

CERTIFICATE OF CONFORMITY

Emissions – Wood Heater

EPA 40 CFR Part 60, Subpart AAA, ASTM E2515-17, CSA B415.1-2010 (R2020), EPA ATM
05/02/25, NYSEDA Test Method (IDC)
WHI25 – 21514333

Organization

Stove Builder International
250 de Copenhague
St Augustin de Desmaures, QC G3A 2H3
Canada

Product: Osburn 950 N, Escape 1200 N, Gateway 1400 N, Solution 1.4 N, Spark II N, Fox N, Deco Nano N, S250 N, HES140 N, Blue Ridge 100 N, SP1400 N, SL1400 N

Catalytic: No

Maximum Output: 71,279 Btu/hr

Weighted Average Emissions: 1.7 g/hr

Weighted Average Annual Delivered Efficiency (HHV): 74%

Test Fuel Type: Cordwood

Weighted Average CO Emissions Rate (g/min): 1.3 g/min

Conformance: Complies with 2020 particulate emissions standard

Test Report No.: 25-446 (PFS-TECO)

Certification Body: Intertek Testing Services NA, Inc.

Registered Address: 545 E. Algonquin Rd., Arlington Heights, IL 60005, USA

Initial Issue Date: 30-Dec-25

Issue Status: 3

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Jean-Philippe Kayl
Vice President – Global Certification
Name


Signature

22-Apr-26
Date

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Version: 11 November 2021 SFT-BCH-OP-19c

Certificate of Conformity WHI25-21514333

Appendix A

Certificate of Conformity #:		Certificate of Conformity Issue Date:	
WHI25-21514333		April 22, 2026	
REVISION #	REVISION DATE	REPORT PAGES	REVISION
0	December 30, 2025	N/A	Original Report Issue
1	April 2, 2026	N/A	EPA Deficiency update to test report.
2	April 22, 2026	N/A	Corrected EPA ATM issue date from 11/13/24 to 05/02/25.

Revised Report #:		Report Issue Date:	
25-446 (PFS-TECO)		December 19, 2025	
REVISION #	REVISION DATE	REPORT PAGES	REVISION
0	December 19, 2025	N/A	Original Report Issue
1	March 30, 2026	11	Added summary table of sample flow rates
		12	Added summary table of post-test leak check and sample analysis times.
		27	Added immediate (<1hr) post-test filter weights to E2515 Lab Data sheets.
		5	Added note regarding video documentation.
		238	Added additional images documenting test runs to Appendix A.

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Version: 11 November 2021 SFT-BCH-OP-19c

Stove Builder International

Project # 25-446

Model: 1.4R Series

AKA: Osburn 950 N, Escape 1200 N, Gateway
1400 N, Solution 1.4 N, Spark II N, Fox N, Deco
Nano N, S250 N, HES140 N, Blue Ridge 100 N,
SP1400 N, SL1400 N

Type: Non-catalytic Wood Fired Heater

Date: December 29, 2025

Revised Date: March 30, 2026

NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standard (EPA Alternate Test Method)

Contact: Mr. Guillaume Thibodeau-Fortin
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Prepared by: Aaron Kravitz,
Laboratory Manager



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Revision Summary

December 29, 2025 – Original Issue

March 30, 2026 – Made the following revisions as the request of EPA:

- Added summary table of sample flow rates, see page 11
- Added summary table of post-test leak check and sample analysis times, see page 12
- Added immediate (<1hr) post-test filter weights to E2515 Lab Data sheets, see Appendix A (non-CBI report page 27)
- Added note regarding video documentation to page 5.
- Added additional images documenting test runs to Appendix A (non-CBI report page 238)

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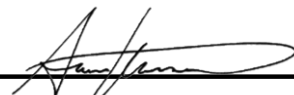
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Affidavit

PFS-TECO was contracted by Stove Builder International (SBI) to provide testing services for the 1.4R Series Wood-Fired Room Heater per the *NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standard*, which was approved for use by EPA under an Alternate Test Method (ATM) in a letter to the manufacturer dated May 2, 2025. All testing and associated procedures were conducted at PFS-TECO's Portland Laboratory beginning on 10/27/2025 and ending on 10/29/2025. PFS' laboratory is located at 11785 SE Hwy 212 Ste 305, Clackamas, OR 97015. Testing procedures followed the NYSERDA IDC method, with variances as described in the ATM. Particulate sampling was performed per ASTM E2515, *Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel* and *NYSERDA Standard Operation Procedures for use of a Thermo Scientific 1405-D TEOM™ in a dilution tunnel with wood-fired stoves, hydronic heaters, and furnaces*, with variances as described in the ATM. A copy of the EPA ATM letter is included in Appendix A for reference, as required by the approval letter. Test results apply only to the specific appliance tested.

PFS-TECO is accredited by the U.S. Environmental Protection Agency for the certification and auditing of wood heaters pursuant to subpart AAA of 40 CFR Part 60, New Source Performance Standards for Residential Wood Heaters and subpart QQQQ of 40 CFR Part 60, Standards of Performance for New Hydronic Heaters and Forced Air Furnaces, Methods 28R, 28WHH, 28 WHH-PTS, and all methods listed in Sections 60.534 and 60.5476. PFS-TECO holds EPA Accreditation Certificate Numbers 4 and 4M (mobile). PFS-TECO is accredited by IAS to ISO 17020:2012 "Criteria for Bodies Performing Inspections", and ISO 17025:2017 "Requirements for Testing Laboratories." PFS-TECO is also accredited by Standards Council of Canada to ISO 17065:2012 "Requirements for Bodies Operating Product Certification Systems."

The following people were associated with the testing, analysis and report writing associated with this project.



Aaron Kravitz, Laboratory Manager

Introduction

SBI contracted with PFS-TECO to perform EPA certification testing on the 1.4R Series Wood-Fired Room Heater. All testing was performed at PFS' Portland laboratory. All testing was performed by Aaron Kravitz.

Notes

- Prior to the start of testing, 50 hours of conditioning was performed by the manufacturer in accordance with the ATM.
- Prior to the start of testing, the dilution tunnel was cleaned with a steel brush (October 17, 2024).
- A TEOM using TX-40 filters was used to determine 1st hour emissions and integrated emissions in accordance with the ATM for all test runs.
- A total of 3 test runs were completed. All three test runs are included in average emissions results. Test runs were performed in accordance with the ATM. All runs have been found to be appropriate, see the Run Narrative section for further detail on each run.
- No fuel pieces were intentionally squared or debarked and met all requirements specified in the ATM. Fuel pieces used for testing had little to no bark due to natural drying, splitting, and impacts caused by multiple moisture measurements. All fuel loads (other than L1 fuel loads) included at least one piece with bark still adhered. As required, video recording of all runs was performed.
- For the purpose of measuring temperature of the unit, 5 thermocouples were installed on the outer surface of the firebox per the ATM.
- The blower installed on the unit were operated per the manufacturer's instructions.
- Video was recorded for the duration of each run, but the video files for all runs were found to be corrupted and are therefore unavailable. However, complete photo documentation for all runs is available in Appendix A.

Wood Heater Identification and Testing

- Appliance Tested: **Spark II N (1.4R Series)**
- Serial Number: **PFS Tracking Number 238**
- Manufacturer: **Stove Builder International**
- Catalyst: **No**
- Heat exchange blower: **Optional**
- Type: **Wood Stove**
- Style: **Freestanding**
- Unit Condition: **Good**
- Date Received: **Friday, October 10, 2025**
- Testing Period – Start: **Monday, October 27, 2025**
Finish: **Wednesday, October 29, 2025**
- Test Location: **PFS TECO**
11785 SE Hwy 212 Ste. 305
Clackamas, OR 97015
- Elevation: **~131 Feet above sea level**
- Test Technician(s): **Aaron Kravitz**
- Observers: **None**

Test Procedures and Equipment

All Sampling and analytical procedures were performed by Aaron Kravitz. All procedures used are directly from the NYSERDA Method and ASTM E2515. See the list below for equipment used. See Appendix C submitted with this report for calibration data.

Equipment List:

Equipment ID#	Equipment Description
50	Digiweigh DWP12i Platform Scale
129	APEX XC-60-ED Digital Emissions Sampling Box A
130	APEX XC-60-ED Digital Emissions Sampling Box B
137	California Analytical ZRE CO2/CO/O2 IR ANALYZER
94	Moisture meter calibration block
95	Anemometer
97	10 lb audit weight
239	OhausAnalytical Balance
109A/B	Troemner 100mg/200mg Audit Weights
217	Microtector
115	Delmhorst Wood Moisture Meter
190	Mettler 3'x3' floor scale w/digital weight indicator
205	DewTrak tunnel dewpoint monitor
209	Tape Measure
216	Temperature Logger
DT0042934	Gas Analyzer Calibration Span Gas
CC341544	Gas Analyzer Calibration Mid Gas
EPA B47459	Dichot TEOM – Tunnel Sampling
EPA B47461	Dichot TEOM – Ambient Sampling
197	Mass Flow Meter
Thermo CVK7037	TEOM Calibration Kit

The TEOM instruments were calibrated in accordance with NYSERDA Standard Operation Procedures for Thermo Scientific 1405-D TEOM™ for use in a dilution tunnel, dated September 29, 2022, and the manufacturer's instructions, using mass flow meter ID # 197 and manufacturer-supplied calibration kit serial # CVK7037.

Barometric pressure data was taken from local National Weather Service station KPDX. As PFS and KPDX are at the same altitude, the correction for altitude per ASTM E2515 6.1.2 is 1:1. NWS data was verified with on-site barometer #202, which is calibrated yearly.

Results

The average emissions rate for the test series was measured to be **1.0 g/hr** when measured with a TEOM, or **1.7 g/hr** when measured in accordance with ASTM E2515. With average 1st hour TEOM emissions of **2.8 g/hr**. Average Higher Heating Value efficiency of **74%**. The average CO emission rate for the test series was **1.3 g/min**. The SBI 1.4R Wood-Fired Room Heater meets the 2020 cordwood PM emission standard of ≤ 2.5 g/hr per CFR 40 part 60, §60.532 (c).

Detailed individual run data can be found in Appendix A submitted with this report.

Summary Tables

Run 1

	Burn Phase:	L1	L2	L3	L4	1 st hr	Total
	Burn Time (min):	23	75	76	273		450
	Burn Rate (dry kg/hr):	4.31	3.09	2.14	1.78		1.99
TEOM	Eg:	1.7	1.1	0.67	3.0	2.6	6.4
TEOM	Eg/hr:	4.3	0.92	0.53	0.65	2.6	0.86
TEOM	Eg/kg:	1.00	0.30	0.25	0.44	0.61	0.43
TEOM	Eg/MJ output:	0.068	0.020	0.016	0.029		0.029
TEOM	Elb/mmbtu output:	0.159	0.047	0.038	0.068		0.067
2515	Eg:						11.6
2515	Eg/hr:						1.5
2515	Eg/kg:						0.78
2515	Eg/MJ output:						0.052
2515	Elb/mmbtu output:						0.120
	CO (g):	38.3	81.9	92.9	271.2		484.2
	CO (g/min):	1.7	1.1	1.2	1.0		1.1
	CO g/hr:	99.9	65.5	73.3	59.6		64.6
	CO g/kg:	23.2	21.2	34.3	33.5		32.4
	CO g/MJ output:	1.6	1.5	2.2	2.7		2.2
	CO lb/mmBTU output:	3.7	3.4	5.2	6.2		5.0
	Output (BTU/hr)	60,178	42,553	30,998	21,178		28,251
	Efficiency (%)	72.1%	74.3%	76.0%	75.5%		74.9%

Run 2

	Burn Phase:	L1	L2	L3	L4	1 st hr	Total
	Burn Time (min):	21	85	89	304		502
	Burn Rate (dry kg/hr):	4.92	2.81	1.89	1.62		1.83
TEOM	Eg:	2.2	1.2	1.51	7.2	3.1	12.2
TEOM	Eg/hr:	6.3	0.85	1.0	1.42	3.1	1.5
TEOM	Eg/kg:	1.3	0.30	0.54	1.06	0.73	0.79
TEOM	Eg/MJ output:	0.091	0.021	0.037	0.071		0.054
TEOM	Elb/mmbtu output:	0.212	0.049	0.085	0.164		0.126
2515	Eg:						20.1
2515	Eg/hr:						2.4
2515	Eg/kg:						1.32
2515	Eg/MJ output:						0.089
2515	Elb/mmbtu output:						0.208
	CO (g):	73.3	117.1	164.6	376.4		731.4
	CO (g/min):	3.5	1.4	1.8	1.2		1.5
	CO g/hr:	209.5	82.7	110.9	74.3		87.4
	CO g/kg:'	42.6	29.4	58.7	45.9		47.8
	CO g/MJ output:	3.0	2.1	4.0	3.7		3.3
	CO lb/mmBTU output:	7.0	4.8	9.3	8.6		7.6
	Output (BTU/hr)	65,777	38,089	26,348	19,116		25,448
	Efficiency (%)	70.3%	73.5%	74.1%	75.1%		74.0%

Run 3

	Burn Phase:	L1	L2	L3	L4	1 st hr	Total
	Burn Time (min):	19	72	86	311		491
	Burn Rate (dry kg/hr):	5.38	3.20	2.02	1.53		1.84
TEOM	Eg:	1.6	1.13	0.67	1.7	2.6	5.1
TEOM	Eg/hr:	5.1	0.94	0.47	0.32	2.6	0.62
TEOM	Eg/kg:	1.0	0.29	0.23	0.25	0.58	0.34
TEOM	Eg/MJ output:	0.068	0.021	0.015	0.016		0.023
TEOM	Elb/mmbtu output:	0.159	0.048	0.036	0.038		0.053
2515	Eg:						9.1
2515	Eg/hr:						1.1
2515	Eg/kg:						0.61
2515	Eg/MJ output:						0.041
2515	Elb/mmbtu output:						0.094
	CO (g):	72.0	98.5	59.5	281.8		511.8
	CO (g/min):	3.8	1.37	0.69	0.9		1.0
	CO g/hr:	227.3	82.1	41.5	54.4		62.5
	CO g/kg:'	42.3	25.6	20.5	35.5		34.0
	CO g/MJ output:	3.0	1.8	1.4	2.7		2.3
	CO lb/mmBTU output:	7.0	4.2	3.1	6.4		5.3
	Output (BTU/hr)	71,279	43,482	29,114	18,785		26,132
	Efficiency (%)	69.4%	73.4%	76.1%	75.2%		74.2%

Test Run Narrative

Run 1

Run 1 was performed on 10/27/25 as an Integrated Duty Cycle run per the ATM. Emissions sampling began from a cold start ignition of kindling and start-up fuel. L2 test fuel was loaded at 24 minutes, L3 at 100 minutes, and L4 at 177 minutes. The total test time was 450 minutes. The particulate emissions rate from kindling ignition to test completion was 0.86 g/hr as measured by the TEOM, or 1.5 g/hr as measured in accordance with ASTM E2515. No filter change was needed for E2515 sampling. The overall burn rate from ignition to completion was 1.99 kg/hr, and overall efficiency was 74.9%. All test results were appropriate and valid. There were no anomalies, and all test criteria were met. No condensed water was detected in the tunnel at any time. Video was recorded for the entire run.

Run 2

Run 2 was performed on 10/28/2025 as an Integrated Duty Cycle run per the ATM. Emissions sampling began from a cold start ignition of kindling and start-up fuel. L2 test fuel was loaded at 22 minutes, L3 at 108 minutes, and L4 at 198 minutes. The total test time was 502 minutes. The particulate emissions rate from kindling ignition to test completion was 1.5 g/hr as measured by the TEOM, or 2.4 g/hr as measured in accordance with ASTM E2515. No filter change was needed for E2515 sampling. The overall burn rate from ignition to completion was 1.83 kg/hr, and overall efficiency was 74.0%. All test results were appropriate and valid. There were no anomalies, and all test criteria were met. No condensed water was detected in the tunnel at any time. Video was recorded for the entire run.

Run 3

Run 3 was performed on 10/29/2025 as an Integrated Duty Cycle run per the ATM. Emissions sampling began from a cold start ignition of kindling and start-up fuel. L2 test fuel was loaded at 20 minutes, L3 at 93 minutes, and L4 at 180 minutes. The total test time was 491 minutes. The particulate emissions rate from kindling ignition to test completion was 0.62 g/hr as measured by the TEOM, or 1.1 g/hr as measured in accordance with ASTM E2515. No filter change was needed for E2515 sampling. The overall burn rate from ignition to completion was 1.84 kg/hr, and overall efficiency was 74.2%. All test results were appropriate and valid. There were no anomalies, and all test criteria were met. No condensed water was detected in the tunnel at any time. Video was recorded for the entire run.

Test Conditions Summary

Testing conditions for all runs fell within allowable specifications of the ATM. A summary of facility conditions, fuel burned, and run times is listed below.

Run	Ambient (°F)		Relative Humidity (%)		Average Barometric Pressure (In. Hg.)	Test Run Time (Min)
	Pre	Post	Pre	Post		
1	66.5	68.8	38.7	35.1	30.18	450
2	65.5	71.5	43.6	31.9	30.11	502
3	67.7	69.3	45.6	33.3	30.28	491

Sample Flow Rates

Average sample flow rates for ASTM E2515 filter trains are shown below. Target flow rates for all runs were 0.140 scfm for trains A and B and 0.200 scfm for the ambient train. Proportionality results are documented in the run data in Appendix A.

Run	Avg. Flow Rate A (scfm)	Avg. Flow Rate B (scfm)	Avg. Flow Rate Amb (scfm)
1	0.141	0.143	0.224*
2	0.140	0.145	0.204*
3	0.142	0.144	0.197*

*Ambient sample flow rate maintained within 20% of initial value for the duration of all test runs.

Post-Test Leak Checks and Filter Analysis

Following the completion of each test run, all filter trains were leak checked, and all filter pairs weighed, within one hour. See the table below for details. Filter analysis results can be found in the Lab Data sheets in Appendix A.

Run	Test End Time	Leak Check Time	Filter Weight Time
1	17:34	17:40	18:00
2	19:11	19:15	19:30
3	20:11	20:15	20:30

Appliance Operation and Test Settings

The appliance was operated according to procedures as described in the Operations Manual, found in Appendix B submitted with this report. Detailed run information can be found in Appendix A submitted with this report.

Settings & Run Notes

	L1 Settings	L2 Settings	L3 Settings	L4 Settings
Run 1	Air fully open Fan off	Air fully open until 50% fuel consumption, then fully closed Fan on high	Air fully closed Fan on high	Air fully closed Fan on high
Run 2	Air fully open Fan off	Air fully open until 50% fuel consumption, then fully closed Fan on high	Air fully closed Fan on high	Air fully closed Fan on high
Run 3	Air fully open Fan off	Air fully open until 50% fuel consumption, then fully closed Fan on high	Air fully closed Fan on high	Air fully closed Fan on high

Appliance Description

Models: The tested model Spark II N is part of the 1.4R Series, all of which are identical with respect to all parts that may impact emissions performance as specified by 40 CFR 60 § 60.533(k). The models are only different with respect to branding, decorative features, and support method. Drawings for all models are in Appendix D. See below for model list:

- Osburn 950 N, Escape 1200 N, Gateway 1400 N, Solution 1.4 N, Spark II N, Fox N, Deco Nano N, S250 N, HES140 N, Blue Ridge 100 N, SP1400 N, SL1400 N

Appliance Type: Freestanding Non-Catalytic Wood-Fired Room Heater

Total Firebox Volume: 1.85 ft³

Usable Firebox Volume: 1.67 ft³, see ATM document in Appendix A for further detail on Total versus Usable Firebox Volume.

Air Introduction System: Primary air is introduced through an opening at the front of the unit beneath the firebox, which is regulated by an air slide. Primary air is routed to the firebox through an air wash above the loading door, a pilot opening beneath the loading door, and holes located in the firebox floor. Secondary air is introduced through a fixed opening under the firebox and is routed to a series of secondary air tubes located at the top of the firebox.

Baffles: Combustion air is routed to the front of the stove with a ceramic fiber baffle that sits on top of the secondary air channels located above the firebox.

Refractory Insulation: The firebox is lined with 1 1/4" thick high-density firebrick.

Flue Outlet: 6-inch exhaust outlet located on the top of the appliance.

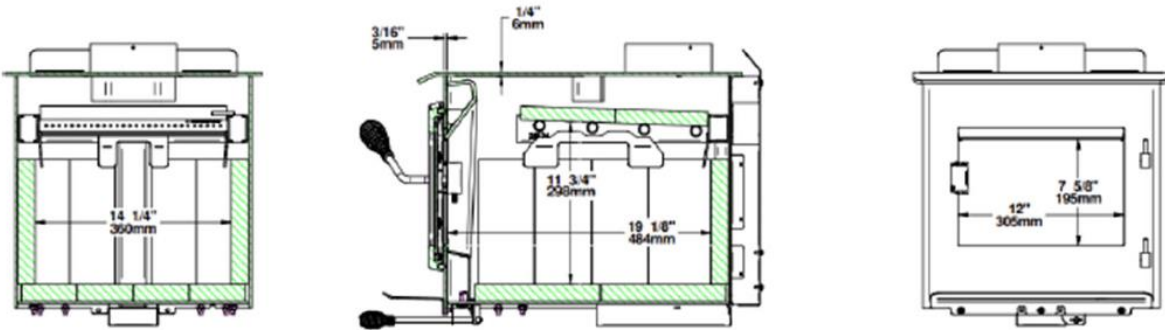
Fan: Crossflow blower 115V-60Hz

Appliance Dimensions

Height	Width	Depth
28 – 11/16 in	18 – ½ in	25 – 5/8 in

Appliance design drawings can be found in Appendix D submitted with the CBI copy of this report.

Overall Firebox Volume Dimension



$$OFV = 11.75 \times 19.125 \times 14.25 = 3202.2 \text{ in}^3$$

$$OFV = (3202.2 / 12^3) = 1.85 \text{ ft}^3$$

$$\text{Total Volume} = \text{Volume1} + \text{Volume7} + \text{Volume8} + \text{Volume 9} + \text{Volume 10} - (\text{Volume 11}) \times 2$$

$$= 2182.106 + 477.386 + 172.358 + 31.345 + 35.449 - 2.806 \times 2 = 2893.032 \text{ in}^3 = 1.67 \text{ ft}^3$$

$$\text{Volume 11} = ((0.452 \times 13.995) + (1.614 \times 0.393) + (0.393 \times 11.243/2)) \times 0.306 = 2.806 \text{ in}^3$$

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Appliance Front



Appliance Left



Appliance Right



Appliance Rear



Appliance Fire Box



Test Fuel Properties

Test fuel used was maple cordwood, split and air-dried to the specified moisture content range. No kiln-drying was used. Fuel is sourced locally in Oregon. Fuel was not debarked, though bark frequently fell off of fuel pieces in the course of splitting to final size. Fuel was free of decay, fungus or other contaminants. No moisture was added to the fuel. Test fuel moisture was measured within 24h from loading. The fuel was stored in the same ambient condition than the laboratory. As per the Fuel Load Calculator, all pieces of fuel were cut to 16 inches long.

While splitting test fuel, it was verified that every piece of test fuel with 4 sides were verified to meet the 70% rule in the ATM. No pieces were intentionally squared. Typical fuel loads are pictured below:

Typical Kindling Load



Typical L1 Load



Typical L2 Load



Typical L3 Load



Typical L4 Load (small)



Typical L4 Load (large)



Sample Collection

Verified – Yes: ☒ No: ☐ (if No Explain)

ASTM E2515-11

Four separate, complete particulate sampling trains were used for each run. Filter face velocity at no time exceeded 150mm/sec during any test run. The dry gas meters were calibrated for the flow rates encountered during the test runs.

The 47mm filter holder assemblies consist of an aluminum front housing and polycarbonate rear housing, with the rear housing located 75mm downstream from the front housing. The front filter support frit is stainless steel.

Probe assemblies are constructed from 316 grade stainless steel tubing with an outside diameter of 6.35mm and 310mm length.

A type K thermocouple filter temperature monitor probe is installed behind the front filter housing with its tip directly exposed to the sample gas.

Sample gas drying systems are located prior to each metering system and include temperature sensors.

The metering systems include vacuum gauges, leak-free diaphragm-type pumps, and type K thermocouple temperature sensors. The gas meters have a resolution of 0.001 cubic feet.

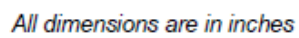
Barometric pressure data was taken from local National Weather Service station KPDX. As PFS and KPDX are at the same altitude, the correction for altitude per ASTM E2515-11 6.1.2 is 1:1.

Dilution tunnel temperature was measured by a type K thermocouple probe.

Dilution tunnel velocity was measured prior to each run by performing a velocity traverse and monitored throughout each run by measuring pitot pressure at the tunnel centroid. Traverses were performed using a Dwyer Model 1430 Microtector in accordance with the instrument owners' manual. This includes leveling and zeroing the instrument prior to each use and performing pre- and post-test leak checks on the pitot tubing.

To monitor and log centroid pitot pressure, the pressure transducer of an Apex Instruments XC-60-DIR sample box was used. Both pieces of equipment offer precision in excess of the +/- 0.001" specified in section 6.1.5 of ASTM E2515-11, and are therefore suitable for use with flows under 800 ft/min. Both pieces of equipment are plumbed to the same pitot tube, which is in accordance with the design shown in Appendix X2 of ASTM E2515-11.

The dilution tunnel is constructed in accordance with the requirements of ASTM E2515-11, as shown below:



Sample ports are located 16 feet downstream from any disturbances and 3 feet upstream from any disturbances. Flow rate traverse data was collected 12 feet downstream from any disturbances and 4 feet upstream from any disturbances. (See below). Flow is induced and maintained by a centrifugal-type blower.

Test facility temperature is monitored by a type T thermocouple probe, located in a 150mm long, 50mm diameter pipe shield located in the 90-degree arc in front of the test unit, between 1-2m away, and in the horizontal plane of the test unit air intake.

Test facility airflow was measured with an anemometer capable of measuring velocities less than 20 ft/min located within 2 feet of the appliance.

Reagents and Standards

Verified – Yes: ☒ No: ☐ (if No Explain)

Pall Type A/E Glass fiber 47mm filters having at least 99.95% efficiency at 0.3-micron particles were used.

Test samples were conditioned in an airtight desiccator containing calcium sulfate desiccant, with specific humidity of less than 0.005 g/liter prior to and after the testing.

Acetone was used to clean probe assemblies both prior to pretest desiccation and prior to post-test desiccation.

Calibration and Standardization

Verified – Yes: ☒ No: ☐ (if No Explain)

The gas metering system is calibrated every six months traceable to NIST and demonstrating an uncertainty of +/- 0.75% of the measured volume. Calibration flow rate range is from 0.05 to 0.30 scfm.

All thermocouples discussed in this report are calibrated traceable to NIST every six months. Both Type T (ambient) and Type K (all others) TCs are monitored by the same piece of equipment, a National Instruments 9213.

The analytical balance has a resolution of 0.1mg and is calibrated traceable to NIST every six months. Before each test and before each weighing of samples (both for tare and final analysis), the balance is audited with a calibrated 200mg weight.

All other measurement equipment used for this test is calibrated traceable to NIST at an appropriate interval. See Appendix C for all calibration records.

Procedures

Verified – Yes: ☒ No: ☐ (if No Explain)

The following procedures were performed and/or observed prior to testing:

- The dilution tunnel was cleaned with an appropriately sized steel brush.
- Induced draft was evaluated by measuring flue static pressure with the dilution tunnel blower operating and no fire in the appliance. No induced static pressure was observed (all readings <0.005 " H₂O) in any appliance door/air damper configuration.
- Smoke capture was evaluated by operating the appliance at a high burn rate and visually monitoring smoke collection by the hood. No less than 100% smoke collection was observed at the minimum tunnel flow rate.

Prior to ignition for each run, a velocity traverse was conducted to determine dilution tunnel velocity. Traverse points were determined in accordance with Figures 5 and 6 of ASTM E2515-11, which for a 6" diameter tunnel are 0.5" and 1.5" from either side of the duct, on two axes located at 90° from each other. Velocity calculated in accordance with section 9.3.2, excluding center readings. The pitot tube was placed in the center of the tunnel for the duration of each test run.

Prior to tare analysis, probes were cleaned with acetone, O-rings cleaned of any residue, and filters were visually check for pinhole leaks or irregularities. Filters, O-rings, and probes were desiccated at 20+/-5C for at least 24 hours and weighed at intervals of not less than 6 hours until constant weight was attained. Filters and O-rings were both weighed in pairs.

Tared samples were assembled into three dual filter holder assemblies (A, B, and first hour) and the single ambient filter assembly. Blunt tweezers and surgical gloves were used to avoid damage or contamination of the samples. The three dual filter assemblies were inserted to the appropriate depth in the tunnel (within the 2" diameter centroid, no closer than 1" apart). The ambient filter holder was installed within 10' of the centroid of the dilution tunnel inlet hood, in the same plane and the hood inlet.

Leak checks were performed on sampling systems as follows:

- Leak checks were performed on the pitot tube lines before and after each test run by applying a pressure differential of at least 3" H₂O and sealing the pitot tube opening. Pressure remained stable for at least 15 seconds all checks of both the pressure and suction sides, confirming that no leaks were present.
- All four sampling trains were leak-checked before and after each test run. Pre-test leak checks were conducted at the vacuum level corresponding to each sample pump's flow setting, in accordance with Note 5 of ASTM E2515-11. Post-test checks were conducted at the highest vacuum level encountered during the test, or the pre-test vacuum level, whichever was greater. Of the leak rate limits (0.01 cfm or 4% of sample rate), 4% of the sample rate is lower, and at no point was the measured leakage rate greater than this.

- The portion of the sampling trains from the pumps to the dry gas meters (that is, the positive pressure section of the metering system) was leak checked semiannually during calibration. This check was performed by closing the main inlet valve and pressurizing the outlet of the dry gas meter to at least 7" H₂O, and ensuring the pressure remained stable for at least 1 minute.

Sampling began at the start of each test run as defined by the applicable procedure and continued until the defined end of the test run. Readings were collected at 1-minute intervals. During all test runs, the following conditions were maintained:

- Test facility temperature was between 55 and 90 F.
- Air velocities were less than 50ft/min within 2ft of the appliance
- Filter holder temperatures were no greater than 90 F.
- Sample flow rates were maintained within 10% of the initial proportionality ratio.
- Ambient sample flow rate maintained within 20% of the initial flow rate.

Following each test run and its associated leak checks, samples were recovered by disassembling the filter holder components and replacing them in the desiccator. The outside of the probes was cleaned with acetone prior to desiccation.

Sample weights were determined using the same analytical balance and procedures used for tare weights. Filters, O-rings, and probes were desiccated at 20+/-5C for at least 24 hours and weighed at intervals of not less than 6 hours until constant weight was attained. Filters and O-rings were both weighed in pairs. Components were not exposed to laboratory atmosphere for more than 2 minutes per weighing.

Appliance Sealing and Storage

Upon completion of testing, the appliance and the chimney were secured with metal strapping and the seal below was applied, the appliance was then returned to the manufacturer's location at: 250 Rue de Copenhague Saint-Augustin-de-Desmaures, QC G3A 2H3 for archival.

Sealing Label

ATTENTION:

THIS SEAL IS NOT TO BE BROKEN WITHOUT PRIOR AUTHORIZATION FROM THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY.

THIS APPLIANCE HAS BEEN SEALED INACCORDANCE WITH REQUIREMNTS OF 40CFR
PART 60 SUBPART AAA §60.535 (a)(2)(vii)

REPORT # _____

DATE SEALED _____

MANUFACTURER _____

MODEL # _____

Sealed Unit



List of Appendices

The following appendices have been submitted electronically in conjunction with this report:

Appendix A – Test Run Data, Technician Notes, Sample Analysis, and Alternate Test Method Approval

Appendix B – Labels and Manuals

Appendix C –Equipment Calibration Records

LAB SAMPLE DATA - ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	A	G01390	244.7	246.5	1.8
	B	G01391	245.3	246.6	1.3
	Amb	G01392	246.1	246.1	0.0
Probes	A	20A	115628.3	115628.5	0.2
	B	20B	115967.7	115968.1	0.4
O-rings	A	20A	3557.5	3557.7	0.2
	B	20B	3612.5	3613.0	0.5

Placed in Dessicator on: 10/27/2025

Balance Audit (mg):

		200.0		200.0		200.0			
		Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time
Filters	A	247.0	10/27 18:00	246.6	10/31 12:00	246.5	11/3 11:30		
	B	246.5	10/27 18:00	246.6	10/31 12:00	246.6	11/3 11:30		
	Amb	246.3	10/27 18:00	246.2	10/31 12:00	246.1	11/3 11:30		
Probes	A			115628.4	10/31 12:00	115628.5	11/3 11:30		
	B			115968.2	10/31 12:00	115968.1	11/3 11:30		
O-Rings	A			3557.7	10/31 12:00	3557.7	11/3 11:30		
	B			3613.0	10/31 12:00	3613.0	11/3 11:30		

Train A Aggregate, mg:	2.2
Train B Aggregate, mg:	2.2
Ambient, mg:	0.0

LAB SAMPLE DATA - ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	A	G01392	230.0	232.4	2.4
	B	G01394	231.2	234.2	3.0
	Amb	G01394	228.0	228.1	0.1
Probes	A	20C	113776.2	113776.9	0.7
	B	1A	115629.2	115629.5	0.3
O-rings	A	20C	3608.3	3609.2	0.9
	B	1A	3566.6	3567.1	0.5

Placed in Dessicator on: 10/28/2025

Balance Audit (mg):

		200.0		200.0		200.0		200.0	
		Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time
Filters	A	232.7	10/28 19:30	232.8	10/31 12:00	232.4	11/3 11:30	232.4	11/4 12:30
	B	235.0	10/28 19:30	234.7	10/31 12:00	234.4	11/3 11:30	234.2	11/4 12:30
	Amb	228.4	10/28 19:30	228.2	10/31 12:00	228.1	11/3 11:30		
Probes	A			113777.1	10/31 12:00	113776.9	11/3 11:30		
	B			115629.7	10/31 12:00	115629.5	11/3 11:30		
O-Rings	A			3609.2	10/31 12:00	3609.2	11/3 11:30		
	B			3567.2	10/31 12:00	3567.1	11/3 11:30		

Train A Aggregate, mg:	4.0
Train B Aggregate, mg:	3.8
Ambient, mg:	0.1

LAB SAMPLE DATA - ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/29/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	A	G01395	231.4	232.6	1.2
	B	G01396	229.8	231.1	1.3
	Amb	G01397	231.2	231.3	0.1
Probes	A	1B	115904.6	115904.7	0.1
	B	1C	116434.8	116434.8	0.0
O-rings	A	1B	3555.5	3555.9	0.4
	B	1C	4166.0	4166.6	0.6

Placed in Dessicator on: 10/29/2025

Balance Audit (mg):

		200.0		200.0		200.0			
		Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time
Filters	A	233.0	10/29 20:30	232.7	10/31 12:00	232.6	11/3 11:30		
	B	231.3	10/29 20:30	231.2	10/31 12:00	231.1	11/3 11:30		
	Amb	231.4	10/29 20:30	231.3	10/31 12:00	231.3	11/3 11:30		
Probes	A			115904.7	10/31 12:00	115904.7	11/3 11:30		
	B			116434.9	10/31 12:00	116434.8	11/3 11:30		
O-Rings	A			3555.9	10/31 12:00	3555.9	11/3 11:30		
	B			4166.8	10/31 12:00	4166.6	11/3 11:30		

Train A Aggregate, mg:	1.7
Train B Aggregate, mg:	1.9
Ambient, mg:	0.1

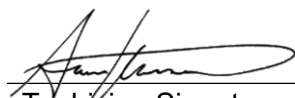
WOOD STOVE TEST DATA PACKET

IDC / ASTM E2515



Run 1 Data Summary

Client:	SBI
Model:	1.4R
Job #:	25-446
Tracking #:	238
Test Date:	10/27/2025



Technician Signature

11/26/2025

Date

TEST RESULTS - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Total Fuel Burned (kg-dry) 14.90

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft ³)	99.214	65.173	65.827	-
Average Gas Velocity in Dilution Tunnel (ft/sec)	16.5			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	44875.2			
Average Gas Meter Temperature (°F)	70.5	91.6	88.7	-
Total Sample Volume (dscf)	100.850	63.298	64.606	-
Average Tunnel Temperature (°F)	83.2			
Total Time of Test (min)	450			
Total Particulate Catch (mg)	0.0	2.2	2.2	-
Particulate Concentration, dry-standard (g/dscf)	0.0000000	0.0000348	0.0000341	-
Total PM Emissions (g)	0.00	11.70	11.46	-
Particulate Emission Rate (g/hr)	0.00	1.56	1.53	-
Emissions Factor (g/kg)	-	0.79	0.77	-
Difference from Average Total Particulate Emissions (g)	-	0.12	0.12	-
Difference from Average Total Particulate Emissions (%)	-	1.0%	1.0%	-
Difference from Average Emissions Factor (g/kg)	-	0.01	0.01	-

Final Average Results	
Total Particulate Emissions (g)	11.58
Particulate Emission Rate (g/hr)	1.54
Emissions Factor (g/kg)	0.78

Quality Checks	Requirement	Observed	Result
Dual Train Precision	Each train within 7.5% of average emissions (in grams), or emission factors within 0.5 g/kg	See Above	OK
Filter Temps	<90 °F	88.8	OK
Face Velocity	< 30 ft/min	8.0	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min:66.5/Max:72.1	OK
Negative Probe Weight Evaluation	<5% of Total Catch	Probe Catch Not Negative	OK
Pro-Rate Variation	90% of readings between 90-110%; none greater than 120% or less than 80%	See Data Tabs	OK

DILUTION TUNNEL & MISC. DATA - ASTM E2780 / E2515

Client: SBI
 Model: 1.4R
 Run #: 1
 Test Start Time: 10:04

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Total Sampling Time (min): 450
 Recording Interval (min): 1

Meter Box γ Factor: 1.004 (A)
 Meter Box γ Factor: 1.009 (B)
 Meter Box γ Factor: - (C)
 Meter Box γ Factor: 1.013 (Ambient)

Induced Draft Check (in. H₂O): 0
 Smoke Capture Check (%): 100%
 Date Flue Pipe Last Cleaned: 10/24/2025
 Test Fuel Scale Audit (lbs): 10.00
 Platform Scale Audit (lbs): 10.0

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	30.19	30.17	30.18
Relative Humidity (%)	38.7	35.1	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	0	0	
Ambient Sample Volume:		99.214	ft ³

Sample Train Leak Checks

	Pre-test	Post-test		
(A)	0.000	0.000	cfm @	-8 in. Hg
(B)	0.000	0.000	cfm @	-8 in. Hg
(C)	-	-	cfm @	- in. Hg
(Ambient)	0.000	0.000	cfm @	-13 in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H ₂ O)	Temp (°F)
1	0.044	78
2	0.061	78
3	0.071	78
4	0.072	78
5	0.068	78
6	0.041	78
7	0.049	78
8	0.066	78
9	0.074	78
10	0.067	78
11	0.065	78
12	0.045	78
Center	0.074	78

Dilution Tunnel H₂O: 2.00 percent

Tunnel Diameter: 12 inches

Pitot Tube Cp: 0.99 [unitless]

Dilution Tunnel MW(dry): 29.00 lb/lb-mole

Dilution Tunnel MW(wet): 28.78 lb/lb-mole

Tunnel Area: 0.7854 ft²

V_{strav}: 16.27 ft/sec

V_{scent}: 18.12 ft/sec

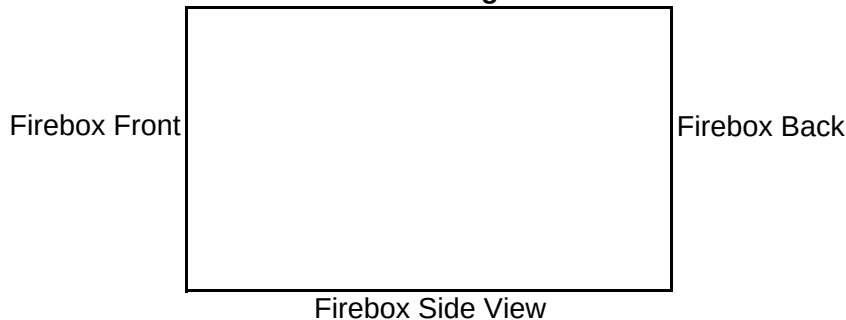
F_p: 0.898 [ratio]

Initial Tunnel Flow: 743.7 scf/min

Static Pressure: -0.114 in. H₂O

TEST FUEL PROPERTIES

Fuel Load Configuration



Actual Fuel Used Properties

Fuel Type: Maple
 HHV (kJ/kg): 8,587
 %C: 0.5084
 %H: 0.0602
 %O: 0.4174
 %Ash: 0.5
 MC (%DB): #DIV/0!

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>1</u>	Technician: <u>AK</u>
	Date: <u>10/27/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.000		0.075	0.01	68	-0.5		6.86		76	68	84	67
1	0.141	0.141	0.075	0.97	69	-1.3	-	6.62	-0.24	80	170	84	67
2	0.288	0.147	0.075	0.97	69	-1.3	-	6.44	-0.18	85	271	84	67
3	0.434	0.146	0.076	0.97	69	-1.2	-	6.19	-0.25	90	352	84	67
4	0.580	0.146	0.074	0.97	69	-1.2	-	5.90	-0.29	86	424	83	67
5	0.727	0.147	0.076	0.96	69	-1.3	-	5.76	-0.14	84	420	83	67
6	0.873	0.146	0.075	0.96	69	-1.3	-	5.56	-0.20	84	438	83	67
7	1.019	0.146	0.075	0.96	69	-1.3	-	5.39	-0.17	85	480	83	67
8	1.164	0.145	0.073	0.96	69	-1.2	-	5.15	-0.24	87	580	83	67
9	1.309	0.145	0.074	0.95	69	-1.2	-	4.93	-0.22	88	585	83	67
10	1.454	0.145	0.075	0.95	70	-1.2	105	4.70	-0.23	88	576	84	67
11	1.598	0.144	0.073	0.95	70	-1.3	-	4.48	-0.22	88	567	84	67
12	1.742	0.144	0.074	0.95	70	-1.3	-	4.26	-0.22	88	582	84	67
13	1.887	0.145	0.074	0.95	70	-1.3	-	4.05	-0.21	89	576	84	67
14	2.031	0.144	0.074	0.95	70	-1.3	-	3.81	-0.24	89	562	84	67
15	2.177	0.146	0.073	0.95	71	-1.3	-	3.60	-0.21	90	560	85	67
16	2.321	0.144	0.075	0.95	71	-1.3	-	3.38	-0.22	90	560	85	68
17	2.465	0.144	0.072	0.93	71	-1.3	-	3.18	-0.20	90	556	85	68
18	2.608	0.143	0.074	0.93	72	-1.3	-	3.00	-0.18	90	556	85	68
19	2.752	0.144	0.075	0.95	72	-1.3	-	2.86	-0.14	90	557	85	68
20	2.896	0.144	0.077	0.94	72	-1.3	104	2.69	-0.17	90	566	85	68
21	3.040	0.144	0.073	0.95	72	-1.3	-	2.49	-0.20	91	579	84	68
22	3.185	0.145	0.075	0.94	73	-1.2	-	2.28	-0.21	91	588	84	68
23	3.329	0.144	0.075	0.93	73	-1.3	-	2.11	-0.17	91	593	84	68
24	3.472	0.143	0.074	0.94	73	-1.3	-	13.88	11.77	102	547	84	68
25	3.615	0.143	0.074	0.94	73	-1.4	-	13.80	-0.08	96	565	84	68
26	3.758	0.143	0.075	0.94	74	-1.4	-	13.53	-0.27	94	573	84	68
27	3.901	0.143	0.073	0.93	74	-1.3	-	13.31	-0.22	94	566	84	69
28	4.046	0.145	0.075	0.92	74	-1.4	-	13.08	-0.23	94	589	85	69
29	4.190	0.144	0.072	0.93	75	-1.3	-	12.88	-0.20	93	601	85	69
30	4.333	0.143	0.073	0.93	75	-1.3	104	12.67	-0.21	94	597	86	69
31	4.476	0.143	0.074	0.93	75	-1.3	-	12.44	-0.23	94	610	88	69

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 1

Technician: AK

Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.619	0.143	0.075	0.94	75	-1.4	-	12.18	-0.26	94	622	88	69
33	4.762	0.143	0.074	0.93	76	-1.3	-	11.98	-0.20	95	637	88	69
34	4.907	0.145	0.074	0.93	76	-1.4	-	11.73	-0.25	96	650	87	69
35	5.050	0.143	0.074	0.94	76	-1.3	-	11.45	-0.28	96	662	87	69
36	5.192	0.142	0.075	0.93	77	-1.3	-	11.19	-0.26	97	663	86	69
37	5.335	0.143	0.073	0.94	77	-1.3	-	10.92	-0.27	97	662	86	70
38	5.478	0.143	0.075	0.92	77	-1.4	-	10.68	-0.24	97	660	85	70
39	5.622	0.144	0.073	0.93	77	-1.3	-	10.45	-0.23	97	658	86	70
40	5.766	0.144	0.073	0.93	78	-1.4	105	10.20	-0.25	97	656	86	70
41	5.909	0.143	0.075	0.93	78	-1.3	-	9.96	-0.24	97	665	86	70
42	6.052	0.143	0.074	0.92	78	-1.4	-	9.72	-0.24	97	668	87	70
43	6.195	0.143	0.074	0.93	79	-1.4	-	9.50	-0.22	98	669	87	70
44	6.338	0.143	0.075	0.94	79	-1.3	-	9.23	-0.27	98	668	87	70
45	6.482	0.144	0.073	0.94	79	-1.4	-	8.97	-0.26	98	663	86	70
46	6.626	0.144	0.076	0.93	79	-1.3	-	8.73	-0.24	98	662	86	70
47	6.769	0.143	0.073	0.94	80	-1.4	-	8.48	-0.25	98	659	86	70
48	6.912	0.143	0.075	0.93	80	-1.5	-	8.24	-0.24	98	651	87	71
49	7.054	0.142	0.075	0.92	80	-1.3	-	8.03	-0.21	98	641	88	71
50	7.198	0.144	0.075	0.93	81	-1.4	103	7.82	-0.21	96	584	89	71
51	7.342	0.144	0.075	0.94	81	-1.3	-	7.69	-0.13	94	536	89	71
52	7.486	0.144	0.075	0.93	81	-1.4	-	7.57	-0.12	92	500	88	71
53	7.629	0.143	0.076	0.93	81	-1.4	-	7.44	-0.13	91	477	87	71
54	7.772	0.143	0.073	0.94	82	-1.4	-	7.35	-0.09	90	462	86	71
55	7.916	0.144	0.074	0.92	82	-1.4	-	7.24	-0.11	90	450	86	71
56	8.059	0.143	0.075	0.93	82	-1.4	-	7.12	-0.12	89	442	86	71
57	8.204	0.145	0.073	0.93	82	-1.4	-	7.02	-0.10	89	435	86	71
58	8.348	0.144	0.073	0.93	83	-1.4	-	6.92	-0.10	88	429	86	71
59	8.492	0.144	0.077	0.94	83	-1.4	-	6.81	-0.11	88	432	85	71
60	8.635	0.143	0.075	0.94	83	-1.3	102	6.71	-0.10	87	427	85	71
61	8.779	0.144	0.076	0.94	83	-1.4	-	6.61	-0.10	87	423	86	71
62	8.923	0.144	0.077	0.93	83	-1.5	-	6.51	-0.10	87	423	86	71
63	9.067	0.144	0.075	0.93	84	-1.4	-	6.39	-0.12	87	421	87	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>1</u>	Technician: <u>AK</u>
	Date: <u>10/27/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.212	0.145	0.076	0.94	84	-1.4	-	6.29	-0.10	87	417	87	71
65	9.356	0.144	0.074	0.93	84	-1.5	-	6.17	-0.12	87	417	86	71
66	9.500	0.144	0.075	0.92	84	-1.4	-	6.09	-0.08	86	417	86	71
67	9.643	0.143	0.074	0.94	84	-1.4	-	5.95	-0.14	86	419	85	71
68	9.787	0.144	0.074	0.93	85	-1.5	-	5.86	-0.09	86	416	85	71
69	9.931	0.144	0.076	0.93	85	-1.4	-	5.78	-0.08	85	414	85	71
70	10.075	0.144	0.076	0.93	85	-1.4	101	5.67	-0.11	85	413	85	71
71	10.221	0.146	0.077	0.94	85	-1.5	-	5.57	-0.10	85	420	86	71
72	10.365	0.144	0.075	0.94	85	-1.6	-	5.45	-0.12	85	419	87	71
73	10.509	0.144	0.074	0.93	86	-1.6	-	5.36	-0.09	85	420	88	71
74	10.653	0.144	0.077	0.94	86	-1.6	-	5.25	-0.11	85	417	88	71
75	10.797	0.144	0.075	0.94	86	-1.6	-	5.14	-0.11	84	417	88	71
76	10.941	0.144	0.075	0.93	86	-1.5	-	5.07	-0.07	84	414	89	71
77	11.085	0.144	0.074	0.94	86	-1.5	-	4.97	-0.10	84	409	89	71
78	11.230	0.145	0.076	0.93	87	-1.6	-	4.87	-0.10	84	411	88	71
79	11.375	0.145	0.076	0.93	87	-1.6	-	4.78	-0.09	84	409	87	71
80	11.519	0.144	0.075	0.94	87	-1.6	101	4.70	-0.08	84	409	87	71
81	11.663	0.144	0.077	0.93	87	-1.6	-	4.62	-0.08	84	410	86	71
82	11.807	0.144	0.076	0.94	87	-1.6	-	4.53	-0.09	83	407	86	71
83	11.951	0.144	0.076	0.93	87	-1.7	-	4.45	-0.08	83	403	86	71
84	12.096	0.145	0.077	0.94	87	-1.7	-	4.37	-0.08	83	403	86	71
85	12.240	0.144	0.076	0.94	88	-1.7	-	4.28	-0.09	83	398	87	71
86	12.385	0.145	0.075	0.94	88	-1.6	-	4.19	-0.09	83	398	88	71
87	12.530	0.145	0.075	0.94	88	-1.7	-	4.14	-0.05	83	397	88	71
88	12.675	0.145	0.076	0.95	88	-1.7	-	4.07	-0.07	83	397	87	71
89	12.819	0.144	0.077	0.93	88	-1.6	-	3.99	-0.08	83	396	86	71
90	12.963	0.144	0.076	0.92	88	-1.6	100	3.92	-0.07	83	394	86	71
91	13.107	0.144	0.076	0.93	88	-1.7	-	3.84	-0.08	82	391	86	71
92	13.252	0.145	0.076	0.94	89	-1.7	-	3.79	-0.05	82	390	86	71
93	13.396	0.144	0.077	0.94	89	-1.7	-	3.74	-0.05	82	386	86	71
94	13.542	0.146	0.076	0.93	89	-1.7	-	3.64	-0.10	82	382	87	71
95	13.684	0.142	0.075	0.95	89	-1.8	-	3.59	-0.05	82	373	88	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>1</u>	Technician: <u>AK</u>
	Date: <u>10/27/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	13.829	0.145	0.075	0.94	89	-1.8	-	3.54	-0.05	82	369	87	71
97	13.973	0.144	0.075	0.93	89	-1.8	-	3.48	-0.06	82	365	87	71
98	14.117	0.144	0.077	0.93	89	-1.8	-	3.42	-0.06	82	363	86	71
99	14.262	0.145	0.076	0.93	89	-1.8	-	3.38	-0.04	81	361	85	71
100	14.406	0.144	0.076	0.94	90	-1.8	100	11.76	8.38	89	369	85	71
101	14.550	0.144	0.076	0.93	90	-1.9	-	11.58	-0.18	87	476	86	71
102	14.694	0.144	0.074	0.94	90	-1.8	-	11.44	-0.14	88	548	86	71
103	14.841	0.147	0.074	0.94	90	-1.8	-	11.22	-0.22	89	595	88	71
104	14.985	0.144	0.075	0.93	90	-1.8	-	10.97	-0.25	90	614	88	71
105	15.129	0.144	0.075	0.94	90	-1.8	-	10.81	-0.16	88	527	88	71
106	15.273	0.144	0.076	0.93	90	-1.8	-	10.69	-0.12	87	481	88	71
107	15.417	0.144	0.075	0.93	90	-1.8	-	10.59	-0.10	86	456	87	71
108	15.561	0.144	0.077	0.94	90	-1.8	-	10.45	-0.14	85	449	86	71
109	15.705	0.144	0.074	0.93	91	-1.8	-	10.32	-0.13	85	442	86	71
110	15.849	0.144	0.077	0.93	91	-1.8	100	10.22	-0.10	85	436	86	71
111	15.996	0.147	0.075	0.94	91	-1.9	-	10.08	-0.14	85	430	86	71
112	16.141	0.145	0.075	0.93	91	-1.9	-	9.97	-0.11	85	427	86	71
113	16.285	0.144	0.075	0.93	91	-1.8	-	9.86	-0.11	84	425	86	71
114	16.429	0.144	0.074	0.94	91	-1.9	-	9.73	-0.13	84	421	86	71
115	16.573	0.144	0.074	0.93	91	-1.9	-	9.62	-0.11	84	425	86	71
116	16.718	0.145	0.075	0.93	91	-1.9	-	9.51	-0.11	84	423	87	71
117	16.862	0.144	0.076	0.94	91	-1.8	-	9.41	-0.10	84	424	87	71
118	17.006	0.144	0.076	0.93	91	-1.8	-	9.29	-0.12	84	421	87	71
119	17.153	0.147	0.076	0.94	91	-1.8	-	9.18	-0.11	84	420	86	71
120	17.298	0.145	0.076	0.94	92	-1.8	100	9.07	-0.11	84	419	86	71
121	17.442	0.144	0.075	0.94	92	-1.9	-	8.97	-0.10	84	416	86	71
122	17.587	0.145	0.076	0.94	92	-1.9	-	8.85	-0.12	84	418	86	71
123	17.731	0.144	0.076	0.94	92	-1.9	-	8.74	-0.11	84	418	86	71
124	17.876	0.145	0.075	0.93	92	-1.8	-	8.64	-0.10	84	417	87	71
125	18.019	0.143	0.075	0.93	92	-1.8	-	8.54	-0.10	84	416	87	71
126	18.165	0.146	0.077	0.93	92	-1.8	-	8.43	-0.11	84	417	87	71
127	18.312	0.147	0.076	0.94	92	-1.8	-	8.32	-0.11	83	415	87	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 1

Technician: AK

Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
128	18.457	0.145	0.076	0.94	92	-1.9	-	8.22	-0.10	84	415	86	71
129	18.601	0.144	0.076	0.95	92	-1.8	-	8.12	-0.10	83	411	86	71
130	18.746	0.145	0.075	0.94	92	-1.8	100	8.02	-0.10	83	410	85	71
131	18.891	0.145	0.077	0.93	92	-1.8	-	7.92	-0.10	83	412	85	71
132	19.035	0.144	0.076	0.94	92	-1.9	-	7.81	-0.11	83	409	85	71
133	19.178	0.143	0.076	0.93	92	-1.8	-	7.71	-0.10	83	410	86	71
134	19.325	0.147	0.076	0.94	93	-1.9	-	7.60	-0.11	83	411	87	71
135	19.471	0.146	0.076	0.94	93	-1.8	-	7.52	-0.08	83	404	88	71
136	19.617	0.146	0.075	0.93	93	-1.8	-	7.42	-0.10	83	402	88	71
137	19.761	0.144	0.074	0.93	93	-1.9	-	7.33	-0.09	83	400	87	71
138	19.906	0.145	0.075	0.93	93	-1.9	-	7.24	-0.09	83	400	87	71
139	20.051	0.145	0.075	0.93	93	-1.9	-	7.14	-0.10	83	395	86	71
140	20.193	0.142	0.076	0.94	93	-1.9	100	7.04	-0.10	83	396	86	71
141	20.340	0.147	0.075	0.93	93	-1.9	-	6.95	-0.09	83	398	85	71
142	20.485	0.145	0.076	0.93	93	-2.0	-	6.86	-0.09	83	397	85	71
143	20.630	0.145	0.075	0.94	93	-1.9	-	6.76	-0.10	83	392	85	71
144	20.775	0.145	0.076	0.94	93	-2.0	-	6.68	-0.08	83	392	86	71
145	20.921	0.146	0.074	0.94	93	-2.0	-	6.58	-0.10	83	393	87	71
146	21.064	0.143	0.075	0.93	93	-1.9	-	6.50	-0.08	82	391	86	71
147	21.212	0.148	0.075	0.92	93	-1.9	-	6.40	-0.10	82	388	86	71
148	21.357	0.145	0.075	0.93	93	-1.9	-	6.31	-0.09	82	390	86	71
149	21.501	0.144	0.075	0.94	93	-2.0	-	6.23	-0.08	82	387	86	71
150	21.646	0.145	0.073	0.93	94	-1.9	101	6.14	-0.09	82	386	86	71
151	21.791	0.145	0.075	0.93	93	-2.0	-	6.06	-0.08	82	389	86	71
152	21.933	0.142	0.077	0.93	94	-2.0	-	5.97	-0.09	82	389	87	71
153	22.081	0.148	0.075	0.94	94	-2.0	-	5.88	-0.09	82	390	88	71
154	22.226	0.145	0.077	0.93	94	-2.0	-	5.80	-0.08	82	391	88	71
155	22.372	0.146	0.075	0.93	94	-2.0	-	5.72	-0.08	82	390	87	71
156	22.517	0.145	0.076	0.93	94	-2.0	-	5.62	-0.10	82	392	86	71
157	22.662	0.145	0.074	0.94	94	-2.0	-	5.55	-0.07	82	390	86	71
158	22.807	0.145	0.076	0.94	94	-2.0	-	5.45	-0.10	82	391	85	71
159	22.952	0.145	0.076	0.93	94	-2.0	-	5.36	-0.09	82	391	85	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>1</u>	Technician: <u>AK</u>
	Date: <u>10/27/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
160	23.097	0.145	0.074	0.95	94	-2.1	101	5.29	-0.07	82	392	85	71
161	23.242	0.145	0.077	0.93	94	-2.0	-	5.22	-0.07	82	392	85	71
162	23.387	0.145	0.077	0.94	94	-2.0	-	5.12	-0.10	82	392	85	71
163	23.530	0.143	0.077	0.93	94	-2.1	-	5.05	-0.07	82	394	86	71
164	23.677	0.147	0.076	0.93	94	-2.1	-	5.00	-0.05	82	390	87	71
165	23.823	0.146	0.076	0.93	94	-2.0	-	4.92	-0.08	82	387	88	71
166	23.968	0.145	0.074	0.94	94	-2.0	-	4.86	-0.06	82	391	89	71
167	24.113	0.145	0.076	0.92	94	-2.1	-	4.78	-0.08	82	392	89	71
168	24.258	0.145	0.076	0.94	94	-2.1	-	4.71	-0.07	82	398	88	71
169	24.400	0.142	0.077	0.91	94	-2.1	-	4.63	-0.08	82	403	87	71
170	24.548	0.148	0.076	0.92	94	-2.1	100	4.57	-0.06	82	400	86	72
171	24.692	0.144	0.076	0.92	94	-2.1	-	4.49	-0.08	82	390	86	71
172	24.837	0.145	0.077	0.93	94	-2.1	-	4.46	-0.03	82	375	86	72
173	24.982	0.145	0.075	0.93	94	-2.1	-	4.40	-0.06	81	358	85	72
174	25.127	0.145	0.077	0.94	94	-2.1	-	4.36	-0.04	81	343	86	71
175	25.274	0.147	0.076	0.93	94	-2.2	-	4.34	-0.02	81	332	86	71
176	25.419	0.145	0.075	0.94	95	-2.1	-	4.32	-0.02	81	321	86	71
177	25.564	0.145	0.075	0.93	95	-2.2	-	16.33	12.01	89	339	87	71
178	25.708	0.144	0.076	0.93	95	-2.2	-	21.39	5.06	94	338	87	71
179	25.850	0.142	0.076	0.93	95	-2.2	-	21.15	-0.24	97	386	87	71
180	25.998	0.148	0.074	0.93	95	-2.2	101	20.90	-0.25	102	686	87	72
181	26.143	0.145	0.075	0.93	95	-2.2	-	20.71	-0.19	95	615	86	71
182	26.288	0.145	0.075	0.94	95	-2.2	-	20.42	-0.29	93	640	86	72
183	26.433	0.145	0.074	0.94	95	-2.2	-	20.21	-0.21	93	668	86	72
184	26.580	0.147	0.076	0.94	95	-2.2	-	19.96	-0.25	94	699	87	72
185	26.726	0.146	0.076	0.93	95	-2.2	-	19.64	-0.32	94	718	87	72
186	26.871	0.145	0.073	0.93	95	-2.2	-	19.40	-0.24	95	707	87	72
187	27.016	0.145	0.074	0.94	95	-2.2	-	19.18	-0.22	93	626	87	72
188	27.161	0.145	0.075	0.95	95	-2.1	-	19.09	-0.09	91	564	88	72
189	27.306	0.145	0.075	0.94	95	-2.1	-	18.90	-0.19	90	535	88	72
190	27.451	0.145	0.075	0.94	95	-2.1	102	18.71	-0.19	89	512	87	72
191	27.596	0.145	0.073	0.95	95	-2.1	-	18.59	-0.12	89	491	86	72

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 1

Technician: AK

Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
192	27.739	0.143	0.073	0.94	95	-2.0	-	18.51	-0.08	88	482	86	72
193	27.887	0.148	0.076	0.95	95	-2.0	-	18.40	-0.11	88	478	85	72
194	28.032	0.145	0.076	0.94	95	-2.0	-	18.24	-0.16	87	475	85	72
195	28.178	0.146	0.076	0.94	95	-2.0	-	18.17	-0.07	87	479	85	72
196	28.322	0.144	0.075	0.93	95	-2.0	-	18.05	-0.12	87	474	85	72
197	28.470	0.148	0.073	0.93	95	-1.9	-	17.93	-0.12	87	477	84	72
198	28.616	0.146	0.076	0.93	95	-2.0	-	17.82	-0.11	87	478	85	72
199	28.761	0.145	0.075	0.94	95	-2.0	-	17.69	-0.13	87	479	85	72
200	28.906	0.145	0.075	0.93	95	-1.9	101	17.53	-0.16	87	479	85	72
201	29.051	0.145	0.076	0.94	95	-1.8	-	17.41	-0.12	87	484	85	72
202	29.197	0.146	0.075	0.95	95	-2.0	-	17.24	-0.17	86	485	85	72
203	29.342	0.145	0.074	0.92	95	-1.9	-	17.03	-0.21	87	488	85	72
204	29.488	0.146	0.075	0.94	95	-1.9	-	16.91	-0.12	87	492	85	72
205	29.633	0.145	0.075	0.93	95	-1.9	-	16.79	-0.12	87	503	86	72
206	29.779	0.146	0.076	0.93	95	-2.0	-	16.61	-0.18	87	511	87	72
207	29.925	0.146	0.076	0.93	95	-2.0	-	16.42	-0.19	87	516	87	72
208	30.071	0.146	0.075	0.94	95	-1.9	-	16.29	-0.13	87	518	86	72
209	30.216	0.145	0.075	0.93	95	-1.9	-	16.15	-0.14	87	520	86	72
210	30.362	0.146	0.075	0.95	95	-1.9	101	16.00	-0.15	87	519	85	72
211	30.507	0.145	0.075	0.93	95	-2.0	-	15.86	-0.14	87	519	85	72
212	30.652	0.145	0.076	0.95	96	-1.9	-	15.73	-0.13	87	520	85	72
213	30.798	0.146	0.077	0.93	96	-2.0	-	15.54	-0.19	87	516	84	72
214	30.943	0.145	0.074	0.94	96	-1.9	-	15.34	-0.20	87	514	84	72
215	31.088	0.145	0.074	0.94	96	-1.9	-	15.20	-0.14	87	514	85	72
216	31.231	0.143	0.076	0.95	96	-1.9	-	15.02	-0.18	87	514	86	72
217	31.379	0.148	0.074	0.93	96	-1.9	-	14.90	-0.12	87	516	87	72
218	31.525	0.146	0.075	0.94	96	-1.9	-	14.73	-0.17	87	519	87	72
219	31.671	0.146	0.076	0.93	96	-1.9	-	14.60	-0.13	87	520	87	72
220	31.814	0.143	0.076	0.95	96	-1.9	100	14.44	-0.16	87	524	86	72
221	31.962	0.148	0.076	0.93	96	-1.9	-	14.30	-0.14	87	520	86	72
222	32.107	0.145	0.075	0.93	96	-1.9	-	14.16	-0.14	87	520	85	72
223	32.252	0.145	0.074	0.94	96	-1.9	-	14.01	-0.15	87	519	85	72

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>1</u>	Technician: <u>AK</u>
	Date: <u>10/27/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
224	32.397	0.145	0.075	0.92	96	-1.9	-	13.85	-0.16	87	520	85	72
225	32.543	0.146	0.074	0.95	96	-2.0	-	13.70	-0.15	88	522	85	72
226	32.688	0.145	0.074	0.93	96	-1.9	-	13.58	-0.12	88	522	84	72
227	32.833	0.145	0.075	0.95	96	-1.9	-	13.40	-0.18	88	522	85	72
228	32.978	0.145	0.075	0.93	96	-1.9	-	13.26	-0.14	88	522	85	72
229	33.124	0.146	0.077	0.93	96	-1.9	-	13.13	-0.13	88	524	85	72
230	33.270	0.146	0.075	0.94	96	-1.9	100	12.97	-0.16	88	521	85	72
231	33.416	0.146	0.077	0.93	96	-1.9	-	12.85	-0.12	88	519	85	72
232	33.561	0.145	0.074	0.94	96	-1.9	-	12.71	-0.14	88	518	85	72
233	33.707	0.146	0.074	0.94	96	-2.0	-	12.55	-0.16	88	519	85	72
234	33.852	0.145	0.076	0.93	96	-1.9	-	12.39	-0.16	88	523	85	72
235	33.997	0.145	0.076	0.94	96	-1.9	-	12.26	-0.13	88	522	85	72
236	34.142	0.145	0.076	0.95	96	-2.0	-	12.09	-0.17	88	523	84	72
237	34.287	0.145	0.075	0.94	96	-1.9	-	11.97	-0.12	88	515	84	72
238	34.432	0.145	0.075	0.93	96	-1.9	-	11.84	-0.13	88	524	84	72
239	34.578	0.146	0.075	0.93	96	-1.9	-	11.72	-0.12	88	525	84	72
240	34.723	0.145	0.076	0.92	96	-1.8	100	11.58	-0.14	88	527	85	72
241	34.869	0.146	0.075	0.94	96	-1.9	-	11.43	-0.15	88	521	86	72
242	35.015	0.146	0.075	0.93	96	-1.9	-	11.24	-0.19	88	517	87	72
243	35.157	0.142	0.075	0.92	96	-2.0	-	11.10	-0.14	87	511	87	72
244	35.305	0.148	0.074	0.93	96	-1.9	-	10.97	-0.13	87	507	86	72
245	35.449	0.144	0.075	0.93	96	-1.9	-	10.82	-0.15	87	499	86	72
246	35.594	0.145	0.074	0.94	96	-1.9	-	10.73	-0.09	87	495	85	72
247	35.739	0.145	0.076	0.92	96	-1.9	-	10.60	-0.13	87	493	85	72
248	35.884	0.145	0.076	0.94	96	-1.9	-	10.49	-0.11	87	487	85	72
249	36.029	0.145	0.074	0.93	96	-1.9	-	10.37	-0.12	87	485	85	72
250	36.174	0.145	0.074	0.93	96	-2.0	100	10.27	-0.10	86	483	85	72
251	36.320	0.146	0.077	0.94	96	-2.0	-	10.16	-0.11	86	480	85	72
252	36.466	0.146	0.076	0.93	96	-1.9	-	10.05	-0.11	86	481	85	72
253	36.611	0.145	0.078	0.94	96	-1.9	-	9.91	-0.14	86	476	85	72
254	36.756	0.145	0.075	0.94	96	-1.9	-	9.81	-0.10	86	474	85	72
255	36.900	0.144	0.077	0.93	96	-1.9	-	9.70	-0.11	86	473	85	72

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>1</u>	Technician: <u>AK</u>
	Date: <u>10/27/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
256	37.045	0.145	0.075	0.93	96	-2.0	-	9.60	-0.10	86	468	86	72
257	37.190	0.145	0.076	0.93	96	-2.0	-	9.50	-0.10	86	467	86	72
258	37.335	0.145	0.074	0.93	96	-1.9	-	9.40	-0.10	86	469	86	72
259	37.479	0.144	0.075	0.94	96	-1.9	-	9.31	-0.09	86	469	85	72
260	37.625	0.146	0.077	0.93	96	-1.9	100	9.21	-0.10	86	465	85	72
261	37.771	0.146	0.075	0.93	96	-2.0	-	9.10	-0.11	86	465	85	72
262	37.916	0.145	0.073	0.93	96	-2.0	-	9.03	-0.07	86	468	85	72
263	38.061	0.145	0.076	0.92	96	-1.9	-	8.91	-0.12	85	470	85	72
264	38.205	0.144	0.076	0.94	96	-1.9	-	8.82	-0.09	85	467	85	72
265	38.350	0.145	0.076	0.92	96	-2.1	-	8.71	-0.11	85	468	85	72
266	38.495	0.145	0.076	0.93	96	-2.1	-	8.59	-0.12	85	469	85	72
267	38.639	0.144	0.077	0.94	96	-2.1	-	8.50	-0.09	85	466	85	72
268	38.785	0.146	0.074	0.91	96	-2.0	-	8.40	-0.10	85	468	84	72
269	38.929	0.144	0.075	0.93	96	-2.0	-	8.32	-0.08	85	465	84	72
270	39.075	0.146	0.076	0.92	96	-2.0	99	8.23	-0.09	85	464	84	72
271	39.221	0.146	0.075	0.94	96	-2.0	-	8.13	-0.10	85	461	84	72
272	39.366	0.145	0.075	0.93	96	-2.0	-	8.05	-0.08	85	457	84	72
273	39.508	0.142	0.073	0.92	96	-2.0	-	7.96	-0.09	85	455	85	72
274	39.655	0.147	0.075	0.92	96	-2.1	-	7.88	-0.08	85	453	85	72
275	39.800	0.145	0.076	0.94	96	-2.0	-	7.81	-0.07	85	450	85	72
276	39.944	0.144	0.075	0.93	96	-2.1	-	7.75	-0.06	85	450	86	72
277	40.089	0.145	0.076	0.93	96	-2.1	-	7.66	-0.09	85	450	87	72
278	40.234	0.145	0.077	0.93	96	-2.0	-	7.58	-0.08	84	448	87	72
279	40.380	0.146	0.075	0.93	96	-2.1	-	7.51	-0.07	84	444	86	72
280	40.525	0.145	0.074	0.93	96	-2.1	100	7.45	-0.06	84	436	86	72
281	40.670	0.145	0.075	0.93	96	-2.1	-	7.40	-0.05	84	426	85	72
282	40.815	0.145	0.076	0.93	96	-2.2	-	7.35	-0.05	84	416	85	72
283	40.960	0.145	0.076	0.93	96	-2.1	-	7.29	-0.06	83	406	85	72
284	41.104	0.144	0.077	0.92	96	-2.1	-	7.27	-0.02	83	397	85	72
285	41.249	0.145	0.074	0.94	96	-2.1	-	7.22	-0.05	83	389	85	72
286	41.394	0.145	0.074	0.93	96	-2.1	-	7.18	-0.04	83	383	85	72
287	41.539	0.145	0.074	0.92	96	-2.2	-	7.12	-0.06	83	378	85	72

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 1

Technician: AK

Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
288	41.684	0.145	0.076	0.94	96	-2.2	-	7.07	-0.05	82	373	85	72
289	41.830	0.146	0.075	0.93	96	-2.2	-	7.02	-0.05	82	370	85	72
290	41.975	0.145	0.074	0.93	96	-2.2	100	6.99	-0.03	82	365	86	72
291	42.120	0.145	0.075	0.93	96	-2.2	-	6.96	-0.03	82	361	86	72
292	42.265	0.145	0.076	0.94	96	-2.2	-	6.92	-0.04	82	358	86	72
293	42.409	0.144	0.077	0.93	96	-2.3	-	6.87	-0.05	81	355	85	72
294	42.554	0.145	0.075	0.93	96	-2.2	-	6.84	-0.03	81	351	85	72
295	42.699	0.145	0.076	0.93	96	-2.2	-	6.81	-0.03	81	350	84	72
296	42.844	0.145	0.076	0.92	96	-2.2	-	6.79	-0.02	81	349	84	72
297	42.989	0.145	0.073	0.93	96	-2.3	-	6.76	-0.03	81	344	84	71
298	43.134	0.145	0.076	0.93	96	-2.3	-	6.73	-0.03	81	338	84	71
299	43.280	0.146	0.075	0.93	96	-2.3	-	6.71	-0.02	81	336	85	71
300	43.425	0.145	0.074	0.93	96	-2.3	100	6.69	-0.02	81	333	86	71
301	43.570	0.145	0.075	0.92	96	-2.4	-	6.66	-0.03	80	331	87	71
302	43.714	0.144	0.075	0.93	96	-2.4	-	6.63	-0.03	80	329	86	71
303	43.859	0.145	0.074	0.93	96	-2.4	-	6.60	-0.03	80	328	86	71
304	44.004	0.145	0.076	0.94	96	-2.5	-	6.60	0.00	80	328	85	71
305	44.149	0.145	0.075	0.94	96	-2.4	-	6.58	-0.02	80	326	85	71
306	44.294	0.145	0.077	0.93	96	-2.4	-	6.54	-0.04	80	325	84	71
307	44.439	0.145	0.074	0.93	96	-2.5	-	6.51	-0.03	80	324	84	71
308	44.585	0.146	0.075	0.94	96	-2.5	-	6.47	-0.04	80	325	84	71
309	44.730	0.145	0.076	0.92	96	-2.4	-	6.45	-0.02	80	324	84	71
310	44.875	0.145	0.076	0.93	96	-2.6	99	6.43	-0.02	80	324	84	71
311	45.020	0.145	0.076	0.92	96	-2.5	-	6.41	-0.02	80	323	83	71
312	45.164	0.144	0.077	0.93	96	-2.6	-	6.38	-0.03	80	323	84	71
313	45.310	0.146	0.075	0.93	96	-2.5	-	6.36	-0.02	79	319	84	71
314	45.454	0.144	0.076	0.93	96	-2.6	-	6.34	-0.02	79	316	85	71
315	45.599	0.145	0.076	0.93	96	-2.6	-	6.32	-0.02	79	316	85	71
316	45.744	0.145	0.075	0.92	96	-2.7	-	6.30	-0.02	79	314	85	71
317	45.890	0.146	0.076	0.94	96	-2.7	-	6.29	-0.01	79	313	85	71
318	46.036	0.146	0.077	0.93	96	-2.7	-	6.25	-0.04	79	310	84	71
319	46.180	0.144	0.077	0.93	96	-2.7	-	6.23	-0.02	79	310	84	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>1</u>	Technician: <u>AK</u>
	Date: <u>10/27/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
320	46.325	0.145	0.077	0.93	96	-2.7	98	6.22	-0.01	79	308	84	71
321	46.470	0.145	0.076	0.93	96	-2.7	-	6.18	-0.04	79	306	84	71
322	46.615	0.145	0.077	0.93	96	-2.8	-	6.15	-0.03	79	306	84	71
323	46.760	0.145	0.075	0.94	96	-2.8	-	6.15	0.00	79	305	85	71
324	46.904	0.144	0.076	0.92	96	-2.7	-	6.12	-0.03	79	304	85	71
325	47.050	0.146	0.077	0.94	96	-2.8	-	6.10	-0.02	79	303	85	71
326	47.195	0.145	0.077	0.93	96	-2.8	-	6.08	-0.02	79	303	85	71
327	47.341	0.146	0.078	0.93	96	-2.8	-	6.05	-0.03	79	300	85	71
328	47.487	0.146	0.075	0.93	96	-2.9	-	6.05	0.00	78	296	85	71
329	47.632	0.145	0.076	0.94	96	-2.8	-	6.01	-0.04	78	290	84	71
330	47.777	0.145	0.077	0.93	96	-2.9	98	6.01	0.00	78	286	84	71
331	47.922	0.145	0.077	0.94	96	-2.8	-	5.99	-0.02	78	282	85	71
332	48.067	0.145	0.076	0.92	96	-2.9	-	5.96	-0.03	78	278	85	71
333	48.212	0.145	0.075	0.93	96	-2.8	-	5.94	-0.02	78	275	85	71
334	48.357	0.145	0.078	0.93	96	-2.9	-	5.93	-0.01	78	273	84	70
335	48.502	0.145	0.075	0.93	96	-2.9	-	5.91	-0.02	78	272	84	70
336	48.647	0.145	0.077	0.93	96	-3.0	-	5.89	-0.02	78	270	84	70
337	48.793	0.146	0.077	0.94	96	-2.9	-	5.87	-0.02	78	270	84	70
338	48.939	0.146	0.077	0.93	96	-3.0	-	5.85	-0.02	78	268	85	70
339	49.084	0.145	0.077	0.94	96	-2.9	-	5.84	-0.01	77	265	86	70
340	49.229	0.145	0.077	0.94	96	-3.0	98	5.81	-0.03	77	263	86	70
341	49.374	0.145	0.076	0.93	96	-3.0	-	5.80	-0.01	77	262	85	70
342	49.519	0.145	0.076	0.94	96	-3.0	-	5.78	-0.02	77	260	85	70
343	49.664	0.145	0.075	0.93	96	-3.0	-	5.77	-0.01	77	260	84	70
344	49.809	0.145	0.077	0.93	96	-3.1	-	5.74	-0.03	77	258	84	70
345	49.954	0.145	0.077	0.93	96	-3.0	-	5.73	-0.01	77	257	84	70
346	50.099	0.145	0.077	0.93	96	-3.0	-	5.70	-0.03	77	255	84	70
347	50.245	0.146	0.076	0.94	96	-3.0	-	5.69	-0.01	77	254	84	70
348	50.391	0.146	0.079	0.94	96	-3.0	-	5.67	-0.02	77	253	84	70
349	50.537	0.146	0.077	0.93	96	-3.0	-	5.65	-0.02	77	253	84	70
350	50.682	0.145	0.076	0.93	96	-3.0	98	5.62	-0.03	77	253	84	70
351	50.827	0.145	0.077	0.94	96	-3.0	-	5.61	-0.01	77	251	85	70

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI Job #: 25-446
 Model: 1.4R Tracking #: 238
 Run #: 1 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
352	50.972	0.145	0.075	0.93	96	-3.1	-	5.60	-0.01	77	249	85	70
353	51.117	0.145	0.076	0.93	96	-3.1	-	5.58	-0.02	77	249	85	70
354	51.262	0.145	0.075	0.94	96	-3.1	-	5.56	-0.02	77	248	85	70
355	51.407	0.145	0.077	0.93	96	-3.1	-	5.55	-0.01	77	248	84	70
356	51.552	0.145	0.074	0.94	96	-3.1	-	5.52	-0.03	77	248	84	70
357	51.697	0.145	0.077	0.95	96	-3.1	-	5.50	-0.02	76	247	84	70
358	51.843	0.146	0.076	0.93	96	-3.1	-	5.48	-0.02	76	245	84	70
359	51.989	0.146	0.077	0.94	96	-3.1	-	5.46	-0.02	76	243	84	70
360	52.134	0.145	0.077	0.94	96	-3.2	98	5.45	-0.01	76	242	84	70
361	52.280	0.146	0.076	0.94	96	-3.2	-	5.44	-0.01	76	242	84	70
362	52.425	0.145	0.076	0.93	96	-3.2	-	5.42	-0.02	76	242	84	70
363	52.570	0.145	0.076	0.94	96	-3.2	-	5.40	-0.02	76	242	84	70
364	52.715	0.145	0.078	0.95	96	-3.2	-	5.39	-0.01	76	242	83	70
365	52.860	0.145	0.076	0.93	96	-3.1	-	5.37	-0.02	76	241	83	70
366	53.005	0.145	0.076	0.93	96	-3.2	-	5.33	-0.04	76	239	84	70
367	53.150	0.145	0.076	0.92	96	-3.2	-	5.34	0.01	76	239	85	70
368	53.295	0.145	0.076	0.93	96	-3.2	-	5.31	-0.03	76	238	86	70
369	53.441	0.146	0.077	0.93	96	-3.1	-	5.29	-0.02	76	237	85	70
370	53.587	0.146	0.075	0.92	96	-3.2	99	5.28	-0.01	76	237	85	70
371	53.732	0.145	0.076	0.93	96	-3.2	-	5.25	-0.03	76	236	84	70
372	53.877	0.145	0.076	0.93	96	-3.2	-	5.23	-0.02	76	235	84	70
373	54.022	0.145	0.078	0.93	96	-3.3	-	5.22	-0.01	76	235	83	70
374	54.167	0.145	0.077	0.93	96	-3.1	-	5.20	-0.02	76	235	83	70
375	54.312	0.145	0.077	0.92	96	-3.2	-	5.18	-0.02	76	234	84	70
376	54.457	0.145	0.078	0.94	96	-3.2	-	5.17	-0.01	76	232	84	70
377	54.602	0.145	0.077	0.94	96	-3.2	-	5.16	-0.01	76	232	84	70
378	54.747	0.145	0.076	0.94	96	-3.2	-	5.13	-0.03	76	231	84	70
379	54.893	0.146	0.075	0.93	96	-3.3	-	5.12	-0.01	76	228	85	70
380	55.038	0.145	0.077	0.93	96	-3.2	99	5.11	-0.01	77	229	86	70
381	55.183	0.145	0.077	0.93	96	-3.3	-	5.08	-0.03	77	229	86	70
382	55.327	0.144	0.076	0.93	96	-3.3	-	5.07	-0.01	76	228	86	70
383	55.472	0.145	0.077	0.93	96	-3.3	-	5.05	-0.02	76	227	85	70

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>1</u>	Technician: <u>AK</u>
	Date: <u>10/27/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
384	55.617	0.145	0.075	0.94	96	-3.3	-	5.04	-0.01	76	226	84	70
385	55.761	0.144	0.078	0.93	96	-3.3	-	5.02	-0.02	76	225	84	69
386	55.906	0.145	0.077	0.93	96	-3.3	-	5.00	-0.02	76	226	84	69
387	56.051	0.145	0.077	0.93	96	-3.3	-	5.00	0.00	76	226	84	70
388	56.196	0.145	0.077	0.92	96	-3.3	-	4.98	-0.02	76	225	84	69
389	56.342	0.146	0.077	0.93	96	-3.3	-	4.96	-0.02	76	223	85	69
390	56.487	0.145	0.075	0.94	96	-3.3	98	4.94	-0.02	76	223	85	69
391	56.631	0.144	0.075	0.93	95	-3.2	-	4.92	-0.02	76	223	85	69
392	56.776	0.145	0.076	0.92	96	-3.2	-	4.92	0.00	76	222	84	69
393	56.920	0.144	0.077	0.94	95	-3.3	-	4.89	-0.03	76	221	84	69
394	57.065	0.145	0.077	0.95	96	-3.3	-	4.88	-0.01	76	221	83	69
395	57.210	0.145	0.076	0.93	95	-3.3	-	4.86	-0.02	75	222	83	69
396	57.354	0.144	0.078	0.93	95	-3.3	-	4.85	-0.01	75	220	84	69
Avg/Tot	65.173	0.145	0.076	0.93	91.6	-2.2	100			83.2	394.3	85.3	70.5

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
0	0.000		-0.01	69	-0.5		81	0.006	0.28	0.000
1	0.126	0.126	1.06	70	-1.4	-	81	-0.028	0.87	0.034
2	0.274	0.148	1.05	71	-1.4	-	81	-0.050	2.27	0.116
3	0.422	0.148	1.05	71	-1.4	-	84	-0.069	3.53	0.122
4	0.569	0.147	1.03	71	-1.4	-	84	-0.076	6.16	0.271
5	0.716	0.147	1.04	71	-1.4	-	85	-0.069	11.10	0.650
6	0.862	0.146	1.04	71	-1.4	-	85	-0.076	9.94	0.832
7	1.009	0.147	1.04	72	-1.4	-	86	-0.080	11.33	0.426
8	1.155	0.146	1.02	72	-1.4	-	86	-0.089	14.40	0.461
9	1.302	0.147	1.02	72	-1.4	-	85	-0.088	16.15	0.651
10	1.448	0.146	1.02	73	-1.3	103	85	-0.091	14.04	0.237
11	1.594	0.146	1.03	73	-1.4	-	85	-0.087	13.43	0.212
12	1.740	0.146	1.01	73	-1.3	-	85	-0.095	13.49	0.171
13	1.886	0.146	1.02	73	-1.3	-	84	-0.091	14.24	0.145
14	2.031	0.145	1.01	74	-1.3	-	84	-0.091	13.45	0.126
15	2.176	0.145	1.01	74	-1.3	-	84	-0.087	13.26	0.061
16	2.321	0.145	1.00	74	-1.3	-	84	-0.090	13.06	0.046
17	2.466	0.145	1.02	74	-1.3	-	85	-0.084	12.88	0.060
18	2.610	0.144	1.01	75	-1.4	-	84	-0.090	13.04	0.077
19	2.755	0.145	1.01	75	-1.3	-	85	-0.091	13.00	0.054
20	2.900	0.145	1.01	75	-1.4	102	85	-0.090	13.01	0.054
21	3.045	0.145	1.01	75	-1.4	-	85	-0.089	13.85	0.083
22	3.191	0.146	1.02	76	-1.4	-	86	-0.091	14.51	0.152
23	3.336	0.145	1.00	76	-1.3	-	86	-0.089	14.29	0.156
24	3.481	0.145	1.02	76	-1.4	-	87	-0.093	11.66	0.189
25	3.625	0.144	1.00	77	-1.3	-	87	-0.088	10.81	0.366
26	3.769	0.144	1.02	77	-1.3	-	86	-0.095	11.72	0.535
27	3.913	0.144	1.01	77	-1.3	-	87	-0.094	12.72	0.400
28	4.057	0.144	1.00	78	-1.3	-	88	-0.088	12.96	0.263
29	4.202	0.145	1.03	77	-1.3	-	88	-0.086	14.23	0.151
30	4.347	0.145	0.99	78	-1.3	102	88	-0.091	14.58	0.144
31	4.492	0.145	1.01	78	-1.3	-	86	-0.094	14.75	0.154

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
32	4.637	0.145	1.00	78	-1.3	-	86	-0.093	15.39	0.150
33	4.781	0.144	0.99	79	-1.3	-	86	-0.090	15.80	0.160
34	4.925	0.144	1.02	79	-1.4	-	86	-0.093	16.10	0.176
35	5.069	0.144	1.01	79	-1.4	-	86	-0.092	16.28	0.191
36	5.213	0.144	1.01	79	-1.4	-	87	-0.091	16.70	0.207
37	5.358	0.145	1.00	80	-1.4	-	87	-0.096	15.95	0.189
38	5.502	0.144	1.00	80	-1.4	-	88	-0.098	15.84	0.190
39	5.647	0.145	1.00	80	-1.4	-	87	-0.091	15.95	0.172
40	5.792	0.145	1.03	80	-1.4	103	88	-0.097	15.91	0.150
41	5.937	0.145	1.01	80	-1.4	-	87	-0.092	16.07	0.154
42	6.081	0.144	1.00	81	-1.4	-	88	-0.088	16.33	0.196
43	6.225	0.144	1.02	81	-1.3	-	86	-0.097	16.33	0.198
44	6.369	0.144	1.01	81	-1.4	-	86	-0.098	16.27	0.179
45	6.513	0.144	1.00	81	-1.3	-	87	-0.099	16.14	0.162
46	6.657	0.144	1.00	82	-1.3	-	86	-0.096	15.88	0.148
47	6.802	0.145	0.99	82	-1.3	-	87	-0.092	15.70	0.164
48	6.947	0.145	1.00	82	-1.4	-	87	-0.095	15.50	0.151
49	7.092	0.145	1.02	82	-1.3	-	87	-0.092	15.32	0.145
50	7.236	0.144	1.02	82	-1.3	102	87	-0.088	15.29	0.228
51	7.381	0.145	1.00	83	-1.4	-	87	-0.088	15.35	0.356
52	7.525	0.144	1.03	83	-1.4	-	87	-0.083	13.28	0.275
53	7.669	0.144	1.02	83	-1.4	-	86	-0.081	12.28	0.270
54	7.814	0.145	0.99	83	-1.4	-	87	-0.073	11.73	0.216
55	7.959	0.145	1.00	83	-1.4	-	85	-0.073	11.53	0.178
56	8.104	0.145	0.99	84	-1.3	-	87	-0.079	11.40	0.166
57	8.250	0.146	1.00	83	-1.4	-	86	-0.071	11.41	0.183
58	8.395	0.145	1.01	84	-1.3	-	87	-0.072	11.47	0.200
59	8.540	0.145	1.00	84	-1.4	-	86	-0.074	11.46	0.204
60	8.685	0.145	1.02	84	-1.4	101	87	-0.071	11.42	0.219
61	8.830	0.145	1.01	84	-1.4	-	87	-0.079	11.46	0.217
62	8.975	0.145	1.01	84	-1.3	-	86	-0.067	11.46	0.227
63	9.120	0.145	1.02	84	-1.4	-	86	-0.071	11.51	0.217

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
64	9.265	0.145	1.02	84	-1.4	-	86	-0.069	11.66	0.230
65	9.410	0.145	1.02	84	-1.4	-	86	-0.070	11.70	0.232
66	9.555	0.145	1.00	85	-1.3	-	86	-0.071	11.58	0.357
67	9.700	0.145	1.02	85	-1.3	-	86	-0.071	11.73	0.267
68	9.846	0.146	1.00	85	-1.3	-	86	-0.070	11.56	0.378
69	9.992	0.146	1.00	85	-1.3	-	86	-0.069	11.71	0.292
70	10.138	0.146	1.02	85	-1.3	100	87	-0.070	11.93	0.249
71	10.283	0.145	1.02	85	-1.4	-	86	-0.067	12.18	0.233
72	10.428	0.145	1.02	85	-1.4	-	86	-0.068	12.35	0.359
73	10.574	0.146	1.01	86	-1.3	-	86	-0.068	11.89	0.373
74	10.719	0.145	1.01	86	-1.4	-	86	-0.070	11.71	0.335
75	10.864	0.145	1.01	86	-1.3	-	86	-0.075	11.32	0.339
76	11.010	0.146	1.01	86	-1.4	-	86	-0.063	11.23	0.335
77	11.155	0.145	1.00	86	-1.3	-	87	-0.068	11.40	0.280
78	11.300	0.145	1.01	86	-1.3	-	87	-0.067	11.28	0.322
79	11.446	0.146	1.01	86	-1.4	-	87	-0.066	11.44	0.328
80	11.592	0.146	1.00	86	-1.3	100	87	-0.065	11.39	0.353
81	11.738	0.146	1.01	87	-1.3	-	86	-0.073	11.28	0.325
82	11.884	0.146	0.99	86	-1.4	-	86	-0.066	11.18	0.275
83	12.030	0.146	1.03	87	-1.3	-	88	-0.069	10.97	0.260
84	12.176	0.146	1.00	86	-1.3	-	88	-0.073	10.82	0.242
85	12.322	0.146	1.02	87	-1.4	-	87	-0.067	10.68	0.214
86	12.468	0.146	1.00	87	-1.3	-	87	-0.063	10.75	0.212
87	12.613	0.145	1.01	87	-1.4	-	86	-0.060	10.75	0.206
88	12.759	0.146	0.97	87	-1.4	-	86	-0.062	10.83	0.251
89	12.905	0.146	1.02	87	-1.4	-	86	-0.071	10.57	0.312
90	13.050	0.145	1.02	87	-1.4	100	86	-0.061	10.47	0.324
91	13.196	0.146	1.02	87	-1.4	-	86	-0.061	10.41	0.305
92	13.342	0.146	1.01	87	-1.4	-	87	-0.069	10.38	0.294
93	13.488	0.146	1.02	87	-1.4	-	86	-0.060	10.42	0.278
94	13.633	0.145	1.00	87	-1.4	-	88	-0.057	9.88	0.319
95	13.777	0.144	0.99	88	-1.4	-	88	-0.062	9.59	0.359

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
96	13.923	0.146	1.01	88	-1.4	-	88	-0.063	9.31	0.478
97	14.070	0.147	1.00	88	-1.4	-	88	-0.062	9.26	0.471
98	14.216	0.146	1.01	87	-1.3	-	87	-0.057	9.28	0.440
99	14.363	0.147	1.02	88	-1.2	-	87	-0.062	9.27	0.477
100	14.508	0.145	1.01	88	-1.4	100	86	-0.063	8.80	0.382
101	14.652	0.144	0.99	88	-1.3	-	87	-0.077	7.19	0.492
102	14.798	0.146	1.00	88	-1.2	-	87	-0.084	12.85	0.208
103	14.946	0.148	1.01	88	-1.4	-	87	-0.085	15.76	0.250
104	15.092	0.146	1.01	88	-1.3	-	87	-0.085	16.18	0.159
105	15.237	0.145	0.99	88	-1.4	-	88	-0.077	15.68	0.273
106	15.383	0.146	1.02	88	-1.3	-	88	-0.077	12.86	0.393
107	15.529	0.146	1.01	88	-1.4	-	88	-0.068	12.35	0.349
108	15.674	0.145	1.01	88	-1.3	-	88	-0.075	12.27	0.345
109	15.818	0.144	1.03	88	-1.4	-	87	-0.073	12.42	0.341
110	15.964	0.146	1.01	88	-1.3	99	87	-0.074	12.19	0.328
111	16.112	0.148	1.00	89	-1.2	-	86	-0.072	12.03	0.337
112	16.258	0.146	1.00	89	-1.4	-	85	-0.072	12.05	0.337
113	16.404	0.146	1.00	89	-1.3	-	85	-0.067	12.04	0.340
114	16.551	0.147	1.01	89	-1.4	-	85	-0.074	12.18	0.343
115	16.697	0.146	1.02	89	-1.3	-	86	-0.066	12.29	0.357
116	16.844	0.147	1.03	89	-1.3	-	86	-0.073	12.31	0.380
117	16.988	0.144	1.00	89	-1.4	-	86	-0.071	12.16	0.436
118	17.134	0.146	1.01	89	-1.4	-	87	-0.066	12.12	0.449
119	17.283	0.149	1.02	89	-1.4	-	87	-0.067	12.12	0.438
120	17.429	0.146	1.00	89	-1.3	100	86	-0.066	12.05	0.447
121	17.575	0.146	1.01	89	-1.3	-	86	-0.070	12.04	0.422
122	17.722	0.147	1.02	89	-1.3	-	86	-0.066	12.00	0.422
123	17.868	0.146	1.00	89	-1.3	-	86	-0.073	12.01	0.405
124	18.014	0.146	1.03	89	-1.3	-	85	-0.068	11.96	0.408
125	18.158	0.144	1.01	89	-1.2	-	85	-0.068	11.99	0.374
126	18.304	0.146	1.02	89	-1.3	-	86	-0.070	11.97	0.351
127	18.453	0.149	1.02	90	-1.4	-	86	-0.067	11.95	0.369

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
128	18.599	0.146	1.01	89	-1.3	-	86	-0.067	11.86	0.347
129	18.745	0.146	0.99	89	-1.4	-	86	-0.070	11.85	0.348
130	18.891	0.146	1.03	89	-1.3	100	86	-0.071	11.77	0.340
131	19.037	0.146	1.02	90	-1.4	-	87	-0.069	11.70	0.348
132	19.184	0.147	1.00	90	-1.4	-	87	-0.071	11.74	0.332
133	19.327	0.143	1.02	90	-1.2	-	86	-0.069	11.76	0.322
134	19.476	0.149	1.00	90	-1.3	-	85	-0.072	11.77	0.347
135	19.623	0.147	1.02	90	-1.3	-	85	-0.069	11.64	0.352
136	19.769	0.146	1.02	90	-1.2	-	86	-0.067	11.61	0.314
137	19.915	0.146	1.02	90	-1.3	-	86	-0.065	11.60	0.310
138	20.062	0.147	1.03	90	-1.4	-	86	-0.065	11.55	0.310
139	20.209	0.147	0.98	90	-1.4	-	87	-0.067	11.54	0.285
140	20.354	0.145	1.02	90	-1.4	100	87	-0.066	11.38	0.305
141	20.502	0.148	1.02	90	-1.4	-	88	-0.065	11.32	0.305
142	20.649	0.147	0.99	90	-1.3	-	87	-0.067	11.29	0.282
143	20.795	0.146	0.99	90	-1.3	-	86	-0.065	11.23	0.295
144	20.942	0.147	1.00	90	-1.3	-	86	-0.063	11.16	0.311
145	21.088	0.146	1.00	90	-1.2	-	86	-0.065	11.23	0.301
146	21.232	0.144	1.01	90	-1.3	-	86	-0.069	11.19	0.319
147	21.381	0.149	1.03	90	-1.4	-	86	-0.066	11.16	0.316
148	21.527	0.146	1.01	90	-1.4	-	86	-0.066	11.16	0.321
149	21.674	0.147	1.01	90	-1.4	-	86	-0.063	11.08	0.316
150	21.820	0.146	1.02	90	-1.4	101	86	-0.061	11.01	0.314
151	21.967	0.147	1.02	90	-1.4	-	86	-0.063	11.04	0.304
152	22.111	0.144	1.02	91	-1.3	-	86	-0.060	11.01	0.300
153	22.259	0.148	1.01	90	-1.4	-	86	-0.061	11.01	0.291
154	22.406	0.147	1.02	90	-1.4	-	87	-0.065	11.12	0.266
155	22.553	0.147	1.02	90	-1.3	-	87	-0.065	11.12	0.256
156	22.699	0.146	1.02	90	-1.3	-	88	-0.065	11.26	0.235
157	22.845	0.146	1.00	90	-1.4	-	87	-0.064	11.33	0.231
158	22.992	0.147	1.01	90	-1.4	-	87	-0.063	11.33	0.239
159	23.138	0.146	1.00	91	-1.4	-	86	-0.066	11.30	0.248

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
160	23.285	0.147	1.01	91	-1.3	101	86	-0.065	11.34	0.262
161	23.431	0.146	1.03	90	-1.3	-	86	-0.061	11.36	0.253
162	23.578	0.147	1.02	91	-1.3	-	85	-0.067	11.37	0.262
163	23.722	0.144	1.01	91	-1.4	-	85	-0.067	11.37	0.263
164	23.871	0.149	1.00	91	-1.3	-	85	-0.064	11.33	0.237
165	24.018	0.147	1.02	91	-1.4	-	85	-0.067	11.29	0.223
166	24.164	0.146	1.01	91	-1.3	-	86	-0.065	11.22	0.219
167	24.311	0.147	1.00	91	-1.4	-	86	-0.063	11.22	0.228
168	24.457	0.146	1.00	91	-1.2	-	86	-0.064	11.24	0.259
169	24.602	0.145	1.01	91	-1.3	-	86	-0.069	11.52	0.295
170	24.751	0.149	1.03	91	-1.3	100	86	-0.064	12.06	0.317
171	24.898	0.147	1.02	91	-1.3	-	86	-0.060	10.26	0.171
172	25.045	0.147	1.02	91	-1.3	-	86	-0.059	9.53	0.214
173	25.191	0.146	1.01	91	-1.3	-	85	-0.055	7.90	0.350
174	25.336	0.145	1.01	91	-1.4	-	85	-0.058	7.18	0.470
175	25.485	0.149	1.01	91	-1.3	-	86	-0.051	6.85	0.542
176	25.631	0.146	1.00	91	-1.3	-	85	-0.058	6.58	0.618
177	25.778	0.147	1.00	91	-1.4	-	85	-0.059	6.35	0.638
178	25.924	0.146	1.00	90	-1.3	-	86	-0.057	1.99	0.203
179	26.068	0.144	1.01	91	-1.4	-	87	-0.066	2.39	0.278
180	26.217	0.149	1.03	91	-1.4	101	87	-0.090	5.40	0.756
181	26.364	0.147	1.02	91	-1.4	-	86	-0.087	13.91	0.751
182	26.511	0.147	1.04	91	-1.3	-	85	-0.089	14.81	0.194
183	26.658	0.147	1.02	91	-1.3	-	86	-0.088	15.72	0.217
184	26.805	0.147	1.02	91	-1.4	-	86	-0.091	16.36	0.358
185	26.952	0.147	1.02	91	-1.3	-	85	-0.090	17.19	0.391
186	27.099	0.147	1.03	91	-1.3	-	87	-0.094	16.55	0.128
187	27.245	0.146	1.03	91	-1.3	-	87	-0.085	16.27	0.269
188	27.392	0.147	1.01	91	-1.3	-	86	-0.087	15.90	0.427
189	27.539	0.147	1.03	91	-1.3	-	87	-0.086	14.43	0.045
190	27.686	0.147	1.03	91	-1.3	102	86	-0.077	13.77	0.070
191	27.833	0.147	1.03	91	-1.3	-	86	-0.080	12.80	0.117

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
192	27.977	0.144	1.02	91	-1.4	-	86	-0.077	12.55	0.165
193	28.127	0.150	1.01	91	-1.4	-	86	-0.075	12.60	0.142
194	28.274	0.147	0.99	91	-1.4	-	86	-0.078	12.65	0.105
195	28.421	0.147	1.02	92	-1.2	-	86	-0.075	12.88	0.050
196	28.565	0.144	1.01	91	-1.4	-	87	-0.083	12.99	0.047
197	28.715	0.150	1.02	91	-1.3	-	87	-0.077	13.11	0.040
198	28.862	0.147	1.02	91	-1.4	-	87	-0.076	13.26	0.039
199	29.009	0.147	1.01	91	-1.4	-	86	-0.073	13.45	0.035
200	29.156	0.147	1.02	91	-1.4	101	86	-0.081	13.52	0.031
201	29.303	0.147	1.00	92	-1.4	-	86	-0.077	13.73	0.024
202	29.450	0.147	1.02	91	-1.3	-	85	-0.076	13.98	0.023
203	29.597	0.147	1.02	92	-1.3	-	86	-0.075	14.21	0.031
204	29.744	0.147	1.00	91	-1.3	-	86	-0.074	14.48	0.064
205	29.891	0.147	1.04	91	-1.3	-	85	-0.077	14.94	0.115
206	30.038	0.147	1.00	92	-1.3	-	86	-0.087	15.41	0.193
207	30.185	0.147	0.99	91	-1.4	-	87	-0.079	15.23	0.160
208	30.332	0.147	1.02	92	-1.3	-	87	-0.075	15.57	0.141
209	30.479	0.147	1.03	91	-1.3	-	88	-0.077	15.64	0.146
210	30.626	0.147	1.00	92	-1.4	101	87	-0.082	15.51	0.136
211	30.773	0.147	1.00	92	-1.3	-	87	-0.075	15.47	0.141
212	30.920	0.147	1.02	92	-1.4	-	86	-0.077	15.40	0.107
213	31.067	0.147	1.01	92	-1.3	-	86	-0.079	15.35	0.097
214	31.214	0.147	1.01	92	-1.3	-	86	-0.080	15.33	0.106
215	31.361	0.147	1.02	91	-1.4	-	86	-0.083	15.26	0.132
216	31.506	0.145	1.01	92	-1.4	-	86	-0.080	15.30	0.153
217	31.655	0.149	1.03	92	-1.3	-	85	-0.079	15.38	0.177
218	31.802	0.147	1.02	92	-1.2	-	86	-0.079	15.48	0.238
219	31.949	0.147	1.02	92	-1.3	-	86	-0.076	15.55	0.325
220	32.094	0.145	1.01	92	-1.2	100	86	-0.078	15.65	0.379
221	32.243	0.149	1.04	92	-1.3	-	87	-0.083	15.58	0.287
222	32.390	0.147	1.03	92	-1.4	-	87	-0.082	15.55	0.235
223	32.537	0.147	1.01	92	-1.3	-	87	-0.083	15.56	0.231

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
224	32.684	0.147	1.01	92	-1.3	-	88	-0.080	15.59	0.227
225	32.831	0.147	1.01	92	-1.4	-	87	-0.084	15.66	0.226
226	32.978	0.147	1.02	92	-1.2	-	87	-0.075	15.73	0.260
227	33.125	0.147	1.04	92	-1.4	-	86	-0.079	15.77	0.290
228	33.272	0.147	1.02	92	-1.2	-	86	-0.079	15.80	0.271
229	33.419	0.147	1.01	92	-1.3	-	86	-0.072	15.76	0.261
230	33.566	0.147	1.00	92	-1.2	101	86	-0.078	15.73	0.232
231	33.713	0.147	1.01	92	-1.4	-	85	-0.077	15.64	0.198
232	33.860	0.147	1.02	92	-1.2	-	86	-0.080	15.62	0.194
233	34.007	0.147	1.01	92	-1.4	-	86	-0.081	15.63	0.186
234	34.154	0.147	1.02	92	-1.4	-	86	-0.079	15.63	0.203
235	34.301	0.147	0.99	92	-1.4	-	87	-0.077	15.67	0.283
236	34.448	0.147	1.01	92	-1.3	-	86	-0.083	15.71	0.347
237	34.595	0.147	1.01	92	-1.4	-	86	-0.078	15.67	0.413
238	34.742	0.147	1.01	92	-1.4	-	86	-0.079	15.70	0.432
239	34.889	0.147	1.01	92	-1.3	-	87	-0.076	15.82	0.543
240	35.036	0.147	1.01	92	-1.4	100	87	-0.082	15.83	0.570
241	35.182	0.146	1.00	92	-1.3	-	88	-0.081	15.71	0.479
242	35.329	0.147	1.02	92	-1.2	-	87	-0.071	15.15	0.281
243	35.473	0.144	1.03	92	-1.3	-	87	-0.079	14.75	0.201
244	35.622	0.149	1.00	92	-1.2	-	87	-0.076	14.49	0.158
245	35.769	0.147	0.99	92	-1.4	-	86	-0.078	14.24	0.118
246	35.915	0.146	1.01	92	-1.4	-	86	-0.077	14.18	0.187
247	36.062	0.147	1.02	92	-1.3	-	87	-0.075	14.01	0.128
248	36.208	0.146	1.00	92	-1.3	-	86	-0.077	13.84	0.139
249	36.355	0.147	1.03	92	-1.4	-	87	-0.076	13.63	0.134
250	36.501	0.146	1.02	92	-1.4	100	87	-0.077	13.62	0.128
251	36.648	0.147	1.00	92	-1.4	-	87	-0.071	13.55	0.091
252	36.794	0.146	1.01	92	-1.3	-	86	-0.077	13.50	0.115
253	36.941	0.147	1.00	92	-1.3	-	87	-0.076	13.41	0.131
254	37.087	0.146	1.01	92	-1.3	-	86	-0.076	13.48	0.208
255	37.233	0.146	1.01	92	-1.4	-	86	-0.075	13.44	0.211

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
256	37.380	0.147	1.01	92	-1.4	-	86	-0.076	13.35	0.187
257	37.527	0.147	1.03	92	-1.3	-	86	-0.077	13.21	0.167
258	37.673	0.146	1.01	92	-1.3	-	86	-0.075	13.19	0.146
259	37.820	0.147	1.01	92	-1.3	-	87	-0.072	13.19	0.142
260	37.966	0.146	1.01	92	-1.3	100	86	-0.073	13.15	0.133
261	38.113	0.147	1.01	92	-1.4	-	86	-0.076	13.25	0.121
262	38.259	0.146	1.01	92	-1.3	-	86	-0.071	13.23	0.131
263	38.405	0.146	0.99	92	-1.4	-	86	-0.075	13.21	0.137
264	38.552	0.147	1.01	92	-1.3	-	86	-0.077	13.14	0.159
265	38.699	0.147	1.03	92	-1.3	-	86	-0.072	13.08	0.143
266	38.846	0.147	1.02	92	-1.3	-	86	-0.069	13.21	0.139
267	38.993	0.147	1.00	92	-1.4	-	86	-0.073	13.30	0.147
268	39.139	0.146	0.99	92	-1.4	-	87	-0.072	13.25	0.168
269	39.286	0.147	0.99	92	-1.3	-	86	-0.069	13.19	0.181
270	39.433	0.147	1.01	92	-1.4	99	87	-0.073	13.03	0.177
271	39.579	0.146	0.99	92	-1.4	-	86	-0.074	12.94	0.155
272	39.726	0.147	1.01	92	-1.3	-	86	-0.071	12.76	0.144
273	39.870	0.144	1.01	92	-1.3	-	86	-0.071	12.53	0.165
274	40.019	0.149	0.99	92	-1.4	-	86	-0.071	12.41	0.138
275	40.165	0.146	1.01	92	-1.3	-	86	-0.068	12.40	0.138
276	40.312	0.147	0.99	92	-1.3	-	86	-0.063	12.39	0.161
277	40.458	0.146	1.02	92	-1.3	-	87	-0.072	12.29	0.161
278	40.604	0.146	1.01	92	-1.3	-	88	-0.072	12.13	0.147
279	40.751	0.147	1.01	92	-1.4	-	87	-0.064	11.98	0.133
280	40.897	0.146	1.01	92	-1.3	100	87	-0.068	11.49	0.133
281	41.043	0.146	1.01	92	-1.3	-	86	-0.064	10.62	0.106
282	41.190	0.147	1.01	92	-1.4	-	86	-0.064	9.91	0.102
283	41.336	0.146	1.02	92	-1.3	-	85	-0.064	9.48	0.118
284	41.483	0.147	1.01	92	-1.3	-	86	-0.063	8.78	0.172
285	41.629	0.146	1.01	92	-1.4	-	86	-0.061	8.50	0.176
286	41.776	0.147	1.02	92	-1.3	-	86	-0.063	8.43	0.186
287	41.922	0.146	1.02	92	-1.3	-	86	-0.062	8.28	0.206

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
288	42.068	0.146	1.01	92	-1.4	-	86	-0.060	8.48	0.170
289	42.215	0.147	1.01	92	-1.3	-	86	-0.060	8.45	0.168
290	42.362	0.147	1.01	92	-1.4	101	87	-0.062	8.25	0.200
291	42.508	0.146	1.00	92	-1.3	-	86	-0.057	8.18	0.207
292	42.655	0.147	0.99	92	-1.3	-	86	-0.055	8.05	0.201
293	42.801	0.146	0.98	92	-1.3	-	85	-0.060	8.13	0.210
294	42.948	0.147	1.03	92	-1.3	-	85	-0.056	8.09	0.208
295	43.095	0.147	1.01	92	-1.4	-	85	-0.059	8.09	0.202
296	43.242	0.147	0.99	92	-1.3	-	85	-0.061	8.15	0.204
297	43.388	0.146	1.01	92	-1.4	-	86	-0.054	8.16	0.202
298	43.535	0.147	1.01	92	-1.3	-	86	-0.051	7.76	0.229
299	43.682	0.147	1.01	92	-1.4	-	87	-0.048	7.72	0.242
300	43.829	0.147	1.00	92	-1.4	101	86	-0.055	7.73	0.249
301	43.976	0.147	1.01	92	-1.4	-	87	-0.062	7.72	0.264
302	44.122	0.146	1.02	92	-1.3	-	87	-0.056	7.73	0.261
303	44.269	0.147	1.01	92	-1.3	-	87	-0.049	7.77	0.257
304	44.416	0.147	1.01	92	-1.3	-	86	-0.054	7.78	0.267
305	44.562	0.146	1.03	92	-1.4	-	86	-0.054	7.80	0.259
306	44.709	0.147	1.00	92	-1.4	-	85	-0.049	7.87	0.257
307	44.856	0.147	1.01	92	-1.4	-	85	-0.049	7.99	0.283
308	45.002	0.146	1.03	92	-1.4	-	86	-0.048	8.18	0.307
309	45.149	0.147	1.02	92	-1.3	-	86	-0.048	8.19	0.323
310	45.295	0.146	1.01	92	-1.3	100	85	-0.051	8.20	0.275
311	45.442	0.147	1.00	92	-1.3	-	86	-0.048	8.03	0.273
312	45.588	0.146	1.01	92	-1.4	-	86	-0.052	8.10	0.321
313	45.735	0.147	1.00	92	-1.3	-	86	-0.048	8.07	0.339
314	45.881	0.146	1.02	92	-1.4	-	87	-0.045	8.03	0.372
315	46.028	0.147	1.01	92	-1.3	-	87	-0.045	7.96	0.392
316	46.175	0.147	1.01	92	-1.3	-	86	-0.047	7.95	0.418
317	46.321	0.146	1.00	91	-1.3	-	85	-0.047	7.90	0.457
318	46.468	0.147	1.02	92	-1.3	-	85	-0.047	7.87	0.459
319	46.614	0.146	1.02	92	-1.4	-	85	-0.048	7.87	0.480

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
320	46.761	0.147	1.01	92	-1.4	99	85	-0.047	7.86	0.491
321	46.907	0.146	1.01	92	-1.4	-	85	-0.049	7.86	0.502
322	47.054	0.147	1.00	92	-1.4	-	87	-0.042	7.85	0.514
323	47.200	0.146	1.02	92	-1.4	-	87	-0.048	7.88	0.533
324	47.347	0.147	1.02	92	-1.3	-	88	-0.044	7.82	0.536
325	47.494	0.147	1.01	92	-1.3	-	88	-0.045	7.84	0.568
326	47.640	0.146	1.02	91	-1.3	-	86	-0.044	7.81	0.553
327	47.787	0.147	1.01	92	-1.3	-	86	-0.045	7.81	0.540
328	47.933	0.146	0.99	92	-1.3	-	85	-0.042	7.22	0.570
329	48.080	0.147	1.01	91	-1.3	-	85	-0.049	6.95	0.650
330	48.227	0.147	1.00	92	-1.3	98	86	-0.045	6.63	0.864
331	48.374	0.147	1.00	92	-1.3	-	85	-0.040	6.58	0.922
332	48.521	0.147	1.02	92	-1.3	-	86	-0.045	6.56	0.945
333	48.667	0.146	0.99	91	-1.3	-	85	-0.043	6.53	0.965
334	48.814	0.147	1.01	91	-1.4	-	85	-0.042	6.54	0.988
335	48.961	0.147	1.00	91	-1.3	-	85	-0.044	6.52	1.012
336	49.108	0.147	1.00	92	-1.3	-	85	-0.043	6.49	1.042
337	49.255	0.147	1.00	91	-1.3	-	84	-0.048	6.48	1.088
338	49.401	0.146	1.00	91	-1.4	-	85	-0.043	6.47	1.094
339	49.548	0.147	1.01	91	-1.4	-	85	-0.035	6.44	1.061
340	49.694	0.146	1.02	92	-1.3	98	84	-0.043	6.48	1.061
341	49.841	0.147	1.01	91	-1.3	-	85	-0.042	6.45	1.083
342	49.988	0.147	1.00	91	-1.4	-	86	-0.041	6.45	1.077
343	50.134	0.146	1.00	91	-1.4	-	85	-0.041	6.45	1.077
344	50.281	0.147	1.02	91	-1.2	-	85	-0.038	6.44	1.088
345	50.427	0.146	1.02	91	-1.3	-	84	-0.039	6.48	1.050
346	50.574	0.147	1.02	91	-1.4	-	84	-0.037	6.46	1.071
347	50.720	0.146	1.03	91	-1.4	-	84	-0.039	6.44	1.080
348	50.867	0.147	1.00	91	-1.4	-	84	-0.043	6.42	1.073
349	51.014	0.147	1.01	91	-1.4	-	84	-0.038	6.44	1.069
350	51.160	0.146	1.02	91	-1.3	99	85	-0.039	6.42	1.066
351	51.307	0.147	1.00	91	-1.2	-	85	-0.033	6.45	1.075

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
352	51.454	0.147	1.03	92	-1.4	-	85	-0.045	6.43	1.075
353	51.600	0.146	1.02	91	-1.3	-	85	-0.033	6.41	1.056
354	51.747	0.147	1.00	91	-1.3	-	85	-0.037	6.43	1.054
355	51.893	0.146	1.01	92	-1.2	-	86	-0.039	6.42	1.061
356	52.040	0.147	1.01	91	-1.3	-	86	-0.043	6.44	1.057
357	52.186	0.146	1.03	91	-1.3	-	86	-0.038	6.42	1.062
358	52.333	0.147	0.98	91	-1.3	-	85	-0.033	6.36	1.072
359	52.479	0.146	1.00	91	-1.3	-	85	-0.038	6.39	1.102
360	52.626	0.147	1.00	91	-1.4	99	85	-0.038	6.42	1.117
361	52.773	0.147	1.01	91	-1.4	-	85	-0.039	6.35	1.157
362	52.920	0.147	1.02	91	-1.3	-	85	-0.034	6.35	1.159
363	53.066	0.146	1.01	91	-1.3	-	84	-0.042	6.31	1.175
364	53.213	0.147	1.01	91	-1.4	-	85	-0.034	6.32	1.174
365	53.359	0.146	1.01	91	-1.3	-	86	-0.041	6.31	1.181
366	53.506	0.147	1.01	91	-1.4	-	86	-0.040	6.31	1.191
367	53.653	0.147	1.02	91	-1.3	-	85	-0.036	6.28	1.181
368	53.800	0.147	1.00	91	-1.4	-	86	-0.039	6.25	1.229
369	53.947	0.147	1.01	91	-1.3	-	86	-0.031	6.16	1.215
370	54.094	0.147	1.02	91	-1.3	99	87	-0.033	6.10	1.207
371	54.241	0.147	1.00	91	-1.4	-	86	-0.037	6.08	1.199
372	54.388	0.147	1.04	91	-1.3	-	85	-0.036	6.07	1.207
373	54.534	0.146	1.03	91	-1.3	-	85	-0.038	6.01	1.194
374	54.681	0.147	1.00	91	-1.4	-	84	-0.039	5.96	1.183
375	54.827	0.146	1.01	91	-1.4	-	84	-0.034	5.94	1.194
376	54.974	0.147	1.01	91	-1.3	-	84	-0.033	5.95	1.182
377	55.121	0.147	1.01	91	-1.3	-	84	-0.036	5.93	1.197
378	55.268	0.147	1.00	91	-1.4	-	84	-0.035	5.93	1.213
379	55.414	0.146	1.00	91	-1.3	-	84	-0.035	5.84	1.176
380	55.561	0.147	1.01	91	-1.3	99	84	-0.034	5.83	1.118
381	55.707	0.146	1.00	91	-1.3	-	84	-0.031	5.85	1.084
382	55.853	0.146	1.02	91	-1.3	-	84	-0.034	5.82	1.053
383	56.000	0.147	1.02	91	-1.4	-	85	-0.031	5.80	1.026

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBIJob #: 25-446Model: 1.4RTracking #: 238Run #: 1Technician: AKDate: 10/27/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
384	56.146	0.146	1.01	91	-1.4	-	85	-0.038	5.77	0.989
385	56.293	0.147	1.01	91	-1.3	-	86	-0.032	5.75	0.967
386	56.440	0.147	1.01	91	-1.4	-	86	-0.031	5.74	0.961
387	56.586	0.146	1.02	91	-1.4	-	86	-0.040	5.73	0.943
388	56.733	0.147	1.01	91	-1.3	-	86	-0.030	5.74	0.945
389	56.879	0.146	1.02	91	-1.4	-	87	-0.031	5.71	0.949
390	57.026	0.147	1.00	91	-1.4	99	86	-0.029	5.74	0.961
391	57.172	0.146	1.01	91	-1.4	-	86	-0.035	5.74	0.954
392	57.319	0.147	1.02	91	-1.4	-	85	-0.036	5.72	0.960
393	57.465	0.146	1.02	91	-1.4	-	85	-0.036	5.72	0.949
394	57.612	0.147	1.00	91	-1.3	-	84	-0.031	5.72	0.952
395	57.759	0.147	0.97	91	-1.4	-	84	-0.034	5.66	0.957
396	57.905	0.146	1.00	91	-1.3	-	85	-0.032	5.66	0.966
Avg/Tot	65.827	0.146	1.01	88.7	-1.3	100	85.8	-0.062	10.37	0.477

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Stove ΔT: 315

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
0	65	66	65	66	65	65.4	N/A
1	70	68	66	75	65	68.9	N/A
2	83	74	70	89	66	76.4	N/A
3	102	85	78	103	67	86.9	N/A
4	119	98	85	144	70	103.1	N/A
5	135	109	91	175	76	117.3	N/A
6	151	118	97	206	86	131.4	N/A
7	162	127	102	245	98	146.7	N/A
8	173	136	108	304	113	166.7	N/A
9	183	147	115	362	129	187.0	N/A
10	193	160	122	410	146	206.1	N/A
11	205	170	129	450	164	223.8	N/A
12	220	180	137	485	182	240.8	N/A
13	236	191	145	514	199	256.7	N/A
14	253	202	153	536	216	272.1	N/A
15	270	215	161	553	232	286.1	N/A
16	286	227	169	566	247	298.9	N/A
17	301	239	178	577	261	311.2	N/A
18	317	252	187	588	275	323.5	N/A
19	330	264	195	597	288	334.9	N/A
20	343	277	204	606	300	346.1	N/A
21	356	289	213	620	313	358.2	N/A
22	369	302	223	635	325	370.8	N/A
23	382	313	234	648	338	383.0	N/A
24	393	325	246	643	354	392.0	N/A
25	397	333	256	633	367	397.4	N/A
26	400	338	265	635	376	402.6	N/A
27	400	341	272	636	383	406.5	N/A
28	401	345	277	641	389	410.4	N/A
29	402	348	281	651	394	415.0	N/A
30	403	352	284	659	399	419.4	N/A
31	406	356	287	672	403	424.6	N/A
32	408	361	289	684	406	429.7	N/A
33	412	366	291	703	410	436.1	N/A
34	415	371	292	717	413	441.8	N/A
35	419	376	294	733	417	447.9	N/A
36	423	382	296	746	421	453.7	N/A
37	427	388	299	759	425	459.6	N/A
38	432	394	301	769	430	464.8	N/A
39	436	399	304	779	434	470.2	N/A
40	440	404	306	786	440	475.2	N/A
41	445	410	309	790	445	479.6	N/A
42	449	415	312	791	451	483.3	N/A
43	454	420	315	797	457	488.5	N/A
44	459	425	319	799	463	492.7	N/A
45	464	430	322	798	469	496.6	N/A
46	469	435	326	799	475	500.7	N/A
47	474	439	330	800	482	505.0	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Stove ΔT: 315

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
48	479	444	334	798	488	508.4	N/A
49	484	448	338	795	494	511.8	N/A
50	488	452	342	796	500	515.7	N/A
51	491	455	346	789	506	517.3	N/A
52	493	457	350	775	510	517.0	N/A
53	493	459	353	757	514	515.2	N/A
54	493	459	356	744	517	513.8	N/A
55	494	460	358	727	519	511.5	N/A
56	492	460	361	712	521	509.1	N/A
57	490	460	363	699	522	506.8	N/A
58	489	460	364	689	523	504.9	N/A
59	487	459	366	680	523	503.1	N/A
60	485	459	367	671	524	501.3	N/A
61	484	457	369	664	524	499.6	N/A
62	483	456	370	658	524	498.1	N/A
63	481	455	371	651	525	496.6	N/A
64	480	455	373	646	525	495.6	N/A
65	479	454	374	641	525	494.7	N/A
66	478	454	375	640	525	494.4	N/A
67	477	453	376	636	526	493.8	N/A
68	477	453	378	632	526	493.1	N/A
69	477	452	379	631	526	493.0	N/A
70	476	452	381	629	526	492.8	N/A
71	477	453	382	628	527	493.2	N/A
72	476	452	383	629	527	493.5	N/A
73	477	452	385	628	528	493.8	N/A
74	477	452	386	627	528	494.0	N/A
75	477	452	388	625	528	493.9	N/A
76	477	452	389	623	528	493.7	N/A
77	476	452	391	620	528	493.4	N/A
78	476	452	392	616	529	493.1	N/A
79	476	452	394	615	529	493.2	N/A
80	477	453	395	611	529	493.1	N/A
81	477	453	397	610	530	493.3	N/A
82	477	453	398	608	530	493.4	N/A
83	477	454	400	606	531	493.4	N/A
84	477	453	401	602	532	493.1	N/A
85	477	454	403	599	532	493.0	N/A
86	477	454	405	596	533	492.8	N/A
87	476	454	406	594	534	492.9	N/A
88	477	454	408	592	536	493.2	N/A
89	477	454	409	590	537	493.2	N/A
90	477	454	411	585	538	493.0	N/A
91	478	454	413	582	539	493.2	N/A
92	478	454	415	578	541	493.4	N/A
93	479	454	418	577	543	494.1	N/A
94	480	455	420	572	545	494.1	N/A
95	480	454	422	566	547	493.9	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Stove ΔT: 315

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
96	480	454	423	560	550	493.4	N/A
97	481	453	426	554	552	493.2	N/A
98	481	453	427	548	554	492.7	N/A
99	482	452	429	544	556	492.7	N/A
100	482	451	431	535	561	492.1	N/A
101	480	451	433	540	563	493.3	N/A
102	478	451	434	557	563	496.7	N/A
103	477	452	436	589	562	503.2	N/A
104	477	453	436	622	563	510.2	N/A
105	478	455	437	641	563	514.7	N/A
106	478	456	436	647	564	516.2	N/A
107	477	456	435	647	566	516.0	N/A
108	476	456	434	644	567	515.2	N/A
109	475	455	432	642	567	514.1	N/A
110	473	455	430	638	568	512.7	N/A
111	472	454	428	633	567	511.0	N/A
112	471	454	426	630	567	509.6	N/A
113	470	453	425	627	567	508.3	N/A
114	470	453	423	623	566	506.8	N/A
115	469	452	422	620	566	505.6	N/A
116	469	451	420	618	565	504.5	N/A
117	469	451	419	617	564	503.8	N/A
118	469	450	419	613	563	502.4	N/A
119	469	449	418	611	562	501.7	N/A
120	469	449	417	609	561	500.9	N/A
121	469	448	417	608	559	500.2	N/A
122	469	448	417	605	559	499.4	N/A
123	469	448	417	605	558	499.1	N/A
124	469	447	417	603	557	498.5	N/A
125	468	447	417	602	556	498.1	N/A
126	468	447	418	601	555	497.7	N/A
127	468	447	418	600	554	497.5	N/A
128	468	447	419	600	553	497.4	N/A
129	468	447	419	601	552	497.6	N/A
130	469	447	420	601	551	497.6	N/A
131	469	447	421	602	551	497.9	N/A
132	469	447	421	603	550	498.0	N/A
133	469	447	422	603	550	498.0	N/A
134	470	447	423	605	549	498.5	N/A
135	470	447	424	606	549	499.0	N/A
136	471	447	424	607	548	499.3	N/A
137	471	447	425	608	547	499.7	N/A
138	472	447	426	607	547	499.8	N/A
139	472	447	427	607	547	499.9	N/A
140	473	447	427	607	547	500.2	N/A
141	473	447	428	605	547	500.2	N/A
142	474	448	429	604	546	500.1	N/A
143	475	447	430	603	546	500.2	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 1

Technician: AK

Date: 10/27/2025

Stove ΔT: 315

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
144	475	447	431	601	546	500.1	N/A
145	476	447	432	600	546	500.1	N/A
146	476	447	432	598	546	500.0	N/A
147	477	447	433	596	546	499.8	N/A
148	478	447	434	593	546	499.6	N/A
149	478	447	435	591	546	499.4	N/A
150	479	447	436	589	546	499.3	N/A
151	480	447	437	588	546	499.5	N/A
152	481	447	437	585	546	499.1	N/A
153	482	447	438	584	546	499.3	N/A
154	483	447	439	581	546	499.1	N/A
155	484	447	440	577	546	498.7	N/A
156	485	447	440	576	546	498.8	N/A
157	486	447	441	575	546	499.1	N/A
158	487	448	442	575	546	499.4	N/A
159	488	448	442	574	546	499.6	N/A
160	489	448	443	572	546	499.7	N/A
161	490	449	444	573	546	500.3	N/A
162	491	449	445	573	546	500.7	N/A
163	492	449	445	573	546	501.2	N/A
164	493	450	446	575	546	501.9	N/A
165	493	451	447	577	546	502.7	N/A
166	494	451	448	579	546	503.5	N/A
167	494	453	448	579	546	504.1	N/A
168	494	453	449	583	546	505.1	N/A
169	495	455	450	584	546	505.9	N/A
170	496	456	451	585	545	506.4	N/A
171	497	457	452	581	545	506.3	N/A
172	496	458	453	576	546	505.8	N/A
173	496	459	453	568	546	504.3	N/A
174	495	459	453	556	546	501.7	N/A
175	494	458	454	543	546	498.9	N/A
176	493	456	453	531	546	495.8	N/A
177	492	455	453	515	550	492.8	N/A
178	490	453	452	490	553	487.8	N/A
179	488	452	452	472	553	483.2	N/A
180	489	451	451	501	547	487.8	N/A
181	489	448	451	531	538	491.4	N/A
182	488	446	447	567	531	495.9	N/A
183	485	444	444	605	526	500.9	N/A
184	482	443	439	646	523	506.5	N/A
185	480	442	435	687	519	512.5	N/A
186	477	441	430	719	518	516.9	N/A
187	476	439	425	739	517	519.0	N/A
188	474	438	421	743	516	518.2	N/A
189	473	436	416	738	516	515.9	N/A
190	471	434	412	729	516	512.6	N/A
191	470	432	409	717	517	508.7	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Stove ΔT : 315

Elapsed Time (min)	Temperature Data (°F)						Catalyst Exit
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	
192	467	430	405	706	518	505.0	N/A
193	465	428	401	695	518	501.5	N/A
194	462	426	398	688	519	498.5	N/A
195	460	424	395	681	519	495.8	N/A
196	457	422	392	676	520	493.3	N/A
197	455	420	389	672	520	491.1	N/A
198	452	418	387	669	520	489.1	N/A
199	450	416	385	667	520	487.6	N/A
200	448	415	383	667	521	486.6	N/A
201	447	414	381	666	521	485.7	N/A
202	445	412	380	667	521	485.1	N/A
203	444	411	379	669	522	484.9	N/A
204	444	410	378	674	522	485.5	N/A
205	444	409	378	681	522	486.5	N/A
206	444	409	377	687	522	487.7	N/A
207	444	408	377	695	522	489.3	N/A
208	444	408	377	702	522	490.7	N/A
209	445	408	378	710	522	492.4	N/A
210	446	408	378	716	522	494.0	N/A
211	447	408	378	723	521	495.6	N/A
212	448	409	379	728	522	497.2	N/A
213	450	410	380	734	522	498.9	N/A
214	451	411	380	736	522	499.8	N/A
215	452	411	381	739	521	500.9	N/A
216	453	412	382	739	522	501.7	N/A
217	455	413	383	741	521	502.6	N/A
218	456	414	384	742	521	503.4	N/A
219	457	414	385	745	521	504.6	N/A
220	459	415	386	747	520	505.6	N/A
221	460	416	388	748	520	506.4	N/A
222	462	417	389	751	519	507.6	N/A
223	464	418	390	753	519	508.8	N/A
224	466	419	392	753	519	509.5	N/A
225	467	420	393	756	518	510.7	N/A
226	469	420	394	758	518	511.6	N/A
227	471	421	395	760	518	512.8	N/A
228	473	422	397	761	517	513.8	N/A
229	474	423	398	763	517	515.0	N/A
230	476	423	400	764	517	515.7	N/A
231	478	424	401	762	516	516.2	N/A
232	480	425	402	764	516	517.3	N/A
233	482	426	403	762	516	517.6	N/A
234	484	427	405	761	516	518.3	N/A
235	485	428	406	760	515	518.9	N/A
236	487	429	408	758	515	519.4	N/A
237	489	430	409	755	515	519.6	N/A
238	490	431	411	754	514	520.1	N/A
239	492	432	413	755	514	521.1	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 1

Technician: AK

Date: 10/27/2025

Stove ΔT: 315

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
240	493	433	415	756	514	522.2	N/A
241	494	434	417	757	513	523.0	N/A
242	495	436	419	754	513	523.3	N/A
243	496	437	420	752	513	523.7	N/A
244	497	438	422	749	513	523.7	N/A
245	497	440	424	744	513	523.6	N/A
246	498	441	426	741	512	523.5	N/A
247	498	442	428	735	512	522.9	N/A
248	498	442	430	732	512	522.6	N/A
249	498	443	431	726	512	521.9	N/A
250	498	443	433	722	512	521.5	N/A
251	498	444	434	718	512	521.1	N/A
252	498	444	436	714	511	520.5	N/A
253	498	445	437	711	512	520.3	N/A
254	498	445	438	706	511	519.6	N/A
255	498	445	439	704	511	519.6	N/A
256	499	445	440	701	511	519.2	N/A
257	499	445	441	698	511	518.8	N/A
258	499	445	442	696	511	518.6	N/A
259	499	446	443	693	511	518.3	N/A
260	499	446	445	692	511	518.5	N/A
261	499	446	446	690	511	518.3	N/A
262	500	447	446	689	510	518.4	N/A
263	500	447	447	687	511	518.4	N/A
264	500	448	448	686	510	518.6	N/A
265	501	448	449	685	511	518.7	N/A
266	501	448	450	686	510	519.2	N/A
267	502	449	451	685	510	519.3	N/A
268	502	449	452	686	510	519.9	N/A
269	502	450	453	686	510	520.4	N/A
270	503	451	454	686	510	520.7	N/A
271	503	451	455	686	510	521.3	N/A
272	504	452	456	686	510	521.6	N/A
273	504	453	457	687	510	522.1	N/A
274	504	453	458	686	510	522.4	N/A
275	505	454	459	686	510	522.8	N/A
276	504	455	460	685	510	522.9	N/A
277	504	455	461	685	510	523.0	N/A
278	504	456	462	683	511	523.0	N/A
279	503	456	462	681	511	522.8	N/A
280	503	457	463	678	512	522.6	N/A
281	502	458	463	673	512	521.6	N/A
282	502	458	463	667	512	520.4	N/A
283	500	459	463	657	512	518.4	N/A
284	499	460	463	648	512	516.4	N/A
285	497	459	463	637	513	513.8	N/A
286	495	459	463	626	513	511.2	N/A
287	493	459	462	615	513	508.5	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Stove ΔT: 315

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
288	491	459	462	605	513	506.1	N/A
289	488	459	462	596	513	503.7	N/A
290	486	458	461	589	514	501.5	N/A
291	485	458	461	580	513	499.3	N/A
292	483	458	460	573	514	497.4	N/A
293	481	457	459	567	514	495.5	N/A
294	479	457	459	560	514	493.7	N/A
295	477	456	458	554	514	491.9	N/A
296	476	456	457	548	514	490.1	N/A
297	474	455	457	542	514	488.5	N/A
298	473	455	456	536	514	486.7	N/A
299	471	454	455	529	515	484.9	N/A
300	470	454	454	523	515	483.2	N/A
301	468	453	454	517	515	481.4	N/A
302	467	453	453	511	515	479.8	N/A
303	466	453	452	506	515	478.3	N/A
304	465	453	451	501	515	477.1	N/A
305	463	452	451	497	516	475.6	N/A
306	462	451	450	493	516	474.4	N/A
307	461	451	449	489	517	473.1	N/A
308	460	450	448	485	517	472.0	N/A
309	459	450	447	483	517	471.2	N/A
310	458	449	446	481	517	470.5	N/A
311	457	449	445	479	518	469.8	N/A
312	457	449	445	477	518	469.2	N/A
313	456	449	444	475	518	468.5	N/A
314	455	449	443	473	519	467.8	N/A
315	455	449	442	470	519	466.9	N/A
316	454	448	442	467	519	466.0	N/A
317	453	448	441	465	519	465.2	N/A
318	452	448	440	462	519	464.3	N/A
319	451	448	439	460	519	463.5	N/A
320	451	448	438	457	520	462.7	N/A
321	450	448	438	455	519	461.8	N/A
322	449	447	437	453	520	460.9	N/A
323	448	446	436	450	520	459.9	N/A
324	447	446	435	447	520	458.9	N/A
325	445	445	434	446	520	458.1	N/A
326	445	445	434	444	520	457.2	N/A
327	444	444	433	442	520	456.3	N/A
328	443	443	432	439	519	455.2	N/A
329	442	442	432	434	519	453.8	N/A
330	441	442	431	430	519	452.4	N/A
331	440	441	430	425	519	450.8	N/A
332	438	440	429	420	519	449.0	N/A
333	437	439	428	416	518	447.4	N/A
334	435	438	427	411	517	445.7	N/A
335	434	437	426	406	517	443.8	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Stove ΔT : 315

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
336	432	436	425	402	517	442.1	N/A
337	431	434	424	398	515	440.4	N/A
338	429	433	423	395	515	438.8	N/A
339	427	431	422	391	514	437.0	N/A
340	426	430	421	387	514	435.4	N/A
341	425	428	420	384	513	433.8	N/A
342	423	427	419	381	513	432.3	N/A
343	422	425	418	378	512	430.9	N/A
344	420	424	416	376	512	429.5	N/A
345	419	422	416	373	511	428.1	N/A
346	418	420	414	370	510	426.6	N/A
347	417	419	413	368	510	425.4	N/A
348	415	418	412	366	510	424.1	N/A
349	414	416	411	363	509	422.8	N/A
350	413	415	410	361	509	421.6	N/A
351	412	413	409	359	509	420.4	N/A
352	411	412	408	357	508	419.3	N/A
353	410	411	407	356	508	418.3	N/A
354	409	410	406	354	508	417.2	N/A
355	407	409	405	352	507	416.1	N/A
356	407	407	405	351	507	415.4	N/A
357	406	406	404	350	507	414.4	N/A
358	405	406	403	348	507	413.5	N/A
359	404	404	402	347	506	412.5	N/A
360	403	403	401	345	506	411.6	N/A
361	402	402	400	343	506	410.7	N/A
362	402	401	399	342	506	409.9	N/A
363	401	400	399	340	506	409.2	N/A
364	400	399	398	339	506	408.5	N/A
365	399	399	397	338	506	407.8	N/A
366	399	398	396	336	506	407.0	N/A
367	398	397	396	336	506	406.4	N/A
368	397	396	395	334	506	405.8	N/A
369	397	396	394	333	506	405.1	N/A
370	396	395	394	332	506	404.5	N/A
371	395	394	393	331	506	403.9	N/A
372	395	394	392	331	506	403.4	N/A
373	394	393	392	330	506	402.8	N/A
374	393	393	391	329	506	402.2	N/A
375	393	392	390	327	506	401.7	N/A
376	391	392	390	327	506	401.1	N/A
377	391	391	389	325	506	400.4	N/A
378	390	391	389	324	506	399.9	N/A
379	390	390	388	323	506	399.3	N/A
380	388	389	388	322	506	398.8	N/A
381	388	389	387	320	506	398.0	N/A
382	387	388	387	321	505	397.5	N/A
383	386	388	387	320	504	396.9	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/27/2025

Stove ΔT : 315

Temperature Data (°F)							
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
384	386	387	386	319	503	396.1	N/A
385	385	387	385	318	502	395.5	N/A
386	385	386	385	317	501	394.8	N/A
387	384	386	385	317	501	394.3	N/A
388	384	385	385	316	499	393.6	N/A
389	383	385	384	315	499	392.9	N/A
390	382	384	384	314	498	392.3	N/A
391	381	383	384	313	497	391.7	N/A
392	381	383	383	313	496	391.3	N/A
393	380	382	383	313	496	390.7	N/A
394	380	382	382	312	496	390.2	N/A
395	379	382	382	311	495	389.8	N/A
396	378	381	382	310	495	389.2	N/A
Average	437.0	413.0	390.9	542.0	497.1	456.0	N/A

Test Input Data

Client: SBI
 Model: 1.4R
 Date: 10/27/2025
 Run #: 1

Job #: 25-446
 Tracking #: 238
 Technician: AK

Traverse Data

pt	dP (in WC)
1	0.044
2	0.061
3	0.071
4	0.072
5	0.068
6	0.041
7	0.049
8	0.066
9	0.074
10	0.067
11	0.065
12	0.045
Center	0.074

Tunnel Data

Tunnel dia. (in):	12
Pitot Cp	0.99

Vs,cent (ft/s):	18.11
Vs, trav (ft/s):	16.26
Fp	0.898

	Pre-Test	Post Test
Barometric Pressure (in. Hg)	30.19	30.17
Lab Relative Humidity (%)	38.7	35.1

Traverse Temp:	78
Static Pressure:	-0.114

Fuel Data

Fuel Properties

Species	Maple
HHV (Btu/lb)	8587
%C	50.64%
%H	6.02%
%O	41.74%
%Ash	1.35%

	Wet Weight	MC (%db)	Dry Weight (lbs)
Kindling	1.75	10.00	1.59
Starter	5.01	20.37	4.16
L2	12.00	22.63	9.79
L3	8.34	20.58	6.92
L4 _s	4.52	22.26	3.70
L4 _b	13.05	20.58	10.82
Avg. Moisture (%db)		20.81	

Run 1 Results Summary

Test Segments

	Clock	ET(min)
L1 Ignition	10:04 AM	0
L1 End	11:20 AM	23
L1 Duration		23
Fuel Consumed (lbs-wet)		4.65
Fuel Consumed (lbs-dry)		3.64

L2 Loaded	11:20 AM	24
L2 End	12:19 PM	99
L2 Duration		75
Fuel Consumed (lbs-wet)		10.73
Fuel Consumed (lbs-dry)		8.52

L3 Loaded	12:20 PM	100
L3 End	1:17 PM	176
L3 Duration		76
Fuel Consumed (lbs-wet)		7.40
Fuel Consumed (lbs-dry)		5.98

L4 Loaded	1:17 PM	177
L4 End	4:23 PM	450
L4 Duration		273
Fuel Consumed (lbs-wet)		17.89
Fuel Consumed (lbs-dry)		14.84

Total Fuel Burned (lbs-wet)	40.67
Total Fuel Burned (lbs-dry)	32.97

14.96 (kg-dry) 1.99 kg/hr dry

Firebox Avg Temps (F)

L1TS _{avg(i)}	65
L1TS _{avg(f)}	383
L2TS _{avg(i)}	392
L2TS _{avg(f)}	493
L3TS _{avg(i)}	492
L3TS _{avg(f)}	496
L4TS _{avg(i)}	493
L4TS _{avg(f)}	380

Burn Time Rating (hrs)

BTR	5
-----	---

Burn Rate (lbs-wet/hr) (dry kg/hr)

BR _{L2}	12.13	4.31
BR _{L2}	8.58	3.09
BR _{L3}	5.84	2.14
BR _{L4}	3.93	1.78
OVERALL	5.42	1.99

1st hr Start	10:04 AM	0
1st hr End	11:04 AM	60
L4 Duration		60
Fuel Consumed (lbs-wet)		11.92
Fuel Consumed (lbs-dry)		9.45

PM Results

Burn Phase:	L1	L2	L3	L4	1st Hr	Total
E _T :	1.7	1.1	0.7	3.0	2.6	6.4
E _{g/hr} :	4.3	0.92	0.53	0.65	2.60	0.86
E _{g/kg} :	1.00	0.30	0.25	0.44	0.61	0.43
E _{g/MJ output} :	0.07	0.02	0.02	0.03		0.03
E _{lb/mmbtu output} :	0.16	0.05	0.04	0.07	-	0.07
CO (g):	38.3	81.9	92.9	271.2		484.2
CO (g/min):	1.66	1.09	1.22	0.99		1.08
Output (BTU/hr)	60,178	42,553	30,998	21,178		28,251
Efficiency (%)	72.1%	74.3%	76.0%	75.5%		74.9%

Rolling Average Max Values

	1-min Avg.	5-min Avg.	60-min Avg
PM (g/hr)	67.0	22.4	2.7

Quality Checks

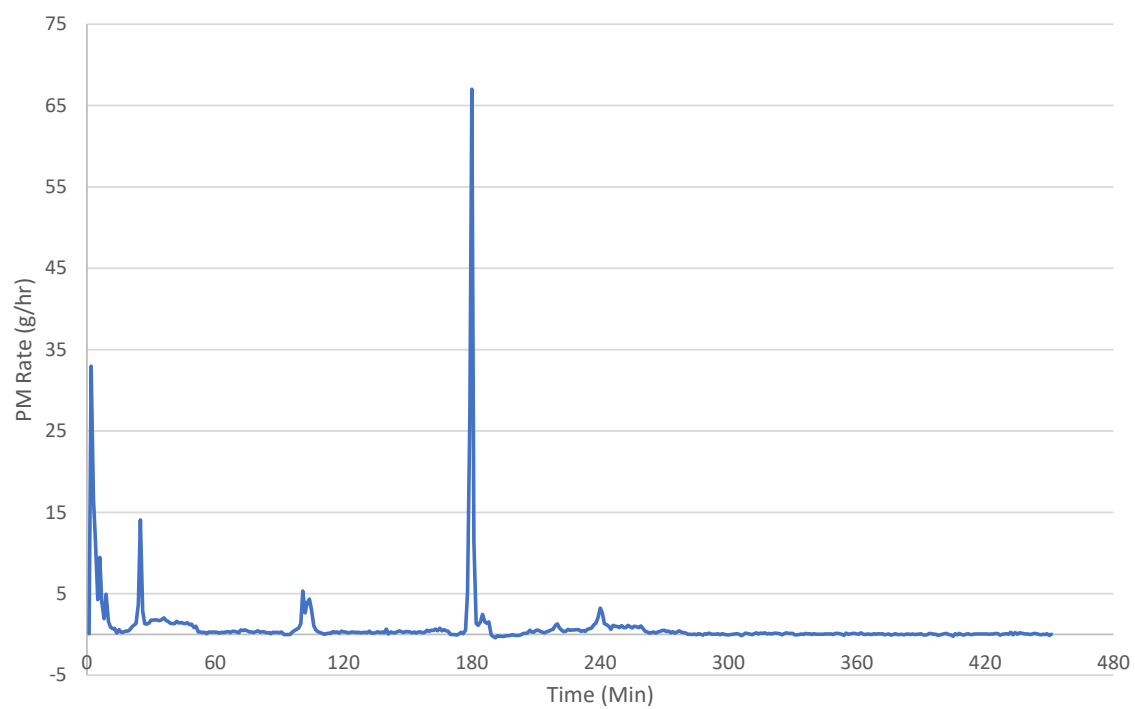
Requirement

Observed

Pass/Fail

Filter/Dewpt. Temp	Dewpoint must never exceed filter temp	Max Δ -52.3	PASS
Filter Temp	Must be between 80 and 90F at all times	81 / 88.8	PASS
Ambient Temp	Must be between 65 and 90F at all times	66.5 / 72.1	PASS
Minimum Tunnel Flow	>600 CFM	737.6	PASS
Weight Loss	Must be >0.1 lb per 20 min	Min -0.29 lb.	PASS

TEOM PM Emissions



L1 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/27/25
Run: 1
Control #: 238
Test Duration: 23
Output Category: L1

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	72.1%	77.1%
Combustion Efficiency	98.5%	98.5%
Heat Transfer Efficiency	73.2%	78.3%

Output Rate (kJ/h)	63,438	60,178	(Btu/h)
Burn Rate (kg/h)	4.40	9.71	(lb/h)
Input (kJ/h)	87,978	83,456	(Btu/h)

Test Load Weight (dry kg)	1.69	3.72	dry lb
MC wet (%)	21.65		
MC dry (%)	27.64		
Particulate (g)	N/A		
CO (g)	38		
Test Duration (h)	0.38		

Emissions	Particulate	CO
g/MJ Output	N/A	1.57
g/kg Dry Fuel	N/A	22.67
g/h	N/A	99.85
g/min	N/A	1.66
lb/MM Btu Output	N/A	3.66

Air/Fuel Ratio (A/F)	9.52
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VERSION:

2.4

4/15/2010

L2 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/27/25
Run: 1
Control #: 238
Test Duration: 75
Output Category: L2

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	74.3%	79.4%
Combustion Efficiency	98.6%	98.6%
Heat Transfer Efficiency	75.3%	80.6%

Output Rate (kJ/h)	44,858	42,553	(Btu/h)
Burn Rate (kg/h)	3.02	6.67	(lb/h)
Input (kJ/h)	60,413	57,308	(Btu/h)

Test Load Weight (dry kg)	3.78	8.33	dry lb
MC wet (%)	20.64		
MC dry (%)	26.01		
Particulate (g)	N/A		
CO (g)	82		
Test Duration (h)	1.25		

Emissions	Particulate	CO
g/MJ Output	N/A	1.46
g/kg Dry Fuel	N/A	21.66
g/h	N/A	65.51
g/min	N/A	1.09
lb/MM Btu Output	N/A	3.39

Air/Fuel Ratio (A/F)	9.55
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VERSION:

2.4

4/15/2010

L3 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/27/25
Run: 1
Control #: 238
Test Duration: 76
Output Category: L3

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	76.0%	81.3%
Combustion Efficiency	97.7%	97.7%
Heat Transfer Efficiency	77.8%	83.2%

Output Rate (kJ/h)	32,677	30,998	(Btu/h)
Burn Rate (kg/h)	2.15	4.74	(lb/h)
Input (kJ/h)	42,990	40,781	(Btu/h)

Test Load Weight (dry kg)	2.73	6.01	dry lb
MC wet (%)	19.24		
MC dry (%)	23.82		
Particulate (g)	N/A		
CO (g)	93		
Test Duration (h)	1.27		

Emissions	Particulate	CO
g/MJ Output	N/A	2.24
g/kg Dry Fuel	N/A	34.07
g/h	N/A	73.33
g/min	N/A	1.22
lb/MM Btu Output	N/A	5.22

Air/Fuel Ratio (A/F)	10.61
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VERSION:

2.4

4/15/2010

L4 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/27/25
Run: 1
Control #: 238
Test Duration: 273
Output Category: L4

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	75.5%	80.8%
Combustion Efficiency	97.3%	97.3%
Heat Transfer Efficiency	77.6%	83.0%

Output Rate (kJ/h)	22,325	21,178	(Btu/h)
Burn Rate (kg/h)	1.48	3.26	(lb/h)
Input (kJ/h)	29,557	28,038	(Btu/h)

Test Load Weight (dry kg)	6.73	14.84	dry lb
MC wet (%)	17.05		
MC dry (%)	20.55		
Particulate (g)	N/A		
CO (g)	271		
Test Duration (h)	4.55		

Emissions	Particulate	CO
g/MJ Output	N/A	2.67
g/kg Dry Fuel	N/A	40.28
g/h	N/A	59.60
g/min	N/A	0.99
lb/MM Btu Output	N/A	6.20

Air/Fuel Ratio (A/F)	12.24
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VERSION:

2.4

4/15/2010

Run 1 TEOM Data

ET (min)	Ci - 1-min avg PM (ug/m ³)	Tunnel dP (in WC)	sqrtd P	Tunnel Temp (F)	Tunnel Temp - 10 minute Avg. (F)	Tunnel RH - 10 minute avg. (%)	Tunnel Velocity - Vsi (ft/s)	Tunnel Flow - Q _{std} (m ³ /min)	E _i (mg)	E _{g/hr, i} (g/hr)	PM 5-min Rolling Avg (g/hr)	PM 30-min Rolling Avg (g/hr)	PM (cumulative g)
0	70	0.075	0.2739	76.1	-	-	16.352	21.660	1.522	0.09	-	-	0.00
1	25460	0.075	0.2739	80.1	-	-	16.413	21.580	549.418	32.97	-	-	0.55
2	12971	0.075	0.2739	84.8	-	-	16.484	21.486	278.706	16.72	-	-	0.83
3	8842	0.076	0.2757	90.4	-	-	16.679	21.519	190.270	11.42	-	-	1.02
4	3349	0.074	0.2720	86.3	-	-	16.397	21.313	71.374	4.28	13.10	-	1.09
5	7280	0.076	0.2757	83.7	-	-	16.577	21.651	157.628	9.46	14.97	-	1.25
6	3088	0.075	0.2739	83.5	-	-	16.465	21.512	66.422	3.99	9.17	-	1.32
7	1508	0.075	0.2739	84.6	-	-	16.481	21.490	32.409	1.94	6.22	-	1.35
8	3889	0.073	0.2702	86.9	-	-	16.294	21.157	82.273	4.94	4.92	-	1.43
9	1251	0.074	0.2720	87.5	84.39	114.96	16.415	21.290	26.626	1.60	4.38	-	1.46
10	692	0.075	0.2739	87.9	85.57	129.03	16.531	21.425	14.823	0.89	2.67	-	1.47
11	554	0.073	0.2702	87.9	86.35	144.53	16.309	21.138	11.707	0.70	2.01	-	1.48
12	582	0.074	0.2720	88.2	86.69	160.97	16.425	21.276	12.384	0.74	1.77	-	1.50
13	138	0.074	0.2720	88.5	86.5	177.95	16.430	21.270	2.936	0.18	0.82	-	1.50
14	472	0.074	0.2720	88.9	86.76	194.84	16.436	21.263	10.036	0.60	0.62	-	1.51
15	211	0.073	0.2702	89.7	87.36	211.72	16.336	21.103	4.455	0.27	0.50	-	1.51
16	212	0.075	0.2739	90.3	88.04	228.47	16.567	21.379	4.532	0.27	0.41	-	1.52
17	334	0.072	0.2683	90.1	88.59	244.92	16.230	20.950	6.994	0.42	0.35	-	1.52
18	322	0.074	0.2720	90.3	88.93	260.61	16.457	21.236	6.834	0.41	0.39	-	1.53
19	421	0.075	0.2739	90.3	89.21	275.4	16.567	21.379	9.001	0.54	0.38	-	1.54
20	685	0.077	0.2775	90.2	89.44	289.4	16.785	21.664	14.844	0.89	0.51	-	1.56
21	898	0.073	0.2702	90.5	89.7	302.84	16.348	21.088	18.944	1.14	0.68	-	1.57
22	1049	0.075	0.2739	90.8	89.96	315.84	16.575	21.369	22.413	1.34	0.86	-	1.60
23	2911	0.075	0.2739	91	90.21	328.47	16.578	21.365	62.186	3.73	1.53	-	1.66
24	11150	0.074	0.2720	102.1	91.53	340.47	16.632	21.011	234.279	14.06	4.23	-	1.89
25	2254	0.074	0.2720	96.3	92.19	351.6	16.546	21.121	47.609	2.86	4.63	-	1.94
26	1042	0.075	0.2739	94.4	92.6	361.97	16.629	21.299	22.204	1.33	4.66	-	1.96
27	994	0.073	0.2702	93.6	92.95	371.5	16.394	21.029	20.894	1.25	4.65	-	1.98
28	1093	0.075	0.2739	93.5	93.27	380.19	16.616	21.317	23.303	1.40	4.18	-	2.01
29	1395	0.072	0.2683	93.4	93.58	388.2	16.278	20.888	29.149	1.75	1.72	-	2.04
30	1381	0.073	0.2702	93.5	93.91	395.53	16.392	21.030	29.037	1.74	1.50	-	2.07
31	1415	0.074	0.2720	93.7	94.23	402.17	16.507	21.170	29.964	1.80	1.59	-	2.10
32	1369	0.075	0.2739	93.8	94.53	408.06	16.620	21.311	29.184	1.75	1.69	-	2.12
33	1314	0.074	0.2720	94.6	94.89	413.37	16.521	21.153	27.804	1.67	1.74	-	2.15
34	1449	0.074	0.2720	95.6	94.24	418.35	16.536	21.134	30.633	1.84	1.76	-	2.18
35	1595	0.074	0.2720	96.2	94.23	423.4	16.545	21.123	33.699	2.02	1.82	-	2.22
36	1338	0.075	0.2739	96.7	94.46	428.51	16.663	21.255	28.443	1.71	1.80	-	2.24
37	1246	0.073	0.2702	97	94.8	433.82	16.444	20.964	26.120	1.57	1.76	-	2.27
38	1070	0.075	0.2739	97.2	95.17	439.26	16.671	21.246	22.724	1.36	1.70	-	2.29
39	1058	0.073	0.2702	97.3	95.56	444.78	16.449	20.959	22.172	1.33	1.60	-	2.32
40	1057	0.073	0.2702	97.2	95.93	450.36	16.447	20.960	22.160	1.33	1.46	-	2.34
41	1261	0.075	0.2739	97.1	96.27	455.87	16.669	21.248	26.784	1.61	1.44	-	2.36
42	1112	0.074	0.2720	97.4	96.63	461.23	16.562	21.100	23.470	1.41	1.41	-	2.39
43	1168	0.074	0.2720	98	96.97	466.47	16.571	21.088	24.621	1.48	1.43	-	2.41
44	1059	0.075	0.2739	98.4	97.25	471.56	16.689	21.223	22.477	1.35	1.43	-	2.44
45	1068	0.073	0.2702	98.4	97.47	476.43	16.465	20.938	22.359	1.34	1.44	-	2.46
46	1118	0.076	0.2757	98.4	97.64	481.13	16.800	21.364	23.890	1.43	1.40	-	2.48
47	932	0.073	0.2702	98.3	97.77	485.67	16.463	20.940	19.525	1.17	1.35	-	2.50
48	995	0.075	0.2739	98.1	97.86	490.04	16.684	21.228	21.113	1.27	1.31	-	2.52
49	651	0.075	0.2739	97.8	97.91	494.2	16.680	21.234	13.829	0.83	1.21	-	2.54
50	787	0.075	0.2739	95.6	97.75	498.25	16.647	21.276	16.752	1.01	1.14	-	2.55
51	240	0.075	0.2739	93.5	97.39	502.01	16.616	21.317	5.112	0.31	0.92	-	2.56
52	234	0.075	0.2739	91.9	96.84	505.38	16.592	21.348	4.986	0.30	0.74	-	2.56
53	174	0.076	0.2757	90.5	96.09	508.05	16.681	21.517	3.744	0.22	0.53	-	2.57
54	205	0.073	0.2702	90	95.25	510.16	16.341	21.097	4.321	0.26	0.42	-	2.57
55	77	0.074	0.2720	89.8	94.39	511.65	16.449	21.245	1.632	0.10	0.24	-	2.57
56	229	0.075	0.2739	89.2	93.47	512.49	16.551	21.400	4.909	0.29	0.24	-	2.58
57	218	0.073	0.2702	88.7	92.51	512.67	16.321	21.122	4.598	0.28	0.23	-	2.58
58	250	0.073	0.2702	88.2	91.52	512.3	16.314	21.132	5.279	0.32	0.25	-	2.59
59	209	0.077	0.2775	87.7	90.51	511.43	16.747	21.713	4.548	0.27	0.25	2.67	2.59
60	198	0.075	0.2739	87.2	89.67	509.99	16.521	21.439	4.236	0.25	0.28	2.68	2.60
61	126	0.076	0.2757	86.8	89	508.22	16.624	21.589	2.718	0.16	0.26	2.11	2.60
62	206	0.077	0.2775	86.6	88.47	506.33	16.730	21.735	4.476	0.27	0.26	1.83	2.60
63	190	0.075	0.2739	86.9	88.11	504.47	16.516	21.445	4.072	0.24	0.24	1.63	2.61
64	227	0.076	0.2757	86.7	87.78	502.65	16.623	21.591	4.909	0.29	0.24	1.56	2.61
65	273	0.074	0.2720	86.5	87.45	500.97	16.400	21.309	5.815	0.35	0.26	1.41	2.62
66	166	0.075	0.2739	86.2	87.15	499.5	16.506	21.459	3.563	0.21	0.27	1.34	2.62
67	293	0.074	0.2720	86	86.88	498.2	16.392	21.319	6.248	0.37	0.30	1.31	2.63
68	284	0.074	0.2720	85.7	86.63	497.03	16.388	21.325	6.047	0.36	0.32	1.23	2.63
69	220	0.076	0.2757	85.4	86.4	496.02	16.603	21.617	4.758	0.29	0.32	1.21	2.64
70	164	0.076	0.2757	85.2	86.2	495.17	16.600	21.621	3.542	0.21	0.29	1.20	2.64
71	420	0.077	0.2775	85	86.02	494.53	16.706	21.767	9.153	0.55	0.36	1.20	2.65
72	360	0.075	0.2739	84.9	85.85	494.07	16.486	21.484	7.731	0.46	0.37	1.19	2.66
73	415	0.074	0.2720	84.8	85.64	493.79	16.374	21.343	8.863	0.53	0.41	1.19	2.67
74	342	0.077	0.2775	84.5	85.42	493.62	16.698	21.777	7.451	0.45	0.44	1.19	2.68
75	242	0.075	0.2739	84.4	85.21	493.54	16.478	21.494	5.210	0.31	0.46	1.20	2.68
76	239	0.075	0.2739	84.2	85.01	493.47	16.475	21.498	5.139	0.31	0.41	1.20	2.69
77	178	0.074	0.2720	84	84.81	493.43	16.362	21.358	3.800	0.23	0.37	1.20	2.69
78	247	0.076	0.2757	83.9	84.63	493.43	16.580	21.647	5.343	0.32	0.32	1.19	2.70
79	331	0.076	0.2757	83.8	84.47	493.46	16.579	21.649	7.174	0.43	0.32	1.19	2.70
80	210	0.075	0.2739	83.6	84.31	493.49	16.466	21.510	4.507	0.27	0.31	1.18	2.71
81	259	0.077	0.2775	83.5	84.16	493.5	16.683	21.797	5.650	0.34	0.32	1.17	2.71
82	223	0.076	0.2757	83.4	84.01	493.49	16.573	21.657	4.829	0.29	0.33	1.15	2.72
83	153	0.076	0.2757	83.4	83.87	493.45	16.573	21.657	3.310	0.20	0.31	1.09	2.72
84	184	0.077	0.2775	83.1	83.73	493.37	16.677	21.805	4.004	0.24	0.27	0.85	2.72

Run 1 TEOM Data

85	66	0.076	0.2757	83	83.59	493.28	16.567	21.665	1.419	0.09	0.23	0.81	2.73
86	197	0.075	0.2739	82.9	83.46	493.19	16.456	21.524	4.238	0.25	0.21	0.79	2.73
87	174	0.075	0.2739	82.8	83.34	493.14	16.454	21.526	3.750	0.22	0.20	0.77	2.73
88	191	0.076	0.2757	82.7	83.22	493.15	16.562	21.671	4.143	0.25	0.21	0.75	2.74
89	150	0.077	0.2775	82.6	83.1	493.14	16.669	21.815	3.279	0.20	0.20	0.72	2.74
90	220	0.076	0.2757	82.5	82.99	493.13	16.559	21.675	4.762	0.29	0.24	0.70	2.75
91		0.076	0.2757	82.4	82.88	493.12					0.24	0.67	
92		0.076	0.2757	82.3	82.77	493.12					0.24	0.64	
93		0.077	0.2775	82.1	82.64	493.19					0.24	0.63	
94		0.076	0.2757	82.1	82.54	493.29					0.29	0.60	
95	202	0.075	0.2739	81.9	82.43	493.38	16.441	21.544	4.349	0.26	0.26	0.58	2.75
96	380	0.075	0.2739	81.8	82.32	493.44	16.439	21.546	8.190	0.49	0.38	0.56	2.76
97	471	0.075	0.2739	81.7	82.21	493.47	16.437	21.548	10.147	0.61	0.45	0.53	2.77
98	599	0.077	0.2775	81.5	82.09	493.42	16.652	21.837	13.078	0.78	0.54	0.52	2.78
99	1027	0.076	0.2757	81.4	81.97	493.37	16.542	21.697	22.287	1.34	0.70	0.50	2.80
100	4135	0.076	0.2757	89.2	82.64	493.28	16.661	21.542	89.072	5.34	1.71	0.49	2.89
101	2043	0.076	0.2757	87	83.1	493.29	16.627	21.586	44.109	2.65	2.14	0.49	2.94
102	3044	0.074	0.2720	87.6	83.63	493.62	16.416	21.288	64.793	3.89	2.80	0.56	3.00
103	3404	0.074	0.2720	88.7	84.29	494.53	16.433	21.267	72.393	4.34	3.51	0.58	3.07
104	2374	0.075	0.2739	89.5	85.03	496.14	16.555	21.394	50.799	3.05	3.85	0.63	3.13
105	846	0.075	0.2739	88	85.64	498.23	16.533	21.423	18.133	1.09	3.00	0.69	3.14
106	420	0.076	0.2757	86.6	86.12	500.51	16.621	21.593	9.078	0.54	2.58	0.72	3.15
107	265	0.075	0.2739	85.8	86.53	502.79	16.500	21.467	5.686	0.34	1.87	0.71	3.16
108	184	0.077	0.2775	85.4	86.92	505.04	16.712	21.759	4.014	0.24	1.05	0.70	3.16
109	90	0.074	0.2720	85.1	87.29	507.18	16.379	21.337	1.930	0.12	0.47	0.69	3.16
110	13	0.077	0.2775	84.8	86.85	509.24	16.703	21.771	0.289	0.02	0.25	0.68	3.16
111	63	0.075	0.2739	84.7	86.62	511.01	16.483	21.488	1.344	0.08	0.16	0.67	3.17
112	112	0.075	0.2739	84.5	86.31	512.3	16.480	21.492	2.416	0.14	0.12	0.67	3.17
113	106	0.075	0.2739	84.3	85.87	512.81	16.477	21.496	2.284	0.14	0.10	0.67	3.17
114	259	0.074	0.2720	84.3	85.35	512.47	16.367	21.352	5.538	0.33	0.14	0.66	3.18
115	208	0.074	0.2720	84.2	84.97	511.55	16.365	21.354	4.437	0.27	0.19	0.66	3.18
116	231	0.075	0.2739	84.2	84.73	510.38	16.475	21.498	4.964	0.30	0.24	0.66	3.19
117	135	0.076	0.2757	84.1	84.56	509.16	16.583	21.643	2.923	0.18	0.24	0.66	3.19
118	312	0.076	0.2757	84	84.42	507.89	16.582	21.645	6.752	0.41	0.30	0.66	3.20
119	237	0.076	0.2757	83.9	84.3	506.65	16.580	21.647	5.131	0.31	0.29	0.66	3.20
120	238	0.076	0.2757	83.8	84.2	505.47	16.579	21.649	5.144	0.31	0.30	0.67	3.21
121	161	0.075	0.2739	83.7	84.1	504.39	16.468	21.508	3.461	0.21	0.28	0.67	3.21
122	182	0.076	0.2757	83.7	84.02	503.37	16.577	21.651	3.943	0.24	0.29	0.67	3.21
123	242	0.076	0.2757	83.6	83.95	502.45	16.576	21.653	5.237	0.31	0.27	0.67	3.22
124	201	0.075	0.2739	83.5	83.87	501.61	16.465	21.512	4.324	0.26	0.27	0.67	3.22
125	192	0.075	0.2739	83.5	83.8	500.86	16.465	21.512	4.129	0.25	0.25	0.67	3.23
126	194	0.077	0.2775	83.5	83.73	500.18	16.683	21.797	4.236	0.25	0.26	0.67	3.23
127	157	0.076	0.2757	83.4	83.66	499.54	16.573	21.657	3.400	0.20	0.26	0.66	3.23
128	180	0.076	0.2757	83.5	83.61	499.03	16.574	21.655	3.906	0.23	0.24	0.66	3.24
129	206	0.076	0.2757	83.3	83.55	498.62	16.571	21.659	4.472	0.27	0.24	0.66	3.24
130	163	0.075	0.2739	83.2	83.49	498.28	16.460	21.518	3.499	0.21	0.23	0.66	3.25
131	310	0.077	0.2775	83.1	83.43	498.05	16.677	21.805	6.751	0.41	0.26	0.66	3.25
132	133	0.076	0.2757	83	83.36	497.9	16.567	21.665	2.891	0.17	0.26	0.65	3.26
133	136	0.076	0.2757	83.1	83.31	497.79	16.568	21.663	2.945	0.18	0.25	0.65	3.26
134	164	0.076	0.2757	83.1	83.27	497.8	16.568	21.663	3.560	0.21	0.24	0.64	3.26
135	246	0.076	0.2757	83	83.22	497.89	16.567	21.665	5.321	0.32	0.26	0.64	3.27
136	158	0.075	0.2739	82.9	83.16	498.05	16.456	21.524	3.396	0.20	0.22	0.64	3.27
137	247	0.074	0.2720	82.9	83.11	498.28	16.346	21.380	5.280	0.32	0.25	0.64	3.28
138	146	0.075	0.2739	82.8	83.04	498.52	16.454	21.526	3.135	0.19	0.25	0.64	3.28
139	497	0.075	0.2739	82.8	82.99	498.76	16.454	21.526	10.704	0.64	0.33	0.64	3.29
140	44	0.076	0.2757	82.7	82.94	499.03	16.562	21.671	0.964	0.06	0.28	0.64	3.29
141	239	0.075	0.2739	82.7	82.9	499.26	16.453	21.528	5.153	0.31	0.30	0.64	3.30
142	180	0.076	0.2757	82.7	82.87	499.48	16.562	21.671	3.899	0.23	0.29	0.64	3.30
143	158	0.075	0.2739	82.6	82.82	499.7	16.451	21.530	3.410	0.20	0.29	0.64	3.30
144	225	0.076	0.2757	82.5	82.76	499.86	16.559	21.675	4.872	0.29	0.22	0.64	3.31
145	357	0.074	0.2720	82.5	82.71	499.97	16.340	21.388	7.630	0.46	0.30	0.64	3.32
146	260	0.075	0.2739	82.4	82.66	500.04	16.448	21.534	5.590	0.34	0.30	0.64	3.32
147	177	0.075	0.2739	82.3	82.6	500.05	16.447	21.536	3.813	0.23	0.30	0.65	3.33
148	264	0.075	0.2739	82.3	82.55	500.03	16.447	21.536	5.683	0.34	0.33	0.65	3.33
149	257	0.075	0.2739	82.3	82.5	499.97	16.447	21.536	5.528	0.33	0.34	0.65	3.34
150	225	0.073	0.2702	82.3	82.46	499.88	16.226	21.247	4.774	0.29	0.30	0.65	3.34
151	153	0.075	0.2739	82.3	82.42	499.81	16.447	21.536	3.297	0.20	0.28	0.64	3.34
152	227	0.077	0.2775	82.2	82.37	499.71	16.663	21.823	4.945	0.30	0.29	0.64	3.35
153	122	0.075	0.2739	82.1	82.32	499.62	16.444	21.540	2.635	0.16	0.25	0.63	3.35
154	218	0.077	0.2775	82.1	82.28	499.52	16.661	21.825	4.761	0.29	0.24	0.62	3.36
155	236	0.075	0.2739	82.1	82.24	499.37	16.444	21.540	5.081	0.30	0.25	0.62	3.36
156	138	0.076	0.2757	82.1	82.21	499.25	16.553	21.683	2.994	0.18	0.24	0.62	3.37
157	206	0.074	0.2720	82	82.18	499.18	16.332	21.398	4.407	0.26	0.24	0.61	3.37
158	400	0.076	0.2757	82	82.15	499.16	16.551	21.685	8.669	0.52	0.31	0.60	3.38
159	293	0.076	0.2757	82	82.12	499.18	16.551	21.685	6.351	0.38	0.33	0.58	3.38
160	389	0.074	0.2720	82.1	82.1	499.22	16.334	21.396	8.334	0.50	0.37	0.50	3.39
161	373	0.077	0.2775	82	82.07	499.29	16.660	21.827	8.138	0.49	0.43	0.46	3.40
162	508	0.077	0.2775	82	82.05	499.46	16.660	21.827	11.095	0.67	0.51	0.40	3.41
163	348	0.077	0.2775	82	82.04	499.65	16.660	21.827	7.603	0.46	0.50	0.34	3.42
164	573	0.076	0.2757	82.1	82.04	499.93	16.553	21.683	12.417	0.75	0.57	0.30	3.43
165	333	0.076	0.2757	82	82.03	500.34	16.551	21.685	7.226	0.43	0.56	0.29	3.44
166	460	0.074	0.2720	81.9	82.01	500.81	16.331	21.400	9.834	0.59	0.58	0.29	3.45
167	351	0.076	0.2757	81.9	82	501.31	16.550	21.687	7.614	0.46	0.54	0.29	3.46
168	284	0.076	0.2757	81.9	81.99	501.88	16.550	21.687	6.157	0.37	0.52	0.30	3.46
169		0.077	0.2775	82	81.99	502.51					0.46	0.30	
170		0.076	0.2757	81.9	81.97	503.18					0.47	0.31	
171		0.076	0.2757	81.7	81.94	503.79					0.41	0.31	
172	-80	0.077	0.2775	81.5	81.89	504.29	16.652	21.837	-1.741	-0.10	0.13	0.32	3.46

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173	37	0.075	0.2739	81.2	81.81	504.6	16.430	21.558	0.807	0.05	-0.03	0.32	3.46
174	192	0.077	0.2775	81	81.7	504.58	16.644	21.847	4.184	0.25	0.06	0.31	3.47
175	79	0.076	0.2757	80.8	81.58	504.2	16.533	21.709	1.706	0.10	0.07	0.31	3.47
176	405	0.075	0.2739	80.5	81.44	503.43	16.419	21.572	8.741	0.52	0.16	0.31	3.48
177	4066	0.075	0.2739	89	82.15	502.3	16.548	21.404	87.030	5.22	1.23	0.30	3.56
178	21121	0.076	0.2757	93.5	83.31	500.57	16.726	21.458	453.219	27.19	6.66	0.31	4.02
179	52199	0.076	0.2757	96.8	84.79	498.3	16.776	21.394	1116.763	67.01	20.01	0.40	5.13
180	9065	0.074	0.2720	102	86.8	496.44	16.631	21.013	190.487	11.43	22.27	0.89	5.32
181	1032	0.075	0.2739	95.2	88.15	494.95	16.641	21.284	21.964	1.32	22.43	2.10	5.35
182	868	0.075	0.2739	93.1	89.31	493.96	16.610	21.324	18.518	1.11	21.61	2.30	5.36
183	1201	0.074	0.2720	93	90.49	493.62	16.497	21.184	25.443	1.53	16.48	2.32	5.39
184	1917	0.076	0.2757	93.6	91.75	494.1	16.727	21.456	41.126	2.47	3.57	2.34	5.43
185	1195	0.076	0.2757	94.3	93.1	495.46	16.738	21.443	25.617	1.54	1.59	2.36	5.46
186	1077	0.073	0.2702	94.8	94.53	497.57	16.412	21.006	22.620	1.36	1.60	2.40	5.48
187	1205	0.074	0.2720	92.9	94.92	500.19	16.495	21.186	25.527	1.53	1.68	2.42	5.50
188	-32	0.075	0.2739	91.3	94.7	503.23	16.582	21.359	-0.677	-0.04	1.37	2.45	5.50
189	-201	0.075	0.2739	90	94.02	506.5	16.563	21.384	-4.300	-0.26	0.83	2.47	5.50
190	-326	0.075	0.2739	89.1	92.73	508.98	16.549	21.402	-6.978	-0.42	0.43	2.46	5.49
191	-138	0.073	0.2702	88.6	92.07	510.71	16.320	21.124	-2.917	-0.18	0.13	2.45	5.49
192	-174	0.073	0.2702	88	91.56	511.62	16.311	21.136	-3.686	-0.22	-0.22	2.44	5.49
193	-185	0.076	0.2757	87.6	91.02	511.68	16.637	21.574	-3.985	-0.24	-0.26	2.43	5.48
194	-216	0.076	0.2757	87.3	90.39	510.88	16.632	21.580	-4.665	-0.28	-0.27	2.43	5.48
195	-110	0.076	0.2757	87.1	89.67	509.21	16.629	21.584	-2.377	-0.14	-0.21	2.42	5.48
196	-123	0.075	0.2739	86.8	88.87	506.85	16.515	21.447	-2.642	-0.16	-0.21	2.41	5.47
197	-97	0.073	0.2702	86.8	88.26	504.06	16.293	21.159	-2.048	-0.12	-0.19	2.40	5.47
198	-17	0.076	0.2757	86.6	87.79	501.15	16.621	21.593	-0.361	-0.02	-0.15	2.39	5.47
199	-98	0.075	0.2739	86.6	87.45	498.32	16.512	21.451	-2.100	-0.13	-0.11	2.38	5.47
200	-96	0.075	0.2739	86.5	87.19	495.72	16.510	21.453	-2.051	-0.12	-0.11	2.38	5.47
201	-88	0.076	0.2757	86.5	86.98	493.42	16.620	21.595	-1.907	-0.11	-0.10	2.37	5.46
202	-30	0.075	0.2739	86.4	86.82	491.43	16.509	21.455	-0.635	-0.04	-0.08	2.36	5.46
203	88	0.074	0.2720	86.5	86.71	489.77	16.400	21.309	1.867	0.11	-0.06	2.36	5.47
204	86	0.075	0.2739	86.5	86.63	488.47	16.510	21.453	1.852	0.11	-0.01	2.35	5.47
205	127	0.075	0.2739	86.5	86.57	487.55	16.510	21.453	2.732	0.16	0.05	2.34	5.47
206	397	0.076	0.2757	86.7	86.56	486.99	16.623	21.591	8.581	0.51	0.17	2.34	5.48
207	237	0.076	0.2757	86.8	86.56	486.81	16.624	21.589	5.108	0.31	0.24	2.34	5.48
208	216	0.075	0.2739	87	86.6	486.97	16.518	21.443	4.637	0.28	0.27	2.34	5.49
209	393	0.075	0.2739	87.2	86.66	487.45	16.521	21.439	8.418	0.51	0.35	2.34	5.50
210	396	0.075	0.2739	87.2	86.73	488.19	16.521	21.439	8.491	0.51	0.42	2.34	5.51
211	295	0.075	0.2739	87.3	86.81	489.19	16.522	21.437	6.333	0.38	0.40	2.35	5.51
212	213	0.076	0.2757	87.3	86.9	490.4	16.632	21.580	4.588	0.28	0.39	2.35	5.52
213	157	0.077	0.2775	87.2	86.97	491.79	16.740	21.723	3.417	0.21	0.37	2.36	5.52
214	256	0.074	0.2720	87.3	87.05	493.22	16.412	21.294	5.451	0.33	0.34	2.36	5.53
215	333	0.074	0.2720	87.2	87.12	494.65	16.410	21.296	7.086	0.43	0.32	2.35	5.53
216	421	0.076	0.2757	87.3	87.18	496.05	16.632	21.580	9.093	0.55	0.36	2.36	5.54
217	499	0.074	0.2720	87.3	87.23	497.38	16.412	21.294	10.619	0.64	0.43	2.36	5.55
218	860	0.075	0.2739	87.4	87.27	498.65	16.524	21.435	18.437	1.11	0.61	2.36	5.57
219	1005	0.076	0.2757	87.4	87.29	499.87	16.634	21.578	21.688	1.30	0.80	2.36	5.59
220	606	0.076	0.2757	87.4	87.31	501.02	16.634	21.578	13.086	0.79	0.88	2.38	5.61
221	402	0.076	0.2757	87.4	87.32	502.09	16.634	21.578	8.682	0.52	0.87	2.39	5.61
222	265	0.075	0.2739	87.4	87.33	503.13	16.524	21.435	5.683	0.34	0.81	2.39	5.62
223	320	0.074	0.2720	87.4	87.35	504.13	16.413	21.292	6.821	0.41	0.67	2.39	5.63
224	488	0.075	0.2739	87.4	87.36	505.1	16.524	21.435	10.459	0.63	0.54	2.39	5.64
225	401	0.074	0.2720	87.5	87.39	506.08	16.415	21.290	8.544	0.51	0.48	2.39	5.65
226	439	0.074	0.2720	87.6	87.42	507.07	16.416	21.288	9.342	0.56	0.49	2.39	5.65
227	438	0.075	0.2739	87.6	87.45	508.09	16.527	21.431	9.391	0.56	0.53	2.39	5.66
228	450	0.075	0.2739	87.6	87.47	509.13	16.527	21.431	9.647	0.58	0.57	2.39	5.67
229	446	0.077	0.2775	87.6	87.49	510.17	16.746	21.715	9.693	0.58	0.56	2.36	5.68
230	286	0.075	0.2739	87.6	87.51	511.19	16.527	21.431	6.137	0.37	0.53	2.33	5.69
231	366	0.077	0.2775	87.6	87.53	512.17	16.746	21.715	7.946	0.48	0.51	2.30	5.70
232	291	0.074	0.2720	87.7	87.56	513.14	16.418	21.286	6.188	0.37	0.48	2.31	5.70
233	478	0.074	0.2720	87.6	87.58	514.03	16.416	21.288	10.169	0.61	0.48	2.31	5.71
234	531	0.076	0.2757	87.6	87.6	514.91	16.637	21.574	11.453	0.69	0.50	2.31	5.73
235	604	0.076	0.2757	87.5	87.6	515.73	16.635	21.576	13.032	0.78	0.59	2.32	5.74
236	879	0.076	0.2757	87.6	87.6	516.51	16.637	21.574	18.969	1.14	0.72	2.33	5.76
237	1093	0.075	0.2739	87.6	87.6	517.19	16.527	21.431	23.424	1.41	0.92	2.25	5.78
238	1615	0.075	0.2739	87.6	87.6	517.83	16.527	21.431	34.613	2.08	1.22	1.80	5.82
239	2519	0.075	0.2739	87.6	87.6	518.44	16.527	21.431	53.990	3.24	1.73	0.67	5.87
240	2037	0.076	0.2757	87.7	87.61	519.09	16.638	21.572	43.937	2.64	2.10	0.51	5.91
241	1036	0.075	0.2739	87.7	87.62	519.77	16.528	21.429	22.201	1.33	2.14	0.54	5.94
242	923	0.075	0.2739	87.6	87.61	520.37	16.527	21.431	19.773	1.19	2.09	0.57	5.96
243	793	0.075	0.2739	87.3	87.58	520.97	16.522	21.437	16.992	1.02	1.88	0.56	5.97
244	481	0.074	0.2720	87.1	87.53	521.51	16.409	21.298	10.245	0.61	1.36	0.54	5.98
245	870	0.075	0.2739	87	87.48	521.98	16.518	21.443	18.663	1.12	1.05	0.53	6.00
246	781	0.074	0.2720	86.9	87.41	522.4	16.406	21.302	16.635	1.00	0.99	0.52	6.02
247	744	0.076	0.2757	86.8	87.33	522.73	16.624	21.589	16.052	0.96	0.94	0.51	6.03
248	644	0.076	0.2757	86.6	87.23	522.97	16.621	21.593	13.914	0.83	0.91	0.53	6.05
249	835	0.074	0.2720	86.6	87.13	523.05	16.401	21.307	17.783	1.07	1.00	0.55	6.07
250	658	0.074	0.2720	86.4	87	522.98	16.398	21.311	14.033	0.84	0.94	0.57	6.08
251	648	0.077	0.2775	86.3	86.86	522.79	16.726	21.741	14.093	0.85	0.91	0.60	6.09
252	850	0.076	0.2757	86.2	86.72	522.51	16.615	21.601	18.365	1.10	0.94	0.61	6.11
253	713	0.078	0.2793	86.1	86.6	522.17	16.831	21.886	15.600	0.94	0.96	0.63	6.13
254	605	0.075	0.2739	86	86.49	521.76	16.503	21.463	12.995	0.78	0.90	0.66	6.14
255	779	0.077	0.2775	85.8	86.37	521.36	16.718	21.751	16.940	1.02	0.94	0.67	6.16
256	734	0.075	0.2739	85.8	86.26	520.92	16.500	21.467	15.765	0.95	0.96	0.69	6.17
257	647	0.076	0.2757	85.7	86.15	520.51	16.608	21.611	13.982	0.84	0.90	0.71	6.19
258	804	0.074	0.2720	85.6	86.05	520.11	16.386	21.327	17.136	1.03	0.92	0.73	6.20
259	564	0.075	0.2739	85.6	85.95	519.75	16.497	21.471	12.113	0.73	0.91	0.74	6.22
260	287	0.077	0.2775	85.5	85.86	519.46	16.714	21.757	6.234	0.37			

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261	233	0.075	0.2739	85.5	85.78	519.18	16.495	21.473	4.994	0.30	0.65	0.78	6.23
262	120	0.073	0.2702	85.5	85.71	518.97	16.274	21.184	2.549	0.15	0.52	0.79	6.23
263	172	0.076	0.2757	85.4	85.64	518.78	16.603	21.617	3.710	0.22	0.36	0.79	6.23
264	237	0.076	0.2757	85.4	85.58	518.68	16.603	21.617	5.131	0.31	0.27	0.79	6.24
265	135	0.076	0.2757	85.4	85.54	518.59	16.603	21.617	2.912	0.17	0.23	0.79	6.24
266	244	0.076	0.2757	85.4	85.5	518.59	16.603	21.617	5.279	0.32	0.23	0.79	6.25
267	277	0.077	0.2775	85.3	85.46	518.64	16.710	21.761	6.025	0.36	0.28	0.78	6.25
268	382	0.074	0.2720	85.3	85.43	518.77	16.382	21.333	8.152	0.49	0.33	0.79	6.26
269	408	0.075	0.2739	85.2	85.39	518.98	16.490	21.478	8.765	0.53	0.37	0.78	6.27
270	251	0.076	0.2757	85.1	85.35	519.19	16.599	21.623	5.433	0.33	0.40	0.78	6.28
271	323	0.075	0.2739	85	85.3	519.48	16.487	21.482	6.943	0.42	0.42	0.78	6.28
272	147	0.075	0.2739	85	85.25	519.8	16.487	21.482	3.164	0.19	0.39	0.79	6.29
273	264	0.073	0.2702	84.9	85.2	520.17	16.265	21.196	5.600	0.34	0.36	0.79	6.29
274	117	0.075	0.2739	84.8	85.14	520.55	16.484	21.486	2.510	0.15	0.28	0.79	6.29
275	223	0.076	0.2757	84.6	85.06	520.96	16.591	21.633	4.828	0.29	0.28	0.79	6.30
276	339	0.075	0.2739	84.6	84.98	521.32	16.481	21.490	7.280	0.44	0.28	0.78	6.31
277	208	0.076	0.2757	84.5	84.9	521.69	16.589	21.635	4.501	0.27	0.30	0.77	6.31
278	185	0.077	0.2775	84.4	84.81	522	16.697	21.779	4.038	0.24	0.28	0.76	6.31
279	130	0.075	0.2739	84.3	84.72	522.24	16.477	21.496	2.804	0.17	0.28	0.74	6.32
280	26	0.074	0.2720	84.1	84.62	522.42	16.364	21.356	0.554	0.03	0.23	0.73	6.32
281	24	0.075	0.2739	83.8	84.5	522.46	16.469	21.506	0.520	0.03	0.15	0.73	6.32
282	-15	0.076	0.2757	83.6	84.36	522.34	16.576	21.653	-0.325	-0.02	0.09	0.72	6.32
283	31	0.076	0.2757	83.4	84.21	521.97	16.573	21.657	0.677	0.04	0.05	0.72	6.32
284	-45	0.077	0.2775	83.2	84.05	521.37	16.678	21.803	-0.973	-0.06	0.01	0.70	6.32
285	81	0.074	0.2720	82.9	83.88	520.47	16.346	21.380	1.732	0.10	0.02	0.70	6.32
286	3	0.074	0.2720	82.7	83.69	519.31	16.343	21.384	0.075	0.00	0.01	0.69	6.32
287	-76	0.074	0.2720	82.5	83.49	517.86	16.340	21.388	-1.626	-0.10	0.00	0.68	6.32
288	56	0.076	0.2757	82.3	83.28	516.17	16.556	21.679	1.221	0.07	0.01	0.67	6.32
289	16	0.075	0.2739	82.1	83.06	514.26	16.444	21.540	0.343	0.02	0.02	0.66	6.32
290	119	0.074	0.2720	82	82.85	512.16	16.332	21.398	2.542	0.15	0.03	0.65	6.32
291	5	0.075	0.2739	81.8	82.65	509.93	16.439	21.546	0.104	0.01	0.03	0.64	6.32
292	16	0.076	0.2757	81.6	82.45	507.64	16.545	21.693	0.350	0.02	0.05	0.64	6.32
293	6	0.077	0.2775	81.4	82.25	505.35	16.651	21.839	0.130	0.01	0.04	0.63	6.32
294	56	0.075	0.2739	81.3	82.06	503.08	16.431	21.556	1.203	0.07	0.05	0.62	6.32
295	-51	0.076	0.2757	81.2	81.89	500.89	16.539	21.701	-1.100	-0.07	0.01	0.60	6.32
296	72	0.076	0.2757	81	81.72	498.78	16.536	21.705	1.556	0.09	0.03	0.59	6.32
297	4	0.073	0.2702	80.9	81.56	496.78	16.205	21.274	0.094	0.01	0.02	0.56	6.32
298	-30	0.076	0.2757	80.8	81.41	494.84	16.533	21.709	-0.654	-0.04	0.01	0.53	6.32
299	-42	0.075	0.2739	80.6	81.26	492.96	16.421	21.570	-0.913	-0.05	-0.01	0.47	6.32
300	-21	0.074	0.2720	80.5	81.11	491.13	16.309	21.427	-0.449	-0.03	0.00	0.42	6.32
301	15	0.075	0.2739	80.4	80.97	489.34	16.418	21.574	0.331	0.02	-0.02	0.40	6.32
302	51	0.075	0.2739	80.3	80.84	487.57	16.416	21.576	1.105	0.07	-0.01	0.38	6.32
303	61	0.074	0.2720	80.1	80.71	485.85	16.303	21.435	1.305	0.08	0.02	0.36	6.33
304	14	0.076	0.2757	80.1	80.59	484.19	16.522	21.723	0.304	0.02	0.03	0.35	6.33
305	-134	0.075	0.2739	79.9	80.46	482.56	16.410	21.584	-2.901	-0.17	0.00	0.34	6.32
306	-13	0.077	0.2775	79.8	80.34	481	16.626	21.872	-0.286	-0.02	-0.01	0.32	6.32
307	135	0.074	0.2720	79.8	80.23	479.46	16.299	21.441	2.891	0.17	0.02	0.30	6.33
308	69	0.075	0.2739	79.7	80.12	477.99	16.407	21.588	1.487	0.09	0.02	0.28	6.33
309	52	0.076	0.2757	79.7	80.03	476.62	16.516	21.731	1.129	0.07	0.03	0.27	6.33
310	-36	0.076	0.2757	79.6	79.94	475.35	16.515	21.733	-0.784	-0.05	0.05	0.26	6.33
311	78	0.076	0.2757	79.6	79.86	474.19	16.515	21.733	1.702	0.10	0.08	0.24	6.33
312	140	0.077	0.2775	79.5	79.78	473.13	16.621	21.878	3.071	0.18	0.08	0.22	6.33
313	46	0.075	0.2739	79.4	79.71	472.15	16.403	21.594	0.987	0.06	0.07	0.21	6.33
314	135	0.076	0.2757	79.3	79.63	471.22	16.510	21.739	2.927	0.18	0.09	0.20	6.34
315	94	0.076	0.2757	79.3	79.57	470.35	16.510	21.739	2.051	0.12	0.13	0.18	6.34
316	141	0.075	0.2739	79.2	79.51	469.5	16.399	21.598	3.046	0.18	0.14	0.17	6.34
317	33	0.076	0.2757	79.1	79.44	468.71	16.507	21.743	0.707	0.04	0.12	0.16	6.34
318	86	0.077	0.2775	79	79.37	467.94	16.614	21.888	1.873	0.11	0.13	0.14	6.34
319	31	0.077	0.2775	79	79.3	467.17	16.614	21.888	0.675	0.04	0.10	0.13	6.34
320	96	0.077	0.2775	78.9	79.23	466.39	16.612	21.890	2.092	0.13	0.10	0.12	6.35
321	126	0.076	0.2757	78.8	79.15	465.59	16.502	21.749	2.743	0.16	0.10	0.12	6.35
322	83	0.077	0.2775	78.7	79.07	464.76	16.609	21.894	1.817	0.11	0.11	0.12	6.35
323	59	0.075	0.2739	78.7	79	463.9	16.392	21.608	1.279	0.08	0.10	0.12	6.35
324	-28	0.076	0.2757	78.6	78.93	463.01	16.499	21.753	-0.600	-0.04	0.09	0.12	6.35
325	76	0.077	0.2775	78.6	78.86	462.12	16.607	21.896	1.657	0.10	0.08	0.11	6.35
326	148	0.077	0.2775	78.5	78.79	461.24	16.606	21.898	3.241	0.19	0.09	0.11	6.36
327	84	0.078	0.2793	78.5	78.73	460.35	16.713	22.040	1.858	0.11	0.09	0.10	6.36
328	86	0.075	0.2739	78.4	78.67	459.45	16.387	21.614	1.850	0.11	0.10	0.10	6.36
329	96	0.076	0.2757	78.4	78.61	458.48	16.496	21.757	2.083	0.12	0.13	0.09	6.36
330	-36	0.077	0.2775	78.2	78.54	457.45	16.601	21.904	-0.782	-0.05	0.10	0.09	6.36
331	-46	0.077	0.2775	78.1	78.47	456.35	16.600	21.906	-1.012	-0.06	0.05	0.08	6.36
332	-18	0.076	0.2757	78	78.4	455.16	16.490	21.766	-0.382	-0.02	0.02	0.08	6.36
333	30	0.075	0.2739	77.9	78.32	453.91	16.380	21.624	0.642	0.04	0.01	0.07	6.36
334	-21	0.078	0.2793	77.9	78.25	452.59	16.704	22.052	-0.468	-0.03	-0.02	0.07	6.36
335	96	0.075	0.2739	77.8	78.17	451.17	16.378	21.626	2.082	0.12	0.01	0.06	6.36
336	53	0.077	0.2775	77.7	78.09	449.66	16.594	21.914	1.160	0.07	0.04	0.06	6.36
337	72	0.077	0.2775	77.6	78	448.07	16.592	21.916	1.570	0.09	0.06	0.05	6.36
338	-12	0.077	0.2775	77.6	77.92	446.42	16.592	21.916	-0.270	-0.02	0.05	0.05	6.36
339	54	0.077	0.2775	77.4	77.82	444.74	16.589	21.921	1.192	0.07	0.07	0.05	6.37
340	18	0.077	0.2775	77.4	77.74	443.04	16.589	21.921	0.397	0.02	0.05	0.05	6.37
341	27	0.076	0.2757	77.3	77.66	441.34	16.479	21.780	0.592	0.04	0.04	0.05	6.37
342	11	0.076	0.2757	77.2	77.58	439.67	16.478	21.782	0.232	0.01	0.03	0.05	6.37
343	6	0.075	0.2739	77.2	77.51	438.01	16.369	21.638	0.133	0.01	0.03	0.05	6.37
344	45	0.077	0.2775	77.1	77.43	436.39	16.584	21.927	0.989	0.06	0.03	0.05	6.37
345	45	0.077	0.2775	77.1	77.36	434.82	16.584	21.927	0.985	0.06	0.04	0.05	6.37
346	43	0.077	0.2775	77	77.29	433.27	16.583	21.929	0.937	0.06	0.04	0.05	6.37
347	40	0.076	0.2757	76.9	77.22	431.77	16.473	21.788	0.864	0.05	0.05	0.05	6.37
348	-11	0.079	0.2811	76.9	77.15	430.3	16.795	22.214	-0.246	-0.01	0.04	0.05	6.37

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349	81	0.077	0.2775	76.8	77.09	428.88	16.580	21.933	1.787	0.11	0.05	0.05	6.37
350	105	0.076	0.2757	76.7	77.02	427.5	16.470	21.792	2.290	0.14	0.07	0.05	6.37
351	81	0.077	0.2775	76.7	76.96	426.17	16.578	21.935	1.779	0.11	0.08	0.05	6.38
352	6	0.075	0.2739	76.7	76.91	424.87	16.361	21.648	0.131	0.01	0.07	0.05	6.38
353	-93	0.076	0.2757	76.6	76.85	423.62	16.469	21.794	-2.031	-0.12	0.05	0.06	6.37
354	127	0.075	0.2739	76.6	76.8	422.39	16.360	21.650	2.758	0.17	0.06	0.05	6.38
355	25	0.077	0.2775	76.5	76.74	421.2	16.575	21.939	0.550	0.03	0.04	0.05	6.38
356	45	0.074	0.2720	76.5	76.69	420.08	16.249	21.507	0.977	0.06	0.03	0.05	6.38
357	92	0.077	0.2775	76.4	76.64	418.98	16.574	21.941	2.028	0.12	0.05	0.06	6.38
358	103	0.076	0.2757	76.4	76.59	417.92	16.466	21.798	2.254	0.14	0.10	0.06	6.38
359	42	0.077	0.2775	76.3	76.54	416.89	16.572	21.943	0.919	0.06	0.08	0.06	6.38
360	22	0.077	0.2775	76.2	76.49	415.89	16.570	21.945	0.489	0.03	0.08	0.06	6.38
361	137	0.076	0.2757	76.2	76.44	414.91	16.462	21.802	2.987	0.18	0.10	0.06	6.39
362	8	0.076	0.2757	76.2	76.39	413.97	16.462	21.802	0.170	0.01	0.08	0.06	6.39
363	-22	0.076	0.2757	76.2	76.35	413.06	16.462	21.802	-0.484	-0.03	0.05	0.06	6.39
364	27	0.078	0.2793	76.1	76.3	412.19	16.676	22.089	0.602	0.04	0.05	0.06	6.39
365	15	0.076	0.2757	76.1	76.26	411.35	16.461	21.804	0.335	0.02	0.04	0.07	6.39
366	-9	0.076	0.2757	76	76.21	410.51	16.459	21.806	-0.188	-0.01	0.01	0.07	6.39
367	72	0.076	0.2757	76	76.17	409.71	16.459	21.806	1.560	0.09	0.02	0.07	6.39
368	19	0.076	0.2757	76	76.13	408.94	16.459	21.806	0.406	0.02	0.03	0.06	6.39
369	66	0.077	0.2775	75.9	76.09	408.2	16.566	21.951	1.447	0.09	0.04	0.06	6.39
370	28	0.075	0.2739	75.9	76.06	407.49	16.349	21.664	0.602	0.04	0.05	0.07	6.39
371	60	0.076	0.2757	75.9	76.03	406.81	16.458	21.808	1.306	0.08	0.06	0.06	6.39
372	-54	0.076	0.2757	75.8	75.99	406.16	16.456	21.810	-1.169	-0.07	0.03	0.06	6.39
373	6	0.078	0.2793	75.8	75.95	405.52	16.671	22.095	0.142	0.01	0.03	0.06	6.39
374	36	0.077	0.2775	75.7	75.91	404.89	16.563	21.955	0.799	0.05	0.02	0.06	6.39
375	-66	0.077	0.2775	75.7	75.87	404.28	16.563	21.955	-1.446	-0.09	0.00	0.06	6.39
376	-22	0.078	0.2793	75.6	75.83	403.69	16.668	22.099	-0.479	-0.03	-0.03	0.05	6.39
377	78	0.077	0.2775	75.5	75.78	403.09	16.560	21.959	1.705	0.10	0.01	0.05	6.39
378	-19	0.076	0.2757	75.6	75.74	402.5	16.453	21.814	-0.417	-0.03	0.00	0.05	6.39
379	-4	0.075	0.2739	76.2	75.77	401.92	16.354	21.658	-0.096	-0.01	-0.01	0.05	6.39
380	21	0.077	0.2775	76.6	75.84	401.35	16.577	21.937	0.459	0.03	0.01	0.05	6.39
381	-27	0.077	0.2775	76.5	75.9	400.75	16.575	21.939	-0.593	-0.04	0.01	0.05	6.39
382	17	0.076	0.2757	76.4	75.96	400.16	16.466	21.798	0.363	0.02	0.00	0.04	6.39
383	37	0.077	0.2775	76.4	76.02	399.57	16.574	21.941	0.816	0.05	0.01	0.04	6.39
384	-12	0.075	0.2739	76.2	76.07	398.97	16.354	21.658	-0.259	-0.02	0.01	0.04	6.39
385	30	0.078	0.2793	76	76.1	398.35	16.675	22.091	0.653	0.04	0.01	0.04	6.39
386	-12	0.077	0.2775	76	76.14	397.72	16.567	21.949	-0.271	-0.02	0.02	0.04	6.39
387	22	0.077	0.2775	75.9	76.18	397.11	16.566	21.951	0.486	0.03	0.02	0.04	6.39
388	20	0.077	0.2775	75.8	76.2	396.49	16.564	21.953	0.435	0.03	0.01	0.03	6.39
389	66	0.077	0.2775	75.8	76.16	395.85	16.564	21.953	1.456	0.09	0.03	0.03	6.40
390	-31	0.075	0.2739	75.7	76.07	395.2	16.346	21.668	-0.668	-0.04	0.02	0.03	6.40
391	-74	0.075	0.2739	75.6	75.98	394.58	16.345	21.670	-1.609	-0.10	0.00	0.04	6.39
392	-4	0.076	0.2757	75.6	75.9	393.96	16.453	21.814	-0.093	-0.01	-0.01	0.04	6.39
393	89	0.077	0.2775	75.5	75.81	393.34	16.560	21.959	1.954	0.12	0.01	0.03	6.40
394	76	0.077	0.2775	75.5	75.74	392.74	16.560	21.959	1.665	0.10	0.01	0.03	6.40
395	15	0.076	0.2757	75.4	75.68	392.17	16.450	21.818	0.330	0.02	0.03	0.03	6.40
396	27	0.078	0.2793	75.4	75.62	391.61	16.665	22.104	0.591	0.04	0.05	0.04	6.40
397	-84	0.077	0.2775	75.3	75.56	391.06	16.557	21.964	-1.853	-0.11	0.03	0.03	6.40
398	-44	0.076	0.2757	75.3	75.51	390.53	16.449	21.820	-0.967	-0.06	0.00	0.03	6.40
399	4	0.078	0.2793	75.3	75.46	390.02	16.664	22.106	0.096	0.01	-0.02	0.03	6.40
400	76	0.076	0.2757	75.3	75.42	389.51	16.449	21.820	1.668	0.10	-0.01	0.03	6.40
401	107	0.077	0.2775	75.2	75.38	389.03	16.555	21.966	2.355	0.14	0.02	0.03	6.40
402	-5	0.078	0.2793	75.1	75.33	388.56	16.661	22.110	-0.111	-0.01	0.04	0.03	6.40
403	-48	0.078	0.2793	75.1	75.29	388.1	16.661	22.110	-1.066	-0.06	0.04	0.03	6.40
404	-163	0.076	0.2757	75	75.24	387.63	16.444	21.827	-3.567	-0.21	-0.01	0.03	6.39
405	77	0.078	0.2793	75.6	75.26	387.12	16.668	22.099	1.691	0.10	-0.01	0.03	6.40
406	-32	0.076	0.2757	75.9	75.31	386.65	16.458	21.808	-0.702	-0.04	-0.05	0.03	6.40
407	106	0.075	0.2739	75.9	75.37	386.14	16.349	21.664	2.291	0.14	-0.02	0.03	6.40
408	-5	0.077	0.2775	75.8	75.42	385.65	16.564	21.953	-0.114	-0.01	0.00	0.03	6.40
409	-68	0.076	0.2757	75.8	75.47	385.2	16.456	21.810	-1.484	-0.09	0.02	0.03	6.40
410	9	0.075	0.2739	75.6	75.5	384.76	16.345	21.670	0.201	0.01	0.00	0.02	6.40
411	81	0.076	0.2757	75.6	75.54	384.36	16.453	21.814	1.773	0.11	0.03	0.02	6.40
412	-5	0.078	0.2793	75.4	75.57	383.99	16.665	22.104	-0.110	-0.01	0.00	0.02	6.40
413	-4	0.076	0.2757	75.4	75.6	383.65	16.450	21.818	-0.092	-0.01	0.00	0.02	6.40
414	37	0.076	0.2757	75.3	75.63	383.38	16.449	21.820	0.817	0.05	0.03	0.02	6.40
415	39	0.077	0.2775	75.3	75.6	383.19	16.557	21.964	0.847	0.05	0.04	0.02	6.40
416	44	0.077	0.2775	75.2	75.53	383.02	16.555	21.966	0.972	0.06	0.03	0.02	6.40
417	38	0.075	0.2739	75.1	75.45	382.93	16.337	21.680	0.825	0.05	0.04	0.02	6.40
418	35	0.077	0.2775	75.1	75.38	382.86	16.553	21.968	0.771	0.05	0.05	0.02	6.40
419	49	0.076	0.2757	75.1	75.31	382.8	16.446	21.825	1.061	0.06	0.05	0.02	6.40
420	38	0.076	0.2757	75.1	75.26	382.79	16.446	21.825	0.826	0.05	0.05	0.02	6.40
421	22	0.078	0.2793	75	75.2	382.77	16.659	22.112	0.496	0.03	0.05	0.02	6.40
422	32	0.077	0.2775	75	75.16	382.74	16.552	21.970	0.694	0.04	0.05	0.02	6.41
423	50	0.076	0.2757	74.9	75.11	382.74	16.443	21.829	1.085	0.07	0.05	0.02	6.41
424	97	0.077	0.2775	75	75.08	382.73	16.552	21.970	2.128	0.13	0.06	0.02	6.41
425	75	0.076	0.2757	74.9	75.04	382.72	16.443	21.829	1.642	0.10	0.07	0.02	6.41
426	-73	0.077	0.2775	75	75.02	382.69	16.552	21.970	-1.605	-0.10	0.05	0.02	6.41
427	3	0.077	0.2775	75	75.01	382.65	16.552	21.970	0.069	0.00	0.04	0.02	6.41
428	38	0.076	0.2757	74.9	74.99	382.57	16.443	21.829	0.839	0.05	0.04	0.02	6.41
429	70	0.077	0.2775	74.9	74.97	382.48	16.550	21.972	1.546	0.09	0.03	0.02	6.41
430	11	0.078	0.2793	75.3	74.99	382.33	16.664	22.106	0.252	0.02	0.01	0.02	6.41
431	201	0.075	0.2739	75.9	75.08	382.16	16.349	21.664	4.359	0.26	0.08	0.02	6.42
432	-28	0.077	0.2775	75.9	75.17	381.96	16.566	21.951	-0.611	-0.04	0.08	0.02	6.42
433	170	0.077	0.2775	75.8	75.26	381.73	16.564	21.953	3.738	0.22	0.11	0.02	6.42
434	21	0.075	0.2739	75.8	75.34	381.5	16.348	21.666	0.460	0.03	0.10	0.02	6.42
435	155	0.075	0.2739	75.6	75.41	381.27	16.345	21.670	3.368	0.20	0.14	0.03	6.42
436	117	0.076	0.2757	75.6	75.47	381.05	16.453	21.814	2.554	0.15	0.11	0.03	6.43

Run 1 TEOM Data

[illegible]

Run 1 TEOM Data

[illegible]

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
 Model: 1.4R Run Number: 1 Test Date: 10/27/2025

Pre-Test Set-up Check List

Perform the following checks after a minimum of 30 minutes of warmup time

Leak Checks	Requirement	Pump Off (lpm)	Pump On, Probe Blocked (lpm)	Net (lpm)	Result
PM-2.5	<0.05 lpm (net)	0.38	0.36	0.02	☒ Pass ☐ Fail
PM-Course	<0.05 lpm (net)	0.15	0.16	0.01	☒ Pass ☐ Fail
Ambient	<0.05 lpm (net)	-0.05	-0.07	0.02	☒ Pass ☐ Fail

Flow Checks	Requirement	TEOM Indicated Flow (lpm) ¹	Measured Flow		Difference (%)	Result
			(lpm) ²	(lpm) ³		
PM-2.5	±2%	1.00	1.01		1.0	☒ Pass ☐ Fail
PM-Course	±2%	1.00	1.01		1.0	☒ Pass ☐ Fail
Ambient	±2%	3.00	3.01		0.3	☒ Pass ☐ Fail

¹Indicated flow is at 20°C, 1 atm

²Measured flow with PFS equipment ID 197, which indicates flow at 21.1°C, 1 atm

³Adjusted value (Measured Flow * 99.6%) to match the STP used by TEOM

Initial Filter Setup

Use black filter tool when changing filters

	1 min. requirement	5 min. requirement	Result
PM-2.5	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail
PM- Course	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail
Ambient	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail

Pre-Fire Verifications	Time probe in Tunnel	Result
Place probe in tunnel at least 10 min prior to test start	09:30	
Verify Data is recording [In RPCOMM] - Dichot		☒ Okay
Verify Data is recording [In RPCOMM] - Ambient		☒ Okay

Pre-Test Conditions

	Requirements	Result
Room RH (%)	45.0	
Barometric Pressure	30.19	
Room Air Velocity (ft/min)	<50	Must be <50 ft/min within 2 ft of stove ☒ Pass ☐ Fail
Room Temperature (°F)	66	<87 °F ☒ Pass ☐ Fail
Average External Stove Temp (°F)	65	Within 2 °F of ambient (Run #1 only) ☒ Pass ☐ Fail ☐ N/A
Average Internal Stove Temp (°F)	66	Within 2 °F of ambient (Run #1 only) ☒ Pass ☐ Fail ☐ N/A
Time Coals Removed from Stove & Firebox Vacuumed	N/A	>1 hr before test (Runs #2 & 3 only) ☐ Pass ☐ Fail ☒ N/A
Earliest possible start time	N/A	24 hours from start of Run #1 (Runs #2 & 3 only) ☐ Pass ☐ Fail ☒ N/A

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
Model: 1.4R Run Number: 1 Test Date: 10/27/2025

IDC FUELING NOTES

Fuel & Moisture Measurement

Fuel Type	Maple Cordwood
Moisture Meter Calibration 22%:	22.0
Moisture Meter Calibration 12%:	12.0
Moisture Reading Start Time:	8:15

L1 Test Notes

Scale Weight Prior to Loading (lbs):	0
Test Burn Start Time:	10:04
Air Control Setting (open/closed):	Fully Open
Door Closed Time (5 min from start):	10:07
Bypass Closed Time:	N/A
Target End Weight (lbs):	2.00-2.11
Actual End Weight (lbs):	2.11
Phase End Time:	10:27

Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
	-None-

L2 Test Notes

Scale Weight Prior to Loading (lbs):	2.11
Load Time:	10:27
Air Control Setting (open/closed):	Fully Open
Door Closed Time (immediately after loading):	10:28
Bypass Closed Time:	N/A
50% Target Weight (lbs):	7.70-8.52
Actual 50% Weight (lbs):	8.03
Air control closed time:	10:53
Target End Weight (lbs):	3.14-3.48
Actual End Weight (lbs):	3.38
Phase End Time:	11:43

Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
11:35	Changed TEOM Filters

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
 Model: 1.4R Run Number: 1 Test Date: 10/27/2025

L3 Test Notes

Scale Weight Prior to Loading (lbs):	3.38
Load Time:	11:43
Air Control Setting (5 min start-up allowed):	
Door Closed Time (immediately after loading):	11:44
Bypass Closed Time:	N/A
Target End Weight (lbs):	4.00-4.42
Actual End Weight (lbs):	4.20
Phase End Time:	13:01

Open @	11:43	Closed @	11:48
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Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
12:53	Changed TEOM filters

L4 Test Notes

Scale Weight Prior to Loading (lbs):	4.20
Load Time:	13:01
Air Control Setting (10 min start-up allowed):	
Door Closed Time (5 min after loading):	13:03
Bypass Closed Time:	N/A
Target End Weight (lbs):	3.99-4.41
Actual End Weight (lbs):	4.00
Phase End Time:	17:34

Open @	13:01	Closed @	13:11
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Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
	-None-

Post-Test Conditions

Room Air Velocity (ft/min)	<50
Room RH (%)	28.8
Barometric Pressure	30.17

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
 Model: 1.4R Run Number: 1 Test Date: 10/27/2025

Post-Test Check List

Leak Checks	Requirement	Pump Off (lpm)	Pump On, Probe Blocked (lpm)	Net (lpm)	Result
PM-2.5	<0.05 lpm (net)	0.38	.38	0.00	☒ Pass ☐ Fail
PM-Course	<0.05 lpm (net)	0.15	0.16	0.01	☒ Pass ☐ Fail
Ambient	<0.05 lpm (net)	-0.14	-0.16	0.02	☒ Pass ☐ Fail

Flow Checks	Requirement	TEOM Indicated Flow (lpm) ¹	Measured Flow		Difference (%)	Result
			(lpm) ²	(lpm) ³		
PM-2.5	±2%	1.00	1.00		0.0	☒ Pass ☐ Fail
PM-Course	±2%	1.00	1.01		1.0	☒ Pass ☐ Fail
Ambient	±2%	3.00	3.02		0.6	☒ Pass ☐ Fail

¹Indicated flow is at 20°C, 1 atm

²Measured flow with PFS equipment ID 134, which indicates flow at 21.1°C, 1 atm

³Adjusted value (Measured Flow * 99.6%) to match the STP used by TEOM

Flue Gas Analyzer Calibration Check

Calibration Gas Values: Span Gas Cylinder#: DT0042934 CO₂ (%): 17.32 CO (%): 4.350
 Mid Gas Cylinder#: CC341544 CO₂ (%): 10.00 CO (%): 2.500

Calibration Results:

	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	9:07	9:08	9:09	10/28 8:36	10/28 8:37	10/28 8:38
CO ₂	0.00	17.33	10.38	0.09	17.22	10.24
CO	0.000	4.348	2.531	0.006	4.329	2.482

Flue Gas Probe Leak Check: Initial: No Leakage Final: No Leakage

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI
Model: 1.4R

Job Number: 25-446
Run Number: 1

Tracking #: 238
Test Date: 10/27/2025

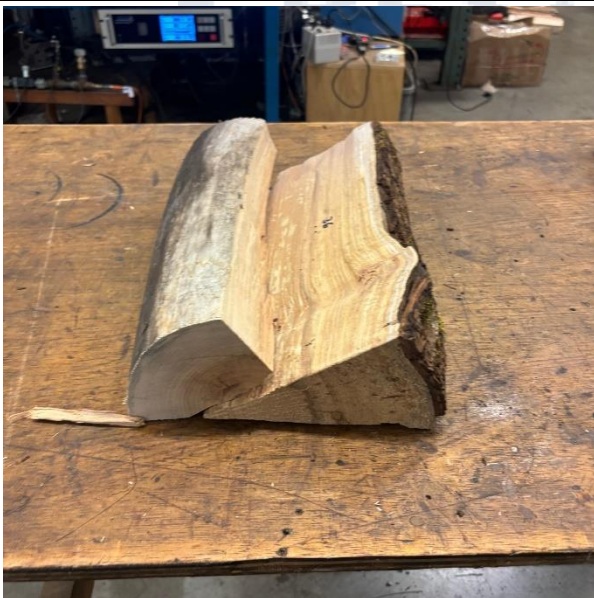
Test Fuel Photos



L1 Fuel Load



L2 Fuel Load



L3 Fuel Load



L4 Fuel Load

Technician Signature: _____

A handwritten signature in black ink, appearing to be 'A. L. L.', written over a horizontal line.

Date: 11/21/2025

WOOD STOVE TEST DATA PACKET
IDC / ASTM E2515



Run 2 Data Summary

Client:	SBI
Model:	1.4R
Job #:	25-446
Tracking #:	238
Test Date:	10/28/2025



Technician Signature

11/26/2025

Date

TEST RESULTS - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Total Fuel Burned (kg-dry) 15.25

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft ³)	101.254	72.764	74.616	-
Average Gas Velocity in Dilution Tunnel (ft/sec)	16.6			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	44758.3			
Average Gas Meter Temperature (°F)	72.0	93.2	90.2	-
Total Sample Volume (dscf)	102.392	70.294	72.855	-
Average Tunnel Temperature (°F)	84.2			
Total Time of Test (min)	502			
Total Particulate Catch (mg)	0.1	4.0	3.8	-
Particulate Concentration, dry-standard (g/dscf)	0.0000010	0.0000569	0.0000522	-
Total PM Emissions (g)	0.37	20.94	19.17	-
Particulate Emission Rate (g/hr)	0.04	2.50	2.29	-
Emissions Factor (g/kg)	-	1.37	1.26	-
Difference from Average Total Particulate Emissions (g)	-	0.89	0.89	-
Difference from Average Total Particulate Emissions (%)	-	4.4%	4.4%	-
Difference from Average Emissions Factor (g/kg)	-	0.06	0.06	-

Final Average Results	
Total Particulate Emissions (g)	20.05
Particulate Emission Rate (g/hr)	2.40
Emissions Factor (g/kg)	1.32

Quality Checks	Requirement	Observed	Result
Dual Train Precision	Each train within 7.5% of average emissions (in grams), or emission factors within 0.5 g/kg	See Above	OK
Filter Temps	<90 °F	88.3	OK
Face Velocity	< 30 ft/min	8.2	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min:65.5/Max:74.8	OK
Negative Probe Weight Evaluation	<5% of Total Catch	Probe Catch Not Negative	OK
Pro-Rate Variation	90% of readings between 90-110%; none greater than 120% or less than 80%	See Data Tabs	OK

DILUTION TUNNEL & MISC. DATA - ASTM E2780 / E2515

Client: SBI
 Model: 1.4R
 Run #: 2
 Test Start Time: 10:49

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Total Sampling Time (min): 502
 Recording Interval (min): 1

Meter Box γ Factor: 1.004 (A)
 Meter Box γ Factor: 1.009 (B)
 Meter Box γ Factor: - (C)
 Meter Box γ Factor: 1.013 (Ambient)

Induced Draft Check (in. H₂O): 0
 Smoke Capture Check (%): 100%
 Date Flue Pipe Last Cleaned: 10/24/2025
 Test Fuel Scale Audit (lbs): 10.00
 Platform Scale Audit (lbs): 10.0

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	30.09	30.12	30.11
Relative Humidity (%)	43.6	31.9	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	0	0	
Ambient Sample Volume:		101.254	ft ³

Sample Train Leak Checks

	Pre-test	Post-test		
(A)	0.001	0.000	cfm @	-8 in. Hg
(B)	0.000	0.000	cfm @	-8 in. Hg
(C)	-	-	cfm @	- in. Hg
(Ambient)	0.000	0.000	cfm @	-13 in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H ₂ O)	Temp (°F)
1	0.052	74
2	0.066	74
3	0.073	75
4	0.073	76
5	0.063	76
6	0.050	74
7	0.047	74
8	0.061	75
9	0.071	76
10	0.074	75
11	0.065	75
12	0.045	75
Center	0.075	76

Dilution Tunnel H₂O: 2.00 percent
 Tunnel Diameter: 12 inches
 Pitot Tube Cp: 0.99 [unitless]
 Dilution Tunnel MW(dry): 29.00 lb/lb-mole
 Dilution Tunnel MW(wet): 28.78 lb/lb-mole
 Tunnel Area: 0.7854 ft²

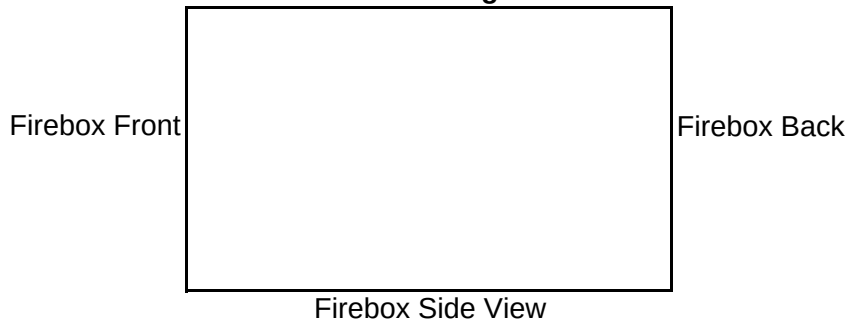
V_{strav} : 16.46 ft/sec
 V_{scent} : 18.23 ft/sec
 F_p : 0.903 [ratio]

Initial Tunnel Flow: 754.7 scf/min

Static Pressure: -0.117 in. H₂O

TEST FUEL PROPERTIES

Fuel Load Configuration



Actual Fuel Used Properties

Fuel Type: Maple
 HHV (kJ/kg): 8,587
 %C: 0.5084
 %H: 0.0602
 %O: 0.4174
 %Ash: 0.5
 MC (%DB): #DIV/0!

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	-0.002		0.074	0.00	68	-0.3		6.95		75	67	85	66
1	0.122	0.124	0.075	0.98	68	-1.2	-	6.73	-0.22	79	176	84	66
2	0.270	0.148	0.074	0.97	67	-1.1	-	6.51	-0.22	81	258	83	66
3	0.417	0.147	0.074	0.97	68	-1.1	-	6.21	-0.30	85	392	83	66
4	0.563	0.146	0.076	0.96	68	-1.0	-	5.98	-0.23	82	488	83	66
5	0.709	0.146	0.074	0.97	68	-1.0	-	5.72	-0.26	82	524	83	66
6	0.855	0.146	0.074	0.96	68	-1.0	-	5.49	-0.23	83	554	83	66
7	1.003	0.148	0.075	0.95	68	-1.0	-	5.23	-0.26	85	583	83	66
8	1.148	0.145	0.073	0.96	68	-1.0	-	4.97	-0.26	87	596	83	66
9	1.292	0.144	0.074	0.96	68	-1.1	-	4.77	-0.20	88	608	83	66
10	1.437	0.145	0.074	0.95	68	-1.0	104	4.52	-0.25	88	610	83	66
11	1.582	0.145	0.073	0.95	68	-1.1	-	4.19	-0.33	89	616	83	66
12	1.727	0.145	0.074	0.95	69	-1.0	-	4.00	-0.19	90	632	83	66
13	1.869	0.142	0.074	0.94	69	-1.0	-	3.78	-0.22	90	640	83	67
14	2.015	0.146	0.074	0.94	69	-1.0	-	3.53	-0.25	90	641	83	67
15	2.159	0.144	0.074	0.95	69	-1.1	-	3.32	-0.21	91	635	83	67
16	2.303	0.144	0.074	0.94	69	-1.1	-	3.09	-0.23	91	634	83	67
17	2.446	0.143	0.073	0.95	70	-1.2	-	2.90	-0.19	92	626	83	67
18	2.590	0.144	0.074	0.94	70	-1.1	-	2.70	-0.20	93	623	83	67
19	2.734	0.144	0.072	0.95	70	-1.1	-	2.52	-0.18	92	621	83	67
20	2.879	0.145	0.073	0.94	70	-1.2	105	2.27	-0.25	92	626	84	67
21	3.025	0.146	0.073	0.93	71	-1.2	-	2.11	-0.16	92	627	84	67
22	3.169	0.144	0.073	0.93	71	-1.1	-	14.01	11.90	102	577	85	68
23	3.313	0.144	0.073	0.94	71	-1.2	-	13.68	-0.33	96	616	86	68
24	3.456	0.143	0.074	0.94	71	-1.2	-	13.50	-0.18	94	620	86	68
25	3.599	0.143	0.073	0.93	72	-1.1	-	13.34	-0.16	93	610	86	68
26	3.743	0.144	0.072	0.93	72	-1.2	-	13.21	-0.13	93	601	86	68
27	3.887	0.144	0.074	0.93	72	-1.1	-	13.01	-0.20	93	596	85	68
28	4.031	0.144	0.074	0.93	72	-1.3	-	12.80	-0.21	93	597	84	68
29	4.171	0.140	0.074	0.94	73	-1.1	-	12.64	-0.16	93	600	84	68
30	4.314	0.143	0.072	0.94	73	-1.1	105	12.38	-0.26	93	622	84	68
31	4.458	0.144	0.075	0.92	73	-1.2	-	12.15	-0.23	93	632	84	68

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.601	0.143	0.074	0.93	74	-1.3	-	11.93	-0.22	93	633	85	68
33	4.746	0.145	0.074	0.92	74	-1.2	-	11.70	-0.23	93	638	85	69
34	4.889	0.143	0.074	0.92	74	-1.2	-	11.48	-0.22	93	631	85	69
35	5.031	0.142	0.075	0.93	74	-1.3	-	11.26	-0.22	93	622	85	69
36	5.177	0.146	0.073	0.93	75	-1.3	-	11.05	-0.21	93	617	84	69
37	5.320	0.143	0.074	0.93	75	-1.2	-	10.82	-0.23	93	611	83	69
38	5.463	0.143	0.075	0.93	75	-1.3	-	10.65	-0.17	93	609	83	69
39	5.608	0.145	0.075	0.93	76	-1.3	-	10.50	-0.15	93	606	84	69
40	5.751	0.143	0.074	0.94	76	-1.2	105	10.24	-0.26	93	605	85	69
41	5.894	0.143	0.073	0.93	76	-1.3	-	10.05	-0.19	93	602	86	69
42	6.037	0.143	0.072	0.92	77	-1.4	-	9.87	-0.18	93	600	87	69
43	6.178	0.141	0.074	0.93	77	-1.3	-	9.65	-0.22	93	606	86	69
44	6.322	0.144	0.074	0.94	77	-1.3	-	9.46	-0.19	93	610	85	70
45	6.466	0.144	0.074	0.92	77	-1.3	-	9.26	-0.20	93	611	85	70
46	6.609	0.143	0.074	0.93	78	-1.2	-	9.05	-0.21	93	612	84	70
47	6.751	0.142	0.076	0.94	78	-1.3	-	8.85	-0.20	93	610	84	70
48	6.894	0.143	0.075	0.93	78	-1.4	-	8.70	-0.15	93	613	83	70
49	7.038	0.144	0.076	0.93	79	-1.3	-	8.49	-0.21	94	615	83	70
50	7.184	0.146	0.076	0.92	79	-1.4	102	8.30	-0.19	94	614	84	70
51	7.329	0.145	0.073	0.92	79	-1.3	-	8.14	-0.16	92	550	84	70
52	7.472	0.143	0.074	0.94	79	-1.3	-	8.02	-0.12	90	505	85	70
53	7.615	0.143	0.076	0.94	80	-1.4	-	7.88	-0.14	89	478	84	70
54	7.758	0.143	0.073	0.93	80	-1.4	-	7.78	-0.10	88	460	84	70
55	7.902	0.144	0.076	0.92	80	-1.3	-	7.70	-0.08	87	446	83	69
56	8.044	0.142	0.075	0.94	80	-1.4	-	7.60	-0.10	86	435	84	69
57	8.188	0.144	0.073	0.93	81	-1.4	-	7.50	-0.10	86	429	84	69
58	8.332	0.144	0.073	0.92	81	-1.4	-	7.41	-0.09	86	427	85	69
59	8.475	0.143	0.075	0.93	81	-1.3	-	7.30	-0.11	86	423	84	69
60	8.618	0.143	0.073	0.93	81	-1.3	102	7.17	-0.13	86	421	84	70
61	8.762	0.144	0.074	0.93	82	-1.4	-	7.06	-0.11	85	420	84	69
62	8.906	0.144	0.075	0.94	82	-1.5	-	6.96	-0.10	85	418	84	70
63	9.053	0.147	0.075	0.93	82	-1.5	-	6.86	-0.10	85	420	84	70

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.198	0.145	0.076	0.93	82	-1.5	-	6.74	-0.12	84	423	85	70
65	9.341	0.143	0.076	0.93	82	-1.5	-	6.63	-0.11	84	422	84	70
66	9.485	0.144	0.075	0.93	83	-1.4	-	6.55	-0.08	84	424	84	70
67	9.629	0.144	0.075	0.92	83	-1.5	-	6.45	-0.10	85	426	84	70
68	9.770	0.141	0.076	0.93	83	-1.5	-	6.34	-0.11	85	427	84	70
69	9.914	0.144	0.076	0.93	83	-1.5	-	6.20	-0.14	84	428	84	70
70	10.059	0.145	0.076	0.92	84	-1.5	102	6.12	-0.08	84	425	84	70
71	10.204	0.145	0.075	0.92	84	-1.5	-	5.99	-0.13	84	427	84	70
72	10.348	0.144	0.076	0.93	84	-1.6	-	5.92	-0.07	84	426	84	70
73	10.491	0.143	0.075	0.93	84	-1.5	-	5.83	-0.09	84	424	84	70
74	10.638	0.147	0.076	0.94	84	-1.5	-	5.73	-0.10	83	422	84	70
75	10.782	0.144	0.075	0.93	85	-1.6	-	5.65	-0.08	83	419	85	70
76	10.926	0.144	0.075	0.95	85	-1.6	-	5.57	-0.08	83	416	85	70
77	11.070	0.144	0.075	0.93	85	-1.7	-	5.44	-0.13	83	412	86	70
78	11.216	0.146	0.076	0.92	85	-1.7	-	5.36	-0.08	84	412	87	70
79	11.360	0.144	0.075	0.94	85	-1.6	-	5.23	-0.13	83	409	87	70
80	11.501	0.141	0.076	0.93	85	-1.7	100	5.09	-0.14	83	408	86	70
81	11.645	0.144	0.076	0.94	86	-1.7	-	5.02	-0.07	83	410	85	70
82	11.789	0.144	0.076	0.93	86	-1.8	-	4.92	-0.10	83	408	84	70
83	11.933	0.144	0.076	0.93	86	-1.7	-	4.82	-0.10	83	406	84	70
84	12.080	0.147	0.076	0.92	86	-1.7	-	4.75	-0.07	83	409	83	70
85	12.225	0.145	0.076	0.92	86	-1.8	-	4.65	-0.10	83	412	84	71
86	12.370	0.145	0.075	0.93	86	-1.7	-	4.56	-0.09	82	412	85	71
87	12.514	0.144	0.076	0.93	87	-1.8	-	4.46	-0.10	82	403	86	70
88	12.658	0.144	0.076	0.92	87	-1.8	-	4.40	-0.06	82	395	87	71
89	12.800	0.142	0.076	0.93	87	-1.9	-	4.32	-0.08	82	387	86	71
90	12.944	0.144	0.076	0.93	87	-1.9	100	4.25	-0.07	83	382	85	71
91	13.088	0.144	0.075	0.94	87	-1.9	-	4.15	-0.10	83	376	85	71
92	13.235	0.147	0.076	0.94	87	-1.8	-	4.09	-0.06	82	373	84	71
93	13.381	0.146	0.074	0.92	88	-1.9	-	4.02	-0.07	82	374	84	71
94	13.526	0.145	0.075	0.93	88	-1.9	-	3.96	-0.06	82	371	84	71
95	13.670	0.144	0.077	0.93	88	-1.9	-	3.91	-0.05	82	373	85	70

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	13.815	0.145	0.077	0.93	88	-1.9	-	3.87	-0.04	82	370	85	71
97	13.956	0.141	0.075	0.93	88	-2.0	-	3.80	-0.07	81	368	85	71
98	14.101	0.145	0.076	0.93	88	-2.0	-	3.74	-0.06	81	366	85	71
99	14.245	0.144	0.076	0.94	88	-1.9	-	3.67	-0.07	81	362	85	71
100	14.392	0.147	0.076	0.93	89	-2.1	100	3.61	-0.06	81	363	84	71
101	14.538	0.146	0.076	0.92	89	-2.0	-	3.61	0.00	81	366	84	71
102	14.683	0.145	0.074	0.93	89	-2.1	-	3.53	-0.08	81	366	84	71
103	14.828	0.145	0.074	0.93	89	-2.0	-	3.48	-0.05	82	357	84	71
104	14.972	0.144	0.075	0.94	89	-2.0	-	3.43	-0.05	82	347	84	71
105	15.114	0.142	0.075	0.93	89	-2.1	-	3.38	-0.05	81	338	84	71
106	15.259	0.145	0.075	0.92	89	-2.1	-	3.35	-0.03	81	333	84	71
107	15.403	0.144	0.075	0.94	89	-2.2	-	3.30	-0.05	81	328	85	71
108	15.550	0.147	0.075	0.93	89	-2.1	-	11.82	8.52	86	363	85	70
109	15.695	0.145	0.073	0.92	90	-2.2	-	11.69	-0.13	86	473	85	71
110	15.841	0.146	0.074	0.93	90	-2.2	100	11.49	-0.20	87	556	86	71
111	15.985	0.144	0.074	0.92	90	-2.2	-	11.22	-0.27	88	587	86	71
112	16.127	0.142	0.074	0.93	90	-2.2	-	10.96	-0.26	89	610	85	71
113	16.271	0.144	0.074	0.93	90	-2.2	-	10.82	-0.14	88	533	85	71
114	16.415	0.144	0.074	0.92	90	-2.2	-	10.69	-0.13	87	484	84	71
115	16.562	0.147	0.074	0.93	90	-2.2	-	10.53	-0.16	86	467	85	71
116	16.706	0.144	0.075	0.93	90	-2.3	-	10.39	-0.14	86	459	86	71
117	16.851	0.145	0.074	0.92	90	-2.3	-	10.24	-0.15	86	460	86	71
118	16.996	0.145	0.074	0.92	91	-2.2	-	10.16	-0.08	86	455	86	71
119	17.138	0.142	0.075	0.93	91	-2.3	-	10.02	-0.14	86	455	85	71
120	17.282	0.144	0.074	0.93	91	-2.3	101	9.87	-0.15	86	456	85	71
121	17.429	0.147	0.075	0.93	91	-2.3	-	9.71	-0.16	86	456	84	71
122	17.573	0.144	0.074	0.94	91	-2.3	-	9.59	-0.12	86	451	84	71
123	17.718	0.145	0.075	0.94	91	-2.3	-	9.47	-0.12	86	452	84	71
124	17.862	0.144	0.075	0.93	91	-2.2	-	9.34	-0.13	86	448	85	71
125	18.005	0.143	0.074	0.93	91	-2.3	-	9.24	-0.10	86	447	85	71
126	18.150	0.145	0.076	0.93	91	-2.2	-	9.12	-0.12	86	442	86	71
127	18.294	0.144	0.075	0.94	91	-2.2	-	9.01	-0.11	85	439	86	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
128	18.441	0.147	0.075	0.94	92	-2.2	-	8.89	-0.12	85	437	86	71
129	18.585	0.144	0.076	0.92	92	-2.2	-	8.78	-0.11	85	434	86	71
130	18.730	0.145	0.075	0.94	92	-2.2	101	8.67	-0.11	85	427	85	71
131	18.874	0.144	0.075	0.93	92	-2.2	-	8.55	-0.12	85	426	84	71
132	19.016	0.142	0.075	0.92	92	-2.2	-	8.44	-0.11	85	430	84	71
133	19.162	0.146	0.075	0.93	92	-2.2	-	8.32	-0.12	85	426	85	71
134	19.309	0.147	0.072	0.93	92	-2.3	-	8.21	-0.11	85	425	86	71
135	19.454	0.145	0.075	0.93	92	-2.3	-	8.11	-0.10	85	424	87	71
136	19.598	0.144	0.074	0.93	92	-2.2	-	8.01	-0.10	85	420	86	71
137	19.743	0.145	0.076	0.93	92	-2.3	-	7.91	-0.10	85	420	86	71
138	19.884	0.141	0.074	0.92	92	-2.2	-	7.80	-0.11	85	420	85	72
139	20.029	0.145	0.075	0.92	92	-2.2	-	7.70	-0.10	85	419	85	72
140	20.176	0.147	0.075	0.91	93	-2.2	100	7.60	-0.10	85	415	84	72
141	20.320	0.144	0.075	0.93	93	-2.3	-	7.49	-0.11	84	411	84	72
142	20.466	0.146	0.074	0.93	93	-2.2	-	7.41	-0.08	84	404	85	72
143	20.609	0.143	0.076	0.92	93	-2.3	-	7.32	-0.09	84	401	84	72
144	20.753	0.144	0.074	0.92	93	-2.3	-	7.22	-0.10	84	399	85	72
145	20.900	0.147	0.075	0.92	93	-2.3	-	7.13	-0.09	84	394	85	72
146	21.044	0.144	0.073	0.93	93	-2.3	-	7.05	-0.08	84	392	85	72
147	21.189	0.145	0.076	0.93	93	-2.4	-	6.96	-0.09	84	388	86	72
148	21.331	0.142	0.073	0.93	93	-2.3	-	6.91	-0.05	83	384	86	72
149	21.476	0.145	0.076	0.93	93	-2.3	-	6.83	-0.08	83	382	85	72
150	21.623	0.147	0.076	0.92	93	-2.3	99	6.74	-0.09	83	379	85	72
151	21.769	0.146	0.073	0.93	93	-2.4	-	6.65	-0.09	83	377	85	72
152	21.913	0.144	0.074	0.93	93	-2.3	-	6.59	-0.06	83	376	84	72
153	22.055	0.142	0.074	0.92	93	-2.4	-	6.50	-0.09	83	372	84	72
154	22.200	0.145	0.076	0.93	93	-2.3	-	6.44	-0.06	83	371	85	72
155	22.347	0.147	0.073	0.93	94	-2.5	-	6.38	-0.06	83	368	85	72
156	22.491	0.144	0.075	0.94	94	-2.4	-	6.31	-0.07	83	367	86	72
157	22.636	0.145	0.073	0.92	94	-2.4	-	6.25	-0.06	83	367	87	72
158	22.779	0.143	0.076	0.93	94	-2.5	-	6.19	-0.06	83	363	87	72
159	22.924	0.145	0.074	0.92	94	-2.5	-	6.12	-0.07	83	361	86	72

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI Job #: 25-446
 Model: 1.4R Tracking #: 238
 Run #: 2 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
160	23.071	0.147	0.074	0.92	94	-2.5	100	6.06	-0.06	83	361	86	72
161	23.216	0.145	0.074	0.92	94	-2.5	-	5.98	-0.08	83	360	85	72
162	23.360	0.144	0.075	0.93	94	-2.5	-	5.92	-0.06	83	356	85	72
163	23.502	0.142	0.075	0.93	94	-2.5	-	5.88	-0.04	83	355	84	72
164	23.649	0.147	0.075	0.92	94	-2.6	-	5.80	-0.08	83	350	85	72
165	23.793	0.144	0.075	0.94	94	-2.6	-	5.73	-0.07	83	350	85	72
166	23.938	0.145	0.075	0.94	94	-2.6	-	5.69	-0.04	83	348	85	72
167	24.081	0.143	0.076	0.92	94	-2.5	-	5.62	-0.07	83	345	85	72
168	24.226	0.145	0.075	0.93	94	-2.6	-	5.59	-0.03	83	340	85	72
169	24.368	0.142	0.074	0.93	94	-2.6	-	5.55	-0.04	83	334	86	72
170	24.513	0.145	0.075	0.93	94	-2.5	99	5.46	-0.09	82	330	86	72
171	24.657	0.144	0.076	0.93	94	-2.6	-	5.40	-0.06	82	326	87	72
172	24.802	0.145	0.075	0.94	95	-2.7	-	5.34	-0.06	82	322	87	72
173	24.947	0.145	0.074	0.93	95	-2.6	-	5.29	-0.05	82	320	86	72
174	25.091	0.144	0.075	0.91	95	-2.7	-	5.23	-0.06	82	316	85	72
175	25.237	0.146	0.076	0.92	95	-2.7	-	5.16	-0.07	82	315	85	72
176	25.382	0.145	0.076	0.92	95	-2.6	-	5.10	-0.06	82	313	85	72
177	25.527	0.145	0.075	0.92	95	-2.7	-	5.07	-0.03	82	317	85	72
178	25.672	0.145	0.075	0.93	95	-2.7	-	5.02	-0.05	82	320	85	72
179	25.816	0.144	0.075	0.93	95	-2.7	-	4.96	-0.06	82	320	85	72
180	25.961	0.145	0.075	0.93	95	-2.8	99	4.92	-0.04	82	316	85	72
181	26.105	0.144	0.075	0.92	95	-2.8	-	4.86	-0.06	82	317	85	72
182	26.250	0.145	0.076	0.93	95	-2.8	-	4.82	-0.04	82	314	86	72
183	26.395	0.145	0.076	0.93	95	-2.8	-	4.76	-0.06	82	313	87	72
184	26.541	0.146	0.076	0.93	95	-2.8	-	4.71	-0.05	82	312	87	72
185	26.686	0.145	0.074	0.93	95	-2.9	-	4.66	-0.05	82	313	86	72
186	26.831	0.145	0.075	0.93	95	-2.9	-	4.61	-0.05	82	318	86	72
187	26.976	0.145	0.076	0.93	95	-3.0	-	4.54	-0.07	82	316	85	72
188	27.120	0.144	0.076	0.93	95	-2.9	-	4.49	-0.05	82	315	85	72
189	27.265	0.145	0.075	0.93	95	-2.9	-	4.44	-0.05	82	313	85	72
190	27.410	0.145	0.074	0.92	95	-3.0	100	4.39	-0.05	82	310	86	72
191	27.555	0.145	0.076	0.92	95	-3.0	-	4.33	-0.06	82	308	87	72

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
192	27.700	0.145	0.074	0.93	95	-3.0	-	4.29	-0.04	82	303	87	72
193	27.845	0.145	0.076	0.92	95	-3.0	-	4.26	-0.03	82	301	87	72
194	27.991	0.146	0.075	0.92	96	-3.0	-	4.20	-0.06	82	298	86	72
195	28.136	0.145	0.073	0.92	96	-3.0	-	4.18	-0.02	82	298	86	72
196	28.281	0.145	0.075	0.93	96	-3.1	-	4.13	-0.05	82	296	85	72
197	28.426	0.145	0.075	0.91	96	-3.0	-	4.11	-0.02	81	295	85	72
198	28.571	0.145	0.075	0.92	96	-3.0	-	12.30	8.19	90	329	85	72
199	28.715	0.144	0.073	0.93	96	-3.0	-	21.76	9.46	96	364	85	72
200	28.860	0.145	0.073	0.91	96	-3.1	101	21.37	-0.39	104	538	85	72
201	29.005	0.145	0.074	0.93	96	-3.1	-	20.84	-0.53	107	747	86	72
202	29.151	0.146	0.074	0.92	96	-3.1	-	20.54	-0.30	102	718	87	73
203	29.297	0.146	0.073	0.93	96	-3.1	-	20.19	-0.35	99	659	87	73
204	29.443	0.146	0.074	0.93	96	-3.1	-	19.90	-0.29	95	605	86	73
205	29.587	0.144	0.074	0.93	96	-3.1	-	19.68	-0.22	93	576	86	73
206	29.733	0.146	0.074	0.92	96	-3.1	-	19.49	-0.19	92	555	86	73
207	29.878	0.145	0.074	0.92	96	-3.1	-	19.32	-0.17	92	540	86	73
208	30.023	0.145	0.073	0.93	96	-3.0	-	19.16	-0.16	91	525	86	73
209	30.168	0.145	0.073	0.92	96	-2.9	-	19.03	-0.13	91	511	86	73
210	30.313	0.145	0.073	0.92	96	-2.9	102	18.98	-0.05	90	497	86	73
211	30.458	0.145	0.072	0.92	96	-2.9	-	18.77	-0.21	90	495	86	73
212	30.603	0.145	0.074	0.93	96	-2.8	-	18.61	-0.16	90	492	86	73
213	30.749	0.146	0.074	0.92	96	-2.9	-	18.46	-0.15	90	493	86	73
214	30.895	0.146	0.076	0.93	96	-2.7	-	18.32	-0.14	89	493	85	73
215	31.041	0.146	0.074	0.93	96	-2.7	-	18.17	-0.15	89	495	85	73
216	31.186	0.145	0.073	0.93	96	-2.7	-	18.02	-0.15	90	496	85	73
217	31.331	0.145	0.072	0.94	96	-2.6	-	17.86	-0.16	89	495	85	73
218	31.477	0.146	0.076	0.93	96	-2.6	-	17.72	-0.14	89	494	85	73
219	31.622	0.145	0.074	0.93	96	-2.6	-	17.56	-0.16	89	500	87	73
220	31.767	0.145	0.073	0.92	96	-2.5	101	17.40	-0.16	89	500	87	73
221	31.912	0.145	0.072	0.92	96	-2.6	-	17.25	-0.15	89	504	86	73
222	32.057	0.145	0.073	0.93	96	-2.5	-	17.09	-0.16	89	503	86	73
223	32.203	0.146	0.074	0.92	96	-2.6	-	16.94	-0.15	89	500	86	73

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
224	32.348	0.145	0.074	0.93	97	-2.6	-	16.78	-0.16	89	500	86	73
225	32.495	0.147	0.074	0.94	97	-2.5	-	16.63	-0.15	89	500	85	73
226	32.641	0.146	0.073	0.93	97	-2.5	-	16.48	-0.15	89	505	86	73
227	32.786	0.145	0.074	0.93	97	-2.6	-	16.31	-0.17	89	505	86	73
228	32.931	0.145	0.074	0.94	97	-2.5	-	16.16	-0.15	89	507	87	73
229	33.077	0.146	0.072	0.94	97	-2.5	-	16.00	-0.16	89	511	87	73
230	33.221	0.144	0.073	0.94	97	-2.5	101	15.84	-0.16	90	512	87	73
231	33.367	0.146	0.074	0.94	97	-2.5	-	15.68	-0.16	90	514	86	73
232	33.512	0.145	0.073	0.93	97	-2.5	-	15.54	-0.14	90	512	86	73
233	33.657	0.145	0.073	0.93	97	-2.5	-	15.38	-0.16	90	514	85	73
234	33.803	0.146	0.074	0.92	97	-2.5	-	15.22	-0.16	90	514	85	73
235	33.948	0.145	0.073	0.93	97	-2.6	-	15.07	-0.15	90	515	86	73
236	34.094	0.146	0.073	0.93	97	-2.5	-	14.92	-0.15	90	512	86	73
237	34.240	0.146	0.074	0.92	97	-2.5	-	14.76	-0.16	90	513	86	73
238	34.385	0.145	0.074	0.93	97	-2.5	-	14.59	-0.17	90	510	86	73
239	34.531	0.146	0.072	0.93	97	-2.5	-	14.44	-0.15	90	507	86	74
240	34.676	0.145	0.075	0.93	97	-2.5	101	14.31	-0.13	90	504	85	74
241	34.821	0.145	0.074	0.93	97	-2.5	-	14.15	-0.16	90	504	85	74
242	34.966	0.145	0.074	0.93	97	-2.5	-	14.00	-0.15	90	503	85	74
243	35.111	0.145	0.075	0.93	97	-2.4	-	13.86	-0.14	90	500	85	74
244	35.256	0.145	0.073	0.93	97	-2.5	-	13.70	-0.16	90	499	85	74
245	35.402	0.146	0.073	0.93	97	-2.4	-	13.56	-0.14	90	497	85	74
246	35.547	0.145	0.073	0.92	97	-2.5	-	13.42	-0.14	89	494	85	74
247	35.693	0.146	0.074	0.91	97	-2.5	-	13.27	-0.15	90	493	86	74
248	35.839	0.146	0.075	0.94	97	-2.4	-	13.13	-0.14	90	494	86	74
249	35.984	0.145	0.073	0.93	97	-2.4	-	13.00	-0.13	90	492	86	74
250	36.130	0.146	0.073	0.93	97	-2.5	101	12.86	-0.14	90	494	87	74
251	36.275	0.145	0.074	0.93	97	-2.5	-	12.70	-0.16	90	494	86	74
252	36.420	0.145	0.075	0.93	97	-2.5	-	12.60	-0.10	90	493	86	74
253	36.565	0.145	0.075	0.93	97	-2.4	-	12.44	-0.16	90	493	86	74
254	36.710	0.145	0.075	0.94	97	-2.5	-	12.32	-0.12	90	487	86	74
255	36.855	0.145	0.073	0.93	97	-2.4	-	12.19	-0.13	90	488	85	74

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
256	37.001	0.146	0.074	0.92	97	-2.5	-	12.06	-0.13	90	490	85	74
257	37.145	0.144	0.073	0.92	97	-2.5	-	11.92	-0.14	90	487	86	74
258	37.292	0.147	0.072	0.94	97	-2.4	-	11.80	-0.12	90	487	86	74
259	37.438	0.146	0.074	0.93	97	-2.4	-	11.66	-0.14	90	485	86	74
260	37.583	0.145	0.073	0.93	97	-2.5	101	11.54	-0.12	90	485	86	74
261	37.728	0.145	0.073	0.93	97	-2.5	-	11.40	-0.14	90	483	86	74
262	37.873	0.145	0.074	0.92	97	-2.5	-	11.28	-0.12	90	482	86	74
263	38.018	0.145	0.074	0.93	97	-2.5	-	11.15	-0.13	90	483	86	74
264	38.163	0.145	0.074	0.92	97	-2.4	-	11.05	-0.10	90	492	86	74
265	38.308	0.145	0.073	0.94	97	-2.5	-	10.95	-0.10	90	495	86	74
266	38.453	0.145	0.075	0.93	98	-2.5	-	10.83	-0.12	90	499	86	74
267	38.598	0.145	0.074	0.93	98	-2.5	-	10.71	-0.12	90	499	86	74
268	38.744	0.146	0.072	0.93	98	-2.5	-	10.58	-0.13	90	497	86	74
269	38.890	0.146	0.074	0.94	98	-2.5	-	10.47	-0.11	90	494	86	74
270	39.036	0.146	0.074	0.91	98	-2.6	101	10.34	-0.13	90	498	86	74
271	39.181	0.145	0.074	0.92	98	-2.5	-	10.18	-0.16	90	496	86	74
272	39.326	0.145	0.073	0.92	98	-2.6	-	10.05	-0.13	90	496	86	75
273	39.471	0.145	0.074	0.93	98	-2.5	-	9.91	-0.14	90	494	86	75
274	39.615	0.144	0.075	0.92	98	-2.6	-	9.81	-0.10	90	497	86	75
275	39.760	0.145	0.073	0.92	98	-2.6	-	9.74	-0.07	90	498	87	75
276	39.905	0.145	0.073	0.95	98	-2.6	-	9.62	-0.12	90	498	87	75
277	40.051	0.146	0.074	0.92	98	-2.5	-	9.51	-0.11	90	496	87	75
278	40.195	0.144	0.075	0.91	98	-2.6	-	9.41	-0.10	90	492	87	75
279	40.341	0.146	0.074	0.94	98	-2.5	-	9.30	-0.11	90	488	86	75
280	40.487	0.146	0.074	0.93	98	-2.6	100	9.19	-0.11	90	481	86	75
281	40.632	0.145	0.075	0.92	98	-2.5	-	9.06	-0.13	90	475	86	75
282	40.777	0.145	0.075	0.93	98	-2.5	-	8.96	-0.10	90	468	86	75
283	40.922	0.145	0.074	0.92	98	-2.6	-	8.88	-0.08	90	463	86	75
284	41.067	0.145	0.075	0.93	98	-2.5	-	8.81	-0.07	90	462	86	75
285	41.212	0.145	0.075	0.92	98	-2.6	-	8.71	-0.10	90	455	86	75
286	41.357	0.145	0.075	0.93	98	-2.6	-	8.62	-0.09	89	449	86	75
287	41.502	0.145	0.075	0.93	98	-2.6	-	8.55	-0.07	89	448	87	75

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>2</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
288	41.647	0.145	0.074	0.92	98	-2.7	-	8.45	-0.10	89	445	87	75
289	41.793	0.146	0.074	0.92	98	-2.5	-	8.38	-0.07	89	435	86	75
290	41.939	0.146	0.074	0.92	98	-2.6	100	8.31	-0.07	89	421	86	75
291	42.084	0.145	0.073	0.91	98	-2.6	-	8.26	-0.05	88	415	86	75
292	42.229	0.145	0.075	0.93	98	-2.7	-	8.20	-0.06	88	409	86	75
293	42.374	0.145	0.075	0.93	98	-2.7	-	8.14	-0.06	88	403	86	75
294	42.518	0.144	0.076	0.93	98	-2.6	-	8.09	-0.05	88	397	86	75
295	42.663	0.145	0.074	0.93	98	-2.7	-	8.03	-0.06	88	393	86	75
296	42.808	0.145	0.074	0.92	98	-2.7	-	7.98	-0.05	87	390	86	75
297	42.954	0.146	0.075	0.93	98	-2.7	-	7.92	-0.06	87	387	86	75
298	43.098	0.144	0.075	0.92	98	-2.7	-	7.86	-0.06	87	378	86	75
299	43.244	0.146	0.073	0.93	98	-2.8	-	7.82	-0.04	87	377	86	75
300	43.390	0.146	0.075	0.93	98	-2.8	100	7.77	-0.05	87	376	86	75
301	43.535	0.145	0.075	0.92	98	-2.8	-	7.72	-0.05	87	371	86	75
302	43.680	0.145	0.074	0.92	98	-2.9	-	7.67	-0.05	87	369	86	75
303	43.825	0.145	0.074	0.93	98	-2.8	-	7.63	-0.04	86	368	86	75
304	43.970	0.145	0.073	0.92	98	-2.8	-	7.58	-0.05	86	365	86	75
305	44.115	0.145	0.073	0.94	98	-2.9	-	7.53	-0.05	86	363	86	75
306	44.260	0.145	0.075	0.93	98	-2.9	-	7.49	-0.04	86	362	86	75
307	44.405	0.145	0.077	0.92	98	-2.9	-	7.44	-0.05	86	357	86	75
308	44.550	0.145	0.076	0.93	99	-2.9	-	7.40	-0.04	86	355	86	75
309	44.696	0.146	0.074	0.94	99	-3.0	-	7.36	-0.04	86	352	86	75
310	44.842	0.146	0.075	0.93	99	-2.9	99	7.31	-0.05	86	350	86	75
311	44.987	0.145	0.075	0.92	99	-3.1	-	7.28	-0.03	86	347	86	75
312	45.132	0.145	0.075	0.93	99	-3.1	-	7.23	-0.05	86	345	86	75
313	45.277	0.145	0.075	0.93	99	-3.1	-	7.20	-0.03	86	345	86	75
314	45.422	0.145	0.076	0.92	99	-3.2	-	7.14	-0.06	85	342	86	75
315	45.567	0.145	0.075	0.91	99	-3.1	-	7.11	-0.03	85	339	86	74
316	45.712	0.145	0.075	0.93	99	-3.1	-	7.08	-0.03	85	339	86	74
317	45.857	0.145	0.075	0.93	99	-3.1	-	7.03	-0.05	85	336	87	74
318	46.002	0.145	0.075	0.92	99	-3.1	-	6.99	-0.04	85	333	86	74
319	46.148	0.146	0.074	0.92	99	-3.3	-	6.96	-0.03	85	328	86	74

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 2

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
320	46.294	0.146	0.075	0.94	99	-3.2	99	6.94	-0.02	85	323	86	74
321	46.439	0.145	0.074	0.93	99	-3.2	-	6.91	-0.03	85	321	86	74
322	46.584	0.145	0.074	0.93	99	-3.3	-	6.88	-0.03	85	319	86	74
323	46.730	0.146	0.075	0.93	99	-3.3	-	6.85	-0.03	84	315	86	74
324	46.874	0.144	0.076	0.93	99	-3.4	-	6.81	-0.04	84	314	87	74
325	47.019	0.145	0.076	0.93	99	-3.4	-	6.78	-0.03	84	312	87	74
326	47.164	0.145	0.075	0.93	99	-3.3	-	6.76	-0.02	84	310	87	74
327	47.309	0.145	0.076	0.93	99	-3.3	-	6.74	-0.02	84	309	86	74
328	47.455	0.146	0.074	0.94	99	-3.5	-	6.70	-0.04	84	307	86	74
329	47.600	0.145	0.074	0.93	99	-3.4	-	6.68	-0.02	84	304	86	74
330	47.746	0.146	0.074	0.92	99	-3.4	99	6.66	-0.02	84	299	86	74
331	47.892	0.146	0.074	0.94	99	-3.4	-	6.64	-0.02	84	294	86	74
332	48.037	0.145	0.074	0.92	99	-3.6	-	6.63	-0.01	84	290	86	74
333	48.182	0.145	0.074	0.92	99	-3.5	-	6.60	-0.03	84	287	87	74
334	48.327	0.145	0.076	0.92	99	-3.6	-	6.59	-0.01	83	283	87	74
335	48.472	0.145	0.075	0.92	99	-3.6	-	6.57	-0.02	83	281	86	74
336	48.617	0.145	0.075	0.92	99	-3.5	-	6.56	-0.01	83	278	86	74
337	48.762	0.145	0.076	0.93	99	-3.6	-	6.54	-0.02	83	276	86	74
338	48.907	0.145	0.074	0.93	99	-3.6	-	6.52	-0.02	83	274	85	74
339	49.052	0.145	0.075	0.92	99	-3.7	-	6.51	-0.01	83	270	86	74
340	49.198	0.146	0.076	0.92	99	-3.7	99	6.49	-0.02	83	265	86	74
341	49.344	0.146	0.074	0.92	99	-3.7	-	6.48	-0.01	83	261	86	74
342	49.490	0.146	0.076	0.92	99	-3.7	-	6.45	-0.03	83	258	85	74
343	49.635	0.145	0.077	0.92	99	-3.7	-	6.44	-0.01	82	255	85	74
344	49.780	0.145	0.076	0.93	99	-3.8	-	6.41	-0.03	82	254	86	74
345	49.925	0.145	0.075	0.92	99	-3.8	-	6.40	-0.01	82	252	86	74
346	50.070	0.145	0.074	0.91	99	-3.8	-	6.38	-0.02	82	249	86	74
347	50.216	0.146	0.076	0.92	99	-3.8	-	6.36	-0.02	82	247	86	74
348	50.361	0.145	0.074	0.92	99	-3.9	-	6.33	-0.03	82	247	86	74
349	50.506	0.145	0.076	0.93	99	-3.9	-	6.32	-0.01	82	244	86	74
350	50.651	0.145	0.075	0.93	99	-3.9	98	6.31	-0.01	82	243	87	74
351	50.797	0.146	0.075	0.91	99	-4.0	-	6.28	-0.03	82	242	87	74

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 2

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
352	50.943	0.146	0.075	0.92	99	-4.0	-	6.27	-0.01	82	240	87	74
353	51.089	0.146	0.074	0.93	99	-3.9	-	6.25	-0.02	82	240	87	74
354	51.234	0.145	0.074	0.93	99	-4.0	-	6.22	-0.03	82	239	86	74
355	51.379	0.145	0.074	0.93	99	-4.0	-	6.22	0.00	81	243	86	74
356	51.524	0.145	0.076	0.94	99	-4.1	-	6.20	-0.02	81	240	86	74
357	51.672	0.148	0.074	0.93	99	-4.0	-	6.18	-0.02	81	239	86	74
358	51.814	0.142	0.076	0.93	99	-4.1	-	6.16	-0.02	81	239	87	74
359	51.960	0.146	0.076	0.92	99	-4.1	-	6.15	-0.01	81	238	87	74
360	52.105	0.145	0.075	0.94	99	-4.1	99	6.13	-0.02	81	236	87	74
361	52.250	0.145	0.076	0.92	99	-4.2	-	6.12	-0.01	81	234	86	73
362	52.396	0.146	0.074	0.92	99	-4.2	-	6.10	-0.02	81	234	86	73
363	52.542	0.146	0.075	0.94	99	-4.1	-	6.09	-0.01	81	233	86	73
364	52.687	0.145	0.074	0.93	99	-4.2	-	6.08	-0.01	81	232	86	73
365	52.833	0.146	0.074	0.91	99	-4.2	-	6.06	-0.02	81	232	86	73
366	52.978	0.145	0.075	0.93	99	-4.3	-	6.04	-0.02	81	231	86	73
367	53.123	0.145	0.074	0.91	99	-4.3	-	6.03	-0.01	81	230	87	73
368	53.271	0.148	0.075	0.92	99	-4.3	-	6.02	-0.01	81	229	87	73
369	53.413	0.142	0.075	0.95	100	-4.2	-	5.99	-0.03	81	229	87	73
370	53.558	0.145	0.075	0.92	99	-4.3	99	5.98	-0.01	81	230	86	73
371	53.704	0.146	0.075	0.94	99	-4.4	-	5.97	-0.01	80	229	86	73
372	53.849	0.145	0.073	0.92	100	-4.3	-	5.96	-0.01	80	229	86	73
373	53.995	0.146	0.075	0.92	100	-4.3	-	5.94	-0.02	80	227	86	73
374	54.141	0.146	0.074	0.91	100	-4.3	-	5.93	-0.01	80	226	85	73
375	54.286	0.145	0.074	0.92	100	-4.4	-	5.92	-0.01	80	225	85	73
376	54.432	0.146	0.075	0.92	100	-4.3	-	5.91	-0.01	80	222	85	73
377	54.577	0.145	0.075	0.91	99	-4.4	-	5.89	-0.02	80	223	85	73
378	54.722	0.145	0.075	0.92	99	-4.4	-	5.87	-0.02	80	223	86	73
379	54.867	0.145	0.075	0.92	99	-4.4	-	5.86	-0.01	80	223	87	73
380	55.012	0.145	0.075	0.93	99	-4.3	99	5.85	-0.01	80	222	87	73
381	55.158	0.146	0.075	0.92	100	-4.4	-	5.83	-0.02	80	221	87	73
382	55.303	0.145	0.075	0.94	99	-4.4	-	5.82	-0.01	80	220	87	73
383	55.448	0.145	0.075	0.93	99	-4.5	-	5.82	0.00	80	220	86	73

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI Job #: 25-446
 Model: 1.4R Tracking #: 238
 Run #: 2 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
384	55.594	0.146	0.075	0.93	100	-4.5	-	5.80	-0.02	80	219	86	73
385	55.740	0.146	0.074	0.94	99	-4.4	-	5.79	-0.01	80	218	86	73
386	55.886	0.146	0.074	0.92	99	-4.4	-	5.77	-0.02	80	217	86	73
387	56.031	0.145	0.075	0.93	99	-4.5	-	5.76	-0.01	80	217	86	73
388	56.177	0.146	0.075	0.92	99	-4.4	-	5.74	-0.02	80	217	86	73
389	56.322	0.145	0.074	0.93	99	-4.4	-	5.72	-0.02	80	216	86	73
390	56.467	0.145	0.074	0.93	99	-4.5	99	5.70	-0.02	79	215	86	73
391	56.612	0.145	0.075	0.92	99	-4.5	-	5.70	0.00	79	215	86	73
392	56.760	0.148	0.075	0.93	99	-4.4	-	5.68	-0.02	79	214	85	73
393	56.903	0.143	0.076	0.91	100	-4.5	-	5.67	-0.01	79	213	85	73
394	57.048	0.145	0.076	0.93	99	-4.5	-	5.66	-0.01	79	214	85	73
395	57.193	0.145	0.075	0.93	99	-4.5	-	5.64	-0.02	79	212	86	73
396	57.340	0.147	0.074	0.92	99	-4.5	-	5.63	-0.01	79	213	86	73
Avg/Tot	72.764	0.145	0.075	0.93	93.2	-3.0	100			84.2	370.3	85.4	72.0

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
0	-0.002		0.02	68	-0.5		86	0.006	0.26	0.000
1	0.126	0.128	1.10	69	-1.4	-	83	-0.038	0.80	0.031
2	0.278	0.152	1.08	69	-1.3	-	83	-0.054	2.41	0.140
3	0.429	0.151	1.07	69	-1.3	-	84	-0.078	3.62	0.232
4	0.579	0.150	1.08	69	-1.3	-	84	-0.083	10.93	1.410
5	0.728	0.149	1.05	70	-1.3	-	85	-0.088	14.02	1.309
6	0.878	0.150	1.07	70	-1.3	-	85	-0.088	13.74	0.721
7	1.029	0.151	1.05	70	-1.3	-	85	-0.091	13.61	0.833
8	1.177	0.148	1.03	70	-1.3	-	85	-0.090	15.04	0.972
9	1.325	0.148	1.06	70	-1.3	-	85	-0.092	14.38	0.700
10	1.473	0.148	1.07	71	-1.3	103	85	-0.087	14.35	0.590
11	1.621	0.148	1.03	71	-1.3	-	85	-0.092	14.36	0.411
12	1.768	0.147	1.03	71	-1.3	-	85	-0.094	15.17	0.494
13	1.914	0.146	1.04	72	-1.3	-	84	-0.097	15.46	0.690
14	2.062	0.148	1.04	72	-1.3	-	84	-0.087	15.67	0.522
15	2.209	0.147	1.04	72	-1.3	-	85	-0.095	15.33	0.378
16	2.356	0.147	1.05	73	-1.3	-	85	-0.092	14.92	0.325
17	2.503	0.147	1.04	73	-1.3	-	86	-0.094	14.93	0.315
18	2.650	0.147	1.04	73	-1.3	-	86	-0.090	14.35	0.199
19	2.798	0.148	1.03	73	-1.3	-	86	-0.092	13.87	0.197
20	2.945	0.147	1.05	73	-1.4	104	86	-0.091	14.01	0.283
21	3.093	0.148	1.03	74	-1.3	-	86	-0.095	13.53	0.279
22	3.240	0.147	1.03	74	-1.3	-	86	-0.092	10.92	0.261
23	3.387	0.147	1.02	74	-1.3	-	85	-0.092	11.75	0.460
24	3.533	0.146	1.03	75	-1.3	-	85	-0.092	13.03	0.402
25	3.680	0.147	1.01	75	-1.3	-	85	-0.096	13.01	0.338
26	3.827	0.147	1.02	75	-1.3	-	85	-0.092	13.13	0.206
27	3.973	0.146	1.04	75	-1.3	-	85	-0.089	12.76	0.237
28	4.119	0.146	1.04	76	-1.3	-	85	-0.089	13.11	0.290
29	4.263	0.144	1.02	76	-1.4	-	85	-0.088	13.21	0.213
30	4.409	0.146	1.03	76	-1.3	104	85	-0.091	13.39	0.188
31	4.556	0.147	1.04	77	-1.3	-	85	-0.092	14.03	0.250

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
32	4.702	0.146	1.02	77	-1.4	-	86	-0.093	14.13	0.250
33	4.848	0.146	1.02	77	-1.3	-	86	-0.092	14.17	0.171
34	4.994	0.146	1.03	77	-1.4	-	87	-0.099	14.39	0.196
35	5.140	0.146	1.05	78	-1.4	-	87	-0.094	14.32	0.135
36	5.289	0.149	1.05	78	-1.3	-	87	-0.086	14.22	0.115
37	5.435	0.146	1.03	78	-1.3	-	87	-0.087	14.02	0.105
38	5.581	0.146	1.04	78	-1.3	-	86	-0.088	13.90	0.107
39	5.727	0.146	1.02	79	-1.3	-	86	-0.092	13.76	0.107
40	5.873	0.146	1.03	79	-1.3	103	86	-0.091	13.72	0.133
41	6.020	0.147	1.02	79	-1.3	-	86	-0.089	13.82	0.119
42	6.166	0.146	1.03	79	-1.4	-	86	-0.098	13.91	0.126
43	6.310	0.144	1.02	80	-1.4	-	86	-0.094	14.14	0.119
44	6.457	0.147	1.02	80	-1.4	-	86	-0.087	14.21	0.131
45	6.604	0.147	1.01	80	-1.4	-	86	-0.096	14.27	0.168
46	6.750	0.146	1.00	80	-1.4	-	87	-0.094	14.29	0.168
47	6.897	0.147	1.01	80	-1.3	-	88	-0.092	14.05	0.161
48	7.043	0.146	1.04	81	-1.4	-	88	-0.089	13.99	0.160
49	7.189	0.146	1.03	81	-1.3	-	88	-0.094	14.08	0.146
50	7.338	0.149	1.02	81	-1.4	101	88	-0.087	14.10	0.162
51	7.485	0.147	1.01	81	-1.4	-	87	-0.089	14.10	0.183
52	7.631	0.146	1.03	81	-1.2	-	86	-0.081	13.90	0.549
53	7.778	0.147	1.02	82	-1.3	-	86	-0.075	12.40	0.320
54	7.924	0.146	1.00	81	-1.3	-	85	-0.079	11.40	0.351
55	8.071	0.147	1.04	82	-1.2	-	85	-0.071	10.79	0.384
56	8.215	0.144	1.02	82	-1.3	-	85	-0.069	10.59	0.330
57	8.362	0.147	1.02	82	-1.4	-	85	-0.069	10.61	0.356
58	8.509	0.147	1.05	82	-1.4	-	85	-0.074	10.62	0.355
59	8.656	0.147	1.02	83	-1.3	-	85	-0.074	10.64	0.354
60	8.803	0.147	1.03	83	-1.2	101	85	-0.074	10.67	0.372
61	8.950	0.147	1.01	82	-1.2	-	85	-0.077	10.77	0.358
62	9.097	0.147	1.04	83	-1.4	-	86	-0.072	10.90	0.402
63	9.247	0.150	1.02	83	-1.3	-	85	-0.069	11.04	0.365

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
64	9.394	0.147	1.04	83	-1.4	-	85	-0.075	11.32	0.321
65	9.541	0.147	1.02	83	-1.4	-	85	-0.070	11.50	0.263
66	9.688	0.147	1.03	83	-1.2	-	86	-0.063	11.68	0.262
67	9.835	0.147	1.05	84	-1.2	-	86	-0.070	11.70	0.265
68	9.980	0.145	1.02	84	-1.4	-	86	-0.073	11.78	0.271
69	10.127	0.147	1.03	84	-1.4	-	86	-0.076	11.88	0.227
70	10.274	0.147	1.04	84	-1.4	100	86	-0.066	11.73	0.229
71	10.422	0.148	1.03	84	-1.4	-	86	-0.075	11.68	0.229
72	10.569	0.147	1.01	84	-1.3	-	85	-0.066	11.56	0.271
73	10.716	0.147	1.02	84	-1.3	-	85	-0.069	11.50	0.271
74	10.866	0.150	1.03	85	-1.4	-	85	-0.069	11.32	0.309
75	11.014	0.148	1.04	85	-1.3	-	85	-0.068	11.17	0.314
76	11.161	0.147	1.02	85	-1.3	-	86	-0.073	11.10	0.334
77	11.309	0.148	1.00	85	-1.4	-	86	-0.068	11.04	0.341
78	11.456	0.147	1.04	85	-1.3	-	86	-0.068	11.01	0.390
79	11.604	0.148	1.03	85	-1.3	-	86	-0.070	11.00	0.437
80	11.749	0.145	1.04	85	-1.2	99	86	-0.070	11.03	0.565
81	11.896	0.147	1.02	85	-1.4	-	85	-0.065	11.23	0.616
82	12.044	0.148	1.05	85	-1.3	-	85	-0.072	11.05	0.437
83	12.192	0.148	1.03	86	-1.4	-	85	-0.069	11.04	0.352
84	12.342	0.150	1.01	86	-1.3	-	85	-0.069	11.02	0.369
85	12.490	0.148	1.03	86	-1.3	-	85	-0.065	11.36	0.337
86	12.638	0.148	1.04	86	-1.3	-	86	-0.066	11.41	0.392
87	12.785	0.147	1.03	86	-1.3	-	87	-0.066	10.86	0.499
88	12.933	0.148	1.03	86	-1.4	-	87	-0.066	10.35	0.542
89	13.078	0.145	1.05	86	-1.4	-	88	-0.067	10.21	0.517
90	13.226	0.148	1.06	86	-1.4	99	87	-0.067	9.85	0.513
91	13.374	0.148	1.03	87	-1.3	-	87	-0.065	9.70	0.472
92	13.524	0.150	1.01	87	-1.2	-	86	-0.063	9.66	0.411
93	13.672	0.148	1.04	86	-1.3	-	86	-0.059	9.56	0.416
94	13.820	0.148	1.05	87	-1.2	-	85	-0.065	9.53	0.391
95	13.968	0.148	1.05	87	-1.4	-	85	-0.064	9.45	0.413

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
96	14.117	0.149	1.03	87	-1.3	-	85	-0.061	9.35	0.366
97	14.262	0.145	1.02	87	-1.2	-	85	-0.058	9.12	0.509
98	14.410	0.148	1.06	87	-1.3	-	86	-0.061	9.04	0.524
99	14.558	0.148	1.03	87	-1.2	-	87	-0.060	8.97	0.528
100	14.708	0.150	1.04	87	-1.3	99	88	-0.062	9.09	0.514
101	14.855	0.147	1.03	87	-1.3	-	87	-0.058	9.16	0.481
102	15.003	0.148	1.02	87	-1.3	-	87	-0.060	9.26	0.458
103	15.151	0.148	1.05	87	-1.3	-	86	-0.058	9.15	0.465
104	15.299	0.148	1.02	87	-1.3	-	86	-0.057	7.96	0.552
105	15.445	0.146	1.04	88	-1.3	-	85	-0.058	7.66	0.578
106	15.593	0.148	1.03	88	-1.2	-	85	-0.053	7.49	0.639
107	15.741	0.148	1.03	87	-1.4	-	85	-0.052	7.50	0.653
108	15.892	0.151	1.03	88	-1.3	-	86	-0.066	7.32	0.644
109	16.040	0.148	1.03	88	-1.3	-	86	-0.078	8.29	0.423
110	16.188	0.148	1.03	88	-1.2	100	86	-0.086	13.02	0.358
111	16.336	0.148	1.04	88	-1.4	-	86	-0.088	14.77	0.419
112	16.482	0.146	1.02	88	-1.2	-	87	-0.088	14.87	0.373
113	16.630	0.148	1.02	88	-1.3	-	87	-0.082	15.13	0.383
114	16.778	0.148	1.05	88	-1.4	-	87	-0.074	13.19	0.364
115	16.929	0.151	1.03	88	-1.3	-	86	-0.076	12.41	0.411
116	17.077	0.148	1.01	88	-1.3	-	86	-0.076	12.66	0.405
117	17.225	0.148	1.02	88	-1.4	-	86	-0.070	12.87	0.407
118	17.373	0.148	1.02	88	-1.4	-	86	-0.074	13.04	0.410
119	17.518	0.145	1.05	88	-1.3	-	86	-0.068	13.06	0.375
120	17.667	0.149	1.03	88	-1.4	101	86	-0.073	13.06	0.358
121	17.818	0.151	1.01	88	-1.2	-	86	-0.075	13.02	0.330
122	17.966	0.148	1.05	88	-1.2	-	87	-0.072	12.96	0.325
123	18.114	0.148	1.01	89	-1.2	-	88	-0.074	12.87	0.358
124	18.262	0.148	1.04	89	-1.2	-	88	-0.070	12.88	0.332
125	18.407	0.145	1.02	89	-1.3	-	87	-0.075	12.77	0.346
126	18.555	0.148	1.02	89	-1.3	-	87	-0.069	12.60	0.380
127	18.704	0.149	1.04	89	-1.3	-	87	-0.067	12.58	0.408

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
128	18.854	0.150	0.99	89	-1.2	-	86	-0.073	12.63	0.377
129	19.003	0.149	1.02	89	-1.3	-	86	-0.075	12.47	0.425
130	19.151	0.148	1.04	89	-1.3	100	86	-0.069	12.31	0.428
131	19.299	0.148	1.02	89	-1.3	-	86	-0.073	12.24	0.448
132	19.445	0.146	1.03	89	-1.3	-	86	-0.068	12.16	0.447
133	19.593	0.148	1.00	90	-1.3	-	86	-0.073	12.27	0.436
134	19.743	0.150	1.01	89	-1.3	-	86	-0.076	12.16	0.459
135	19.891	0.148	1.01	89	-1.2	-	86	-0.067	12.13	0.444
136	20.039	0.148	1.02	90	-1.3	-	86	-0.070	12.09	0.463
137	20.187	0.148	1.03	90	-1.2	-	86	-0.070	12.01	0.478
138	20.333	0.146	1.04	90	-1.2	-	86	-0.069	11.96	0.493
139	20.481	0.148	1.05	89	-1.3	-	86	-0.067	11.85	0.521
140	20.632	0.151	1.04	90	-1.2	100	86	-0.071	11.55	0.523
141	20.780	0.148	1.03	90	-1.3	-	86	-0.063	11.23	0.478
142	20.929	0.149	1.01	90	-1.3	-	86	-0.064	10.97	0.464
143	21.075	0.146	1.03	90	-1.4	-	86	-0.069	10.78	0.423
144	21.223	0.148	1.03	90	-1.4	-	86	-0.062	10.72	0.389
145	21.374	0.151	1.04	90	-1.3	-	86	-0.065	10.56	0.362
146	21.523	0.149	1.02	90	-1.4	-	86	-0.059	10.44	0.332
147	21.671	0.148	1.05	90	-1.3	-	86	-0.064	10.32	0.304
148	21.817	0.146	1.02	90	-1.3	-	86	-0.063	10.25	0.269
149	21.965	0.148	1.02	90	-1.4	-	87	-0.061	10.14	0.265
150	22.117	0.152	1.05	90	-1.3	99	87	-0.062	10.05	0.257
151	22.265	0.148	1.02	90	-1.3	-	86	-0.060	9.94	0.267
152	22.413	0.148	1.01	90	-1.4	-	86	-0.060	9.89	0.250
153	22.559	0.146	1.04	90	-1.2	-	86	-0.060	9.90	0.238
154	22.708	0.149	1.05	90	-1.3	-	86	-0.060	9.86	0.214
155	22.859	0.151	1.05	90	-1.2	-	86	-0.061	9.80	0.218
156	23.007	0.148	1.02	91	-1.4	-	86	-0.057	9.62	0.222
157	23.155	0.148	1.03	91	-1.2	-	86	-0.058	9.60	0.222
158	23.301	0.146	1.04	91	-1.4	-	86	-0.059	9.41	0.239
159	23.449	0.148	1.02	90	-1.3	-	86	-0.061	9.21	0.366

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
160	23.600	0.151	1.02	91	-1.3	99	86	-0.056	9.23	0.476
161	23.748	0.148	1.03	91	-1.4	-	87	-0.056	9.16	0.401
162	23.896	0.148	1.05	91	-1.3	-	87	-0.059	9.05	0.466
163	24.042	0.146	1.03	91	-1.4	-	87	-0.052	8.96	0.512
164	24.194	0.152	1.00	91	-1.3	-	87	-0.057	8.78	0.568
165	24.342	0.148	1.02	91	-1.2	-	86	-0.054	8.61	0.668
166	24.491	0.149	1.02	91	-1.2	-	86	-0.058	8.82	0.558
167	24.636	0.145	1.03	91	-1.3	-	86	-0.063	8.64	0.582
168	24.785	0.149	1.03	91	-1.3	-	86	-0.057	8.45	0.647
169	24.931	0.146	1.03	91	-1.4	-	86	-0.059	8.25	0.765
170	25.080	0.149	1.03	91	-1.4	99	86	-0.054	8.02	0.855
171	25.229	0.149	1.02	91	-1.3	-	86	-0.050	8.07	0.842
172	25.377	0.148	1.00	91	-1.2	-	87	-0.057	8.00	0.858
173	25.526	0.149	1.02	91	-1.3	-	87	-0.046	7.95	0.855
174	25.675	0.149	1.04	91	-1.3	-	87	-0.047	7.90	0.861
175	25.823	0.148	1.04	91	-1.3	-	86	-0.051	7.90	0.867
176	25.972	0.149	1.05	91	-1.3	-	86	-0.048	7.98	0.893
177	26.121	0.149	1.04	92	-1.4	-	86	-0.053	8.53	0.793
178	26.269	0.148	1.03	91	-1.4	-	86	-0.053	8.74	0.737
179	26.418	0.149	1.03	91	-1.3	-	86	-0.054	8.69	0.744
180	26.566	0.148	1.03	91	-1.3	99	86	-0.055	8.50	0.813
181	26.715	0.149	1.02	91	-1.4	-	87	-0.049	8.47	0.842
182	26.863	0.148	1.04	91	-1.3	-	87	-0.049	8.34	0.892
183	27.011	0.148	1.03	91	-1.3	-	87	-0.062	8.38	0.880
184	27.160	0.149	1.02	92	-1.4	-	87	-0.046	8.39	0.901
185	27.309	0.149	1.02	92	-1.3	-	86	-0.046	8.37	0.898
186	27.457	0.148	1.04	92	-1.4	-	86	-0.051	8.58	0.836
187	27.606	0.149	1.01	91	-1.2	-	86	-0.048	8.65	0.773
188	27.755	0.149	1.03	92	-1.4	-	86	-0.051	8.51	0.792
189	27.904	0.149	1.05	92	-1.3	-	86	-0.048	8.52	0.782
190	28.053	0.149	1.07	92	-1.3	100	86	-0.046	8.36	0.813
191	28.202	0.149	1.03	92	-1.3	-	86	-0.049	7.92	0.891

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
192	28.351	0.149	1.04	92	-1.4	-	87	-0.045	7.86	0.853
193	28.500	0.149	1.04	92	-1.2	-	87	-0.048	7.70	0.872
194	28.649	0.149	1.02	92	-1.2	-	87	-0.046	7.65	0.898
195	28.798	0.149	1.04	92	-1.3	-	86	-0.047	7.63	0.877
196	28.947	0.149	1.05	92	-1.3	-	86	-0.049	7.79	0.828
197	29.096	0.149	1.04	92	-1.3	-	86	-0.048	7.65	0.849
198	29.244	0.148	1.01	92	-1.4	-	87	-0.054	7.52	0.829
199	29.392	0.148	1.03	92	-1.4	-	88	-0.064	2.07	0.188
200	29.541	0.149	1.05	92	-1.3	101	88	-0.092	3.60	0.778
201	29.689	0.148	1.02	92	-1.3	-	88	-0.096	8.33	1.044
202	29.838	0.149	1.06	92	-1.3	-	87	-0.090	16.69	1.995
203	29.987	0.149	1.01	92	-1.4	-	86	-0.092	17.23	2.663
204	30.136	0.149	1.03	92	-1.3	-	86	-0.086	16.91	2.807
205	30.285	0.149	1.01	92	-1.4	-	86	-0.087	16.07	1.013
206	30.434	0.149	1.04	92	-1.2	-	87	-0.081	15.63	0.599
207	30.583	0.149	1.04	92	-1.4	-	87	-0.079	15.27	0.537
208	30.732	0.149	1.03	92	-1.3	-	87	-0.081	14.70	0.317
209	30.882	0.150	1.03	92	-1.2	-	87	-0.081	13.94	0.167
210	31.031	0.149	1.04	92	-1.2	102	87	-0.080	13.65	0.229
211	31.180	0.149	1.04	92	-1.2	-	87	-0.074	13.34	0.179
212	31.329	0.149	1.03	92	-1.2	-	87	-0.075	13.69	0.182
213	31.477	0.148	1.00	92	-1.4	-	87	-0.076	13.80	0.169
214	31.626	0.149	1.03	92	-1.3	-	87	-0.075	13.82	0.190
215	31.774	0.148	1.04	92	-1.4	-	87	-0.080	13.79	0.214
216	31.923	0.149	1.03	92	-1.4	-	87	-0.077	13.90	0.228
217	32.072	0.149	1.03	92	-1.2	-	87	-0.072	14.01	0.222
218	32.221	0.149	1.03	92	-1.2	-	87	-0.077	14.09	0.222
219	32.371	0.150	1.03	92	-1.3	-	87	-0.079	14.27	0.323
220	32.520	0.149	1.04	92	-1.2	101	87	-0.080	14.44	0.312
221	32.669	0.149	1.03	92	-1.2	-	87	-0.078	14.47	0.243
222	32.819	0.150	1.03	92	-1.3	-	87	-0.081	14.50	0.224
223	32.968	0.149	1.04	92	-1.3	-	87	-0.073	14.50	0.237

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
224	33.117	0.149	1.03	92	-1.2	-	87	-0.079	14.47	0.265
225	33.266	0.149	1.01	92	-1.3	-	87	-0.077	14.57	0.277
226	33.416	0.150	1.03	92	-1.2	-	87	-0.080	14.65	0.289
227	33.565	0.149	1.03	93	-1.3	-	87	-0.080	14.67	0.324
228	33.713	0.148	1.03	93	-1.4	-	87	-0.083	14.83	0.301
229	33.862	0.149	1.01	93	-1.2	-	87	-0.080	14.87	0.346
230	34.010	0.148	1.02	93	-1.3	101	87	-0.078	14.96	0.396
231	34.160	0.150	1.02	93	-1.2	-	87	-0.076	14.89	0.433
232	34.309	0.149	1.03	93	-1.3	-	87	-0.075	14.90	0.434
233	34.458	0.149	1.02	93	-1.4	-	87	-0.078	14.91	0.423
234	34.607	0.149	1.02	93	-1.3	-	87	-0.078	14.97	0.423
235	34.757	0.150	1.02	93	-1.4	-	87	-0.075	14.93	0.451
236	34.906	0.149	1.02	93	-1.2	-	87	-0.083	14.94	0.452
237	35.055	0.149	1.04	93	-1.4	-	88	-0.076	14.82	0.482
238	35.204	0.149	1.05	93	-1.4	-	88	-0.079	14.77	0.445
239	35.353	0.149	1.06	93	-1.3	-	88	-0.076	14.69	0.406
240	35.502	0.149	1.03	93	-1.4	101	88	-0.081	14.59	0.404
241	35.652	0.150	1.02	93	-1.3	-	87	-0.076	14.58	0.395
242	35.800	0.148	1.02	93	-1.2	-	87	-0.074	14.52	0.393
243	35.949	0.149	1.04	93	-1.3	-	87	-0.076	14.48	0.368
244	36.097	0.148	1.04	93	-1.4	-	87	-0.081	14.48	0.353
245	36.246	0.149	1.04	93	-1.2	-	87	-0.077	14.40	0.320
246	36.395	0.149	1.02	93	-1.3	-	87	-0.078	14.39	0.309
247	36.545	0.150	1.03	93	-1.4	-	87	-0.075	14.33	0.309
248	36.694	0.149	1.00	93	-1.3	-	87	-0.079	14.31	0.311
249	36.843	0.149	1.03	93	-1.3	-	87	-0.075	14.39	0.277
250	36.992	0.149	1.03	93	-1.2	101	87	-0.080	14.40	0.289
251	37.142	0.150	1.02	93	-1.2	-	87	-0.075	14.44	0.270
252	37.291	0.149	1.02	94	-1.3	-	87	-0.075	14.46	0.245
253	37.440	0.149	1.04	93	-1.3	-	87	-0.076	14.47	0.238
254	37.589	0.149	1.03	93	-1.4	-	87	-0.075	14.35	0.237
255	37.738	0.149	1.04	93	-1.2	-	87	-0.079	14.37	0.211

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
256	37.887	0.149	1.03	93	-1.3	-	87	-0.076	14.41	0.172
257	38.035	0.148	1.03	93	-1.3	-	87	-0.077	14.37	0.164
258	38.184	0.149	1.02	93	-1.4	-	88	-0.076	14.37	0.163
259	38.333	0.149	1.03	93	-1.3	-	88	-0.071	14.29	0.160
260	38.482	0.149	1.03	93	-1.3	101	88	-0.075	14.28	0.170
261	38.631	0.149	1.02	93	-1.4	-	88	-0.077	14.28	0.157
262	38.780	0.149	1.05	93	-1.3	-	88	-0.075	14.22	0.177
263	38.929	0.149	1.03	94	-1.3	-	88	-0.075	14.27	0.167
264	39.079	0.150	1.04	94	-1.2	-	87	-0.073	14.40	0.215
265	39.228	0.149	1.02	94	-1.4	-	87	-0.080	14.55	0.266
266	39.377	0.149	1.03	93	-1.3	-	87	-0.079	14.58	0.221
267	39.526	0.149	1.02	93	-1.4	-	87	-0.072	14.56	0.189
268	39.675	0.149	1.04	93	-1.2	-	88	-0.084	14.38	0.207
269	39.824	0.149	1.03	94	-1.4	-	88	-0.075	14.34	0.181
270	39.973	0.149	1.05	94	-1.3	101	88	-0.079	14.15	0.169
271	40.122	0.149	1.02	94	-1.4	-	87	-0.073	14.29	0.184
272	40.270	0.148	1.02	94	-1.3	-	87	-0.072	14.62	0.265
273	40.419	0.149	1.03	94	-1.4	-	87	-0.075	14.46	0.342
274	40.568	0.149	1.02	94	-1.3	-	88	-0.073	14.49	0.271
275	40.717	0.149	1.02	94	-1.4	-	88	-0.076	14.46	0.192
276	40.866	0.149	1.01	94	-1.3	-	88	-0.075	14.46	0.209
277	41.015	0.149	1.03	94	-1.2	-	88	-0.073	14.42	0.203
278	41.164	0.149	1.03	94	-1.2	-	88	-0.076	14.30	0.195
279	41.313	0.149	1.04	94	-1.3	-	87	-0.079	14.03	0.173
280	41.462	0.149	1.03	94	-1.3	101	87	-0.076	13.71	0.170
281	41.611	0.149	1.03	94	-1.2	-	87	-0.069	13.39	0.140
282	41.760	0.149	1.00	94	-1.2	-	87	-0.077	13.19	0.143
283	41.910	0.150	1.05	94	-1.2	-	87	-0.068	12.89	0.141
284	42.059	0.149	1.04	94	-1.3	-	87	-0.069	12.53	0.081
285	42.208	0.149	1.03	94	-1.2	-	87	-0.067	12.31	0.080
286	42.356	0.148	1.03	94	-1.4	-	87	-0.072	12.11	0.083
287	42.505	0.149	1.01	94	-1.3	-	87	-0.066	11.92	0.093

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
288	42.653	0.148	1.02	94	-1.4	-	87	-0.071	11.79	0.094
289	42.802	0.149	1.05	94	-1.3	-	87	-0.070	12.00	0.100
290	42.951	0.149	1.05	94	-1.4	100	87	-0.066	10.38	0.114
291	43.100	0.149	1.02	94	-1.3	-	88	-0.064	10.08	0.185
292	43.249	0.149	1.03	94	-1.2	-	87	-0.070	9.86	0.225
293	43.399	0.150	1.03	94	-1.2	-	87	-0.061	9.76	0.273
294	43.548	0.149	1.03	94	-1.3	-	87	-0.061	9.68	0.309
295	43.697	0.149	1.03	94	-1.2	-	87	-0.058	9.60	0.325
296	43.847	0.150	1.01	94	-1.3	-	87	-0.057	9.50	0.326
297	43.996	0.149	1.00	94	-1.3	-	87	-0.058	9.37	0.309
298	44.145	0.149	1.05	94	-1.2	-	88	-0.063	9.31	0.311
299	44.294	0.149	1.03	94	-1.4	-	87	-0.061	9.31	0.318
300	44.443	0.149	1.04	94	-1.3	100	87	-0.062	9.27	0.304
301	44.591	0.148	1.03	94	-1.3	-	87	-0.057	9.22	0.310
302	44.740	0.149	1.03	94	-1.2	-	87	-0.056	9.16	0.296
303	44.889	0.149	1.03	94	-1.2	-	87	-0.059	9.12	0.307
304	45.038	0.149	1.04	94	-1.2	-	87	-0.060	9.04	0.325
305	45.187	0.149	1.02	94	-1.3	-	87	-0.057	9.04	0.325
306	45.336	0.149	1.01	94	-1.2	-	87	-0.059	8.88	0.354
307	45.486	0.150	1.03	94	-1.3	-	87	-0.059	8.76	0.401
308	45.635	0.149	1.04	95	-1.2	-	87	-0.059	8.66	0.408
309	45.784	0.149	1.01	95	-1.2	-	87	-0.055	8.61	0.407
310	45.934	0.150	1.03	95	-1.3	100	87	-0.058	8.54	0.386
311	46.083	0.149	1.03	95	-1.3	-	87	-0.055	8.51	0.379
312	46.232	0.149	1.02	95	-1.4	-	87	-0.057	8.48	0.381
313	46.381	0.149	1.02	95	-1.2	-	87	-0.057	8.42	0.375
314	46.530	0.149	1.03	94	-1.4	-	87	-0.061	8.36	0.384
315	46.679	0.149	1.03	95	-1.2	-	87	-0.053	8.22	0.441
316	46.827	0.148	1.03	94	-1.4	-	87	-0.054	8.18	0.454
317	46.976	0.149	1.02	95	-1.4	-	87	-0.048	8.21	0.495
318	47.125	0.149	1.03	95	-1.3	-	87	-0.054	8.25	0.459
319	47.275	0.150	1.04	95	-1.2	-	87	-0.054	8.03	0.472

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
320	47.424	0.149	1.03	95	-1.2	99	88	-0.050	7.69	0.454
321	47.574	0.150	1.02	95	-1.2	-	88	-0.050	7.58	0.464
322	47.723	0.149	1.03	95	-1.3	-	88	-0.053	7.55	0.487
323	47.872	0.149	1.03	95	-1.4	-	87	-0.048	7.49	0.461
324	48.022	0.150	1.04	95	-1.2	-	87	-0.051	7.45	0.479
325	48.171	0.149	1.03	95	-1.3	-	87	-0.051	7.40	0.482
326	48.320	0.149	1.03	95	-1.2	-	87	-0.052	7.34	0.483
327	48.469	0.149	1.02	95	-1.4	-	87	-0.044	7.34	0.484
328	48.618	0.149	1.02	95	-1.3	-	87	-0.043	7.30	0.493
329	48.766	0.148	1.04	95	-1.4	-	87	-0.047	7.29	0.503
330	48.915	0.149	1.04	95	-1.2	100	87	-0.047	6.86	0.533
331	49.065	0.150	1.04	95	-1.2	-	87	-0.043	6.67	0.560
332	49.214	0.149	1.03	95	-1.3	-	87	-0.041	6.56	0.607
333	49.363	0.149	1.03	95	-1.2	-	86	-0.044	6.54	0.589
334	49.513	0.150	1.02	95	-1.4	-	87	-0.040	6.45	0.620
335	49.662	0.149	1.04	95	-1.4	-	87	-0.043	6.44	0.619
336	49.812	0.150	1.04	95	-1.3	-	88	-0.044	6.42	0.630
337	49.961	0.149	1.00	95	-1.2	-	88	-0.042	6.42	0.646
338	50.111	0.150	1.04	95	-1.4	-	88	-0.042	6.36	0.673
339	50.260	0.149	1.04	95	-1.3	-	88	-0.044	6.34	0.690
340	50.409	0.149	1.03	95	-1.3	99	87	-0.042	5.83	1.112
341	50.558	0.149	1.03	95	-1.3	-	87	-0.039	5.74	1.152
342	50.707	0.149	1.03	95	-1.4	-	87	-0.037	5.75	1.144
343	50.856	0.149	1.03	95	-1.2	-	86	-0.037	5.74	1.132
344	51.005	0.149	1.04	95	-1.4	-	87	-0.041	5.76	1.114
345	51.155	0.150	1.03	95	-1.4	-	87	-0.038	5.78	1.146
346	51.304	0.149	1.02	95	-1.2	-	87	-0.041	5.76	1.195
347	51.454	0.150	1.01	95	-1.3	-	87	-0.036	5.78	1.223
348	51.603	0.149	1.03	95	-1.2	-	87	-0.036	5.75	1.227
349	51.753	0.150	1.02	95	-1.3	-	87	-0.042	5.75	1.222
350	51.902	0.149	1.03	95	-1.3	99	87	-0.039	5.73	1.223
351	52.052	0.150	1.04	95	-1.2	-	87	-0.042	5.72	1.226

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
352	52.201	0.149	1.05	95	-1.4	-	87	-0.033	5.74	1.238
353	52.350	0.149	1.03	95	-1.4	-	87	-0.042	5.75	1.238
354	52.499	0.149	1.03	95	-1.3	-	87	-0.039	5.78	1.238
355	52.647	0.148	1.03	95	-1.2	-	87	-0.039	6.11	0.980
356	52.797	0.150	1.01	95	-1.2	-	86	-0.030	6.02	0.820
357	52.949	0.152	1.03	95	-1.3	-	86	-0.035	5.76	1.058
358	53.096	0.147	1.02	95	-1.3	-	86	-0.037	5.81	1.038
359	53.245	0.149	1.04	95	-1.2	-	87	-0.036	5.82	1.008
360	53.395	0.150	1.01	95	-1.4	99	87	-0.036	5.86	1.019
361	53.544	0.149	1.04	95	-1.2	-	87	-0.034	5.83	1.022
362	53.694	0.150	1.04	95	-1.3	-	87	-0.032	5.76	1.007
363	53.843	0.149	1.01	95	-1.3	-	86	-0.034	5.74	1.019
364	53.993	0.150	1.02	95	-1.3	-	86	-0.027	5.73	1.014
365	54.142	0.149	1.03	95	-1.3	-	86	-0.031	5.71	1.009
366	54.291	0.149	1.01	95	-1.3	-	86	-0.035	5.73	0.997
367	54.439	0.148	1.06	95	-1.4	-	86	-0.029	5.73	0.992
368	54.591	0.152	1.03	95	-1.4	-	86	-0.030	5.78	0.989
369	54.738	0.147	1.02	95	-1.2	-	86	-0.032	5.76	0.982
370	54.887	0.149	1.02	95	-1.3	99	86	-0.037	5.69	0.901
371	55.037	0.150	1.01	95	-1.3	-	86	-0.040	5.57	0.864
372	55.187	0.150	1.02	95	-1.3	-	86	-0.031	5.54	0.854
373	55.336	0.149	1.03	95	-1.3	-	86	-0.032	5.50	0.842
374	55.486	0.150	1.04	95	-1.3	-	86	-0.031	5.51	0.831
375	55.636	0.150	1.05	95	-1.3	-	86	-0.034	5.49	0.825
376	55.785	0.149	1.02	95	-1.4	-	86	-0.035	5.49	0.835
377	55.934	0.149	1.03	95	-1.2	-	86	-0.033	5.43	0.827
378	56.083	0.149	1.03	95	-1.3	-	87	-0.026	5.40	0.806
379	56.232	0.149	1.04	95	-1.3	-	88	-0.030	5.40	0.796
380	56.381	0.149	1.03	95	-1.3	99	88	-0.028	5.41	0.791
381	56.530	0.149	1.04	95	-1.4	-	87	-0.033	5.41	0.792
382	56.680	0.150	1.01	95	-1.3	-	87	-0.032	5.39	0.782
383	56.830	0.150	1.01	95	-1.4	-	86	-0.024	5.38	0.773

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBIJob #: 25-446Model: 1.4RTracking #: 238Run #: 2Technician: AKDate: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
384	56.979	0.149	1.05	94	-1.2	-	86	-0.028	5.36	0.757
385	57.129	0.150	1.04	95	-1.4	-	86	-0.034	5.38	0.753
386	57.279	0.150	1.04	95	-1.2	-	86	-0.031	5.38	0.753
387	57.428	0.149	1.02	95	-1.3	-	86	-0.028	5.39	0.740
388	57.578	0.150	1.03	95	-1.2	-	86	-0.029	5.40	0.737
389	57.727	0.149	1.04	95	-1.3	-	86	-0.030	5.42	0.730
390	57.876	0.149	1.04	94	-1.4	99	87	-0.025	5.43	0.729
391	58.024	0.148	1.04	95	-1.4	-	87	-0.029	5.42	0.736
392	58.176	0.152	1.02	94	-1.3	-	87	-0.028	5.42	0.735
393	58.323	0.147	1.03	95	-1.3	-	87	-0.034	5.44	0.740
394	58.473	0.150	1.04	94	-1.4	-	87	-0.032	5.44	0.737
395	58.623	0.150	1.02	94	-1.4	-	87	-0.031	5.44	0.737
396	58.772	0.149	1.01	94	-1.3	-	87	-0.022	5.46	0.733
Avg/Tot	74.616	0.149	1.03	90.2	-1.3	100	86.4	-0.057	9.62	0.575

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 332

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
0	64	64	65	65	63	64.2	N/A
1	71	66	66	75	64	68.3	N/A
2	85	72	69	86	65	75.4	N/A
3	98	78	72	112	69	85.8	N/A
4	113	87	77	162	76	102.7	N/A
5	128	98	82	218	87	122.3	N/A
6	140	110	87	268	102	141.4	N/A
7	151	121	93	319	118	160.3	N/A
8	162	132	99	373	135	179.9	N/A
9	176	144	106	427	152	200.9	N/A
10	190	156	115	478	171	221.7	N/A
11	208	167	123	525	190	242.5	N/A
12	227	179	132	569	209	262.9	N/A
13	245	192	141	606	227	282.2	N/A
14	262	206	152	640	244	300.8	N/A
15	280	220	162	665	261	317.6	N/A
16	297	235	174	683	277	332.9	N/A
17	312	249	185	697	292	346.9	N/A
18	327	262	196	706	305	359.3	N/A
19	340	275	207	712	319	370.6	N/A
20	352	288	219	715	332	381.1	N/A
21	364	301	231	714	345	390.7	N/A
22	373	314	243	696	360	397.1	N/A
23	379	324	254	694	370	404.2	N/A
24	382	331	263	703	379	411.6	N/A
25	384	337	270	704	386	416.3	N/A
26	386	343	277	712	394	422.1	N/A
27	388	349	281	714	400	426.4	N/A
28	390	356	285	711	406	429.5	N/A
29	392	362	288	718	411	434.2	N/A
30	394	367	291	723	417	438.4	N/A
31	397	374	294	729	422	443.1	N/A
32	400	379	296	733	428	447.3	N/A
33	405	385	299	735	434	451.6	N/A
34	411	390	301	738	439	456.0	N/A
35	417	396	304	738	445	459.8	N/A
36	423	401	307	736	451	463.6	N/A
37	430	406	311	730	456	466.5	N/A
38	437	410	314	731	461	470.8	N/A
39	444	415	318	729	467	474.5	N/A
40	450	419	322	725	472	477.6	N/A
41	456	424	326	726	478	481.9	N/A
42	464	428	330	727	483	486.0	N/A
43	470	432	334	730	488	490.5	N/A
44	477	436	338	732	492	495.0	N/A
45	483	440	342	735	498	499.4	N/A
46	489	444	346	735	503	503.4	N/A
47	494	448	351	734	508	507.0	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 2

Technician: AK

Date: 10/28/2025

Stove ΔT : 332

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
48	499	451	355	736	514	511.0	N/A
49	503	455	360	738	519	514.9	N/A
50	507	459	365	735	524	517.8	N/A
51	510	463	369	732	528	520.4	N/A
52	511	466	373	724	533	521.1	N/A
53	511	467	376	712	535	520.3	N/A
54	510	469	379	699	537	518.7	N/A
55	508	469	381	686	538	516.5	N/A
56	506	469	383	672	538	513.7	N/A
57	504	469	385	660	538	511.0	N/A
58	501	469	386	652	537	509.0	N/A
59	498	469	387	644	536	506.9	N/A
60	495	469	388	637	535	504.9	N/A
61	492	468	389	630	535	502.7	N/A
62	489	467	390	625	534	501.0	N/A
63	486	467	390	623	534	500.0	N/A
64	484	467	391	622	533	499.4	N/A
65	481	467	392	623	533	499.0	N/A
66	479	467	392	625	532	499.1	N/A
67	478	467	393	625	531	498.7	N/A
68	476	468	394	625	532	498.9	N/A
69	475	469	395	628	532	499.6	N/A
70	474	469	396	631	532	500.3	N/A
71	472	470	397	631	532	500.4	N/A
72	471	471	398	632	532	500.7	N/A
73	470	471	399	630	533	500.5	N/A
74	469	472	400	628	533	500.2	N/A
75	468	472	401	624	533	499.7	N/A
76	468	472	403	622	532	499.3	N/A
77	467	472	404	615	532	498.0	N/A
78	467	472	405	611	532	497.3	N/A
79	467	473	406	606	532	496.5	N/A
80	467	473	407	601	531	495.9	N/A
81	468	473	408	599	530	495.7	N/A
82	468	474	410	597	530	495.7	N/A
83	469	475	411	597	529	495.9	N/A
84	469	476	412	596	529	496.4	N/A
85	469	477	414	598	529	497.0	N/A
86	468	478	415	599	529	497.9	N/A
87	468	479	417	599	530	498.5	N/A
88	468	480	419	598	532	499.1	N/A
89	468	480	420	593	534	498.9	N/A
90	468	480	423	592	535	499.4	N/A
91	467	480	424	590	538	499.9	N/A
92	467	479	426	589	540	500.3	N/A
93	467	479	428	590	542	501.1	N/A
94	466	478	429	590	544	501.4	N/A
95	466	477	431	587	546	501.2	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT : 332

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
96	466	475	432	586	548	501.1	N/A
97	465	474	433	579	549	500.2	N/A
98	465	474	433	572	551	499.2	N/A
99	466	472	434	567	553	498.3	N/A
100	466	472	435	562	555	497.9	N/A
101	466	471	436	560	556	497.9	N/A
102	466	470	436	554	559	497.2	N/A
103	467	470	437	551	561	496.9	N/A
104	467	469	437	545	563	496.3	N/A
105	467	468	438	537	565	494.9	N/A
106	466	467	438	529	567	493.4	N/A
107	466	466	438	519	571	491.9	N/A
108	464	465	438	508	577	490.5	N/A
109	463	463	439	517	578	491.9	N/A
110	465	460	439	547	576	497.4	N/A
111	470	457	439	588	575	505.6	N/A
112	474	456	439	629	573	514.2	N/A
113	479	454	440	655	572	520.1	N/A
114	481	454	439	665	571	522.1	N/A
115	483	453	438	668	571	522.6	N/A
116	485	452	437	670	571	522.9	N/A
117	486	451	435	668	570	522.1	N/A
118	487	450	434	671	569	522.3	N/A
119	488	450	433	672	569	522.2	N/A
120	489	449	432	674	568	522.3	N/A
121	490	448	432	675	566	522.1	N/A
122	491	447	431	677	564	522.0	N/A
123	492	447	430	678	563	522.1	N/A
124	493	447	430	679	561	522.1	N/A
125	494	446	430	679	561	522.0	N/A
126	496	446	430	677	559	521.7	N/A
127	497	446	430	676	558	521.5	N/A
128	498	446	431	675	556	521.4	N/A
129	500	446	431	673	555	521.1	N/A
130	501	446	432	671	554	520.7	N/A
131	503	446	432	667	554	520.3	N/A
132	504	447	433	663	553	519.7	N/A
133	505	447	434	660	552	519.6	N/A
134	505	448	435	656	552	519.2	N/A
135	506	448	436	653	552	518.8	N/A
136	507	448	437	653	551	518.9	N/A
137	507	449	438	650	551	518.8	N/A
138	508	449	438	648	549	518.5	N/A
139	509	450	439	644	548	518.1	N/A
140	510	450	440	640	548	517.5	N/A
141	510	450	441	635	547	516.7	N/A
142	510	450	442	630	546	515.8	N/A
143	510	451	443	623	546	514.5	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT : 332

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
144	510	451	444	616	545	513.1	N/A
145	509	450	444	611	545	511.8	N/A
146	509	450	445	606	544	510.5	N/A
147	508	450	445	601	542	509.2	N/A
148	507	450	446	597	542	508.1	N/A
149	506	449	446	591	541	506.6	N/A
150	505	449	446	585	541	505.1	N/A
151	504	448	446	581	539	503.4	N/A
152	502	448	446	576	538	502.0	N/A
153	501	447	446	572	537	500.6	N/A
154	500	447	446	568	536	499.4	N/A
155	498	447	445	564	535	497.9	N/A
156	497	446	445	560	534	496.4	N/A
157	495	446	445	555	533	494.7	N/A
158	494	446	444	551	531	493.2	N/A
159	492	445	444	547	531	491.7	N/A
160	491	445	444	544	530	490.4	N/A
161	490	444	443	539	528	488.9	N/A
162	488	444	443	536	528	487.5	N/A
163	487	443	442	532	526	486.1	N/A
164	485	443	442	529	526	484.9	N/A
165	484	442	441	525	525	483.5	N/A
166	483	442	441	521	524	482.3	N/A
167	482	441	441	516	523	480.6	N/A
168	481	441	440	512	523	479.5	N/A
169	480	441	440	510	522	478.4	N/A
170	478	440	440	503	522	476.7	N/A
171	477	439	439	497	522	474.9	N/A
172	476	439	439	493	521	473.5	N/A
173	475	438	439	489	521	472.1	N/A
174	474	438	438	483	521	470.7	N/A
175	473	437	438	478	520	469.0	N/A
176	472	436	437	474	519	467.7	N/A
177	471	435	437	471	519	466.7	N/A
178	471	435	436	468	519	465.6	N/A
179	470	434	436	464	518	464.6	N/A
180	470	434	436	463	517	463.9	N/A
181	469	434	436	461	517	463.2	N/A
182	469	434	436	459	516	462.5	N/A
183	469	433	436	457	514	461.8	N/A
184	468	433	436	455	514	461.1	N/A
185	468	432	436	454	513	460.7	N/A
186	469	432	436	453	512	460.3	N/A
187	469	432	436	452	511	459.9	N/A
188	469	431	436	452	511	459.8	N/A
189	470	431	436	450	510	459.2	N/A
190	470	430	436	449	510	458.9	N/A
191	469	430	435	446	510	458.1	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 332

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
192	469	429	435	444	510	457.4	N/A
193	468	429	435	441	510	456.5	N/A
194	467	429	434	438	510	455.6	N/A
195	466	428	434	436	510	454.8	N/A
196	465	428	434	433	510	453.8	N/A
197	464	427	433	431	510	453.1	N/A
198	462	427	432	425	515	452.4	N/A
199	460	427	431	411	521	449.9	N/A
200	458	428	430	401	522	447.3	N/A
201	457	427	429	452	518	456.5	N/A
202	454	426	429	510	513	466.4	N/A
203	452	423	428	571	509	476.6	N/A
204	450	419	427	609	508	482.6	N/A
205	449	417	424	635	508	486.4	N/A
206	448	414	421	656	509	489.6	N/A
207	448	412	418	670	510	491.4	N/A
208	449	410	414	678	512	492.5	N/A
209	449	408	410	684	514	493.0	N/A
210	449	406	406	688	516	493.3	N/A
211	449	404	402	687	518	492.2	N/A
212	449	403	399	686	520	491.3	N/A
213	448	402	395	688	522	490.8	N/A
214	447	401	391	689	523	490.0	N/A
215	446	399	388	690	524	489.3	N/A
216	445	397	384	691	524	488.3	N/A
217	444	396	382	694	525	488.0	N/A
218	444	395	379	699	525	488.3	N/A
219	444	394	377	702	525	488.3	N/A
220	444	393	376	706	524	488.4	N/A
221	444	393	374	711	524	489.0	N/A
222	444	392	373	715	523	489.3	N/A
223	445	392	372	719	522	489.9	N/A
224	446	392	371	722	522	490.4	N/A
225	446	392	371	723	521	490.5	N/A
226	447	392	370	727	520	491.1	N/A
227	448	392	370	729	519	491.6	N/A
228	449	393	370	732	519	492.4	N/A
229	450	393	370	735	518	493.0	N/A
230	451	394	370	737	517	493.6	N/A
231	451	395	371	739	516	494.2	N/A
232	452	396	371	742	515	495.1	N/A
233	453	397	372	743	515	495.8	N/A
234	454	398	373	745	514	496.4	N/A
235	454	399	373	747	513	497.2	N/A
236	455	400	374	748	512	497.9	N/A
237	456	401	375	749	512	498.6	N/A
238	457	402	377	747	511	498.8	N/A
239	458	403	378	745	511	498.9	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 332

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
240	458	404	379	744	510	499.2	N/A
241	459	405	380	744	509	499.5	N/A
242	460	406	382	742	509	499.8	N/A
243	461	406	383	742	509	500.2	N/A
244	462	407	385	739	508	500.2	N/A
245	463	409	386	736	507	500.2	N/A
246	464	410	387	735	506	500.5	N/A
247	465	411	389	733	506	500.7	N/A
248	466	412	390	732	506	501.0	N/A
249	468	413	391	731	505	501.3	N/A
250	469	414	392	730	505	501.8	N/A
251	469	415	393	728	504	502.0	N/A
252	471	416	395	728	504	502.6	N/A
253	472	417	396	727	504	503.1	N/A
254	473	418	397	727	503	503.6	N/A
255	474	420	398	727	503	504.4	N/A
256	475	421	400	726	503	504.8	N/A
257	476	422	401	726	503	505.4	N/A
258	477	423	402	725	503	505.9	N/A
259	478	425	403	724	503	506.4	N/A
260	479	426	404	723	503	506.8	N/A
261	480	428	405	722	502	507.1	N/A
262	480	429	406	721	502	507.7	N/A
263	481	431	407	721	501	508.3	N/A
264	482	433	408	723	501	509.3	N/A
265	482	434	409	724	501	510.1	N/A
266	483	435	410	728	500	511.2	N/A
267	483	436	411	730	500	512.0	N/A
268	484	438	412	733	500	513.1	N/A
269	484	439	413	734	500	513.8	N/A
270	484	440	414	735	499	514.4	N/A
271	484	442	415	733	499	514.5	N/A
272	485	443	416	734	499	515.2	N/A
273	485	444	417	734	499	515.8	N/A
274	485	445	418	735	499	516.4	N/A
275	486	446	419	738	499	517.5	N/A
276	486	448	420	739	498	518.2	N/A
277	487	449	421	739	498	518.7	N/A
278	488	451	422	739	498	519.3	N/A
279	489	453	423	736	499	519.9	N/A
280	489	454	424	735	498	520.1	N/A
281	490	456	425	731	499	520.3	N/A
282	491	458	426	726	500	520.0	N/A
283	491	459	427	721	500	519.7	N/A
284	491	461	428	716	501	519.3	N/A
285	492	462	429	709	501	518.5	N/A
286	492	464	429	704	501	517.9	N/A
287	492	465	430	699	500	517.2	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT : 332

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
288	492	466	431	693	500	516.5	N/A
289	492	466	432	688	500	515.5	N/A
290	493	467	432	678	500	513.8	N/A
291	493	467	433	670	500	512.3	N/A
292	492	466	434	660	499	510.2	N/A
293	492	466	434	650	499	508.1	N/A
294	491	466	434	640	499	506.0	N/A
295	491	465	434	631	499	503.9	N/A
296	490	465	434	622	498	502.0	N/A
297	489	465	434	613	498	500.0	N/A
298	489	464	434	606	498	498.2	N/A
299	488	464	434	599	498	496.6	N/A
300	487	464	434	592	497	494.9	N/A
301	487	464	434	586	497	493.3	N/A
302	486	463	434	580	497	491.9	N/A
303	485	463	434	575	497	490.6	N/A
304	485	463	434	570	497	489.4	N/A
305	484	462	434	564	497	488.1	N/A
306	483	462	433	560	497	486.9	N/A
307	482	461	433	555	497	485.7	N/A
308	482	461	433	551	497	484.5	N/A
309	481	460	433	546	496	483.2	N/A
310	480	459	432	542	496	481.9	N/A
311	480	459	432	538	496	480.8	N/A
312	479	458	432	533	496	479.5	N/A
313	479	457	431	529	495	478.3	N/A
314	478	457	431	524	495	477.0	N/A
315	478	456	430	520	494	475.6	N/A
316	477	455	430	515	495	474.4	N/A
317	477	454	429	512	494	473.2	N/A
318	476	453	429	507	494	471.8	N/A
319	476	452	429	503	494	470.7	N/A
320	476	451	428	499	493	469.4	N/A
321	476	449	428	496	494	468.4	N/A
322	475	448	427	491	493	466.9	N/A
323	475	446	427	486	494	465.6	N/A
324	474	445	426	481	495	464.1	N/A
325	473	444	426	477	495	462.7	N/A
326	472	442	425	473	495	461.3	N/A
327	472	440	425	468	494	459.8	N/A
328	471	439	424	465	494	458.6	N/A
329	470	437	424	462	494	457.2	N/A
330	469	436	423	457	494	455.6	N/A
331	468	434	422	452	494	454.0	N/A
332	466	432	421	447	494	452.1	N/A
333	465	431	420	441	494	450.3	N/A
334	463	429	419	436	494	448.4	N/A
335	462	428	418	431	494	446.5	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT : 332

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
336	460	426	417	427	493	444.6	N/A
337	458	424	416	423	493	442.8	N/A
338	456	423	415	419	492	441.0	N/A
339	454	421	414	414	492	439.0	N/A
340	452	420	413	409	492	436.9	N/A
341	449	418	412	403	491	434.7	N/A
342	447	416	411	399	492	432.7	N/A
343	444	414	410	393	491	430.4	N/A
344	442	412	408	388	491	428.1	N/A
345	439	410	407	384	491	426.1	N/A
346	437	408	406	379	490	424.1	N/A
347	435	407	404	375	490	422.3	N/A
348	433	406	403	371	489	420.3	N/A
349	431	405	402	367	489	418.8	N/A
350	429	403	400	364	489	417.1	N/A
351	427	402	399	361	489	415.7	N/A
352	426	400	398	358	489	414.2	N/A
353	424	400	397	355	489	412.7	N/A
354	421	398	395	352	489	411.1	N/A
355	420	398	394	350	489	410.3	N/A
356	419	398	393	349	488	409.4	N/A
357	418	397	392	347	487	408.2	N/A
358	417	397	391	344	486	407.1	N/A
359	417	396	390	343	485	406.1	N/A
360	416	396	389	341	484	405.1	N/A
361	415	395	388	339	483	404.1	N/A
362	415	394	388	337	482	403.0	N/A
363	414	394	387	335	481	402.1	N/A
364	413	393	386	334	480	401.1	N/A
365	413	392	385	332	479	400.2	N/A
366	412	392	384	330	478	399.2	N/A
367	411	391	384	329	478	398.5	N/A
368	411	391	383	328	477	397.8	N/A
369	410	390	382	326	477	397.1	N/A
370	410	389	381	325	477	396.4	N/A
371	409	389	381	324	476	395.7	N/A
372	409	388	380	323	475	395.0	N/A
373	408	388	379	322	474	394.3	N/A
374	408	388	379	321	473	393.6	N/A
375	407	387	378	321	472	393.0	N/A
376	407	387	377	319	471	392.1	N/A
377	406	386	377	319	469	391.4	N/A
378	406	386	376	317	468	390.6	N/A
379	405	385	376	317	467	390.0	N/A
380	404	385	375	315	466	389.0	N/A
381	404	384	375	314	465	388.3	N/A
382	403	384	374	313	464	387.7	N/A
383	402	384	374	313	463	387.0	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 332

Temperature Data (°F)							
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
384	402	383	373	312	462	386.3	N/A
385	401	383	373	311	462	385.7	N/A
386	400	382	373	310	460	385.1	N/A
387	400	382	372	309	460	384.5	N/A
388	399	382	372	308	459	383.8	N/A
389	398	381	371	307	458	383.0	N/A
390	397	381	371	306	458	382.4	N/A
391	397	380	370	305	458	382.0	N/A
392	396	380	370	304	458	381.5	N/A
393	396	380	369	304	457	381.0	N/A
394	395	379	369	303	456	380.6	N/A
395	395	379	369	302	456	380.1	N/A
396	394	379	368	301	456	379.6	N/A
Average	436.7	410.8	388.2	513.8	484.0	446.7	N/A

Test Input Data

Client: SBI
 Model: 1.4R
 Date: 10/28/2025
 Run #: 2

Job #: 25-446
 Tracking #: 238
 Technician: AK

Traverse Data

pt	dP (in WC)
1	0.052
2	0.066
3	0.073
4	0.073
5	0.063
6	0.050
7	0.047
8	0.061
9	0.071
10	0.074
11	0.065
12	0.045
Center	0.075

Tunnel Data

Tunnel dia. (in):	12
Pitot Cp	0.99

Vs,cent (ft/s):	18.22
Vs, trav (ft/s):	16.46
Fp	0.904

	Pre-Test	Post Test
Barometric Pressure (in. Hg)	30.09	30.12
Lab Relative Humidity (%)	43.6	31.9

Traverse Temp:	75
Static Pressure:	-0.117

Fuel Data

Fuel Properties

Species	Maple
HHV (Btu/lb)	8587
%C	50.64%
%H	6.02%
%O	41.74%
%Ash	1.35%

	Wet Weight	MC (%db)	Dry Weight (lbs)
Kindling	1.75	10.00	1.59
Starter	5.18	20.08	4.31
L2	12.19	22.38	9.96
L3	8.57	22.76	6.98
L4 _s	4.54	20.86	3.76
L4 _b	13.35	20.88	11.04
Avg. Moisture (%db)		21.07	

Run 2 Results Summary

Test Segments

	Clock	ET(min)
L1 Ignition	10:49 AM	0
L1 End	11:20 AM	21
L1 Duration		21
Fuel Consumed (lbs-wet)		4.82
Fuel Consumed (lbs-dry)		3.79

L2 Loaded	11:20 AM	22
L2 End	12:19 PM	107
L2 Duration		85
Fuel Consumed (lbs-wet)		11.00
Fuel Consumed (lbs-dry)		8.77

L3 Loaded	12:20 PM	108
L3 End	1:17 PM	197
L3 Duration		89
Fuel Consumed (lbs-wet)		7.76
Fuel Consumed (lbs-dry)		6.17

L4 Loaded	1:17 PM	198
L4 End	4:23 PM	502
L4 Duration		304
Fuel Consumed (lbs-wet)		18.09
Fuel Consumed (lbs-dry)		15.00

Total Fuel Burned (lbs-wet)	41.67
Total Fuel Burned (lbs-dry)	33.74

15.30 (kg-dry) 1.83 kg/hr dry

Firebox Avg Temps (F)

L1TS _{avg(i)}	64
L1TS _{avg(f)}	391
L2TS _{avg(i)}	397
L2TS _{avg(f)}	492
L3TS _{avg(i)}	491
L3TS _{avg(f)}	453
L4TS _{avg(i)}	453
L4TS _{avg(f)}	396

Burn Time Rating (hrs)

BTR	6
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Burn Rate (lbs-wet/hr) (dry kg/hr)

BR _{L2}	13.77	4.92
BR _{L2}	7.76	2.81
BR _{L3}	5.23	1.89
BR _{L4}	3.57	1.62
OVERALL	4.98	1.83

1st hr Start	10:49 AM	0
1st hr End	11:49 AM	60
L4 Duration		60
Fuel Consumed (lbs-wet)		11.68
Fuel Consumed (lbs-dry)		9.28

PM Results

Burn Phase:	L1	L2	L3	L4	1st Hr	Total
E _T :	2.2	1.2	1.5	7.2	3.1	12.2
E _{g/hr} :	6.3	0.9	1.0	1.42	3.08	1.5
E _{g/kg} :	1.29	0.30	0.54	1.06	0.73	0.79
E _{g/MJ output} :	0.09	0.02	0.04	0.07		0.05
E _{lb/mmbtu output} :	0.21	0.05	0.09	0.16	-	0.13
CO (g):	73.3	117.1	164.6	376.4		731.4
CO (g/min):	3.49	1.38	1.85	1.24		1.46
Output (BTU/hr)	65,777	38,089	26,348	19,116		25,448
Efficiency (%)	70.3%	73.5%	74.1%	75.1%		74.0%

Rolling Average Max Values

	1-min Avg.	5-min Avg.	60-min Avg
PM (g/hr)	289.6	94.2	10.1

Quality Checks

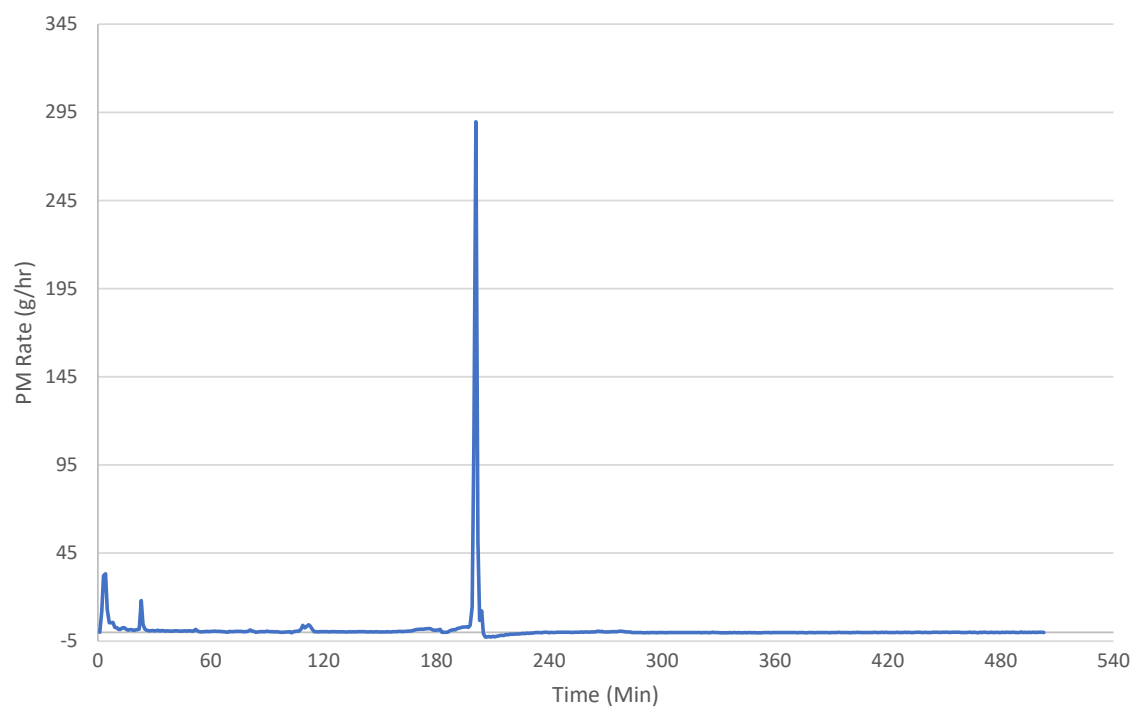
Requirement

Observed

Pass/Fail

Filter/Dewpt. Temp	Dewpoint must never exceed filter temp	Max Δ -36	PASS
Filter Temp	Must be between 80 and 90F at all times	82.5 / 88.3	PASS
Ambient Temp	Must be between 65 and 90F at all times	65.5 / 74.8	PASS
Minimum Tunnel Flow	>600 CFM	739.6	PASS
Weight Loss	Must be >0.1 lb per 20 min	Min -0.27 lb.	PASS

TEOM PM Emissions



L1 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/28/25
Run: 2
Control #: 238
Test Duration: 21
Output Category: L1

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	70.3%	75.2%
Combustion Efficiency	97.0%	97.0%
Heat Transfer Efficiency	72.4%	77.5%

Output Rate (kJ/h)	69,341	65,777	(Btu/h)
Burn Rate (kg/h)	4.94	10.89	(lb/h)
Input (kJ/h)	98,661	93,591	(Btu/h)

Test Load Weight (dry kg)	1.73	3.81	dry lb
MC wet (%)	21.27		
MC dry (%)	27.02		
Particulate (g)	N/A		
CO (g)	73		
Test Duration (h)	0.35		

Emissions	Particulate	CO
g/MJ Output	N/A	3.02
g/kg Dry Fuel	N/A	42.42
g/h	N/A	209.53
g/min	N/A	3.49
lb/MM Btu Output	N/A	7.02

Air/Fuel Ratio (A/F)	8.76
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VERSION:

2.4

4/15/2010

L2 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/28/25
Run: 2
Control #: 238
Test Duration: 85
Output Category: L2

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	73.5%	78.6%
Combustion Efficiency	98.0%	98.0%
Heat Transfer Efficiency	75.0%	80.2%

Output Rate (kJ/h)	40,152	38,089	(Btu/h)
Burn Rate (kg/h)	2.73	6.03	(lb/h)
Input (kJ/h)	54,627	51,820	(Btu/h)

Test Load Weight (dry kg)	3.87	8.54	dry lb
MC wet (%)	20.27		
MC dry (%)	25.42		
Particulate (g)	N/A		
CO (g)	117		
Test Duration (h)	1.42		

Emissions	Particulate	CO
g/MJ Output	N/A	2.06
g/kg Dry Fuel	N/A	30.22
g/h	N/A	82.65
g/min	N/A	1.38
lb/MM Btu Output	N/A	4.78

Air/Fuel Ratio (A/F)	10.27
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VERSION:

2.4

4/15/2010

L3 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/28/25
Run: 2
Control #: 238
Test Duration: 89
Output Category: L3

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	74.1%	79.3%
Combustion Efficiency	95.9%	95.9%
Heat Transfer Efficiency	77.3%	82.7%

Output Rate (kJ/h)	27,776	26,348	(Btu/h)
Burn Rate (kg/h)	1.88	4.13	(lb/h)
Input (kJ/h)	37,459	35,534	(Btu/h)

Test Load Weight (dry kg)	2.78	6.13	dry lb
MC wet (%)	20.48		
MC dry (%)	25.75		
Particulate (g)	N/A		
CO (g)	165		
Test Duration (h)	1.48		

Emissions	Particulate	CO
g/MJ Output	N/A	3.99
g/kg Dry Fuel	N/A	59.15
g/h	N/A	110.94
g/min	N/A	1.85
lb/MM Btu Output	N/A	9.28

Air/Fuel Ratio (A/F)	11.43
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VERSION:

2.4

4/15/2010

L4 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/28/25
Run: 2
Control #: 238
Test Duration: 304
Output Category: L4

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	75.1%	80.3%
Combustion Efficiency	96.2%	96.2%
Heat Transfer Efficiency	78.1%	83.5%

Output Rate (kJ/h)	20,152	19,116	(Btu/h)
Burn Rate (kg/h)	1.34	2.96	(lb/h)
Input (kJ/h)	26,830	25,451	(Btu/h)

Test Load Weight (dry kg)	6.81	15.00	dry lb
MC wet (%)	17.08		
MC dry (%)	20.60		
Particulate (g)	N/A		
CO (g)	376		
Test Duration (h)	5.07		

Emissions	Particulate	CO
g/MJ Output	N/A	3.69
g/kg Dry Fuel	N/A	55.31
g/h	N/A	74.29
g/min	N/A	1.24
lb/MM Btu Output	N/A	8.57

Air/Fuel Ratio (A/F)	13.11
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VERSION:

2.4

4/15/2010

Run 2 TEOM Data

ET (min)	Ci - 1-min avg PM (ug/m ³)	Tunnel dP (in WC)	sqrt dP	Tunnel Temp (F)	Tunnel Temp - 10 minute Avg. (F)	Tunnel RH - 10 minute avg. (%)	Tunnel Velocity - Vsi (ft/s)	Tunnel Flow - Q _{std} (m ³ /min)	E _i (mg)	E _{g/hr, i} (g/hr)	PM 5-min Rolling Avg (g/hr)	PM 30-min Rolling Avg (g/hr)	PM (cumulative g)
0	15	0.074	0.2720	74.8	-	-	16.345	21.650	0.333	0.02	-	-	0.00
1	9141	0.075	0.2739	78.5	-	-	16.512	21.720	198.547	11.91	-	-	0.20
2	24901	0.074	0.2720	81.4	-	-	16.446	21.517	535.787	32.15	-	-	0.73
3	25791	0.074	0.2720	85.3	-	-	16.505	21.440	552.964	33.18	-	-	1.29
4	9931	0.076	0.2757	82.3	-	-	16.681	21.788	216.379	12.98	18.05	-	1.50
5	4270	0.074	0.2720	82.4	-	-	16.461	21.497	91.783	5.51	19.15	-	1.60
6	4221	0.074	0.2720	83.2	-	-	16.473	21.481	90.663	5.44	17.85	-	1.69
7	4290	0.075	0.2739	85.1	-	-	16.613	21.588	92.603	5.56	12.53	-	1.78
8	2243	0.073	0.2702	87	-	-	16.419	21.261	47.682	2.86	6.47	-	1.83
9	2099	0.074	0.2720	87.9	82.79	120.13	16.544	21.389	44.894	2.69	4.41	-	1.87
10	1257	0.074	0.2720	88.3	84.14	135.87	16.550	21.381	26.876	1.61	3.63	-	1.90
11	1308	0.073	0.2702	88.8	85.17	153.29	16.446	21.227	27.755	1.67	2.88	-	1.93
12	1990	0.074	0.2720	89.5	85.98	172.04	16.569	21.358	42.505	2.55	2.28	-	1.97
13	2146	0.074	0.2720	89.9	86.44	191.67	16.575	21.350	45.820	2.75	2.25	-	2.01
14	1452	0.074	0.2720	90.3	87.24	211.48	16.581	21.342	30.999	1.86	2.09	-	2.05
15	1002	0.074	0.2720	90.6	88.06	231.01	16.585	21.336	21.373	1.28	2.02	-	2.07
16	1141	0.074	0.2720	91	88.84	250.15	16.591	21.329	24.343	1.46	1.98	-	2.09
17	1229	0.073	0.2702	92.2	89.55	268.81	16.497	21.161	26.000	1.56	1.78	-	2.12
18	867	0.074	0.2720	92.6	90.11	286.75	16.615	21.298	18.474	1.11	1.45	-	2.14
19	1145	0.072	0.2683	92.2	90.54	303.73	16.383	21.016	24.068	1.44	1.37	-	2.16
20	1197	0.073	0.2702	92.2	90.93	319.68	16.497	21.161	25.319	1.52	1.42	-	2.19
21	1517	0.073	0.2702	92.3	91.28	334.5	16.498	21.159	32.108	1.93	1.51	-	2.22
22	14343	0.073	0.2702	101.5	92.48	347.92	16.635	20.985	300.989	18.06	4.81	-	2.52
23	3545	0.073	0.2702	95.7	93.06	360.12	16.549	21.094	74.771	4.49	5.49	-	2.59
24	1372	0.074	0.2720	93.6	93.39	371.2	16.630	21.278	29.194	1.75	5.55	-	2.62
25	888	0.073	0.2702	92.5	93.58	381.07	16.501	21.155	18.788	1.13	5.47	-	2.64
26	745	0.072	0.2683	92.5	93.73	390	16.388	21.010	15.662	0.94	5.27	-	2.66
27	658	0.074	0.2720	92.7	93.78	397.95	16.617	21.296	14.016	0.84	1.83	-	2.67
28	834	0.074	0.2720	92.6	93.78	404.97	16.615	21.298	17.756	1.07	1.15	-	2.69
29	676	0.074	0.2720	92.6	93.82	411.32	16.615	21.298	14.407	0.86	0.97	-	2.70
30	716	0.072	0.2683	92.9	93.89	417.05	16.394	21.002	15.031	0.90	0.92	-	2.72
31	893	0.075	0.2739	93	93.96	422.29	16.733	21.433	19.137	1.15	0.96	-	2.74
32	547	0.074	0.2720	93.2	93.13	427.31	16.624	21.286	11.638	0.70	0.94	-	2.75
33	766	0.074	0.2720	93.1	92.87	432.05	16.623	21.288	16.314	0.98	0.92	-	2.76
34	691	0.074	0.2720	93.2	92.83	436.49	16.624	21.286	14.710	0.88	0.92	-	2.78
35	513	0.075	0.2739	93.1	92.89	440.84	16.735	21.431	10.986	0.66	0.87	-	2.79
36	647	0.073	0.2702	92.9	92.93	445	16.507	21.148	13.677	0.82	0.81	-	2.80
37	612	0.074	0.2720	92.7	92.93	449.02	16.617	21.296	13.040	0.78	0.82	-	2.82
38	587	0.075	0.2739	92.9	92.96	453.15	16.732	21.435	12.581	0.75	0.78	-	2.83
39	530	0.075	0.2739	93.1	93.01	457.18	16.735	21.431	11.358	0.68	0.74	-	2.84
40	652	0.074	0.2720	93.2	93.04	461.1	16.624	21.286	13.880	0.83	0.77	-	2.86
41	670	0.073	0.2702	93.3	93.07	464.98	16.513	21.140	14.160	0.85	0.78	-	2.87
42	510	0.072	0.2683	93.2	93.07	468.85	16.398	20.997	10.707	0.64	0.75	-	2.88
43	621	0.074	0.2720	93.1	93.07	472.75	16.623	21.288	13.215	0.79	0.76	-	2.89
44	573	0.074	0.2720	93.3	93.08	476.64	16.626	21.284	12.200	0.73	0.77	-	2.91
45	680	0.074	0.2720	93.3	93.1	480.6	16.626	21.284	14.465	0.87	0.78	-	2.92
46	515	0.074	0.2720	93.1	93.12	484.57	16.623	21.288	10.968	0.66	0.74	-	2.93
47	614	0.076	0.2757	92.9	93.14	488.61	16.843	21.578	13.246	0.79	0.77	-	2.94
48	640	0.075	0.2739	93.2	93.17	492.63	16.736	21.429	13.723	0.82	0.78	-	2.96
49	554	0.076	0.2757	93.6	93.22	496.66	16.853	21.564	11.940	0.72	0.77	-	2.97
50	569	0.076	0.2757	93.6	93.26	500.68	16.853	21.564	12.281	0.74	0.75	-	2.98
51	1302	0.073	0.2702	91.7	93.1	504.53	16.489	21.171	27.554	1.65	0.94	-	3.01
52	619	0.074	0.2720	90.1	92.79	508.04	16.578	21.346	13.215	0.79	0.94	-	3.02
53	242	0.076	0.2757	88.7	92.35	511.01	16.779	21.660	5.253	0.32	0.84	-	3.03
54	164	0.073	0.2702	87.6	91.78	513.39	16.428	21.250	3.484	0.21	0.74	-	3.03
55	278	0.076	0.2757	86.7	91.12	515.1	16.748	21.700	6.029	0.36	0.67	-	3.04
56	292	0.075	0.2739	86.2	90.43	516.13	16.630	21.567	6.303	0.38	0.41	-	3.04
57	422	0.073	0.2702	86.4	89.78	516.53	16.410	21.273	8.984	0.54	0.36	-	3.05
58	360	0.073	0.2702	86.2	89.08	516.33	16.407	21.277	7.664	0.46	0.39	-	3.06
59	400	0.075	0.2739	85.8	88.3	515.54	16.624	21.574	8.635	0.52	0.45	3.16	3.07
60	422	0.073	0.2702	85.5	87.49	514.25	16.396	21.291	8.992	0.54	0.49	3.17	3.08
61	537	0.074	0.2720	85.2	86.84	512.48	16.504	21.442	11.514	0.69	0.55	2.97	3.09
62	375	0.075	0.2739	84.8	86.31	510.48	16.609	21.594	8.093	0.49	0.54	2.42	3.10
63	478	0.075	0.2739	84.5	85.89	508.45	16.604	21.600	10.319	0.62	0.57	1.86	3.11
64	421	0.076	0.2757	84.2	85.55	506.52	16.710	21.750	9.151	0.55	0.58	1.65	3.12
65	263	0.076	0.2757	83.9	85.27	504.77	16.705	21.756	5.715	0.34	0.54	1.56	3.12
66	239	0.075	0.2739	84.2	85.07	503.31	16.599	21.606	5.157	0.31	0.46	1.48	3.13
67	223	0.075	0.2739	84.6	84.89	502.08	16.606	21.598	4.810	0.29	0.42	1.39	3.13
68	102	0.076	0.2757	84.5	84.72	501.07	16.714	21.744	2.227	0.13	0.32	1.35	3.14
69	399	0.076	0.2757	84.3	84.57	500.34	16.711	21.748	8.675	0.52	0.32	1.30	3.14
70	309	0.076	0.2757	84	84.42	499.88	16.707	21.754	6.724	0.40	0.33	1.28	3.15
71	303	0.075	0.2739	83.9	84.29	499.65	16.595	21.612	6.539	0.39	0.35	1.26	3.16
72	397	0.076	0.2757	83.7	84.18	499.61	16.702	21.760	8.644	0.52	0.39	1.22	3.17
73	388	0.075	0.2739	83.5	84.08	499.65	16.589	21.620	8.395	0.50	0.47	1.18	3.17
74	421	0.076	0.2757	83.4	84	499.72	16.697	21.766	9.154	0.55	0.47	1.16	3.18
75	362	0.075	0.2739	83.2	83.93	499.79	16.584	21.626	7.831	0.47	0.49	1.15	3.19
76	309	0.075	0.2739	82.9	83.8	499.81	16.580	21.632	6.689	0.40	0.49	1.13	3.20
77	319	0.075	0.2739	83	83.64	499.74	16.581	21.630	6.908	0.41	0.47	1.11	3.20
78	273	0.076	0.2757	83.6	83.55	499.58	16.701	21.762	5.943	0.36	0.44	1.10	3.21
79	525	0.075	0.2739	83.4	83.46	499.27	16.587	21.622	11.348	0.68	0.46	1.08	3.22
80	1015	0.076	0.2757	83.3	83.39	498.83	16.696	21.768	22.096	1.33	0.64	1.06	3.24
81	582	0.076	0.2757	83.2	83.32	498.36	16.694	21.770	12.680	0.76	0.71	1.04	3.26
82	382	0.076	0.2757	82.9	83.24	497.86	16.690	21.776	8.308	0.50	0.72	0.75	3.27
83	105	0.076	0.2757	82.8	83.17	497.41	16.688	21.778	2.296	0.14	0.68	0.69	3.27
84	204	0.076	0.2757	82.6	83.09	497.03	16.685	21.782	4.452	0.27	0.60	0.67	3.27

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85	273	0.076	0.2757	82.5	83.02	496.76	16.684	21.784	5.945	0.36	0.40	0.65	3.28
86	334	0.075	0.2739	82.4	82.97	496.62	16.572	21.642	7.229	0.43	0.34	0.64	3.29
87	271	0.076	0.2757	82.2	82.89	496.67	16.679	21.790	5.912	0.35	0.31	0.63	3.29
88	264	0.076	0.2757	81.9	82.72	496.85	16.674	21.796	5.759	0.35	0.35	0.62	3.30
89	538	0.076	0.2757	82.3	82.61	497.1	16.681	21.788	11.715	0.70	0.44	0.61	3.31
90	265	0.076	0.2757	82.6	82.54	497.45	16.685	21.782	5.769	0.35	0.44	0.60	3.31
91	316	0.075	0.2739	82.5	82.47	497.86	16.574	21.640	6.833	0.41	0.43	0.59	3.32
92	243	0.076	0.2757	82.4	82.42	498.32	16.682	21.786	5.291	0.32	0.42	0.59	3.33
93	212	0.074	0.2720	82.2	82.36	498.84	16.458	21.501	4.564	0.27	0.41	0.58	3.33
94	265	0.075	0.2739	82.1	82.31	499.36	16.567	21.648	5.729	0.34	0.34	0.57	3.34
95	199	0.077	0.2775	81.8	82.24	499.78	16.782	21.941	4.364	0.26	0.32	0.56	3.34
96		0.077	0.2775	81.6	82.16	500.1					0.30	0.55	
97		0.075	0.2739	81.4	82.08	500.27					0.29	0.54	
98		0.076	0.2757	81.3	82.02	500.28					0.30	0.54	
99	192	0.076	0.2757	81.1	81.9	500.21	16.662	21.812	4.195	0.25	0.26	0.54	3.35
100	157	0.076	0.2757	81	81.74	500.06	16.661	21.814	3.417	0.21	0.23	0.53	3.35
101	261	0.076	0.2757	80.9	81.58	499.87	16.659	21.816	5.701	0.34	0.27	0.52	3.35
102	-229	0.074	0.2720	81.1	81.45	499.56	16.441	21.523	-4.929	-0.30	0.13	0.51	3.35
103	255	0.074	0.2720	81.5	81.38	499.14	16.447	21.515	5.490	0.33	0.17	0.50	3.35
104	480	0.075	0.2739	81.5	81.32	498.62	16.558	21.660	10.403	0.62	0.24	0.48	3.37
105	579	0.075	0.2739	81.2	81.26	497.98	16.554	21.666	12.549	0.75	0.35	0.47	3.38
106	601	0.075	0.2739	81.1	81.21	497.21	16.552	21.668	13.019	0.78	0.44	0.47	3.39
107	1464	0.075	0.2739	80.8	81.15	496.37	16.548	21.674	31.734	1.90	0.88	0.47	3.42
108	3130	0.075	0.2739	86.2	81.64	495.5	16.630	21.567	67.504	4.05	1.62	0.47	3.49
109	1965	0.073	0.2702	85.9	82.12	494.86	16.402	21.283	41.827	2.51	2.00	0.49	3.53
110	2539	0.074	0.2720	87.1	82.73	494.81	16.532	21.405	54.338	3.26	2.50	0.55	3.59
111	3355	0.074	0.2720	88.3	83.47	495.58	16.550	21.381	71.742	4.30	3.21	0.57	3.66
112	2704	0.074	0.2720	89.4	84.3	497.27	16.567	21.360	57.746	3.46	3.52	0.61	3.72
113	1367	0.074	0.2720	87.8	84.93	499.58	16.543	21.391	29.240	1.75	3.06	0.69	3.74
114	321	0.074	0.2720	86.6	85.44	502.15	16.525	21.414	6.884	0.41	2.64	0.75	3.75
115	326	0.074	0.2720	86	85.92	504.93	16.516	21.426	6.981	0.42	2.07	0.77	3.76
116	230	0.075	0.2739	85.8	86.39	507.88	16.624	21.574	4.964	0.30	1.27	0.77	3.76
117	275	0.074	0.2720	85.7	86.88	510.91	16.511	21.432	5.894	0.35	0.65	0.77	3.77
118	293	0.074	0.2720	86	86.86	514.09	16.516	21.426	6.269	0.38	0.37	0.77	3.78
119	286	0.075	0.2739	86	86.87	517.12	16.627	21.570	6.166	0.37	0.36	0.76	3.78
120	281	0.074	0.2720	85.9	86.75	519.61	16.514	21.428	6.029	0.36	0.35	0.76	3.79
121	260	0.075	0.2739	85.9	86.51	521.25	16.625	21.572	5.617	0.34	0.36	0.76	3.79
122	222	0.074	0.2720	85.9	86.16	522.04	16.514	21.428	4.765	0.29	0.35	0.75	3.80
123	260	0.075	0.2739	85.9	85.97	522.25	16.625	21.572	5.614	0.34	0.34	0.75	3.80
124	279	0.075	0.2739	85.7	85.88	522.26	16.622	21.576	6.021	0.36	0.34	0.74	3.81
125	240	0.074	0.2720	85.6	85.84	522.2	16.510	21.434	5.134	0.31	0.33	0.74	3.82
126	145	0.076	0.2757	85.5	85.81	522.08	16.730	21.724	3.158	0.19	0.30	0.74	3.82
127	265	0.075	0.2739	85.4	85.78	522.02	16.618	21.582	5.715	0.34	0.31	0.74	3.82
128	191	0.075	0.2739	85.3	85.71	521.92	16.616	21.584	4.117	0.25	0.29	0.75	3.83
129	257	0.076	0.2757	85.2	85.63	521.8	16.725	21.730	5.589	0.34	0.28	0.74	3.83
130	153	0.075	0.2739	85.2	85.56	521.64	16.615	21.586	3.293	0.20	0.26	0.74	3.84
131	203	0.075	0.2739	85.1	85.48	521.47	16.613	21.588	4.378	0.26	0.28	0.74	3.84
132	217	0.075	0.2739	85	85.39	521.24	16.612	21.590	4.687	0.28	0.26	0.73	3.85
133	349	0.075	0.2739	84.9	85.29	520.99	16.610	21.592	7.545	0.45	0.31	0.73	3.85
134	222	0.072	0.2683	84.9	85.21	520.7	16.275	21.156	4.703	0.28	0.30	0.72	3.86
135	270	0.075	0.2739	85	85.15	520.38	16.612	21.590	5.839	0.35	0.33	0.72	3.86
136	132	0.074	0.2720	84.8	85.08	520.1	16.498	21.450	2.838	0.17	0.31	0.72	3.87
137	259	0.076	0.2757	84.7	85.01	519.83	16.717	21.740	5.620	0.34	0.32	0.72	3.87
138	274	0.074	0.2720	84.7	84.95	519.55	16.496	21.452	5.869	0.35	0.30	0.72	3.88
139	313	0.075	0.2739	84.5	84.88	519.26	16.604	21.600	6.768	0.41	0.32	0.71	3.89
140	296	0.075	0.2739	84.5	84.81	518.94	16.604	21.600	6.395	0.38	0.33	0.69	3.89
141	280	0.075	0.2739	84.2	84.72	518.58	16.599	21.606	6.042	0.36	0.37	0.69	3.90
142	229	0.074	0.2720	84.1	84.63	518.19	16.487	21.464	4.916	0.29	0.36	0.68	3.90
143	208	0.076	0.2757	84	84.54	517.68	16.707	21.754	4.517	0.27	0.34	0.69	3.91
144	248	0.074	0.2720	83.9	84.44	517.07	16.484	21.468	5.331	0.32	0.33	0.69	3.91
145	164	0.075	0.2739	83.8	84.32	516.37	16.593	21.614	3.541	0.21	0.29	0.69	3.92
146	124	0.073	0.2702	83.7	84.21	515.53	16.369	21.326	2.637	0.16	0.25	0.68	3.92
147	233	0.076	0.2757	83.5	84.09	514.57	16.699	21.764	5.073	0.30	0.25	0.68	3.92
148	141	0.073	0.2702	83.4	83.96	513.53	16.365	21.332	3.014	0.18	0.24	0.68	3.93
149	198	0.076	0.2757	83.4	83.85	512.38	16.697	21.766	4.317	0.26	0.22	0.67	3.93
150	227	0.076	0.2757	83.3	83.73	511.14	16.696	21.768	4.947	0.30	0.24	0.67	3.94
151	233	0.073	0.2702	83.3	83.64	509.81	16.363	21.334	4.964	0.30	0.27	0.67	3.94
152	203	0.074	0.2720	83.3	83.56	508.43	16.475	21.479	4.355	0.26	0.26	0.67	3.95
153	265	0.074	0.2720	83.2	83.48	507.03	16.473	21.481	5.690	0.34	0.29	0.67	3.95
154	209	0.076	0.2757	83.2	83.41	505.66	16.694	21.770	4.547	0.27	0.29	0.66	3.96
155	219	0.073	0.2702	83.1	83.34	504.26	16.360	21.338	4.674	0.28	0.29	0.67	3.96
156	243	0.075	0.2739	83.1	83.28	502.85	16.583	21.628	5.257	0.32	0.29	0.66	3.97
157	240	0.073	0.2702	83.1	83.24	501.4	16.360	21.338	5.112	0.31	0.30	0.65	3.97
158	240	0.076	0.2757	83.1	83.21	499.91	16.693	21.772	5.220	0.31	0.30	0.65	3.98
159	384	0.074	0.2720	83	83.17	498.42	16.470	21.485	8.256	0.50	0.34	0.65	3.98
160	376	0.074	0.2720	82.9	83.13	496.95	16.469	21.487	8.080	0.48	0.38	0.65	3.99
161	282	0.074	0.2720	83	83.1	495.5	16.470	21.485	6.067	0.36	0.39	0.65	4.00
162	369	0.075	0.2739	82.9	83.06	494.05	16.580	21.632	7.980	0.48	0.43	0.67	4.01
163	382	0.075	0.2739	82.9	83.03	492.61	16.580	21.632	8.271	0.50	0.46	0.67	4.01
164	584	0.075	0.2739	82.8	82.99	491.16	16.578	21.634	12.626	0.76	0.52	0.66	4.03
165	554	0.075	0.2739	82.8	82.96	489.73	16.578	21.634	11.983	0.72	0.56	0.66	4.04
166	668	0.075	0.2739	82.8	82.93	488.32	16.578	21.634	14.461	0.87	0.66	0.66	4.05
167	882	0.076	0.2757	82.7	82.89	486.91	16.687	21.780	19.208	1.15	0.80	0.64	4.07
168	1235	0.075	0.2739	82.6	82.84	485.53	16.575	21.638	26.725	1.60	1.02	0.58	4.10
169	1276	0.074	0.2720	82.6	82.8	484.2	16.464	21.493	27.424	1.65	1.20	0.56	4.13
170	1334	0.075	0.2739	82.4	82.75	482.83	16.572	21.642	28.861	1.73	1.40	0.53	4.16
171	1436	0.076	0.2757	82.3	82.68	481.43	16.681	21.788	31.288	1.88	1.60	0.49	4.19
172	1297	0.075	0.2739	82.3	82.62	480.03	16.570	21.644	28.072	1.68	1.71	0.46	4.22

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173	1537	0.074	0.2720	82.2	82.55	478.63	16.458	21.501	33.045	1.98	1.78	0.46	4.25
174	1545	0.075	0.2739	82.2	82.49	477.21	16.569	21.646	33.433	2.01	1.86	0.48	4.28
175	1624	0.076	0.2757	82.1	82.42	475.76	16.678	21.792	35.394	2.12	1.93	0.51	4.32
176	1509	0.076	0.2757	82.1	82.35	474.3	16.678	21.792	32.875	1.97	1.95	0.54	4.35
177	1084	0.075	0.2739	82	82.28	472.91	16.566	21.650	23.469	1.41	1.90	0.57	4.37
178	972	0.075	0.2739	82.1	82.23	471.53	16.567	21.648	21.040	1.26	1.75	0.59	4.39
179	866	0.075	0.2739	82	82.17	470.15	16.566	21.650	18.760	1.13	1.58	0.61	4.41
180	1065	0.075	0.2739	82	82.13	468.87	16.566	21.650	23.058	1.38	1.43	0.63	4.44
181	1303	0.075	0.2739	82	82.1	467.7	16.566	21.650	28.210	1.69	1.37	0.64	4.46
182		0.076	0.2757	81.8	82.05	466.6					1.37	0.66	
183		0.076	0.2757	81.8	82.01	465.57					1.40	0.68	
184		0.076	0.2757	81.9	81.98	464.61					1.54	0.69	
185		0.074	0.2720	81.8	81.95	463.78					1.69	0.70	
186	649	0.075	0.2739	81.8	81.92	463.04	16.563	21.654	14.060	0.84	0.84	0.70	4.48
187	913	0.076	0.2757	81.8	81.9	462.36	16.673	21.798	19.903	1.19	1.02	0.71	4.50
188	1123	0.076	0.2757	81.8	81.87	461.78	16.673	21.798	24.483	1.47	1.17	0.72	4.52
189	1016	0.075	0.2739	81.7	81.84	461.24	16.561	21.656	22.003	1.32	1.21	0.74	4.55
190	1751	0.074	0.2720	81.7	81.81	460.74	16.451	21.511	37.657	2.26	1.42	0.76	4.58
191	1820	0.076	0.2757	81.7	81.78	460.23	16.671	21.800	39.678	2.38	1.72	0.78	4.62
192	2111	0.074	0.2720	81.6	81.76	459.72	16.449	21.513	45.412	2.72	2.03	0.82	4.67
193	2333	0.076	0.2757	81.5	81.73	459.19	16.668	21.804	50.863	3.05	2.35	0.85	4.72
194	2310	0.075	0.2739	81.5	81.69	458.64	16.558	21.660	50.044	3.00	2.68	0.90	4.77
195	2480	0.073	0.2702	81.5	81.66	458.05	16.336	21.369	53.001	3.18	2.87	0.95	4.82
196	2187	0.075	0.2739	81.5	81.63	457.4	16.558	21.660	47.369	2.84	2.96	1.00	4.87
197	3096	0.075	0.2739	81.4	81.59	456.72	16.557	21.662	67.062	4.02	3.22	1.05	4.94
198	11077	0.075	0.2739	89.8	82.39	455.99	16.685	21.496	238.104	14.29	5.47	1.10	5.17
199	85981	0.073	0.2702	95.7	83.79	455.06	16.549	21.094	1813.689	108.82	26.63	1.17	6.99
200	230490	0.073	0.2702	103.7	85.99	453.9	16.667	20.944	4827.321	289.64	83.92	1.42	11.82
201	40966	0.074	0.2720	107.1	88.53	453.74	16.832	21.023	861.243	51.67	93.69	3.43	12.68
202	5374	0.074	0.2720	101.7	90.54	454.64	16.751	21.124	113.518	6.81	94.25	8.79	12.79
203	9679	0.073	0.2702	98.7	92.26	456.65	16.593	21.037	203.618	12.22	93.83	9.74	12.99
204	-599	0.074	0.2720	95.3	93.64	459.35	16.656	21.246	-12.720	-0.76	71.92	9.86	12.98
205	-2069	0.074	0.2720	93.4	94.83	462.51	16.627	21.282	-44.043	-2.64	13.46	10.09	12.94
206	-1996	0.074	0.2720	92.2	95.9	466.09	16.609	21.305	-42.530	-2.55	2.61	10.07	12.89
207	-1863	0.074	0.2720	91.6	96.92	469.92	16.600	21.317	-39.724	-2.38	0.78	10.01	12.85
208	-2122	0.073	0.2702	91	97.04	473.92	16.479	21.184	-44.949	-2.70	-2.21	9.96	12.81
209	-1809	0.073	0.2702	90.5	96.52	478.23	16.471	21.194	-38.340	-2.30	-2.52	9.91	12.77
210	-2061	0.073	0.2702	90.1	95.16	482.83	16.465	21.201	-43.700	-2.62	-2.51	9.86	12.73
211	-1716	0.072	0.2683	89.8	93.43	486.4	16.348	21.061	-36.151	-2.17	-2.43	9.81	12.69
212	-1655	0.074	0.2720	89.6	92.22	488.89	16.570	21.356	-35.348	-2.12	-2.38	9.76	12.66
213	-1409	0.074	0.2720	89.5	91.3	490.31	16.569	21.358	-30.092	-1.81	-2.20	9.71	12.63
214	-1319	0.076	0.2757	89.3	90.7	491.05	16.788	21.648	-28.565	-1.71	-2.09	9.67	12.60
215	-1332	0.074	0.2720	89.3	90.29	491.34	16.566	21.362	-28.445	-1.71	-1.90	9.63	12.57
216	-1029	0.073	0.2702	89.5	90.02	491.21	16.456	21.213	-21.825	-1.31	-1.73	9.59	12.55
217	-1082	0.072	0.2683	89.4	89.8	490.87	16.342	21.069	-22.786	-1.37	-1.58	9.55	12.52
218	-886	0.076	0.2757	89.4	89.64	490.45	16.789	21.646	-19.178	-1.15	-1.45	9.52	12.51
219	-792	0.074	0.2720	89.3	89.52	489.97	16.566	21.362	-16.922	-1.02	-1.31	9.49	12.49
220	-789	0.073	0.2702	89.3	89.44	489.48	16.453	21.217	-16.737	-1.00	-1.17	9.46	12.47
221	-665	0.072	0.2683	89.3	89.39	489.16	16.340	21.071	-14.015	-0.84	-1.08	9.43	12.46
222	-692	0.073	0.2702	89.3	89.36	488.96	16.453	21.217	-14.675	-0.88	-0.98	9.41	12.44
223	-699	0.074	0.2720	89.3	89.34	488.87	16.566	21.362	-14.940	-0.90	-0.93	9.38	12.43
224	-655	0.074	0.2720	89.2	89.33	488.91	16.564	21.364	-13.986	-0.84	-0.89	9.35	12.41
225	-430	0.074	0.2720	89.2	89.32	489.03	16.564	21.364	-9.195	-0.55	-0.80	9.32	12.40
226	-564	0.073	0.2702	89.2	89.29	489.31	16.452	21.219	-11.969	-0.72	-0.78	9.29	12.39
227	-383	0.074	0.2720	89.4	89.29	489.67	16.567	21.360	-8.186	-0.49	-0.70	9.26	12.38
228	-413	0.074	0.2720	89.4	89.29	490.08	16.567	21.360	-8.822	-0.53	-0.63	9.21	12.38
229	-368	0.072	0.2683	89.4	89.3	490.56	16.342	21.069	-7.757	-0.47	-0.55	9.18	12.37
230	-364	0.073	0.2702	89.5	89.32	491.08	16.456	21.213	-7.718	-0.46	-0.53	9.13	12.36
231	-237	0.074	0.2720	89.6	89.35	491.61	16.570	21.356	-5.066	-0.30	-0.45	9.09	12.36
232	-131	0.073	0.2702	89.6	89.38	492.2	16.458	21.211	-2.769	-0.17	-0.39	9.05	12.35
233	-143	0.073	0.2702	89.6	89.41	492.79	16.458	21.211	-3.033	-0.18	-0.32	9.01	12.35
234	-90	0.074	0.2720	89.7	89.46	493.39	16.572	21.354	-1.923	-0.12	-0.25	8.97	12.35
235	-169	0.073	0.2702	89.7	89.51	494.06	16.459	21.209	-3.578	-0.21	-0.20	8.92	12.34
236	47	0.073	0.2702	89.7	89.56	494.73	16.459	21.209	0.987	0.06	-0.12	8.89	12.34
237	14	0.074	0.2720	89.7	89.59	495.43	16.572	21.354	0.292	0.02	-0.09	8.86	12.35
238	17	0.074	0.2720	89.7	89.62	496.07	16.572	21.354	0.372	0.02	-0.05	8.83	12.35
239	-214	0.072	0.2683	89.7	89.65	496.66	16.346	21.063	-4.505	-0.27	-0.08	8.81	12.34
240	43	0.075	0.2739	89.6	89.66	497.22	16.682	21.500	0.931	0.06	-0.02	8.79	12.34
241	-29	0.074	0.2720	89.7	89.67	497.74	16.572	21.354	-0.612	-0.04	-0.04	8.75	12.34
242	-26	0.074	0.2720	89.6	89.67	498.2	16.570	21.356	-0.548	-0.03	-0.05	8.59	12.34
243	62	0.075	0.2739	89.5	89.66	498.64	16.680	21.502	1.343	0.08	-0.04	8.44	12.34
244	2	0.073	0.2702	89.5	89.64	499.02	16.456	21.213	0.037	0.00	0.01	8.29	12.34
245	2	0.073	0.2702	89.5	89.62	499.32	16.456	21.213	0.052	0.00	0.00	8.15	12.34
246	2	0.073	0.2702	89.4	89.59	499.59	16.455	21.215	0.038	0.00	0.01	8.13	12.34
247	-6	0.074	0.2720	89.5	89.57	499.8	16.569	21.358	-0.136	-0.01	0.02	8.11	12.34
248	20	0.075	0.2739	89.5	89.55	500.02	16.680	21.502	0.420	0.03	0.00	8.09	12.34
249	4	0.073	0.2702	89.5	89.53	500.27	16.456	21.213	0.079	0.00	0.01	8.07	12.34
250	59	0.073	0.2702	89.5	89.52	500.53	16.456	21.213	1.243	0.07	0.02	8.03	12.34
251	-139	0.074	0.2720	89.6	89.51	500.78	16.570	21.356	-2.974	-0.18	-0.02	7.99	12.34
252	61	0.075	0.2739	89.6	89.51	501.06	16.682	21.500	1.305	0.08	0.00	7.94	12.34
253	30	0.075	0.2739	89.6	89.52	501.35	16.682	21.500	0.639	0.04	0.00	7.89	12.34
254	54	0.075	0.2739	89.5	89.52	501.7	16.680	21.502	1.162	0.07	0.02	7.83	12.34
255	43	0.073	0.2702	89.6	89.53	502.12	16.458	21.211	0.917	0.06	0.01	7.78	12.34
256	134	0.074	0.2720	89.6	89.55	502.55	16.570	21.356	2.871	0.17	0.08	7.73	12.35
257	53	0.073	0.2702	89.6	89.56	503.02	16.458	21.211	1.120	0.07	0.08	7.66	12.35
258	199	0.072	0.2683	89.7	89.58	503.51	16.346	21.063	4.187	0.25	0.12	7.42	12.35
259	120	0.074	0.2720	89.7	89.6	504.01	16.572	21.354	2.556	0.15	0.14	5.55	12.36
260	78	0.073	0.2702	89.7	89.62	504.51	16.459	21.209	1.653	0.10	0.15	0.56	12.36

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261	143	0.073	0.2702	89.7	89.63	505.02	16.459	21.209	3.026	0.18	0.15	-0.33	12.36
262	148	0.074	0.2720	89.7	89.64	505.53	16.572	21.354	3.156	0.19	0.17	-0.45	12.36
263	176	0.074	0.2720	89.6	89.64	506.05	16.570	21.356	3.764	0.23	0.17	-0.66	12.37
264	365	0.074	0.2720	89.7	89.66	506.61	16.572	21.354	7.790	0.47	0.23	-0.64	12.38
265	512	0.073	0.2702	89.9	89.69	507.18	16.462	21.205	10.857	0.65	0.34	-0.59	12.39
266	295	0.075	0.2739	89.9	89.72	507.81	16.686	21.494	6.350	0.38	0.38	-0.54	12.39
267	375	0.074	0.2720	90	89.76	508.48	16.576	21.348	8.002	0.48	0.44	-0.48	12.40
268	233	0.072	0.2683	90	89.79	509.19	16.351	21.058	4.909	0.29	0.45	-0.43	12.41
269	190	0.074	0.2720	90	89.82	509.93	16.576	21.348	4.051	0.24	0.41	-0.38	12.41
270	168	0.074	0.2720	90	89.85	510.69	16.576	21.348	3.580	0.21	0.32	-0.33	12.41
271	175	0.074	0.2720	90	89.88	511.43	16.576	21.348	3.740	0.22	0.29	-0.29	12.42
272	288	0.073	0.2702	90	89.91	512.18	16.464	21.203	6.105	0.37	0.27	-0.25	12.42
273	242	0.074	0.2720	90.1	89.96	512.94	16.578	21.346	5.170	0.31	0.27	-0.22	12.43
274	279	0.075	0.2739	90.1	90	513.65	16.689	21.490	6.004	0.36	0.30	-0.18	12.43
275	349	0.073	0.2702	90.2	90.03	514.39	16.467	21.199	7.394	0.44	0.34	-0.15	12.44
276	428	0.073	0.2702	90.2	90.06	515.1	16.467	21.199	9.072	0.54	0.40	-0.12	12.45
277	513	0.074	0.2720	90.2	90.08	515.77	16.579	21.344	10.954	0.66	0.46	-0.09	12.46
278	455	0.075	0.2739	90.2	90.1	516.41	16.691	21.488	9.776	0.59	0.52	-0.06	12.47
279	277	0.074	0.2720	90.1	90.11	517.02	16.578	21.346	5.909	0.35	0.52	-0.03	12.48
280	191	0.074	0.2720	89.9	90.1	517.59	16.575	21.350	4.072	0.24	0.48	0.00	12.48
281	178	0.075	0.2739	89.9	90.09	518.17	16.686	21.494	3.823	0.23	0.41	0.02	12.48
282	147	0.075	0.2739	89.8	90.07	518.65	16.685	21.496	3.151	0.19	0.32	0.04	12.49
283	-22	0.074	0.2720	89.7	90.03	519.03	16.572	21.354	-0.466	-0.03	0.20	0.06	12.49
284	-103	0.075	0.2739	89.6	89.98	519.32	16.682	21.500	-2.208	-0.13	0.10	0.08	12.49
285	-57	0.075	0.2739	89.5	89.91	519.42	16.680	21.502	-1.218	-0.07	0.04	0.09	12.48
286	-29	0.075	0.2739	89.3	89.82	519.39	16.677	21.506	-0.615	-0.04	-0.02	0.10	12.48
287	-143	0.075	0.2739	89.1	89.71	519.23	16.674	21.509	-3.084	-0.19	-0.09	0.10	12.48
288	-73	0.074	0.2720	88.9	89.58	518.94	16.559	21.369	-1.567	-0.09	-0.10	0.11	12.48
289	-211	0.074	0.2720	88.8	89.45	518.5	16.558	21.371	-4.504	-0.27	-0.13	0.12	12.47
290	-150	0.074	0.2720	88.6	89.32	517.87	16.555	21.375	-3.204	-0.19	-0.16	0.12	12.47
291	-139	0.073	0.2702	88.3	89.16	517.07	16.438	21.236	-2.944	-0.18	-0.18	0.12	12.47
292	-222	0.075	0.2739	88	88.98	516.09	16.657	21.531	-4.775	-0.29	-0.20	0.12	12.46
293	-139	0.075	0.2739	87.8	88.79	514.93	16.654	21.535	-3.004	-0.18	-0.22	0.12	12.46
294	-78	0.076	0.2757	87.6	88.59	513.6	16.762	21.682	-1.699	-0.10	-0.19	0.12	12.46
295	-126	0.074	0.2720	87.5	88.39	512.14	16.538	21.397	-2.699	-0.16	-0.18	0.12	12.46
296	-244	0.074	0.2720	87.3	88.19	510.55	16.535	21.401	-5.222	-0.31	-0.21	0.12	12.45
297	-55	0.075	0.2739	87.2	88	508.83	16.645	21.547	-1.180	-0.07	-0.17	0.11	12.45
298	-130	0.075	0.2739	87.1	87.82	507	16.644	21.549	-2.791	-0.17	-0.16	0.11	12.45
299	-94	0.073	0.2702	86.8	87.62	505.11	16.416	21.265	-1.991	-0.12	-0.17	0.11	12.44
300	-54	0.075	0.2739	86.8	87.44	503.22	16.639	21.555	-1.173	-0.07	-0.15	0.11	12.44
301	-148	0.075	0.2739	86.7	87.28	501.32	16.638	21.557	-3.190	-0.19	-0.12	0.11	12.44
302	-19	0.074	0.2720	86.5	87.13	499.49	16.523	21.416	-0.411	-0.02	-0.11	0.11	12.44
303	-124	0.074	0.2720	86.4	86.99	497.74	16.522	21.418	-2.659	-0.16	-0.11	0.10	12.44
304	-134	0.073	0.2702	86.3	86.86	496.08	16.408	21.275	-2.854	-0.17	-0.12	0.10	12.43
305	-107	0.073	0.2702	86.2	86.73	494.5	16.407	21.277	-2.274	-0.14	-0.14	0.10	12.43
306	-119	0.075	0.2739	86.1	86.61	492.99	16.628	21.568	-2.572	-0.15	-0.13	0.10	12.43
307	-67	0.077	0.2775	86	86.49	491.56	16.847	21.856	-1.461	-0.09	-0.14	0.09	12.43
308	-52	0.076	0.2757	85.9	86.37	490.19	16.736	21.716	-1.127	-0.07	-0.12	0.09	12.43
309	-97	0.074	0.2720	85.8	86.27	488.85	16.513	21.430	-2.076	-0.12	-0.11	0.09	12.43
310	-142	0.075	0.2739	85.7	86.16	487.55	16.622	21.576	-3.070	-0.18	-0.12	0.09	12.42
311	-142	0.075	0.2739	85.6	86.05	486.3	16.621	21.578	-3.065	-0.18	-0.13	0.09	12.42
312	-54	0.075	0.2739	85.5	85.95	485.06	16.619	21.580	-1.170	-0.07	-0.13	0.08	12.42
313	-61	0.075	0.2739	85.5	85.86	483.83	16.619	21.580	-1.308	-0.08	-0.13	0.08	12.42
314	-41	0.076	0.2757	85.4	85.77	482.59	16.728	21.726	-0.885	-0.05	-0.11	0.08	12.42
315	-140	0.075	0.2739	85.3	85.68	481.34	16.616	21.584	-3.023	-0.18	-0.11	0.07	12.41
316	-74	0.075	0.2739	85.1	85.58	480.09	16.613	21.588	-1.602	-0.10	-0.10	0.07	12.41
317	-52	0.075	0.2739	85	85.48	478.84	16.612	21.590	-1.132	-0.07	-0.10	0.07	12.41
318	-93	0.075	0.2739	84.9	85.38	477.58	16.610	21.592	-2.008	-0.12	-0.10	0.06	12.41
319	-98	0.074	0.2720	84.8	85.28	476.33	16.498	21.450	-2.093	-0.13	-0.12	0.06	12.41
320	-152	0.075	0.2739	84.6	85.17	475.09	16.606	21.598	-3.291	-0.20	-0.12	0.05	12.40
321	-72	0.074	0.2720	84.5	85.06	473.85	16.493	21.456	-1.554	-0.09	-0.12	0.05	12.40
322	-144	0.074	0.2720	84.5	84.96	472.59	16.493	21.456	-3.082	-0.18	-0.14	0.04	12.40
323	-100	0.075	0.2739	84.4	84.85	471.32	16.603	21.602	-2.170	-0.13	-0.15	0.03	12.40
324	-153	0.076	0.2757	84.3	84.74	470.03	16.711	21.748	-3.322	-0.20	-0.16	0.02	12.39
325	-70	0.076	0.2757	84.2	84.63	468.74	16.710	21.750	-1.528	-0.09	-0.14	0.01	12.39
326	-13	0.075	0.2739	84.1	84.53	467.43	16.598	21.608	-0.277	-0.02	-0.12	0.00	12.39
327	-78	0.076	0.2757	84.1	84.44	466.09	16.708	21.752	-1.694	-0.10	-0.11	-0.01	12.39
328	-96	0.074	0.2720	84	84.35	464.76	16.485	21.466	-2.059	-0.12	-0.11	-0.02	12.39
329	-59	0.074	0.2720	83.8	84.25	463.41	16.482	21.470	-1.259	-0.08	-0.08	-0.02	12.39
330	-185	0.074	0.2720	83.8	84.17	462.03	16.482	21.470	-3.983	-0.24	-0.11	-0.03	12.38
331	-154	0.074	0.2720	83.7	84.09	460.59	16.481	21.472	-3.305	-0.20	-0.15	-0.03	12.38
332	-214	0.074	0.2720	83.6	84	459.11	16.479	21.473	-4.602	-0.28	-0.18	-0.04	12.37
333	-155	0.074	0.2720	83.5	83.91	457.58	16.478	21.475	-3.335	-0.20	-0.20	-0.05	12.37
334	-177	0.076	0.2757	83.4	83.82	456.01	16.697	21.766	-3.850	-0.23	-0.23	-0.06	12.37
335	-98	0.075	0.2739	83.3	83.73	454.39	16.586	21.624	-2.115	-0.13	-0.21	-0.07	12.36
336	-204	0.075	0.2739	83.2	83.64	452.72	16.584	21.626	-4.402	-0.26	-0.22	-0.09	12.36
337	-126	0.076	0.2757	83	83.53	451.02	16.691	21.774	-2.738	-0.16	-0.20	-0.10	12.36
338	-131	0.074	0.2720	83	83.43	449.27	16.470	21.485	-2.815	-0.17	-0.19	-0.12	12.35
339	-159	0.075	0.2739	82.9	83.34	447.45	16.580	21.632	-3.444	-0.21	-0.19	-0.12	12.35
340	-100	0.076	0.2757	82.7	83.23	445.58	16.687	21.780	-2.177	-0.13	-0.19	-0.13	12.35
341	-147	0.074	0.2720	82.6	83.12	443.65	16.464	21.493	-3.165	-0.19	-0.17	-0.14	12.35
342	-158	0.076	0.2757	82.5	83.01	441.7	16.684	21.784	-3.445	-0.21	-0.18	-0.14	12.34
343	-100	0.077	0.2775	82.4	82.9	439.71	16.792	21.929	-2.187	-0.13	-0.17	-0.15	12.34
344	-235	0.076	0.2757	82.2	82.78	437.68	16.679	21.790	-5.131	-0.31	-0.19	-0.15	12.33
345	-125	0.075	0.2739	82.1	82.66	435.64	16.567	21.648	-2.697	-0.16	-0.20	-0.15	12.33
346	-60	0.074	0.2720	82.1	82.55	433.59	16.457	21.503	-1.286	-0.08	-0.18	-0.15	12.33
347	-150	0.076	0.2757	82	82.45	431.53	16.676	21.794	-3.260	-0.20	-0.17	-0.15	12.33
348	-111	0.074	0.2720	82	82.35	429.45	16.455	21.505	-2.386	-0.14	-		

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349	-158	0.076	0.2757	81.9	82.25	427.43	16.674	21.796	-3.437	-0.21	-0.16	-0.15	12.32
350	-153	0.075	0.2739	81.8	82.16	425.44	16.563	21.654	-3.312	-0.20	-0.16	-0.15	12.32
351	-172	0.075	0.2739	81.7	82.07	423.54	16.561	21.656	-3.731	-0.22	-0.19	-0.15	12.31
352	-193	0.075	0.2739	81.7	81.99	421.7	16.561	21.656	-4.190	-0.25	-0.20	-0.15	12.31
353	-121	0.074	0.2720	81.6	81.91	419.93	16.449	21.513	-2.607	-0.16	-0.21	-0.15	12.31
354	-54	0.074	0.2720	81.5	81.84	418.23	16.447	21.515	-1.159	-0.07	-0.18	-0.15	12.31
355	-128	0.074	0.2720	81.4	81.77	416.64	16.446	21.517	-2.748	-0.16	-0.17	-0.15	12.30
356	-25	0.076	0.2757	81.3	81.69	415.17	16.665	21.808	-0.554	-0.03	-0.14	-0.15	12.30
357	-168	0.074	0.2720	81.3	81.62	413.77	16.444	21.519	-3.617	-0.22	-0.13	-0.15	12.30
358	-46	0.076	0.2757	81.3	81.55	412.45	16.665	21.808	-1.006	-0.06	-0.11	-0.15	12.30
359	-69	0.076	0.2757	81.2	81.48	411.18	16.664	21.810	-1.514	-0.09	-0.11	-0.15	12.30
360	-92	0.075	0.2739	81.1	81.41	409.98	16.552	21.668	-2.003	-0.12	-0.10	-0.15	12.30
361	-120	0.076	0.2757	81	81.34	408.82	16.661	21.814	-2.616	-0.16	-0.13	-0.15	12.29
362	-73	0.074	0.2720	81	81.27	407.7	16.440	21.525	-1.578	-0.09	-0.10	-0.15	12.29
363	-113	0.075	0.2739	80.9	81.2	406.64	16.549	21.672	-2.450	-0.15	-0.12	-0.15	12.29
364	-135	0.074	0.2720	80.8	81.13	405.64	16.437	21.529	-2.906	-0.17	-0.14	-0.15	12.29
365	-99	0.074	0.2720	80.8	81.07	404.64	16.437	21.529	-2.135	-0.13	-0.14	-0.15	12.28
366	-85	0.075	0.2739	80.7	81.01	403.62	16.546	21.676	-1.851	-0.11	-0.13	-0.15	12.28
367	-75	0.074	0.2720	80.6	80.94	402.65	16.434	21.533	-1.613	-0.10	-0.13	-0.15	12.28
368	-125	0.075	0.2739	80.6	80.87	401.72	16.544	21.678	-2.718	-0.16	-0.13	-0.15	12.28
369	-100	0.075	0.2739	80.5	80.8	400.82	16.543	21.680	-2.158	-0.13	-0.13	-0.15	12.28
370	-89	0.075	0.2739	80.5	80.74	399.95	16.543	21.680	-1.929	-0.12	-0.12	-0.15	12.27
371	-162	0.075	0.2739	80.4	80.68	399.11	16.541	21.682	-3.508	-0.21	-0.14	-0.15	12.27
372	-123	0.073	0.2702	80.4	80.62	398.31	16.319	21.391	-2.624	-0.16	-0.16	-0.15	12.27
373	-25	0.075	0.2739	80.3	80.56	397.53	16.540	21.684	-0.545	-0.03	-0.13	-0.15	12.27
374	-38	0.074	0.2720	80.3	80.51	396.78	16.429	21.539	-0.827	-0.05	-0.11	-0.15	12.27
375	-156	0.074	0.2720	80.3	80.46	396.06	16.429	21.539	-3.352	-0.20	-0.13	-0.15	12.26
376	-145	0.075	0.2739	80.1	80.4	395.35	16.537	21.688	-3.145	-0.19	-0.13	-0.15	12.26
377	-92	0.075	0.2739	80.1	80.35	394.64	16.537	21.688	-2.003	-0.12	-0.12	-0.15	12.26
378	-102	0.075	0.2739	80.1	80.3	393.92	16.537	21.688	-2.223	-0.13	-0.14	-0.15	12.26
379	-100	0.075	0.2739	80	80.25	393.2	16.535	21.690	-2.165	-0.13	-0.15	-0.15	12.25
380	-145	0.075	0.2739	80	80.2	392.47	16.535	21.690	-3.145	-0.19	-0.15	-0.15	12.25
381	-27	0.075	0.2739	79.9	80.15	391.72	16.534	21.692	-0.588	-0.04	-0.12	-0.15	12.25
382	-89	0.075	0.2739	79.8	80.09	390.99	16.532	21.694	-1.926	-0.12	-0.12	-0.15	12.25
383	-67	0.075	0.2739	79.8	80.04	390.26	16.532	21.694	-1.460	-0.09	-0.11	-0.15	12.25
384	-123	0.075	0.2739	79.7	79.98	389.53	16.531	21.696	-2.662	-0.16	-0.12	-0.15	12.24
385	-98	0.074	0.2720	79.7	79.92	388.8	16.420	21.551	-2.123	-0.13	-0.11	-0.15	12.24
386	-93	0.074	0.2720	79.6	79.87	388.1	16.419	21.553	-2.009	-0.12	-0.12	-0.15	12.24
387	-141	0.075	0.2739	79.6	79.82	387.41	16.529	21.698	-3.054	-0.18	-0.14	-0.15	12.24
388	-176	0.075	0.2739	79.5	79.76	386.73	16.528	21.700	-3.809	-0.23	-0.16	-0.15	12.23
389	-133	0.074	0.2720	79.5	79.71	386.04	16.417	21.555	-2.876	-0.17	-0.17	-0.15	12.23
390	-137	0.074	0.2720	79.4	79.65	385.37	16.416	21.557	-2.959	-0.18	-0.18	-0.15	12.23
391	-142	0.075	0.2739	79.4	79.6	384.75	16.526	21.702	-3.086	-0.19	-0.19	-0.15	12.22
392	-113	0.075	0.2739	79.3	79.55	384.13	16.525	21.704	-2.455	-0.15	-0.18	-0.15	12.22
393	-16	0.076	0.2757	79.3	79.5	383.53	16.634	21.848	-0.357	-0.02	-0.14	-0.15	12.22
394	-26	0.076	0.2757	79.2	79.45	382.96	16.633	21.850	-0.559	-0.03	-0.11	-0.15	12.22
395	-132	0.075	0.2739	79.1	79.39	382.4	16.522	21.708	-2.860	-0.17	-0.11	-0.15	12.22
396	-60	0.074	0.2720	79.1	79.34	381.86	16.411	21.563	-1.298	-0.08	-0.09	-0.14	12.22
397	-116	0.074	0.2720	79.1	79.29	381.32	16.411	21.563	-2.493	-0.15	-0.09	-0.14	12.21
398	-59	0.075	0.2739	79	79.24	380.8	16.520	21.710	-1.275	-0.08	-0.10	-0.14	12.21
399	-157	0.076	0.2757	79	79.19	380.33	16.630	21.855	-3.425	-0.21	-0.14	-0.14	12.21
400	-118	0.075	0.2739	78.9	79.14	379.86	16.518	21.712	-2.564	-0.15	-0.13	-0.14	12.21
401	-95	0.075	0.2739	78.9	79.09	379.39	16.518	21.712	-2.071	-0.12	-0.14	-0.14	12.20
402	-48	0.077	0.2775	78.8	79.04	378.95	16.736	22.002	-1.046	-0.06	-0.12	-0.14	12.20
403	-10	0.075	0.2739	78.8	78.99	378.54	16.517	21.714	-0.217	-0.01	-0.11	-0.14	12.20
404	-134	0.074	0.2720	78.7	78.94	378.14	16.405	21.571	-2.896	-0.17	-0.11	-0.14	12.20
405	-82	0.075	0.2739	78.7	78.9	377.77	16.515	21.716	-1.781	-0.11	-0.10	-0.13	12.20
406	-104	0.077	0.2775	78.7	78.86	377.41	16.734	22.004	-2.285	-0.14	-0.10	-0.14	12.20
407	-78	0.076	0.2757	78.6	78.81	377.09	16.624	21.863	-1.700	-0.10	-0.11	-0.13	12.19
408	-71	0.074	0.2720	78.6	78.77	376.79	16.403	21.573	-1.529	-0.09	-0.12	-0.13	12.19
409	-20	0.075	0.2739	78.6	78.73	376.5	16.514	21.718	-0.429	-0.03	-0.09	-0.13	12.19
410	-24	0.075	0.2739	78.5	78.69	376.27	16.512	21.720	-0.515	-0.03	-0.08	-0.13	12.19
411	-113	0.075	0.2739	78.5	78.65	376.04	16.512	21.720	-2.449	-0.15	-0.08	-0.13	12.19
412	-16	0.076	0.2757	78.4	78.61	375.81	16.620	21.867	-0.351	-0.02	-0.06	-0.12	12.19
413	-56	0.076	0.2757	78.4	78.57	375.58	16.620	21.867	-1.221	-0.07	-0.06	-0.12	12.19
414	-79	0.075	0.2739	78.4	78.54	375.35	16.511	21.722	-1.708	-0.10	-0.07	-0.12	12.19
415	-80	0.076	0.2757	78.4	78.51	375.11	16.620	21.867	-1.744	-0.10	-0.09	-0.12	12.18
416	-17	0.076	0.2757	78.4	78.48	374.87	16.620	21.867	-1.034	-0.02	-0.06	-0.12	12.18
417	-96	0.076	0.2757	78.3	78.45	374.64	16.619	21.869	-2.110	-0.13	-0.09	-0.12	12.18
418	9	0.075	0.2739	78.3	78.42	374.42	16.509	21.724	0.206	0.01	-0.07	-0.12	12.18
419	-30	0.076	0.2757	78.2	78.38	374.21	16.617	21.871	-0.652	-0.04	-0.06	-0.12	12.18
420	-21	0.075	0.2739	78.2	78.35	373.99	16.508	21.726	-0.464	-0.03	-0.04	-0.12	12.18
421	-76	0.075	0.2739	78.1	78.31	373.79	16.506	21.728	-1.643	-0.10	-0.06	-0.12	12.18
422	-129	0.076	0.2757	78.1	78.28	373.6	16.616	21.873	-2.831	-0.17	-0.06	-0.11	12.18
423	-56	0.075	0.2739	78	78.24	373.44	16.505	21.730	-1.207	-0.07	-0.08	-0.11	12.17
424	27	0.077	0.2775	78	78.2	373.32	16.723	22.018	0.599	0.04	-0.07	-0.11	12.18
425	-52	0.076	0.2757	78	78.16	373.23	16.614	21.875	-1.142	-0.07	-0.07	-0.11	12.17
426	-76	0.075	0.2739	78	78.12	373.19	16.505	21.730	-1.658	-0.10	-0.07	-0.11	12.17
427	-23	0.075	0.2739	77.9	78.08	373.18	16.503	21.732	-0.501	-0.03	-0.05	-0.11	12.17
428	-10	0.076	0.2757	77.9	78.04	373.19	16.613	21.877	-0.222	-0.01	-0.04	-0.11	12.17
429	-40	0.074	0.2720	77.9	78.01	373.23	16.393	21.587	-0.859	-0.05	-0.05	-0.11	12.17
430	12	0.075	0.2739	77.8	77.97	373.32	16.502	21.735	0.250	0.02	-0.04	-0.10	12.17
431	-28	0.075	0.2739	77.8	77.94	373.44	16.502	21.735	-0.600	-0.04	-0.02	-0.10	12.17
432	-18	0.076	0.2757	77.8	77.91	373.6	16.611	21.879	-0.390	-0.02	-0.02	-0.10	12.17
433	-24	0.075	0.2739	77.7	77.88	373.78	16.500	21.737	-0.524	-0.03	-0.03	-0.10	12.17
434	13	0.076	0.2757	77.8	77.86	373.99	16.611	21.879	0.292	0.02	-0.01	-0.10	12.17
435	29	0.075	0.2739	77.7	77.83	374.25	16.500	21.737	0.641	0.04	-0.01	-0.10	12.17
436	24	0.076	0.2757	77.7	77.8	374.54	16.610	21.881	0.531	0.03	0.01	-0.09	12.

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437	-69	0.077	0.2775	77.7	77.78	374.86	16.719	22.024	-1.510	-0.09	-0.01	-0.09	12.17
438	-27	0.076	0.2757	77.8	77.77	375.23	16.611	21.879	-0.600	-0.04	-0.01	-0.09	12.17
439	9	0.076	0.2757	77.7	77.75	375.63	16.610	21.881	0.189	0.01	-0.01	-0.09	12.17
440	-25	0.075	0.2739	77.7	77.74	376.06	16.500	21.737	-0.551	-0.03	-0.02	-0.08	12.17
441	-23	0.075	0.2739	77.7	77.73	376.54	16.500	21.737	-0.493	-0.03	-0.04	-0.08	12.17
442	-61	0.075	0.2739	77.6	77.71	377.05	16.499	21.739	-1.325	-0.08	-0.03	-0.08	12.17
443	-6	0.075	0.2739	77.6	77.7	377.58	16.499	21.739	-0.140	-0.01	-0.03	-0.08	12.17
444	-4	0.077	0.2775	77.6	77.68	378.15	16.717	22.026	-0.087	-0.01	-0.03	-0.08	12.17
445	43	0.075	0.2739	77.6	77.67	378.73	16.499	21.739	0.933	0.06	-0.01	-0.08	12.17
446	-17	0.076	0.2757	77.6	77.66	379.3	16.608	21.883	-0.369	-0.02	-0.01	-0.07	12.17
447	-38	0.077	0.2775	77.6	77.65	379.89	16.717	22.026	-0.839	-0.05	-0.01	-0.07	12.17
448	7	0.074	0.2720	77.6	77.63	380.49	16.388	21.593	0.156	0.01	0.00	-0.07	12.17
449	22	0.074	0.2720	77.5	77.61	381.09	16.387	21.595	0.470	0.03	0.00	-0.06	12.17
450	37	0.076	0.2757	77.5	77.59	381.67	16.607	21.885	0.804	0.05	0.00	-0.06	12.17
451	10	0.075	0.2739	77.5	77.57	382.25	16.497	21.741	0.221	0.01	0.01	-0.06	12.17
452	-117	0.075	0.2739	77.5	77.56	382.82	16.497	21.741	-2.550	-0.15	-0.01	-0.05	12.17
453	18	0.075	0.2739	77.5	77.55	383.41	16.497	21.741	0.402	0.02	-0.01	-0.05	12.17
454	20	0.075	0.2739	77.5	77.54	383.97	16.497	21.741	0.439	0.03	-0.01	-0.06	12.17
455	33	0.075	0.2739	77.5	77.53	384.5	16.497	21.741	0.710	0.04	-0.01	-0.05	12.17
456	-11	0.076	0.2757	77.5	77.52	385.05	16.607	21.885	-0.248	-0.01	-0.01	-0.05	12.17
457	20	0.075	0.2739	77.5	77.51	385.56	16.497	21.741	0.435	0.03	0.02	-0.05	12.17
458	-49	0.075	0.2739	77.5	77.5	386.01	16.497	21.741	-1.068	-0.06	0.00	-0.05	12.17
459	-61	0.074	0.2720	77.5	77.5	386.42	16.387	21.595	-1.324	-0.08	-0.02	-0.04	12.16
460	-65	0.076	0.2757	77.5	77.5	386.8	16.607	21.885	-1.419	-0.09	-0.04	-0.04	12.16
461	-54	0.076	0.2757	77.4	77.49	387.13	16.605	21.887	-1.180	-0.07	-0.05	-0.04	12.16
462	-12	0.074	0.2720	77.5	77.49	387.41	16.387	21.595	-0.249	-0.01	-0.06	-0.04	12.16
463	63	0.076	0.2757	77.5	77.49	387.62	16.607	21.885	1.369	0.08	-0.03	-0.04	12.16
464	-38	0.075	0.2739	77.4	77.48	387.79	16.495	21.743	-0.825	-0.05	-0.03	-0.04	12.16
465	6	0.075	0.2739	77.4	77.47	387.92	16.495	21.743	0.121	0.01	-0.01	-0.04	12.16
466	-63	0.076	0.2757	77.4	77.46	387.99	16.605	21.887	-1.368	-0.08	-0.01	-0.03	12.16
467	-150	0.075	0.2739	77.4	77.45	388.03	16.495	21.743	-3.263	-0.20	-0.05	-0.03	12.16
468	61	0.074	0.2720	77.4	77.44	388.07	16.385	21.597	1.316	0.08	-0.05	-0.03	12.16
469	-32	0.075	0.2739	77.5	77.44	388.11	16.497	21.741	-0.694	-0.04	-0.05	-0.03	12.16
470	-7	0.077	0.2775	77.4	77.43	388.14	16.714	22.031	-0.144	-0.01	-0.05	-0.03	12.16
471	40	0.075	0.2739	77.4	77.43	388.17	16.495	21.743	0.859	0.05	-0.02	-0.03	12.16
472	-30	0.075	0.2739	77.5	77.43	388.22	16.497	21.741	-0.643	-0.04	0.01	-0.03	12.16
473	-54	0.075	0.2739	77.4	77.42	388.29	16.495	21.743	-1.176	-0.07	-0.02	-0.03	12.16
474	6	0.076	0.2757	77.4	77.42	388.35	16.605	21.887	0.122	0.01	-0.01	-0.03	12.16
475	-31	0.077	0.2775	77.4	77.42	388.45	16.714	22.031	-0.690	-0.04	-0.02	-0.03	12.16
476	-62	0.075	0.2739	77.4	77.42	388.57	16.495	21.743	-1.338	-0.08	-0.04	-0.03	12.16
477	1	0.075	0.2739	77.4	77.42	388.71	16.495	21.743	0.030	0.00	-0.04	-0.03	12.16
478	-41	0.076	0.2757	77.4	77.42	388.86	16.605	21.887	-0.906	-0.05	-0.03	-0.03	12.15
479	-33	0.076	0.2757	77.3	77.4	389.01	16.604	21.889	-0.733	-0.04	-0.04	-0.03	12.15
480	52	0.075	0.2739	77.4	77.4	389.16	16.495	21.743	1.122	0.07	-0.02	-0.03	12.16
481	-21	0.075	0.2739	77.4	77.4	389.34	16.495	21.743	-0.457	-0.03	-0.01	-0.03	12.15
482	14	0.077	0.2775	77.4	77.39	389.52	16.714	22.031	0.304	0.02	-0.01	-0.02	12.16
483	0	0.075	0.2739	77.4	77.39	389.7	16.495	21.743	0.010	0.00	0.00	-0.02	12.16
484	-78	0.075	0.2739	77.4	77.39	389.91	16.495	21.743	-1.699	-0.10	-0.01	-0.02	12.15
485	19	0.075	0.2739	77.4	77.39	390.11	16.495	21.743	0.417	0.02	-0.02	-0.02	12.15
486	75	0.075	0.2739	77.4	77.39	390.32	16.495	21.743	1.624	0.10	0.01	-0.02	12.16
487	-68	0.077	0.2775	77.3	77.38	390.52	16.712	22.033	-1.501	-0.09	-0.01	-0.02	12.15
488	-56	0.076	0.2757	77.2	77.36	390.74	16.602	21.891	-1.224	-0.07	-0.03	-0.02	12.15
489	-69	0.076	0.2757	77.3	77.36	390.98	16.604	21.889	-1.521	-0.09	-0.03	-0.02	12.15
490	121	0.076	0.2757	77.3	77.35	391.24	16.604	21.889	2.640	0.16	0.00	-0.02	12.15
491	-26	0.076	0.2757	77.3	77.34	391.48	16.604	21.889	-0.571	-0.03	-0.03	-0.02	12.15
492	53	0.076	0.2757	77.3	77.33	391.72	16.604	21.889	1.153	0.07	0.01	-0.02	12.15
493	-56	0.075	0.2739	77.3	77.32	391.97	16.494	21.745	-1.216	-0.07	0.01	-0.02	12.15
494	-10	0.076	0.2757	77.3	77.31	392.24	16.604	21.889	-0.222	-0.01	0.02	-0.02	12.15
495	-21	0.077	0.2775	77.3	77.3	392.53	16.712	22.033	-0.471	-0.03	-0.02	-0.02	12.15
496	18	0.075	0.2739	77.2	77.28	392.81	16.492	21.747	0.396	0.02	0.00	-0.02	12.15
497	-14	0.075	0.2739	77.3	77.28	393.12	16.494	21.745	-0.295	-0.02	-0.02	-0.02	12.15
498	-29	0.077	0.2775	77.2	77.28	393.42	16.711	22.035	-0.634	-0.04	-0.01	-0.02	12.15
499	38	0.074	0.2720	77.2	77.27	393.73	16.382	21.601	0.819	0.05	0.00	-0.02	12.15
500	3	0.076	0.2757	77.2	77.26	394.03	16.602	21.891	0.055	0.00	0.00	-0.02	12.15
501	36	0.075	0.2739	77.2	77.25	394.34	16.492	21.747	0.773	0.05	0.01	-0.02	12.15
502	-119	0.076	0.2757	77.2	77.24	394.67	16.602	21.891	-2.611	-0.16	-0.02	-0.01	12.15
					77.23333333	394.8444444					-0.01	-0.01	
					77.225	395					-0.04	-0.02	
					77.21428571	395.1428571					-0.06	-0.02	
					77.21666667	395.3					-0.16	-0.02	
					77.2	395.44						-0.02	
					77.2	395.6						-0.02	
					77.2	395.7333333						-0.02	
					77.2	395.9						-0.02	
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Run 2 TEOM Data

[illegible]

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
 Model: 1.4R Run Number: 2 Test Date: 10/28/2025

Pre-Test Set-up Check List

Perform the following checks after a minimum of 30 minutes of warmup time

Leak Checks	Requirement	Pump Off (lpm)	Pump On, Probe Blocked (lpm)	Net (lpm)	Result
PM-2.5	<0.05 lpm (net)	0.38	0.38	0.00	☒ Pass ☐ Fail
PM-Course	<0.05 lpm (net)	0.14	0.14	0.00	☒ Pass ☐ Fail
Ambient	<0.05 lpm (net)	-0.05	-0.06	0.01	☒ Pass ☐ Fail

Flow Checks	Requirement	TEOM Indicated Flow (lpm) ¹	Measured Flow		Difference (%)	Result
			(lpm) ²	(lpm) ³		
PM-2.5	±2%	1.00	0.99		1.0	☒ Pass ☐ Fail
PM-Course	±2%	1.00	1.00		0.0	☒ Pass ☐ Fail
Ambient	±2%	3.00	3.00		0.0	☒ Pass ☐ Fail

¹Indicated flow is at 20°C, 1 atm

²Measured flow with PFS equipment ID 197, which indicates flow at 21.1°C, 1 atm

³Adjusted value (Measured Flow * 99.6%) to match the STP used by TEOM

Initial Filter Setup

Use **black** filter tool when changing filters

	1 min. requirement	5 min. requirement	Result
PM-2.5	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail
PM- Course	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail
Ambient	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail

Pre-Fire Verifications	Time probe in Tunnel	Result
Place probe in tunnel at least 10 min prior to test start	09:15	
Verify Data is recording [In RPCOMM] - Dichot		☒ Okay
Verify Data is recording [In RPCOMM] - Ambient		☒ Okay

Pre-Test Conditions

	Requirements	Result
Room RH (%)	43.6	
Barometric Pressure	30.09	
Room Air Velocity (ft/min)	<50	Must be <50 ft/min within 2 ft of stove ☒ Pass ☐ Fail
Room Temperature (°F)	66	<87 °F ☒ Pass ☐ Fail
Average External Stove Temp (°F)	N/A	Within 2 °F of ambient (Run #1 only) ☐ Pass ☐ Fail ☒ N/A
Average Internal Stove Temp (°F)	N/A	Within 2 °F of ambient (Run #1 only) ☐ Pass ☐ Fail ☒ N/A
Time Coals Removed from Stove & Firebox Vacuumed	8:30	>1 hr before test (Runs #2 & 3 only) ☒ Pass ☐ Fail ☐ N/A
Earliest possible start time	10:05	24 hours from start of Run #1 (Runs #2 & 3 only) ☒ Pass ☐ Fail ☐ N/A

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
Model: 1.4R Run Number: 2 Test Date: 10/28/2025

IDC FUELING NOTES

Fuel & Moisture Measurement

Fuel Type	Maple Cordwood
Moisture Meter Calibration 22%:	22.0
Moisture Meter Calibration 12%:	12.0
Moisture Reading Start Time:	8:30

L1 Test Notes

Scale Weight Prior to Loading (lbs):	0
Test Burn Start Time:	10:49
Air Control Setting (open/closed):	Fully Open
Door Closed Time (5 min from start):	10:52
Bypass Closed Time:	N/A
Target End Weight (lbs):	2.03-2.24
Actual End Weight (lbs):	2.11
Phase End Time:	11:10

Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
	-None-

L2 Test Notes

Scale Weight Prior to Loading (lbs):	2.11
Load Time:	11:10
Air Control Setting (open/closed):	Fully Open
Door Closed Time (immediately after loading):	11:11
Bypass Closed Time:	N/A
50% Target Weight (lbs):	7.79-8.62
Actual 50% Weight (lbs):	8.30
Air control closed time:	11:39
Target End Weight (lbs):	3.16-3.50
Actual End Weight (lbs):	3.30
Phase End Time:	12:36

Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
12:25	Changed TEOM Filters

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
Model: 1.4R Run Number: 2 Test Date: 10/28/2025

L3 Test Notes

Scale Weight Prior to Loading (lbs):	3.30
Load Time:	12:36
Air Control Setting (5 min start-up allowed):	
Door Closed Time (immediately after loading):	12:37
Bypass Closed Time:	N/A
Target End Weight (lbs):	3.95-4.36
Actual End Weight (lbs):	4.11
Phase End Time:	14:06

Open @	12:36	Closed @	12:41
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Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
13:51	Changed TEOM filters

L4 Test Notes

Scale Weight Prior to Loading (lbs):	4.11
Load Time:	14:06
Air Control Setting (10 min start-up allowed):	
Door Closed Time (5 min after loading):	14:09
Bypass Closed Time:	N/A
Target End Weight (lbs):	3.90-4.32
Actual End Weight (lbs):	3.91
Phase End Time:	19:11

Open @	14:06	Closed @	14:16
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Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
	-None-

Post-Test Conditions

Room Air Velocity (ft/min)	<50
Room RH (%)	31.9
Barometric Pressure	30.12

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
 Model: 1.4R Run Number: 2 Test Date: 10/28/2025

Post-Test Check List

Leak Checks	Requirement	Pump Off (lpm)	Pump On, Probe Blocked (lpm)	Net (lpm)	Result
PM-2.5	<0.05 lpm (net)	0.38	0.37	0.01	☒ Pass ☐ Fail
PM-Course	<0.05 lpm (net)	0.15	0.16	0.01	☒ Pass ☐ Fail
Ambient	<0.05 lpm (net)	-0.05	-0.07	0.02	☒ Pass ☐ Fail

Flow Checks	Requirement	TEOM Indicated Flow (lpm) ¹	Measured Flow		Difference (%)	Result
			(lpm) ²	(lpm) ³		
PM-2.5	±2%	1.00	1.02		2.0	☒ Pass ☐ Fail
PM-Course	±2%	1.00	1.01		1.0	☒ Pass ☐ Fail
Ambient	±2%	3.00	3.01		0.1	☒ Pass ☐ Fail

¹Indicated flow is at 20°C, 1 atm

²Measured flow with PFS equipment ID 134, which indicates flow at 21.1°C, 1 atm

³Adjusted value (Measured Flow * 99.6%) to match the STP used by TEOM

Flue Gas Analyzer Calibration Check

Calibration Gas Values: Span Gas Cylinder#: DT0042934 CO₂ (%): 17.32 CO (%): 4.350
 Mid Gas Cylinder#: CC341544 CO₂ (%): 10.00 CO (%): 2.500

Calibration Results:

	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	8:36	8:37	8:38	10/29 10:16	10/29 10:17	10/29 10:18
CO ₂	0.09	17.22	10.24	-0.02	17.13	10.19
CO	0.006	4.329	2.482	-0.042	4.249	2.472

Flue Gas Probe Leak Check: Initial: No Leakage Final: No Leakage

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI
Model: 1.4R

Job Number: 25-446
Run Number: 2

Tracking #: 238
Test Date: 10/28/2025

Test Fuel Photos



L1 Fuel Load



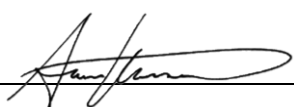
L2 Fuel Load



L3 Fuel Load



L4 Fuel Load

Technician Signature: 

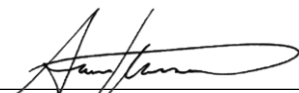
Date: 11/21/2025

WOOD STOVE TEST DATA PACKET
IDC / ASTM E2515



Run 3 Data Summary

Client:	SBI
Model:	1.4R
Job #:	25-446
Tracking #:	238
Test Date:	10/28/2025



Technician Signature

11/26/2025

Date

TEST RESULTS - ASTM E2780 / ASTM E2515

Client: SBI

Model: 1.4R

Run #: 3

Job #: 25-446

Tracking #: 238

Technician: AK

Date: 10/28/2025

Total Fuel Burned (kg-dry) 15.00

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft ³)	94.790	71.584	72.001	-
Average Gas Velocity in Dilution Tunnel (ft/sec)	16.7			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	45467.8			
Average Gas Meter Temperature (°F)	71.1	92.2	89.2	-
Total Sample Volume (dscf)	96.573	69.683	70.831	-
Average Tunnel Temperature (°F)	82.7			
Total Time of Test (min)	491			
Total Particulate Catch (mg)	0.1	1.7	1.9	-
Particulate Concentration, dry-standard (g/dscf)	0.0000010	0.0000244	0.0000268	-
Total PM Emissions (g)	0.39	8.69	9.60	-
Particulate Emission Rate (g/hr)	0.05	1.06	1.17	-
Emissions Factor (g/kg)	-	0.58	0.64	-
Difference from Average Total Particulate Emissions (g)	-	0.45	0.45	-
Difference from Average Total Particulate Emissions (%)	-	4.9%	4.9%	-
Difference from Average Emissions Factor (g/kg)	-	0.03	0.03	-

Final Average Results	
Total Particulate Emissions (g)	9.14
Particulate Emission Rate (g/hr)	1.12
Emissions Factor (g/kg)	0.61

Quality Checks	Requirement	Observed	Result
Dual Train Precision	Each train within 7.5% of average emissions (in grams), or emission factors within 0.5 g/kg	See Above	OK
Filter Temps	<90 °F	88.4	OK
Face Velocity	< 30 ft/min	8.0	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min:67.7/Max:73.5	OK
Negative Probe Weight Evaluation	<5% of Total Catch	Probe Catch Not Negative	OK
Pro-Rate Variation	90% of readings between 90-110%; none greater than 120% or less than 80%	See Data Tabs	OK

DILUTION TUNNEL & MISC. DATA - ASTM E2780 / E2515

Client: SBI
 Model: 1.4R
 Run #: 3
 Test Start Time: 12:04

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Total Sampling Time (min): 491
 Recording Interval (min): 1

Meter Box γ Factor: 1.004 (A)
 Meter Box γ Factor: 1.009 (B)
 Meter Box γ Factor: - (C)
 Meter Box γ Factor: 1.013 (Ambient)

Induced Draft Check (in. H₂O): 0
 Smoke Capture Check (%): 100%
 Date Flue Pipe Last Cleaned: 10/24/2025
 Test Fuel Scale Audit (lbs): 10.00
 Platform Scale Audit (lbs): 10.0

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	30.31	30.25	30.28
Relative Humidity (%)	45.6	33.3	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	0	0	
Ambient Sample Volume:		94.790	ft ³

Sample Train Leak Checks

	Pre-test	Post-test		
(A)	0.000	0.000	cfm @	-7 in. Hg
(B)	0.000	0.000	cfm @	-8 in. Hg
(C)	-	-	cfm @	- in. Hg
(Ambient)	0.000	0.000	cfm @	-13 in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H ₂ O)	Temp (°F)
1	0.048	70
2	0.064	70
3	0.073	70
4	0.073	70
5	0.068	70
6	0.044	70
7	0.048	70
8	0.062	70
9	0.072	70
10	0.074	70
11	0.066	70
12	0.042	70
Center	0.074	70

Dilution Tunnel H₂O: 2.00 percent
 Tunnel Diameter: 12 inches
 Pitot Tube Cp: 0.99 [unitless]
 Dilution Tunnel MW(dry): 29.00 lb/lb-mole
 Dilution Tunnel MW(wet): 28.78 lb/lb-mole
 Tunnel Area: 0.7854 ft²

V_{strav} : 16.24 ft/sec

V_{scent} : 17.95 ft/sec

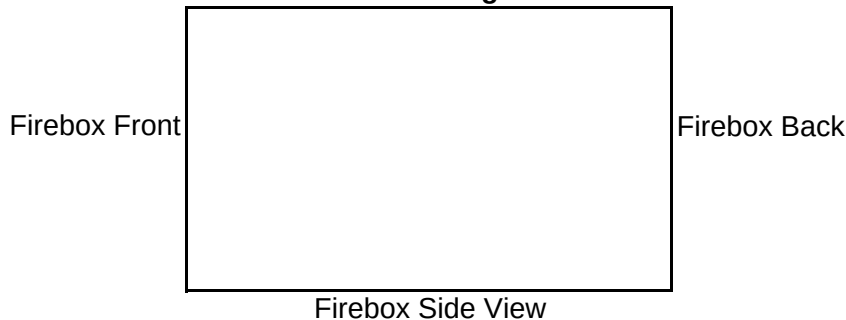
F_p : 0.905 [ratio]

Initial Tunnel Flow: 756.2 scf/min

Static Pressure: -0.115 in. H₂O

TEST FUEL PROPERTIES

Fuel Load Configuration



Actual Fuel Used Properties

Fuel Type: Maple
 HHV (kJ/kg): 8,587
 %C: 0.5084
 %H: 0.0602
 %O: 0.4174
 %Ash: 0.5
 MC (%DB): #DIV/0!

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>3</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	-0.002		0.075	0.01	70	-0.3		6.94		71	69	84	68
1	0.124	0.126	0.075	1.00	70	-1.2	-	6.72	-0.22	75	185	84	68
2	0.272	0.148	0.074	0.99	70	-1.1	-	6.48	-0.24	82	397	83	68
3	0.421	0.149	0.076	1.00	70	-1.1	-	6.28	-0.20	79	402	83	68
4	0.569	0.148	0.074	0.99	70	-1.2	-	6.06	-0.22	80	482	83	68
5	0.716	0.147	0.076	0.99	70	-1.1	-	5.78	-0.28	82	575	84	68
6	0.864	0.148	0.075	0.98	70	-1.2	-	5.47	-0.31	83	621	85	68
7	1.011	0.147	0.075	0.98	70	-1.1	-	5.27	-0.20	84	601	85	68
8	1.157	0.146	0.075	0.97	70	-1.0	-	5.10	-0.17	85	565	85	68
9	1.304	0.147	0.074	0.98	71	-1.1	-	4.91	-0.19	85	562	84	68
10	1.451	0.147	0.074	0.97	71	-1.1	104	4.64	-0.27	87	603	84	68
11	1.598	0.147	0.074	0.97	71	-1.1	-	4.33	-0.31	89	666	84	69
12	1.745	0.147	0.074	0.97	71	-1.2	-	4.02	-0.31	91	690	84	69
13	1.893	0.148	0.074	0.96	71	-1.1	-	3.70	-0.32	92	687	84	69
14	2.036	0.143	0.074	0.96	71	-1.3	-	3.44	-0.26	93	688	85	69
15	2.182	0.146	0.074	0.96	72	-1.2	-	3.14	-0.30	93	680	85	69
16	2.328	0.146	0.074	0.97	72	-1.1	-	2.86	-0.28	94	677	85	69
17	2.473	0.145	0.074	0.96	72	-1.3	-	2.63	-0.23	94	682	85	70
18	2.618	0.145	0.074	0.97	72	-1.3	-	2.35	-0.28	95	687	84	70
19	2.763	0.145	0.075	0.96	73	-1.2	-	2.13	-0.22	94	657	84	70
20	2.908	0.145	0.073	0.95	73	-1.3	107	13.76	11.63	103	564	84	70
21	3.054	0.146	0.073	0.96	73	-1.2	-	13.42	-0.34	97	600	84	70
22	3.199	0.145	0.074	0.96	73	-1.1	-	13.16	-0.26	94	601	85	70
23	3.345	0.146	0.075	0.95	74	-1.2	-	12.97	-0.19	93	610	85	70
24	3.491	0.146	0.074	0.95	74	-1.2	-	12.72	-0.25	93	624	84	70
25	3.635	0.144	0.072	0.95	74	-1.2	-	12.46	-0.26	94	641	84	70
26	3.780	0.145	0.075	0.95	74	-1.2	-	12.20	-0.26	94	650	85	70
27	3.925	0.145	0.072	0.97	75	-1.3	-	12.00	-0.20	94	648	86	70
28	4.069	0.144	0.073	0.96	75	-1.2	-	11.72	-0.28	94	646	86	70
29	4.217	0.148	0.075	0.95	75	-1.2	-	11.49	-0.23	95	650	87	70
30	4.359	0.142	0.075	0.96	76	-1.2	106	11.20	-0.29	96	662	86	70
31	4.503	0.144	0.074	0.94	76	-1.3	-	10.97	-0.23	96	668	85	70

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 3

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.649	0.146	0.075	0.95	76	-1.2	-	10.75	-0.22	96	664	85	70
33	4.795	0.146	0.075	0.95	76	-1.3	-	10.52	-0.23	96	662	84	70
34	4.939	0.144	0.075	0.94	77	-1.3	-	10.30	-0.22	96	663	84	70
35	5.084	0.145	0.075	0.94	77	-1.3	-	10.06	-0.24	96	671	84	70
36	5.228	0.144	0.074	0.95	77	-1.3	-	9.83	-0.23	96	666	84	70
37	5.373	0.145	0.075	0.95	78	-1.3	-	9.58	-0.25	96	674	85	70
38	5.517	0.144	0.076	0.95	78	-1.2	-	9.34	-0.24	96	678	85	70
39	5.662	0.145	0.075	0.95	78	-1.2	-	9.11	-0.23	97	684	85	71
40	5.807	0.145	0.076	0.94	78	-1.2	104	8.88	-0.23	97	696	84	71
41	5.952	0.145	0.076	0.94	79	-1.1	-	8.63	-0.25	97	701	84	71
42	6.098	0.146	0.076	0.95	79	-1.3	-	8.41	-0.22	97	697	84	71
43	6.245	0.147	0.075	0.95	79	-1.2	-	8.19	-0.22	97	693	84	71
44	6.390	0.145	0.074	0.95	79	-1.3	-	7.97	-0.22	98	691	84	71
45	6.531	0.141	0.075	0.95	80	-1.3	-	7.71	-0.26	96	605	84	71
46	6.676	0.145	0.076	0.96	80	-1.3	-	7.58	-0.13	93	553	85	71
47	6.821	0.145	0.075	0.95	80	-1.3	-	7.51	-0.07	92	518	86	71
48	6.966	0.145	0.077	0.97	81	-1.2	-	7.44	-0.07	91	496	87	71
49	7.110	0.144	0.076	0.95	81	-1.3	-	7.34	-0.10	90	479	87	71
50	7.256	0.146	0.075	0.95	81	-1.3	103	7.19	-0.15	89	468	86	71
51	7.402	0.146	0.075	0.95	81	-1.3	-	7.07	-0.12	88	461	86	71
52	7.547	0.145	0.077	0.94	81	-1.3	-	6.95	-0.12	88	455	85	71
53	7.692	0.145	0.077	0.94	82	-1.2	-	6.85	-0.10	87	450	85	71
54	7.837	0.145	0.075	0.95	82	-1.4	-	6.74	-0.11	87	446	84	71
55	7.982	0.145	0.078	0.95	82	-1.2	-	6.60	-0.14	86	444	84	71
56	8.127	0.145	0.078	0.97	82	-1.3	-	6.49	-0.11	86	444	84	71
57	8.275	0.148	0.075	0.96	83	-1.3	-	6.37	-0.12	86	444	84	71
58	8.420	0.145	0.075	0.95	83	-1.4	-	6.25	-0.12	86	442	84	71
59	8.563	0.143	0.077	0.96	83	-1.4	-	6.12	-0.13	86	440	85	70
60	8.709	0.146	0.077	0.93	83	-1.3	102	6.01	-0.11	86	440	85	70
61	8.855	0.146	0.076	0.94	84	-1.4	-	5.89	-0.12	86	438	85	70
62	9.001	0.146	0.076	0.94	84	-1.3	-	5.78	-0.11	85	437	85	70
63	9.146	0.145	0.076	0.95	84	-1.3	-	5.66	-0.12	85	437	85	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 3

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.292	0.146	0.076	0.96	84	-1.4	-	5.56	-0.10	85	435	84	70
65	9.437	0.145	0.076	0.95	84	-1.4	-	5.45	-0.11	85	433	84	70
66	9.582	0.145	0.077	0.96	85	-1.4	-	5.36	-0.09	84	433	85	70
67	9.728	0.146	0.076	0.96	85	-1.4	-	5.25	-0.11	84	431	86	70
68	9.873	0.145	0.077	0.95	85	-1.4	-	5.15	-0.10	84	431	87	70
69	10.022	0.149	0.077	0.96	85	-1.5	-	5.04	-0.11	84	430	86	70
70	10.167	0.145	0.075	0.96	85	-1.5	102	4.95	-0.09	84	424	85	70
71	10.310	0.143	0.078	0.94	85	-1.5	-	4.85	-0.10	84	419	85	70
72	10.456	0.146	0.076	0.95	86	-1.5	-	4.74	-0.11	84	419	84	70
73	10.602	0.146	0.077	0.95	86	-1.4	-	4.67	-0.07	84	415	84	70
74	10.749	0.147	0.076	0.97	86	-1.6	-	4.59	-0.08	84	415	84	70
75	10.895	0.146	0.079	0.95	86	-1.6	-	4.51	-0.08	83	413	85	70
76	11.041	0.146	0.078	0.95	86	-1.6	-	4.43	-0.08	83	413	85	70
77	11.187	0.146	0.077	0.95	86	-1.6	-	4.36	-0.07	83	407	85	70
78	11.332	0.145	0.077	0.96	86	-1.5	-	4.29	-0.07	83	403	85	70
79	11.481	0.149	0.076	0.96	87	-1.7	-	4.22	-0.07	83	398	85	70
80	11.624	0.143	0.077	0.96	87	-1.5	101	4.14	-0.08	82	394	85	70
81	11.770	0.146	0.079	0.95	87	-1.6	-	4.07	-0.07	83	387	85	70
82	11.916	0.146	0.077	0.95	87	-1.6	-	3.99	-0.08	83	384	84	70
83	12.061	0.145	0.078	0.96	87	-1.7	-	3.91	-0.08	83	381	84	70
84	12.207	0.146	0.078	0.95	87	-1.6	-	3.84	-0.07	83	378	84	70
85	12.353	0.146	0.077	0.96	88	-1.7	-	3.79	-0.05	82	379	85	70
86	12.499	0.146	0.075	0.95	88	-1.6	-	3.73	-0.06	82	378	86	70
87	12.648	0.149	0.078	0.96	88	-1.7	-	3.65	-0.08	82	378	86	70
88	12.792	0.144	0.076	0.96	88	-1.8	-	3.59	-0.06	82	372	86	70
89	12.938	0.146	0.077	0.95	88	-1.7	-	3.53	-0.06	82	367	85	70
90	13.085	0.147	0.077	0.96	88	-1.8	100	3.47	-0.06	81	363	84	70
91	13.232	0.147	0.076	0.96	88	-1.9	-	3.43	-0.04	81	362	84	70
92	13.378	0.146	0.079	0.97	88	-1.9	-	3.36	-0.07	81	357	84	70
93	13.524	0.146	0.078	0.95	88	-1.8	-	12.03	8.67	88	393	84	70
94	13.672	0.148	0.077	0.95	89	-1.8	-	11.85	-0.18	88	510	84	70
95	13.816	0.144	0.076	0.96	89	-1.8	-	11.61	-0.24	89	562	84	70

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>3</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	13.961	0.145	0.076	0.95	89	-1.9	-	11.36	-0.25	89	587	85	70
97	14.107	0.146	0.079	0.96	89	-1.9	-	11.12	-0.24	90	603	86	70
98	14.253	0.146	0.076	0.96	89	-1.9	-	10.87	-0.25	89	530	87	70
99	14.396	0.143	0.077	0.95	89	-2.0	-	10.74	-0.13	87	486	86	70
100	14.542	0.146	0.077	0.94	89	-1.9	100	10.60	-0.14	86	469	86	70
101	14.688	0.146	0.076	0.95	89	-1.9	-	10.48	-0.12	86	460	85	70
102	14.834	0.146	0.077	0.96	89	-1.9	-	10.37	-0.11	86	458	84	70
103	14.980	0.146	0.078	0.95	89	-2.0	-	10.22	-0.15	86	454	84	70
104	15.127	0.147	0.076	0.95	90	-2.0	-	10.09	-0.13	86	453	84	70
105	15.273	0.146	0.077	0.94	90	-2.0	-	9.96	-0.13	86	451	84	70
106	15.419	0.146	0.078	0.94	90	-1.9	-	9.86	-0.10	85	445	85	70
107	15.565	0.146	0.078	0.95	90	-1.9	-	9.73	-0.13	85	447	86	70
108	15.711	0.146	0.076	0.96	90	-1.9	-	9.64	-0.09	85	446	87	70
109	15.857	0.146	0.076	0.96	90	-1.9	-	9.50	-0.14	85	445	86	70
110	16.003	0.146	0.078	0.95	90	-1.9	100	9.41	-0.09	85	442	85	70
111	16.149	0.146	0.078	0.94	90	-1.9	-	9.32	-0.09	85	439	84	70
112	16.295	0.146	0.078	0.95	90	-2.0	-	9.20	-0.12	84	439	84	70
113	16.441	0.146	0.077	0.95	90	-1.9	-	9.09	-0.11	84	436	84	70
114	16.587	0.146	0.076	0.94	90	-1.9	-	8.99	-0.10	85	437	83	70
115	16.733	0.146	0.077	0.96	90	-1.9	-	8.88	-0.11	85	434	83	70
116	16.879	0.146	0.079	0.95	90	-2.0	-	8.78	-0.10	85	431	83	70
117	17.025	0.146	0.077	0.95	90	-2.0	-	8.68	-0.10	84	430	84	70
118	17.171	0.146	0.078	0.95	91	-1.9	-	8.59	-0.09	84	426	85	70
119	17.318	0.147	0.076	0.95	91	-2.0	-	8.49	-0.10	84	425	86	70
120	17.465	0.147	0.078	0.95	91	-2.0	100	8.40	-0.09	84	423	87	70
121	17.611	0.146	0.076	0.94	91	-2.0	-	8.30	-0.10	84	425	86	70
122	17.758	0.147	0.076	0.96	91	-2.1	-	8.19	-0.11	84	421	85	70
123	17.904	0.146	0.077	0.95	91	-2.0	-	8.11	-0.08	84	417	85	70
124	18.050	0.146	0.078	0.96	91	-2.0	-	7.99	-0.12	84	412	84	70
125	18.196	0.146	0.075	0.95	91	-2.1	-	7.89	-0.10	84	410	84	70
126	18.342	0.146	0.076	0.96	91	-2.1	-	7.79	-0.10	84	407	84	70
127	18.489	0.147	0.077	0.95	91	-2.1	-	7.72	-0.07	84	406	85	70

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 3

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
128	18.635	0.146	0.077	0.95	91	-2.1	-	7.63	-0.09	84	402	86	70
129	18.781	0.146	0.077	0.96	91	-2.1	-	7.53	-0.10	83	401	86	70
130	18.927	0.146	0.078	0.96	91	-2.1	99	7.44	-0.09	83	399	87	70
131	19.073	0.146	0.078	0.95	91	-2.0	-	7.37	-0.07	83	397	86	70
132	19.219	0.146	0.079	0.94	91	-2.1	-	7.28	-0.09	83	397	86	70
133	19.365	0.146	0.077	0.94	91	-2.1	-	7.20	-0.08	83	394	85	70
134	19.512	0.147	0.078	0.96	91	-2.1	-	7.10	-0.10	83	392	85	70
135	19.658	0.146	0.077	0.96	91	-2.1	-	7.03	-0.07	83	391	84	70
136	19.804	0.146	0.077	0.97	92	-2.2	-	6.95	-0.08	83	389	84	70
137	19.950	0.146	0.076	0.95	92	-2.2	-	6.88	-0.07	83	389	83	70
138	20.097	0.147	0.077	0.95	92	-2.1	-	6.80	-0.08	83	389	83	70
139	20.244	0.147	0.075	0.95	92	-2.2	-	6.72	-0.08	83	385	83	70
140	20.391	0.147	0.077	0.94	92	-2.3	100	6.65	-0.07	82	384	83	70
141	20.538	0.147	0.078	0.97	92	-2.2	-	6.57	-0.08	82	381	84	70
142	20.684	0.146	0.076	0.95	92	-2.2	-	6.49	-0.08	83	380	84	70
143	20.830	0.146	0.077	0.95	92	-2.2	-	6.41	-0.08	83	378	83	70
144	20.977	0.147	0.077	0.95	92	-2.3	-	6.35	-0.06	83	379	83	70
145	21.123	0.146	0.078	0.96	92	-2.3	-	6.27	-0.08	83	378	84	70
146	21.269	0.146	0.077	0.94	92	-2.3	-	6.20	-0.07	83	376	85	70
147	21.415	0.146	0.077	0.95	92	-2.3	-	6.12	-0.08	82	375	85	70
148	21.561	0.146	0.077	0.95	92	-2.3	-	6.05	-0.07	82	374	85	70
149	21.708	0.147	0.079	0.95	92	-2.3	-	5.97	-0.08	82	373	85	70
150	21.854	0.146	0.077	0.96	92	-2.3	100	5.90	-0.07	82	377	84	70
151	22.000	0.146	0.077	0.95	92	-2.4	-	5.82	-0.08	82	375	84	70
152	22.147	0.147	0.078	0.95	92	-2.4	-	5.75	-0.07	83	377	84	70
153	22.293	0.146	0.076	0.95	92	-2.3	-	5.68	-0.07	83	379	84	70
154	22.439	0.146	0.078	0.95	92	-2.4	-	5.59	-0.09	82	379	84	70
155	22.586	0.147	0.078	0.97	92	-2.4	-	5.53	-0.06	82	378	84	70
156	22.732	0.146	0.077	0.96	92	-2.4	-	5.46	-0.07	82	380	84	70
157	22.878	0.146	0.076	0.95	92	-2.4	-	5.38	-0.08	82	380	84	70
158	23.025	0.147	0.077	0.94	92	-2.5	-	5.32	-0.06	82	377	84	70
159	23.172	0.147	0.077	0.95	92	-2.5	-	5.25	-0.07	82	379	85	70

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 3

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
160	23.319	0.147	0.076	0.94	92	-2.5	100	5.18	-0.07	82	381	84	70
161	23.465	0.146	0.077	0.95	92	-2.5	-	5.11	-0.07	82	383	84	70
162	23.612	0.147	0.077	0.96	92	-2.5	-	5.05	-0.06	82	383	83	70
163	23.758	0.146	0.076	0.95	92	-2.4	-	4.97	-0.08	82	381	83	70
164	23.905	0.147	0.078	0.95	93	-2.5	-	4.90	-0.07	82	380	83	70
165	24.051	0.146	0.077	0.96	92	-2.5	-	4.86	-0.04	82	379	84	70
166	24.197	0.146	0.077	0.96	92	-2.5	-	4.78	-0.08	82	379	85	70
167	24.344	0.147	0.076	0.95	93	-2.5	-	4.71	-0.07	82	380	85	70
168	24.490	0.146	0.076	0.95	93	-2.6	-	4.63	-0.08	83	382	84	70
169	24.636	0.146	0.077	0.95	93	-2.6	-	4.57	-0.06	83	383	84	70
170	24.783	0.147	0.074	0.96	93	-2.6	101	4.50	-0.07	83	383	83	70
171	24.929	0.146	0.077	0.95	93	-2.6	-	4.44	-0.06	83	387	83	70
172	25.075	0.146	0.077	0.95	93	-2.6	-	4.37	-0.07	83	388	84	70
173	25.222	0.147	0.076	0.94	93	-2.6	-	4.29	-0.08	83	393	84	70
174	25.368	0.146	0.076	0.95	93	-2.6	-	4.22	-0.07	83	398	84	70
175	25.514	0.146	0.077	0.95	93	-2.6	-	4.16	-0.06	83	397	84	70
176	25.661	0.147	0.076	0.95	93	-2.6	-	4.16	0.00	83	384	85	70
177	25.807	0.146	0.078	0.94	93	-2.6	-	4.17	0.01	83	376	86	70
178	25.953	0.146	0.077	0.95	93	-2.6	-	4.16	-0.01	83	367	86	70
179	26.100	0.147	0.076	0.96	93	-2.7	-	4.07	-0.09	83	361	87	70
180	26.246	0.146	0.075	0.94	93	-2.6	102	6.04	1.97	92	393	86	70
181	26.393	0.147	0.073	0.93	93	-2.7	-	21.11	15.07	102	488	86	71
182	26.539	0.146	0.072	0.96	93	-2.7	-	20.86	-0.25	114	681	85	71
183	26.684	0.145	0.074	0.95	93	-2.6	-	20.64	-0.22	103	634	85	71
184	26.830	0.146	0.074	0.92	93	-2.7	-	20.47	-0.17	98	645	85	71
185	26.976	0.146	0.073	0.95	93	-2.7	-	20.20	-0.27	97	654	85	71
186	27.121	0.145	0.076	0.94	93	-2.6	-	19.96	-0.24	96	657	85	71
187	27.267	0.146	0.074	0.95	93	-2.6	-	19.71	-0.25	96	662	86	71
188	27.413	0.146	0.075	0.95	93	-2.6	-	19.50	-0.21	96	670	87	71
189	27.558	0.145	0.075	0.94	93	-2.7	-	19.23	-0.27	97	678	86	71
190	27.703	0.145	0.074	0.95	93	-2.6	102	19.06	-0.17	95	609	86	71
191	27.849	0.146	0.075	0.95	93	-2.6	-	18.87	-0.19	93	553	85	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 3

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
192	27.995	0.146	0.077	0.94	93	-2.5	-	18.71	-0.16	92	521	85	72
193	28.141	0.146	0.075	0.92	93	-2.6	-	18.61	-0.10	91	502	85	72
194	28.287	0.146	0.074	0.94	93	-2.5	-	18.51	-0.10	90	486	85	72
195	28.434	0.147	0.074	0.95	94	-2.4	-	18.41	-0.10	90	478	85	72
196	28.579	0.145	0.076	0.95	94	-2.4	-	18.33	-0.08	89	476	85	72
197	28.725	0.146	0.074	0.95	94	-2.4	-	18.20	-0.13	89	469	86	72
198	28.871	0.146	0.074	0.95	94	-2.4	-	18.07	-0.13	88	467	86	72
199	29.016	0.145	0.075	0.96	94	-2.3	-	17.96	-0.11	88	467	86	72
200	29.162	0.146	0.076	0.94	94	-2.4	101	17.86	-0.10	88	464	87	72
201	29.307	0.145	0.075	0.95	94	-2.3	-	17.71	-0.15	88	463	87	72
202	29.453	0.146	0.074	0.94	94	-2.3	-	17.60	-0.11	88	462	86	72
203	29.599	0.146	0.074	0.94	94	-2.3	-	17.49	-0.11	87	461	86	72
204	29.745	0.146	0.075	0.93	94	-2.3	-	17.36	-0.13	87	460	85	72
205	29.890	0.145	0.076	0.95	94	-2.2	-	17.25	-0.11	87	460	85	72
206	30.036	0.146	0.075	0.94	94	-2.3	-	17.11	-0.14	87	461	85	72
207	30.183	0.147	0.075	0.93	94	-2.3	-	16.99	-0.12	87	464	86	72
208	30.329	0.146	0.074	0.95	94	-2.2	-	16.85	-0.14	87	462	87	72
209	30.475	0.146	0.075	0.95	94	-2.2	-	16.72	-0.13	87	461	87	72
210	30.621	0.146	0.076	0.95	94	-2.2	100	16.61	-0.11	87	460	87	72
211	30.766	0.145	0.075	0.95	94	-2.2	-	16.47	-0.14	87	460	86	72
212	30.912	0.146	0.076	0.95	94	-2.2	-	16.36	-0.11	87	458	86	72
213	31.057	0.145	0.076	0.95	94	-2.2	-	16.22	-0.14	87	458	85	73
214	31.203	0.146	0.073	0.94	94	-2.3	-	16.09	-0.13	86	453	85	73
215	31.349	0.146	0.074	0.95	95	-2.2	-	15.97	-0.12	86	455	86	73
216	31.494	0.145	0.075	0.95	95	-2.2	-	15.84	-0.13	86	453	87	73
217	31.640	0.146	0.075	0.95	95	-2.2	-	15.71	-0.13	86	456	87	73
218	31.786	0.146	0.073	0.95	95	-2.3	-	15.59	-0.12	86	453	87	73
219	31.932	0.146	0.076	0.93	95	-2.2	-	15.46	-0.13	86	452	86	73
220	32.077	0.145	0.074	0.95	95	-2.3	100	15.34	-0.12	86	453	86	73
221	32.224	0.147	0.074	0.94	95	-2.2	-	15.24	-0.10	86	449	85	73
222	32.370	0.146	0.075	0.96	95	-2.2	-	15.09	-0.15	86	451	85	73
223	32.516	0.146	0.075	0.95	95	-2.2	-	14.98	-0.11	86	449	86	73

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>3</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft ³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
224	32.662	0.146	0.075	0.95	95	-2.3	-	14.87	-0.11	86	447	86	73
225	32.808	0.146	0.075	0.94	95	-2.3	-	14.74	-0.13	86	446	86	73
226	32.953	0.145	0.076	0.95	95	-2.2	-	14.62	-0.12	86	444	86	73
227	33.099	0.146	0.074	0.94	95	-2.2	-	14.50	-0.12	86	446	86	73
228	33.244	0.145	0.074	0.95	95	-2.2	-	14.38	-0.12	86	443	86	73
229	33.390	0.146	0.075	0.95	95	-2.3	-	14.26	-0.12	86	445	85	73
230	33.536	0.146	0.075	0.95	95	-2.2	101	14.14	-0.12	86	446	85	73
231	33.681	0.145	0.074	0.95	95	-2.2	-	14.03	-0.11	86	444	85	73
232	33.827	0.146	0.075	0.95	95	-2.2	-	13.93	-0.10	86	445	85	73
233	33.973	0.146	0.075	0.94	95	-2.2	-	13.83	-0.10	86	443	85	73
234	34.119	0.146	0.076	0.94	95	-2.2	-	13.70	-0.13	85	442	85	73
235	34.266	0.147	0.075	0.94	95	-2.2	-	13.61	-0.09	85	438	85	73
236	34.412	0.146	0.075	0.95	95	-2.3	-	13.51	-0.10	85	438	85	73
237	34.558	0.146	0.076	0.94	95	-2.3	-	13.37	-0.14	85	443	85	73
238	34.704	0.146	0.077	0.93	95	-2.3	-	13.27	-0.10	85	440	86	73
239	34.849	0.145	0.076	0.94	95	-2.2	-	13.15	-0.12	85	438	86	73
240	34.995	0.146	0.074	0.94	95	-2.2	101	13.02	-0.13	85	437	85	73
241	35.140	0.145	0.075	0.95	95	-2.2	-	12.92	-0.10	85	435	85	73
242	35.286	0.146	0.076	0.94	95	-2.3	-	12.81	-0.11	85	436	85	73
243	35.432	0.146	0.075	0.94	96	-2.2	-	12.72	-0.09	85	435	85	73
244	35.577	0.145	0.076	0.94	96	-2.3	-	12.60	-0.12	85	439	85	73
245	35.723	0.146	0.075	0.94	96	-2.3	-	12.50	-0.10	85	440	86	73
246	35.869	0.146	0.076	0.95	96	-2.3	-	12.38	-0.12	85	439	87	73
247	36.015	0.146	0.075	0.95	96	-2.4	-	12.30	-0.08	85	441	87	73
248	36.161	0.146	0.075	0.94	96	-2.3	-	12.17	-0.13	85	440	86	73
249	36.307	0.146	0.076	0.94	96	-2.3	-	12.07	-0.10	85	445	86	73
250	36.453	0.146	0.075	0.94	96	-2.3	101	11.96	-0.11	85	448	86	73
251	36.599	0.146	0.077	0.95	96	-2.4	-	11.84	-0.12	85	449	85	73
252	36.745	0.146	0.077	0.94	96	-2.4	-	11.73	-0.11	85	450	85	73
253	36.890	0.145	0.075	0.94	96	-2.3	-	11.61	-0.12	85	452	85	73
254	37.036	0.146	0.075	0.93	96	-2.3	-	11.50	-0.11	86	455	85	73
255	37.181	0.145	0.076	0.94	96	-2.4	-	11.37	-0.13	86	456	85	73

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 3

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
256	37.327	0.146	0.075	0.93	96	-2.4	-	11.24	-0.13	86	456	86	73
257	37.473	0.146	0.076	0.93	96	-2.4	-	11.12	-0.12	86	457	86	73
258	37.618	0.145	0.076	0.93	96	-2.4	-	10.99	-0.13	86	463	86	73
259	37.764	0.146	0.075	0.94	96	-2.5	-	10.85	-0.14	86	465	86	73
260	37.909	0.145	0.075	0.95	96	-2.4	100	10.74	-0.11	86	468	86	73
261	38.055	0.146	0.076	0.93	96	-2.4	-	10.63	-0.11	86	468	86	73
262	38.201	0.146	0.076	0.93	96	-2.4	-	10.54	-0.09	86	467	86	73
263	38.348	0.147	0.075	0.93	96	-2.4	-	10.44	-0.10	86	460	86	73
264	38.493	0.145	0.075	0.95	96	-2.4	-	10.35	-0.09	86	462	86	73
265	38.639	0.146	0.075	0.94	96	-2.4	-	10.25	-0.10	86	460	85	73
266	38.784	0.145	0.076	0.94	96	-2.4	-	10.14	-0.11	86	458	85	73
267	38.930	0.146	0.076	0.95	96	-2.5	-	10.05	-0.09	86	454	86	73
268	39.075	0.145	0.076	0.94	96	-2.5	-	9.97	-0.08	86	452	86	73
269	39.221	0.146	0.076	0.94	96	-2.5	-	9.86	-0.11	86	451	85	73
270	39.366	0.145	0.075	0.94	96	-2.4	100	9.77	-0.09	86	451	85	74
271	39.511	0.145	0.076	0.94	96	-2.4	-	9.69	-0.08	86	449	86	74
272	39.657	0.146	0.076	0.93	96	-2.5	-	9.60	-0.09	86	447	85	73
273	39.803	0.146	0.075	0.93	96	-2.4	-	9.52	-0.08	85	446	86	73
274	39.949	0.146	0.076	0.94	96	-2.5	-	9.43	-0.09	85	443	86	73
275	40.095	0.146	0.077	0.95	96	-2.4	-	9.34	-0.09	85	441	87	73
276	40.241	0.146	0.075	0.93	96	-2.5	-	9.28	-0.06	85	437	87	74
277	40.386	0.145	0.076	0.93	96	-2.5	-	9.20	-0.08	85	432	86	74
278	40.532	0.146	0.075	0.94	96	-2.5	-	9.13	-0.07	85	430	86	73
279	40.678	0.146	0.075	0.94	97	-2.5	-	9.06	-0.07	85	427	86	73
280	40.823	0.145	0.077	0.94	97	-2.5	99	8.99	-0.07	85	425	86	73
281	40.968	0.145	0.076	0.94	97	-2.4	-	8.90	-0.09	85	422	85	74
282	41.114	0.146	0.076	0.95	97	-2.4	-	8.81	-0.09	85	420	85	73
283	41.259	0.145	0.074	0.94	97	-2.4	-	8.75	-0.06	85	417	86	73
284	41.405	0.146	0.076	0.94	97	-2.5	-	8.67	-0.08	84	415	86	73
285	41.550	0.145	0.076	0.94	97	-2.4	-	8.57	-0.10	84	412	86	73
286	41.696	0.146	0.076	0.93	97	-2.5	-	8.49	-0.08	84	410	86	73
287	41.842	0.146	0.075	0.94	97	-2.4	-	8.41	-0.08	84	408	85	74

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 3

Technician: AK

Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
288	41.988	0.146	0.075	0.94	97	-2.6	-	8.33	-0.08	84	406	86	73
289	42.134	0.146	0.076	0.95	97	-2.5	-	8.24	-0.09	84	406	86	73
290	42.280	0.146	0.075	0.94	97	-2.5	99	8.18	-0.06	84	404	87	74
291	42.425	0.145	0.075	0.93	97	-2.6	-	8.08	-0.10	84	404	87	73
292	42.571	0.146	0.075	0.94	97	-2.6	-	8.00	-0.08	84	404	86	73
293	42.716	0.145	0.075	0.94	97	-2.5	-	7.92	-0.08	84	403	86	73
294	42.861	0.145	0.076	0.93	97	-2.5	-	7.85	-0.07	84	404	86	73
295	43.006	0.145	0.077	0.94	97	-2.6	-	7.78	-0.07	84	408	85	73
296	43.152	0.146	0.075	0.93	97	-2.6	-	7.70	-0.08	84	410	85	73
297	43.298	0.146	0.075	0.93	97	-2.5	-	7.62	-0.08	84	408	85	73
298	43.443	0.145	0.078	0.92	97	-2.7	-	7.54	-0.08	84	411	85	73
299	43.589	0.146	0.076	0.94	97	-2.6	-	7.46	-0.08	84	411	85	73
300	43.735	0.146	0.075	0.94	97	-2.6	100	7.39	-0.07	84	412	86	73
301	43.882	0.147	0.076	0.93	97	-2.6	-	7.31	-0.08	84	414	86	73
302	44.027	0.145	0.076	0.94	97	-2.6	-	7.25	-0.06	84	414	86	73
303	44.173	0.146	0.076	0.94	97	-2.6	-	7.19	-0.06	84	419	86	73
304	44.318	0.145	0.076	0.95	97	-2.7	-	7.11	-0.08	84	413	85	74
305	44.463	0.145	0.076	0.94	97	-2.6	-	7.04	-0.07	84	410	85	73
306	44.609	0.146	0.076	0.94	97	-2.7	-	6.98	-0.06	83	401	85	73
307	44.754	0.145	0.076	0.93	97	-2.6	-	6.93	-0.05	83	396	85	73
308	44.899	0.145	0.076	0.92	97	-2.7	-	6.87	-0.06	83	393	86	73
309	45.044	0.145	0.074	0.94	97	-2.7	-	6.83	-0.04	83	389	87	73
310	45.190	0.146	0.074	0.95	97	-2.7	100	6.77	-0.06	83	383	87	74
311	45.336	0.146	0.075	0.94	97	-2.7	-	6.74	-0.03	83	380	86	73
312	45.482	0.146	0.074	0.93	97	-2.8	-	6.71	-0.03	83	376	86	73
313	45.628	0.146	0.076	0.93	97	-2.7	-	6.67	-0.04	82	367	86	73
314	45.774	0.146	0.078	0.93	97	-2.7	-	6.64	-0.03	82	359	86	73
315	45.919	0.145	0.076	0.94	97	-2.7	-	6.61	-0.03	82	353	87	73
316	46.065	0.146	0.075	0.94	97	-2.7	-	6.59	-0.02	82	347	87	73
317	46.210	0.145	0.075	0.94	97	-2.7	-	6.56	-0.03	82	342	86	73
318	46.355	0.145	0.077	0.93	97	-2.7	-	6.54	-0.02	82	338	86	73
319	46.501	0.146	0.076	0.93	97	-2.8	-	6.53	-0.01	81	336	86	73

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>3</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
320	46.646	0.145	0.074	0.93	97	-2.8	100	6.49	-0.04	81	334	85	73
321	46.792	0.146	0.076	0.94	97	-2.8	-	6.48	-0.01	81	330	85	73
322	46.938	0.146	0.078	0.94	97	-2.9	-	6.44	-0.04	81	328	86	73
323	47.083	0.145	0.077	0.94	97	-2.8	-	6.43	-0.01	81	327	86	73
324	47.229	0.146	0.077	0.94	97	-2.9	-	6.41	-0.02	81	325	85	73
325	47.376	0.147	0.077	0.94	97	-2.9	-	6.39	-0.02	81	322	85	73
326	47.522	0.146	0.076	0.93	97	-2.9	-	6.36	-0.03	81	320	85	73
327	47.667	0.145	0.075	0.95	97	-2.9	-	6.35	-0.01	81	319	85	73
328	47.813	0.146	0.077	0.93	97	-2.9	-	6.32	-0.03	80	316	85	73
329	47.959	0.146	0.077	0.95	97	-3.0	-	6.31	-0.01	80	314	85	73
330	48.104	0.145	0.076	0.94	97	-3.0	100	6.28	-0.03	80	313	85	73
331	48.249	0.145	0.075	0.94	97	-2.9	-	6.26	-0.02	80	311	85	73
332	48.395	0.146	0.075	0.94	97	-3.0	-	6.23	-0.03	80	309	85	73
333	48.540	0.145	0.076	0.94	97	-3.0	-	6.23	0.00	80	308	85	73
334	48.686	0.146	0.076	0.93	97	-3.0	-	6.20	-0.03	80	305	85	73
335	48.832	0.146	0.075	0.93	97	-3.0	-	6.18	-0.02	80	305	85	73
336	48.977	0.145	0.076	0.94	97	-3.1	-	6.17	-0.01	80	304	85	73
337	49.124	0.147	0.076	0.93	97	-3.1	-	6.13	-0.04	80	301	85	73
338	49.270	0.146	0.075	0.94	97	-3.1	-	6.12	-0.01	80	300	86	73
339	49.416	0.146	0.076	0.93	97	-3.1	-	6.11	-0.01	79	298	85	73
340	49.562	0.146	0.078	0.94	97	-3.2	98	6.09	-0.02	79	297	86	73
341	49.708	0.146	0.076	0.94	97	-3.1	-	6.06	-0.03	79	294	86	73
342	49.853	0.145	0.076	0.96	97	-3.2	-	6.04	-0.02	79	292	86	73
343	49.999	0.146	0.077	0.95	97	-3.2	-	6.01	-0.03	79	292	86	73
344	50.144	0.145	0.076	0.94	97	-3.2	-	6.00	-0.01	79	292	86	73
345	50.290	0.146	0.077	0.93	97	-3.2	-	5.98	-0.02	79	291	85	73
346	50.435	0.145	0.074	0.94	97	-3.4	-	5.96	-0.02	79	290	85	73
347	50.581	0.146	0.077	0.94	97	-3.3	-	5.94	-0.02	79	290	85	73
348	50.727	0.146	0.076	0.94	97	-3.4	-	5.92	-0.02	79	287	85	73
349	50.873	0.146	0.075	0.94	97	-3.3	-	5.89	-0.03	79	285	85	73
350	51.018	0.145	0.077	0.94	97	-3.3	98	5.88	-0.01	79	282	86	72
351	51.165	0.147	0.077	0.95	97	-3.4	-	5.85	-0.03	79	281	87	72

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>	
Model: <u>1.4R</u>	Tracking #: <u>238</u>	
Run #: <u>3</u>	Technician: <u>AK</u>	
	Date: <u>10/28/2025</u>	

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
352	51.311	0.146	0.076	0.93	97	-3.4	-	5.84	-0.01	78	280	87	72
353	51.457	0.146	0.075	0.94	97	-3.4	-	5.82	-0.02	78	277	86	72
354	51.603	0.146	0.076	0.93	97	-3.5	-	5.80	-0.02	78	273	86	72
355	51.748	0.145	0.077	0.94	97	-3.5	-	5.80	0.00	78	268	85	72
356	51.894	0.146	0.076	0.94	97	-3.5	-	5.78	-0.02	78	263	85	72
357	52.039	0.145	0.076	0.93	97	-3.4	-	5.77	-0.01	78	259	85	72
358	52.185	0.146	0.075	0.95	97	-3.5	-	5.75	-0.02	78	256	85	72
359	52.331	0.146	0.075	0.94	97	-3.5	-	5.74	-0.01	78	253	85	72
360	52.476	0.145	0.076	0.95	97	-3.5	98	5.72	-0.02	78	250	86	72
361	52.622	0.146	0.075	0.94	97	-3.6	-	5.70	-0.02	78	249	86	72
362	52.768	0.146	0.076	0.93	97	-3.6	-	5.70	0.00	78	248	87	72
363	52.913	0.145	0.076	0.93	97	-3.5	-	5.67	-0.03	78	247	86	72
364	53.060	0.147	0.077	0.93	97	-3.6	-	5.68	0.01	77	244	86	72
365	53.206	0.146	0.077	0.94	97	-3.6	-	5.65	-0.03	77	242	85	72
366	53.352	0.146	0.076	0.93	97	-3.6	-	5.63	-0.02	77	241	85	72
367	53.498	0.146	0.077	0.92	97	-3.6	-	5.62	-0.01	77	238	85	72
368	53.644	0.146	0.078	0.94	97	-3.6	-	5.61	-0.01	77	237	86	72
369	53.789	0.145	0.077	0.94	97	-3.6	-	5.59	-0.02	77	236	87	72
370	53.935	0.146	0.077	0.94	97	-3.7	98	5.58	-0.01	77	235	86	72
371	54.080	0.145	0.077	0.94	97	-3.6	-	5.57	-0.01	77	233	86	72
372	54.226	0.146	0.076	0.93	97	-3.7	-	5.55	-0.02	77	231	85	72
373	54.372	0.146	0.077	0.93	97	-3.7	-	5.54	-0.01	77	230	85	72
374	54.517	0.145	0.076	0.95	97	-3.6	-	5.52	-0.02	77	229	84	72
375	54.663	0.146	0.076	0.94	97	-3.7	-	5.51	-0.01	77	227	84	71
376	54.809	0.146	0.078	0.94	97	-3.8	-	5.50	-0.01	77	227	84	71
377	54.955	0.146	0.076	0.95	97	-3.7	-	5.48	-0.02	77	225	84	71
378	55.101	0.146	0.077	0.94	97	-3.7	-	5.46	-0.02	77	224	85	71
379	55.248	0.147	0.076	0.93	97	-3.8	-	5.47	0.01	77	223	86	71
380	55.394	0.146	0.076	0.94	97	-3.7	98	5.46	-0.01	77	222	86	71
381	55.540	0.146	0.076	0.94	97	-3.7	-	5.45	-0.01	77	221	86	71
382	55.685	0.145	0.077	0.94	97	-3.8	-	5.42	-0.03	77	220	85	71
383	55.831	0.146	0.077	0.95	97	-3.8	-	5.42	0.00	77	220	85	71

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: <u>SBI</u>	Job #: <u>25-446</u>
Model: <u>1.4R</u>	Tracking #: <u>238</u>
Run #: <u>3</u>	Technician: <u>AK</u>
	Date: <u>10/28/2025</u>

Elapsed Time (min)	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
	Gas Meter (ft³)	Sample Rate (cfm)	Dilution Tunnel dP (in H ₂ O)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
384	55.977	0.146	0.076	0.93	97	-3.8	-	5.41	-0.01	76	219	85	71
385	56.122	0.145	0.076	0.94	97	-3.8	-	5.39	-0.02	76	217	84	71
386	56.268	0.146	0.076	0.93	97	-3.7	-	5.39	0.00	76	217	85	71
387	56.414	0.146	0.076	0.94	97	-3.8	-	5.38	-0.01	76	216	85	71
388	56.559	0.145	0.075	0.94	97	-3.8	-	5.36	-0.02	76	216	85	71
389	56.705	0.146	0.075	0.93	97	-3.8	-	5.35	-0.01	76	215	85	71
390	56.851	0.146	0.077	0.94	97	-3.8	98	5.34	-0.01	76	215	85	71
391	56.996	0.145	0.076	0.94	97	-3.8	-	5.33	-0.01	76	213	86	71
392	57.143	0.147	0.077	0.94	97	-3.8	-	5.31	-0.02	76	212	85	71
393	57.289	0.146	0.076	0.94	97	-3.8	-	5.31	0.00	76	213	85	71
394	57.435	0.146	0.076	0.95	97	-3.8	-	5.29	-0.02	76	212	85	71
395	57.580	0.145	0.077	0.95	97	-3.8	-	5.30	0.01	76	210	85	71
396	57.726	0.146	0.076	0.93	97	-3.8	-	5.27	-0.03	76	210	86	71
Avg/Tot	71.584	0.146	0.076	0.94	92.2	-2.6	100			82.7	379.6	85.1	71.1

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
0	-0.002		-0.02	70	-0.5		86	0.006	0.29	0.001
1	0.125	0.127	1.10	71	-1.4	-	83	-0.038	0.88	0.038
2	0.275	0.150	1.07	71	-1.4	-	84	-0.085	2.35	0.124
3	0.423	0.148	1.06	72	-1.3	-	84	-0.069	7.16	0.365
4	0.572	0.149	1.06	72	-1.3	-	84	-0.082	11.51	0.843
5	0.720	0.148	1.04	72	-1.4	-	85	-0.090	13.95	0.929
6	0.867	0.147	1.05	72	-1.4	-	85	-0.091	14.71	1.177
7	1.014	0.147	1.05	72	-1.3	-	86	-0.089	13.96	0.760
8	1.161	0.147	1.06	73	-1.3	-	86	-0.087	12.12	0.246
9	1.308	0.147	1.05	73	-1.4	-	86	-0.085	12.26	0.173
10	1.455	0.147	1.04	73	-1.4	103	86	-0.089	12.91	0.178
11	1.601	0.146	1.05	73	-1.3	-	86	-0.098	14.19	0.578
12	1.747	0.146	1.02	74	-1.4	-	86	-0.095	15.87	0.871
13	1.896	0.149	1.01	74	-1.3	-	86	-0.099	15.61	0.626
14	2.039	0.143	1.00	74	-1.3	-	86	-0.100	15.73	0.605
15	2.184	0.145	1.02	74	-1.3	-	86	-0.096	15.31	0.549
16	2.329	0.145	1.03	75	-1.3	-	86	-0.100	15.11	0.650
17	2.475	0.146	1.05	75	-1.3	-	87	-0.100	15.25	0.520
18	2.620	0.145	1.03	75	-1.3	-	87	-0.100	15.42	0.444
19	2.765	0.145	1.02	75	-1.3	-	87	-0.089	14.41	0.465
20	2.911	0.146	1.00	76	-1.3	105	87	-0.093	11.83	0.366
21	3.057	0.146	1.02	76	-1.4	-	87	-0.097	10.11	0.594
22	3.202	0.145	1.01	76	-1.3	-	86	-0.090	12.46	0.133
23	3.347	0.145	1.01	77	-1.4	-	86	-0.095	12.97	0.046
24	3.492	0.145	1.04	77	-1.4	-	86	-0.092	13.98	0.101
25	3.637	0.145	1.00	77	-1.3	-	86	-0.092	14.84	0.101
26	3.782	0.145	1.01	78	-1.3	-	87	-0.101	15.32	0.176
27	3.926	0.144	1.01	78	-1.3	-	87	-0.095	15.15	0.208
28	4.071	0.145	1.01	78	-1.4	-	87	-0.093	15.26	0.191
29	4.218	0.147	1.01	78	-1.3	-	87	-0.099	15.12	0.190
30	4.361	0.143	1.01	79	-1.4	104	87	-0.099	15.25	0.192
31	4.506	0.145	1.01	79	-1.3	-	87	-0.097	15.38	0.186

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
32	4.651	0.145	1.01	79	-1.4	-	87	-0.099	15.47	0.183
33	4.796	0.145	1.01	79	-1.3	-	86	-0.096	15.33	0.176
34	4.941	0.145	1.01	79	-1.4	-	87	-0.088	15.32	0.182
35	5.085	0.144	1.02	80	-1.3	-	87	-0.097	15.40	0.175
36	5.230	0.145	1.02	80	-1.3	-	87	-0.097	15.42	0.182
37	5.374	0.144	0.99	80	-1.3	-	87	-0.098	15.34	0.179
38	5.519	0.145	1.00	80	-1.3	-	86	-0.099	15.45	0.206
39	5.663	0.144	0.99	80	-1.3	-	86	-0.097	15.66	0.197
40	5.809	0.146	1.01	81	-1.3	102	86	-0.101	15.97	0.199
41	5.954	0.145	1.03	81	-1.4	-	87	-0.097	16.25	0.225
42	6.099	0.145	1.01	81	-1.4	-	87	-0.095	15.85	0.201
43	6.247	0.148	0.99	82	-1.4	-	87	-0.096	15.51	0.207
44	6.391	0.144	1.01	81	-1.3	-	87	-0.101	15.42	0.214
45	6.533	0.142	0.99	82	-1.2	-	87	-0.090	15.29	0.253
46	6.678	0.145	1.01	82	-1.4	-	87	-0.088	15.12	0.711
47	6.822	0.144	1.01	82	-1.3	-	86	-0.089	13.53	0.355
48	6.967	0.145	1.00	82	-1.3	-	87	-0.084	12.67	0.335
49	7.112	0.145	1.01	82	-1.3	-	86	-0.076	12.18	0.326
50	7.258	0.146	0.99	83	-1.3	102	86	-0.086	11.97	0.329
51	7.404	0.146	1.02	82	-1.3	-	86	-0.079	11.85	0.341
52	7.549	0.145	1.00	83	-1.4	-	86	-0.079	11.76	0.372
53	7.695	0.146	1.02	83	-1.4	-	86	-0.077	11.84	0.364
54	7.840	0.145	1.00	83	-1.4	-	86	-0.077	11.87	0.372
55	7.985	0.145	1.00	83	-1.3	-	86	-0.072	11.92	0.393
56	8.130	0.145	0.99	84	-1.4	-	86	-0.082	11.97	0.387
57	8.278	0.148	1.02	84	-1.4	-	86	-0.073	12.10	0.375
58	8.423	0.145	1.03	84	-1.4	-	86	-0.073	12.11	0.375
59	8.566	0.143	1.00	84	-1.4	-	87	-0.082	12.09	0.394
60	8.711	0.145	1.03	84	-1.3	101	88	-0.077	12.16	0.355
61	8.857	0.146	1.01	84	-1.4	-	88	-0.077	12.13	0.374
62	9.002	0.145	1.03	84	-1.4	-	88	-0.077	12.02	0.381
63	9.148	0.146	1.04	84	-1.4	-	88	-0.072	11.95	0.377

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
64	9.294	0.146	1.00	84	-1.3	-	87	-0.078	11.83	0.381
65	9.441	0.147	1.00	84	-1.4	-	87	-0.070	11.77	0.370
66	9.586	0.145	1.02	85	-1.4	-	86	-0.075	11.76	0.370
67	9.732	0.146	1.01	85	-1.3	-	86	-0.070	11.85	0.348
68	9.878	0.146	1.03	85	-1.3	-	86	-0.071	11.86	0.345
69	10.026	0.148	1.03	85	-1.3	-	86	-0.070	11.76	0.338
70	10.172	0.146	1.01	85	-1.3	101	86	-0.073	11.73	0.362
71	10.315	0.143	1.04	85	-1.3	-	86	-0.074	11.56	0.388
72	10.461	0.146	1.00	85	-1.4	-	87	-0.073	11.25	0.337
73	10.607	0.146	1.00	85	-1.3	-	87	-0.068	11.18	0.310
74	10.753	0.146	1.02	85	-1.3	-	87	-0.072	11.01	0.337
75	10.899	0.146	1.02	86	-1.3	-	86	-0.064	11.04	0.295
76	11.045	0.146	1.02	86	-1.3	-	86	-0.069	11.12	0.261
77	11.191	0.146	1.04	86	-1.3	-	86	-0.065	10.97	0.224
78	11.337	0.146	1.00	86	-1.3	-	86	-0.066	10.12	0.237
79	11.486	0.149	1.03	86	-1.4	-	86	-0.066	9.98	0.232
80	11.630	0.144	1.02	86	-1.3	100	87	-0.072	9.96	0.252
81	11.776	0.146	1.02	86	-1.4	-	88	-0.065	9.92	0.386
82	11.923	0.147	1.02	86	-1.4	-	88	-0.059	9.75	0.488
83	12.069	0.146	1.02	86	-1.4	-	88	-0.060	9.74	0.546
84	12.216	0.147	1.02	86	-1.4	-	87	-0.066	9.80	0.402
85	12.363	0.147	1.03	86	-1.3	-	86	-0.058	9.71	0.368
86	12.509	0.146	1.03	86	-1.3	-	86	-0.058	9.72	0.358
87	12.658	0.149	1.01	86	-1.3	-	85	-0.062	9.62	0.327
88	12.802	0.144	1.00	86	-1.4	-	85	-0.060	9.60	0.312
89	12.948	0.146	1.04	86	-1.3	-	85	-0.057	8.90	0.351
90	13.095	0.147	1.03	87	-1.3	100	86	-0.061	8.62	0.476
91	13.241	0.146	1.02	87	-1.4	-	87	-0.055	8.74	0.482
92	13.388	0.147	1.01	87	-1.3	-	87	-0.063	8.81	0.424
93	13.534	0.146	1.04	87	-1.4	-	88	-0.067	8.46	0.482
94	13.683	0.149	1.03	87	-1.3	-	87	-0.086	10.31	0.422
95	13.826	0.143	1.01	87	-1.2	-	87	-0.083	14.52	0.205

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
96	13.973	0.147	1.04	87	-1.3	-	86	-0.092	14.97	0.157
97	14.119	0.146	1.00	87	-1.3	-	86	-0.088	15.12	0.148
98	14.265	0.146	1.03	87	-1.4	-	86	-0.083	14.99	0.213
99	14.409	0.144	1.03	87	-1.3	-	86	-0.077	12.77	0.260
100	14.555	0.146	1.02	87	-1.4	99	86	-0.078	12.32	0.253
101	14.702	0.147	1.02	87	-1.4	-	86	-0.078	12.50	0.258
102	14.848	0.146	1.03	87	-1.4	-	86	-0.070	12.79	0.225
103	14.995	0.147	1.01	87	-1.2	-	86	-0.072	12.87	0.212
104	15.141	0.146	1.00	87	-1.3	-	86	-0.071	12.68	0.251
105	15.288	0.147	1.06	87	-1.3	-	86	-0.071	12.71	0.234
106	15.435	0.147	1.02	87	-1.3	-	86	-0.076	12.64	0.261
107	15.581	0.146	1.04	87	-1.4	-	86	-0.076	12.57	0.257
108	15.728	0.147	1.00	88	-1.3	-	86	-0.065	12.48	0.251
109	15.875	0.147	1.00	88	-1.4	-	86	-0.078	12.35	0.279
110	16.022	0.147	1.02	88	-1.4	100	86	-0.077	12.18	0.300
111	16.169	0.147	1.00	88	-1.4	-	86	-0.073	12.14	0.280
112	16.315	0.146	1.05	88	-1.2	-	86	-0.072	12.16	0.293
113	16.462	0.147	1.02	88	-1.3	-	86	-0.078	12.13	0.267
114	16.609	0.147	1.02	88	-1.4	-	86	-0.068	12.06	0.221
115	16.755	0.146	1.03	88	-1.4	-	86	-0.074	11.87	0.199
116	16.902	0.147	1.04	88	-1.3	-	87	-0.071	11.79	0.184
117	17.049	0.147	1.01	87	-1.2	-	88	-0.074	11.74	0.190
118	17.195	0.146	1.02	88	-1.4	-	88	-0.076	11.71	0.210
119	17.342	0.147	1.01	88	-1.3	-	87	-0.073	11.74	0.196
120	17.489	0.147	1.01	88	-1.4	99	87	-0.071	11.66	0.210
121	17.636	0.147	1.03	88	-1.4	-	86	-0.072	11.60	0.191
122	17.782	0.146	1.00	88	-1.3	-	86	-0.072	11.53	0.177
123	17.929	0.147	1.04	88	-1.4	-	86	-0.072	11.39	0.162
124	18.076	0.147	1.03	88	-1.4	-	85	-0.066	11.25	0.153
125	18.222	0.146	1.01	88	-1.3	-	86	-0.067	11.17	0.154
126	18.369	0.147	1.02	88	-1.4	-	86	-0.064	11.01	0.169
127	18.516	0.147	1.02	88	-1.4	-	86	-0.066	10.86	0.156

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
128	18.663	0.147	1.02	88	-1.3	-	86	-0.069	10.71	0.185
129	18.810	0.147	1.01	88	-1.2	-	86	-0.064	10.57	0.201
130	18.957	0.147	1.00	88	-1.4	99	86	-0.068	10.45	0.212
131	19.104	0.147	1.02	88	-1.2	-	86	-0.064	10.44	0.220
132	19.251	0.147	1.01	88	-1.4	-	86	-0.064	10.37	0.203
133	19.397	0.146	1.02	88	-1.3	-	86	-0.062	10.35	0.198
134	19.544	0.147	0.99	88	-1.4	-	86	-0.064	10.31	0.199
135	19.691	0.147	1.01	89	-1.4	-	86	-0.064	10.28	0.187
136	19.838	0.147	1.03	89	-1.2	-	86	-0.066	10.21	0.182
137	19.985	0.147	0.99	89	-1.3	-	86	-0.065	10.20	0.177
138	20.132	0.147	1.04	89	-1.3	-	86	-0.066	10.15	0.170
139	20.279	0.147	1.02	89	-1.4	-	86	-0.063	10.11	0.168
140	20.426	0.147	1.03	89	-1.3	99	86	-0.062	10.00	0.171
141	20.573	0.147	1.01	89	-1.4	-	86	-0.068	9.97	0.175
142	20.720	0.147	1.02	89	-1.4	-	86	-0.068	9.94	0.178
143	20.866	0.146	1.01	88	-1.3	-	86	-0.063	9.90	0.178
144	21.013	0.147	1.03	89	-1.3	-	86	-0.059	9.91	0.180
145	21.160	0.147	1.02	89	-1.3	-	87	-0.062	9.93	0.172
146	21.307	0.147	1.04	89	-1.3	-	88	-0.062	9.85	0.180
147	21.454	0.147	1.00	89	-1.3	-	88	-0.062	9.85	0.185
148	21.601	0.147	1.01	89	-1.3	-	88	-0.065	9.89	0.193
149	21.748	0.147	1.04	89	-1.4	-	87	-0.058	9.92	0.184
150	21.895	0.147	1.02	89	-1.3	100	87	-0.062	9.97	0.169
151	22.042	0.147	1.04	89	-1.3	-	86	-0.064	10.09	0.158
152	22.189	0.147	1.01	89	-1.3	-	86	-0.058	10.16	0.148
153	22.336	0.147	1.02	89	-1.2	-	86	-0.057	10.17	0.164
154	22.483	0.147	1.01	89	-1.3	-	86	-0.064	10.17	0.151
155	22.630	0.147	1.01	89	-1.4	-	86	-0.061	10.26	0.142
156	22.777	0.147	1.00	89	-1.3	-	87	-0.059	10.28	0.128
157	22.925	0.148	1.03	89	-1.4	-	87	-0.057	10.28	0.125
158	23.072	0.147	1.02	89	-1.4	-	86	-0.066	10.31	0.140
159	23.219	0.147	1.02	89	-1.2	-	86	-0.063	10.31	0.147

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
160	23.366	0.147	1.01	89	-1.3	100	86	-0.059	10.25	0.159
161	23.513	0.147	1.01	89	-1.3	-	86	-0.065	10.20	0.141
162	23.660	0.147	1.01	89	-1.3	-	86	-0.058	10.19	0.142
163	23.808	0.148	1.02	89	-1.2	-	86	-0.062	10.09	0.139
164	23.955	0.147	1.01	89	-1.3	-	87	-0.060	10.06	0.147
165	24.102	0.147	1.02	89	-1.4	-	87	-0.064	10.02	0.148
166	24.249	0.147	1.01	89	-1.4	-	87	-0.060	10.02	0.155
167	24.396	0.147	1.03	89	-1.3	-	87	-0.060	10.24	0.152
168	24.543	0.147	1.03	89	-1.3	-	86	-0.062	10.21	0.165
169	24.691	0.148	1.04	89	-1.3	-	86	-0.066	10.20	0.168
170	24.838	0.147	1.02	89	-1.3	101	85	-0.062	10.30	0.168
171	24.985	0.147	1.03	89	-1.3	-	85	-0.064	10.48	0.155
172	25.132	0.147	1.01	89	-1.3	-	85	-0.065	10.63	0.148
173	25.279	0.147	1.03	89	-1.3	-	86	-0.067	10.77	0.168
174	25.427	0.148	1.01	90	-1.4	-	86	-0.062	11.14	0.177
175	25.574	0.147	1.02	89	-1.4	-	86	-0.064	11.59	0.261
176	25.721	0.147	1.02	89	-1.3	-	86	-0.059	10.22	0.132
177	25.868	0.147	1.04	89	-1.3	-	86	-0.063	8.79	0.066
178	26.015	0.147	1.02	90	-1.2	-	86	-0.057	8.71	0.157
179	26.162	0.147	1.05	90	-1.3	-	87	-0.055	8.69	0.141
180	26.309	0.147	1.01	90	-1.4	102	87	-0.063	8.46	0.144
181	26.456	0.147	1.02	90	-1.3	-	87	-0.085	2.54	0.112
182	26.602	0.146	1.03	90	-1.4	-	87	-0.102	4.49	0.142
183	26.749	0.147	1.03	90	-1.4	-	87	-0.090	8.88	0.216
184	26.896	0.147	1.03	90	-1.4	-	87	-0.091	13.57	0.173
185	27.043	0.147	0.99	90	-1.2	-	86	-0.091	14.37	0.278
186	27.189	0.146	1.02	90	-1.3	-	86	-0.096	14.71	0.287
187	27.336	0.147	1.03	90	-1.4	-	86	-0.090	14.76	0.228
188	27.483	0.147	1.01	90	-1.3	-	87	-0.093	14.87	0.200
189	27.629	0.146	1.01	90	-1.3	-	87	-0.091	15.02	0.183
190	27.776	0.147	1.00	90	-1.3	102	88	-0.092	15.10	0.306
191	27.922	0.146	1.01	91	-1.4	-	88	-0.083	14.60	0.701

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
192	28.069	0.147	1.02	90	-1.2	-	87	-0.080	13.36	0.196
193	28.215	0.146	1.01	90	-1.4	-	87	-0.078	12.72	0.139
194	28.362	0.147	1.03	90	-1.4	-	87	-0.078	12.49	0.116
195	28.509	0.147	1.02	90	-1.4	-	87	-0.078	12.18	0.098
196	28.655	0.146	1.05	90	-1.3	-	87	-0.077	12.18	0.089
197	28.802	0.147	0.99	90	-1.3	-	87	-0.073	12.05	0.137
198	28.948	0.146	1.01	90	-1.3	-	87	-0.078	12.01	0.150
199	29.095	0.147	1.00	90	-1.4	-	87	-0.079	11.97	0.164
200	29.242	0.147	1.03	91	-1.2	101	87	-0.080	12.01	0.182
201	29.389	0.147	1.00	91	-1.3	-	87	-0.081	11.96	0.185
202	29.535	0.146	1.02	90	-1.3	-	87	-0.071	11.96	0.207
203	29.682	0.147	1.01	91	-1.2	-	87	-0.067	11.96	0.221
204	29.829	0.147	1.01	91	-1.4	-	87	-0.077	11.99	0.263
205	29.975	0.146	1.00	91	-1.2	-	87	-0.077	11.97	0.303
206	30.122	0.147	1.01	91	-1.4	-	87	-0.071	12.02	0.292
207	30.269	0.147	1.03	91	-1.2	-	87	-0.070	12.12	0.319
208	30.416	0.147	1.01	91	-1.3	-	87	-0.077	12.16	0.330
209	30.562	0.146	1.01	91	-1.2	-	87	-0.076	12.09	0.332
210	30.709	0.147	0.99	91	-1.3	100	87	-0.076	12.13	0.358
211	30.856	0.147	1.01	91	-1.3	-	87	-0.073	12.13	0.360
212	31.003	0.147	1.00	91	-1.4	-	87	-0.072	12.14	0.347
213	31.150	0.147	1.03	91	-1.4	-	87	-0.068	12.07	0.362
214	31.297	0.147	1.01	91	-1.3	-	87	-0.077	12.06	0.371
215	31.444	0.147	1.01	91	-1.2	-	87	-0.077	12.00	0.375
216	31.591	0.147	1.03	91	-1.4	-	87	-0.073	12.03	0.360
217	31.738	0.147	1.02	91	-1.3	-	86	-0.079	12.00	0.348
218	31.885	0.147	1.01	91	-1.3	-	86	-0.072	11.99	0.366
219	32.032	0.147	1.02	91	-1.4	-	87	-0.074	11.93	0.371
220	32.179	0.147	1.01	91	-1.3	101	87	-0.076	11.89	0.363
221	32.325	0.146	1.02	91	-1.3	-	87	-0.074	11.90	0.345
222	32.472	0.147	1.02	91	-1.4	-	87	-0.072	11.87	0.364
223	32.619	0.147	1.02	91	-1.4	-	87	-0.071	11.91	0.322

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
224	32.766	0.147	1.00	91	-1.4	-	87	-0.076	11.86	0.326
225	32.912	0.146	1.00	91	-1.3	-	87	-0.073	11.78	0.351
226	33.059	0.147	1.02	92	-1.2	-	87	-0.074	11.76	0.328
227	33.206	0.147	1.02	92	-1.3	-	87	-0.068	11.64	0.338
228	33.353	0.147	1.02	92	-1.3	-	87	-0.076	11.69	0.343
229	33.500	0.147	1.01	92	-1.3	-	87	-0.070	11.75	0.309
230	33.646	0.146	1.01	92	-1.4	101	88	-0.070	11.73	0.235
231	33.793	0.147	1.04	92	-1.3	-	88	-0.075	12.05	0.218
232	33.940	0.147	1.01	91	-1.4	-	88	-0.075	11.24	0.440
233	34.087	0.147	1.03	92	-1.4	-	88	-0.071	11.74	0.212
234	34.233	0.146	1.03	92	-1.3	-	87	-0.070	11.67	0.246
235	34.380	0.147	1.02	92	-1.3	-	87	-0.068	11.56	0.233
236	34.527	0.147	1.02	92	-1.4	-	86	-0.069	11.50	0.187
237	34.674	0.147	1.03	92	-1.3	-	86	-0.067	11.33	0.190
238	34.821	0.147	1.03	92	-1.4	-	87	-0.070	11.26	0.231
239	34.967	0.146	1.01	92	-1.4	-	87	-0.066	11.27	0.217
240	35.114	0.147	1.00	92	-1.4	101	88	-0.071	11.33	0.209
241	35.261	0.147	1.02	92	-1.4	-	88	-0.071	11.39	0.185
242	35.408	0.147	1.02	92	-1.4	-	88	-0.069	11.39	0.185
243	35.555	0.147	1.03	92	-1.3	-	87	-0.072	11.45	0.180
244	35.701	0.146	1.03	92	-1.4	-	87	-0.075	11.48	0.195
245	35.848	0.147	1.03	92	-1.3	-	87	-0.066	11.59	0.193
246	35.995	0.147	1.01	92	-1.3	-	87	-0.068	11.68	0.199
247	36.142	0.147	1.01	92	-1.3	-	88	-0.071	11.87	0.248
248	36.288	0.146	1.01	92	-1.4	-	88	-0.071	11.81	0.288
249	36.435	0.147	1.02	92	-1.4	-	88	-0.069	11.87	0.256
250	36.582	0.147	1.03	92	-1.4	101	88	-0.068	12.01	0.247
251	36.729	0.147	1.02	92	-1.2	-	87	-0.072	12.08	0.240
252	36.875	0.146	1.00	92	-1.2	-	87	-0.072	12.19	0.231
253	37.022	0.147	1.02	92	-1.4	-	87	-0.070	12.28	0.219
254	37.169	0.147	1.00	92	-1.3	-	87	-0.072	12.42	0.245
255	37.316	0.147	1.01	92	-1.3	-	87	-0.072	12.63	0.263

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
256	37.462	0.146	1.01	92	-1.4	-	87	-0.075	12.73	0.298
257	37.609	0.147	1.02	93	-1.4	-	87	-0.077	12.93	0.348
258	37.756	0.147	1.03	92	-1.3	-	87	-0.073	13.16	0.325
259	37.903	0.147	1.03	92	-1.3	-	87	-0.069	13.27	0.318
260	38.050	0.147	1.02	92	-1.3	101	87	-0.071	13.27	0.336
261	38.197	0.147	1.03	92	-1.3	-	87	-0.077	13.18	0.322
262	38.344	0.147	1.03	92	-1.3	-	87	-0.078	13.09	0.278
263	38.491	0.147	1.02	93	-1.4	-	87	-0.073	12.61	0.190
264	38.638	0.147	1.00	92	-1.3	-	87	-0.071	12.44	0.168
265	38.785	0.147	1.04	92	-1.3	-	88	-0.069	12.36	0.157
266	38.932	0.147	0.98	92	-1.2	-	88	-0.076	12.30	0.154
267	39.079	0.147	1.01	92	-1.4	-	87	-0.073	12.20	0.153
268	39.225	0.146	1.02	92	-1.3	-	87	-0.068	12.21	0.144
269	39.372	0.147	1.00	92	-1.3	-	87	-0.067	12.14	0.153
270	39.519	0.147	1.01	92	-1.3	101	87	-0.072	12.07	0.150
271	39.665	0.146	1.04	92	-1.4	-	87	-0.072	11.94	0.150
272	39.812	0.147	1.01	93	-1.3	-	87	-0.073	11.82	0.149
273	39.959	0.147	1.02	93	-1.3	-	87	-0.069	11.61	0.176
274	40.106	0.147	1.01	93	-1.4	-	87	-0.070	11.47	0.154
275	40.252	0.146	1.01	93	-1.3	-	87	-0.069	11.34	0.158
276	40.399	0.147	1.02	92	-1.3	-	87	-0.067	11.30	0.180
277	40.546	0.147	1.01	93	-1.4	-	87	-0.067	11.13	0.294
278	40.693	0.147	1.03	93	-1.3	-	87	-0.071	10.98	0.283
279	40.839	0.146	1.01	92	-1.4	-	87	-0.073	10.95	0.263
280	40.986	0.147	1.00	93	-1.4	100	87	-0.063	10.90	0.261
281	41.133	0.147	1.03	93	-1.4	-	88	-0.066	10.83	0.255
282	41.279	0.146	0.99	92	-1.3	-	87	-0.065	10.80	0.259
283	41.426	0.147	0.99	92	-1.3	-	87	-0.066	10.73	0.233
284	41.573	0.147	1.01	93	-1.3	-	87	-0.069	10.69	0.242
285	41.720	0.147	1.01	93	-1.4	-	87	-0.066	10.64	0.230
286	41.866	0.146	1.00	93	-1.4	-	87	-0.068	10.56	0.209
287	42.013	0.147	1.03	93	-1.4	-	87	-0.064	10.49	0.177

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
288	42.160	0.147	1.02	93	-1.3	-	88	-0.057	10.44	0.172
289	42.306	0.146	1.01	93	-1.3	-	88	-0.064	10.46	0.165
290	42.453	0.147	1.03	93	-1.4	100	88	-0.059	10.48	0.160
291	42.600	0.147	1.04	93	-1.4	-	87	-0.070	10.45	0.255
292	42.747	0.147	1.01	93	-1.3	-	87	-0.064	10.42	0.257
293	42.893	0.146	1.01	93	-1.3	-	87	-0.066	10.68	0.149
294	43.040	0.147	1.03	93	-1.4	-	87	-0.064	10.59	0.146
295	43.187	0.147	1.02	93	-1.3	-	87	-0.066	10.73	0.135
296	43.334	0.147	1.01	93	-1.4	-	87	-0.064	10.83	0.139
297	43.480	0.146	1.00	93	-1.4	-	87	-0.065	10.93	0.138
298	43.627	0.147	1.01	93	-1.3	-	87	-0.071	11.01	0.117
299	43.774	0.147	1.03	93	-1.3	-	87	-0.066	11.07	0.105
300	43.921	0.147	1.01	93	-1.3	100	87	-0.066	11.09	0.088
301	44.067	0.146	1.02	93	-1.3	-	87	-0.058	11.13	0.093
302	44.214	0.147	1.00	93	-1.4	-	87	-0.068	11.09	0.124
303	44.361	0.147	1.02	93	-1.3	-	87	-0.064	11.22	0.156
304	44.508	0.147	1.02	93	-1.4	-	87	-0.066	10.87	0.148
305	44.655	0.147	1.02	93	-1.3	-	87	-0.065	10.78	0.223
306	44.802	0.147	1.03	93	-1.4	-	87	-0.064	10.15	0.191
307	44.949	0.147	1.00	93	-1.3	-	87	-0.060	10.07	0.185
308	45.096	0.147	1.01	93	-1.3	-	87	-0.061	10.03	0.186
309	45.243	0.147	1.01	93	-1.4	-	86	-0.067	9.78	0.347
310	45.390	0.147	1.02	93	-1.4	101	87	-0.056	9.55	0.251
311	45.536	0.146	1.02	93	-1.4	-	87	-0.062	9.13	0.180
312	45.683	0.147	1.03	93	-1.2	-	88	-0.057	8.97	0.158
313	45.830	0.147	1.01	93	-1.4	-	88	-0.061	8.62	0.123
314	45.976	0.146	1.02	93	-1.4	-	88	-0.056	7.71	0.110
315	46.123	0.147	1.01	93	-1.2	-	88	-0.056	7.54	0.118
316	46.270	0.147	1.01	93	-1.3	-	87	-0.056	7.45	0.119
317	46.417	0.147	1.00	93	-1.4	-	87	-0.058	7.42	0.129
318	46.564	0.147	1.01	93	-1.3	-	87	-0.055	7.33	0.130
319	46.711	0.147	1.03	93	-1.4	-	86	-0.056	7.33	0.127

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
320	46.857	0.146	1.03	93	-1.4	101	86	-0.047	7.26	0.127
321	47.004	0.147	1.03	93	-1.4	-	87	-0.053	7.22	0.135
322	47.151	0.147	0.99	93	-1.4	-	86	-0.057	7.23	0.141
323	47.298	0.147	1.01	93	-1.3	-	87	-0.053	7.20	0.150
324	47.445	0.147	1.04	93	-1.4	-	87	-0.047	7.19	0.150
325	47.591	0.146	1.01	93	-1.4	-	87	-0.049	7.19	0.165
326	47.738	0.147	1.02	93	-1.3	-	87	-0.056	7.19	0.172
327	47.885	0.147	1.02	93	-1.4	-	87	-0.047	7.22	0.178
328	48.032	0.147	1.00	93	-1.3	-	86	-0.055	7.16	0.194
329	48.179	0.147	1.00	93	-1.2	-	86	-0.050	7.15	0.196
330	48.326	0.147	1.02	93	-1.3	100	86	-0.051	7.14	0.198
331	48.473	0.147	1.02	93	-1.4	-	87	-0.045	7.12	0.223
332	48.619	0.146	1.03	93	-1.3	-	87	-0.044	7.08	0.258
333	48.766	0.147	1.00	93	-1.4	-	87	-0.046	7.10	0.245
334	48.913	0.147	1.00	93	-1.3	-	87	-0.046	7.04	0.262
335	49.060	0.147	1.00	93	-1.3	-	86	-0.047	7.05	0.303
336	49.207	0.147	1.02	93	-1.3	-	86	-0.047	7.03	0.334
337	49.354	0.147	1.02	93	-1.4	-	86	-0.048	6.96	0.362
338	49.501	0.147	1.02	93	-1.3	-	86	-0.051	6.99	0.391
339	49.647	0.146	1.00	93	-1.4	-	86	-0.049	7.00	0.404
340	49.795	0.148	1.03	93	-1.4	99	86	-0.048	7.00	0.426
341	49.941	0.146	1.01	93	-1.3	-	86	-0.047	7.00	0.444
342	50.088	0.147	1.00	93	-1.4	-	87	-0.047	7.00	0.444
343	50.235	0.147	1.01	93	-1.4	-	88	-0.047	7.05	0.453
344	50.382	0.147	1.02	93	-1.3	-	88	-0.047	7.03	0.455
345	50.529	0.147	1.00	93	-1.4	-	88	-0.044	7.08	0.442
346	50.676	0.147	1.02	93	-1.4	-	87	-0.044	7.15	0.421
347	50.823	0.147	1.01	93	-1.3	-	87	-0.039	7.11	0.433
348	50.970	0.147	1.00	93	-1.3	-	86	-0.048	6.98	0.333
349	51.117	0.147	1.00	93	-1.2	-	86	-0.043	6.74	0.387
350	51.264	0.147	1.02	93	-1.3	98	86	-0.043	6.69	0.411
351	51.411	0.147	1.02	93	-1.3	-	86	-0.049	6.63	0.401

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
352	51.558	0.147	1.00	93	-1.3	-	87	-0.045	6.57	0.430
353	51.704	0.146	1.02	93	-1.3	-	87	-0.041	6.32	0.531
354	51.851	0.147	1.01	93	-1.4	-	87	-0.051	6.03	0.673
355	51.998	0.147	1.02	93	-1.4	-	87	-0.043	5.73	0.858
356	52.145	0.147	1.01	93	-1.4	-	87	-0.036	5.33	1.062
357	52.293	0.148	1.01	92	-1.4	-	88	-0.037	5.32	1.048
358	52.440	0.147	1.00	93	-1.4	-	88	-0.037	5.33	1.040
359	52.587	0.147	1.01	93	-1.3	-	88	-0.039	5.32	1.006
360	52.734	0.147	1.02	93	-1.3	99	88	-0.045	5.34	0.993
361	52.881	0.147	1.02	92	-1.4	-	87	-0.035	5.35	0.974
362	53.028	0.147	1.03	93	-1.4	-	87	-0.042	5.34	0.953
363	53.175	0.147	1.02	93	-1.4	-	87	-0.036	5.30	0.924
364	53.322	0.147	1.00	93	-1.4	-	87	-0.036	5.27	0.874
365	53.469	0.147	1.01	93	-1.3	-	87	-0.037	5.27	0.844
366	53.616	0.147	1.02	93	-1.4	-	87	-0.033	5.27	0.822
367	53.763	0.147	1.02	93	-1.3	-	87	-0.032	5.25	0.799
368	53.911	0.148	1.01	93	-1.3	-	86	-0.033	5.23	0.777
369	54.058	0.147	0.99	93	-1.4	-	86	-0.029	5.19	0.761
370	54.205	0.147	1.02	93	-1.3	99	86	-0.036	5.19	0.740
371	54.352	0.147	1.00	93	-1.4	-	86	-0.038	5.21	0.716
372	54.499	0.147	1.01	93	-1.3	-	86	-0.039	5.08	0.708
373	54.646	0.147	1.00	93	-1.3	-	86	-0.037	5.04	0.706
374	54.792	0.146	1.01	92	-1.3	-	86	-0.035	5.04	0.681
375	54.939	0.147	1.03	93	-1.4	-	86	-0.036	5.08	0.666
376	55.087	0.148	1.03	93	-1.4	-	86	-0.032	5.06	0.648
377	55.234	0.147	1.01	93	-1.4	-	87	-0.035	5.04	0.635
378	55.381	0.147	1.03	93	-1.3	-	87	-0.031	5.04	0.615
379	55.528	0.147	1.00	92	-1.3	-	86	-0.039	5.06	0.610
380	55.675	0.147	1.03	93	-1.4	99	87	-0.039	5.01	0.595
381	55.822	0.147	1.00	92	-1.3	-	87	-0.033	5.09	0.607
382	55.969	0.147	1.00	92	-1.3	-	88	-0.032	5.10	0.604
383	56.116	0.147	1.00	92	-1.3	-	88	-0.028	5.05	0.593

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: SBIJob #: 25-446Model: 1.4RTracking #: 238Run #: 3Technician: AKDate: 10/28/2025

Elapsed Time (min)	Particulate Sampling Data							Flue Gas Data		
	Gas Meter (ft ³)	Sample Rate (cfm)	Orifice dH (in H ₂ O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H ₂ O)	CO ₂ (%)	CO (%)
384	56.262	0.146	1.02	92	-1.4	-	87	-0.034	5.05	0.579
385	56.409	0.147	1.02	93	-1.4	-	87	-0.026	5.01	0.579
386	56.556	0.147	1.02	93	-1.3	-	86	-0.031	4.99	0.575
387	56.704	0.148	1.02	93	-1.4	-	86	-0.034	4.98	0.586
388	56.851	0.147	1.03	92	-1.3	-	86	-0.032	4.94	0.564
389	56.998	0.147	1.01	92	-1.3	-	85	-0.030	4.96	0.556
390	57.145	0.147	1.02	92	-1.3	99	86	-0.036	4.94	0.543
391	57.291	0.146	1.02	92	-1.3	-	86	-0.028	4.93	0.541
392	57.438	0.147	1.00	92	-1.3	-	86	-0.032	4.93	0.537
393	57.584	0.146	1.03	92	-1.4	-	87	-0.031	4.93	0.539
394	57.731	0.147	1.02	92	-1.4	-	87	-0.027	4.94	0.536
395	57.878	0.147	0.99	92	-1.4	-	87	-0.032	4.93	0.529
396	58.025	0.147	1.03	92	-1.3	-	87	-0.024	4.89	0.526
Avg/Tot	72.001	0.147	1.01	89.2	-1.3	100	86.4	-0.059	9.50	0.415

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 307

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
0	69	69	69	68	68	68.5	N/A
1	74	70	70	79	69	72.1	N/A
2	81	73	72	103	70	79.7	N/A
3	97	79	75	138	73	92.4	N/A
4	116	89	79	189	78	110.4	N/A
5	135	104	85	253	84	132.2	N/A
6	147	121	91	319	94	154.3	N/A
7	157	136	97	374	105	173.8	N/A
8	166	149	103	416	117	190.1	N/A
9	175	162	110	451	130	205.5	N/A
10	187	175	117	484	144	221.4	N/A
11	202	190	125	524	158	239.7	N/A
12	219	205	134	567	174	259.6	N/A
13	237	220	144	606	193	279.9	N/A
14	255	235	154	640	212	299.1	N/A
15	273	250	165	668	233	317.7	N/A
16	292	265	176	692	254	335.5	N/A
17	310	278	187	716	275	353.2	N/A
18	327	292	199	733	295	369.2	N/A
19	344	306	211	742	314	383.5	N/A
20	357	320	224	721	335	391.6	N/A
21	366	330	237	705	352	397.8	N/A
22	371	336	248	699	363	403.4	N/A
23	375	340	256	698	373	408.6	N/A
24	380	344	264	703	381	414.1	N/A
25	385	348	271	714	387	420.9	N/A
26	391	352	277	730	392	428.4	N/A
27	396	357	282	747	397	435.8	N/A
28	402	361	287	754	402	441.0	N/A
29	409	365	292	766	405	447.2	N/A
30	415	370	296	770	410	452.2	N/A
31	423	374	300	775	415	457.5	N/A
32	430	379	305	783	420	463.4	N/A
33	437	384	309	790	424	468.8	N/A
34	444	389	314	794	429	474.0	N/A
35	451	393	319	797	434	478.7	N/A
36	459	397	323	800	439	483.7	N/A
37	466	402	328	801	444	488.1	N/A
38	473	406	333	803	449	492.7	N/A
39	479	411	337	809	455	498.1	N/A
40	486	415	343	813	460	503.1	N/A
41	492	420	348	818	465	508.5	N/A
42	498	425	353	821	471	513.6	N/A
43	503	429	359	821	476	517.4	N/A
44	508	434	364	824	482	522.2	N/A
45	511	438	370	820	487	525.2	N/A
46	513	441	374	812	493	526.6	N/A
47	514	445	379	800	498	527.0	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI

Job #: 25-446

Model: 1.4R

Tracking #: 238

Run #: 3

Technician: AK

Date: 10/28/2025

Stove ΔT: 307

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
48	513	447	383	785	502	525.9	N/A
49	513	448	386	768	506	524.1	N/A
50	512	449	389	751	509	522.2	N/A
51	512	450	392	738	511	520.5	N/A
52	511	450	395	724	513	518.4	N/A
53	510	450	397	713	515	516.8	N/A
54	509	451	399	703	516	515.4	N/A
55	508	451	401	694	518	514.3	N/A
56	507	451	403	686	519	512.9	N/A
57	506	451	405	681	520	512.4	N/A
58	505	451	406	675	520	511.4	N/A
59	505	451	408	670	521	510.9	N/A
60	505	451	410	667	521	510.7	N/A
61	504	451	412	664	522	510.6	N/A
62	504	452	413	661	522	510.6	N/A
63	504	452	415	658	523	510.4	N/A
64	505	452	417	656	523	510.5	N/A
65	505	452	419	653	524	510.4	N/A
66	505	452	420	651	524	510.4	N/A
67	505	452	422	650	524	510.7	N/A
68	506	452	424	647	525	510.6	N/A
69	506	452	425	643	525	510.3	N/A
70	506	453	427	643	525	510.9	N/A
71	506	453	429	639	526	510.4	N/A
72	506	453	430	635	526	510.1	N/A
73	506	454	431	632	526	509.9	N/A
74	506	454	433	628	527	509.5	N/A
75	506	454	434	624	527	509.2	N/A
76	506	455	436	620	528	508.8	N/A
77	505	455	437	617	529	508.5	N/A
78	505	455	438	613	530	508.1	N/A
79	503	456	439	609	530	507.4	N/A
80	502	456	440	605	531	506.7	N/A
81	501	456	441	599	532	505.9	N/A
82	501	456	442	594	534	505.1	N/A
83	500	456	443	585	535	503.6	N/A
84	499	456	444	577	536	502.2	N/A
85	498	456	445	571	537	501.3	N/A
86	497	456	445	567	537	500.5	N/A
87	496	456	446	564	538	500.1	N/A
88	496	456	447	560	539	499.3	N/A
89	494	456	447	554	539	497.9	N/A
90	492	455	447	549	540	496.6	N/A
91	490	455	448	544	540	495.2	N/A
92	489	454	448	541	540	494.2	N/A
93	487	454	449	533	543	493.0	N/A
94	484	453	450	548	543	495.4	N/A
95	481	453	450	579	542	500.8	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 307

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
96	480	453	449	615	542	507.8	N/A
97	480	454	448	648	544	514.7	N/A
98	481	455	447	667	546	519.0	N/A
99	481	455	445	674	548	520.5	N/A
100	481	455	443	671	550	520.0	N/A
101	481	454	441	668	552	519.4	N/A
102	481	454	439	667	554	518.9	N/A
103	480	453	437	666	556	518.4	N/A
104	480	452	435	666	557	518.2	N/A
105	480	451	434	666	558	517.7	N/A
106	480	451	432	665	560	517.3	N/A
107	480	450	431	662	560	516.6	N/A
108	479	449	430	661	561	515.9	N/A
109	480	448	429	659	562	515.4	N/A
110	480	448	428	656	562	514.6	N/A
111	480	447	428	651	561	513.5	N/A
112	481	447	427	648	562	512.7	N/A
113	480	446	427	646	562	512.2	N/A
114	481	446	426	646	562	512.2	N/A
115	481	446	426	646	561	512.0	N/A
116	481	446	426	644	561	511.5	N/A
117	481	446	426	642	561	511.2	N/A
118	481	446	426	640	561	510.6	N/A
119	481	446	426	637	560	510.1	N/A
120	482	446	427	635	560	509.7	N/A
121	482	446	427	633	560	509.6	N/A
122	482	446	428	631	560	509.2	N/A
123	482	446	428	631	559	509.2	N/A
124	482	446	429	628	559	508.7	N/A
125	482	447	429	626	559	508.3	N/A
126	482	447	430	624	558	508.1	N/A
127	482	447	430	623	558	507.9	N/A
128	482	447	431	618	557	507.0	N/A
129	482	447	431	614	557	506.1	N/A
130	482	447	432	609	556	505.2	N/A
131	481	446	432	606	556	504.2	N/A
132	481	446	433	603	555	503.6	N/A
133	481	446	433	601	555	503.2	N/A
134	481	446	434	596	554	502.0	N/A
135	480	446	434	593	554	501.3	N/A
136	480	446	434	592	553	501.1	N/A
137	480	445	435	588	552	500.0	N/A
138	480	445	435	584	552	499.2	N/A
139	479	445	436	581	551	498.5	N/A
140	479	446	436	578	550	497.9	N/A
141	479	445	437	575	550	497.0	N/A
142	479	445	437	573	549	496.5	N/A
143	479	445	437	570	548	495.8	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT : 307

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
144	478	445	438	567	548	495.3	N/A
145	478	445	438	565	547	494.7	N/A
146	478	445	438	564	547	494.5	N/A
147	478	445	439	563	547	494.3	N/A
148	478	445	439	561	546	494.0	N/A
149	478	445	440	559	546	493.6	N/A
150	478	445	440	559	546	493.5	N/A
151	477	445	440	557	546	493.1	N/A
152	477	445	441	558	546	493.4	N/A
153	477	445	441	559	546	493.6	N/A
154	477	445	442	560	546	493.9	N/A
155	478	445	442	561	546	494.2	N/A
156	478	445	443	562	546	494.6	N/A
157	478	445	443	563	546	494.9	N/A
158	478	445	444	564	545	495.2	N/A
159	478	445	444	563	545	495.1	N/A
160	478	445	445	565	545	495.7	N/A
161	479	445	445	566	545	495.9	N/A
162	479	445	446	567	545	496.2	N/A
163	479	445	446	566	545	496.1	N/A
164	479	445	446	565	544	495.8	N/A
165	478	445	447	565	544	496.0	N/A
166	478	446	447	565	543	495.8	N/A
167	478	446	448	565	543	496.1	N/A
168	479	447	448	565	543	496.4	N/A
169	479	447	449	570	543	497.6	N/A
170	480	449	449	570	543	498.0	N/A
171	480	449	450	574	542	499.1	N/A
172	481	449	451	579	542	500.4	N/A
173	482	449	452	584	542	501.8	N/A
174	483	451	453	591	541	503.6	N/A
175	484	452	455	598	541	505.9	N/A
176	485	453	456	599	541	506.6	N/A
177	485	454	456	593	541	505.8	N/A
178	485	454	457	586	541	504.7	N/A
179	485	454	457	578	542	503.5	N/A
180	485	454	457	565	546	501.4	N/A
181	486	455	457	542	559	499.6	N/A
182	483	456	457	535	561	498.4	N/A
183	480	457	457	559	555	501.5	N/A
184	476	455	457	588	549	504.8	N/A
185	473	454	456	619	544	509.2	N/A
186	470	453	455	651	540	513.9	N/A
187	469	453	453	681	538	518.5	N/A
188	468	452	451	708	536	523.0	N/A
189	468	452	450	730	535	526.9	N/A
190	468	452	447	742	535	529.0	N/A
191	469	452	444	741	536	528.0	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 307

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
192	469	451	440	733	536	525.6	N/A
193	469	450	435	724	537	523.2	N/A
194	468	450	431	715	538	520.5	N/A
195	468	449	428	708	538	518.1	N/A
196	467	447	424	704	539	516.1	N/A
197	466	446	420	697	539	513.6	N/A
198	466	445	416	689	539	510.8	N/A
199	464	443	413	684	540	508.6	N/A
200	463	441	409	677	540	506.2	N/A
201	462	440	406	671	540	503.7	N/A
202	461	438	403	667	540	501.8	N/A
203	460	437	401	663	540	499.9	N/A
204	459	435	398	660	540	498.3	N/A
205	458	434	396	659	540	497.2	N/A
206	457	432	393	657	540	495.8	N/A
207	456	431	391	656	540	494.7	N/A
208	455	431	389	652	541	493.4	N/A
209	454	430	388	650	541	492.4	N/A
210	453	429	386	650	541	491.5	N/A
211	453	428	384	647	540	490.3	N/A
212	452	427	383	646	540	489.4	N/A
213	451	427	382	644	540	488.8	N/A
214	451	426	380	644	539	488.2	N/A
215	451	426	379	642	539	487.4	N/A
216	450	425	378	641	539	486.8	N/A
217	450	424	377	640	539	486.0	N/A
218	449	424	376	637	539	485.0	N/A
219	449	424	376	636	539	484.5	N/A
220	449	424	375	635	538	484.0	N/A
221	448	423	374	635	537	483.6	N/A
222	448	423	374	633	537	482.8	N/A
223	448	422	373	632	537	482.4	N/A
224	448	422	373	631	536	482.1	N/A
225	448	422	372	630	536	481.5	N/A
226	447	422	372	629	536	481.3	N/A
227	448	422	372	626	535	480.4	N/A
228	448	422	371	624	535	479.8	N/A
229	448	421	371	621	535	479.2	N/A
230	448	421	371	621	534	478.9	N/A
231	448	421	371	619	534	478.5	N/A
232	448	420	371	618	533	478.1	N/A
233	449	420	371	619	533	478.2	N/A
234	449	420	371	618	533	478.0	N/A
235	449	420	371	618	532	477.8	N/A
236	449	419	371	618	532	477.9	N/A
237	449	419	371	618	531	477.6	N/A
238	449	419	371	617	531	477.4	N/A
239	449	419	372	617	530	477.4	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT : 307

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
240	450	419	372	616	530	477.3	N/A
241	450	420	373	614	530	477.2	N/A
242	450	420	373	614	530	477.3	N/A
243	450	420	374	614	529	477.3	N/A
244	450	420	375	613	529	477.3	N/A
245	451	420	375	614	529	477.9	N/A
246	452	421	376	614	529	478.1	N/A
247	452	421	377	615	529	478.8	N/A
248	453	421	379	616	529	479.6	N/A
249	454	422	380	618	529	480.4	N/A
250	455	422	381	619	529	481.3	N/A
251	456	423	382	620	529	482.1	N/A
252	458	423	383	621	528	482.8	N/A
253	459	424	385	624	529	484.2	N/A
254	460	425	386	626	529	485.3	N/A
255	462	426	388	630	529	486.9	N/A
256	463	426	390	636	529	488.7	N/A
257	465	427	391	640	529	490.4	N/A
258	467	429	393	645	528	492.2	N/A
259	468	429	395	651	528	494.3	N/A
260	470	431	397	657	527	496.3	N/A
261	472	432	399	661	527	498.2	N/A
262	474	434	401	665	527	500.0	N/A
263	476	435	403	668	527	501.7	N/A
264	478	437	405	668	527	502.8	N/A
265	479	438	406	668	527	503.6	N/A
266	480	439	408	667	527	504.5	N/A
267	482	441	410	666	528	505.1	N/A
268	483	442	412	665	528	505.8	N/A
269	483	443	414	662	528	506.0	N/A
270	484	444	415	660	528	506.3	N/A
271	485	445	417	659	528	506.9	N/A
272	486	447	419	657	528	507.3	N/A
273	487	448	420	655	528	507.5	N/A
274	487	449	421	651	529	507.4	N/A
275	487	449	423	650	529	507.5	N/A
276	488	450	424	647	528	507.4	N/A
277	488	451	425	643	529	507.1	N/A
278	488	452	426	641	529	507.1	N/A
279	488	453	427	639	529	507.1	N/A
280	488	454	428	637	529	506.8	N/A
281	488	455	428	634	529	506.6	N/A
282	488	455	429	631	529	506.4	N/A
283	488	456	430	630	529	506.3	N/A
284	487	456	430	627	529	506.1	N/A
285	487	457	431	622	530	505.4	N/A
286	486	458	431	619	530	505.0	N/A
287	486	458	432	616	530	504.4	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 307

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
288	485	459	432	614	531	504.1	N/A
289	485	459	432	611	531	503.8	N/A
290	484	459	432	610	532	503.6	N/A
291	484	460	433	608	532	503.3	N/A
292	484	460	433	606	532	503.1	N/A
293	484	461	433	605	533	503.0	N/A
294	484	461	433	604	533	503.1	N/A
295	484	461	434	604	533	503.2	N/A
296	485	461	434	605	533	503.6	N/A
297	486	462	434	605	533	503.8	N/A
298	486	462	435	606	533	504.3	N/A
299	487	462	435	607	533	504.7	N/A
300	488	462	436	608	533	505.4	N/A
301	489	462	436	609	533	505.8	N/A
302	490	462	437	611	534	506.6	N/A
303	491	462	438	613	534	507.6	N/A
304	492	463	438	615	534	508.3	N/A
305	494	463	439	615	534	508.8	N/A
306	494	463	440	613	534	508.9	N/A
307	495	464	440	613	534	509.2	N/A
308	496	463	441	611	534	509.2	N/A
309	497	464	442	607	535	508.8	N/A
310	497	464	442	602	535	508.1	N/A
311	498	464	443	599	535	507.6	N/A
312	498	464	443	595	536	507.1	N/A
313	498	464	443	588	536	505.9	N/A
314	498	464	443	580	537	504.2	N/A
315	498	463	443	569	537	502.1	N/A
316	497	463	443	562	538	500.5	N/A
317	497	462	442	553	538	498.4	N/A
318	496	461	442	545	538	496.4	N/A
319	495	460	441	538	539	494.6	N/A
320	494	459	441	530	539	492.5	N/A
321	493	458	440	524	539	490.6	N/A
322	492	457	439	517	539	488.9	N/A
323	491	456	439	511	540	487.2	N/A
324	490	454	438	506	540	485.6	N/A
325	488	453	437	501	541	484.1	N/A
326	487	452	437	497	541	482.8	N/A
327	486	451	436	492	542	481.3	N/A
328	484	449	436	488	542	479.8	N/A
329	483	448	435	484	543	478.6	N/A
330	481	448	435	480	543	477.2	N/A
331	480	447	434	475	544	475.9	N/A
332	478	446	433	471	544	474.6	N/A
333	477	444	433	469	545	473.6	N/A
334	476	444	432	464	545	472.2	N/A
335	474	443	432	461	545	471.1	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 307

Elapsed Time (min)	Temperature Data (°F)						
	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
336	473	442	431	459	545	470.0	N/A
337	472	441	431	454	546	468.7	N/A
338	471	440	430	452	546	467.7	N/A
339	469	439	430	448	546	466.4	N/A
340	468	438	429	445	547	465.3	N/A
341	467	437	429	442	547	464.4	N/A
342	466	436	428	439	548	463.3	N/A
343	465	435	427	436	548	462.2	N/A
344	464	435	427	433	548	461.2	N/A
345	463	434	426	431	549	460.3	N/A
346	461	433	426	429	549	459.5	N/A
347	461	432	425	427	549	458.7	N/A
348	459	432	425	423	549	457.6	N/A
349	458	431	424	420	549	456.2	N/A
350	457	430	423	417	548	454.8	N/A
351	456	428	423	414	547	453.6	N/A
352	454	427	422	411	545	451.9	N/A
353	452	426	422	408	544	450.3	N/A
354	450	425	421	405	542	448.5	N/A
355	448	423	420	400	541	446.4	N/A
356	445	422	419	396	539	444.3	N/A
357	443	420	418	391	537	441.8	N/A
358	440	419	418	387	535	439.7	N/A
359	438	417	417	383	534	437.7	N/A
360	435	416	415	379	532	435.3	N/A
361	433	414	414	375	530	433.1	N/A
362	430	412	413	371	528	430.9	N/A
363	428	411	412	367	527	428.7	N/A
364	426	409	410	363	525	426.6	N/A
365	424	408	409	359	523	424.5	N/A
366	421	406	408	356	522	422.6	N/A
367	419	405	406	353	520	420.6	N/A
368	418	403	405	351	518	418.8	N/A
369	416	402	404	348	516	416.9	N/A
370	414	400	403	346	513	415.2	N/A
371	412	399	402	342	512	413.2	N/A
372	410	397	400	339	511	411.3	N/A
373	408	396	399	336	509	409.6	N/A
374	406	394	397	333	508	407.7	N/A
375	404	392	396	331	506	405.9	N/A
376	402	391	394	328	505	404.0	N/A
377	401	389	393	325	503	402.3	N/A
378	399	388	392	323	502	400.7	N/A
379	397	386	391	322	500	399.3	N/A
380	396	385	390	322	498	398.1	N/A
381	395	384	389	320	497	396.7	N/A
382	393	383	387	317	496	395.3	N/A
383	393	382	386	316	493	394.0	N/A

WOODSTOVE SURFACE TEMPERATURE DATA

Client: SBI
 Model: 1.4R
 Run #: 3

Job #: 25-446
 Tracking #: 238
 Technician: AK
 Date: 10/28/2025

Stove ΔT: 307

Temperature Data (°F)							
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
384	391	381	385	315	492	392.9	N/A
385	390	379	384	314	490	391.6	N/A
386	389	378	383	312	489	390.5	N/A
387	388	377	382	311	488	389.3	N/A
388	387	376	381	309	487	387.9	N/A
389	386	375	380	308	485	387.0	N/A
390	385	373	379	307	485	385.9	N/A
391	383	371	379	306	484	384.7	N/A
392	382	370	378	305	483	383.6	N/A
393	381	369	377	305	482	382.7	N/A
394	380	368	376	304	481	381.6	N/A
395	379	367	375	303	480	380.8	N/A
396	379	366	374	302	479	379.9	N/A
Average	438.3	408.2	393.7	523.6	502.6	453.3	N/A

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
 Model: 1.4R Run Number: 3 Test Date: 10/29/2025

Pre-Test Set-up Check List

Perform the following checks after a minimum of 30 minutes of warmup time

Leak Checks	Requirement	Pump Off (lpm)	Pump On, Probe Blocked (lpm)	Net (lpm)	Result
PM-2.5	<0.05 lpm (net)	0.38	0.36	0.02	☒ Pass ☐ Fail
PM-Course	<0.05 lpm (net)	0.14	0.14	0.00	☒ Pass ☐ Fail
Ambient	<0.05 lpm (net)	-0.05	-0.05	0.00	☒ Pass ☐ Fail

Flow Checks	Requirement	TEOM Indicated Flow (lpm) ¹	Measured Flow		Difference (%)	Result
			(lpm) ²	(lpm) ³		
PM-2.5	±2%	1.00	1.00		0.0	☒ Pass ☐ Fail
PM-Course	±2%	1.00	1.01		1.0	☒ Pass ☐ Fail
Ambient	±2%	3.00	3.01		0.3	☒ Pass ☐ Fail

¹Indicated flow is at 20°C, 1 atm

²Measured flow with PFS equipment ID 197, which indicates flow at 21.1°C, 1 atm

³Adjusted value (Measured Flow * 99.6%) to match the STP used by TEOM

Initial Filter Setup

Use **black** filter tool when changing filters

	1 min. requirement	5 min. requirement	Result
PM-2.5	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail
PM- Course	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail
Ambient	Frequency > 200Hz	Mass > -1 ug, noise < 2ug	☒ Pass ☐ Fail

Pre-Fire Verifications	Time probe in Tunnel	Result
Place probe in tunnel at least 10 min prior to test start	10:30	
Verify Data is recording [In RPCOMM] - Dichot		☒ Okay
Verify Data is recording [In RPCOMM] - Ambient		☒ Okay

Pre-Test Conditions

	Requirements	Result
Room RH (%)	45.6	
Barometric Pressure	30.31	
Room Air Velocity (ft/min)	<50	Must be <50 ft/min within 2 ft of stove ☒ Pass ☐ Fail
Room Temperature (°F)	68	<87 °F ☒ Pass ☐ Fail
Average External Stove Temp (°F)	N/A	Within 2 °F of ambient (Run #1 only) ☐ Pass ☐ Fail ☒ N/A
Average Internal Stove Temp (°F)	N/A	Within 2 °F of ambient (Run #1 only) ☐ Pass ☐ Fail ☒ N/A
Time Coals Removed from Stove & Firebox Vacuumed	10:30	>1 hr before test (Runs #2 & 3 only) ☒ Pass ☐ Fail ☐ N/A
Earliest possible start time	10:50	24 hours from start of Run #1 (Runs #2 & 3 only) ☒ Pass ☐ Fail ☐ N/A

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
Model: 1.4R Run Number: 3 Test Date: 10/29/2025

IDC FUELING NOTES

Fuel & Moisture Measurement

Fuel Type	Maple Cordwood
Moisture Meter Calibration 22%:	22.0
Moisture Meter Calibration 12%:	12.0
Moisture Reading Start Time:	9:30

L1 Test Notes

Scale Weight Prior to Loading (lbs):	0
Test Burn Start Time:	12:00
Air Control Setting (open/closed):	Fully Open
Door Closed Time (5 min from start):	12:02
Bypass Closed Time:	N/A
Target End Weight (lbs):	1.98-2.18
Actual End Weight (lbs):	2.13
Phase End Time:	12:19

Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
	-None-

L2 Test Notes

Scale Weight Prior to Loading (lbs):	2.13
Load Time:	12:19
Air Control Setting (open/closed):	Fully Open
Door Closed Time (immediately after loading):	12:20
Bypass Closed Time:	N/A
50% Target Weight (lbs):	7.67-8.47
Actual 50% Weight (lbs):	7.97
Air control closed time:	12:44
Target End Weight (lbs):	3.15-3.48
Actual End Weight (lbs):	3.36
Phase End Time:	13:32

Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
13:27	Changed TEOM Filters

Technician Signature: 

Date: 11/21/2025

Test Input Data

Client: SBI
 Model: 1.4R
 Date: 10/29/
 Run #: 3

Job #: 25-446
 Tracking #:
 Technician: AK

Traverse Data

pt	dP (in WC)
1	0.048
2	0.064
3	0.073
4	0.073
5	0.068
6	0.044
7	0.048
8	0.062
9	0.072
10	0.074
11	0.066
12	0.042
Center	0.074

Tunnel Data

Tunnel dia. (in):	12
Pitot Cp	0.99

Vs,cent (ft/s):	17.95
Vs, trav (ft/s):	16.24
Fp	0.905

	Pre-Test	Post Test
Barometric Pressure (in. Hg)	30.31	30.25
Lab Relative Humidity (%)	45.6	33.3

Traverse Temp:	70
Static Pressure:	-0.115

Fuel Data

Fuel Properties

Species	Maple
HHV (Btu/lb)	8587
%C	50.64%
%H	6.02%
%O	41.74%
%Ash	1.35%

	Wet Weight	MC (%db)	Dry Weight (lbs)
Kindling	1.75	10.00	1.59
Starter	5.15	19.99	4.29
L2	11.88	22.44	9.70
L3	8.68	22.25	7.10
L4 _s	4.32	19.93	3.60
L4 _b	13.02	20.59	10.80
Avg. Moisture (%db)		20.80	

Run 3 Results Summary

Test Segments

	Clock	ET(min)
L1 Ignition	12:00 PM	0
L1 End	11:20 AM	19
L1 Duration		19
Fuel Consumed (lbs-wet)		4.77
Fuel Consumed (lbs-dry)		3.75

L2 Loaded	11:20 AM	20
L2 End	12:19 PM	92
L2 Duration		72
Fuel Consumed (lbs-wet)		10.65
Fuel Consumed (lbs-dry)		8.47

L3 Loaded	12:20 PM	93
L3 End	1:17 PM	179
L3 Duration		86
Fuel Consumed (lbs-wet)		7.97
Fuel Consumed (lbs-dry)		6.39

L4 Loaded	1:17 PM	180
L4 End	4:23 PM	491
L4 Duration		311
Fuel Consumed (lbs-wet)		17.52
Fuel Consumed (lbs-dry)		14.58

Total Fuel Burned (lbs-wet)	40.91		
Total Fuel Burned (lbs-dry)	33.19	15.06 (kg-dry)	1.84 kg/hr dry

Firebox Avg Temps (F)

L1TS _{avg(i)}	69
L1TS _{avg(f)}	384
L2TS _{avg(i)}	392
L2TS _{avg(f)}	494
L3TS _{avg(i)}	493
L3TS _{avg(f)}	504
L4TS _{avg(i)}	502
L4TS _{avg(f)}	375

Burn Time Rating (hrs)

BTR	6
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Burn Rate (lbs-wet/hr) (dry kg/hr)

BR _{L2}	15.06	5.38
BR _{L2}	8.88	3.20
BR _{L3}	5.56	2.02
BR _{L4}	3.38	1.53
OVERALL	5.00	1.84

1st hr Start	12:00 PM	0
1st hr End	1:00 PM	60
L4 Duration		60
Fuel Consumed (lbs-wet)		12.56
Fuel Consumed (lbs-dry)		9.99

PM Results

Burn Phase:	L1	L2	L3	L4	1st Hr	Total
E _T :	1.6	1.1	0.7	1.7	2.6	5.1
E _{g/hr} :	5.1	0.9	0.5	0.32	2.65	0.62
E _{g/kg} :	0.96	0.29	0.23	0.25	0.58	0.34
E _{g/MJ output} :	0.07	0.02	0.02	0.02		0.02
E _{lb/mmBtu output} :	0.16	0.05	0.04	0.04	-	0.05
CO (g):	72.0	98.5	59.5	281.8		511.8
CO (g/min):	3.79	1.37	0.69	0.91		1.04
Output (BTU/hr)	71,279	43,482	29,114	18,785		26,132
Efficiency (%)	69.4%	73.4%	76.1%	75.2%		74.2%

Rolling Average Max Values

	1-min Avg.	5-min Avg.	60-min Avg
PM (g/hr)	21.8	12.5	2.7

Quality Checks

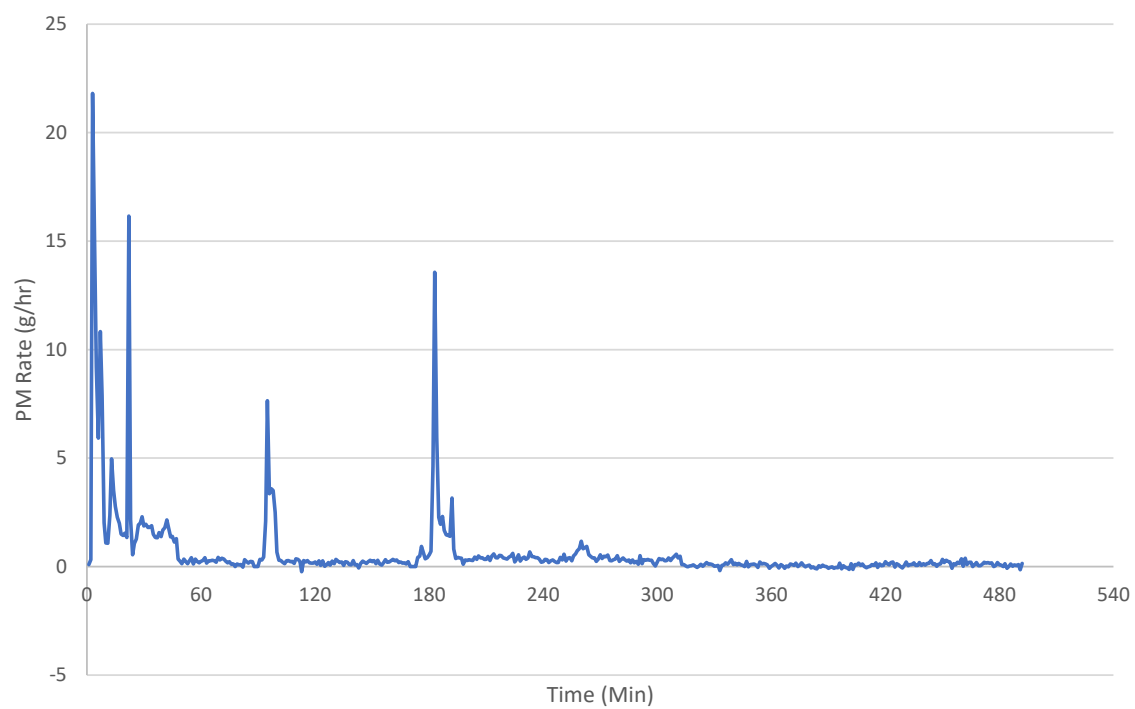
Requirement

Observed

Pass/Fail

Filter/Dewpt. Temp	Dewpoint must never exceed filter temp	Max Δ -34.6	PASS
Filter Temp	Must be between 80 and 90F at all times	82.8 / 88.4	PASS
Ambient Temp	Must be between 65 and 90F at all times	67.7 / 73.5	PASS
Minimum Tunnel Flow	>600 CFM	731.0	PASS
Weight Loss	Must be >0.1 lb per 20 min	Min -0.21 lb.	PASS

TEOM PM Emissions



L1 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/29/
Run: 3
Control #: 0
Test Duration: 19
Output Category: L1

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	69.4%	74.2%
Combustion Efficiency	97.1%	97.1%
Heat Transfer Efficiency	71.5%	76.4%

Output Rate (kJ/h)	75,141	71,279	(Btu/h)
Burn Rate (kg/h)	5.42	11.95	(lb/h)
Input (kJ/h)	108,302	102,736	(Btu/h)

Test Load Weight (dry kg)	1.72	3.78	dry lb
MC wet (%)	21.32		
MC dry (%)	27.10		
Particulate (g)	N/A		
CO (g)	72		
Test Duration (h)	0.32		

Emissions	Particulate	CO
g/MJ Output	N/A	3.03
g/kg Dry Fuel	N/A	41.93
g/h	N/A	227.35
g/min	N/A	3.79
lb/MM Btu Output	N/A	7.03

Air/Fuel Ratio (A/F)	8.75
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VERSION:

2.4

4/15/2010

L2 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/29/
Run: 3
Control #: 0
Test Duration: 72
Output Category: L2

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	73.4%	78.5%
Combustion Efficiency	98.2%	98.2%
Heat Transfer Efficiency	74.7%	79.9%

Output Rate (kJ/h)	45,838	43,482	(Btu/h)
Burn Rate (kg/h)	3.13	6.89	(lb/h)
Input (kJ/h)	62,483	59,272	(Btu/h)

Test Load Weight (dry kg)	3.75	8.27	dry lb
MC wet (%)	20.44		
MC dry (%)	25.70		
Particulate (g)	N/A		
CO (g)	99		
Test Duration (h)	1.20		

Emissions	Particulate	CO
g/MJ Output	N/A	1.79
g/kg Dry Fuel	N/A	26.24
g/h	N/A	82.09
g/min	N/A	1.37
lb/MM Btu Output	N/A	4.16

Air/Fuel Ratio (A/F)	9.58
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VERSION:

2.4

4/15/2010

L3 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/29/
Run: 3
Control #: 0
Test Duration: 86
Output Category: L3

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	76.1%	81.3%
Combustion Efficiency	98.8%	98.8%
Heat Transfer Efficiency	77.0%	82.4%

Output Rate (kJ/h)	30,691	29,114	(Btu/h)
Burn Rate (kg/h)	2.02	4.45	(lb/h)
Input (kJ/h)	40,352	38,278	(Btu/h)

Test Load Weight (dry kg)	2.90	6.38	dry lb
MC wet (%)	19.82		
MC dry (%)	24.72		
Particulate (g)	N/A		
CO (g)	60		
Test Duration (h)	1.43		

Emissions	Particulate	CO
g/MJ Output	N/A	1.35
g/kg Dry Fuel	N/A	20.56
g/h	N/A	41.53
g/min	N/A	0.69
lb/MM Btu Output	N/A	3.15

Air/Fuel Ratio (A/F)	11.15
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VERSION:

2.4

4/15/2010

L4 Efficiency Results

Manufacturer: SBI
Model: 1.4R
Date: 10/29/
Run: 3
Control #: 0
Test Duration: 311
Output Category: L4

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	75.2%	80.4%
Combustion Efficiency	97.3%	97.3%
Heat Transfer Efficiency	77.3%	82.6%

Output Rate (kJ/h)	19,802	18,785	(Btu/h)
Burn Rate (kg/h)	1.32	2.91	(lb/h)
Input (kJ/h)	26,348	24,994	(Btu/h)

Test Load Weight (dry kg)	6.84	15.07	dry lb
MC wet (%)	16.79		
MC dry (%)	20.17		
Particulate (g)	N/A		
CO (g)	282		
Test Duration (h)	5.18		

Emissions	Particulate	CO
g/MJ Output	N/A	2.75
g/kg Dry Fuel	N/A	41.21
g/h	N/A	54.37
g/min	N/A	0.91
lb/MM Btu Output	N/A	6.38

Air/Fuel Ratio (A/F)	14.07
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VERSION:

2.4

4/15/2010

Run 3 TEOM Data

ET (min)	Ci - 1-min avg PM (ug/m ³)	Tunnel dP (in WC)	sqrtdP	Tunnel Temp (F)	Tunnel Temp - 10 minute Avg. (F)	Tunnel RH - 10 minute avg. (%)	Tunnel Velocity - Vsi (ft/s)	Tunnel Flow - Q _{sdi} (m ³ /min)	E _i (mg)	E _{g/hr, i} (g/hr)	PM 5-min Rolling Avg (g/hr)	PM 30-min Rolling Avg (g/hr)	PM (cumulative g)
0	71	0.075	0.2739	70.5	-	-	16.363	21.976	1.554	0.09	-	-	0.00
1	243	0.075	0.2739	74.9	-	-	16.431	21.885	5.326	0.32	-	-	0.01
2	16829	0.074	0.2720	81.9	-	-	16.427	21.598	363.480	21.81	-	-	0.37
3	11362	0.076	0.2757	79.1	-	-	16.605	21.945	249.343	14.96	-	-	0.62
4	7086	0.074	0.2720	79.5	-	-	16.391	21.646	153.384	9.20	9.28	-	0.77
5	4506	0.076	0.2757	81.6	-	-	16.643	21.894	98.654	5.92	10.44	-	0.87
6	8315	0.075	0.2739	83.3	-	-	16.559	21.715	180.562	10.83	12.55	-	1.05
7	6060	0.075	0.2739	84	-	-	16.570	21.701	131.514	7.89	9.76	-	1.18
8	1553	0.075	0.2739	84.5	-	-	16.578	21.691	33.696	2.02	7.17	-	1.22
9	847	0.074	0.2720	85.1	80.44	127.9	16.476	21.534	18.229	1.09	5.55	-	1.24
10	832	0.074	0.2720	87	82.09	143.19	16.504	21.497	17.886	1.07	4.58	-	1.25
11	1840	0.074	0.2720	88.8	83.48	159.95	16.532	21.462	39.485	2.37	2.89	-	1.29
12	3866	0.074	0.2720	90.5	84.34	177.94	16.557	21.428	82.850	4.97	2.31	-	1.38
13	2732	0.074	0.2720	91.8	85.61	196.69	16.577	21.403	58.467	3.51	2.60	-	1.43
14	2168	0.074	0.2720	93.1	86.97	215.56	16.596	21.378	46.353	2.78	2.94	-	1.48
15	1774	0.074	0.2720	93.3	88.14	234.11	16.599	21.374	37.912	2.27	3.18	-	1.52
16	1551	0.074	0.2720	93.9	89.2	252.23	16.608	21.362	33.127	1.99	3.10	-	1.55
17	1176	0.074	0.2720	94.4	90.24	270.17	16.616	21.353	25.113	1.51	2.41	-	1.58
18	1116	0.074	0.2720	94.6	91.25	288.08	16.619	21.349	23.822	1.43	2.00	-	1.60
19	1197	0.075	0.2739	94.2	92.16	305.88	16.725	21.500	25.744	1.54	1.75	-	1.63
20	1062	0.073	0.2702	102.7	93.73	322.9	16.626	21.051	22.365	1.34	1.56	-	1.65
21	12720	0.073	0.2702	96.6	94.51	338.71	16.536	21.166	269.235	16.15	4.40	-	1.92
22	1688	0.074	0.2720	94.4	94.9	353.09	16.616	21.353	36.047	2.16	4.53	-	1.95
23	421	0.075	0.2739	93.4	95.06	365.96	16.713	21.516	9.068	0.54	4.35	-	1.96
24	829	0.074	0.2720	93.1	95.06	377.46	16.596	21.378	17.728	1.06	4.25	-	1.98
25	1010	0.072	0.2683	93.6	95.09	387.78	16.378	21.077	21.284	1.28	4.24	-	2.00
26	1497	0.075	0.2739	93.9	95.09	397.07	16.720	21.506	32.203	1.93	1.40	-	2.03
27	1568	0.072	0.2683	94.1	95.06	405.33	16.385	21.068	33.037	1.98	1.36	-	2.07
28	1801	0.073	0.2702	94.4	95.04	412.51	16.503	21.208	38.202	2.29	1.71	-	2.11
29	1454	0.075	0.2739	95.1	95.13	418.88	16.738	21.483	31.226	1.87	1.87	-	2.14
30	1511	0.075	0.2739	95.5	94.41	424.94	16.744	21.475	32.458	1.95	2.01	-	2.17
31	1414	0.074	0.2720	95.8	94.33	430.91	16.637	21.326	30.156	1.81	1.98	-	2.20
32	1402	0.075	0.2739	95.8	94.47	436.9	16.749	21.469	30.094	1.81	1.95	-	2.23
33	1463	0.075	0.2739	95.8	94.71	442.93	16.749	21.469	31.416	1.88	1.86	-	2.26
34	1151	0.075	0.2739	96	95	448.92	16.752	21.466	24.709	1.48	1.79	-	2.29
35	1045	0.075	0.2739	96.1	95.25	454.7	16.753	21.464	22.436	1.35	1.67	-	2.31
36	1035	0.074	0.2720	96.2	95.48	460.23	16.643	21.318	22.073	1.32	1.57	-	2.33
37	1221	0.075	0.2739	96.3	95.7	465.46	16.756	21.460	26.194	1.57	1.52	-	2.36
38	1071	0.076	0.2757	96.4	95.9	470.63	16.869	21.600	23.133	1.39	1.42	-	2.38
39	1312	0.075	0.2739	96.6	96.05	475.72	16.761	21.454	28.151	1.69	1.46	-	2.41
40	1382	0.076	0.2757	97	96.2	480.82	16.878	21.589	29.828	1.79	1.55	-	2.44
41	1665	0.076	0.2757	97.3	96.35	485.92	16.883	21.583	35.935	2.16	1.72	-	2.47
42	1379	0.076	0.2757	97.1	96.48	490.95	16.880	21.587	29.770	1.79	1.76	-	2.50
43	1066	0.075	0.2739	97.3	96.63	495.8	16.771	21.440	22.858	1.37	1.76	-	2.53
44	1092	0.074	0.2720	97.5	96.78	500.62	16.662	21.293	23.256	1.40	1.70	-	2.55
45	878	0.075	0.2739	95.5	96.72	505.27	16.744	21.475	18.845	1.13	1.57	-	2.57
46	990	0.076	0.2757	93.3	96.43	509.56	16.822	21.661	21.453	1.29	1.39	-	2.59
47	264	0.075	0.2739	91.7	95.97	513.45	16.687	21.549	5.682	0.34	1.11	-	2.60
48	179	0.077	0.2775	90.6	95.39	516.78	16.891	21.856	3.920	0.24	0.88	-	2.60
49	101	0.076	0.2757	89.6	94.69	519.38	16.766	21.734	2.192	0.13	0.63	-	2.60
50	269	0.075	0.2739	88.9	93.88	521.27	16.644	21.604	5.813	0.35	0.47	-	2.61
51	175	0.075	0.2739	88.1	92.96	522.47	16.632	21.620	3.785	0.23	0.26	-	2.61
52	107	0.077	0.2775	87.5	92	522.95	16.843	21.918	2.337	0.14	0.22	-	2.61
53	216	0.077	0.2775	87.1	90.98	522.89	16.837	21.926	4.732	0.28	0.23	-	2.62
54	313	0.075	0.2739	86.7	89.9	522.21	16.611	21.648	6.781	0.41	0.28	-	2.62
55	88	0.078	0.2793	86.3	88.98	521.12	16.934	22.084	1.939	0.12	0.23	-	2.63
56	263	0.078	0.2793	86.3	88.28	519.75	16.934	22.084	5.803	0.35	0.26	-	2.63
57	182	0.075	0.2739	86.4	87.75	518.29	16.607	21.654	3.931	0.24	0.28	-	2.64
58	133	0.075	0.2739	86.2	87.31	516.83	16.603	21.657	2.883	0.17	0.26	-	2.64
59	184	0.077	0.2775	86	86.95	515.51	16.820	21.948	4.043	0.24	0.22	2.73	2.64
60	212	0.077	0.2775	85.7	86.63	514.37	16.816	21.954	4.659	0.28	0.26	2.73	2.65
61	310	0.076	0.2757	85.5	86.37	513.38	16.703	21.815	6.770	0.41	0.27	2.73	2.65
62	125	0.076	0.2757	85.2	86.14	512.59	16.698	21.821	2.730	0.16	0.25	2.36	2.66
63	199	0.076	0.2757	85	85.93	511.95	16.695	21.825	4.348	0.26	0.27	2.11	2.66
64	200	0.076	0.2757	84.7	85.73	511.46	16.691	21.831	4.364	0.26	0.27	1.95	2.67
65	219	0.076	0.2757	84.5	85.55	511.07	16.688	21.835	4.793	0.29	0.28	1.85	2.67
66	202	0.077	0.2775	84.3	85.35	510.82	16.794	21.983	4.438	0.27	0.25	1.67	2.68
67	151	0.076	0.2757	84	85.11	510.65	16.680	21.845	3.293	0.20	0.25	1.54	2.68
68	319	0.077	0.2775	83.9	84.88	510.57	16.788	21.991	7.009	0.42	0.29	1.51	2.69
69	232	0.077	0.2775	84	84.68	510.51	16.789	21.989	5.090	0.31	0.30	1.49	2.69
70	300	0.075	0.2739	84.3	84.54	510.53	16.575	21.695	6.501	0.39	0.32	1.48	2.70
71	259	0.078	0.2793	84.2	84.41	510.51	16.901	22.127	5.729	0.34	0.33	1.45	2.70
72	194	0.076	0.2757	84	84.29	510.47	16.680	21.845	4.232	0.25	0.34	1.37	2.71
73	137	0.077	0.2775	83.8	84.17	510.42	16.786	21.993	3.003	0.18	0.29	1.31	2.71
74	177	0.076	0.2757	83.6	84.06	510.32	16.674	21.854	3.870	0.23	0.28	1.27	2.71
75	82	0.079	0.2811	83.4	83.95	510.2	16.997	22.285	1.826	0.11	0.22	1.23	2.72
76	96	0.078	0.2793	83.3	83.85	510.04	16.887	22.145	2.116	0.13	0.18	1.20	2.72
77	-2	0.077	0.2775	83.1	83.76	509.82	16.776	22.007	-0.052	0.00	0.13	1.18	2.72
78	89	0.077	0.2775	82.8	83.65	509.58	16.771	22.013	1.955	0.12	0.12	1.16	2.72
79	66	0.076	0.2757	82.7	83.52	509.29	16.660	21.872	1.436	0.09	0.09	1.13	2.72
80	70	0.077	0.2775	82.4	83.33	508.87	16.765	22.021	1.541	0.09	0.08	1.11	2.72
81	-21	0.079	0.2811	82.6	83.17	508.42	16.984	22.301	-0.457	-0.03	0.05	0.83	2.72
82	237	0.077	0.2775	82.8	83.05	507.92	16.771	22.013	5.221	0.31	0.12	0.80	2.73
83	168	0.078	0.2793	82.7	82.94	507.29	16.878	22.158	3.729	0.22	0.14	0.79	2.73
84	116	0.078	0.2793	82.6	82.84	506.56	16.876	22.160	2.575	0.15	0.15	0.77	2.73

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85	185	0.077	0.2775	82.3	82.73	505.77	16.763	22.023	4.068	0.24	0.18	0.75	2.74
86	177	0.075	0.2739	82.2	82.62	504.94	16.543	21.737	3.858	0.23	0.23	0.72	2.74
87		0.078	0.2793	81.9	82.5	504.1					0.21	0.69	
88		0.076	0.2757	81.7	82.39	503.2					0.21	0.66	
89		0.077	0.2775	81.6	82.28	502.26					0.24	0.64	
90	248	0.077	0.2775	81.4	82.18	501.25	16.749	22.042	5.466	0.33	0.28	0.61	2.75
91	230	0.076	0.2757	81.3	82.05	500.18	16.639	21.900	5.026	0.30	0.31	0.59	2.75
92	323	0.079	0.2811	81.1	81.88	499.09	16.961	22.332	7.213	0.43	0.35	0.57	2.76
93	1591	0.078	0.2793	88	82.41	498.03	16.960	22.050	35.079	2.10	0.79	0.54	2.79
94	5817	0.077	0.2775	87.8	82.93	497.35	16.848	21.912	127.462	7.65	2.16	0.52	2.92
95	2570	0.076	0.2757	88.7	83.57	497.3	16.752	21.752	55.902	3.35	2.77	0.53	2.98
96	2747	0.076	0.2757	89.4	84.29	498.02	16.763	21.738	59.721	3.58	3.42	0.65	3.04
97	2640	0.079	0.2811	90.1	85.11	499.48	17.101	22.148	58.468	3.51	4.04	0.68	3.10
98	1908	0.076	0.2757	88.5	85.79	501.46	16.749	21.756	41.516	2.49	4.12	0.72	3.14
99	501	0.077	0.2775	87	86.33	503.71	16.836	21.928	10.978	0.66	2.72	0.75	3.15
100	219	0.077	0.2775	86.2	86.81	506.05	16.823	21.944	4.802	0.29	2.11	0.76	3.15
101	218	0.076	0.2757	85.8	87.26	508.46	16.708	21.809	4.752	0.29	1.45	0.74	3.16
102	154	0.077	0.2775	85.5	87.7	510.93	16.813	21.958	3.391	0.20	0.79	0.71	3.16
103	104	0.078	0.2793	85.5	87.45	513.47	16.921	22.101	2.300	0.14	0.31	0.69	3.16
104	202	0.076	0.2757	85.7	87.24	515.75	16.706	21.811	4.401	0.26	0.24	0.67	3.17
105	213	0.077	0.2775	85.6	86.93	517.44	16.814	21.956	4.678	0.28	0.23	0.65	3.17
106	174	0.078	0.2793	85.4	86.53	518.4	16.920	22.103	3.837	0.23	0.22	0.63	3.18
107	182	0.078	0.2793	85.3	86.05	518.59	16.918	22.105	4.023	0.24	0.23	0.63	3.18
108	111	0.076	0.2757	85.1	85.71	518.28	16.697	21.823	2.419	0.15	0.23	0.63	3.18
109	276	0.076	0.2757	84.9	85.5	517.77	16.694	21.827	6.028	0.36	0.25	0.63	3.19
110	247	0.078	0.2793	84.7	85.35	517.23	16.909	22.117	5.458	0.33	0.26	0.63	3.20
111	185	0.078	0.2793	84.6	85.23	516.65	16.907	22.119	4.090	0.25	0.26	0.63	3.20
112	-177	0.078	0.2793	84.2	85.1	516.03	16.901	22.127	-3.928	-0.24	0.17	0.63	3.20
113	216	0.077	0.2775	84.4	84.99	515.41	16.796	21.981	4.747	0.28	0.20	0.63	3.20
114	165	0.076	0.2757	84.8	84.9	514.81	16.692	21.829	3.593	0.22	0.17	0.62	3.20
115	212	0.077	0.2775	84.6	84.8	514.24	16.799	21.977	4.658	0.28	0.16	0.63	3.21
116	134	0.079	0.2811	84.5	84.71	513.66	17.014	22.262	2.973	0.18	0.14	0.62	3.21
117	121	0.077	0.2775	84.3	84.61	513.12	16.794	21.983	2.667	0.16	0.22	0.62	3.21
118	124	0.078	0.2793	84.1	84.51	512.59	16.900	22.129	2.749	0.16	0.20	0.62	3.22
119	162	0.076	0.2757	84	84.42	512.06	16.680	21.845	3.538	0.21	0.20	0.62	3.22
120	81	0.078	0.2793	83.8	84.33	511.57	16.895	22.135	1.796	0.11	0.16	0.62	3.22
121	204	0.076	0.2757	83.7	84.24	511.18	16.675	21.852	4.452	0.27	0.18	0.62	3.23
122	44	0.076	0.2757	83.9	84.21	510.83	16.679	21.847	0.959	0.06	0.16	0.62	3.23
123	205	0.077	0.2775	84.2	84.19	510.53	16.793	21.985	4.509	0.27	0.18	0.62	3.23
124	10	0.078	0.2793	84.1	84.12	510.18	16.900	22.129	0.232	0.01	0.14	0.61	3.23
125	58	0.075	0.2739	84	84.06	509.81	16.570	21.701	1.256	0.08	0.14	0.61	3.23
126	140	0.076	0.2757	83.9	84	509.47	16.679	21.847	3.050	0.18	0.12	0.61	3.24
127	53	0.077	0.2775	83.7	83.94	509.14	16.785	21.995	1.170	0.07	0.12	0.60	3.24
128	191	0.077	0.2775	83.5	83.88	508.78	16.782	21.999	4.212	0.25	0.12	0.60	3.24
129	101	0.077	0.2775	83.3	83.81	508.38	16.779	22.003	2.222	0.13	0.14	0.60	3.24
130	250	0.078	0.2793	83.1	83.74	507.93	16.884	22.149	5.536	0.33	0.19	0.59	3.25
131	195	0.078	0.2793	82.8	83.65	507.39	16.879	22.156	4.311	0.26	0.21	0.59	3.25
132	142	0.079	0.2811	83.1	83.57	506.83	16.992	22.291	3.174	0.19	0.23	0.59	3.26
133	163	0.077	0.2775	83.4	83.49	506.23	16.780	22.001	3.584	0.22	0.23	0.59	3.26
134	41	0.078	0.2793	83.4	83.42	505.56	16.889	22.143	0.910	0.05	0.21	0.59	3.26
135	171	0.077	0.2775	83.2	83.34	504.86	16.777	22.005	3.761	0.23	0.19	0.59	3.27
136	148	0.077	0.2775	83.1	83.26	504.16	16.776	22.007	3.262	0.20	0.18	0.59	3.27
137	75	0.076	0.2757	82.8	83.17	503.37	16.662	21.870	1.632	0.10	0.16	0.60	3.27
138	63	0.077	0.2775	82.7	83.09	502.59	16.769	22.015	1.389	0.08	0.13	0.60	3.27
139	212	0.075	0.2739	82.6	83.02	501.83	16.549	21.729	4.606	0.28	0.18	0.60	3.28
140	64	0.077	0.2775	82.4	82.95	501.1	16.765	22.021	1.403	0.08	0.15	0.60	3.28
141	68	0.078	0.2793	82.4	82.91	500.38	16.873	22.164	1.512	0.09	0.13	0.60	3.28
142	-51	0.076	0.2757	82.8	82.88	499.67	16.662	21.870	-1.110	-0.07	0.09	0.60	3.28
143	113	0.077	0.2775	82.8	82.82	498.93	16.771	22.013	2.497	0.15	0.11	0.60	3.28
144	189	0.077	0.2775	82.6	82.74	498.26	16.768	22.017	4.160	0.25	0.10	0.59	3.28
145	146	0.078	0.2793	82.6	82.68	497.6	16.876	22.160	3.227	0.19	0.12	0.59	3.29
146	114	0.077	0.2775	82.5	82.62	496.94	16.766	22.019	2.512	0.15	0.14	0.59	3.29
147	175	0.077	0.2775	82.4	82.58	496.37	16.765	22.021	3.856	0.23	0.20	0.58	3.29
148	217	0.077	0.2775	82.2	82.53	495.85	16.762	22.025	4.784	0.29	0.22	0.58	3.30
149	167	0.079	0.2811	82.1	82.48	495.36	16.976	22.312	3.715	0.22	0.22	0.57	3.30
150	216	0.077	0.2775	82	82.44	494.92	16.759	22.029	4.755	0.29	0.24	0.57	3.31
151	101	0.077	0.2775	82.1	82.41	494.53	16.760	22.027	2.235	0.13	0.23	0.57	3.31
152	221	0.078	0.2793	82.5	82.38	494.22	16.875	22.162	4.906	0.29	0.24	0.57	3.31
153	89	0.076	0.2757	82.5	82.35	494	16.657	21.876	1.939	0.12	0.21	0.53	3.32
154	47	0.078	0.2793	82.4	82.33	493.86	16.873	22.164	1.035	0.06	0.18	0.41	3.32
155	133	0.078	0.2793	82.4	82.31	493.81	16.873	22.164	2.943	0.18	0.16	0.35	3.32
156	240	0.077	0.2775	82.3	82.29	493.82	16.763	22.023	5.295	0.32	0.19	0.29	3.33
157	149	0.076	0.2757	82.2	82.27	493.88	16.652	21.882	3.266	0.20	0.17	0.23	3.33
158	166	0.077	0.2775	82.1	82.26	494	16.760	22.027	3.658	0.22	0.19	0.19	3.33
159	216	0.077	0.2775	82.1	82.26	494.15	16.760	22.027	4.760	0.29	0.24	0.19	3.34
160	251	0.076	0.2757	82	82.26	494.37	16.649	21.886	5.504	0.33	0.27	0.19	3.34
161	199	0.077	0.2775	81.9	82.24	494.65	16.757	22.031	4.373	0.26	0.26	0.19	3.35
162	229	0.077	0.2775	81.8	82.17	494.93	16.755	22.033	5.049	0.30	0.28	0.19	3.35
163	142	0.076	0.2757	81.8	82.1	495.18	16.646	21.890	3.110	0.19	0.27	0.19	3.36
164	164	0.078	0.2793	81.8	82.04	495.37	16.864	22.176	3.644	0.22	0.26	0.19	3.36
165	126	0.077	0.2775	82.4	82.04	495.54	16.765	22.021	2.770	0.17	0.23	0.19	3.36
166	135	0.077	0.2775	82.4	82.05	495.66	16.765	22.021	2.974	0.18	0.21	0.19	3.36
167	94	0.076	0.2757	82.4	82.07	495.78	16.656	21.878	2.053	0.12	0.17	0.19	3.37
168	169	0.076	0.2757	82.5	82.11	495.9	16.657	21.876	3.704	0.22	0.18	0.19	3.37
169		0.077	0.2775	82.5	82.15	496.15					0.17	0.18	
170		0.074	0.2720	82.5	82.2	496.39					0.17	0.18	
171		0.077	0.2775	82.5	82.26	496.71					0.17	0.18	
172		0.077	0.2775	82.5	82.33	497.13					0.22	0.19	

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173	327	0.076	0.2757	82.5	82.4	497.69	16.657	21.876	7.151	0.43	0.43	0.19	3.38
174	362	0.076	0.2757	82.7	82.49	498.47	16.660	21.872	7.923	0.48	0.45	0.19	3.39
175	708	0.077	0.2775	82.7	82.52	499.47	16.769	22.015	15.583	0.93	0.61	0.19	3.40
176	471	0.076	0.2757	82.5	82.53	500.55	16.657	21.876	10.307	0.62	0.61	0.19	3.41
177	271	0.078	0.2793	82.8	82.57	501.51	16.879	22.156	6.011	0.36	0.56	0.21	3.42
178	316	0.077	0.2775	83.1	82.63	502.34	16.776	22.007	6.958	0.42	0.56	0.22	3.42
179	416	0.076	0.2757	83	82.68	502.93	16.665	21.866	9.104	0.55	0.58	0.22	3.43
180	550	0.075	0.2739	92.3	83.66	503.27	16.696	21.537	11.850	0.71	0.53	0.23	3.45
181	3659	0.073	0.2702	102	85.61	503.33	16.616	21.064	77.063	4.62	1.33	0.23	3.52
182	10924	0.072	0.2683	114	88.76	503.14	16.677	20.699	226.123	13.57	3.97	0.24	3.75
183	4679	0.074	0.2720	102.8	90.79	503.12	16.741	21.193	99.161	5.95	5.08	0.32	3.85
184	1781	0.074	0.2720	98.3	92.35	503.24	16.674	21.278	37.895	2.27	5.43	0.57	3.89
185	1542	0.073	0.2702	96.6	93.74	503.56	16.536	21.166	32.628	1.96	5.67	0.68	3.92
186	1781	0.076	0.2757	96.2	95.11	504.29	16.866	21.604	38.467	2.31	5.21	0.72	3.96
187	1313	0.074	0.2720	96.1	96.44	505.57	16.641	21.320	27.989	1.68	2.83	0.76	3.98
188	1135	0.075	0.2739	96.1	97.74	507.4	16.753	21.464	24.370	1.46	1.94	0.79	4.01
189	1111	0.075	0.2739	96.6	99.1	509.74	16.761	21.454	23.827	1.43	1.77	0.82	4.03
190	1092	0.074	0.2720	94.6	99.33	512.49	16.619	21.349	23.311	1.40	1.66	0.84	4.06
191	2447	0.075	0.2739	92.9	98.42	515.32	16.705	21.526	52.676	3.16	1.83	0.87	4.11
192	614	0.077	0.2775	91.5	96.17	518.03	16.905	21.839	13.410	0.80	1.65	0.89	4.12
193	290	0.075	0.2739	90.7	94.96	520.2	16.672	21.569	6.258	0.38	1.43	0.94	4.13
194	326	0.074	0.2720	90	94.13	521.77	16.550	21.438	6.989	0.42	1.23	0.96	4.14
195	309	0.074	0.2720	89.5	93.42	522.67	16.542	21.448	6.632	0.40	1.03	0.96	4.14
196	297	0.076	0.2757	89.1	92.71	522.89	16.758	21.744	6.459	0.39	0.48	0.96	4.15
197	83	0.074	0.2720	88.7	91.97	522.4	16.530	21.463	1.783	0.11	0.34	0.97	4.15
198	240	0.074	0.2720	88.4	91.2	521.18	16.526	21.469	5.159	0.31	0.32	0.97	4.16
199	213	0.075	0.2739	88.2	90.36	519.35	16.634	21.618	4.615	0.28	0.30	0.97	4.16
200	245	0.076	0.2757	87.9	89.69	517.07	16.740	21.768	5.322	0.32	0.28	0.98	4.17
201	228	0.075	0.2739	87.7	89.17	514.64	16.626	21.628	4.921	0.30	0.26	0.98	4.17
202	220	0.074	0.2720	87.5	88.77	512.26	16.512	21.487	4.719	0.28	0.30	0.99	4.18
203	336	0.074	0.2720	87.4	88.44	509.93	16.511	21.489	7.219	0.43	0.32	0.99	4.18
204	256	0.075	0.2739	87.2	88.16	507.71	16.619	21.638	5.546	0.33	0.33	0.99	4.19
205	376	0.076	0.2757	87	87.91	505.62	16.726	21.785	8.189	0.49	0.37	0.99	4.20
206	304	0.075	0.2739	86.9	87.69	503.59	16.614	21.644	6.575	0.39	0.39	1.00	4.20
207	316	0.075	0.2739	86.9	87.51	501.7	16.614	21.644	6.832	0.41	0.41	1.00	4.21
208	257	0.074	0.2720	86.8	87.35	499.96	16.501	21.501	5.521	0.33	0.39	1.00	4.22
209	259	0.075	0.2739	86.7	87.2	498.34	16.611	21.648	5.602	0.34	0.39	1.01	4.22
210	355	0.076	0.2757	86.6	87.07	496.87	16.720	21.793	7.739	0.46	0.39	1.01	4.23
211	212	0.075	0.2739	86.6	86.96	495.53	16.610	21.650	4.591	0.28	0.36	1.01	4.23
212	366	0.076	0.2757	86.5	86.86	494.29	16.718	21.795	7.977	0.48	0.38	1.02	4.24
213	449	0.076	0.2757	86.5	86.77	493.18	16.718	21.795	9.782	0.59	0.43	1.02	4.25
214	327	0.073	0.2702	86.4	86.69	492.17	16.384	21.363	6.976	0.42	0.44	1.03	4.26
215	310	0.074	0.2720	86.3	86.62	491.19	16.494	21.511	6.674	0.40	0.43	1.03	4.26
216	396	0.075	0.2739	86.3	86.56	490.29	16.605	21.655	8.579	0.51	0.48	1.04	4.27
217	389	0.075	0.2739	86.2	86.49	489.42	16.603	21.657	8.428	0.51	0.49	1.04	4.28
218	317	0.073	0.2702	86.2	86.43	488.58	16.381	21.367	6.766	0.41	0.45	1.04	4.29
219	284	0.076	0.2757	86.1	86.37	487.79	16.712	21.803	6.188	0.37	0.44	1.05	4.29
220	264	0.074	0.2720	86.1	86.32	487.04	16.491	21.515	5.673	0.34	0.43	1.05	4.30
221	338	0.074	0.2720	86	86.26	486.37	16.489	21.517	7.276	0.44	0.41	1.05	4.31
222	372	0.075	0.2739	86	86.21	485.71	16.600	21.661	8.057	0.48	0.41	1.05	4.32
223	472	0.075	0.2739	85.9	86.15	485.07	16.599	21.663	10.230	0.61	0.45	1.06	4.33
224	164	0.075	0.2739	85.9	86.1	484.46	16.599	21.663	3.556	0.21	0.42	1.06	4.33
225	256	0.075	0.2739	85.8	86.05	483.87	16.597	21.665	5.543	0.33	0.42	1.07	4.33
226	415	0.076	0.2757	85.7	85.99	483.32	16.706	21.811	9.046	0.54	0.44	1.07	4.34
227	191	0.074	0.2720	85.7	85.94	482.76	16.485	21.522	4.121	0.25	0.39	1.08	4.35
228	295	0.074	0.2720	85.7	85.89	482.24	16.485	21.522	6.356	0.38	0.34	1.08	4.35
229	342	0.075	0.2739	85.7	85.85	481.71	16.596	21.667	7.419	0.45	0.39	1.07	4.36
230	255	0.075	0.2739	85.7	85.81	481.2	16.596	21.667	5.524	0.33	0.39	1.05	4.37
231	314	0.074	0.2720	85.7	85.78	480.69	16.485	21.522	6.751	0.41	0.36	1.04	4.37
232	517	0.075	0.2739	85.5	85.73	480.22	16.593	21.671	11.213	0.67	0.45	1.03	4.39
233	359	0.075	0.2739	85.5	85.69	479.8	16.593	21.671	7.780	0.47	0.46	1.03	4.39
234	350	0.076	0.2757	85.4	85.64	479.39	16.702	21.817	7.625	0.46	0.47	1.03	4.40
235	316	0.075	0.2739	85.4	85.6	479.02	16.591	21.673	6.844	0.41	0.48	1.03	4.41
236	319	0.075	0.2739	85.3	85.56	478.68	16.590	21.675	6.924	0.42	0.48	1.02	4.41
237	264	0.076	0.2757	85.2	85.51	478.4	16.698	21.821	5.763	0.35	0.42	1.02	4.42
238	153	0.077	0.2775	85.2	85.46	478.16	16.808	21.964	3.365	0.20	0.37	1.02	4.42
239	178	0.076	0.2757	85.2	85.41	477.98	16.698	21.821	3.891	0.23	0.32	1.02	4.43
240	255	0.074	0.2720	85.1	85.35	477.82	16.476	21.534	5.491	0.33	0.31	1.01	4.43
241	243	0.075	0.2739	85.1	85.29	477.69	16.587	21.679	5.259	0.32	0.29	0.94	4.44
242	143	0.076	0.2757	85.1	85.25	477.61	16.697	21.823	3.124	0.19	0.25	0.71	4.44
243	202	0.075	0.2739	85	85.2	477.52	16.585	21.681	4.377	0.26	0.27	0.61	4.45
244	235	0.076	0.2757	85.1	85.17	477.45	16.697	21.823	5.126	0.31	0.28	0.57	4.45
245	180	0.075	0.2739	85.1	85.14	477.46	16.587	21.679	3.900	0.23	0.26	0.55	4.45
246	142	0.076	0.2757	85.1	85.12	477.48	16.697	21.823	3.092	0.19	0.24	0.51	4.46
247	140	0.075	0.2739	85.3	85.13	477.6	16.590	21.675	3.039	0.18	0.23	0.49	4.46
248	328	0.075	0.2739	85.2	85.13	477.82	16.588	21.677	7.116	0.43	0.27	0.46	4.47
249	233	0.076	0.2757	85.2	85.13	478.12	16.698	21.821	5.086	0.31	0.27	0.44	4.47
250	443	0.075	0.2739	85.3	85.15	478.51	16.590	21.675	9.595	0.58	0.34	0.43	4.48
251	196	0.077	0.2775	85.3	85.17	479	16.810	21.962	4.300	0.26	0.35	0.38	4.49
252	297	0.077	0.2775	85.3	85.19	479.55	16.810	21.962	6.531	0.39	0.39	0.37	4.49
253	316	0.075	0.2739	85.3	85.22	480.23	16.590	21.675	6.852	0.41	0.39	0.37	4.50
254	208	0.075	0.2739	85.5	85.26	481.03	16.593	21.671	4.509	0.27	0.38	0.37	4.50
255	375	0.076	0.2757	85.5	85.3	481.94	16.703	21.815	8.181	0.49	0.36	0.37	4.51
256	450	0.075	0.2739	85.6	85.35	483	16.594	21.669	9.741	0.58	0.43	0.37	4.52
257	559	0.076	0.2757	85.6	85.38	484.16	16.705	21.813	12.195	0.73	0.50	0.37	4.54
258	631	0.076	0.2757	85.7	85.43	485.42	16.706	21.811	13.753	0.83	0.58	0.38	4.55
259	901	0.075	0.2739	85.9	85.5	486.8	16.599	21.663	19.516	1.17	0.76	0.39	4.57
260	631	0.075	0.2739	86	85.57	488.31	16.600	21.661	13.661	0.82	0.83	0.40	4.58

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261	669	0.076	0.2757	86	85.64	489.92	16.711	21.805	14.591	0.88	0.88	0.41	4.60
262	710	0.076	0.2757	86	85.71	491.64	16.711	21.805	15.481	0.93	0.92	0.42	4.61
263	422	0.075	0.2739	86	85.78	493.4	16.600	21.661	9.150	0.55	0.87	0.43	4.62
264	359	0.075	0.2739	86	85.83	495.15	16.600	21.661	7.771	0.47	0.73	0.44	4.63
265	306	0.075	0.2739	85.9	85.87	496.81	16.599	21.663	6.631	0.40	0.64	0.44	4.64
266	307	0.076	0.2757	85.8	85.89	498.39	16.708	21.809	6.687	0.40	0.55	0.44	4.64
267	188	0.076	0.2757	85.8	85.91	499.86	16.708	21.809	4.103	0.25	0.41	0.44	4.65
268	267	0.076	0.2757	85.7	85.91	501.22	16.706	21.811	5.826	0.35	0.37	0.44	4.65
269	419	0.076	0.2757	85.7	85.89	502.4	16.706	21.811	9.143	0.55	0.39	0.44	4.66
270	291	0.075	0.2739	85.6	85.85	503.41	16.594	21.669	6.307	0.38	0.38	0.44	4.67
271	368	0.076	0.2757	85.6	85.81	504.28	16.705	21.813	8.031	0.48	0.40	0.44	4.68
272	343	0.076	0.2757	85.5	85.76	505.01	16.703	21.815	7.489	0.45	0.44	0.44	4.68
273	412	0.075	0.2739	85.4	85.7	505.59	16.591	21.673	8.935	0.54	0.48	0.44	4.69
274	212	0.076	0.2757	85.3	85.63	506.05	16.700	21.819	4.616	0.28	0.42	0.44	4.70
275	199	0.077	0.2775	85.2	85.56	506.44	16.808	21.964	4.376	0.26	0.40	0.44	4.70
276	246	0.075	0.2739	85.2	85.5	506.73	16.588	21.677	5.339	0.32	0.37	0.44	4.71
277	266	0.076	0.2757	85.1	85.43	506.92	16.697	21.823	5.795	0.35	0.35	0.43	4.71
278	384	0.075	0.2739	85	85.36	507.05	16.585	21.681	8.321	0.50	0.34	0.43	4.72
279	187	0.075	0.2739	84.9	85.28	507.16	16.584	21.683	4.050	0.24	0.33	0.43	4.72
280	245	0.077	0.2775	84.8	85.2	507.2	16.802	21.973	5.373	0.32	0.35	0.43	4.73
281	300	0.076	0.2757	84.7	85.11	507.17	16.691	21.831	6.558	0.39	0.36	0.43	4.74
282	244	0.076	0.2757	84.6	85.02	507.08	16.689	21.833	5.321	0.32	0.36	0.43	4.74
283	193	0.074	0.2720	84.5	84.93	506.96	16.467	21.546	4.157	0.25	0.31	0.42	4.75
284	234	0.076	0.2757	84.4	84.84	506.83	16.686	21.837	5.109	0.31	0.32	0.43	4.75
285	131	0.076	0.2757	84.3	84.75	506.61	16.685	21.839	2.868	0.17	0.29	0.43	4.75
286	231	0.076	0.2757	84.3	84.66	506.36	16.685	21.839	5.053	0.30	0.27	0.42	4.76
287	136	0.075	0.2739	84.2	84.57	506.1	16.573	21.697	2.957	0.18	0.24	0.42	4.76
288	183	0.075	0.2739	84.1	84.48	505.8	16.572	21.699	3.968	0.24	0.24	0.42	4.77
289	77	0.076	0.2757	84	84.39	505.47	16.680	21.845	1.689	0.10	0.20	0.41	4.77
290	393	0.075	0.2739	83.9	84.3	505.15	16.568	21.703	8.536	0.51	0.27	0.41	4.78
291	100	0.075	0.2739	83.9	84.22	504.82	16.568	21.703	2.169	0.13	0.23	0.41	4.78
292	241	0.075	0.2739	83.8	84.14	504.49	16.567	21.705	5.227	0.31	0.26	0.40	4.78
293	223	0.075	0.2739	83.8	84.07	504.16	16.567	21.705	4.844	0.29	0.27	0.40	4.79
294	250	0.076	0.2757	83.7	84	503.86	16.675	21.852	5.455	0.33	0.31	0.40	4.79
295	221	0.077	0.2775	83.7	83.94	503.65	16.785	21.995	4.852	0.29	0.27	0.39	4.80
296	224	0.075	0.2739	83.8	83.89	503.52	16.567	21.705	4.856	0.29	0.30	0.39	4.80
297	117	0.075	0.2739	83.7	83.84	503.46	16.565	21.707	2.534	0.15	0.27	0.39	4.81
298	19	0.078	0.2793	83.7	83.8	503.48	16.893	22.137	0.419	0.03	0.22	0.39	4.81
299	168	0.076	0.2757	83.7	83.77	503.57	16.675	21.852	3.661	0.22	0.20	0.39	4.81
300	290	0.075	0.2739	83.7	83.75	503.75	16.565	21.707	6.291	0.38	0.21	0.39	4.82
301	246	0.076	0.2757	83.8	83.74	504	16.677	21.850	5.370	0.32	0.22	0.38	4.82
302	266	0.076	0.2757	83.8	83.74	504.35	16.677	21.850	5.819	0.35	0.26	0.39	4.83
303	207	0.076	0.2757	83.7	83.73	504.8	16.675	21.852	4.523	0.27	0.31	0.39	4.83
304	217	0.076	0.2757	83.7	83.73	505.33	16.675	21.852	4.741	0.28	0.32	0.39	4.84
305	300	0.076	0.2757	83.5	83.71	505.89	16.672	21.856	6.546	0.39	0.32	0.39	4.84
306	211	0.076	0.2757	83.4	83.67	506.42	16.671	21.858	4.614	0.28	0.31	0.39	4.85
307	294	0.076	0.2757	83.4	83.64	506.96	16.671	21.858	6.416	0.38	0.32	0.40	4.85
308	360	0.076	0.2757	83.3	83.6	507.45	16.669	21.860	7.880	0.47	0.36	0.39	4.86
309	438	0.074	0.2720	83.2	83.55	507.86	16.447	21.572	9.445	0.57	0.42	0.39	4.87
310	309	0.074	0.2720	83	83.48	508.13	16.444	21.576	6.672	0.40	0.42	0.39	4.88
311	366	0.075	0.2739	82.8	83.38	508.31	16.552	21.725	7.947	0.48	0.46	0.40	4.89
312	77	0.074	0.2720	82.7	83.27	508.36	16.439	21.582	1.653	0.10	0.40	0.40	4.89
313	73	0.076	0.2757	82.4	83.14	508.2	16.656	21.878	1.604	0.10	0.33	0.40	4.89
314	25	0.078	0.2793	82.2	82.99	507.78	16.870	22.168	0.562	0.03	0.22	0.40	4.89
315	-10	0.076	0.2757	82.1	82.85	507.11	16.651	21.884	-0.214	-0.01	0.14	0.39	4.89
316	18	0.075	0.2739	81.9	82.7	506.27	16.538	21.743	0.397	0.02	0.05	0.38	4.89
317	31	0.075	0.2739	81.7	82.53	505.19	16.535	21.747	0.670	0.04	0.04	0.37	4.89
318	56	0.077	0.2775	81.5	82.35	503.91	16.751	22.039	1.237	0.07	0.03	0.35	4.89
319	11	0.076	0.2757	81.4	82.17	502.49	16.640	21.898	0.247	0.01	0.03	0.33	4.89
320	-34	0.074	0.2720	81.3	82	500.93	16.418	21.610	-0.742	-0.04	0.02	0.32	4.89
321	23	0.076	0.2757	81.2	81.84	499.23	16.637	21.902	0.504	0.03	0.02	0.31	4.89
322	82	0.078	0.2793	81	81.67	497.41	16.851	22.192	1.818	0.11	0.04	0.29	4.89
323	12	0.077	0.2775	80.9	81.52	495.53	16.742	22.052	0.274	0.02	0.03	0.28	4.89
324	76	0.077	0.2775	80.8	81.38	493.68	16.740	22.054	1.681	0.10	0.04	0.27	4.90
325	145	0.077	0.2775	80.7	81.24	491.88	16.738	22.056	3.207	0.19	0.09	0.27	4.90
326	80	0.076	0.2757	80.6	81.11	490.11	16.628	21.914	1.757	0.11	0.10	0.26	4.90
327	90	0.075	0.2739	80.5	80.99	488.4	16.517	21.772	1.952	0.12	0.11	0.26	4.90
328	68	0.077	0.2775	80.4	80.88	486.74	16.734	22.062	1.502	0.09	0.12	0.26	4.90
329	14	0.077	0.2775	80.3	80.77	485.14	16.732	22.064	0.319	0.02	0.10	0.25	4.90
330	16	0.076	0.2757	80.2	80.66	483.61	16.622	21.922	0.357	0.02	0.07	0.25	4.91
331	44	0.075	0.2739	80.1	80.55	482.15	16.510	21.780	0.952	0.06	0.06	0.24	4.91
332	-140	0.075	0.2739	80	80.45	480.72	16.509	21.782	-3.055	-0.18	0.00	0.23	4.90
333	44	0.076	0.2757	79.9	80.35	479.37	16.617	21.928	0.960	0.06	-0.01	0.22	4.90
334	61	0.076	0.2757	79.9	80.26	478.02	16.617	21.928	1.335	0.08	0.01	0.21	4.91
335	133	0.075	0.2739	79.7	80.16	476.72	16.504	21.788	2.890	0.17	0.04	0.21	4.91
336	78	0.076	0.2757	79.7	80.07	475.44	16.614	21.932	1.713	0.10	0.05	0.21	4.91
337	149	0.076	0.2757	79.5	79.97	474.18	16.611	21.937	3.264	0.20	0.12	0.20	4.91
338	247	0.075	0.2739	79.5	79.88	472.97	16.501	21.792	5.383	0.32	0.18	0.20	4.92
339	72	0.076	0.2757	79.4	79.79	471.75	16.609	21.939	1.579	0.09	0.18	0.20	4.92
340	118	0.078	0.2793	79.4	79.71	470.56	16.827	22.225	2.626	0.16	0.17	0.20	4.92
341	65	0.076	0.2757	79.2	79.62	469.4	16.606	21.943	1.430	0.09	0.17	0.19	4.92
342	109	0.076	0.2757	79.2	79.54	468.27	16.606	21.943	2.401	0.14	0.16	0.19	4.93
343	65	0.077	0.2775	79	79.45	467.13	16.712	22.091	1.442	0.09	0.11	0.18	4.93
344	46	0.076	0.2757	79	79.36	466.03	16.603	21.947	1.000	0.06	0.11	0.18	4.93
345	0	0.077	0.2775	78.9	79.28	464.95	16.711	22.093	-0.006	0.00	0.08	0.18	4.93
346	187	0.074	0.2720	78.9	79.2	463.9	16.382	21.658	4.052	0.24	0.11	0.18	4.93
347	-10	0.077	0.2775	78.8	79.13	462.9	16.709	22.095	-0.220	-0.01	0.08	0.17	4.93
348	67	0.076	0.2757	78.8	79.06	461.89	16.600	21.951	1.472	0.09	0.08	0.17	4.93

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349	85	0.075	0.2739	78.8	79	460.87	16.491	21.806	1.859	0.11	0.09	0.17	4.94
350	95	0.077	0.2775	78.6	78.92	459.82	16.706	22.099	2.103	0.13	0.11	0.16	4.94
351	46	0.077	0.2775	78.6	78.86	458.73	16.706	22.099	1.015	0.06	0.07	0.16	4.94
352	-25	0.076	0.2757	78.4	78.78	457.59	16.594	21.959	-0.552	-0.03	0.07	0.16	4.94
353	166	0.075	0.2739	78.4	78.72	456.4	16.484	21.814	3.620	0.22	0.10	0.16	4.94
354	88	0.076	0.2757	78.3	78.65	455.13	16.592	21.961	1.941	0.12	0.10	0.15	4.94
355	112	0.077	0.2775	78.2	78.58	453.74	16.700	22.107	2.480	0.15	0.10	0.15	4.95
356	93	0.076	0.2757	78.1	78.5	452.22	16.589	21.965	2.051	0.12	0.11	0.15	4.95
357	57	0.076	0.2757	78	78.42	450.53	16.588	21.967	1.261	0.08	0.14	0.15	4.95
358	-63	0.075	0.2739	78	78.34	448.74	16.478	21.822	-1.372	-0.08	0.08	0.15	4.95
359	16	0.075	0.2739	77.8	78.24	446.89	16.475	21.826	0.351	0.02	0.06	0.14	4.95
360	52	0.076	0.2757	77.8	78.16	444.94	16.585	21.971	1.134	0.07	0.04	0.14	4.95
361	108	0.075	0.2739	77.6	78.06	442.9	16.472	21.830	2.359	0.14	0.04	0.13	4.95
362	56	0.076	0.2757	77.6	77.98	440.8	16.582	21.975	1.227	0.07	0.04	0.13	4.95
363	-47	0.076	0.2757	77.5	77.89	438.64	16.580	21.977	-1.022	-0.06	0.05	0.12	4.95
364	68	0.077	0.2775	77.3	77.79	436.45	16.686	22.126	1.500	0.09	0.06	0.12	4.95
365	32	0.077	0.2775	77.3	77.7	434.26	16.686	22.126	0.700	0.04	0.06	0.11	4.96
366	-63	0.076	0.2757	77.2	77.61	432.09	16.576	21.983	-1.376	-0.08	0.01	0.11	4.95
367	20	0.077	0.2775	77.2	77.53	429.97	16.684	22.128	0.450	0.03	0.00	0.10	4.95
368	-11	0.078	0.2793	77.1	77.44	427.88	16.791	22.273	-0.249	-0.01	0.01	0.09	4.95
369	95	0.077	0.2775	76.9	77.35	425.8	16.680	22.134	2.111	0.13	0.02	0.09	4.96
370	71	0.077	0.2775	76.9	77.26	423.78	16.680	22.134	1.572	0.09	0.03	0.08	4.96
371	40	0.077	0.2775	76.9	77.19	421.79	16.680	22.134	0.885	0.05	0.06	0.07	4.96
372	119	0.076	0.2757	76.9	77.12	419.83	16.571	21.990	2.614	0.16	0.08	0.07	4.96
373	-3	0.077	0.2775	76.9	77.06	417.92	16.680	22.134	-0.057	0.00	0.09	0.07	4.96
374	57	0.076	0.2757	77	77.03	416.03	16.572	21.988	1.258	0.08	0.08	0.07	4.96
375	128	0.076	0.2757	77	77	414.17	16.572	21.988	2.817	0.17	0.09	0.07	4.97
376	42	0.078	0.2793	77	76.98	412.31	16.789	22.275	0.944	0.06	0.09	0.07	4.97
377	-6	0.076	0.2757	77	76.96	410.48	16.572	21.988	-0.127	-0.01	0.06	0.08	4.97
378	29	0.077	0.2775	77	76.95	408.67	16.681	22.132	0.650	0.04	0.07	0.08	4.97
379	46	0.076	0.2757	76.9	76.95	406.91	16.571	21.990	1.017	0.06	0.06	0.08	4.97
380	-54	0.076	0.2757	76.7	76.93	405.21	16.568	21.994	-1.186	-0.07	0.02	0.08	4.97
381	-10	0.076	0.2757	76.7	76.91	403.56	16.568	21.994	-0.226	-0.01	0.00	0.08	4.97
382	-57	0.077	0.2775	76.6	76.88	401.96	16.675	22.140	-1.254	-0.08	-0.01	0.07	4.96
383	-79	0.077	0.2775	76.5	76.84	400.4	16.673	22.142	-1.759	-0.11	-0.04	0.07	4.96
384	29	0.076	0.2757	76.4	76.78	398.92	16.563	22.000	0.631	0.04	-0.05	0.07	4.96
385	-15	0.076	0.2757	76.3	76.71	397.49	16.562	22.002	-0.327	-0.02	-0.04	0.07	4.96
386	52	0.076	0.2757	76.3	76.64	396.14	16.562	22.002	1.136	0.07	-0.02	0.06	4.96
387	15	0.076	0.2757	76.2	76.56	394.84	16.560	22.004	0.326	0.02	0.00	0.06	4.96
388	2	0.075	0.2739	76.2	76.48	393.56	16.451	21.859	0.036	0.00	0.02	0.06	4.97
389	-55	0.075	0.2739	76	76.39	392.33	16.448	21.863	-1.203	-0.07	0.00	0.06	4.96
390	-24	0.077	0.2775	76	76.32	391.11	16.666	22.152	-0.534	-0.03	0.00	0.06	4.96
391	-8	0.076	0.2757	76	76.25	389.91	16.557	22.008	-0.181	-0.01	-0.02	0.06	4.96
392	-59	0.077	0.2775	76	76.19	388.74	16.666	22.152	-1.298	-0.08	-0.04	0.06	4.96
393	-33	0.076	0.2757	76	76.14	387.61	16.557	22.008	-0.722	-0.04	-0.05	0.06	4.96
394	-36	0.076	0.2757	76	76.1	386.48	16.557	22.008	-0.802	-0.05	-0.04	0.06	4.96
395	116	0.077	0.2775	75.9	76.06	385.4	16.664	22.154	2.579	0.15	-0.01	0.05	4.96
396	-75	0.076	0.2757	75.7	76	384.34	16.552	22.014	-1.642	-0.10	-0.02	0.05	4.96
397	26	0.076	0.2757	75.6	75.94	383.26	16.551	22.016	0.573	0.03	0.00	0.05	4.96
398	-29	0.077	0.2775	75.6	75.88	382.24	16.659	22.161	-0.634	-0.04	0.00	0.04	4.96
399	-53	0.076	0.2757	75.6	75.84	381.23	16.551	22.016	-1.159	-0.07	0.00	0.04	4.96
400	-99	0.076	0.2757	75.5	75.79	380.24	16.549	22.018	-2.185	-0.13	-0.06	0.04	4.96
401	104	0.078	0.2793	75.5	75.74	379.28	16.766	22.306	2.321	0.14	-0.01	0.04	4.96
402	-99	0.077	0.2775	75.4	75.68	378.31	16.656	22.165	-2.204	-0.13	-0.05	0.03	4.96
403	66	0.077	0.2775	75.4	75.62	377.35	16.656	22.165	1.473	0.09	-0.02	0.03	4.96
404	60	0.077	0.2775	75.3	75.55	376.43	16.655	22.167	1.326	0.08	0.01	0.03	4.96
405	118	0.078	0.2793	75.2	75.48	375.51	16.761	22.312	2.637	0.16	0.07	0.03	4.96
406	46	0.075	0.2739	75.2	75.43	374.62	16.435	21.879	1.010	0.06	0.05	0.03	4.96
407	88	0.077	0.2775	75.2	75.39	373.8	16.653	22.169	1.941	0.12	0.10	0.03	4.97
408	-1	0.077	0.2775	75.2	75.35	373.01	16.653	22.169	-0.030	0.00	0.08	0.03	4.97
409	-36	0.077	0.2775	75.2	75.31	372.23	16.653	22.169	-0.799	-0.05	0.06	0.03	4.97
410	-14	0.077	0.2775	75.2	75.28	371.46	16.653	22.169	-0.306	-0.02	0.02	0.03	4.97
411	11	0.077	0.2775	75.1	75.24	370.74	16.652	22.171	0.247	0.01	0.01	0.03	4.97
412	67	0.076	0.2757	75.1	75.21	370.07	16.543	22.027	1.473	0.09	0.01	0.03	4.97
413	43	0.077	0.2775	75	75.17	369.42	16.650	22.173	0.945	0.06	0.02	0.02	4.97
414	134	0.076	0.2757	75	75.14	368.8	16.542	22.029	2.959	0.18	0.06	0.02	4.97
415	-34	0.079	0.2811	75	75.12	368.26	16.865	22.459	-0.753	-0.05	0.06	0.02	4.97
416	89	0.077	0.2775	75	75.1	367.75	16.650	22.173	1.980	0.12	0.08	0.02	4.97
417	32	0.078	0.2793	75	75.08	367.3	16.758	22.317	0.708	0.04	0.07	0.02	4.97
418	45	0.078	0.2793	75	75.06	366.93	16.758	22.317	0.999	0.06	0.07	0.02	4.97
419	168	0.076	0.2757	75	75.04	366.65	16.542	22.029	3.707	0.22	0.08	0.02	4.98
420	96	0.077	0.2775	74.9	75.01	366.46	16.648	22.175	2.132	0.13	0.11	0.02	4.98
421	62	0.077	0.2775	74.9	74.99	366.33	16.648	22.175	1.365	0.08	0.11	0.03	4.98
422	138	0.078	0.2793	74.8	74.96	366.26	16.755	22.321	3.085	0.19	0.14	0.03	4.98
423	156	0.077	0.2775	74.8	74.94	366.26	16.647	22.177	3.456	0.21	0.16	0.03	4.99
424	-19	0.076	0.2757	74.8	74.92	366.28	16.538	22.033	-0.421	-0.03	0.12	0.03	4.99
425	95	0.078	0.2793	74.8	74.9	366.34	16.755	22.321	2.128	0.13	0.12	0.03	4.99
426	60	0.077	0.2775	74.7	74.87	366.44	16.645	22.179	1.330	0.08	0.11	0.03	4.99
427	2	0.076	0.2757	74.7	74.84	366.56	16.537	22.035	0.045	0.00	0.08	0.04	4.99
428	-53	0.077	0.2775	74.7	74.81	366.65	16.645	22.179	-1.171	-0.07	0.02	0.04	4.99
429	53	0.078	0.2793	74.6	74.77	366.76	16.752	22.325	1.190	0.07	0.04	0.04	4.99
430	165	0.077	0.2775	74.6	74.74	366.89	16.644	22.181	3.661	0.22	0.06	0.03	4.99
431	36	0.077	0.2775	74.6	74.71	367	16.644	22.181	0.793	0.05	0.05	0.03	5.00
432	73	0.077	0.2775	74.5	74.68	367.15	16.642	22.184	1.613	0.10	0.07	0.03	5.00
433	75	0.077	0.2775	74.5	74.65	367.31	16.642	22.184	1.655	0.10	0.11	0.04	5.00
434	133	0.078	0.2793	74.5	74.62	367.52	16.750	22.327	2.960	0.18	0.13	0.04	5.00
435	37	0.079	0.2811	74.5	74.59	367.72	16.857	22.470	0.823	0.05	0.09	0.03	5.00
436	42	0.077	0.2775	74.5	74.57	367.95	16.642	22.184	0.935	0.06	0.10	0.04	5.00

Run 3 TEOM Data

437	139	0.076	0.2757	74.5	74.55	368.21	16.534	22.039	3.074	0.18	0.11	0.04	5.01
438	40	0.077	0.2775	74.4	74.52	368.51	16.641	22.186	0.878	0.05	0.10	0.04	5.01
439	104	0.077	0.2775	74.4	74.5	368.84	16.641	22.186	2.315	0.14	0.10	0.04	5.01
440	49	0.077	0.2775	74.4	74.48	369.18	16.641	22.186	1.077	0.06	0.10	0.04	5.01
441	112	0.076	0.2757	74.4	74.46	369.57	16.532	22.041	2.461	0.15	0.12	0.04	5.01
442	111	0.075	0.2739	74.4	74.45	370	16.423	21.896	2.433	0.15	0.11	0.05	5.02
443	208	0.076	0.2757	74.3	74.43	370.47	16.531	22.043	4.590	0.28	0.15	0.05	5.02
444	83	0.076	0.2757	74.3	74.41	370.96	16.531	22.043	1.822	0.11	0.15	0.05	5.02
445	97	0.077	0.2775	74.3	74.39	371.49	16.639	22.188	2.157	0.13	0.16	0.06	5.02
446	12	0.076	0.2757	74.3	74.37	372.03	16.531	22.043	0.260	0.02	0.14	0.06	5.02
447	83	0.075	0.2739	74.3	74.35	372.57	16.422	21.898	1.817	0.11	0.13	0.06	5.03
448	94	0.077	0.2775	74.2	74.33	373.11	16.638	22.190	2.096	0.13	0.10	0.06	5.03
449	249	0.078	0.2793	74.2	74.31	373.63	16.745	22.333	5.570	0.33	0.14	0.06	5.03
450	140	0.077	0.2775	74.2	74.29	374.16	16.638	22.190	3.106	0.19	0.15	0.07	5.04
451	220	0.076	0.2757	74.2	74.27	374.7	16.529	22.045	4.848	0.29	0.21	0.07	5.04
452	183	0.078	0.2793	74.2	74.25	375.2	16.745	22.333	4.082	0.24	0.24	0.08	5.05
453	163	0.076	0.2757	74.3	74.25	375.66	16.531	22.043	3.599	0.22	0.25	0.08	5.05
454	-55	0.076	0.2757	74.2	74.24	376.12	16.529	22.045	-1.215	-0.07	0.17	0.09	5.05
455	99	0.077	0.2775	74.3	74.24	376.55	16.639	22.188	2.195	0.13	0.16	0.09	5.05
456	57	0.076	0.2757	74.3	74.24	376.96	16.531	22.043	1.248	0.07	0.12	0.09	5.05
457	148	0.076	0.2757	74.3	74.24	377.35	16.531	22.043	3.271	0.20	0.11	0.09	5.05
458	112	0.077	0.2775	74.4	74.26	377.76	16.641	22.186	2.492	0.15	0.10	0.09	5.06
459	267	0.076	0.2757	74.3	74.27	378.17	16.531	22.043	5.892	0.35	0.18	0.10	5.06
460	9	0.078	0.2793	74.3	74.28	378.57	16.747	22.331	0.209	0.01	0.16	0.10	5.06
461	296	0.076	0.2757	74.2	74.28	378.94	16.529	22.045	6.533	0.39	0.22	0.11	5.07
462	68	0.077	0.2775	74.2	74.28	379.33	16.638	22.190	1.502	0.09	0.20	0.11	5.07
463	154	0.077	0.2775	74.2	74.27	379.73	16.638	22.190	3.422	0.21	0.21	0.11	5.07
464	154	0.076	0.2757	74.2	74.27	380.12	16.529	22.045	3.388	0.20	0.18	0.11	5.08
465	1	0.077	0.2775	74.2	74.26	380.52	16.638	22.190	0.030	0.00	0.18	0.12	5.08
466	73	0.077	0.2775	74.3	74.26	380.93	16.639	22.188	1.620	0.10	0.12	0.12	5.08
467	136	0.077	0.2775	74.4	74.27	381.36	16.641	22.186	3.020	0.18	0.14	0.12	5.08
468	28	0.078	0.2793	74.4	74.27	381.72	16.748	22.329	0.620	0.04	0.10	0.12	5.08
469	34	0.077	0.2775	74.4	74.28	382.01	16.641	22.186	0.755	0.05	0.07	0.12	5.08
470	82	0.079	0.2811	74.4	74.29	382.24	16.855	22.472	1.842	0.11	0.09	0.12	5.09
471	145	0.078	0.2793	74.4	74.31	382.42	16.748	22.329	3.243	0.19	0.11	0.12	5.09
472	124	0.077	0.2775	74.3	74.32	382.53	16.639	22.188	2.743	0.16	0.11	0.12	5.09
473	145	0.076	0.2757	74.2	74.32	382.61	16.529	22.045	3.188	0.19	0.14	0.13	5.10
474	108	0.077	0.2775	74.2	74.32	382.64	16.638	22.190	2.395	0.14	0.16	0.13	5.10
475	127	0.078	0.2793	74.1	74.31	382.63	16.744	22.335	2.828	0.17	0.17	0.13	5.10
476	1	0.078	0.2793	74.2	74.3	382.57	16.745	22.333	0.013	0.00	0.13	0.13	5.10
477	31	0.077	0.2775	74.6	74.32	382.42	16.644	22.181	0.679	0.04	0.11	0.13	5.10
478	142	0.077	0.2775	75.1	74.39	382.3	16.652	22.171	3.156	0.19	0.11	0.13	5.10
479	60	0.077	0.2775	75.1	74.46	382.09	16.652	22.171	1.322	0.08	0.10	0.13	5.11
480	48	0.078	0.2793	75.1	74.53	381.86	16.759	22.315	1.069	0.06	0.07	0.13	5.11
481	-3	0.076	0.2757	75	74.59	381.59	16.542	22.029	-0.059	0.00	0.07	0.13	5.11
482	97	0.078	0.2793	74.8	74.64	381.31	16.755	22.321	2.158	0.13	0.09	0.13	5.11
483	-59	0.077	0.2775	74.9	74.71	380.99	16.648	22.175	-1.316	-0.08	0.04	0.12	5.11
484	6	0.077	0.2775	74.8	74.77	380.64	16.647	22.177	0.136	0.01	0.02	0.13	5.11
485	91	0.077	0.2775	74.7	74.83	380.23	16.645	22.179	2.027	0.12	0.04	0.12	5.11
486	11	0.076	0.2757	74.6	74.87	379.8	16.535	22.037	0.242	0.01	0.04	0.12	5.11
487	56	0.078	0.2793	74.4	74.85	379.37	16.748	22.329	1.241	0.07	0.03	0.12	5.11
488	36	0.077	0.2775	74.4	74.78	378.86	16.641	22.186	0.791	0.05	0.05	0.12	5.11
489	74	0.076	0.2757	74.3	74.7	378.42	16.531	22.043	1.632	0.10	0.07	0.12	5.11
490	-106	0.077	0.2775	74.3	74.62	377.96	16.639	22.188	-2.363	-0.14	0.02	0.12	5.11
491	113	0.078	0.2793	74.2	74.54	377.49	16.745	22.333	2.529	0.15	0.05	0.12	5.11
					74.51111111	377.2666667					0.04	0.12	
					74.4625	377.0375					0.04	0.12	
					74.41428571	376.8					0.00	0.12	
					74.36666667	376.5666667					0.15	0.12	
					74.32	376.3						0.12	
					74.3	376.025						0.12	
					74.26666667	375.7666667						0.12	
					74.25	375.45						0.12	
					74.2	375.1						0.12	
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Run 3 TEOM Data

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IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
Model: 1.4R Run Number: 3 Test Date: 10/29/2025

L3 Test Notes

Scale Weight Prior to Loading (lbs):	3.36
Load Time:	13:32
Air Control Setting (5 min start-up allowed):	
Door Closed Time (immediately after loading):	13:33
Bypass Closed Time:	N/A
Target End Weight (lbs):	4.02-4.44
Actual End Weight (lbs):	4.07
Phase End Time:	14:59

Open @	13:32	Closed @	13:37
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Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
14:49	Changed TEOM filters

L4 Test Notes

Scale Weight Prior to Loading (lbs):	4.07
Load Time:	14:59
Air Control Setting (10 min start-up allowed):	
Door Closed Time (5 min after loading):	15:02
Bypass Closed Time:	N/A
Target End Weight (lbs):	3.87-4.27
Actual End Weight (lbs):	3.89
Phase End Time:	20:11

Open @	14:59	Closed @	15:09
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Additional Notes (Fuel adjustments, TEOM Filter Changes, etc.)

Time	Notes
	-None-

Post-Test Conditions

Room Air Velocity (ft/min)	<50
Room RH (%)	33.3
Barometric Pressure	30.25

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI Job Number: 25-446 Tracking #: 238
 Model: 1.4R Run Number: 3 Test Date: 10/29/2025

Post-Test Check List

Leak Checks	Requirement	Pump Off (lpm)	Pump On, Probe Blocked (lpm)	Net (lpm)	Result
PM-2.5	<0.05 lpm (net)	0.38	0.37	0.01	☒ Pass ☐ Fail
PM-Course	<0.05 lpm (net)	0.14	0.18	0.04	☒ Pass ☐ Fail
Ambient	<0.05 lpm (net)	-0.05	-0.04	0.01	☒ Pass ☐ Fail

Flow Checks	Requirement	TEOM Indicated Flow (lpm) ¹	Measured Flow		Difference (%)	Result
			(lpm) ²	(lpm) ³		
PM-2.5	±2%	1.00	0.99		1.0	☒ Pass ☐ Fail
PM-Course	±2%	1.00	1.01		1.0	☒ Pass ☐ Fail
Ambient	±2%	3.00	3.03		1.0	☒ Pass ☐ Fail

¹Indicated flow is at 20°C, 1 atm

²Measured flow with PFS equipment ID 134, which indicates flow at 21.1°C, 1 atm

³Adjusted value (Measured Flow * 99.6%) to match the STP used by TEOM

Flue Gas Analyzer Calibration Check

Calibration Gas Values: Span Gas Cylinder#: DT0042934 CO₂ (%): 17.32 CO (%): 4.350
 Mid Gas Cylinder#: CC341544 CO₂ (%): 10.00 CO (%): 2.500

Calibration Results:

	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	10:16	10:17	10:18	10/30 9:03	10/30 9:04	10/30 9:05
CO ₂	-0.02	17.13	10.19	0.01	17.43	10.34
CO	-0.042	4.249	2.472	0.013	4.421	2.535

Flue Gas Probe Leak Check: Initial: No Leakage Final: No Leakage

Technician Signature: 

Date: 11/21/2025

IDC Wood Heater Run Sheets

Client: SBI
Model: 1.4R

Job Number: 25-446
Run Number: 3

Tracking #: 238
Test Date: 10/29/2025

Test Fuel Photos



L1 Fuel Load



L2 Fuel Load



L3 Fuel Load



L4 Fuel Load

Technician Signature: _____

Date: 11/21/2025

Unit preburn period

Total preburning time (h)

52.23

Model tested:

1.4R Series

Date	Load Type	Duration	Av. Flue	Fuel added	Moisture	Burn Rate (Dry)
		(min)	(°F)	(lbs)	(DB%)	(kg/hr)
2025-10-02	Load 1 - Start-up	27	496	7.19	18.4	4.1
	Load 2 - High-fire	105	631	12.01	22.6	2.0
	Load 3 - Maintenance-fire	92	360	8.23	18.9	1.6
	Load 4 - Low burn rate	306	309	16.38	20.3	1.1
2025-10-01	Load 1 - Start-up	26	439	6.99	21.2	3.9
	Load 2 - High-fire	85	473	12.06	24.3	2.4
	Load 3 - Maintenance-fire	98	351	8.28	20.5	1.5
	Load 4 - Low burn rate	303	312	19.02	21.7	1.3
2025-09-30	Load 1 - Start-up	25	470	6.95	20.6	4.1
	Load 2 - High-fire	76	508	11.37	23.1	2.6
	Load 3 - Maintenance-fire	94	380	8.52	22.0	1.6
	Load 4 - Low burn rate	262	335	19.78	22.0	1.5
2025-09-29	Load 1 - Start-up	22	485	6.88	18.5	4.6
	Load 2 - High-fire	86	484	12.19	21.8	2.5
	Load 3 - Maintenance-fire	88	389	8.63	20.4	1.7
	Load 4 - Low burn rate	304	334	19.87	21.3	1.3
2025-09-22	Load 1 - Start-up	24	477	6.90	19.3	4.2
	Load 2 - High-fire	84	479	12.08	20.3	2.5
	Load 3 - Maintenance-fire	95	367	8.54	21.5	1.5
	Load 4 - Low burn rate	359	294	20.01	21.2	1.1
2025-09-20	Load 1 - Start-up	21	531	7.02	20.0	4.9
	Load 2 - High-fire	88	467	11.95	20.8	2.4
	Load 3 - Maintenance-fire	100	358	8.74	19.1	1.5
	Load 4 - Low burn rate	364	308	20.63	20.9	1.2

High fire air control (max. position)



Low fire air control (max. position)



1.4R Series Pre-burn Data		2025-10-02		Total time (h)		8.83			
Wood Specie: Maple									
Load time	Load type	Fuel added	Moisture	Piece amount	Length of fuel	Fuel Burnt (Dry)	Burn Rate (Dry)	Time	Flue Temp
(-)	(-)	(lb)	(DB %)	(-)	(in.)	(lb)	(kg/hr)	(min)	(°F)
2025-10-02 12:20	Load 1 - Start-up	7.19	18.4	2	16.00	4.03	4.06	27	495.8
2025-10-02 12:47	Load 2 - High-fire	12.01	22.6	4	16.00	8.57	2.00	105	631.1
2025-10-02 14:32	Load 3 - Maintenance-fire	8.23	18.9	4	16.00	5.98	1.59	92	360.4
2025-10-02 16:04	Load 4 - Low burn rate	16.38	20.3	5	16.00	13.83	1.11	306	308.9

	Average Tflue (°F)		495.8		631.1		360.4		308.9	
	Load 1 - Start-up (min)		27		105		92		306	
Air control position	Full open		Full open then fully closed (@50% fuel load)		Fully closed		Fully closed			
Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)		
0	2025-10-02 12:20	73.9	2025-10-02 12:47	732.2	2025-10-02 14:32	309.6	2025-10-02 16:04		306.1	
1	2025-10-02 12:21	154.9	2025-10-02 12:48	715.5	2025-10-02 14:33	333.3	2025-10-02 16:05		360.4	
2	2025-10-02 12:22	360.1	2025-10-02 12:49	702.2	2025-10-02 14:34	379.7	2025-10-02 16:06		424.3	
3	2025-10-02 12:23	392.9	2025-10-02 12:50	705.1	2025-10-02 14:35	443.0	2025-10-02 16:07		678.6	
4	2025-10-02 12:24	454.7	2025-10-02 12:51	716.9	2025-10-02 14:36	495.4	2025-10-02 16:08		695.6	
5	2025-10-02 12:25	511.8	2025-10-02 12:52	730.8	2025-10-02 14:37	528.5	2025-10-02 16:09		660.8	
6	2025-10-02 12:26	541.4	2025-10-02 12:53	747.0	2025-10-02 14:38	532.6	2025-10-02 16:10		658.4	
7	2025-10-02 12:27	541.3	2025-10-02 12:54	761.3	2025-10-02 14:39	485.4	2025-10-02 16:11		670.2	
8	2025-10-02 12:28	552.0	2025-10-02 12:55	774.6	2025-10-02 14:40	457.6	2025-10-02 16:12		660.9	
9	2025-10-02 12:29	556.6	2025-10-02 12:56	786.8	2025-10-02 14:41	438.5	2025-10-02 16:13		616.0	
10	2025-10-02 12:30	545.0	2025-10-02 12:57	797.6	2025-10-02 14:42	426.6	2025-10-02 16:14		576.5	
11	2025-10-02 12:31	522.1	2025-10-02 12:58	806.2	2025-10-02 14:43	417.6	2025-10-02 16:15		547.0	
12	2025-10-02 12:32	504.2	2025-10-02 12:59	813.8	2025-10-02 14:44	410.5	2025-10-02 16:16		524.6	
13	2025-10-02 12:33	507.9	2025-10-02 13:00	820.7	2025-10-02 14:45	405.0	2025-10-02 16:17		507.6	
14	2025-10-02 12:34	512.0	2025-10-02 13:01	826.9	2025-10-02 14:46	402.0	2025-10-02 16:18		495.0	
15	2025-10-02 12:35	512.0	2025-10-02 13:02	833.2	2025-10-02 14:47	398.3	2025-10-02 16:19		485.5	
16	2025-10-02 12:36	513.1	2025-10-02 13:03	835.6	2025-10-02 14:48	394.7	2025-10-02 16:20		478.4	
17	2025-10-02 12:37	516.9	2025-10-02 13:04	835.1	2025-10-02 14:49	392.1	2025-10-02 16:21		472.8	
18	2025-10-02 12:38	521.1	2025-10-02 13:05	830.7	2025-10-02 14:50	390.1	2025-10-02 16:22		468.4	
19	2025-10-02 12:39	529.0	2025-10-02 13:06	822.0	2025-10-02 14:51	388.6	2025-10-02 16:23		464.3	
20	2025-10-02 12:40	543.3	2025-10-02 13:07	813.2	2025-10-02 14:52	387.2	2025-10-02 16:24		461.3	
21	2025-10-02 12:41	559.5	2025-10-02 13:08	802.9	2025-10-02 14:53	386.3	2025-10-02 16:25		458.5	
22	2025-10-02 12:42	572.3	2025-10-02 13:09	792.9	2025-10-02 14:54	385.6	2025-10-02 16:26		456.2	
23	2025-10-02 12:43	580.5	2025-10-02 13:10	783.6	2025-10-02 14:55	384.7	2025-10-02 16:27		453.7	
24	2025-10-02 12:44	582.7	2025-10-02 13:11	775.3	2025-10-02 14:56	383.4	2025-10-02 16:28		452.7	
25	2025-10-02 12:45	582.7	2025-10-02 13:12	766.4	2025-10-02 14:57	382.2	2025-10-02 16:29		451.3	
26	2025-10-02 12:46	575.2	2025-10-02 13:13	758.2	2025-10-02 14:58	382.0	2025-10-02 16:30		450.1	
27	2025-10-02 12:47	564.0	2025-10-02 13:14	749.8	2025-10-02 14:59	381.6	2025-10-02 16:31		447.6	
28			2025-10-02 13:15	742.2	2025-10-02 15:00	382.5	2025-10-02 16:32		447.1	
29			2025-10-02 13:16	733.5	2025-10-02 15:01	381.6	2025-10-02 16:33		445.4	
30			2025-10-02 13:17	725.5	2025-10-02 15:02	381.2	2025-10-02 16:34		444.2	
31			2025-10-02 13:18	717.8	2025-10-02 15:03	380.0	2025-10-02 16:35		443.4	
32			2025-10-02 13:19	709.9	2025-10-02 15:04	380.1	2025-10-02 16:36		442.8	
33			2025-10-02 13:20	701.9	2025-10-02 15:05	379.1	2025-10-02 16:37		441.4	
34			2025-10-02 13:21	694.7	2025-10-02 15:06	377.8	2025-10-02 16:38		440.6	
35			2025-10-02 13:22	687.9	2025-10-02 15:07	375.8	2025-10-02 16:39		439.2	
36			2025-10-02 13:23	682.3	2025-10-02 15:08	374.8	2025-10-02 16:40		438.5	
37			2025-10-02 13:24	676.4	2025-10-02 15:09	373.6	2025-10-02 16:41		437.0	
38			2025-10-02 13:25	670.3	2025-10-02 15:10	372.2	2025-10-02 16:42		435.9	
39			2025-10-02 13:26	664.1	2025-10-02 15:11	370.7	2025-10-02 16:43		433.7	
40			2025-10-02 13:27	657.6	2025-10-02 15:12	369.3	2025-10-02 16:44		432.6	
41			2025-10-02 13:28	649.4	2025-10-02 15:13	368.0	2025-10-02 16:45		431.5	
42			2025-10-02 13:29	641.2	2025-10-02 15:14	366.7	2025-10-02 16:46		430.0	
43			2025-10-02 13:30	632.2	2025-10-02 15:15	365.6	2025-10-02 16:47		428.5	
44			2025-10-02 13:31	623.5	2025-10-02 15:16	363.9	2025-10-02 16:48		426.5	
45			2025-10-02 13:32	615.9	2025-10-02 15:17	362.2	2025-10-02 16:49		425.6	
46			2025-10-02 13:33	607.3	2025-10-02 15:18	361.4	2025-10-02 16:50		423.6	
47			2025-10-02 13:34	599.3	2025-10-02 15:19	359.7	2025-10-02 16:51		422.3	
48			2025-10-02 13:35	592.3	2025-10-02 15:20	358.2	2025-10-02 16:52		421.5	
49			2025-10-02 13:36	585.3	2025-10-02 15:21	357.3	2025-10-02 16:53		419.9	
50			2025-10-02 13:37	578.4	2025-10-02 15:22	355.7	2025-10-02 16:54		418.4	
51			2025-10-02 13:38	571.6	2025-10-02 15:23	353.6	2025-10-02 16:55		417.2	
52			2025-10-02 13:39	564.7	2025-10-02 15:24	351.4	2025-10-02 16:56		417.9	
53			2025-10-02 13:40	558.6	2025-10-02 15:25	349.1	2025-10-02 16:57		417.4	
54			2025-10-02 13:41	552.3	2025-10-02 15:26	345.6	2025-10-02 16:58		418.1	
55			2025-10-02 13:42	546.3	2025-10-02 15:27	343.6	2025-10-02 16:59		417.6	
56			2025-10-02 13:43	541.0	2025-10-02 15:28	341.6	2025-10-02 17:00		417.7	
57			2025-10-02 13:44	536.6	2025-10-02 15:29	340.3	2025-10-02 17:01		416.6	
58			2025-10-02 13:45	533.6	2025-10-02 15:30	337.9	2025-10-02 17:02		416.2	
59			2025-10-02 13:46	531.2	2025-10-02 15:31	336.7	2025-10-02 17:03		416.5	
60			2025-10-02 13:47	529.6	2025-10-02 15:32	335.7	2025-10-02 17:04		415.9	
61			2025-10-02 13:48	528.6	2025-10-02 15:33	333.9	2025-10-02 17:05		416.0	
62			2025-10-02 13:49	527.7	2025-10-02 15:34	332.5	2025-10-02 17:06		417.0	
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64			2025-10-02 13:51	526.5	2025-10-02 15:36	329.0	2025-10-02 17:08		418.5	
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66			2025-10-02 13:53	526.3	2025-10-02 15:38	325.9	2025-10-02 17:10		419.3	
67			2025-10-02 13:54	525.6	2025-10-02 15:39	324.2	2025-10-02 17:11		419.4	
68			2025-10-02 13:55	525.1	2025-10-02 15:40	322.7	2025-10-02 17:12		418.9	
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71			2025-10-02 13:58	525.6	2025-10-02 15:43	318.1	2025-10-02 17:15		416.9	
72			2025-10-02 13:59	526.1	2025-10-02 15:44	317.1	2025-10-02 17:16		416.1	
73			2025-10-02 14:00	527.9	2025-10-02 15:45	315.6	2025-10-02 17:17		414.2	
74			2025-10-02 14:01	528.6	2025-10-02 15:46	314.4	2025-10-02 17:18		413.0	
75			2025-10-02 14:02	530.5	2025-10-02 15:47	313.4	2025-10-02 17:19		411.7	
76			2025-10-02 14:03	531.8	2025-10-02 15:48	313.0	2025-10-02 17:20		410.2	
77			2025-10-02 14:04	532.5	2025-10-02 15:49	312.2	2025-10-02 17:21		408.6	
78			2025-10-02 14:05	534.4	2025-10-02 15:50	311.3	2025-10-02 17:22		406.7	
79			2025-10-02 14:06	536.8	2025-10-02 15:51	309.9	2025-10-02 17:23		405.4	
80			2025-10-02 14:07	537.9	2025-10-02 15:52	308.2	2025-10-02 17:24		403.6	
81			2025-10-02 14:08	539.2	2025-10-02 15:53	307.6	2025-10-02 17:25		402.1	
82			2025-10-02 14:09	542.1	2025-10-02 15:54	306.9	2025-10-02 17:26		401.1	
83			2025-10-02 14:10	543.5	2025-10-02 15:55	305.9	2025-10-02 17:27		399.8	
84			2025-10-02 14:11	545.8	2025-10-02 15:56	305.8	2025-10-02 17:28		398.8	
85			2025-10-02 14							

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92			2025-10-02 14:19	560.5	2025-10-02 16:04	306.1	2025-10-02 17:36	389.2
93			2025-10-02 14:20	562.4			2025-10-02 17:37	387.2
94			2025-10-02 14:21	563.6			2025-10-02 17:38	384.7
95			2025-10-02 14:22	564.9			2025-10-02 17:39	382.3
96			2025-10-02 14:23	564.6			2025-10-02 17:40	378.7
97			2025-10-02 14:24	564.6			2025-10-02 17:41	375.6
98			2025-10-02 14:25	562.6			2025-10-02 17:42	373.6
99			2025-10-02 14:26	561.0			2025-10-02 17:43	370.9
100			2025-10-02 14:27	559.0			2025-10-02 17:44	369.8
101			2025-10-02 14:28	555.8			2025-10-02 17:45	367.7
102			2025-10-02 14:29	551.5			2025-10-02 17:46	365.5
103			2025-10-02 14:30	546.4			2025-10-02 17:47	364.3
104			2025-10-02 14:31	540.7			2025-10-02 17:48	362.7
105			2025-10-02 14:32	534.2			2025-10-02 17:49	361.4
106							2025-10-02 17:50	360.0
107							2025-10-02 17:51	359.5
108							2025-10-02 17:52	359.7
109							2025-10-02 17:53	359.1
110							2025-10-02 17:54	359.6
111							2025-10-02 17:55	360.0
112							2025-10-02 17:56	359.6
113							2025-10-02 17:57	359.6
114							2025-10-02 17:58	359.3
115							2025-10-02 17:59	359.6
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119							2025-10-02 18:03	348.7
120							2025-10-02 18:04	345.8
121							2025-10-02 18:05	343.2
122							2025-10-02 18:06	341.2
123							2025-10-02 18:07	338.7
124							2025-10-02 18:08	336.6
125							2025-10-02 18:09	334.9
126							2025-10-02 18:10	334.1
127							2025-10-02 18:11	332.5
128							2025-10-02 18:12	331.0
129							2025-10-02 18:13	329.9
130							2025-10-02 18:14	328.0
131							2025-10-02 18:15	324.0
132							2025-10-02 18:16	317.6
133							2025-10-02 18:17	311.6
134							2025-10-02 18:18	306.5
135							2025-10-02 18:19	302.3
136							2025-10-02 18:20	298.5
137							2025-10-02 18:21	295.9
138							2025-10-02 18:22	294.2
139							2025-10-02 18:23	291.7
140							2025-10-02 18:24	289.9
141							2025-10-02 18:25	288.6
142							2025-10-02 18:26	286.2
143							2025-10-02 18:27	284.5
144							2025-10-02 18:28	283.1
145							2025-10-02 18:29	281.9
146							2025-10-02 18:30	280.8
147							2025-10-02 18:31	279.7
148							2025-10-02 18:32	278.6
149							2025-10-02 18:33	278.0
150							2025-10-02 18:34	276.8
151							2025-10-02 18:35	276.7
152							2025-10-02 18:36	275.6
153							2025-10-02 18:37	275.3
154							2025-10-02 18:38	274.3
155							2025-10-02 18:39	273.5
156							2025-10-02 18:40	272.7
157							2025-10-02 18:41	272.4
158							2025-10-02 18:42	272.3
159							2025-10-02 18:43	272.4
160							2025-10-02 18:44	272.3
161							2025-10-02 18:45	272.3
162							2025-10-02 18:46	272.3
163							2025-10-02 18:47	272.6
164							2025-10-02 18:48	272.5
165							2025-10-02 18:49	271.5
166							2025-10-02 18:50	271.3
167							2025-10-02 18:51	270.6
168							2025-10-02 18:52	269.4
169							2025-10-02 18:53	267.8
170							2025-10-02 18:54	265.8
171							2025-10-02 18:55	264.1
172							2025-10-02 18:56	262.3
173							2025-10-02 18:57	260.7
174							2025-10-02 18:58	258.3
175							2025-10-02 18:59	254.7
176							2025-10-02 19:00	251.1
177							2025-10-02 19:01	247.9
178							2025-10-02 19:02	245.3
179							2025-10-02 19:03	243.2
180							2025-10-02 19:04	240.9
181							2025-10-02 19:05	238.9
182							2025-10-02 19:06	236.9
183							2025-10-02 19:07	234.7
184							2025-10-02 19:08	233.1
185							2025-10-02 19:09	231.4
186							2025-10-02 19:10	229.8
187							2025-10-02 19:11	228.3
188							2025-10-02 19:12	226.7
189							2025-10-02 19:13	225.6
190							2025-10-02 19:14	224.4
191							2025-10-02 19:15	223.2
192							2025-10-02 19:16	222.2
193							2025-10-02 19:17	221.0
194							2025-10-02 19:18	220.2
195							2025-10-02 19:19	219.6

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197							2025-10-02 19:21	218.2
198							2025-10-02 19:22	217.5
199							2025-10-02 19:23	216.9
200							2025-10-02 19:24	216.2
201							2025-10-02 19:25	216.1
202							2025-10-02 19:26	215.7
203							2025-10-02 19:27	215.4
204							2025-10-02 19:28	214.9
205							2025-10-02 19:29	214.4
206							2025-10-02 19:30	213.6
207							2025-10-02 19:31	212.8
208							2025-10-02 19:32	212.5
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210							2025-10-02 19:34	211.2
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213							2025-10-02 19:37	210.3
214							2025-10-02 19:38	209.9
215							2025-10-02 19:39	209.3
216							2025-10-02 19:40	209.5
217							2025-10-02 19:41	209.7
218							2025-10-02 19:42	209.9
219							2025-10-02 19:43	209.8
220							2025-10-02 19:44	209.6
221							2025-10-02 19:45	209.7
222							2025-10-02 19:46	209.7
223							2025-10-02 19:47	209.5
224							2025-10-02 19:48	209.6
225							2025-10-02 19:49	209.0
226							2025-10-02 19:50	208.7
227							2025-10-02 19:51	208.3
228							2025-10-02 19:52	207.7
229							2025-10-02 19:53	207.0
230							2025-10-02 19:54	206.5
231							2025-10-02 19:55	206.0
232							2025-10-02 19:56	205.2
233							2025-10-02 19:57	204.5
234							2025-10-02 19:58	203.7
235							2025-10-02 19:59	203.1
236							2025-10-02 20:00	202.8
237							2025-10-02 20:01	202.0
238							2025-10-02 20:02	201.6
239							2025-10-02 20:03	201.3
240							2025-10-02 20:04	200.9
241							2025-10-02 20:05	200.8
242							2025-10-02 20:06	200.3
243							2025-10-02 20:07	199.9
244							2025-10-02 20:08	199.6
245							2025-10-02 20:09	199.6
246							2025-10-02 20:10	199.5
247							2025-10-02 20:11	199.1
248							2025-10-02 20:12	199.2
249							2025-10-02 20:13	198.9
250							2025-10-02 20:14	199.0
251							2025-10-02 20:15	199.0
252							2025-10-02 20:16	198.8
253							2025-10-02 20:17	198.6
254							2025-10-02 20:18	198.7
255							2025-10-02 20:19	198.6
256							2025-10-02 20:20	198.7
257							2025-10-02 20:21	198.8
258							2025-10-02 20:22	198.9
259							2025-10-02 20:23	199.0
260							2025-10-02 20:24	198.9
261							2025-10-02 20:25	199.1
262							2025-10-02 20:26	198.9
263							2025-10-02 20:27	198.7
264							2025-10-02 20:28	198.4
265							2025-10-02 20:29	197.9
266							2025-10-02 20:30	197.7
267							2025-10-02 20:31	197.5
268							2025-10-02 20:32	197.4
269							2025-10-02 20:33	197.3
270							2025-10-02 20:34	197.2
271							2025-10-02 20:35	197.1
272							2025-10-02 20:36	197.1
273							2025-10-02 20:37	197.3
274							2025-10-02 20:38	196.8
275							2025-10-02 20:39	196.7
276							2025-10-02 20:40	197.0
277							2025-10-02 20:41	196.6
278							2025-10-02 20:42	196.6
279							2025-10-02 20:43	196.7
280							2025-10-02 20:44	196.5
281							2025-10-02 20:45	196.2
282							2025-10-02 20:46	196.2
283							2025-10-02 20:47	196.3
284							2025-10-02 20:48	196.2
285							2025-10-02 20:49	196.2
286							2025-10-02 20:50	196.0
287							2025-10-02 20:51	196.0
288							2025-10-02 20:52	196.1
289							2025-10-02 20:53	196.3
290							2025-10-02 20:54	196.0
291							2025-10-02 20:55	196.2
292							2025-10-02 20:56	196.4
293							2025-10-02 20:57	196.4
294							2025-10-02 20:58	196.5
295							2025-10-02 20:59	196.6
296							2025-10-02 21:00	197.1
297							2025-10-02 21:01	197.4
298							2025-10-02 21:02	196.9
299							2025-10-02 21:03	197.2

Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
300							2025-10-02 21:04	197.1
301							2025-10-02 21:05	197.1
302							2025-10-02 21:06	196.9
303							2025-10-02 21:07	196.7
304							2025-10-02 21:08	196.9
305							2025-10-02 21:09	197.0
306							2025-10-02 21:10	197.0

1.4R Series Pre-burn Data		2025-10-01		Total time (h)		8.53			
Wood Specie: Maple									
Load time	Load type	Fuel added	Moisture	Piece amount	Length of fuel	Fuel Burnt (Dry)	Burn Rate (Dry)	Time	Flue Temp
(-)	(-)	(lb)	(DB %)	(-)	(in.)	(lb)	(kg/hr)	(min)	(°F)
2025-10-01 12:00	Load 1 - Start-up	6.99	21.2	4	16.00	3.72	3.89	26	438.8
2025-10-01 12:26	Load 2 - High-fire	12.06	24.3	4	16.00	8.34	2.40	85	473.3
2025-10-01 13:51	Load 3 - Maintenance-fire	8.28	20.5	2	16.00	5.88	1.47	98	351.0
2025-10-01 15:29	Load 4 - Low burn rate	19.02	21.7	6	16.00	15.84	1.28	303	311.9

	Average Tflue (°F)		438.8		473.3		351.0		311.9	
	Load 1 - Start-up (min)		26		85		98		303	
Air control position	Full open		Full open then fully closed (@50% fuel load)		Fully closed		Fully closed			
Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)		
0	2025-10-01 12:00	73.9	2025-10-01 12:26	554.8	2025-10-01 13:51	297.4	2025-10-01 15:29		307.5	
1	2025-10-01 12:01	132.2	2025-10-01 12:27	566.9	2025-10-01 13:52	293.6	2025-10-01 15:30		348.6	
2	2025-10-01 12:02	218.0	2025-10-01 12:28	573.7	2025-10-01 13:53	323.2	2025-10-01 15:31		422.4	
3	2025-10-01 12:03	370.6	2025-10-01 12:29	592.0	2025-10-01 13:54	383.8	2025-10-01 15:32		540.8	
4	2025-10-01 12:04	366.3	2025-10-01 12:30	597.7	2025-10-01 13:55	440.8	2025-10-01 15:33		746.1	
5	2025-10-01 12:05	362.6	2025-10-01 12:31	602.4	2025-10-01 13:56	481.1	2025-10-01 15:34		646.4	
6	2025-10-01 12:06	376.6	2025-10-01 12:32	607.3	2025-10-01 13:57	508.3	2025-10-01 15:35		616.9	
7	2025-10-01 12:07	384.3	2025-10-01 12:33	612.3	2025-10-01 13:58	471.6	2025-10-01 15:36		611.3	
8	2025-10-01 12:08	404.6	2025-10-01 12:34	618.8	2025-10-01 13:59	439.1	2025-10-01 15:37		616.8	
9	2025-10-01 12:09	419.7	2025-10-01 12:35	625.6	2025-10-01 14:00	418.0	2025-10-01 15:38		623.0	
10	2025-10-01 12:10	432.8	2025-10-01 12:36	634.7	2025-10-01 14:01	402.7	2025-10-01 15:39		628.5	
11	2025-10-01 12:11	443.6	2025-10-01 12:37	645.0	2025-10-01 14:02	391.4	2025-10-01 15:40		584.5	
12	2025-10-01 12:12	452.7	2025-10-01 12:38	647.6	2025-10-01 14:03	383.2	2025-10-01 15:41		550.5	
13	2025-10-01 12:13	463.6	2025-10-01 12:39	643.5	2025-10-01 14:04	376.9	2025-10-01 15:42		524.7	
14	2025-10-01 12:14	496.5	2025-10-01 12:40	635.4	2025-10-01 14:05	371.8	2025-10-01 15:43		504.3	
15	2025-10-01 12:15	520.1	2025-10-01 12:41	627.7	2025-10-01 14:06	368.6	2025-10-01 15:44		487.9	
16	2025-10-01 12:16	521.7	2025-10-01 12:42	622.5	2025-10-01 14:07	367.7	2025-10-01 15:45		474.7	
17	2025-10-01 12:17	526.9	2025-10-01 12:43	619.2	2025-10-01 14:08	366.2	2025-10-01 15:46		463.3	
18	2025-10-01 12:18	528.5	2025-10-01 12:44	616.6	2025-10-01 14:09	365.9	2025-10-01 15:47		454.1	
19	2025-10-01 12:19	529.0	2025-10-01 12:45	616.9	2025-10-01 14:10	365.4	2025-10-01 15:48		445.7	
20	2025-10-01 12:20	534.3	2025-10-01 12:46	617.4	2025-10-01 14:11	365.2	2025-10-01 15:49		439.4	
21	2025-10-01 12:21	542.4	2025-10-01 12:47	617.5	2025-10-01 14:12	365.2	2025-10-01 15:50		434.0	
22	2025-10-01 12:22	546.6	2025-10-01 12:48	614.3	2025-10-01 14:13	364.5	2025-10-01 15:51		429.7	
23	2025-10-01 12:23	547.1	2025-10-01 12:49	608.8	2025-10-01 14:14	364.2	2025-10-01 15:52		425.2	
24	2025-10-01 12:24	547.6	2025-10-01 12:50	605.5	2025-10-01 14:15	363.3	2025-10-01 15:53		421.8	
25	2025-10-01 12:25	550.5	2025-10-01 12:51	605.2	2025-10-01 14:16	362.4	2025-10-01 15:54		418.8	
26	2025-10-01 12:26	554.8	2025-10-01 12:52	602.5	2025-10-01 14:17	361.8	2025-10-01 15:55		415.4	
27			2025-10-01 12:53	602.8	2025-10-01 14:18	360.9	2025-10-01 15:56		413.0	
28			2025-10-01 12:54	601.7	2025-10-01 14:19	360.2	2025-10-01 15:57		410.7	
29			2025-10-01 12:55	598.8	2025-10-01 14:20	359.1	2025-10-01 15:58		408.7	
30			2025-10-01 12:56	595.6	2025-10-01 14:21	358.4	2025-10-01 15:59		406.9	
31			2025-10-01 12:57	590.9	2025-10-01 14:22	356.9	2025-10-01 16:00		404.9	
32			2025-10-01 12:58	576.6	2025-10-01 14:23	355.5	2025-10-01 16:01		403.6	
33			2025-10-01 12:59	540.7	2025-10-01 14:24	354.1	2025-10-01 16:02		402.2	
34			2025-10-01 13:00	513.6	2025-10-01 14:25	352.5	2025-10-01 16:03		400.8	
35			2025-10-01 13:01	491.7	2025-10-01 14:26	351.4	2025-10-01 16:04		400.0	
36			2025-10-01 13:02	472.9	2025-10-01 14:27	350.1	2025-10-01 16:05		398.2	
37			2025-10-01 13:03	458.0	2025-10-01 14:28	348.8	2025-10-01 16:06		397.8	
38			2025-10-01 13:04	446.1	2025-10-01 14:29	348.1	2025-10-01 16:07		397.1	
39			2025-10-01 13:05	436.9	2025-10-01 14:30	346.4	2025-10-01 16:08		396.6	
40			2025-10-01 13:06	429.9	2025-10-01 14:31	345.8	2025-10-01 16:09		395.9	
41			2025-10-01 13:07	424.2	2025-10-01 14:32	344.7	2025-10-01 16:10		395.2	
42			2025-10-01 13:08	419.6	2025-10-01 14:33	343.9	2025-10-01 16:11		394.6	
43			2025-10-01 13:09	416.1	2025-10-01 14:34	343.3	2025-10-01 16:12		393.9	
44			2025-10-01 13:10	412.9	2025-10-01 14:35	342.7	2025-10-01 16:13		393.0	
45			2025-10-01 13:11	410.8	2025-10-01 14:36	342.5	2025-10-01 16:14		391.8	
46			2025-10-01 13:12	408.7	2025-10-01 14:37	341.9	2025-10-01 16:15		390.5	
47			2025-10-01 13:13	406.9	2025-10-01 14:38	341.3	2025-10-01 16:16		389.0	
48			2025-10-01 13:14	405.9	2025-10-01 14:39	340.9	2025-10-01 16:17		387.7	
49			2025-10-01 13:15	405.4	2025-10-01 14:40	340.2	2025-10-01 16:18		386.7	
50			2025-10-01 13:16	405.1	2025-10-01 14:41	339.4	2025-10-01 16:19		385.7	
51			2025-10-01 13:17	405.3	2025-10-01 14:42	339.5	2025-10-01 16:20		384.5	
52			2025-10-01 13:18	404.9	2025-10-01 14:43	339.4	2025-10-01 16:21		384.2	
53			2025-10-01 13:19	404.7	2025-10-01 14:44	339.5	2025-10-01 16:22		382.7	
54			2025-10-01 13:20	403.6	2025-10-01 14:45	339.6	2025-10-01 16:23		381.2	
55			2025-10-01 13:21	403.1	2025-10-01 14:46	339.8	2025-10-01 16:24		380.0	
56			2025-10-01 13:22	401.8	2025-10-01 14:47	339.9	2025-10-01 16:25		378.2	
57			2025-10-01 13:23	401.7	2025-10-01 14:48	340.9	2025-10-01 16:26		377.0	
58			2025-10-01 13:24	401.8	2025-10-01 14:49	341.4	2025-10-01 16:27		375.6	
59			2025-10-01 13:25	401.7	2025-10-01 14:50	341.8	2025-10-01 16:28		375.5	
60			2025-10-01 13:26	400.7	2025-10-01 14:51	342.5	2025-10-01 16:29		375.1	
61			2025-10-01 13:27	398.1	2025-10-01 14:52	342.9	2025-10-01 16:30		374.7	
62			2025-10-01 13:28	392.7	2025-10-01 14:53	343.4	2025-10-01 16:31		375.1	
63			2025-10-01 13:29	386.7	2025-10-01 14:54	343.3	2025-10-01 16:32		374.6	
64			2025-10-01 13:30	382.0	2025-10-01 14:55	344.0	2025-10-01 16:33		374.2	
65			2025-10-01 13:31	378.2	2025-10-01 14:56	344.4	2025-10-01 16:34		373.6	
66			2025-10-01 13:32	375.1	2025-10-01 14:57	344.5	2025-10-01 16:35		373.4	
67			2025-10-01 13:33	372.7	2025-10-01 14:58	344.6	2025-10-01 16:36		373.5	
68			2025-10-01 13:34	371.0	2025-10-01 14:59	343.9	2025-10-01 16:37		373.8	
69			2025-10-01 13:35	369.5	2025-10-01 15:00	342.5	2025-10-01 16:38		374.4	
70			2025-10-01 13:36	367.3	2025-10-01 15:01	341.2	2025-10-01 16:39		374.5	
71			2025-10-01 13:37	364.2	2025-10-01 15:02	340.3	2025-10-01 16:40		374.7	
72			2025-10-01 13:38	359.2	2025-10-01 15:03	339.1	2025-10-01 16:41		375.5	
73			2025-10-01 13:39	353.8	2025-10-01 15:04	338.4	2025-10-01 16:42		376.9	
74			2025-10-01 13:40	347.8	2025-10-01 15:05	337.2	2025-10-01 16:43		378.8	
75			2025-10-01 13:41	341.0	2025-10-01 15:06	335.8	2025-10-01 16:44		380.1	
76			2025-10-01 13:42	334.4	2025-10-01 15:07	334.8	2025-10-01 16:45		381.6	
77			2025-10-01 13:43	328.4	2025-10-01 15:08	333.3	2025-10-01 16:46		383.4	
78			2025-10-01 13:44	321.8	2025-10-01 15:09	332.3	2025-10-01 16:47		384.4	
79			2025-10-01 13:45	317.2	2025-10-01 15:10	331.4	2025-10-01 16:48		385.7	
80			2025-10-01 13:46	310.9	2025-10-01 15:11	330.3	2025-10-01 16:49		387.4	
81			2025-10-01 13:47	305.4	2025-10-01 15:12	329.9	2025-10-01 16:50		389.3	
82			2025-10-01 13:48	301.6	2025-10-01 15:13	328.9	2025-10-01 16:51		391.2	
83			2025-10-01 13:49	298.0	2025-10-01 15:14	328.1	2025-10-01 16:52		394.2	
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Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
94					2025-10-01 15:25	326.2	2025-10-01 17:03	419.6
95					2025-10-01 15:26	323.6	2025-10-01 17:04	418.6
96					2025-10-01 15:27	318.9	2025-10-01 17:05	418.6
97					2025-10-01 15:28	313.2	2025-10-01 17:06	417.5
98					2025-10-01 15:29	307.5	2025-10-01 17:07	417.3
99							2025-10-01 17:08	419.0
100							2025-10-01 17:09	420.1
101							2025-10-01 17:10	420.5
102							2025-10-01 17:11	420.9
103							2025-10-01 17:12	420.6
104							2025-10-01 17:13	419.8
105							2025-10-01 17:14	418.7
106							2025-10-01 17:15	416.8
107							2025-10-01 17:16	415.1
108							2025-10-01 17:17	413.9
109							2025-10-01 17:18	412.8
110							2025-10-01 17:19	411.7
111							2025-10-01 17:20	411.8
112							2025-10-01 17:21	410.9
113							2025-10-01 17:22	411.0
114							2025-10-01 17:23	410.4
115							2025-10-01 17:24	410.9
116							2025-10-01 17:25	411.5
117							2025-10-01 17:26	411.7
118							2025-10-01 17:27	412.2
119							2025-10-01 17:28	413.3
120							2025-10-01 17:29	414.6
121							2025-10-01 17:30	415.5
122							2025-10-01 17:31	415.7
123							2025-10-01 17:32	415.3
124							2025-10-01 17:33	412.9
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126							2025-10-01 17:35	406.2
127							2025-10-01 17:36	402.4
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129							2025-10-01 17:38	395.5
130							2025-10-01 17:39	391.8
131							2025-10-01 17:40	387.9
132							2025-10-01 17:41	385.0
133							2025-10-01 17:42	381.5
134							2025-10-01 17:43	378.2
135							2025-10-01 17:44	374.9
136							2025-10-01 17:45	372.0
137							2025-10-01 17:46	369.4
138							2025-10-01 17:47	367.5
139							2025-10-01 17:48	364.7
140							2025-10-01 17:49	362.3
141							2025-10-01 17:50	359.8
142							2025-10-01 17:51	355.5
143							2025-10-01 17:52	349.3
144							2025-10-01 17:53	342.1
145							2025-10-01 17:54	336.2
146							2025-10-01 17:55	330.9
147							2025-10-01 17:56	326.0
148							2025-10-01 17:57	321.3
149							2025-10-01 17:58	316.7
150							2025-10-01 17:59	312.4
151							2025-10-01 18:00	305.9
152							2025-10-01 18:01	299.4
153							2025-10-01 18:02	293.2
154							2025-10-01 18:03	287.4
155							2025-10-01 18:04	282.4
156							2025-10-01 18:05	277.9
157							2025-10-01 18:06	273.6
158							2025-10-01 18:07	269.7
159							2025-10-01 18:08	266.0
160							2025-10-01 18:09	262.8
161							2025-10-01 18:10	259.7
162							2025-10-01 18:11	257.0
163							2025-10-01 18:12	254.4
164							2025-10-01 18:13	252.2
165							2025-10-01 18:14	250.0
166							2025-10-01 18:15	247.5
167							2025-10-01 18:16	245.2
168							2025-10-01 18:17	243.1
169							2025-10-01 18:18	241.0
170							2025-10-01 18:19	239.1
171							2025-10-01 18:20	237.1
172							2025-10-01 18:21	235.4
173							2025-10-01 18:22	233.7
174							2025-10-01 18:23	231.9
175							2025-10-01 18:24	230.0
176							2025-10-01 18:25	228.4
177							2025-10-01 18:26	226.9
178							2025-10-01 18:27	225.5
179							2025-10-01 18:28	224.0
180							2025-10-01 18:29	222.8
181							2025-10-01 18:30	221.3
182							2025-10-01 18:31	219.9
183							2025-10-01 18:32	218.5
184							2025-10-01 18:33	217.4
185							2025-10-01 18:34	216.7
186							2025-10-01 18:35	215.8
187							2025-10-01 18:36	214.7
188							2025-10-01 18:37	213.5
189							2025-10-01 18:38	212.6
190							2025-10-01 18:39	211.9
191							2025-10-01 18:40	211.2
192							2025-10-01 18:41	210.3
193							2025-10-01 18:42	209.3
194							2025-10-01 18:43	208.5
195							2025-10-01 18:44	207.9
196							2025-10-01 18:45	206.9
197							2025-10-01 18:46	206.6
198							2025-10-01 18:47	206.0
199							2025-10-01 18:48	205.4

Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
200							2025-10-01 18:49	204.6
201							2025-10-01 18:50	204.1
202							2025-10-01 18:51	203.8
203							2025-10-01 18:52	203.6
204							2025-10-01 18:53	203.3
205							2025-10-01 18:54	203.1
206							2025-10-01 18:55	202.6
207							2025-10-01 18:56	202.6
208							2025-10-01 18:57	202.1
209							2025-10-01 18:58	201.9
210							2025-10-01 18:59	201.8
211							2025-10-01 19:00	201.6
212							2025-10-01 19:01	201.3
213							2025-10-01 19:02	201.3
214							2025-10-01 19:03	201.4
215							2025-10-01 19:04	201.1
216							2025-10-01 19:05	200.7
217							2025-10-01 19:06	200.5
218							2025-10-01 19:07	200.3
219							2025-10-01 19:08	200.3
220							2025-10-01 19:09	199.9
221							2025-10-01 19:10	199.7
222							2025-10-01 19:11	199.8
223							2025-10-01 19:12	199.6
224							2025-10-01 19:13	199.4
225							2025-10-01 19:14	199.3
226							2025-10-01 19:15	199.4
227							2025-10-01 19:16	199.5
228							2025-10-01 19:17	199.2
229							2025-10-01 19:18	199.4
230							2025-10-01 19:19	199.5
231							2025-10-01 19:20	199.8
232							2025-10-01 19:21	200.1
233							2025-10-01 19:22	200.6
234							2025-10-01 19:23	200.5
235							2025-10-01 19:24	201.0
236							2025-10-01 19:25	201.0
237							2025-10-01 19:26	200.9
238							2025-10-01 19:27	201.3
239							2025-10-01 19:28	201.9
240							2025-10-01 19:29	201.7
241							2025-10-01 19:30	201.9
242							2025-10-01 19:31	201.9
243							2025-10-01 19:32	202.2
244							2025-10-01 19:33	202.2
245							2025-10-01 19:34	202.5
246							2025-10-01 19:35	202.8
247							2025-10-01 19:36	203.5
248							2025-10-01 19:37	204.1
249							2025-10-01 19:38	204.5
250							2025-10-01 19:39	204.9
251							2025-10-01 19:40	205.0
252							2025-10-01 19:41	205.3
253							2025-10-01 19:42	205.4
254							2025-10-01 19:43	205.5
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256							2025-10-01 19:45	205.6
257							2025-10-01 19:46	205.2
258							2025-10-01 19:47	205.7
259							2025-10-01 19:48	205.8
260							2025-10-01 19:49	205.7
261							2025-10-01 19:50	205.9
262							2025-10-01 19:51	205.7
263							2025-10-01 19:52	205.6
264							2025-10-01 19:53	205.5
265							2025-10-01 19:54	205.4
266							2025-10-01 19:55	205.0
267							2025-10-01 19:56	204.4
268							2025-10-01 19:57	204.2
269							2025-10-01 19:58	203.8
270							2025-10-01 19:59	203.3
271							2025-10-01 20:00	203.1
272							2025-10-01 20:01	203.0
273							2025-10-01 20:02	202.7
274							2025-10-01 20:03	202.8
275							2025-10-01 20:04	203.0
276							2025-10-01 20:05	203.0
277							2025-10-01 20:06	203.0
278							2025-10-01 20:07	202.7
279							2025-10-01 20:08	202.8
280							2025-10-01 20:09	202.8
281							2025-10-01 20:10	202.8
282							2025-10-01 20:11	202.8
283							2025-10-01 20:12	202.6
284							2025-10-01 20:13	202.8
285							2025-10-01 20:14	202.7
286							2025-10-01 20:15	202.2
287							2025-10-01 20:16	202.3
288							2025-10-01 20:17	202.5
289							2025-10-01 20:18	202.4
290							2025-10-01 20:19	202.1
291							2025-10-01 20:20	202.3
292							2025-10-01 20:21	202.2
293							2025-10-01 20:22	202.3
294							2025-10-01 20:23	202.3
295							2025-10-01 20:24	202.2
296							2025-10-01 20:25	202.3
297							2025-10-01 20:26	202.2
298							2025-10-01 20:27	202.4
299							2025-10-01 20:28	202.3
300							2025-10-01 20:29	202.4
301							2025-10-01 20:30	202.5
302							2025-10-01 20:31	202.4
303							2025-10-01 20:32	202.5

1.4R Series Pre-burn Data

2025-09-30

Total time (h)

7.62

Wood Specie: Maple									
Load time	Load type	Fuel added	Moisture	Piece amount	Length of fuel	Fuel Burnt (Dry)	Burn Rate (Dry)	Time	Flue Temp
(-)	(-)	(lb)	(DB %)	(-)	(in.)	(lb)	(kg/hr)	(min)	(°F)
2025-09-30 10:23	Load 1 - Start-up	6.95	20.6	4	16.00	3.76	4.09	25	470.2
2025-09-30 10:48	Load 2 - High-fire	11.37	23.1	4	16.00	8.01	2.58	76	507.9
2025-09-30 12:04	Load 3 - Maintenance-fire	8.52	22.0	2	16.00	5.99	1.56	94	379.9
2025-09-30 13:38	Load 4 - Low burn rate	19.78	22.0	6	16.00	16.43	1.54	262	334.5

Average Tflue (°F)		470.2		507.9		379.9		334.5
Load 1 - Start-up (min)		25	High-fire (min)	76	Maintenance-fire (min)	94	Low burn rate (min)	262
Air control position	Full open	Full open then fully closed (@50% fuel load)		Fully closed		Fully closed		
Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
0	2025-09-30 10:23	74.8	2025-09-30 10:48	542.0	2025-09-30 12:04	342.2	2025-09-30 13:38	314.7
1	2025-09-30 10:24	128.5	2025-09-30 10:49	536.7	2025-09-30 12:05	354.8	2025-09-30 13:39	335.8
2	2025-09-30 10:25	221.5	2025-09-30 10:50	531.6	2025-09-30 12:06	411.7	2025-09-30 13:40	397.3
3	2025-09-30 10:26	341.0	2025-09-30 10:51	554.0	2025-09-30 12:07	472.9	2025-09-30 13:41	562.6
4	2025-09-30 10:27	435.6	2025-09-30 10:52	569.3	2025-09-30 12:08	516.2	2025-09-30 13:42	670.1
5	2025-09-30 10:28	468.2	2025-09-30 10:53	582.1	2025-09-30 12:09	546.4	2025-09-30 13:43	643.3
6	2025-09-30 10:29	513.2	2025-09-30 10:54	595.3	2025-09-30 12:10	512.0	2025-09-30 13:44	636.6
7	2025-09-30 10:30	533.5	2025-09-30 10:55	605.0	2025-09-30 12:11	485.2	2025-09-30 13:45	639.4
8	2025-09-30 10:31	531.0	2025-09-30 10:56	613.5	2025-09-30 12:12	468.7	2025-09-30 13:46	644.5
9	2025-09-30 10:32	527.0	2025-09-30 10:57	621.2	2025-09-30 12:13	456.9	2025-09-30 13:47	647.6
10	2025-09-30 10:33	528.0	2025-09-30 10:58	628.9	2025-09-30 12:14	448.3	2025-09-30 13:48	614.8
11	2025-09-30 10:34	522.5	2025-09-30 10:59	634.9	2025-09-30 12:15	442.2	2025-09-30 13:49	574.1
12	2025-09-30 10:35	521.3	2025-09-30 11:00	641.4	2025-09-30 12:16	438.1	2025-09-30 13:50	542.6
13	2025-09-30 10:36	522.6	2025-09-30 11:01	649.7	2025-09-30 12:17	435.9	2025-09-30 13:51	518.6
14	2025-09-30 10:37	520.2	2025-09-30 11:02	661.6	2025-09-30 12:18	432.8	2025-09-30 13:52	499.4
15	2025-09-30 10:38	518.3	2025-09-30 11:03	677.7	2025-09-30 12:19	429.2	2025-09-30 13:53	483.7
16	2025-09-30 10:39	518.4	2025-09-30 11:04	690.7	2025-09-30 12:20	426.2	2025-09-30 13:54	470.7
17	2025-09-30 10:40	519.2	2025-09-30 11:05	694.5	2025-09-30 12:21	424.3	2025-09-30 13:55	461.3
18	2025-09-30 10:41	522.0	2025-09-30 11:06	688.8	2025-09-30 12:22	423.4	2025-09-30 13:56	453.4
19	2025-09-30 10:42	525.9	2025-09-30 11:07	685.3	2025-09-30 12:23	421.1	2025-09-30 13:57	446.2
20	2025-09-30 10:43	530.3	2025-09-30 11:08	684.6	2025-09-30 12:24	419.2	2025-09-30 13:58	441.3
21	2025-09-30 10:44	535.6	2025-09-30 11:09	686.9	2025-09-30 12:25	416.7	2025-09-30 13:59	437.1
22	2025-09-30 10:45	539.6	2025-09-30 11:10	692.2	2025-09-30 12:26	415.2	2025-09-30 14:00	433.7
23	2025-09-30 10:46	541.8	2025-09-30 11:11	693.9	2025-09-30 12:27	413.8	2025-09-30 14:01	431.0
24	2025-09-30 10:47	541.9	2025-09-30 11:12	691.5	2025-09-30 12:28	412.1	2025-09-30 14:02	428.3
25	2025-09-30 10:48	542.0	2025-09-30 11:13	687.5	2025-09-30 12:29	409.1	2025-09-30 14:03	425.7
26			2025-09-30 11:14	682.7	2025-09-30 12:30	406.4	2025-09-30 14:04	423.0
27			2025-09-30 11:15	676.8	2025-09-30 12:31	403.2	2025-09-30 14:05	420.8
28			2025-09-30 11:16	672.8	2025-09-30 12:32	400.6	2025-09-30 14:06	419.1
29			2025-09-30 11:17	631.4	2025-09-30 12:33	398.5	2025-09-30 14:07	417.0
30			2025-09-30 11:18	590.7	2025-09-30 12:34	396.1	2025-09-30 14:08	413.7
31			2025-09-30 11:19	559.1	2025-09-30 12:35	393.3	2025-09-30 14:09	411.4
32			2025-09-30 11:20	533.3	2025-09-30 12:36	392.1	2025-09-30 14:10	408.8
33			2025-09-30 11:21	512.6	2025-09-30 12:37	390.5	2025-09-30 14:11	406.8
34			2025-09-30 11:22	497.0	2025-09-30 12:38	388.7	2025-09-30 14:12	404.6
35			2025-09-30 11:23	483.8	2025-09-30 12:39	386.7	2025-09-30 14:13	402.6
36			2025-09-30 11:24	474.7	2025-09-30 12:40	385.0	2025-09-30 14:14	400.0
37			2025-09-30 11:25	467.5	2025-09-30 12:41	382.9	2025-09-30 14:15	398.6
38			2025-09-30 11:26	462.5	2025-09-30 12:42	381.0	2025-09-30 14:16	397.4
39			2025-09-30 11:27	457.7	2025-09-30 12:43	379.1	2025-09-30 14:17	395.9
40			2025-09-30 11:28	454.2	2025-09-30 12:44	377.1	2025-09-30 14:18	394.6
41			2025-09-30 11:29	451.0	2025-09-30 12:45	374.9	2025-09-30 14:19	393.8
42			2025-09-30 11:30	448.1	2025-09-30 12:46	373.3	2025-09-30 14:20	393.6
43			2025-09-30 11:31	444.1	2025-09-30 12:47	371.6	2025-09-30 14:21	393.2
44			2025-09-30 11:32	440.8	2025-09-30 12:48	370.2	2025-09-30 14:22	392.9
45			2025-09-30 11:33	438.0	2025-09-30 12:49	368.8	2025-09-30 14:23	391.3
46			2025-09-30 11:34	436.6	2025-09-30 12:50	366.7	2025-09-30 14:24	390.5
47			2025-09-30 11:35	436.0	2025-09-30 12:51	365.2	2025-09-30 14:25	389.5
48			2025-09-30 11:36	436.0	2025-09-30 12:52	364.1	2025-09-30 14:26	388.9
49			2025-09-30 11:37	434.7	2025-09-30 12:53	362.8	2025-09-30 14:27	388.2
50			2025-09-30 11:38	433.5	2025-09-30 12:54	361.8	2025-09-30 14:28	387.7
51			2025-09-30 11:39	431.1	2025-09-30 12:55	360.4	2025-09-30 14:29	387.3
52			2025-09-30 11:40	427.5	2025-09-30 12:56	359.7	2025-09-30 14:30	386.9
53			2025-09-30 11:41	423.0	2025-09-30 12:57	359.0	2025-09-30 14:31	386.1
54			2025-09-30 11:42	419.0	2025-09-30 12:58	358.5	2025-09-30 14:32	385.8
55			2025-09-30 11:43	414.9	2025-09-30 12:59	358.0	2025-09-30 14:33	385.9
56			2025-09-30 11:44	412.0	2025-09-30 13:00	357.0	2025-09-30 14:34	385.4
57			2025-09-30 11:45	409.4	2025-09-30 13:01	356.6	2025-09-30 14:35	384.6
58			2025-09-30 11:46	407.6	2025-09-30 13:02	355.9	2025-09-30 14:36	385.1
59			2025-09-30 11:47	404.8	2025-09-30 13:03	355.7	2025-09-30 14:37	384.9
60			2025-09-30 11:48	400.1	2025-09-30 13:04	355.3	2025-09-30 14:38	384.4
61			2025-09-30 11:49	394.2	2025-09-30 13:05	355.1	2025-09-30 14:39	383.8
62			2025-09-30 11:50	389.0	2025-09-30 13:06	354.6	2025-09-30 14:40	383.3
63			2025-09-30 11:51	384.9	2025-09-30 13:07	353.4	2025-09-30 14:41	382.4
64			2025-09-30 11:52	381.0	2025-09-30 13:08	352.0	2025-09-30 14:42	381.6
65			2025-09-30 11:53	377.6	2025-09-30 13:09	351.0	2025-09-30 14:43	381.6
66			2025-09-30 11:54	375.4	2025-09-30 13:10	349.6	2025-09-30 14:44	382.1
67			2025-09-30 11:55	372.8	2025-09-30 13:11	348.1	2025-09-30 14:45	382.6
68			2025-09-30 11:56	368.4	2025-09-30 13:12	347.1	2025-09-30 14:46	382.5
69			2025-09-30 11:57	363.5	2025-09-30 13:13	346.5	2025-09-30 14:47	382.1
70			2025-09-30 11:58	359.3	2025-09-30 13:14	345.7	2025-09-30 14:48	382.1
71			2025-09-30 11:59	356.0	2025-09-30 13:15	344.9	2025-09-30 14:49	382.6
72			2025-09-30 12:00	352.7	2025-09-30 13:16	344.6	2025-09-30 14:50	382.5
73			2025-09-30 12:01	349.8	2025-09-30 13:17	344.8	2025-09-30 14:51	382.6
74			2025-09-30 12:02	347.3	2025-09-30 13:18	344.8	2025-09-30 14:52	382.4
75			2025-09-30 12:03	344.8	2025-09-30 13:19	345.1	2025-09-30 14:53	382.8
76			2025-09-30 12:04	342.2	2025-09-30 13:20	345.1	2025-09-30 14:54	383.2
77					2025-09-30 13:21	345.4	2025-09-30 14:55	383.7
78					2025-09-30 13:22	345.3	2025-09-30 14:56	384.7
79					2025-09-30 13:23	345.5	2025-09-30 14:57	385.1
80					2025-09-30 13:24	345.6	2025-09-30 14:58	384.9
81					2025-09-30 13:25	345.7	2025-09-30 14:59	385.2
82					2025-09-30 13:26	346.3	2025-09-30 15:00	385.7
83					2025-09-30 13:27	346.3	2025-09-30 15:01	386.1
84					2025-09-30 13:28	345.2	2025-09-30 15:02	386.9
85					2025-09-30 13:29	340.8	2025-09-30 15:03	386.9
86					2025-09-30 13:30	336.7	2025-09-30 15:04	387.0
87					2025-09-30 13:31	333.0	2025-09-30 15:05	387.5
88					2025-09-30 13:32	329.6	2025-09-30 15:06	387.2
89					2025-09-30 13:33	326.5	2025-09-30 15:07	387.7
90					2025-09-30 13:34	323.2	2025-09-30 15:08	387.8
91					2025-09-30 13:35	320.8	2025-09-30 15:09	387.6
92					2025-09-30 13:36	318.2	2025-09-30 15:10	388.0
93					2025-09-30 13:37	315.3	2025-09-30 15:11	388.4

Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
94					2025-09-30 13:38	314.7	2025-09-30 15:12	388.1
95							2025-09-30 15:13	387.7
96							2025-09-30 15:14	387.8
97							2025-09-30 15:15	387.7
98							2025-09-30 15:16	388.6
99							2025-09-30 15:17	388.5
100							2025-09-30 15:18	389.0
101							2025-09-30 15:19	389.1
102							2025-09-30 15:20	390.0
103							2025-09-30 15:21	390.8
104							2025-09-30 15:22	391.6
105							2025-09-30 15:23	392.1
106							2025-09-30 15:24	392.1
107							2025-09-30 15:25	392.3
108							2025-09-30 15:26	392.7
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111							2025-09-30 15:29	392.4
112							2025-09-30 15:30	391.2
113							2025-09-30 15:31	390.4
114							2025-09-30 15:32	389.9
115							2025-09-30 15:33	388.9
116							2025-09-30 15:34	387.9
117							2025-09-30 15:35	386.1
118							2025-09-30 15:36	384.5
119							2025-09-30 15:37	383.1
120							2025-09-30 15:38	381.8
121							2025-09-30 15:39	381.5
122							2025-09-30 15:40	379.8
123							2025-09-30 15:41	378.6
124							2025-09-30 15:42	377.5
125							2025-09-30 15:43	376.6
126							2025-09-30 15:44	375.3
127							2025-09-30 15:45	374.4
128							2025-09-30 15:46	373.1
129							2025-09-30 15:47	372.8
130							2025-09-30 15:48	372.9
131							2025-09-30 15:49	372.8
132							2025-09-30 15:50	372.9
133							2025-09-30 15:51	371.3
134							2025-09-30 15:52	369.5
135							2025-09-30 15:53	367.9
136							2025-09-30 15:54	366.7
137							2025-09-30 15:55	365.5
138							2025-09-30 15:56	363.8
139							2025-09-30 15:57	362.3
140							2025-09-30 15:58	360.5
141							2025-09-30 15:59	358.2
142							2025-09-30 16:00	356.2
143							2025-09-30 16:01	353.8
144							2025-09-30 16:02	351.3
145							2025-09-30 16:03	349.4
146							2025-09-30 16:04	345.6
147							2025-09-30 16:05	341.3
148							2025-09-30 16:06	337.4
149							2025-09-30 16:07	333.1
150							2025-09-30 16:08	327.7
151							2025-09-30 16:09	322.6
152							2025-09-30 16:10	317.6
153							2025-09-30 16:11	312.3
154							2025-09-30 16:12	306.9
155							2025-09-30 16:13	301.7
156							2025-09-30 16:14	296.8
157							2025-09-30 16:15	292.5
158							2025-09-30 16:16	288.7
159							2025-09-30 16:17	284.9
160							2025-09-30 16:18	281.4
161							2025-09-30 16:19	278.6
162							2025-09-30 16:20	275.6
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164							2025-09-30 16:22	270.3
165							2025-09-30 16:23	268.0
166							2025-09-30 16:24	265.9
167							2025-09-30 16:25	264.1
168							2025-09-30 16:26	262.5
169							2025-09-30 16:27	260.5
170							2025-09-30 16:28	259.0
171							2025-09-30 16:29	257.2
172							2025-09-30 16:30	255.6
173							2025-09-30 16:31	254.0
174							2025-09-30 16:32	252.7
175							2025-09-30 16:33	251.3
176							2025-09-30 16:34	250.0
177							2025-09-30 16:35	248.8
178							2025-09-30 16:36	247.6
179							2025-09-30 16:37	246.2
180							2025-09-30 16:38	245.0
181							2025-09-30 16:39	243.7
182							2025-09-30 16:40	242.7
183							2025-09-30 16:41	241.5
184							2025-09-30 16:42	240.6
185							2025-09-30 16:43	239.6
186							2025-09-30 16:44	238.7
187							2025-09-30 16:45	237.8
188							2025-09-30 16:46	236.7
189							2025-09-30 16:47	236.1
190							2025-09-30 16:48	235.6
191							2025-09-30 16:49	235.2
192							2025-09-30 16:50	234.5
193							2025-09-30 16:51	233.8
194							2025-09-30 16:52	233.2
195							2025-09-30 16:53	232.6
196							2025-09-30 16:54	231.8
197							2025-09-30 16:55	231.3
198							2025-09-30 16:56	230.7
199							2025-09-30 16:57	230.2

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201							2025-09-30 16:59	228.6
202							2025-09-30 17:00	228.1
203							2025-09-30 17:01	227.8
204							2025-09-30 17:02	227.3
205							2025-09-30 17:03	226.9
206							2025-09-30 17:04	226.5
207							2025-09-30 17:05	226.3
208							2025-09-30 17:06	225.9
209							2025-09-30 17:07	225.7
210							2025-09-30 17:08	225.5
211							2025-09-30 17:09	225.5
212							2025-09-30 17:10	225.3
213							2025-09-30 17:11	225.1
214							2025-09-30 17:12	225.1
215							2025-09-30 17:13	225.0
216							2025-09-30 17:14	224.8
217							2025-09-30 17:15	224.9
218							2025-09-30 17:16	224.7
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220							2025-09-30 17:18	224.6
221							2025-09-30 17:19	224.5
222							2025-09-30 17:20	224.5
223							2025-09-30 17:21	224.2
224							2025-09-30 17:22	224.1
225							2025-09-30 17:23	224.1
226							2025-09-30 17:24	224.2
227							2025-09-30 17:25	223.9
228							2025-09-30 17:26	223.8
229							2025-09-30 17:27	223.3
230							2025-09-30 17:28	223.4
231							2025-09-30 17:29	222.9
232							2025-09-30 17:30	222.6
233							2025-09-30 17:31	222.2
234							2025-09-30 17:32	222.2
235							2025-09-30 17:33	222.0
236							2025-09-30 17:34	221.8
237							2025-09-30 17:35	221.7
238							2025-09-30 17:36	221.4
239							2025-09-30 17:37	221.2
240							2025-09-30 17:38	220.9
241							2025-09-30 17:39	221.6
242							2025-09-30 17:40	222.9
243							2025-09-30 17:41	224.2
244							2025-09-30 17:42	225.1
245							2025-09-30 17:43	225.7
246							2025-09-30 17:44	226.0
247							2025-09-30 17:45	226.4
248							2025-09-30 17:46	226.3
249							2025-09-30 17:47	226.4
250							2025-09-30 17:48	226.7
251							2025-09-30 17:49	226.8
252							2025-09-30 17:50	227.1
253							2025-09-30 17:51	226.9
254							2025-09-30 17:52	226.9
255							2025-09-30 17:53	226.7
256							2025-09-30 17:54	226.4
257							2025-09-30 17:55	226.2
258							2025-09-30 17:56	226.2
259							2025-09-30 17:57	225.8
260							2025-09-30 17:58	225.6
261							2025-09-30 17:59	225.4
262							2025-09-30 18:00	225.3

1.4R Series Pre-burn Data

2025-09-29

Total time (h)

8.33

Wood Specie: Maple									
Load time	Load type	Fuel added	Moisture	Piece amount	Length of fuel	Fuel Burnt (Dry)	Burn Rate (Dry)	Time	Flue Temp
(-)	(-)	(lb)	(DB %)	(-)	(in.)	(lb)	(kg/hr)	(min)	(°F)
2025-09-29 11:23	Load 1 - Start-up	6.88	18.5	4	16.00	3.70	4.58	22	484.6
2025-09-29 11:45	Load 2 - High-fire	12.19	21.8	4	16.00	8.64	2.46	86	484.5
2025-09-29 13:11	Load 3 - Maintenance-fire	8.63	20.4	2	16.00	6.13	1.71	88	389.5
2025-09-29 14:39	Load 4 - Low burn rate	19.87	21.3	6	16.00	16.59	1.34	304	333.6

Average Tflue (°F)		484.6		484.5		389.5		333.6
Load 1 - Start-up (min)		22	High-fire (min)	86	Maintenance-fire (min)	88	Low burn rate (min)	304
Air control position	Full open		Full open then fully closed (@50% fuel load)		Fully closed		Fully closed	
Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
0	2025-09-29 11:23	72.1	2025-09-29 11:45	552.6	2025-09-29 13:11	354.9	2025-09-29 14:39	328.8
1	2025-09-29 11:24	135.4	2025-09-29 11:46	551.6	2025-09-29 13:12	385.4	2025-09-29 14:40	349.5
2	2025-09-29 11:25	360.5	2025-09-29 11:47	563.6	2025-09-29 13:13	472.1	2025-09-29 14:41	365.6
3	2025-09-29 11:26	404.0	2025-09-29 11:48	589.1	2025-09-29 13:14	503.7	2025-09-29 14:42	516.4
4	2025-09-29 11:27	466.9	2025-09-29 11:49	605.0	2025-09-29 13:15	474.1	2025-09-29 14:43	662.8
5	2025-09-29 11:28	509.3	2025-09-29 11:50	606.8	2025-09-29 13:16	458.6	2025-09-29 14:44	645.1
6	2025-09-29 11:29	539.0	2025-09-29 11:51	606.6	2025-09-29 13:17	449.2	2025-09-29 14:45	639.7
7	2025-09-29 11:30	556.8	2025-09-29 11:52	610.3	2025-09-29 13:18	443.7	2025-09-29 14:46	650.4
8	2025-09-29 11:31	562.1	2025-09-29 11:53	618.2	2025-09-29 13:19	439.7	2025-09-29 14:47	659.2
9	2025-09-29 11:32	561.0	2025-09-29 11:54	629.8	2025-09-29 13:20	436.3	2025-09-29 14:48	664.7
10	2025-09-29 11:33	549.0	2025-09-29 11:55	646.6	2025-09-29 13:21	433.5	2025-09-29 14:49	669.8
11	2025-09-29 11:34	536.6	2025-09-29 11:56	665.4	2025-09-29 13:22	432.4	2025-09-29 14:50	652.7
12	2025-09-29 11:35	528.0	2025-09-29 11:57	680.7	2025-09-29 13:23	432.0	2025-09-29 14:51	608.7
13	2025-09-29 11:36	524.6	2025-09-29 11:58	691.1	2025-09-29 13:24	432.9	2025-09-29 14:52	571.9
14	2025-09-29 11:37	522.5	2025-09-29 11:59	700.5	2025-09-29 13:25	432.1	2025-09-29 14:53	544.8
15	2025-09-29 11:38	524.6	2025-09-29 12:00	705.0	2025-09-29 13:26	431.5	2025-09-29 14:54	522.2
16	2025-09-29 11:39	528.7	2025-09-29 12:01	702.8	2025-09-29 13:27	431.1	2025-09-29 14:55	504.4
17	2025-09-29 11:40	533.7	2025-09-29 12:02	698.0	2025-09-29 13:28	430.8	2025-09-29 14:56	490.3
18	2025-09-29 11:41	538.5	2025-09-29 12:03	688.4	2025-09-29 13:29	429.7	2025-09-29 14:57	477.5
19	2025-09-29 11:42	543.8	2025-09-29 12:04	675.1	2025-09-29 13:30	428.1	2025-09-29 14:58	467.9
20	2025-09-29 11:43	546.6	2025-09-29 12:05	663.5	2025-09-29 13:31	425.7	2025-09-29 14:59	459.5
21	2025-09-29 11:44	549.5	2025-09-29 12:06	653.7	2025-09-29 13:32	422.4	2025-09-29 15:00	453.0
22	2025-09-29 11:45	552.6	2025-09-29 12:07	643.5	2025-09-29 13:33	419.5	2025-09-29 15:01	446.8
23			2025-09-29 12:08	635.5	2025-09-29 13:34	416.9	2025-09-29 15:02	442.9
24			2025-09-29 12:09	628.2	2025-09-29 13:35	414.5	2025-09-29 15:03	440.2
25			2025-09-29 12:10	622.0	2025-09-29 13:36	413.4	2025-09-29 15:04	437.0
26			2025-09-29 12:11	617.7	2025-09-29 13:37	411.9	2025-09-29 15:05	435.5
27			2025-09-29 12:12	613.3	2025-09-29 13:38	410.9	2025-09-29 15:06	433.4
28			2025-09-29 12:13	609.3	2025-09-29 13:39	409.6	2025-09-29 15:07	431.1
29			2025-09-29 12:14	603.1	2025-09-29 13:40	408.1	2025-09-29 15:08	430.3
30			2025-09-29 12:15	597.6	2025-09-29 13:41	406.8	2025-09-29 15:09	429.3
31			2025-09-29 12:16	593.0	2025-09-29 13:42	405.9	2025-09-29 15:10	428.3
32			2025-09-29 12:17	572.3	2025-09-29 13:43	405.0	2025-09-29 15:11	427.3
33			2025-09-29 12:18	540.2	2025-09-29 13:44	404.3	2025-09-29 15:12	427.8
34			2025-09-29 12:19	516.6	2025-09-29 13:45	403.5	2025-09-29 15:13	428.0
35			2025-09-29 12:20	497.0	2025-09-29 13:46	402.9	2025-09-29 15:14	428.0
36			2025-09-29 12:21	479.5	2025-09-29 13:47	402.1	2025-09-29 15:15	429.0
37			2025-09-29 12:22	464.4	2025-09-29 13:48	400.8	2025-09-29 15:16	428.9
38			2025-09-29 12:23	452.4	2025-09-29 13:49	400.0	2025-09-29 15:17	429.6
39			2025-09-29 12:24	441.1	2025-09-29 13:50	398.1	2025-09-29 15:18	430.4
40			2025-09-29 12:25	432.0	2025-09-29 13:51	396.5	2025-09-29 15:19	430.8
41			2025-09-29 12:26	424.0	2025-09-29 13:52	395.2	2025-09-29 15:20	430.3
42			2025-09-29 12:27	417.2	2025-09-29 13:53	393.1	2025-09-29 15:21	429.7
43			2025-09-29 12:28	412.1	2025-09-29 13:54	391.3	2025-09-29 15:22	430.2
44			2025-09-29 12:29	408.4	2025-09-29 13:55	389.5	2025-09-29 15:23	431.1
45			2025-09-29 12:30	405.1	2025-09-29 13:56	387.1	2025-09-29 15:24	431.3
46			2025-09-29 12:31	402.8	2025-09-29 13:57	384.8	2025-09-29 15:25	431.7
47			2025-09-29 12:32	400.3	2025-09-29 13:58	382.4	2025-09-29 15:26	431.7
48			2025-09-29 12:33	398.3	2025-09-29 13:59	380.4	2025-09-29 15:27	432.5
49			2025-09-29 12:34	396.7	2025-09-29 14:00	378.2	2025-09-29 15:28	434.0
50			2025-09-29 12:35	394.4	2025-09-29 14:01	376.2	2025-09-29 15:29	434.2
51			2025-09-29 12:36	392.3	2025-09-29 14:02	373.8	2025-09-29 15:30	435.5
52			2025-09-29 12:37	390.7	2025-09-29 14:03	371.8	2025-09-29 15:31	436.1
53			2025-09-29 12:38	390.7	2025-09-29 14:04	370.0	2025-09-29 15:32	436.8
54			2025-09-29 12:39	388.8	2025-09-29 14:05	368.1	2025-09-29 15:33	435.9
55			2025-09-29 12:40	386.3	2025-09-29 14:06	366.8	2025-09-29 15:34	435.6
56			2025-09-29 12:41	383.8	2025-09-29 14:07	365.4	2025-09-29 15:35	434.8
57			2025-09-29 12:42	381.7	2025-09-29 14:08	364.6	2025-09-29 15:36	433.5
58			2025-09-29 12:43	379.4	2025-09-29 14:09	363.2	2025-09-29 15:37	432.6
59			2025-09-29 12:44	377.1	2025-09-29 14:10	361.8	2025-09-29 15:38	431.0
60			2025-09-29 12:45	375.6	2025-09-29 14:11	360.8	2025-09-29 15:39	430.2
61			2025-09-29 12:46	374.3	2025-09-29 14:12	360.1	2025-09-29 15:40	429.2
62			2025-09-29 12:47	373.0	2025-09-29 14:13	359.0	2025-09-29 15:41	428.6
63			2025-09-29 12:48	372.1	2025-09-29 14:14	358.5	2025-09-29 15:42	428.4
64			2025-09-29 12:49	371.5	2025-09-29 14:15	357.3	2025-09-29 15:43	428.2
65			2025-09-29 12:50	370.9	2025-09-29 14:16	356.5	2025-09-29 15:44	427.8
66			2025-09-29 12:51	370.4	2025-09-29 14:17	356.3	2025-09-29 15:45	428.5
67			2025-09-29 12:52	370.1	2025-09-29 14:18	355.5	2025-09-29 15:46	428.9
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69			2025-09-29 12:54	370.8	2025-09-29 14:20	354.7	2025-09-29 15:48	430.2
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72			2025-09-29 12:57	372.8	2025-09-29 14:23	353.4	2025-09-29 15:51	430.0
73			2025-09-29 12:58	373.4	2025-09-29 14:24	353.8	2025-09-29 15:52	430.1
74			2025-09-29 12:59	372.3	2025-09-29 14:25	353.6	2025-09-29 15:53	430.4
75			2025-09-29 13:00	371.4	2025-09-29 14:26	354.0	2025-09-29 15:54	430.5
76			2025-09-29 13:01	371.6	2025-09-29 14:27	353.1	2025-09-29 15:55	430.9
77			2025-09-29 13:02	370.4	2025-09-29 14:28	352.7	2025-09-29 15:56	431.3
78			2025-09-29 13:03	369.9	2025-09-29 14:29	351.9	2025-09-29 15:57	432.0
79			2025-09-29 13:04	369.9	2025-09-29 14:30	352.2	2025-09-29 15:58	431.7
80			2025-09-29 13:05	367.6	2025-09-29 14:31	352.1	2025-09-29 15:59	432.6
81			2025-09-29 13:06	364.5	2025-09-29 14:32	351.4	2025-09-29 16:00	432.4
82			2025-09-29 13:07	362.0	2025-09-29 14:33	351.0	2025-09-29 16:01	432.6
83			2025-09-29 13:08	359.5	2025-09-29 14:34	349.0	2025-09-29 16:02	432.2
84			2025-09-29 13:09	357.3	2025-09-29 14:35	344.3	2025-09-29 16:03	431.8
85			2025-09-29 13:10	353.8	2025-09-29 14:36	339.7	2025-09-29 16:04	430.5
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92							2025-09-29 16:11	421.5
93							2025-09-29 16:12	421.1

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95							2025-09-29 16:14	420.2
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105							2025-09-29 16:24	419.2
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117							2025-09-29 16:36	400.0
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122							2025-09-29 16:41	388.6
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133							2025-09-29 16:52	364.7
134							2025-09-29 16:53	363.0
135							2025-09-29 16:54	361.1
136							2025-09-29 16:55	358.2
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139							2025-09-29 16:58	350.6
140							2025-09-29 16:59	348.5
141							2025-09-29 17:00	347.0
142							2025-09-29 17:01	346.1
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151							2025-09-29 17:10	328.8
152							2025-09-29 17:11	326.9
153							2025-09-29 17:12	325.0
154							2025-09-29 17:13	322.2
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193							2025-09-29 17:52	255.4
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197							2025-09-29 17:56	248.4
198							2025-09-29 17:57	247.1
199							2025-09-29 17:58	245.7

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204							2025-09-29 18:03	239.0
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210							2025-09-29 18:09	232.9
211							2025-09-29 18:10	232.0
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213							2025-09-29 18:12	230.6
214							2025-09-29 18:13	229.6
215							2025-09-29 18:14	228.5
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217							2025-09-29 18:16	226.4
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221							2025-09-29 18:20	222.4
222							2025-09-29 18:21	221.5
223							2025-09-29 18:22	220.7
224							2025-09-29 18:23	219.8
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226							2025-09-29 18:25	218.4
227							2025-09-29 18:26	218.1
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231							2025-09-29 18:30	215.8
232							2025-09-29 18:31	215.4
233							2025-09-29 18:32	215.0
234							2025-09-29 18:33	214.5
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236							2025-09-29 18:35	213.8
237							2025-09-29 18:36	213.3
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240							2025-09-29 18:39	212.4
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243							2025-09-29 18:42	211.2
244							2025-09-29 18:43	210.8
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246							2025-09-29 18:45	210.3
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251							2025-09-29 18:50	209.2
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260							2025-09-29 18:59	210.5
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280							2025-09-29 19:19	216.2
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283							2025-09-29 19:22	216.4
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285							2025-09-29 19:24	216.3
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293							2025-09-29 19:32	215.3
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300							2025-09-29 19:39	213.4
301							2025-09-29 19:40	213.2
302							2025-09-29 19:41	213.1
303							2025-09-29 19:42	212.7
304							2025-09-29 19:43	212.7

1.4R Series Pre-burn Data		2025-09-22		Total time (h)		9.37			
Wood Specie: Maple									
Load time	Load type	Fuel added	Moisture	Piece amount	Length of fuel	Fuel Burnt (Dry)	Burn Rate (Dry)	Time	Flue Temp
(-)	(-)	(lb)	(DB %)	(-)	(in.)	(lb)	(kg/hr)	(min)	(°F)
2025-09-22 12:48	Load 1 - Start-up	6.90	19.3	4	16.00	3.73	4.23	24	476.8
2025-09-22 13:12	Load 2 - High-fire	12.08	20.3	4	16.00	8.68	2.53	84	478.7
2025-09-22 14:36	Load 3 - Maintenance-fire	8.54	21.5	2	16.00	5.97	1.54	95	367.2
2025-09-22 16:11	Load 4 - Low burn rate	20.01	21.2	6	16.00	16.50	1.13	359	294.5

Average Tflue (°F)		476.8		478.7		367.2		294.5	
Load 1 - Start-up (min)		24		84		95		359	
Full open		Full open then fully closed (@50% fuel load)		Fully closed		Fully closed		Fully closed	
Air control position	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	
Index									
0	2025-09-22 12:48	72.8	2025-09-22 13:12	596.8	2025-09-22 14:36	350.7	2025-09-22 16:11	283.9	
1	2025-09-22 12:49	122.9	2025-09-22 13:13	600.7	2025-09-22 14:37	369.7	2025-09-22 16:12	305.7	
2	2025-09-22 12:50	237.4	2025-09-22 13:14	571.3	2025-09-22 14:38	399.2	2025-09-22 16:13	361.5	
3	2025-09-22 12:51	319.2	2025-09-22 13:15	586.6	2025-09-22 14:39	442.1	2025-09-22 16:14	572.9	
4	2025-09-22 12:52	383.3	2025-09-22 13:16	608.9	2025-09-22 14:40	485.1	2025-09-22 16:15	718.6	
5	2025-09-22 12:53	433.6	2025-09-22 13:17	625.5	2025-09-22 14:41	463.7	2025-09-22 16:16	659.4	
6	2025-09-22 12:54	486.3	2025-09-22 13:18	641.0	2025-09-22 14:42	437.9	2025-09-22 16:17	663.5	
7	2025-09-22 12:55	516.9	2025-09-22 13:19	654.6	2025-09-22 14:43	422.6	2025-09-22 16:18	671.9	
8	2025-09-22 12:56	516.5	2025-09-22 13:20	664.4	2025-09-22 14:44	413.9	2025-09-22 16:19	676.5	
9	2025-09-22 12:57	510.2	2025-09-22 13:21	672.7	2025-09-22 14:45	409.6	2025-09-22 16:20	628.0	
10	2025-09-22 12:58	509.2	2025-09-22 13:22	676.1	2025-09-22 14:46	406.7	2025-09-22 16:21	582.9	
11	2025-09-22 12:59	514.7	2025-09-22 13:23	678.6	2025-09-22 14:47	404.5	2025-09-22 16:22	550.2	
12	2025-09-22 13:00	521.1	2025-09-22 13:24	677.0	2025-09-22 14:48	402.1	2025-09-22 16:23	527.9	
13	2025-09-22 13:01	528.2	2025-09-22 13:25	671.4	2025-09-22 14:49	399.9	2025-09-22 16:24	511.4	
14	2025-09-22 13:02	534.2	2025-09-22 13:26	663.5	2025-09-22 14:50	398.3	2025-09-22 16:25	495.1	
15	2025-09-22 13:03	538.8	2025-09-22 13:27	653.1	2025-09-22 14:51	396.9	2025-09-22 16:26	480.6	
16	2025-09-22 13:04	546.6	2025-09-22 13:28	638.6	2025-09-22 14:52	395.0	2025-09-22 16:27	469.1	
17	2025-09-22 13:05	556.1	2025-09-22 13:29	626.5	2025-09-22 14:53	393.2	2025-09-22 16:28	459.3	
18	2025-09-22 13:06	567.2	2025-09-22 13:30	616.3	2025-09-22 14:54	392.6	2025-09-22 16:29	451.1	
19	2025-09-22 13:07	576.0	2025-09-22 13:31	607.0	2025-09-22 14:55	392.1	2025-09-22 16:30	444.1	
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38			2025-09-22 13:50	436.2	2025-09-22 15:14	380.7	2025-09-22 16:49	430.3	
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82			2025-09-22 14:34	362.6	2025-09-22 15:58	331.8	2025-09-22 17:33	470.9	
83			2025-09-22 14:35	356.9	2025-09-22 15:59	327.6	2025-09-22 17:34	473.1	
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86					2025-09-22 16:02	315.1	2025-09-22 17:37	481.5	
87					2025-09-22 16:03	309.9			

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94					2025-09-22 16:10	285.5	2025-09-22 17:45	502.1
95					2025-09-22 16:11	283.9	2025-09-22 17:46	497.3
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119							2025-09-22 18:10	397.6
120							2025-09-22 18:11	394.6
121							2025-09-22 18:12	387.9
122							2025-09-22 18:13	379.5
123							2025-09-22 18:14	372.4
124							2025-09-22 18:15	366.2
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126							2025-09-22 18:17	355.0
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128							2025-09-22 18:19	345.2
129							2025-09-22 18:20	340.8
130							2025-09-22 18:21	336.7
131							2025-09-22 18:22	332.3
132							2025-09-22 18:23	327.3
133							2025-09-22 18:24	322.1
134							2025-09-22 18:25	316.5
135							2025-09-22 18:26	311.0
136							2025-09-22 18:27	305.9
137							2025-09-22 18:28	301.5
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139							2025-09-22 18:30	293.4
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142							2025-09-22 18:33	282.7
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145							2025-09-22 18:36	273.0
146							2025-09-22 18:37	270.1
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151							2025-09-22 18:42	256.2
152							2025-09-22 18:43	253.3
153							2025-09-22 18:44	249.9
154							2025-09-22 18:45	246.7
155							2025-09-22 18:46	243.8
156							2025-09-22 18:47	241.0
157							2025-09-22 18:48	238.6
158							2025-09-22 18:49	236.5
159							2025-09-22 18:50	234.3
160							2025-09-22 18:51	232.5
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162							2025-09-22 18:53	229.3
163							2025-09-22 18:54	227.8
164							2025-09-22 18:55	226.5
165							2025-09-22 18:56	225.9
166							2025-09-22 18:57	224.9
167							2025-09-22 18:58	224.0
168							2025-09-22 18:59	222.8
169							2025-09-22 19:00	222.1
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171							2025-09-22 19:02	220.3
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174							2025-09-22 19:05	218.2
175							2025-09-22 19:06	217.2
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178							2025-09-22 19:09	215.1
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181							2025-09-22 19:12	213.3
182							2025-09-22 19:13	212.6
183							2025-09-22 19:14	212.1
184							2025-09-22 19:15	211.7
185							2025-09-22 19:16	211.2
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189							2025-09-22 19:20	209.5
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191							2025-09-22 19:22	208.4
192							2025-09-22 19:23	208.5
193							2025-09-22 19:24	208.3
194							2025-09-22 19:25	207.8
195							2025-09-22 19:26	207.3
196							2025-09-22 19:27	207.0
197							2025-09-22 19:28	206.6
198							2025-09-22 19:29	206.3
199							2025-09-22 19:30	205.6

Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
200							2025-09-22 19:31	205.5
201							2025-09-22 19:32	204.9
202							2025-09-22 19:33	204.7
203							2025-09-22 19:34	204.3
204							2025-09-22 19:35	204.3
205							2025-09-22 19:36	203.7
206							2025-09-22 19:37	203.3
207							2025-09-22 19:38	203.2
208							2025-09-22 19:39	203.0
209							2025-09-22 19:40	202.8
210							2025-09-22 19:41	202.5
211							2025-09-22 19:42	202.5
212							2025-09-22 19:43	202.1
213							2025-09-22 19:44	201.8
214							2025-09-22 19:45	201.5
215							2025-09-22 19:46	200.8
216							2025-09-22 19:47	200.5
217							2025-09-22 19:48	200.1
218							2025-09-22 19:49	199.8
219							2025-09-22 19:50	199.1
220							2025-09-22 19:51	198.9
221							2025-09-22 19:52	198.5
222							2025-09-22 19:53	198.2
223							2025-09-22 19:54	197.8
224							2025-09-22 19:55	197.5
225							2025-09-22 19:56	197.1
226							2025-09-22 19:57	197.1
227							2025-09-22 19:58	196.6
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231							2025-09-22 20:02	195.4
232							2025-09-22 20:03	195.2
233							2025-09-22 20:04	194.7
234							2025-09-22 20:05	194.5
235							2025-09-22 20:06	194.4
236							2025-09-22 20:07	194.2
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238							2025-09-22 20:09	193.7
239							2025-09-22 20:10	193.7
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241							2025-09-22 20:12	193.6
242							2025-09-22 20:13	193.5
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244							2025-09-22 20:15	193.2
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246							2025-09-22 20:17	192.5
247							2025-09-22 20:18	192.0
248							2025-09-22 20:19	191.8
249							2025-09-22 20:20	191.2
250							2025-09-22 20:21	191.1
251							2025-09-22 20:22	190.8
252							2025-09-22 20:23	190.4
253							2025-09-22 20:24	190.0
254							2025-09-22 20:25	189.8
255							2025-09-22 20:26	189.5
256							2025-09-22 20:27	189.1
257							2025-09-22 20:28	188.9
258							2025-09-22 20:29	188.4
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264							2025-09-22 20:35	187.8
265							2025-09-22 20:36	187.7
266							2025-09-22 20:37	187.4
267							2025-09-22 20:38	187.4
268							2025-09-22 20:39	187.1
269							2025-09-22 20:40	186.6
270							2025-09-22 20:41	186.0
271							2025-09-22 20:42	185.6
272							2025-09-22 20:43	185.3
273							2025-09-22 20:44	185.1
274							2025-09-22 20:45	184.8
275							2025-09-22 20:46	184.5
276							2025-09-22 20:47	184.0
277							2025-09-22 20:48	183.9
278							2025-09-22 20:49	184.0
279							2025-09-22 20:50	184.0
280							2025-09-22 20:51	183.6
281							2025-09-22 20:52	183.3
282							2025-09-22 20:53	183.2
283							2025-09-22 20:54	183.0
284							2025-09-22 20:55	182.8
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287							2025-09-22 20:58	182.8
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290							2025-09-22 21:01	182.6
291							2025-09-22 21:02	182.5
292							2025-09-22 21:03	182.4
293							2025-09-22 21:04	182.3
294							2025-09-22 21:05	182.2
295							2025-09-22 21:06	182.3
296							2025-09-22 21:07	182.2
297							2025-09-22 21:08	182.2
298							2025-09-22 21:09	182.1
299							2025-09-22 21:10	182.1
300							2025-09-22 21:11	182.1
301							2025-09-22 21:12	182.0
302							2025-09-22 21:13	182.1
303							2025-09-22 21:14	182.0
304							2025-09-22 21:15	181.9
305							2025-09-22 21:16	181.8

Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
306							2025-09-22 21:17	181.6
307							2025-09-22 21:18	182.0
308							2025-09-22 21:19	182.1
309							2025-09-22 21:20	182.3
310							2025-09-22 21:21	182.3
311							2025-09-22 21:22	182.2
312							2025-09-22 21:23	182.4
313							2025-09-22 21:24	182.3
314							2025-09-22 21:25	182.3
315							2025-09-22 21:26	182.5
316							2025-09-22 21:27	182.4
317							2025-09-22 21:28	182.5
318							2025-09-22 21:29	182.7
319							2025-09-22 21:30	182.7
320							2025-09-22 21:31	182.6
321							2025-09-22 21:32	182.9
322							2025-09-22 21:33	183.1
323							2025-09-22 21:34	183.2
324							2025-09-22 21:35	183.7
325							2025-09-22 21:36	183.7
326							2025-09-22 21:37	183.9
327							2025-09-22 21:38	184.1
328							2025-09-22 21:39	184.0
329							2025-09-22 21:40	184.1
330							2025-09-22 21:41	184.2
331							2025-09-22 21:42	184.2
332							2025-09-22 21:43	184.4
333							2025-09-22 21:44	184.3
334							2025-09-22 21:45	184.4
335							2025-09-22 21:46	184.4
336							2025-09-22 21:47	184.9
337							2025-09-22 21:48	184.8
338							2025-09-22 21:49	185.1
339							2025-09-22 21:50	185.2
340							2025-09-22 21:51	185.1
341							2025-09-22 21:52	185.5
342							2025-09-22 21:53	185.5
343							2025-09-22 21:54	185.8
344							2025-09-22 21:55	186.1
345							2025-09-22 21:56	186.1
346							2025-09-22 21:57	186.3
347							2025-09-22 21:58	186.4
348							2025-09-22 21:59	186.2
349							2025-09-22 22:00	186.7
350							2025-09-22 22:01	187.3
351							2025-09-22 22:02	187.6
352							2025-09-22 22:03	187.7
353							2025-09-22 22:04	187.8
354							2025-09-22 22:05	188.0
355							2025-09-22 22:06	188.2
356							2025-09-22 22:07	188.6
357							2025-09-22 22:08	188.9
358							2025-09-22 22:09	189.1
359							2025-09-22 22:10	189.7

1.4R Series Pre-burn Data		2025-09-20		Total time (h)		9.55			
Wood Specie: Maple									
Load time	Load type	Fuel added	Moisture	Piece amount	Length of fuel	Fuel Burnt (Dry)	Burn Rate (Dry)	Time	Flue Temp
(-)	(-)	(lb)	(DB %)	(-)	(in.)	(lb)	(kg/hr)	(min)	(°F)
2025-09-20 11:14	Load 1 - Start-up	7.02	20.0	4	16.00	3.75	4.86	21	530.5
2025-09-20 11:35	Load 2 - High-fire	11.95	20.8	4	16.00	8.54	2.38	88	467.3
2025-09-20 13:03	Load 3 - Maintenance-fire	8.74	19.1	2	16.00	6.21	1.52	100	358.5
2025-09-20 14:43	Load 4 - Low burn rate	20.63	20.9	6	16.00	17.10	1.15	364	307.6

Average Tflue (°F)		530.5		467.3		358.5		307.6					
Load 1 - Start-up (min)		21		High-fire (min)		88		100		Low burn rate (min)		364	
Full open				Full open then fully closed (@50% fuel load)		Fully closed				Fully closed			
Air control position	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	
Index													
0	2025-09-20 11:14	81.1	2025-09-20 11:35	639.9	2025-09-20 13:03	320.6	2025-09-20 14:43	276.9					
1	2025-09-20 11:15	153.0	2025-09-20 11:36	609.9	2025-09-20 13:04	317.8	2025-09-20 14:44	304.5					
2	2025-09-20 11:16	297.3	2025-09-20 11:37	621.3	2025-09-20 13:05	344.3	2025-09-20 14:45	315.3					
3	2025-09-20 11:17	433.1	2025-09-20 11:38	642.1	2025-09-20 13:06	376.3	2025-09-20 14:46	386.0					
4	2025-09-20 11:18	483.4	2025-09-20 11:39	650.5	2025-09-20 13:07	419.9	2025-09-20 14:47	492.9					
5	2025-09-20 11:19	523.8	2025-09-20 11:40	655.3	2025-09-20 13:08	440.6	2025-09-20 14:48	657.7					
6	2025-09-20 11:20	546.1	2025-09-20 11:41	645.6	2025-09-20 13:09	421.7	2025-09-20 14:49	651.3					
7	2025-09-20 11:21	573.1	2025-09-20 11:42	636.2	2025-09-20 13:10	409.6	2025-09-20 14:50	627.8					
8	2025-09-20 11:22	579.2	2025-09-20 11:43	629.5	2025-09-20 13:11	401.9	2025-09-20 14:51	636.4					
9	2025-09-20 11:23	584.5	2025-09-20 11:44	629.3	2025-09-20 13:12	397.8	2025-09-20 14:52	657.0					
10	2025-09-20 11:24	588.2	2025-09-20 11:45	634.8	2025-09-20 13:13	397.1	2025-09-20 14:53	628.6					
11	2025-09-20 11:25	593.8	2025-09-20 11:46	642.8	2025-09-20 13:14	398.1	2025-09-20 14:54	589.1					
12	2025-09-20 11:26	601.8	2025-09-20 11:47	649.9	2025-09-20 13:15	399.3	2025-09-20 14:55	556.4					
13	2025-09-20 11:27	603.7	2025-09-20 11:48	659.8	2025-09-20 13:16	402.5	2025-09-20 14:56	531.5					
14	2025-09-20 11:28	600.4	2025-09-20 11:49	669.6	2025-09-20 13:17	405.9	2025-09-20 14:57	512.2					
15	2025-09-20 11:29	606.2	2025-09-20 11:50	675.6	2025-09-20 13:18	408.4	2025-09-20 14:58	497.1					
16	2025-09-20 11:30	617.1	2025-09-20 11:51	674.9	2025-09-20 13:19	410.4	2025-09-20 14:59	486.9					
17	2025-09-20 11:31	632.9	2025-09-20 11:52	671.7	2025-09-20 13:20	412.7	2025-09-20 15:00	478.6					
18	2025-09-20 11:32	641.9	2025-09-20 11:53	667.2	2025-09-20 13:21	414.3	2025-09-20 15:01	472.1					
19	2025-09-20 11:33	645.6	2025-09-20 11:54	659.8	2025-09-20 13:22	414.6	2025-09-20 15:02	466.6					
20	2025-09-20 11:34	645.8	2025-09-20 11:55	652.1	2025-09-20 13:23	416.0	2025-09-20 15:03	462.6					
21	2025-09-20 11:35	639.9	2025-09-20 11:56	642.8	2025-09-20 13:24	416.1	2025-09-20 15:04	458.9					
22			2025-09-20 11:57	634.3	2025-09-20 13:25	416.0	2025-09-20 15:05	456.1					
23			2025-09-20 11:58	627.9	2025-09-20 13:26	415.9	2025-09-20 15:06	454.0					
24			2025-09-20 11:59	622.7	2025-09-20 13:27	415.1	2025-09-20 15:07	452.0					
25			2025-09-20 12:00	617.4	2025-09-20 13:28	414.3	2025-09-20 15:08	450.4					
26			2025-09-20 12:01	613.2	2025-09-20 13:29	412.3	2025-09-20 15:09	448.3					
27			2025-09-20 12:02	607.6	2025-09-20 13:30	410.4	2025-09-20 15:10	446.7					
28			2025-09-20 12:03	603.4	2025-09-20 13:31	408.2	2025-09-20 15:11	444.9					
29			2025-09-20 12:04	598.4	2025-09-20 13:32	405.7	2025-09-20 15:12	444.9					
30			2025-09-20 12:05	597.9	2025-09-20 13:33	402.1	2025-09-20 15:13	444.6					
31			2025-09-20 12:06	577.5	2025-09-20 13:34	399.2	2025-09-20 15:14	444.3					
32			2025-09-20 12:07	538.8	2025-09-20 13:35	396.8	2025-09-20 15:15	444.8					
33			2025-09-20 12:08	509.6	2025-09-20 13:36	394.9	2025-09-20 15:16	446.2					
34			2025-09-20 12:09	485.3	2025-09-20 13:37	392.8	2025-09-20 15:17	446.7					
35			2025-09-20 12:10	464.0	2025-09-20 13:38	390.6	2025-09-20 15:18	448.8					
36			2025-09-20 12:11	445.3	2025-09-20 13:39	388.2	2025-09-20 15:19	450.1					
37			2025-09-20 12:12	430.8	2025-09-20 13:40	386.0	2025-09-20 15:20	452.4					
38			2025-09-20 12:13	418.6	2025-09-20 13:41	383.4	2025-09-20 15:21	454.5					
39			2025-09-20 12:14	407.8	2025-09-20 13:42	381.4	2025-09-20 15:22	455.1					
40			2025-09-20 12:15	398.0	2025-09-20 13:43	379.5	2025-09-20 15:23	456.7					
41			2025-09-20 12:16	389.4	2025-09-20 13:44	378.2	2025-09-20 15:24	457.5					
42			2025-09-20 12:17	382.0	2025-09-20 13:45	376.6	2025-09-20 15:25	458.5					
43			2025-09-20 12:18	374.9	2025-09-20 13:46	375.3	2025-09-20 15:26	459.9					
44			2025-09-20 12:19	370.1	2025-09-20 13:47	373.9	2025-09-20 15:27	460.8					
45			2025-09-20 12:20	366.0	2025-09-20 13:48	372.3	2025-09-20 15:28	461.7					
46			2025-09-20 12:21	361.2	2025-09-20 13:49	370.9	2025-09-20 15:29	462.7					
47			2025-09-20 12:22	356.6	2025-09-20 13:50	369.2	2025-09-20 15:30	463.4					
48			2025-09-20 12:23	354.4	2025-09-20 13:51	367.9	2025-09-20 15:31	464.3					
49			2025-09-20 12:24	352.1	2025-09-20 13:52	365.8	2025-09-20 15:32	465.5					
50			2025-09-20 12:25	352.3	2025-09-20 13:53	364.2	2025-09-20 15:33	466.4					
51			2025-09-20 12:26	352.0	2025-09-20 13:54	363.0	2025-09-20 15:34	467.6					
52			2025-09-20 12:27	352.2	2025-09-20 13:55	361.4	2025-09-20 15:35	468.3					
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54			2025-09-20 12:29	352.8	2025-09-20 13:57	357.8	2025-09-20 15:37	470.0					
55			2025-09-20 12:30	353.4	2025-09-20 13:58	355.8	2025-09-20 15:38	469.5					
56			2025-09-20 12:31	353.6	2025-09-20 13:59	353.8	2025-09-20 15:39	470.9					
57			2025-09-20 12:32	354.1	2025-09-20 14:00	352.5	2025-09-20 15:40	472.6					
58			2025-09-20 12:33	355.2	2025-09-20 14:01	350.3	2025-09-20 15:41	474.2					
59			2025-09-20 12:34	356.4	2025-09-20 14:02	348.5	2025-09-20 15:42	475.4					
60			2025-09-20 12:35	359.4	2025-09-20 14:03	346.7	2025-09-20 15:43	477.7					
61			2025-09-20 12:36	362.1	2025-09-20 14:04	344.9	2025-09-20 15:44	479.5					
62			2025-09-20 12:37	364.5	2025-09-20 14:05	343.5	2025-09-20 15:45	482.5					
63			2025-09-20 12:38	367.6	2025-09-20 14:06	342.1	2025-09-20 15:46	484.9					
64			2025-09-20 12:39	371.0	2025-09-20 14:07	340.4	2025-09-20 15:47	488.1					
65			2025-09-20 12:40	374.2	2025-09-20 14:08	338.7	2025-09-20 15:48	493.6					
66			2025-09-20 12:41	375.5	2025-09-20 14:09	337.2	2025-09-20 15:49	499.3					
67			2025-09-20 12:42	375.2	2025-09-20 14:10	335.7	2025-09-20 15:50	506.4					
68			2025-09-20 12:43	374.3	2025-09-20 14:11	334.3	2025-09-20 15:51	512.7					
69			2025-09-20 12:44	374.0	2025-09-20 14:12	332.9	2025-09-20 15:52	519.7					
70			2025-09-20 12:45	373.1	2025-09-20 14:13	331.8	2025-09-20 15:53	525.8					
71			2025-09-20 12:46	372.6	2025-09-20 14:14	330.4	2025-09-20 15:54	530.7					
72			2025-09-20 12:47	370.8	2025-09-20 14:15	329.5	2025-09-20 15:55	534.5					
73			2025-09-20 12:48	368.5	2025-09-20 14:16	328.4	2025-09-20 15:56	535.3					
74			2025-09-20 12:49	364.1	2025-09-20 14:17	326.6	2025-09-20 15:57	535.1					
75			2025-09-20 12:50	359.7	2025-09-20 14:18	325.0	2025-09-20 15:58	534.4					
76			2025-09-20 12:51	356.2	2025-09-20 14:19	322.6	2025-09-20 15:59	533.6					
77			2025-09-20 12:52	352.5	2025-09-20 14:20								

Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
94					2025-09-20 14:37	294.8	2025-09-20 16:17	471.7
95					2025-09-20 14:38	294.5	2025-09-20 16:18	467.9
96					2025-09-20 14:39	293.8	2025-09-20 16:19	464.8
97					2025-09-20 14:40	291.0	2025-09-20 16:20	461.6
98					2025-09-20 14:41	287.1	2025-09-20 16:21	460.1
99					2025-09-20 14:42	281.6	2025-09-20 16:22	458.7
100					2025-09-20 14:43	276.9	2025-09-20 16:23	457.1
101							2025-09-20 16:24	456.1
102							2025-09-20 16:25	455.1
103							2025-09-20 16:26	454.5
104							2025-09-20 16:27	453.5
105							2025-09-20 16:28	450.5
106							2025-09-20 16:29	445.2
107							2025-09-20 16:30	440.8
108							2025-09-20 16:31	436.4
109							2025-09-20 16:32	431.5
110							2025-09-20 16:33	424.9
111							2025-09-20 16:34	418.0
112							2025-09-20 16:35	412.0
113							2025-09-20 16:36	407.0
114							2025-09-20 16:37	402.8
115							2025-09-20 16:38	398.9
116							2025-09-20 16:39	394.0
117							2025-09-20 16:40	390.1
118							2025-09-20 16:41	386.5
119							2025-09-20 16:42	383.6
120							2025-09-20 16:43	381.3
121							2025-09-20 16:44	377.4
122							2025-09-20 16:45	373.2
123							2025-09-20 16:46	368.4
124							2025-09-20 16:47	364.9
125							2025-09-20 16:48	361.5
126							2025-09-20 16:49	359.7
127							2025-09-20 16:50	358.2
128							2025-09-20 16:51	357.3
129							2025-09-20 16:52	355.6
130							2025-09-20 16:53	353.8
131							2025-09-20 16:54	349.5
132							2025-09-20 16:55	344.8
133							2025-09-20 16:56	339.7
134							2025-09-20 16:57	335.3
135							2025-09-20 16:58	331.5
136							2025-09-20 16:59	327.4
137							2025-09-20 17:00	323.9
138							2025-09-20 17:01	320.1
139							2025-09-20 17:02	317.1
140							2025-09-20 17:03	313.8
141							2025-09-20 17:04	310.8
142							2025-09-20 17:05	307.6
143							2025-09-20 17:06	304.8
144							2025-09-20 17:07	301.8
145							2025-09-20 17:08	299.6
146							2025-09-20 17:09	297.4
147							2025-09-20 17:10	294.7
148							2025-09-20 17:11	292.1
149							2025-09-20 17:12	289.2
150							2025-09-20 17:13	286.8
151							2025-09-20 17:14	284.1
152							2025-09-20 17:15	281.6
153							2025-09-20 17:16	279.1
154							2025-09-20 17:17	276.7
155							2025-09-20 17:18	273.9
156							2025-09-20 17:19	271.2
157							2025-09-20 17:20	268.7
158							2025-09-20 17:21	266.5
159							2025-09-20 17:22	264.0
160							2025-09-20 17:23	261.5
161							2025-09-20 17:24	259.2
162							2025-09-20 17:25	257.4
163							2025-09-20 17:26	255.6
164							2025-09-20 17:27	253.8
165							2025-09-20 17:28	252.3
166							2025-09-20 17:29	251.0
167							2025-09-20 17:30	249.5
168							2025-09-20 17:31	248.2
169							2025-09-20 17:32	247.0
170							2025-09-20 17:33	246.0
171							2025-09-20 17:34	244.8
172							2025-09-20 17:35	243.8
173							2025-09-20 17:36	242.5
174							2025-09-20 17:37	241.3
175							2025-09-20 17:38	240.2
176							2025-09-20 17:39	239.0
177							2025-09-20 17:40	237.9
178							2025-09-20 17:41	236.8
179							2025-09-20 17:42	236.0
180							2025-09-20 17:43	234.6
181							2025-09-20 17:44	233.7
182							2025-09-20 17:45	232.6
183							2025-09-20 17:46	231.4
184							2025-09-20 17:47	230.8
185							2025-09-20 17:48	229.9
186							2025-09-20 17:49	229.1
187							2025-09-20 17:50	228.1
188							2025-09-20 17:51	227.4
189							2025-09-20 17:52	226.8
190							2025-09-20 17:53	226.0
191							2025-09-20 17:54	225.4
192							2025-09-20 17:55	224.8
193							2025-09-20 17:56	224.2
194							2025-09-20 17:57	223.5
195							2025-09-20 17:58	223.0
196							2025-09-20 17:59	222.2
197							2025-09-20 18:00	221.8
198							2025-09-20 18:01	221.1
199							2025-09-20 18:02	220.5

Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
200							2025-09-20 18:03	220.0
201							2025-09-20 18:04	219.7
202							2025-09-20 18:05	219.3
203							2025-09-20 18:06	218.6
204							2025-09-20 18:07	218.5
205							2025-09-20 18:08	218.2
206							2025-09-20 18:09	217.7
207							2025-09-20 18:10	217.5
208							2025-09-20 18:11	216.9
209							2025-09-20 18:12	216.4
210							2025-09-20 18:13	216.0
211							2025-09-20 18:14	215.5
212							2025-09-20 18:15	215.2
213							2025-09-20 18:16	214.8
214							2025-09-20 18:17	214.4
215							2025-09-20 18:18	214.0
216							2025-09-20 18:19	213.7
217							2025-09-20 18:20	213.2
218							2025-09-20 18:21	212.9
219							2025-09-20 18:22	212.5
220							2025-09-20 18:23	212.7
221							2025-09-20 18:24	212.1
222							2025-09-20 18:25	211.9
223							2025-09-20 18:26	211.8
224							2025-09-20 18:27	211.3
225							2025-09-20 18:28	210.8
226							2025-09-20 18:29	210.9
227							2025-09-20 18:30	210.8
228							2025-09-20 18:31	210.4
229							2025-09-20 18:32	210.2
230							2025-09-20 18:33	210.0
231							2025-09-20 18:34	210.2
232							2025-09-20 18:35	209.6
233							2025-09-20 18:36	209.3
234							2025-09-20 18:37	209.5
235							2025-09-20 18:38	209.1
236							2025-09-20 18:39	208.8
237							2025-09-20 18:40	208.6
238							2025-09-20 18:41	208.1
239							2025-09-20 18:42	208.1
240							2025-09-20 18:43	208.0
241							2025-09-20 18:44	207.8
242							2025-09-20 18:45	207.6
243							2025-09-20 18:46	207.5
244							2025-09-20 18:47	207.3
245							2025-09-20 18:48	207.2
246							2025-09-20 18:49	206.7
247							2025-09-20 18:50	206.1
248							2025-09-20 18:51	206.0
249							2025-09-20 18:52	205.9
250							2025-09-20 18:53	205.4
251							2025-09-20 18:54	205.0
252							2025-09-20 18:55	204.9
253							2025-09-20 18:56	204.6
254							2025-09-20 18:57	204.6
255							2025-09-20 18:58	204.1
256							2025-09-20 18:59	203.8
257							2025-09-20 19:00	203.6
258							2025-09-20 19:01	203.2
259							2025-09-20 19:02	203.1
260							2025-09-20 19:03	202.9
261							2025-09-20 19:04	203.0
262							2025-09-20 19:05	202.9
263							2025-09-20 19:06	202.7
264							2025-09-20 19:07	202.7
265							2025-09-20 19:08	202.5
266							2025-09-20 19:09	202.4
267							2025-09-20 19:10	202.0
268							2025-09-20 19:11	201.7
269							2025-09-20 19:12	201.6
270							2025-09-20 19:13	201.4
271							2025-09-20 19:14	200.8
272							2025-09-20 19:15	201.0
273							2025-09-20 19:16	200.9
274							2025-09-20 19:17	200.8
275							2025-09-20 19:18	200.6
276							2025-09-20 19:19	200.4
277							2025-09-20 19:20	200.4
278							2025-09-20 19:21	200.2
279							2025-09-20 19:22	199.7
280							2025-09-20 19:23	199.5
281							2025-09-20 19:24	199.2
282							2025-09-20 19:25	199.1
283							2025-09-20 19:26	198.9
284							2025-09-20 19:27	198.7
285							2025-09-20 19:28	198.4
286							2025-09-20 19:29	198.3
287							2025-09-20 19:30	198.2
288							2025-09-20 19:31	197.8
289							2025-09-20 19:32	197.7
290							2025-09-20 19:33	197.8
291							2025-09-20 19:34	197.4
292							2025-09-20 19:35	197.2
293							2025-09-20 19:36	197.3
294							2025-09-20 19:37	196.9
295							2025-09-20 19:38	196.5
296							2025-09-20 19:39	196.8
297							2025-09-20 19:40	196.2
298							2025-09-20 19:41	196.3
299							2025-09-20 19:42	196.0
300							2025-09-20 19:43	195.8
301							2025-09-20 19:44	195.5
302							2025-09-20 19:45	195.2
303							2025-09-20 19:46	194.8
304							2025-09-20 19:47	194.5
305							2025-09-20 19:48	194.1

Index	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)	Date & Time	Flue (F)
306							2025-09-20 19:49	193.6
307							2025-09-20 19:50	193.5
308							2025-09-20 19:51	193.2
309							2025-09-20 19:52	193.0
310							2025-09-20 19:53	192.8
311							2025-09-20 19:54	192.6
312							2025-09-20 19:55	192.3
313							2025-09-20 19:56	192.1
314							2025-09-20 19:57	191.8
315							2025-09-20 19:58	191.6
316							2025-09-20 19:59	191.4
317							2025-09-20 20:00	191.4
318							2025-09-20 20:01	191.0
319							2025-09-20 20:02	190.8
320							2025-09-20 20:03	190.7
321							2025-09-20 20:04	190.6
322							2025-09-20 20:05	190.2
323							2025-09-20 20:06	190.1
324							2025-09-20 20:07	189.7
325							2025-09-20 20:08	189.6
326							2025-09-20 20:09	189.6
327							2025-09-20 20:10	189.4
328							2025-09-20 20:11	189.4
329							2025-09-20 20:12	189.3
330							2025-09-20 20:13	189.2
331							2025-09-20 20:14	189.0
332							2025-09-20 20:15	189.1
333							2025-09-20 20:16	189.0
334							2025-09-20 20:17	188.6
335							2025-09-20 20:18	188.5
336							2025-09-20 20:19	188.0
337							2025-09-20 20:20	188.2
338							2025-09-20 20:21	188.0
339							2025-09-20 20:22	187.9
340							2025-09-20 20:23	187.7
341							2025-09-20 20:24	187.4
342							2025-09-20 20:25	187.4
343							2025-09-20 20:26	187.3
344							2025-09-20 20:27	186.9
345							2025-09-20 20:28	187.3
346							2025-09-20 20:29	186.9
347							2025-09-20 20:30	186.9
348							2025-09-20 20:31	186.7
349							2025-09-20 20:32	186.6
350							2025-09-20 20:33	186.8
351							2025-09-20 20:34	186.7
352							2025-09-20 20:35	186.5
353							2025-09-20 20:36	186.6
354							2025-09-20 20:37	186.8
355							2025-09-20 20:38	186.7
356							2025-09-20 20:39	186.9
357							2025-09-20 20:40	186.7
358							2025-09-20 20:41	186.6
359							2025-09-20 20:42	186.5
360							2025-09-20 20:43	186.3
361							2025-09-20 20:44	186.4
362							2025-09-20 20:45	186.2
363							2025-09-20 20:46	186.2
364							2025-09-20 20:47	185.9

ASTM E2515 - Glass Fiber Filters

Date:	10/8 12:00	10/10 10:00	-	-			
my Audit Time:	200.0	200.0	-	-			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
G01381	244.3	244.5	-	-	A	25-448	#1
G01382	245.5	245.7	-	-	A		
G01383	248.2	248.4	-	-	A		
G01384	244.9	245.0	-	-	A		
G01385	244.7	243.9	-	-	A		#2
G01386	244.8	244.9	-	-	A		
G01387	243.4	243.6	-	-	A		
G01388	244.9	244.9	-	-	A		
G01389	244.7	244.7	-	-	A	25-446	#1
G01390	245.4	245.3	-	-	A		
G01391	246.2	246.1	-	-	A		
G01392	230.0	230.0	-	-	A		#2
G01393	231.2	231.2	-	-	A		
G01394	227.9	228.0	-	-	A		
G01395	231.3	231.4	-	-	A		#3
G01396	229.8	229.8	-	-	A		

Date:	10/22/25	10/10/25	-	-			
my Audit Time:	200.0	200.0	-	-			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
G01397	231.0	231.2	-	-	A	25-446	#3
G01398	230.1	230.2	-	-	A		
G01399	230.8	230.7	-	-	A		
G01400	228.8	228.9	-	-	A		
G01401	230.1	230.0	-	-	A		
G01402	230.1	230.2	-	-	A		
G01403	230.7	230.8	-	-	A		
G01404	229.7	229.6	-	-	A		
G01405	228.8	228.9	-	-	A		
G01406	229.2	229.4	-	-	A		
G01407	230.5	230.3	-	-	A		
G01408	229.0	229.0	-	-	A		
G01409	230.1	230.0	-	-	A		
G01410	229.2	229.2	-	-	A		
G01411	229.8	229.7	-	-	A		
G01412	229.9	229.9	-	-	A		

ASTM E2515 - Probe Samples 11-20

Date:	8/25/25	9/10/25	9/11/25	-			
Time:	10:45	08:00	08:00	-			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
11A	116148.2	116876.1	116876.3	-	A	25-443	#2
11B	117349.5	117349.4	-	-	A		
11C	116148.1	116148.3	116148.3	-	A		
12A	116720.1	116714.7	116719.6	-	A	25-443	#3
12B	117782.7	117782.3	117782.3	-	A		
12C	117181.1	117180.6	117180.5	-	A		
13A	117321.9	117321.3	117321.5	-	A	25-443	#4
13B	116947.5	116947.3	-	-	A		
13C	115654.3	115654.1	-	-	A		
14A	116637.7	116637.5	-	-	A	25-436	#1
14B	116628.3	116628.1	-	-	A		
14C	116537.3	116536.8	116536.9	-	A		
15A	117250.1	117249.6	117249.5	-	B	25-436	#2
15B	116762.5	116762.1	116762.2	-	A		
15C	116848.9	116848.5	116848.5	-	A		

Date:	9/22/25	9/24/25	-	-			
Time:	17:00	10:00	-	-			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
16A	116380.4	116380.2	-	-	A	25-436	#3
16B	115863.7	115863.9	-	-	A		
16C	114148.6	114148.4	-	-	A		
17A	116811.8	116811.6	-	-	A	25-436	#4
17B	117141.9	117141.7	-	-	A		
17C	113141.9	113141.9	-	-	A		
18A	117501.1	117500.9	-	-	A	25-448	#1
18B	117333.0	117332.9	-	-	A		
18C	114335.8	114335.6	-	-	A		
19A	117027.1	117026.9	-	-	A	25-448	#2
19B	117014.4	117014.2	-	-	A		
19C	114231.8	114231.7	-	-	A		
20A	115628.4	115628.3	-	-	A	25-446	#1
20B	115967.7	115967.7	-	-	A		
20C	113776.4	113776.2	-	-	A		#2

ASTM E2515 - Probe Samples 1-10

Date/Time:	10/24/25 14:00	10/27 14:30	10/28 08:30				
Audit:	200.0	200.0	200.0				
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
1A	115629.7	115629.0	115629.2	-	A	25-4YC ↓	#2
1B	115905.0	115904.5	115904.6	-	A		#3
1C	116435.2	116434.6	116434.8	-	A		
2A	116060.2	116060.1	-	-	A		
2B	116176.2	116175.5	116175.5	-	A		
2C	116430.7	116430.1	116430.0	-	A		
3A	115882.9	115882.5	115882.4	-	A		
3B	116122.6	116122.4	-	-	A		
3C	116620.85	116619.7	116619.7	-	A		
4A	116025.4	116024.7	116025.3	116025.3	A		
4B	116184.6	116184.1	116184.3	-	A		
4C	116999.9	116999.6	116999.6	-	A		
5A	116759.0	116758.6	116758.8	-	A		
5B	116877.9	116877.2	116877.4	-	A		
5C	115856.9	115856.8	-	-	A		

Date/Time:							
Audit:							
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
6A							
6B							
6C							
7A							
7B							
7C							
8A							
8B							
8C							
9A							
9B							
9C							
10A							
10B							
10C							

ASTM E2515 - O-Ring Samples 11-20

Date:	8/25/25	9/10/25	9/11/25	✓			
Time:	10:36	0830	08:00	✓			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
11A	3422.7	3422.6	-	-	A	25-443	#2
11B	4233.7	4233.7	-	-	A		
11C	3587.5	3587.3	-	-	A		
12A	3584.7	3584.6	-	-	A	25-443	#3
12B	3614.3	3614.3	-	-	A		
12C	3549.9	3549.9	-	-	A		
13A	3595.0	3595.0	-	-	A	25-443	#4
13B	3640.2	3640.4	-	-	A		
13C	4408.2	4408.3	-	-	A		
14A	3341.6	3341.7	-	-	A	25-436	#1
14B	3365.9	3366.1	-	-	A		
14C	3442.1	3442.4	3442.3	-	A		
15A	3569.1	3569.4	3569.2	-	A	25-436	#2
15B	3570.6	3570.7	-	-	A		
15C	3395.9	3395.8	-	-	A		

Date:	9/22/25	9/24/25	-	-			
Time:	16:00	10:30	-	-			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
16A	3571.6	3571.5	-	-	A	25-431	#3
16B	3636.8	3636.6	-	-	A		
16C	3599.9	3500.1	-	-	A		
17A	3611.2	3611.2	-	-	A	25-436	#4
17B	3567.5	3567.6	-	-	A		
17C	3596.1	3596.0	-	-	A		
18A	3601.2	3601.1	-	-	A	25-448	#1
18B	3544.0	3543.9	-	-	A		
18C	3526.8	3526.6	-	-	A		
19A	3584.6	3584.4	-	-	A	25-448	#2
19B	3630.2	3630.1	-	-	A		
19C	3612.7	3612.7	-	-	A		
20A	3557.5	3557.5	-	-	A	25-446	#1
20B	3612.7	3612.5	-	-	A		
20C	3608.5	3608.3	-	-	A		

ASTM E2515 - O-Ring Samples 1-10

Paired Weights

Date/Time:	10/24/25 14:00	10/27 10:00	-	-			
Audit:	200.0	200.0	-	-			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
1A	3566.6	3566.6	-	-	A	25-446	#2
1B	3555.3	3555.5	-	-	A		#3
1C	4165.8	4166.0	-	-	A		
2A	3552.0	3552.2	-	-	A		
2B	3572.0	3571.9	-	-	A		
2C	3389.8	3389.9	-	-	A		
3A	3578.5	3578.4	-	-	A		
3B	3566.6	3566.4	-	-	A		
3C	3621.6	3621.4	-	-	A		
4A	3376.1	3375.9	-	-	A		
4B	3578.3	3578.2	-	-	A		
4C	3371.6	3371.7	-	-	A		
5A	3534.7	3534.8	-	-	A		
5B	3529.9	3529.8	-	-	A		
5C	3374.7	3374.7	-	-	A		

Date/Time:							
Audit:							
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
6A							
6B							
6C							
7A							
7B							
7C							
8A							
8B							
8C							
9A							
9B							
9C							
10A							
10B							
10C							



OFFICE OF AIR QUALITY PLANNING AND STANDARDS
RESEARCH TRIANGLE PARK, NC 27711

May 2, 2025

Mr. Guillaume Thibodeau-Fortin, P. Eng.
Laboratory Manager
Stove Builder International, Inc.
250, De Copenhague
St-Augustin-de-Desmaures (Qc)
G3A 2H3, Canada

Dear Mr. Thibodeau-Fortin,

I am writing in response to your letter received on March 26, 2025, in which you request approval of an alternative test method for demonstrating compliance with 40 CFR part 60, Subpart AAA, Standards of Performance for New Residential Wood Heaters (Subpart AAA). The U.S. Environmental Protection Agency's (EPA) Office of Air Quality Planning and Standards is the delegated authority for approval/disapproval determinations on any major alternatives to test methods and other compliance determination procedures required under 40 CFR parts 59, 60, 61, 63, and 65.

According to the information provided in your correspondence, you seek an alternative test method and testing procedures for use when conducting testing on the Stove Builder International Inc. (SBI) 1.4R Series residential wood heater. The 1.4R series is a series of freestanding stoves sharing the same firebox size and design with aesthetic differences between the models. Currently, as required by section 60.534(a)(2) of Subpart AAA, a manufacturer, when using the 2020 cord wood alternative compliance option, must have their appliance tested by an EPA-approved test laboratory and the testing conducted with cord wood using an alternative cord wood test method approved by the EPA Administrator or their delegated authority to establish the certification test conditions and the particulate matter (PM) emission values.

You request to use the specified modifications detailed below, coupled with NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standard (attached) as the alternative cord wood test method to certify the SBI 1.4R Series model line. In your request, you state that the SBI 1.4R Series is a room heater that is subject to the cordwood emissions standards in 40 CFR 60, subpart AAA and that you are seeking a cord wood alternative test method to use for this compliance testing. You also state that your appliance has a usable firebox volume of 1.67 ft³ with an overall firebox volume of 1.85 ft³. Testing a freestanding model will meet the requirements of the 2015 New Source Performance Standard. In your request, you state that you would like to use Big Leaf Maple cord wood for compliance testing. This fuel is among the allowable fuel species specified in the fuel load calculator that accompanies the NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standard. Fuel weight and length targets are determined by the Fuel Load Calculator referenced by the NYSERDA test method mentioned above.

We understand from your request, that you also seek to use several alternative testing procedures, detailed in the second list below, when conducting sampling as required by 40 CFR 60.534(c), which requires that PM emission concentrations be measured using ASTM E2515-11 *Standard Test Method for*

Determination of Particulate Matter Emissions Collected by a Dilution Tunnel (ASTM E2515-11).

Additionally, in your request, you seek to use the NYSERDA 1405D TEOM EPA Protocol to measure the first hour of PM emissions, as is required by 40 CFR 60.534(d).

Based on the information you have provided, and with the caveats set forth below, we are approving your request to use the NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standard as the alternative cord wood test method when conducting certification testing as required by Subpart AAA, section 60.534(a)(2) on the SBI 1.4R Series room heater with ASTM E-2515 using the modifications detailed below.

Here are the proposed revisions of the “NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standard”:

1. Section 1.5.2 and 13.9 – Additional information:
 - a. 10-minute average data is to be calculated as follows:
 - i. On B415.1 spreadsheet, the weight remaining on the scale and elapsed time is real time at every minute.
 - ii. All other parameters (CO, CO₂, O₂, Flue temperature and ambient temperature) are averaged using a 10-minute rolling average of the following data points. For example, at t=0, weight is weight₀, CO/CO₂/Flue/Amb are the average from t=0 to t=9. At t=1, weight is weight₁, CO/CO₂/Flue/Amb are the average from t=1 to t=10, etc.
2. Section 3.19 – Additional information:
 - a. The locked version of the Fuel Load Calculator to be used is dated 8/7/2023.
3. Section 5.1 – Additional information:
 - a. A complete copy of the Owner’s manual must be provided to the test laboratory one day prior to the day of testing. All fuel loading details must meet the requirements of section 11 in the NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standard.
 - b. All certification test procedures must be consistent with the owner’s manual and the manufacturer may not provide other operating instructions to the test lab.
 - c. All fuel loading procedures and air control/door closing procedures must be included in the Owner’s manual. This includes necessary bypass operating instructions/information required in section 11.6.5.1 of the NYSERDA Test Method for Certification of Cordwood-Fired Stoves under the 2015 New Source Performance Standard, as well as required fuel piece length information required in section 11.3.4.1.3 of that test method.
 - d. Kindling and start-up instructions in the owner’s manual are limited to top-down start, or bottom-up start direction. For the purposes of this testing, a bottom-up start will be required. There must be no discussion regarding fuel spacing and piece size in the instructions to the lab. However, general guidance on kindling and start-up fuel arrangement can be supplied (e.g., split the start-up fuel piece into 6 pieces, use between 10-15 pieces of kindling, put the biggest pieces on the bottom and the smallest on top, stack into 5 to 7 layers).
 - e. The owner’s manual information may inform the test laboratory on appliance operation; however, NO INSTRUCTIONS IN THE OWNER’S MANUAL MAY OVERRIDE

ANY REQUIREMENT OF THIS TEST METHOD, ASTM E-2515-11, or The NYSERDA Test Method for Certification of Cordwood-Fired Stoves under the 2015 New Source Performance Standard OR ANY provision stipulated in in 40 CFR 60, Subpart AAA.

4. Section 5.5.2 – Modification of the requirement:
 - a. 1.4R series has a manually controlled air intake. Language around electronically controlled air intakes does not apply.
5. Section 11.2 – Additional information:
 - a. Overall firebox dimensions and usable firebox dimensions must have been provided to EPA prior to alternative method approval. In addition, the usable firebox dimensions must be illustrated in the owner's manual with instructions to the end user or appropriate fueling/loading.
 - b. Overall firebox volume and usable firebox volume must also be reported in the test report and must agree with dimensions stated in this letter.
 - c. Fuel load density must be based on the usable firebox dimensions listed below in this alternative test method approval.
 - i. On the 1.4R Series, the Usable Firebox Volume (UFV) is smaller than the Overall Firebox Volume. As provided, the Owner's Manual for the 1.4R series specifies: *"The images below show the space in the firebox where the logs are to be placed. Leave enough space between the logs for good air circulation. Using more than the usable firebox volume for loading wood will result in poor combustion. The usable firebox volume of 1.67 ft³ shown below is the one used during EPA emissions certification and represents the usable firebox volume for all models in this series. The recommended log length for this wood heater is 16 inches. Fuel specie and length used for the EPA certification will be Big Leaf Maple and will match the length requirement of the fuel load calculator."*

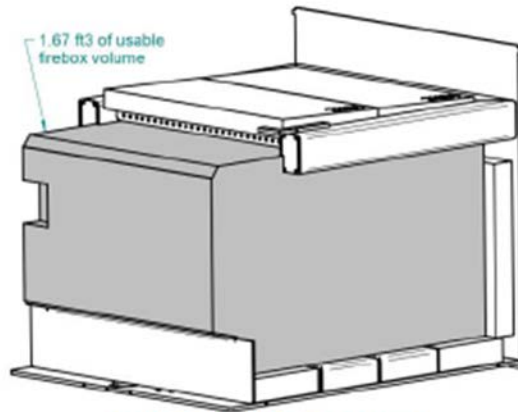
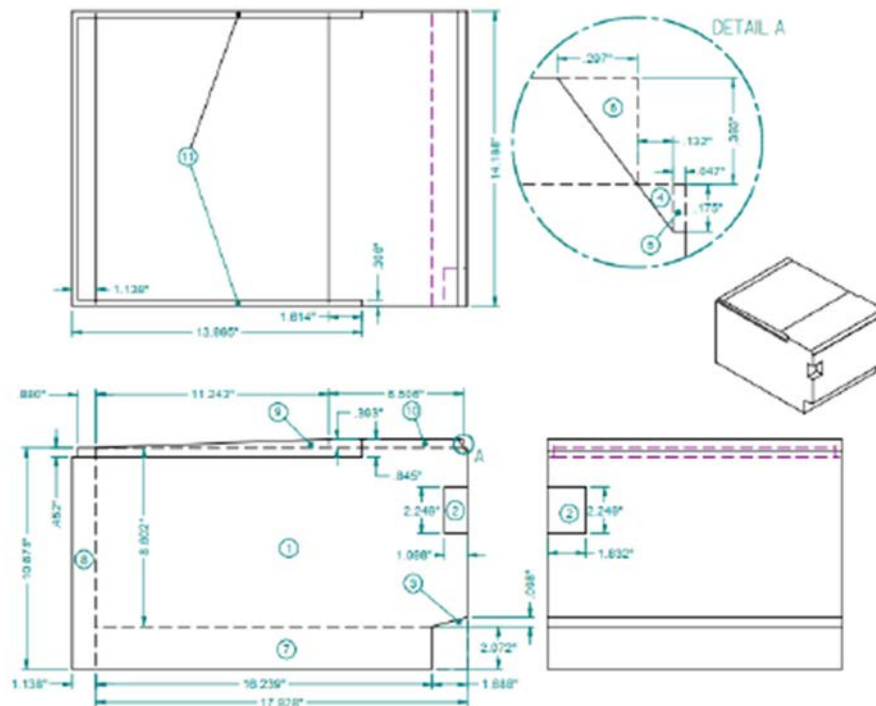


Figure 1 - Usable Firebox Volume



ii. 1.4R series UFV calculation:

$$\text{Total Volume} = \text{Volume1} + \text{Volume7} + \text{Volume8} + \text{Volume 9} + \text{Volume 10} - (\text{Volume 11}) \times 2$$

$$= 2182.106 + 477.386 + 172.358 + 31.345 + 35.449 - 2.806 \times 2 = \mathbf{2893.032 \text{ in}^3} = \mathbf{1.67 \text{ ft}^3}$$

$$\text{Volume 1} = (17.928 \times 8.602 - \text{Vol3} - \text{Vol4} - \text{Vol5}) \times 14.188 - \text{Vol2}$$

$$= (17.928 \times 8.602 - 1.688 \times 0.098 / 2 - 0.132 \times 0.175 / 2 - 0.047 \times 0.175 / 2) \times 14.188 - 1.098 \times 1.832 \times 2.249 = \mathbf{2182.106 \text{ in}^3}$$

$$\text{Volume 7} = (16.239 \times 2.072) \times 14.188 = \mathbf{477.386 \text{ in}^3}$$

$$\text{Volume 8} = (10.675 \times 1.138) \times 14.188 = \mathbf{172.358 \text{ in}^3}$$

$$\text{Volume 9} = (11.243 \times 0.393 / 2) \times 14.188 = \mathbf{31.345 \text{ in}^3}$$

$$\text{Volume 10} = (6.506 \times 0.393 - \text{Vol6}) \times 14.188 = (6.506 \times 0.393 - 0.297 \times 0.393 / 2) \times 14.188 = \mathbf{35.449 \text{ in}^3}$$

$$\text{Volume 11} = ((0.452 \times 13.995) + (1.614 \times 0.393) + (0.393 \times 11.243 / 2)) \times 0.306 = \mathbf{2.806 \text{ in}^3}$$

Note: CAD models give a volume of 2889.117 in³. This calculation gives 100.2% of the CAD volume which is representative.

iii. 1.4R Series UFV schematic:

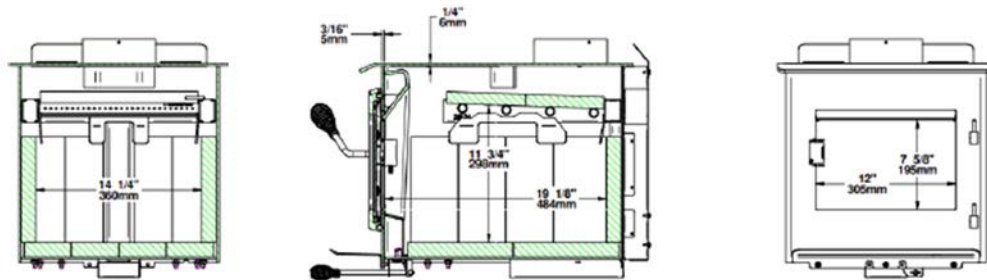
- | 1.3 Firebox Information | | |
|-------------------------|--|-----------------------------------|
| Firebox Shape: | ☒ Cubic | ☐ Cylindrical |
| Firebox width: | 14.19 | in. |
| Firebox depth: | 19.07 | in. |
| Firebox height: | 11.07 | in. |
| Volume adjustment: | 0.061 | ft ³ |
| Firebox Net Volume: | 1.671 | ft ³ |

- i. This volume adjustment represents the 2 small side volumes removed as well as the front volume for the air channel at the bottom, the lock cover and slanted top of the volume. This is calculated as follows:
- $$V_{adj} = 2V_{side} + V_{air\ ch.} + V_{lock\ cov.} + V_{slanted\ top}$$
- $$V_{adj} = 2 \times 3.618 + 59.873 + 4.52 + 34.52 = 106.149\ in^3 = 0.061\ ft^3$$
- ii. Firebox depth of 19.066 inches is measured from the back of the firebox up to the glass window. Refer to the UFV drawing for more detail.
- iii. Firebox height of 11.067 inches is the dimension measured from the bottom of the firebox up to the front secondary tube. The volume above is for mixing and secondary combustion. Refer to the UFV drawing above for more detail.
- iv. Firebox width of 14.188 inches is the width between the side bricks from each side. Refer to the UFV drawing above for more detail.
- e. The Overall firebox volume (OFV) is for marketing purposes only. The overall firebox calculation is not intended to be used for testing, as it includes areas of the firebox that the test fuel load is not permitted to be placed into. This area is a buffer zone to

allow an easier fuel insertion, to prevent ash spillage and to allow the air wash to work properly. The calculation presents below approximates the volume a consumer could easily confirm using a measuring tape. As provided, the owner's manual for the 1.4R series specifies:

"The overall firebox calculation is an approximation and is not intended to be used for loading fuel. It includes few small zones where fuel cannot be inserted."

- i. 1/4R Series Overall firebox volume (OFV) calculations:



$$OFV = 11.75 \times 19.125 \times 14.25 = 3202.2 \text{ in}^3$$

$$OFV = (3202.2 / 12^3) = 1.85 \text{ ft}^3$$

6. Section 11.3.6 – Additional Information

- a. In the Fuel Load Calculator, it is accepted to have a different actual number of pieces than the target number of pieces as long as the fuel load weight and fuel piece weight are respected.

7. Section 11.6.8.4.4 – Modification to the requirement:

- a. The door of this heater series may not remain cracked to 1 inch if the door is not physically held in position. SBI asks that the approval allow for, *"If the door cannot remain cracked to 1 inch because of a mechanical constraint, then it may be cracked to the closest position but NO LESS than 1 inch."*

8. Section 11.6.11.3.4.2 – Additional information:

- a. SBI requests that the heat output setting can be set to the lowest burn rate before the end of the 10-minute period as is suggested by the word *"may."*

9. Section 11.1.10.1.2 – Additional information:

- a. This does not apply as the 1.4R Series heater is manually controlled.

10. Section 14.2.1 – Additional information:

- a. As ASTM E2515-11 sampling of PM emissions rates is done for an entire test run (L1 – L4 use the same filters), then the PM emissions rate reported by phase will rely on TEOM sampling data from the use of the NYSERDA 1405D TEOM EPA Protocol.

11. Additional requirements:

- a. Emissions must be measured and reported from all test runs.
- b. The NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015

New Source Performance Standards is meant to be run in triplicate, with no test runs excluded (no option to replace one test run with two others) and the reported test result is the average of these three replicate tests.

- c. The sampling trains must not be disassembled until after a post-test leak check has been performed.
- d. The blower of the SBI 1.4R Series is operated manually. Per section 11.6.5.2 of the NYSEDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standards. Section 11.11.1.1 states: "All test runs should have the fan "ON" at the highest setting except for 1) the duration of L1, and 2) When the door is open in all loads (L1, L2, L3, and L4) and, 3) From the end of L3 to when the air control is set to the lowest position for L4.
- e. Per section 11.6.7.1 of the NYSEDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standards, section 11.6.7.2, all test runs must be video recorded in their entirety or at least at 1-minute intervals, and remote witness capability must be made available by the test lab upon request.
- f. Follow Technical Information Document 024 - Memo on Rounding and Significant Figures for rounding conventions: <https://www.epa.gov/emc/technical-information-document-024-memo-rounding-and-significant-figures>

The following items are ASTM E2515-11 requirements to be modified:

1. Section 7.1.1 – Additional option:
 - a. Pall TX-40 (PTFE coated) filters should be used. Certified organic binder free glass fiber filters meeting the same filtration specifications are also acceptable.
2. Section 9.2.2 – Modification of requirement:
 - a. Tunnel flow rate must be sufficient to maintain tunnel temperature below 125 °F (maximum) and 113 °F on a 10-minute rolling average, excluding periods when the appliance door is open. Two exceedances are allowed of the 10-minute rolling average points in each test run. The tunnel relative humidity must be below 90% humidity at 80°F (ASTM E2515-11 minimum filter temperature as required in this alternative test method) based on 1-minute data excluding periods when the appliance door is open.
 - i. Optionally, real-time tunnel dewpoint temperature measurements recorded at a minimum rate of one reading per minute can be made to override the maximum tunnel temperature requirement (125°F maximum and 113°F on a 10-minute rolling average). One-minute dewpoint temperature measurements in the dilution tunnel must be below the one-minute ASTM E2515-11 filter temperature measurement. If there is an exceedance of the tunnel dewpoint temperature above the ASTM E2515-11 filter temperature, then the test run is invalid and must be repeated.
 - ii. As an alternative to 1.a.i, the tunnel relative humidity may be measured using a psychrometer to measure the wet bulb temperature in the dilution tunnel. These measurements must be taken and recorded, at a minimum of every 2 minutes. ASTM E0377-15 Standard Test Method for Measuring Humidity with a Psychrometer (the Measurement of Wet- and Dry- Bulb Temperatures) may be followed for these purposes.

- b. With respect to the last sentence in ASTM E2515-11 section 9.2.2, you are excluded from the following requirement: “The maximum tunnel flow rate shall not exceed five times the minimum flow rate determined as shown in 9.2.4.”
- 3. Section 9.8.1, 10.2.1 and 11.7 – Additional requirements:
 - a. The filter temperature must be maintained between 80 and 90 °F during testing.
 - b. Filters must be weighed in pairs using EPA ALT-154.
 - c. Only one point per sampling train is allowed outside the ± 10 percent proportionality range per test run.
 - d. Non-desiccated post-test filter weights must be taken within an hour after the post-test leak check. These initial weights must be included in the test report.
 - e. Oven drying or applying heat to the filter as a form of desiccation is not allowed.
 - f. Dual train comparison (precision) must be calculated in terms of percent difference between the two sample trains and in terms of calculated emissions difference on a g/kg basis. These values must both be clearly reported for each test run.
 - g. Negative filter weights must be discussed in the test report. Where negative mass (i.e., filter material left on O-rings and gaskets) is subtracted from the overall PM mass, the resultant PM mass must be reported with the mass subtracted and with the mass not subtracted for comparison purposes. Given the gravimetric procedures in ALT-154, we do not expect to encounter any negative mass issues with the filters but if any should be present, there must be a full discussion in the test report on how this may have come to be the case and what impact it may have on the measured emissions.
- 4. Section 9.5.2 to 11.4R.2 – Additional requirement:
 - a. Ambient background sampling and filter collection must be conducted per the NYSEKDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standards, section 11.12, ASTM E2515-11, section 4.3 and all other method specific room air sampling requirements.
- 5. Sections 9.6.4 through 9.6.5.1 - Additional requirement:
 - a. Particulate matter emission concentrations must be measured with ASTM E2515-11 with the following exceptions, eliminate section 9.6.5.1 of ASTM E2515-11 and perform the post-test leak checks as specified below:
 - i. Post-Test Leak Check: A leak check of each sampling train is mandatory at the conclusion of each sampling run before sample recovery. The leak check must be performed in accordance with the procedures of ASTM E2515-11, section 9.6.4.1, except that it must be conducted at a vacuum equal to or greater than the maximum value reached during the sampling run. If the leakage rate is found to be no greater than 0.0003 m³/min (0.01 cfm) or 4% of the average sampling rate (whichever is less), the leak check results are acceptable. If a higher leakage rate is obtained, the sampling run is invalid.
 - b. Additionally, if a component change of either sampling train is needed during sampling, then perform the leak check specified below:
 - i. Leak Checks During Sample Run: If, during a sampling run, a component (e.g., filter assembly) change becomes necessary, a leak check must be conducted immediately before the change is made. Record the sample volume before and after the leak test. **The sample volume collected during any leak checks must not be included in the total sample volume for the test run.** The leak check

must be done according to the procedure outlined in ASTM E2515-11, section 9.6.4.1, except that it must be done at a vacuum equal to or greater than the maximum value recorded up to that point in the sampling run. If the leakage rate is found to be no greater than 0.0003 m³/min (0.01 cfm) or 4% of the average sampling rate (whichever is less), the leak check results are acceptable. If a higher leakage rate is obtained, the sampling run is invalid.

- c. NOTE: Immediately after component changes, leak checks are optional but are highly recommended. If such leak checks are done, the post-test leak check procedures referenced above will be used.

When using ASTM E2515-11 to conduct first hour PM sampling as required by 60.534(d), these changes and modifications will be made:

To determine the first hour PM emissions as required by 60.534(d), the NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standards, section 10.2.3, requires the use of a TEOM operated per NYSERDA 1405D TEOM EPA Protocol to report the first-hour emission rate, to provide data for phased emissions, and real-time data reporting requirements. All TEOM measurements shall run through the entirety of the test to obtain a full data set. This means that no ASTM E2515-11 sampling will be done for the first hour emissions.

Finally, SBI asks that the "NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standard" dated November 1, 2023" would be used with the caveats above in conjunction with ASTM E2515-11 to measure particulate emission concentrations and CSA B415.1-10 to measure efficiencies and CO emission rates.

All other requirements of the NYSERDA Test Method for Certification of Cordwood-Fired Stoves Under the 2015 New Source Performance Standards and ASTM E2515-11 must be followed during the testing, and all requirements of 40 CFR part 60, Subpart AAA must be satisfied and described in your test report. This approval is based on the understanding that the lowest heat output (Btu/hr) setting on the SR 3.2 Series room heater available to the user will correspond to the lowest burn rate to be evaluated during certification testing and the test report will fully document that the certification testing was conducted as such. This is consistent with section 60.534(a)(1) of Subpart AAA, which states, "the burn rate for the low burn category must be no greater than the rate that an operator can achieve in home use and no greater than is advertised by the manufacturer or retailer."

A copy of this letter must be included in any certification test report where this alternative test method determination is used for compliance to 40 CFR 60, Subpart AAA requirements.

If you have additional questions regarding this approval, please contact me at 919-541-4790 or johnson.steffan@epa.gov.

Sincerely,

Steffan M. Johnson
Group Leader
Measurement Technology Group

attachment

cc: Sara Ayers – EPA/OECA/OC
Shannon Banner – EPA/OAQPS/SPPD
Marc Houyoux – EPA/OAQPS/AQAD
Eleana Little – EPA /OECA/OC
Rafael Sanchez – EPA/OECA
Bill Schrock - EPA/OAQPS/SPPD
Phil Sebasco – EPA /OECA/OC
Nick Swanson – EPA/OAQPS/SPPD
Karen Wesson – EPA/OAQPS/AQAD

Run 1 Photos



Picture 1: L1 Cleaned FB

Run 1 Photos



Picture 2: L1 Loaded

Run 1 Photos



Picture 3: L1 Residual

Run 1 Photos



Picture 4: L1

A photograph of a fire burning in a metal furnace or boiler. Several large, cut logs are visible, some with handwritten markings like 'H7', 'H8', and 'H9'. The fire is intense, with bright orange and yellow flames rising from the logs. The furnace is made of dark metal with visible rivets and a small access door on the left.

Picture 5: L2 Loaded

Run 1 Photos



Picture 6: L2 Residual

Run 1 Photos



Picture 7: L2

Run 1 Photos



Picture 8: L3 Loaded

Run 1 Photos



Picture 9: L3 Residual

Run 1 Photos



Picture 10: L3

Run 1 Photos



Picture 11: L4 Loaded

Run 1 Photos



Picture 12: L4 Residual

Run 1 Photos



Picture 13: L4 Unable to Load

Run 1 Photos



Picture 14: L4L

Run 1 Photos



Picture 15: L45

Run 2 Photos



Picture 1: Cleaned FB

Run 2 Photos



Picture 2: L1 Loaded

Run 2 Photos



Picture 3: L1 Residual

Run 2 Photos



Picture 4: L1

Run 2 Photos



Picture 5: L2 Loaded

Run 2 Photos



Picture 6: L2 Residual

Run 2 Photos



Picture 7: L2

Run 2 Photos



Picture 8: L3 Loaded

Run 2 Photos



Picture 9: L3 Residual

Run 2 Photos



Picture 10: L3

Run 2 Photos



Picture 11: L4 Loaded

Run 2 Photos



Picture 12: L4 Unable to Load

Run 2 Photos



Picture 13: L4L

Run 2 Photos



Picture 14: L4S

Run 3 Photos



Picture 1: Cleaned FB

Run 3 Photos



Picture 2: L1 Loaded

Run 3 Photos



Picture 3: L1 Residual

Run 3 Photos



Picture 4: L1

Run 3 Photos



Picture 5: L2 Loaded

Run 3 Photos



Picture 6: L2 Residual

Run 3 Photos



Picture 7: L2

Run 3 Photos



Picture 8: L3 Loaded

Run 3 Photos



Picture 9: L3 Residual

Run 3 Photos



Picture 10: L3

Run 3 Photos



Picture 11: L4 Loaded

Run 3 Photos



Picture 12: L4 Unable to Load

Run 3 Photos



Picture 13: L4L

Run 3 Photos



Picture 14: L45

Additional Photos



Picture 1: Air Setting - High

Additional Photos



Picture 2: Air Setting - Low

Additional Photos



Picture 3: Back

Additional Photos



Picture 4: Front

Additional Photos



Picture 5: Left

Additional Photos



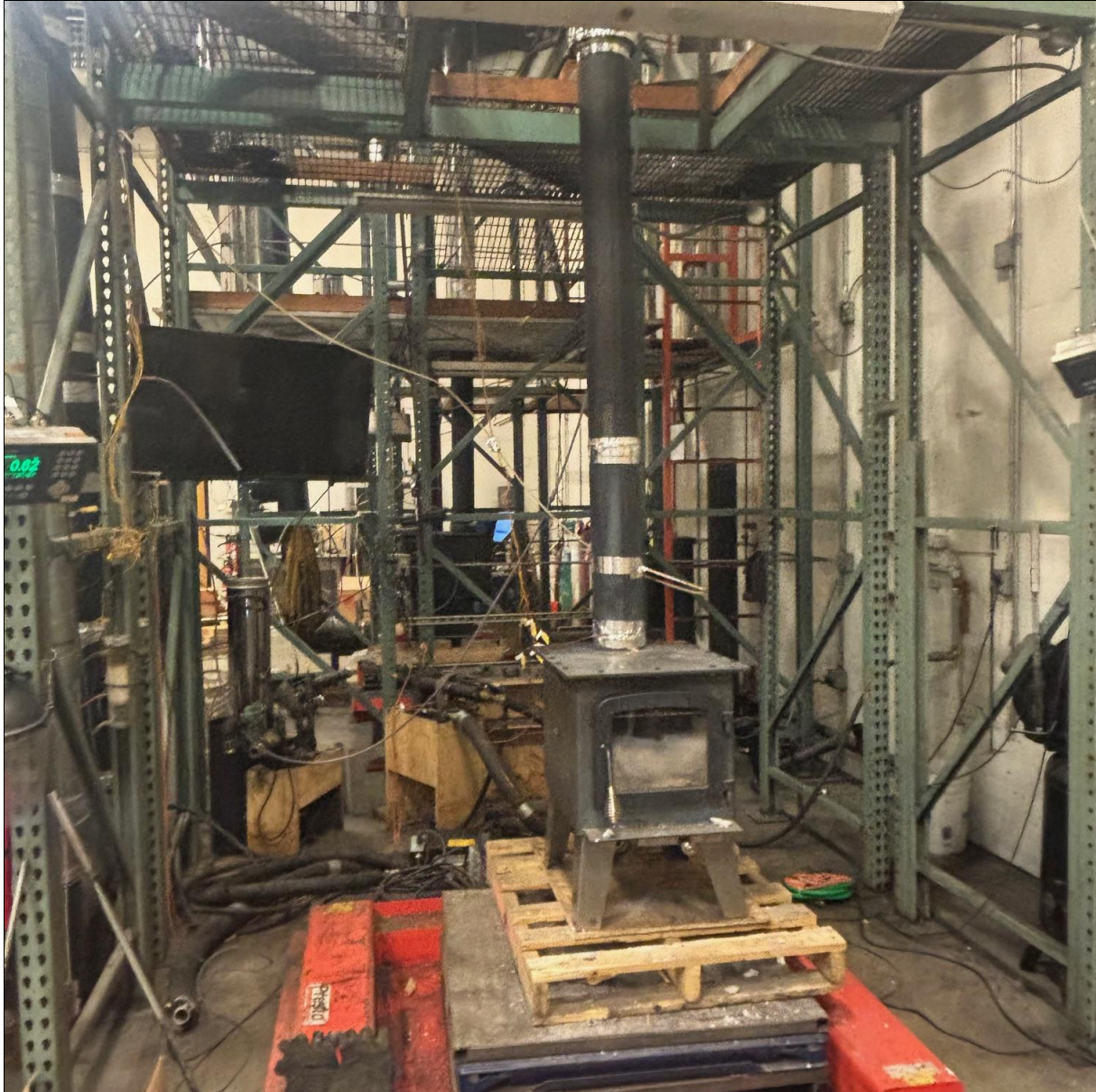
Picture 6: Right

Additional Photos



Picture 7: Sealed

Additional Photos



Picture 8: Test Setup



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

BLUE RIDGE 100 N

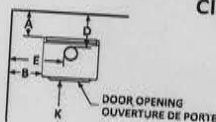
Control Number (MH) : 4009383

Certified to/Certifié selon CSA B415.1

Certified to/Certifié selon ASTM E2515-11 (R2017)

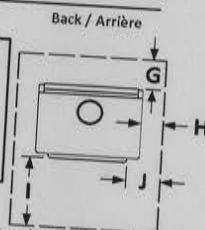
Serial Number
No. de Série

345



Clearances to combustibles / Dégagements aux combustibles

MOBILE HOME MAISONS MOBILES Double wall connector Tuyau à paroi double					
A: in./po.	(mm)	D: in./po.	(mm)	E: in./po.	(mm)
B: in./po.	(mm)	F: in./po.	(mm)		
C: in./po.	(mm)				



CANADA

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po.	(mm)	A: in./po.	(mm)
B: in./po.	(mm)	B: in./po.	(mm)
C: in./po.	(mm)	C: in./po.	(mm)
D: in./po.	(mm)	D: in./po.	(mm)
E: in./po.	(mm)	E: in./po.	(mm)
F: in./po.	(mm)	F: in./po.	(mm)

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po.	(mm)	A: in./po.	(mm)
B: in./po.	(mm)	B: in./po.	(mm)
C: in./po.	(mm)	C: in./po.	(mm)
D: in./po.	(mm)	D: in./po.	(mm)
E: in./po.	(mm)	E: in./po.	(mm)
F: in./po.	(mm)	F: in./po.	(mm)

Protection de plancher/Floor protection	
CANADA	U.S.A.
G: in./po. (mm)	I: in./po. (mm)
H: in./po. (mm)	J: in./po. (mm)
I: in./po. (mm)	K: in./po. (mm)
K: in./po. (mm)	

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate / Moyenne pondérée des émissions : 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

(For more information go to www.p65warnings.ca.gov)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm.



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

Englander

28/11/2025 (# Test)

Madison Height, (VA), USA

37010
Madison Height, (VA), USA
28/11/2025 (# Test)



Intertek

Control Number (SA) : 4002461

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

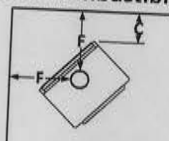
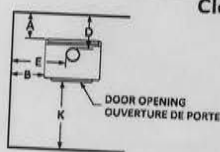
LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

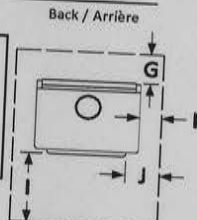
MODEL / MODÈLE :

BLUE RIDGE 100 N

345



MOBILE HOME MAISONS MOBILES Double wall connector Tuyau à paroi double					
A: in./po.	(mm)	D: in./po.	(mm)		
B: in./po.	(mm)	E: in./po.	(mm)		
C: in./po.	(mm)	F: in./po.	(mm)		



CANADA Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po.	(mm)	A: in./po.	(mm)
B: in./po.	(mm)	B: in./po.	(mm)
C: in./po.	(mm)	C: in./po.	(mm)
D: in./po.	(mm)	D: in./po.	(mm)
E: in./po.	(mm)	E: in./po.	(mm)
F: in./po.	(mm)	F: in./po.	(mm)

U.S.A. Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po.	(mm)	A: in./po.	(mm)
B: in./po.	(mm)	B: in./po.	(mm)
C: in./po.	(mm)	C: in./po.	(mm)
D: in./po.	(mm)	D: in./po.	(mm)
E: in./po.	(mm)	E: in./po.	(mm)
F: in./po.	(mm)	F: in./po.	(mm)

CANADA Protection de plancher/Floor protection		U.S.A.	
G: in./po.	(mm)	I: in./po.	(mm)
H: in./po.	(mm)	J: in./po.	(mm)
I: in./po.	(mm)	K: in./po.	(mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate / Moyenne pondérée des émissions : 1.7 g/h
Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm.
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.

ATTENTION

- CHAUD EN FONCTIONNEMENT.
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- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

Englander

St-Augustin-de-Desmaures, (Qc), Canada

37010
St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

DÉCO NANO N

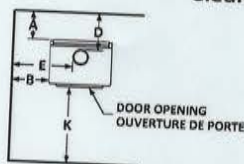
Control Number (MH) : 4009383

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

123

Clearances to combustibles / Dégagements aux combustibles



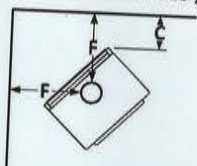
CANADA

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)



U.S.A.

Single wall connector
Tuyau à paroi simple

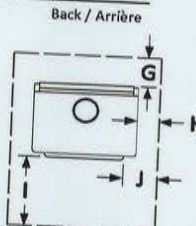
A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)



Protection de plancher/Floor protection

CANADA

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
K: in./po. (mm)

U.S.A.

I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

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PRÉVEZ LES INCENDIES

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- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
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- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
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- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
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Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm (For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

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- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37008

Madison Height, (VA), USA
28/11/2025 (# Test)

Madison Height, (VA), USA
28/11/2025 (# Test)



Intertek

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION
STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUE

MODEL / MODÈLE :

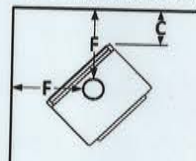
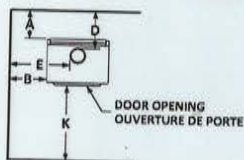
DÉCO NANO N

Control Number (SA) : 4002461 Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

123

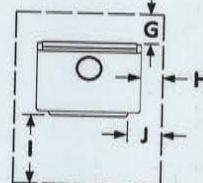
Clearances to combustibles / Dégagements aux combustibles



MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm)	D: in./po. (mm)
B: in./po. (mm)	E: in./po. (mm)
C: in./po. (mm)	F: in./po. (mm)

Back / Arrière



CANADA

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)	B: in./po. (mm)	C: in./po. (mm)	D: in./po. (mm)	E: in./po. (mm)	F: in./po. (mm)
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Double wall connector
Tuyau à paroi double

A: in./po. (mm)	B: in./po. (mm)	C: in./po. (mm)	D: in./po. (mm)	E: in./po. (mm)	F: in./po. (mm)
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U.S.A.

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)	B: in./po. (mm)	C: in./po. (mm)	D: in./po. (mm)	E: in./po. (mm)	F: in./po. (mm)
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Double wall connector
Tuyau à paroi double

A: in./po. (mm)	B: in./po. (mm)	C: in./po. (mm)	D: in./po. (mm)	E: in./po. (mm)	F: in./po. (mm)
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Protection de plancher/Floor protection

CANADA

G: in./po. (mm)	H: in./po. (mm)	I: in./po. (mm)	J: in./po. (mm)	K: in./po. (mm)
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U.S.A.

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à paroi simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37008

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUE

MODEL / MODÈLE :

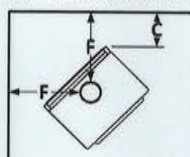
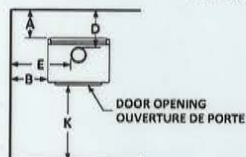
ESCAPE 1200 N

Control Number (MH) : 4009383 Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

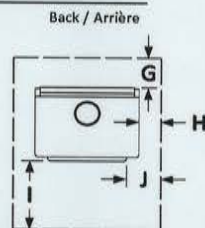
122

Clearances to combustibles / Dégagements aux combustibles



MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm) D: in./po. (mm)
B: in./po. (mm) E: in./po. (mm)
C: in./po. (mm) F: in./po. (mm)



Back / Arrière

CANADA

U.S.A.

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double		Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double		Protection de plancher/Floor protection	
C. NADA		U.S.A.		C. NADA		U.S.A.			
A: in./po. (mm)		A: in./po. (mm)		G: in./po. (mm)		I: in./po. (mm)			
B: in./po. (mm)		B: in./po. (mm)		H: in./po. (mm)		J: in./po. (mm)			
C: in./po. (mm)		C: in./po. (mm)		I: in./po. (mm)		K: in./po. (mm)			
D: in./po. (mm)		D: in./po. (mm)							
E: in./po. (mm)		E: in./po. (mm)							
F: in./po. (mm)		F: in./po. (mm)							

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC 5629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.
- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC 5629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques.
- Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37009

Madison Height, (VA), USA
28/11/2025 (# Test)

Madison Height, (VA), USA
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION
STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

ESCAPE 1200 N

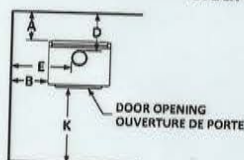
Serial Number
No. de Série

122

Control Number (SA) : 4002461

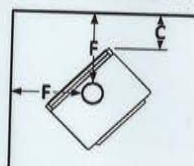
Certified to/Certifié selon ASTM E2515-11 (R2017)

Clearances to combustibles / Déagements aux combustibles



CANADA

Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)



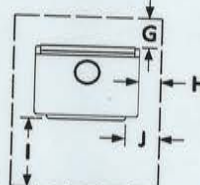
U.S.A.

Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm)	D: in./po. (mm)
B: in./po. (mm)	E: in./po. (mm)
C: in./po. (mm)	F: in./po. (mm)

Back / Arrière



Protection de plancher/Floor protection

CANADA

G: in./po. (mm)	I: in./po. (mm)
H: in./po. (mm)	J: in./po. (mm)
I: in./po. (mm)	K: in./po. (mm)

U.S.A.

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres déagements avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
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- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
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- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistente par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

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- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37009
St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUE

MODEL / MODÈLE :

FOX N

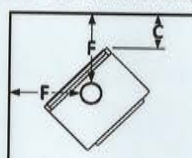
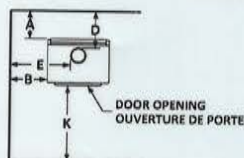
Control Number (MH) : 4009383

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

121

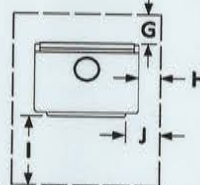
Clearances to combustibles / Dégagements aux combustibles



MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm) D: in./po. (mm)
B: in./po. (mm) E: in./po. (mm)
C: in./po. (mm) F: in./po. (mm)

Back / Arrière



CANADA

U.S.A.

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
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Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Protection de plancher/Floor protection

CANADA

U.S.A.

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
 - Contact local building or fire officials about restrictions and installation inspection in your area.
 - Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
 - See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
 - This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
 - Do not pass connector through combustible wall or ceiling.
 - Do not connect this unit to a chimney serving another appliance.
 - For use with solid fuel only. Do not use other fuels.
 - Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
 - Do not obstruct the space underneath the stove.
 - Do not use grate or elevate fire. Build fire directly on hearth.
 - Do not overfire. If heater or chimney connector glows, you are overfiring.
 - Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
 - Replace glass with ceramic type only.
 - Install unit on a non-combustible material extending as shown above on this label.
 - Combustion air openings shall not be obstructed.
 - This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.
- Installer et utiliser conformément au manuel d'utilisation du fabricant.
 - Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
 - Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
 - Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
 - Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
 - Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
 - Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
 - Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
 - Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
 - Ne rien entreposer sous l'appareil.
 - Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
 - Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
 - Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
 - Remplacer la vitre seulement avec un verre de céramique.
 - Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
 - Les entrées d'air servant à la combustion ne doivent pas être obstruées.
 - Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

Madison Height, (VA), USA
28/11/2025 (# Test)

Madison Height, (VA), USA

28/11/2025 (# Test)



Intertek

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

FOX N

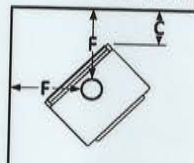
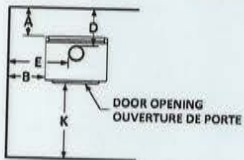
Control Number (SA) : 4002461

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

121

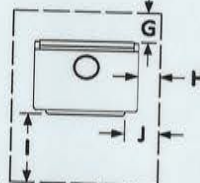
Clearances to combustibles / Dégagements aux combustibles



MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm)	D: in./po. (mm)
B: in./po. (mm)	E: in./po. (mm)
C: in./po. (mm)	F: in./po. (mm)

Back / Arrière



CANADA
Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

U.S.A.
Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Protection de plancher/Floor protection

CANADA

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
K: in./po. (mm)

U.S.A.

L: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

LISTED SOLID FUEL BURNING APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

GATEWAY 1400 N

Certified to/Certifié selon CSA B415.1

Serial Number

No. de Série

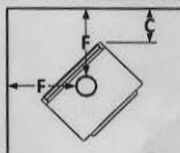
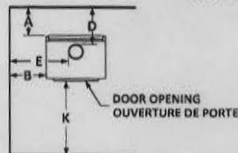
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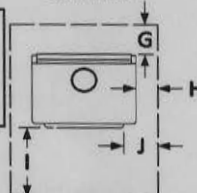
Certified to/Certifié selon ASTM E2515-11 (R2017)

Clearances to combustibles / Dégageurs aux combustibles

Back / Arrière



MOBILE HOME MAISONS MOBILES		Double wall connector Tuyau à paroi double	
A: in./po.	(mm)	D: in./po.	(mm)
B: in./po.	(mm)	E: in./po.	(mm)
C: in./po.	(mm)	F: in./po.	(mm)



CANADA

U.S.A.

Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)

Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)

Protection de plancher/Floor protection

CANADA

U.S.A.

G: in./po. (mm)	I: in./po. (mm)
H: in./po. (mm)	J: in./po. (mm)
I: in./po. (mm)	K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégageurs avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instruction. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégageurs indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de créosote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste en violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate / Moyenne pondérée des émissions : 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm.
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

Madison Height, (VA), USA

28/11/2025 (# Test)

EMPIRE
SINCE 1952

28/11/2025 (# Test)

Madison Height, (VA), USA



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

LISTED SOLID FUEL BURNING APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

Intertek

Certified to/Certifié selon CSA B415.1

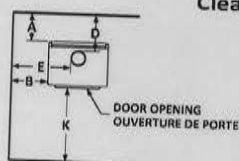
MODEL / MODÈLE :
GATEWAY 1400 N

Control Number (SA) : 4002461

Certified to/Certifié selon ASTM E2515-11 (R2017)

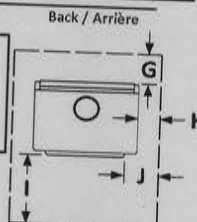
Serial Number
No. de Série

127



Clearances to combustibles / Dégagements aux combustibles

MOBILE HOME MAISONS MOBILES		Double wall connector Tuyau à paroi double	
A: in./po.	(mm)	D: in./po.	(mm)
B: in./po.	(mm)	E: in./po.	(mm)
C: in./po.	(mm)	F: in./po.	(mm)



CANADA	
Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)

U.S.A.	
Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)

Protection de plancher/Floor protection

CANADA		U.S.A.	
G: in./po. (mm)	I: in./po. (mm)	J: in./po. (mm)	K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instruction. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques.
- Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste en une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate / Moyenne pondérée des émissions : 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm.
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

St-Augustin-de-Desmaures, (Qc), Canada

28/11/2025 (# Test)



St-Augustin-de-Desmaures, (Qc), Canada

28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

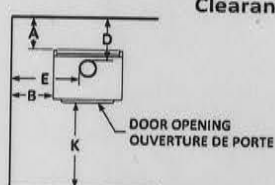
Certified to/Certifié selon ASTM E2515-11 (R2017)

**LISTED SOLID FUEL BURNING
APPLIANCE**
**POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ**
MODEL / MODÈLE :
HES140 N

Control Number (MH) : 4009383

Serial Number
No. de Série

234



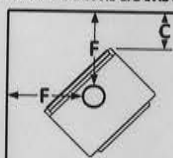
CANADA

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)



Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

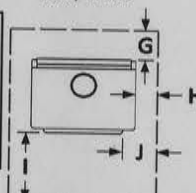
U.S.A.

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

MOBILE HOME MAISONS MOBILES Double wall connector Tuyau à paroi double					
A: in./po.	(mm)	D: in./po.	(mm)		
B: in./po.	(mm)	E: in./po.	(mm)		
C: in./po.	(mm)	F: in./po.	(mm)		

Back / Arrière



Protection de plancher/Floor protection

CANADA

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
K: in./po. (mm)

U.S.A.

I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate / Moyenne pondérée des émissions : 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)



WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm.
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

Madison Height, (VA), USA
28/11/2025 (# Test)



28/11/2025 (# Test)

Madison Height, (VA), USA



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

Certified to/Certifié selon ASTM E2515-11 (R2017)

LISTED SOLID FUEL BURNING
APPLIANCE
POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉE

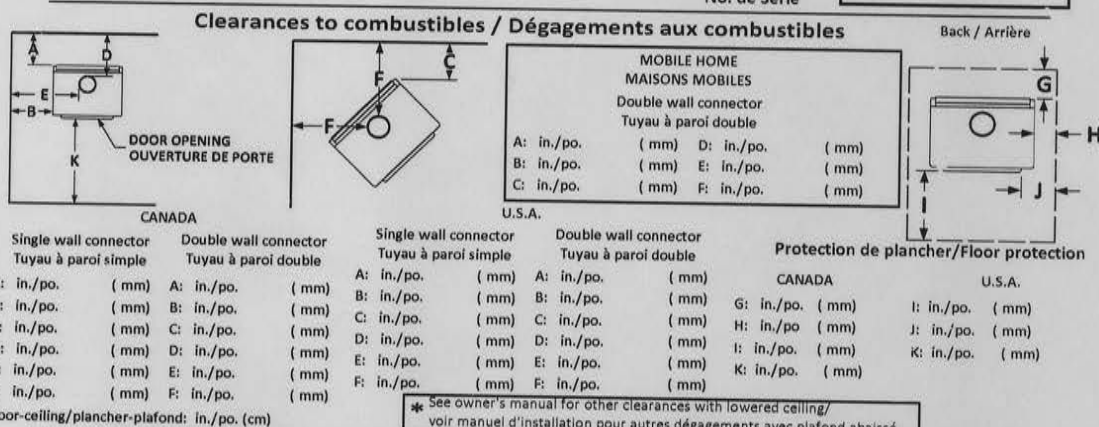
MODEL / MODÈLE :

HES140 N

Control Number (SA) : 4002461

Serial Number
No. de Série

234



PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contactez les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate / Moyenne pondérée des émissions : 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)



WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm.
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU REPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉE

MODEL / MODÈLE :

OSBURN 950 N

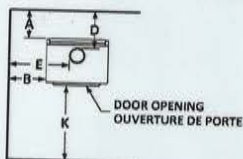
Control Number (MH) : 4009383

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

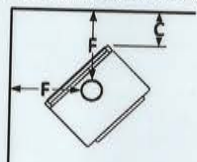
120

Clearances to combustibles / Dégageages aux combustibles



CANADA

Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)



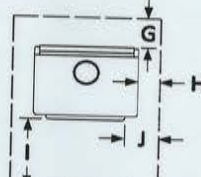
U.S.A.

Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm)	D: in./po. (mm)
B: in./po. (mm)	E: in./po. (mm)
C: in./po. (mm)	F: in./po. (mm)

Back / Arrière



Protection de plancher/Floor protection

CANADA

G: in./po. (mm)	I: in./po. (mm)
H: in./po. (mm)	J: in./po. (mm)
I: in./po. (mm)	K: in./po. (mm)

U.S.A.

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégageages avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contactez les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégageages indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

Madison Height, (VA), USA
28/11/2025 (# Test)

Madison Height, (VA), USA

28/11/2025 (# Test)



Intertek

Control Number (SA) : 4002461

REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

Certified to/Certifié selon ASTM E2515-11 (R2017)

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

OSBURN 950 N

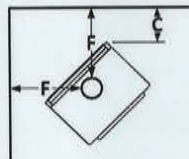
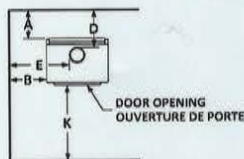
Serial Number

No. de Série

120

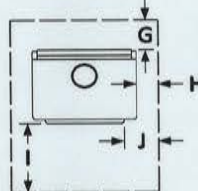
Clearances to combustibles / Dégagements aux combustibles

Back / Arrière



MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po.	(mm)	D: in./po.	(mm)
B: in./po.	(mm)	E: in./po.	(mm)
C: in./po.	(mm)	F: in./po.	(mm)



CANADA

Single wall connector
Tuyau à paroi simple

A: in./po.	(mm)
B: in./po.	(mm)
C: in./po.	(mm)
D: in./po.	(mm)
E: in./po.	(mm)
F: in./po.	(mm)

Double wall connector
Tuyau à paroi double

A: in./po.	(mm)
B: in./po.	(mm)
C: in./po.	(mm)
D: in./po.	(mm)
E: in./po.	(mm)
F: in./po.	(mm)

Single wall connector
Tuyau à paroi simple

A: in./po.	(mm)
B: in./po.	(mm)
C: in./po.	(mm)
D: in./po.	(mm)
E: in./po.	(mm)
F: in./po.	(mm)

Double wall connector
Tuyau à paroi double

A: in./po.	(mm)
B: in./po.	(mm)
C: in./po.	(mm)
D: in./po.	(mm)
E: in./po.	(mm)
F: in./po.	(mm)

Protection de plancher/Floor protection

CANADA

G: in./po.	(mm)
H: in./po.	(mm)
I: in./po.	(mm)
J: in./po.	(mm)
K: in./po.	(mm)

U.S.A.

I: in./po.	(mm)
J: in./po.	(mm)
K: in./po.	(mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à paroi simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistente par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

Fabricant de poêles international
Stove Builder International

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION
STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

S250 N

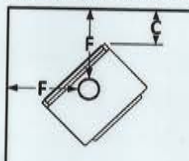
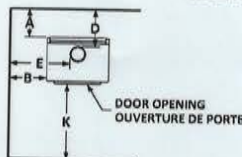
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Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

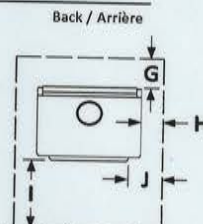
119

Clearances to combustibles / Dégagements aux combustibles



MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm) D: in./po. (mm)
B: in./po. (mm) E: in./po. (mm)
C: in./po. (mm) F: in./po. (mm)



CANADA
Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

U.S.A.
Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Protection de plancher/Floor protection
CANADA U.S.A.

G: in./po. (mm) I: in./po. (mm)
H: in./po. (mm) J: in./po. (mm)
I: in./po. (mm) K: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(i))

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37011

Madison Height, (VA), USA
28/11/2025 (# Test)

28/11/2025 (# Test)

Madison Height, (VA), USA



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉE

MODEL / MODÈLE :

S250 N

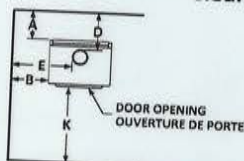
Serial Number
No. de Série

119

Control Number (SA) : 4002461

Certified to/Certifié selon ASTM E2515-11 (R2017)

Clearances to combustibles / Dégagements aux combustibles



CANADA

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

U.S.A.

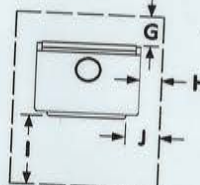
Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Back / Arrière



Protection de plancher/Floor protection

CANADA

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

U.S.A.

I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

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- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
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- Do not connect this unit to a chimney serving another appliance.
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- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
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PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
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- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
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- Remplacer la vitre seulement avec un verre de céramique.
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Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37011

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

SL1400 N

Control Number (MH) : 4009383

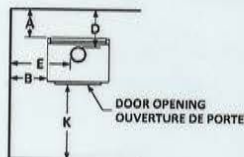
Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number

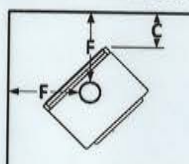
No. de Série

118

Clearances to combustibles / Dégagements aux combustibles



CANADA

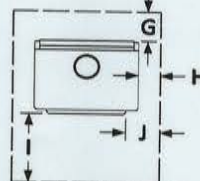


U.S.A.

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm) D: in./po. (mm)
B: in./po. (mm) E: in./po. (mm)
C: in./po. (mm) F: in./po. (mm)

Back / Arrière



Protection de plancher/Floor protection

CANADA

U.S.A.

G: in./po. (mm) I: in./po. (mm)
H: in./po. (mm) J: in./po. (mm)
K: in./po. (mm)

Single wall connector
Tuyau à paroi simple

Double wall connector
Tuyau à paroi double

Single wall connector
Tuyau à paroi simple

Double wall connector
Tuyau à paroi double

A: in./po. (mm) B: in./po. (mm)
C: in./po. (mm) D: in./po. (mm)
E: in./po. (mm) F: in./po. (mm)

A: in./po. (mm) B: in./po. (mm)
C: in./po. (mm) D: in./po. (mm)
E: in./po. (mm) F: in./po. (mm)

A: in./po. (mm) B: in./po. (mm)
C: in./po. (mm) D: in./po. (mm)
E: in./po. (mm) F: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à paroi simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

Madison Height, (VA), USA
28/11/2025 (# Test)

Fabricant de poêles international
Stove Builder International

Madison Height, (VA), USA
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

Intertek

Control Number (SA) : 4002461

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

SL1400 N

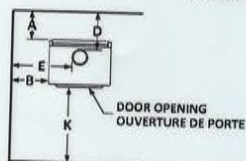
118

LISTED SOLID FUEL BURNING
APPLIANCE

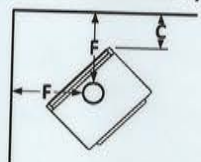
POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

Clearances to combustibles / Dégagements aux combustibles



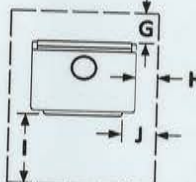
CANADA



A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Back / Arrière



Protection de plancher/Floor protection
CANADA U.S.A.

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po. (mm)		A: in./po. (mm)	
B: in./po. (mm)		B: in./po. (mm)	
C: in./po. (mm)		C: in./po. (mm)	
D: in./po. (mm)		D: in./po. (mm)	
E: in./po. (mm)		E: in./po. (mm)	
F: in./po. (mm)		F: in./po. (mm)	

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po. (mm)		A: in./po. (mm)	
B: in./po. (mm)		B: in./po. (mm)	
C: in./po. (mm)		C: in./po. (mm)	
D: in./po. (mm)		D: in./po. (mm)	
E: in./po. (mm)		E: in./po. (mm)	
F: in./po. (mm)		F: in./po. (mm)	

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po. (mm)		A: in./po. (mm)	
B: in./po. (mm)		B: in./po. (mm)	
C: in./po. (mm)		C: in./po. (mm)	
D: in./po. (mm)		D: in./po. (mm)	
E: in./po. (mm)		E: in./po. (mm)	
F: in./po. (mm)		F: in./po. (mm)	

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po. (mm)		A: in./po. (mm)	
B: in./po. (mm)		B: in./po. (mm)	
C: in./po. (mm)		C: in./po. (mm)	
D: in./po. (mm)		D: in./po. (mm)	
E: in./po. (mm)		E: in./po. (mm)	
F: in./po. (mm)		F: in./po. (mm)	

G: in./po. (mm)		I: in./po. (mm)	
H: in./po. (mm)		J: in./po. (mm)	
K: in./po. (mm)		K: in./po. (mm)	

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste en une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

Intertek

Control Number (MH): 4009383

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

LISTED SOLID FUEL BURNING
APPLIANCE

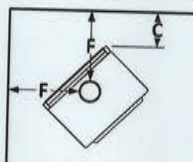
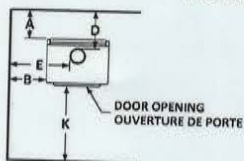
POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

SOLUTION 1.4 N

117

Clearances to combustibles / Dégagements aux combustibles

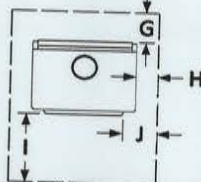


MOBILE HOME
MAISONS MOBILES

Double wall connector
Tuyau à paroi double

A: in./po. (mm) D: in./po. (mm)
B: in./po. (mm) E: in./po. (mm)
C: in./po. (mm) F: in./po. (mm)

Back / Arrière



CANADA

U.S.A.

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Protection de plancher/Floor protection

CANADA

U.S.A.

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

PRÉVENEZ LES INCENDIES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.
- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques.
- Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

Madison Height, (VA), USA
28/11/2025 (# Test)

Madison Height, (VA), USA

28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

Intertek

Control Number (SA) : 4002461

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

LISTED SOLID FUEL BURNING
APPLIANCE

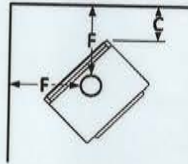
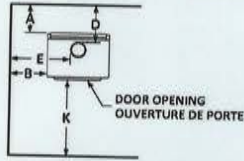
POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

SOLUTION 1.4 N

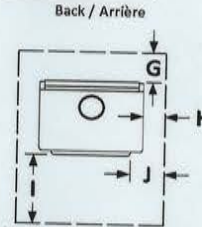
117

Clearances to combustibles / Dégagements aux combustibles



MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm) D: in./po. (mm)
B: in./po. (mm) E: in./po. (mm)
C: in./po. (mm) F: in./po. (mm)



CANADA

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Protection de plancher/Floor protection

CANADA

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

U.S.A.

L: in./po. (mm)
M: in./po. (mm)
N: in./po. (mm)
O: in./po. (mm)
P: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contactez les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles International
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUE

MODEL / MODÈLE :

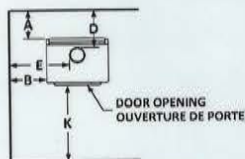
SP1400 N

Control Number (MH) : 4009383 Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

116

Clearances to combustibles / Dégagements aux combustibles



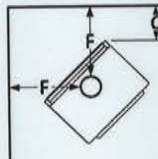
CANADA

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)



U.S.A.

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

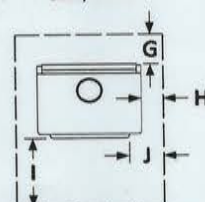
Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Back / Arrière



Protection de plancher/Floor protection

CANADA

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
K: in./po. (mm)

U.S.A.

I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contactez les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

Madison Height, (VA), USA
28/11/2025 (# Test)

Fabricant de poêles international
Stove Builder International

28/11/2025 (# Test)

Madison Height, (VA), USA



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION
STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

SP1400 N

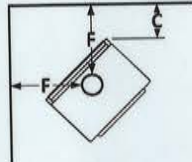
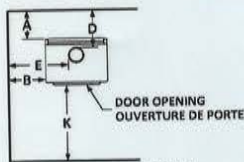
Control Number (SA) : 4002461

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

116

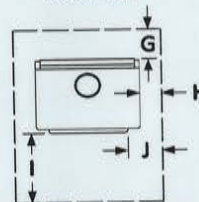
Clearances to combustibles / Déagements aux combustibles



MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm) D: in./po. (mm)
B: in./po. (mm) E: in./po. (mm)
C: in./po. (mm) F: in./po. (mm)

Back / Arrière



CANADA

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Protection de plancher/Floor protection

CANADA

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
K: in./po. (mm)

U.S.A.

I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres déagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les déagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37XXX

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

Fabricant de poêles international
Stove Builder International

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU REPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

SPARK II N

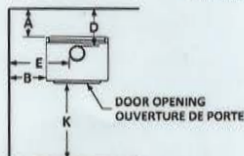
Control Number (MH) : 4009383

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

115

Clearances to combustibles / Dégagements aux combustibles



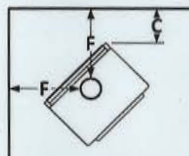
CANADA

Single wall connector
Tuyau à paroi simple

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)



U.S.A.

Single wall connector
Tuyau à paroi simple

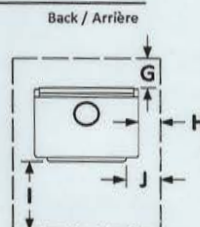
A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

Double wall connector
Tuyau à paroi double

A: in./po. (mm)
B: in./po. (mm)
C: in./po. (mm)
D: in./po. (mm)
E: in./po. (mm)
F: in./po. (mm)

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm) D: in./po. (mm)
B: in./po. (mm) E: in./po. (mm)
C: in./po. (mm) F: in./po. (mm)



Protection de plancher/Floor protection

CANADA

G: in./po. (mm)
H: in./po. (mm)
I: in./po. (mm)
K: in./po. (mm)

U.S.A.

I: in./po. (mm)
J: in./po. (mm)
K: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres dégagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
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- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37007

Madison Height, (VA), USA
28/11/2025 (# Test)

Fabricant de poêles international
Stove Builder International

Madison Height, (VA), USA
28/11/2025 (# Test)



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION

STANDARDS / NORMES D'ESSAI:

Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE

POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉ

MODEL / MODÈLE :

SPARK II N

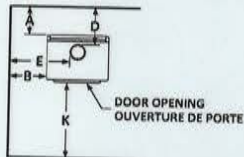
Control Number (SA) : 4002461

Certified to/Certifié selon ASTM E2515-11 (R2017)

Serial Number
No. de Série

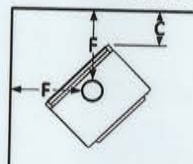
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Clearances to combustibles / Déagements aux combustibles



CANADA

Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)



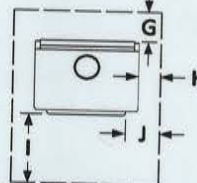
U.S.A.

Single wall connector Tuyau à paroi simple	Double wall connector Tuyau à paroi double
A: in./po. (mm)	A: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)
F: in./po. (mm)	F: in./po. (mm)

MOBILE HOME
MAISONS MOBILES
Double wall connector
Tuyau à paroi double

A: in./po. (mm)	D: in./po. (mm)
B: in./po. (mm)	E: in./po. (mm)
C: in./po. (mm)	F: in./po. (mm)

Back / Arrière



Protection de plancher/Floor protection

CANADA

G: in./po. (mm)	I: in./po. (mm)
H: in./po. (mm)	J: in./po. (mm)
I: in./po. (mm)	K: in./po. (mm)

U.S.A.

Floor-ceiling/plancher-plafond: in./po. (cm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres déagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation.
- Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

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- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de créosote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques.
- Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistente par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.

AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

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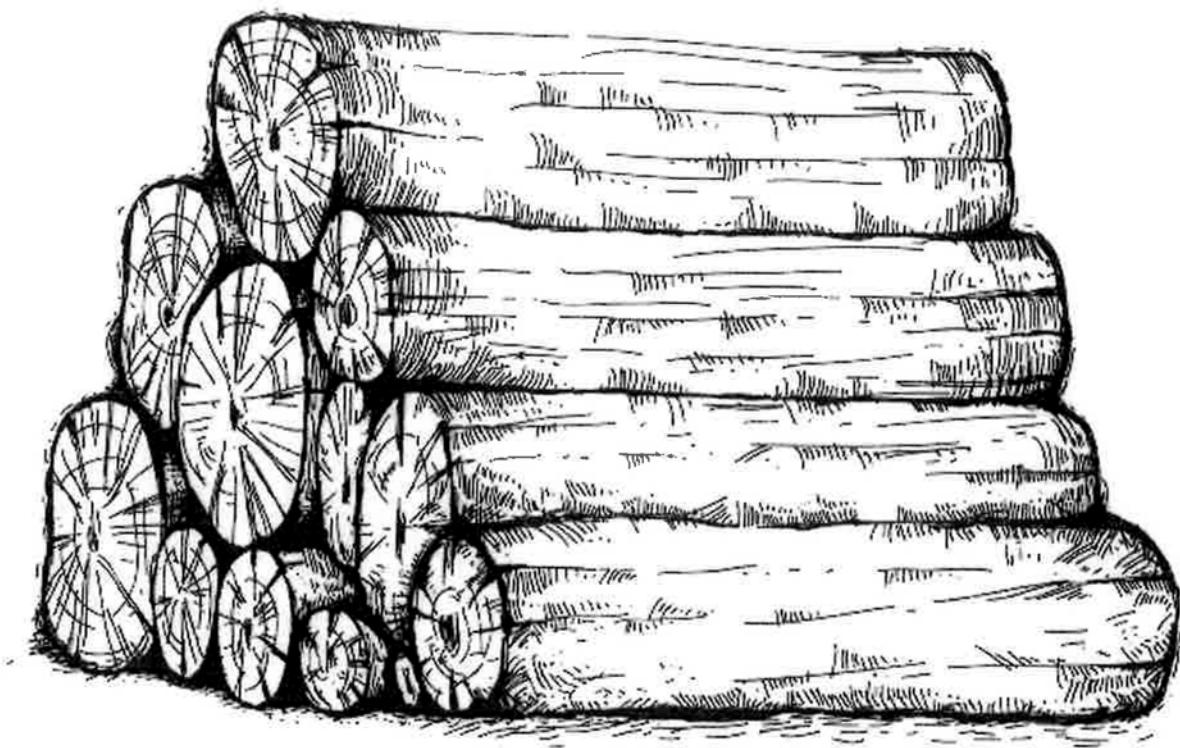
St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

Wood Stove Owner's Manual

Part 1 of 2

SAFETY NOTIFICATIONS AND GENERAL INFORMATION



ENGLISH

CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN LOCAL AREA.

READ THIS ENTIRE GUIDE BEFORE INSTALLATION AND USE OF THIS WOOD STOVE. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH.

READ AND KEEP THIS GUIDE FOR REFERENCE

THANK YOU FOR CHOOSING THIS WOOD STOVE.

If this room heater is not properly installed, a house fire may result.

To reduce the risk of fire, follow the installation instructions in this manual.

As one of North America's largest and most respected wood stove and fireplace manufacturers, Stove Builder International takes pride in the quality and performance of all its products.

The following pages provide general advice on wood heating, detailed instructions for safe and effective installation, and guidance on how to get the best performance from this stove.

It is highly recommended that this wood burning hearth product be installed and serviced by professionals who are certified by a «Qualified Agency» such as NFI (National Fireplace Institute®) or CSIA (Chimney Safety Institute of America) in the United States and in Canada by WETT (Wood Energy Technology Transfer) or in Quebec by APC (Association des Professionnels du Chauffage).

Contact local building or fire officials about restrictions and installation inspection requirements in your local area.

A building permit might be required for the installation of this stove and the chimney that it is connected to. It is also highly recommended to inform your home insurance company.

Please read this entire manual before installing and using this stove.

A primary alternative heat source should be available in the home. This heating unit may serve as a supplementary heat source. The manufacturer cannot be responsible for additional heating costs associated with the use of an alternative heat source.

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1. Safety Information and Environment

- Some stoves have been tested for use with an open door in conjunction with a fire screen, sold separately (See in the *Wood Stove Installation and Operation Manual* if your appliance has this option). The door may be opened, or fire screen removed only during lighting procedures or reloading. Always close the door or put back on the fire screen after ignition. **Do not leave the insert unattended when the door is open with or without a fire screen.**
- **WARNING : OPERATE ONLY WITH THE DOOR FULLY CLOSED OR FULLY OPEN WITH THE FIRE SCREEN IN PLACE (IF THIS OPTION IS ALLOWED WITH YOUR STOVE). IF THE DOOR IS LEFT PARTLY OPEN, GAS AND FLAME MAY BE DRAWN OUT OF THE OPENING, CREATING RISKS FROM BOTH FIRE AND SMOKE.**
- **WARNING: ALWAYS OPERATE THE STOVE WITH THE ASH DRAWER CLOSED.**
- **HOT WHILE IN OPERATION, KEEP CHILDREN, CLOTHING AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. GLOVES MAY BE NEEDED FOR THE STOVE OPERATION.**
- Using a stove with cracked or broken components, such as glass, firebricks or baffle may produce an unsafe condition and may damage the stove.
- Open the air control fully before opening the loading door.
- **DO NOT BURN GARBAGE OR FLAMMABLE FLUIDS SUCH AS GASOLINE, NAPHTA OR ENGINE OIL.**
- Do not store fuel within heater minimum installation clearances.
- Burn only seasoned natural firewood.
- This appliance should always be maintained and operated in accordance with these instructions.
- Do not elevate the fire by using a grate.
- This appliance must always be used with the original andirons, if equipped.
- Do not use makeshift materials or make any compromises when installing this appliance.
- This wood heater needs periodic inspection and repairs for the proper operation. It is against federal regulations to operate this wood heater in a manner inconsistent with operating instructions in this guide.
- A smoke detector, a carbon monoxide detector and a fire extinguisher should be installed in the house. The location of the fire extinguisher should be known by all family members.
- A smoke detector located in the proximity of the stove may be activated when the door of the stove is open to reload or to stir.



This product can expose you to chemicals including carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm. For more information go to www.P65warnings.ca.gov/

- The information given on the certification label affixed to the appliance always overrides the information published, in any other media (owner's manual, catalogues, flyers, magazines and

web sites).

- Mixing of appliance components from different sources or modifying components may result in hazardous conditions. Where any such changes are planned, Stove Builder International Inc. should be contacted in advance.
- Any modification of the appliance that has not been approved in writing by the testing authority violates CSA-B365 (Canada), and ANSI NFPA 211 (USA).
- **CAUTION: DO NOT CONNECT TO OR USE IN CONJUNCTION WITH ANY AIR DISTRIBUTION DUCTWORK UNLESS SPECIFICALLY APPROVED FOR SUCH INSTALLATION.**
- **CAUTION: DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.**
- Connect this stove only to a listed factory-built chimney for use with solid fuel or to a lined masonry chimney conforming to national and local building codes.
- If required, a supply of combustion air shall be provided to the room.
- This stove must be installed as a free-standing heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- **NOTE: DO NOT INSTALL THE CHIMNEY DIRECTLY AT THE OUTLET OF THE APPLIANCE. A CHIMNEY CONNECTOR (FLUE PIPE) IS REQUIRED UNLESS THE APPLIANCE IS SPECIFICALLY APPROVED FOR THAT TYPE OF INSTALLATION.**

1.1 Mobile Home

- Some appliances may be installed in a mobile home. The installation requires a fresh air kit, sold separately.
- **WARNING : DO NOT INSTALL IN THE SLEEPING ROOM OF A MOBILE HOME.**
- **IF INSTALLATION OF THIS PRODUCT IS PERMITTED IN A MOBILE HOME, IT MUST BE SECURED TO THE STRUCTURE.**
- **CAUTION : WHEN THE INSTALLATION IN A MOBILE HOME IS ACCEPTED, THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL, CEILING AND ROOF MUST BE MAINTAINED.**
- **IT IS PROHIBITED TO USE THIS WOOD STOVE WITH A FIRE SCREEN IN A MOBILE HOME.**

Over-Firing the fireplace

DO NOT OVERFIRE THIS FIREPLACE: Attempts to achieve firing rates that exceed the fireplace specifications can result in permanent damage to the heater.

This fireplace is designed to operate at a high temperature. However, all installation are different and due to differences in wood heating value, wood moisture content, chimney configuration, and flue draft, this appliance can reach excessive temperature in the worst conditions. If the top or door of the fireplace or other area starts to glow red, you are over-firing the fireplace. Shut down the air control down to slow down the firing rate.

1.2 Regulations Covering Stove Installation

When installed and operated as described in these instructions, this wood stove is suitable for use as a freestanding heater in residential installations.

In Canada, the CSA-B365 *Installation Code for Solid Fuel Burning Appliances and Equipment* and the CSA-C22.1 *Canadian National Electrical Code* are to be followed in the absence of local code requirements. In the USA, the ANSI NFPA 211 *Standard for Chimneys, Fireplaces, Vents and Solid Fuel-Burning Appliances* and the ANSI NFPA 70 *National Electrical Code* are to be followed in the absence of local code requirements.

This stove must be connected to a chimney complying with the requirements for Type HT chimneys in the *Standard for Factory-Built Chimneys for Residential Type and Building Heating Appliances*, UL 103HT and ULC S629 or to a code-approved masonry chimney with a flue liner.

1.3 Location of the Certification Label

Since the information given on the certification label affixed to the appliance always overrides the information published, in any other media (owner's manual, catalogues, flyers, magazines and web sites) it is important to refer to it in order to have a safe and compliant installation. In addition, important information about the stove can be found (model, serial number, etc.). The certification label is located on the back of the stove.

It is recommended to note the stove serial number on page 1 of the *Wood Stove Installation and Operation Manual* since it will be needed to precisely identify the version of the appliance in the event replacement parts or technical assistance is required.

1.4 Emissions and Efficiency

The low smoke emissions produced by the special features inside this stove firebox mean that the household will release up to 90% less smoke into the outside environment than if an older conventional stove was used. But there is more to the emission control technologies than protecting the environment.

The smoke released from wood when it is heated contains about half of the energy content of the fuel. By burning the wood completely, this stove releases all the heat energy from the wood instead of wasting it as smoke up the chimney. Also, the features inside the firebox allow control of the air supply meaning controlling the heat output, while maintaining clean and efficient flaming combustion, which boosts the efficient delivery of heat to the home.

The emission control and advanced combustion features of this stove can only work properly if the fuel used is in the correct moisture content range of 15% to 20%. Refer to the [Fuel Section](#) for suggestions on preparing fuelwood and judging its moisture.

1.5 Materials

The SBI team is committed to protecting the environment, so they do everything they can to use only materials in their products that will have no lasting negative impact on the environment.

The **body** of this stove, which is most of its weight, is carbon steel. Should it ever become necessary many years in the future, almost the entire stove can be recycled into new products, thus eliminating the need to mine new materials.

The **paint** coating on the stove is very thin. Its VOC content (Volatile Organic Compounds) is very low. VOCs can be responsible for smog, so all the paint used during the manufacturing process meets the latest air quality requirements regarding VOC reduction or elimination.

The **air tubes** are stainless steel, which can also be recycled.

The **baffle** is made of aluminosilicate fibre material that is compressed with a binder to form a rigid board. C-Cast or Vermiculite can withstand temperatures above 2,000 °F. It is not considered hazardous waste. Disposal at a ecocenter is recommended.

The **Grey firebrick** is made of cement and pumice stone. Pumice stone is made from volcanic rock. It is recommended to send it to the ecocenter.

The **Yellow firebrick** is mainly composed of silicon dioxide, also known as silica, a product processed from a mined mineral. It is most commonly found in nature in the form of sand and clay. Disposal at a ecocenter is recommended.

The door and glass **gaskets** are fibreglass which is spun from melted sand. Black gaskets have been dipped into a solvent-free solution. Disposal at a ecocenter is recommended.

The door **glass** is a 5/32" (4 mm) thick ceramic material that contains no toxic chemicals. It is made of natural raw materials such as sand and quartz that are combined in such a way to form a high temperature glass. Ceramic glass cannot be recycled in the same way as normal glass, so it should not be disposed of with your regular household products. Disposal at a ecocenter is recommended.

2. Fuel

Good firewood has been cut to the correct length for the stove, split to a range of sizes and stacked in the open until its moisture content is down to 15% to 20%.

DO NOT BURN:

- **COAL;**
- **GARBAGE;**
- **LAWN CLIPPINGS OR YARD WASTE;**
- **MATERIALS CONTAINING RUBBER, INCLUDING TIRES;**
- **MATERIALS CONTAINING PLASTIC;**
- **WASTE PETROLEUM PRODUCTS, PAINTS OR PAINT THINNERS, OR ASPHALT PRODUCTS;**
- **MATERIALS CONTAINING ASBESTOS;**
- **CONSTRUCTION OR DEMOLITION DEBRIS;**
- **RAILROAD TIES OR PRESSURE-TREATED WOOD;**
- **MANURE OR ANIMAL REMAINS;**
- **SALT WATER DRIFTWOOD OR OTHER PREVIOUSLY SALT WATER SATURATED MATERIALS;**
- **UNSEASONED WOOD; OR**
- **PAPER PRODUCTS, CARDBOARD, PLYWOOD, OR PARTICLE BOARD. THE PROHIBITION AGAINST BURNING THESE MATERIALS DOES NOT PROHIBIT THE USE OF FIRE STARTERS MADE FROM PAPER, CARDBOARD, SAW DUST, WAX AND SIMILAR SUBSTANCES FOR THE PURPOSE OF STARTING A FIRE IN AN AFFECTED WOOD HEATER.**
- **BURNING THESE MATERIALS MAY RESULT IN THE RELEASE OF TOXIC FUMES OR RENDER THE HEATER INEFFECTIVE AND CAUSE SMOKE.**
- **IF THESE FUELS ARE BURNED, IT COULD CREATE A HIGHER CONCENTRATION OF CO THAN BURNING HARDWOOD.**

2.1 Tree Species

The tree species the firewood is produced from is less important than its moisture content. The main difference in firewood from various tree species is the density of the wood. Hardwoods are denser than softwoods.

Homeowners with access to both hardwood and softwood use both types for different purposes.

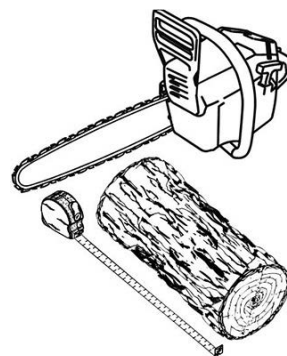
Softer woods make good fuel for mild weather in spring and fall because they light quickly and produce less heat. Softwoods are not as dense as hardwoods so a given volume of wood contains less energy. Using softwoods avoids overheating the house, which can be a common problem with wood heating in moderate weather. Harder woods are best for colder winter weather when more heat and longer burn cycles are desirable.

Note that hardwood trees like oak, maple, ash and beech are slower growing and longer lived

than softer woods like poplar and birch. That makes hardwood trees more valuable. The advice that only hardwoods are good to burn is outdated. Old, leaky cast iron stoves wouldn't hold a fire overnight unless they were fed large pieces of hardwood. That is no longer true.

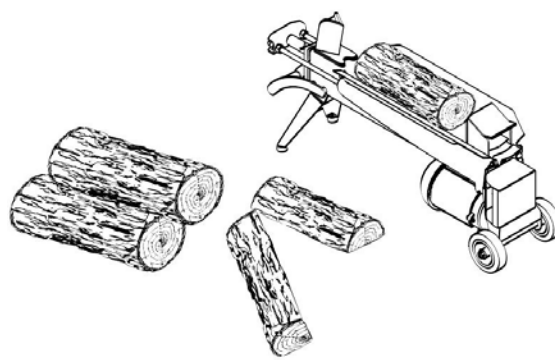
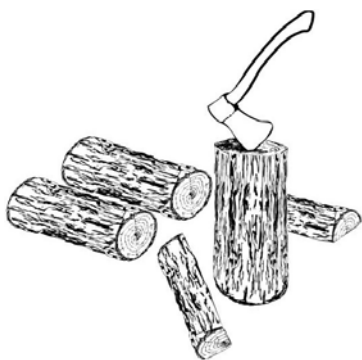
2.2 Log Length

Logs should be cut at least 1" (25 mm) shorter than the firebox so they fit in easily. Pieces that are even slightly too long makes loading the stove very difficult. The most common standard length of firewood is 16" (400 mm).



2.3 Piece Size

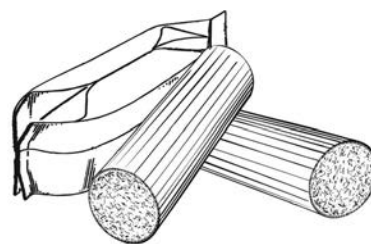
Firewood dries more quickly when it is split. Large unsplit rounds can take years to dry enough to burn. Even when dried, unsplit logs are difficult to ignite because they don't have the sharp edges where the flames first catch.



Wood should be split to a range of sizes, from about 3" to 6" (75 mm to 150 mm) in cross section. Having a range of sizes makes starting and rekindling fires much easier.

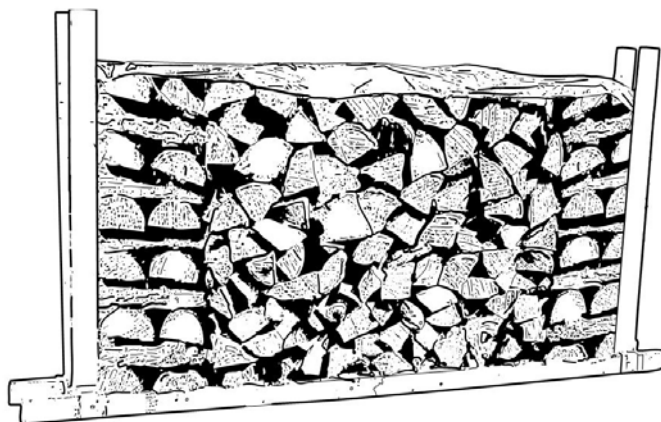
2.4 Compressed Wood Logs

Compressed wood logs made of 100% compressed sawdust can be burned with caution in the number of these logs burned at once. Do not burn compressed logs made of wax impregnated sawdust or logs with any chemical additives. Follow the manufacturer's instructions and warnings.



2.5 Drying Time

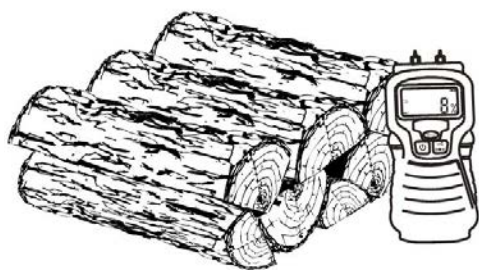
Firewood that is not dry enough to burn is the cause of most complaints about wood burning appliances. Continually burning green or unseasoned wood produces more creosote and involves lack of heat and dirty glass door. Firewood with a moisture content between 15% and 20% will allow the stove to produce its highest possible efficiency.



Here are some facts to consider in estimating drying time:

- Firewood bought from a dealer is rarely dry enough to burn, so it is advisable to buy the wood in spring and dry it yourself;
- Drying happens faster in dry weather than in a damp climate;
- Drying happens faster in warm summer weather than in winter weather;
- Small pieces dry more quickly than large pieces;
- Split pieces dry more quickly than unsplit rounds;
- Softwoods like pine, spruce, poplar, and aspen take less time to dry than hardwoods. they can be dry enough to burn after being stacked to air dry only for the summer months;
- Hardwoods like oak, maple and ash can take one, or even two years to dry fully, especially if the pieces are big;
- Firewood dries more quickly when stacked outside in a location exposed to sun and wind; it takes much longer to dry when stacked in a wood shed;

Use these guidelines to find out if the firewood is dry enough to burn:



- Cracks form at the ends of logs as they dry;
- The wood turns from white or cream colored to grey or yellow;
- Two pieces of wood struck together sounds hollow;
- Dry wood is much lighter in weight than wet wood,
- The face of a fresh cut feels warm and dry;
- The moisture content read by a moisture meter is between 15% to 20%.

3. Burning Wood Efficiently

3.1 First Use

Two things happen when burning the first few fires; the paint cures and the internal components are conditioned. As the paint cures, some of the chemicals vaporize. The vapors are not poisonous, but they smell bad. Fresh paint fumes can also trigger false alarms in smoke detectors. When lighting the heater for the first few times, it may be wise to open doors and windows to ventilate the house.

Burn two or three small fires to begin the curing and conditioning process. Then build bigger and hotter fires until there is no longer paint smell from the stove. As hotter and hotter fires are burned, more of the painted surfaces reach the curing temperature of the paint. The smell of curing paint does not disappear until one or two very hot fires have been burned.

Never built the fire too close to the glass. It may cause higher temperature and produce a faster aging of the glass.

3.2 Lighting Fires

Each person heating with wood develops its own favorite way to light fires. Regardless of the method chosen, the goal should be to have a hot fire burning, quickly. A fire that ignites fast produces less smoke and deposits less creosote in the chimney.



Never use gasoline, gasoline-type lantern fuel (naphtha), fuel oil, motor oil, kerosene, charcoal lighter fluid, or similar liquids or aerosols to start or 'freshen up' a fire in this wood stove. Keep all such liquids well away from the stove while it is in use.

Here are three popular and effective ways to ignite wood fires.

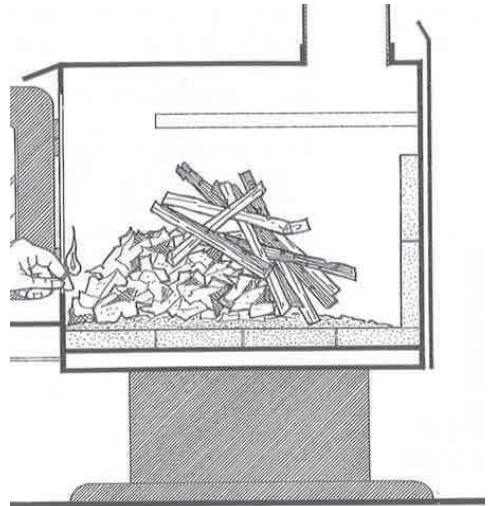
3.2.1 Conventional Method

The conventional method to build a wood fire is to crumple 5 to 10 sheets of newspaper and place them in the firebox and hold them in place with ten pieces of kindling wood. The kindling should be placed on and behind the newspaper.

Then add two or three small pieces of firewood. Open the by-pass damper (if equipped), open the air intake control completely and ignite the newspaper. Leave the door slightly ajar.

Once the fire has ignited, the door can be closed with the air control still fully open. When the kindling is almost completely burned, standard firewood pieces can be added.

Do not leave the heater unattended when the door is slightly open. Always close and latch the door after the fire ignites.



3.2.2 The Top Down Method

This method is the opposite of the conventional method and only works properly if well-seasoned wood is used.

Place three or four small, split, dry logs in the firebox. Arrange the kindling wood on the logs in two layers at right angles and place a dozen finely split kindling on the second row.

It is possible to use ragged paper but it may not hold in place since it tends to roll while it is burning. The best is to wrap a sheet on itself, grab the ends of the roll and make a knot. Use four or five sheets of paper tied together and put them on top and around the kindling. Open the by-pass damper (if equipped), open the air intake control completely, ignite the paper and close the door.

The top down fire method has two advantages over the traditional method: first, the fire does not collapse on itself, and it is not necessary to add wood gradually since the combustion chamber is full before the fire is lit.

3.2.3 Two Parallel Logs Method

Two spit logs are placed in the firebox with a few sheets of twisted newspapers in between the logs. Fine kindling is added across the two logs and some larger kindling across those, log cabin style. Newspaper is lit.

3.2.4 Using Fire Starters

Commercial fire starters can be used instead of a newspaper. Always follow the instructions on the packaging before use.

DO NOT USE CHEMICALS OR FLUID TO START THE FIRE.

NEVER USE GEL STARTER IF THERE ARE HOT EMBERS INSIDE THE FIREBOX. THE BOTTLE OF GEL WILL CATCH ON FIRE.

3.3 Zone Heating

This stove is a space heater, which means it is intended to heat the area it is installed in, as well as spaces that connect to that area, although to a lower temperature. This is called zone heating and it is an increasingly popular way to heat homes or spaces within homes.

Zone heating can be used to supplement another heating system by heating a particular space within a home, such as a basement, a family room or an addition that lacks another heat source.

Houses of moderate size and relatively new construction can be heated with a properly sized and located wood stove. Whole house zone heating works best when the stove is in the part of the house where the family spends most of its time. This is normally the main living area where the kitchen, dining and living rooms are located.

Locating the stove in this area will give the maximum benefit of the heat it produces and will achieve the highest possible heating efficiency and comfort. The space where the most time is spent will be warmest, while bedrooms and basement (if there is one) will stay cooler. In this way, less wood is burnt than with other forms of heating.

Although the stove may be able to heat the main living areas of the house to an adequate temperature, it is strongly recommended to also have a conventional oil, gas or electric heating system to provide backup heating.

The success of zone heating will depend on several factors, including the correct sizing and location of the stove, the size, layout and age of your home and your climate zone. Three-season vacation homes can usually be heated with smaller stoves than houses that are heated all winter.

3.4 Combustion Cycles

Wood heating with a space heater is very different than other forms of heating. There will be temperature variations in different parts of the house and there will be temperature variations throughout day and night. This is normal, and for experienced wood burners these are advantages of zone heating wood burning.

Wood heaters don't have a steady heat output. It is normal for the temperature to rise after a new load of wood is ignited and for its temperature to gradually decrease throughout the burning cycle. This increasing and decreasing temperature can be matched with the household routines. For example, the temperature in the area can be cooler when the household is active, and it can be warmer when it is inactive.

Wood burns best in cycles. A cycle starts when a new load of wood is ignited by hot coals and

ends when that load has been consumed down to a bed of charcoal about the same size as it was when the wood was loaded.

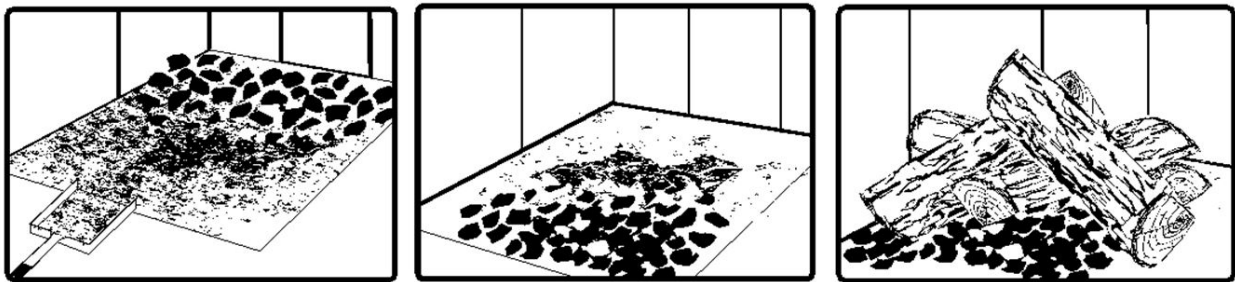
Trying to produce a steady heat output by placing a single log on the fire at regular intervals is not recommended. Always place at least three, and preferably more pieces on the fire at a time so that the heat radiated from one piece helps to ignite the pieces next to it. Each load of wood should provide several hours of heating. The size of each load may vary depending on the amount of heat required.

Burning in cycles means the loading door does not need to be opened while the wood is flaming. This is an advantage since it is preventing smoke leaking from the heater when the door is opened as a full fire is burning. This is especially true if the chimney is on the outside wall of the house.

If the door must be opened while the fire is flaming, fully open air control for a few minutes then open the bypass damper (if equipped) and open the door slowly.

3.5 Rekindling a Fire

When the temperature of the room is lower and all that remains is embers, it is time to reload. Remove excess ash from the front of the firebox and bring the ashes forward. Place a new load of wood on, and at the back of the embers. Open the air control and the by-pass damper (if equipped) completely and close the door.



Raking the coals is useful for two reasons. First, it brings them near where most of the combustion air enters the firebox. This will ignite the new load quickly. Secondly, the charcoal will not be smothered by the new load of wood. When the embers are simply spread inside the combustion chamber, the new load smoulder for a long time before igniting.

Close the air control only when the firebox is full of bright turbulent flames, the wood is charred, and its edges are glowing.

The heater should not be left unattended during ignition and the fire should not burn at full intensity for more than a few minutes.

When lighting a new load, the appliance produces a heat surge. This heat surge is pleasant when the room temperature is cool but can be unpleasant when the room is already warm. Therefore, it is best to let each load of wood burn completely so that the room cools down before putting a load of wood back on.

Do not overfire the unit. The signs of an overfired unit are a roaring fire, the chimney connector is glowing red and an extreme heat coming from the cookstove. If this occurs, **DO NOT OPEN THE DOOR**. Shut-off the air inlet opening completely and wait until the glow has completely subsided.

3.6 Removing Ashes

Ash should be removed from the firebox every two to three days of full time heating. Ash should not accumulate excessively in the firebox since it will affect the proper operation of the appliance. The best time to remove ash is in the morning, after an overnight fire when the heater is relatively cold, but there is still a little chimney draft to draw the ash dust into the heater and prevent going out into the room.

Ashes almost always contain live embers that can stay hot for days and which release carbon monoxide gas. Ashes should be placed in a tightly covered metal container. The container must be placed on a non-combustible floor or on the ground well away from all combustible materials.

If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be kept in a closed metal container until they are completely cooled. No other waste should be placed in this container.



NEVER STORE ASHES INDOORS OR IN A NON-METALLIC CONTAINER OR ON A WOODEN DECK.

3.7 Air Intake Control

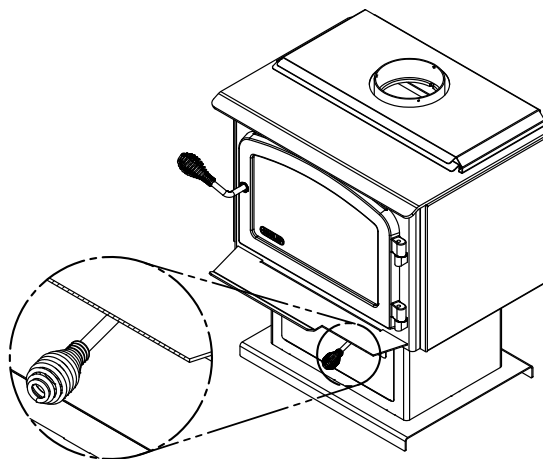
Once the firewood, firebox and chimney are hot, air intake can be reduced to achieve a steady burn.

As the air intake is reduced, the burn rate decreases. This has the effect of distributing the thermal energy of the fuel over a longer period of time. In addition, the flow rate of exhaust through the appliance and flue pipe slows down, which increases the duration of the energy transfer of the exhaust gases. As the air intake is reduced, the flame slows down.

If the flames diminish to the point of disappearing, the air intake has been reduced too early in the combustion cycle or the wood used is too wet. If the wood is dry and the air control is used properly, the flames should decrease, but remain bright and stable.

On the other hand, too much air can make the fire uncontrollable, creating very high temperatures in the unit as well as in the chimney and seriously damaging them. A reddish glow on the unit and on the chimney components indicates overheating. Excessive temperatures can cause a chimney fire.

The images shown are for guidance only and may differ from your product, but the operation remains the same. See the [EPA Loading Section](#) of the [Wood Stove Installation and Operation Manual](#) for a specific overview of the air control of your appliance.



ENGLISH

3.8 Wood Stove Operation

3.8.1 Efficient Wood Combustion

For operating methods of your stove, refer to the "Wood Stove Operation" or "EPA Loading" section of the "Installation and Operation Manual". This section explains in detail effective operating methods that will get maximum performance from your heating unit. The following topics are covered:

- The space where the wood can be placed for efficient combustion.
- Air control operation to increase or decrease firing rate.
- Lighting a fire when the combustion chamber is cold.
- Loading wood and adjusting the air control to obtain an intense fire allowing the temperature to quickly increase.
- Loading wood and adjusting the air control to obtain a fire that maintains the temperature.
- Loading wood and adjusting air control to obtain a long-lasting fire with the minimum possible intensity.

3.8.2 Burn Cycle Time

The burn cycle time is the period between loading wood on a coal bed and the consumption of that wood back to a coal bed of the same size. The flaming phase of the fire lasts for roughly the first half of the burn cycle and the second half is the coal bed phase during which there is little or no flame. The burning time expected from this stove, including both phases, will vary depending on a number of things, such as:

- firebox size,
- the amount of wood loaded,
- the species of wood,
- the wood moisture content,
- the size of the space to be heated,
- the climate zone where the house is, and
- the time of the year.

The table below gives an approximate maximum burn cycle time, based on firebox volume.

Table 1 : Approximate Maximum Burn Cycle Time

FIREBOX VOLUME	MAXIMUM BURN CYCLE TIME
<1.5 cubic feet	3 to 5 hours
1.5 c.f. to 2.0 c.f.	5 to 6 hours
2.0 c.f. to 2.5 c.f.	6 to 8 hours
2.5 c.f. to 3.0 c.f.	8 to 9 hours
>3.0 c.f.	9 to 10 hours

A longer burning time is not necessarily an indication of efficient operation. It is preferable to build a smaller fire that will provide three or four hours of heating than to fully load the firebox for a much longer burn. Shorter burn cycles make it easier to match the heat output of the stove to heat demand for the space.

3.8.3 Logs Orientation

In a relatively square firebox, the wood can be loaded north-south (ends of the logs visible) or east-west (sides of the logs visible).

North-south loads allow more wood to be loaded at the same time. On the other hand, they break into smaller pieces faster. North-south loading is good for high output, long lasting fires for cold weather.

East-west loads allow a limited amount of wood since too many logs could cause them to fall on the glass. East-west loads, placed in a compact way, take a long time before breaking down. They are excellent for low-intensity, long-lasting fires in relatively mild weather.

3.8.4 Carbon Monoxide

Carbon monoxide is an odourless gas that is highly toxic which can cause death at high concentration in air. Installation of a carbon monoxide detector is highly recommended.

When unburned logs remain in the firebox and the flame disappears, go outside and look at the chimney exit. If there is visible smoke, it means that there is still combustible to burn but that the fire lacks air to burn properly. In this situation, the CO rate will increase so it is important to react. Open the door slightly and move the log with a poker. Turn it over and create a passage for the air below, making a trench with the coal bed. Add small pieces of wood to restart the combustion.

4. Maintenance

This heater will give many years of reliable service if used and maintained properly. Internal components of the firebox such as firebricks or refractory panels, baffle and air tubes will wear over time. Defective parts should always be replaced with original parts (see « Exploded diagram and parts list » in the *Wood Stove Installation and Operation Manual*).

To avoid premature deterioration, follow the lighting and reloading procedures in section "3. Burning Wood Efficiently" and also avoid letting the heater run with the air intake fully open for entire burn cycles.

4.1 Heater

4.1.1 Cleaning and Painting

Painted and plated surfaces can be wiped down with a soft, damp cloth. If the paint is scratched or damaged, it is possible to repaint the heater with a heat-resistant paint (see « Exploded diagram and parts list » in the *Wood Stove Installation and Operation Manual*). **Do not clean or paint the appliance when it is hot.** Before painting, the surface should be sanded lightly with sandpaper and then wiped off to remove dust. Apply two thin layers of paint.

4.2 Refractory Materials and Baffle

Inspect the firebricks or the refractory panels and the baffle for damage periodically and replace anything that is broken.

Operation of the heater with a cracked or missing baffle may cause unsafe temperatures and hazardous conditions and will void the warranty.

4.3 Glass Door

4.3.1 Cleaning

Under normal conditions, the door glass should stay relatively clear. If the firewood is dry enough and the operating instructions in this guide are followed, a whitish, dusty deposit will form on the inner surface of the glass after a week or so of use. This is normal and can be easily removed when the heater is cold by wiping with a damp cloth or paper towel and then drying.

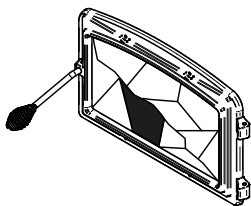
When the stove runs at a low combustion rate, light brown stains may form, especially in the lower corners of the glass. This indicates that the fire has been smoky and some of the smoke has condensed on the glass. It also indicates incomplete combustion of the wood, which also means more smoke emissions and faster formation of creosote in the chimney.

The deposits that form on the glass are the best indication of the fuel quality and success in properly using the stove. These stains can be cleaned with a special wood stove glass cleaner.

Do not use abrasive products to clean the glass.

The goal should be having a clear glass with no brown stains. If brown stains appear regularly on the glass, something about the fuel or the operating procedure needs to be changed. When brown streaks are coming from the edge of the glass, it is time to replace the gasket around the glass.

The glass gasket should be self-adhesive. Always replace the gasket with a genuine one.



Do not clean the glass when the stove is hot.

Do not abuse the glass door by striking or slamming shut.

Do not use the stove if the glass is broken.

4.3.2 Replacement

In case of breakage or change of wearing parts, refer to the Wood Stove Installation and Operation Manual.

5. Normal Operating Sounds

5.1 "Click" Sounds

It is normal to hear a "click" sound when the stove heats up and cools down.

5.2 Blower Sounds

When the blower runs, it is normal to hear a "humming" and "air turbulence" sounds coming from the unit. The blower will make a slight sound as it pushes air through the stove.

6. Operating the Stove

This wood heater has a manufacturer-set minimum low burn rate that must not be altered. It is against federal regulations to alter this setting or otherwise operate this wood heater in a manner inconsistent with operating instructions in this guide.

- Before using the stove, a pedestal base or leg kit must be installed under the product, if this is not already the case. Refer to the *Wood Stove Installation and Operation Manual*.
- The installation of the options is optional, see the *Wood Stove Installation and Operation Manual* for the available options and their installation.

6.1 Blower Operation

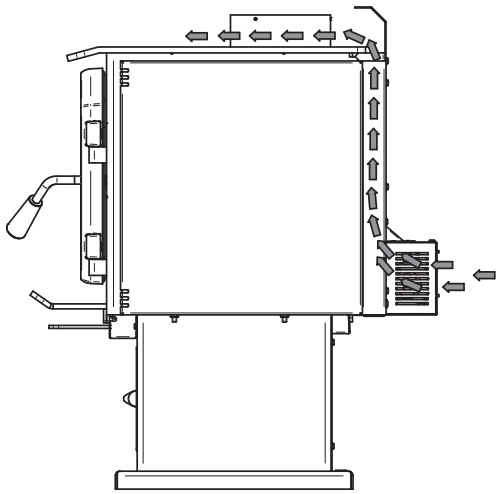


Figure 1: Air flow with a blower

It is possible, on wood stoves, to install a fan (depending on your product, it could be included or sold separately). See the Exploded View and Parts List in the *Wood Stove Installation and Operation Manual* for the original part number.

The blower is installed on the back of the stove to increase the airflow through the heat exchanger and improve hot air circulation in the room. When used regularly, the blower can provide a small increase in efficiency, up to 2%. However, the use of a blower should not be used as a way to gain more output from a stove that is undersized for the space it is intended to heat.



Ensure the blower cord is not in contact with any surface of the stove to prevent electrical shock or fire damage. Do not run cord beneath the stove.

The blower has a rheostat that can be adjusted in three different positions; either from high (HI) to low (LO) or closed (OFF).

Allow the stove to reach operating temperature (approximately one hour) before turning on the blower, since increased airflow from the blower will remove heat and affect the start up combustion efficiency.

It is possible to add a heat sensor, sold separately, to the blower. When the blower is ON, the blower will start automatically when the stove is hot enough and it will stop when the stove has cooled down. Therefore, you can leave the blower speed control at the desired setting.

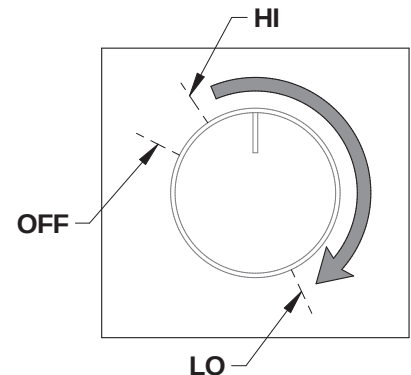


Figure 2: Blower operation

6.2 The Use of a Fire Screen

Some stoves have been tested for use with an open door in conjunction with a fire screen (**In the United States or in provinces with a particulate matter emission rate limit (e.g. US EPA), the use of wood stoves with door open with a fire screen is prohibited**), this option is sold separately (to confirm that your product has been tested with it, please refer to the *Wood Stove Installation and Operation Manual*). If applicable on your model, the fire screen must be properly secured on the stove to avoid any risk of sparks damaging the flooring. When the fire screen is in use, do not leave the stove unattended to respond promptly in the event of smoke spillage into the room. Potential causes of smoke spillage are described in Section "The venting system" of this guide. See "Optional Fire Screen Installation" in the *Wood Stove Installation and Operation Manual* for specifications about installation instructions.

OPERATING THE STOVE WITH A FIRE SCREEN INCREASES POSSIBILITIES OF GENERATING CARBON MONOXIDE. CARBON MONOXIDE IS AN ODOURLESS GAS THAT IS HIGHLY TOXIC WHICH CAN CAUSE DEATH AT HIGH CONCENTRATION IN AIR.

6.3 Exhaust System

Wood smoke can condense inside the chimney, forming a inflammable deposit called creosote. If creosote builds up in the system, it can ignite when a hot fire is burned in the stove. A very hot fire can progress to the top of the chimney. Severe chimney fires can damage even the best chimneys. Smouldering, smoky fires can quickly cause a thick layer of creosote to form. When the stove is operated properly, the exhaust from the chimney is mostly clear and creosote builds up more slowly.

«Creosote - Formation and Need to Removal

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cooler chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this creosote makes an extremely hot fire.

The chimney connector and chimney should be inspected at least once every two months during the heating season to determine if a creosote buildup has occurred.

The presence in a chimney of soot or creosote in excess of 1/8" (3 mm) thick will indicate the need for immediate cleaning, possible modification of burning procedures, and more frequent inspections. If creosote has accumulated it should be removed to reduce the risk of a chimney fire.»

6.3.1 Cleaning Frequency

It is not possible to predict how much or how quickly creosote will form in the chimney. It is important, therefore, to check the build-up in the chimney monthly until the rate of creosote formation is determined. Even if creosote forms slowly in the system, the chimney should be cleaned and inspected at least once each year.

Establish a routine for the fuel, wood stove and firing technique. Check daily for creosote build-up until experience shows how often you need to clean to be safe. Be aware that the hotter the fire the less creosote is deposited, and weekly cleaning may be necessary in mild weather even though monthly cleaning may be enough in the coldest months.

Contact your local municipal or provincial fire authority for information on how to handle a chimney fire. Have a clearly understood plan to handle a chimney fire.

6.3.2 Sweeping the Chimney

Chimney sweeping can be a difficult and dangerous job. People with no chimney sweeping experience will often prefer to hire a professional chimney sweep to inspect and clean the system for the first time. After seeing the cleaning process, some will choose to do it themselves.

The chimney should be checked regularly for creosote build-up. Inspection and cleaning of the chimney can be facilitated by removing the baffle. See "Air Tubes and Baffle Installation" in the *Wood Stove Installation and Operation Manual* for more details.



6.3.3 Chimney Fire

Regular chimney maintenance and inspection can prevent chimney fires. If you have a chimney fire, follow these steps:

1. Close the stove door and the air intake control;
2. Alert the occupants of the house of the possible danger;
3. If you require assistance, alert the fire department;
4. If possible, use a dry chemical fire extinguisher, baking soda or sand to control the fire. Do not use water as it may cause a dangerous steam explosion;

Do not use the appliance again until the stove and its chimney have been inspected by a qualified chimney sweep or a fire department inspector.

7. The Venting System

7.1 General

The venting system, made of the chimney and the connecting pipe between the stove and the chimney, acts as the engine that drives the wood heating system. Even the best stove will not function safely and efficiently if it is not connected to a suitable chimney.

The heat in the flue gases that pass from the stove and chimney connector into the chimney is not waste heat. This heat is what the chimney uses to make the draft that draws in combustion air, keeps smoke inside the stove and safely vents exhaust to outside. The heat in the flue gas can be seen as the fuel the chimney uses to create draft.

The amount of draft in your chimney depends on the length of the chimney, local geography, nearby obstructions, and other factors. Too much draft may cause excessive temperatures in the appliance and may damage the heater. Inadequate draft may cause leak smoke into the room.

7.2 Suitable Chimneys

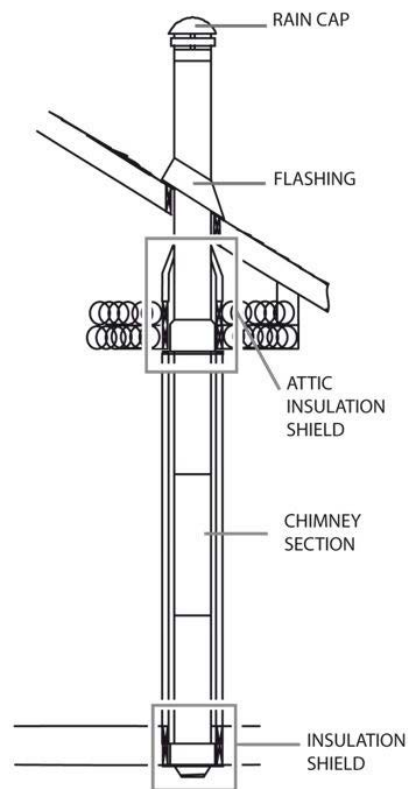
This stove will provide optimum efficiency and performance when connected to a 6" diameter chimney flue system. The connection to a chimney having a diameter of at least 5" (Canada only) or no more than 7" is permitted, if it allows the proper venting of combustion gases and that such application is verified and authorized by a qualified installer. Otherwise, the diameter of the flue should be 6".

To be suitable, a factory-built metal chimney must comply with UL 103 HT (U.S.A.) or ULC S629 (Canada).

7.3 Factory-Built Metal Chimneys

These are sometimes referred to as 'high temp' chimneys because they have the specific characteristics to withstand temperatures that can be created by wood burning stoves. Factory-built chimneys are tested as a system with all the necessary components for installation. The instructions provided with the chimney by its manufacturer are the only reliable source of installation guidelines. To be safe and effective, the chimney must be installed exactly in accordance with the manufacturer's instructions. Only components intended for the brand and model of chimney should be used. Never fabricate or substitute parts from other chimney brands. The chimney must be a type suitable for solid fuel.

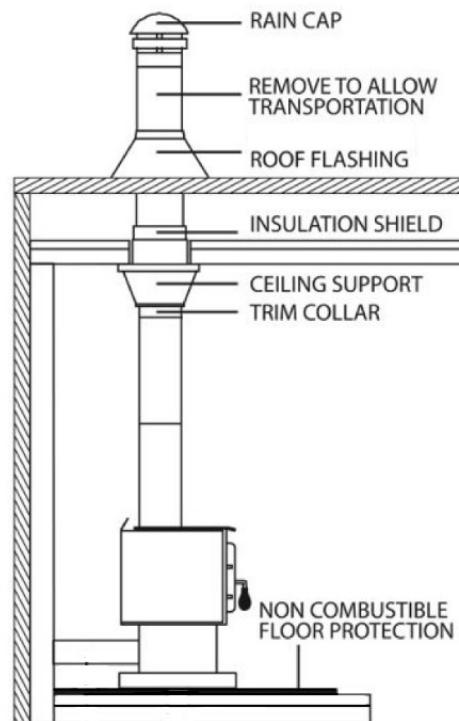
To maintain an effective vapour barrier, insulation and waterproof at the chimney and outside flue pipe, a roof flashing must be installed and sealed with silicone adhesive.



7.3.1 Factory-Built Metal Chimneys in Mobile Homes

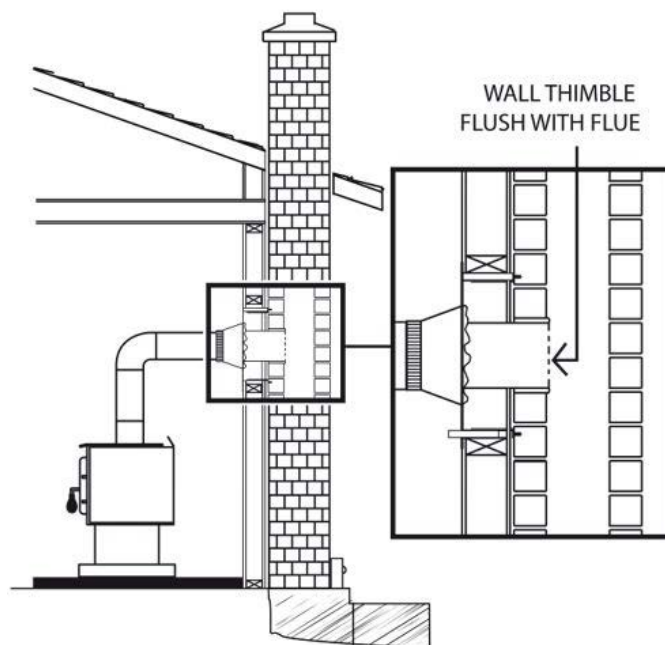
For use in a mobile home (if allowed), this stove is to be connected to a 6" double wall factory built chimney pipe conforming to ULC-S629 or UL 103HT standards for 650°C Factory-built chimney. The total length of the flue system should be at least 12 feet including elbows, from the top of the stove.

To maintain an effective vapour barrier, insulation and waterproof at the chimney and outside flue pipe, a roof flashing must be installed and sealed with silicone adhesive.



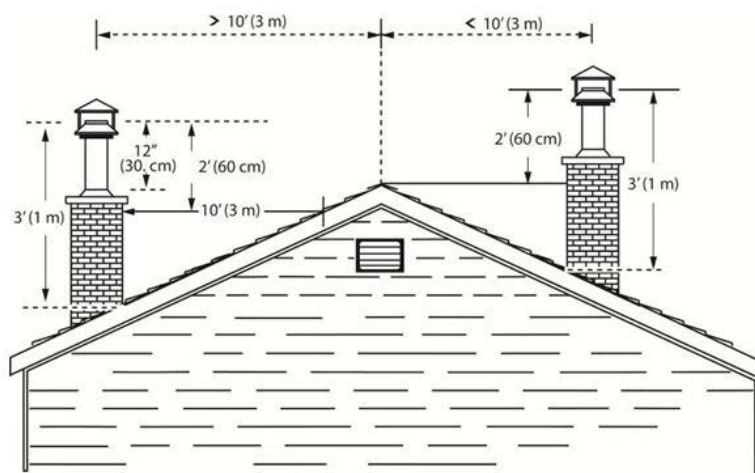
7.3.2 Masonry Chimneys

The stove may also be connected to a masonry chimney, provided the chimney complies with the construction rules found in the building code enforced locally. The chimney must have either a clay liner or a suitably listed stainless steel liner. If the masonry chimney has a square or rectangular liner that is larger in cross-sectional area than a round 6" flue, it should be relined with a suitably listed 6" stainless steel liner. Do not downsize the flue to less than 6" unless the venting system is straight and exceeds 25 feet in height. When passing through a combustible wall, the use of an insulated listed thimble is required.



7.4 Minimum Chimney Height

The top of the chimney should be tall enough to be above the air turbulence caused when wind blows against the house and its roof. The chimney must extend at least 3 ft. (1 m) above the highest point of contact with the roof, and at least 2 ft. (60 cm) higher than any roof line or obstacle within a horizontal distance of 10 ft. (3 m).



7.5 Chimney Location

Because the venting system is the engine that drives the wood heating system, it must have the right characteristics. The signs of bad system design are cold back drafting when there is no fire in the stove, slow kindling of new fires, and smoke roll-out when the door is opened for loading. There are two guidelines to follow. First, the chimney should be installed up through the heated space of the house, not out and up an outside wall. Second, the chimney should penetrate to the top of the building at or near the highest heated space.

Venting systems that rise straight up from the stove flue collar provide the best performance. Chimneys that rise inside the warm space of the house tend to provide a small amount of draft even when there is no fire burning. This means that when a fire is lit, the smoke goes up the chimney and strong draft build quickly as the chimney flue warms up. Although they are common in North America, chimneys that exit a house wall and run up outside can cause problems.

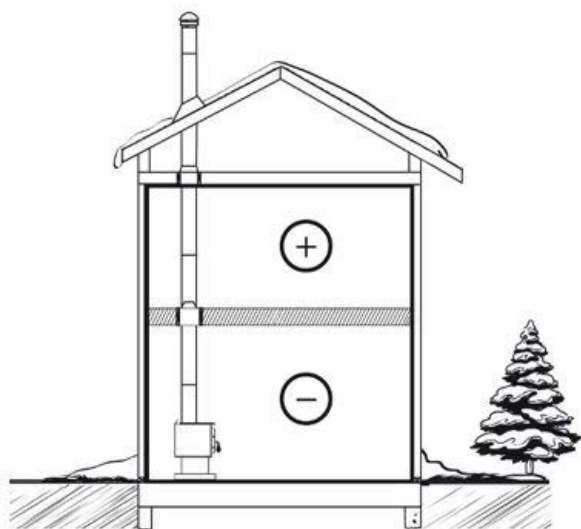


Figure 3: Good System Design

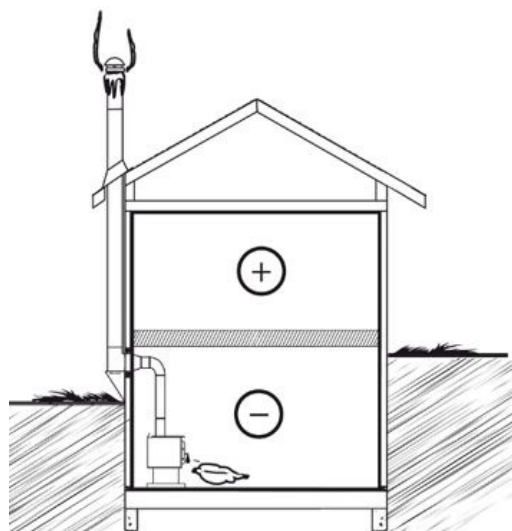


Figure 4: Inferior System Design

When it is cold outside, the warm air in the house is buoyant so it tends to rise. This creates a slight pressure difference in the house. Called 'stack effect', it produces a slightly negative pressure in the lower part of the house (compared to the outside) and a slightly positive pressure zone in the high part of the house. If there is no fire burning in a heater connected to a chimney that is shorter than the warm space inside the house, the slight negative pressure in the lower part of the house will compete against the desired upward flow in the chimney. This occurs for the two following reasons:

First, the chimney runs up the outside of the house, so the air in it is colder and denser than the warm air in the house. And second, the chimney is shorter than the heated space of the house, meaning the negative pressure in the lower part of the house will draw cold air down the chimney, through the stove and into the room. Even the finest stove will not work well when connected to this chimney.



7.6 Supply of Combustion Air

For the stove draft to work correctly, the room must have an outside or fresh air inlet, with a minimum of 5" diameter, from the house exterior to the room, that is at least sufficient to replenish the volume of air that comes out of the chimney flue. In well insulated houses an air inlet must be fitted through the outer wall that is not exposed to the prevailing winds, depending on the surrounding conditions of the house. If a vent is installed, it must be fitted in such a way that it cannot be blocked. A fresh air intake register with a airtight damper may be installed to help prevent any uncomfortable air draft.

When the stove and the chimney are completely cold, it may be necessary before starting up to provide an external air supply by opening a door or a window for a short period. A house constructed or renovated in a waterproof manner is prone to not having the air exchange required for the proper functioning of a wood heating appliance.

In that case, avoid, during startups, to use appliances that evacuate air outside of the house, such as:

- Cookstove hood
- Bathroom vent
- Air exchange system
- Ventilated central vacuum cleaner
- Dryer

The supply of fresh combustion air can be done in several ways, provided they comply with CSA B365 and NFPA211.

In Canada, wood stoves are not required to have a combustion air supply from outside, except for mobile homes. Research has shown that outside air supply do not compensate for the depressurization of the house and may not be sufficient to provide a supply of combustion air in windy weather. However, to reduce the risks against smoke spillage due to house depressurization,

a carbon monoxide (CO) detector is required in the room where the stove is installed. The CO detector will provide warning if for any reason the wood stove fails to function correctly.

7.6.1 Mobile Home

If your stove is 'mobile home approved', It must have a supply of combustion air from outdoors. The air intake must not draw air from the attic, from the basement, from a garage or any enclosed space. Air must be drawn from a ventilated crawl space under the floor or directly from outside. Install a flexible or rigid, insulated pipe (HVAC type, must comply to ULC S110 and/or UL 181, Class 0 or Class 1) to the fresh air intake.

Where a mobile home has been converted to a standard house by mounting it on a permanent basement foundation, the supply of outdoor air is not required.

It is prohibited to use this wood stove with a fire screen in a mobile home.

7.6.2 Conventional House

The safest and most reliable supply of combustion air for a wood stove is from the room in which it is installed. Room air is already preheated so it will not chill the fire, and its availability is not affected by wind pressures on the house. Contrary to commonly expressed concerns, almost all tightly sealed new houses have enough natural leakage to provide the small amount of air needed by the stove. The only case in which the wood stove may not have adequate access to combustion air is if the operation of a powerful exhaust device (such as a kitchen range exhaust) causes the pressure in the house to become negative relative to outdoors.

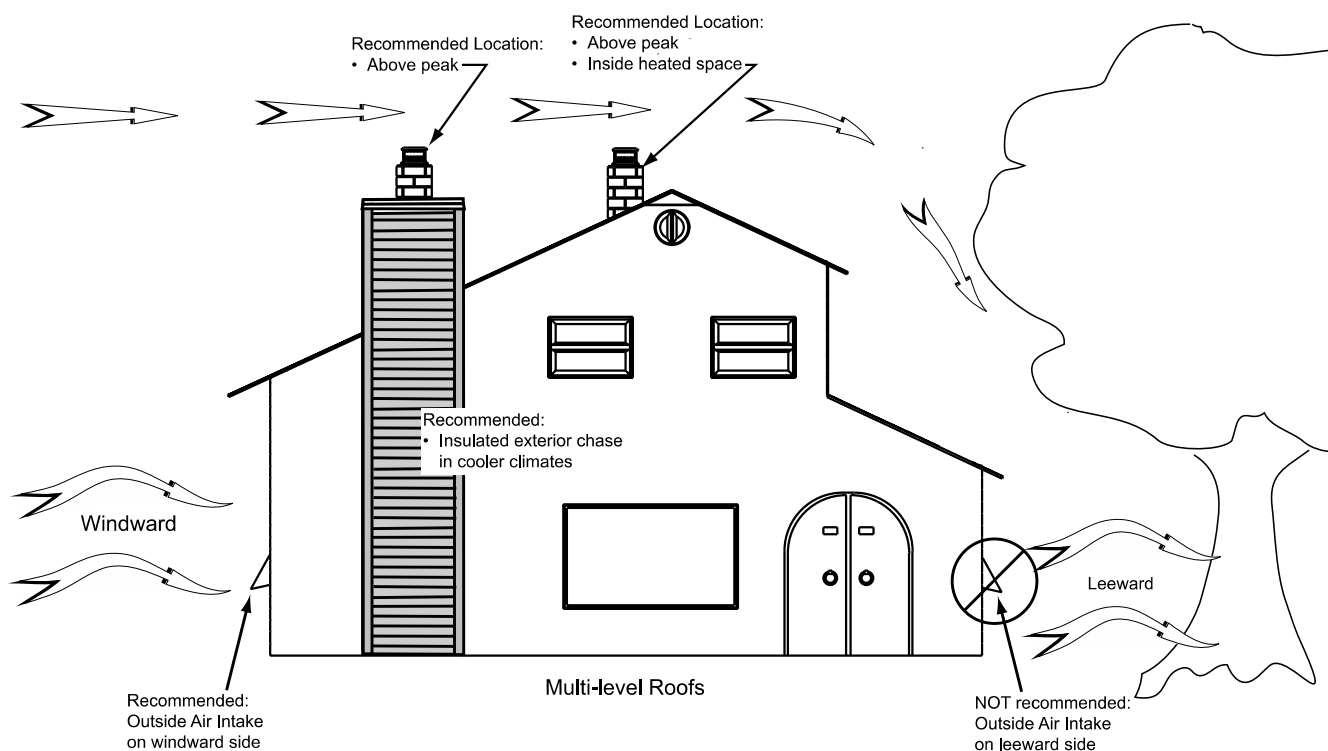


Figure 5: Air supply in conventional houses

If an air intake is installed through the wall of the house, its pressure can vary during windy weather. If there are changes in wood stove performance in windy weather, and in particular if smoke puffs from the stove, the air duct should be disconnected from the stove to determine if it is the cause of the problem. In some windy conditions, negative pressure at the duct weather

hood outside the house wall may draw hot exhaust gases from the stove backwards through the duct to outdoors. Check the outdoor air duct for soot deposits when the full system is cleaned and inspected at least once each year.

To reduce the risks against smoke spillage due to house depressurization, a carbon monoxide (CO) and a smoke detector is required in the room where the stove is installed. The CO detector will provide warning if for any reason the wood stove fails to function correctly.

7.7 Installing the Chimney Connector

The chimney connector is the single or double wall pipe installed between the stove flue collar and the chimney breech. Single wall pipe components are available from most hardware and building supply stores. These components are not usually tested to a particular standard and certified as compliant. Therefore, a list of rules found in solid fuel installation codes apply to the installation of a single wall pipe.

Double wall chimney connectors are tested and certified. The rules for double wall pipe are found in the manufacturer's installation instructions. These rules will be very different than those for single wall.

7.7.1 Installation of Single Wall Chimney Connector

The chimney connector assembly has been called 'the weak link' in the safety of wood heating systems because failure to install the connector properly (which has been common in the past) can result in house fires.

The best flue pipe assembly is one that rises straight up from the stove to the base of the chimney with no elbows. Straight assemblies are less likely to cause problems like smoke roll-out when the door is opened for loading. They are also more stable and easier to maintain than assemblies with elbows. Horizontal runs of flue pipe should be avoided where possible because they reduce chimney draft.

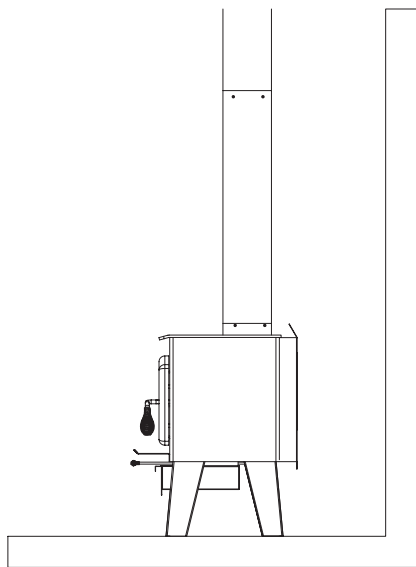


Figure 6: Best

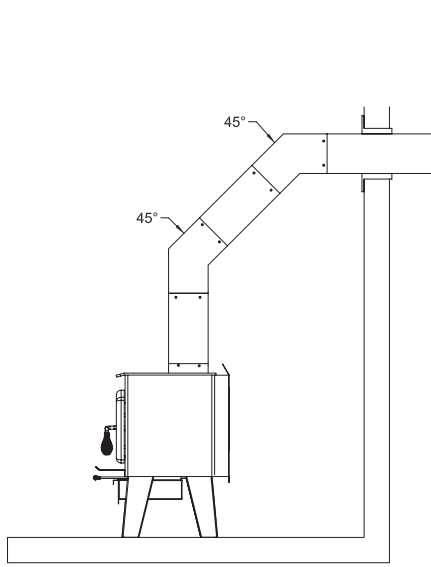


Figure 7: Acceptable

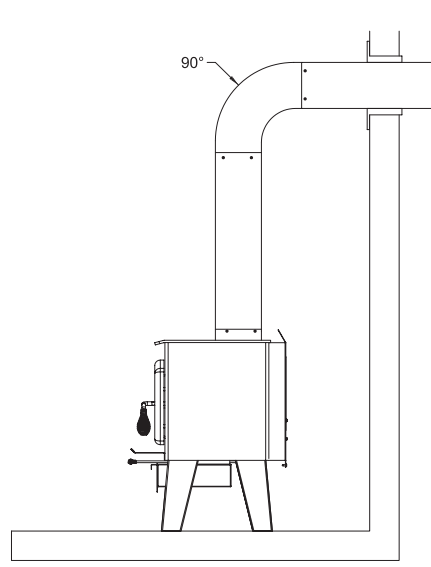


Figure 8: Avoid

The rules below are based on those found in the CSA-B365 installation code. Please carefully follow these installation instruction rules, or those enforced by the local code.

- Maximum overall length of horizontal pipe: 10 ft. (3 m) including elbows.
- Minimum clearance from combustible material: 18" (450 mm). The minimum clearance may be reduced by 50 percent to 9" (225 mm) if suitable shielding is installed either on the pipe or on the combustible surface.
- The assembly should be as short and direct as possible between the stove and chimney. The use of two 45 degree elbows is often preferable to a single 90 degree elbow because less turbulence is created in the exhaust flow and they result in less horizontal run.
- The minimum overall height of the chimney system, measured from the stove top to the exterior termination cap of the chimney should be at least 12 ft. (3.66 m). A chimney which is too short may lack the "tunnel effect" required to obtain a proper draft.
- Maximum number of 90-degree elbows: 2.
- Maximum unsupported horizontal length: 3 ft. (1 m).
- Galvanized flue pipes must not be used because the coatings vaporize at high temperatures and release dangerous gases. Use black painted flue pipes.
- Flue pipes must be at least 24 gauge in thickness.
- Flue pipe joints should overlap 1 ¼" (30 mm).
- Each joint in the assembly must be fastened with at least three screws.
- The assembly must make allowance for expansion: elbows in assemblies allow for expansion; straight assemblies should include an inspection wrap with one end unfastened, or a telescopic section.
- Minimum upward slope towards the chimney: ¼ in/ft. (20 mm/m).
- **One end of the assembly must be securely fastened to the flue collar** with 3 sheet metal screws and the other end securely fastened to the chimney.
- There must be provision for cleaning of the pipes, either through a clean out or by removal of the pipe assembly. Removal of the assembly should not require that the stove be moved.
- The male ends of the sections must be oriented towards the appliance so that falling dust and condensation stay inside the pipe.
- A flue pipe must never pass through a combustible floor or ceiling or through an attic, roof space, closet or concealed space. Where passage through a wall or partition of combustible construction is desired, the installation shall conform to CAN/CSA-B365, Installation Code for Solid-Fuel-Burning Appliances and Equipment.
- A straight up connector assembly needs either a telescopic length or an inspection wrap (pipe coupler) to allow it to be assembled and disassembled without moving the stove.
- A straight flue pipe assembly offers the least restriction to gas flow and results in a stronger draft. Straight assemblies also need less maintenance because there are no corners to collect creosote.
- The chimney and chimney connector must be clean and in good condition.

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St-Augustin-de-Desmaures (Québec) Canada
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tech@sbi-international.com



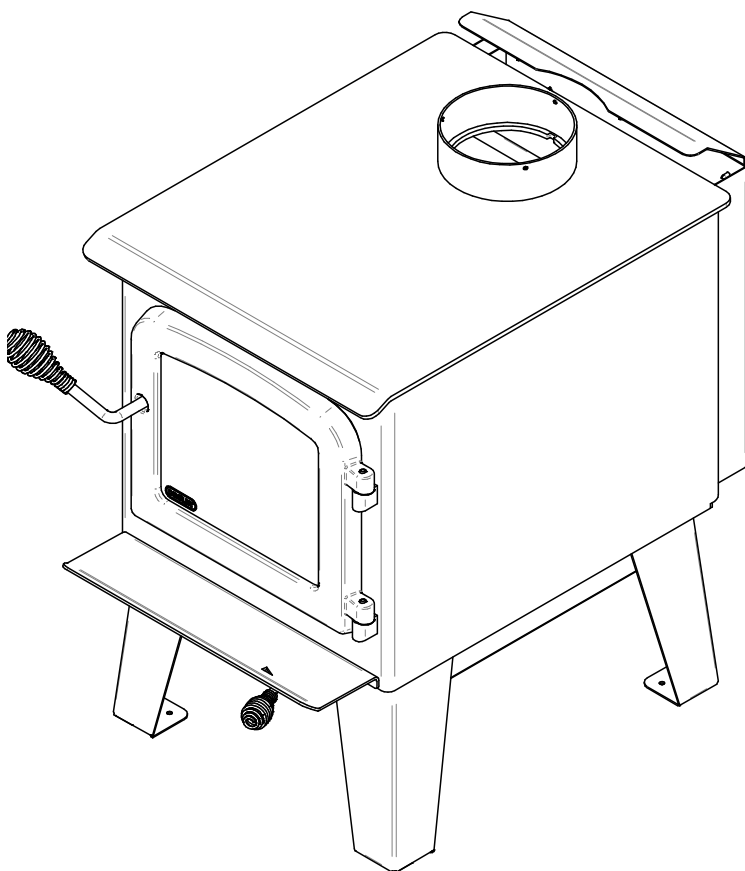
Wood Stove Owner's Manual

Part 2 of 2

INSTALLATION AND OPERATION REQUIREMENTS

SPARK II N

(DB03402 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard

EPA
 ≤ 2.5 g/h

Safety tested according to ULC S627,
UL 1482 and UL 737 standards by an
accredited laboratory.



ENGLISH

CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN LOCAL AREA.

READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS WOOD STOVE. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH.

READ AND KEEP THIS MANUAL FOR REFERENCE

Dealer: _____

Installer: _____

Phone Number: _____

Serial Number: _____

ONLINE WARRANTY REGISTRATION

If the unit requires repairs during the warranty period, proof of purchase must be provided. The purchase invoice must be kept. The date indicated on it establishes the warranty period. If it can not be provided, the warranty period will be determined by the date of manufacture of the product. It is also highly recommended to register the warranty online at

<https://www.drolet.ca/en/warranty/warranty-registration/>

Registering the warranty will help to quickly find the information needed on the unit.



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1. CERTIFICATION PLATE



REFER TO INTERTEK'S DIRECTORY OF BUILDING PRODUCTS FOR DETAILED INFORMATION
SE RÉFÉRER AU RÉPERTOIRE DES PRODUITS HOMOLOGUÉS D'INTERTEK POUR PLUS D'INFORMATION
STANDARDS / NORMES D'ESSAI:
Certified to/Certifié selon CSA B415.1

LISTED SOLID FUEL BURNING
APPLIANCE
POÊLE À COMBUSTIBLE SOLIDE
HOMOLOGUÉE

MODEL / MODÈLE :
SPARK II N

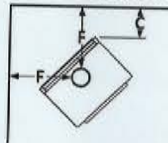
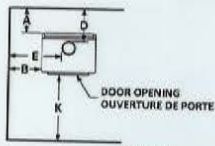
Control Number (SA) : 4002461

Certified to/Certifié selon ASTM E2515-11 (R2017)

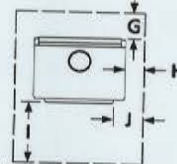
Serial Number
No. de Série

115

Clearances to combustibles / Déagements aux combustibles



Back / Arrière



CANADA

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po. (mm)	A: in./po. (mm)	B: in./po. (mm)	B: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)	C: in./po. (mm)	C: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)	D: in./po. (mm)	D: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)	E: in./po. (mm)	E: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)	F: in./po. (mm)	F: in./po. (mm)

Floor-ceiling/plancher-plafond: in./po. (cm)

U.S.A.

Single wall connector Tuyau à paroi simple		Double wall connector Tuyau à paroi double	
A: in./po. (mm)	A: in./po. (mm)	B: in./po. (mm)	B: in./po. (mm)
B: in./po. (mm)	B: in./po. (mm)	C: in./po. (mm)	C: in./po. (mm)
C: in./po. (mm)	C: in./po. (mm)	D: in./po. (mm)	D: in./po. (mm)
D: in./po. (mm)	D: in./po. (mm)	E: in./po. (mm)	E: in./po. (mm)
E: in./po. (mm)	E: in./po. (mm)	F: in./po. (mm)	F: in./po. (mm)

Protection de plancher/Floor protection

CANADA		U.S.A.	
G: in./po. (mm)	G: in./po. (mm)	I: in./po. (mm)	I: in./po. (mm)
H: in./po. (mm)	H: in./po. (mm)	J: in./po. (mm)	J: in./po. (mm)
I: in./po. (mm)	I: in./po. (mm)	K: in./po. (mm)	K: in./po. (mm)

* See owner's manual for other clearances with lowered ceiling/
voir manuel d'installation pour autres déagements avec plafond abaissé

PREVENT HOUSE FIRES

- Install and use only in accordance with the manufacturer's installation and operating instructions.
- Contact local building or fire officials about restrictions and installation inspection in your area.
- Use listed 152 mm / 6 in. diameter single or double wall connectors with prefabricated chimneys approved UL 103 HT (US) and ULC S629 (CAN) suitable for solid fuels or lined masonry chimneys.
- See local building code and manufacturer's instructions for precautions required for passing a chimney through a combustible wall or ceiling.
- This stove must be installed as a freestanding heater with the clearances listed in the manufacturer's installation instructions. It is strictly forbidden to install this stove in a factory-built fireplace.
- Do not pass connector through combustible wall or ceiling.
- Do not connect this unit to a chimney serving another appliance.
- For use with solid fuel only. Do not use other fuels.
- Operate only with door closed or door open with firescreen installed. Open door or remove firescreen to feed the stove only.
- Do not obstruct the space underneath the stove.
- Do not use grate or elevate fire. Build fire directly on hearth.
- Do not overfire. If heater or chimney connector glows, you are overfiring.
- Inspect and clean chimney frequently. Under certain condition of use, creosote buildup may occur rapidly.
- Replace glass with ceramic type only.
- Install unit on a non-combustible material extending as shown above on this label.
- Combustion air openings shall not be obstructed.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against US federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

PRÉVENEZ LES INCENDIES

- Installer et utiliser conformément au manuel d'utilisation du fabricant.
- Contacter les autorités de votre localité ayant juridiction concernant les restrictions et inspections d'installation.
- Utiliser des tuyaux d'évacuation à parois simple ou double homologués d'un diamètre de 6 po. (152 mm) avec une cheminée préfabriquée approuvée UL 103 HT (US) et ULC S629 (CAN) pour utilisation au bois ou une cheminée de maçonnerie gainée.
- Voir les codes locaux et le manuel d'installation du fabricant pour le passage de la cheminée à travers un mur ou un plafond combustible.
- Ce poêle doit être installé comme appareil de chauffage autonome avec les déagements indiqués dans les instructions d'installation du fabricant. Il est strictement défendu d'installer ce poêle dans un foyer préfabriqué.
- Ne pas traverser un plafond ou un mur combustible avec un tuyau d'évacuation.
- Ne pas raccorder cet appareil à une cheminée desservant un autre appareil.
- Pour l'usage avec du combustible solide seulement. Ne pas utiliser d'autres combustibles.
- Garder la porte fermée ou le pare-étincelle en place en tout temps. Ouvrir la porte ou retirer le pare-étincelle que lors du chargement.
- Ne rien entreposer sous l'appareil.
- Ne pas utiliser de grilles ou de chenets pour surélever le feu. Préparer le feu directement sur l'âtre.
- Ne pas surchauffer. Si l'appareil ou le tuyau rougit, il y a surchauffe.
- Inspecter et nettoyer la cheminée fréquemment. Sous certaines conditions, l'accumulation de crésote peut être rapide.
- Remplacer la vitre seulement avec un verre de céramique.
- Installer l'appareil sur une plaque non combustible tel qu'indiqué sur l'étiquette.
- Les entrées d'air servant à la combustion ne doivent pas être obstruées.
- Cet appareil de chauffage requiert des inspections et réparations périodiques. Consulter le manuel de l'utilisateur pour plus d'information. Opérer cet appareil de chauffage de façon inconsistante par rapport au manuel de l'utilisateur consiste une violation de la loi fédérale (USA).

Optional blower: AC02050 (115V, 0.8A, 60Hz)

Option ventilateur: AC02050 (115V, 0.8A, 60Hz)

U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using cordwood.
AGENCE DE PROTECTION DE L'ENVIRONNEMENT DES É.-U. Conforme aux normes d'émission de particules de 2020 avec bûche de bois.

Weighted average emission rate: / Moyenne pondérée des émissions 1.7 g/h

Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii)

WARNING: This product can expose you to carbon monoxide, which is known to the State of California to cause cancer, birth defects or other reproductive harm
(For more information go to www.p65warnings.ca.gov)



CAUTION

- HOT WHILE IN OPERATION.
- DO NOT TOUCH. KEEP CHILDREN, CLOTHING AND FURNITURE AWAY.
- CONTACT MAY CAUSE SKIN BURNS. SEE NAME-PLATE AND INSTRUCTIONS.



Fabricant de poêles international
Stove Builder International

ATTENTION

- CHAUD EN FONCTIONNEMENT.
- NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET LES MEUBLES ÉLOIGNÉS.
- UN CONTACT AVEC LA PEAU PEUT OCCASIONNER DES BRÛLURES. VOIR LES INSTRUCTIONS.

37007

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

St-Augustin-de-Desmaures, (Qc), Canada
28/11/2025 (# Test)

2. General Information

2.1 Performances

Values are as measured per test method, except for the recommended heating area, firebox volume, maximum burn time and maximum heat output.

Model	Spark II N (DB03402)
Combustion type	Non-catalytic
Fuel Type	Dry Cordwood
Recommended heating area (sq. ft.) ¹	250 to 1,200 ft ² (23 to 111 m ²)
Overall firebox volume ²	1.85 ft ³ (0.0524 m ³)
EPA loading volume	1.67 ft ³ (0.0473 m ³)
Maximum burn time ¹	5 hours
Maximum heat output (dry cordwood) ³	75,000 BTU/h (21.98 kW)
Overall heat output rate (min. to max.) ⁴	18,782 BTU/h to 71,262 BTU/h (5.504 kW to 20.88 kW)
Average overall efficiency ⁴ (Dry cordwood)	74 % (HHV) ⁵
Optimum efficiency ⁶	81 % (LHV)
Optimum heat transfer efficiency ⁷	78 % (HHV)
Average particulate emissions rate ⁸	1.7 g/h (EPA / CSA B415.1-10) ⁹
Average CO ¹⁰	1.3 g/min

¹ Recommended heating area and maximum burn time may vary subject to location in home, chimney draft, heat loss factors, climate, fuel type and other variables. The recommended heated area for a given appliance is defined by the manufacturer as its capacity to maintain a minimum acceptable temperature in the designated area in case of a power failure.

² The overall firebox calculation is an approximation and is not intended to be used for loading. This volume includes a buffer zone to allow an easier fuel insertion, prevent ash spillage and allow the air wash to work properly.

³ The maximum heat output (dry cordwood) is based on a loading density varying between 15 lb/ft³ and 20 lb/ft³ and reloading intervals ranging from 60 to 120 minutes. Other performances are based on a fuel load prescribed by the standard without any reloading between start and finish. The specified loading density varies between 7 lb/ft³ and 12 lb/ft³. The moisture content is between 19% and 25%.

⁴ As measured per CSA B415.1-10 stack loss method.

⁵ Higher Heating Value of the fuel.

⁶ Optimum overall efficiency at a specific burn rate (LHV).

⁷ The optimum heat transfer efficiency is for the low burn rate and represents the appliance's ability to convert the energy contained in the wood logs into energy transferred to the room in the form of heat and does not take into account the chemical losses during combustion.

⁸ This appliance is officially tested and certified by an independent agency.

⁹ Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii).

¹⁰ Carbon monoxide.

2.2 Specifications

Maximum log length ¹¹	17 in (432 mm) north-south
Flue outlet diameter	6 in (150 mm)
Recommended connector pipe diameter	6 in (150 mm)
Type of chimney	ULC-S629, UL 103 HT (2100 °F)
Minimum chimney height	12 feet
Baffle material	Vermiculite
Approved for alcove installation	Yes
Approved for mobile home installation ¹²	Yes
Type of door	Simple, glazed or not, with cast iron frame
Type of glass	Ceramic glass
Blower	Optional (up to 100 CFM)
Particulate emission standard ¹³	EPA / CSA B415.1-10

¹¹ North-south: ends of the logs visible, East-west: sides of the logs visible.

¹² Mobile homes (Canada) or manufactured homes (USA): The US Department of Housing and Urban Development describes “manufactured homes” better known as “mobile homes” as follows; buildings built on fixed wheels and those transported on temporary wheels/axles and set on a permanent foundation. In Canada, a mobile home is a dwelling for which the manufacture and assembly of each component is completed or substantially completed prior to being moved to a site for installation on a foundation and connection to service facilities and which conforms to the CAN/CSA-Z240 MH standard.

¹³ Tested and certified in compliance with CFR 40 part 60, subpart AAA, section 60.534(a)(1)(ii).

2.3 Dimensions

2.3.1 Stove Dimensions

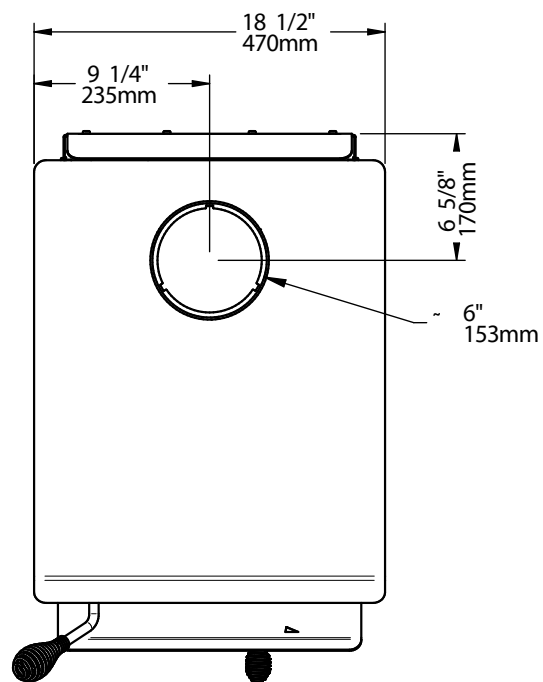


Figure 1: Top View

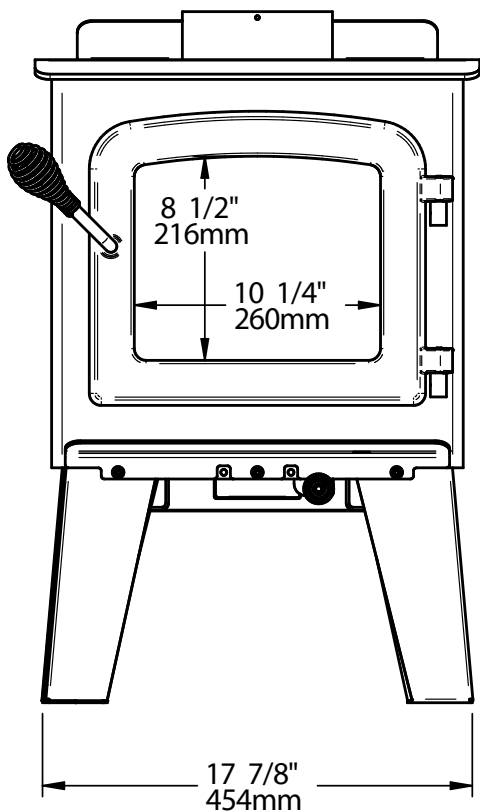


Figure 2: Front View

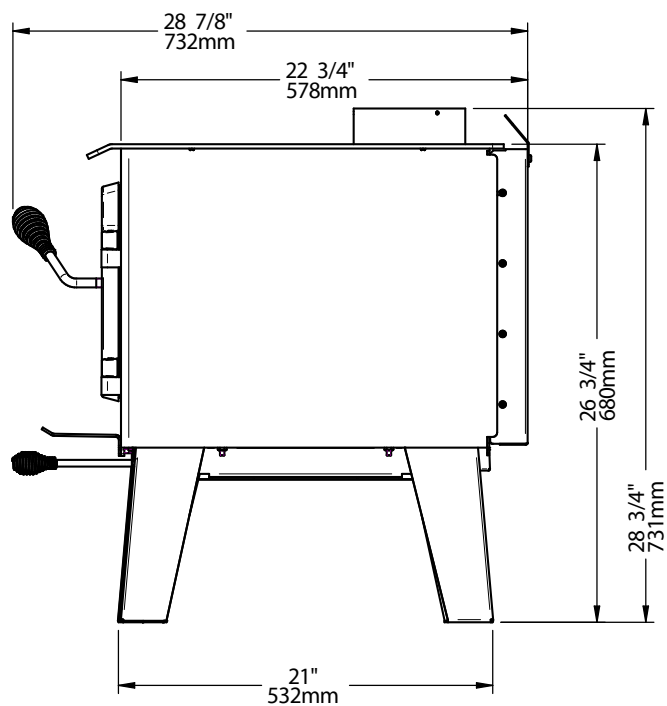


Figure 3: Side View

2.3.2 Combustion Chamber Dimensions

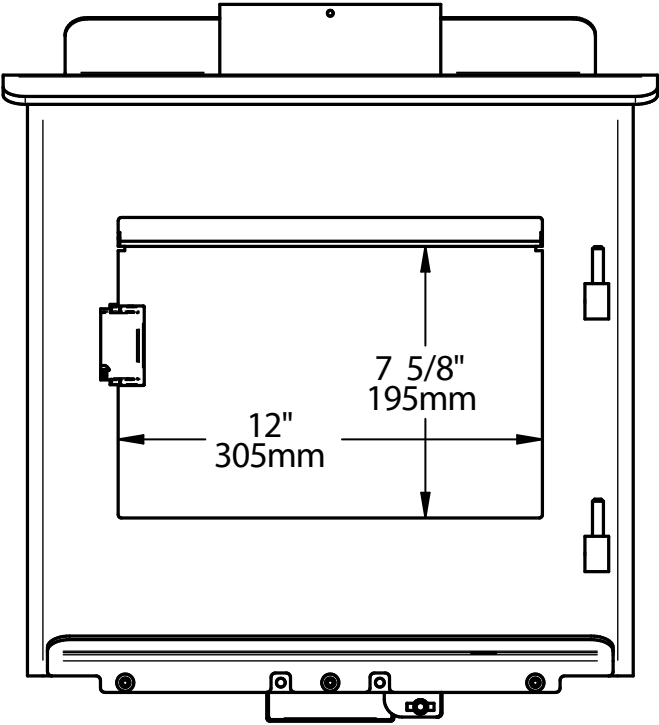


Figure 4: Door Opening

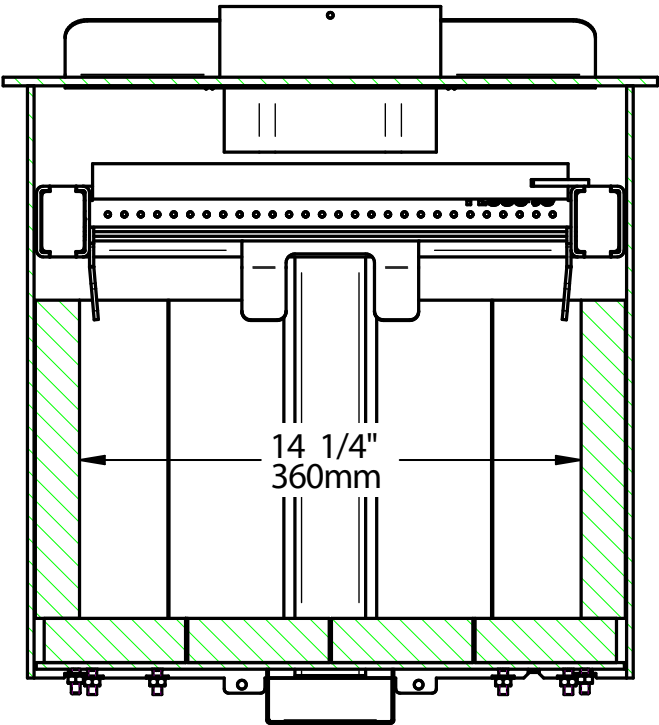


Figure 5: Front View - Combustion Chamber

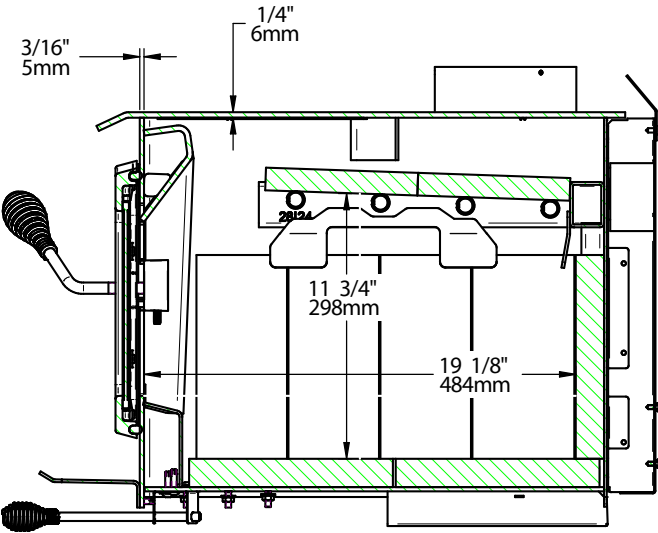


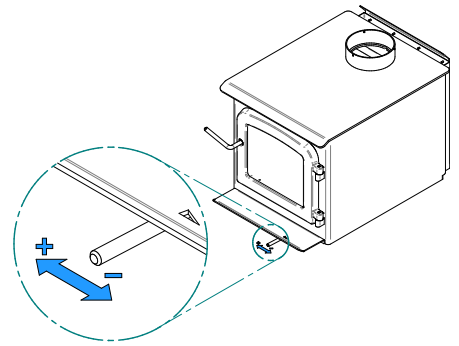
Figure 6: Side View - Combustion Chamber

2.4 EPA loading

The charging methods shown below are those that were used during emissions certification.

2.4.1 Air control

The air control is located underneath the ash shelf. To open the air control, push the air control handle completely to the left (High). This will increase the burn rate. To close the air control, push the air control handle completely to the right (Low). This will decrease the burn rate.



2.4.2 Start-up phase

The air control need to be fully open. Place 2 newspaper sheets on the firebox floor and carefully criss-cross 12 kindling pieces of 1"x1" (2.5 cm x 2.5 cm) approximately over the paper in the middle of the firebox. For the best ignition, use 3 of the largest kindling pieces to support the rest of the kindling pieces. Put those 3 kindling pieces in a North-South orientation and sit on the "door step" as shown on the picture below. This allows to leave enough space for the paper under the kindling pieces for a better paper ignition. The 9 smaller kindling pieces must be put at approximately 45 degree angle on three layers. The first layer built with smaller pieces and other layer over it built with larger kindling pieces. In general, leave some air spaces between each kindling pieces and make sure that fuel pieces are not in contact with fire bricks.



The kindling pieces need to be dry with moisture content about 10%. To achieve such a dry condition, we recommend splitting kindling pieces at least 2 weeks in advance, and let it dry in a criss-cross stack, and leave it inside at ambient temperature and low relative humidity. The best practice is to have 2 stacks done first, and, have a rotation of those stacks to allow one to dry when you use the dried one.



Start-up fuel configuration refers to the picture below. Put 4 start-up pieces over the kindling pieces, on one layer, in the North-South configuration. Leave air space between each pieces. Basically, for a good and fast ignition you need to allow the flames to pass all around each wood pieces. Make sure the 4 start-up pieces are over the "door step" like the first 3 kindling pieces. This practice ensure that primary air will go easily under the fuel load during the combustion process.



For an efficient ignition, using a propane torch will be better then a small lighter. Using the torch, ignite slightly the paper and then, ignite for about 30 seconds in the middle of the kindling load until intense flames are all around the start-up fuel pieces. Close the door very slowly until there is approximately 1 inch between the door and the stove body. Keep the combustion chamber full of flames between 2 and 3 minutes and close the door when the flames are rolling fast above the fuel load. A fast and very hot ignition will insure an efficient combustion. Keep the air control fully open.

2.4.3 High Fire phase

The best time to start this phase is when the unit has a small coal bed, some fuel pieces not completely burn and when there are still some flames in the combustion chamber. The air control setting is fully open. This high-fire phase is intended to quickly heat an area, shortly after start-up phase or when restarting the appliance. The High fire load configuration can be made with 4 medium cordwood pieces of 2.5 in. x 4.5 in (6 cm x 11 cm) approximately. Refer to picture below for a wood load configuration allowing an optimized ignition followed by a stable and clean combustion. In general, medium wood pieces with moisture content between 19% and 25% (dry basis) will be configure in more compact configuration (limited air space between each piece). However, larger wood pieces with a higher moisture content will be configure with more air spaces between each wood pieces. The blower (if equipped) can be turn ON at the beginning of the High-fire phase.



Following the start-up phase, when flames start to reduce in intensity, open the door and make sure all the fuel pieces are over primary air grate to maximise wood ignition. Put the first 2 pieces in North-South configuration in the middle of the firebox without touching the refractory panels. The two other pieces should be added on top of the first 2, stacked in the middle in an North-South orientation (refer to the picture above). Close the door immediately after loading. Keep the air control fully opened for about half of an hour. That represents approximately when 50% of the load has been consumed. This is when the fire box has reached the maximum temperature, and the flames just begin to reduce in intensity. The air control can be fully or partially closed at that point.

2.4.4 Maintenance Fire phase

This phase is a period when a fire is maintained with a medium-sized coal bed, and a smaller batch of wood normally made of two or three large cordwood pieces. The goal is to maintain consistent heat output. The Maintenance-fire load configuration is made with 2 large fuel pieces of 4 in. x 6 in (10 cm x 15 cm) approximately.



Following the high-fire phase, when there are only faint flames remaining and most of the wood is turned into coal, open completely the air control and open the door. The 2 wood pieces can be put directly over the coal bed. It is not required to stir the coal bed except if there is not enough space in the firebox. Put the two pieces in north-south orientation in the middle of the firebox without touching the refractory panel (sides and back) and also as far as possible from the door glass. Keep approximately 1 inch between the two pieces. Then, close the door and keep the air control fully open until intense flame are present all around the fuel pieces (approximately 5 minutes). The air control can be fully closed from that point. Make sure flames does not disappear 10-15 minutes after closing the air control. The blower (if equipped) can be turn ON from that point.

2.4.5 Low burn rate phase

This phase is a period when the stove has a large coal bed, the stove is fully loaded, and the adjustable air settings are set to produce the lowest possible burn rate. This phase is made to maintain heat over a long time, such as overnight or while away for significant periods of time. The Low-burn rate load configuration is made with 3 large cordwood pieces of 4 in. x 6 in (10 cm x 15 cm) approximately and 3 small cordwood pieces of 2.5 in. x 2.5 in (6 cm x 11 cm) approximately. The load configuration is North-South.

Following the maintenance-fire phase, when there are only faint flames remaining (or no flames

at all) and most of the wood is turned into coal, open completely the air control and open the door. Stir the coals to insure ease of wood loading.

For an optimal loading, put the large wood pieces on the coal bed (first layer) and small pieces over the large pieces of the firebox as shown on the picture above. In general, for large wood load running at low firing rate, maintain air gap between each wood pieces for a faster ignition and an efficient combustion. Put the pieces in north-south orientation in the middle of the firebox without touching the refractory panel (sides and back) and also as far as possible from the door glass. Let the door cracked of about one inch for about 4 minutes. Let the flame increase in intensity on each side of the wood load and make sure to ignite completely the top of the wood load (near secondary air tubes) then close the door. Keep the air control fully opened for another 6 minutes and close it partially or completely after that period. The blower (if equipped) can be turn ON from that point.



3. Clearances to Combustible Material

The clearances shown in this section have been determined by tests according to procedures set out in safety standards ULC S627 (Canada), UL 1482 (U.S.A.) and UL 737 (U.S.A.). When the stove is installed so that its surfaces are at or beyond the minimum clearances specified, combustible surfaces will not overheat under normal and even abnormal operating conditions.

No part of the stove or flue pipe may be located closer to combustibles than the minimum clearance figures given.

The clearances to combustible walls may be slightly different in Canada and the U.S.A. and may also differ depending on whether single or double wall flue pipe is used. Make sure to choose the correct clearance for the stove location and type of flue pipe.

The clearances of the appliance and the flue pipes must be met individually, meaning the appliance cannot be installed closer to the combustible materials than the single or double wall pipe allows. For a safe way to reduce clearances refer to section "5. Reducing Wall and Ceiling Clearances Safely"

3.1 Clearances

	APPLIANCE CLEARANCES WITH SINGLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
C		

	APPLIANCE CLEARANCES WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
C		

If the above clearances are met, then the distances measured from the flue outlet will be:

	DISTANCES ¹⁴ FROM PIPE CONNECTOR WITH SINGLE WALL PIPE CONNECTOR	
	Canada	USA
D		
E		
F		

	DISTANCES ¹⁴ FROM PIPE CONNECTOR WITH DOUBLE WALL PIPE CONNECTORE	
	Canada	USA
D		
E		
F		

¹⁴ The pipe distances listed in this table refer to the distances obtained when the stove is installed in accordance with the appliance clearances above mentioned.

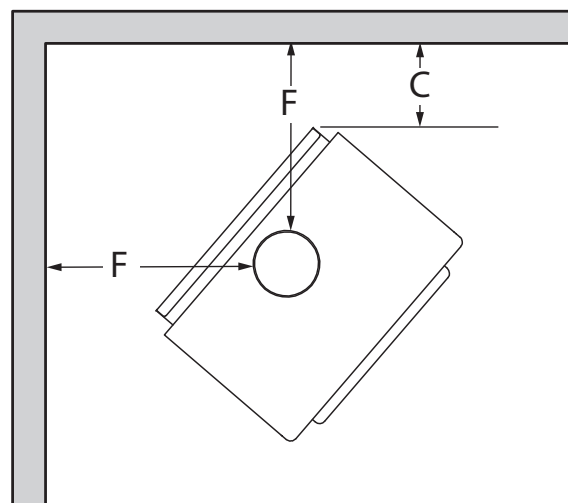
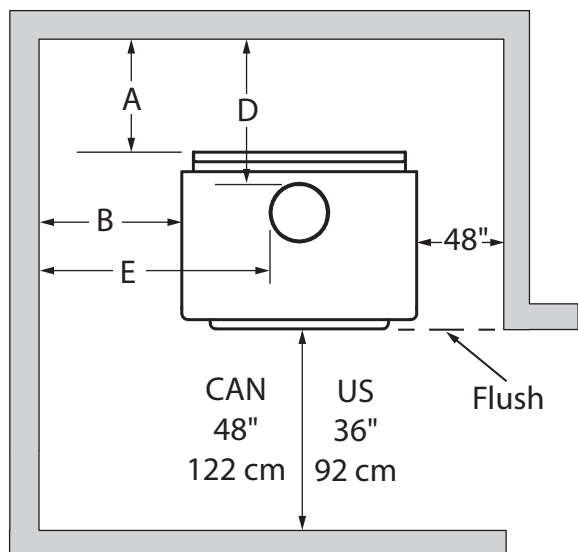


Figure 7: Clearances - Top

Figure 8: Clearances - Corner

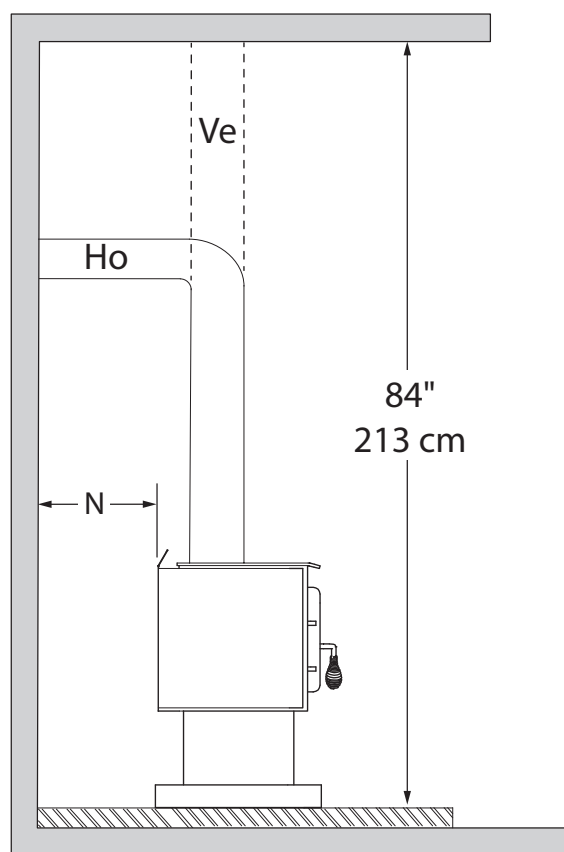


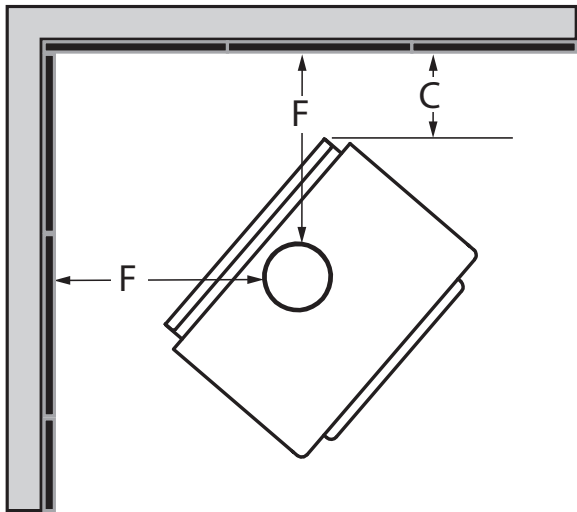
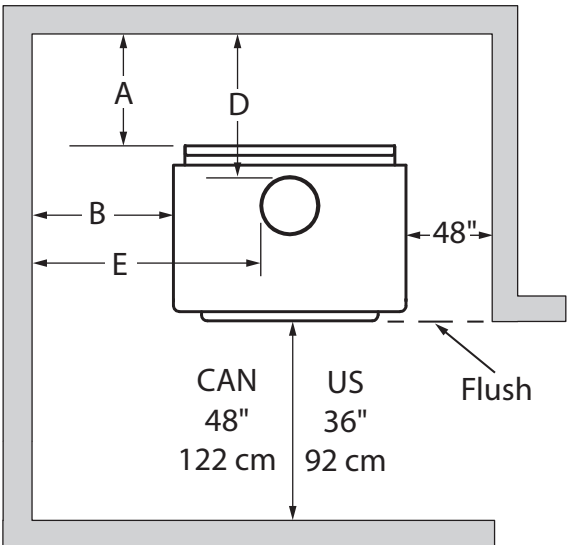
Figure 9: Clearances - Side

3.1.1 With Heat Shield AC02762¹⁵

To reduce the clearances of an appliance using a single wall pipe connector, the use of a heat shield certified with the single wall pipe connector to be used as close as 6" from combustible materials must be used. Only in this case, the same clearances as a certified double wall pipe connector can be used. Refer to the booklet present in the screen options to obtain the dimensions to be respected.

	APPLIANCE CLEARANCES WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
C		

	DISTANCES ¹⁶ FROM DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
D		
E		
F		



If the clearance reduction is on the same side as the door handle, position the stove at a minimum of 6 inches from the side wall (clearance B), otherwise it may be located at the clearance shown in the table above.

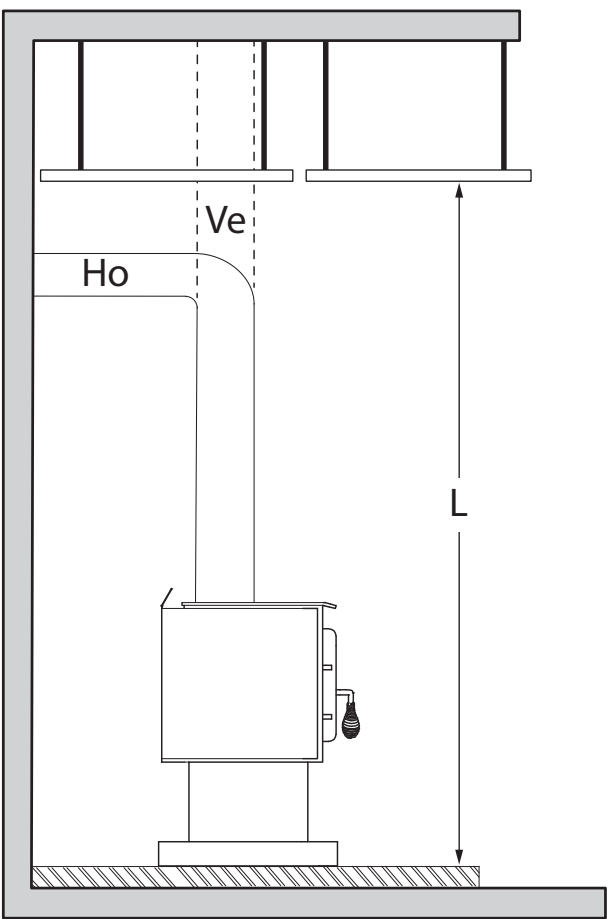
¹⁵ Note that to reduce the clearances of an appliance using a single wall pipe connector, the use of a heat shield certified with the single wall pipe connector to be used as close as 6" from combustible materials must be used. Only in this case, the same clearances as a certified double wall pipe connector can be used.

¹⁶ The pipe distances listed in this table refer to the distances obtained when the stove is installed in accordance with the appliance clearances above mentioned.

3.1.2 With Lowered Ceiling

	APPLIANCE CLEARANCES WITH SINGLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
C		
L		

	APPLIANCE CLEARANCES WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
C		
L		



If the above clearances are met, then the distances measured from the flue outlet will be:

	DISTANCES ¹⁷ FROM PIPE CONNECTOR WITH SINGLE WALL PIPE CONNECTOR	
	Canada	USA
D		
E		
F		

	DISTANCES ¹⁷ FROM PIPE CONNECTOR WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
D		
E		
F		

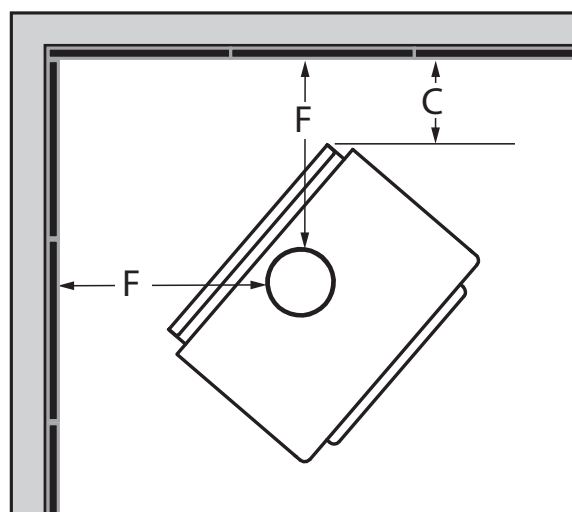
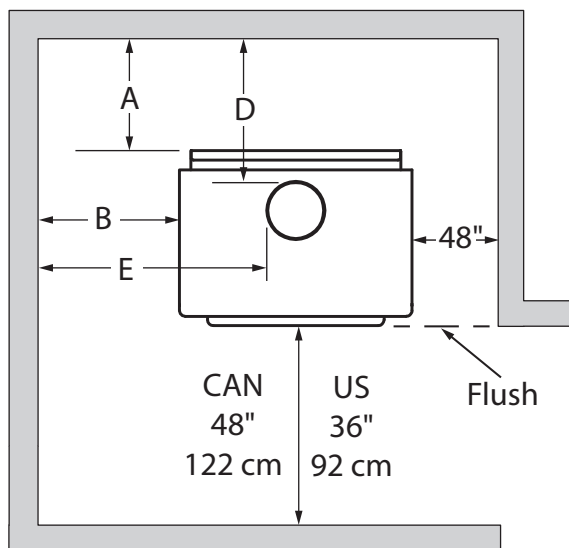
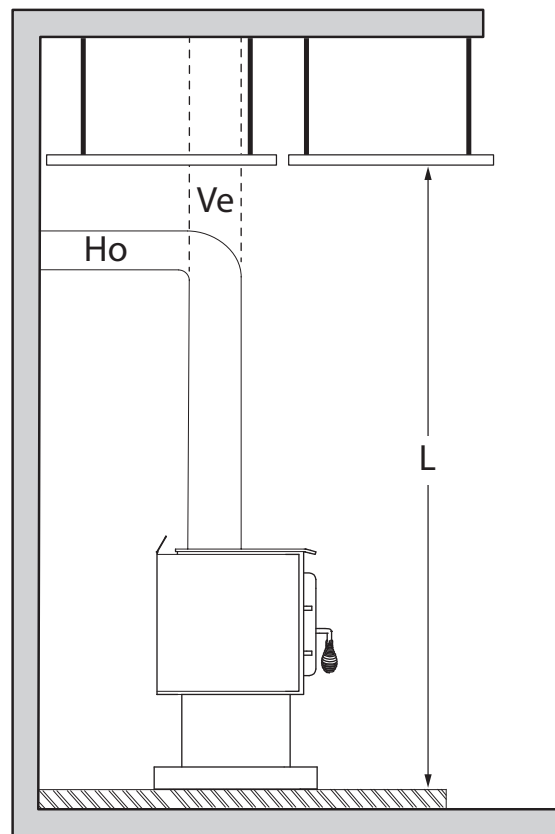
¹⁷ The pipe distances listed in this table refer to the distances obtained when the stove is installed in accordance with the appliance clearances above mentioned.

3.1.3 With Heat Shield AC02762 and Lowered Ceiling

To reduce the clearances of an appliance using a single wall pipe connector, the use of a heat shield certified with the single wall pipe connector to be used as close as 6" from combustible materials must be used. Only in this case, the same clearances as a certified double wall pipe connector can be used. Refer to the booklet present in the screen options to obtain the dimensions to be respected.

	APPLIANCE CLEARANCES WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
C		
L		

	DISTANCES ¹⁸ FROM PIPE CONNECTOR WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
D		
E		
F		



If the clearance reduction is on the same side as the door handle, position the stove at a minimum of 6 inches from the side wall (clearance B), otherwise it may be located at the clearance shown in the table above.

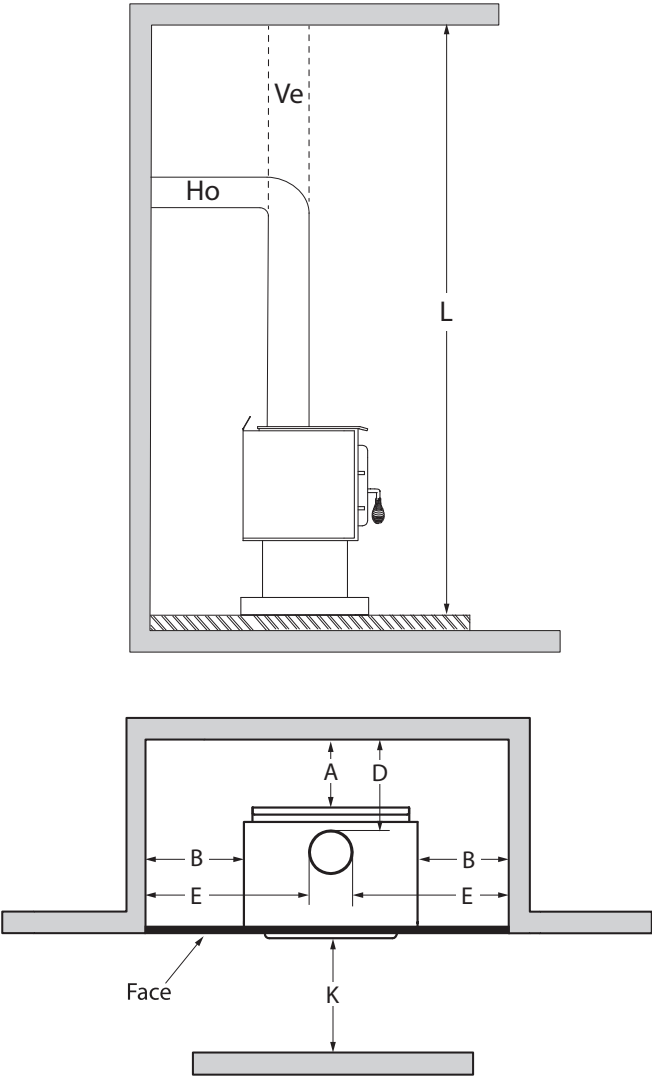
¹⁸ The pipe distances listed in this table refer to the distances obtained when the stove is installed in accordance with the appliance clearances above mentioned.

3.1.4 Inside a Combustible Alcove

See section 3.1 for single wall pipe installation.

	APPLIANCE CLEARANCES WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
K		
L		

	DISTANCES ¹⁹ FROM PIPE CONNECTOR WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
D		
E		



3.1.5 Mobile Home

It is strictly **forbidden** to install a unit with **a single wall pipe** in a **mobile home**.

	APPLIANCE CLEARANCES WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
C		

	DISTANCES ¹⁹ FROM PIPE CONNECTOR WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
D		
E		
F		

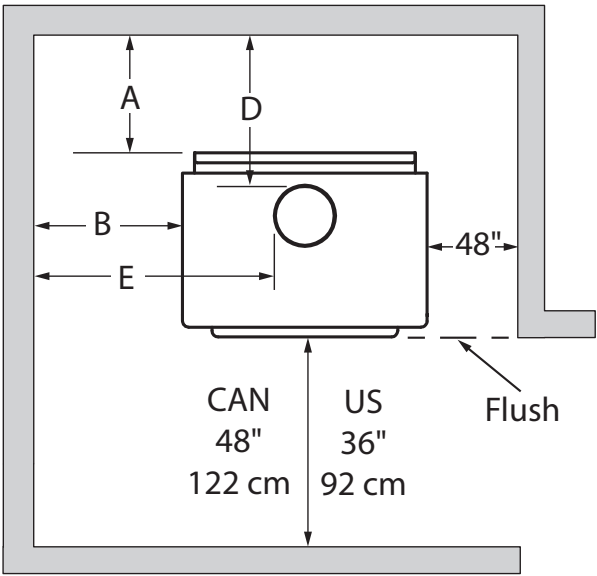
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3.1.6 Mobile Home With Heat Shield AC02762

It is strictly **forbidden** to install a unit with **a single wall pipe** in a **mobile home**.

	APPLIANCE CLEARANCES WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
A		
B		
C		

	DISTANCES ²⁰ FROM PIPE CONNECTOR WITH DOUBLE WALL PIPE CONNECTOR	
	Canada	USA
D		
E		
F		



If the clearance reduction is on the same side as the door handle, position the stove at a minimum of 6 inches from the side wall (clearance B), otherwise it may be located at the clearance shown in the table above.

²⁰ Les distances de tuyau listées dans ce tableau se réfèrent aux distances obtenues lorsque le poêle est installé en accord avec les dégagements de l'appareil mentionnés ci-dessus.

4. Floor Protection

This stove is designed to prevent the floor from overheating. However, it must be placed on a non-flammable surface to protect the floor from hot embers that may fall during loading.

The floor protection must be a continuous, non combustible material, such as steel with a minimum thickness of 0.015" (0.38 mm) or ceramic tiles sealed together with grout. Cement board, brick, or any other approved or listed material suited for floor protection. No R factor required.

Any type of tile will require a continuous non combustible sheet beneath to prevent the possibility of embers falling through to the combustible floor if cracks or separation should occur in the finished surface. Check local codes for approved alternatives.

No protection is required if the unit is installed on a non-combustible floor (ex: concrete).

	FLOOR PROTECTION	
	Canada	USA
G²¹	8" (203 mm)	N/A
H	8" (203 mm)	N/A
I	18" (457 mm) From door opening	16" (203 mm) From door opening
J	N/A	8" (203 mm)
K	34 ½" (876 mm)	31 ¼" (794 mm)
N²²	N/A	See note 22
S	48 ¾" (1238 mm)	38 ¾" (984 mm)
T	34 ½" (876 mm)	27 ½" (698 mm)
U	34 ½" (876 mm)	31 ¼" (794 mm)
V	66" (1676 mm)	54 3/8" (1381 mm)

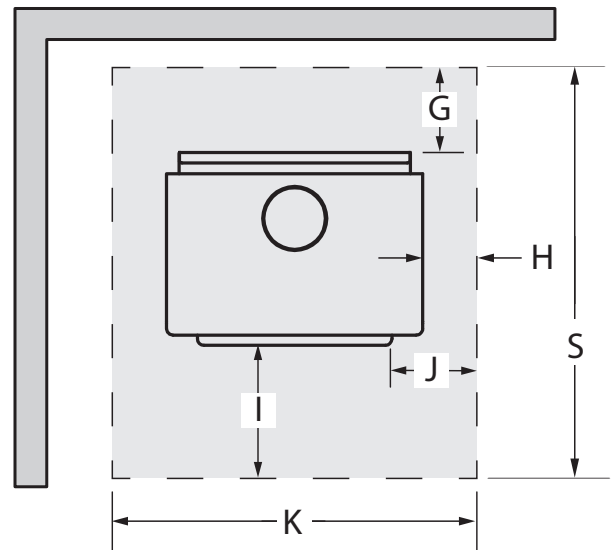
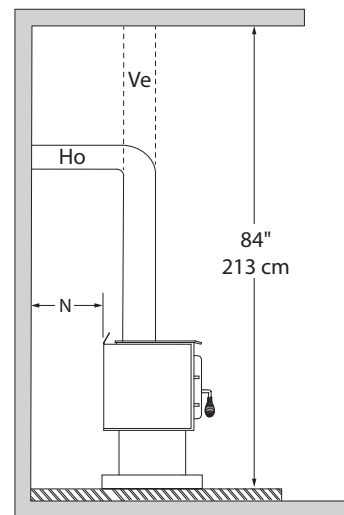
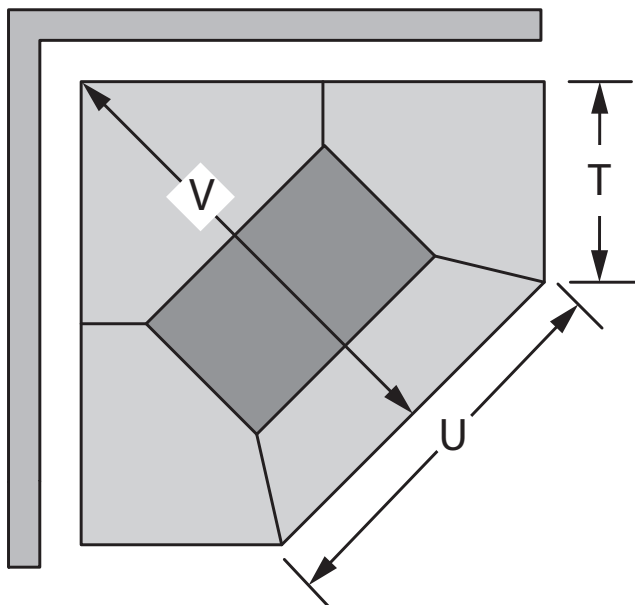


Figure 10: Floor Protection



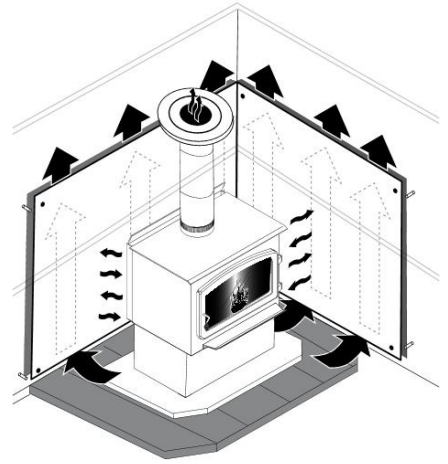
²¹ The floor protection at the back of the stove is limited to the stove's required clearance if such clearance is smaller than 8 inches (203 mm).

²² Only required under the horizontal section (Ho) of the connector. Must exceed each side of the connector by at least 2 inches (51 mm).

5. Reducing Wall and Ceiling Clearances Safely

It is often desired to use as little space as possible when installing a wood stove. To do this, it is possible to reduce the clearances safely and install the stove closer to the walls by permanently installing a heat shield between the stove and the flammable material.

The rules for heat shields are sometimes complicated. Read and apply the instructions carefully. Some regions may have different regulations. Consult the local building code or contact the fire department for restrictions, inspection and installation requirements in the area.



5.1 Shield Construction Rules

- Adhesives used in shield construction must not ignite or lose adhesive qualities at temperatures likely to be encountered.
 - Mounting hardware which extends from the shield surface into combustibles may be used only at the edges of the shield.
 - Mounting hardware must allow full vertical ventilation.
- A) Minimum clearance between the appliance top and an unshielded combustible ceiling (for a ceiling 72" from the floor): 45 ¼" (1149 mm)
- B) Shield extension above the appliance: 20" (500 mm)
- C) Minimum space behind the shield: 1" (25 mm). In Canada 7/8" (21 mm)
- D) Clearance along the bottom of the shield: minimum 1" (25 mm) and maximum 3" (75 mm)
- E) Minimum clearance along the top of the shield: 3" (75 mm)
- F) Mounting hardware must not be located closer than 8" (200 mm) from the vertical centre line of the appliance.
- G) Edge clearance for ceiling shields to side and back walls: 3" (75 mm)
- H) Shield extension beyond each side of the appliance: 18" (450 mm).

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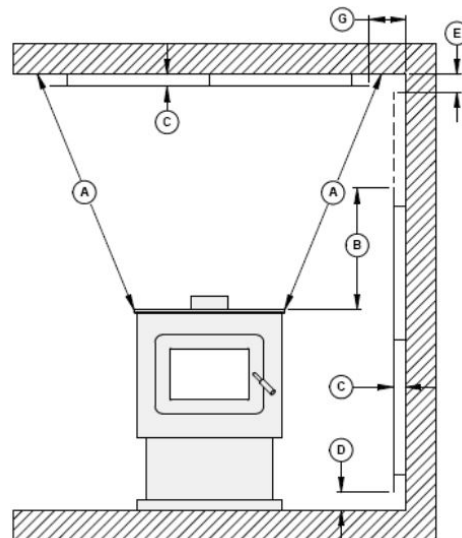
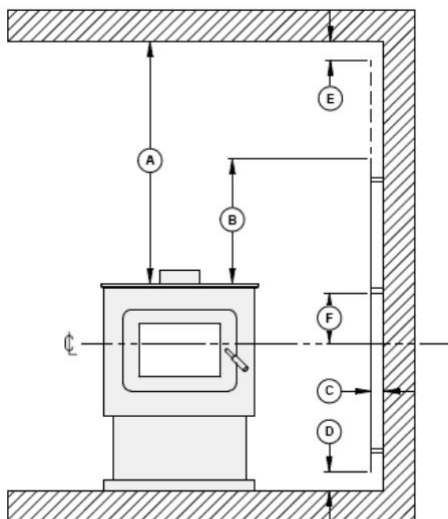


Figure 11: Heat shield clearances

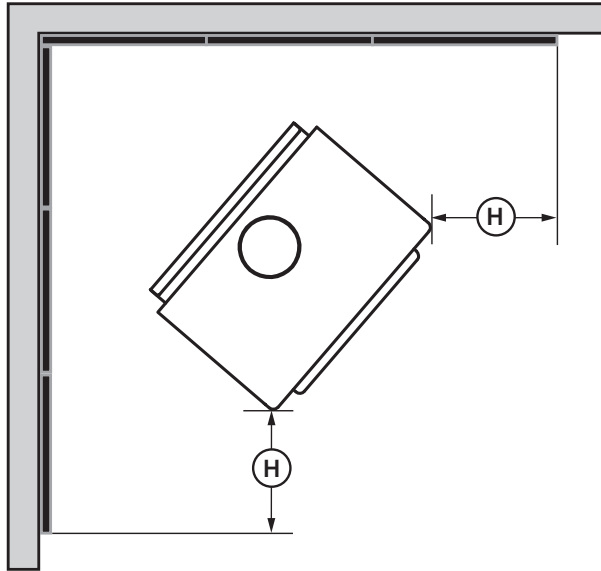


Figure 13: Heat shield clearances

Figure 12: Heat shield clearances

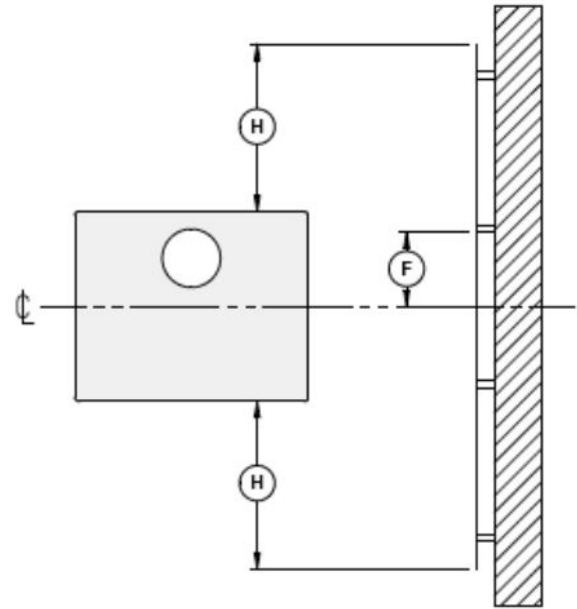
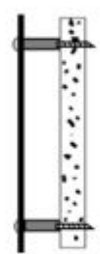
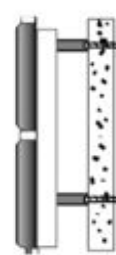
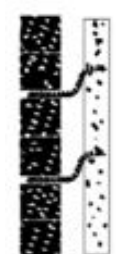
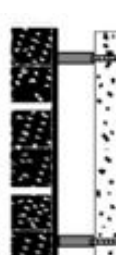


Figure 14: Heat shield clearances

TYPE OF SHIELD	CLEARANCES MAY BE REDUCED BY THESE PERCENTAGES				
	SIDES AND REAR		TOP (CEILING)		
	CAN / USA (%)	USA MIN.	CAN / USA (%)	USA MIN.	
Sheet metal, a minimum of 24 gauge (0.61 mm) in thickness , spaced out at least 1" (25 mm)* by non-combustible spacers	67	12" (305 mm)	50	18" (457 mm)	
Ceramic tiles, or equivalent non-combustible material, on non-combustible board spaced out at least 1" (25 mm)* by non-combustible spacers	50	18" (457 mm)	33	24" (610 mm)	
Ceramic tiles, or equivalent non-combustible material, on non-combustible board, with a minimum of 24 gauge (0.61 mm) sheet metal backing spaced out at least 1" (25 mm)* by non-combustible spacers	67	12" (305 mm)	50	24" (610 mm)	
Brick, spaced out at least 1" (25 mm)* by non-combustible spacers	50	18" (457 mm)	N/A	N/A	
Brick, with a minimum of 24 gauge (0.61 mm) sheet metal backing, spaced out at least 1" (25 mm)* by non-combustible spacers	67	12" (305 mm)	N/A	N/A	

* In Canada this space can be 7/8" (21 mm)

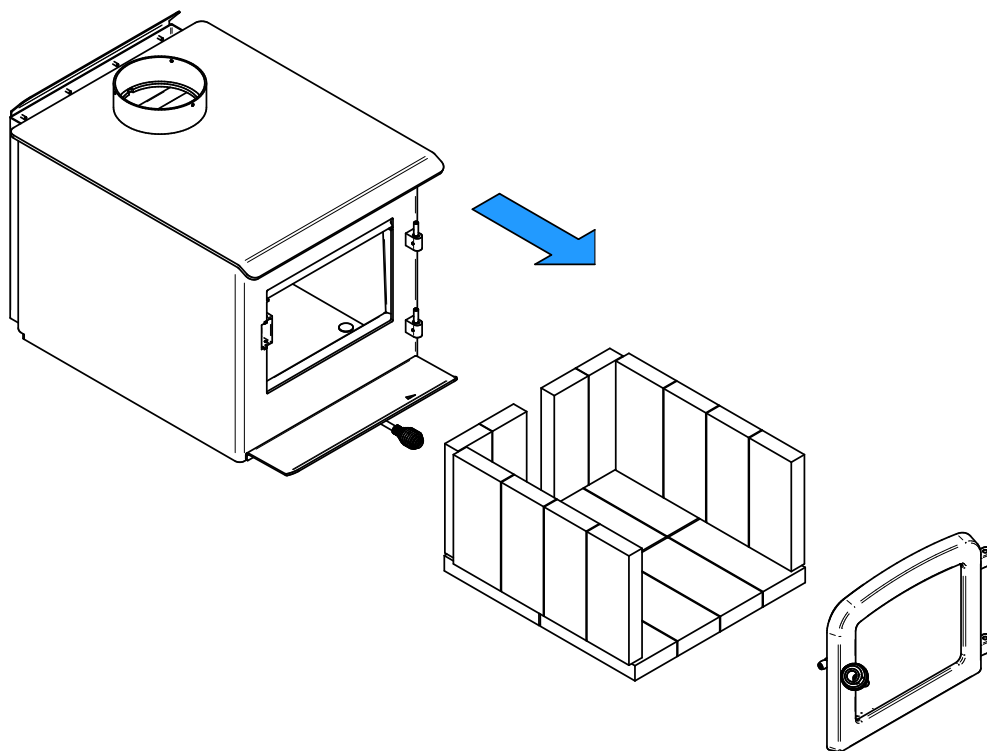
6. OPTIONS INSTALLATION ON YOUR PRODUCT

ENGLISH

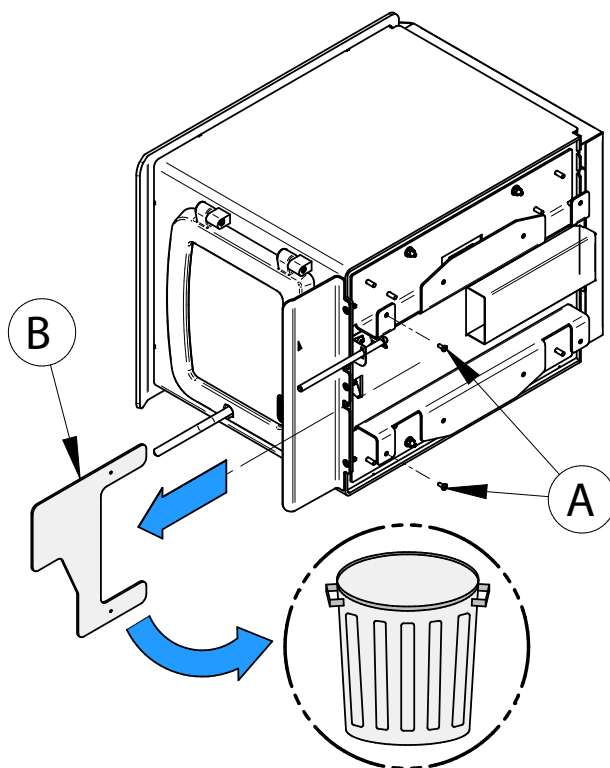
6.1 Legs Installation

THE IMAGES SHOWN ARE INDICATIVE ONLY AND MAY DIFFER OF YOUR PRODUCT, BUT THE ASSEMBLY REMAINS THE SAME.

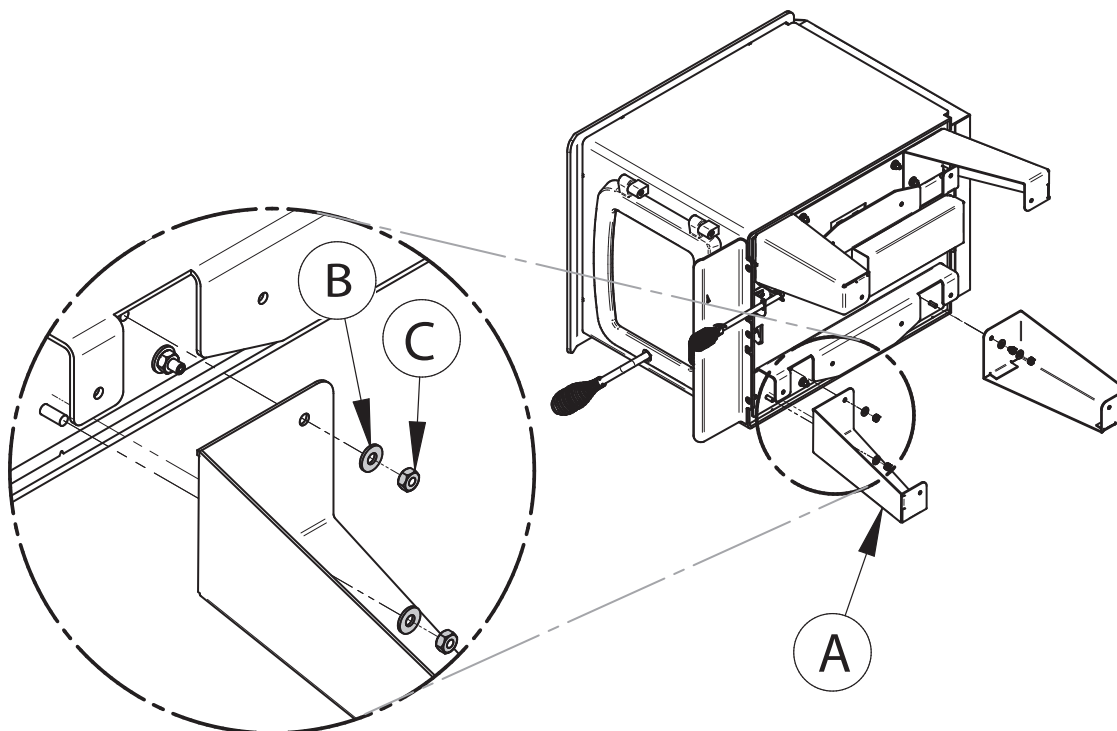
1. Remove the door and the firebricks from the stove.



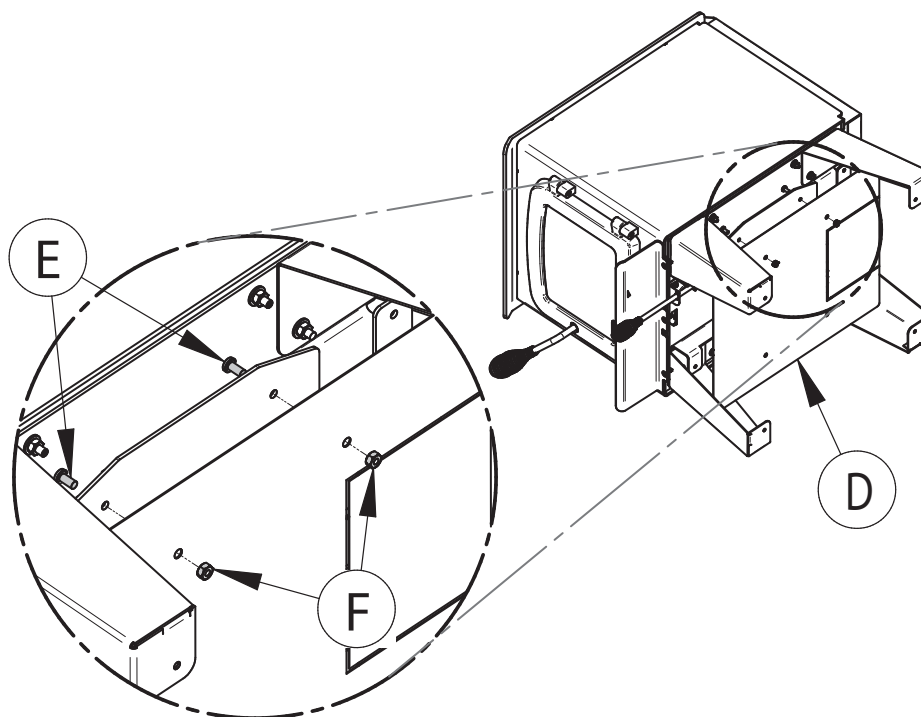
2. Put the stove on its side. Unscrew and discard the metal plate (B) located under the fireplace.



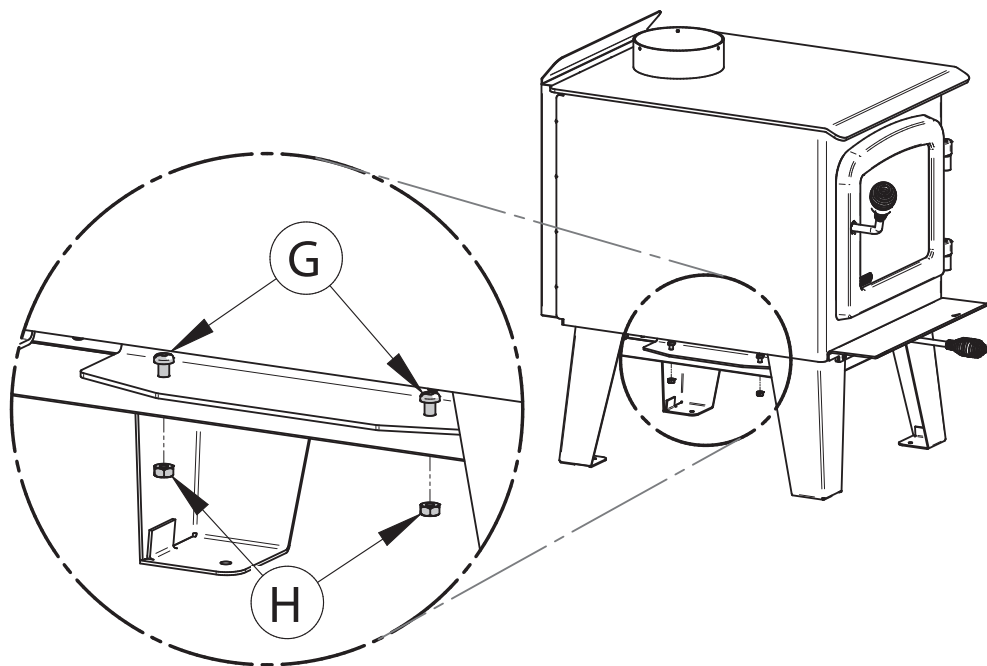
3. Put the stove on its side. Install the legs **(A)** on the stove and secure them with the washers **(B)** and nuts **(C)**.



4. Install the heat shield plate **(D)** under the stove and secure it with screws **(E)** and nuts **(F)** from the top only.



5. Put the stove on its legs and install two screws **(G)** on the other side of the heat shield plate and screw with the nuts **(H)**.



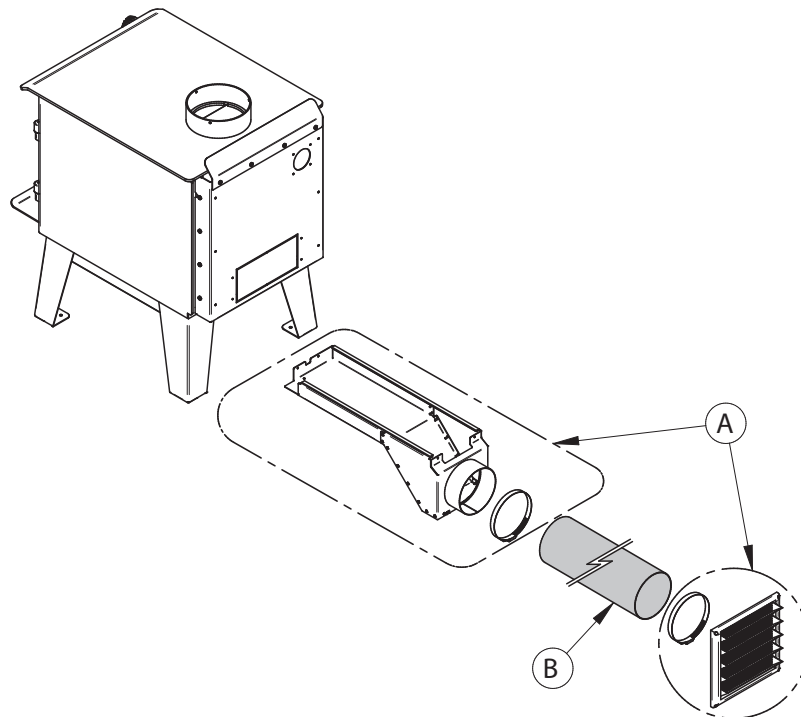
6. Put back the firebricks, the ash plug and the door on the stove. (See step 1)

The baffle and the bricks must be put back in the right place after the final positioning of the stove.

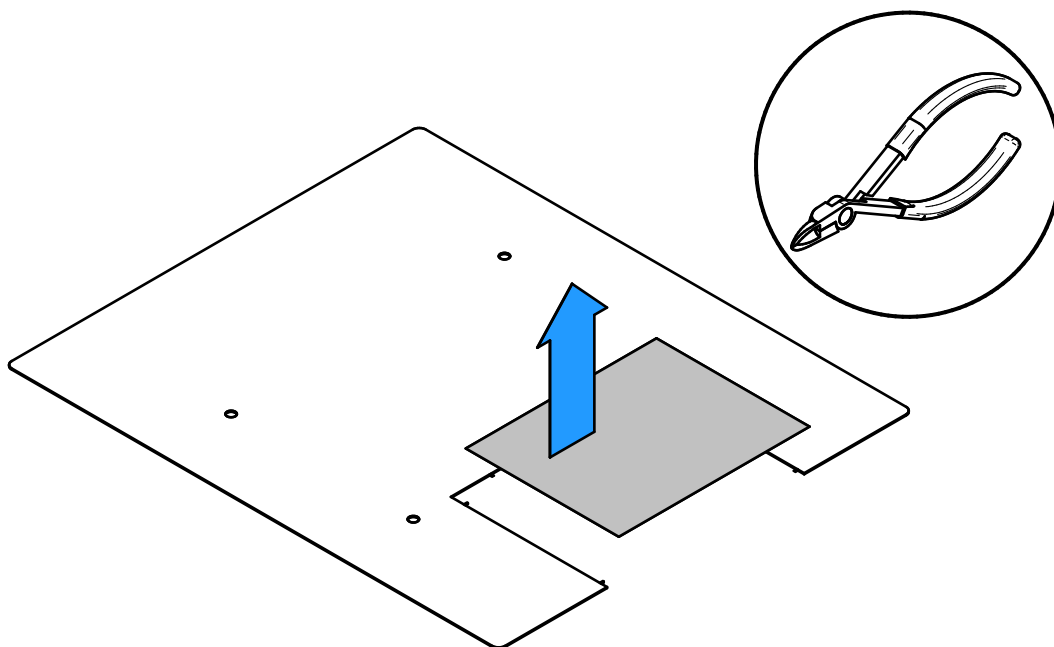
6.2 Optional Fresh Air Intake Kit Installation

THE IMAGES SHOWN ARE INDICATIVE ONLY AND MAY DIFFER OF YOUR PRODUCT, BUT THE ASSEMBLY REMAINS THE SAME.

This mobile home approved stove requires the installation of a fresh air intake kit **(A)** and an insulated fresh air intake pipe (HVAC type, must meet ULC S110 or UL 181 class 0 or class 1) **(B)**, sold separately. Refer to air intake kit installation instructions for more details.



After installing the fresh air intake, before screwing the heat shield plate (D) under the stove, remove the metal rectangle cut in the heat shield plate by cutting the micro-joints with pliers.



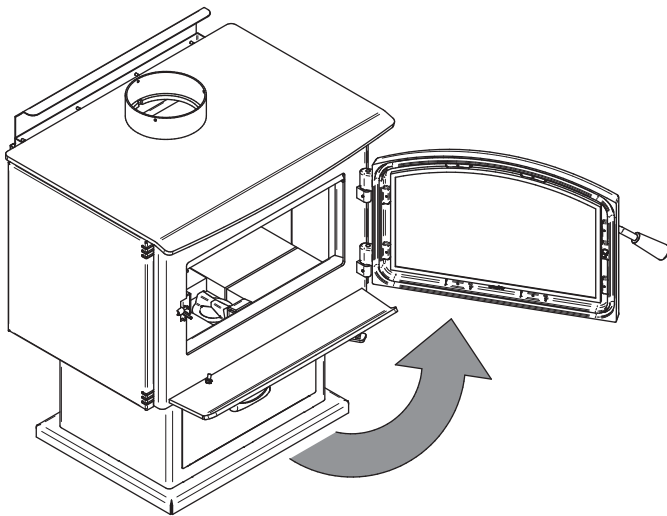
6.3 Optional Fire Screen Installation

THE IMAGES SHOWN ARE INDICATIVE ONLY AND MAY DIFFER OF YOUR PRODUCT, BUT THE ASSEMBLY REMAINS THE SAME.

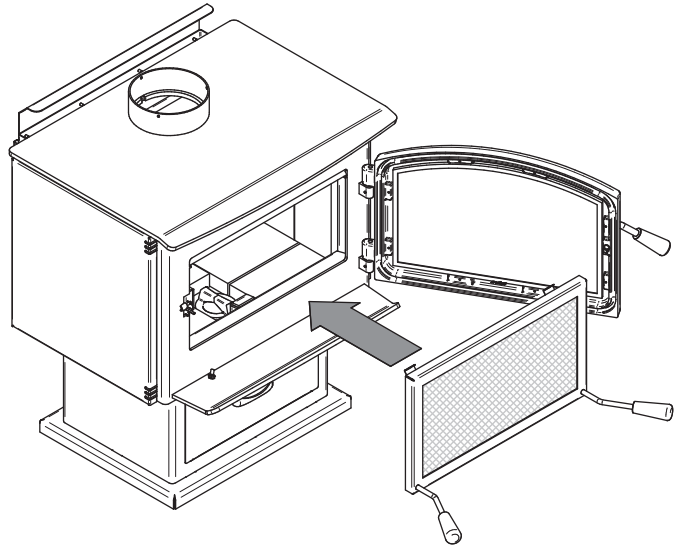
In the United States or in provinces with a particulate emission limit (eg US EPA), the use of wood stoves with open door with and fire screen is prohibited.

It is prohibited to use this wood stove with a fire screen in a mobile home.

1. Open the door.



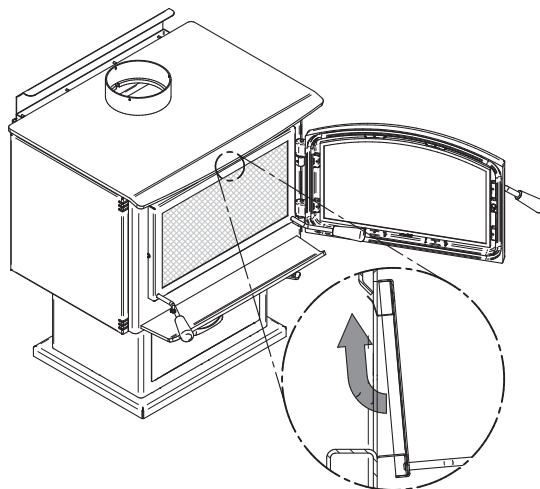
2. Hold the fire screen by the two handles and bring it close to the door opening.



3. Lean the upper part of the fire screen against the top door opening making sure to position the top fire screen brackets behind the primary air deflector.

4. Lift the fire screen upwards and push the bottom part towards the stove then let the fire screen rest on the bottom of the door opening.

Warning: Never leave the stove unattended while in use with the fire screen.

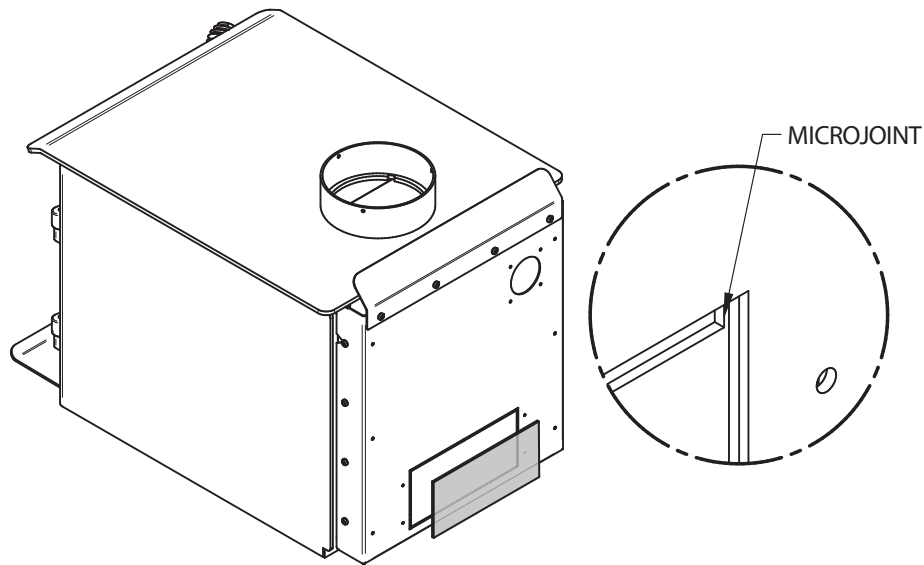


6.4 Optional Blower And Thermodisc Installation

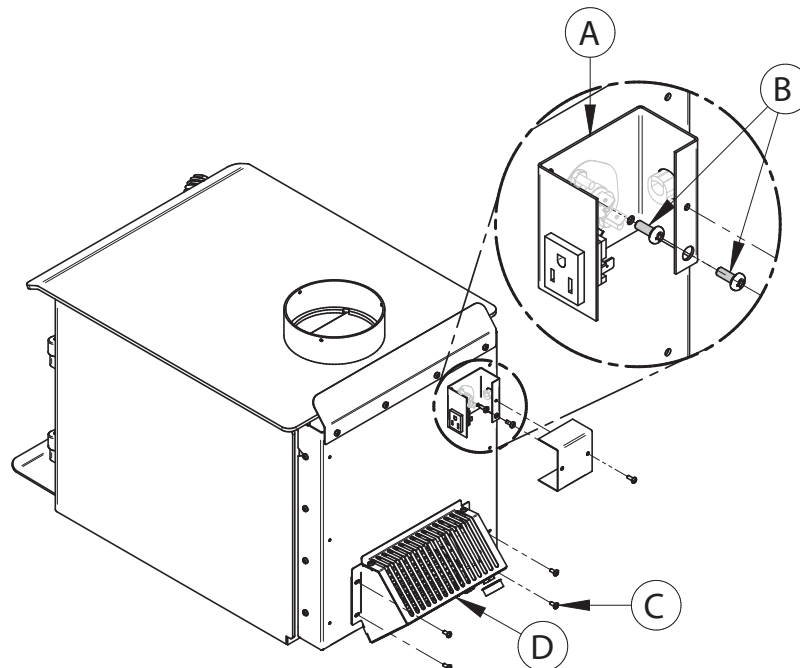
THE IMAGES SHOWN ARE INDICATIVE ONLY AND MAY DIFFER OF YOUR PRODUCT, BUT THE ASSEMBLY REMAINS THE SAME.

A blower and a thermodisc, sold separately, can be installed on the stove. The installation of the blower is identical for a stove on legs or pedestal. Thermodisc allows the blower to operate only when the stove is hot enough. See the instructions provided with the thermodisc for more details.

1. Remove the backplate by cutting the knockouts with pliers.

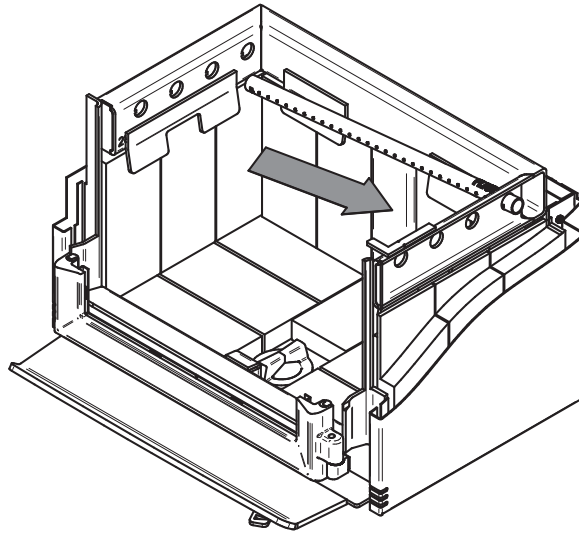


2. Screw the blower **(D)** in place using the screws **(C)** included in the installation manual. Screw the thermodisc **(A)** with the screws **(B)** supplied with the thermodisc on the back of the stove. **Ensure that the blower's power cord is not in contact with any surface of the stove to prevent electrical shock or fire damage. Do not run the power cord beneath the stove.**

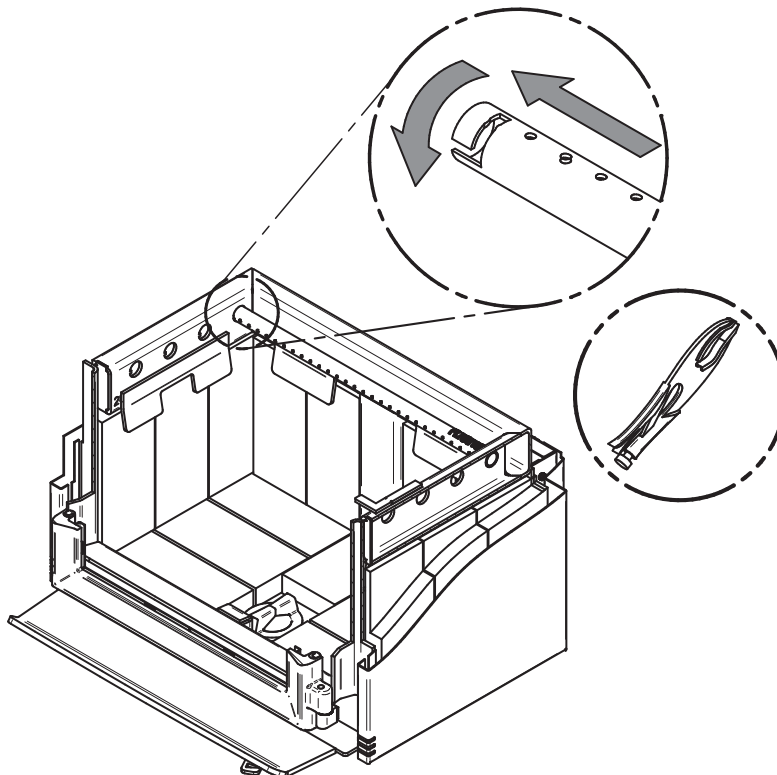


6.5 Air Tubes And Baffle Installation

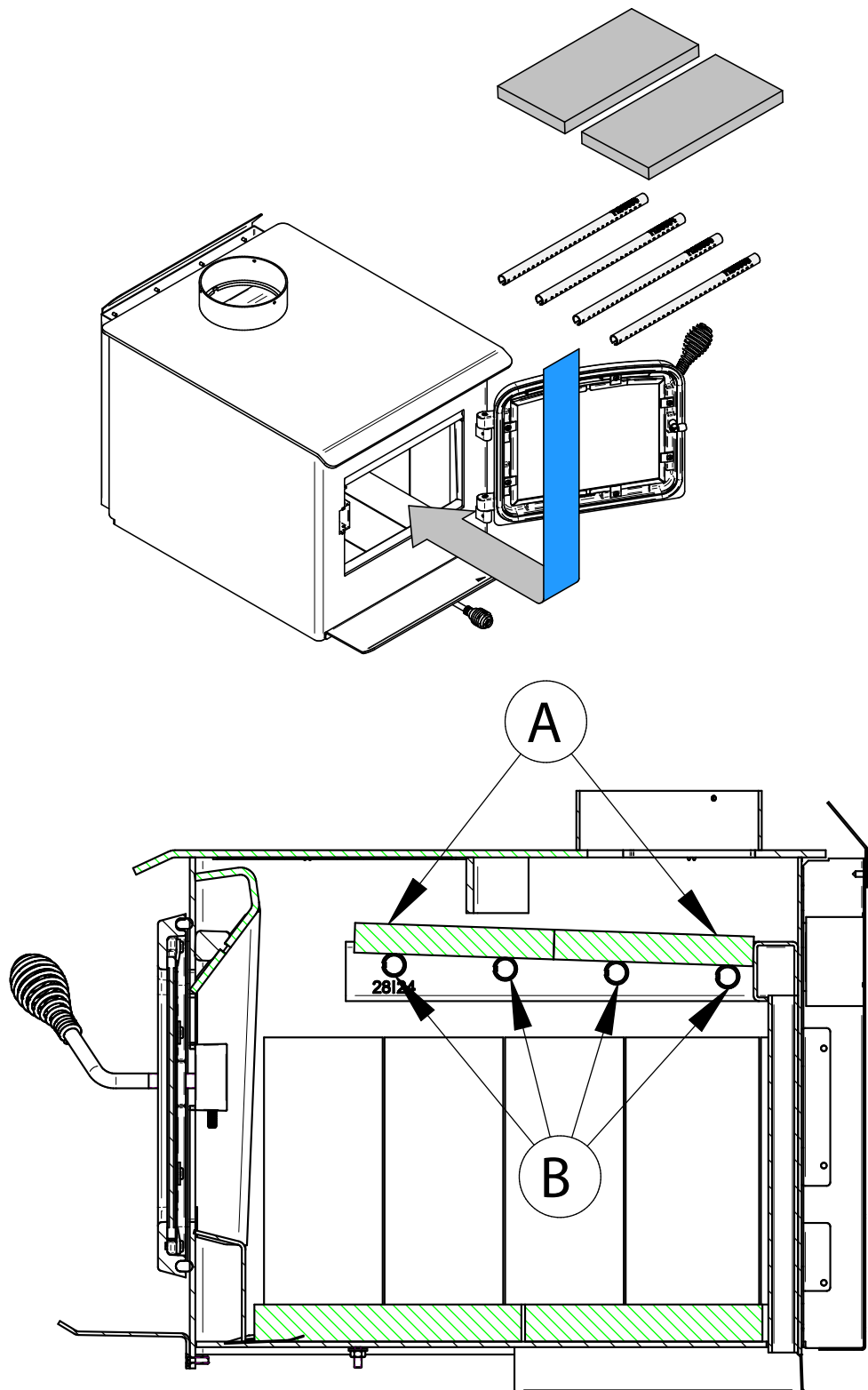
1. Starting with the rear tube, lean and insert the right end of the secondary air tube into the rear right channel hole. Then lift and insert the left end of the tube into the rear left channel.



2. Align the notch in the left end of the tube with the key of the left air channel hole. Using a Vise grip hold the tube and lock it in place by turning the tube as shown. Make sure the notch reaches the end of the key way.
3. Put the baffle in place.
4. Repeat steps 1 and 2 for the three other tubes.
5. To remove the tubes use the above steps in reverse order.



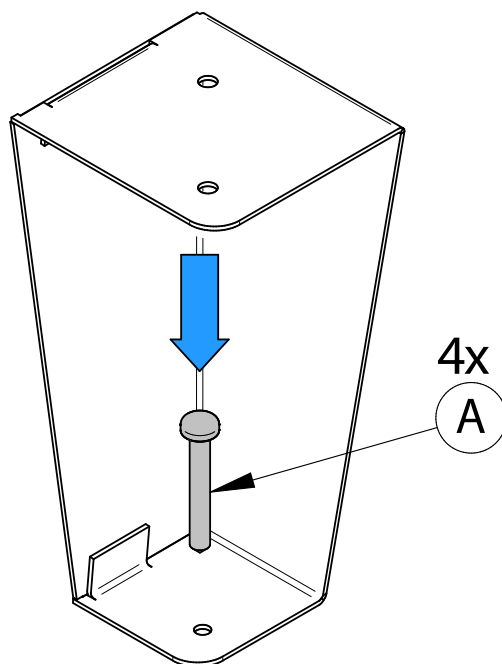
Note that secondary air tubes (B) can be replaced without removing the baffle board (A) and that all tube are not necessarily identical (look at the part number on the tube).



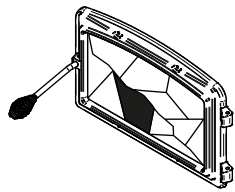
6.6 Mobile Home Installation

THE IMAGES SHOWN ARE INDICATIVE ONLY AND MAY DIFFER OF YOUR PRODUCT, BUT THE ASSEMBLY REMAINS THE SAME.

Screw the legs in place with the proper hardware **(A)**.



7. Maintenance/Parts Replacement



Do not clean the glass when the stove is hot.

Do not abuse the glass door by striking or slamming shut.

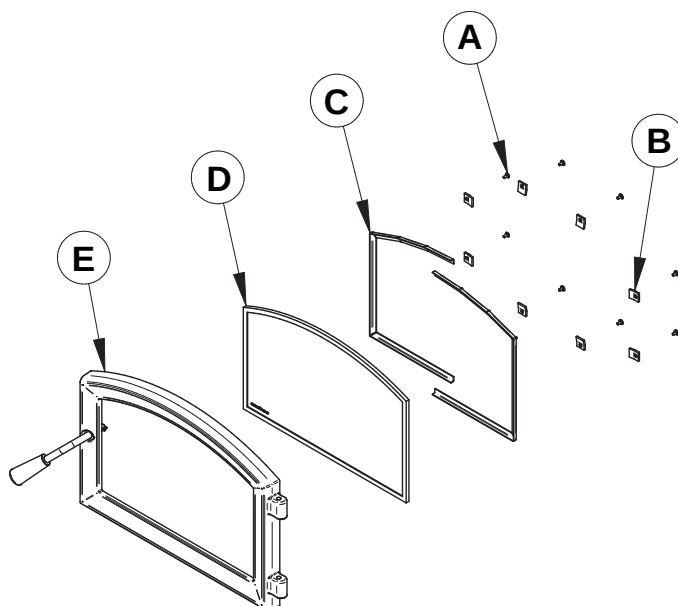
Do not use the stove if the glass is broken.

7.1 Replacement

The glass used is a ceramic glass, 5/32" (4 mm) thick, tested to reach temperatures up to 1400° F. If the glass breaks, it must be replaced with one having the same specification.

To remove or replace the glass (D):

THE IMAGES SHOWN ARE INDICATIVE ONLY AND MAY DIFFER OF YOUR PRODUCT, BUT THE ASSEMBLY REMAINS THE SAME.



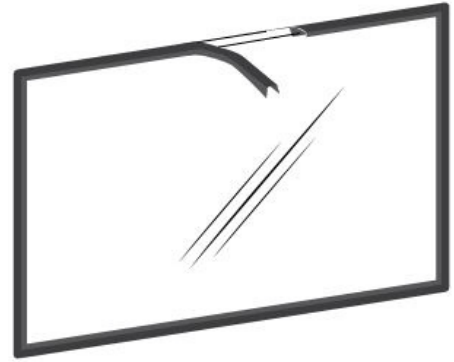
1. Remove the door **(E)** from its hinges and lay it on a soft, flat surface.
2. Remove the eight screws **(A)**, the eight glass retainers **(B)**, and the metal frames **(C)**.
3. Remove the glass **(D)**. If it is damaged install a new one in place. The replacement glass must have a gasket all around (see procedure below).
4. Reinstall the glass, being careful to centre the glass in the door and not to over-tightening the retaining screw.

The two main causes of broken door glass are uneven placement in the door and over-tightening the retaining screws.

7.2 Gasket

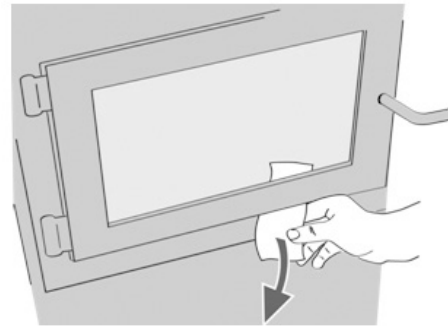
The glass gasket is flat, adhesive-backed, woven fibreglass. The gasket must be centred on the edge of the glass.

1. Follow the steps of the previous section to remove the glass.
2. Remove the old gasket and clean the glass thoroughly.
3. Peel back a section of the paper covering the adhesive and place the gasket on a table with the adhesive side up.
4. Stick the end of the gasket to the middle of one edge, then press the edge of the glass down onto the gasket, taking care that it is perfectly centred on the gasket.
5. Peel off more of the backing and rotate the glass. The gasket must not be stretched during installation.
6. Cut the gasket to the required length.
7. Pinch the gasket onto the glass in a U shape, all around the glass.



7.3 Door

In order for the stove to burn at its best efficiency, the door must provide a perfect seal with the firebox. The tightness of the door seal can be verified by closing and latching the door on a strip of paper. The test must be performed all around the door. If the paper slips out easily anywhere, either adjust the door or replace the gasket.



7.3.1 Adjustment

In order for the stove to burn at its best efficiency, the door must provide a perfect seal with the firebox. Therefore, the gasket should be inspected periodically to check for a good seal. The gasket seal may be improved with a simple latch mechanism adjustment:

1. Remove the split pin by pulling and turning it using pliers.
2. Turn the handle one counterclockwise turn to increase pressure.
3. Reinstall the split pin with a small hammer.

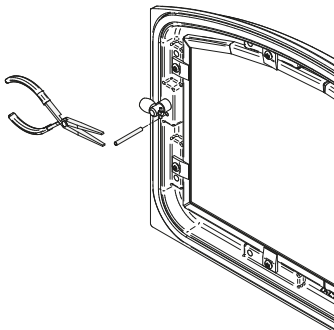


Figure 15: Removing the split pin

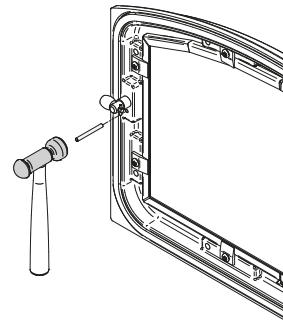
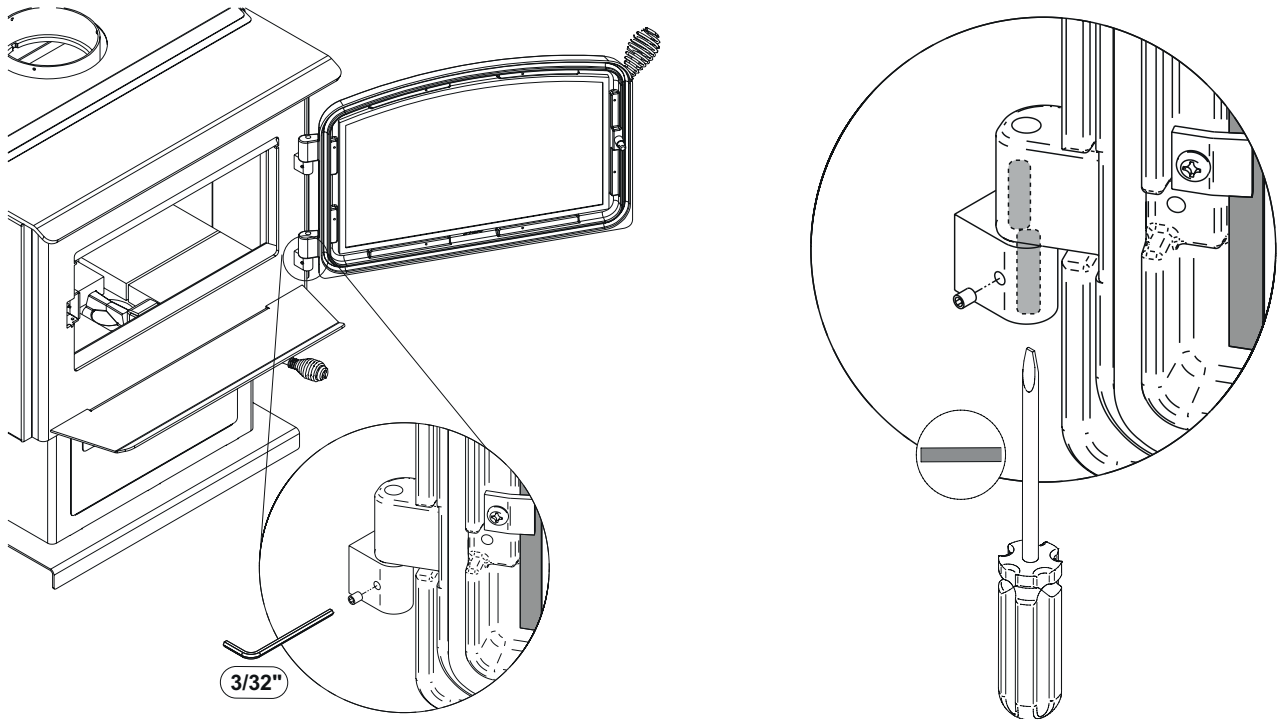


Figure 16: Installing the split pin

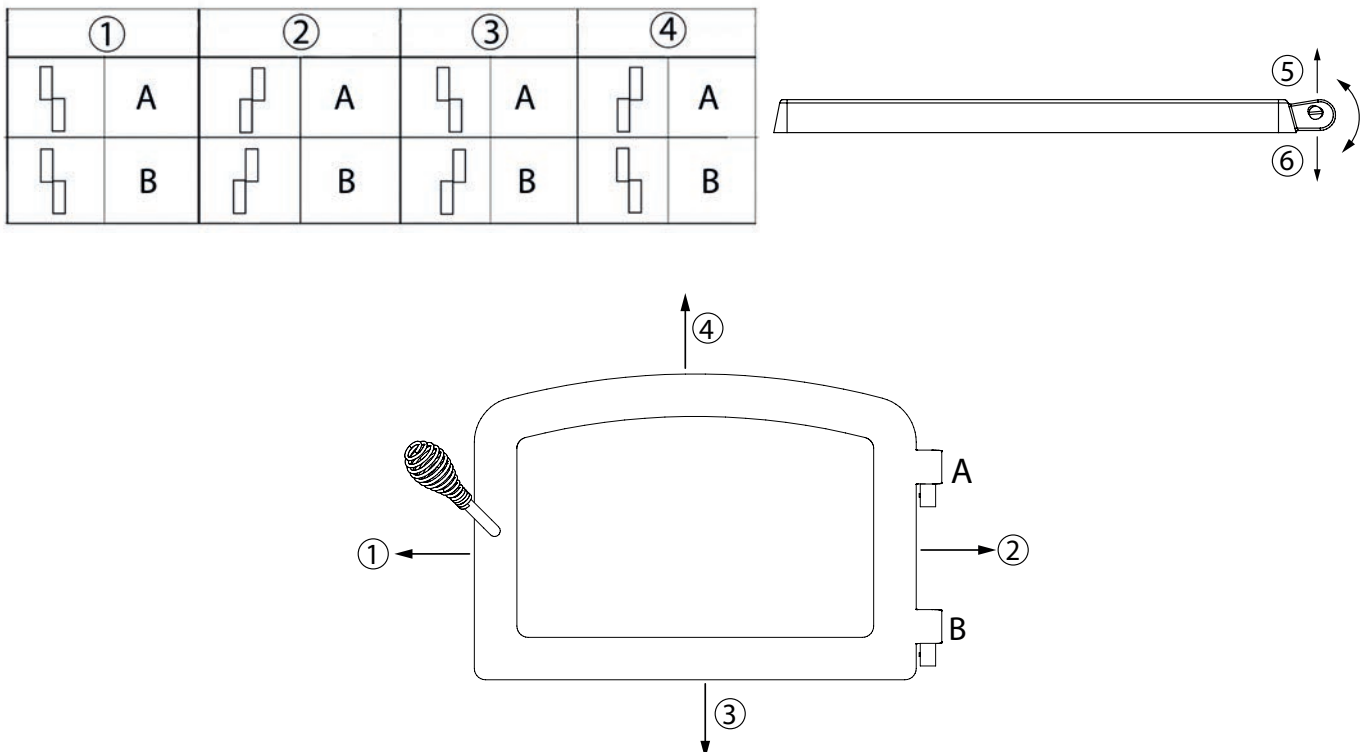
7.3.2 Door Alignment

Door alignment should be checked before lighting the wood stove for the first time, as it may not be properly aligned.

To align, open the door and loosen the pressures screws located on the lower and upper hinges of the door using a 3/32" Allen key to free the adjustable hinge rods.



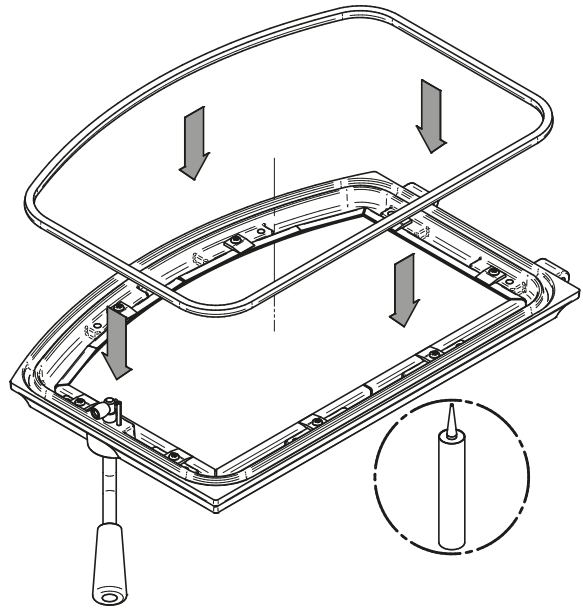
Using a flat screwdriver, turn the adjustable hinge rods in the direction shown to adjust the doors. Tighten all door hinge pressure screws when they are at the desired positions. Configurations 1-2-3-4-5-6, show in which direction these act on the adjustment of the door.



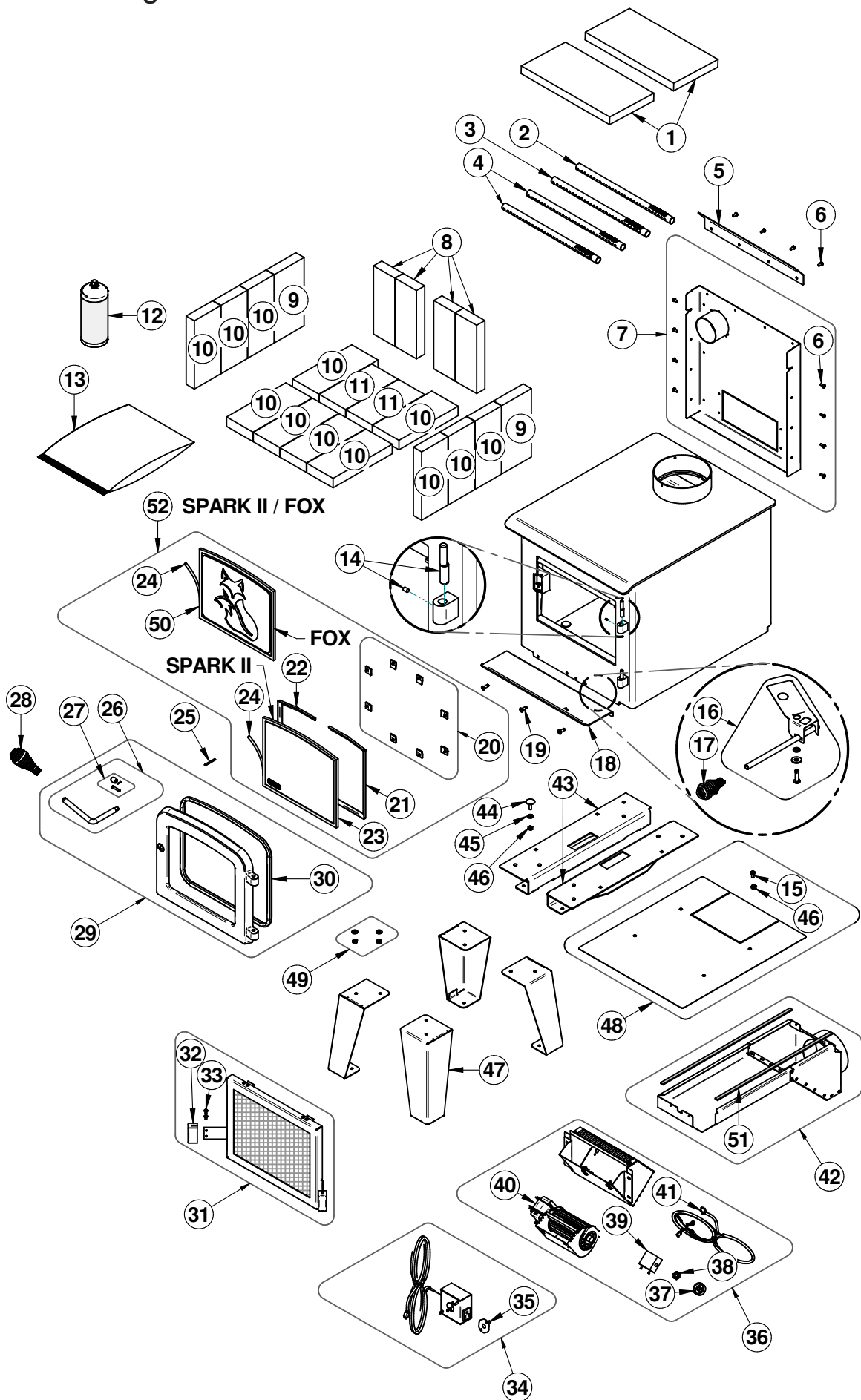
7.3.3 Gasket

It is important to replace the gasket with another having the same diameter and density to maintain a good seal.

1. Remove the door and place it face-down on something soft like a cushion of rags or a piece of carpet.
2. Remove the old gasket from the door. Use a screwdriver to scrape the old gasket adhesive from the door gasket groove.
3. Apply a bead of approximately 3/16" (5 mm) of high temperature silicone in the door gasket groove. Starting from the middle, hinges side, press the gasket into the groove. The gasket must not be stretched during installation.
4. Leave about 1/2" long of the gasket when cutting and press the end into the groove. Tuck any loose fibers under the gasket and into the silicone.
5. Close the door. Do not use the stove for 24 hours.



8. Exploded Diagram and Parts List



IMPORTANT: THIS IS DATED INFORMATION. When requesting service or replacement parts for your stove, please provide the model number and serial number. We reserve the right to change parts due to technology upgrade or availability. Contact an authorized dealer to obtain one of these parts. Never use substitute materials. The use of unapproved parts can cause poor performance and risk to your safety.

#	Item	Description	Qty
1	21622	13 7/16" X 6 3/4" X 1" VERMICULITE BAFFLE	2
2	PL66833	REAR SECONDARY AIR TUBE	1
3	PL66834	REAR CENTER SECONDARY AIR TUBE	1
4	PL66835	FRONT AND CENTER SECONDARY AIR TUBE	2
5	PL74262	EXHAUST DEFLECTOR	1
6	30154	BLACK SCREW #10 X 5/8" QUADREX #2 TYPE A	12
7	SE74262	BACK HEAT SHIELD ASSEMBLY	1
8	29007	3 1/4" X 9" X 1 1/4" REFRACTORY BRICK	4
9	29010	4 1/2" X 9" X 1 1/4" REFRACTORY BRICK	2
10	29015	4" X 9" X 1 1/4" REFRACTORY BRICK	12
11	29000	4" X 8" X 1 1/4" REFRACTORY BRICK	2
12	AC05959	METALLIC BLACK STOVE PAINT - 342 g (12oz) AEROSOL	1
13	SE46259	FOX AND SPARK INSTRUCTION MANUAL KIT	1
14	SE74167	DOOR HINGE REPLACEMENT KIT	1
15	30025	1/4-20 X 1/2" PAN-HEAD QUADREX BLACK SCREW	4
16	SE74355	ASSEMBLY AIR CONTROL HATCH KIT	1
17	30429	3/8" NICKEL COIL HANDLE	1
18	PL74265	ASH TRAY	1
19	30507	BLACK TORX SCREW WITH FLAT HEAD TYPE F 1/4-20 X 3/4"	3
20	SE53585	GLASS RETAINER KIT WITH SCREWS (12 PER KIT)	1
21	PL74317	RIGHT GLASS FRAME	1
22	PL74318	LEFT GLASS FRAME	1
23	SE74251	GLASS WITH GASKET 11 3/8" L X 9 1/2" H	1
24	AC06400	3/4" X 6' FLAT BLACK SELF-ADHESIVE GLASS GASKET	1
25	30101	SPRING TENSION PIN 5/32"Ø X 1 1/2"L	1
26	SE70697	REPLACEMENT HANDLE WITH LATCH KIT	1
27	AC09185	DOOR LATCH KIT	1
28	AC07867	1/2" CHROME PLATED COIL HANDLE	1
29	SE24349	ESCAPE 1200 CAST IRON DOOR ASSEMBLY	1
30	AC06500	SILICONE AND 5/8" X 8' BLACK DOOR GASKET KIT	1
31	AC01420	RIGID FIRESCREEN	1
32	PL06728	PAINTED AIR CONTROL HANDLE	2
33	30129	METAL SCREW #10 X 1/2" PAN QUADREX ZINC "A" TYPE	4

#	Item	Description	Qty
34	AC02055	QUICK CONNECT THERMODISC	1
35	44028	CERAMIC THERMODISC F110-20F	1
36	AC02050	BLOWER ASSEMBLY WITH VARIABLE SPEED CONTROL (UP TO 100 CFM)	1
37	44085	RHEOSTAT KNOB	1
38	44087	RHEOSTAT NUT	1
39	44080	RHEOSTAT WITHOUT NUT (MODEL KBMS-13BV)	1
40	44073	CROSSFLOW BLOWER 115V-60Hz-39W 100 CFM	1
41	60013	POWER CORD 96" X 18-3 type SJT (50 pcs per carton)	1
42	AC01421	5"Ø FRESH AIR INTAKE KIT FOR WOOD STOVE ON LEGS	1
43	PL74323	LEG SUPPORT	2
44	30536	LEVELING BOLT 1/4 - 20 X 1"	4
45	30185	17/64" AA TYPE WASHER BLACK	4
46	30100	BLACK HEX NUT 1/4 - 20	8
47	PL74328	LEG	4
48	SE74357	BOTTOM HEAT SHIELD KIT	1
49	30141	LEG KIT HARDWARE BAG	1
50	SE74358	FOX DOOR PLATE ASSEMBLY	1
51	AC06810	SELF ADHESIVE BLACK GASKET KIT 1/8" X 3/8" X 6'	1
52	SE74364	SPARK II GLASS AND MOLDING KIT	1

DROLET LIMITED LIFETIME WARRANTY

The warranty of the manufacturer extends only to the original retail purchaser and is not transferable. This warranty covers brand new products only, which have not been altered, modified nor repaired since shipment from factory. Proof of purchase (dated bill of sale), model name and serial number must be supplied when making any warranty claim to your DROLET dealer.

This warranty applies to normal residential use only. This warranty is void if the unit is used to burn material other than cordwood (for which the unit is not certified by EPA) and void if not operated according to the owner's manual. Damages caused by misuse, abuse, improper installation, lack of maintenance, over firing, negligence or accident during transportation, power failures, downdrafts, venting problems or under-estimated heating area are not covered by this warranty. The recommended heated area for a given appliance is defined by the manufacturer as its capacity to maintain a minimum acceptable temperature in the designated area in case of a power failure.

This warranty does not cover any scratch, corrosion, distortion, or discoloration. Any defect or damage caused by the use of unauthorized or other than original parts voids this warranty. An authorized qualified technician must perform the installation in accordance with the instructions supplied with this product and all local and national building codes. Any service call related to an improper installation is not covered by this warranty.

The manufacturer may require that defective products be returned or that digital pictures be provided to support the claim. Returned products are to be shipped prepaid to the manufacturer for investigation. Transportation fees to ship the product back to the purchaser will be paid by the manufacturer. Repair work covered by the warranty, executed at the purchaser's domicile by an authorized qualified technician requires the prior approval of the manufacturer. All parts and labour costs covered by this warranty are limited according to the table below.

The manufacturer, at its discretion, may decide to repair or replace any part or unit after inspection and investigation of the defect. The manufacturer may, at its discretion, fully discharge all obligations with respect to this warranty by refunding the wholesale price of any warranted but defective parts. The manufacturer shall, in no event, be responsible for any uncommon, indirect, consequential damages of any nature, which are in excess of the original purchase price of the product. **A one-time replacement limit applies to all parts benefiting from lifetime coverage.** This warranty applies to products purchased after March 1st, 2018.

DESCRIPTION	WARRANTY APPLICATION*	
	PARTS	LABOUR
Combustion chamber (welds only) and cast iron door frame.	Lifetime	3 years
Surrounds, heat shields, ash drawer, steel legs, pedestal, trims (aluminum extrusions), plating (defective manufacture**), and convector air-mate.	5 years	3 years
Removable stainless steel combustion chamber components, secondary air tubes**, deflectors, supports and catalysts.	5 years	N/A
Glass retainers, handle assembly, and air control mechanism.	3 years	1 year
Carbon steel combustion chamber components, vermiculite, C-Cast or equivalent baffle**.	2 years	N/A
Standard blower, heat sensors, switches, rheostat, wiring, and other controls.	1 year	1 year
Optional blower, paint (peeling**), ceramic glass (thermal breakage only**), ceramic fibre blankets, gaskets, insulation, and other options.	1 year	N/A
Firebricks.	N/A	N/A
All parts replaced under the warranty.	90 days	N/A

***Subject to limitations above. **Picture required.**

Labour cost and repair work to the account of the manufacturer are based on a predetermined rate schedule and must not exceed the wholesale price of the replacement part.

Shall your unit or a components be defective, contact immediately your **DROLET** dealer. To accelerate processing of your warranty claim, make sure to have on hand the following information when calling:

- Your name, address and telephone number;
- Bill of sale and dealer's name;
- Installation configuration;
- Serial number and model name as indicated on the nameplate fixed to the back of your unit;
- Nature of the defect and any relevant information.

Before shipping your unit or defective component to our plant, you must obtain an Authorization Number from your DROLET dealer. Any merchandise shipped to our plant without authorization will be refused automatically and returned to sender.

Wood_Revision : March 2018

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St-Augustin-de-Desmaures (Québec) Canada
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<https://www.drolet.ca/en/>
tech@sbi-international.com



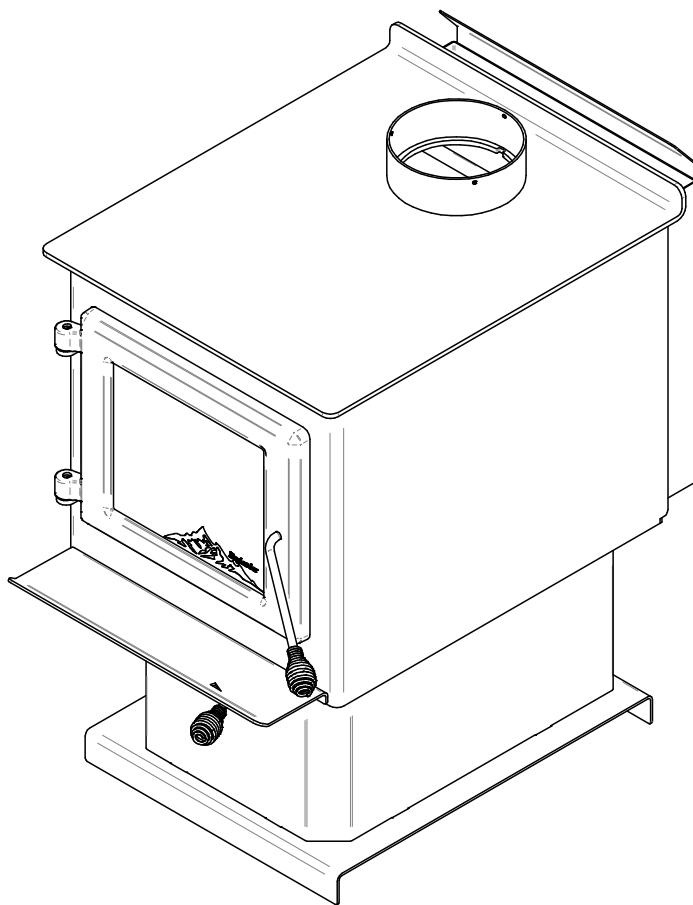
Wood Stove Owner's Manual

Part 2 of 2

INSTALLATION AND OPERATION REQUIREMENTS

BLUE RIDGE 100 N

(ESW0002 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard

EPA
 ≤ 2.5 g/h

ENGLISH

CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN LOCAL AREA.

READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS WOOD STOVE. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH.

READ AND KEEP THIS MANUAL FOR REFERENCE



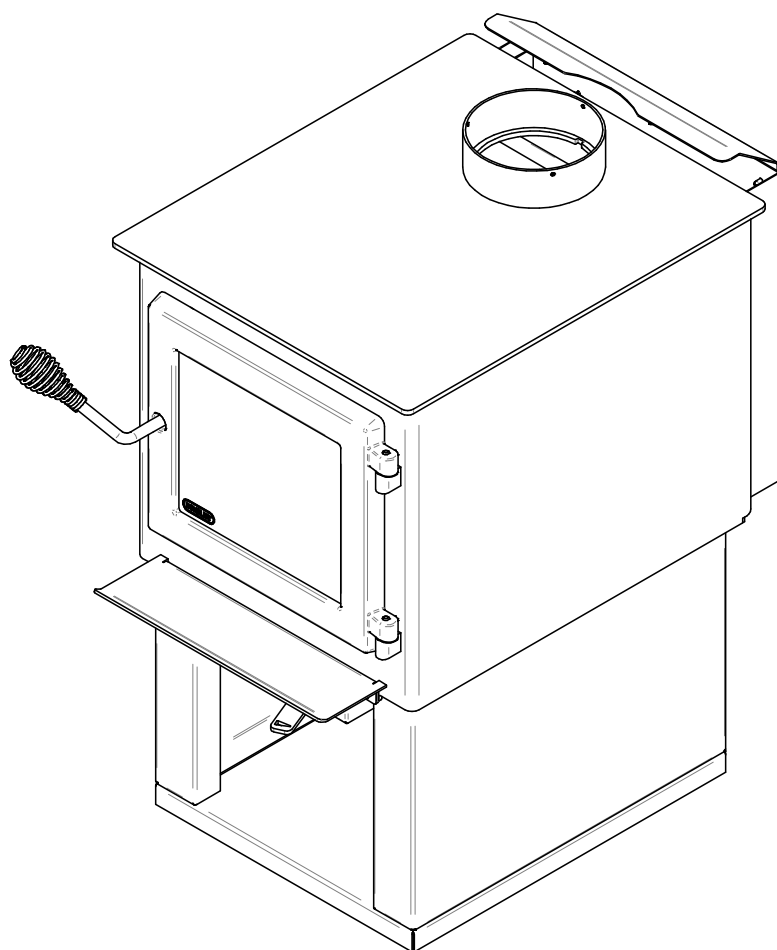
Wood Stove Owner's Manual

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INSTALLATION AND OPERATION REQUIREMENTS

DÉCO NANO N

(DB03216 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard

EPA
 ≤ 2.5 g/h

ENGLISH

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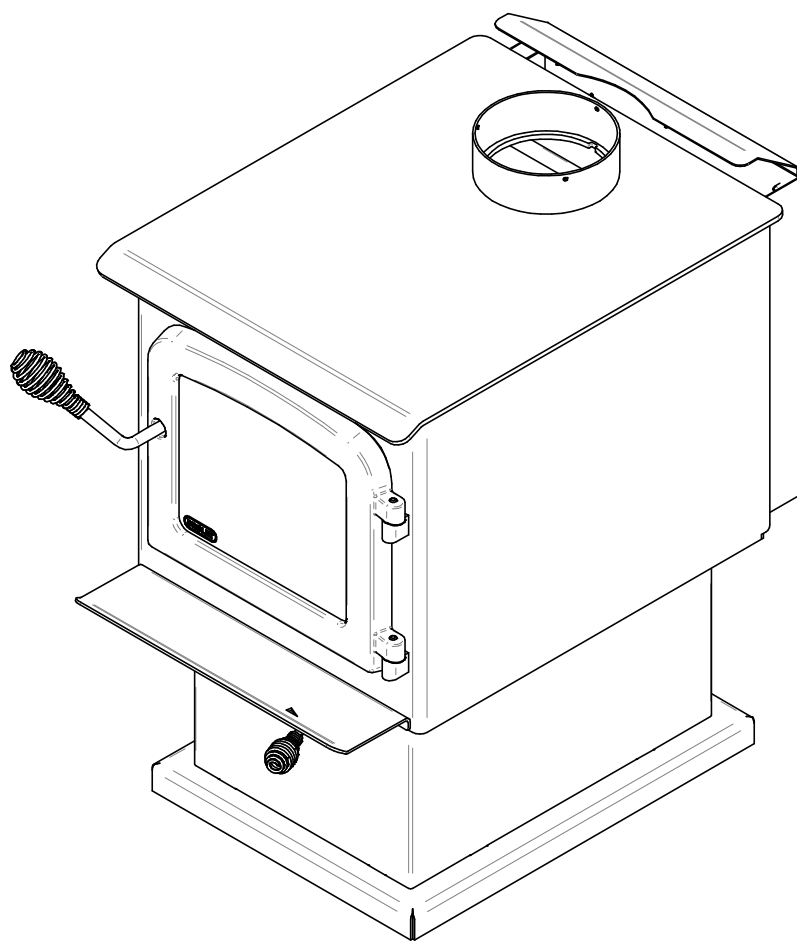
Wood Stove Owner's Manual

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INSTALLATION AND OPERATION REQUIREMENTS

ESCAPE 1200 N

(DB03183 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard

EPA
 ≤ 2.5 g/h

ENGLISH

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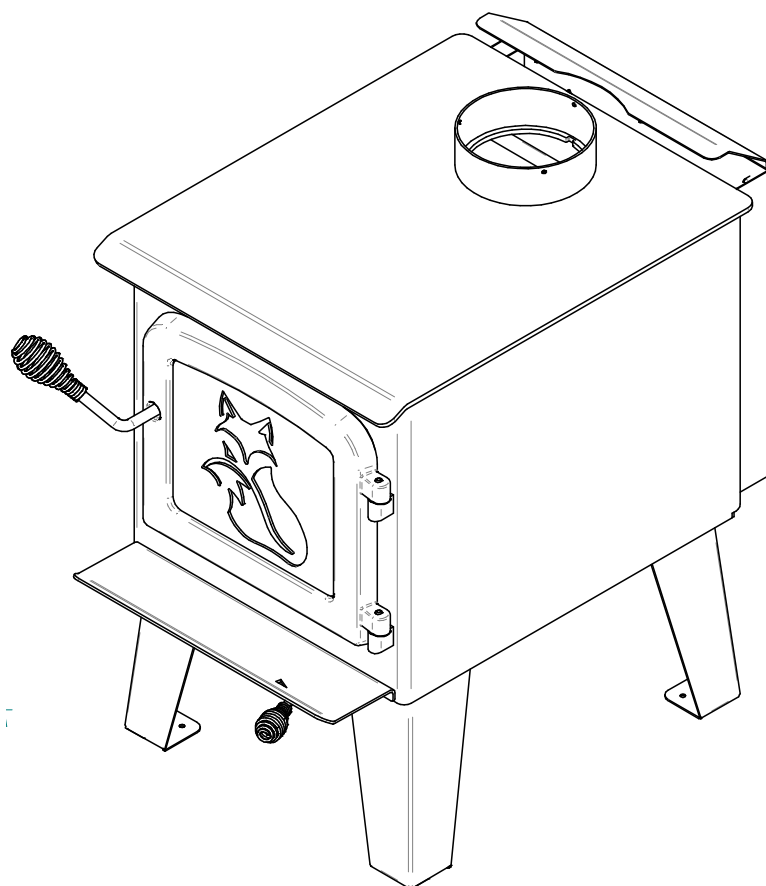
Wood Stove Owner's Manual

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INSTALLATION AND OPERATION REQUIREMENTS

FOX N

(DB03187 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard



ENGLISH

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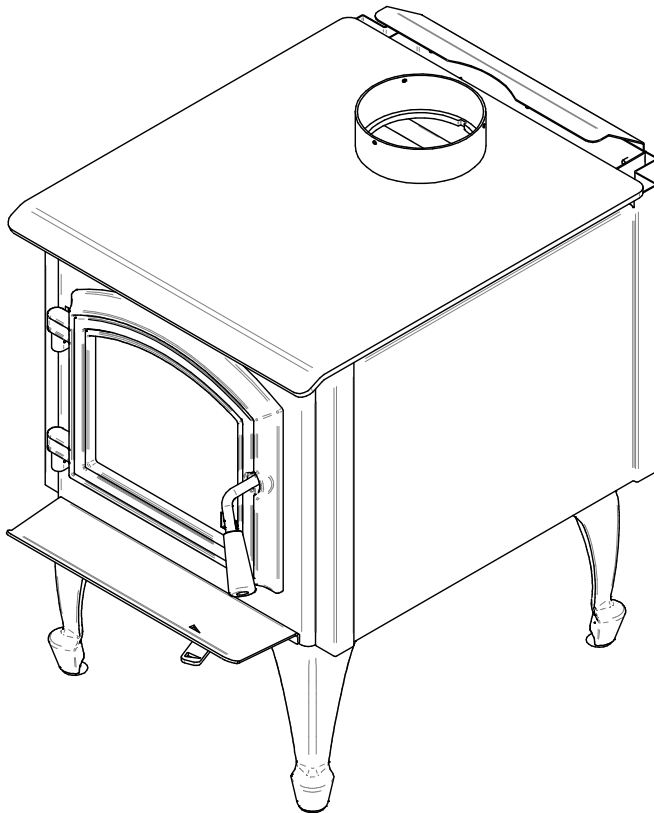
Wood Stove Owner's Manual

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INSTALLATION AND OPERATION REQUIREMENTS

GATEWAY 1400 N

(SR00605 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard



ENGLISH

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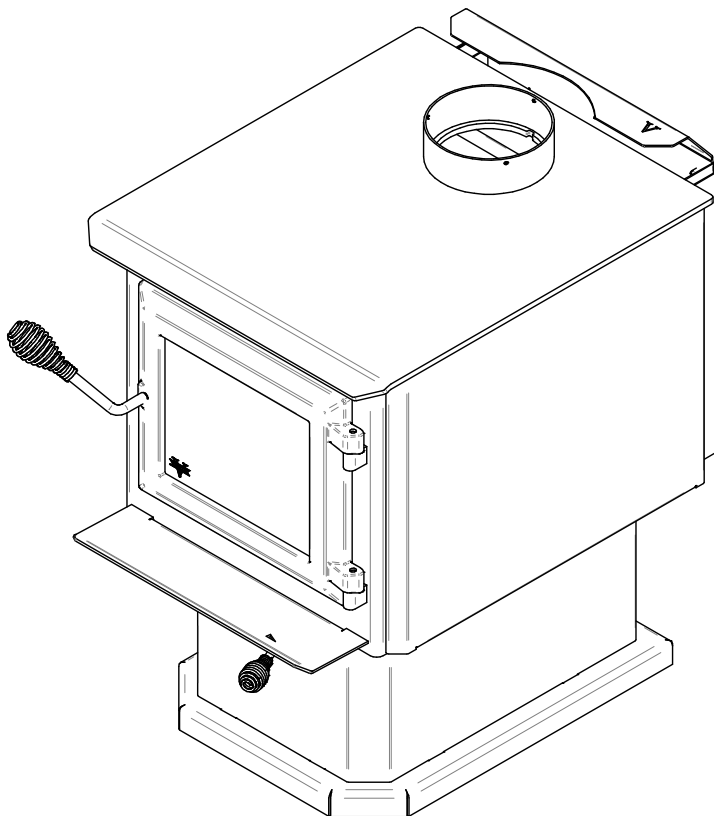
Wood Stove Owner's Manual

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INSTALLATION AND OPERATION REQUIREMENTS

HES140 N

(VB00027 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard

EPA
 ≤ 2.5 g/h

ENGLISH

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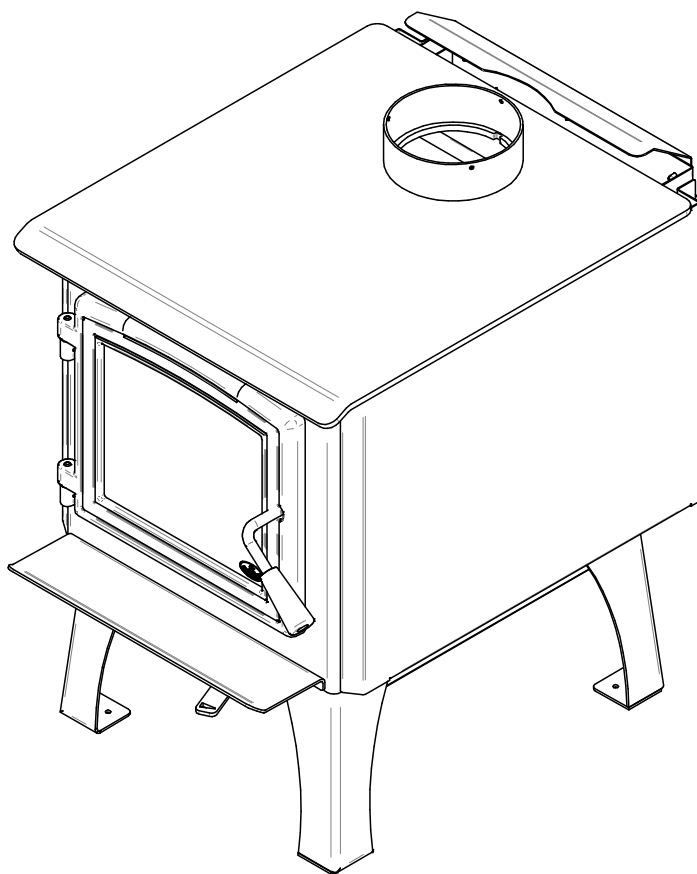
Wood Stove Owner's Manual

Part 2 of 2

INSTALLATION AND OPERATION REQUIREMENTS

OSBURN 950 N

(OB00951 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard

EPA
 ≤ 2.5 g/h

ENGLISH

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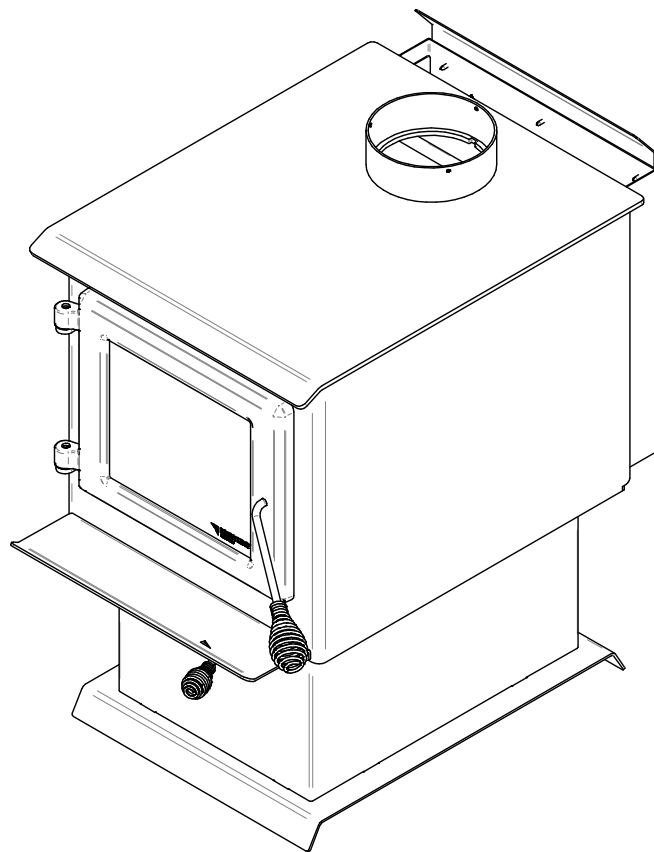
Wood Stove Owner's Manual

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INSTALLATION AND OPERATION REQUIREMENTS

S250 N

(CB00031 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard



ENGLISH

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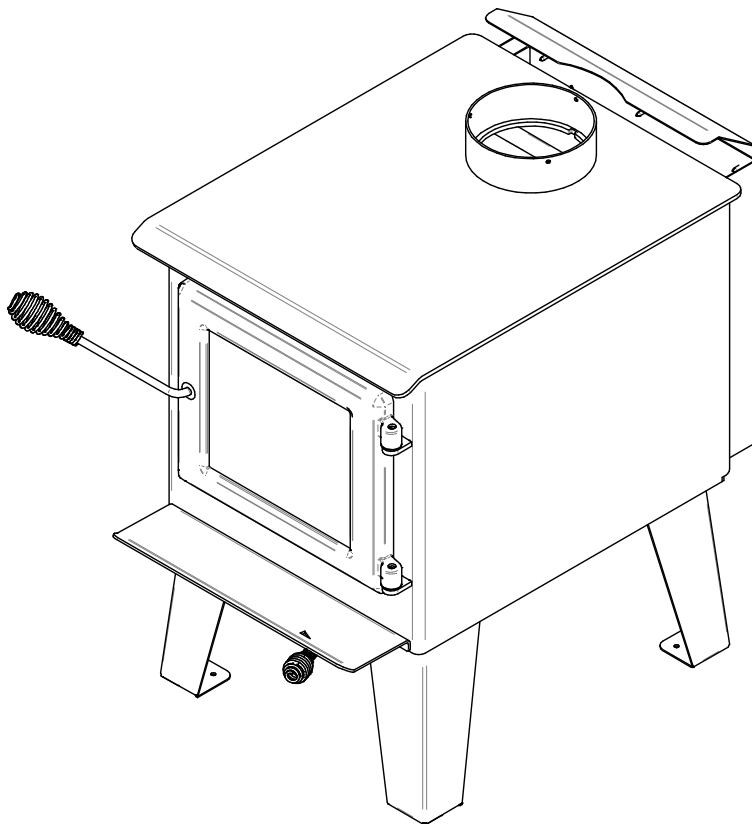
Wood Stove Owner's Manual

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INSTALLATION AND OPERATION REQUIREMENTS

SL1400 N

(SL01400 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard



ENGLISH

CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN LOCAL AREA.

READ THIS ENTIRE MANUAL BEFORE INSTALLATION AND USE OF THIS WOOD STOVE. FAILURE TO FOLLOW THESE INSTRUCTIONS COULD RESULT IN PROPERTY DAMAGE, BODILY INJURY OR EVEN DEATH.

READ AND KEEP THIS MANUAL FOR REFERENCE

enerzone

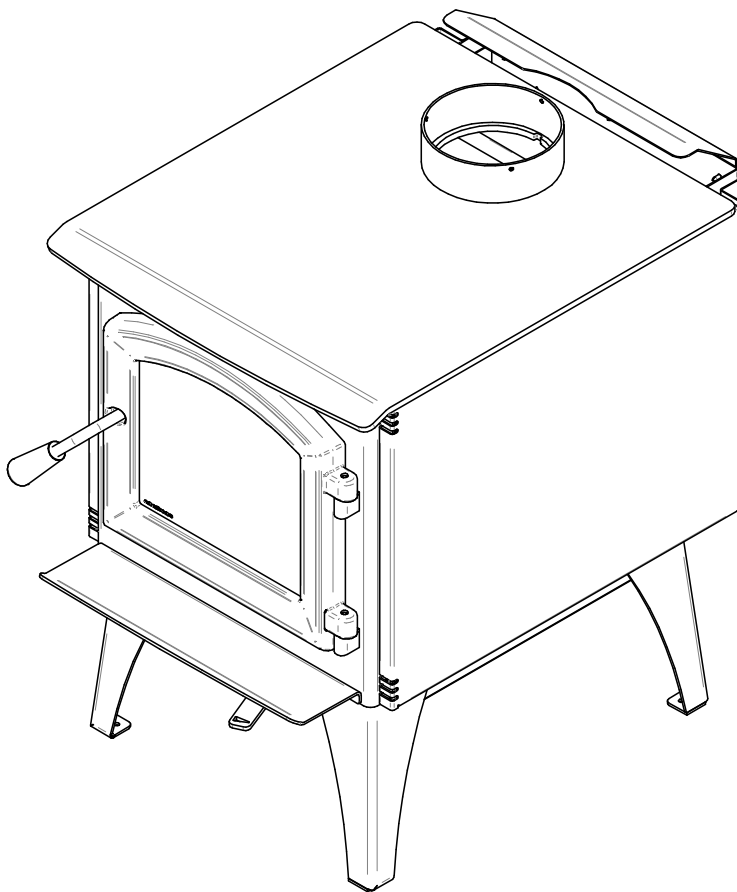
Wood Stove Owner's Manual

Part 2 of 2

INSTALLATION AND OPERATION REQUIREMENTS

SOLUTION 1.4 N

(EB00073 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard



ENGLISH

CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN LOCAL AREA.

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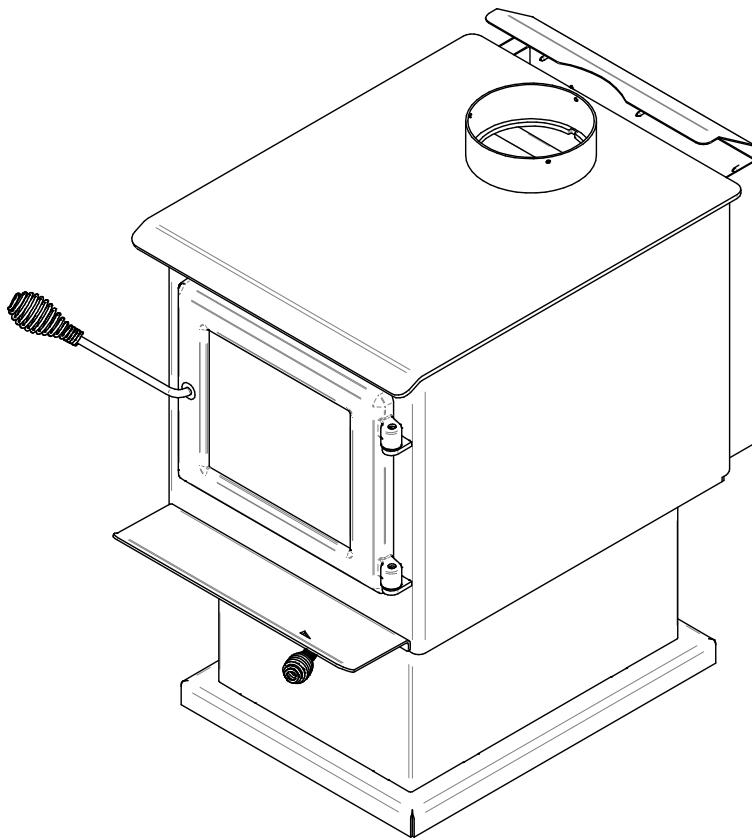
Wood Stove Owner's Manual

Part 2 of 2

INSTALLATION AND OPERATION REQUIREMENTS

SP1400 N

(SP01400 model)



US Environmental Protection Agency
phase II certified wood stove compliant
with 2020 cord wood standard

EPA
 ≤ 2.5 g/h

ENGLISH

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QUALITY CONTROL SERVICES

LABORATORY EQUIPMENT • SALES • SERVICE • CALIBRATION • REPAIRS
2340 SE 11TH Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293
(503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com



PFS Teco
11785 SE Hwy 212 STE#305
Clackamas, OR 97015

Report Number: DIRI0182484A0912013i241204

A2LA ACCREDITED CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Scale	Digiweigh	DWP12i 300kg x 0.	82484A0912013i	#050	Lab
Units	Readability	SOP	Cal Date	Last Cal Date	Cal Due Date
kg	0.01	QC033	12/4/24	12/28/23	12/2025

FUNCTIONAL CHECKS

SHIFT TEST		LINEARITY		REPEATABILITY		ENVIRONMENTAL CONDITIONS
Test Wt:	Tol:	Test Wt:	Tol:	Test Wt:	Tol:	
100	0.05	HB44	HB44	100	0.01	
As-Found:		As-Found:		As-Found:		
Pass: ☒	Fail: ☐	Pass: ☒	Fail: ☐	Pass: ☒	Fail: ☐	
As-Left:		As-Left:		As-Left:		☐ ☒ ☐ Good Fair Poor
Pass: ☒	Fail: ☐	Pass: ☒	Fail: ☐	Pass: ☒	Fail: ☐	Temperature: 17.2°C

CALIBRATION DATA

Standard	As-Found	As-Left	Expanded Uncertainty
400	399.98	399.98	0.006
200	200.00	200.00	0.005
100	100.00	100.00	0.005
75	75.00	75.00	0.005
50	50.00	50.00	0.005
25	25.00	25.00	0.005

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Avoirdupois Cast W	Rice Lake	25 and 50lb	PWO990-CA	7/26/24	7/2026	20221688

Permanent Information Concerning this Equipment:

12 month calibration cycle. Scale calibrates in kg only.

Comments/Information Concerning this Calibration

12/04/2024: RH-37%

Report prepared/reviewed by: TLP

Date: 12.04.2024

Technician: T. Peterson

Signature: [Signature]

THIS CERTIFICATE SHALL NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT THE APPROVAL OF QUALITY CONTROL SERVICES, INC.

The uncertainty is calculated according to the ISO Guide to the Expression of Uncertainty in Measurement and includes the uncertainty of standards used combined with the observed standard deviation of the unit under test. The uncertainty is expanded with a k factor of 2 for an approximate 95% level of confidence. Instruments listed above were calibrated using standards traceable to the National Institute of Standards and Technology (NIST). Calibration data reflect results at the time and location of calibration. Calibration data should be reviewed to insure that the instrument is performing to its required accuracy. Calibrations comply with ISO/IEC 17025 and ANSI/Z540-1-1994 quality standards.

Member: National Conference of Standards Laboratories and Weights & Measures

PT ID: DIRI01

Dry Gas Meter Calibration

DUT

Manufacturer: Apex
 Model:
 Lab ID #: 129
 Serial #:
 Calibration Date: 6/13/2025
 Calibration Expiration: 12/13/2025
 Barometric Pressure: 29.94 in. Hg



Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer: Apex		Fluke	Aquatech	Apex
Model:				
Lab ID#: 47		196	202	129c
Calibration Expiration Date: 6/4/2025		2/11/2025	6/17/2025	2/27/2026
Calibration γ Factor: 0.998				

Use in accordance with EPA Method 5, sections 10.3 and 16.1. Use only calibrated, NIST traceable reference standard DGM. Calibrate over expected operating flow range of DUT.

Calibration Data	Run 1	Run 2	Run 3
Standard DGM Initial Volume (L)	0.000	0.000	0.000
Standard DGM Final Volume (L)	107.399	60.166	125.330
Standard DGM Temperature (°F)	69.3	70.0	70.3
Standard DGM Pressure (in H ₂ O)	0.00	0.00	0.00
DGM Initial Volume (ft ³)	0.000	0.000	0.000
DGM Final Volume (ft ³)	3.729	2.106	4.391
DGM Temperature (°F)	70.1	70.3	70.5
DGM Pressure (in H ₂ O)	1.69	1.09	4.25
Net Volume for Standard DGM (ft ³)	3.793	2.125	4.426
Net Volume for DGM (ft ³)	3.729	2.106	4.391
Dry Gas Meter γ Factor	1.012	1.005	0.996
γ Factor Deviation From Average	1.012	1.005	0.996

Average Gas Meter γ Factor

1.004

Measurement Uncertainty: Total measurement uncertainty +/- 0.748% RD, K=2

Calculations:

- Deviation = |Average value for all runs - current run value|
- $\gamma = [V_{std} \times (\gamma_{std}) \times (P_{bar} + P_{std}/13.6) \times (T_{DGM} + 460)] / [V_{DGM} \times (T_{std} + 460) \times (P_{bar} + P_{DGM}/13.6)]$

Report and Certificate of Calibration



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Toll Free
800-356-4662

Address
5777 SE International Way
Milwaukie, OR 97222

Local
503-654-9620



Report #: 38860-203315-21 **Customer PO#:** 1126
Customer Name: PFS TECO
Customer Address: 11785 SE Highway 212, Suite 305
City: Clackamas **State:** OR **Zip:** 97015
Contact: Ethan Frederick
Service Address: 11785 SE Highway 212, Suite 305 Clackamas, OR 97015

Calibration Standards

10-01442 Compound Gauge Fluke SN: 4582643 Cal: 01/24/2025 Due: 01/31/2026 Vendor: Fluke Report #: EVL1027223
14-01349 Thermo-Hygrometer Comark SN: 06210350162 Cal: 08/23/2024 Due: 08/31/2025 Vendor: Cal-Cert Range: 122 °F 95 %RH Report #: 36408-71148-5

Instrument Data

Calibration Date:	February 27, 2025	Reference:	ASME B40.100
Recommended Due Date:	February 27, 2026	Cal-Cert Procedure:	CP-003
Calibration Frequency:	12 Months	Indicating System:	Digital
Manufacturer:	Red Lion	Temperature:	69 °F
Type:	Pressure Transducer	Humidity:	32% RH
Model Number:	Unknown	Cal Factor:	None
Serial #:	Unknown	Asset #:	129B
Capacity:	1 In H2O	Service Location:	Service Address
Tolerance:	± 1.00% of Span	As Found:	Pass
Gauge Class:	A	As Left:	Pass

Instrument Range:		Range Resolution:		Mode Verified:		Pressure		
UUT Reading	Standard As Found	Standard Verification Reading #1	Error	Standard Verification Reading #2	Error	Tolerance	Expanded Uncertainty ±	
In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	
0.000	0.00	0.00	0.00	0.00	0.00	0.01	0.0005	
0.100	0.1059	0.1059	0.01	0.1019	0.00	0.01	0.0104	
0.250	0.2575	0.2575	0.01	0.2545	0.00	0.01	0.0078	
0.500	0.5012	0.5012	0.00	0.5047	0.00	0.01	0.0091	
0.750	0.7511	0.7511	0.00	0.7435	-0.01	0.01	0.0198	
1.000	1.0092	1.0092	0.01	0.9934	-0.01	0.01	0.0411	
0.750	0.7546	0.7546	0.00	0.7446	-0.01	0.01	0.026	
0.500	0.5054	0.5054	0.01	0.4943	-0.01	0.01	0.0288	
0.250	0.2545	0.2545	0.00	0.2521	0.00	0.01	0.0062	
0.100	0.0941	0.0941	-0.01	0.1009	0.00	0.01	0.0177	
0.000	0.0000	0.0000	0.00	0.0000	0.00	0.01	0.0005	

Manufacturer: Red Lion

Type: Pressure Transducer

Serial #: Unknown

Remarks:

**We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.**

**Cal-Cert is accredited by A2LA under Calibration Laboratory Code #4986.01.
A2LA is recognized under the ILAC mutual recognition agreement (MRA).**

This certificate is hereby issued that the above instrument was tested for accuracy with calibrated standards traceable to the National Institute of Standards and Technology (NIST). The information provided on this form complies with the data gathering and reporting requirements of ISO/IEC 17025 and ANSI/NCSL Z540.1, and meets the requirements of all applicable references and Cal-Cert procedures listed above. Any stated measurement uncertainty includes the uncertainty of the Calibration standards used, combined with the uncertainty of the measurement process using the RSS method with a k=2 for an approximate 95% level of confidence. The calibration process meets or exceeds a ratio of 4:1 unless otherwise stated.

All tolerances were derived from the applicable standards and pass/fail determination is based on those tolerances. The customer determined any recommended due dates indicated on the certificate.

This report shall not be reproduced except in full, without written approval from Cal-Cert.

Service Engineer: Samuel Owens

Date: February 27, 2025

Quality Manager: Tony Lewandowski

Signature:



Report and Certificate of Calibration



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Address
5777 SE International Way
Milwaukie, OR 97222

Local
503-654-9620



Report #: 38860-203316-21 **Customer PO#:** 1126
Customer Name: PFS TECO
Customer Address: 11785 SE Highway 212, Suite 305
City: Clackamas **State:** OR **Zip:** 97015
Contact: Ethan Frederick
Service Address: 11785 SE Highway 212, Suite 305 Clackamas, OR 97015

Calibration Standards

10-01442 Compound Gauge Fluke SN: 4582643 Cal: 01/24/2025 Due: 01/31/2026 Vendor: Fluke Report #: EVL1027223
14-01349 Thermo-Hygrometer Comark SN: 06210350162 Cal: 08/23/2024 Due: 08/31/2025 Vendor: Cal-Cert Range: 122 °F 95 %RH Report #: 36408-71148-5

Instrument Data

Calibration Date:	February 27, 2025	Reference:	ASME B40.100
Recommended Due Date:	February 27, 2026	Cal-Cert Procedure:	CP-003
Calibration Frequency:	12 Months	Indicating System:	Digital
Manufacturer:	Red Lion	Temperature:	69 °F
Type:	Pressure Transducer	Humidity:	35% RH
Model Number:	Unknown	Cal Factor:	None
Serial #:	Unknown	Asset #:	129C
Capacity:	5 In H2O	Service Location:	Service Address
Tolerance:	± 1.00% of Span	As Found:	Pass
Gauge Class:	A	As Left:	Pass

Instrument Range:		Range Resolution:		Mode Verified:		Pressure		
UUT Reading	Standard As Found	Standard Verification Reading #1	Error	Standard Verification Reading #2	Error	Tolerance	Expanded Uncertainty ±	
In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	
0.00	0.0000	0.0000	0.00	0.0000	0.00	0.05	0.005	
0.50	0.4730	0.4730	-0.03	0.4903	-0.01	0.05	0.045	
1.25	1.2178	1.2178	-0.03	1.2325	-0.02	0.05	0.038	
2.50	2.4830	2.4830	-0.02	2.4763	-0.02	0.05	0.018	
3.75	3.7075	3.7075	-0.04	3.7267	-0.02	0.05	0.05	
5.00	4.9570	4.9570	-0.04	4.9676	-0.03	0.05	0.028	
3.75	3.7411	3.7411	-0.01	3.7101	-0.04	0.05	0.08	
2.50	2.4715	2.4715	-0.03	2.4686	-0.03	0.05	0.009	
1.25	1.2346	1.2346	-0.02	1.2180	-0.03	0.05	0.043	
0.50	0.4994	0.4994	0.00	0.4811	-0.02	0.05	0.047	
0.00	0.0000	0.0000	0.00	0.0000	0.00	0.05	0.005	

Manufacturer: Red Lion

Type: Pressure Transducer

Serial #: Unknown

Remarks:

**We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
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This report shall not be reproduced except in full, without written approval from Cal-Cert.

Service Engineer: Samuel Owens

Date: February 27, 2025

Quality Manager: Tony Lewandowski

Signature:



Dry Gas Meter Calibration

DUT

Manufacturer: Apex
 Model:
 Lab ID #: 130
 Serial #:
 Calibration Date: 6/13/2025
 Calibration Expiration: 12/13/2025
 Barometric Pressure: 29.95 in. Hg



Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer: Apex		Fluke	Aquatech	Apex
Model:				
Lab ID#: 47		196	202	129c
Calibration Expiration Date: 6/4/2025		2/11/2025	6/17/2025	2/27/2026
Calibration γ Factor: 0.998				

Use in accordance with EPA Method 5, sections 10.3 and 16.1. Use only calibrated, NIST traceable reference standard DGM. Calibrate over expected operating flow range of DUT.

Calibration Data	Run 1	Run 2	Run 3
Standard DGM Initial Volume (L)	0.000	0.000	0.000
Standard DGM Final Volume (L)	67.836	90.653	121.304
Standard DGM Temperature (°F)	70.7	71.0	71.5
Standard DGM Pressure (in H ₂ O)	0.00	0.00	0.00
DGM Initial Volume (ft ³)	0.000	0.000	0.000
DGM Final Volume (ft ³)	2.353	3.174	4.258
DGM Temperature (°F)	74.0	74.0	74.0
DGM Pressure (in H ₂ O)	1.77	0.95	4.09
Net Volume for Standard DGM (ft ³)	2.396	3.201	4.284
Net Volume for DGM (ft ³)	2.353	3.174	4.258
Dry Gas Meter γ Factor	1.018	1.010	0.999
γ Factor Deviation From Average	1.018	1.010	0.999

Average Gas Meter γ Factor

1.009

Measurement Uncertainty: Total measurement uncertainty +/- 0.748% RD, K=2

Calculations:

- Deviation = |Average value for all runs - current run value|
- $\gamma = [V_{std} \times (\gamma_{std}) \times (P_{bar} + P_{std}/13.6) \times (T_{DGM} + 460)] / [V_{DGM} \times (T_{std} + 460) \times (P_{bar} + P_{DGM}/13.6)]$

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Local
503-654-9620



Report #: 38860-203317-21 **Customer PO#:** 1126
Customer Name: PFS TECO
Customer Address: 11785 SE Highway 212, Suite 305
City: Clackamas **State:** OR **Zip:** 97015
Contact: Ethan Frederick
Service Address: 11785 SE Highway 212, Suite 305 Clackamas, OR 97015

Calibration Standards

10-01442 Compound Gauge Fluke SN: 4582643 Cal: 01/24/2025 Due: 01/31/2026 Vendor: Fluke Report #: EVL1027223
14-01349 Thermo-Hygrometer Comark SN: 06210350162 Cal: 08/23/2024 Due: 08/31/2025 Vendor: Cal-Cert Range: 122 °F 95 %RH Report #: 36408-71148-5

Instrument Data

Calibration Date:	February 27, 2025	Reference:	ASME B40.100
Recommended Due Date:	February 27, 2026	Cal-Cert Procedure:	CP-003
Calibration Frequency:	12 Months	Indicating System:	Digital
Manufacturer:	Red Lion	Temperature:	69 °F
Type:	Pressure Transducer	Humidity:	33% RH
Model Number:	Unknown	Cal Factor:	None
Serial #:	Unknown	Asset #:	130B
Capacity:	1 In H2O	Service Location:	Service Address
Tolerance:	± 1.00% of Span	As Found:	Pass
Gauge Class:	A	As Left:	Pass

Instrument Range:		Range Resolution:		Mode Verified:		Pressure		
UUT Reading	Standard As Found	Standard Verification Reading #1	Error	Standard Verification Reading #2	Error	Tolerance	Expanded Uncertainty ±	
In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	
0.000	0.00	0.00	0.00	0.00	0.00	0.01	0.0005	
0.100	0.0982	0.0982	0.00	0.1012	0.00	0.01	0.0078	
0.250	0.2523	0.2523	0.00	0.2554	0.01	0.01	0.008	
0.500	0.5071	0.5071	0.01	0.5033	0.00	0.01	0.0099	
0.750	0.7544	0.7544	0.00	0.7510	0.00	0.01	0.0089	
1.000	0.9942	0.9942	-0.01	1.0026	0.00	0.01	0.0218	
0.750	0.7548	0.7548	0.00	0.7517	0.00	0.01	0.0081	
0.500	0.5044	0.5044	0.00	0.4925	-0.01	0.01	0.0309	
0.250	0.2422	0.2422	-0.01	0.2540	0.00	0.01	0.0307	
0.100	0.0978	0.0978	0.00	0.1019	0.00	0.01	0.0106	
0.000	0.0000	0.0000	0.00	0.0000	0.00	0.01	0.0005	

Manufacturer: Red Lion

Type: Pressure Transducer

Serial #: Unknown

Remarks:

**We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.**

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All tolerances were derived from the applicable standards and pass/fail determination is based on those tolerances. The customer determined any recommended due dates indicated on the certificate.

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Service Engineer: Samuel Owens

Date: February 27, 2025

Quality Manager: Tony Lewandowski

Signature:



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Local
503-654-9620



Report #: 38860-203318-21 **Customer PO#:** 1126
Customer Name: PFS TECO
Customer Address: 11785 SE Highway 212, Suite 305
City: Clackamas **State:** OR **Zip:** 97015
Contact: Ethan Frederick
Service Address: 11785 SE Highway 212, Suite 305 Clackamas, OR 97015

Calibration Standards

10-01442 Compound Gauge Fluke SN: 4582643 Cal: 01/24/2025 Due: 01/31/2026 Vendor: Fluke Report #: EVL1027223
14-01349 Thermo-Hygrometer Comark SN: 06210350162 Cal: 08/23/2024 Due: 08/31/2025 Vendor: Cal-Cert Range: 122 °F 95 %RH Report #: 36408-71148-5

Instrument Data

Calibration Date:	February 27, 2025	Reference:	ASME B40.100
Recommended Due Date:	February 27, 2026	Cal-Cert Procedure:	CP-003
Calibration Frequency:	12 Months	Indicating System:	Digital
Manufacturer:	Red Lion	Temperature:	68 °F
Type:	Pressure Transducer	Humidity:	36% RH
Model Number:	Unknown	Cal Factor:	None
Serial #:	Unknown	Asset #:	130C
Capacity:	5 In H2O	Service Location:	Service Address
Tolerance:	± 1.00% of Span	As Found:	Pass
Gauge Class:	A	As Left:	Pass

Instrument Range:		Range Resolution:		Mode Verified:		Pressure		
5.00		0.01						
UUT Reading	Standard As Found	Standard Verification Reading #1	Error	Standard Verification Reading #2	Error	Tolerance	Expanded Uncertainty ±	
In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	In H2O	
0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.005	
0.50	0.4838	0.4838	-0.02	0.4885	-0.01	0.05	0.013	
1.25	1.2024	1.2024	-0.05	1.2281	-0.02	0.05	0.067	
2.50	2.4684	2.4684	-0.03	2.4855	-0.01	0.05	0.044	
3.75	3.7132	3.7132	-0.04	3.7348	-0.02	0.05	0.056	
5.00	4.9555	4.9555	-0.04	4.9530	-0.05	0.05	0.01	
3.75	3.7299	3.7299	-0.02	3.7069	-0.04	0.05	0.06	
2.50	2.4683	2.4683	-0.03	2.4679	-0.03	0.05	0.006	
1.25	1.2380	1.2380	-0.01	1.2357	-0.01	0.05	0.008	
0.50	0.4920	0.4920	-0.01	0.4858	-0.01	0.05	0.017	
0.00	0.0000	0.0000	0.00	0.0000	0.00	0.05	0.005	

Manufacturer: Red Lion

Type: Pressure Transducer

Serial #: Unknown

Remarks:

**We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.**

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All tolerances were derived from the applicable standards and pass/fail determination is based on those tolerances. The customer determined any recommended due dates indicated on the certificate.

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Service Engineer: Samuel Owens

Date: February 27, 2025

Quality Manager: Tony Lewandowski

Signature:



Report and Certificate of Calibration



Portland Laboratory
5777 SE International Way
Milwaukie, OR 97222
800-356-4662
503-654-9620

Anaheim Laboratory
120 S. Chaparral Ct Suite 110
Anaheim Hills, CA 92808
888-700-4100
714-696-5300

www.Cal-Cert.com

Report #: 41210-28785-3646 **Customer PO#:** 1131
Customer Name: PFS TECO
Customer Address: 11785 SE Highway 212, Suite 305
City: Clackamas **State:** OR **Zip:** 97015
Contact: Ethan Frederick
Service Address: 5777 SE International Way Milwaukie, OR 97222

Calibration Standards

10-00391 | Thermo-Hygrometer | Comark | SN: 6217150001 | Cal: 04/09/2025 | Due: 04/30/2026 | Vendor: Cal-Cert | Range: 122 °F 95 %RH | Report #: 39951-30759-5013
LP-01158 | Electrical Meter | Keithley | SN: 1388607 | Cal: 07/24/2023 | Due: 07/31/2025 | Vendor: Techmaster Electronics | Report #: TSV-0-545118

Instrument Data

Calibration Date:	July 7, 2025	Reference:	Manufactures Tolerances
Recommended Due Date:	July 7, 2027	Cal-Cert Procedure:	CP-080
Calibration Frequency:	24 Months	Indicating System:	Digital
Manufacturer:	Delmhorst	Temperature:	81 °F
Type:	Resistivity Standard	Humidity:	40% RH
Model Number:	MCS-1	Asset #:	94
Serial #:	94	Service Location:	Cal-Cert Lab
Capacity:	120 Megaohms	As Found:	Pass
Tolerance:	1.00 % of indication	As Left:	Pass

Instrument Range:		120 Megaohms		Resolution:	0.001	Mode Verified:	Resistance
Standard Reading	UUT As Found	UUT Reading #1	Error	UUT Reading #2	Error		
0.000	0.000	0.000	0.000	0.000	0.000		
1.100	1.095	1.095	-0.005	1.095	-0.005		
120.000	120.450	120.450	0.450	120.450	0.450		
0.000	0.000	0.000	0.000	0.000	0.000		

Expanded Uncertainty± 2.50 Megaohms

Remarks:

We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.

This certificate is hereby issued that the above instrument was tested for accuracy with calibrated standards traceable to the National Institute of Standards and Technology (NIST). The information provided on this form complies with the data gathering and reporting requirements of ANSI/NCSL Z540.1, and meets the requirements of all applicable references and Cal-Cert procedures listed above.
Any stated measurement uncertainty includes the uncertainty of the Calibration standards used, combined with the uncertainty of the measurement process using the RSS method with a k=2 for an approximate 95% level of confidence. The calibration process meets or exceeds a ratio of 4:1 unless otherwise stated.
All tolerances were derived from the applicable standards and pass/fail determination is based on those tolerances. The customer determined any recommended due dates indicated on the certificate.

This report shall not be reproduced except in full, without written approval from Cal-Cert.

Service Engineer: Brent Enbysk
Quality Manager: Tony Lewandowski

Date: July 7, 2025

Signature:

Resistivity Meter CF-080-01

Revision 7

7/24/2017



CERTIFICATE OF CALIBRATION

CUSTOMER:	PFS-TECO : CLACKAMAS, OR	CALIBRATION DATE:	07/01/2025
PO NUMBER:	1130	CALIBRATION DUE:	07/01/2026
INST. MANUFACTURER:	DWYER	PROCEDURE:	T.O.33K6-4-1769-1
INST. DESCRIPTION:	VELOMETER	CALIBRATION FLUID:	AIR @ 14.7 PSIA 70°F
MODEL NUMBER:	471	RECEIVED CONDITION:	WITHIN MFG. SPECS.
SERIAL NUMBER:	CP288559 ID# 095	LEFT CONDITION:	WITHIN MFG. SPECS.
RATED ACCURACY:	SEE NOTES BELOW.	AMBIENT CONDITIONS:	763mm HGA 45% RH 72°F
UNCERTAINTY GIVEN:	± 0.69% RD ; k=2	CERTIFICATE FILE #:	490265.2025
NOTES:	± 3.0% FS (0-500 / 0-1500) ** ± 4.0% F.S. (0-5000) ** ± 5.0% F.S. (0-15000) ** ± 2 °F		

Q.MANUAL IM 2.0 REV 2020.2 DATED 7-27-2020

DECISION RULE: SIMPLE ACCEPTANCE. MEASUREMENT UNCERTAINTIES NOT TAKEN INTO CONSIDERATION WHEN DETERMINING PASS/FAIL

UUT INDICATED FT/MIN	DM.STD. ACTUAL FT/MIN	UUT INDICATED DEG. F	DM STD. ACTUAL DEG. F
65	68	0 TO 200°F	0 TO 200°F
149	154	42.8	44.3
280	289	70.6	72.1
491	504	97.5	99.0
543	557		
1017	1044		
1495	1535		
528	552		
3242	3327		
4990	5130		
6986	7220		
14859	15348		

STANDARDS USED:

A312 ± .02% RD -140 TO 1372 DEG °C TRACE# DMCA1328	DUE	04/24/26
A69 12INCH AIR FLOW 50 - 8000FPM +/- 0.69 % RD TRACE#1649766843,06290041521,1616396227	DUE	03/31/26

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). Unless otherwise directed by the customer, Dick Munns uses a decision rule of Simple Acceptance as defined in ILAC G8 with a TUR of 1:1 or better. Calibration has been performed according to the shown procedure. The use of IAS/ILAC logo indicates calibrations are in accordance to ISO/IEC 17025:2017.

Dick Munns Company • 11133 Winners Circle, Los Alamitos, CA 90720
Phone: 714-827-1215 • www.dickmunns.com

This Calibration Certificate shall not be reproduced except, in full, without approval by Dick Munns Company. The data shown applies only to the instrument being calibrated and under the stated conditions of calibration.

Issuing Date:

Approved By:

Cal. Technician:

Calibrated at: ☒ Lab

☐ On-Site (Customer's)

Page 1 of 1

07/01/2025

[Signature]

A.V.

Certificate of Calibration

Certificate Number: 743892



JJ Calibrations, Inc.

7724 SE Aspen Summit Drive

Portland, OR 97266-9217

Phone 503.786.3005

FAX 503.786.2994

PFS TECO

11785 SE Hwy 212

Suite 305

Clackamas, OR 97015

PO: 1033

Order Date: 03/08/2021

Authorized By: N/A

Calibrated on: 03/18/2021

*Recommended Due: 03/18/2026

Environment: 19 °C 41 % RH

* As Received: Other - See Remarks

* As Returned: Other - See Remarks

Action Taken: Calibrated

Technician: 126



0723.01

Calibration

Property #: 097

User: N/A

Department: N/A

Make: Unknown

Model: 10 Lbs.

Serial #: 097

Description: Mass

Procedure: DCN 500901

Accuracy: Raw Data

Remarks: * Many factors may cause the unit to drift out of calibration before the recommended due date. Any reported error is the absolute value between the reference and the unit. Uncertainties include the effects of the unit.

Data is provided for your determination of acceptability. Received/returned without accessories.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
484A	Rice Lake	1kg-10kg (Class ASTM 1)	Mass Set,	05/28/2021	699197
503A	Rice Lake	1mg-200g (Class 0)	Mass Set,	09/11/2021	729241
550A	And (A&D) Co.	HP-30K	Balance 30 Kg	12/31/2021	739307
723A	Rice Lake	1mg-200g (Class 0)	Mass Set,	06/09/2021	723431

Parameter

Measurement Data

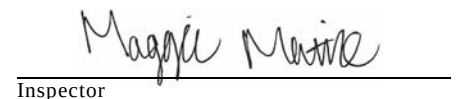
Measurement Description	Range	Unit	Reference	Min	Max	*Error	UUT	Uncertainty
Before/After								Accredited = $\bar{u}$
Mass								
Raw Data		g	4535.92370000	0.0000000	0.0000000	0.1785299	4536.1022299 g	3.5E-01 $\bar{u}$

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to either the SI or to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by JCGM 106:2012. Unless otherwise stated, a test accuracy ratio (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without written approval of JJ Calibrations.


Reviewer

3 Issued 03/25/2021

Rev # 15


Inspector

Report and Certificate of Calibration



www.Cal-Cert.com

Toll Free
800-356-4662

Address
5777 SE International Way
Milwaukie, OR 97222

Local
503-654-9620



Report #: 42818-1223707-4239 **Customer PO#:**
Customer Name: PFS TECO
Customer Address: 11785 SE Highway 212, Suite 305
City: Clackamas **State:** OR **Zip:** 97015
Contact: Aaron Kravitz
Service Address: 11785 SE Highway 212, Suite 305 Clackamas, OR 97015

Calibration Standards

17-01019 Weight Troemner SN: 50384 Cal: 08/20/2025 Due: 08/30/2030 Vendor: CO Dept of Agriculture Report #: 20251741
17-01616 Thermo-Hygrometer Comark SN: 06210350346 Cal: 07/10/2025 Due: 06/30/2026 Report #: 41434-183372-5539

Instrument Data

Calibration Date:	October 2, 2025	Reference:	ASTM E898-20, D4753-15
Calibration Due Date:	October 2, 2026	Cal-Cert Procedure:	CP-002
Calibration Frequency:	12 Months	Indicating System:	Digital
Manufacturer:	Ohaus	Temperature:	68 °F
Model Number:	PR224	Humidity:	42% RH
Type:	Digital Balance	Asset #:	None
Serial #:	C525207572	Service Location:	Service Address
Scale Capacity:	200 grams	As Found:	PASS
		As Left:	PASS

Scale Linear Test								
Instrument Range:			Resolution:			0.0001 grams		
Calibration Standard	As Found UUT	As Found Error	As Left UUT	As Left Error	As Left % of Error	Tolerance (As Left) Allowable Error		
grams	grams	grams	grams	grams		Error	Condition	Expanded Unc. (grams)
0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000	PASS	0.00000
20.0000	20.0052	0.0052	20.0052	0.0052	0.03	0.0200	PASS	0.00466
40.0000	40.0083	0.0083	40.0083	0.0083	0.02	0.0400	PASS	0.00926
60.0000	60.0110	0.0110	60.0110	0.0110	0.02	0.0600	PASS	0.01387
80.0000	80.0143	0.0143	80.0143	0.0143	0.02	0.0800	PASS	0.01849
100.0000	100.0021	0.0021	100.0021	0.0021	0.00	0.1000	PASS	0.02310
120.0000	120.0056	0.0056	120.0056	0.0056	0.00	0.1200	PASS	0.02772
140.0000	140.0088	0.0088	140.0088	0.0088	0.01	0.1400	PASS	0.03234
160.0000	160.0133	0.0133	160.0133	0.0133	0.01	0.1600	PASS	0.03696
180.0000	180.0167	0.0167	180.0167	0.0167	0.01	0.1800	PASS	0.03926
200.0000	200.0188	0.0188	200.0188	0.0188	0.01	0.2000	PASS	0.04619
100.0000	100.0024	0.0024	100.0024	0.0024	0.00	0.1000	PASS	0.02310
0.0000	0.0000	0.0000	0.0000	0.0000	0.00	0.0000	PASS	0.00000

FUNCTIONAL CHECKS					
ECCENTRIC LOAD TEST:		HYSTERESIS: Load Increments		REPEATABILITY:	
Loading position	100.0000	Test Weight Applied. % of load	Readings	Test Weight Applied	100.0000
Right	100.0028	0%	0.0000	1st	100.0023
Left	100.0023	(R1) 50%	100.0021	2nd	100.0024
Front	100.0023	100%	200.0188	3rd	100.0023
Back	100.0031	(R2) 50%	100.0024	4th	100.0023
Center	100.0021	0%	0.0000	5th	100.0023
As Left	PASS	As Left	PASS	As Left	PASS
Tolerance: The maximum error of the eccentric loading must be less than .1% of center load value.		Tolerance: The Difference of R1 and R2 must be within 0.1%		Tolerance: Deviation of lowest and highest reading within 0.1%	

Remarks:

We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.

Cal-Cert is accredited by A2LA under Calibration Laboratory Code #4986.01.
A2LA is recognized under the ILAC mutual recognition agreement (MRA).

This certificate is hereby issued that the above instrument was tested for accuracy with calibrated standards traceable to the National Institute of Standards and Technology (NIST). The information provided on this form complies with the data gathering and reporting requirements of ISO/IEC 17025 and ANSI/NCSL Z540.1, and meets the requirements of all applicable references and Cal-Cert procedures listed above.

Any stated measurement uncertainty includes the uncertainty of the Calibration standards used, combined with the uncertainty of the measurement process using the RSS method with a k=2 for an approximate 95% level of confidence. The calibration process meets or exceeds a ratio of 4:1 unless otherwise stated. All tolerances were derived from the applicable standards and pass/fail determination is based on those tolerances. The customer determined any recommended due dates indicated on the certificate.

This report shall not be reproduced except in full, without written approval from Cal-Cert.

Service Engineer:

Ryan Wills

Date:

October 2, 2025

Quality Manager:

Tony Lewandowski

Signature:

REPORT#: 42818-1223707-4239



QUALITY CONTROL SERVICES

LABORATORY EQUIPMENT • SALES • SERVICE • CALIBRATION • REPAIRS
2340 SE 11TH Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293
(503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com



Report of Calibration

Firm: PFS-TECO
Address: 11785 SE Hwy 212, Ste 305
City/State/Zip: Clackamas, OR 97015

Test Completed: 05/09/22
Purchase Order: 1067
Traceable Number: 20220682

Test Item: 200 mg and 100 mg Individual Weights
Serial No.: Listed in Table

Manufacturer: Troemner
Customer ID: Listed in Table

<u>Material</u>	<u>Assumed Density</u>	<u>Range</u>	<u>Tolerance Class</u>
Stainless Steel	7.95 g/cm ³	200 mg & 100 mg	ASTM Class 1

Method and Traceability

The procedure used for this calibration is NIST IR 6969 SOP 4 Double Substitution Weighing Design. Standards used for comparison are traceable to the National Institute of Standards and Technology (reports on file) and are part of a comprehensive measurement assurance program for ensuring continued accuracy and traceability within the level of uncertainty reported. The Traceable Number listed above is Traceable to National Standards through an unbroken chain of comparison each having stated uncertainties.

Standards Used:

100 g to 1 mg Working Standards Were Calibrated: 07/02/21 Due: 07/31/22 Standards ID: 723318
Mass Comparators Used: MET-05 Tested by: D. Thompson

Conventional Mass: “The conventional value of the result of weighing a body in air is equal to the mass of a standard, of conventionally chosen density, at a conventionally chosen temperature, which balances this body at this reference temperature in air of conventionally chosen density. International Recommendation 33 (OIML IR 33 1973, 1979). “Conventional Value of the Result of Weighing in Air” (Previously known as “Apparent Mass vs. 8.0 g/cm³).

Uncertainty Statement: The uncertainty conforms to the ISO Guide to the Expressions of Uncertainty in Measurement. Uncertainty as reported is based on a coverage factor $k=2$ for an approximate 95 percent level of uncertainty. Uncertainty components include the standard deviation of the process, the uncertainty of the standard used, an uncertainty component associated with the potential drift of the standard used, and the estimated uncertainty related to measuring and determining the air buoyancy effect.

Conventional Mass Values are listed on page 2 of this report.

page 1 of 2

Quality Control Services, Inc.
Metrology Laboratory Manager
E-mail dthompson@qc-services.com

Date: 05/09/22


Signature David S. Thompson

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Member: National Conference of Standards Laboratories and Weights & Measures



QUALITY CONTROL SERVICES

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Report of Calibration

Firm: PFS-TECO
Address: 11785 SE Hwy 212, Ste 305
City/State/Zip: Clackamas, OR 97015

Test Completed: 05/09/22
Purchase Order: 1067
Traceable Number: 20220682

Test Item: 200 mg and 100 mg Individual Weights
Serial No.: Listed in Table

Manufacturer: Troemner
Customer ID: Listed in Table

Laboratory Environment at time of test

Temperature °C	Pressure mmHg	Humidity %RH
21.93 to 21.94	760.7 to 760.8	47.8 to 47.9

Conventional Mass Value

Nominal Value	As Found Value (g)	As Found Correction* (mg)	As Left Value (g)	As Left Correction* (mg)	Uncertainty (mg)	Tolerance (mg)
200 mg, 1000101395, #109-B	0.2000082	0.0082	0.2000082	0.0082	0.0014	0.010
100 mg, 1000126267, #109-A	0.1000065	0.0065	0.1000065	0.0065	0.0014	0.010

*Correction is the difference between the conventional mass value of a weight and its nominal value.

Comments: These weights were received in good condition and were within ASTM Class 1 tolerances As Found.

Recalibration Due: The customer has requested a 5-year calibration cycle. The calibration due date for these weights is 05/09/27. The values listed above were found at the time of calibration. Any number of factors may cause these items to drift out of calibration before the calibration interval has expired.

Accredited by the American Association for Laboratory Accreditation (A2LA) under Calibration Laboratory Code 115953 and Certificate Number 1550.01. This laboratory meets the requirements of ISO/IEC 17025:2017 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration.

page 2 to 2

Quality Control Services, Inc.
Metrology Laboratory Manager
E-mail dthompson@qc-services.com

Date: 05/09/22


Signature David S. Thompson

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Member: National Conference of Standards Laboratories and Weights & Measures

CERTIFICATE OF CALIBRATION**Customer: PFS-TECO****Date of Certificate Issue: 07/11/25****Certificate No.: 54129_07.25_DTII****11785 SE Highway 212, Suite 305; Clackamas, OR 97015****Procedure: PRM07-07-DewTrak II****Manufacturer: Edgetech Instruments****Cal Date: 07/11/25****Model: DewTrak II / D2****Due Date: 07/11/26****Description: Chilled Mirror Hygrometer****Cal Interval Months: 12****Serial No.: 54129 / 2A5910****SO/RMA No.: 17433****Asset/ID No.: Unknown 205****As-Found Condition: New Sensor****Calibration Method: Comparison****As-Left Condition: In Tolerance****Environmental Conditions: Temperature: 76.4 °F | Humidity: 53.9 % rh**

This certifies the above instrument meets or exceeds published measurements specifications and has been calibrated using standards traceable to the international system of units (SI) through the National Institute of Standard and Technology (NIST). The policies and procedures used at this facility are in full compliance with ISO/IEC 17025-2017(E) international standard. This certificate shall not be reproduced, except in full, without the written approval of the calibration laboratory of **Edgetech Instruments Inc.** The environment in which this instrument was calibrated is maintained within the operating specifications of the instrument and the standards. All calibration results relate to items calibrated only.

Note: The calibration results were analyzed and the pass or fail criteria are based on the accuracy specifications provided on this item report. The uncertainty of measurement is not factored in for pass or fail criteria and is only reported for customer analysis.

Standard Used:

Asset #	Make / Model	Due Date
285	ETI DewTrak II	10/24/25
292	ETI RH-Calibrator	12/09/25



Accreditation # 92175

Performed by: *Dexter Ekeh*
Dexter Ekeh, Calibration Technician**Verified by:** *Phil Schofield*
Phil Schofield, Calibration Manager**Calibration Location: Edgetech Instruments at 399 River Rd., Hudson, MA 01749**

CERTIFICATE OF CALIBRATION

Customer: PFS-TECO
Date of Certificate Issue: 07/11/25

Certificate No.: 54129_07.25_DTII

Decision rule 1 Measurement of uncertainty is not taken into account when stating conformity .When determining an “in-tolerance” or “out-of-tolerance” conditions on calibrations the measurement uncertainty will not be taken into account .When a measurement result is declared “in-tolerance”, the measured value(s) shall fall within the appropriate specification limit and the uncertainty of the measured value shall be stated and provided

UUT Accuracy Specifications | FP/DP: +/- 0.2 °C

As Left Data: New Sensor

Test:	Ref. °C	UUT °C	Dev. °C	U k=2 C
Dew Point	30.12	29.99	0.13	0.05
Dew Point	13.85	13.71	0.14	0.05
Frost Point	-10.00	-10.12	0.12	0.05

Note: Compliance – The measurement results are within (or below) the specification limit when the measurement uncertainty is taken into account. For the above calibration point that it is not possible to state compliance using a 95 % coverage probability for the expanded uncertainty the measurement result is below the limit or within specification

End of Certificate

DT II_05_22_13_FP

Report and Certificate of Calibration



www.Cal-Cert.com

Toll Free
800-356-1662

Address
5777 SE International Way
Milwaukie, OR 97222

Local
503-654-9620



Report #: 39356-1216144-4847 **Customer PO#:** 1128
Customer Name: PFS TECO
Customer Address: 11785 SE Highway 212, Suite 305
City: Clackamas **State:** OR **Zip:** 97015
Contact: Ethan Frederick
Service Address: 5777 SE International Way Milwaukie, OR 97222

Calibration Standards

10-00027 Gage Block Set Mitutoyo SN: 975536 Cal: 03/28/2023 Due: 03/31/2025 Vendor: Cal-Cert Report #: 28026-56355-5
10-00954 Gage Block Set Shars SN: 120018 Cal: 05/26/2023 Due: 05/26/2025 Vendor: American Gage Report #: 109141
LP-01346 Thermo-Hygrometer Comark SN: 06210350198 Cal: 03/08/2024 Due: 03/31/2025 Vendor: Cal-Cert Range: 122 °F 95 %RH Report #: 33563-67215-3616

Instrument Data

Calibration Date:	March 5, 2025	Reference:	Manufacturer's Spec
Calibration Due Date:	March 5, 2026	Cal-Cert Procedure:	CP-115
Calibration Frequency:	12 Months	Indicating System:	Scaling
Manufacturer:	Craftsman	Temperature:	66 °F
Type:	Tape Measure	Humidity:	40% RH
Model Number:	CMHT37365	Asset #:	209
Serial #:	Unknown	Service Location:	Cal-Cert Lab
Capacity:	25.00 Feet	As Found:	Pass
		As Left:	Pass

Instrument Range:	25.000 Feet	Range Resolution:	0.06250 Feet
	Calibration Standard	As Found Reading	Verification Reading #1
			Verification Reading #2
	0.0000	0.0000	0.0000
	0.5000	0.5000	0.5000
	0.1000	0.1000	0.1000
	12.0000	12.0000	12.0000
	48.0000	48.0000	48.0000
	96.0000	96.0000	96.0000
	192.0000	192.0000	192.0000

Expanded Uncertainty ± 0.07217 Feet

Remarks:

We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.

Cal-Cert is accredited by A2LA under Calibration Laboratory Code #4986.01.
A2LA is recognized under the ILAC mutual recognition agreement (MRA).

This certificate is hereby issued that the above instrument was tested for accuracy with calibrated standards traceable to the National Institute of Standards and Technology (NIST). The information provided on this form complies with the data gathering and reporting requirements of ISO/IEC 17025 and ANSI/NC SL Z540.1, and meets the requirements of all applicable references and Cal-Cert procedures listed above.

Any stated measurement uncertainty includes the uncertainty of the Calibration standards used, combined with the uncertainty of the measurement process using the RSS method with a k=2 for an approximate 95% level of confidence. The calibration process meets or exceeds a ratio of 4:1 unless otherwise stated.

All tolerances were derived from the applicable standards and pass/fail determination is based on those tolerances. The customer determined any recommended due dates indicated on the certificate.

This report shall not be reproduced except in full, without written approval from Cal-Cert.

Service Engineer: Justin Roye **Date:** March 5, 2025

Quality Manager: Tony Lewandowski

Signature:

Thermocouple Readout Calibration

DUT

Manufacturer:	National Instruments
Model:	NI 9213
Lab ID #:	216
Serial #:	
Calibration Date:	8/26/2025
Calibration Expiration:	2/26/2026
Barometric Pressure:	29.91 in. Hg



Equipment Used:	Ref. Std. TC Signal Generator
Manufacturer:	Omega
Model:	CL23A
Lab ID#:	165
Cal. Expiration Date:	2/11/2026

Calibrate in accordance with EA-10/11 • EA Guidelines on the Calibration of Temperature Indicators and Simulators by Electrical Simulation and Measurement. Use procedure specified for thermocouple indicators without cold junction compensation.

Use only calibrated, NIST traceable reference standard signal generator.

Stated uncertainty calculated with RSS method with k=2 for a 95% confidence interval.

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.8	0.8	0.906
	500	499.2	0.8	
Tunnel	1000	998.8	1.2	
Type K	1500	1498.8	1.2	
	2000	1998.4	1.6	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.8	0.8	0.906
	500	499.2	0.8	
Flue	1000	998.8	1.2	
Type K	1500	1498.8	1.2	
	2000	1998.4	1.6	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.8	0.8	0.906
	500	499.2	0.8	
Filter A	1000	998.8	1.2	
Type K	1500	1498.8	1.2	
	2000	1998.4	1.6	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.8	0.8	0.906
	500	499.2	0.8	
Filter B	1000	998.8	1.2	
Type K	1500	1498.8	1.2	
	2000	1998.4	1.6	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.8	0.8	0.906
	500	499.2	0.8	
Filter C	1000	998.8	1.2	
Type K	1500	1498.8	1.2	
	2000	1998.4	1.6	

Thermocouple Readout Calibration

DUT

Manufacturer:	National Instruments
Model:	NI 9213
Lab ID #:	216
Serial #:	
Calibration Date:	8/26/2025
Calibration Expiration:	2/26/2026
Barometric Pressure:	29.91 in. Hg



Equipment Used:	Ref. Std. TC Signal Generator
Manufacturer:	Omega
Model:	CL23A
Lab ID#:	165
Cal. Expiration Date:	2/11/2026

Calibrate in accordance with EA-10/11 • EA Guidelines on the Calibration of Temperature Indicators and Simulators by Electrical Simulation and Measurement. Use procedure specified for thermocouple indicators without cold junction compensation.

Use only calibrated, NIST traceable reference standard signal generator.

Stated uncertainty calculated with RSS method with k=2 for a 95% confidence interval.

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.8	0.8	0.906
	500	499.2	0.8	
Meter A	1000	998.8	1.2	
Type K	1500	1498.8	1.2	
	2000	1998.4	1.6	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.4	0.4	0.906
	500	499.6	0.4	
Meter B	1000	999.5	0.5	
Type K	1500	1499.2	0.8	
	2000	1999.1	0.9	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.4	0.4	0.906
	500	499.6	0.4	
Meter C	1000	999.5	0.5	
Type K	1500	1499.2	0.8	
	2000	1999.1	0.9	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.4	0.4	0.906
	500	499.6	0.4	
FB Top	1000	999.5	0.5	
Type K	1500	1499.2	0.8	
	2000	1999.1	0.9	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.4	0.4	0.906
	500	499.6	0.4	
FB Bottom	1000	999.5	0.5	
Type K	1500	1499.2	0.8	
	2000	1999.1	0.9	

Thermocouple Readout Calibration

DUT

Manufacturer:	National Instruments
Model:	NI 9213
Lab ID #:	216
Serial #:	
Calibration Date:	8/26/2025
Calibration Expiration:	2/26/2026
Barometric Pressure:	29.91 in. Hg



Equipment Used:	Ref. Std. TC Signal Generator
Manufacturer:	Omega
Model:	CL23A
Lab ID#:	165
Cal. Expiration Date:	2/11/2026

Calibrate in accordance with EA-10/11 • EA Guidelines on the Calibration of Temperature Indicators and Simulators by Electrical Simulation and Measurement. Use procedure specified for thermocouple indicators without cold junction compensation.

Use only calibrated, NIST traceable reference standard signal generator.

Stated uncertainty calculated with RSS method with k=2 for a 95% confidence interval.

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-0.4	0.4	0.906
	500	499.6	0.4	
FB Back	1000	999.5	0.5	
Type K	1500	1499.2	0.8	
	2000	1999.1	0.9	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-1.0	1	0.906
	500	498.9	1.1	
FB Left	1000	999.1	0.9	
Type K	1500	1498.7	1.3	
	2000	1998.6	1.4	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-1.0	1	0.906
	500	498.9	1.1	
FB Right	1000	999.1	0.9	
Type K	1500	1498.7	1.3	
	2000	1998.6	1.4	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	-1.0	1	0.906
	500	498.9	1.1	
Catalyst	1000	999.1	0.9	
Type K	1500	1498.7	1.3	
	2000	1998.6	1.4	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.2	0.2	0.906
	50	50.3	0.3	
Ambient	100	100.3	0.3	
Type T	150	150.3	0.3	
	200	200.4	0.4	

IN CASE OF EMERGENCY: CALL 1-800-645-4633

SDS ID: P-18-0301-H

DO NOT REMOVE THIS LABEL

Lot No. 70086426104

Cylinder No. DT0042934

Part No. NI CD17CO8E-AS

Volume: 99 ft³

Fill Date: 09/17/2024

Expiration Date: 09/26/2032



ProSpec

By Linde



Linde Gas & Equipment Inc.

6760 S. Alameda

Los Angeles, CA 90008

UN1956

Compressed gas, n.o.s. (Nitrogen,
Oxygen)



EPA Protocol

Molar Concentration	Component	CAS
17.32 %	Carbon dioxide	124-38-9
4.35 %	Carbon monoxide	630-08-0
16.96 %	Oxygen	7782-44-7
Balance	Nitrogen	7727-37-9

Danger



CONTAINS GAS UNDER PRESSURE; MAY EXPLODE IF HEATED. MAY DAMAGE FERTILITY OR THE UNBORN CHILD. CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE. MAY INCREASE RESPIRATION AND HEART RATE. ASPHYXIATING EVEN WITH ADEQUATE OXYGEN.

TLV:

Carbon dioxide 50 ppm
Carbon monoxide 25 ppm

Obtain special instructions before use; Do not handle until all safety precautions have been read and understood; Do not breathe gas/vapors; Vapor exposed skin thoroughly after handling; Do not eat, drink or smoke when using this product; Wear protective gloves/protective clothing/eye protection/face protection; IF EXPOSED OR CONCERNED: Get medical advice/attention; Get medical advice/attention; Contact supplier for any special requirements; Dispose of contents/container in accordance with local/regional/national/international regulations; Use only with equipment rated for cylinder pressure; Do not open valve until connected to equipment prepared for use; Close valve after each use and when empty; Protect from sunlight when ambient temperature exceeds 52°C (125°F); Avoid breathing gas, vapors; IF INHALED: Remove person to fresh air and keep comfortable for breathing; Call a POISON CENTER or doctor/physician.

FIRST AID

IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. If not breathing, give artificial respiration. If breathing is difficult, trained personnel should give oxygen. Call a physician.
IF IN EYES: Immediately flush eyes with plenty of water for at least 15 minutes. Hold the eyelids open and away from the eyeballs to ensure that all surfaces are irrigated.



Compressed gas, n.o.s.
(Carbon Monoxide, Carbon Dioxide, Oxygen,
Nitrogen)

UN1956

SPG 5P10162.5VM2
Part Number

Primary Standard, +/- 0.02% Absolute

2.500 % Carbon Monoxide
10.00 % Carbon Dioxide
10.00 % Oxygen
Balance Nitrogen

CAS: 630-08-0
CAS: 124-38-9
CAS: 7782-44-7
CAS: 7727-37-9

DANGER: CAUSES DAMAGE TO ORGANS THROUGH PROLONGED OR REPEATED EXPOSURE. CONTAINS GAS UNDER PRESSURE; MAY EXPLODE WHEN HEATED. MAY DAMAGE FERTILITY OR THE UNBORN CHILD. MAY INCREASE RESPIRATION AND HEARTRATE. Use only with equipment of compatible materials of construction and rated for cylinder pressure. Protect from sunlight when ambient temperature exceeds 52C (125F). Use a back flow preventive device in the piping. Close valve after each use and when empty. Do not open valve until connected to equipment prepared for use. Obtain special instructions before use. Protect from sunlight. Store in a well-ventilated place. IF exposed or concerned: Get medical advice. Store locked up. Dispose of contents/container in accordance with container/supplier owner instructions. Do not handle until all safety precautions have been read and understood. Do not breathe gas. Wash hands thoroughly after handling. Do not eat, drink, or smoke when using this product. Wear protective gloves, protective clothing, eye protection, and/or face protection. Read and follow the Safety Data Sheet (SDS) before use.

FIRST AID: IF ON SKIN: wash with plenty of water. IF INHALED: Remove person to fresh air and keep comfortable for breathing. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing. IF exposed or concerned: Get medical advice.



WARNING: This product can expose you to Carbon Monoxide which is known to the State of California to cause birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Lot No: 1-053-122
Serial Number: CC341544
SPG 5P10162.5VM2
Part Number
PO #: 206483
Expires: 2-2024

NorLAB

To Order Call: 800-657-6672

In Emergency Call: 1-800-424-6300
Norco, Inc.
808 W. Cowen Road
Boise, Idaho 83705



CERTIFICATE OF CALIBRATION

CUSTOMER: PFS-TECO CLACKAMAS OR
PO NUMBER: 1130
INST. MANUFACTURER: OMEGA
INST. DESCRIPTION: MASS FLOWMETER
MODEL NUMBER: FMA-1608A
SERIAL NUMBER: 285467
RATED ACCURACY: +/- .8 % RD. + .2 % F.S.
UNCERTAINTY GIVEN: TOTAL measurement uncertainty: +/- .31 % RD. K = 2
NOTES: REFERENCE CONDITIONS: 760mmHGA & 70 DEG. F QM.IM 2.0 REV. DATED 7-27-2020
DECISION RULE: SIMPLE ACCEPTANCE. MEASUREMENT UNCERTAINTIES NOT TAKEN INTO CONSIDERATION WHEN DETERMINING PASS/FAIL

CALIBRATION DATE: 06/30/25
CALIBRATION DUE: 06/30/26
PROCEDURE: NAVAIR-17-20MG-20
CALIBRATION FLUID: AIR
AS RECEIVED: WITHIN SPECS.
AS RETURNED: WITHIN SPECS.
AMBIENT CONDITIONS: 761 mm HGA 45 % RH 73 F
CERTIFICATE FILE #: 531513.2025

TEST POINT NUMBER	UUT INDICATED SLPM	DM.STD. ACTUAL SLPM	LOWER LIMITS SLPM	UPPER LIMITS SLPM
1	2.002	1.972	1.946	2.058
2	3.985	3.938	3.913	4.057
3	6.001	5.960	5.913	6.089
4	7.967	7.921	7.863	8.071
5	10.045	9.998	9.925	10.165
6	12.023	11.976	11.887	12.159
7	13.991	13.958	13.839	14.143
8	16.034	15.975	15.866	16.202
9	18.034	17.976	17.850	18.218
10	19.985	19.905	19.785	20.185

STANDARDS USED:

A24 TEMP.STD.:HART SCIENTIFIC +/- .19 F (+/- .04 C) TRACE# 1683031933	DUE	04/28/26
A290 VOLUME PROVER +/- .12% RD 0-50 LPM TRACE# 1682664031,1683031933	DUE	05/09/26

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). Unless otherwise directed by the customer, Dick Munns uses a decision rule of Simple Acceptance as defined in ILAC G8 with a TUR of 1:1 or better. Calibration has been performed according to the shown procedure. The use of IAS/ILAC logo indicates calibrations are in accordance to ISO/IEC 17025:2017.

Dick Munns Company • 11133 Winners Circle, Los Alamitos, CA 90720
Phone: 714-827-1215 • www.dickmunns.com

This Calibration Certificate shall not be reproduced except, in full, without approval by Dick Munns Company. The data shown applies only to the instrument being calibrated and under the stated conditions of calibration.

Issuing Date:

Approved By:

Cal. Technician:

Calibrated at: ☒ Lab

☐ On-Site (Customer's)

06/30/2025

[Signature]

JA

Page 1 of 1

Thermo Fisher Scientific Inc.

Serial # CVK 7037

Weight One	Weight Two	Weight Three	Average Weight
0.094101 grams	0.094103 grams	0.094102 grams	0.09410 grams

Technician: Ying Dunn 2-18-21
Name Date

Q.A.: [Signature] 2/18/21
Name Date

This filter has been weighed on a laboratory balance that is calibrated and certified traceable to NIST test standards.