
Enerco Group, Inc.

Project # 25-454

Model: G2-N50WTS

AKA: G2-A50WTS, G2-C50WTS, G2-H50WTS, G2-J50WTS

Type: Pellet-Fired Room Heater

January 5, 2026

**ASTM E2779 Standard Test Method for
Determining Particulate Matter
Emissions from Pellet Heaters (EPA ALT-
146)**

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Prepared by: Aaron Kravitz, Laboratory
Manager



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Revision History

January 5, 2026– Original Issue

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Affidavit

PFS-TECO was contracted by Enerco Group, Inc. to provide testing services for the G2-N50WTS Pellet-Fired Room Heater per ASTM E2779, *Determining PM Emissions from Pellet Heaters*. All testing and associated procedures were conducted at PFS-TECO's Portland Laboratory on 11/24/2025. PFS-TECO's Portland Laboratory is located at 11785 SE Highway 212 – Suite 305, Clackamas, Oregon 97015. Testing procedures followed EPA ALT-146 / ASTM E2779. Particulate sampling was performed per ASTM E2515, *Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel*.

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 17025:2005 "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

Enerco Group, Inc. of Cleveland, OH contracted with PFS-TECO to perform EPA certification testing on the G2-N50WTS Pellet-Fired Room Heater. All testing was performed at PFS-TECO's Portland Laboratory. Testing was performed by Mr. Aaron Kravitz.

Notes

- Prior to start of testing, 50 hours of conditioning was performed by the manufacturer at a medium heat setting, per ASTM E2779
- Prior to start of testing, the dilution tunnel was cleaned with a steel brush.
- A separate, independent sample train was utilized to determine 1st hour emissions.
- A single test run was performed in accordance with EPA ALT-146 burn rate settings:
 - 1 Hour at Maximum Burn Setting
 - 2 Hours at Medium Burn Setting (less than the mid-point of the high and low rates)
 - 3 Hours at Minimum Burn Setting

Pellet Heater Identification and Testing

- Appliance Tested: **G2-N50WTS**
- Serial Number: **N/A – Prototype Unit; PFS Tracking #0240**
- Manufacturer: **Enerco Group, Inc.**
- Catalyst: **No**
- Heat exchange blower: **Integral**
- Type: **Pellet Stove**
- Style: **Free Standing**
- Date Received: **Friday, November 21, 2025**
- Testing Period – Start: **Monday, November 24, 2025** Finish: **Monday, November 24, 2025**
- Test Location: **PFS-TECO Portland Laboratory, 11785 SE HWY 212 - Suite 305, Clackamas, OR 97015**
- Elevation: **≈131 Feet above sea level**
- Test Technician(s): **Aaron Kravitz**
- Observers: **N/A**

Test Procedures and Equipment

All Sampling and analytical procedures were performed by Aaron Kravitz. All procedures used are directly from ASTM E2779 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
189	Mettler Toledo 3'x3' floor scale w/digital weight indicator
053	APEX XC-60 Digital Emissions Sampling Box A
054	APEX XC-60 Digital Emissions Sampling Box B
203	APEX XC-50-DIR Digital Emissions Sampling Box C
203B	Dilution Tunnel centroid transducer
055	APEX Ambient sampling box
215	NI Temperature DAQ
057	California Analytical ZRE CO ₂ /CO/O ₂ IR ANALYZER
109A/B	Troemner 100mg/200mg Audit Weights
239	Ohaus Analytical Balance
097	10 lb audit weight
095	Anemometer
221	Microtector
DT0042934	Gas Analyzer Calibration Span Gas
CC341544	Gas Analyzer Calibration Mid Gas

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.

Results

The integrated test run emission rate for test Run 1 was measured to be **0.55 g/hr** with a Higher Heating Value efficiency of **80%** and a CO emission rate of **0.15 g/min**. The calculated first hour particulate emission rate was **1.6 g/hr**. The Enerco Group, Inc. Model G2-N50WTS Pellet-Fired Room Heater meets the 2020 PM emission standard of ≤ 2.0 g/hr per CFR 40 part 60, §60.532 (b).

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

Summary Table

Run Number	Date	Segments		Run Time (min)	Heat Output (BTU/hr)	1st Hr Emissions (g/hr)	Integrated Total (g/hr)	CO Emissions (g/min)	Overall CO Emissions (g/min)	Heating Efficiency (%HHV)	Overall Heating Efficiency (%HHV)
		Setting	BR								
1	11/24/2025	OA	1.18	360	17861	1.6	0.55	0.15	0.15	79.9%	79.9%
		H	2.21	60	34172			0.08		81.4%	
		M	1.28	120	18603			0.28		76.2%	
		L	0.76	180	11887			0.08		82.3%	

Test Run Narrative

Run 1

Run 1 was performed on 11/25/2025 as an attempted integrated test run per EPA ALT-146/ ASTM E2779. The overall test duration was 360 minutes. The particulate emissions rate for the integrated test run was 0.55 g/hr. The run had an overall HHV efficiency of 80%. A separate filter train C was run for the first hour of the run only. All test results were appropriate and valid and the burn rate requirement for the integrated test run were achieved. There were no anomalies and all criteria were met.

Test Conditions Summary

Testing conditions for all runs fell within allowable specifications of ASTM E2779 and ASTM E2515. A summary of facility conditions, fuel burned, and run times are listed below.

Runs	Ambient (°F)		Relative Humidity (%)		Average Barometric Pressure (In. Hg.)	Preburn Fuel Weight (lbs)	Test Fuel Weight (lbs)	Test Fuel Moisture (%DB)	Test Run Time (Min)
	Pre	Post	Pre	Post					
1	64.6	66.0	36.4	44.7	29.92	4.88	15.88	2.1%	360

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

	Pre-Burn	Test Run		
Run 1	High Setting	Maximum Segment High Setting	Medium Segment Medium Setting	Minimum Segment Low Setting

Appliance Description

Model(s): G2-N50WTS, G2-A50WTS, G2-C50WTS, G2-H50WTS, G2-J50WTS

Model Description: All models are distinct for branding purposes only and are identical in all aspects of construction that may affect emissions performance.

Appliance Type: Pellet-Fired Room Heater

Air Introduction System: A variable speed combustion fan forces air into the firebox through holes in the bottom of the firepot.

Combustion Control: A touchscreen control panel on the top of the unit is used to select burn rates, which are varied by automatic modulation of the combustion fan and feed system. An automatically controlled distribution bower is also installed.

Fueling System: An inclined auger driven by a gear motor, meters pellets through a drop tube (over feed) to a fire pot in the firebox.

Baffles: N/A

Flue Outlet: Venting is through a 3" diameter steel pipe, which exits through the back of the unit.

Appliance Dimensions

G2-N50WTS Dimensions

Height	Width	Depth
35.18"	18.12"	21.25"

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

Appliance Front



Appliance Left



Appliance Right



Appliance Rear



Test Fuel Properties

Test fuel used was Lignetics Pellet Fuel, a PFI Certified Premium Pellet Brand. A sample of pellets was sent to Twin Ports Testing for analysis, see report below.



Pellet Fuel Analysis



Twin Ports Testing, Inc.
1301 North 3rd Street
Superior, WI 54880
p: 715-392-7114
p: 800-373-2562
f: 715-392-7163
www.twinportstesting.com

Report No: USR:W224-0189-01
Issue No: 1

Analytical Test Report

Client: PFS-TECO
11785 SE Hwy 212, Ste 305
Clackamas, OR 97015
Attention: Sebastian Button
PO No:

Signed:

Katy Jahr
Chemistry Lab Supervisor

Date of Issue: 5/13/2024

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Sample Log No: W224-0189-01 Sample Date:
Sample Designation: Lignetics Pellets (Mill # 16036) Sample Time:
Sample Recognized As: Wood Pellets Arrival Date: 4/26/2024

Test Results

	METHOD	UNITS	MOISTURE FREE	AS RECEIVED
Moisture Total	ASTM E871	wt. %		2.10
Ash	ASTM D1102	wt. %	0.17	0.17
Volatile Matter	ASTM D3175	wt. %	80.51	78.82
Fixed Carbon by Difference	ASTM D3172	wt. %	19.31	18.91
Sulfur	ASTM D4239	wt. %	0.070	0.069
SO ₂	Calculated	lb/mmbtu		0.163
Net Cal. Value at Const. Pressure	ISO 1928	GJ/tonne	18.71	18.27
Gross Cal. Value at Const. Vol.	ASTM E711	Btu/lb	8627	8445
Carbon	ASTM D5373	wt. %	49.48	48.44
Hydrogen*	ASTM D5373	wt. %	6.22	6.09
Nitrogen	ASTM D5373	wt. %	< 0.20	< 0.20
Oxygen*	ASTM D3176	wt. %	> 43.86	> 42.94

*Note: As received values do not include hydrogen and oxygen in the total moisture.

Chlorine	ASTM D6721	mg/kg		
Fluorine	ASTM D3761	mg/kg		
Mercury	ASTM D6722	mg/kg		
Bulk Density	ASTM E873	lbs/ft ³		
Fines (Less than 1/8")	TPT CH-P-06	wt. %		
Durability Index	Kansas State	PDI		
Sample Above 1.50"	TPT CH-P-06	wt. %		
Maximum Length (Single Pellet)	TPT CH-P-06	inch		
Diameter, Range	TPT CH-P-05	inch		to
Diameter, Average	TPT CH-P-05	inch		
Stated Bag Weight	TPT CH-P-01	lbs		
Actual Bag Weight	TPT CH-P-01	lbs		

Comments:



Accreditation #60243

Results issued on this report only reflect the analysis of the sample submitted. Our reports and letters are for the exclusive and confidential use of our clients and may not be reproduced, except in their entirety, without the written approval of Twin Ports Testing. Twin Ports Testing Laboratory is accredited to the ISO/IEC 17025:2017 standard by PJLA.

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.

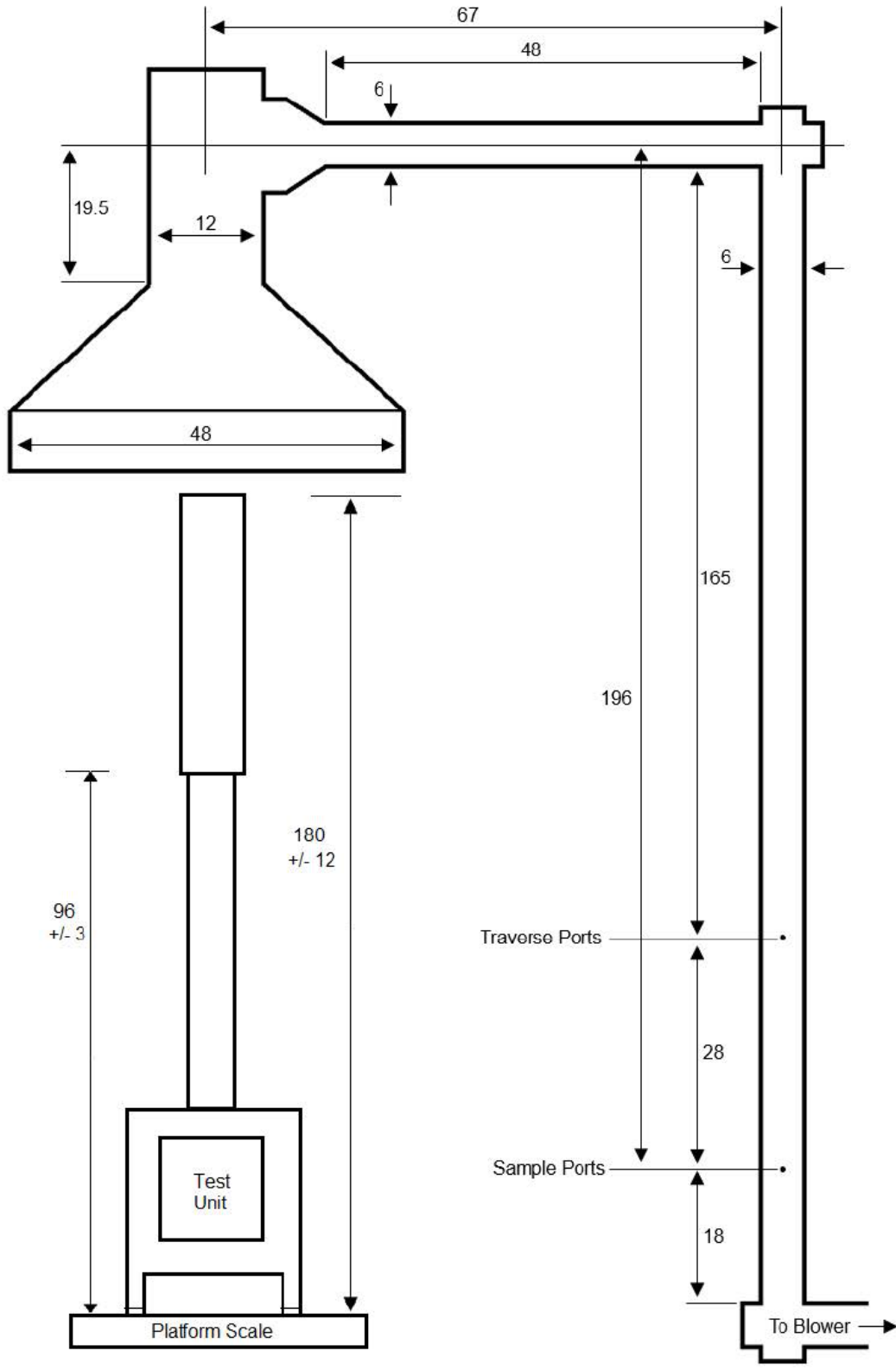
Barometric pressure data was taken from local National Weather Service station KPDX. As PFS and KPDX are at the same altitude, the correction for altitude per ASTM E2515-11 6.1.2 is 1:1.

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.

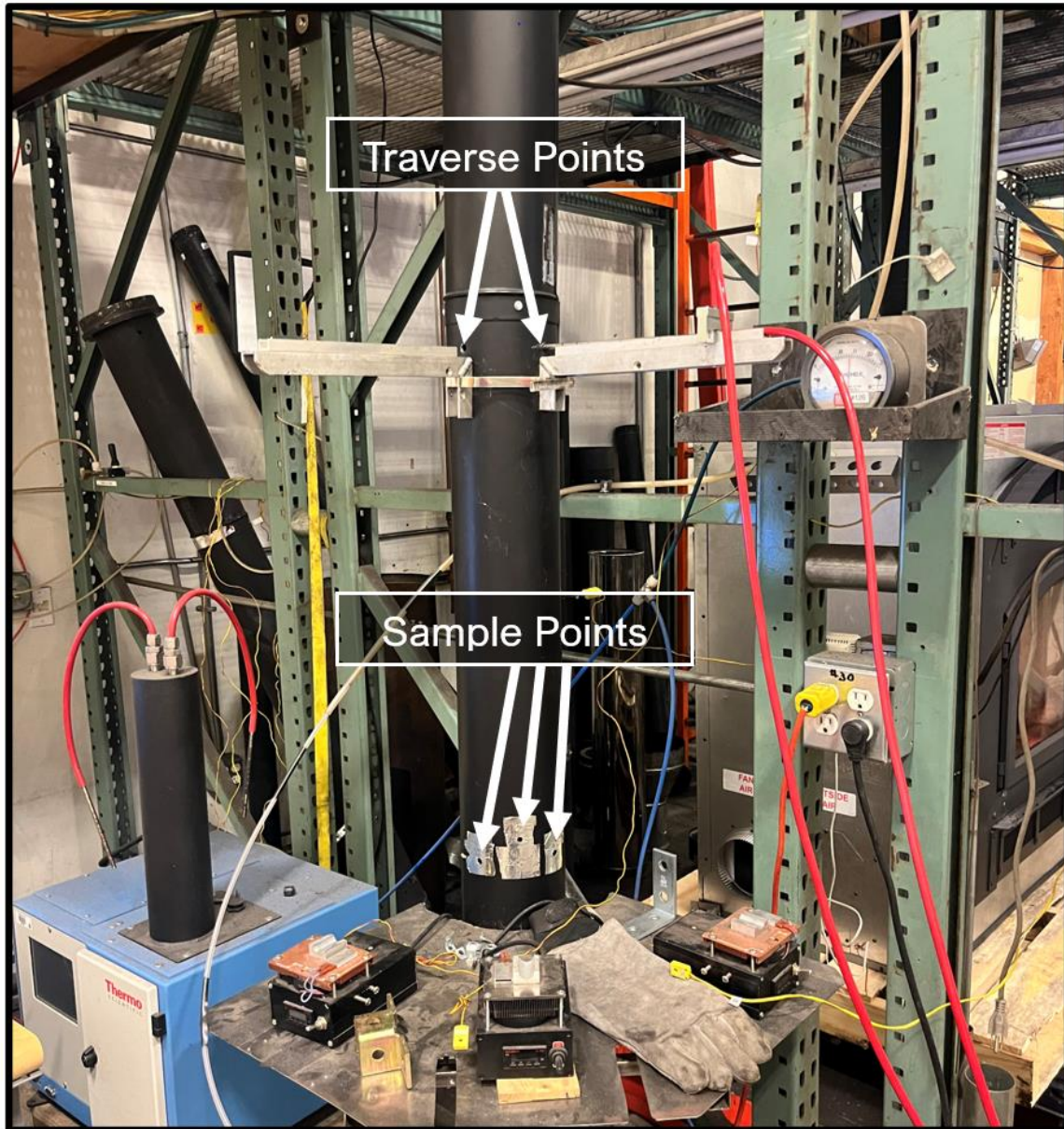
The dilution tunnel is constructed in accordance with the requirements of ASTM E2515-11, as shown below:



Booth #1 Tunnel Schematic

All dimensions are in inches

Sample ports are located 16.3 feet downstream from any disturbances and 1.5 feet upstream from any disturbances. Flow rate traverse data was collected 13.8 feet downstream from any disturbances and 3.8 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 was secured with metal strapping and the seal below was applied, the appliance was then returned to the manufacturer's location at: 4560 West 160th St, Cleveland, OH 44135 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, and Sample Analysis

Appendix B – Labels and Manuals

Appendix C –Equipment Calibration Records

Appendix D – Design Drawings (CBI Report Only)

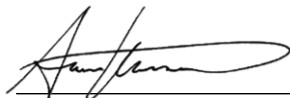
Appendix E – Manufacturer QAP (CBI Report Only)

PELLET TEST DATA PACKET
ASTM E2779/E2515



Run 1 Data Summary

Client: Enerco
Model: G2-N50WTS
Job #: 25-454
Tracking #: 240
Test Date: 11/24/2025



Technician Signature

12/22/2025

Date

TEST RESULTS - ASTM E2779 / ASTM E2515

Client: Enerco

Model: G2-N50WTS

Run #: 1

Job #: 25-454

Tracking #: 240

Technician: AK

Date: 11/24/2025

Burn Rate Summary	
High Burn Rate (dry kg/hr)	2.21
Medium Burn Rate (dry kg/hr)	1.28
Low Burn Rate (dry kg/hr)	0.76
Overall Burn Rate (dry kg/hr)	1.18

Medium Burn Rate Target: < 1.48 dry kg/hr

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter - Train C
Total Sample Volume (ft ³)	82.541	58.744	57.101	8.633
Average Gas Velocity in Dilution Tunnel (ft/sec)	15.1			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	10017.4			
Average Gas Meter Temperature (°F)	65.2	91.5	91.3	78.7
Total Sample Volume (dscf)	82.857	57.778	55.063	8.488
Average Tunnel Temperature (°F)	92.3			
Total Time of Test (min)	360			
Total Particulate Catch (mg)	0.1	3.3	3.0	1.4
Particulate Concentration, dry-standard (g/dscf)	0.0000012	0.0000571	0.0000545	0.0001649
Total PM Emissions (g)	0.07	3.36	3.20	1.64
Particulate Emission Rate (g/hr)	0.01	0.56	0.53	1.64
Emissions Factor (g/kg)	-	0.48	0.45	0.74
Difference from Average Total Particulate Emissions (g)	-	0.08	0.08	-
Difference from Average Total Particulate Emissions (%)	-	2.4%	2.4%	-
Difference from Average Emissions Factor (g/kg)	-	0.01	0.01	-

Final Average Results	
Total Particulate Emissions (g)	3.28
Particulate Emission Rate (g/hr)	0.55
Emissions Factor (g/kg)	0.47
HHV Efficiency (%)	79.9%
LHV Efficiency (%)	85.6%
CO Emissions (g/min)	0.15

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	75.2	OK
Face Velocity	< 30 ft/min	9.2	OK
Leakage Rate	Less than 4% of average sample rate	0.001 cfm	OK
Ambient Temp	55-90 °F	63.2 / 66.1	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
Medium Burn Rate	< midpoint of the high and low burn rates	1.28	OK

Overall Pellet Test Efficiency Results

Manufacturer: Enerco
Model: G2-N50WTS
Date: 11/24/25
Run: 1
Control #: 25-454
Test Duration: 360
Output Category: Integrated

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	79.9%	85.6%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	80.3%	86.0%

Output Rate (kJ/h)	18,828	17,861	(Btu/h)
Burn Rate (kg/h)	1.18	2.59	(lb/h)
Input (kJ/h)	23,575	22,363	(Btu/h)

Test Load Weight (dry kg)	7.05	15.55	dry lb
MC wet (%)	2.10		
MC dry (%)	2.15		
Particulate (g)	3.28		
CO (g)	54		
Test Duration (h)	6.00		

Emissions	Particulate	CO
g/MJ Output	0.03	0.48
g/kg Dry Fuel	0.47	7.63
g/h	0.55	8.97
g/min	0.01	0.15
lb/MM Btu Output	0.07	1.11

Air/Fuel Ratio (A/F)	29.25
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VERSION:

2.4

4/15/2010

Max Burn Rate Segment Efficiency Results

Manufacturer: Enerco
Model: G2-N50WTS
Date: 11/24/25
Run: 1
Control #: 25-454
Test Duration: 60
Output Category: Maximum

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	81.4%	87.2%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	81.8%	87.6%

Output Rate (kJ/h)	36,024	34,172	(Btu/h)
Burn Rate (kg/h)	2.21	4.87	(lb/h)
Input (kJ/h)	44,270	41,995	(Btu/h)

Test Load Weight (dry kg)	2.21	4.87	dry lb
MC wet (%)	2.10		
MC dry (%)	2.15		
Particulate (g)	N/A		
CO (g)	5		
Test Duration (h)	1.00		

Emissions	Particulate	CO
g/MJ Output	N/A	0.14
g/kg Dry Fuel	N/A	2.29
g/h	N/A	5.07
g/min	N/A	0.08
lb/MM Btu Output	N/A	0.33

Air/Fuel Ratio (A/F)	17.88
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VERSION:

2.4

4/15/2010

Medium Burn Rate Segment Efficiency Results

Manufacturer: Enerco
Model: G2-N50WTS
Date: 11/24/25
Run: 1
Control #: 25-454
Test Duration: 120
Output Category: Medium

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	76.2%	81.6%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	76.6%	82.1%

Output Rate (kJ/h)	19,611	18,603	(Btu/h)
Burn Rate (kg/h)	1.28	2.83	(lb/h)
Input (kJ/h)	25,742	24,419	(Btu/h)

Test Load Weight (dry kg)	2.57	5.66	dry lb
MC wet (%)	2.10		
MC dry (%)	2.15		
Particulate (g)	N/A		
CO (g)	34		
Test Duration (h)	2.00		

Emissions	Particulate	CO
g/MJ Output	N/A	0.86
g/kg Dry Fuel	N/A	13.20
g/h	N/A	16.94
g/min	N/A	0.28
lb/MM Btu Output	N/A	2.01

Air/Fuel Ratio (A/F)	32.66
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VERSION:

2.4

4/15/2010

Minimum Burn Rate Segment Efficiency Results

Manufacturer: Enerco
Model: G2-N50WTS
Date: 11/24/25
Run: 1
Control #: 25-454
Test Duration: 180
Output Category: Minimum

Test Results in Accordance with CSA B415.1-10

	HHV Basis	LHV Basis
Overall Efficiency	82.3%	88.2%
Combustion Efficiency	99.5%	99.5%
Heat Transfer Efficiency	82.7%	88.6%

Output Rate (kJ/h)	12,531	11,887	(Btu/h)
Burn Rate (kg/h)	0.76	1.67	(lb/h)
Input (kJ/h)	15,232	14,449	(Btu/h)

Test Load Weight (dry kg)	2.28	5.02	dry lb
MC wet (%)	2.10		
MC dry (%)	2.15		
Particulate (g)	N/A		
CO (g)	15		
Test Duration (h)	3.00		

Emissions	Particulate	CO
g/MJ Output	N/A	0.40
g/kg Dry Fuel	N/A	6.61
g/h	N/A	5.02
g/min	N/A	0.08
lb/MM Btu Output	N/A	0.93

Air/Fuel Ratio (A/F)	34.05
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VERSION:

2.4

4/15/2010

DILUTION TUNNEL & MISC. DATA - ASTM E2779 / E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1
 Test Start Time: 9:26

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

High Burn End Time (min): 60
 Medium Burn End Time (min): 180
 Total Sampling Time (min): 360
 Recording Interval (min): 1

Meter Box γ Factor: 1.021 (A)
 Meter Box γ Factor: 1.001 (B)
 Meter Box γ Factor: 1.001 (C)
 Meter Box γ Factor: 0.999 (Ambient)
 Induced Draft Check (in. H₂O): 0
 Smoke Capture Check (%): 100%
 Date Flue Pipe Last Cleaned: 11/20/2025
 Platform Scale Audit (lbs): 10.0

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	30.20	29.64	29.92
Relative Humidity (%)	36.4	44.7	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	10	10	
Ambient Sample Volume:	82.541 ft ³		

Sample Train Leak Checks

	Pre-test	Post-test		
(A)	0.000	0.000	cfm @	-6 in. Hg
(B)	0.000	0.000	cfm @	-6 in. Hg
(C)	0.001	0.001	cfm @	-6 in. Hg
(Ambient)	0.000	0.000	cfm @	-12 in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H ₂ O)	Temp (°F)
1	0.034	76
2	0.056	76
3	0.052	76
4	0.038	76
5	0.036	76
6	0.054	76
7	0.052	76
8	0.036	76
Center	0.058	76

Dilution Tunnel H₂O: 2.00 percent
 Tunnel Diameter: 6 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: 0.1963 ft²
 V_{strav} : 13.991 ft/sec
 V_{scent} : 16.008 ft/sec
 F_p : 0.874 [ratio]
 Initial Tunnel Flow: 159.8 scf/min

Static Pressure: -0.090 in. H₂O

TEST FUEL PROPERTIES

Default Fuel Values

Fuel Type:	D. Fir	Oak
HHV (kJ/kg)	19,810	19,887
%C	48.73	50
%H	6.87	6.6
%O	43.9	42.9
%Ash	0.5	0.5

Actual Fuel Used Properties

Pellet Brand:	Lignetics
Pellet Fuel Grade:	PFI Premium
HHV (BTU/lb)	8627
%C	49.48
%H	6.22
%O	44.13
%Ash	0.17
MC (%WB)	2.10

PELLET STOVE PREBURN DATA - ASTM E2779

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

Recording Interval (min): 1
Run Time (min): 60

Average:			-0.053	264	64
Elapsed Time (min)	Scale Reading (lbs)	Weight Change (lbs)	Flue Draft (in H ₂ O)	Flue (°F)	Ambient (°F)
0	39.8	-	-0.052	248	63
1	39.7	-0.08	-0.053	249	63
2	39.6	-0.06	-0.050	250	63
3	39.6	-0.08	-0.052	252	63
4	39.5	-0.09	-0.051	254	63
5	39.4	-0.08	-0.054	256	63
6	39.3	-0.09	-0.053	259	63
7	39.2	-0.09	-0.051	261	63
8	39.1	-0.09	-0.053	262	63
9	39.1	-0.07	-0.054	263	64
10	39.0	-0.07	-0.052	261	63
11	38.9	-0.07	-0.052	261	64
12	38.8	-0.08	-0.053	259	64
13	38.7	-0.11	-0.053	261	64
14	38.6	-0.08	-0.053	262	64
15	38.5	-0.1	-0.057	265	64
16	38.5	-0.09	-0.051	267	64
17	38.4	-0.1	-0.054	269	64
18	38.3	-0.07	-0.055	270	64
19	38.2	-0.08	-0.054	271	64
20	38.1	-0.1	-0.054	271	64
21	38.0	-0.08	-0.054	270	64
22	38.0	-0.07	-0.054	271	64
23	37.9	-0.07	-0.054	271	64
24	37.8	-0.09	-0.054	269	64
25	37.7	-0.09	-0.054	267	64
26	37.6	-0.06	-0.053	267	64
27	37.5	-0.1	-0.053	269	64
28	37.5	-0.07	-0.054	267	64
29	37.4	-0.1	-0.055	266	64
30	37.3	-0.08	-0.053	267	64
31	37.2	-0.08	-0.054	269	64
32	37.1	-0.07	-0.054	269	64
33	37.1	-0.09	-0.052	269	64
34	37.0	-0.08	-0.054	268	64
35	36.9	-0.06	-0.056	267	64
36	36.8	-0.08	-0.054	267	65
37	36.8	-0.08	-0.053	265	65
38	36.7	-0.08	-0.055	266	65
39	36.6	-0.08	-0.053	266	65
40	36.5	-0.07	-0.055	264	65
41	36.5	-0.07	-0.052	264	65
42	36.4	-0.08	-0.051	263	65
43	36.3	-0.08	-0.055	263	65
44	36.2	-0.1	-0.054	264	65
45	36.1	-0.07	-0.053	263	64
46	36.1	-0.07	-0.052	264	64

PELLET STOVE PREBURN DATA - ASTM E2779

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

47	36.0	-0.09	-0.053	264	63
48	35.9	-0.07	-0.054	265	64
49	35.8	-0.09	-0.053	265	64
50	35.7	-0.07	-0.054	266	64
51	35.7	-0.08	-0.058	264	64
52	35.6	-0.09	-0.053	263	64
53	35.5	-0.08	-0.054	265	64
54	35.4	-0.07	-0.052	264	64
55	35.3	-0.1	-0.053	266	64
56	35.2	-0.08	-0.054	267	65
57	35.1	-0.09	-0.054	265	64
58	35.1	-0.08	-0.056	267	65
59	35.0	-0.09	-0.054	268	64
60	34.9	-0.07	-0.055	268	65

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
0	0.000		0.064	0.03	69.2	0.12		15.9		101	268	69	64.6
1	0.140	0.140	0.066	2.26	69.1	0.88	-	15.8	-0.1	101	267	69	64.7
2	0.283	0.143	0.065	2.30	69.1	0.9	-	15.7	-0.1	101	268	70	64.6
3	0.435	0.152	0.065	2.33	69.1	0.9	-	15.7	-0.1	101	269	70	64.5
4	0.580	0.145	0.065	2.36	69.1	0.92	-	15.6	-0.1	101	269	70	64.8
5	0.732	0.152	0.066	2.37	69.2	0.91	-	15.5	-0.1	101	267	70	64.6
6	0.879	0.147	0.063	2.39	69.3	0.93	-	15.4	-0.1	101	268	71	64.9
7	1.032	0.153	0.064	2.40	69.4	0.9	-	15.3	-0.1	101	269	71	64.9
8	1.180	0.148	0.064	2.41	69.5	0.88	-	15.2	-0.1	101	268	71	64.9
9	1.334	0.154	0.064	2.42	69.7	0.93	-	15.2	-0.1	101	266	71	64.8
10	1.481	0.147	0.064	2.44	69.9	0.92	96	15.1	-0.1	101	267	71	64.9
11	1.637	0.156	0.066	2.44	70	0.91	-	15.0	-0.1	101	266	72	64.7
12	1.786	0.149	0.064	2.46	70.3	0.93	-	14.9	-0.1	101	266	72	64.9
13	1.945	0.159	0.065	2.49	70.5	0.89	-	14.8	-0.1	101	266	72	64.6
14	2.096	0.151	0.065	2.50	70.7	0.91	-	14.7	-0.1	101	268	72	65
15	2.251	0.155	0.064	2.53	71	0.88	-	14.7	-0.1	101	269	72	64.9
16	2.404	0.153	0.063	2.54	71.3	0.91	-	14.6	-0.1	101	270	72	64.9
17	2.559	0.155	0.063	2.54	71.5	0.91	-	14.5	-0.1	101	272	72	64.8
18	2.713	0.154	0.064	2.56	71.9	0.91	-	14.4	-0.1	101	272	72	64.9
19	2.868	0.155	0.064	2.58	72.1	0.91	-	14.3	-0.1	102	272	72	64.8
20	3.026	0.158	0.063	2.59	72.5	0.93	100	14.2	-0.1	102	272	72	65.1
21	3.179	0.153	0.063	2.60	72.8	0.92	-	14.2	-0.1	102	272	72	64.8
22	3.340	0.161	0.064	2.61	73.1	0.91	-	14.1	-0.1	102	271	73	64.9
23	3.494	0.154	0.063	2.61	73.5	0.92	-	14.0	-0.1	102	270	73	65
24	3.652	0.158	0.062	2.62	73.8	0.95	-	13.9	-0.1	102	270	73	64.9
25	3.810	0.158	0.065	2.63	74.2	0.91	-	13.8	-0.1	102	270	73	65
26	3.968	0.158	0.064	2.63	74.5	0.94	-	13.7	-0.1	102	270	73	65.3
27	4.127	0.159	0.064	2.63	74.8	0.92	-	13.6	-0.1	102	270	73	65
28	4.283	0.156	0.065	2.65	75.2	0.93	-	13.6	-0.1	102	270	73	65.2
29	4.446	0.163	0.064	2.65	75.5	0.95	-	13.5	-0.1	102	271	73	65
30	4.601	0.155	0.065	2.65	75.9	0.92	101	13.4	-0.1	102	271	73	64.9
31	4.765	0.164	0.065	2.68	76.3	0.92	-	13.3	-0.1	102	270	73	65
32	4.926	0.161	0.064	2.68	76.7	0.97	-	13.2	-0.1	102	271	73	65

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
33	5.081	0.155	0.065	2.67	77	0.95	-	13.1	-0.1	102	270	73	65.1
34	5.245	0.164	0.063	2.68	77.4	0.95	-	13.1	-0.1	102	271	73	65.1
35	5.403	0.158	0.065	2.69	77.7	0.96	-	13.0	-0.1	102	272	73	65.2
36	5.561	0.158	0.065	2.69	78.1	0.95	-	12.9	-0.1	102	272	73	65.1
37	5.724	0.163	0.065	2.70	78.4	0.98	-	12.8	-0.1	102	271	73	65
38	5.880	0.156	0.064	2.69	78.8	0.94	-	12.7	-0.1	102	269	73	65.2
39	6.045	0.165	0.064	2.70	79.1	0.95	-	12.6	-0.1	102	269	73	65.1
40	6.203	0.158	0.064	2.70	79.4	0.96	102	12.6	-0.1	102	270	73	65.2
41	6.365	0.162	0.066	2.72	79.7	0.96	-	12.5	-0.1	102	269	73	65
42	6.527	0.162	0.064	2.71	80.1	0.96	-	12.4	-0.1	102	267	73	65.1
43	6.686	0.159	0.064	2.71	80.4	0.96	-	12.3	-0.1	102	267	73	65
44	6.849	0.163	0.064	2.71	80.7	0.97	-	12.3	-0.1	102	267	73	65.1
45	7.011	0.162	0.065	2.72	81	0.98	-	12.2	-0.1	102	266	73	65.1
46	7.171	0.160	0.065	2.73	81.3	0.97	-	12.1	-0.1	102	267	73	65.1
47	7.336	0.165	0.065	2.73	81.7	0.99	-	12.0	-0.1	102	267	73	65.1
48	7.496	0.160	0.063	2.73	81.9	0.97	-	11.9	-0.1	102	269	73	65.2
49	7.658	0.162	0.066	2.73	82.2	0.97	-	11.8	-0.1	102	271	73	65.2
50	7.823	0.165	0.063	2.73	82.5	0.98	103	11.7	-0.1	102	271	73	65.1
51	7.984	0.161	0.064	2.74	82.8	0.99	-	11.6	-0.1	102	271	73	65.2
52	8.149	0.165	0.064	2.74	83.1	0.97	-	11.6	-0.1	102	270	73	65.1
53	8.312	0.163	0.066	2.74	83.3	0.99	-	11.5	-0.1	102	269	73	65
54	8.472	0.160	0.065	2.74	83.6	0.98	-	11.4	-0.1	102	270	73	65.2
55	8.638	0.166	0.066	2.75	83.8	0.99	-	11.3	-0.1	102	269	73	65.1
56	8.795	0.157	0.064	2.75	84.2	1	-	11.3	-0.1	102	267	73	65.2
57	8.959	0.164	0.064	2.75	84.4	0.98	-	11.2	-0.1	102	265	73	65.2
58	9.123	0.164	0.063	2.75	84.7	0.98	-	11.1	-0.1	103	264	73	65.1
59	9.284	0.161	0.064	2.75	84.9	1	-	11.0	-0.1	102	266	73	65.3
60	9.449	0.165	0.064	2.75	85.1	0.99	103	10.9	-0.1	102	267	73	65.2
61	9.613	0.164	0.064	2.76	85.3	1	-	10.9	-0.1	102	268	73	65.4
62	9.774	0.161	0.065	2.76	85.6	0.99	-	10.8	0.0	102	265	74	65.1
63	9.941	0.167	0.065	2.76	85.8	0.98	-	10.8	-0.1	102	261	74	65.3
64	10.101	0.160	0.064	2.76	86	0.99	-	10.7	0.0	102	259	74	65.2
65	10.266	0.165	0.064	2.76	86.2	1.01	-	10.7	-0.1	101	256	74	65.1

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
66	10.431	0.165	0.064	2.76	86.4	1.01	-	10.6	-0.1	102	253	74	65.2
67	10.593	0.162	0.063	2.77	86.6	1	-	10.6	0.0	101	250	74	65.1
68	10.757	0.164	0.066	2.75	86.8	0.99	-	10.5	0.0	101	246	74	65.1
69	10.922	0.165	0.065	2.76	87	1	-	10.5	0.0	101	245	74	65.2
70	11.087	0.165	0.064	2.76	87.2	1	103	10.4	-0.1	101	242	74	65.4
71	11.252	0.165	0.065	2.76	87.4	0.99	-	10.4	-0.1	100	241	74	65.2
72	11.418	0.166	0.065	2.78	87.6	1.01	-	10.3	-0.1	100	240	74	65.2
73	11.578	0.160	0.064	2.77	87.7	1.01	-	10.3	0.0	100	238	74	65.1
74	11.745	0.167	0.062	2.77	87.9	1	-	10.2	0.0	100	238	74	65.1
75	11.906	0.161	0.065	2.77	88.1	1	-	10.2	-0.1	100	236	74	65.1
76	12.069	0.163	0.066	2.76	88.3	1.02	-	10.1	0.0	100	233	74	64.8
77	12.237	0.168	0.066	2.78	88.4	0.99	-	10.1	0.0	99	232	73	64.6
78	12.398	0.161	0.065	2.78	88.6	0.99	-	10.1	-0.1	99	230	73	64.5
79	12.564	0.166	0.065	2.78	88.7	1.01	-	10.0	0.0	99	229	73	64.2
80	12.730	0.166	0.066	2.78	88.9	1	102	10.0	-0.1	99	228	74	64.3
81	12.892	0.162	0.065	2.77	89.1	1.02	-	9.9	0.0	99	227	74	64.5
82	13.057	0.165	0.067	2.78	89.2	1.02	-	9.9	-0.1	99	227	73	64.3
83	13.223	0.166	0.066	2.78	89.4	1.01	-	9.8	-0.1	99	226	74	64.4
84	13.386	0.163	0.066	2.78	89.5	1.01	-	9.8	0.0	98	228	74	64.3
85	13.551	0.165	0.067	2.77	89.6	1.01	-	9.7	-0.1	98	228	73	64.1
86	13.718	0.167	0.066	2.78	89.8	1.01	-	9.7	0.0	98	227	73	64.2
87	13.880	0.162	0.065	2.78	89.9	1.02	-	9.6	0.0	98	224	74	64.2
88	14.049	0.169	0.065	2.78	90	1.02	-	9.6	0.0	98	222	73	64
89	14.216	0.167	0.066	2.78	90.1	1.01	-	9.5	-0.1	98	224	73	64.1
90	14.377	0.161	0.066	2.78	90.2	1.02	101	9.5	-0.1	98	225	74	64
91	14.544	0.167	0.065	2.78	90.4	1.01	-	9.4	-0.1	97	226	73	63.9
92	14.710	0.166	0.066	2.78	90.5	1.02	-	9.4	-0.1	97	227	73	63.8
93	14.869	0.159	0.066	2.79	90.6	1.02	-	9.3	0.0	97	228	73	63.9
94	15.038	0.169	0.066	2.78	90.7	1.01	-	9.3	-0.1	97	228	73	63.8
95	15.200	0.162	0.067	2.78	90.8	1.02	-	9.3	0.0	97	227	73	63.7
96	15.365	0.165	0.066	2.79	90.9	1	-	9.2	0.0	97	223	73	63.7
97	15.534	0.169	0.065	2.78	91	1.01	-	9.2	-0.1	98	222	73	64
98	15.696	0.162	0.068	2.80	91.1	1.02	-	9.1	0.0	97	221	73	63.9

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
99	15.862	0.166	0.066	2.78	91.2	1.02	-	9.1	-0.1	97	220	73	63.8
100	16.028	0.166	0.066	2.78	91.3	1.03	101	9.0	-0.1	97	221	73	63.8
101	16.191	0.163	0.066	2.79	91.4	1.02	-	9.0	-0.1	97	223	73	63.6
102	16.358	0.167	0.066	2.79	91.4	1.04	-	8.9	-0.1	97	223	73	63.6
103	16.524	0.166	0.065	2.79	91.5	1.02	-	8.9	-0.1	97	226	73	63.6
104	16.688	0.164	0.066	2.79	91.6	1.02	-	8.8	-0.1	97	227	73	63.8
105	16.856	0.168	0.067	2.78	91.7	1.02	-	8.8	0.0	97	226	73	63.7
106	17.023	0.167	0.066	2.79	91.8	1.02	-	8.7	-0.1	97	227	73	63.8
107	17.186	0.163	0.066	2.79	91.9	1.03	-	8.7	-0.1	97	229	73	63.6
108	17.352	0.166	0.066	2.79	91.9	1.01	-	8.6	-0.1	97	229	73	63.6
109	17.516	0.164	0.065	2.80	91.9	1.01	-	8.5	-0.1	97	231	73	63.7
110	17.679	0.163	0.063	2.80	92	1.02	102	8.5	0.0	97	231	73	63.5
111	17.846	0.167	0.065	2.80	92	1.02	-	8.4	0.0	97	232	73	63.6
112	18.014	0.168	0.065	2.80	92.1	1.02	-	8.4	0.0	97	231	73	63.5
113	18.175	0.161	0.067	2.79	92.2	1.01	-	8.4	0.0	97	230	73	63.6
114	18.342	0.167	0.066	2.79	92.3	1.05	-	8.3	-0.1	97	229	73	63.5
115	18.509	0.167	0.067	2.78	92.4	1.03	-	8.2	-0.1	97	228	73	63.3
116	18.671	0.162	0.067	2.79	92.4	1.02	-	8.2	0.0	97	229	73	63.3
117	18.840	0.169	0.066	2.80	92.5	1.02	-	8.2	-0.1	97	228	73	63.2
118	19.006	0.166	0.067	2.79	92.5	1.04	-	8.1	0.0	97	229	73	63.3
119	19.168	0.162	0.066	2.80	92.5	1.03	-	8.1	-0.1	98	229	73	63.5
120	19.340	0.172	0.066	2.80	92.6	1.05	103	8.0	-0.1	98	229	73	63.6
121	19.505	0.165	0.067	2.79	92.6	1.02	-	8.0	0.0	98	230	73	63.7
122	19.668	0.163	0.065	2.80	92.6	1.06	-	7.9	-0.1	98	231	73	63.7
123	19.837	0.169	0.066	2.80	92.7	1.04	-	7.8	-0.1	98	233	73	63.9
124	20.001	0.164	0.065	2.78	92.8	1.06	-	7.8	0.0	98	234	73	64.1
125	20.162	0.161	0.066	2.80	92.8	1.05	-	7.7	-0.1	98	235	73	64.2
126	20.331	0.169	0.066	2.79	92.9	1.03	-	7.7	-0.1	98	235	73	64.1
127	20.494	0.163	0.065	2.79	93	1.05	-	7.6	0.0	99	236	73	64.3
128	20.660	0.166	0.067	2.78	93	1.04	-	7.6	0.0	99	235	73	64.3
129	20.828	0.168	0.066	2.77	93.1	1.04	-	7.6	0.0	99	233	73	64.5
130	20.990	0.162	0.066	2.78	93.1	1.05	101	7.5	-0.1	99	233	73	64.5
131	21.157	0.167	0.064	2.78	93.2	1.04	-	7.5	0.0	99	235	73	64.5

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
132	21.324	0.167	0.067	2.79	93.2	1.04	-	7.4	-0.1	99	235	73	64.7
133	21.487	0.163	0.065	2.78	93.3	1.04	-	7.4	0.0	99	233	73	64.6
134	21.656	0.169	0.066	2.78	93.3	1.04	-	7.3	-0.1	99	233	73	64.6
135	21.823	0.167	0.064	2.78	93.4	1.05	-	7.3	0.0	99	232	74	64.7
136	21.984	0.161	0.066	2.79	93.4	1.06	-	7.2	0.0	99	231	73	64.7
137	22.151	0.167	0.066	2.79	93.5	1.07	-	7.2	-0.1	99	232	74	64.8
138	22.318	0.167	0.067	2.80	93.6	1.04	-	7.1	-0.1	99	233	73	64.7
139	22.481	0.163	0.067	2.78	93.6	1.06	-	7.1	-0.1	99	231	74	64.8
140	22.647	0.166	0.067	2.79	93.7	1.04	101	7.0	0.0	99	231	74	64.8
141	22.814	0.167	0.066	2.79	93.7	1.04	-	7.0	0.0	99	230	74	64.8
142	22.978	0.164	0.064	2.79	93.7	1.05	-	6.9	-0.1	99	229	74	64.8
143	23.144	0.166	0.065	2.78	93.8	1.06	-	6.9	-0.1	99	231	74	64.9
144	23.314	0.170	0.066	2.79	93.8	1.05	-	6.9	0.0	99	229	74	64.9
145	23.478	0.164	0.065	2.78	93.9	1.06	-	6.8	-0.1	99	227	74	64.9
146	23.642	0.164	0.065	2.79	93.9	1.05	-	6.8	0.0	99	226	74	65
147	23.809	0.167	0.065	2.79	93.9	1.05	-	6.7	-0.1	100	226	74	65
148	23.971	0.162	0.065	2.78	94	1.05	-	6.7	-0.1	99	226	74	64.9
149	24.138	0.167	0.065	2.78	94	1.06	-	6.6	0.0	99	226	74	65
150	24.306	0.168	0.065	2.77	94	1.07	101	6.6	0.0	99	224	74	65
151	24.471	0.165	0.065	2.77	94	1.05	-	6.5	0.0	99	224	74	65.1
152	24.638	0.167	0.065	2.78	94.1	1.06	-	6.5	-0.1	99	227	74	65.1
153	24.803	0.165	0.064	2.78	94.1	1.04	-	6.4	-0.1	99	227	74	65
154	24.966	0.163	0.064	2.78	94.1	1.08	-	6.4	0.0	99	227	74	65.1
155	25.135	0.169	0.064	2.78	94.1	1.07	-	6.3	-0.1	99	229	74	65.1
156	25.300	0.165	0.064	2.78	94.2	1.06	-	6.3	-0.1	100	230	74	65.2
157	25.465	0.165	0.065	2.78	94.3	1.05	-	6.2	0.0	99	230	74	65.1
158	25.634	0.169	0.064	2.71	94.3	1.05	-	6.2	0.0	100	230	74	65.3
159	25.792	0.158	0.065	2.72	94.4	1.05	-	6.1	-0.1	100	229	74	65.4
160	25.957	0.165	0.065	2.71	94.4	1.03	102	6.1	-0.1	100	229	74	65.3
161	26.122	0.165	0.064	2.71	94.4	1.06	-	6.0	0.0	100	230	74	65.3
162	26.285	0.163	0.064	2.71	94.5	1.05	-	6.0	0.0	100	229	74	65.4
163	26.448	0.163	0.064	2.71	94.5	1.04	-	6.0	-0.1	100	230	74	65.4
164	26.613	0.165	0.065	2.71	94.6	1.05	-	5.9	-0.1	100	229	74	65.4

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
165	26.775	0.162	0.063	2.71	94.6	1.06	-	5.9	0.0	100	228	74	65.5
166	26.940	0.165	0.066	2.71	94.6	1.04	-	5.8	0.0	100	229	74	65.5
167	27.108	0.168	0.065	2.72	94.6	1.05	-	5.8	-0.1	100	229	74	65.5
168	27.265	0.157	0.065	2.72	94.7	1.05	-	5.7	-0.1	100	229	74	65.5
169	27.433	0.168	0.065	2.72	94.8	1.05	-	5.7	0.0	100	229	74	65.5
170	27.598	0.165	0.065	2.70	94.8	1.05	101	5.6	-0.1	100	229	74	65.5
171	27.757	0.159	0.066	2.72	94.8	1.04	-	5.6	-0.1	100	229	74	65.4
172	27.924	0.167	0.065	2.70	94.9	1.05	-	5.5	0.0	100	230	74	65.7
173	28.084	0.160	0.065	2.70	94.8	1.07	-	5.5	-0.1	101	232	74	65.6
174	28.253	0.169	0.065	2.70	94.9	1.05	-	5.4	-0.1	101	234	74	65.7
175	28.415	0.162	0.065	2.72	94.9	1.04	-	5.4	0.0	100	233	74	65.7
176	28.577	0.162	0.066	2.71	95	1.06	-	5.3	0.0	100	230	74	65.7
177	28.741	0.164	0.065	2.71	95	1.05	-	5.3	-0.1	101	229	74	65.6
178	28.910	0.169	0.064	2.71	95	1.06	-	5.2	-0.1	100	228	74	65.6
179	29.067	0.157	0.066	2.70	95	1.05	-	5.2	-0.1	101	229	74	65.7
180	29.234	0.167	0.065	2.71	95.1	1.06	101	5.1	-0.1	101	231	74	65.8
181	29.401	0.167	0.067	2.71	95.1	1.07	-	5.1	-0.1	98	222	74	65.7
182	29.559	0.158	0.065	2.71	95.1	1.07	-	5.1	0.0	95	211	74	65.7
183	29.727	0.168	0.065	2.72	95.1	1.06	-	5.0	0.0	93	201	74	65.7
184	29.888	0.161	0.066	2.73	95.1	1.06	-	5.0	0.0	92	195	74	65.8
185	30.055	0.167	0.066	2.71	95.2	1.06	-	5.0	0.0	91	189	73	65.7
186	30.218	0.163	0.066	2.70	95.2	1.08	-	4.9	0.0	90	185	73	65.8
187	30.380	0.162	0.064	2.71	95.2	1.07	-	4.9	0.0	89	181	73	65.7
188	30.545	0.165	0.065	2.69	95.2	1.05	-	4.9	0.0	89	178	73	65.7
189	30.710	0.165	0.065	2.71	95.3	1.04	-	4.9	0.0	88	175	73	65.8
190	30.872	0.162	0.065	2.71	95.3	1.06	100	4.9	0.0	88	172	73	65.7
191	31.037	0.165	0.065	2.72	95.3	1.06	-	4.8	0.0	87	169	73	65.7
192	31.206	0.169	0.064	2.71	95.4	1.07	-	4.8	0.0	87	167	73	65.8
193	31.363	0.157	0.064	2.71	95.4	1.05	-	4.8	0.0	87	167	73	65.8
194	31.531	0.168	0.065	2.72	95.5	1.06	-	4.8	0.0	87	167	73	65.8
195	31.694	0.163	0.065	2.71	95.5	1.06	-	4.7	0.0	87	166	73	65.9
196	31.859	0.165	0.065	2.72	95.6	1.05	-	4.7	0.0	86	165	73	65.8
197	32.024	0.165	0.065	2.71	95.6	1.06	-	4.7	-0.1	86	165	72	65.9

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
198	32.185	0.161	0.065	2.72	95.6	1.06	-	4.6	0.0	86	164	72	65.7
199	32.353	0.168	0.066	2.71	95.6	1.04	-	4.6	0.0	86	164	72	65.7
200	32.516	0.163	0.065	2.71	95.7	1.04	100	4.6	0.0	86	164	72	65.9
201	32.678	0.162	0.064	2.70	95.7	1.05	-	4.5	0.0	86	164	72	65.9
202	32.843	0.165	0.066	2.71	95.7	1.07	-	4.5	0.0	86	164	72	65.8
203	33.012	0.169	0.065	2.73	95.8	1.07	-	4.5	0.0	86	164	72	65.8
204	33.171	0.159	0.065	2.72	95.8	1.06	-	4.5	0.0	86	163	72	65.8
205	33.336	0.165	0.064	2.72	95.8	1.08	-	4.4	0.0	86	164	72	65.9
206	33.505	0.169	0.065	2.72	95.8	1.08	-	4.4	0.0	86	164	72	66
207	33.662	0.157	0.064	2.71	95.9	1.07	-	4.3	-0.1	86	165	72	65.9
208	33.830	0.168	0.065	2.72	95.9	1.06	-	4.3	0.0	86	167	72	65.9
209	33.993	0.163	0.065	2.71	95.9	1.08	-	4.3	0.0	86	168	72	65.9
210	34.158	0.165	0.064	2.72	96	1.06	100	4.2	0.0	86	169	72	65.9
211	34.323	0.165	0.063	2.71	96	1.06	-	4.2	0.0	86	169	72	65.9
212	34.484	0.161	0.067	2.73	96	1.05	-	4.2	0.0	86	170	72	65.7
213	34.652	0.168	0.065	2.71	96	1.07	-	4.2	0.0	86	169	72	65.7
214	34.815	0.163	0.066	2.71	96	1.06	-	4.1	0.0	86	169	72	65.7
215	34.977	0.162	0.065	2.72	96	1.07	-	4.1	0.0	85	168	72	65.7
216	35.142	0.165	0.064	2.70	96	1.07	-	4.1	0.0	86	166	72	65.7
217	35.310	0.168	0.064	2.72	96.1	1.08	-	4.1	0.0	85	165	72	65.7
218	35.469	0.159	0.064	2.73	96.1	1.08	-	4.1	0.0	85	164	72	65.7
219	35.635	0.166	0.064	2.72	96.1	1.06	-	4.0	0.0	85	162	72	65.7
220	35.801	0.166	0.065	2.72	96.1	1.06	100	4.0	0.0	85	162	72	65.7
221	35.964	0.163	0.064	2.72	96.1	1.05	-	4.0	-0.1	85	162	72	65.7
222	36.128	0.164	0.064	2.72	96.2	1.06	-	3.9	0.0	85	162	72	65.7
223	36.292	0.164	0.065	2.70	96.2	1.07	-	3.9	0.0	85	162	72	65.8
224	36.456	0.164	0.065	2.71	96.1	1.07	-	3.9	0.0	85	162	72	65.7
225	36.622	0.166	0.065	2.71	96.2	1.09	-	3.9	0.0	85	163	72	65.8
226	36.783	0.161	0.065	2.72	96.2	1.07	-	3.8	0.0	85	163	72	65.8
227	36.948	0.165	0.065	2.70	96.2	1.1	-	3.8	0.0	85	163	72	65.7
228	37.117	0.169	0.066	2.71	96.2	1.07	-	3.8	0.0	85	163	72	65.9
229	37.275	0.158	0.066	2.71	96.3	1.06	-	3.7	0.0	85	163	72	65.9
230	37.440	0.165	0.066	2.70	96.2	1.06	99	3.7	0.0	86	170	72	65.9

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
231	37.609	0.169	0.066	2.72	96.3	1.07	-	3.7	0.0	85	168	72	65.9
232	37.768	0.159	0.065	2.70	96.3	1.06	-	3.7	0.0	85	166	72	65.9
233	37.933	0.165	0.064	2.72	96.3	1.08	-	3.6	0.0	85	165	72	65.9
234	38.099	0.166	0.066	2.70	96.3	1.07	-	3.6	0.0	85	164	72	65.9
235	38.262	0.163	0.065	2.70	96.4	1.05	-	3.6	0.0	85	164	72	65.9
236	38.427	0.165	0.066	2.72	96.4	1.08	-	3.6	0.0	85	163	72	66
237	38.591	0.164	0.065	2.71	96.4	1.06	-	3.5	0.0	85	163	72	66
238	38.755	0.164	0.066	2.73	96.4	1.07	-	3.5	0.0	85	163	72	65.9
239	38.920	0.165	0.066	2.71	96.4	1.1	-	3.5	0.0	85	163	72	65.9
240	39.082	0.162	0.066	2.72	96.4	1.06	99	3.4	0.0	85	164	72	65.9
241	39.247	0.165	0.066	2.70	96.5	1.08	-	3.4	0.0	84	163	72	66.1
242	39.416	0.169	0.065	2.70	96.5	1.08	-	3.4	0.0	85	164	72	66
243	39.574	0.158	0.066	2.71	96.6	1.08	-	3.3	-0.1	85	165	72	65.9
244	39.740	0.166	0.065	2.70	96.5	1.09	-	3.3	0.0	85	165	72	65.9
245	39.908	0.168	0.066	2.72	96.6	1.07	-	3.3	0.0	84	165	72	65.8
246	40.067	0.159	0.066	2.70	96.6	1.08	-	3.3	0.0	84	164	72	65.6
247	40.232	0.165	0.065	2.72	96.6	1.07	-	3.2	0.0	84	164	72	65.7
248	40.399	0.167	0.065	2.71	96.6	1.07	-	3.2	0.0	84	164	72	65.6
249	40.562	0.163	0.064	2.71	96.6	1.08	-	3.2	0.0	84	165	72	65.6
250	40.726	0.164	0.065	2.72	96.6	1.08	99	3.1	0.0	84	164	72	65.8
251	40.890	0.164	0.066	2.71	96.6	1.06	-	3.1	0.0	84	164	72	65.8
252	41.054	0.164	0.066	2.71	96.6	1.09	-	3.1	0.0	84	164	72	65.8
253	41.219	0.165	0.066	2.71	96.7	1.1	-	3.0	0.0	84	164	72	65.8
254	41.381	0.162	0.065	2.71	96.7	1.09	-	3.0	0.0	84	164	72	65.8
255	41.546	0.165	0.065	2.71	96.7	1.09	-	3.0	0.0	84	165	72	65.8
256	41.715	0.169	0.066	2.71	96.7	1.07	-	2.9	0.0	84	166	72	65.7
257	41.873	0.158	0.064	2.71	96.6	1.08	-	2.9	0.0	84	166	72	65.7
258	42.038	0.165	0.065	2.70	96.7	1.08	-	2.9	0.0	84	166	72	65.8
259	42.207	0.169	0.066	2.71	96.6	1.07	-	2.9	0.0	84	165	72	65.8
260	42.366	0.159	0.065	2.70	96.7	1.09	99	2.8	0.0	84	165	72	65.8
261	42.531	0.165	0.066	2.71	96.7	1.08	-	2.8	0.0	84	165	72	65.8
262	42.700	0.169	0.064	2.71	96.7	1.08	-	2.8	0.0	84	166	71	65.7
263	42.857	0.157	0.066	2.70	96.7	1.06	-	2.8	0.0	84	165	71	65.7

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
264	43.024	0.167	0.065	2.71	96.7	1.07	-	2.7	0.0	84	165	71	65.7
265	43.189	0.165	0.065	2.71	96.7	1.07	-	2.7	0.0	84	164	71	65.7
266	43.353	0.164	0.063	2.71	96.7	1.09	-	2.7	0.0	84	164	71	65.7
267	43.518	0.165	0.065	2.70	96.6	1.06	-	2.7	0.0	84	163	71	65.8
268	43.679	0.161	0.065	2.70	96.7	1.11	-	2.6	0.0	84	164	71	65.9
269	43.846	0.167	0.066	2.70	96.7	1.09	-	2.6	0.0	84	164	71	65.9
270	44.010	0.164	0.065	2.71	96.7	1.07	99	2.6	0.0	84	164	71	65.8
271	44.172	0.162	0.066	2.71	96.8	1.11	-	2.5	0.0	84	164	71	65.9
272	44.337	0.165	0.064	2.70	96.7	1.11	-	2.5	0.0	84	164	71	65.8
273	44.505	0.168	0.066	2.71	96.7	1.09	-	2.5	0.0	84	164	71	65.9
274	44.664	0.159	0.066	2.70	96.7	1.08	-	2.5	0.0	84	164	71	65.9
275	44.829	0.165	0.065	2.71	96.7	1.09	-	2.4	0.0	84	164	71	65.8
276	44.998	0.169	0.066	2.70	96.7	1.09	-	2.4	-0.1	84	163	71	65.8
277	45.155	0.157	0.065	2.71	96.7	1.1	-	2.4	0.0	84	163	71	65.8
278	45.323	0.168	0.065	2.69	96.8	1.07	-	2.3	0.0	84	163	71	65.8
279	45.490	0.167	0.065	2.70	96.7	1.07	-	2.3	0.0	84	164	71	65.8
280	45.648	0.158	0.066	2.69	96.7	1.11	98	2.3	0.0	84	164	71	65.8
281	45.816	0.168	0.066	2.71	96.7	1.07	-	2.3	0.0	84	164	71	65.9
282	45.977	0.161	0.066	2.71	96.7	1.07	-	2.2	0.0	84	164	71	65.9
283	46.144	0.167	0.065	2.69	96.7	1.1	-	2.2	0.0	84	164	71	65.7
284	46.307	0.163	0.065	2.69	96.8	1.08	-	2.2	0.0	84	163	71	65.9
285	46.469	0.162	0.066	2.70	96.8	1.08	-	2.2	0.0	83	161	71	65.8
286	46.634	0.165	0.067	2.69	96.8	1.1	-	2.1	0.0	84	162	71	65.8
287	46.799	0.165	0.066	2.71	96.7	1.08	-	2.1	0.0	83	162	71	65.7
288	46.961	0.162	0.067	2.70	96.8	1.09	-	2.1	0.0	84	162	71	65.7
289	47.126	0.165	0.066	2.71	96.8	1.07	-	2.0	0.0	83	163	71	65.7
290	47.295	0.169	0.065	2.70	96.8	1.11	99	2.0	0.0	85	170	71	65.8
291	47.451	0.156	0.064	2.70	96.8	1.07	-	2.0	0.0	84	169	71	65.8
292	47.620	0.169	0.065	2.71	96.7	1.1	-	2.0	0.0	84	168	71	65.8
293	47.785	0.165	0.065	2.69	96.8	1.07	-	1.9	-0.1	84	167	71	65.7
294	47.944	0.159	0.067	2.69	96.8	1.1	-	1.9	0.0	84	167	71	65.7
295	48.112	0.168	0.065	2.69	96.8	1.08	-	1.9	0.0	84	166	71	65.7
296	48.272	0.160	0.064	2.70	96.8	1.1	-	1.8	0.0	84	166	71	65.8

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
297	48.440	0.168	0.065	2.68	96.7	1.09	-	1.8	0.0	83	165	71	65.7
298	48.603	0.163	0.066	2.69	96.8	1.1	-	1.8	0.0	84	164	71	65.6
299	48.765	0.162	0.066	2.69	96.7	1.09	-	1.8	0.0	83	163	71	65.6
300	48.932	0.167	0.066	2.68	96.8	1.08	98	1.7	0.0	83	163	71	65.8
301	49.095	0.163	0.065	2.70	96.8	1.09	-	1.7	0.0	84	163	71	65.9
302	49.255	0.160	0.066	2.69	96.8	1.09	-	1.7	0.0	84	164	71	65.6
303	49.424	0.169	0.068	2.70	96.8	1.1	-	1.6	0.0	83	164	71	65.8
304	49.586	0.162	0.065	2.69	96.8	1.09	-	1.6	0.0	84	164	71	65.8
305	49.747	0.161	0.066	2.70	96.8	1.1	-	1.5	-0.1	84	165	71	65.7
306	49.914	0.167	0.066	2.68	96.8	1.08	-	1.5	0.0	84	166	71	65.7
307	50.078	0.164	0.066	2.69	96.8	1.09	-	1.5	0.0	83	166	71	65.8
308	50.240	0.162	0.066	2.70	96.8	1.11	-	1.5	0.0	83	165	71	65.9
309	50.405	0.165	0.065	2.69	96.8	1.08	-	1.4	0.0	83	165	71	65.8
310	50.568	0.163	0.065	2.68	96.8	1.08	98	1.4	0.0	83	165	71	66
311	50.731	0.163	0.066	2.68	96.8	1.11	-	1.4	0.0	83	164	71	65.9
312	50.896	0.165	0.066	2.68	96.8	1.08	-	1.4	0.0	84	164	71	65.8
313	51.060	0.164	0.067	2.68	96.8	1.09	-	1.3	0.0	83	163	71	65.7
314	51.225	0.165	0.066	2.69	96.8	1.1	-	1.3	0.0	83	163	71	65.7
315	51.387	0.162	0.067	2.69	96.8	1.08	-	1.3	0.0	83	163	71	65.7
316	51.547	0.160	0.066	2.69	96.8	1.1	-	1.2	0.0	83	163	71	65.5
317	51.717	0.170	0.066	2.69	96.8	1.09	-	1.2	0.0	83	163	71	65.1
318	51.876	0.159	0.066	2.69	96.8	1.09	-	1.2	0.0	83	164	71	65.2
319	52.040	0.164	0.066	2.70	96.8	1.11	-	1.1	0.0	83	164	71	65.4
320	52.209	0.169	0.066	2.69	96.8	1.1	99	1.1	0.0	83	164	71	65.4
321	52.367	0.158	0.065	2.68	96.8	1.09	-	1.1	0.0	83	164	71	65.5
322	52.532	0.165	0.065	2.69	96.8	1.1	-	1.1	0.0	83	164	71	65.5
323	52.699	0.167	0.067	2.68	96.8	1.09	-	1.0	0.0	83	165	71	65.5
324	52.858	0.159	0.066	2.68	96.8	1.1	-	1.0	0.0	83	165	71	65.5
325	53.025	0.167	0.066	2.69	96.8	1.08	-	1.0	0.0	83	164	71	65.6
326	53.188	0.163	0.065	2.67	96.8	1.09	-	0.9	0.0	83	164	71	65.6
327	53.348	0.160	0.066	2.68	96.8	1.11	-	0.9	0.0	84	165	71	65.6
328	53.517	0.169	0.066	2.68	96.8	1.1	-	0.9	0.0	83	164	71	65.6
329	53.677	0.160	0.066	2.69	96.8	1.11	-	0.9	0.0	83	164	71	65.6

BOX A TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco

Job #: 25-454

Model: G2-N50WTS

Tracking #: 240

Run #: 1

Technician: AK

Date: 11/24/2025

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
330	53.840	0.163	0.066	2.69	96.7	1.08	98	0.8	0.0	83	164	71	65.6
331	54.009	0.169	0.066	2.69	96.8	1.11	-	0.8	0.0	84	164	71	65.7
332	54.167	0.158	0.067	2.69	96.8	1.08	-	0.8	0.0	84	164	71	65.7
333	54.332	0.165	0.066	2.68	96.7	1.11	-	0.7	0.0	83	164	71	65.7
334	54.499	0.167	0.066	2.68	96.7	1.1	-	0.7	0.0	83	164	71	65.8
335	54.658	0.159	0.067	2.67	96.8	1.09	-	0.7	0.0	83	163	71	65.8
336	54.822	0.164	0.066	2.68	96.7	1.1	-	0.7	0.0	83	162	71	65.8
337	54.991	0.169	0.064	2.68	96.7	1.1	-	0.6	0.0	83	162	71	65.8
338	55.147	0.156	0.064	2.68	96.8	1.11	-	0.6	0.0	83	162	71	65.8
339	55.315	0.168	0.065	2.68	96.7	1.12	-	0.6	-0.1	84	162	71	65.8
340	55.481	0.166	0.067	2.68	96.7	1.1	98	0.6	0.0	83	161	71	65.8
341	55.639	0.158	0.066	2.69	96.7	1.11	-	0.5	0.0	84	162	71	65.7
342	55.809	0.170	0.065	2.68	96.8	1.1	-	0.5	0.0	83	162	71	65.7
343	55.966	0.157	0.066	2.67	96.8	1.11	-	0.5	0.0	83	162	71	65.8
344	56.131	0.165	0.065	2.68	96.8	1.11	-	0.4	0.0	84	162	71	65.8
345	56.298	0.167	0.067	2.68	96.8	1.08	-	0.4	0.0	84	162	71	65.7
346	56.457	0.159	0.066	2.67	96.8	1.09	-	0.4	0.0	84	162	71	65.8
347	56.621	0.164	0.065	2.67	96.8	1.1	-	0.4	0.0	83	162	71	65.8
348	56.789	0.168	0.065	2.69	96.8	1.11	-	0.3	0.0	83	161	71	65.8
349	56.950	0.161	0.066	2.68	96.8	1.13	-	0.3	0.0	83	161	71	65.9
350	57.113	0.163	0.066	2.68	96.8	1.1	97	0.3	0.0	85	169	71	65.9
351	57.276	0.163	0.064	2.68	96.8	1.11	-	0.3	0.0	84	168	71	65.9
352	57.439	0.163	0.066	2.68	96.8	1.11	-	0.2	0.0	84	167	71	65.9
353	57.604	0.165	0.066	2.68	96.8	1.12	-	0.2	0.0	84	166	72	65.9
354	57.764	0.160	0.066	2.67	96.9	1.14	-	0.2	0.0	84	165	72	65.9
355	57.932	0.168	0.066	2.67	96.9	1.1	-	0.1	0.0	84	164	72	65.9
356	58.094	0.162	0.066	2.68	96.9	1.09	-	0.1	0.0	84	164	72	65.8
357	58.255	0.161	0.066	2.68	96.9	1.13	-	0.1	0.0	84	164	72	65.9
358	58.419	0.164	0.064	2.68	96.9	1.11	-	0.1	0.0	84	164	72	65.9
359	58.588	0.169	0.067	2.68	96.9	1.12	-	0.0	0.0	84	163	72	66
360	58.744	0.156	0.066	2.67	96.9	1.09	98	0.0	0.0	84	163	72	66
Avg/Tot	58.744	0.163	0.065	2.70	92	1.04	100			92	205	72	65

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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		0.05	68.9	0.95		68	-0.055	6.89	0.01
1	0.128	0.128	2.51	68.8	1.87	-	70	-0.055	6.38	0.02
2	0.282	0.154	2.52	68.8	2.05	-	70	-0.053	6.24	0.01
3	0.433	0.151	2.52	68.8	1.99	-	71	-0.052	7.29	0.02
4	0.588	0.155	2.52	68.8	1.8	-	71	-0.055	6.72	0.01
5	0.740	0.152	2.53	68.9	1.84	-	71	-0.054	6.56	0.01
6	0.896	0.156	2.52	69	2.13	-	71	-0.054	7.39	0.01
7	1.047	0.151	2.53	69.1	2.1	-	72	-0.054	6.43	0.01
8	1.203	0.156	2.54	69.3	1.95	-	72	-0.055	6.31	0.01
9	1.355	0.152	2.54	69.5	1.59	-	72	-0.054	6.43	0.02
10	1.511	0.156	2.55	69.7	1.87	101	72	-0.054	6.30	0.02
11	1.666	0.155	2.54	69.9	2.1	-	72	-0.054	6.56	0.01
12	1.818	0.152	2.54	70.1	2.14	-	72	-0.054	7.02	0.01
13	1.976	0.158	2.54	70.3	1.94	-	73	-0.054	6.91	0.01
14	2.129	0.153	2.54	70.6	1.57	-	73	-0.054	7.55	0.01
15	2.287	0.158	2.55	70.9	2	-	73	-0.056	7.41	0.02
16	2.438	0.151	2.55	71.1	2.04	-	73	-0.053	7.09	0.01
17	2.593	0.155	2.54	71.5	1.76	-	73	-0.054	7.40	0.01
18	2.745	0.152	2.55	71.7	1.56	-	73	-0.053	6.87	0.02
19	2.901	0.156	2.55	72	1.67	-	73	-0.053	6.66	0.01
20	3.057	0.156	2.56	72.3	1.62	103	73	-0.053	7.09	0.01
21	3.209	0.152	2.55	72.6	1.56	-	73	-0.054	6.78	0.01
22	3.367	0.158	2.56	72.9	2.1	-	73	-0.053	7.11	0.02
23	3.520	0.153	2.56	73.2	1.64	-	74	-0.053	6.54	0.01
24	3.677	0.157	2.56	73.6	1.93	-	74	-0.054	7.78	0.01
25	3.830	0.153	2.56	73.9	1.86	-	74	-0.053	6.92	0.01
26	3.987	0.157	2.56	74.3	2.15	-	74	-0.053	7.05	0.01
27	4.144	0.157	2.56	74.6	1.57	-	74	-0.054	7.00	0.02
28	4.297	0.153	2.56	74.9	1.75	-	74	-0.055	6.78	0.01
29	4.455	0.158	2.56	75.3	2.03	-	74	-0.054	6.99	0.01
30	4.609	0.154	2.57	75.6	2.05	103	74	-0.053	6.77	0.01
31	4.769	0.160	2.56	76	1.77	-	74	-0.052	6.52	0.01

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	4.924	0.155	2.56	76.3	1.68	-	74	-0.053	6.86	0.02
33	5.081	0.157	2.57	76.6	1.87	-	74	-0.055	6.89	0.02
34	5.239	0.158	2.58	77	1.95	-	74	-0.055	7.28	0.02
35	5.392	0.153	2.57	77.3	1.64	-	74	-0.055	7.47	0.01
36	5.549	0.157	2.58	77.6	2.13	-	74	-0.054	7.06	0.02
37	5.703	0.154	2.57	77.9	1.59	-	74	-0.054	7.63	0.02
38	5.861	0.158	2.57	78.2	2	-	74	-0.052	7.15	0.01
39	6.017	0.156	2.57	78.6	1.69	-	74	-0.054	6.49	0.02
40	6.174	0.157	2.57	78.9	1.62	103	74	-0.052	5.72	0.01
41	6.332	0.158	2.57	79.2	2.02	-	74	-0.053	6.97	0.01
42	6.486	0.154	2.58	79.5	1.62	-	75	-0.053	6.99	0.01
43	6.646	0.160	2.57	79.8	1.64	-	74	-0.052	6.90	0.01
44	6.800	0.154	2.57	80.1	1.73	-	75	-0.055	6.12	0.02
45	6.959	0.159	2.57	80.5	1.97	-	75	-0.054	5.81	0.01
46	7.117	0.158	2.58	80.8	2.16	-	75	-0.053	6.73	0.01
47	7.273	0.156	2.58	81.1	1.63	-	75	-0.053	6.57	0.01
48	7.433	0.160	2.58	81.3	1.94	-	75	-0.053	7.59	0.01
49	7.588	0.155	2.59	81.6	2.16	-	75	-0.055	7.23	0.01
50	7.747	0.159	2.58	81.8	1.77	103	75	-0.053	7.14	0.02
51	7.907	0.160	2.59	82.1	2.14	-	75	-0.056	7.92	0.01
52	8.063	0.156	2.59	82.4	1.96	-	75	-0.056	7.02	0.01
53	8.222	0.159	2.57	82.6	1.66	-	75	-0.053	6.39	0.01
54	8.378	0.156	2.58	82.9	1.73	-	75	-0.053	6.82	0.01
55	8.538	0.160	2.58	83.2	1.59	-	75	-0.056	6.98	0.01
56	8.691	0.153	2.57	83.5	2.16	-	75	-0.052	5.60	0.01
57	8.850	0.159	2.58	83.7	2.15	-	75	-0.053	5.81	0.01
58	9.009	0.159	2.58	84	1.58	-	75	-0.053	5.61	0.01
59	9.165	0.156	2.58	84.2	1.59	-	75	-0.055	7.99	0.02
60	9.326	0.161	2.59	84.4	1.9	103	75	-0.054	6.84	0.01
61	9.481	0.155	2.59	84.7	1.91	-	75	-0.052	6.59	0.01
62	9.641	0.160	2.58	84.9	1.59	-	75	-0.053	5.46	0.01
63	9.799	0.158	2.59	85.2	1.63	-	75	-0.054	3.76	0.03

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	9.955	0.156	2.58	85.4	2.05	-	75	-0.051	3.86	0.02
65	10.117	0.162	2.59	85.6	1.59	-	75	-0.052	4.20	0.01
66	10.272	0.155	2.59	85.8	1.65	-	75	-0.050	3.51	0.04
67	10.432	0.160	2.59	86	1.96	-	75	-0.049	3.70	0.02
68	10.592	0.160	2.59	86.3	2.15	-	75	-0.050	3.33	0.04
69	10.747	0.155	2.58	86.5	1.72	-	75	-0.049	3.69	0.03
70	10.912	0.165	2.59	86.7	2.15	103	75	-0.049	3.68	0.03
71	11.067	0.155	2.59	86.8	1.88	-	75	-0.049	5.25	0.01
72	11.228	0.161	2.59	87	2.02	-	75	-0.047	3.17	0.06
73	11.387	0.159	2.59	87.2	1.7	-	75	-0.049	3.37	0.04
74	11.543	0.156	2.59	87.4	2.14	-	75	-0.049	3.42	0.05
75	11.702	0.159	2.59	87.6	1.62	-	75	-0.049	3.65	0.02
76	11.859	0.157	2.59	87.8	2.15	-	75	-0.048	3.18	0.05
77	12.019	0.160	2.59	87.9	1.61	-	75	-0.049	3.35	0.04
78	12.178	0.159	2.59	88	1.65	-	75	-0.048	2.54	0.06
79	12.335	0.157	2.58	88.2	1.81	-	75	-0.047	2.92	0.05
80	12.497	0.162	2.60	88.4	1.69	101	75	-0.047	3.38	0.05
81	12.653	0.156	2.59	88.7	2.17	-	75	-0.046	3.93	0.03
82	12.814	0.161	2.59	88.7	1.59	-	75	-0.045	2.92	0.06
83	12.973	0.159	2.59	88.9	1.82	-	75	-0.048	3.57	0.04
84	13.131	0.158	2.59	89	2.11	-	75	-0.047	3.72	0.03
85	13.292	0.161	2.59	89.1	2.16	-	75	-0.050	3.72	0.03
86	13.448	0.156	2.58	89.4	1.73	-	75	-0.048	2.98	0.06
87	13.609	0.161	2.59	89.5	2.18	-	75	-0.046	2.69	0.08
88	13.772	0.163	2.59	89.6	1.62	-	75	-0.048	2.49	0.08
89	13.929	0.157	2.59	89.7	1.63	-	75	-0.046	3.40	0.04
90	14.090	0.161	2.59	89.9	1.59	101	74	-0.047	4.57	0.02
91	14.248	0.158	2.58	90	1.8	-	74	-0.050	4.24	0.03
92	14.407	0.159	2.59	90.1	1.63	-	74	-0.048	3.86	0.03
93	14.565	0.158	2.59	90.2	1.81	-	74	-0.049	4.04	0.02
94	14.723	0.158	2.59	90.2	1.64	-	74	-0.048	4.00	0.03
95	14.884	0.161	2.60	90.4	2.02	-	74	-0.045	2.99	0.05

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	15.043	0.159	2.59	90.6	1.65	-	74	-0.046	1.89	0.10
97	15.201	0.158	2.59	90.7	1.88	-	74	-0.045	2.44	0.07
98	15.362	0.161	2.60	90.8	2.1	-	74	-0.047	3.66	0.04
99	15.520	0.158	2.59	90.9	2.09	-	74	-0.047	2.75	0.07
100	15.680	0.160	2.59	91	1.64	100	74	-0.047	3.43	0.05
101	15.840	0.160	2.59	91	1.84	-	74	-0.048	4.24	0.04
102	15.998	0.158	2.59	91.1	1.72	-	74	-0.048	4.20	0.03
103	16.160	0.162	2.59	91.1	1.71	-	74	-0.047	3.47	0.05
104	16.317	0.157	2.59	91.2	1.71	-	74	-0.049	4.16	0.02
105	16.481	0.164	2.59	91.3	2.18	-	74	-0.048	3.46	0.04
106	16.640	0.159	2.59	91.4	2.08	-	74	-0.046	3.51	0.06
107	16.798	0.158	2.59	91.5	1.96	-	74	-0.049	4.15	0.02
108	16.960	0.162	2.59	91.6	1.84	-	74	-0.050	4.34	0.02
109	17.114	0.154	2.60	91.7	2.02	-	74	-0.049	3.68	0.06
110	17.276	0.162	2.59	91.8	2.04	102	74	-0.050	4.19	0.02
111	17.436	0.160	2.59	91.9	1.61	-	74	-0.052	3.43	0.04
112	17.594	0.158	2.59	91.9	2.19	-	74	-0.048	3.89	0.03
113	17.755	0.161	2.59	92	1.66	-	74	-0.049	2.89	0.05
114	17.913	0.158	2.59	92.1	2.14	-	74	-0.047	3.28	0.04
115	18.074	0.161	2.59	92.2	1.59	-	74	-0.046	3.52	0.03
116	18.234	0.160	2.58	92.3	1.66	-	74	-0.047	4.32	0.02
117	18.392	0.158	2.58	92.3	1.66	-	74	-0.047	3.48	0.04
118	18.553	0.161	2.59	92.4	2.13	-	74	-0.047	3.18	0.05
119	18.713	0.160	2.58	92.4	2.07	-	74	-0.049	3.95	0.03
120	18.874	0.161	2.59	92.4	1.92	102	74	-0.049	4.22	0.03
121	19.036	0.162	2.59	92.4	1.98	-	74	-0.045	3.83	0.03
122	19.193	0.157	2.59	92.4	2.02	-	74	-0.047	4.14	0.02
123	19.354	0.161	2.59	92.5	2.05	-	74	-0.048	4.11	0.03
124	19.515	0.161	2.59	92.5	1.59	-	74	-0.049	5.31	0.01
125	19.669	0.154	2.57	92.6	2.18	-	74	-0.049	3.96	0.03
126	19.832	0.163	2.59	92.7	2.19	-	74	-0.047	4.08	0.03
127	19.989	0.157	2.59	92.8	2.01	-	74	-0.049	3.95	0.04

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	20.150	0.161	2.59	92.9	2.08	-	74	-0.051	3.51	0.04
129	20.310	0.160	2.58	92.9	2.19	-	74	-0.049	3.57	0.03
130	20.468	0.158	2.58	92.9	2.15	100	74	-0.048	2.81	0.07
131	20.630	0.162	2.60	93	1.65	-	74	-0.048	4.54	0.02
132	20.787	0.157	2.58	93	2.13	-	74	-0.048	3.54	0.04
133	20.948	0.161	2.59	93	1.72	-	74	-0.047	4.11	0.03
134	21.111	0.163	2.58	93.1	1.73	-	74	-0.049	3.26	0.06
135	21.269	0.158	2.58	93.1	2.06	-	74	-0.046	4.04	0.02
136	21.427	0.158	2.58	93.2	2.1	-	74	-0.051	3.33	0.05
137	21.587	0.160	2.58	93.2	1.88	-	74	-0.049	3.72	0.04
138	21.745	0.158	2.58	93.2	1.81	-	74	-0.048	4.25	0.02
139	21.907	0.162	2.58	93.4	1.73	-	74	-0.048	3.54	0.03
140	22.065	0.158	2.58	93.5	1.73	100	74	-0.049	3.49	0.04
141	22.225	0.160	2.58	93.5	1.6	-	74	-0.048	3.20	0.05
142	22.386	0.161	2.58	93.5	2.06	-	74	-0.050	3.52	0.03
143	22.543	0.157	2.58	93.6	2.15	-	74	-0.048	3.48	0.03
144	22.708	0.165	2.58	93.7	1.68	-	74	-0.049	4.13	0.02
145	22.865	0.157	2.57	93.6	1.89	-	74	-0.047	2.27	0.07
146	23.023	0.158	2.57	93.6	2.03	-	74	-0.050	2.84	0.05
147	23.183	0.160	2.58	93.7	1.87	-	74	-0.050	3.91	0.02
148	23.341	0.158	2.58	93.7	1.75	-	74	-0.047	4.23	0.03
149	23.503	0.162	2.58	93.7	1.99	-	74	-0.047	3.23	0.06
150	23.660	0.157	2.57	93.8	1.65	100	74	-0.048	3.18	0.05
151	23.824	0.164	2.57	93.8	1.72	-	74	-0.048	3.40	0.04
152	23.983	0.159	2.57	93.9	2.07	-	74	-0.047	4.38	0.02
153	24.139	0.156	2.58	93.9	1.89	-	74	-0.048	3.37	0.04
154	24.300	0.161	2.57	93.9	1.88	-	74	-0.048	4.19	0.03
155	24.459	0.159	2.57	93.9	2.01	-	74	-0.050	4.11	0.02
156	24.618	0.159	2.58	94	1.93	-	75	-0.048	3.98	0.03
157	24.782	0.164	2.57	94.1	2.18	-	75	-0.048	4.16	0.03
158	24.939	0.157	2.58	94.1	2.05	-	75	-0.048	3.05	0.06
159	25.097	0.158	2.57	94.2	1.78	-	75	-0.048	3.05	0.05

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	25.257	0.160	2.57	94.2	2.2	101	75	-0.049	3.72	0.03
161	25.415	0.158	2.57	94.2	2	-	75	-0.047	4.46	0.02
162	25.579	0.164	2.57	94.3	2.19	-	75	-0.048	3.53	0.04
163	25.734	0.155	2.57	94.3	1.71	-	75	-0.048	3.20	0.05
164	25.894	0.160	2.57	94.4	2.09	-	75	-0.047	3.68	0.02
165	26.055	0.161	2.57	94.4	1.89	-	75	-0.048	3.75	0.03
166	26.211	0.156	2.57	94.5	1.76	-	75	-0.047	3.15	0.06
167	26.377	0.166	2.57	94.4	2.11	-	75	-0.051	3.18	0.06
168	26.531	0.154	2.57	94.5	2.08	-	75	-0.048	4.86	0.02
169	26.692	0.161	2.57	94.6	1.64	-	75	-0.044	3.67	0.06
170	26.854	0.162	2.57	94.6	1.63	101	75	-0.046	3.09	0.07
171	27.009	0.155	2.56	94.6	1.65	-	75	-0.047	4.46	0.03
172	27.172	0.163	2.56	94.7	2	-	75	-0.048	3.80	0.02
173	27.328	0.156	2.56	94.7	2.11	-	75	-0.049	4.07	0.03
174	27.492	0.164	2.57	94.7	1.64	-	75	-0.049	5.12	0.02
175	27.649	0.157	2.56	94.7	2.18	-	75	-0.051	4.23	0.02
176	27.807	0.158	2.56	94.8	1.91	-	75	-0.045	2.52	0.07
177	27.968	0.161	2.56	94.8	1.94	-	75	-0.046	2.45	0.08
178	28.129	0.161	2.55	94.7	1.66	-	75	-0.048	4.12	0.02
179	28.286	0.157	2.56	94.9	2.02	-	75	-0.049	3.26	0.04
180	28.445	0.159	2.55	95	1.63	101	75	-0.049	4.57	0.02
181	28.607	0.162	2.56	95	2.07	-	75	-0.042	3.48	0.05
182	28.764	0.157	2.57	95	1.62	-	75	-0.040	4.72	0.02
183	28.924	0.160	2.56	95	1.95	-	75	-0.037	3.57	0.02
184	29.082	0.158	2.56	95	1.61	-	75	-0.035	3.88	0.01
185	29.247	0.165	2.56	95	1.74	-	75	-0.037	3.72	0.01
186	29.401	0.154	2.57	95.1	1.61	-	74	-0.036	3.85	0.01
187	29.561	0.160	2.56	95.1	2.21	-	74	-0.033	3.00	0.03
188	29.722	0.161	2.57	95.1	2.16	-	74	-0.034	2.51	0.05
189	29.879	0.157	2.57	95.2	1.68	-	74	-0.032	3.82	0.01
190	30.042	0.163	2.56	95.2	1.63	100	74	-0.035	2.94	0.02
191	30.198	0.156	2.56	95.2	2.17	-	74	-0.031	3.10	0.02

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	30.362	0.164	2.56	95.2	1.73	-	74	-0.035	2.96	0.03
193	30.520	0.158	2.56	95.2	1.64	-	74	-0.029	4.05	0.01
194	30.677	0.157	2.56	95.3	1.84	-	74	-0.032	4.48	0.01
195	30.840	0.163	2.56	95.3	1.7	-	74	-0.029	3.15	0.03
196	30.999	0.159	2.57	95.4	1.78	-	74	-0.031	4.28	0.02
197	31.157	0.158	2.56	95.4	2.06	-	74	-0.034	2.72	0.06
198	31.317	0.160	2.56	95.4	1.98	-	74	-0.031	4.64	0.02
199	31.478	0.161	2.56	95.4	1.79	-	74	-0.031	3.49	0.02
200	31.636	0.158	2.57	95.5	2	99	74	-0.031	3.14	0.02
201	31.795	0.159	2.56	95.4	1.7	-	74	-0.031	4.02	0.01
202	31.954	0.159	2.56	95.5	1.7	-	73	-0.031	3.86	0.01
203	32.118	0.164	2.56	95.5	1.62	-	74	-0.031	3.64	0.01
204	32.273	0.155	2.56	95.4	2.1	-	73	-0.032	2.55	0.06
205	32.433	0.160	2.56	95.6	1.61	-	73	-0.032	4.83	0.01
206	32.596	0.163	2.56	95.6	1.6	-	73	-0.031	4.95	0.01
207	32.751	0.155	2.56	95.6	2.16	-	73	-0.032	3.86	0.04
208	32.913	0.162	2.56	95.7	2	-	73	-0.035	6.08	0.01
209	33.070	0.157	2.56	95.7	1.97	-	73	-0.032	4.11	0.01
210	33.234	0.164	2.56	95.8	1.86	100	73	-0.033	4.44	0.01
211	33.392	0.158	2.56	95.8	2.2	-	73	-0.032	3.63	0.02
212	33.548	0.156	2.56	95.8	2	-	73	-0.032	4.17	0.02
213	33.714	0.166	2.56	95.8	2.11	-	73	-0.035	3.02	0.02
214	33.867	0.153	2.56	95.8	1.67	-	73	-0.030	2.92	0.03
215	34.028	0.161	2.55	95.8	2.19	-	73	-0.033	2.78	0.03
216	34.188	0.160	2.55	95.8	1.65	-	73	-0.032	2.24	0.04
217	34.349	0.161	2.56	95.8	1.83	-	73	-0.032	3.79	0.01
218	34.508	0.159	2.55	95.9	1.64	-	73	-0.031	2.53	0.03
219	34.664	0.156	2.55	96	1.65	-	73	-0.030	2.70	0.04
220	34.825	0.161	2.55	95.9	2.21	99	73	-0.031	2.97	0.02
221	34.988	0.163	2.55	96	1.84	-	73	-0.032	3.77	0.02
222	35.143	0.155	2.55	96	1.63	-	73	-0.032	4.72	0.01
223	35.304	0.161	2.56	96.1	1.75	-	73	-0.029	3.50	0.02

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	35.466	0.162	2.55	96.1	1.69	-	73	-0.030	3.17	0.01
225	35.622	0.156	2.56	96.1	1.87	-	73	-0.033	3.10	0.02
226	35.782	0.160	2.55	96.1	1.94	-	73	-0.030	3.52	0.03
227	35.940	0.158	2.55	96.1	1.85	-	73	-0.031	3.80	0.01
228	36.103	0.163	2.55	96.1	1.74	-	73	-0.030	3.68	0.01
229	36.260	0.157	2.55	96.1	2.2	-	73	-0.032	3.74	0.01
230	36.418	0.158	2.55	96.1	2.22	99	73	-0.035	3.33	0.03
231	36.583	0.165	2.55	96.1	2.03	-	73	-0.030	3.39	0.02
232	36.737	0.154	2.56	96.2	1.95	-	73	-0.033	1.97	0.07
233	36.897	0.160	2.56	96.1	1.82	-	73	-0.028	3.00	0.02
234	37.058	0.161	2.56	96.2	1.63	-	73	-0.029	3.95	0.01
235	37.217	0.159	2.55	96.3	1.74	-	73	-0.031	3.00	0.03
236	37.377	0.160	2.55	96.3	1.76	-	73	-0.031	3.79	0.01
237	37.534	0.157	2.56	96.2	1.72	-	73	-0.035	2.85	0.03
238	37.698	0.164	2.55	96.3	2.07	-	73	-0.032	3.96	0.01
239	37.855	0.157	2.56	96.3	1.91	-	73	-0.033	3.35	0.01
240	38.012	0.157	2.56	96.4	1.65	98	73	-0.031	3.76	0.01
241	38.175	0.163	2.55	96.3	2.21	-	73	-0.032	3.89	0.01
242	38.334	0.159	2.55	96.4	1.7	-	73	-0.034	3.00	0.04
243	38.492	0.158	2.54	96.4	1.67	-	73	-0.034	5.21	0.01
244	38.652	0.160	2.56	96.4	1.75	-	73	-0.030	4.80	0.01
245	38.812	0.160	2.55	96.4	2.15	-	73	-0.028	3.70	0.01
246	38.971	0.159	2.55	96.4	2.15	-	73	-0.032	3.74	0.02
247	39.128	0.157	2.55	96.5	2.19	-	73	-0.032	3.53	0.01
248	39.289	0.161	2.55	96.5	1.66	-	73	-0.035	3.83	0.01
249	39.452	0.163	2.55	96.5	1.66	-	73	-0.031	3.46	0.02
250	39.607	0.155	2.54	96.5	1.63	99	73	-0.030	3.56	0.02
251	39.768	0.161	2.55	96.4	1.7	-	73	-0.032	3.51	0.02
252	39.929	0.161	2.55	96.5	1.64	-	73	-0.032	3.14	0.02
253	40.085	0.156	2.55	96.6	2.2	-	73	-0.032	3.20	0.02
254	40.246	0.161	2.55	96.6	1.74	-	73	-0.031	4.54	0.01
255	40.404	0.158	2.55	96.6	2.19	-	73	-0.032	4.07	0.01

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	40.566	0.162	2.55	96.6	1.8	-	73	-0.033	4.69	0.01
257	40.724	0.158	2.54	96.5	1.79	-	73	-0.034	4.40	0.01
258	40.881	0.157	2.55	96.6	1.65	-	73	-0.034	3.33	0.01
259	41.046	0.165	2.55	96.6	2.05	-	73	-0.033	3.25	0.02
260	41.200	0.154	2.55	96.6	1.64	99	73	-0.033	2.29	0.06
261	41.360	0.160	2.55	96.7	1.75	-	73	-0.035	4.10	0.02
262	41.523	0.163	2.56	96.6	1.92	-	73	-0.030	3.59	0.01
263	41.678	0.155	2.54	96.6	2.09	-	73	-0.034	3.73	0.01
264	41.840	0.162	2.54	96.7	2.13	-	73	-0.035	3.35	0.01
265	41.997	0.157	2.55	96.6	1.79	-	73	-0.033	3.03	0.02
266	42.160	0.163	2.54	96.6	1.62	-	73	-0.032	3.01	0.02
267	42.317	0.157	2.55	96.6	1.68	-	73	-0.032	2.56	0.04
268	42.475	0.158	2.55	96.7	2.08	-	73	-0.031	4.28	0.01
269	42.639	0.164	2.55	96.7	1.65	-	73	-0.032	4.31	0.01
270	42.793	0.154	2.55	96.7	2.13	99	73	-0.033	3.82	0.01
271	42.954	0.161	2.54	96.7	1.62	-	73	-0.032	3.23	0.01
272	43.114	0.160	2.55	96.7	1.81	-	73	-0.030	3.72	0.01
273	43.274	0.160	2.55	96.7	1.66	-	73	-0.030	4.33	0.01
274	43.432	0.158	2.55	96.7	1.92	-	73	-0.031	2.89	0.03
275	43.590	0.158	2.55	96.6	2.18	-	73	-0.034	2.82	0.02
276	43.752	0.162	2.55	96.7	1.63	-	73	-0.034	2.26	0.05
277	43.910	0.158	2.54	96.7	1.84	-	73	-0.033	3.61	0.02
278	44.067	0.157	2.54	96.7	1.86	-	73	-0.033	3.94	0.01
279	44.230	0.163	2.55	96.7	1.92	-	73	-0.034	3.98	0.01
280	44.387	0.157	2.54	96.7	2.13	99	73	-0.029	3.39	0.01
281	44.546	0.159	2.55	96.7	1.68	-	73	-0.032	3.27	0.02
282	44.706	0.160	2.54	96.7	1.65	-	73	-0.031	3.48	0.01
283	44.866	0.160	2.54	96.7	1.92	-	73	-0.032	3.40	0.01
284	45.024	0.158	2.54	96.7	2.12	-	73	-0.033	4.22	0.01
285	45.183	0.159	2.54	96.7	1.91	-	73	-0.031	2.89	0.03
286	45.341	0.158	2.54	96.7	1.64	-	73	-0.034	3.35	0.01
287	45.503	0.162	2.54	96.7	1.99	-	73	-0.031	4.19	0.01

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	45.660	0.157	2.55	96.7	2.21	-	73	-0.030	4.55	0.01
289	45.819	0.159	2.54	96.8	1.63	-	73	-0.031	4.36	0.01
290	45.983	0.164	2.55	96.7	1.8	99	73	-0.033	3.59	0.01
291	46.137	0.154	2.54	96.7	2	-	73	-0.034	3.64	0.02
292	46.299	0.162	2.54	96.7	1.89	-	73	-0.036	2.77	0.03
293	46.458	0.159	2.55	96.8	1.65	-	73	-0.029	2.79	0.03
294	46.616	0.158	2.54	96.8	1.89	-	73	-0.033	3.36	0.01
295	46.776	0.160	2.54	96.8	2.19	-	73	-0.027	3.67	0.01
296	46.932	0.156	2.54	96.8	2.11	-	73	-0.032	4.47	0.01
297	47.097	0.165	2.54	96.8	2.1	-	73	-0.031	2.93	0.03
298	47.250	0.153	2.54	96.8	2.15	-	73	-0.031	3.67	0.01
299	47.411	0.161	2.53	96.8	1.66	-	73	-0.031	2.67	0.03
300	47.572	0.161	2.54	96.8	2.02	98	73	-0.031	2.88	0.03
301	47.727	0.155	2.53	96.8	2.2	-	73	-0.034	3.69	0.01
302	47.889	0.162	2.54	96.8	1.79	-	73	-0.033	4.58	0.01
303	48.048	0.159	2.53	96.8	1.69	-	73	-0.033	4.39	0.01
304	48.206	0.158	2.54	96.9	2.15	-	73	-0.034	2.82	0.04
305	48.365	0.159	2.54	96.8	1.97	-	73	-0.033	4.59	0.01
306	48.522	0.157	2.54	96.9	1.68	-	73	-0.031	4.97	0.00
307	48.686	0.164	2.54	96.9	1.92	-	73	-0.031	3.95	0.01
308	48.840	0.154	2.53	96.8	1.92	-	73	-0.032	3.20	0.02
309	49.001	0.161	2.53	96.8	2.2	-	73	-0.036	2.74	0.03
310	49.163	0.162	2.54	96.8	1.67	98	73	-0.033	2.89	0.02
311	49.317	0.154	2.52	96.8	1.99	-	73	-0.035	2.38	0.02
312	49.479	0.162	2.53	96.8	2.08	-	73	-0.035	4.38	0.01
313	49.638	0.159	2.53	96.7	1.9	-	73	-0.032	3.87	0.01
314	49.798	0.160	2.53	96.8	1.91	-	73	-0.033	3.11	0.02
315	49.955	0.157	2.54	96.7	1.88	-	73	-0.031	4.06	0.00
316	50.112	0.157	2.53	96.8	1.67	-	73	-0.035	3.74	0.01
317	50.275	0.163	2.54	96.8	2.13	-	73	-0.034	4.58	0.01
318	50.429	0.154	2.54	96.9	1.96	-	73	-0.030	4.15	0.01
319	50.590	0.161	2.53	96.9	1.66	-	73	-0.033	4.48	0.01

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	50.751	0.161	2.53	96.9	2.21	98	73	-0.032	3.31	0.01
321	50.906	0.155	2.53	96.9	1.91	-	73	-0.031	3.19	0.01
322	51.067	0.161	2.53	96.9	1.67	-	73	-0.033	3.86	0.01
323	51.228	0.161	2.53	96.8	2.11	-	73	-0.034	3.69	0.01
324	51.384	0.156	2.53	96.8	1.69	-	73	-0.033	3.74	0.01
325	51.546	0.162	2.53	96.9	1.73	-	73	-0.034	3.97	0.00
326	51.701	0.155	2.53	96.8	1.81	-	73	-0.032	2.96	0.02
327	51.861	0.160	2.54	96.8	1.86	-	73	-0.031	3.68	0.01
328	52.022	0.161	2.53	96.8	2.15	-	73	-0.033	4.29	0.01
329	52.178	0.156	2.53	96.8	1.78	-	73	-0.032	2.78	0.03
330	52.337	0.159	2.53	96.8	2.23	98	73	-0.032	2.60	0.03
331	52.498	0.161	2.54	96.8	1.92	-	73	-0.031	3.54	0.01
332	52.655	0.157	2.54	96.8	2.23	-	73	-0.033	4.60	0.01
333	52.813	0.158	2.53	96.8	1.98	-	73	-0.033	4.38	0.00
334	52.974	0.161	2.53	96.8	2.16	-	73	-0.032	3.10	0.02
335	53.132	0.158	2.53	96.8	1.73	-	73	-0.035	4.30	0.01
336	53.289	0.157	2.53	96.7	2.01	-	73	-0.030	2.30	0.05
337	53.451	0.162	2.53	96.7	2.03	-	73	-0.033	2.59	0.04
338	53.608	0.157	2.53	96.7	2.17	-	73	-0.030	3.71	0.01
339	53.766	0.158	2.53	96.7	2.09	-	73	-0.032	3.38	0.01
340	53.929	0.163	2.53	96.7	1.66	98	73	-0.033	4.55	0.01
341	54.083	0.154	2.53	96.7	1.7	-	73	-0.028	3.38	0.01
342	54.245	0.162	2.52	96.7	2.09	-	73	-0.031	3.75	0.01
343	54.402	0.157	2.53	96.7	1.82	-	73	-0.030	2.54	0.03
344	54.559	0.157	2.53	96.7	1.74	-	73	-0.029	2.66	0.02
345	54.723	0.164	2.53	96.7	1.74	-	73	-0.033	3.34	0.01
346	54.877	0.154	2.53	96.6	2	-	73	-0.029	3.84	0.01
347	55.037	0.160	2.53	96.6	1.67	-	73	-0.031	3.82	0.02
348	55.198	0.161	2.52	96.6	2.17	-	73	-0.032	2.78	0.03
349	55.355	0.157	2.53	96.7	1.75	-	73	-0.032	3.26	0.02
350	55.513	0.158	2.53	96.8	1.73	97	73	-0.032	4.31	0.01
351	55.671	0.158	2.53	96.8	1.65	-	73	-0.032	3.89	0.02

BOX B TEST DATA - ASTM E2779 / ASTM E2515

Client: Enerco
 Model: G2-N50WTS
 Run #: 1

Job #: 25-454
 Tracking #: 240
 Technician: AK
 Date: 11/24/2025

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	55.832	0.161	2.52	96.8	2.23	-	73	-0.029	3.00	0.01
353	55.989	0.157	2.53	96.8	1.71	-	73	-0.033	3.77	0.01
354	56.146	0.157	2.52	96.8	1.97	-	73	-0.034	3.08	0.02
355	56.310	0.164	2.52	96.7	1.93	-	73	-0.035	2.36	0.05
356	56.464	0.154	2.53	96.7	2.23	-	73	-0.032	3.51	0.01
357	56.623	0.159	2.52	96.8	2.2	-	73	-0.035	3.15	0.01
358	56.782	0.159	2.52	96.8	1.71	-	73	-0.034	4.32	0.01
359	56.942	0.160	2.52	96.7	1.8	-	73	-0.032	3.63	0.01
360	57.101	0.159	2.53	96.7	2.02	98	73	-0.031	3.02	0.03
Avg/Tot	57.101	0.159	2.55	91	1.88	100			4.16	0.02

LAB SAMPLE DATA - ASTM E2515

Client: Enerco

Model: G2-N50WTS

Run #: 1

Job #: 25-454

Tracking #: 240

Technician: AK

Date: 11/24/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	A	G01413	229.2	232.2	3.0
	B	G01414	229.2	231.8	2.6
	C - 1st Hour	G01415	228.9	229.7	0.8
	Amb	G01416	228.8	228.9	0.1
Probes	A	5A	116758.8	116759.0	0.2
	B	5B	116877.4	116877.5	0.1
	C - 1st Hour	5C	115856.8	115857.4	0.6
O-rings	A	5A	3534.8	3534.9	0.1
	B	5B	3529.8	3530.1	0.3
	C - 1st Hour	5C	3374.7	3374.7	0.0

Placed in Dessicator on:

11/12/2025

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	232.3	12/1 16:00	232.2	12/3 11:00				
	B	231.9	12/1 16:00	231.8	12/3 11:00				
	C - 1st Hour	229.7	12/1 16:00	229.7	12/3 11:00				
	Amb	228.9	12/1 16:00	228.9	12/3 11:00				
Probes	A	116759.3	12/1 16:00	116759.0	12/3 11:00	116759.0	12/4 8:30		
	B	116877.6	12/1 16:00	116877.5	12/3 11:00				
	C - 1st Hour	115857.9	12/1 16:00	115857.5	12/3 11:00	115857.4	12/4 8:30		
O-Rings	A	3535.0	12/1 16:00	3534.9	12/3 11:00				
	B	3530.2	12/1 16:00	3530.1	12/3 11:00				
	C - 1st Hour	3374.9	12/1 16:00	3374.7	12/3 11:00				

Train A Aggregate, mg: 3.3

Train B Aggregate, mg: 3.0

Train C Aggregate, mg: 1.4

Ambient Aggregate, mg: 0.1

ASTM E2779 Wood Heater Run Sheets

Client: Enerco Job Number: 25-454 Tracking #: 240
Model: G2-N50WTS Run Number: 1 Test Date: 11/24/2025

Pellet Heater Control Settings

High Burn Rate Settings: High Setting

Medium Burn Rate Settings: Medium Setting

Low Burn Rate Settings: Low Setting

Preburn Notes

Preburn Start Time: 08:26

Time	Notes
	-None-

Test Notes

Test Burn Start Time: 09:26

Time	Notes
	-None-

Test Burn End Time: 15:26

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO₂ (%): 17.32 CO (%): 4.350
Mid Gas CO₂ (%): 10.00 CO (%): 2.500

Calibration Results:

	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	08:08	08:09	08:10	16:45	16:46	16:47
CO ₂	0.00	17.32	10.28	-0.03	17.24	10.10
CO	0.000	4.350	2.466	-0.005	4.325	2.425

Flue Gas Probe Leak Check: Initial: 0 Final: 0

Technician Signature: 

Date: 12/22/2025
Page 1 of 1

ASTM E2515 - Glass Fiber Filters

Date:	11/18/25 0900	11/19/25 0100	11/19 18:30	-			
Time:	200.0	200.0	200.0	-			
Avg:	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
G01413	229.0	229.2	-	-	A	25-4584	#1
G01414	229.1	229.2	-	-	A	↓	↓
G01415	229.0	228.9	-	-	A	↓	↓
G01416	229.0	228.8	-	-	A	↓	↓
G01417	230.6	230.7	-	-	A	25-456	#1
G01418	228.5	228.7	-	-	A	↓	↓
G01419	226.4	226.6	-	-	A	↓	↓
G01420	228.5	228.7	-	-	A	↓	↓
G01421	228.1	227.9	-	-	A	25-466	#1
G01422	230.7	230.4	230.5	-	A	↓	↓
G01423	229.6	229.4	-	-	A	↓	↓
G01424	229.0	228.9	-	-	A	↓	↓
G01425	232.5	232.7	-	-	A		#2
G01426	226.5	226.0	226.1	-	A	↓	↓
G01427	227.7	222.1	228.0	-	A	↓	↓
G01428	229.5	229.45	-	-	A	↓	↓

Date:	12/8/25 10:00	12/9/25 15:00	-	-			
Avg Time:	200.0	200.0	-	-			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
G01429	228.6	228.8	-	-	A	25-466	#3
G01430	228.4	228.3	-	-	A	↓	↓
G01431	228.2	228.0	-	-	A	↓	↓
G01432	230.5	230.7	-	-	A	↓	↓
G01433	233.5	233.6	-	-	A		#4
G01434	226.6	226.7	-	-	A	↓	↓
G01435	230.6	230.5	-	-	A	↓	↓
G01436	230.4	230.5	-	-	A	↓	↓
G01437	229.5	229.4	-	-	A		#5
G01438	231.6	231.4	-	-	A	↓	↓
G01439	229.7	229.6	-	-	A	↓	↓
G01440	228.3	228.4	-	-	A	↓	↓
G01441	229.2	229.1	-	-	A		#6
G01442	229.7	229.9	-	-	A	↓	↓
G01443	230.0	229.9	-	-	A	↓	↓
G01444	230.8	230.4	-	-	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	25-457	#1
2B	3572.0	3571.9	-	-	A		
2C	3389.8	3389.9	-	-	A		
3A	3578.5	3578.4	-	-	A	25-456 ^A	#1
3B	3566.6	3566.4	-	-	A		
3C	3621.6	3621.4	-	-	A		
4A	3376.1	3375.9	-	-	A	25-456 ^A	#2
4B	3578.3	3578.2	-	-	A		
4C	3371.6	3371.7	-	-	A		
5A	3534.7	3534.8	-	-	A	25-458 ^A	#1
5B	3529.7	3529.8	-	-	A		
5C	3374.7	3374.7	-	-	A		

Date/Time:	11/21/25 0930	11/24/25 0900	11/25/25 0800				
Audit:	200.0	200.0	200.0				
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
6A	3387.5	3386.3	3386.4	-	A	25-456	#1
6B	3608.5	3607.7	3607.9	-	A		
6C	3395.4	3394.5	3394.3	-	A		
7A	3566.4	3566.0	3565.9	-	A	25-466	#1
7B	3518.2	3517.6	3517.5	-	A		
7C	3400.2	3399.6	3399.5	-	A		
8A	3548.0	3547.0	3547.2	-	A	25-466	#2
8B	3352.1	3351.4	3351.4	-	A		
8C	3581.4	3581.3	3581.2	-	A		
9A	3575.6	3575.4	-	-	A	25-466	#3
9B	3518.6	3518.6	-	-	A		
9C	3419.6	3420.4	3420.2	-	A		
10A	3354.4	3354.2	-	-	A	25-466	#4
10B	3565.5	3565.3	-	-	A		
10C	3359.9	3359.8	-	-	A		

ASTM E2515 - Probe Samples 1-10

Date/Time:	10/21/25 14:00	10/27 9:30	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	25-446	#2
1B	115905.0	115904.5	115904.6	-	A	↓	#3
1C	116435.2	116434.6	116434.8	-	A		
2A	116060.2	116060.1	-	-	A	25-457	#1
2B	116176.2	116175.5	116175.5	-	A		
2C	116430.7	116430.1	116430.0	-	A		
3A	115882.9	115882.5	115882.4	-	A	25-456 ¹	#1
3B	116122.6	116122.4	-	-	A		
3C	116620.85	116619.7	116619.7	-	A		
4A	116025.4	116024.7	116025.3	116025.3	A	25-456 ¹	#2
4B	116184.6	116184.1	116184.3	-	A		
4C	116999.9	116999.6	116999.6	-	A		
5A	116759.0	116758.6	116758.8	-	A	25-458 ¹	#1
5B	116877.9	116877.2	116877.4	-	A		
5C	115856.9	115856.8	-	-	A		

Date/Time:	11/21/25 0900	11/24/25 0845	-	-			
Audit:	200.0	200.0	-	-			
	Weight 1	Weight 2	Weight 3	Weight 4	Initial	Project	Run
6A	116385.0	116385.0	-	-	A	25-456	#1
6B	115956.6	115956.6	-	-	A		
6C	115130.6	115129.8	-	-	A		
7A	116560.6	116560.6	-	-	A	25-466	#1
7B	117130.9	117131.0	-	-	A		
7C	116553.0	116552.8	-	-	A		
8A	116635.7	116635.8	-	-	A	25-466	#2
8B	116668.1	116668.0	-	-	A		
8C	116664.6	116664.5	-	-	A		
9A	116533.2	116533.1	-	-	A	25-466	#3
9B	117740.6	117740.4	-	-	A		
9C	116604.8	116604.6	-	-	A		
10A	116648.6	116648.7	-	-	A	25-466	#4
10B	117756.3	117756.1	-	-	A		
10C	116730.5	116730.7	-	-	A		



Twin Ports Testing, Inc.
1301 North 3rd Street
Superior, WI 54880
p: 715-392-7114
p: 800-373-2562
f: 715-392-7163
www.twinportstesting.com

Report No: **USR:W224-0189-01**
Issue No: **1**

Analytical Test Report

Client: PFS-TECO
11785 SE Hwy 212, Ste 305
Clackamas, OR 97015
Attention: Sebastian Button
PO No:

Signed:

Katy Jahr
Chemistry Lab Supervisor

Date of Issue: 5/13/2024

THIS DOCUMENT SHALL NOT BE REPRODUCED EXCEPT IN FULL

Sample Details

Sample Log No: W224-0189-01
Sample Designation: Lignetics Pellets (Mill # 16036)
Sample Recognized As: Wood Pellets
Sample Date: 4/26/2024
Sample Time:
Arrival Date:

Test Results

	METHOD	UNITS	MOISTURE FREE	AS RECEIVED
Moisture Total	ASTM E871	wt. %		2.10
Ash	ASTM D1102	wt. %	0.17	0.17
Volatile Matter	ASTM D3175	wt. %	80.51	78.82
Fixed Carbon by Difference	ASTM D3172	wt. %	19.31	18.91
Sulfur	ASTM D4239	wt. %	0.070	0.069
SO ₂	Calculated	lb/mmmbtu		0.163
Net Cal. Value at Const. Pressure	ISO 1928	GJ/tonne	18.71	18.27
Gross Cal. Value at Const. Vol.	ASTM E711	Btu/lb	8627	8445
Carbon	ASTM D5373	wt. %	49.48	48.44
Hydrogen*	ASTM D5373	wt. %	6.22	6.09
Nitrogen	ASTM D5373	wt. %	< 0.20	< 0.20
Oxygen*	ASTM D3176	wt. %	> 43.86	> 42.94

*Note: As received values do not include hydrogen and oxygen in the total moisture.

Chlorine	ASTM D6721	mg/kg
Fluorine	ASTM D3761	mg/kg
Mercury	ASTM D6722	mg/kg

Bulk Density	ASTM E873	lbs/ft ³	
Fines (Less than 1/8")	TPT CH-P-06	wt. %	
Durability Index	Kansas State	PDI	
Sample Above 1.50"	TPT CH-P-06	wt. %	
Maximum Length (Single Pellet)	TPT CH-P-06	inch	
Diameter, Range	TPT CH-P-05	inch	to
Diameter, Average	TPT CH-P-05	inch	
Stated Bag Weight	TPT CH-P-01	lbs	
Actual Bag Weight	TPT CH-P-01	lbs	

Comments:



Accreditation #60243

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Mr. John Steinert
Vice President
PFS TECO
11785 SE Hwy 212
Suite 305
Clackamas, OR 97015

02/04/2022

Dear Mr. Steinert,

I am writing you in response to your correspondence dated February 3, 2022, in which you request the use of an alternative testing procedure to demonstrate compliance with 40 CFR part 60, Subpart AAA – Standards of Performance for New Residential Wood Heaters (Subpart AAA). The Office of Air Quality Planning and Standards, as the delegated authority, must make the determination on any major alternatives to test methods and procedures required under 40 CFR parts 59, 60, 61, 63, and 65. Your proposed alternative test method and our approval decisions are discussed below.

According to the information provided, you seek an alternative test method for use when conducting testing on the United States Stove Company, Model KP5517 pellet heater. Currently, as required by section 60.534(a)(1)(i) of Subpart AAA, a manufacturer has the option to test their appliance in accordance with 40 CFR part 60, Appendix B, Method 28R for a crib fuel appliance or ASTM E2779-10 “Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters” (ASTM E2779-10) for a pellet fuel appliance. This request seeks an alternative to section 9.4.1.2 of ASTM E2779-10 which specifies test conditions for pellet heaters including the determination of the Medium Burn Rate Category and states that the medium burn rate must be $\leq 50\%$ of the maximum burn rate.

In your request, you state that the specification for determining the medium burn rate found in ASTM E2779-10 is incorrect, and the Medium Burn Rate Category should be defined as less than 50% of the midpoint point (this is defined in the attached Memo as 50% of the span between the Maximum Burn Rate and the Low Burn Rate) between the high and low burn rates. Furthermore, your request includes a memorandum dated February 2, 2022, titled “Appropriate Calculation of Medium Burn Rate Category in ASTM E-2779 Testing” (attached) which was sent to the EPA’s Office of Enforcement and Compliance Assurance. This memorandum states that an error had been uncovered in determining the appropriate Medium Burn Rate Category in ASTM E2779-10 for compliance pursuant to Subpart AAA. Specifically, section 9.4.1.2 of ASTM E2779-10 states that “the pellet heater shall be operated with the control or controls set in

the position(s) as needed to achieve a burn rate that is $\leq 50\%$ of the maximum burn rate.” Table 1 of ASTM E2779-10 also notes that the Medium Burn Rate Category test must be $\leq 50\%$ of the maximum burn rate. The memorandum states that this is incorrect as it assumes that zero is the other bound for determining half of the maximum burn rate, and that the correct approach in determining the Medium Burn Rate Category should be at a level below 50% of the span between the Maximum Burn Rate and the Low Burn Rate (a non-zero value).

We have reviewed your request and agree that the Medium Burn Rate Category should be defined as less than 50% of the span between the high and low burn rates. Meaning that the Medium Burn Rate Category should be at a level below 50% of the span between the Maximum Burn Rate and the Low Burn Rate (a non-zero value).

Based on the information provided and with the caveats set forth below, we are approving your request for an alternative methodology used when calculating the Medium Burn Rate Category to conduct certification testing as required by Subpart AAA, section 60.534(a)(1)(i) on pellet heaters. This approval is based on the understanding that the Medium Burn Rate Category is defined as less than 50% of the span between the high and low burn rates. Additionally, this approval is based on the understanding that the lowest heat output (Btu/hr) setting available to the user, and corresponds to the lowest burn rate to be evaluated during certification testing; this is consistent with Subpart AAA, section 60.534(a)(1), 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.”

With this Alternate Test Method, the following changes to ASTM E2779-10 must be followed for certification testing:

1. Medium Burn Rate Category burn rate is defined as:

Nomenclature:

Max = Maximum burn rate (kg/h)

Min = Minimum burn rate (kg/h)

$$\frac{Max+Min}{2} \quad \text{Eq.1}$$

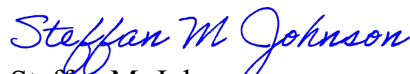
All other requirements of ASTM E-2779-10 must be followed during the testing, and all requirements of 40 CFR part 60, Subpart AAA must be satisfied as described in your test report. A copy of this letter must be included in each certification test report where this alternative test method is utilized.

Because this alternative method may be of use to others, we feel that it is reasonable that this approval be broadly applicable to all pellet heaters tested in accordance with ASTM E2779-10 “Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters” and subject to the requirements of §60.534(a)(1)(i) of Subpart AAA. For this reason, we will post this

letter as ALT-146 on our website at <https://www.epa.gov/emc/broadly-applicable-approved-alternative-test-methods> for use by other interested parties. This alternative method approval is valid until such time that Subpart AAA is revised or replaced to require a different pellet heater certification method, and at such time, this alternative will be reconsidered and possibly withdrawn.

If you have additional questions regarding this approval, please contact Angelina Brashear of my staff at 919-541-4746 or brashear.angelina@epa.gov.

Sincerely,



Steffan M. Johnson
Group Leader
Measurement Technology Group

cc: Angelina Brashear – EPA/OAQPS/AQAD
Chuck French – EPA/OAQPS/SPPD
Rafael Sanchez – EPA/OECA
Robert Scinta – EPA/OECA
Michael Toney – EPA/OAQPS/AQAD
Nathan Topham – EPA/OAQPS/SPPD
John Voorhees – United States Stove Company
Chet Wayland – EPA/OAQPS/AQAD



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

MEMORANDUM

02/02/2022

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

SUBJECT: Appropriate calculation of Medium Burn Rate Category in ASTM E-2779 Testing

FROM: Steffan Johnson
Group Leader
Measurement Technology Group
Air Quality Assessment Division

STEFFAN
JOHNSON

Digitally signed by
STEFFAN JOHNSON
Date: 2022.02.02
08:28:07 -05'00'

TO: Robert Scinta, P.E.
Chief, Air Branch
Monitoring, Assistance, and Media Programs Division
Office of Compliance, Office of Enforcement and Compliance Assurance

During a recent review of pellet heater compliance test reports, the Measurement Technology Group has uncovered an error in determining the appropriate Medium Burn Rate Category when using ASTM E-2779 for compliance pursuant to 40 CFR 60, subpart AAA. Specifically, the method requirements in section 9.4.1.2 and Table 1 of that test method incorrectly require that the Medium Burn Rate Category must fall below 50% of the maximum burn rate. This is not correct as this requirement assumes then that zero is the other bound for determining half of the maximum.

9.4.1.2 *Medium Burn Rate Category*—For burn rates in the medium segment, except as allowed in 9.4.1.4 or 9.4.1.5, the pellet heater shall be operated with the control or controls set in the position(s) as needed to achieve a burn rate that is $\leq 50\%$ of the maximum burn rate.

TABLE 1

Burn Rate Segment	Maximum	Medium	Minimum
Description	Maximum achievable	$\leq 50\%$ of Maximum	Minimum achievable
Time at Burn Rate	60 +5 / - 0 minutes	120 +5 / - 0 minutes	180 +5 / - 0 minutes

The correct application of this requirement would be to determine the Medium Burn Rate Category at a level below 50% of the span between the Maximum Burn Rate and the Low Burn Rate (a non-zero value). Ergo, the correct calculation for finding that midpoint of 50% is defined as $\frac{Max+M}{2}$.

For example, if the Maximum Burn rate of an appliance is 1.79 kg/hr and the minimum is 1.23 kg/hr, the method would currently place the 50% requirement at 0.895 kg/hr. This is unachievable on this appliance and presents an impossible compliance requirement. Applying the equation laid out above the value of 1.51 is derived and, therefore, presents an appropriate and likely attainable emissions test requirement for the Medium Burn Rate Category.

During your reviews of such emissions tests, as reported to OECA and intended for compliance certification purposes, MTG recommends applying the above procedure in order to ascertain if a Medium Burn Rate was appropriately established during a compliance test.

CC:

Sarah Ayres - OECA

Angelina Brashear – OAQPS

Alice Edwards – Alaska DEC

Chuck French – OAQPS

Robert Lischinsky - OECA

Theresa Lowe - OAQPS

Rafael Sanchez – OECA

Robert Scinta - OECA

Mike Toney – OAQPS

Nathan Topham - OAQPS

Chet Wayland – OAQPS

Pre-Conditioning Data

Client: EGI
 Model: G2-N50WTS
 Date(s): 10-27-2025 - 10-29-2025

Job #: 25-454
 Tracking #: 240
 Technician: Ben Childs

Medium Burn rate used: ☒
 Catalyst: Yes ☐ No ☒

Elapsed Time (hrs)	Flue (°F)	Catalyst Exit (°F)	Notes: Indicate initial air setting and any changes in in setting during conditioning, as well as weight and average moisture content of all fuel additions.
0	234.7		Scale Weight - 43.46
1	297.2		
2	292.1		
3	293.0		
4	298.1		
5	290.7		
6	294.1		
7	294.7		
8	312.8		
9	291.5		
10	292.2		
11	288.1		
12	294.1		Scale Weight - 50.32
13	291.7		
14	287.9		
15	291.2		
16	296.3		
17	291.3		
18	296.4		
19	296.1		
20	307.5		
21	307.3		
22	311.6		
23	304.4		
24	301.6		Scale Weight - 48.79
25	300.9		
26	293.6		
27	291.5		
28	288.8		
29	286.8		
30	295.5		
31	309.7		
32	308.4		
33	299.8		
34	305.5		Scale Weight - 49.21
35	293.1		
36	296.1		
37	296.3		
38	295.3		
39	295.2		
40	287.9		
41	289.7		
42	295.5		
43	293.2		
44	294.2		Scale Weight - 38.29
45	296.7		
46	302.3		
47	292.4		
48	295.3		
49	288.2		
50	291.1		

Equations and Sample Calculations – ASTM E2779 & E2515

Client Enerco
 Model: G2-N50WTS
 Tracking #: 240
 Run: 1

Equations used to calculate the parameters listed below are described in this appendix. Sample calculations are provided for each equation. The raw data and printout results from a sample run are also provided for comparison to the sample calculations.

M_{Bdb} – Weight of test fuel burned during test run, dry basis, kg

M_{BSidb} – Weight of test fuel burned during test run segment i , dry basis, kg

BR – Average dry burn rate over full integrated test run, kg/hr

BR_{Si} – Average dry burn rate over test run segment i , kg/hr

V_s – Average gas velocity in the dilution tunnel, ft/sec

Q_{sd} – Average gas flow rate in dilution tunnel, dscf/hr

$V_{m(std)}$ – Volume of Gas Sampled Corrected to Dry Standard Conditions, dscf

m_n – Total Particulate Matter Collected, mg

C_s - Concentration of particulate matter in tunnel gas, dry basis, corrected to STP, g/dscf

E_T – Total Particulate Emissions, g

PR - Proportional Rate Variation

PM_R – Average particulate emissions for full integrated test run, g/hr

PM_F – Average particulate emission factor for full integrated test run, g/dry kg of fuel burned

M_{Bdb} – Weight of test fuel burned during test run, dry basis, kg

ASTM E2779 equation (1)

$$M_{Bdb} = (M_{Swb} - M_{Ewb})(100/(100 + FM))$$

Where,

FM = average fuel moisture of test fuel, % dry basis

M_{Swb} = weight of test fuel in hopper at start of test run, wet basis, kgM_{Ewb} = weight of test fuel in hopper at end of test run, wet basis, kg

Sample Calculation:

$$FM = 2.15 \%$$

$$M_{Swb} = 15.9 \text{ lbs}$$

$$M_{Ewb} = 0.0 \text{ lbs}$$

0.4536 = Conversion factor from lbs to kg

$$M_{Bdb} = [(15.9 \times 0.4536) - (0.0 \times 0.4536)] (100/(100 + 2.145))$$

$$M_{Bdb} = 7.05 \text{ kg}$$

M_{BSidb} – Weight of test fuel burned during test run segment i , dry basis, kg

ASTM E2779 equation (2)

$$M_{BSidb} = (M_{SSiwb} - M_{ESiwb})(100/(100 + FM))$$

Where,

M_{SSiwb} = weight of test fuel in hopper at start of test run segment i , wet basis, kg

M_{ESiwb} = weight of test fuel in hopper at end of test run segment i , wet basis, kg

Sample Calculation (from medium burn rate segment):

$$FM = 2.15 \%$$

$$M_{SSiwb} = 10.9 \text{ lbs}$$

$$M_{ESiwb} = 5.1 \text{ lbs}$$

0.4536 = Conversion factor from lbs to kg

$$M_{BSidb} = [(10.9 \times 0.4536) - (5.1 \times 0.4536)] (100/(100 + 2.15))$$

$$M_{BSidb} = \mathbf{2.57 \text{ kg}}$$

BR – Average dry burn rate over full integrated test run, kg/hr

ASTM E2779 equation (3)

$$BR = \frac{60 M_{Bdb}}{\theta}$$

Where,

 θ = Total length of full integrated test run, min

Sample Calculation:

$$\begin{aligned} M_{Bdb} &= 7.05 \quad \text{kg} \\ \theta &= 360 \quad \text{min} \end{aligned}$$

$$BR = \frac{60 \times 7.05}{360}$$

$$BR = 1.18 \quad \text{kg/hr}$$

BR_{Si} – Average dry burn rate over test run segment *i*, kg/hr

ASTM E2779 equation (4)

$$BR_{Si} = \frac{60 M_{BSidb}}{\theta_{Si}}$$

Where,

$$\theta_{Si} = \text{Total length of test run segment } i, \text{ min}$$

Sample Calculation (from medium burn rate segment):

$$M_{BSidb} = 2.57 \text{ kg}$$

$$\theta = 120 \text{ min}$$

$$BR = \frac{60 \times 2.57}{120}$$

$$BR = 1.28 \text{ kg/hr}$$

V_s – Average gas velocity in the dilution tunnel, ft/sec

ASTM E2515 equations (9)

$$V_s = F_p \times K_p \times C_p \times (\sqrt{\Delta P})_{avg} \times \sqrt{\frac{T_s}{P_s \times M_s}}$$

Where:

- F_p = Adjustment factor for center of tunnel pitot tube placement, $F_p = \frac{V_{strav}}{V_{scent}}$, ASTM E2515 Equation (1)
- V_{scent} = Dilution tunnel velocity calculated after the multi-point pitot traverse at the center, ft/sec
- V_{strav} = Dilution tunnel velocity calculated after the multi-point pitot traverse, ft/sec
- k_p = Pitot tube constant, 85.49
- C_p = Pitot tube coefficient: 0.99, unitless
- ΔP^* = Velocity pressure in the dilution tunnel, in H₂O
- T_s = Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)
- P_s = Absolute average gas static pressure in dilution tunnel, = $P_{bar} + P_g$, in Hg
- P_{bar} = Barometric pressure at test site, in. Hg
- P_g = Static pressure of tunnel, in. H₂O; (in Hg = in H₂O/13.6)
- M_s = **The dilution tunnel wet molecular weight; $M_s = 28.78$ assuming a dry weight of 29 lb/lb-mole

Sample calculation:

$$F_p = \frac{13.99}{16.01} = 0.874$$

$$V_s = 0.874 \times 85.49 \times 0.99 \times 0.255 \times \left(\frac{92.3 + 460}{29.92 + \frac{-0.09}{13.6}} \right)^{1/2} \times 28.78$$

$$V_s = 15.13 \text{ ft/s}$$

*The ASTM test standard mistakenly has the square root of the average delta p instead of the average of the square root of delta p. The current EPA Method 2 is also incorrect. This was verified by Mike Toney at EPA.

**The ASTM test standard mistakenly identifies M_s as the dry molecular weight. It should be the wet molecular weight as indicated in EPA Method 2.

Q_{sd} – Average gas flow rate in dilution tunnel, dscf/hr

ASTM E2515 equation (3)

$$Q_{sd} = 3600 \times (1 - B_{ws}) \times v_s \times A \times \frac{T_{std}}{T_s} \times \frac{P_s}{P_{std}}$$

Where:

3600	=	Conversion from seconds to hours (ASTM method uses 60 to convert in minutes)
B _{ws}	=	Water vapor in gas stream, proportion by volume; assume 2%
A	=	Cross sectional area of dilution tunnel, ft ²
T _{std}	=	Standard absolute temperature, 528 °R
P _s	=	Absolute average gas static pressure in dilution tunnel, = P _{bar} + P _g , in Hg
T _s	=	Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)
P _{std}	=	Standard absolute pressure, 29.92 in Hg

Sample calculation:

$$Q_{sd} = 3600 \times (1 - 0.02) \times 15.13 \times 0.1963 \times \frac{528}{92.3 + 460} \times \frac{29.92 + \frac{-0.09}{13.6}}{29.92}$$

$$Q_{sd} = 10017.4 \text{ dscf/hr}$$

$V_{m(std)}$ – Volume of Gas Sampled Corrected to Dry Standard Conditions, dscf

ASTM E2515 equation (6)

$$V_{m(std)} = K_1 \times V_m \times Y \times \frac{P_{bar} + \left(\frac{\Delta H}{13.6} \right)}{T_m}$$

Where:

K_1	=	17.64 °R/in. Hg
V_m	=	Volume of gas sample measured at the dry gas meter, dcf
Y	=	Dry gas meter calibration factor, dimensionless
P_{bar}	=	Barometric pressure at the testing site, in. Hg
ΔH	=	Average pressure differential across the orifice meter, in. H ₂ O
T_m	=	Absolute average dry gas meter temperature, °R

Sample Calculation:

Using equation for Train A:

$$V_{m(std)} = 17.64 \times 58.744 \times 1.021 \times \frac{(29.92 + \frac{2.70}{13.6})}{(91.5 + 460)}$$

$$V_{m(std)} = \mathbf{57.778} \text{ dscf}$$

Using equation for Train B:

$$V_{m(std)} = 17.64 \times 57.101 \times 1.001 \times \frac{(29.92 + \frac{2.55}{13.6})}{(91.3 + 460)}$$

$$V_{m(std)} = \mathbf{55.063} \text{ dscf}$$

Using equation for ambient train:

$$V_{m(std)} = 17.64 \times 82.54 \times 0.999 \times \frac{(29.92 + \frac{0.00}{13.6})}{(65.2 + 460)}$$

$$V_{m(std)} = \mathbf{82.857} \text{ dscf}$$

m_n – Total Particulate Matter Collected, mg

ASTM E2515 Equation (12)

$$m_n = m_p + m_f + m_g$$

Where:

 m_p = mass of particulate matter from probe, mg m_f = mass of particulate matter from filters, mg m_g = mass of particulate matter from filter seals, mg

Sample Calculation:

Using equation for Train A:

$$m_n = 0.2 + 3.0 + 0.1$$

$$m_n = \mathbf{3.3} \text{ mg}$$

Using equation for Train B:

$$m_n = 0.1 + 2.6 + 0.3$$

$$m_n = \mathbf{3.0} \text{ mg}$$

C_s - Concentration of particulate matter in tunnel gas, dry basis, corrected to standard conditions, g/dscf
 ASTM E2515 equation (13)

$$C_s = K_2 \times \frac{m_n}{V_{m(\text{std})}}$$

Where:

K_2 = Constant, 0.001 g/mg
 m_n = Total mass of particulate matter collected in the sampling train, mg
 $V_{m(\text{std})}$ = Volume of gas sampled corrected to dry standard conditions, dscf

Sample calculation:

For Train A:

$$C_s = 0.001 \times \frac{3.3}{57.778}$$

$$C_s = \mathbf{0.00006} \text{ g/dscf}$$

For Train B:

$$C_s = 0.001 \times \frac{3.0}{55.063}$$

$$C_s = \mathbf{0.00005} \text{ g/dscf}$$

For Ambient Train

$$C_r = 0.001 \times \frac{0.1}{82.857}$$

$$C_r = \mathbf{0.000001} \text{ g/dscf}$$

E_T – Total Particulate Emissions, g

ASTM E2515 equation (15)

$$E_T = (c_s - c_r) \times Q_{std} \times \theta$$

Where:

C _s	=	Concentration of particulate matter in tunnel gas, g/dscf
C _r	=	Concentration particulate matter room air, g/dscf
Q _{std}	=	Average dilution tunnel gas flow rate, dscf/hr
θ	=	Total time of test run, minutes

Sample calculation:

For Train A

$$E_T = (0.000057 - 0.000001) \times 10017.4 \times 360 / 60$$

$$E_T = \mathbf{3.36} \text{ g}$$

For Train B

$$E_T = (0.000054 - 0.000001) \times 10017.4 \times 360 / 60$$

$$E_T = \mathbf{3.20} \text{ g}$$

Average

$$E = \mathbf{3.28} \text{ g}$$

Total emission values shall not differ by more than 7.5% from the total average emissions

$$7.5\% \text{ of the average} = 0.25$$

$$\text{Train A difference (\%)} = \mathbf{2.4\%}$$

$$\text{Train B difference (\%)} = \mathbf{2.4\%}$$

PR - Proportional Rate Variation

ASTM E2515 equation (16)

$$PR = \left[\frac{\theta \times V_{mi} \times V_s \times T_m \times T_{si}}{\theta_i \times V_m \times V_{si} \times T_{mi} \times T_s} \right] \times 100$$

Where:

- θ = Total sampling time, min
 θ_i = Length of recording interval, min
 V_{mi} = Volume of gas sample measured by the dry gas meter during the "ith" time interval, dcf
 V_m = Volume of gas sample as measured by dry gas meter, dcf
 V_{si} = Average gas velocity in the dilution tunnel during the "ith" time interval, ft/sec
 V_s = Average gas velocity in the dilution tunnel, ft/sec
 T_{mi} = Absolute average dry gas meter temperature during the "ith" time interval, °R
 T_m = Absolute average dry gas meter temperature, °R
 T_{si} = Absolute average gas temperature in the dilution tunnel during the "ith" time interval, °R
 T_s = Absolute average gas temperature in the dilution tunnel, °R

Sample calculation (for the first 10 minute interval of Train A):

$$PR = \left(\frac{360 \times 1.481 \times 15.13 \times (91.5 + 460) \times (#### + 460)}{10 \times 58.744 \times 15.11 \times (92.3 + 460) \times (69.9 + 460)} \right) \times 100$$

$$PR = 96 \%$$

PM_R – Average particulate emissions for full integrated test run, g/hr
 ASTM E2779 equation (5)

$$PM_R = 60 (E_T/\theta)$$

Where,

E_T = Total particulate emissions, grams

θ = Total length of full integrated test run, min

Sample Calculation:

$$E_T \text{ (Dual train average)} = 3.28 \text{ g}$$

$$\theta = 360 \text{ min}$$

$$PM_R = 60 \times (3.28 / 360)$$

$$PM_R = 0.55 \text{ g/hr}$$

PM_F – Average particulate emission factor for full integrated test run, g/dry kg of fuel burned
 ASTM E2779 equation (6)

$$PM_F = E_T / M_{Bdb}$$

Where,

E_T = Total particulate emissions, grams

M_{Bdb} = Weight of test fuel burned during test run, dry basis, kg

Sample Calculation:

$$E_T \text{ (Dual train average)} = 3.28 \text{ g}$$

$$M_{Bdb} = 7.05 \text{ kg}$$

$$PM_F = 3.28 / 7.05)$$

$$PM_F = \mathbf{0.47} \text{ g/kg}$$

Stack Loss Efficiency and CO emissions calculations are done in accordance with CSA B415.1, using the password protected excel spreadsheet provided with the test standard. No alterations or alternative calculations are used for determining efficiency or CO emissions. The following pages are a sample of the calculations page from the B415.1 Spreadsheet (V2_4 - Dated April 15, 2010).

Manufacturer: Enerco
Model: G2-N50WTS
Date: 11/24/25
Run: 1
Control #: 25-454
Test Duration: 360 min

Note: In the "Input data", "Calc. % O₂", "Fuel Properties", and "Mass Balance" columns, [e], [d], [g], [a], [b], [c], [h], [u], [w], [j], and [k] refer to their respective variables in Clauses 13.7.3 to 13.7.5.

	HHV	LHV
Eff	79.87%	85.59%
Comb Eff	99.50%	99.50%
HT Eff	80.27%	86.02%
Output	18,828	kJ/h
Burn Rate	1.18	kg/h
Grams CO	54	g
Input	23,575	kJ/h
MC wet	2.10	
Averages	0.02	4.16

Ultimate CO₂
CO_{2,ult} 20.28
F₀
1.023

Overall Heating Efficiency: 79.87%
Combustion Efficiency: 99.50%
Heat Transfer Efficiency: 80.27%

Heat Output: 17,861 Btu/h 18,828 kJ/h
Heat Input: 22,363 Btu/h 23,575 kJ/h

Burn Duration: 6.00 h

Burn Rate: 2.59 lb/h 1.176 kg/h

Stack Temp: 204.8 Deg. F 96.0 Deg. C

Air Fuel Ratio (A/F)	
Dry Molecular Weight (M _d)	29.33
Dry Moles Exhaust Gas (N _d):	1014.75
Air Fuel Ratio (A/F)	29.25

%HC 0.8

INPUT DATA				Oxygen Calculation			Input Data		Combust	Heat	Net	Air	Wet Wt	% Wet	Dry Wt.	% Dry	Total	Carbon
Elapsed Time	Weight Remaining (kg)	% CO [e]	% CO ₂ [d]	Excess Air EA	Total O ₂	Calc. % O ₂ [g]	Flue Gas (°C)	Room Temp (°C)	Eff %	Transfer %	Eff %	Fuel Ratio	Now Wt	Consumed x	Now W _{dry}	Consumed y	Input	/12= [a]
0	7.21	0.01	6.89	193.8%	20.72	13.82	131.1	18.1	100.4%	82.3%	82.6%	17.4	7.21	0.00	7.05	0.00	0	4.12
1	7.17	0.02	6.38	217.2%	20.73	14.35	130.6	18.1	100.4%	81.5%	81.9%	18.7	7.17	0.44	7.02	0.44	1024	4.12
2	7.13	0.01	6.24	224.3%	20.74	14.49	131.3	18.2	100.5%	81.2%	81.6%	19.2	7.13	1.01	6.98	1.01	713	4.12
3	7.10	0.02	7.29	177.5%	20.70	13.40	131.7	18.1	100.3%	82.7%	83.0%	16.4	7.10	1.45	6.95	1.45	713	4.12
4	7.06	0.01	6.72	201.2%	20.72	13.99	131.4	18.1	100.5%	82.0%	82.3%	17.8	7.06	2.02	6.91	2.02	846	4.12
5	7.01	0.01	6.56	208.5%	20.73	14.16	130.8	18.2	100.5%	81.8%	82.2%	18.2	7.01	2.64	6.87	2.64	757	4.12
6	6.98	0.01	7.39	174.1%	20.70	13.31	131.1	18.1	100.3%	82.9%	83.2%	16.2	6.98	3.09	6.84	3.09	624	4.12
7	6.95	0.01	6.43	215.1%	20.73	14.30	131.7	18.3	100.5%	81.5%	81.9%	18.6	6.95	3.53	6.81	3.53	668	4.12
8	6.91	0.01	6.31	220.8%	20.73	14.42	130.8	18.3	100.5%	81.4%	81.8%	19.0	6.91	4.03	6.77	4.03	668	4.12
9	6.88	0.02	6.43	214.4%	20.73	14.29	130.0	18.3	100.4%	81.7%	82.0%	18.6	6.88	4.47	6.74	4.47	713	4.12
10	6.84	0.02	6.30	221.2%	20.73	14.43	130.3	18.2	100.4%	81.4%	81.8%	19.0	6.84	5.04	6.70	5.04	757	4.12
11	6.81	0.01	6.56	208.7%	20.73	14.16	130.1	18.3	100.4%	81.9%	82.2%	18.2	6.81	5.54	6.66	5.54	713	4.12
12	6.77	0.01	7.02	188.4%	20.71	13.69	129.7	18.2	100.4%	82.6%	82.9%	17.0	6.77	6.05	6.63	6.05	802	4.12
13	6.72	0.01	6.91	193.0%	20.71	13.80	130.1	18.3	100.5%	82.4%	82.8%	17.3	6.72	6.68	6.58	6.68	802	4.12
14	6.69	0.01	7.55	168.2%	20.69	13.14	130.8	18.1	100.4%	83.1%	83.4%	15.8	6.69	7.18	6.55	7.18	757	4.12
15	6.65	0.02	7.41	173.1%	20.70	13.28	131.8	18.3	100.3%	82.9%	83.1%	16.1	6.65	7.75	6.51	7.75	802	4.12
16	6.61	0.01	7.09	185.6%	20.71	13.62	132.4	18.3	100.4%	82.4%	82.7%	16.9	6.61	8.31	6.47	8.31	802	4.12
17	6.57	0.01	7.40	173.5%	20.70	13.29	133.3	18.3	100.4%	82.7%	83.1%	16.2	6.57	8.88	6.43	8.88	713	4.12
18	6.53	0.02	6.87	194.5%	20.72	13.84	133.3	18.2	100.4%	82.0%	82.3%	17.4	6.53	9.32	6.40	9.32	713	4.12
19	6.49	0.01	6.66	204.1%	20.72	14.06	133.4	18.3	100.4%	81.7%	82.0%	18.0	6.49	9.89	6.36	9.89	757	4.12
20	6.46	0.01	7.09	185.7%	20.71	13.62	133.1	18.2	100.4%	82.3%	82.7%	16.9	6.46	10.39	6.32	10.39	713	4.12
21	6.42	0.01	6.78	198.7%	20.72	13.94	133.4	18.4	100.4%	81.9%	82.2%	17.6	6.42	10.89	6.29	10.89	713	4.12
22	6.38	0.02	7.11	184.7%	20.71	13.59	132.6	18.2	100.4%	82.4%	82.7%	16.8	6.38	11.40	6.25	11.40	846	4.12
23	6.33	0.01	6.54	209.8%	20.73	14.19	132.4	18.3	100.5%	81.6%	82.0%	18.3	6.33	12.09	6.20	12.09	802	4.12
24	6.30	0.01	7.78	160.2%	20.69	12.90	132.2	18.3	100.3%	83.3%	83.6%	15.4	6.30	12.53	6.17	12.53	713	4.12
25	6.26	0.01	6.92	192.6%	20.71	13.79	132.1	18.3	100.4%	82.2%	82.6%	17.3	6.26	13.10	6.13	13.10	713	4.12
26	6.23	0.01	7.05	187.2%	20.71	13.65	132.2	18.3	100.4%	82.4%	82.7%	17.0	6.23	13.54	6.10	13.54	713	4.12
27	6.19	0.02	7.00	189.3%	20.71	13.71	132.1	18.5	100.4%	82.3%	82.7%	17.1	6.19	14.11	6.06	14.11	802	4.12
28	6.15	0.01	6.78	198.7%	20.72	13.94	132.4	18.3	100.4%	82.0%	82.3%	17.6	6.15	14.67	6.02	14.67	757	4.12
29	6.11	0.01	6.99	189.8%	20.71	13.72	132.9	18.4	100.4%	82.2%	82.6%	17.1	6.11	15.18	5.98	15.18	668	4.12
30	6.08	0.01	6.77	199.0%	20.72	13.94	132.7	18.3	100.4%	82.0%	82.3%	17.7	6.08	15.62	5.95	15.62	713	4.12
31	6.04	0.01	6.52	210.5%	20.73	14.20	132.4	18.3	100.4%	81.6%	81.9%	18.3	6.04	16.18	5.91	16.18	757	4.12
32	6.00	0.02	6.86	195.0%	20.72	13.85	132.7	18.3	100.3%	82.1%	82.4%	17.4	6.00	16.69	5.88	16.69	802	4.12

Moisture Content M_{Cwb} : 2.1

Combustion Efficiency: 99.50%
 Total Input (kJ): 141,449 134,158 (Btu)
 Total Output (kJ): 112,970 107,146 (Btu)
 Efficiency: 79.87%
 Total CO (g): 53.83

Moisture of Wood (wet basis): 2.1
 Initial Dry Weight $W_{t_{do}}$ (kg): 7.05
 Moisture Content Dry 2.15

Dry kg : 7.05
 CA: 49
 HY: 6
 OX: 44.13

Load Weight (kg): 7.21
 Fuel Heating HHV LHV
 Value in kJ/kg - CV: 20,053 18,712 Btu/lb 8627.0 8050.0

6.22	2.76	20052.95	2.10	79.18	21.00	1.01	3.19	-0.02	0.10	41.26	184.13	0.29	-0.24	857.83	31.64	1.19	369.27	3045.49	2312.83	2254.19	2228.13
Fuel Properties		Calorific Value	Mw Moisture Fuel Burnt	Mass Balance (moles/100 mole dry flue gas)					kg Wood per 100 mole dtp	Moles per kg of Dry Wood						Moisture Present	Stack Temp K	Heat Content Change - Ambient to Stack T			
Hydrogen /1= [b]	Oxygen /16= [c]			[h]	[u]	[w]	[j]	[k]		CO ₂	O ₂	CO	HC	N ₂	H ₂ O			Flue Gas Constituent			
																		CO ₂	O ₂	CO	N ₂
6.22	2.76	20052.95	2.10	79.28	21.03	1.67	5.23	-0.02	0.17	41.35	82.94	0.07	-0.12	475.77	31.39	1.19	404.26	4477.63	3380.04	3289.37	3252.38
6.22	2.76	20052.95	2.10	79.26	21.02	1.55	4.85	-0.02	0.15	41.33	92.98	0.10	-0.13	513.67	31.41	1.19	403.76	4457.01	3364.83	3274.66	3237.81
6.22	2.76	20052.95	2.10	79.26	21.02	1.51	4.74	-0.02	0.15	41.35	96.03	0.09	-0.13	525.23	31.42	1.19	404.43	4482.40	3383.48	3292.67	3255.66
6.22	2.76	20052.95	2.10	79.29	21.03	1.77	5.53	-0.02	0.18	41.32	75.94	0.09	-0.10	449.26	31.36	1.19	404.82	4500.56	3396.94	3305.72	3268.57
6.22	2.76	20052.95	2.10	79.27	21.03	1.63	5.10	-0.02	0.16	41.36	86.08	0.07	-0.12	487.68	31.40	1.19	404.54	4491.21	3390.12	3299.14	3262.05
6.22	2.76	20052.95	2.10	79.27	21.03	1.59	4.98	-0.02	0.16	41.35	89.23	0.08	-0.13	499.56	31.41	1.19	403.93	4459.66	3366.63	3276.36	3239.51
6.22	2.76	20052.95	2.10	79.29	21.03	1.79	5.60	-0.02	0.18	41.33	74.47	0.08	-0.10	443.75	31.36	1.19	404.26	4477.63	3380.04	3289.37	3252.38
6.22	2.76	20052.95	2.10	79.26	21.02	1.56	4.88	-0.02	0.16	41.36	92.05	0.08	-0.13	510.21	31.41	1.19	404.87	4496.52	3393.73	3302.55	3265.45
6.22	2.76	20052.95	2.10	79.26	21.02	1.53	4.79	-0.02	0.15	41.36	94.53	0.08	-0.13	519.59	31.42	1.19	403.98	4459.84	3366.69	3276.40	3239.55
6.22	2.76	20052.95	2.10	79.26	21.02	1.56	4.89	-0.02	0.16	41.32	91.78	0.11	-0.13	509.11	31.40	1.19	403.15	4425.47	3341.34	3251.88	3215.28
6.22	2.76	20052.95	2.10	79.26	21.02	1.53	4.79	-0.02	0.15	41.33	94.69	0.10	-0.13	520.11	31.41	1.19	403.43	4439.04	3351.42	3261.65	3224.95
6.22	2.76	20052.95	2.10	79.27	21.03	1.59	4.98	-0.02	0.16	41.35	89.33	0.08	-0.13	499.92	31.40	1.19	403.21	4427.76	3343.03	3253.51	3216.89
6.22	2.76	20052.95	2.10	79.28	21.03	1.70	5.33	-0.02	0.17	41.35	80.62	0.06	-0.11	467.04	31.38	1.19	402.87	4418.24	3336.16	3246.91	3210.34
6.22	2.76	20052.95	2.10	79.28	21.03	1.67	5.24	-0.02	0.17	41.37	82.59	0.05	-0.12	474.50	31.39	1.19	403.21	4427.76	3343.03	3253.51	3216.89
6.22	2.76	20052.95	2.10	79.30	21.03	1.83	5.73	-0.02	0.18	41.35	71.95	0.06	-0.10	434.27	31.36	1.19	403.98	4466.17	3371.59	3281.20	3244.29
6.22	2.76	20052.95	2.10	79.29	21.03	1.80	5.62	-0.02	0.18	41.30	74.05	0.11	-0.10	442.08	31.35	1.19	404.93	4496.71	3393.79	3302.59	3265.48
6.22	2.76	20052.95	2.10	79.28	21.03	1.72	5.38	-0.02	0.17	41.33	79.41	0.08	-0.11	462.40	31.37	1.19	405.54	4524.05	3414.02	3322.17	3284.87
6.22	2.76	20052.95	2.10	79.30	21.03	1.79	5.62	-0.02	0.18	41.34	74.20	0.07	-0.10	442.76	31.36	1.19	406.48	4563.07	3442.76	3349.97	3312.39
6.22	2.76	20052.95	2.10	79.28	21.03	1.67	5.22	-0.02	0.17	41.32	83.22	0.10	-0.11	476.75	31.38	1.19	406.43	4562.88	3442.70	3349.94	3312.36
6.22	2.76	20052.95	2.10	79.27	21.03	1.61	5.05	-0.02	0.16	41.34	87.34	0.09	-0.12	492.40	31.40	1.19	406.59	4567.66	3446.14	3353.25	3315.63
6.22	2.76	20052.95	2.10	79.28	21.03	1.72	5.38	-0.02	0.17	41.35	79.45	0.07	-0.11	462.62	31.38	1.19	406.26	4556.00	3437.63	3345.03	3307.50
6.22	2.76	20052.95	2.10	79.27	21.03	1.64	5.15	-0.02	0.16	41.34	85.04	0.08	-0.12	483.69	31.39	1.19	406.54	4561.14	3441.19	3348.41	3310.85
6.22	2.76	20052.95	2.10	79.28	21.03	1.72	5.40	-0.02	0.17	41.32	79.03	0.09	-0.11	460.94	31.37	1.19	405.71	4533.05	3420.72	3328.68	3291.31
6.22	2.76	20052.95	2.10	79.27	21.03	1.58	4.96	-0.02	0.16	41.36	89.77	0.08	-0.13	501.62	31.41	1.19	405.59	4526.35	3415.71	3323.81	3286.49
6.22	2.76	20052.95	2.10	79.31	21.04	1.89	5.90	-0.02	0.19	41.32	68.52	0.07	-0.09	421.24	31.34	1.19	405.37	4515.06	3407.31	3315.67	3278.43
6.22	2.76	20052.95	2.10	79.28	21.03	1.68	5.25	-0.02	0.17	41.34	82.39	0.08	-0.12	473.70	31.38	1.19	405.21	4510.29	3403.87	3312.36	3275.16
6.22	2.76	20052.95	2.10	79.28	21.03	1.71	5.35	-0.02	0.17	41.34	80.08	0.08	-0.11	464.97	31.38	1.19	405.32	4512.76	3405.62	3314.03	3276.82
6.22	2.76	20052.95	2.10	79.28	21.03	1.70	5.31	-0.02	0.17	41.33	80.98	0.09	-0.11	468.33	31.38	1.19	405.26	4504.14	3399.03	3307.60	3270.46
6.22	2.76	20052.95	2.10	79.27	21.03	1.64	5.15	-0.02	0.16	41.35	85.03	0.07	-0.12	483.71	31.39	1.19	405.59	4524.23	3414.07	3322.21	3284.91
6.22	2.76	20052.95	2.10	79.28	21.03	1.69	5.30	-0.02	0.17	41.35	81.19	0.07	-0.11	469.17	31.38	1.19	406.09	4540.67	3426.02	3333.73	3296.32
6.22	2.76	20052.95	2.10	79.27	21.03	1.64	5.14	-0.02	0.16	41.34	85.17	0.08	-0.12	484.19	31.39	1.19	405.82	4533.41	3420.84	3328.75	3291.39
6.22	2.76	20052.95	2.10	79.27	21.03	1.58	4.95	-0.02	0.16	41.35	90.08	0.08	-0.13	502.76	31.41	1.19	405.59	4526.35	3415.71	3323.81	3286.49
6.22	2.76	20052.95	2.10	79.27	21.03	1.66	5.21	-0.02	0.17	41.31	83.44	0.11	-0.11	477.57	31.38	1.19	405.87	4535.71	3422.53	3330.39	3293.00

			SUMS								AVERAGE	SUMS							
2886.02	2699.13	291.62	45341.96	144744.51	29508.44	657354.36	-78384.51	533001.71	20076.83	3744.16	26950.81	-821.05	27771.9	114588.6	-820.9	53.8	-24.5		
temperature		Room Temp	Energy Losses (kJ/kg of Dry Fuel) Flue Gas Constituent								Total Loss Rate								
CH ₄	H ₂ O	K	CO ₂	O ₂	CO	N ₂	CH ₄	H ₂ O Comb	H ₂ O Fuel MC		Total Loss	Chemical Loss 1	Sensible and Latent Loss	Total Output	Chem Loss 2	Grams Produced			
																CO	HC		
4287.86	3937.06	291.26	185.15	280.32	20.61	1547.40	-105.08	1503.67	57.09	3489.16	0.00	0	0.00	0	0	0.00	0.00		
4267.31	3919.48	291.26	184.20	312.87	29.68	1663.17	-114.95	1504.18	57.07	3636.22	185.75	-4	190.09	839	-4	0.15	-0.11		
4292.78	3941.00	291.32	185.33	324.91	26.56	1709.96	-120.50	1505.45	57.09	3688.80	131.08	-3	134.41	582	-3	0.09	-0.08		
4310.70	3956.60	291.26	185.95	257.96	25.96	1468.44	-93.14	1503.01	57.11	3405.28	121.01	-2	123.39	592	-2	0.09	-0.06		
4301.21	3948.75	291.21	185.75	291.82	19.37	1590.83	-109.95	1504.56	57.10	3539.49	149.36	-4	153.17	697	-4	0.08	-0.08		
4270.29	3921.50	291.37	184.43	300.39	21.65	1618.32	-113.28	1504.06	57.07	3572.64	134.89	-3	138.34	622	-3	0.08	-0.08		
4287.86	3937.06	291.26	185.06	251.72	22.43	1443.25	-92.65	1502.34	57.09	3369.23	104.76	-2	106.94	519	-2	0.07	-0.05		
4307.19	3952.80	291.43	185.96	312.38	22.11	1666.06	-116.96	1505.44	57.11	3632.10	121.00	-3	124.15	547	-3	0.07	-0.07		
4270.64	3921.54	291.43	184.46	318.25	22.52	1683.25	-120.19	1504.80	57.07	3650.15	121.60	-3	124.85	546	-3	0.07	-0.07		
4236.41	3892.24	291.43	182.86	306.67	31.26	1636.92	-112.61	1503.07	57.04	3605.21	128.11	-3	131.00	584	-3	0.11	-0.07		
4249.75	3903.92	291.37	183.46	317.33	30.06	1677.33	-117.13	1503.92	57.05	3652.03	137.89	-3	141.17	619	-3	0.11	-0.08		
4238.70	3894.19	291.43	183.08	298.63	23.47	1608.20	-112.63	1503.13	57.04	3560.92	126.54	-3	129.70	586	-3	0.08	-0.07		
4228.88	3886.31	291.32	182.71	268.96	18.55	1499.37	-102.79	1501.83	57.03	3425.67	136.95	-3	140.31	665	-3	0.07	-0.07		
4238.70	3894.19	291.43	183.17	276.08	15.42	1526.43	-106.86	1502.52	57.04	3453.80	138.07	-4	141.72	664	-4	0.06	-0.08		
4276.44	3927.29	291.26	184.66	242.59	17.24	1408.89	-91.44	1501.90	57.08	3320.92	125.39	-3	128.18	632	-3	0.06	-0.06		
4307.54	3952.83	291.48	185.70	251.32	30.33	1443.61	-88.64	1502.41	57.11	3381.83	135.20	-2	137.52	666	-2	0.12	-0.06		
4334.63	3976.24	291.43	186.99	271.09	23.38	1518.92	-99.03	1504.25	57.14	3462.73	138.43	-3	141.45	663	-3	0.09	-0.07		
4373.55	4009.46	291.43	188.64	255.45	19.19	1466.58	-93.70	1504.72	57.18	3398.06	120.75	-3	123.39	592	-3	0.07	-0.06		
4373.19	4009.42	291.37	188.52	286.49	29.27	1579.16	-101.71	1505.58	57.18	3544.49	125.95	-3	128.52	587	-3	0.10	-0.06		
4378.13	4013.37	291.43	188.82	301.00	24.90	1632.62	-109.29	1506.52	57.18	3601.74	135.99	-3	139.17	621	-3	0.09	-0.07		
4366.32	4003.56	291.37	188.37	273.14	20.05	1530.11	-100.55	1505.27	57.17	3473.55	123.43	-3	126.29	589	-3	0.07	-0.06		
4371.98	4007.58	291.54	188.58	292.62	22.71	1601.44	-107.07	1506.10	57.17	3561.55	126.56	-3	129.55	586	-3	0.08	-0.07		
4343.43	3984.02	291.37	187.30	270.34	26.63	1517.11	-97.10	1504.29	57.15	3465.72	146.25	-3	149.21	700	-3	0.11	-0.07		
4336.92	3978.20	291.43	187.19	306.64	21.74	1648.57	-114.00	1505.92	57.14	3613.19	144.45	-4	148.12	657	-4	0.09	-0.08		
4325.84	3968.46	291.48	186.58	233.46	21.29	1381.02	-84.97	1502.50	57.13	3297.01	117.16	-2	119.42	595	-2	0.07	-0.05		
4320.91	3964.52	291.43	186.46	280.45	22.24	1551.44	-103.63	1504.38	57.12	3498.46	124.32	-3	127.20	588	-3	0.08	-0.07		
4323.55	3966.51	291.48	186.56	272.72	21.83	1523.61	-100.63	1504.12	57.12	3465.33	123.14	-3	125.93	589	-3	0.08	-0.06		
4315.46	3958.80	291.65	186.14	275.25	25.37	1531.65	-100.33	1503.84	57.12	3479.05	139.08	-3	142.07	663	-3	0.10	-0.07		
4334.99	3976.28	291.48	187.08	290.31	20.96	1588.93	-107.82	1505.20	57.14	3541.80	133.73	-3	136.99	623	-3	0.08	-0.07		
4351.72	3990.03	291.59	187.75	278.15	20.33	1546.54	-102.81	1505.09	57.15	3492.20	116.34	-3	119.08	552	-3	0.07	-0.06		
4344.14	3984.09	291.48	187.43	291.34	22.73	1593.67	-107.24	1505.38	57.15	3550.46	126.17	-3	129.16	586	-3	0.08	-0.07		
4336.92	3978.20	291.43	187.16	307.69	23.61	1652.32	-113.61	1505.88	57.14	3620.17	136.68	-3	140.07	620	-3	0.09	-0.08		
4346.43	3986.05	291.48	187.36	285.57	31.05	1572.64	-101.24	1504.80	57.15	3537.32	141.41	-3	144.21	660	-3	0.12	-0.07		

Model No / N° de modèle :

- ☐ G2-N50WTS
☐ G2-N90WTS
☐ G2-N130WTS

DATE OF MANUFACTURE / DATE DE FABRICATION											
2026	2027	2028	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
2026	2027	2028	JANV	FÉV	MAR	AVR	MAI	JUIN	JUIL	AOÛT	SEPT

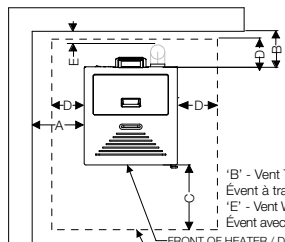


CAUTION: HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.



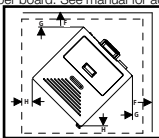
ATTENTION : BRÛLANT DURANT LE FONCTIONNEMENT. NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET L'AMEUBLEMENT ÉLOIGNÉS. LE CONTACT POURRAIT CAUSER DES BRÛLURES. VOIR LA FICHE SIGNALÉTIQUE ET LES INSTRUCTIONS.

MINIMUM CLEARANCES TO COMBUSTIBLES



When installed on a combustible floor, non-combustible floor protection is required to cover the area beneath the heater and extend at least XX" (XX mm) to the front and at least XX" (XX mm) beyond each side of the room heater. The room heater shall not be less than XX" (XX mm) from the side and XX" (XX mm) from the rear to combustible materials. The vent pipe must be at least XX" (XX mm) from any wall. Minimum floor-to-ceiling distance XX" (XXXX mm).

If the stove is to be installed on combustible flooring, the floor must be protected with non-insulated ember board. See manual for additional information on floor protection.



'B' - Vent Through Rear Wall/
Évent à travers le mur arrière
'E' - Vent With Vertical Vent Pipe/
Évent avec tuyau d'évent vertical

FRONT OF HEATER / DEVANT DU POËLE
NON-COMBUSTIBLE FLOOR PROTECTION /
PROTECTEUR DE PLANCHER NON COMBUSTIBLE

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle en dépassant d'au-moins XXX mm (XX po) sur le devant et d'au moins XXX mm (X po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de XX mm (X po) du mur arrière et devra avoir au moins XXX mm (XX po) de dégagement sur les côtés. Le tuyau d'évent devra être dégagé d'au moins XX mm (X po) de tout mur. Distance minimale du plancher au plafond : XXXX mm (XX po).

S'il est prévu que le poêle sera installé sur un plancher combustible, le plancher doit être protégé par planche de braise non isolée. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

SERIAL NUMBER
NUMÉRO DE SÉRIE

- Use a 3" (80 mm) diameter type 'L' or 'PL' venting system approved for solid fuels.
- CAUTION:** Special methods are required when passing chimney through a wall or ceiling. Refer to manufacturer's instructions and local building codes.
- Inspect and Clean Exhaust Venting System Frequently.
- Install and Use Only in Accordance With Enerco Group, Inc.'s Installation and Operating Instructions.
- Contact Local Building or Fire Officials About Restrictions and Installation Inspection in Your Area.
- For Use With Wood Pellet Fuel Only.
- Do Not Connect This Unit to a Chimney Fuel Serving Another Appliance.
- Keep Viewing and Ash Removal Doors Tightly Closed During Operation.
- Room Heater, Pellet Fuel-Burning Type. Also Suitable For Use In Mobile Homes.

MODEL	BURN RATE (kg/hr) (cyl)			PARTICULATE EMISSIONS (g/hr)
	HIGH	MED	LOW	
G2-N50WTS	2.21	1.28	0.76	0.55
G2-N90WTS	2.46	1.50	0.73	0.41
G2-N130WTS	2.85	1.46	0.55	0.45

Electrical Information

- Voltage: 120 VAC
- Frequency: 60 Hz
- Route power cord away behind and away from the unit. Do not allow the power cord to touch any hot components.
- To clean blower assembly, first disconnect power to the unit. Then remove the rear panel and use a vacuum cleaner to remove any dust accumulation on the blower's blades or inside the blower duct.
- CAUTION:** Moving Parts May Cause Injury. Do Not Operate Unit With Any Covers Removed.
- CAUTION:** Hot Parts. Do Not Operate Unit With Any Components Removed.
- DANGER:** Risk of Electric Shock. Disconnect Power Before Servicing Unit.

- To place blower assembly, first unplug the unit, and then remove the rear and side panels as needed and disconnect blower assembly via the screws connecting it to the heater. Remove wiring connections. Replace with new blower assembly and repeat the above steps in reverse order.
- This heater is designed to burn only high quality wood pellets with a density of 700 kg/m³ and a water content of at least 8% of the weight of the pellets. Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or 'freshen up' a fire in this heater. Keep all such liquids well away from the heater while it is in use. See manual for additional specifications for acceptable wood pellets.
- To be installed as a freestanding space heater with the clearances in the manufacturer's installation instructions. Not to be installed in any fireplace.
- Replace glass window with ceramic single-pane glass.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using pellet fuel.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

For Mobile Homes

- Do not obstruct combustion air openings.
- OPERATE ONLY WITH DOORS CLOSED.
- Must supply fresh air from outside mobile home via air inlet connection on the back of the heater.
- This product may be covered by one or more US or international patents or pending patent applications in the US and other countries. Please visit www.enercogroupinc.com/patents for more information.

- Utiliser un tuyau d'évent de type L ou PL de 80 mm (3 po) de diamètre approuvé pour poêles à combustible solide.
- ATTENTION :** Un montage différent doit être réalisé pour une installation de cheminée à travers un mur ou un toit. Se référer aux directives du fabricant et au code de la construction local.
- Inspecter et nettoyer le système d'évent de sortie fréquemment.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Contacter les autorités du code de la construction ou le service d'incendie pour connaître les restrictions et les inspections d'approbation dans votre région.
- Pour utilisation avec granulés de bois seulement.
- Ne pas raccorder cette unité à une cheminée connectée à un autre appareil.
- Durant le fonctionnement, garder la porte de visionnement et la porte de retrait des cendres bien fermées. Poêle de type à granulés de bois. Adéquat pour utilisation dans les maisons mobiles.

MODÈLE	TAUX DE CONSOMMATION (kg/h)			ÉMISSION DE PARTICULES (g/h)
	ÉLEVÉ	MOYEN	BAS	
G2-N50WTS	2.21	1.28	0.76	0.55
G2-N90WTS	2.46	1.50	0.73	0.41
G2-N130WTS	2.85	1.46	0.55	0.45

Information électrique

- Tension : 120 Vc.a.
- Fréquence : 60 Hz
- Placer le cordon d'alimentation hors de nuire derrière en s'éloignant de l'unité. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le ventilateur, couper l'alimentation de l'unité. Retirer ensuite le panneau arrière et à l'aide d'un aspirateur, nettoyer toute accumulation de poussière sur les pales du ventilateur et à l'intérieur de la canalisation.
- ATTENTION :** Les pièces mobiles peuvent causer des blessures. Ne pas faire fonctionner l'unité avec ses panneaux d'écran retirés.
- ATTENTION :** Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- DANGER :** Potentiel de choc électrique. Couper l'alimentation avant d'entretenir l'unité.
- Courant : 3,3 A
- Phase : 1 Ø

- Pour remplacer l'ensemble ventilateur, débrancher en premier l'unité et puis déposer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage ventilateur. Débrancher les fils raccordés. Remplacer le ventilateur par un neuf et inverser la procédure ci-dessus.
- Ce poêle est conçu pour consommer seulement des granulés de bois de qualité élevée, d'une densité de 700 kg/m³ comprenant un taux d'humidité maximale de 8 %. Ne jamais utiliser de liquide d'allumage de charbon, de kérosène, d'huile à lampe ou d'essence pour allumer ou ré-activer le feu dans ce poêle. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications de granulés de bois acceptables, se référer au manuel.
- À installer comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Ne doit pas être installé dans une cheminée.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Homologue conforme aux normes d'émission de particules de 2020 stipulées par U.S. ENVIRONMENTAL PROTECTION AGENCY, lors de l'utilisation de granulés de bois de qualité.
- Pour un bon rendement de fonctionnement ce poêle à granulés de bois nécessite un entretien périodique. Pour plus d'information, consulter le Guide du propriétaire. Toute opération ne respectant pas les directives du Guide du propriétaire contrevient à la réglementation fédérale.
- Pour maisons mobiles**
Ne pas obstruer les ouvertures d'air de combustion. NE FAIRE FONCTIONNER QU'AVEC LES PORTES DE L'UNITÉ FERMÉES.
De l'air frais de l'extérieur de la maison mobile doit être alimenté par la prise d'air à l'arrière de l'unité.
- Ce produit peut être couvert par un ou plusieurs brevets américains ou internationaux ou en instance de brevet aux États-Unis ou dans d'autres pays. Pour plus d'information, veuillez visiter www.enercogroupinc.com/patents

Reportez-vous au répertoire des produits de construction d'Intertek (<https://bpdirectory.intertek.com>) pour obtenir des informations détaillées.

Brevet Américain en Instance

ASTM E2515-2017 Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel
ASTM E2779-2017 Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters
CSA B415.1-22 Performance Testing of Solid-Fuel-Burning Heating Appliances
EPA ALT-146 Medium Burn Rate Calculation
ASTM E1509-22 Standard Specification for Room Heaters, Pellet Fuel-Burning Type
CANULC-S627-2023 Standard For Space Heaters For Use With Solid Fuels. Also Suitable For Use In Mobile Homes



Report Number: US-454

US Patent Pending

Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

ASTM E2515-2017 Méthode d'essai standard pour la détermination des émissions de particules collectées par un tunnel de dilution
ASTM E2779-2017 Méthode d'essai standard pour déterminer les émissions de particules des appareils de chauffage à granulés
CSA B415.1-22 Essais de performance d'appareils de chauffage consommant un carburant solide
EPA ALT-146 Calcul du taux de combustion moyen
ASTM E1509-22 Spécification standard pour les appareils de chauffage, type à granulés de bois
CANULC-S627-2023 Norme pour les appareils de chauffage à utiliser avec des combustibles solides. Convient également pour une utilisation dans les maisons mobiles

Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabriqué en Chine

☐ G2-A50WTS
☐ G2-A90WTS
☐ G2-A130WTS

DATE OF MANUFACTURE / DATE DE FABRICATION

2026	2027	2028	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2026	2027	2028	JANV	FÉV	MAR	AVR	MAI	JUIN	JUIL	AOÛT	SEPT	OCT	NOV	DÉC

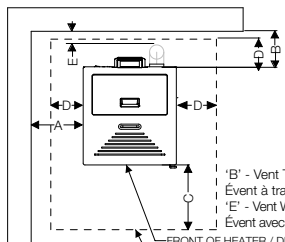


CAUTION: HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.



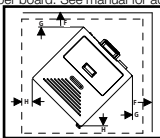
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GARDER LES ENFANTS, LES VÊTEMENTS
ET L'AMEUBLEMENT ÉLOIGNÉS.
LE CONTACT POURRAIT CAUSER DES
BRÛLURES. VOIR LA FICHE SIGNALÉTIQUE
ET LES INSTRUCTIONS.

MINIMUM CLEARANCES TO COMBUSTIBLES



When installed on a combustible floor, non-combustible floor protection is required to cover the area beneath the heater and extend at least XX" (XXX mm) to the front and at least X" (XX mm) beyond each side of the room heater. The room heater shall not be less than XX" (XXX mm) from the side and X" (XX mm) from the rear to combustible materials. The vent pipe must be at least X" (XX mm) from any wall. Minimum floor-to-ceiling distance XX" (XXX mm).

If the stove is to be installed on combustible flooring, the floor must be protected with non-insulated ember board. See manual for additional information on floor protection.



	G2-N50/90/130WTS
A	TBD* (TBD mm)
B	TBD* (TBD mm)
C	TBD* (TBD mm)
D	TBD* (TBD mm)
E	TBD* (TBD mm)
F	TBD* (TBD mm)
G	TBD* (TBD mm)
H	TBD* (TBD mm)

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle en dépassant d'au moins XXX mm (XX po) sur le devant et d'au moins XXX mm (X po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de XX mm (X po) du mur arrière et devra avoir au moins XXX mm (XX po) de dégagement sur les côtés. Le tuyau d'évent devra être dégagé d'au moins XX mm (X po) de tout mur. Distance minimale du plancher au plafond : XXXX mm (XX po).

S'il est prévu que le poêle sera installé sur un plancher combustible, le plancher doit être protégé par planche de braise non isolée. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

SERIAL NUMBER
NUMÉRO DE SÉRIE

- Use a 3" (80 mm) diameter type 'L' or 'PL' venting system approved for solid fuels.
- **▲ CAUTION:** Special methods are required when passing chimney through a wall or ceiling. Refer to manufacturer's instructions and local building codes.
- Inspect and Clean Exhaust Venting System Frequently.
- Install and Use Only in Accordance With Energo Group, Inc.'s Installation and Operating Instructions.
- Contact Local Building or Fire Officials About Restrictions and Installation Inspection in Your Area.
- For Use With Wood Pellet Fuel Only.
- Do Not Connect This Unit to a Chimney Fuel Serving Another Appliance.
- Keep Viewing and Ash Removal Doors Tightly Closed During Operation.
- Room Heater, Pellet Fuel-Burning Type. Also Suitable For Use In Mobile Homes.

MODEL	BURN RATE (kg/hr) (dry)			PARTICULATE EMISSIONS (g/hr)
	HIGH	MED	LOW	
G2-A50WTS	2.21	1.28	0.76	0.55
G2-A90WTS	2.46	1.50	0.73	0.41
G2-A130WTS	2.85	1.46	0.55	0.45

Electrical Information

- Voltage: 120 VAC
- Frequency: 60 Hz
- Route power cord away behind and away from the unit. Do not allow the power cord to touch any hot components.
- To clean blower assembly, first disconnect power to the unit. Then remove the rear panel and use a vacuum cleaner to remove any dust accumulation on the blower's blades or inside the blower duct.
- **⚠ CAUTION:** Moving Parts May Cause Injury. Do Not Operate Unit With Any Covers Removed.
- **⚠ CAUTION:** Hot Parts. Do Not Operate Unit With Any Components Removed.
- **⚠ DANGER:** Risk of Electric Shock. Disconnect Power Before Servicing Unit.

- To replace blower assembly, first unplug the unit, and then remove the rear and side panels as needed and disconnect blower assembly via the screws connecting it to the heater. Remove wiring connections. Replace with new blower assembly and repeat the above steps in reverse order.
- This heater is designed to burn only high quality wood pellets with a density of 700 kg/m³ and a water content of at least 8% of the weight of the pellets. Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or "freshen up" a fire in this heater. Keep all such liquids well away from the heater while it is in use. See manual for additional specifications for acceptable wood pellets.
- To be installed as a freestanding space heater with the clearances in the manufacturer's installation instructions. Not to be installed in any fireplace.
- Replace glass window with ceramic single-pane.
- U.S. ENVIRONMENTAL PROTECTION AGENCY
Certified to comply with 2020 particulate emission standards using pellet fuel.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

For Mobile Homes

- Do not obstruct combustion air openings.
- **OPERATE ONLY WITH DOORS CLOSED.**
- Must supply fresh air from outside mobile home via air inlet connection on the back of the heater.
- This product may be covered by one or more US or international patents or pending patent applications in the US and other countries. Please visit www.enercogroupinc.com/patents for more information.

- Utiliser un tuyau d'évent de type L ou PL de 80 mm (3 po) de diamètre approuvé pour poêles à combustible solide.
- **ATTENTION** : Un montage différent doit être réalisé pour une installation de cheminée à travers un mur ou un toit. Se référer aux directives du fabricant et au code de la construction local.
- Inspecter et nettoyer le système d'évent de sortie fréquemment.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Contacter les autorités du code de la construction ou le service d'incendie pour connaître les restrictions et les inspections d'approbation dans votre région.
- Pour utilisation avec grilles de bois seulement.
- Ne pas raccorder cette unité à une cheminée connectée à un autre appareil.
- Durant le fonctionnement, garder la porte de visionnement et la porte de retrait des cendres bien fermées. Poêle de type à grilles de bois. Adéquat pour utilisation dans les maisons mobiles.

MODÈLE	TALX DE CONSOMMATION (kg/h)			ÉMISSION DE PARTICULES (g/h)
	ÉLEVÉ	MOYEN	BAS	
G2-A50WTS	2.21	1.28	0.76	0.55
G2-A90WTS	2.46	1.50	0.73	0.41
G2-A130WTS	2.85	1.46	0.55	0.45

Information électrique

- Tension : 120 Vc.a.
- Fréquence : 60 Hz
- Placer le cordon d'alimentation hors de votre derrière en s'éloignant de l'unité. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le ventilateur, couper l'alimentation de l'unité. Retirer ensuite le panneau arrière et à l'aide d'un aspirateur, nettoyer toute accumulation de poussière sur les pales du ventilateur et à l'intérieur de la canalisation.
- **ATTENTION :** Les pièces mobiles peuvent causer des blessures. Ne pas faire fonctionner l'unité avec ses panneaux d'encastrement retirés.
- **ATTENTION :** Placer les chocs. Ne pas faire fonctionner l'unité avec des pièces retirées.
- **ATTENTION :** Éviter de choc électrique. Couper l'alimentation avant d'entretenir l'unité.

- Pour remplacer l'ensemble ventilateur, débarrancer au premier l'unité et puis déposer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage ventilateur. Débarrancer les fils raccourcis. Remplacer le ventilateur par un neuf et inverser la procédure ci-dessus.
 - Ce poêle est conçu pour consommer seulement des granulés de bois de qualité élevée, d'une densité de 700 kg/m³ comprenant un taux d'humidité maximal de 8 %.
 - Ne jamais utiliser de liquide d'allumage de charbon, de kérosène, d'huile à lampe ou d'essence pour allumer ou ré-activer le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications de granulés de bois acceptables, se référer au manuel.
 - A l'usage comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Ne doit pas être installé dans une cheminée.
 - Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
 - Homologué conforme aux normes d'émission de particules de 2020 stipulées par U.S. ENVIRONMENTAL PROTECTION AGENCY, lors de l'utilisation de granulés de bois de qualité.
 - Pour un bon rendement de fonctionnement ce poêle à granulés de bois nécessite un entretien périodique. Pour plus d'information, consulter le Guide du propriétaire. Toute opération ne respectant pas les directives du Guide du propriétaire contrevient à la réglementation fédérale.
- Pour maisons mobiles**
- Ne pas obstruer les ouvertures d'air de combustion.
 - NE FAIRE FONCTIONNER QU'AVEC LES PORTES DE L'UNITÉ FERMÉES.
 - De l'air frais de l'extérieur de la maison mobile doit être alimenté par la prise d'air à l'arrière de l'unité.
 - Ce produit peut être couvert par un ou plusieurs brevets américains ou internationaux ou en instance de brevet aux États-Unis ou dans s d'autres pays. Pour plus d'information, veuillez visiter
- www.energogroupinc.com/patents**
- Rapportez-vous au répertoire des produits de construction d'Intertek (<https://buildcert.intertek.com>) pour obtenir des informations détaillées

ASTM E2515-2017	Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel	
ASTM E2779-2017	Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters	
CSA B415.1-22	Performance Testing of Solid-Fuel-Burning Heating Appliances	
EPA 416-146	Medium Burn Rate Calculation	
ASTM E1509-22	Standard Spec. cation for Room Heaters, Pellet Fuel-Burning Type	Repealed
ASTM C1562-2023	Standard Spec. for Space Heaters for Use With Solid Fuels. Also Suitable for Use in Mobile Homes	



Report Number: F25-454

US Patent Pending

ASTM E2515-2017
ASTM E2779-2017
CSA B415.1-22
EPA ALT-146
ASTM E1509-22
CAN/ULC-S627:2023

Méthode d'essai standard pour la détermination des émissions de particules collectées par un tunnel de dilution
Méthode d'essai standard pour déterminer les émissions de particules des appareils de chauffage à granulés
Essais de performance d'appareils de chauffage consommant un carburant solide
Calcul du taux de combustion moyen
Spécification standard pour les appareils de chauffage, type à granulés de bois
Norme pour les appareils de chauffage à utiliser avec des combustibles solides. Convient également pour une utilisation dans les maisons mobiles.

Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabriqué en Chine

67091 REV A

Model No / N° de modèle :

- ☐ G2-C50WTS
☐ G2-C90WTS
☐ G2-C130WTS

DATE OF MANUFACTURE / DATE DE FABRICATION											
2026	2027	2028	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
2026	2027	2028	JANV	FÉV	MAR	AVR	MAI	JUIN	JUIL	AOÛT	SEPT

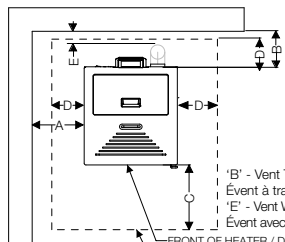


CAUTION: HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.



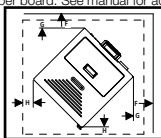
ATTENTION : BRÛLANT DURANT LE FONCTIONNEMENT. NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET L'AMEUBLEMENT ÉLOIGNÉS. LE CONTACT POURRAIT CAUSER DES BRÛLURES. VOIR LA FICHE SIGNALÉTIQUE ET LES INSTRUCTIONS.

MINIMUM CLEARANCES TO COMBUSTIBLES



When installed on a combustible floor, non-combustible floor protection is required to cover the area beneath the heater and extend at least XX" (XX mm) to the front and at least XX" (XX mm) beyond each side of the room heater. The room heater shall not be less than XX" (XX mm) from the side and XX" (XX mm) from the rear to combustible materials. The vent pipe must be at least XX" (XX mm) from any wall. Minimum floor-to-ceiling distance XX" (XXXX mm).

If the stove is to be installed on combustible flooring, the floor must be protected with non-insulated ember board. See manual for additional information on floor protection.



'B' - Vent Through Rear Wall/
Évent à travers le mur arrière
'E' - Vent With Vertical Vent Pipe/
Évent avec tuyau d'évent vertical

FRONT OF HEATER / DEVANT DU POÊLE
NON-COMBUSTIBLE FLOOR PROTECTION /
PROTECTEUR DE PLANCHER NON COMBUSTIBLE

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle en dépassant d'au-moins XXX mm (XX po) sur le devant et d'au moins XXX mm (X po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de XX mm (X po) du mur arrière et devra avoir au moins XXX mm (XX po) de dégagement sur les côtés. Le tuyau d'évent devra être dégagé d'au moins XX mm (X po) de tout mur. Distance minimale du plancher au plafond : XXXX mm (XX po).

S'il est prévu que le poêle sera installé sur un plancher combustible, le plancher doit être protégé par planche de braise non isolée. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

SERIAL NUMBER
NUMÉRO DE SÉRIE

- Use a 3" (80 mm) diameter tube 'L' or 'PL' venting system approved for solid fuels.
- CAUTION:** Special methods are required when passing chimney through a wall or ceiling. Refer to manufacturer's instructions and local building codes.
- Inspect and Clean Exhaust Venting System Frequently.
- Install and Use Only in Accordance With Enerco Group, Inc.'s Installation and Operating Instructions.
- Contact Local Building or Fire Officials About Restrictions and Installation Inspection in Your Area.
- For Use With Wood Pellet Fuel Only.
- Do Not Connect This Unit to a Chimney Fuel Serving Another Appliance.
- Keep Viewing and Ash Removal Doors Tightly Closed During Operation.
- Room Heater, Pellet Fuel-Burning Type. Also Suitable For Use In Mobile Homes.

MODEL	BURN RATE (kg/hr) (cyl)			PARTICULATE EMISSIONS (g/hr)
	HIGH	MED	LOW	
G2-C50WTS	2.21	1.28	0.76	0.55
G2-C90WTS	2.46	1.50	0.73	0.41
G2-C130WTS	2.85	1.46	0.55	0.45

Electrical Information

- Voltage: 120 VAC
- Frequency: 60 Hz
- Route power cord away behind and away from the unit. Do not allow the power cord to touch any hot components.
- To clean blower assembly, first disconnect power to the unit. Then remove the rear panel and use a vacuum cleaner to remove any dust accumulation on the blower's blades or inside the blower duct.
- CAUTION:** Moving Parts May Cause Injury. Do Not Operate Unit With Any Covers Removed.
- CAUTION:** Hot Parts. Do Not Operate Unit With Any Components Removed.
- DANGER:** Risk of Electric Shock. Disconnect Power Before Servicing Unit.

- To replace blower assembly, first unplug the unit, and then remove the rear and side panels as needed and disconnect blower assembly via the screws connecting it to the heater. Remove wiring connections. Replace with new blower assembly and repeat the above steps in reverse order.
- This heater is designed to burn only high quality wood pellets with a density of 700 kg/m³ and a water content of at least 8% of the weight of the pellets. Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or 'freshen up' a fire in this heater. Keep all such liquids well away from the heater while it is in use. See manual for additional specifications for acceptable wood pellets.
- To be installed as a freestanding space heater with the clearances in the manufacturer's installation instructions. Not to be installed in any fireplace.
- Replace glass window with ceramic single-pane glass.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using pellet fuel.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

For Mobile Homes

- Do not obstruct combustion air openings.
- OPERATE ONLY WITH DOORS CLOSED.
- Must supply fresh air from outside mobile home via air inlet connection on the back of the heater.
- This product may be covered by one or more US or international patents or pending patent applications in the US and other countries. Please visit www.enercogroupinc.com/patents for more information.

- Utiliser un tuyau d'évent de type L ou PL de 80 mm (3 po) de diamètre approuvé pour poêles à combustible solide.
- ATTENTION :** Un montage différent doit être réalisé pour une installation de cheminée à travers un mur ou un toit. Se référer aux directives du fabricant et au code de la construction local.
- Inspecter et nettoyer le système d'évent de sortie fréquemment.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Contacter les autorités du code de la construction ou le service d'incendie pour connaître les restrictions et les inspections d'approbation dans votre région.
- Pour utilisation avec granulés de bois seulement.
- Ne pas raccorder cette unité à une cheminée connectée à un autre appareil.
- Durant le fonctionnement, garder la porte de visionnement et la porte de retrait des cendres bien fermées. Poêle de type à granulés de bois. Adéquat pour utilisation dans les maisons mobiles.

MODÈLE	TAUX DE CONSOMMATION (kg/h)			ÉMISSION DE PARTICULES (g/h)
	ÉLEVÉ	MOYEN	BAS	
G2-C50WTS	2.21	1.28	0.76	0.55
G2-C90WTS	2.46	1.50	0.73	0.41
G2-C130WTS	2.85	1.46	0.55	0.45

Information électrique

- Tension : 120 Vc.a.
- Fréquence : 60 Hz
- Placer le cordon d'alimentation hors de nuire derrière en s'éloignant de l'unité. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le ventilateur, couper l'alimentation de l'unité. Retirer ensuite le panneau arrière et à l'aide d'un aspirateur, nettoyer toute accumulation de poussière sur les pales du ventilateur et à l'intérieur de la canalisation.
- ATTENTION :** Les pièces mobiles peuvent causer des blessures. Ne pas faire fonctionner l'unité avec ses panneaux d'écran retirés.
- ATTENTION :** Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- DANGER :** Potentiel de choc électrique. Couper l'alimentation avant d'entretenir l'unité.

- Pour remplacer l'ensemble ventilateur, débrancher en premier l'unité et puis déposer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage ventilateur. Débrancher les fils raccordés. Remplacer le ventilateur par un neuf et inverser la procédure ci-dessus.
- Ce poêle est conçu pour consommer seulement des granulés de bois de qualité élevée, d'une densité de 700 kg/m³ comprenant un taux d'humidité maximale de 8 %. Ne jamais utiliser de liquide d'allumage de charbon, de kérosène, d'huile à lampe ou d'essence pour allumer ou ré-activer le feu dans ce poêle. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications de granulés de bois acceptables, se référer au manuel.
- À installer comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Ne doit pas être installé dans une cheminée.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Homologue conforme aux normes d'émission de particules de 2020 stipulées par U.S. ENVIRONMENTAL PROTECTION AGENCY, lors de l'utilisation de granulés de bois de qualité.
- Pour un bon rendement de fonctionnement ce poêle à granulés de bois nécessite un entretien périodique. Pour plus d'information, consulter le Guide du propriétaire. Toute opération ne respectant pas les directives du Guide du propriétaire contrevient à la réglementation fédérale.
- Pour maisons mobiles**
 - Ne pas obstruer les ouvertures d'air de combustion.
 - NE FAIRE FONCTIONNER QU'AVEC LES PORTES DE L'UNITÉ FERMÉES.
 - De l'air frais de l'extérieur de la maison mobile doit être alimenté par la prise d'air à l'arrière de l'unité.
- Ce produit peut être couvert par un ou plusieurs brevets américains ou internationaux ou en instance de brevet aux États-Unis ou dans d'autres pays. Pour plus d'information, veuillez visiter www.enercogroupinc.com/patents

Reportez-vous au répertoire des produits de construction d'Intertek (<http://tpps.cpi.intertek.com>) pour obtenir des informations détaillées.

Brevet Américain en Instance

ASTM E2515-2017 Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel
ASTM E2779-2017 Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters
CSA B415.1-22 Performance Testing of Solid-Fuel-Burning Heating Appliances
EPA ALT-146 Medium Burn Rate Calculation
ASTM E1509-22 Standard Specification for Room Heaters, Pellet Fuel-Burning Type
CANULC-S627-2023 Standard For Space Heaters For Use With Solid Fuels. Also Suitable For Use In Mobile Homes



Report Number: US-454

US Patent Pending

ASTM E2515-2017
ASTM E2779-2017
CSA B415.1-22
EPA ALT-146
ASTM E1509-22
CANULC-S627-2023

Méthode d'essai standard pour la détermination des émissions de particules collectées par un tunnel de dilution
Méthode d'essai standard pour déterminer les émissions de particules des appareils de chauffage à granulés
Essais de performance d'appareils de chauffage consommant un carburant solide
Calcul du taux de combustion moyen
Spécification standard pour les appareils de chauffage, type à granulés de bois
Norme pour les appareils de chauffage à utiliser avec des combustibles solides. Convient également pour une utilisation dans les maisons mobiles

Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabriqué en Chine

Model No / N° de modèle :

- ☐ G2-H50WTS
☐ G2-H90WTS
☐ G2-H130WTS

DATE OF MANUFACTURE / DATE DE FABRICATION											
2026	2027	2028	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
2026	2027	2028	JANV	FÉV	MAR	AVR	MAI	JUIN	JUIL	AOÛT	SEPT

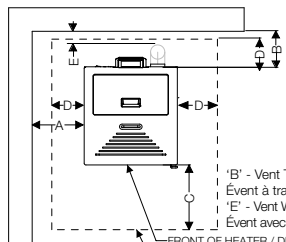


CAUTION: HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.



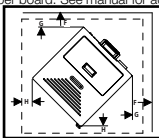
ATTENTION : BRÛLANT DURANT LE FONCTIONNEMENT. NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET L'AMEUBLEMENT ÉLOIGNÉS. LE CONTACT POURRAIT CAUSER DES BRÛLURES. VOIR LA FICHE SIGNALÉTIQUE ET LES INSTRUCTIONS.

MINIMUM CLEARANCES TO COMBUSTIBLES



When installed on a combustible floor, non-combustible floor protection is required to cover the area beneath the heater and extend at least XX" (XX mm) to the front and at least XX" (XX mm) beyond each side of the room heater. The room heater shall not be less than XX" (XX mm) from the side and XX" (XX mm) from the rear to combustible materials. The vent pipe must be at least XX" (XX mm) from any wall. Minimum floor-to-ceiling distance XX" (XXXX mm).

If the stove is to be installed on combustible flooring, the floor must be protected with non-insulated ember board. See manual for additional information on floor protection.



'B' - Vent Through Rear Wall/
Évent à travers le mur arrière
'E' - Vent With Vertical Vent Pipe/
Évent avec tuyau d'évent vertical

FRONT OF HEATER / DEVANT DU POÊLE
NON-COMBUSTIBLE FLOOR PROTECTION /
PROTECTEUR DE PLANCHER NON COMBUSTIBLE

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle en dépassant d'au-moins XXX mm (XX po) sur le devant et d'au moins XXX mm (X po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de XX mm (X po) du mur arrière et devra avoir au moins XXX mm (XX po) de dégagement sur les côtés. Le tuyau d'évent devra être dégagé d'au moins XX mm (X po) de tout mur. Distance minimale du plancher au plafond : XXXX mm (XX po).

S'il est prévu que le poêle sera installé sur un plancher combustible, le plancher doit être protégé par planche de braise non isolée. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

SERIAL NUMBER
NUMÉRO DE SÉRIE

- Use a 3" (80 mm) diameter type 'L' or 'PL' venting system approved for solid fuels.
- CAUTION:** Special methods are required when passing chimney through a wall or ceiling. Refer to manufacturer's instructions and local building codes.
- Inspect and Clean Exhaust Venting System Frequently.
- Install and Use Only in Accordance With Enerco Group, Inc.'s Installation and Operating Instructions.
- Contact Local Building or Fire Officials About Restrictions and Installation Inspection in Your Area.
- For Use With Wood Pellet Fuel Only.
- Do Not Connect This Unit to a Chimney Fuel Serving Another Appliance.
- Keep Viewing and Ash Removal Doors Tightly Closed During Operation.
- Room Heater, Pellet Fuel-Burning Type. Also Suitable For Use In Mobile Homes.

MODEL	BURN RATE (kg/hr) (cyl)			PARTICULATE EMISSIONS (g/hr)
	HIGH	MED	LOW	
G2-H50WTS	2.21	1.28	0.76	0.55
G2-H90WTS	2.46	1.50	0.73	0.41
G2-H130WTS	2.85	1.46	0.55	0.45

Electrical Information

- Voltage: 120 VAC
- Frequency: 60 Hz
- Route power cord away behind and away from the unit. Do not allow the power cord to touch any hot components.
- To clean blower assembly, first disconnect power to the unit. Then remove the rear panel and use a vacuum cleaner to remove any dust accumulation on the blower's blades or inside the blower duct.
- CAUTION:** Moving Parts May Cause Injury. Do Not Operate Unit With Any Covers Removed.
- CAUTION:** Hot Parts. Do Not Operate Unit With Any Components Removed.
- DANGER:** Risk of Electric Shock. Disconnect Power Before Servicing Unit.

- To replace blower assembly, first unplug the unit, and then remove the rear and side panels as needed and disconnect blower assembly via the screws connecting it to the heater. Remove wiring connections. Replace with new blower assembly and repeat the above steps in reverse order.
- This heater is designed to burn only high quality wood pellets with a density of 700 kg/m³ and a water content of at least 8% of the weight of the pellets. Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or 'freshen up' a fire in this heater. Keep all such liquids well away from the heater while it is in use. See manual for additional specifications for acceptable wood pellets.
- To be installed as a freestanding space heater with the clearances in the manufacturer's installation instructions. Not to be installed in any fireplace.
- Replace glass window with ceramic single-pane glass.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using pellet fuel.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

For Mobile Homes

- Do not obstruct combustion air openings.
- OPERATE ONLY WITH DOORS CLOSED.
- Must supply fresh air from outside mobile home via air inlet connection on the back of the heater.
- This product may be covered by one or more US or international patents or pending patent applications in the US and other countries. Please visit www.enercogroupinc.com/patents for more information.

- Utiliser un tuyau d'évent de type L ou PL de 80 mm (3 po) de diamètre approuvé pour poêles à combustible solide.
- ATTENTION :** Un montage différent doit être réalisé pour une installation de cheminée à travers un mur ou un toit. Se référer aux directives du fabricant et au code de la construction local.
- Inspecter et nettoyer le système d'évent de sortie fréquemment.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Contacter les autorités du code de la construction ou le service d'incendie pour connaître les restrictions et les inspections d'approbation dans votre région.
- Pour utilisation avec granulés de bois seulement.
- Ne pas raccorder cette unité à une cheminée connectée à un autre appareil.
- Durant le fonctionnement, garder la porte de visionnement et la porte de retrait des cendres bien fermées. Poêle de type à granulés de bois. Adéquat pour utilisation dans les maisons mobiles.

MODÈLE	TAUX DE CONSOMMATION (kg/h)			ÉMISSION DE PARTICULES (g/h)
	ÉLEVÉ	MOYEN	BAS	
G2-H50WTS	2.21	1.28	0.76	0.55
G2-H90WTS	2.46	1.50	0.73	0.41
G2-H130WTS	2.85	1.46	0.55	0.45

Information électrique

- Tension : 120 Vc.a.
- Fréquence : 60 Hz
- Placer le cordon d'alimentation hors de nuire derrière en s'éloignant de l'unité. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le ventilateur, couper l'alimentation de l'unité. Retirer ensuite le panneau arrière et à l'aide d'un aspirateur, nettoyer toute accumulation de poussière sur les pales du ventilateur et à l'intérieur de la canalisation.
- ATTENTION :** Les pièces mobiles peuvent causer des blessures. Ne pas faire fonctionner l'unité avec ses panneaux d'écran retirés.
- ATTENTION :** Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- DANGER :** Potentiel de choc électrique. Couper l'alimentation avant d'entretenir l'unité.

- Pour remplacer l'ensemble ventilateur, débrancher en premier l'unité et puis déposer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage ventilateur. Débrancher les fils raccordés. Remplacer le ventilateur par un neuf et inverser la procédure ci-dessus.
- Ce poêle est conçu pour consommer seulement des granulés de bois de qualité élevée, d'une densité de 700 kg/m³ comprenant un taux d'humidité maximale de 8 %. Ne jamais utiliser de liquide d'allumage de charbon, de kérosène, d'huile à lampe ou d'essence pour allumer ou ré-activer le feu dans ce poêle. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications de granulés de bois acceptables, se référer au manuel.
- À installer comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Ne doit pas être installé dans une cheminée.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Homologue conforme aux normes d'émission de particules de 2020 stipulées par U.S. ENVIRONMENTAL PROTECTION AGENCY, lors de l'utilisation de granulés de bois de qualité.
- Pour un bon rendement de fonctionnement ce poêle à granulés de bois nécessite un entretien périodique. Pour plus d'information, consulter le Guide du propriétaire. Toute opération ne respectant pas les directives du Guide du propriétaire contrevient à la réglementation fédérale.
- Pour maisons mobiles**
 - Ne pas obstruer les ouvertures d'air de combustion.
 - NE FAIRE FONCTIONNER QU'AVEC LES PORTES DE L'UNITÉ FERMÉES.
 - De l'air frais de l'extérieur de la maison mobile doit être alimenté par la prise d'air à l'arrière de l'unité.
- Ce produit peut être couvert par un ou plusieurs brevets américains ou internationaux ou en instance de brevet aux États-Unis ou dans d'autres pays. Pour plus d'information, veuillez visiter www.enercogroupinc.com/patents

Reportez-vous au répertoire des produits de construction d'Intertek (<https://bpdirectory.intertek.com>) pour obtenir des informations détaillées.

Brevet Américain en Instance

ASTM E2515-2017 Standard Test Method for Determination of Particulate Matter Emissions Collected by a Dilution Tunnel
ASTM E2779-2017 Standard Test Method for Determining Particulate Matter Emissions from Pellet Heaters
CSA B415.1-22 Performance Testing of Solid-Fuel-Burning Heating Appliances
EPA ALT-146 Medium Burn Rate Calculation
ASTM E1509-22 Standard Specification for Room Heaters, Pellet Fuel-Burning Type
CANULC-S627-2023 Standard For Space Heaters For Use With Solid Fuels. Also Suitable For Use In Mobile Homes



Report Number: US-454

US Patent Pending

Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

ASTM E2515-2017
ASTM E2779-2017
CSA B415.1-22
EPA ALT-146
ASTM E1509-22
CANULC-S627-2023

Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabriqué en Chine

Méthode d'essai standard pour la détermination des émissions de particules collectées par un tunnel de dilution
Méthode d'essai standard pour déterminer les émissions de particules des appareils de chauffage à granulés
Essais de performance d'appareils de chauffage consommant un carburant solide
Calcul du taux de combustion moyen
Spécification standard pour les appareils de chauffage, type à granulés de bois
Norme pour les appareils de chauffage à utiliser avec des combustibles solides. Convient également pour une utilisation dans les maisons mobiles

Model No / N° de modèle :

- ☐ G2-J50WTS
☐ G2-J90WTS
☐ G2-J130WTS

DATE OF MANUFACTURE / DATE DE FABRICATION											
2026	2027	2028	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
2026	2027	2028	JANV	FÉV	MAR	AVR	MAI	JUIN	JUIL	AOÛT	SEPT
										OCT	NOV
										OCT	DÉC

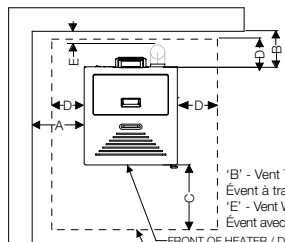


CAUTION: HOT WHILE IN OPERATION. DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.



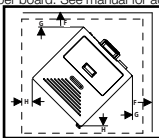
ATTENTION : BRÛLANT DURANT LE FONCTIONNEMENT. NE PAS TOUCHER. GARDER LES ENFANTS, LES VÊTEMENTS ET L'AMEUBLEMENT ÉLOIGNÉS. LE CONTACT POURRAIT CAUSER DES BRÛLURES. VOIR LA FICHE SIGNALÉTIQUE ET LES INSTRUCTIONS.

MINIMUM CLEARANCES TO COMBUSTIBLES



When installed on a combustible floor, non-combustible floor protection is required to cover the area beneath the heater and extend at least XX" (XX mm) to the front and at least XX" (XX mm) beyond each side of the room heater. The room heater shall not be less than XX" (XX mm) from the side and XX" (XX mm) from the rear to combustible materials. The vent pipe must be at least XX" (XX mm) from any wall. Minimum floor-to-ceiling distance XX" (XXXX mm).

If the stove is to be installed on combustible flooring, the floor must be protected with non-insulated ember board. See manual for additional information on floor protection.



'B' - Vent Through Rear Wall/
Évent à travers le mur arrière
'E' - Vent With Vertical Vent Pipe/
Évent avec tuyau d'évent vertical

FRONT OF HEATER / DEVANT DU POËLE
NON-COMBUSTIBLE FLOOR PROTECTION /
PROTECTEUR DE PLANCHER NON COMBUSTIBLE

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle en dépassant d'au-moins XXX mm (XX po) sur le devant et d'au moins XXX mm (X po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de XX mm (X po) du mur arrière et devra avoir au moins XXX mm (XX po) de dégagement sur les côtés. Le tuyau d'évent devra être dégagé d'au moins XX mm (X po) de tout mur. Distance minimale du plancher au plafond : XXXX mm (XX po).

S'il est prévu que le poêle sera installé sur un plancher combustible, le plancher doit être protégé par planche de braise non isolée. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

SERIAL NUMBER
NUMÉRO DE SÉRIE

- Use a 3" (80 mm) diameter type 'L' or 'PL' venting system approved for solid fuels.
- CAUTION:** Special methods are required when passing chimney through a wall or ceiling. Refer to manufacturer's instructions and local building codes.
- Inspect and Clean Exhaust Venting System Frequently.
- Install and Use Only in Accordance With Enerco Group, Inc.'s Installation and Operating Instructions.
- Contact Local Building or Fire Officials About Restrictions and Installation Inspection in Your Area.
- For Use With Wood Pellet Fuel Only.
- Do Not Connect This Unit to a Chimney Fuel Serving Another Appliance.
- Keep Viewing and Ash Removal Doors Tightly Closed During Operation.
- Room Heater, Pellet Fuel-Burning Type. Also Suitable For Use In Mobile Homes.

MODEL	BURN RATE (kg/hr) (ch)			PARTICULATE EMISSIONS (g/hr)
	HIGH	MED	LOW	
G2-J50WTS	2.21	1.28	0.76	0.55
G2-J90WTS	2.46	1.50	0.73	0.41
G2-J130WTS	2.85	1.46	0.55	0.45

Electrical Information

- Voltage: 120 VAC
- Frequency: 60 Hz
- Route power cord away behind and away from the unit. Do not allow the power cord to touch any hot components.
- To clean blower assembly, first disconnect power to the unit. Then remove the rear panel and use a vacuum cleaner to remove any dust accumulation on the blower's blades or inside the blower duct.
- CAUTION:** Moving Parts May Cause Injury. Do Not Operate Unit With Any Covers Removed.
- CAUTION:** Hot Parts. Do Not Operate Unit With Any Components Removed.
- DANGER:** Risk of Electric Shock. Disconnect Power Before Servicing Unit.

- To place blower assembly, first unplug the unit, and then remove the rear and side panels as needed and disconnect blower assembly via the screws connecting it to the heater. Remove wiring connections. Replace with new blower assembly and repeat the above steps in reverse order.
- This heater is designed to burn only high quality wood pellets with a density of 700 kg/m³ and a water content of at least 8% of the weight of the pellets. Never use gasoline, gasoline-type lantern fuel, kerosene, charcoal lighter fluid, or similar liquids to start or 'freshen up' a fire in this heater. Keep all such liquids well away from the heater while it is in use. See manual for additional specifications for acceptable wood pellets.
- To be installed as a freestanding space heater with the clearances in the manufacturer's installation instructions. Not to be installed in any fireplace.
- Replace glass window with ceramic single-pane glass.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using pellet fuel.
- This wood heater needs periodic inspection and repair for proper operation. Consult the owner's manual for further information. It is against federal regulations to operate this wood heater in a manner inconsistent with the operating instructions in the owner's manual.

For Mobile Homes

- Do not obstruct combustion air openings.
- OPERATE ONLY WITH DOORS CLOSED.
- Must supply fresh air from outside mobile home via air inlet connection on the back of the heater.
- This product may be covered by one or more US or international patents or pending patent applications in the US and other countries. Please visit www.enercogroupinc.com/patents for more information.

- Utiliser un tuyau d'évent de type L ou PL de 80 mm (3 po) de diamètre approuvé pour poêles à combustible solide.
- ATTENTION :** Un montage différent doit être réalisé pour une installation de cheminée à travers un mur ou un toit. Se référer aux directives du fabricant et au code de la construction local.
- Inspecter et nettoyer le système d'évent de sortie fréquemment.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Contactez les autorités du code de la construction ou le service d'incendie pour connaître les restrictions et les inspections d'approbation dans votre région.
- Pour utilisation avec granulés de bois seulement.
- Ne pas raccorder cette unité à une cheminée connectée à un autre appareil.
- Durant le fonctionnement, garder la porte de visionnement et la porte de retrait des cendres bien fermées. Poêle de type à granulés de bois. Adéquat pour utilisation dans les maisons mobiles.

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G2-J130WTS	2.85	1.46	0.55	0.45

Information électrique

- Tension : 120 Vc.a.
- Fréquence : 60 Hz
- Placer le cordon d'alimentation hors de nuire derrière en s'éloignant de l'unité. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le ventilateur, couper l'alimentation de l'unité. Retirer ensuite le panneau arrière et à l'aide d'un aspirateur, nettoyer toute accumulation de poussière sur les pales du ventilateur et à l'intérieur de la canalisation.
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- DANGER :** Potentiel de choc électrique. Couper l'alimentation avant d'entretenir l'unité.

- Pour remplacer l'ensemble ventilateur, débrancher en premier l'unité et puis déposer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage ventilateur. Débrancher les fils raccordés. Remplacer le ventilateur par un neuf et inverser la procédure ci-dessus.
- Ce poêle est conçu pour consommer seulement des granulés de bois de qualité élevée, d'une densité de 700 kg/m³ comprenant un taux d'humidité maximale de 8 %. Ne jamais utiliser de liquide d'allumage de charbon, de kérosène, d'huile à lampe ou d'essence pour allumer ou ré-activer le feu dans ce poêle. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications de granulés de bois acceptables, se référer au manuel.
- À installer comme appareil de chauffage autonome avec les dégagements indiqués dans les instructions d'installation du fabricant. Ne doit pas être installé dans une cheminée.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Homologue conforme aux normes d'émission de particules de 2020 stipulées par U.S. ENVIRONMENTAL PROTECTION AGENCY, lors de l'utilisation de granulés de bois de qualité.
- Pour un bon rendement de fonctionnement ce poêle à granulés de bois nécessite un entretien périodique. Pour plus d'information, consulter le Guide du propriétaire. Toute opération ne respectant pas les directives du Guide du propriétaire contrevient à la réglementation fédérale.
- Pour maisons mobiles**
Ne pas obstruer les ouvertures d'air de combustion. NE FAIRE FONCTIONNER QU'AVEC LES PORTES DE L'UNITÉ FERMÉES.
- De l'air frais de l'extérieur de la maison mobile doit être alimenté par la prise d'air à l'arrière de l'unité.
- Ce produit peut être couvert par un ou plusieurs brevets américains ou internationaux ou en instance de brevet aux États-Unis ou dans d'autres pays. Pour plus d'information, veuillez visiter www.enercogroupinc.com/patents

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Brevet Américain en Instance

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Report Number: US-454

US Patent Pending

ASTM E2515-2017
ASTM E2779-2017
CSA B415.1-22
EPA ALT-146
ASTM E1509-22
CANULC-S627-2023

Méthode d'essai standard pour la détermination des émissions de particules collectées par un tunnel de dilution
Méthode d'essai standard pour déterminer les émissions de particules des appareils de chauffage à granulés
Essais de performance d'appareils de chauffage consommant un carburant solide
Calcul du taux de combustion moyen
Spécification standard pour les appareils de chauffage, type à granulés de bois
Norme pour les appareils de chauffage à utiliser avec des combustibles solides. Convient également pour une utilisation dans les maisons mobiles

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Made in China

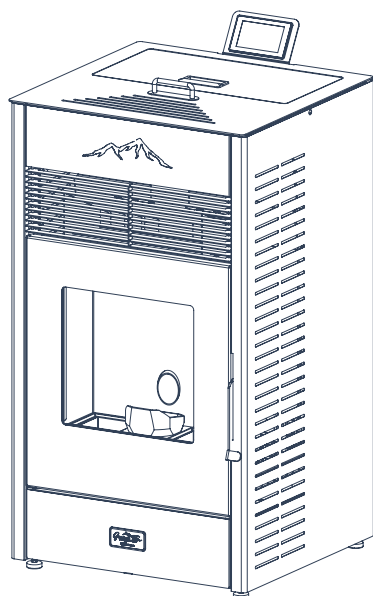
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabriqué en Chine



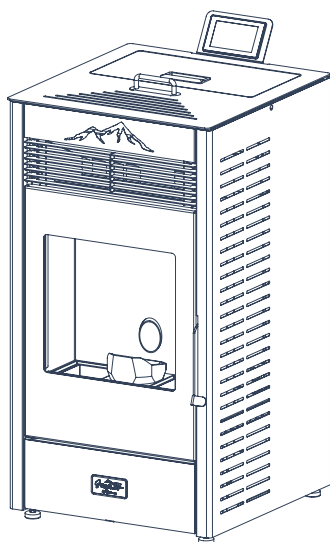
PELLET STOVE OPERATING INSTRUCTIONS AND OWNER'S MANUAL

INSTALLER: Leave this manual with the appliance • CONSUMER: Save these instructions for future reference

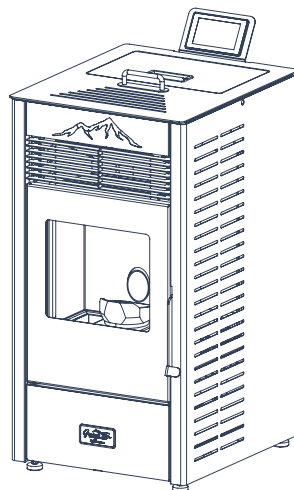
READ INSTRUCTIONS CAREFULLY: Please read this entire manual before installation and use of this pellet burning room heater. Failure to follow these instructions could result in property damage, bodily injury or even death. Do not allow anyone who has not read these instructions to assemble, light, adjust or operate the stove.



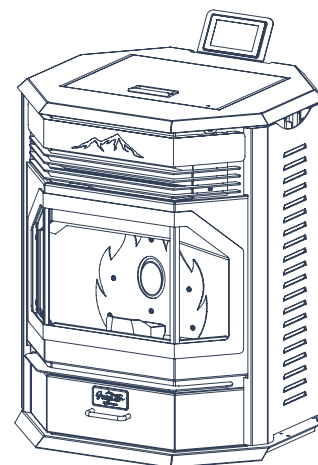
G2-N130WTS



G2-N90WTS



G2-N50WTS



G2-NBF66WTS



GTC SMART STOVE APP

The app is available on both the iOS App Store and Google Play Store. Download the app by searching "GTC Smart Stove" in your store or by scanning the QR code found here.

Mr. Heater is a subsidiary of Enerco Group, Inc.

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SPECIFICATIONS

DIMENSIONS

MODEL #	G2-N50WTS	G2-N90WTS	G2-N130WTS	G2-NBF66WTS
STOVE WEIGHT	170 LBS • 77 kg	205 LBS • 93 kg	252 LBS • 114 kg	235 LBS • 106 kg
STOVE DIMENSIONS* W x D x H	18.12 x 21.25 x 35.18 in • 46 x 54 x 89 cm	21.06 x 22.25 x 39.5 in • 53 x 56 x 100 cm	24.5 x 23.75 x 44 in • 62 x 60 x 112 cm	25.75 x 24 x 32.18 in • 65 x 61 x 82 cm
AIR INLET PIPE DIAMETER	2 in • 50 mm	2 in • 50 mm	2 in • 50 mm	2 in • 50 mm
AIR OUTLET PIPE DIAMETER	3 in • 78 mm	3 in • 78 mm	3 in • 78 mm	3 in • 78 mm
PELLET HOPPER CAPACITY	50 LBS • 23 kg	90 LBS • 41 kg	130 LBS • 59 kg	66 LBS • 30 kg
AIR OUTLET PIPE HEIGHT (center)	5.5 in • 139 mm	5.5 in • 139 mm	5.5 in • 139 mm	5.5 in • 139 mm

* Adjustable feet provide the ability to raise the stove 1.5 inches/3.81 cm

OPERATING SPECIFICATIONS

The below data was tested with 6 inch single wall exhaust pipes. Follow local code.

MODEL #	G2-N50WTS	G2-N90WTS	G2-N130WTS	G2-NBF66WTS
FUEL TYPE	Wood Pellet	Wood Pellet	Wood Pellet	Wood Pellet
HEATING AREA**	800–1,200 ft² • 74–111 m²	1,500–2,200 ft² • 139–204 m²	2,000–3,000 ft² • 186–279 m²	1,800–2,500 ft² • 167–232 m²
EMISSIONS	0.55 g/HR	0.41 g/HR	0.45 g/HR	0.64 g/HR
CARBON MONOXIDE PRODUCED	0.15 g/min	0.46 g/min	0.09 g/min	0.35 g/min
PELLET CONSUMPTION RATE: LOW	1.67 LBS/HR • 0.76 kg/HR	1.60 LBS/HR • 0.73 kg/HR	1.21 LBS/HR • 0.55 kg/HR	2.40 LBS/HR • 1.09 kg/HR
PELLET CONSUMPTION RATE: MED	2.82 LBS/HR • 1.28 kg/HR	3.30 LBS/HR • 1.50 kg/HR	3.21 LBS/HR • 1.46 kg/HR	4.18 LBS/HR • 1.90 kg/HR
PELLET CONSUMPTION RATE: HIGH (LBS/HR • kg/HR)	4.87 LBS/HR • 2.21 kg/HR	5.42 LBS/HR • 2.46 kg/HR	6.28 LBS/HR • 2.85 kg/HR	6.37 LBS/HR • 2.89 kg/HR
STOVE EFFICIENCY***	79.9%	82.9%	82.0%	78.8%
HEAT OUTPUT RATE: LOW	11,887 BTU/HR	12,013 BTU/HR	8,950 BTU/HR	16,573 BTU/HR
HEAT OUTPUT RATE: MED	18,603 BTU/HR	23,452 BTU/HR	22,937 BTU/HR	29,357 BTU/HR
HEAT OUTPUT RATE: HIGH	34,172 BTU/HR	37,245 BTU/HR	42,843 BTU/HR	40,842 BTU/HR

** Heating area varies based on installation, layout, and climate zone.

*** Efficiency was determined in accordance with CSA B415.1–22

ELECTRICAL SPECIFICATIONS

MODEL #	G2-N50WTS	G2-N90WTS	G2-N130WTS	G2-NBF66WTS
ELECTRICAL SUPPLY REQUIREMENTS (VOLTAGE / FREQUENCY / PHASE)	120V / 60 Hz / Single Phase	120V / 60 Hz / Single Phase	120V / 60 Hz / Single Phase	120V / 60 Hz / Single Phase
ELECTRIC CURRENT DURING LIGHTING PHASE	3.3 Amps	3.3 Amps	3.3 Amps	3.3 Amps
GENERATOR REQUIREMENTS	500 Watts	500 Watts	500 Watts	500 Watts

SAFETY

GENERAL HAZARD WARNINGS

- ⚠ WARNING:** FAILURE TO COMPLY WITH THE PRECAUTIONS AND INSTRUCTIONS PROVIDED WITH THIS STOVE CAN RESULT IN DEATH, SERIOUS BODILY INJURY AND PROPERTY LOSS OR DAMAGE FROM HAZARDS OF FIRE, EXPLOSION, BURN, ASPHYXIATION, CARBON MONOXIDE POISONING, AND/OR ELECTRICAL SHOCK.
- ⚠ WARNING:** ONLY PERSONS WHO CAN UNDERSTAND AND FOLLOW THE INSTRUCTIONS SHOULD USE OR SERVICE THIS STOVE.
- ⚠ WARNING:** IF YOU NEED ASSISTANCE OR STOVE INFORMATION SUCH AS AN INSTRUCTIONS MANUAL, LABELS, ETC., CONTACT THE MANUFACTURER.

GENERAL WARNING

- ⚠ WARNING:** FIRE, BURN, INHALATION, AND EXPLOSION HAZARD. KEEP SOLID COMBUSTIBLES SUCH AS BUILDING MATERIALS, PAPER, OR CARDBOARD, A SAFE DISTANCE AWAY FROM THE STOVE AS RECOMMENDED BY THE INSTRUCTIONS. NEVER USE THE STOVE IN SPACES WHICH DO OR MAY CONTAIN VOLATILE OR AIRBORNE COMBUSTIBLES OR PRODUCTS SUCH AS GASOLINE, SOLVENTS, PAINT THINNER, DUST PARTICLES, OR UNKNOWN CHEMICALS.

PROP 65 WARNING

- ⚠ WARNING:** THIS PRODUCT CAN EXPOSE YOU TO CHEMICALS INCLUDING LEAD AND LEAD COMPOUNDS, WHICH ARE KNOWN TO THE STATE OF CALIFORNIA, TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. FOR MORE INFORMATION VISIT: WWW.P65WARNINGS.CA.GOV

FCC INFORMATION

- ⚠ CAUTION:** Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/television technician for help

SAFETY PRECAUTIONS

Have an established plan for what to do in the event of a fire. Contact your local fire authority to acquire information and a plan for what to do in the event of a chimney fire.

- ⚠ WARNING:** DO NOT INSTALL IN SLEEPING ROOM.
- ⚠ CAUTION:** Handle stove with care. Avoid striking, scratching, or slamming glass assemblies. Do not operate with cracked, broken, or scratched glass.
- ⚠ WARNING:** HOT WHILE IN OPERATION. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.
- ⚠ WARNING:** NEVER LEAVE CHILDREN NEAR THE STOVE UNATTENDED WHILE THE STOVE IS OPERATING.
- ⚠ WARNING:** DO NOT OVERFIRE. OVERFIRING THE APPLIANCE MAY CAUSE FIRE. IF THE UNIT OR CHIMNEY CONNECTOR GLOWS, YOU ARE OVERFIRING.
- ⚠ WARNING:** 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 MANUAL.

SAFETY

CARBON MONOXIDE

⚠ WARNING: WHEN USED WITHOUT ADEQUATE COMBUSTION AND VENTILATION AIR, THIS STOVE MAY GIVE OFF EXCESS CARBON MONOXIDE—AN ODORLESS, POISONOUS GAS.

⚠ WARNING: EARLY SIGNS OF CARBON MONOXIDE POISONING RESEMBLE THE FLU WITH HEADACHE, DIZZINESS, AND/OR NAUSEA. IF YOU HAVE THESE SIGNS, THE STOVE MAY NOT BE WORKING PROPERLY. GET FRESH AIR AT ONCE AND HAVE THE STOVE SERVICED!

SOME PEOPLE – PREGNANT WOMEN, PERSONS WITH HEART OR LUNG DISEASE, ANEMIA, THOSE UNDER THE INFLUENCE OF ALCOHOL, THOSE AT HIGH ALTITUDES – ARE MORE AFFECTED BY CARBON MONOXIDE THAN OTHERS.

Regardless of how safe this stove is, every fuel burning appliance creates carbon monoxide. It is always a good plan to reduce risk to you and your loved ones as much as possible by installing a carbon monoxide detector. It is recommended to install monitors in areas that are expected to generate carbon monoxide such as heater fueling areas, pellet fuel bulk storage areas, or sheds containing hydronic heaters. Follow the installation, operation, and maintenance instructions provided by the manufacturer of your detector.

SMOKE DETECTORS

Have at least one smoke detector on each floor of your building. Follow the installation, operation, and maintenance instructions provided by the manufacturer of your detector. Avoid false alarms by placing the detector outside the immediate vicinity of the stove. Typically, a good installation location for smoke detectors is near bedrooms.

MORE SAFETY INFORMATION

For auxiliary information regarding pellet stove safety and operation information, contact the National Fire Protection Association (NFPA):

By Mail: NFPA, Batterymarch Park, Quincy MA 02269

Website: <https://www.nfpa.org/>

REESE'S LAW

⚠ WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH of CHILDREN**
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.



This product contains a lithium button/coin cell battery (type: CR2032, voltage: 3V).

If a new or used lithium button/coin cell battery is swallowed or enters the body, it can cause severe internal burns and can lead to death in as little as 2 hours. Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep it away from children. If you think batteries might have been swallowed or placed inside any part of the body, seek immediate medical attention. Call a local poison control center for treatment.

Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate. Even used batteries may cause severe injury or death.

Non-rechargeable batteries are not to be recharged. Do not force discharge, recharge, disassemble, heat above (manufacturer's specified temperature rating) or incinerate. Doing so may result in injury due to venting, leaking, or explosion resulting in chemical burns.

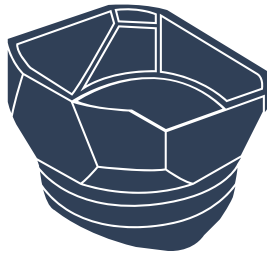
Ensure the batteries are installed correctly according to polarity (+ and -). Do not mix old and new batteries, different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries. Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time according to local regulations.

GETTING STARTED

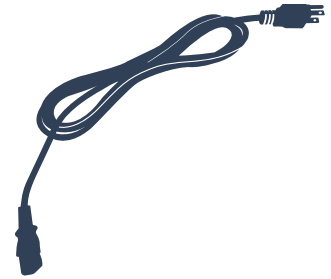
WHAT'S IN THE HOPPER



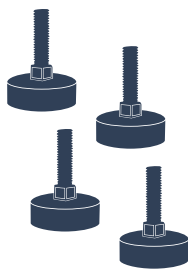
Display Panel



Firepot



Power Cord

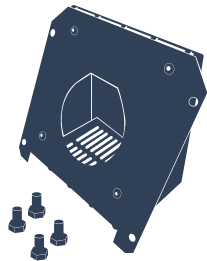
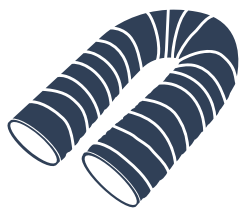


Adjustable Feet (x4)



Cleaning Rod Tool**

**** The cleaning rod tool is not included with the G2-NBF66WTS (Bayfront) pellet stove.**



Fresh Air Intake Kit: Flex Hose, Termination Cap and Screws, Hose Clamp, Cleaning Tool, and Air Intake Adapter

TOOLS AND MATERIALS YOU MAY NEED (NOT SUPPLIED)

Tools Required

- Tape Measure
- Screw Driver (Phillips)
- Stud Finder
- Level
- Venting Components
- High Temperature Silicone (500°F+)
- Reciprocating Saw / Oscillating Tool

Safety Equipment

- Safety Glasses
- Gloves
- Closed-Toe Shoes

Note: Your stove is heavy. Do not attempt to move the stove without assistance

GETTING STARTED

GENERAL INSPECTION OF YOUR STOVE

If any damage, obstruction, or irregularity is found during inspection, do not operate your stove. Contact a qualified service technician or call Customer Support at 1-833-766-5951 for assistance.

Exterior Condition

Inspect your stove's exterior surfaces, door glass, and handles for any visible damage. Confirm that the door closes securely and that all fasteners are tight.

Firebox and Burn Pot

Open the door and check the firebox for debris, packing materials, or obstructions. Ensure the burn pot is correctly seated and free of ash or foreign objects.

Hopper Area

Lift the hopper lid and confirm that the interior is clean and free of dust or moisture from shipping or storage. Verify that the hopper lid closes fully and engages the safety switch.

Power Cord Electrical Components

Examine the power cord for damage and ensure it is routed safely to an appropriate outlet. Do not operate the stove if any wires or electrical components appear damaged.

Installation Verification

If the stove has been recently installed, confirm that the venting system, clearances to combustibles, and floor protection meet all local codes and the requirements outlined in this manual.

UNPACKING AND ASSEMBLY

⚠ CAUTION: Damaged parts may compromise safe operation. Do not install incomplete components. Do not install substitute components. Do not install damaged components.

Step 1: Remove the silica packets

Open your stove door and remove the silica packets from the ash pan.

Step 2: Secure the display panel

Attach the display panel to the rear of the stove using the two provided screws. Connect the data cable to the back of the display.

Step 3: Install the firepot

Remove the firepot from the hopper and seat it in the firebox. Ensure the ignitor can contact pellets upon ignition (see figure 20, page 17)

Step 4: Install cleaning rod tool

Remove the plug, place the rod in the top opening of your stove, and turn it to lock in place (see figure 1). This tool must be hung on the back of the stove when not in use.

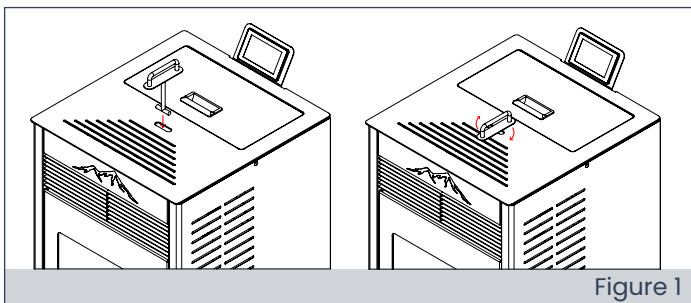


Figure 1

Step 5: Install the adjustable feet

Carefully lay your stove on its side and screw in the four adjustable feet. The feet must be installed.

Step 6: Connect the power cord

Plug the power cord into the socket on the rear bottom of the stove and into the nearest outlet. Press the red ON/OFF toggle switch above it to ON (see figure 2). Confirm that the display powers on and lights up.

⚠ CAUTION: This power connection is for testing only. After confirming the display functions, turn off the red power switch and unplug the stove before continuing any assembly or installation.

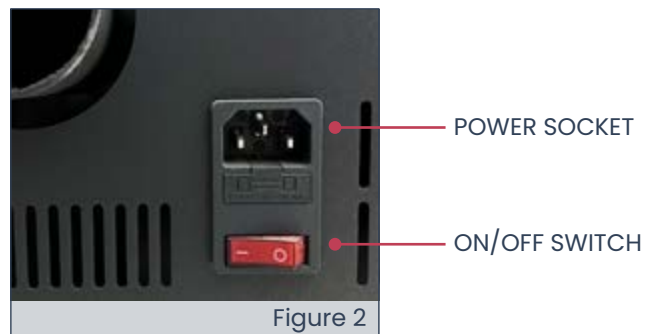


Figure 2

⚠ WARNING: THE POWER SOCKET PROVIDES POWER TO THE STOVE. ALWAYS UNPLUG THE POWER CORD FROM THE SOCKET BEFORE PERFORMING ANY MAINTENANCE ON THE STOVE.

⚠ WARNING: THE ON/OFF SWITCH PROVIDES POWER TO THE DISPLAY PANEL AND ENABLES COMPLETE CONTROL OF THE STOVE THROUGH WI-FI (MOBILE APP). ALWAYS ENSURE CLEARANCE TO COMBUSTIBLES ARE MAINTAINED.

Step 7: Connect to Wi-Fi (optional)

Refer to the operations section (Page 20) for instructions on connecting your stove to Wi-Fi and using smart-control features.

GETTING STARTED

STOVE SAFETY FEATURES

Vacuum Sensor

Your stove's combustion system is designed to operate under a controlled negative pressure. If the firebox door is not fully closed or the seal is compromised, the vacuum sensor will detect the loss of negative pressure and trigger a safety fault, shutting the stove down.

Hopper Lid Sensor

This sensor ensures that the hopper lid remains securely closed during operation. For safety, the stove will automatically disable the pellet feed system when the hopper lid is open.

Hopper Temperature Sensor

This sensor monitors the temperature within the hopper area to ensure safe operation. If an abnormal or elevated temperature is detected, the control system will initiate an immediate shutdown to prevent unsafe conditions.

Exhaust Temperature Sensor

This sensor continuously monitors the temperature of the exhaust system. If the exhaust temperature exceeds safe operating limits while the stove is running, the sensor will trigger a shutdown to protect against overheating.

INSTALLATION

WARNINGS AND CAUTIONS

⚠ WARNING: THE AUTHORITY HAVING JURISDICTION (SUCH AS MUNICIPAL BUILDING DEPARTMENT, FIRE DEPARTMENT, FIRE PREVENTION BUREAU, ETC.) SHOULD BE CONSULTED BEFORE INSTALLATION TO DETERMINE ANY NEED TO OBTAIN A PERMIT. OBSERVE ALL LOCAL BUILDING CODES.

For more information contact:

- The manufacturer at 1-833-766-5951 or www.grandtetoncollection.com
- Local code authorities
- The National Fire Protection Association (NFPA) and request a copy of the latest editions of NFPA Standard 211. The mailing address of the NFPA is Batterymarch Park, Quincy, MA 02269.

⚠ WARNING: WHEN THIS STOVE IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. TO REDUCE THE RISK OF FIRE, FOLLOW THESE INSTALLATION INSTRUCTIONS. CONTACT LOCAL BUILDING OR FIRE OFFICIALS ABOUT RESTRICTIONS AND INSTALLATION INSPECTION REQUIREMENTS IN YOUR AREA.

⚠ CAUTION: Any deviation or alteration from these installation instructions may result in damage to you, the stove, your chimney, and your home. Your warranty may become void. Read and follow all instructions.

⚠ CAUTION: Do not leave the stove plugged into any electrical supply during assembly or installation.

⚠ CAUTION: Contact local building or fire officials about restrictions and installation inspection requirements.

FRESH AIR AND VENTING CAUTIONS

⚠ CAUTION: Never draw outside combustion air from:

- A wall, floor, or ceiling cavity
- An enclosed space such as an attic, garage, or crawl space

⚠ CAUTION: If using an air intake connection, the stove must be installed such that it is attached to the structure.

CONNECTION CAUTIONS

⚠ CAUTION: A chimney connector shall not pass through an attic or roof space, closet, or similar, concealed space, or a floor, or ceiling. 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.

⚠ CAUTION: The joints of any and all connections for any ventilation systems (combustion exhaust and optional inlet air duct) must be sealed with high temperature silicone.

INSTALLATION

GENERAL VENTING CAUTIONS

- ⚠ CAUTION:** Do not connect to any air distribution duct or system.
- ⚠ CAUTION:** Do not connect this unit to a chimney flue serving another appliance.
- ⚠ CAUTION:** Do not install a flue damper in the exhaust venting system of this wood pellet fired stove.
- ⚠ CAUTION:** Do not install in any fireplace.
- ⚠ WARNING:** DO NOT INSTALL THIS UNIT IN A SLEEPING ROOM.

CLEARANCE TO COMBUSTIBLES

The clearances listed below represent minimum distances between your stove and any other object. No objects should encroach on this space. This includes but is not limited to carpet, furniture, children, pets, clothing, fuel, and any other object. These clearances may only be reduced by means approved by the regulatory authority having jurisdiction.

Models: **G2-NBF66WTS (Bayfront)**

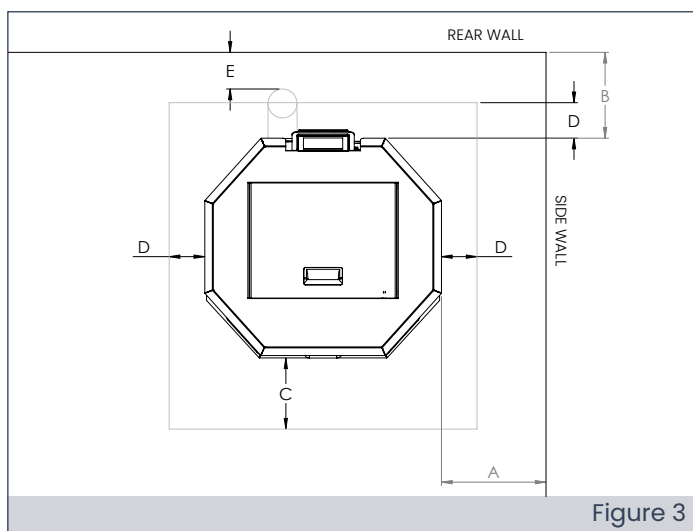


Figure 3

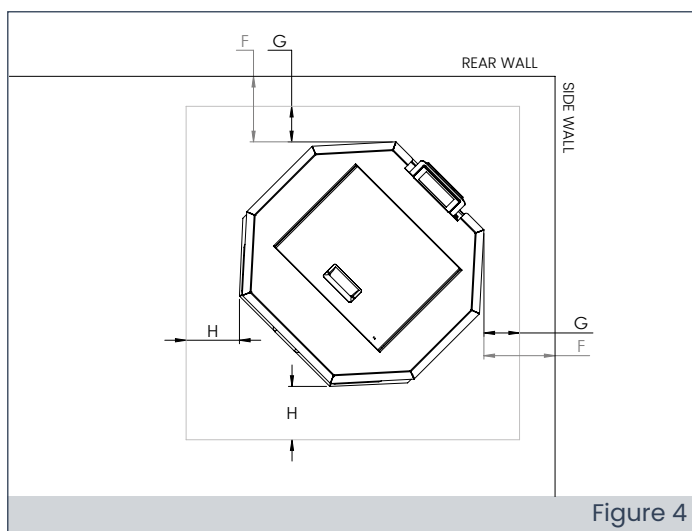


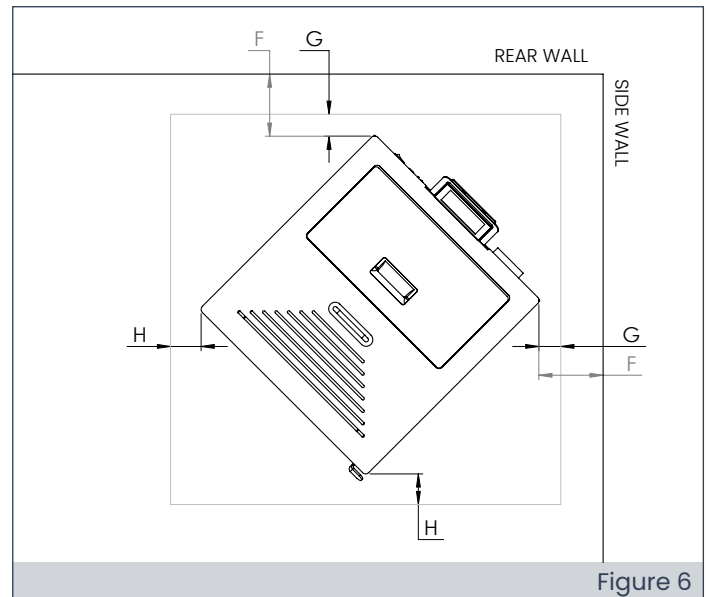
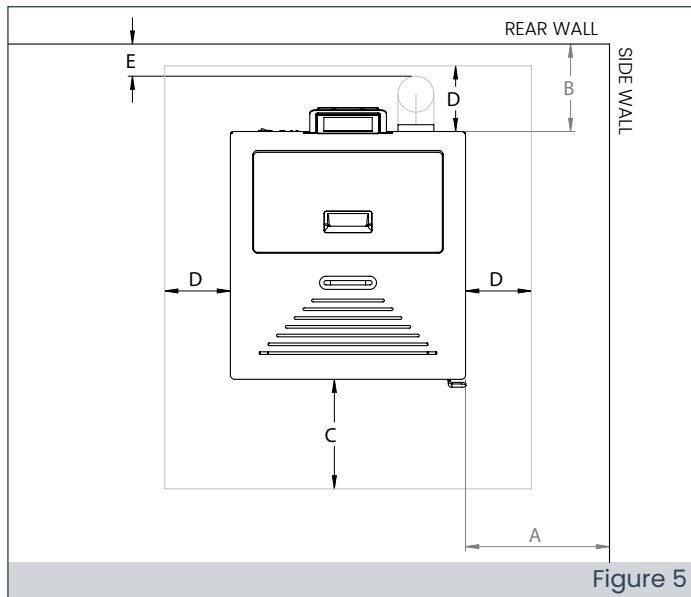
Figure 4

CODE	INSTALLATION TYPE	G2-NBF66WTS (in • mm)
A	Side clearance to wall/nearest body	TBD
B	Rear clearance to wall/nearest body	TBD
C	Floor cover front extension	TBD
D	Floor cover side and back extension	TBD
E	Vertical vent pipe run to wall/nearest body	TBD
F	Angled install - Clearance to wall/nearest body	TBD
G	Angled install - Floor cover back extension	TBD
H	Angled install - Floor cover front extension	TBD

INSTALLATION

CLEARANCE TO COMBUSTIBLES

Models: **G2-N50WTS (Mini)** **G2-N90WTS (Medium)** **G2-N130WTS (Large)**



CODE	INSTALLATION TYPE	G2-N50WTS (in • mm)	G2-N90WTS (in • mm)	G2-N130WTS (in • mm)
A	Side clearance to wall/nearest body	TBD	TBD	TBD
B	Rear clearance to wall/nearest body	TBD	TBD	TBD
C	Floor cover front extension	TBD	TBD	TBD
D	Floor cover side and back extension	TBD	TBD	TBD
E	Vertical vent pipe run to wall/nearest body	TBD	TBD	TBD
F	Angled install - Clearance to wall/nearest body	TBD	TBD	TBD
G	Angled install - Floor cover back extension	TBD	TBD	TBD
H	Angled install - Floor cover front extension	TBD	TBD	TBD

FLOOR PROTECTION

Proper floor protection is essential to ensure safe installation and operation of the appliance. If your installation requires a hearth pad / ember board, you must use an approved pad:

Approved Hearth Pad Types

UL-Listed Hearth Pads (preferred)

- Listed to UL 1618 (Floor Protectors and Wall Shields)
- Permanently labeled by the manufacturer
- Constructed from tested, non-combustible materials
- Clearly marked with UL certification and model identification
- Thermal protection is required for all combustible floors, with an insulation value of R = 1

Important Considerations

- Always adhere to the floor protection dimensions specified in this manual.
- Local code officials (Authority Having Jurisdiction – AHJ) may require proof that the flooring is non-combustible.
- When uncertain, contact a qualified service technician or call Customer Support at 1-833-766-5951 for assistance.
- Reference figures 3-6 codes C,D,G, and H for sizing details

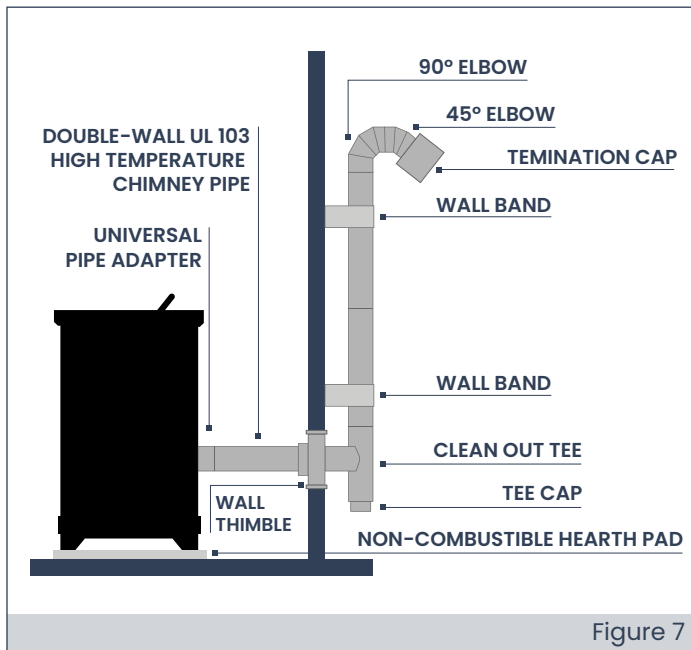
INSTALLATION

RECOMMENDED INSTALLATION METHODS

There are several factors that influence how and where your pellet stove should be installed. The methods outlined below represent the four most common installation approaches recommended by the manufacturer.

Note: Local building code requirements for clearance to combustibles, windows, doors, and under eaves must be met at all times.

Straight Pass Through a Perpendicular Wall



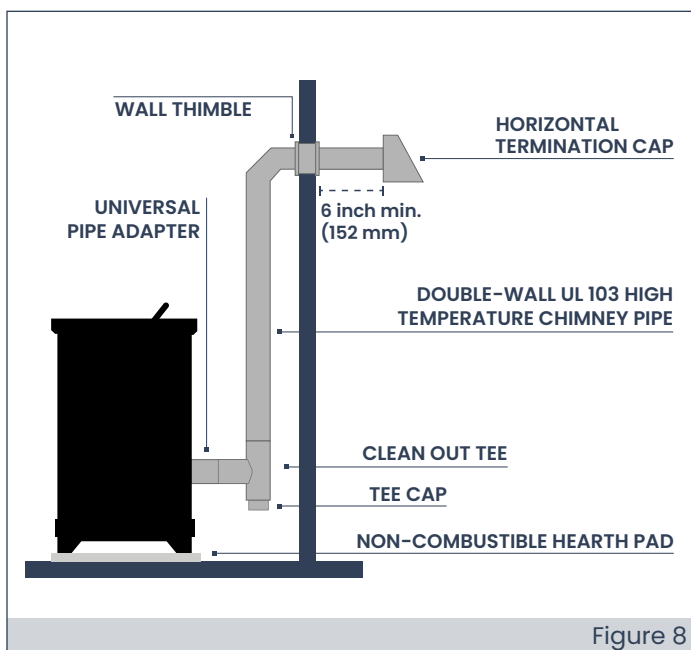
Use Case

- Ground level or higher
- Non-masonry siding (e.g., vinyl, wood, engineered wood)
- No roof overhead

Requirements

- Vent must exit straight out the rear (a 45° elbow is allowed for corner installs).
- Use a wall thimble where the vent passes through the wall.
- Add a tee with a clean-out cap for maintenance.
- Install straight sections to extend the vent above the snow line.
- Finish with a horizontal or 45° termination cap to block weather and rodents.

Interior Rise Through a Perpendicular Wall



Use Case

- Basement
- Existing architecture that better allows for this exit
- Minimize visible venting on the exterior
- Exterior obstruction (Ex. Landscaping, Utilities)

Requirements

- Install a clean-out tee on the interior side of the wall for accessible maintenance.
- Use a wall thimble where the vent passes through the wall.
- Maintain all required clearances to combustibles between the vent pipe and the wall.
- Finish with a horizontal termination cap to block weather and rodents.
- Must terminate 12 inches (304.8 mm) above highest snowfall

INSTALLATION

RECOMMENDED INSTALLATION METHODS (continued)

⚠ WARNING: DO NOT USE SINGLE-WALL CONNECTION PIPE AS A CHIMNEY.

Manufactured Chimney Through Roof

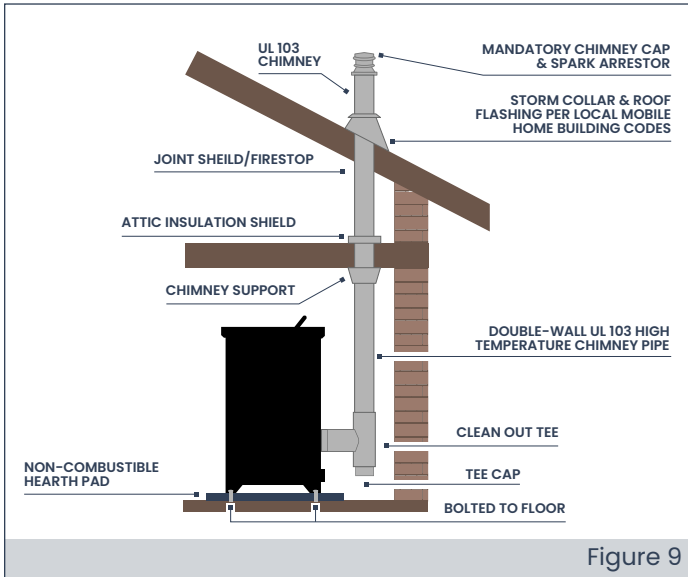


Figure 9

Use Case

- Installing in a new location where no venting currently exists
- Simplest, most direct path to vent vertically

Requirements

- Type L venting must be fully sealed and along the entire vent path.
- Proper shielding is installed through the attic
- Chimney connector pipes must not obstruct the chimney connection at any point.
- Ceiling support and attic insulation is installed where required.

Masonry Chimney Connection

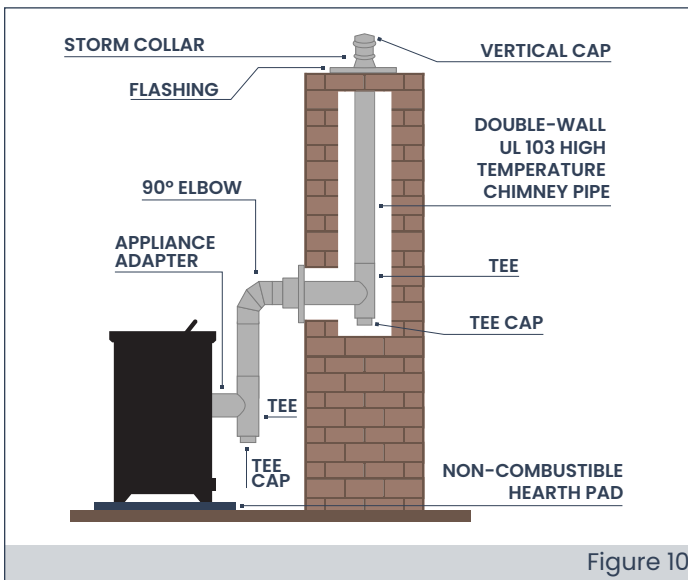


Figure 10

Use Case

- Existing architecture that better allows for this exit
- Stove is not near an exterior wall

Requirements

- Type L venting must be fully sealed to the chimney and along the entire vent path.
- Any opening at the base of the chimney must be securely closed.
- Chimney connector pipes must not obstruct the chimney connection at any point.

VENTING REQUIREMENTS

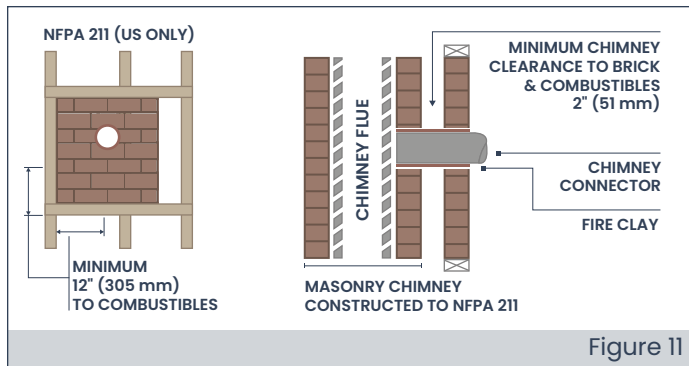
- Install a clean-out tee for easier maintenance.
- Provide at least 6 feet (1.8 m) of total venting to ensure proper draft.
- Include a minimum vertical rise of 4 feet (1.2 m).
- Appropriate termination cap is installed.
- All venting must be Type L and UL 103HT certified.

- Vent pipe must be 3 inch (76.2 mm) diameter or larger; for runs over 16 feet (4.8 m), use 4 inch (101.6 mm) or 6 inch (152.4 mm).
- Ensure the crimped end of each vent section is oriented toward the stove.
- All components must be from the same manufacturer.

INSTALLATION

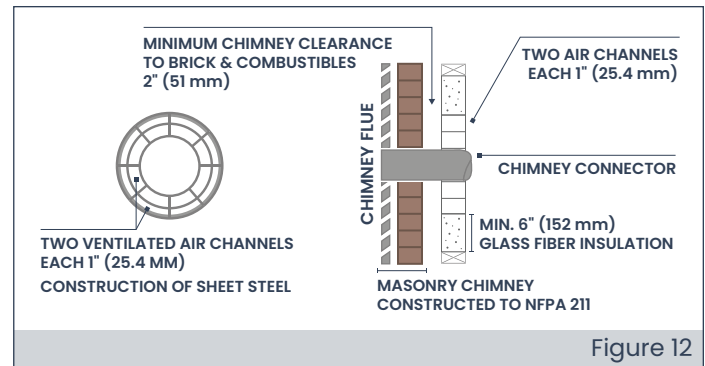
APPROVED WALL PASS THROUGH TECHNIQUES

NFPA 211 (US only) approved wall pass through techniques / Canada on page 14



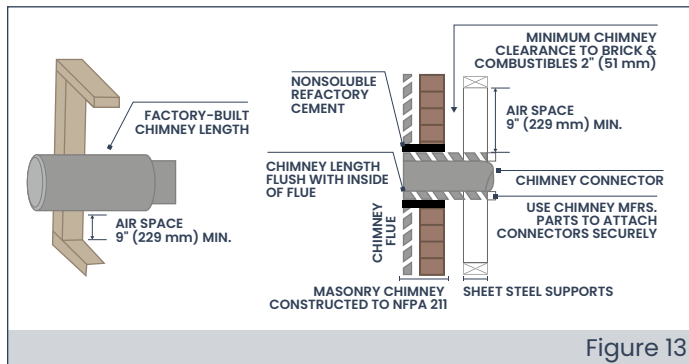
Brick Masonry - US only

A minimum 3.5 inch (89 mm) brick masonry wall must be framed into any combustible wall, providing at least 12 inch (305 mm) of brick separation between the clay liner and combustible materials. The fireclay liner must extend from the outer surface of the brick wall to the inner surface of the chimney flue liner—without projecting beyond it—and must be securely cemented in place.



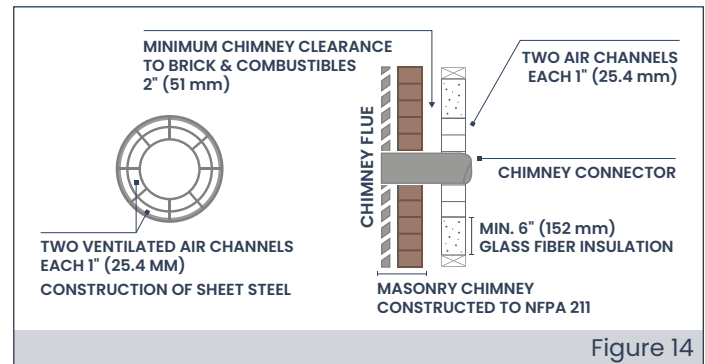
Insulated Sleeve - US only

Use a solid-insulated, listed factory-built chimney section with the same inside diameter as the chimney connector and at least 1 inch (25.4 mm) of insulation. A minimum 9 inch (229 mm) air space must be maintained between the chimney's outer wall and any combustible materials.



Ventilated Thimble - US only

A sheet-steel chimney connector, minimum 24-gauge, must be used with a ventilated thimble of at least the same thickness, providing two 1 inch (25.4 mm) air channels. The assembly must be separated from combustibles by a minimum of 6 inch (152 mm) of glass-fiber insulation. The opening must be covered, and the thimbles supported by a sheet-steel support, also minimum 24-gauge.



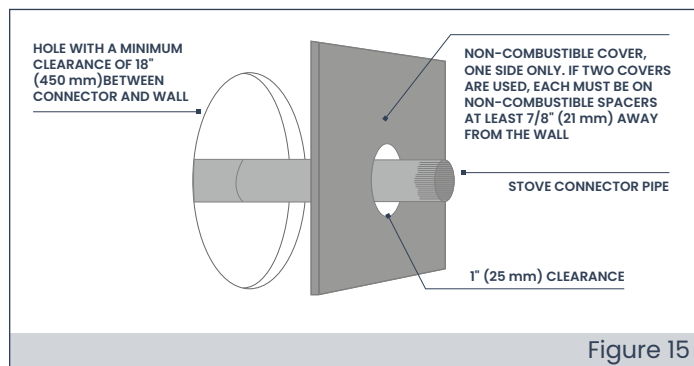
Chimney Section Pass Through - US only

Use a solid-insulated, listed factory-built chimney section with an inside diameter at least 2 inch (51 mm) larger than the chimney connector and a minimum of 1 inch (25.4 mm) of insulation. This section functions as the pass-through for a single-wall, 24-gauge (minimum) sheet-steel connector. Maintain at least 2 inch (51 mm) of air space between the connector and the chimney section, and use a 12 inch (305 mm) chimney section spaced 1 inch (25.4 mm) from the connector with sheet-steel support plates at both ends. The opening must be covered, and the chimney section supported on both sides with securely fastened 24-gauge (minimum) sheet-steel supports. Fasteners must not penetrate the chimney flue liner.

INSTALLATION

APPROVED WALL PASS THROUGH TECHNIQUES (continued)

Canadian Wall Pass Through



Note: For Canadian residential and transportable homes or structure installations, where passage through a wall, or partition of combustible construction is desired, the installation must conform to CAN/CSA-B365.

FRESH AIR INSTALLATION

The fresh air kit is not required but highly recommended. Some benefits include:

- Improves Combustion Efficiency – Supplies a dedicated source of outside air, ensuring the stove always receives the air it needs for a clean, stable burn.
- Enhances Heat Output and Flame Quality – With consistent air supply, the stove can maintain optimal flame height, burn rate, and heat production.
- Reduces Drafts Inside the Home – Without an air kit, the stove pulls air from inside the living space—air that must be replaced by cold outdoor air leaking in. A fresh air kit reduces this infiltration, making the home more comfortable.
- Required in Certain Installations – Many local codes require outside air for manufactured homes, tight homes, or specific venting configurations. Using a fresh air kit ensures compliance.

MOBILE HOME INSTALLATION

⚠ WARNING: DO NOT INSTALL THIS UNIT IN A SLEEPING ROOM.

⚠ CAUTION: The structural integrity of the mobile home's floor, walls, ceiling, and roof must be maintained during installation.

Note: This stove may be installed in a mobile (manufactured) home only when installed in accordance with local codes and the requirements listed below. All installations must comply with the Authority Having Jurisdiction (AHJ) and use components that are specifically approved for mobile-home use.

Required Parts & Materials (Not Supplied)

The following components are required for a compliant mobile-home installation:

- UL 103-listed 3" chimney system (factory-built, residential-type).
- Ceiling thimble
- Roof thimble
- Spark arrestor
- Roof flashing

INSTALLATION

MOBILE HOME INSTALLATION (continued)

Chimney and Venting Requirements

- The chimney must attach directly to the appliance and extend at least 3 feet (0.9 m) above the roof penetration.
- The chimney termination must be at least 2 ft (0.6 m) higher than any part of the mobile home within 10 feet (3 m) of the chimney.
- Roof-mounted chimney terminations must be removable at or below 13½ feet (4.1 m) above ground level without special tools.
- A mechanical securement system must be provided to secure the chimney to the ceiling support box.
- All vent system joints—both combustion air intake and exhaust—must be sealed with high-temperature silicone to ensure an airtight connection.
- The full chimney assembly must comply with all local codes and requirements of the AHJ.
- The chimney must be removed prior to transporting the mobile home, and reinstalled after transport following all requirements.

Fresh Air (Outside Air) Requirements

- This appliance must be supplied with a permanently ducted source of outside combustion air when installed in a mobile home.
- The duct must be constructed entirely of metal—no plastic or flexible non-metallic materials.
- The exterior termination must include a rodent-proof screen.
- The intake must be kept clear of snow, ice, leaves, and debris.
- All intake-air joints must be sealed airtight with high-temperature silicone.

Appliance Mounting and Support

- The stove must be installed on a level surface capable of supporting its weight.
- The stove must be bolted to the surface to prevent movement, tipping, or seal failure during operation or transport.

Flue System Integrity

The appliance operates with negative pressure in the combustion chamber and a slight positive pressure at the flue outlet. Therefore:

- The flue connection must be installed correctly and fully airtight.
- All seals must be maintained to prevent leakage of flue gases into the home.

THERMOSTAT PLACEMENT

- Position the thermostat as far from the stove as the 6 ft. cable allows to ensure it senses the true room temperature rather than heat radiating from the appliance.
- Avoid placing the thermostat near heat sources (stoves, vents, direct sunlight, or electronics) that could cause inaccurate temperature readings.
- Mount the thermostat at a typical room height (approximately 4–5 ft. from the floor) for best sensing performance.
- Do not place the thermostat behind furniture or in drafty areas such as doorways or windows, which can lead to unstable temperature control.

FINAL INSTALLATION CHECKLIST

- | | |
|--|--|
| ☐ All pipe is Type L and UL 103 certified and 3 inch (76.2 mm) diameter or larger | ☐ The venting is installed in the correct orientation |
| ☐ At least 6 feet (1.8 m) total of venting (4 foot (1.2 m) vertical rise) was used | ☐ An appliance adapter is connected to the stove and high temp sealant is used on this joint |
| ☐ There is easy access to the cleanout tee | ☐ All joints are tight and sealed |

OPERATIONS

FUEL GUIDANCE AND TIPS

Pellet Storage

- Store in a dry environment
- Store off the ground
- Keep covered

Note: Do not store wood pellet fuel or other fire starting materials on floor protector, underneath stovepipe, or anywhere within minimum clearances from combustible surfaces specified on pages 9-10.

⚠ CAUTION: Do not store unused pellets in the stove for future use as they may collect moisture. Using wet or damp pellets may result in ignition difficulty, incomplete combustion, and the potential for a hopper fire.

Pellet Material

- Hardwood required
- Less than 1% ash
- Premium grade
- Standard size (diameter of a pencil)
- Pro tip: PFI Certified pellets are recommended

Note: Use of pellets that do not meet these specifications will cause ash build up and negatively impact performance

⚠ CAUTION: Do not use chemicals or fluids to start the fire.

⚠ CAUTION: Do not burn garbage or flammable fluids such as gasoline, naphtha, or engine oil.

⚠ CAUTION: Never attempt to use any of the following materials as fuel:

- Paper products, cardboard, or particle board
- Garbage
- Animal remains or manure
- Lawn clippings or yard waste
- Waste petroleum products
- Coal
- Construction or demolition debris
- Railroad ties or pressure-treated wood
- Materials containing: asbestos, plastic, or rubber (including tires)
- Petroleum products such as: paints, paint thinners, asphalt products

BURNING THESE MATERIALS MAY RESULT IN RELEASE OF TOXIC FUMES OR RENDER THE HEATER INEFFECTIVE AND CAUSE SMOKE

UNDERSTANDING YOUR STOVE

Theory of Operation

Reference figure 16 below

1. The exhaust blower draws air through the firepot and out the exhaust vent
2. The auger drops pellets in the firepot
3. The ignitor lights these pellets
4. The room blower pulls air through the rear heat exchanger and releases it into the room

Note: It is critical to burn clean fuel so ash does not build up and inhibit the operation of these components

⚠ WARNING: HOT WHILE IN OPERATION. DO NOT TOUCH THE STOVE. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS.

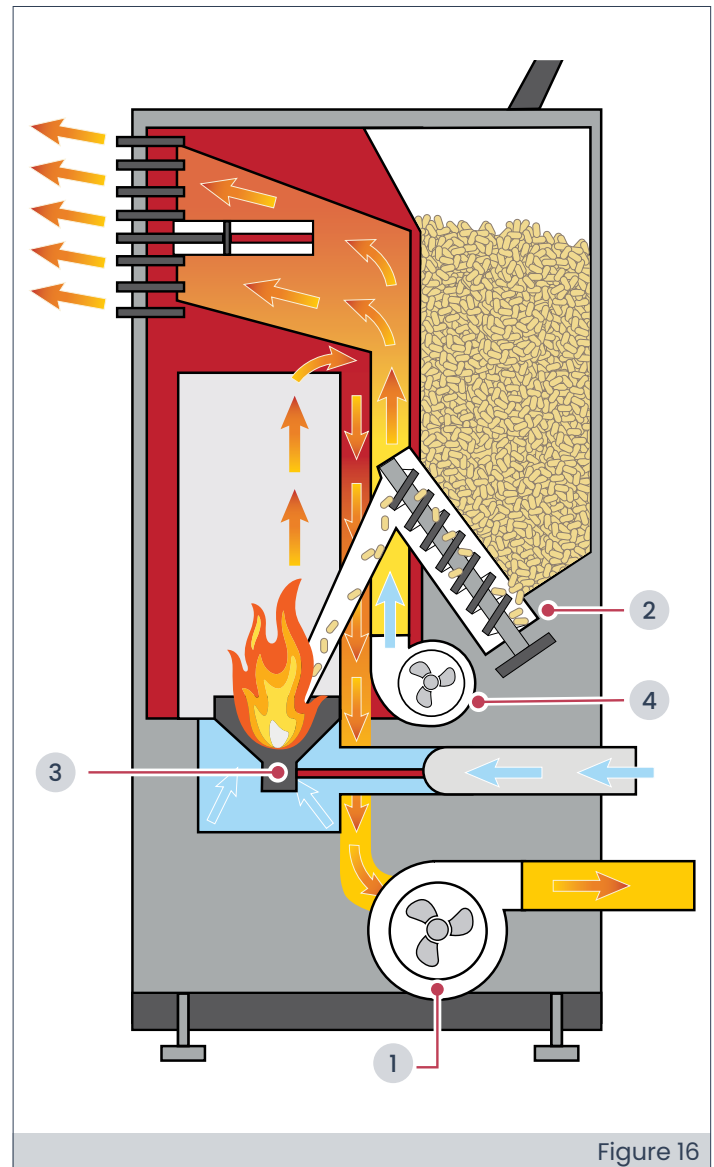


Figure 16

OPERATIONS

BURNING YOUR STOVE

First Burn

Perform the initial burn outdoors

Before bringing your stove indoors for everyday use, complete the first burn in a well-ventilated outdoor area. This process allows the high-temperature paint and protective coatings to cure properly. It's normal for some smoke and odor to be released during this stage. For a thorough cure – it is best to allow your stove to burn on high for 2 hours.

Prime the Auger (*Settings > Jog Auger > Forward*)

Once the stove is set up and you're ready to start the burn, fill the hopper with pellets. Run the auger until pellets begin to drop into the firepot—this step ensures the feed system is properly loaded and ready for consistent fuel delivery when you ignite the stove.

Pre-Burn Checklist

Take a few moments to confirm that your stove is ready for safe and efficient operation. A quick check of these items before each use helps your stove run safely and efficiently.

- ☐ Venting: All vent connections are tight and sealed
- ☐ Pellets: Hopper is filled with enough pellets for the burn (*see figure 17*)
- ☐ Firepot: Holes are clean and clear for proper airflow (*see figure 18*)
- ☐ Ash pan: Not full—empty if needed (*see figure 19*)
- ☐ Door Seal: Closed firmly with a tight gasket seal
- ☐ Ignitor: Visible and unobstructed through the firepot (*see figure 20*)
- ☐ Power: Cord is securely plugged into an outlet and switch is set to ON



Figure 17



Figure 18

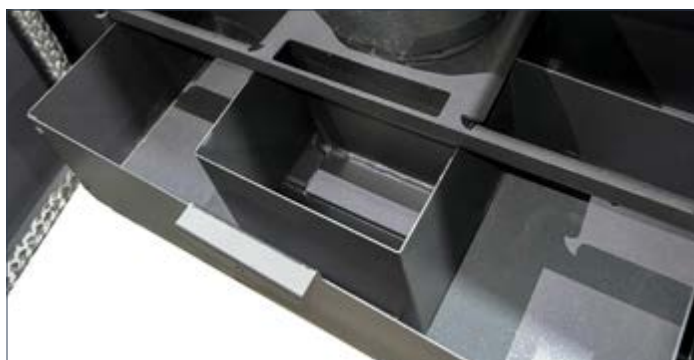


Figure 19



Figure 20

OPERATIONS

STARTING YOUR STOVE

Step 1: Start Your Stove

Press and hold the start/shutdown button (⏻) for 2 seconds

Start-up sequence:

- **Pre-light Cycle:** Your stove will increase air flow to prepare for an efficient burn
- **Lighting Cycle:** The ignitor will heat up, pellets will begin dropping into the firepot, and you'll soon see a flame. Your stove will stay in this cycle until the exhaust temperature is high enough to sustain a steady burn without the ignitor. Pull cleaning rod tool after lighting cycle.
- **Run Mode:** Once the fire is established, your stove will start balancing heat output to reach and maintain a steady room temperature.

⚠ WARNING: NEVER USE CHEMICALS OR FLUIDS TO START OR FRESHEN UP THE FIRE. KEEP ALL CHEMICALS AWAY FROM THE STOVE WHILE IN USE

Step 2: Setting the Temperature

When your stove reaches **Run Mode**, use the **Thermostat Slider** on the control panel to set your desired room temperature (see J-Thermostat Slider page 19).

Note: You are able to set your desired room temperature during the start-up sequence

Step 3: Choosing an Operating Mode

After setting the temperature, choose how you'd like your stove to run — Manual Mode or Automatic Mode.

Manual Mode

- You control both the exhaust blower and the room blower.
- Adjusting the exhaust blower changes your stove's internal burn temperature.
- Adjusting the room blower controls how much warm air your stove pushes into the room.

Note: Use this mode if you want to heat the room as quickly as possible

Automatic Mode

- Your stove automatically manages the blower speeds and pellet feed to maintain your set temperature.
- It measures the difference between the current room temperature and your thermostat setting, then adjusts output levels for smooth, even heating

Note: Use this mode for steady, efficient warmth and longer-term comfort

Note: See page 23 for ECO mode behavior

Step 4: Shutting Down Your Stove

Press and hold the start/shutdown button (⏻) for 2 seconds

Your stove will enter the cool-down cycle where:

- Pellet feeding stops, and the fans speed up to cool your stove quickly.
- Once the internal temperature reaches a safe level, the fans will shut off and your stove will power down.

Note: If you accidentally shutdown your stove and want to restart it, allow it to complete the cool-down cycle first. Your stove must cool to a safe temperature before beginning a new start-up sequence.

OPERATIONS

DISPLAY PANEL CONTROLS



Figure 21

Screen Navigation

- A Lock Button:** Tap to lock or unlock the control panel
- B Start/Shutdown Button:** Press and hold to start or shutdown your stove
- C Mode Slider:** Slide left or right to adjust the burn intensity (Low, Medium, or High)
- D User Settings:** Open the settings menu to adjust operational preferences and stove parameters
- E Status Screen:** View real-time performance metrics and monitor your stove's operation
- F Schedule:** Automate your stove to maintain comfortable temperatures throughout the week
- G Home Button:** Return to the main home screen from any menu
- H Room Fan Slider:** Slide to set the fan speed that circulates warm air (Low, Medium, or High)
- I Automatic / Manual Mode Select:** Switch between Automatic Mode (self-regulated burn) and Manual
- J Thermostat Slider:** Adjust the current room temperature from your stove's built-in thermostat
- K Room Temperature Display:** Shows the current room temperature from your stove's built-in thermostat
- L Thermostat Display:** Shows the temperature you've set for your room
- M Stove Status Display:** Indicates the current operating cycle
- N Alert Indicator:** Alerts you to maintenance needs or system errors (*see Troubleshooting pages 28-29*)

OPERATIONS

WI-FI CONTROLS

Features

- Remotely start or shutdown your stove
- Adjust the thermostat temperature
- Change the burn level between Low, Medium, or High
- Switch between Automatic or Manual modes
- Create schedules or timers to automate room temperature control
- Monitor your stove's performance through temperature and performance metrics
- Adjust the exhaust blower and room fan
- Receive alerts for temperature changes or stove conditions

Pairing

Step 1: Download the App



Download the GTC Smart Stove App
The app is available on both the iOS App Store and Google Play Store
You can download it by searching "GTC Smart Stove" in your app store or by scanning the QR code found here or on the front page of this manual

Step 2: Create or Log In to Your Account

Open the app and log in, or set up a new account if you don't already have one



Figure 22

Step 3: Add a Device

Tap the "+" icon in the top-right corner and select "Add Device"

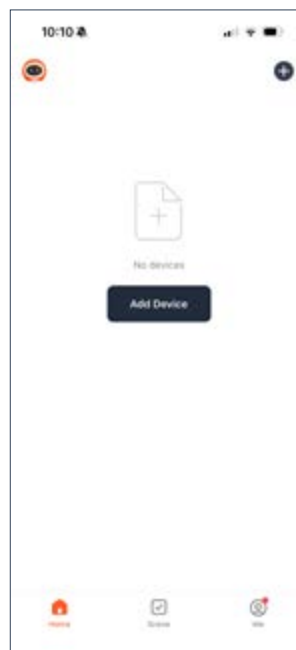


Figure 23

OPERATIONS

Step 4: Enter Pairing Mode

Go to the back of your stove. The red light should be blinking to indicate pairing mode. If it's not blinking, press and hold the pairing button until it begins to blink.

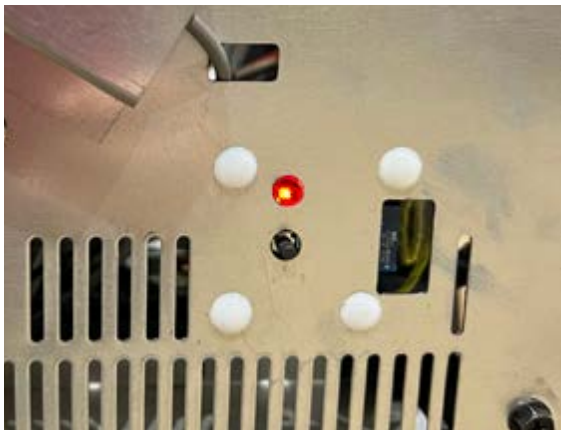


Figure 24

Step 5: Device Discovery

- Automatic (Preferred): Your stove should appear at the top – tap Add
- Manual: Enter your Wi-Fi info, confirm the stove is in pairing mode, and the app will connect

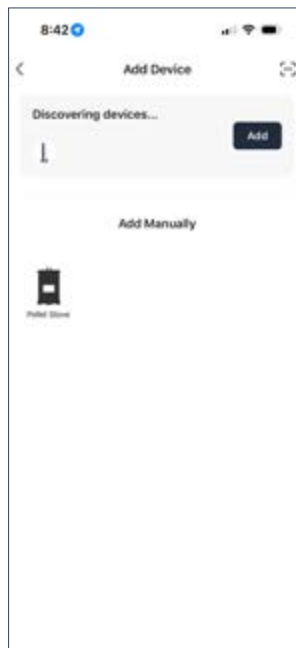


Figure 25

Step 6: Connect to Wi-Fi

Enter your Wi-Fi network name and password to connect your stove



Figure 26

Step 7: Wait for Confirmation of Success

Allow up to 2 minutes for your stove to finish connecting.

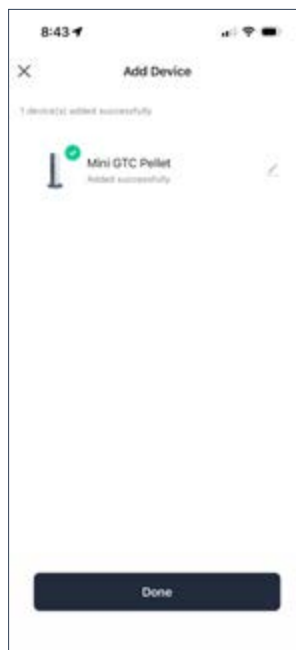


Figure 27

OPERATIONS

MOBILE APP CONTROLS

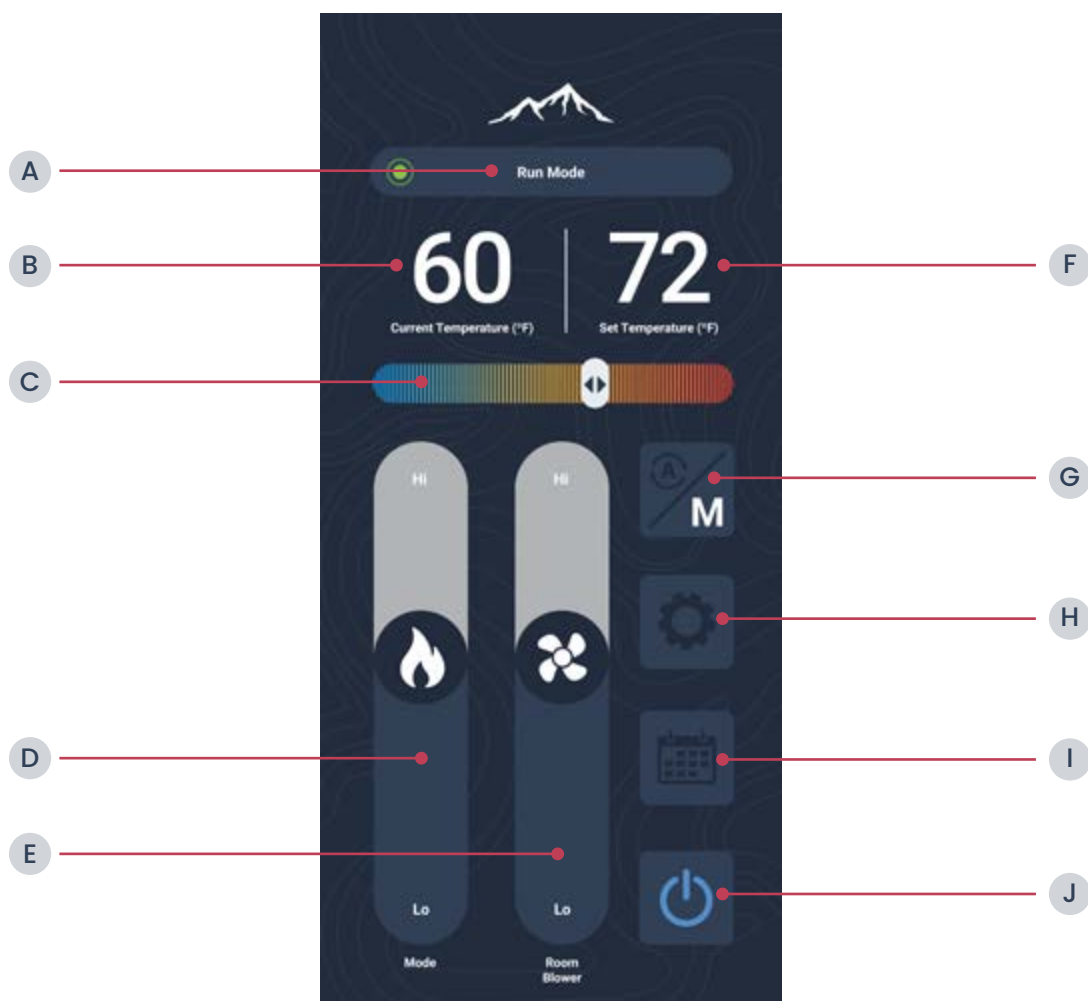


Figure 28

App Navigation

- A Stove Status Display:** Indicates the current operating cycle
- B Room Temperature Display:** Shows the current room temperature from your stove's built-in thermostat
- C Thermostat Slider:** Adjust the current room temperature from your stove's built-in thermostat
- D Mode Slider:** Slide up or down to adjust the burn intensity (Low, Medium, or High)
- E Room Fan Slider:** Slide up or down to set the fan speed that circulates warm air (Low, Medium, or High)
- F Thermostat Display:** Shows the temperature you've set for your room
- G Automatic / Manual Mode Select:** Switch between Automatic Mode (self-regulated burn) and Manual
- H User Settings:** Open the settings menu to adjust operational preferences and stove parameters
- I Schedule:** Automate your stove to maintain comfortable temperatures throughout the week
- J Start/Shutdown Button:** Press and hold to start or shutdown your pellet stove

OPERATIONS

USER SETTINGS

Temperature Unit

Choose to display temperatures in Fahrenheit (°F) or Celsius (°C).

Exhaust Fan

Adjust how fast the exhaust fan circulates air:

- **ECO:** Slows the fan and reduces air flow
- **Balanced:** The default rate at which the stove is designed to run
- **Boost:** Slightly increases the air circulation
- **Max:** Highest fan speed for maximum airflow

Note: Your stove is designed to run in Balanced Mode. Adjusting the fan speed can help compensate for high elevation or unusual venting setups.

Date and Time

Set the current date and time for accurate scheduling.

Screen Sleep Time

Set how long the display stays active before the screen saver appears.

Language

Select your preferred display language: English, French, or Spanish.

Restore Factory Settings

Reset your stove to its original factory settings.

ECO Mode

Control how your stove reacts once the set temperature is reached:

- **ON:** Your stove stops feeding pellets and cools down. It restarts automatically when the room temperature drops 5 degrees below the thermostat temperature. This helps prevent overheating in smaller rooms and saves pellets.
- **OFF (Default):** Your stove reduces to a low-power burn to keep the flame active. This allows steady heat and quicker recovery when more warmth is needed — ideal for larger spaces. Once the temperature drops 5 degrees below the thermostat temperature, your stove returns to run mode.

Note: For smaller rooms, set Eco Mode ON to prevent overheating. For larger spaces, set Eco Mode OFF to maintain steady heat without frequent cycling.

Touch Tones

Turn touch sound feedback on or off.

WiFi Control

Disable all network features so the stove can only be controlled through the touchscreen.

Jog Auger

Manually move the auger forward or backward (only while pressing the button):

- **Forward:** Use to fill the auger with pellets during startup or after the hopper runs empty.
- **Reverse:** Use if you suspect the auger is clogged or jammed.

Note: Never jog the auger during operation; it may disrupt the feed rate and overflow the firepot.

About

View general information, including maintenance details, error codes, stove specifications, and customer support contacts.

OPERATIONS

SCHEDULE

Use this feature to automate On/Off cycles and control room temperature when you don't have access to the mobile app.

Creating a Schedule

Tap the "+" icon in the top-right corner of the Schedule screen.

- **Duration:** Set how long you want the stove to maintain the selected temperature.
- **Days:** Choose which days of the week the schedule should run.
- **Start Time:** Select the time of day you want the stove to start heating.
- **Room Temperature:** Set your desired temperature. The stove will maintain this temperature for the chosen duration.

Deleting a Schedule

Tap the Script icon in the top-left corner of the Schedule screen to remove a schedule.

EXHAUST CLEANING ROD TOOL

The exhaust cleaning rod tool is only included on models G2-N50WTS, G2-N90WTS, G2-NI30WTS. The G2-NBF66WTS does not include a cleaning rod tool.

Purpose

- This handle is used to clean the exhaust passages from the firebox to the exhaust chamber. Brushing these passages helps maintain airflow and prevents ash buildup.
- To clean these passages, lift the handle up and down 5–10 times using smooth, steady motion.

Proper Installation

Refer to figures 29 and 30 below

- Align the lower tab with the slot on the cleaning rod.
- Lower the handle straight down until fully seated.
- Rotate the handle 90° clockwise to lock it into place.

When to Use

- The brushes are most effective when the exhaust fan is operating at its highest speed. This typically occurs during the Lighting cycle or when the stove is running on High.
- The handle must be removed and hung on the back of the stove when not in use. To prevent dust from entering the stove, replace the plug when the handle is not in use.

Installation

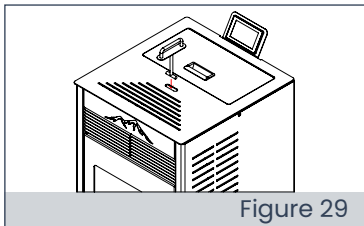


Figure 29

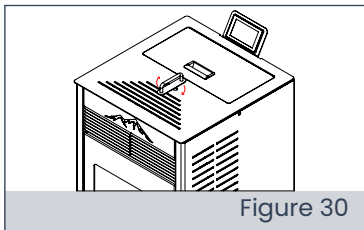


Figure 30

Usage

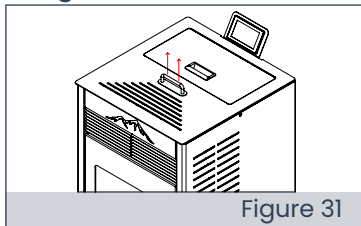


Figure 31

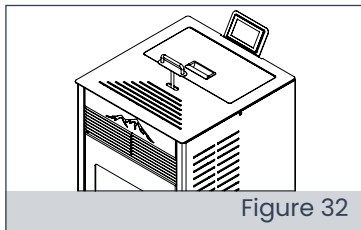


Figure 32

Storage

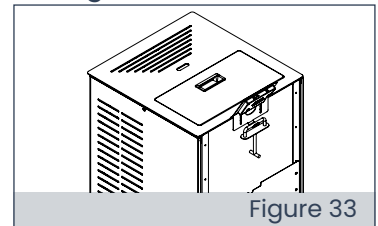


Figure 33

MAINTENANCE

MAINTENANCE OVERVIEW

Regular maintenance is essential for safe, efficient operation of your pellet stove. Ash buildup, restricted airflow, and neglected components can reduce heat output, increase fuel consumption, and place unnecessary stress on the appliance. Routine cleaning and inspection help ensure reliable ignition, proper combustion, and long-term durability. For best performance and to maintain warranty coverage, follow the maintenance schedule outlined in this manual.

MAINTENANCE SCHEDULE

The maintenance intervals listed in this schedule are estimates based on typical fuel quality and normal operating conditions. Actual cleaning and service needs may vary. Poor-quality pellets, high ash content, or extended high-heat operation can require more frequent maintenance, while optimal fuel and lighter use may reduce the frequency. Inspect your stove regularly and perform maintenance as needed to ensure safe, efficient performance.

⚠ CAUTION: Turn off and unplug the stove from any source of electrical power to unit before performing any maintenance or service operations.

Regular: 24–32 Hours of Operation

Note: It is recommended these 3 steps are performed on every startup

1. Empty out the ash pan and clear ash from the window and gaskets. All ashes should be placed in a metal container with a tight fitting lid.
2. Remove the firepot and ensure the holes are clear
3. Vacuum the cavity beneath the firepot

Weekly: 100 Hours of Operation

1. Allow the hopper to empty and check for excess dust buildup.

Note: Fine dust from pellets can compact and cause auger jams.

2. In the case of dust buildup, completely empty the hopper, vacuum any dust / debris, and jog the auger to ensure it is completely empty.
3. Inspect the auger for damage

Note: Do not interfere with the auger while it is moving.

Bi-Weekly: 125 Hours of Operation

1. Go outside and inspect the vent structure and termination cap. Ensure piping is still tight and the termination cap is free of debris.
2. Empty out the Cleanout Tee.

Monthly: 100–150 Hours of Operation

1. Use a wire brush to clear the exhaust ports at the top of the fire chamber.

Note: On the G2-NBF66WTS model, there are ports located behind the ash drawers that also require cleaning.

Post Season Deep Clean

1. Perform all maintenance mentioned above.
2. Clean out the combustion chamber in the rear of the stove:
 - a. Power off the stove and allow it to cool
 - b. Unplug your stove from the wall
 - c. Remove the right side panel of your stove
 - d. Using a flashlight, inspect the interior of your stove. Vacuum or clean any visible debris or dust from the components and fan blades
 - e. Remove the 2 wing-nuts holding on the exhaust maintenance panel and vacuum out any loose ash.
 - f. Replace the maintenance panel and screw the side panel back on.

Note: It is important to store your stove in a dry environment. The electronics can absorb moisture and this can accelerate failure.

MAINTENANCE

MAINTENANCE SCHEDULE (continued)

Flyash: Formation and Maintenance

- 1. Normal pellet stove operation produces small particles called flyash, which accumulate inside the exhaust vent. Over time, this buildup can restrict airflow and reduce stove performance. Periods of incomplete combustion – such as startup, shutdown, or improper operation – may also create soot, which collects in the same areas.
- 2. Inspect the exhaust venting system at least once per year, and clean it as needed using the properly sized chimney brush to remove ash and soot deposits.

Creosote: Formation and Required Removal

- 1. Burning pellets at low temperatures can produce tar-like vapors that mix with moisture and form creosote. These vapors condense inside the cool flue and build up on the chimney lining. Creosote is highly flammable, and failure to remove it can result in a dangerous chimney fire.
- 2. Inspect the chimney and connector every few months during the heating season. If creosote buildup reaches 1/8 inch (3 mm) or more, it must be cleaned using a properly sized chimney brush.
- 3. Hotter burns produce less creosote, so cleaning may be needed more frequently in mild weather. Always have a clear plan for responding to a chimney fire and consult your local fire authority for guidance.

MAINTENANCE SAFETY

- ⚠ CAUTION:** During any assembly or disassembly, be wary to not drop any items (screws, etc.) into the pellet hopper. Debris can jam the auger and damage the stove.
- ⚠ CAUTION:** Allow stove to cool down before performing any maintenance or service operations.
- ⚠ CAUTION:** If stove is intended to operate continuously, refer to the table below to determine shutdown times for required maintenance. Always allow the stove to cool down and any embers to extinguish before cleaning the fire pot and fire pan.
- ⚠ CAUTION:** Embers may be obscured by ash. Handle ash with tools sufficient for fire tending, never directly with your hands. Wear fire retardant clothing and protective eyewear.
- ⚠ WARNING:** DO NOT CLEAN GLASS WHEN HOT.
- ⚠ WARNING:** DO NOT CLEAN GLASS WITH ABRASIVE CLEANERS OR BY ANY OTHER PROCESS WHICH MAY SCRATCH OR DAMAGE THE GLASS.

REQUIRED CLEANING BY HOURS OF OPERATION

	G2-N50WTS	G2-N90WTS	G2-N130WTS	G2-NBF66WTS
FIREPOT / ASH PAN (hours)	24	28	32	32
HOPPER / AUGER CHUTE / CLEAN OUT TEE (hours)	100	100	100	100
AIR INLET / AIR EXHAUST PORTS (hours)	150	150	150	150

MAINTENANCE

REPLACEMENT COMPONENTS

Door

1. Remove the damaged door:
 - Ensure your stove is OFF, cool, and unplugged.
 - Fully open the door.
 - Support the door with one hand.
 - Lift the door up and off the hinge pins.
Some models lift straight up; others require removing or sliding out the upper hinge pin first (if equipped).
2. Install the replacement door:
 - Align the bottom door hinge with the lower stove hinge and lower the door so it seats fully in the hinge.
 - Align the top door hinge hole with the upper stove hinge hole.
 - Insert the upper hinge pin and ensure it is fully seated.
3. Check latch engagement and seal:
 - Close the door and confirm it latches fully.
 - Perform a door seal test by closing the door on a dollar bill placed halfway into the door opening.
 - Gently pull the dollar bill out around the perimeter of the door.
Pass: Consistent resistance around the entire perimeter.
Fail: Bill slides out easily in one area — adjust the latch/striker or re-check gasket seating.
Note: A properly sealed door is critical for safe operation and correct combustion.

Exhaust Blower / Gasket

1. Prepare your stove:
 - Ensure your stove is OFF, cool, and unplugged from the electrical outlet.
 - Allow all internal components to cool completely before servicing.
 - Remove the rear access panel to expose the exhaust blower assembly.
2. Disconnect and remove the exhaust blower:
 - Locate the exhaust blower wiring connector.
 - Disconnect the wiring harness from the blower motor.
 - Remove the mounting screws securing the exhaust blower to the stove body.
 - Carefully pull the exhaust blower straight away from the stove.
 - Remove and discard the old exhaust blower gasket.
3. Prepare the mounting surface:
 - Inspect the exhaust outlet flange on the stove body.
 - Remove any ash, debris, or remaining gasket material.
 - Ensure the surface is clean, flat, and free of damage to ensure a proper seal.
4. Install the new gasket and exhaust blower:
 - Position the new exhaust blower gasket onto the stove exhaust flange, aligning all mounting holes.
 - Align the new exhaust blower with the mounting holes and press it evenly against the gasket.
 - Install all mounting screws finger-tight first.
 - Tighten mounting screws evenly in a crisscross pattern to ensure uniform gasket compression.
Do not overtighten.
5. Reconnect wiring and reassemble:
 - Reconnect the exhaust blower wiring harness.
 - Ensure wiring is fully seated and routed away from hot or moving components.
 - Reinstall the rear access panel.
6. Final checks and operation:
 - Plug your stove back into the electrical outlet.
 - Start your stove and allow it to enter the ignition cycle.
 - Confirm the exhaust blower operates smoothly and quietly.
 - Inspect the blower mounting area for air leaks, vibration, or abnormal noise.

MAINTENANCE

MONITORING AND INSPECTION TECHNIQUES

Once your stove has completed start-up and entered stabilization mode, it should operate with no visible smoke or emissions. Any visible smoke from the exhaust during normal operation indicates your stove is not combusting properly and requires inspection. Common causes may include poor-quality or damp pellets, ash or debris buildup in the burn pot or exhaust passages, restricted airflow, insufficient draft, low supply voltage, or an improperly sealed door or exhaust connection. Regular visual checks during operation, combined with routine cleaning and maintenance, help ensure efficient combustion, reliable performance, and safe operation.

PROPER DRAFT AND COMBUSTION

Proper draft is critical for safe and efficient pellet stove operation, allowing combustion gases to be drawn through the firebox and venting system and expelled outdoors. Inadequate draft may result in visible smoke, lazy or unstable flames, difficulty starting or maintaining a fire, excessive ash buildup, smoke odor, or nuisance shutdowns. Excessive draft may cause short or aggressive flames, increased pellet consumption, reduced heat transfer, elevated exhaust noise, or difficulty maintaining a stable flame at lower heat settings.

TROUBLESHOOTING

SYMPTOM	CAUSE	SOLUTION
Heater does not turn on.	The power switch is turned off.	1. Turn on power switch.
	The power cord is disconnected.	1. Press power cord tightly into the stove. 2. Ensure that the wall socket is delivering 120 Volts.
	A fuse is blown.	1. Replace the fuse.
The blower does not turn on during the Pre-Light and Lighting cycle.	This is normal.	1. There is no problem. The blower does not turn on until the Run Mode.
The blower does not turn on during Run Mode.	The motherboard is disconnected.	1. Unplug the stove. 2. Check the wires connected to the motherboard.
The auger is not filling the firepot with pellets.	There is no fuel in the hopper.	1. Add fuel to the hopper.
	The auger is blocked, jammed, or disconnected.	1. Use the jog auger function to move forward and backwards for 30 seconds. Refer to the operations section on page 23. 2. If your auger only moves in one direction, hold the opposite direction for 30 seconds. 3. Check that the auger screw fastening the auger to the motor is secure. 4. Call customer support.
There is too much fuel in the firepot. The fuel cannot be completely and thoroughly burned.	Poor maintenance.	1. Refer to the maintenance section on page 25.
Glass is blacked over within 1 hour.	Door gasket or ash drawer.	1. Ensure the door is closed and check the ash drawer. 2. Call customer support.

TROUBLESHOOTING

ERROR CODES

Note: In the event of a power failure, a small amount of smoke may be emitted. This lasts 3 to 5 minutes and does not represent a safety risk.

⚠ CAUTION: If the stove overheats, then an inspection, maintenance, and/or cleaning is required before the stove can safely be operated again.

ERROR	CAUSE	SOLUTION
EXHAUST TEMP LOW	Exhaust temperature is below 40–45°F. Operation has been interrupted and the fire has been discontinued.	1. Check that the pellet hopper has fuel. 2. Check that the auger motor is not damaged and is able to fill the firepot with fuel. 3. Refer to the maintenance section on page 25.
EXHAUST TEMP MIN	Failure to ignite the fuel in the fire pot.	1. Check that there are no “clinkers” (glass like lumps of various sizes formed by debris exposed to high heat, more common when using low quality fuel) in fire pot. 2. Check that the firepot is sitting in the holder correctly and that the ignitor is not obstructed. 3. Check that the exhaust gas temperature sensor switch beside the combustion fan is not broken. 4. Check that the ignitor is glowing during lighting. 5. Refer to the maintenance section on page 25.
VACUUM SENSOR	Low pressure detected at the vacuum switch (located behind the right panel and fastened to the bracket).	1. Check that the door, and ash drawer if present, has been closed properly. 2. Check that there is nothing obstructing the exhaust duct nor that the duct is leaking. 3. Check that the combustion fan is rotating. 4. Refer to the maintenance section on page 25.
HIGH HOPPER TEMP	Failure at the high temperature sensor (located below the pellet hopper).	1. The temperature of the sensor is too high. The stove is not running properly. Call customer support.
POWER INTERRUPT	Power failure.	1. Restart the stove.
PELLET LEVEL LOW	Pellet level sensor. Hopper is low on pellets.	1. Replenish pellets in the hopper.
EXHAUST TEMP SENSOR	Short circuit or open circuit at the exhaust temperature sensor.	1. Check wires and connection points. 2. Contact customer support for assistance.
PELLET TEMP SENSOR	Short circuit or open circuit at the hopper temperature sensor.	1. Check wires and connection points. 2. Contact customer support for assistance.
ROOM TEMP SENSOR	Short circuit or open circuit at the room temperature sensor.	1. Check wires and connection points. 2. Contact customer support for assistance.
DISPLAY SYSTEM	Communication failure to the display.	1. Check for loose display cable. 2. Contact customer support.
MAIN BOARD	Issue with the main board.	1. Contact customer support.
MAIN BOARD TEMP	Main board temperature is too high.	1. Check clearance to combustibles (refer to pages 9 and 10). 2. Refer to the maintenance section on page 25. 3. Contact customer support.

WIRING DIAGRAM

Note: If any of the original wire as supplied with the appliance must be replaced, it must be replaced with wiring material having a temperature rating of at least 221°F / 105°C and rated for 600V.

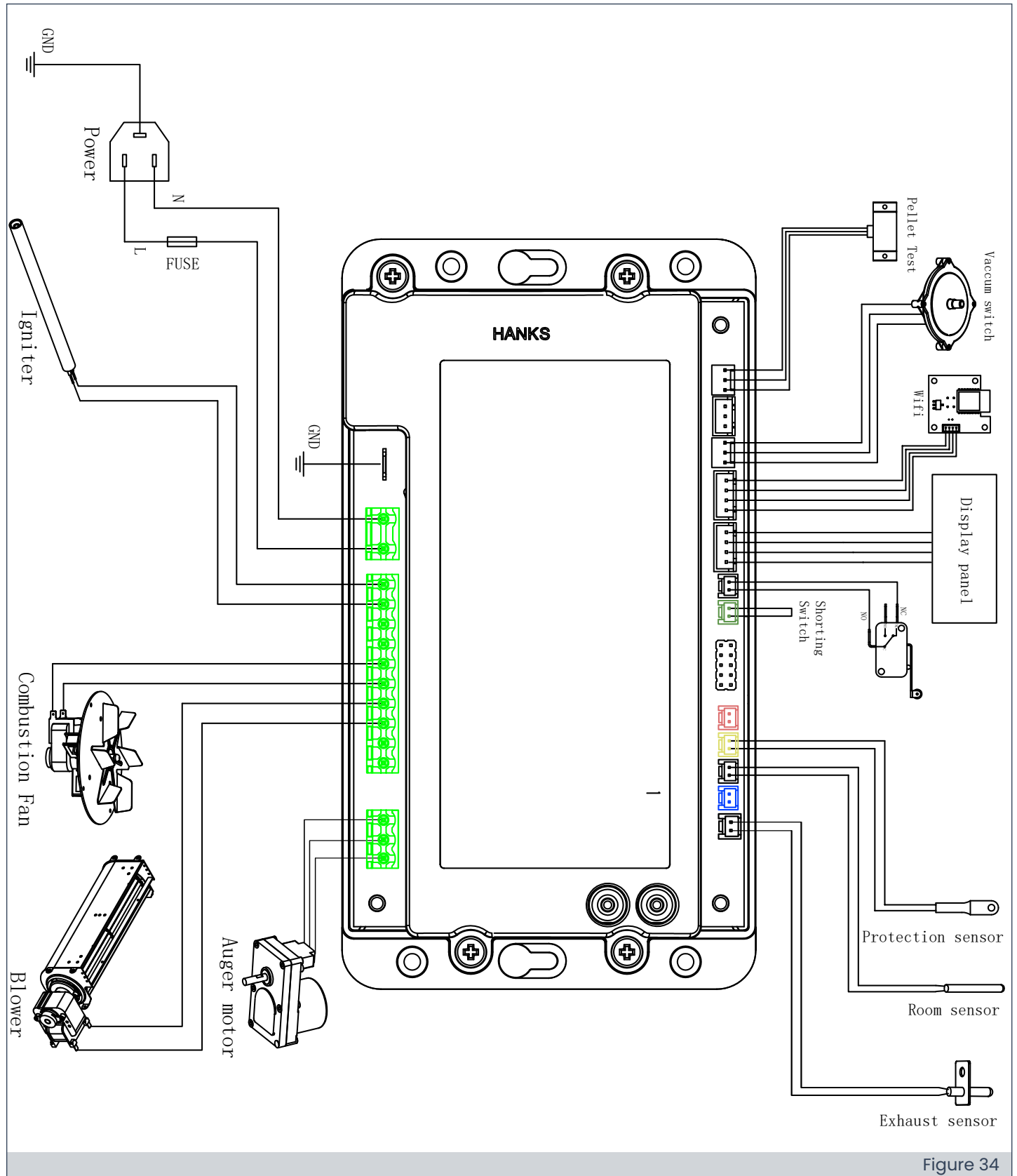


Figure 34

WARRANTY

**WARNING:** USE ONLY THE MANUFACTURER’S REPLACEMENT PARTS. USE OF ANY OTHER PARTS COULD CAUSE INJURY OR DEATH. REPLACEMENT PARTS ARE ONLY AVAILABLE DIRECT FROM THE FACTORY AND MUST BE INSTALLED BY A QUALIFIED SERVICE AGENCY.

PARTS ORDERING INFORMATION

Purchasing:

Accessories may be purchased at any Grand Teton Collection local dealer or direct from the factory.

For Information Regarding Service:

Please call Toll-Free 1-833-766-5951 or visit www.grandtetoncollection.com
Our office hours are 8:00 AM – 5:00 PM, EST, Monday through Friday.
Please include the model number, date of purchase, and description of problem in all communication.

LIMITED WARRANTY

Enerco Group, Inc. (EGI) warrants Grand Teton Collection Pellet Stoves to be free from imperfections in workmanship or material, at the date of manufacture. After installation, If covered components are found to be defective in workmanship or material during the applicable warranty period then the company, at its option, will repair or replace products returned by the buyer to the factory, transportation prepaid within applicable warranty period and found by the company to have imperfections in material or workmanship. The warranty period of the covered components is defined in the table below:

COMPONENTS COVERED	WARRANTY PERIOD (PARTS ONLY, LABOR NOT INCLUDED)
ELECTRICAL	1 YEAR
STEEL PARTS (EXCLUDING FIREPOT)	5 YEARS

If a part is damaged or missing, call our Technical Support Department at 1-833-766-5951

Address any Warranty Claims to the Service Department, Grand Teton Collection, 4560 W. 160TH ST., CLEVELAND, OHIO 44135. Include your name, address and telephone number, the model and serial number of your product, and include details concerning the claim. Also, supply us with the purchase date and the name and address of the dealer from whom you purchased our product.

The foregoing is the full extent of the responsibility of the Company. There are no other warranties, express or implied. Specifically there is no warranty of fitness for a particular purpose and there is no warranty of merchantability. In no event shall the Company be liable for delay caused by imperfections, for consequential damages, or for any charges of the expense of any nature incurred without its written consent. The cost of repair or replacement shall be the exclusive remedy for any breach of warranty. There is no warranty against infringement of the like and no implied warranty arising from course of dealing or usage of trade. This warranty will not apply to any product which has been repaired or altered outside of the factory in any respect which in our judgment affects its condition or operation. This warranty does not cover damage or breakage due to misuse, abuse or modifications. There is no warranty on any paint, glass, gasket or fire brick. There is no warranty on the fire pot. There is no warranty against damage caused by corrosion.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This Warranty gives you specific legal rights, and you may have other rights which vary from state to state.

Grand Teton Collection reserves the right to make changes at any time, without notice or obligation, in colors, specifications, accessories, materials and models.

SERVICE PARTS

EXPLODED VIEW DIAGRAM

Models: **G2-N50WTS (Mini)** **G2-N90WTS (Medium)** **G2-N130WTS (Large)**

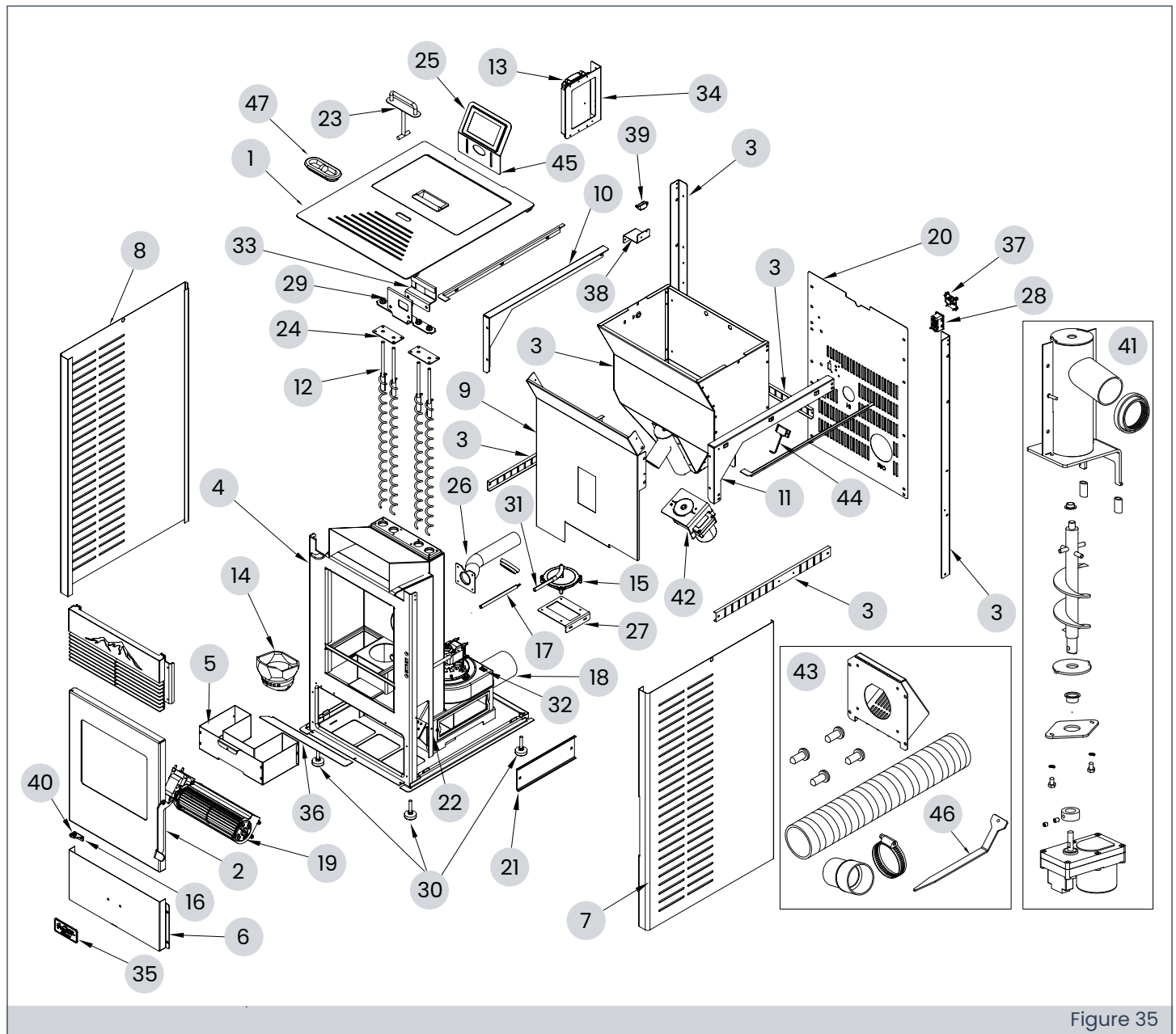


Figure 35

WARNING: FAILURE TO POSITION THE PARTS IN ACCORDANCE WITH THESE DIAGRAMS OR FAILURE TO USE ONLY PARTS SPECIFICALLY APPROVED WITH THIS STOVE MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY.

SERVICE PARTS

EXPLODED VIEW CHART

Models: **G2-N50WTS (Mini)** **G2-N90WTS (Medium)** **G2-NI30WTS (Large)**

Note: Not all parts are available. For questions, contact the manufacturer.

	PART #	DESCRIPTION
1	67044	Top Cover - G2-N50WTS
	67045	Top Cover - G2-N90WTS
	67046	Top Cover - G2-NI30WTS
2	67047	Door Assembly - G2-N50WTS
	67048	Door Assembly - G2-N90WTS
	67049	Door Assembly - G2-NI30WTS
3	n/a	Hopper
4	n/a	Chamber
5	67050	Ash Pan - G2-N50WTS
	67051	Ash Pan - G2-N90WTS/G2-NI30WTS
6	n/a	Lower Front Panel - G2-N50WTS
	n/a	Lower Front Panel - G2-N90WTS
	n/a	Lower Front Panel - G2-NI30WTS
7	n/a	Right Side Panel - G2-N50WTS
	n/a	Right Side Panel - G2-N90WTS
	n/a	Right Side Panel - G2-NI30WTS
8	n/a	Left Side Panel - G2-N50WTS
	n/a	Left Side Panel - G2-N90WTS
	n/a	Left Side Panel - G2-NI30WTS
9	n/a	Hopper Heat Shield
10	n/a	Left Shoulder
11	n/a	Right Shoulder
12	67062	Cleaning Pipes - G2-N50WTS
	67063	Cleaning Pipes - G2-N90WTS/G2-NI30WTS
13	67064	Motherboard - G2-N50WTS
	67065	Motherboard - G2-N90WTS
	67066	Motherboard - G2-NI30WTS
14	66673	Fire Pot - G2-N50WTS
	67043	Fire Pot - G2-N90WTS/G2-NI30WTS
15	66628	Vacuum Switch
16	66674	Door Hinge Bracket
17	66608	Igniter
18	66607	Combustion Blower
19	66675	Circulation Blower - G2-N50WTS
	67067	Circulation Blower - G2-N90WTS/ G2-NI30WTS
20	n/a	Rear cover - G2-N50WTS
	n/a	Rear cover- G2-N90WTS
	n/a	Rear cover - G2-NI30WTS
21	67071	Side Seal Cover - G2-N50WTS
	67072	Side Seal Cover - G2-N90WTS
	67073	Side Seal Cover - G2-NI30WTS

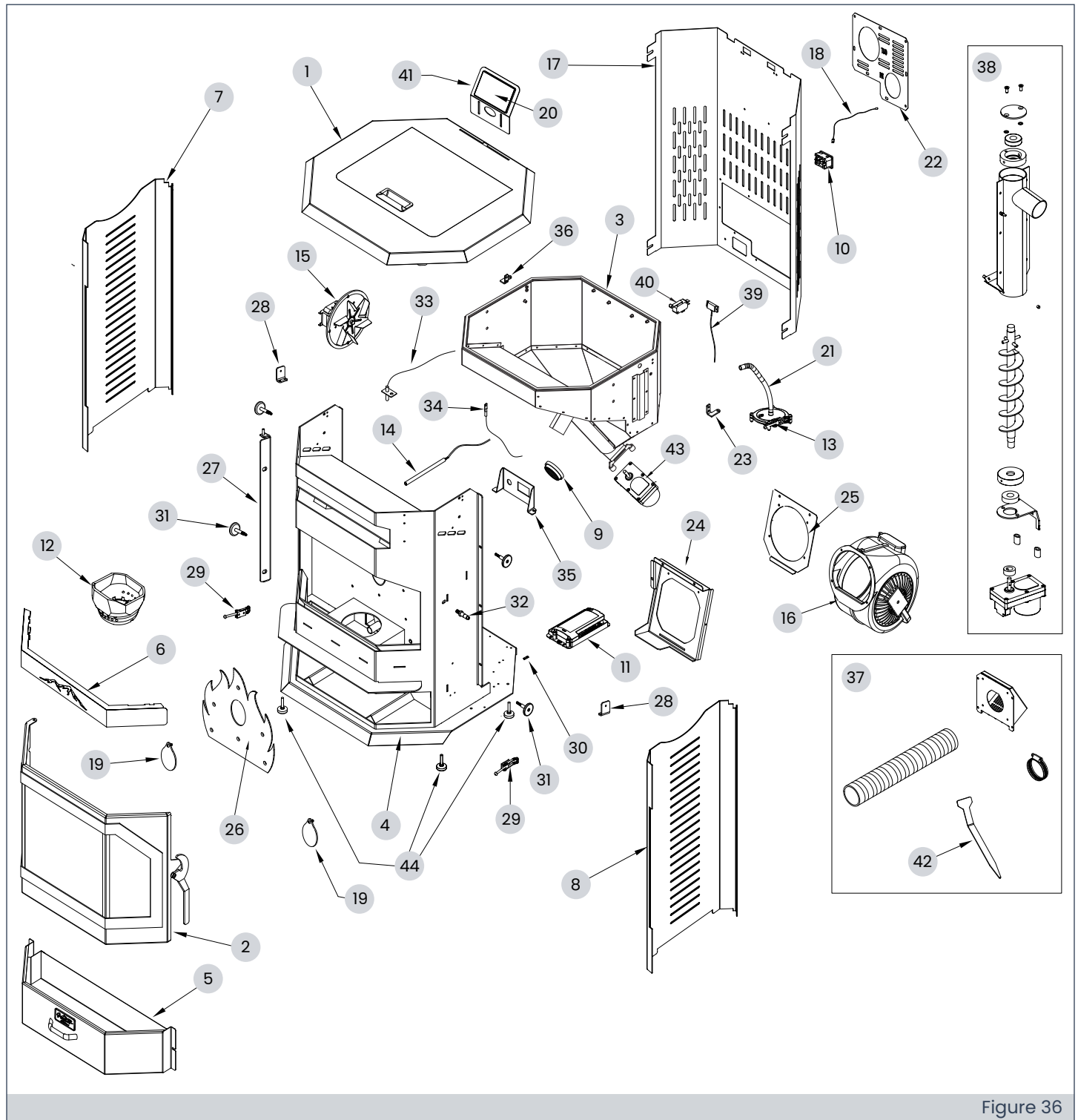
	PART #	DESCRIPTION
22	67074	Side Seal Gasket - G2-N50WTS
	67075	Side Seal Gasket - G2-N90WTS
	67076	Side Seal Gasket - G2-NI30WTS
23	67077	Cleaning Pipe Handle
24	66680	Cleaning Pipe Cover - G2-N50WTS
	67078	Cleaning Pipe Cover - G2-N90WTS/G2-NI30WTS
25	67086	Touch Screen
26	67079	Air Inlet Pipe - G2-N50WTS
	67080	Air Inlet Pipe - G2-N90WTS
	67081	Air Inlet Pipe - G2-NI30WTS
27	n/a	Vacuum Switch Bracket
28	66615	Power Socket
29	67082	Front Pipe Handle Plate - G2-N50WTS
	67083	Front Pipe Handle Plate - G2-N90WTS
	67084	Front Pipe Handle Plate - G2-NI30WTS
30	66693	Feet
31	n/a	Silicon Tube
32	67088	Exhaust Sensor
33	67085	Back Pipe Handle Plate
34	n/a	Motherboard Fixed Plate
35	n/a	Nameplate (see # 6)
36	n/a	Ash Catch Plate
37	67052	Wi-Fi Module
38	n/a	Hopper Lid Switch Bracket
39	66617	Hopper Lid Switch
40	66858	Door Pin
41	66695	Auger Assembly
42	66696	Auger Motor
43	66659	Accessory Kit
44	66701	Hopper Sensor
45	66837	Touch Screen Bracket
46	66855	Cleaning Tool (See # 43)
47	67099	Rubber Plug
N/S	66983	Wi-Fi Cable
N/S	66854	Power Cord
N/S	66856	Data Cable
N/S	67033	Combustion Blower Gasket
N/S	66616	Room Sensor
N/S	66613	Hopper Safety Sensor

N/S - Not Shown

SERVICE PARTS

EXPLODED VIEW DIAGRAM

Models: **G2-NBF66WTS** (Bayfront)



WARNING: FAILURE TO POSITION THE PARTS IN ACCORDANCE WITH THESE DIAGRAMS OR FAILURE TO USE ONLY PARTS SPECIFICALLY APPROVED WITH THIS STOVE MAY RESULT IN PROPERTY DAMAGE OR PERSONAL INJURY.

SERVICE PARTS

EXPLODED VIEW CHART

Models: **G2-NBF66WTS (Bayfront)**

Note: Not all parts are available. For questions, contact the manufacturer.

	PART #	DESCRIPTION		PART #	DESCRIPTION
1	66632	Top Cover	26	n/a	Fireproof Plate
2	66633	Door	27	66649	Door Hinge
3	n/a	Hopper	28	66650	Rear Cover Fixed Plate
4	n/a	Main Body	29	66651	Ash Pan Lock Parts
5	66634	Ash Pan	30	n/a	Ground Screw
6	n/a	Decorative Plate	31	66652	Magnet
7	n/a	Left Side Panel	32	66653	Door, Latch
8	n/a	Right Side Panel	33	67088	Exhaust Sensor
9	66622	Silicone Rubber Sealing Ring	34	66655	Hopper Safety Sensor
10	66615	Power Socket	35	66656	Socket Fixed Plate
11	67087	Motherboard	36	66657	Left Side Panel Hinge
12	67043	Fire Pot	37	66659	Accessory Kit
13	66639	Vacuum Switch	38	66660	Auger Assembly
14	66640	Igniter	39	66701	Hopper Sensor
15	66607	Combustion Blower	40	66617	Hopper Lid Switch
16	66612	Circulation Blower	41	66837	Touch Screen Bracket
17	n/a	Rear Cover	42	66855	Cleaning Tool (See # 37)
18	66643	Room Sensor	43	66696	Auger Motor
19	n/a	Flue Sealing Plate	44	66693	Feet
20	67086	Touch Screen	N/S	66854	Power Cord
21	66645	Pressure Device Silicone Tube	N/S	66856	Data Cable
22	66646	Rear Sealing Plate	N/S	66859	Door Pin
23	66647	Right Side Panel Hinge	N/S	67052	Wi-Fi Module
24	66648	Blower Bracket	N/S	67033	Combustion Blower Gasket
25	66620	Blower Fixed Plate	N/S	67034	Circulation Blower Gasket

N/S - Not Shown



CONTACT US:

1-833-766-5951
grandtetoncollection.com

CUSTOMER SUPPORT HOURS

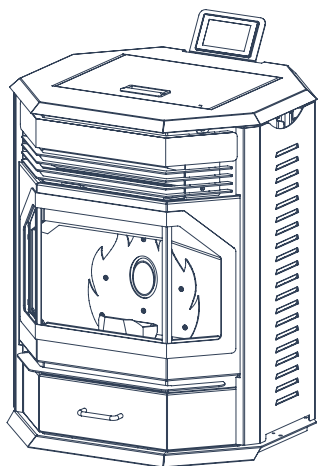
Regular Business Hours
Mon-Fri: 8am – 5pm EST

PELLET STOVE

OPERATING INSTRUCTIONS AND OWNER'S MANUAL

INSTALLER: Leave this manual with the appliance • CONSUMER: Save these instructions for future reference

READ INSTRUCTIONS CAREFULLY: Please read this entire manual before installation and use of this pellet burning room heater. Failure to follow these instructions could result in property damage, bodily injury or even death. Do not allow anyone who has not read these instructions to assemble, light, adjust or operate the stove.

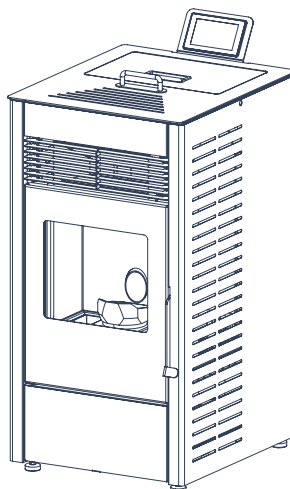


G2-ABF66WTS

G2-CBF66WTS

G2-HBF66WTS

G2-JBF66WTS

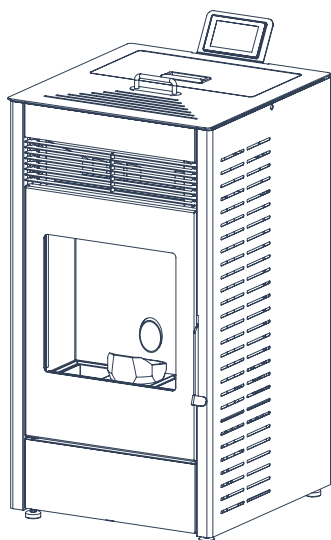


G2-A50WTS

G2-C50WTS

G2-H50WTS

G2-J50WTS

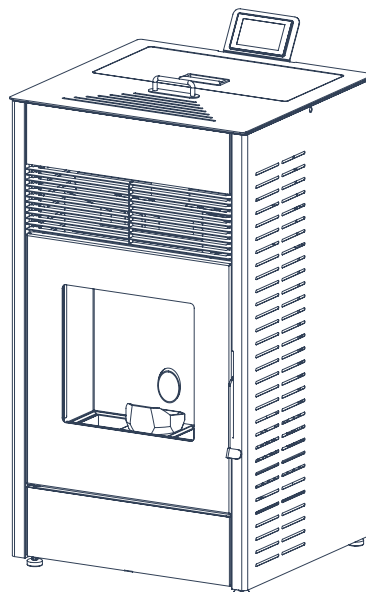


G2-A90WTS

G2-C90WTS

G2-H90WTS

G2-J90WTS



G2-A130WTS

G2-C130WTS

G2-H130WTS

G2-J130WTS



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: DIRI01C101887027241204

A2LA ACCREDITED CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Scale	Mettler	IND570 - 1000lxbx0.	C101887027	#189	Lab
Units	Readability	SOP	Cal Date	Last Cal Date	Cal Due Date
lbs	0.02	QC033	12/4/24	12/28/23	12/2025

FUNCTIONAL CHECKS

SHIFT TEST	LINEARITY	REPEATABILITY	ENVIRONMENTAL CONDITIONS
Test Wt: Tol: 400 0.10	Test Wt: Tol: HB44 HB44	Test Wt: Tol: 200 0.04	☐ ☒ ☐ Good Fair Poor
As-Found: Pass: ☒ Fail: ☐	As-Found: Pass: ☒ Fail: ☐	As-Found: Pass: ☒ Fail: ☐	Temperature: 16.1°C
As-Left: Pass: ☒ Fail: ☐	As-Left: Pass: ☒ Fail: ☐	As-Left: Pass: ☒ Fail: ☐	

CALIBRATION DATA

Standard	As-Found	As-Left	Expanded Uncertainty
1000	1000.02	1000.02	0.012
600	599.92	599.92	0.011
400	399.94	399.94	0.011
200	199.94	199.94	0.011
100	99.98	99.98	0.011
50	49.98	49.98	0.011

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:

Comments/Information Concerning this Calibration

12/04/2024: RH = 38%

Report prepared/reviewed by: TUP

Date: 12-04-2024

Technician: E.J. Vasko

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: XC-60
 Lab ID #: 53
 Serial #: 1902130
 Calibration Date: 8/11/2025
 Calibration Expiration: 2/11/2026
 Barometric Pressure: 29.81 in. Hg



Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer: Apex		Fluke	Aquatech	
Model: SK25Da		52II	DBX2	
Lab ID#: 47		196	202	
Calibration Expiration Date: 6/30/2026		2/11/2026	7/1/2026	
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)	122.491	76.363	62.504
Standard DGM Temperature (°F)	76.0	76.0	76.7
Standard DGM Pressure (in H ₂ O)	0.00	0.00	0.0
DGM Initial Volume (ft ³)	0.000	4.194	6.860
DGM Final Volume (ft ³)	4.194	6.860	9.075
DGM Temperature (°F)	77.0	86.6	90.9
DGM Pressure (in H ₂ O)	3.40	2.40	1.8
Net Volume for Standard DGM (ft ³)	4.326	2.697	2.207
Net Volume for DGM (ft ³)	4.194	2.666	2.215
Dry Gas Meter γ Factor	1.023	1.023	1.016
γ Factor Deviation From Average	1.023	1.023	1.016

Average Gas Meter γ Factor

1.021

Measurement Uncertainty: Total measurement uncertainty +/- 0.748% RD, K=2

Calculations:

- Deviation = |Average value for all runs - current run value|
- $\gamma = [V_{std} \times (\gamma_{std}) \times (P_{bar} + P_{std}/13.6) \times (T_{DGM} + 460)] / [V_{DGM} \times (T_{std} + 460) \times (P_{bar} + P_{DGM}/13.6)]$

Dry Gas Meter Calibration

DUT

Manufacturer: Apex
 Model: XC-60
 Lab ID #: 54
 Serial #: 1902133
 Calibration Date: 8/11/2025
 Calibration Expiration: 2/11/2026
 Barometric Pressure: 29.81 in. Hg



Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer: Apex		Fluke	Aquatech	
Model: SK25Da		52II	DBX2	
Lab ID#: 47		196	202	
Calibration Expiration Date: 6/30/2026		2/11/2026	7/1/2026	
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)	111.016	90.681	65.623
Standard DGM Temperature (°F)	78.1	78.8	79.3
Standard DGM Pressure (in H ₂ O)	0.00	0.00	0.0
DGM Initial Volume (ft ³)	0.000	3.899	7.131
DGM Final Volume (ft ³)	3.899	7.131	9.497
DGM Temperature (°F)	82.4	88.7	93.2
DGM Pressure (in H ₂ O)	3.11	2.51	1.75
Net Volume for Standard DGM (ft ³)	3.920	3.202	2.317
Net Volume for DGM (ft ³)	3.899	3.232	2.366
Dry Gas Meter γ Factor	1.004	1.001	0.998
γ Factor Deviation From Average	0.003	0.000	0.003

Average Gas Meter γ Factor

1.001

Measurement Uncertainty: Total measurement uncertainty +/- 0.748% RD, K=2

Calculations:

- Deviation = |Average value for all runs - current run value|
- $\gamma = [V_{std} \times (\gamma_{std}) \times (P_{bar} + P_{std}/13.6) \times (T_{DGM} + 460)] / [V_{DGM} \times (T_{std} + 460) \times (P_{bar} + P_{DGM}/13.6)]$

Technician:

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 #: 38860-203325-21 **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:	Newport Industries	Temperature:	66 °F
Type:	Pressure Transducer	Humidity:	41% RH
Model Number:	Unknown	Cal Factor:	None
Serial #:	Unknown	Asset #:	54B
Capacity:	1 In H2O	Service Location:	Service Address
Tolerance:	± 1.00% of Span	As Found:	Pass
Gauge Class:	A	As Left:	Pass

Instrument Range: 1.00		Range Resolution: 0.01		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	In H2O
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.005	
0.10	0.1058	0.1058	0.01	0.1024	0.00	0.01	0.01	
0.25	0.2534	0.2534	0.00	0.2546	0.00	0.01	0.006	
0.50	0.5056	0.5056	0.01	0.5073	0.01	0.01	0.007	
0.75	0.7502	0.7502	0.00	0.7589	0.01	0.01	0.023	
1.00	1.0081	1.0081	0.01	1.0051	0.01	0.01	0.009	
0.75	0.7533	0.7533	0.00	0.7544	0.00	0.01	0.006	
0.50	0.5079	0.5079	0.01	0.5036	0.00	0.01	0.012	
0.25	0.2584	0.2584	0.01	0.2576	0.01	0.01	0.006	
0.10	0.1096	0.1096	0.01	0.1083	0.01	0.01	0.006	
0.00	0.0000	0.0000	0.00	0.0000	0.00	0.01	0.005	

Manufacturer: Newport Industries

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



www.Cal-Cert.com

Toll Free
800-356-4662

Address
5777 SE International Way
Milwaukie, OR 97222

Local
503-654-9620



Report #: 38860-203326-21 **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:	Newport Industries	Temperature:	66 °F
Type:	Pressure Transducer	Humidity:	43% RH
Model Number:	Unknown	Cal Factor:	None
Serial #:	Unknown	Asset #:	54C
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	In H2O
0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.005	
0.50	0.4690	0.4690	-0.03	0.5120	0.01	0.05	0.112	
1.25	1.2455	1.2455	0.00	1.2373	-0.01	0.05	0.022	
2.50	2.4891	2.4891	-0.01	2.4813	-0.02	0.05	0.021	
3.75	3.7327	3.7327	-0.02	3.7142	-0.04	0.05	0.048	
5.00	4.9519	4.9519	-0.05	4.9562	-0.04	0.05	0.013	
3.75	3.7261	3.7261	-0.02	3.7208	-0.03	0.05	0.015	
2.50	2.4775	2.4775	-0.02	2.4740	-0.03	0.05	0.011	
1.25	1.2316	1.2316	-0.02	1.2336	-0.02	0.05	0.007	
0.50	0.4971	0.4971	0.00	0.4990	0.00	0.05	0.007	
0.00	0.0000	0.0000	0.00	0.0000	0.00	0.05	0.005	

Manufacturer: Newport Industries

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.

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Service Engineer: Samuel Owens

Date: February 27, 2025

Quality Manager: Tony Lewandowski

Signature:



Dry Gas Meter Calibration

DUT

Manufacturer: Apex
 Model: XC-50-DIR
 Lab ID #: 203
 Serial #: A2204292
 Calibration Date: 8/11/2025
 Calibration Expiration: 2/11/2026
 Barometric Pressure: 30.02 in. Hg



Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer: Apex		Fluke	Aquatech	
Model: SK25Da		52II	DBX2	
Lab ID#: 47		196	202	
Calibration Expiration Date: 6/30/2026		2/11/2026	7/1/2026	
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)	121.289	118.017	129.138
Standard DGM Temperature (°F)	78.0	77.5	77.9
Standard DGM Pressure (in H ₂ O)	0.00	0.00	0.0
DGM Initial Volume (ft ³)	0.000	0.000	0.000
DGM Final Volume (ft ³)	4.197	4.129	4.557
DGM Temperature (°F)	73.8	85.0	90.0
DGM Pressure (in H ₂ O)	2.03	2.76	3.5
Net Volume for Standard DGM (ft ³)	4.283	4.168	4.560
Net Volume for DGM (ft ³)	4.197	4.129	4.557
Dry Gas Meter γ Factor	1.006	1.015	1.013
γ Factor Deviation From Average	1.006	1.015	1.013

Average Gas Meter γ Factor

1.011

Measurement Uncertainty: Total measurement uncertainty +/- 0.748% RD, K=2

Calculations:

- Deviation = |Average value for all runs - current run value|
- $\gamma = [V_{std} \times (Y_{std}) \times (P_{bar} + P_{std}/13.6) \times (T_{DGM} + 460)] / [V_{DGM} \times (T_{std} + 460) \times (P_{bar} + P_{DGM}/13.6)]$

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Milwaukie, OR 97222

Local
503-654-9620



Report #: 38860-203319-21 **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:	66 °F
Type:	Pressure Transducer	Humidity:	43% RH
Model Number:	Unknown	Cal Factor:	None
Serial #:	Unknown	Asset #:	203B
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	0.0929	0.0929	-0.01	0.0992	0.00	0.01	0.0164
0.250	0.2473	0.2473	0.00	0.2488	0.00	0.01	0.0039
0.500	0.4955	0.4955	0.00	0.4990	0.00	0.01	0.0091
0.750	0.7533	0.7533	0.00	0.7427	-0.01	0.01	0.0276
1.000	1.0045	1.0045	0.00	0.9909	-0.01	0.01	0.0354
0.750	0.7462	0.7462	0.00	0.7517	0.00	0.01	0.0143
0.500	0.4976	0.4976	0.00	0.4925	-0.01	0.01	0.0132
0.250	0.2431	0.2431	-0.01	0.2447	-0.01	0.01	0.0042
0.100	0.1020	0.1020	0.00	0.1008	0.00	0.01	0.0031
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.

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Service Engineer: Samuel Owens

Date: February 27, 2025

Quality Manager: Tony Lewandowski

Signature: 

Dry Gas Meter Calibration

DUT

Manufacturer: Apex
 Model: XC-60
 Lab ID #: 55
 Serial #: 810016
 Calibration Date: 8/11/2025
 Calibration Expiration: 2/11/2026
 Barometric Pressure: 30.02 in. Hg



Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer: Apex		Fluke	Aquatech	
Model: SK25Da		52II	DBX2	
Lab ID#: 47		196	202	
Calibration Expiration Date: 6/30/2026		2/11/2026	7/1/2026	
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)	111.833	85.340	79.311
Standard DGM Temperature (°F)	76.7	76.9	77.1
Standard DGM Pressure (in H ₂ O)	0.00	0.00	0.0
DGM Initial Volume (ft ³)	0.000	0.000	0.000
DGM Final Volume (ft ³)	3.988	3.043	2.850
DGM Temperature (°F)	83.4	84.1	84.4
DGM Pressure (in H ₂ O)	0.00	0.00	0.00
Net Volume for Standard DGM (ft ³)	3.949	3.014	2.801
Net Volume for DGM (ft ³)	3.988	3.043	2.850
Dry Gas Meter γ Factor	1.001	1.002	0.994
γ Factor Deviation From Average	1.001	1.002	0.994

Average Gas Meter γ Factor

0.999

Measurement Uncertainty: Total measurement uncertainty +/- 0.748% RD, K=2

Calculations:

- Deviation = |Average value for all runs - current run value|
- $\gamma = [V_{std} \times (\gamma_{std}) \times (P_{bar} + P_{std}/13.6) \times (T_{DGM} + 460)] / [V_{DGM} \times (T_{std} + 460) \times (P_{bar} + P_{DGM}/13.6)]$

Thermocouple Readout Calibration

DUT

Manufacturer:	National Instruments
Model:	NI 9213
Lab ID #:	215
Serial #:	1B182FB
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	0.9	0.9	0.906
	500	500.8	0.8	
Tunnel	1000	1000.9	0.9	
Type K	1500	1500.8	0.8	
	2000	2000.6	0.6	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.8	0.8	0.906
	500	500.8	0.8	
Flue	1000	1000.9	0.9	
Type K	1500	1500.2	0.2	
	2000	2000.4	0.4	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.9	0.9	0.906
	500	500.8	0.8	
Filter A	1000	1000.6	0.6	
Type K	1500	1500.4	0.4	
	2000	2000.2	0.2	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.9	0.9	0.906
	500	500.8	0.8	
Filter B	1000	1000.6	0.6	
Type K	1500	1500.4	0.4	
	2000	2000.2	0.2	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.9	0.9	0.906
	500	500.8	0.8	
Filter C	1000	1000.6	0.6	
Type K	1500	1500.4	0.4	
	2000	2000.2	0.2	

Thermocouple Readout Calibration

DUT

Manufacturer:	National Instruments
Model:	NI 9213
Lab ID #:	215
Serial #:	1B182FB
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	500.8	0.8	
Meter A	1000	1000.6	0.6	
Type K	1500	1500.4	0.4	
	2000	2000.2	0.2	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.8	0.8	0.906
	500	500.8	0.8	
Meter B	1000	1000.6	0.6	
Type K	1500	1500.4	0.4	
	2000	2000.2	0.2	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.3	0.3	0.906
	500	500.2	0.2	
Meter C	1000	1000	0	
Type K	1500	1500	0	
	2000	1999.7	0.3	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.5	0.5	0.906
	500	500.2	0.2	
FB Top	1000	1000.3	0.3	
Type K	1500	1500.2	0.2	
	2000	1999.9	0.1	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.3	0.3	0.906
	500	500.2	0.2	
FB Bottom	1000	1000	0	
Type K	1500	1500	0	
	2000	1999.7	0.3	

Thermocouple Readout Calibration

DUT

Manufacturer:	National Instruments
Model:	NI 9213
Lab ID #:	215
Serial #:	1B182FB
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	0.3	0.3	0.906
	500	500.2	0.2	
FB Back	1000	1000	0	
Type K	1500	1500	0	
	2000	1999.7	0.3	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.3	0.3	0.906
	500	500.2	0.2	
FB Left	1000	1000	0	
Type K	1500	1500	0	
	2000	1999.7	0.3	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.3	0.3	0.906
	500	500.2	0.2	
FB Right	1000	1000	0	
Type K	1500	1500	0	
	2000	1999.7	0.3	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.5	0.5	0.906
	500	500.3	0.3	
Catalyst	1000	1000.2	0.2	
Type K	1500	1500.2	0.2	
	2000	1999.7	0.3	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.3	0.3	0.906
	50	500.2	450.2	
Ambient	100	1000	900	
Type T	150	1500	1350	
	200	1999.7	1799.7	



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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

<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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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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Report and Certificate of Calibration



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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

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/NCCL 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



CERTIFICATE OF CALIBRATION

CUSTOMER: PFS-TECO : CLACKAMAS, OR
PO NUMBER: 1130
INST. MANUFACTURER: DWYER
INST. DESCRIPTION: VELOMETER
MODEL NUMBER: 471
SERIAL NUMBER: CP288559 ID# 095
RATED ACCURACY: SEE NOTES BELOW.
UNCERTAINTY GIVEN: $\pm 0.69\%$ RD ; k=2

CALIBRATION DATE: 07/01/2025
CALIBRATION DUE: 07/01/2026
PROCEDURE: T.O.33K6-4-1769-1
CALIBRATION FLUID: AIR @ 14.7 PSIA 70°F
RECEIVED CONDITION: WITHIN MFG. SPECS.
LEFT CONDITION: WITHIN MFG. SPECS.
AMBIENT CONDITIONS: 763mm HGA 45% RH 72°F
CERTIFICATE FILE #: 490265.2025

NOTES: $\pm 3.0\%$ FS (0-500 / 0-1500) ** $\pm 4.0\%$ F.S. (0-5000) ** $\pm 5.0\%$ F.S. (0-15000) ** $\pm 2^\circ\text{F}$

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 $\pm .02\%$ 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.

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 #: 41210-232033-5 **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

LP-00397 Gage Block Set Mitutoyo SN: 0509020 Cal: 12/12/2024 Due: 12/12/2026 Vendor: BHD Test and Measurement Report #: 146981-1
LP-01346 Thermo-Hygrometer Comark SN: 06210350198 Cal: 03/19/2025 Due: 03/31/2026 Vendor: Cal-Cert Range: 122 °F 95 %RH Report #: 39645-67215-5333

Instrument Data

Calibration Date:	July 7, 2025	Reference:	ASME B89.1.13-2013
Calibration Due Date:	July 7, 2026	Cal-Cert Procedure:	CP-010
Calibration Frequency:	12 Months	Indicating System:	Vernier
Manufacturer:	Dwyer Instruments	Temperature:	69 °F
Type:	Micrometer	Humidity:	54% RH
Model Number:	Unknown	Asset #:	221
Serial #:	Unknown	Service Location:	Cal-Cert Lab
Capacity:	1.000 Inches	As Found:	PASS
Resolution:	0.001 Inches	As Left:	PASS

Instrument Range:		1.000 Inches		Range Resolution:		0.001 Inches	
	Calibration Standard	As Found	As Left Reading 1	As Left Reading 2	Tolerance ±	Expanded Uncertainty	
	Inches	Inches	Inches	Inches	Inches	Inches	
	0.000	0.000	0.000	0.000	0.001	0.0006	
	0.200	0.200	0.200	0.200	0.001	0.0006	
	0.400	0.400	0.400	0.400	0.001	0.0006	
	0.600	0.600	0.600	0.600	0.001	0.0006	
	0.800	0.800	0.800	0.800	0.001	0.0006	
	1.000	1.000	1.000	1.000	0.001	0.0006	

Remarks:

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Service Engineer: Cameron Walling

Date: July 7, 2025

Quality Manager: Tony Lewandowski

Signature:

Micrometer CF-010-01

Revision 17

9/19/2022

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 90048

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; Use and store only outdoors or in a well-ventilated place; Use a back flow preventive device in the piping; 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
Norlab, Inc.
808 W. Cowen Road
Bloomington, IL 61705