Enerco Group, Inc.

Project # 24-367
Model: H080
AKA: WS080, C080, D080, J080, N080, R080, T080, V080
Type: Wood-Fired Room Heater
February 28, 2025

ASTM E2780 Standard Test Method for Determining Particulate Matter Emissions from Wood Heaters
EPA Test Method 28R for Certification and Auditing of Wood Heaters

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Revision Summary

Date: February 28, 2025– Original Issue

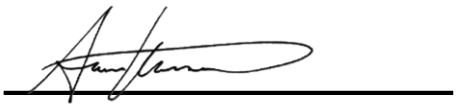
Contents

Affidavit

PFS-TECO was contracted by Enerco Group Inc. (Enerco) to provide testing services for the H080 Wood-Fired Room Heater per EPA Method 28R, *Certification and Auditing of Wood Heaters*. All testing and associated procedures were conducted at PFS-TECO's Portland Laboratory beginning on 2/3/2025 and ending on 2/5/2025. PFS-TECO's Portland Laboratory is located at 11785 SE Highway 212 – Suite 305, Clackamas, Oregon 97015. Testing procedures followed EPA Method 28R and ASTM E2780, *Standard Test Method for Determining Particulate Matter Emissions from Wood Heaters*. 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 17025:2017 "Requirements for Testing Laboratories." PFS-TECO is also accredited by Standards Council of Canada to ISO 17065:2012 "Requirements for Bodies Operating Product Certification Systems."

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



Aaron Kravitz, Laboratory Manager

Introduction

Enerco Group Inc. of Cleveland, Ohio contracted with PFS-TECO to perform EPA certification testing on the H080 Wood-Fired Room Heater. All testing was performed at PFS-TECO's Portland Laboratory. All testing was performed by Aaron Kravitz.

Notes

- Prior to start of testing, 50 hours of conditioning was performed by the manufacturer at a medium burn setting in accordance with ASTM E2780.
- Prior to start of testing, the dilution tunnel was cleaned with a steel brush.
- A separate, independent, third filter train was utilized to determine 1st hour emissions for all test runs.
- All filters and O-rings were weighed in pairs.
- A total of 5 test runs were completed - one test run in each of the 4 specified burn rate categories, and a fan confirmation test performed at a category 2 burn rate. All runs have been found to be appropriate, no anomalies occurred. See the Run Narrative section for further detail on each run.

Wood Heater Identification and Testing

- Appliance Tested: ***H080***
- Serial Number: ***PFS Tracking Number 218***
- Manufacturer: ***Enerco Group, Inc.***
- Catalyst: ***No***
- Heat exchange blower: ***Optional***
- Type: ***Wood Stove***
- Style: ***Free Standing Wood Stove***
- Date Received: ***Monday, January 13, 2025***
- Testing Period – Start: ***Monday, February 03, 2025***
  Finish: ***Wednesday, February 05, 2025***
- Test Location: ***PFS TECO***
  11785 SE Hwy 212
  Clackamas, OR 97015
- Elevation: ***~131 Feet above sea level***
- Test Technician(s): ***Aaron Kravitz***
- Observers: ***None***

Test Procedures and Equipment

All Sampling and analytical procedures were performed by Aaron Kravitz. All procedures used are directly from ASTM E2780 and ASTM E2515. See the list below for equipment used. See Appendix C submitted with this report for calibration data.

Equipment List:

Equipment ID#	Equipment Description
50	Digiweigh DWP12i Platform Scale
53	APEX XC-60-ED Digital Emissions Sampling Box A
54	APEX XC-60-ED Digital Emissions Sampling Box B
203	APEX XC-50-DIR Digital Emissions Sampling Box C
55	Apex Ambient Air Sample Box
57	California Analytical ZRE CO2/CO/O2 IR ANALYZER
94	Moisture meter calibration block
95	Anemometer
97	10 lb audit weight
107	Sartorius Analytical Balance
109A/B	Troemner 100mg/200mg Audit Weights
111	Microtector
221	Microtector Micrometer
115	Delmhorst Wood Moisture Meter
189	Mettler 3'x3' floor scale w/digital weight indicator
209	Tape Measure
213	Digital Calipers
215	Temperature Logger
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

A total of 5 test runs were performed on the H080. The weighted average emissions rate for the 5 run test series was measured to be **1.6 g/hr** with a Higher Heating Value efficiency of **72%.** The average CO emission rate for the 4 tests was **0.74 g/min.** Weighted average heat transfer HHT efficiency was **75%**. The Enerco H080 Wood-Fired Room Heater meets the 2020 cribwood 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

	Cat. 1 ≤.80 kg/hr	Cat. 2 0.80 - 1.25 kg/hr	Cat. 3 1.25 - 1.90 kg/hr	Cat. 4 Max Burn Rate	Fan Confirmation (Cat. 2)*
Date	2/3/2025	2/4/2025	2/4/2025	2/3/2025	2/5/2025
Run Number	2	4	3	1	5
Emission Rate (g/hr)	1.10	1.62	1.67	2.00	1.22
Burn Rate (kg/hr)	0.79	0.95	1.70	2.03	1.08
Heat Output (Btu/hr)	10,710	12,773	21,618	26,631	14,133
Overall Efficiency (% HHV)	74%	73%	71%	72%	71%
CO Emissions (g/MJ Output)	3.10	4.90	2.10	1.03	5.19
CO Emissions (g/kg Dry Fuel)	45.57	71.33	29.43	14.64	73.09
CO Emissions (g/min)	0.58	1.10	0.80	0.48	1.29
Emissions – 1st hr (g/hr)	2.22	3.07	1.46	2.11	0.80
Weighted particulate emission average of 4 test runs: 1.6 grams per hour.					
Weighted average HHV efficiency of 4 test runs: 72%.					
Average CO Emissions Rate: 0.74 g/min					

*Fan Confirmation test not included in weighted average calculations.

Test Run Narrative

Run 1

Run 1 was performed on 2/3/2025 as a category 4 test, per EPA Method 28R. The total test time was 48 minutes. The particulate emissions rate for the test was 2.00 g/hr, the burn rate was 2.03 kg/hr with an HHV efficiency of 72%. All test results were appropriate and valid. There were no anomalies and all test criteria were met.

Run 2

Run 2 was performed on 2/3/2025 as a category 1 test, per EPA Method 28R. The total test time was 124 minutes. The particulate emissions rate for the test was 1.10 g/hr, the burn rate was 0.79 kg/hr with an HHV efficiency of 74%. All test results were appropriate and valid. There were no anomalies and all test criteria were met.

Run 3

Run 3 was performed on 2/4/2025 as a category 3 test, per EPA Method 28R. The total test time was 57 minutes. The particulate emissions rate for the test was 1.67 g/hr, the burn rate was 1.70 kg/hr with an HHV efficiency of 71%. All test results were appropriate and valid. There were no anomalies and all test criteria were met.

Run 4

Run 4 was performed on 2/4/2025 as a category 2 test, per EPA Method 28R. The total test time was 104 minutes. The particulate emissions rate for the test was 1.62 g/hr, the burn rate was 0.95 kg/hr with an HHV efficiency of 73%. All test results were appropriate and valid. There were no anomalies and all test criteria were met.

Run 5

Run 5 was performed on 2/5/2025 as a category 2 fan confirmation test, per EPA Method 28R. The total test time was 88 minutes. The particulate emissions rate for the test was 1.22 g/hr with a burn rate of 1.08 kg/hr. All test results were appropriate and valid. There were no other anomalies and all test criteria were met. Since the particulate emissions rate is within 1.0 g/hr of the category 2 test, the blower is determined not to have a significant impact on emissions performance and may therefore be approved as an optional accessory. This test run is not included in the weighted average calculations presented in the results summary.

Test Conditions Summary

Testing conditions for all runs fell within allowable specifications of the ASTM 2780 and ASTM E2515. A summary of facility conditions, fuel burned, and run times are listed below.

Run	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	66	66	26.4	21.7	29.67	8.4	4.25	21.7	48
2	66	65	21.2	20.0	29.61	4.41	4.28	22.0	124
3	65	66	18.4	17.6	29.64	7.48	4.23	22.1	57
4	67	65	17.7	17.0	29.57	4.12	4.32	22.2	104
5	65	64	20.3	19.3	29.76	6.27	4.17	21.8	88

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 Air Setting	Test Run Air and Fan Settings
Run 1	Air control fully open	Air control fully open, fan on high
Run 2	Air control fully closed	Air control fully closed, fan on high
Run 3	Air control open 1.5”	Air control open 1.5”, fan on high
Run 4	Air control open 0.3”	Air control open 0.3”, fan on high
Run 5	Air control open 0.3”	Air control open 0.3”, fan off (fan confirmation)

Appliance Description

Model(s): H080

Appliance Type: Wood-Fired Room Heater

Tota Firebox Volume: 0.61 ft^3

Usable Firebox Volume: 0.57 ft^3

Model Variants: The H080 is available in eight additional variants, the WS080, C080, D080, J080, N080, R080, T080, and V080. All models are differentiated for branding purposes only and are identical in all respects that may affect emissions performance.

Air Introduction System Primary combustion air enters the appliance through the air control opening located on the bottom front of the stove. Air is routed up the sides of the firebox, then down into the combustion chamber in front of the door glass. Secondary air brought in through a fixed opening on the bottom rear of the appliance and is routed up the back of the firebox and feed into a secondary air tubes. Dimensions on all these features can be found in Appendix D.

Baffles: Combustion air is routed to the front of the stove with a refractory baffle that sits on top of the secondary air tubes, then back and up, out through the flue collar.

Catalytic Combustor: None

Combustor Temperature Monitoring System: N/A

Refractory Insulation: The firebox is lined with 1.25” thick high-density firebrick.

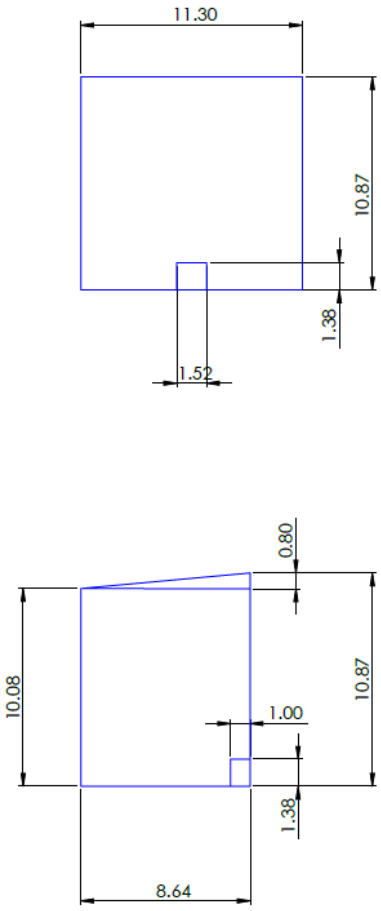
Flue Outlet: 6-inch exhaust outlet located on the top of the appliance.

Fan: An optional, variable speed convection fan is mounted to the rear of the appliance.

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

Firebox Volume Calculation

Usable Volume



11.3 x 8.64 x 10.08 = 984.13

\+

1/2 (8.64 x 0.8) = 3.46

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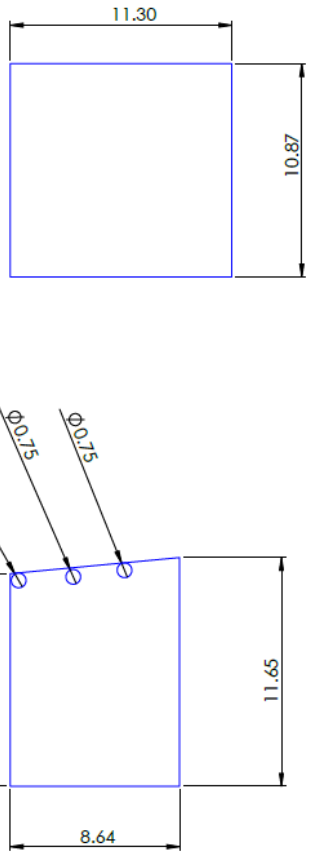
1 x 1.38 x 1.52 = 2.1

984.13 + 3.46 - 2.1 = 985.49 cubic inches

= **0.57** cubic feet

Total Volume



11.30 x 10.83 x 8.64 = 1057.35

\+

1/2 (8.64 x 8.2) = 3.54

\-

3 (pi x 0.375 x 0.375) = 0.44

1060.45 cubic inches = 0.61 cubic feet

Appliance Front

Appliance Left

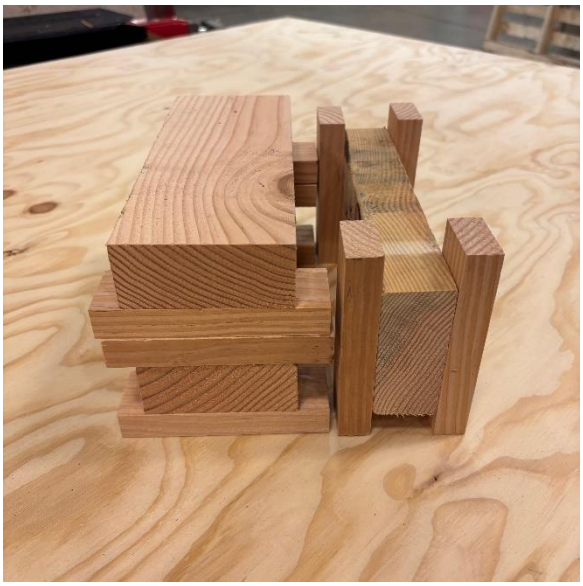
Appliance Right

Appliance Rear

Test Fuel Properties

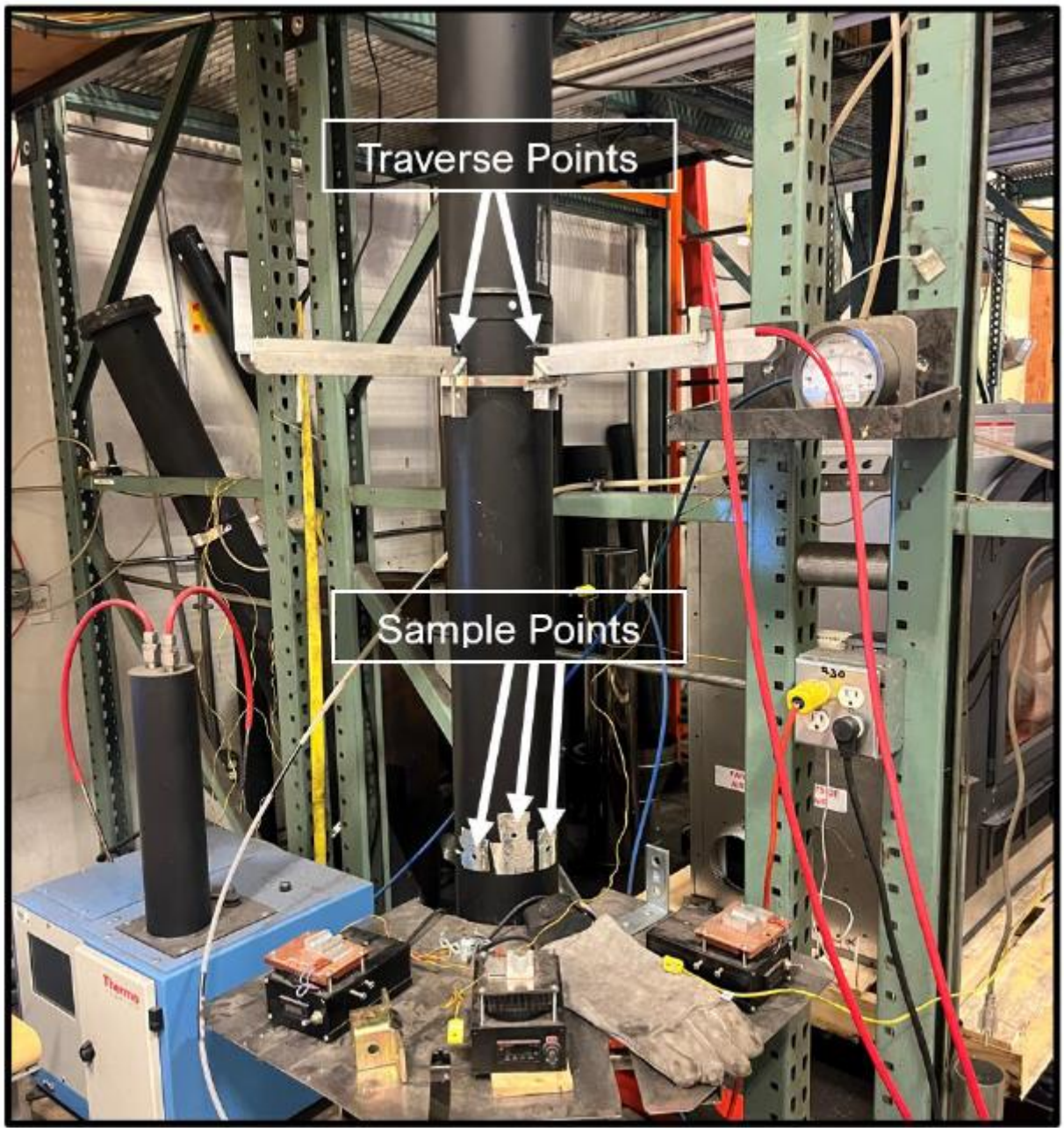
Test fuel used was Douglas Fir dimensional lumber, air-dried to the specified moisture content range. A typical fuel load is pictured below:

Typical Fuel Load



Sampling Locations and Descriptions

Sample ports are located 16.5 feet downstream from any disturbances and 3.5 feet upstream from any disturbances. Flow rate traverse data was collected 8 feet downstream from any disturbances and 4 feet upstream from any disturbances. (See below).



Sampling Methods

ASTM E2515 was used in collecting particulate samples. The dilution tunnel was 6 inches in diameter. All sampling conditions per ASTM E2515 were followed. No alternate procedures were used.

Analytical Methods Description

All sample recovery and analysis procedures followed ASTM E2515 procedures. At the end of each test run, filters, O-Rings and probes were removed from their housings dessicated for a minimum of 24 hours, and then weighed in pairs at 6 hour intervals to a constant weight per ASTM E2515-11 Section 10.

Calibration, Quality Control and Assurances

Calibration procedures and results were conducted per EPA Method 28R and ASTM E2515-11. Test method quality control procedures (leak checks, volume meter checks, stratification checks, proportionality results) followed the procedures outlined.

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 – Run Data - Page 21 of Non-CBI PDF

Appendix B – Labels and Manuals Page 153 of Non-CBI PDF

Appendix C –Equipment Calibration Records Page 195 Non-CBI of PDF

Appendix D – Design Drawings (CBI Report Only)

Appendix E – Manufacturer QAP (CBI Report Only)

Appendix F- Communication - Page 224 of Non-CBI PDF

Appendix A: Test Run Data

EPA Method 28R Weighted Average Emissions

Client: Enerco
Stove Model: H080
Test Dates: 2/3/25 - 2/4/25
Job Number: 24-367

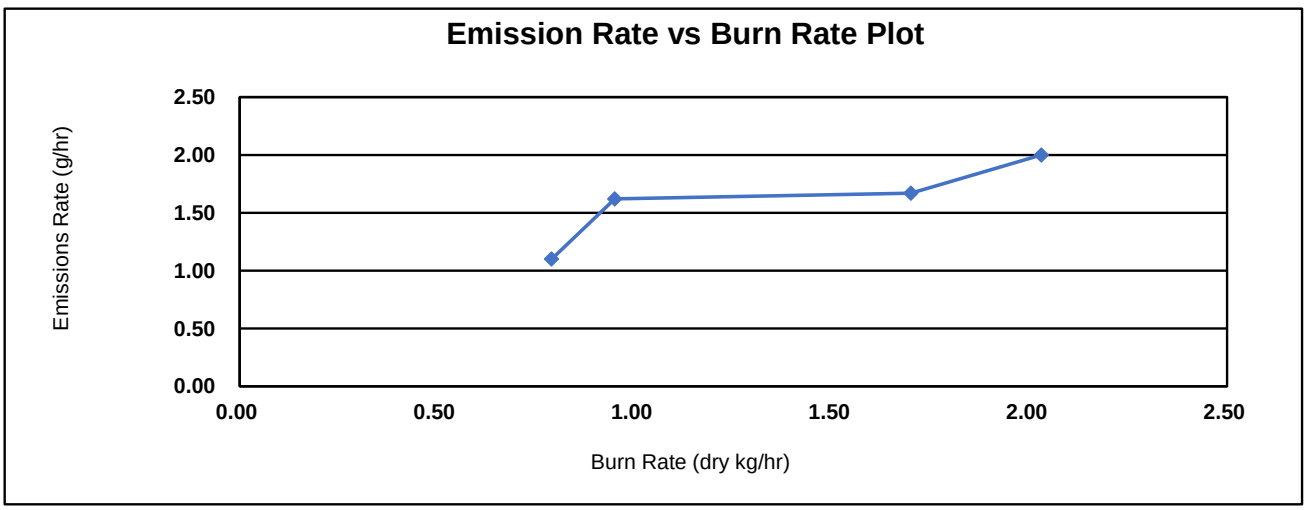
Signature/Date: 2/24/2025

Weighted Average Particulate Emissions (g/hr):	**1.6**
Weighted Average HHV Efficiency (%):	**72%**
Weighted Average LHV Efficiency (%):	**78%**
Average CO Emissions (g/min):	**0.74**

Individual Run Summaries

Run Number:	2	Run Number:	4
Burn Rate (dry kg/hr):	0.79	Burn Rate (dry kg/hr):	0.95
Emissions Rate (g/hr):	1.10	Emissions Rate (g/hr):	1.62
HHV Efficiency (%):	74.3%	HHV Efficiency (%):	73.4%
LHV Efficiency (%):	80.3%	LHV Efficiency (%):	79.4%
Weighting Percentage (%):	19.25%	Weighting Percentage (%):	36.80%

Run Number:	3	Run Number:	1
Burn Rate (dry kg/hr):	1.70	Burn Rate (dry kg/hr):	2.03
Emissions Rate (g/hr):	1.67	Emissions Rate (g/hr):	2.00
HHV Efficiency (%):	70.7%	HHV Efficiency (%):	71.6%
LHV Efficiency (%):	76.4%	LHV Efficiency (%):	77.3%
Weighting Percentage (%):	34.56%	Weighting Percentage (%):	9.39%



EPA Method 28R Weighted Average Emissions

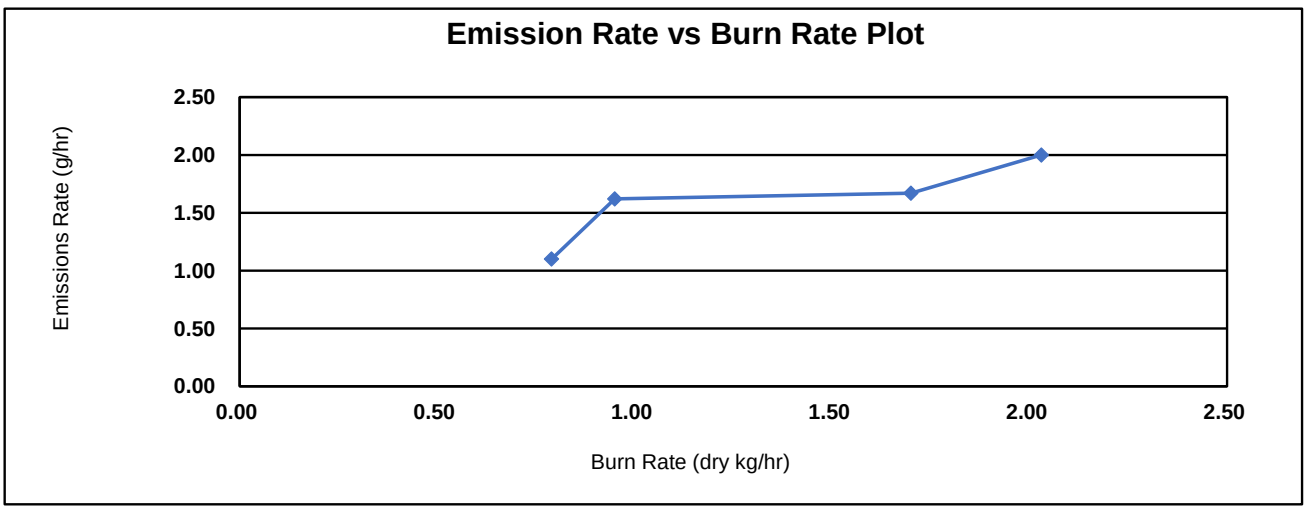
Client: Enerco
Stove Model: H080
Test Dates: 2/3/25 - 2/4/25
Job Number: 24-367

Signature/Date: 2/28/25

Weighted Average Particulate Emissions (g/hr):	**1.6**
Weighted Average HHV Efficiency (%):	**72%**
Weighted Average HHV Heat Transfer Efficiency (%):	**75%**
Average CO Emissions (g/min):	**0.74**

Individual Run Summaries

Run Number:	2	Run Number:	4
Burn Rate (dry kg/hr):	0.79	Burn Rate (dry kg/hr):	0.95
Emissions Rate (g/hr):	1.10	Emissions Rate (g/hr):	1.62
HHV Efficiency (%):	74.3%	HHV Efficiency (%):	73.4%
HHV HT (%):	76.5%	HHV HT (%):	77.3%
Weighting Percentage (%):	19.25%	Weighting Percentage (%):	36.80%
Run Number:	3	Run Number:	1
Burn Rate (dry kg/hr):	1.70	Burn Rate (dry kg/hr):	2.03
Emissions Rate (g/hr):	1.67	Emissions Rate (g/hr):	2.00
HHV Efficiency (%):	70.7%	HHV Efficiency (%):	71.6%
HHV HT (%):	72.0%	HHV HT (%):	72.1%
Weighting Percentage (%):	34.56%	Weighting Percentage (%):	9.39%



WOOD STOVE TEST DATA PACKET
ASTM E2780/E2515

Run 1 Data Summary

Client:	Enerco
Model:	H080
Job #:	24-367
Tracking #:	218
Test Date:	2/3/2025

Techician Signature — Date: 2/24/2025

TEST RESULTS - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Burn Rate (kg/hr):	2.03

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	8.984	8.089	7.434	7.540
Average Gas Velocity in Dilution Tunnel (ft/sec)	21.6			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	13886.9			
Average Gas Meter Temperature (°F)	66.2	74.3	74.8	78.1
Total Sample Volume (dscf)	9.052	8.127	7.357	7.530
Average Tunnel Temperature (°F)	104.5			
Total Time of Test (min)	48			
Total Particulate Catch (mg)	0.1	1.3	1.1	1.0
Particulate Concentration, dry-standard (g/dscf)	0.0000110	0.0001600	0.0001495	0.0001328
Total PM Emissions (g)	0.12	1.65	1.54	2.11
Particulate Emission Rate (g/hr)	0.15	2.07	1.92	2.11
Emissions Factor (g/kg)	-	1.02	0.95	-
Difference from Average Total Particulate Emissions (g)	-	0.06	0.06	-
Difference from Average Total Particulate Emissions (%)	-	3.6%	3.6%	
Difference from Average Emissions Factor (g/kg)	-	0.04	0.04	-

Final Average Results	
Total Particulate Emissions (g)	1.60
Particulate Emission Rate (g/hr)	2.00
Emissions Factor (g/kg)	0.98
HHV Efficiency (%)	71.6%
LHV Efficiency (%)	77.3%
CO Emissions (g/min)	0.48

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	77.2	OK
Face Velocity	< 30 ft/min	11.3	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min:65.7/Max:66.7	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
Stove Surface ΔT	<126°F	97.2	OK

B415.1 Efficiency Results

Manufacturer:	Enerco
Model:	H080
Date:	02/03/25
Run:	1
Control #:	24-367
Test Duration:	48
Output Category:	4

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	71.6%	77.3%
Combustion Efficiency	99.2%	99.2%
Heat Transfer Efficiency	72.1%	78.0%

Output Rate (kJ/h)	28,074	26,631	**(Btu/h)**
Burn Rate (kg/h)	1.98	4.37	**(lb/h)**
Input (kJ/h)	39,236	37,219	**(Btu/h)**

Test Load Weight (dry kg)	1.58	3.49	**dry lb**
MC wet (%)	17.83		
MC dry (%)	21.70		
Particulate (g)	1.60		
CO (g)	23		
Test Duration (h)	0.80		

Emissions	**Particulate**	**CO**
g/MJ Output	0.07	1.03
g/kg Dry Fuel	1.01	14.64
g/h	2.00	29.00
g/min	0.03	0.48
lb/MM Btu Output	0.17	2.40

Air/Fuel Ratio (A/F)	12.93

VERSION: **2.4** **4/15/2010**

WOODSTOVE FUEL DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Preburn Fuel Information

Size	Length (in)	Moisture Content (% DB)	Size	Length (in)	Moisture Content (% DB)
2x4	9.00	21.8			
2x4	9.00	23.2			
2x4	9.00	22.1			
2x4	9.00	24.9			
2x4	9.00	24.5			
2x4	9.00	23.3			
2x4	9.00	22.5			

Total Fuel Weight (lbs): 8.4
Average Moisture (%DB): 23.2

Firebox Volume (ft^3): 0.60
Total 2x4 Crib Weight, with spacers (lbs): 4.25
Total 4x4 Crib Weight, with spacers (lbs): 0.00
Total Wet Fuel Weight, with spacers (lbs): 4.25

Coal Bed Range (20-25%):
Min (lbs): 0.85
Max (lbs): 1.06

Test Fuel Information

Size	Length (in)	Weight (lbs)	Moisture Content (%DB)			Dry Weight (lbs)
2x4	9.37	1.06	24.0	23.3	24.2	0.86
2x4	9.37	1.10	19.5	21.6	19.9	0.91
2x4	9.37	0.90	20.6	19.6	22.6	0.74

Total Dry Weight, no spacers (lbs): 2.51
Total Dry Weight, with spacers (lbs): 3.58

Spacer Moisture Readings (%DB)

11.5	10.1						
13.1	10.7						
10.8	11.8						
12.9	13.6						
12.9	11.5						

Quality Checks	Requirement	Observed	Result
Fuel Density	25 - 36 (lbs/ft^3, DB)	29.4	OK
Loading Density	6.3 - 7.7 (lbs/ft^3, WB)	7.08	OK
2x4 Fuel Mix	35 - 65 % of total weight	N/A	N/A

DILUTION TUNNEL & MISC. DATA - ASTM E2780 / E2515

Client:	Enerco	Job #:	24-367
Model:	H080	Tracking #:	218
Run #:	1	Technician:	AK
Test Start Time:	11:00	Date:	2/3/2025

Total Sampling Time (min):	48
Recording Interval (min):	1

Meter Box γ Factor:	1.019	(A)
Meter Box γ Factor:	1.005	(B)
Meter Box γ Factor:	1.024	(C)
Meter Box γ Factor:	1.013	(Ambient)

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	29.69	29.65	29.67
Relative Humidity (%)	26.4	21.7	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	0	0	
Ambient Sample Volume:		8.984	ft^3

Induced Draft Check (in. H_2O):	0
Smoke Capture Check (%):	100%
Date Flue Pipe Last Cleaned:	1/31/2025
Test Fuel Scale Audit (lbs)	10.00
Platform Scale Audit (lbs)	10.0

Sample Train Leak Checks

	Pre-test	Post-test		
(A)	0.000	0.000	cfm @	-7 in. Hg
(B)	0.000	0.000	cfm @	-6 in. Hg
(C)	0.001	0.000	cfm @	-7 in. Hg
(Ambient)	0.000	0.000	cfm @	-12 in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.082	67
2	0.106	67
3	0.112	67
4	0.086	67
5	0.068	67
6	0.094	67
7	0.108	67
8	0.092	67
Center	0.101	67

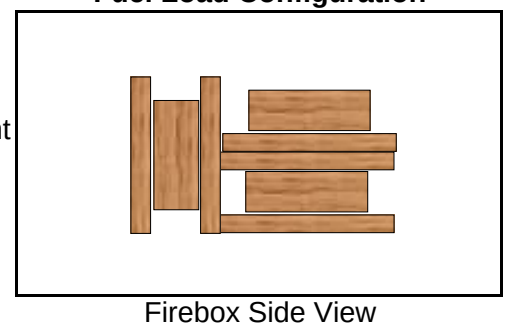
Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	6	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.1963	ft^2
V_{strav}:	20.27	ft/sec
V_{scent}:	21.13	ft/sec
F_p:	0.959	[ratio]
Initial Tunnel Flow:	232.5	scf/min

Static Pressure: -0.180 in. H_2O

TEST FUEL PROPERTIES

Fuel Load Configuration

Firebox Front



Firebox Back

Firebox Side View

Actual Fuel Used Properties

Fuel Type:	D. Fir
HHV (kJ/kg)	19,810
%C	48.73
%H	6.87
%O	43.9
%Ash	0.5
MC (%DB)	21.7

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Recording Interval (min): 1
Run Time (min): 64

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
0	3.03	-0.068	67	94	96	117	64	87.7	285	63
1	2.92	-0.071	67	104	111	140	65	97.4	315	63
2	2.82	-0.078	68	110	128	169	64	107.7	347	63
3	2.71	-0.078	69	115	146	203	65	119.5	374	63
4	2.59	-0.080	71	120	166	241	65	132.5	398	63
5	2.46	-0.083	73	129	185	281	65	146.7	421	63
6	2.37	-0.083	76	141	210	321	65	162.5	438	63
7	2.27	-0.085	80	150	232	358	65	177.0	446	63
8	2.16	-0.087	84	155	254	392	66	190.1	453	63
9	2.03	-0.084	88	169	274	424	66	204.1	459	63
10	1.94	-0.085	93	167	296	450	67	214.3	457	63
11	1.82	-0.085	97	164	313	472	68	222.8	454	63
12	1.72	-0.086	103	166	327	492	69	231.3	457	63
13	1.60	-0.091	107	177	342	513	70	241.8	469	64
14	1.49	-0.090	112	188	362	532	72	253.1	477	64
15	1.37	-0.090	118	198	378	552	74	263.7	486	64
16	1.23	-0.092	123	216	395	573	76	276.6	499	64
17	1.11	-0.092	128	415	279	581	79	296.2	507	64
18	0.97	-0.094	133	432	221	582	82	290.0	513	64
19	0.86	-0.093	139	446	194	583	85	289.4	514	64
20	0.74	-0.093	145	459	180	581	87	290.4	509	64
21	0.64	-0.093	151	471	174	578	90	292.8	503	65
22	0.56	-0.089	157	480	171	573	93	294.9	493	64
23	0.47	-0.089	163	489	171	566	96	297.0	481	64
24	0.39	-0.085	169	497	169	560	99	298.7	469	64
25	0.32	-0.083	175	498	175	550	102	299.9	452	64
26	5.24	-0.079	181	500	189	536	105	302.1	429	64
27	5.17	-0.076	185	508	184	516	108	300.3	394	64
28	5.11	-0.072	189	481	179	489	111	289.8	366	64
29	5.05	-0.068	193	419	179	460	113	272.6	346	64
30	4.99	-0.081	196	507	186	437	116	288.3	346	64
31	4.85	-0.081	199	502	181	424	120	285.1	380	64
32	4.75	-0.078	200	499	174	410	123	281.3	384	64
33	4.67	-0.074	201	497	172	399	125	278.6	373	64
34	4.61	-0.072	201	494	170	387	127	275.9	357	64
35	4.54	-0.073	202	489	178	378	129	274.9	344	65
36	4.43	-0.091	202	489	181	373	129	274.7	371	64
37	4.27	-0.084	203	489	175	383	130	275.8	435	64
38	4.17	-0.081	202	490	174	387	134	277.3	418	65
39	4.03	-0.087	202	492	181	395	136	281.0	422	65
40	3.86	-0.088	201	496	186	412	137	286.3	442	64
41	3.72	-0.088	201	501	188	430	138	291.6	453	64
42	3.60	-0.089	202	506	186	448	139	296.1	457	65
43	3.47	-0.090	203	511	185	464	141	300.8	462	65
44	3.33	-0.090	205	516	184	479	142	305.2	466	65

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Recording Interval (min): 1
Run Time (min): 64

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
45	3.20	-0.089	207	521	186	493	143	310.1	469	65
46	3.08	-0.091	209	527	188	506	144	314.7	471	65
47	2.94	-0.091	212	532	192	517	145	319.5	475	65
48	2.83	-0.090	214	537	194	528	147	324.0	478	65
49	2.71	-0.092	217	542	194	537	148	327.4	479	65
50	2.57	-0.091	219	547	184	542	149	328.1	482	65
51	2.44	-0.091	222	551	180	546	150	329.7	485	65
52	2.33	-0.091	225	556	178	552	152	332.5	488	65
53	2.21	-0.094	229	560	179	558	153	335.7	494	65
54	2.07	-0.094	232	564	182	565	155	339.3	498	65
55	1.95	-0.092	235	568	184	573	156	343.2	501	65
56	1.84	-0.094	238	573	186	582	157	347.2	507	66
57	1.72	-0.095	242	578	184	591	159	350.7	512	65
58	1.61	-0.094	245	583	183	601	160	354.3	515	65
59	1.51	-0.095	249	588	185	610	161	358.4	516	66
60	1.38	-0.093	253	593	181	619	162	361.4	517	65
61	1.27	-0.093	256	598	182	625	164	365.0	518	66
62	1.18	-0.092	260	602	183	630	166	368.1	514	66
63	1.06	-0.092	264	606	188	632	168	371.4	508	66
64	0.98	-0.091	268	608	202	630	169	375.6	501	66

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.000		0.108	0.03	69	0.1		4.25		108	503	68	66
1	0.148	0.148	0.108	2.31	69	1.0	-	4.14	-0.11	111	487	70	66
2	0.299	0.151	0.107	2.37	69	1.0	-	3.95	-0.19	110	514	71	66
3	0.450	0.151	0.108	2.40	69	1.0	-	3.79	-0.16	110	533	71	66
4	0.604	0.154	0.107	2.44	69	1.0	-	3.65	-0.14	109	538	72	66
5	0.756	0.152	0.110	2.47	70	1.0	-	3.49	-0.16	109	540	72	66
6	0.911	0.155	0.106	2.49	70	1.0	-	3.35	-0.14	108	539	72	66
7	1.073	0.162	0.107	2.51	70	1.0	-	3.20	-0.15	108	542	73	66
8	1.241	0.168	0.108	2.53	70	1.0	-	3.05	-0.15	109	544	73	66
9	1.395	0.154	0.110	2.56	70	1.0	-	2.91	-0.14	110	546	73	66
10	1.566	0.171	0.106	2.56	70	1.0	94	2.76	-0.15	110	546	74	66
11	1.713	0.147	0.108	2.58	70	1.0	-	2.61	-0.15	110	547	74	66
12	1.872	0.159	0.108	2.61	71	1.0	-	2.48	-0.13	110	546	74	66
13	2.032	0.160	0.107	2.63	71	1.0	-	2.33	-0.15	109	545	75	66
14	2.185	0.153	0.107	2.64	71	1.0	-	2.20	-0.13	109	544	75	66
15	2.354	0.169	0.108	2.66	71	1.0	-	2.06	-0.14	109	542	75	66
16	2.565	0.211	0.107	2.67	72	1.1	-	1.93	-0.13	109	544	75	67
17	2.757	0.192	0.108	2.68	72	1.1	-	1.80	-0.13	109	542	76	66
18	2.933	0.176	0.109	2.70	72	1.0	-	1.67	-0.13	109	540	76	66
19	3.101	0.168	0.107	2.70	72	1.0	-	1.55	-0.12	109	538	76	66
20	3.270	0.169	0.107	2.72	73	1.1	102	1.43	-0.12	108	538	76	66
21	3.432	0.162	0.107	2.72	73	1.1	-	1.30	-0.13	109	536	76	67
22	3.609	0.177	0.107	2.74	73	1.0	-	1.19	-0.11	109	534	76	66
23	3.789	0.180	0.107	2.74	74	1.1	-	1.10	-0.09	108	530	77	67
24	3.965	0.176	0.107	2.75	74	1.0	-	0.99	-0.11	108	525	77	66
25	4.134	0.169	0.107	2.76	74	1.1	-	0.89	-0.10	107	521	77	66
26	4.307	0.173	0.107	2.77	75	1.1	-	0.80	-0.09	107	516	77	66
27	4.488	0.181	0.107	2.77	75	1.1	-	0.71	-0.09	107	507	77	66
28	4.697	0.209	0.106	2.77	75	1.0	-	0.63	-0.08	106	501	77	66
29	4.871	0.174	0.108	2.78	76	1.1	-	0.55	-0.08	105	494	77	67
30	5.054	0.183	0.107	2.79	76	1.1	106	0.48	-0.07	105	490	77	67
31	5.248	0.194	0.108	2.79	76	1.1	-	0.41	-0.07	105	485	77	66

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	5.415	0.167	0.107	2.79	77	1.1	-	0.36	-0.05	104	479	77	66
33	5.582	0.167	0.106	2.78	77	1.1	-	0.30	-0.06	103	466	77	66
34	5.755	0.173	0.108	2.80	77	1.1	-	0.26	-0.04	102	447	77	67
35	5.918	0.163	0.106	2.82	78	1.1	-	0.23	-0.03	101	427	77	66
36	6.088	0.170	0.107	2.80	78	1.1	-	0.22	-0.01	100	411	77	66
37	6.255	0.167	0.106	2.81	78	1.1	-	0.19	-0.03	99	396	77	66
38	6.418	0.163	0.106	2.83	79	1.1	-	0.16	-0.03	98	384	77	66
39	6.585	0.167	0.109	2.82	79	1.1	-	0.16	0.00	97	371	77	66
40	6.750	0.165	0.107	2.82	79	1.1	100	0.15	-0.01	97	361	77	66
41	6.915	0.165	0.106	2.82	79	1.1	-	0.12	-0.03	96	352	76	66
42	7.086	0.171	0.106	2.84	80	1.1	-	0.11	-0.01	95	345	76	66
43	7.253	0.167	0.108	2.84	80	1.1	-	0.10	-0.01	94	339	76	66
44	7.416	0.163	0.107	2.85	80	1.1	-	0.08	-0.02	94	333	76	66
45	7.587	0.171	0.107	2.84	81	1.1	-	0.06	-0.02	93	329	76	66
46	7.754	0.167	0.106	2.84	81	1.1	-	0.04	-0.02	93	324	76	66
47	7.917	0.163	0.106	2.86	81	1.1	-	0.02	-0.02	92	320	76	66
48	8.089	0.172	0.107	2.85	81	1.1	98	0.00	-0.02	92	316	76	66
Avg/Tot	8.089	0.169	0.107	2.65	74.3	1.0	100			104.5	475.4	75.2	66.2

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	0.000		0.04	70	0.9		70	-0.091	9.71	0.128
1	0.126	0.126	2.48	69	2.0	-	72	-0.097	4.75	0.218
2	0.277	0.151	2.48	69	1.9	-	73	-0.098	11.33	0.325
3	0.433	0.156	2.49	69	1.7	-	73	-0.099	12.56	0.317
4	0.584	0.151	2.49	70	1.9	-	73	-0.098	12.05	0.167
5	0.741	0.157	2.49	70	1.6	-	74	-0.099	11.80	0.132
6	0.893	0.152	2.49	70	1.7	-	74	-0.097	11.67	0.131
7	1.048	0.155	2.49	70	2.0	-	74	-0.098	11.67	0.146
8	1.200	0.152	2.50	70	1.9	-	75	-0.098	11.79	0.171
9	1.356	0.156	2.50	70	1.8	-	75	-0.098	11.83	0.177
10	1.514	0.158	2.51	70	1.6	99	75	-0.098	11.65	0.176
11	1.666	0.152	2.50	71	1.6	-	75	-0.098	11.65	0.174
12	1.822	0.156	2.50	71	2.0	-	75	-0.097	11.65	0.157
13	1.975	0.153	2.50	71	1.5	-	76	-0.098	11.66	0.138
14	2.129	0.154	2.51	71	1.9	-	76	-0.097	11.62	0.125
15	2.282	0.153	2.51	72	1.9	-	76	-0.098	11.69	0.128
16	2.438	0.156	2.51	72	1.5	-	76	-0.097	11.72	0.132
17	2.591	0.153	2.50	72	1.8	-	76	-0.098	11.68	0.128
18	2.747	0.156	2.51	72	1.7	-	76	-0.097	11.62	0.110
19	2.905	0.158	2.52	73	2.1	-	77	-0.097	11.63	0.080
20	3.058	0.153	2.50	73	1.6	101	77	-0.097	11.64	0.079
21	3.216	0.158	2.51	73	1.8	-	77	-0.096	11.62	0.096
22	3.368	0.152	2.51	74	1.6	-	77	-0.095	11.59	0.109
23	3.524	0.156	2.51	74	2.0	-	77	-0.095	11.46	0.071
24	3.679	0.155	2.51	74	2.1	-	77	-0.094	11.14	0.053
25	3.835	0.156	2.51	75	2.1	-	77	-0.095	11.03	0.068
26	3.989	0.154	2.51	75	2.1	-	77	-0.093	10.94	0.091
27	4.143	0.154	2.51	75	2.0	-	77	-0.093	10.53	0.036
28	4.300	0.157	2.51	76	1.7	-	77	-0.091	10.15	0.019
29	4.454	0.154	2.51	76	2.0	-	77	-0.091	9.94	0.019
30	4.613	0.159	2.52	76	2.1	101	77	-0.090	9.83	0.015
31	4.766	0.153	2.51	77	1.8	-	77	-0.089	9.78	0.027

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	4.923	0.157	2.51	77	1.8	-	77	-0.087	9.38	0.015
33	5.079	0.156	2.51	77	2.1	-	77	-0.084	8.32	0.020
34	5.234	0.155	2.52	78	1.6	-	77	-0.082	7.15	0.015
35	5.392	0.158	2.50	78	1.8	-	77	-0.080	6.67	0.009
36	5.549	0.157	2.51	78	2.0	-	77	-0.077	6.37	0.009
37	5.707	0.158	2.52	79	1.6	-	77	-0.076	6.13	0.013
38	5.862	0.155	2.51	79	1.6	-	77	-0.075	5.89	0.024
39	6.020	0.158	2.52	79	2.1	-	77	-0.072	5.78	0.026
40	6.176	0.156	2.52	80	1.9	100	77	-0.072	5.53	0.040
41	6.330	0.154	2.52	80	1.5	-	77	-0.070	5.53	0.051
42	6.490	0.160	2.53	80	1.9	-	77	-0.071	5.40	0.072
43	6.645	0.155	2.53	81	2.1	-	76	-0.068	5.31	0.088
44	6.803	0.158	2.52	81	2.0	-	76	-0.068	5.26	0.114
45	6.960	0.157	2.53	81	2.0	-	76	-0.068	5.28	0.123
46	7.117	0.157	2.53	82	2.1	-	76	-0.067	5.24	0.130
47	7.275	0.158	2.52	82	1.6	-	76	-0.065	5.13	0.160
48	7.434	0.159	2.53	82	1.6	100	76	-0.065	4.96	0.186
Avg/Tot	7.434	0.155	2.46	74.8	1.8	100	75.8	-0.088	9.36	0.103

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
0	0.000		0.00	73	0.1		69
1	0.149	0.149	1.11	73	0.3	-	69
2	0.303	0.154	1.13	73	0.3	-	69
3	0.458	0.155	1.13	73	0.3	-	69
4	0.612	0.154	1.14	73	0.3	-	69
5	0.766	0.154	1.13	73	0.3	-	69
6	0.920	0.154	1.12	73	0.3	-	69
7	1.076	0.156	1.14	73	0.3	-	69
8	1.231	0.155	1.14	74	0.3	-	69
9	1.386	0.155	1.14	74	0.3	-	69
10	1.543	0.157	1.13	74	0.3	100	69
11	1.700	0.157	1.15	74	0.3	-	69
12	1.856	0.156	1.15	75	0.3	-	69
13	2.010	0.154	1.15	75	0.3	-	69
14	2.165	0.155	1.15	75	0.3	-	70
15	2.322	0.157	1.16	75	0.3	-	70
16	2.479	0.157	1.16	76	0.3	-	70
17	2.635	0.156	1.15	76	0.3	-	70
18	2.792	0.157	1.16	76	0.3	-	70
19	2.952	0.160	1.16	76	0.3	-	70
20	3.109	0.157	1.15	77	0.3	101	70
21	3.267	0.158	1.16	77	0.3	-	70
22	3.424	0.157	1.16	77	0.3	-	70
23	3.578	0.154	1.15	78	0.3	-	70
24	3.739	0.161	1.16	78	0.3	-	70
25	3.896	0.157	1.16	78	0.3	-	70
26	4.051	0.155	1.15	79	0.3	-	70
27	4.209	0.158	1.16	79	0.3	-	70
28	4.367	0.158	1.16	79	0.3	-	70
29	4.524	0.157	1.15	80	0.3	-	70
30	4.683	0.159	1.17	80	0.3	100	70
31	4.840	0.157	1.16	80	0.3	-	70

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
32	4.998	0.158	1.15	81	0.3	-	70
33	5.156	0.158	1.16	81	0.3	-	70
34	5.313	0.157	1.16	81	0.3	-	70
35	5.472	0.159	1.16	81	0.3	-	71
36	5.634	0.162	1.16	82	0.3	-	71
37	5.791	0.157	1.15	82	0.3	-	71
38	5.950	0.159	1.17	82	0.3	-	71
39	6.108	0.158	1.16	82	0.3	-	71
40	6.264	0.156	1.15	83	0.3	100	71
41	6.423	0.159	1.17	83	0.3	-	70
42	6.581	0.158	1.16	83	0.3	-	71
43	6.741	0.160	1.16	83	0.3	-	70
44	6.901	0.160	1.17	84	0.3	-	70
45	7.059	0.158	1.16	84	0.3	-	70
46	7.219	0.160	1.17	84	0.3	-	70
47	7.377	0.158	1.17	84	0.3	-	70
48	7.540	0.163	1.17	85	0.3	100	70
Avg/Tot	7.540	0.157	1.13	78.1	0.3	100	69.9

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Stove ΔT: 97

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
0	272	610	222	632	168	380.6	65.7
1	277	357	255	637	168	338.8	66.0
2	280	617	239	644	172	390.4	66.2
3	283	617	227	650	174	390.2	66.0
4	286	618	214	652	175	388.9	66.0
5	289	619	209	654	176	389.3	65.9
6	292	620	205	657	177	390.2	65.8
7	294	622	204	660	178	391.6	65.8
8	296	623	205	663	178	393.0	65.7
9	298	625	202	667	178	393.9	65.7
10	300	626	202	669	179	395.4	65.9
11	302	628	201	672	180	396.7	65.9
12	304	629	201	674	180	397.8	65.9
13	306	631	201	676	180	398.7	65.9
14	307	632	201	678	179	399.6	66.0
15	309	634	201	680	179	400.7	65.9
16	310	635	202	682	180	401.7	66.0
17	312	636	202	684	179	402.6	66.1
18	314	638	202	686	179	403.8	66.0
19	315	640	202	688	179	404.9	65.9
20	317	643	203	690	179	406.2	66.1
21	318	645	204	692	178	407.3	66.0
22	320	647	204	693	178	408.4	66.0
23	321	650	204	694	178	409.5	66.1
24	323	653	207	694	179	411.1	66.0
25	324	655	213	693	178	412.6	66.1
26	325	656	217	691	178	413.5	66.1
27	327	657	209	687	178	411.3	66.1
28	328	657	212	680	177	410.9	66.1
29	330	657	214	672	177	409.9	66.2
30	331	656	215	664	177	408.7	66.2
31	332	656	209	659	178	406.6	66.2
32	333	654	207	652	178	404.7	66.2
33	334	652	212	641	178	403.3	66.1
34	335	650	209	626	178	399.5	66.2
35	336	647	207	607	178	394.8	66.1
36	336	644	204	586	178	389.6	66.1
37	336	621	201	565	179	380.5	66.1
38	336	614	194	544	179	373.5	66.1
39	335	604	192	524	179	366.9	66.1
40	334	578	190	506	179	357.5	66.1
41	333	515	189	488	179	340.8	66.0
42	331	495	186	472	180	332.6	66.0
43	329	478	188	458	179	326.5	66.0
44	327	464	186	445	179	320.1	65.9
45	325	453	182	433	179	314.5	65.9
46	323	446	180	422	179	310.1	66.0
47	321	441	177	413	179	306.1	66.0

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Stove ΔT: **97**

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
48	318	341	174	404	180	283.4	66.2
Average	315.6	599.8	203.8	618.2	177.8	383.1	66.0

LAB SAMPLE DATA - ASTM E2515

Client: Enerco
Model: H080
Run #: 1

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	**A**	G01209	243.8	244.7	0.9
	B	G01210	245.1	245.5	0.4
	C - 1st Hour	G01211	244.3	245.1	0.8
	Amb	G01212	244.7	244.8	0.1
Probes	**A**	20A	115627.4	115627.8	0.4
	B	20B	115967.1	115967.7	0.6
	C - 1st Hour	20C	113775.6	113775.8	0.2
O-rings	**A**	20A	3558.6	3558.6	0.0
	B	20B	3614.1	3614.2	0.1
	C - 1st Hour	20C	3610.4	3610.4	0.0

Placed in Dessicator on:	2/3/2025

Balance Audit (mg):		200.0		200.0					
		Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time
Filters	**A**	244.6	2/6 10:00	244.7	2/7 8:30				
	B	245.6	2/6 10:00	245.5	2/7 8:30				
	C - 1st Hour	245.1	2/6 10:00	245.1	2/7 8:30				
	Amb	244.8	2/6 10:00	244.8	2/7 8:30				
Probes	**A**	115627.9	2/6 10:00	115627.8	2/7 8:30				
	B	115967.6	2/6 10:00	115967.7	2/7 8:30				
	C - 1st Hour	113776.0	2/6 10:00	113775.8	2/7 8:30				
O-Rings	**A**	3558.6	2/6 10:00	3558.6	2/7 8:30				
	B	3614.2	2/6 10:00	3614.2	2/7 8:30				
	C - 1st Hour	3610.4	2/6 10:00	3610.4	2/7 8:30				

Train A Aggregate, mg:	**1.3**
Train B Aggregate, mg:	**1.1**
Train C Aggregate, mg:	**1.0**
Ambient, mg:	**0.1**

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: **1** Test Date: **2/3/2025**

Wood Heater Run Notes

Test Control Settings

Primary Air Setting(s): Fully Open
Targeted Burn Category: IV

Preburn Notes

Time	Notes
25:00 64:00	+4.95 lb PB End

Test Notes

Test Burn Start Time: 11:00 Test Fuel Loaded by: 25 seconds
Door Closed: 30 seconds Air Control Set at: 0 seconds
Other Loading Notes: Fan on high at 0:00

Time	Notes
	-None-

Test Burn End Time: 11:48

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 17.32 CO (%): 4.350
Mid Gas CO_2 (%): 10.00 CO (%): 2.500

Calibration Results:

	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	9:49	9:50	9:52	16:47	16:48	16:49
CO_2	0.00	17.32	10.19	-0.07	17.20	10.18
CO	0.000	4.350	2.528	-0.023	4.319	2.493

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

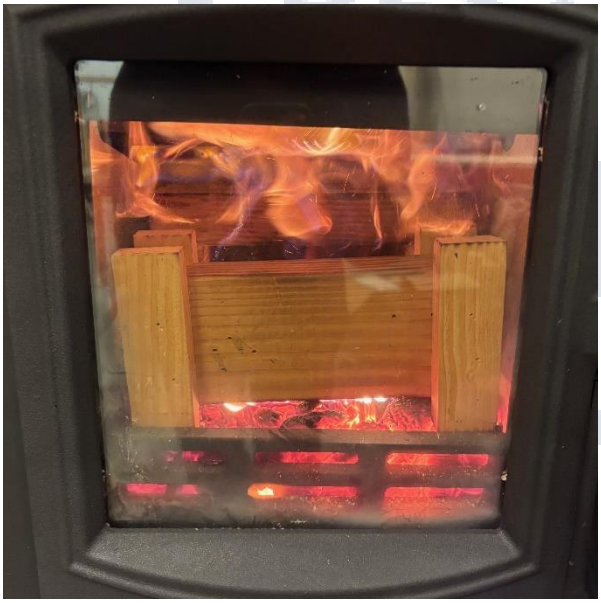
Technician Signature:  Date: 2/24/25

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: **1** Test Date: **2/3/2025**

Test Fuel Front/Side View

Test Fuel Iso View



Test Fuel Loaded in Stove

Air Setting

Technician Signature: _____ Date: 2/24/25

WOOD STOVE TEST DATA PACKET
ASTM E2780/E2515

Run 2 Data Summary

Client:	Enerco
Model:	H080
Job #:	24-367
Tracking #:	218
Test Date:	2/3/2025

Techician Signature

2/24/2025
Date

TEST RESULTS - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Burn Rate (kg/hr):	0.79

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	28.902	20.818	19.786	9.024
Average Gas Velocity in Dilution Tunnel (ft/sec)	21.1			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	14134.7			
Average Gas Meter Temperature (°F)	65.2	83.2	85.8	81.9
Total Sample Volume (dscf)	29.117	20.531	19.151	8.929
Average Tunnel Temperature (°F)	81.3			
Total Time of Test (min)	124			
Total Particulate Catch (mg)	0.0	1.6	1.5	1.4
Particulate Concentration, dry-standard (g/dscf)	0.0000000	0.0000779	0.0000783	0.0001568
Total PM Emissions (g)	0.00	2.28	2.29	2.22
Particulate Emission Rate (g/hr)	0.00	1.10	1.11	2.22
Emissions Factor (g/kg)	-	1.39	1.40	-
Difference from Average Total Particulate Emissions (g)	-	0.01	0.01	-
Difference from Average Total Particulate Emissions (%)	-	0.3%	0.3%	
Difference from Average Emissions Factor (g/kg)	-	0.00	0.00	-

Final Average Results	
Total Particulate Emissions (g)	2.28
Particulate Emission Rate (g/hr)	1.10
Emissions Factor (g/kg)	1.40
HHV Efficiency (%)	74.3%
LHV Efficiency (%)	80.3%
CO Emissions (g/min)	0.58

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	74.1	OK
Face Velocity	< 30 ft/min	26.9	OK
Leakage Rate	Less than 4% of average sample rate	0.001 cfm	OK
Ambient Temp	55-90 °F	Min:64.2/Max:66.2	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
Stove Surface ΔT	<126°F	63.4	OK

B415.1 Efficiency Results

Manufacturer:	Enerco
Model:	H080
Date:	02/03/25
Run:	2
Control #:	24-367
Test Duration:	124
Output Category:	1

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	74.3%	80.3%
Combustion Efficiency	97.2%	97.2%
Heat Transfer Efficiency	76.5%	82.7%

Output Rate (kJ/h)	11,290	10,710	**(Btu/h)**
Burn Rate (kg/h)	0.77	1.69	**(lb/h)**
Input (kJ/h)	15,192	14,411	**(Btu/h)**

Test Load Weight (dry kg)	1.58	3.49	**dry lb**
MC wet (%)	18.00		
MC dry (%)	21.96		
Particulate (g)	2.28		
CO (g)	72		
Test Duration (h)	2.07		

Emissions	**Particulate**	**CO**
g/MJ Output	0.10	3.10
g/kg Dry Fuel	1.44	45.57
g/h	1.10	34.95
g/min	0.02	0.58
lb/MM Btu Output	0.23	7.19

Air/Fuel Ratio (A/F)	19.70

VERSION: **2.4** **4/15/2010**

WOODSTOVE FUEL DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Preburn Fuel Information

Size	Length (in)	Moisture Content (% DB)	Size	Length (in)	Moisture Content (% DB)
2x4	9.00	21.6			
2x4	9.00	19.7			
2x4	9.00	21.3			
2x4	9.00	23.7			

Total Fuel Weight (lbs): 4.41
Average Moisture (%DB): 21.6

Firebox Volume (ft^3): 0.60
Total 2x4 Crib Weight, with spacers (lbs): 4.28
Total 4x4 Crib Weight, with spacers (lbs): 0.00
Total Wet Fuel Weight, with spacers (lbs): 4.28

Coal Bed Range (20-25%):
Min (lbs): 0.86
Max (lbs): 1.07

Test Fuel Information

Size	Length (in)	Weight (lbs)	Moisture Content (%DB)			Dry Weight (lbs)
2x4	9.37	1.04	22.1	19.8	19.7	0.86
2x4	9.37	1.04	21.9	22.0	19.1	0.86
2x4	9.37	1.01	24.8	23.9	24.3	0.81

Total Dry Weight, no spacers (lbs): 2.53
Total Dry Weight, with spacers (lbs): 3.60

Spacer Moisture Readings (%DB)

10.8	11.8						
10.6	13.2						
11.9	12.3						
12.3	10.1						
12.6	11.4						

Quality Checks	Requirement	Observed	Result
Fuel Density	25 - 36 (lbs/ft^3, DB)	29.7	OK
Loading Density	6.3 - 7.7 (lbs/ft^3, WB)	7.13	OK
2x4 Fuel Mix	35 - 65 % of total weight	N/A	N/A

DILUTION TUNNEL & MISC. DATA - ASTM E2780 / E2515

Client:	Enerco	Job #:	24-367
Model:	H080	Tracking #:	218
Run #:	2	Technician:	AK
Test Start Time:	13:33	Date:	2/3/2025

Total Sampling Time (min):	124
Recording Interval (min):	1

Meter Box γ Factor:	1.019	(A)
Meter Box γ Factor:	1.005	(B)
Meter Box γ Factor:	1.024	(C)
Meter Box γ Factor:	1.013	(Ambient)

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	29.64	29.58	29.61
Relative Humidity (%)	21.2	20.0	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	0	0	
Ambient Sample Volume:		28.902	ft^3

Induced Draft Check (in. H_2O):	0
Smoke Capture Check (%):	100%
Date Flue Pipe Last Cleaned:	1/31/2025
Test Fuel Scale Audit (lbs)	10.00
Platform Scale Audit (lbs)	10.0

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 @	-7	in. Hg
(Ambient)	0.000	0.000	cfm @	-12	in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.082	67
2	0.106	67
3	0.112	67
4	0.086	67
5	0.068	67
6	0.094	67
7	0.108	67
8	0.092	67
Center	0.101	67

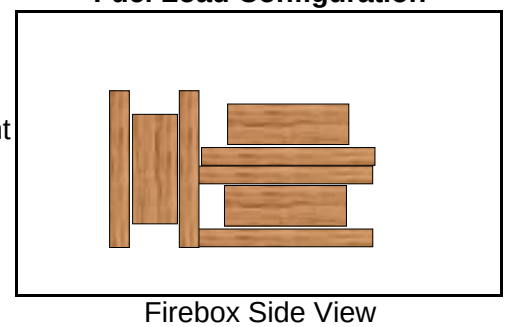
Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	6	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.1963	ft^2
V_{strav}:	20.29	ft/sec
V_{scent}:	21.15	ft/sec
F_p:	0.959	[ratio]
Initial Tunnel Flow:	232.2	scf/min

Static Pressure: -0.180 in. H_2O

TEST FUEL PROPERTIES

Fuel Load Configuration

Firebox Front



Firebox Back

Firebox Side View

Actual Fuel Used Properties

Fuel Type:	D. Fir
HHV (kJ/kg)	19,810
%C	48.73
%H	6.87
%O	43.9
%Ash	0.5
MC (%DB)	22.0

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

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

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
0	3.47	-0.099	277	567	283	696	149	394.2	566	59
1	3.38	-0.089	280	572	286	698	144	395.8	513	59
2	3.28	-0.087	283	575	274	694	143	393.8	469	60
3	3.21	-0.084	287	575	260	688	144	390.7	437	60
4	3.13	-0.083	290	574	250	680	145	387.6	422	61
5	3.06	-0.082	293	572	243	672	146	385.2	407	61
6	2.99	-0.081	296	555	238	665	147	380.1	402	61
7	2.91	-0.081	299	545	232	658	148	376.2	395	62
8	2.82	-0.081	301	537	231	651	149	373.8	390	62
9	2.75	-0.082	303	538	232	646	150	373.7	389	62
10	2.66	-0.082	305	533	226	642	151	371.3	386	62
11	2.59	-0.079	307	527	224	640	151	369.5	385	63
12	2.52	-0.080	308	524	222	637	152	368.6	383	63
13	2.44	-0.080	310	523	221	636	152	368.3	383	63
14	2.36	-0.080	311	520	220	634	153	367.5	384	63
15	2.27	-0.081	313	520	220	633	153	367.7	385	63
16	2.20	-0.079	314	519	220	632	153	367.5	384	64
17	2.12	-0.080	315	518	219	632	153	367.5	383	64
18	2.03	-0.080	316	520	220	632	153	368.2	387	64
19	1.97	-0.080	317	520	220	633	154	368.7	388	64
20	1.90	-0.079	318	521	219	634	154	369.0	385	64
21	1.83	-0.080	319	511	219	635	154	367.6	385	64
22	1.74	-0.081	320	510	220	636	154	367.7	386	65
23	1.68	-0.080	321	496	221	636	154	365.5	387	65
24	1.61	-0.079	322	487	220	637	154	363.7	387	65
25	1.55	-0.080	323	489	220	637	154	364.5	386	65
26	1.49	-0.078	323	493	221	637	153	365.6	382	65
27	1.44	-0.077	324	497	220	636	154	366.4	380	65
28	1.40	-0.077	325	493	233	635	154	368.1	374	65
29	1.35	-0.075	326	437	244	631	154	358.4	364	65
30	1.31	-0.072	327	423	245	624	154	354.7	355	65
31	1.28	-0.070	328	438	242	615	155	355.4	343	65
32	1.27	-0.068	328	433	246	605	155	353.4	332	65
33	1.24	-0.067	329	413	245	593	155	346.8	319	65
34	1.23	-0.065	329	392	242	579	156	339.5	309	65
35	1.21	-0.064	329	391	242	565	155	336.4	299	65
36	1.21	-0.062	329	386	240	551	156	332.3	290	65
37	1.20	-0.060	329	396	239	537	156	331.3	283	65
38	1.19	-0.060	329	390	264	524	156	332.5	277	65
39	1.18	-0.058	328	392	259	511	157	329.5	270	65
40	1.18	-0.057	327	339	284	502	158	322.1	263	65
41	1.17	-0.057	327	340	292	498	157	322.6	259	66
42	1.16	-0.055	326	343	328	496	157	329.9	255	66
43	1.15	-0.058	325	349	357	494	157	336.5	252	65
44	1.14	-0.056	324	340	387	492	157	339.9	252	65

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

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

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
45	1.13	-0.056	323	343	418	490	157	346.1	253	66
46	1.12	-0.057	322	342	425	489	156	346.7	252	66
47	1.10	-0.056	321	336	430	487	157	346.2	253	65
48	1.09	-0.055	320	326	434	485	157	344.4	251	66
49	1.07	-0.056	319	325	437	484	156	344.2	250	65
50	1.06	-0.056	318	329	440	482	157	344.9	251	65
51	1.07	-0.054	317	327	441	480	156	344.1	249	65
52	1.05	-0.055	316	327	442	478	156	343.9	248	65
53	1.03	-0.054	315	335	443	476	157	345.1	245	65
54	1.03	-0.054	314	352	442	474	157	348.0	245	65
55	0.99	-0.054	313	331	386	472	160	332.5	244	65
56	0.97	-0.053	312	423	333	466	160	338.9	242	65
57	0.96	-0.053	312	419	305	457	162	330.9	241	65
58	0.95	-0.051	311	418	278	448	162	323.6	240	65
59	0.94	-0.051	311	415	254	440	163	316.5	237	65
60	0.94	-0.051	310	412	243	432	164	312.3	233	65

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.000		0.108	0.01	73	0.1		4.26		81	248	67	66
1	0.246	0.246	0.109	2.41	73	1.0	-	4.22	-0.04	87	269	68	65
2	0.401	0.155	0.108	2.46	73	1.0	-	4.14	-0.08	89	287	69	65
3	0.558	0.157	0.107	2.48	72	1.0	-	4.07	-0.07	88	301	69	65
4	0.714	0.156	0.107	2.51	73	1.0	-	3.94	-0.13	89	338	70	65
5	0.883	0.169	0.107	2.53	73	1.0	-	3.81	-0.13	91	380	70	65
6	1.054	0.171	0.109	2.55	73	1.0	-	3.70	-0.11	93	411	70	65
7	1.235	0.181	0.108	2.57	73	1.0	-	3.61	-0.09	91	387	70	65
8	1.419	0.184	0.108	2.59	73	1.0	-	3.51	-0.10	90	361	71	65
9	1.597	0.178	0.107	2.60	73	1.0	-	3.43	-0.08	89	350	71	66
10	1.787	0.190	0.106	2.62	73	1.0	109	3.35	-0.08	88	346	71	66
11	1.961	0.174	0.107	2.64	73	1.0	-	3.28	-0.07	87	343	71	65
12	2.138	0.177	0.108	2.65	73	1.0	-	3.20	-0.08	87	340	71	65
13	2.310	0.172	0.107	2.68	73	1.0	-	3.13	-0.07	87	339	71	65
14	2.476	0.166	0.107	2.70	74	1.0	-	3.05	-0.08	87	337	71	65
15	2.645	0.169	0.108	2.71	74	1.0	-	2.97	-0.08	86	338	71	65
16	2.806	0.161	0.107	2.72	74	1.0	-	2.90	-0.07	86	341	71	65
17	2.973	0.167	0.105	2.73	74	1.0	-	2.83	-0.07	86	342	71	65
18	3.138	0.165	0.107	2.75	75	1.0	-	2.76	-0.07	86	340	72	65
19	3.308	0.170	0.106	2.76	75	1.0	-	2.68	-0.08	86	341	72	66
20	3.478	0.170	0.107	2.77	75	1.0	103	2.61	-0.07	86	343	72	65
21	3.647	0.169	0.108	2.78	75	1.0	-	2.53	-0.08	86	344	72	65
22	3.816	0.169	0.106	2.79	76	1.0	-	2.47	-0.06	86	346	72	65
23	3.993	0.177	0.107	2.80	76	1.0	-	2.39	-0.08	87	344	72	66
24	4.165	0.172	0.107	2.80	76	1.0	-	2.31	-0.08	87	350	72	65
25	4.333	0.168	0.107	2.81	76	1.0	-	2.24	-0.07	88	348	72	66
26	4.502	0.169	0.107	2.82	77	1.0	-	2.17	-0.07	87	349	72	66
27	4.669	0.167	0.106	2.83	77	1.0	-	2.10	-0.07	87	354	72	66
28	4.838	0.169	0.107	2.83	77	1.0	-	2.03	-0.07	87	355	72	66
29	5.007	0.169	0.108	2.84	78	1.0	-	1.96	-0.07	87	352	72	66
30	5.172	0.165	0.108	2.85	78	1.0	102	1.89	-0.07	87	346	72	66
31	5.340	0.168	0.107	2.85	78	1.0	-	1.81	-0.08	87	343	73	66

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	5.509	0.169	0.109	2.85	78	1.0	-	1.74	-0.07	87	341	73	66
33	5.672	0.163	0.106	2.85	79	1.0	-	1.69	-0.05	87	337	73	66
34	5.835	0.163	0.107	2.59	79	0.9	-	1.62	-0.07	87	335	73	66
35	5.993	0.158	0.106	2.61	79	1.0	-	1.54	-0.08	87	332	73	66
36	6.163	0.170	0.107	2.61	79	0.9	-	1.49	-0.05	86	333	73	66
37	6.325	0.162	0.107	2.62	80	0.9	-	1.42	-0.07	86	331	73	66
38	6.483	0.158	0.109	2.61	80	1.0	-	1.35	-0.07	86	330	72	66
39	6.647	0.164	0.107	2.62	80	0.9	-	1.30	-0.05	86	328	73	66
40	6.807	0.160	0.107	2.63	81	0.9	98	1.25	-0.05	86	329	73	66
41	6.970	0.163	0.107	2.62	81	0.9	-	1.20	-0.05	86	328	73	66
42	7.132	0.162	0.106	2.63	81	1.0	-	1.13	-0.07	86	324	73	66
43	7.291	0.159	0.106	2.64	81	1.0	-	1.10	-0.03	86	323	73	66
44	7.453	0.162	0.108	2.63	82	1.0	-	1.03	-0.07	86	324	73	66
45	7.615	0.162	0.107	2.65	82	1.0	-	0.98	-0.05	86	325	73	66
46	7.775	0.160	0.108	2.64	82	0.9	-	0.95	-0.03	85	324	73	66
47	7.938	0.163	0.108	2.65	82	0.9	-	0.90	-0.05	85	322	73	66
48	8.098	0.160	0.107	2.65	83	1.0	-	0.86	-0.04	85	317	73	66
49	8.259	0.161	0.107	2.66	83	1.0	-	0.83	-0.03	85	311	73	66
50	8.429	0.170	0.105	2.65	83	1.0	98	0.80	-0.03	84	302	72	66
51	8.589	0.160	0.106	2.66	83	0.9	-	0.78	-0.02	84	296	72	65
52	8.755	0.166	0.107	2.66	83	0.9	-	0.75	-0.03	84	283	72	65
53	8.914	0.159	0.107	2.67	84	0.9	-	0.75	0.00	83	277	72	65
54	9.078	0.164	0.107	2.67	84	1.0	-	0.72	-0.03	83	267	72	65
55	9.242	0.164	0.105	2.67	84	1.0	-	0.71	-0.01	83	261	72	65
56	9.404	0.162	0.106	2.68	84	1.0	-	0.69	-0.02	83	253	72	65
57	9.569	0.165	0.107	2.67	84	1.0	-	0.67	-0.02	82	246	72	65
58	9.733	0.164	0.106	2.68	85	1.0	-	0.66	-0.01	82	239	72	66
59	9.893	0.160	0.106	2.68	85	0.9	-	0.68	0.02	82	234	72	66
60	10.059	0.166	0.107	2.69	85	1.0	97	0.64	-0.04	81	227	72	65
61	10.220	0.161	0.106	2.69	85	1.0	-	0.64	0.00	81	223	72	64
62	10.383	0.163	0.107	2.69	85	1.0	-	0.62	-0.02	80	220	72	65
63	10.548	0.165	0.107	2.69	85	1.0	-	0.61	-0.01	80	217	72	65

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	10.708	0.160	0.107	2.70	86	1.0	-	0.60	-0.01	80	213	72	65
65	10.872	0.164	0.107	2.68	86	0.9	-	0.60	0.00	79	211	72	64
66	11.037	0.165	0.106	2.69	86	1.0	-	0.60	0.00	79	209	72	65
67	11.196	0.159	0.107	2.69	86	0.9	-	0.58	-0.02	79	206	71	65
68	11.365	0.169	0.106	2.69	86	1.0	-	0.58	0.00	79	204	71	65
69	11.537	0.172	0.107	2.69	86	1.0	-	0.57	-0.01	79	205	71	65
70	11.703	0.166	0.107	2.70	86	1.0	97	0.55	-0.02	79	203	71	65
71	11.868	0.165	0.106	2.70	87	1.0	-	0.54	-0.01	79	203	71	65
72	12.030	0.162	0.105	2.69	87	1.0	-	0.53	-0.01	79	201	71	65
73	12.194	0.164	0.106	2.70	87	1.0	-	0.52	-0.01	78	200	71	65
74	12.359	0.165	0.105	2.70	87	1.0	-	0.50	-0.02	78	199	71	65
75	12.520	0.161	0.107	2.71	87	1.0	-	0.50	0.00	78	197	71	65
76	12.684	0.164	0.107	2.70	87	1.0	-	0.48	-0.02	78	197	71	65
77	12.850	0.166	0.106	2.71	87	1.0	-	0.48	0.00	78	196	71	65
78	13.010	0.160	0.107	2.71	87	1.0	-	0.47	-0.01	77	195	71	65
79	13.178	0.168	0.106	2.71	87	1.0	-	0.46	-0.01	77	194	71	65
80	13.340	0.162	0.107	2.70	88	1.0	96	0.45	-0.01	77	194	71	65
81	13.505	0.165	0.107	2.70	88	1.0	-	0.44	-0.01	77	194	71	65
82	13.670	0.165	0.106	2.71	88	1.0	-	0.43	-0.01	77	192	71	65
83	13.832	0.162	0.107	2.72	88	1.0	-	0.41	-0.02	77	192	71	65
84	13.996	0.164	0.106	2.72	88	1.0	-	0.41	0.00	77	192	71	65
85	14.161	0.165	0.106	2.69	88	1.0	-	0.39	-0.02	77	189	71	65
86	14.324	0.163	0.106	2.72	88	1.0	-	0.39	0.00	77	189	71	65
87	14.488	0.164	0.107	2.72	88	1.0	-	0.37	-0.02	77	189	71	65
88	14.654	0.166	0.106	2.71	88	1.0	-	0.36	-0.01	77	189	71	65
89	14.814	0.160	0.106	2.71	88	1.0	-	0.35	-0.01	77	190	71	65
90	14.982	0.168	0.106	2.71	88	1.0	97	0.33	-0.02	77	189	71	65
91	15.146	0.164	0.107	2.72	89	0.9	-	0.33	0.00	76	189	71	65
92	15.307	0.161	0.107	2.71	89	1.0	-	0.32	-0.01	76	188	71	65
93	15.476	0.169	0.106	2.72	89	1.0	-	0.31	-0.01	76	188	71	65
94	15.637	0.161	0.106	2.73	89	1.0	-	0.30	-0.01	76	189	71	65
95	15.802	0.165	0.106	2.73	89	0.9	-	0.28	-0.02	76	188	71	65

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	15.968	0.166	0.107	2.72	89	1.0	-	0.28	0.00	76	188	71	65
97	16.130	0.162	0.107	2.73	89	1.0	-	0.27	-0.01	76	187	70	65
98	16.296	0.166	0.107	2.73	89	1.0	-	0.26	-0.01	76	185	70	65
99	16.461	0.165	0.106	2.72	89	1.0	-	0.24	-0.02	76	186	70	65
100	16.624	0.163	0.107	2.74	89	1.0	96	0.25	0.01	76	185	70	65
101	16.789	0.165	0.106	2.71	89	1.0	-	0.22	-0.03	76	185	70	65
102	16.952	0.163	0.108	2.72	89	1.0	-	0.22	0.00	76	184	70	65
103	17.109	0.157	0.106	2.55	89	0.9	-	0.21	-0.01	76	185	70	65
104	17.272	0.163	0.106	2.58	89	0.9	-	0.19	-0.02	76	183	70	65
105	17.430	0.158	0.108	2.56	89	1.0	-	0.18	-0.01	76	184	70	65
106	17.593	0.163	0.106	2.57	90	1.0	-	0.18	0.00	76	183	70	65
107	17.755	0.162	0.106	2.56	90	0.9	-	0.17	-0.01	76	182	70	65
108	17.911	0.156	0.107	2.56	90	0.9	-	0.16	-0.01	76	183	70	65
109	18.075	0.164	0.109	2.57	90	0.9	-	0.15	-0.01	75	182	70	65
110	18.233	0.158	0.105	2.56	90	0.9	95	0.13	-0.02	75	182	70	65
111	18.393	0.160	0.109		90	0.9	-	0.12	-0.01	75	181	70	65
112	18.556	0.163	0.106	2.56	90	1.0	-	0.12	0.00	75	180	70	65
113	18.713	0.157	0.108	2.55	90	1.0	-	0.11	-0.01	76	179	70	65
114	18.876	0.163	0.107	2.59	90	0.9	-	0.09	-0.02	76	178	70	65
115	19.034	0.158	0.106	2.57	90	1.0	-	0.08	-0.01	76	180	70	65
116	19.197	0.163	0.107	2.58	90	0.9	-	0.08	0.00	76	179	70	65
117	19.360	0.163	0.107	2.57	90	1.0	-	0.06	-0.02	75	179	70	65
118	19.516	0.156	0.106	2.57	90	1.0	-	0.05	-0.01	75	178	70	65
119	19.680	0.164	0.107	2.58	90	0.9	-	0.04	-0.01	75	178	70	65
120	19.837	0.157	0.105	2.57	90	0.9	95	0.03	-0.01	75	177	70	65
121	19.998	0.161	0.106	2.57	90	0.9	-	0.02	-0.01	75	178	70	65
122	20.160	0.162	0.105	2.56	90	0.9	-	0.01	-0.01	75	177	70	65
123	20.316	0.156	0.104	2.57	90	0.9	-	0.01	0.00	75	177	70	65
124	20.818	0.502	0.106	2.58	90	1.0	114	0.00	-0.01	75	178	70	65
Avg/Tot	20.818	0.168	0.107	2.65	83.2	1.0	100			81.3	255.1	71.1	65.2

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	-0.001		0.01	75	0.6		69	-0.060	4.89	0.319
1	0.108	0.109	2.53	75	1.8	-	70	-0.069	6.80	0.249
2	0.261	0.153	2.53	75	1.9	-	71	-0.064	5.18	0.425
3	0.420	0.159	2.52	74	1.6	-	71	-0.072	6.56	0.645
4	0.574	0.154	2.53	74	1.9	-	71	-0.080	6.80	0.345
5	0.731	0.157	2.53	74	2.0	-	72	-0.085	9.09	0.229
6	0.886	0.155	2.53	74	1.8	-	72	-0.079	9.30	0.173
7	1.043	0.157	2.52	74	2.0	-	72	-0.076	8.57	0.225
8	1.200	0.157	2.53	75	1.7	-	72	-0.075	6.94	0.304
9	1.353	0.153	2.52	75	2.0	-	72	-0.073	7.02	0.270
10	1.513	0.160	2.53	75	1.5	97	73	-0.073	7.20	0.272
11	1.667	0.154	2.53	75	1.7	-	73	-0.074	7.35	0.266
12	1.824	0.157	2.53	75	1.5	-	73	-0.075	7.25	0.223
13	1.980	0.156	2.53	75	1.9	-	73	-0.073	7.06	0.181
14	2.137	0.157	2.54	75	1.8	-	73	-0.075	7.00	0.170
15	2.294	0.157	2.53	76	1.9	-	73	-0.073	7.14	0.166
16	2.448	0.154	2.53	76	1.7	-	73	-0.076	7.30	0.177
17	2.608	0.160	2.54	76	1.9	-	73	-0.073	7.29	0.168
18	2.762	0.154	2.54	76	2.0	-	73	-0.073	7.31	0.164
19	2.920	0.158	2.54	77	2.0	-	73	-0.074	7.34	0.162
20	3.078	0.158	2.54	77	1.8	101	73	-0.075	7.33	0.153
21	3.233	0.155	2.54	77	1.8	-	73	-0.075	7.42	0.156
22	3.393	0.160	2.54	77	2.0	-	74	-0.075	7.53	0.149
23	3.548	0.155	2.55	78	2.0	-	74	-0.074	7.73	0.151
24	3.706	0.158	2.55	78	1.6	-	74	-0.075	7.93	0.159
25	3.863	0.157	2.54	78	1.9	-	74	-0.075	8.00	0.156
26	4.021	0.158	2.55	78	1.5	-	74	-0.075	8.08	0.165
27	4.179	0.158	2.55	79	1.6	-	74	-0.075	8.10	0.159
28	4.335	0.156	2.55	79	1.6	-	74	-0.074	8.15	0.154
29	4.495	0.160	2.56	79	2.0	-	74	-0.074	8.00	0.163
30	4.651	0.156	2.55	80	1.5	100	74	-0.074	7.92	0.171
31	4.810	0.159	2.55	80	2.0	-	74	-0.073	7.95	0.178

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	4.969	0.159	2.55	80	2.0	-	74	-0.075	8.02	0.182
33	5.125	0.156	2.56	80	1.5	-	74	-0.071	8.06	0.186
34	5.286	0.161	2.56	81	1.6	-	74	-0.070	8.09	0.193
35	5.442	0.156	2.56	81	2.1	-	74	-0.071	8.19	0.202
36	5.602	0.160	2.56	81	1.6	-	74	-0.072	8.28	0.217
37	5.761	0.159	2.56	82	1.5	-	74	-0.070	8.14	0.209
38	5.918	0.157	2.56	82	1.9	-	74	-0.070	8.13	0.206
39	6.079	0.161	2.56	82	1.9	-	74	-0.071	8.11	0.195
40	6.235	0.156	2.56	82	2.0	100	74	-0.071	8.18	0.194
41	6.396	0.161	2.56	83	1.7	-	74	-0.069	8.11	0.185
42	6.556	0.160	2.57	83	1.7	-	74	-0.069	8.10	0.195
43	6.713	0.157	2.56	83	1.9	-	74	-0.069	7.95	0.178
44	6.874	0.161	2.57	83	1.8	-	74	-0.069	7.95	0.185
45	7.031	0.157	2.57	84	1.6	-	74	-0.069	8.07	0.200
46	7.192	0.161	2.58	84	1.5	-	74	-0.068	8.04	0.206
47	7.352	0.160	2.56	84	1.6	-	74	-0.069	7.71	0.169
48	7.510	0.158	2.57	84	2.0	-	74	-0.066	7.24	0.126
49	7.671	0.161	2.57	85	1.6	-	74	-0.064	6.70	0.087
50	7.831	0.160	2.58	85	1.8	101	74	-0.064	6.33	0.092
51	7.989	0.158	2.57	85	1.5	-	74	-0.060	5.95	0.111
52	8.152	0.163	2.58	85	2.0	-	74	-0.060	5.72	0.126
53	8.310	0.158	2.58	86	1.5	-	74	-0.061	5.51	0.144
54	8.471	0.161	2.58	86	1.6	-	74	-0.057	5.37	0.179
55	8.633	0.162	2.58	86	1.5	-	73	-0.055	5.11	0.184
56	8.790	0.157	2.57	86	1.7	-	73	-0.053	4.71	0.170
57	8.954	0.164	2.59	87	1.6	-	73	-0.052	4.52	0.170
58	9.111	0.157	2.57	87	1.8	-	73	-0.051	4.50	0.181
59	9.273	0.162	2.58	87	2.0	-	73	-0.051	4.47	0.209
60	9.434	0.161	2.58	87	1.8	101	73	-0.051	4.49	0.218
61	9.592	0.158	2.58	88	1.6	-	73	-0.049	4.51	0.237
62	9.754	0.162	2.58	88	1.9	-	73	-0.049	4.53	0.252
63	9.915	0.161	2.59	88	1.8	-	73	-0.046	4.55	0.264

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2
Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
64	10.074	0.159	2.59	88	1.5	-	73	-0.047	4.58	0.278
65	10.238	0.164	2.59	88	1.7	-	73	-0.045	4.60	0.290
66	10.396	0.158	2.59	88	1.5	-	73	-0.047	4.65	0.288
67	10.558	0.162	2.59	89	1.6	-	73	-0.044	4.75	0.295
68	10.719	0.161	2.59	89	2.1	-	73	-0.044	4.78	0.291
69	10.878	0.159	2.59	89	1.9	-	73	-0.044	4.86	0.305
70	11.041	0.163	2.59	89	1.7	100	73	-0.045	4.89	0.305
71	11.202	0.161	2.59	89	1.6	-	73	-0.043	4.81	0.317
72	11.361	0.159	2.59	89	1.8	-	73	-0.045	4.82	0.321
73	11.525	0.164	2.59	90	1.6	-	72	-0.043	4.84	0.329
74	11.683	0.158	2.59	90	1.7	-	72	-0.043	4.85	0.343
75	11.846	0.163	2.59	90	1.5	-	72	-0.042	4.82	0.353
76	12.008	0.162	2.60	90	1.7	-	72	-0.044	4.63	0.400
77	12.168	0.160	2.60	90	1.6	-	72	-0.042	4.67	0.413
78	12.330	0.162	2.60	90	1.5	-	72	-0.042	4.71	0.415
79	12.492	0.162	2.59	90	1.7	-	72	-0.041	4.75	0.431
80	12.652	0.160	2.60	91	2.0	100	72	-0.044	4.73	0.427
81	12.816	0.164	2.60	91	2.1	-	72	-0.041	4.79	0.426
82	12.975	0.159	2.60	91	2.1	-	72	-0.042	4.78	0.430
83	13.137	0.162	2.59	91	1.5	-	72	-0.039	4.85	0.429
84	13.300	0.163	2.60	91	1.6	-	72	-0.043	4.87	0.439
85	13.460	0.160	2.59	91	1.6	-	72	-0.041	4.83	0.444
86	13.622	0.162	2.60	91	1.5	-	72	-0.042	4.82	0.444
87	13.785	0.163	2.60	91	2.1	-	72	-0.042	4.81	0.458
88	13.944	0.159	2.59	91	1.7	-	72	-0.041	4.77	0.476
89	14.109	0.165	2.60	92	1.7	-	72	-0.042	4.76	0.497
90	14.268	0.159	2.60	92	2.0	100	72	-0.041	4.79	0.502
91	14.431	0.163	2.61	92	1.9	-	72	-0.041	4.73	0.510
92	14.594	0.163	2.60	92	1.5	-	72	-0.041	4.73	0.518
93	14.754	0.160	2.61	92	1.5	-	72	-0.041	4.74	0.523
94	14.917	0.163	2.60	92	1.5	-	72	-0.040	4.75	0.535
95	15.080	0.163	2.60	92	1.5	-	72	-0.039	4.79	0.541

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2
Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
96	15.240	0.160	2.61	92	2.1	-	72	-0.042	4.76	0.548
97	15.404	0.164	2.61	92	1.5	-	71	-0.041	4.66	0.556
98	15.566	0.162	2.61	92	1.8	-	71	-0.039	4.62	0.583
99	15.726	0.160	2.61	92	1.5	-	72	-0.039	4.64	0.616
100	15.891	0.165	2.60	93	1.6	100	71	-0.039	4.59	0.628
101	16.050	0.159	2.60	93	1.7	-	71	-0.041	4.55	0.647
102	16.214	0.164	2.60	93	1.8	-	71	-0.041	4.55	0.660
103	16.377	0.163	2.60	93	1.7	-	71	-0.039	4.54	0.674
104	16.538	0.161	2.61	93	1.8	-	71	-0.041	4.54	0.675
105	16.701	0.163	2.61	93	1.9	-	71	-0.040	4.52	0.692
106	16.864	0.163	2.60	93	1.6	-	71	-0.040	4.41	0.703
107	17.024	0.160	2.61	93	2.1	-	71	-0.039	4.38	0.732
108	17.188	0.164	2.61	93	1.5	-	71	-0.039	4.33	0.764
109	17.350	0.162	2.61	93	2.0	-	71	-0.039	4.27	0.781
110	17.511	0.161	2.61	93	1.9	100	71	-0.040	4.23	0.801
111	17.676	0.165	2.60	93	2.0	-	71	-0.040	4.20	0.825
112	17.835	0.159	2.60	93	1.7	-	71	-0.038	4.23	0.790
113	17.999	0.164	2.61	93	2.0	-	71	-0.039	4.40	0.526
114	18.163	0.164	2.62	94	1.7	-	71	-0.038	4.42	0.515
115	18.323	0.160	2.61	94	1.5	-	71	-0.039	4.44	0.497
116	18.487	0.164	2.61	94	1.8	-	71	-0.039	4.47	0.490
117	18.650	0.163	2.61	94	1.7	-	71	-0.038	4.38	0.503
118	18.811	0.161	2.61	94	1.6	-	71	-0.039	4.41	0.513
119	18.974	0.163	2.61	94	2.0	-	71	-0.038	4.42	0.485
120	19.137	0.163	2.60	94	2.0	101	71	-0.039	4.42	0.499
121	19.297	0.160	2.59	94	1.6	-	71	-0.040	4.40	0.495
122	19.463	0.166	2.60	94	1.7	-	71	-0.040	4.41	0.501
123	19.622	0.159	2.60	94	1.5	-	71	-0.039	4.35	0.509
124	19.785	0.163	2.61	94	1.9	100	71	-0.039	4.37	0.533
Avg/Tot	19.786	0.160	2.56	85.8	1.7	100	72.5	-0.055	5.86	0.349

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
0	-0.002		-0.02	78	0.1		68
1	0.119	0.121	0.98	77	1.7	-	68
2	0.264	0.145	0.98	76	1.7	-	68
3	0.409	0.145	0.98	76	1.7	-	68
4	0.554	0.145	0.98	77	1.6	-	68
5	0.699	0.145	0.98	77	1.6	-	68
6	0.845	0.146	0.99	77	1.7	-	69
7	0.992	0.147	1.00	77	1.6	-	69
8	1.140	0.148	1.00	77	1.6	-	69
9	1.287	0.147	1.01	77	1.8	-	69
10	1.435	0.148	1.01	77	1.7	97	69
11	1.582	0.147	1.01	77	1.6	-	69
12	1.730	0.148	1.01	78	1.8	-	69
13	1.878	0.148	1.01	78	1.6	-	69
14	2.026	0.148	1.01	78	1.6	-	69
15	2.174	0.148	1.01	78	1.8	-	69
16	2.322	0.148	1.01	78	1.8	-	70
17	2.470	0.148	1.01	79	1.7	-	70
18	2.619	0.149	1.01	79	1.6	-	70
19	2.767	0.148	1.02	80	1.8	-	70
20	2.916	0.149	1.02	80	1.8	100	70
21	3.066	0.150	1.02	80	1.6	-	70
22	3.215	0.149	1.02	80	1.8	-	70
23	3.365	0.150	1.02	80	1.8	-	70
24	3.515	0.150	1.03	81	1.6	-	70
25	3.665	0.150	1.03	81	1.7	-	70
26	3.815	0.150	1.04	81	1.6	-	70
27	3.966	0.151	1.04	81	1.8	-	70
28	4.117	0.151	1.04	82	1.8	-	70
29	4.268	0.151	1.04	82	1.7	-	70
30	4.419	0.151	1.05	82	1.6	100	70
31	4.570	0.151	1.05	83	1.8	-	70

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
32	4.721	0.151	1.04	83	1.8	-	70
33	4.873	0.152	1.04	83	1.8	-	71
34	5.025	0.152	1.04	83	1.6	-	71
35	5.177	0.152	1.05	83	1.7	-	71
36	5.330	0.153	1.05	84	1.7	-	71
37	5.483	0.153	1.06	84	1.7	-	71
38	5.635	0.152	1.06	84	1.8	-	71
39	5.788	0.153	1.06	84	1.7	-	71
40	5.939	0.151	1.06	84	1.7	101	71
41	6.093	0.154	1.05	84	1.6	-	71
42	6.247	0.154	1.06	85	1.7	-	71
43	6.400	0.153	1.06	85	1.6	-	71
44	6.554	0.154	1.07	85	1.7	-	71
45	6.707	0.153	1.07	85	1.7	-	71
46	6.860	0.153	1.06	85	1.6	-	71
47	7.014	0.154	1.06	86	1.8	-	71
48	7.168	0.154	1.06	86	1.6	-	71
49	7.322	0.154	1.07	86	1.6	-	71
50	7.476	0.154	1.07	86	1.7	102	71
51	7.629	0.153	1.07	86	1.7	-	71
52	7.784	0.155	1.06	86	1.8	-	71
53	7.939	0.155	1.07	87	1.8	-	71
54	8.094	0.155	1.07	87	1.7	-	71
55	8.248	0.154	1.08	87	1.6	-	71
56	8.402	0.154	1.07	87	1.8	-	71
57	8.557	0.155	1.07	88	1.8	-	71
58	8.713	0.156	1.08	88	1.6	-	71
59	8.868	0.155	1.08	88	1.7	-	71
60	9.022	0.154	1.07	88	1.8	102	71
Avg/Tot	9.024	0.150	1.02	81.9	1.7	100	70.0

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Stove ΔT: 63

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
0	309	295	267	427	171	293.8	66.0
1	309	320	284	425	173	302.0	66.0
2	308	305	304	423	176	303.1	66.0
3	306	308	320	420	176	305.9	66.0
4	304	314	382	424	176	319.7	66.2
5	302	315	342	437	175	314.1	66.1
6	300	321	347	457	174	319.7	66.1
7	298	321	291	477	166	310.6	66.1
8	297	325	335	494	162	322.5	66.1
9	297	328	373	509	160	333.2	66.1
10	296	332	353	521	160	332.4	66.3
11	296	330	357	533	160	335.2	66.3
12	296	331	366	544	159	339.1	66.3
13	296	330	382	553	159	344.0	66.3
14	297	328	384	560	159	345.4	66.3
15	297	328	385	567	158	347.0	66.4
16	297	327	387	573	159	348.8	66.4
17	298	327	389	580	158	350.3	66.4
18	298	326	391	585	158	351.7	66.3
19	298	326	391	591	157	352.6	66.3
20	299	326	392	596	156	353.7	66.3
21	299	326	392	600	156	354.5	66.4
22	299	325	397	605	156	356.4	66.4
23	300	325	399	610	155	357.6	66.5
24	300	325	378	615	155	354.4	66.5
25	300	324	365	620	155	352.8	66.4
26	301	324	364	626	154	353.5	66.5
27	301	324	364	631	153	354.4	66.4
28	302	438	284	627		412.6	66.7
29	302	542	257	613	157	374.1	66.6
30	303	460	221	596	160	347.8	66.5
31	304	540	211	580	161	359.2	66.3
32	304	538	204	566	162	355.0	66.2
33	305	474	199	553	162	338.5	66.0
34	305	446	197	543	162	330.4	66.1
35	305	421	193	534	162	323.0	66.1
36	305	532	192	528	162	343.7	66.1
37	305	463	191	522	161	328.5	66.2
38	305	467	191	517	161	328.2	66.2
39	305	464	190	514	160	326.5	66.0
40	305	459	189	510	160	324.5	66.0
41	305	467	189	507	160	325.6	66.0
42	304	405	189	506	159	312.6	66.0
43	304	531	189	504	159	337.2	65.9
44	304	527	188	503	160	336.3	65.9
45	304	480	189	502	160	326.8	66.0
46	303	455	188	501	159	321.3	66.0
47	303	490	189	500	159	328.1	66.1

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Stove ΔT: 63

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
48	303	486	188	497	159	326.7	66.0
49	302	527	187	493	159	333.6	66.1
50	302	430	185	487	159	312.5	66.2
51	302	489	183	479	159	322.3	66.2
52	301	438	180	470	158	309.6	65.4
53	301	482	199	460	158	319.8	64.4
54	300	490	196	450	158	318.7	64.3
55	299	477	193	439	159	313.4	64.6
56	298	474	191	429	159	310.2	65.1
57	297	470	190	418	161	306.9	65.3
58	296	480	188	407	161	306.3	65.5
59	295	469	186	396	162	301.4	65.6
60	293	462	182	386	162	297.1	64.9
61	292	435	178	376	162	288.7	64.0
62	290	430	177	368	161	285.2	64.2
63	289	430	176	359	162	283.4	64.5
64	288	429	175	352	163	281.2	64.5
65	286	453	174	345	164	284.4	64.8
66	285	442	174	339	163	280.6	65.0
67	284	418	173	333	164	274.3	65.2
68	282	427	172	328	165	274.9	65.6
69	280	418	171	324	165	271.8	65.8
70	279	423	170	320	166	271.6	65.8
71	278	428	169	317	165	271.3	65.8
72	277	405	168	314	166	265.9	65.9
73	275	396	167	311	166	263.0	65.8
74	274	372	167	308	167	257.6	65.9
75	273	352	166	306	167	252.7	65.8
76	271	403	166	304	167	262.0	66.0
77	270	418	165	301	166	264.1	66.0
78	269	422	164	299	166	264.2	66.0
79	268	401	164	297	167	259.3	65.9
80	267	417	164	295	167	262.0	65.9
81	266	417	163	294	167	261.4	65.9
82	265	412	163	292	167	259.8	65.9
83	264	409	163	291	167	258.7	65.9
84	262	411	162	290	166	258.3	66.1
85	261	407	162	288	168	257.4	66.0
86	261	406	161	288	167	256.5	66.0
87	260	353	161	287	168	245.6	66.0
88	259	355	161	286	169	245.7	65.9
89	258	352	160	285	169	244.7	66.0
90	257	355	160	284	168	244.7	66.0
91	256	296	160	283	168	232.8	65.9
92	256	324	160	283	168	237.9	65.9
93	255	332	160	282	168	239.2	66.0
94	254	371	159	281	168	246.7	65.9
95	254	373	159	280	167	246.5	65.9

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

Stove ΔT: 63

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
96	253	384	159	279	167	248.4	65.9
97	252	369	159	279	168	245.3	65.9
98	252	376	159	278	168	246.6	65.9
99	251	371	158	277	167	245.0	66.1
100	250	375	158	277	168	245.5	66.1
101	250	374	158	276	168	244.9	66.2
102	249	377	158	275	168	245.3	66.1
103	249	379	158	275	168	245.6	66.2
104	248	388	157	274	167	246.8	66.2
105	248	383	157	273	167	245.6	66.1
106	247	380	157	273	167	244.7	66.1
107	247	380	157	272	167	244.4	66.0
108	246	384	156	271	166	244.8	66.0
109	246	361	156	270	167	240.0	66.0
110	245	335	156	270	167	234.3	65.9
111	245	336	155	269	166	234.1	65.9
112	244	355	156	268	167	238.0	66.0
113	244	369	155	267	166	240.1	66.0
114	243	378	155	266	167	241.8	66.1
115	243	369	154	265	166	239.3	66.1
116	242	365	153	265	165	238.2	66.1
117	242	365	153	264	166	237.9	66.1
118	241	382	153	263	166	240.9	66.1
119	241	382	153	263	165	240.8	66.1
120	240	385	152	263	165	241.0	66.1
121	240	388	152	263	164	241.4	66.1
122	240	379	152	262	164	239.4	66.0
123	239	329	152	262	164	229.0	65.9
124	239	337	152	262	163	230.4	66.0
Average	279.5	395.4	215.1	401.2	163.6	291.4	65.9

LAB SAMPLE DATA - ASTM E2515

Client: Enerco
Model: H080
Run #: 2

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/3/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	**A**	G01213	244.9	246.2	1.3
	B	G01214	244.6	245.9	1.3
	C - 1st Hour	G01215	242.1	242.6	0.5
	Amb	G01216	243.7	243.7	0.0
Probes	**A**	1A	115627.6	115627.9	0.3
	B	1B	115902.7	115902.8	0.1
	C - 1st Hour	1C	116433.5	116433.6	0.1
O-rings	**A**	1A	3565.0	3565.0	0.0
	B	1B	3553.5	3553.6	0.1
	C - 1st Hour	1C	4163.5	4164.3	0.8

Placed in Dessicator on:	2/3/2025

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**	246.2	2/6 10:00	246.2	2/7 8:30				
	B	245.8	2/6 10:00	245.9	2/7 8:30				
	C - 1st Hour	242.4	2/6 10:00	242.6	2/7 8:30				
	Amb	243.7	2/6 10:00	243.7	2/7 8:30				
Probes	**A**	115628.0	2/6 10:00	115627.9	2/7 8:30				
	B	115902.9	2/6 10:00	115902.8	2/7 8:30				
	C - 1st Hour	116433.8	2/6 10:00	116433.5	2/7 8:30	116433.6	2/10 11:30		
O-Rings	**A**	3565.0	2/6 10:00	3565.0	2/7 8:30				
	B	3553.6	2/6 10:00	3553.6	2/7 8:30				
	C - 1st Hour	41634.2	2/6 10:00	4164.3	2/7 8:30				

Train A Aggregate, mg:	**1.6**
Train B Aggregate, mg:	**1.5**
Train C Aggregate, mg:	**1.4**
Ambient, mg:	**0.0**

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: **2** Test Date: **2/3/2025**

Wood Heater Run Notes

Test Control Settings

Primary Air Setting(s): Fully Closed
Targeted Burn Category: I

Preburn Notes

Time	Notes
60:00	PB End

Test Notes

Test Burn Start Time: 13:33 Test Fuel Loaded by: 20 seconds
Door Closed: 75 seconds Air Control Set at: 300 seconds
Other Loading Notes: Fan on high at 27:00

Time	Notes
	-None-

Test Burn End Time: 15:37

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 17.32 CO (%): 4.350
Mid Gas CO_2 (%): 10.00 CO (%): 2.500

Calibration Results:

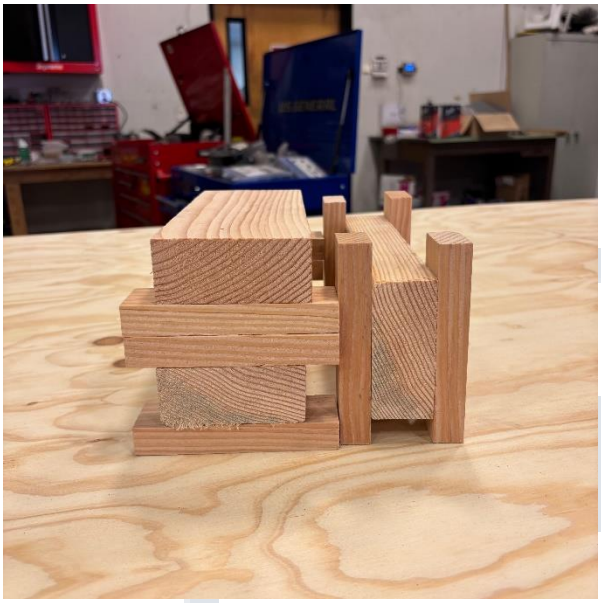
	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	9:49	9:50	9:52	16:47	16:48	16:49
CO_2	0.00	17.32	10.19	-0.07	17.20	10.18
CO	0.000	4.350	2.528	-0.023	4.319	2.493

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

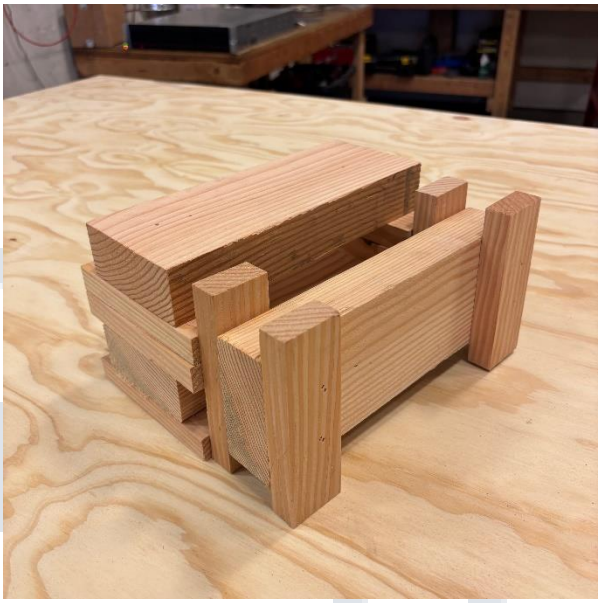
Technician Signature:  Date: 2/24/2025

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: **2** Test Date: **2/3/2025**



Test Fuel Front/Side View



Test Fuel Iso View

Test Fuel Loaded in Stove

Air Setting

Technician Signature: _____ Date: 2/24/2025

WOOD STOVE TEST DATA PACKET
ASTM E2780/E2515

Run 3 Data Summary

Client:	Enerco
Model:	H080
Job #:	24-367
Tracking #:	218
Test Date:	2/4/2025

Technician Signature — Date: 2/24/2025

TEST RESULTS - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Burn Rate (kg/hr):	1.70

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	14.229	8.737	8.803	9.025
Average Gas Velocity in Dilution Tunnel (ft/sec)	21.5			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	13884.9			
Average Gas Meter Temperature (°F)	66.1	74.7	75.2	77.9
Total Sample Volume (dscf)	14.325	8.754	8.695	9.008
Average Tunnel Temperature (°F)	101.3			
Total Time of Test (min)	57			
Total Particulate Catch (mg)	0.0	1.0	1.1	0.9
Particulate Concentration, dry-standard (g/dscf)	0.0000000	0.0001142	0.0001265	0.0000999
Total PM Emissions (g)	0.00	1.51	1.67	1.46
Particulate Emission Rate (g/hr)	0.00	1.59	1.76	1.46
Emissions Factor (g/kg)	-	0.93	1.03	-
Difference from Average Total Particulate Emissions (g)	-	0.08	0.08	-
Difference from Average Total Particulate Emissions (%)	-	5.1%	5.1%	
Difference from Average Emissions Factor (g/kg)	-	0.05	0.05	-

Final Average Results	
Total Particulate Emissions (g)	1.59
Particulate Emission Rate (g/hr)	1.67
Emissions Factor (g/kg)	0.98
HHV Efficiency (%)	70.7%
LHV Efficiency (%)	76.4%
CO Emissions (g/min)	0.80

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	78.1	OK
Face Velocity	< 30 ft/min	11.4	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min:65.2/Max:66.9	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
Stove Surface ΔT	<126°F	66.9	OK

B415.1 Efficiency Results

Manufacturer:	Enerco
Model:	H080
Date:	02/04/25
Run:	3
Control #:	24-367
Test Duration:	57
Output Category:	3

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	70.7%	76.4%
Combustion Efficiency	98.2%	98.2%
Heat Transfer Efficiency	72.0%	77.8%

Output Rate (kJ/h)	22,789	21,618	**(Btu/h)**
Burn Rate (kg/h)	1.63	3.59	**(lb/h)**
Input (kJ/h)	32,244	30,587	**(Btu/h)**

Test Load Weight (dry kg)	1.55	3.41	**dry lb**
MC wet (%)	18.08		
MC dry (%)	22.07		
Particulate (g)	1.59		
CO (g)	46		
Test Duration (h)	0.95		

Emissions	**Particulate**	**CO**
g/MJ Output	0.07	2.10
g/kg Dry Fuel	1.03	29.43
g/h	1.67	47.90
g/min	0.03	0.80
lb/MM Btu Output	0.17	4.88

Air/Fuel Ratio (A/F)	15.46

VERSION: **2.4** **4/15/2010**

WOODSTOVE FUEL DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Preburn Fuel Information

Size	Length (in)	Moisture Content (% DB)	Size	Length (in)	Moisture Content (% DB)
2x4	9.00	21.9			
2x4	9.00	19.1			
2x4	9.00	21.6			
2x4	9.00	22.6			
2x4	9.00	19.3			
2x4	9.00	22.9			

Total Fuel Weight (lbs): 7.48
Average Moisture (%DB): 21.2

Firebox Volume (ft^3): 0.60
Total 2x4 Crib Weight, with spacers (lbs): 4.23
Total 4x4 Crib Weight, with spacers (lbs): 0.00
Total Wet Fuel Weight, with spacers (lbs): 4.23

Coal Bed Range (20-25%):
Min (lbs): 0.85
Max (lbs): 1.06

Test Fuel Information

Size	Length (in)	Weight (lbs)	Moisture Content (%DB)			Dry Weight (lbs)
2x4	9.37	1.06	20.0	23.3	22.0	0.87
2x4	9.37	1.04	23.6	24.1	24.8	0.84
2x4	9.37	0.93	21.8	19.7	19.3	0.77

Total Dry Weight, no spacers (lbs): 2.48
Total Dry Weight, with spacers (lbs): 3.56

Spacer Moisture Readings (%DB)

10.8	10.8						
11.2	9.5						
10.1	12.1						
11.4	12.2						
11.2	11.7						

Quality Checks	Requirement	Observed	Result
Fuel Density	25 - 36 (lbs/ft^3, DB)	29.1	OK
Loading Density	6.3 - 7.7 (lbs/ft^3, WB)	7.05	OK
2x4 Fuel Mix	35 - 65 % of total weight	N/A	N/A

DILUTION TUNNEL & MISC. DATA - ASTM E2780 / E2515

Client:	Enerco	Job #:	24-367
Model:	H080	Tracking #:	218
Run #:	3	Technician:	AK
Test Start Time:	9:39	Date:	2/4/2025

Total Sampling Time (min):	57
Recording Interval (min):	1

Meter Box γ Factor:	1.019	(A)
Meter Box γ Factor:	1.005	(B)
Meter Box γ Factor:	1.024	(C)
Meter Box γ Factor:	1.013	(Ambient)

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	29.65	29.63	29.64
Relative Humidity (%)	18.4	17.6	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	0	0	
Ambient Sample Volume:		14.229	ft^3

Induced Draft Check (in. H_2O):	0
Smoke Capture Check (%):	100%
Date Flue Pipe Last Cleaned:	1/31/2025
Test Fuel Scale Audit (lbs)	10.00
Platform Scale Audit (lbs)	10.0

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)	0.000	0.000	cfm @	-6	in. Hg
(Ambient)	0.000	0.000	cfm @	-13	in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.084	68
2	0.110	68
3	0.108	68
4	0.090	68
5	0.072	68
6	0.096	68
7	0.104	68
8	0.088	68
Center	0.103	68

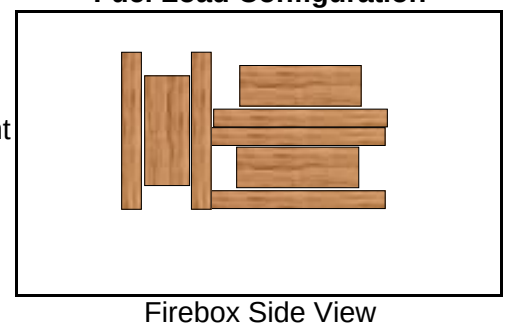
Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	6	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.1963	ft^2
V_{strav}:	20.37	ft/sec
V_{scent}:	21.37	ft/sec
F_p:	0.953	[ratio]
Initial Tunnel Flow:	232.9	scf/min

Static Pressure: -0.180 in. H_2O

TEST FUEL PROPERTIES

Fuel Load Configuration

Firebox Front



Firebox Back

Firebox Side View

Actual Fuel Used Properties

Fuel Type:	D. Fir
HHV (kJ/kg)	19,810
%C	48.73
%H	6.87
%O	43.9
%Ash	0.5
MC (%DB)	22.1

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Recording Interval (min): 1
Run Time (min): 71

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
0	2.03	-0.069	67	112	107	135	64	96.9	323	62
1	1.91	-0.072	68	117	122	156	64	105.5	330	62
2	1.81	-0.078	69	122	141	182	64	115.8	351	62
3	1.69	-0.081	71	129	162	215	64	128.2	377	62
4	1.57	-0.084	72	142	183	254	65	143.2	406	62
5	1.42	-0.089	74	156	192	295	65	156.4	432	62
6	1.25	-0.089	77	195	228	341	66	181.4	461	62
7	1.10	-0.093	80	265	266	384	66	212.2	475	63
8	0.97	-0.092	83	272	301	423	67	229.1	484	63
9	0.83	-0.091	87	261	331	457	69	241.0	487	63
10	0.71	-0.090	91	242	355	486	70	248.8	486	63
11	0.59	-0.091	95	238	371	512	72	257.7	486	63
12	0.48	-0.090	100	236	383	535	75	265.6	484	63
13	0.40	-0.089	105	254	388	551	77	274.9	476	63
14	0.33	-0.086	110	234	389	560	80	274.7	462	63
15	0.28	-0.086	116	230	388	564	83	276.0	443	63
16	0.25	-0.082	121	232	382	563	87	277.0	423	63
17	0.22	-0.078	126	245	374	559	90	278.9	407	63
18	0.19	-0.077	131	274	366	553	93	283.4	394	63
19	5.08	-0.076	137	245	386	545	96	281.7	377	63
20	4.98	-0.096	142	244	384	534	98	280.4	370	63
21	4.87	-0.085	147	255	377	529	102	282.1	393	63
22	4.72	-0.090	151	429	262	519	106	293.1	416	63
23	4.59	-0.092	155	482	208	511	110	293.2	441	63
24	4.43	-0.095	159	485	178	512	114	289.6	469	63
25	4.28	-0.095	164	489	160	518	117	289.6	490	63
26	4.12	-0.094	168	494	159	525	119	293.0	501	64
27	3.97	-0.097	173	499	162	535	122	298.0	509	63
28	3.81	-0.096	178	505	162	545	124	302.7	516	64
29	3.66	-0.096	183	511	163	555	126	307.3	519	64
30	3.52	-0.098	188	517	165	565	128	312.3	522	64
31	3.35	-0.099	193	523	166	573	130	316.9	524	64
32	3.22	-0.097	198	529	165	581	132	321.0	523	64
33	3.08	-0.097	203	535	165	588	133	324.8	523	64
34	2.94	-0.096	208	541	166	594	136	329.0	520	64
35	2.78	-0.096	213	547	166	599	137	332.4	519	64
36	2.64	-0.095	217	554	167	601	138	335.4	515	64
37	2.51	-0.095	222	560	167	602	140	338.2	512	64
38	2.38	-0.095	227	566	167	603	141	340.8	508	64
39	2.25	-0.094	232	572	166	603	143	343.1	503	64
40	2.12	-0.097	236	578	166	603	144	345.5	502	65
41	1.99	-0.094	241	583	166	604	147	348.1	500	65
42	1.86	-0.094	245	589	166	606	148	350.7	499	64
43	1.74	-0.094	249	595	168	608	150	353.9	501	64
44	1.61	-0.094	253	601	170	611	152	357.2	503	64

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Recording Interval (min): 1
Run Time (min): 71

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
45	1.49	-0.095	257	606	174	616	153	361.1	506	65
46	1.38	-0.095	261	611	174	620	155	364.0	505	65
47	1.27	-0.095	265	616	177	622	157	367.2	505	65
48	1.17	-0.093	269	619	179	624	158	369.8	498	65
49	1.08	-0.092	272	622	178	624	160	371.3	491	65
50	1.00	-0.090	276	625	185	619	161	373.3	482	65
51	0.93	-0.089	279	626	188	613	164	373.7	470	65
52	2.52	-0.087	282	626	206	605	165	376.8	459	65
53	2.41	-0.094	286	625	216	596	168	378.3	458	65
54	2.25	-0.097	289	622	183	597	169	371.9	479	65
55	2.11	-0.096	291	622	166	597	171	369.5	491	64
56	1.98	-0.095	293	623	169	600	172	371.3	495	62
57	1.86	-0.094	295	624	171	602	173	372.8	493	63
58	1.75	-0.092	297	626	174	604	174	375.1	486	64
59	1.65	-0.091	300	628	174	606	174	376.4	485	64
60	1.54	-0.091	302	630	176	609	176	378.3	487	64
61	1.45	-0.089	304	631	178	610	177	379.9	481	64
62	1.37	-0.087	305	631	186	606	177	380.9	468	64
63	1.29	-0.087	307	631	223	597	178	387.2	452	64
64	1.24	-0.082	309	630	215	585	179	383.5	437	64
65	1.20	-0.081	310	628	211	571	180	380.0	420	65
66	1.15	-0.079	312	625	221	554	180	378.4	407	65
67	1.12	-0.078	313	621	229	537	182	376.4	394	65
68	1.09	-0.078	313	616	229	521	182	372.3	384	65
69	1.06	-0.075	314	609	234	505	183	369.0	378	65
70	1.03	-0.075	314	599	234	491	184	364.3	370	65
71	1.01	-0.074	314	587	230	477	184	358.5	364	65

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.000		0.109	0.01	68	0.1		4.16		100	368	67	65
1	0.100	0.100	0.108	1.95	68	0.8	-	4.10	-0.06	102	359	68	65
2	0.240	0.140	0.108	2.00	68	0.8	-	3.96	-0.14	103	406	69	66
3	0.383	0.143	0.108	2.04	68	0.8	-	3.80	-0.16	105	455	69	66
4	0.520	0.137	0.109	2.07	68	0.9	-	3.65	-0.15	105	489	69	65
5	0.666	0.146	0.110	2.09	69	0.9	-	3.49	-0.16	106	518	70	65
6	0.806	0.140	0.110	2.10	69	0.9	-	3.33	-0.16	107	534	70	65
7	0.948	0.142	0.109	2.11	69	0.9	-	3.18	-0.15	108	547	70	65
8	1.092	0.144	0.108	2.13	69	0.9	-	3.03	-0.15	108	553	71	65
9	1.236	0.144	0.109	2.15	69	0.9	-	2.89	-0.14	109	558	71	66
10	1.384	0.148	0.109	2.17	69	0.9	91	2.73	-0.16	109	555	71	66
11	1.528	0.144	0.109	2.18	69	0.9	-	2.59	-0.14	109	552	71	66
12	1.682	0.154	0.108	2.20	70	0.9	-	2.47	-0.12	110	545	72	66
13	1.837	0.155	0.109	2.21	70	0.9	-	2.34	-0.13	110	542	72	66
14	1.993	0.156	0.109	2.22	70	0.9	-	2.21	-0.13	110	537	72	66
15	2.145	0.152	0.110	2.25	70	0.9	-	2.08	-0.13	110	531	73	66
16	2.299	0.154	0.108	2.27	71	0.9	-	1.96	-0.12	109	527	73	66
17	2.448	0.149	0.109	2.28	71	0.9	-	1.85	-0.11	109	520	73	66
18	2.605	0.157	0.108	2.29	71	0.9	-	1.73	-0.12	108	512	73	66
19	2.754	0.149	0.109	2.31	71	0.9	-	1.63	-0.10	108	506	73	66
20	2.906	0.152	0.109	2.32	72	0.9	100	1.51	-0.12	108	504	73	66
21	3.059	0.153	0.109	2.32	72	0.9	-	1.41	-0.10	107	504	73	66
22	3.211	0.152	0.109	2.32	72	0.9	-	1.30	-0.11	107	501	74	66
23	3.364	0.153	0.109	2.33	73	0.9	-	1.21	-0.09	107	498	74	67
24	3.515	0.151	0.109	2.34	73	0.9	-	1.11	-0.10	107	493	74	67
25	3.667	0.152	0.108	2.35	73	0.9	-	1.00	-0.11	107	488	74	66
26	3.820	0.153	0.108	2.36	74	0.9	-	0.93	-0.07	107	484	74	67
27	3.968	0.148	0.109	2.36	74	1.0	-	0.84	-0.09	107	478	74	67
28	4.122	0.154	0.108	2.37	74	0.9	-	0.76	-0.08	106	472	74	66
29	4.276	0.154	0.108	2.37	75	0.9	-	0.69	-0.07	105	465	74	66
30	4.430	0.154	0.108	2.38	75	1.0	100	0.63	-0.06	105	460	74	67
31	4.582	0.152	0.108	2.38	75	0.9	-	0.57	-0.06	104	456	74	67

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.740	0.158	0.110	2.38	76	0.9	-	0.50	-0.07	104	450	74	67
33	4.891	0.151	0.108	2.39	76	0.9	-	0.45	-0.05	103	443	74	67
34	5.048	0.157	0.108	2.39	76	0.9	-	0.41	-0.04	102	434	75	67
35	5.201	0.153	0.109	2.41	77	0.9	-	0.37	-0.04	101	421	75	67
36	5.357	0.156	0.108	2.41	77	1.0	-	0.34	-0.03	100	407	74	67
37	5.521	0.164	0.107	2.40	77	0.9	-	0.30	-0.04	99	391	74	67
38	5.678	0.157	0.107	2.41	78	1.0	-	0.29	-0.01	98	376	74	67
39	5.829	0.151	0.108	2.43	78	1.0	-	0.27	-0.02	97	364	74	66
40	5.985	0.156	0.109	2.41	78	0.9	101	0.23	-0.04	97	352	74	67
41	6.139	0.154	0.107	2.42	79	0.9	-	0.23	0.00	96	342	74	66
42	6.294	0.155	0.107	2.43	79	0.9	-	0.20	-0.03	95	335	74	67
43	6.449	0.155	0.107	2.43	79	1.0	-	0.19	-0.01	95	327	74	66
44	6.607	0.158	0.107	2.44	80	0.9	-	0.18	-0.01	94	319	74	66
45	6.808	0.201	0.107	2.44	80	0.9	-	0.17	-0.01	93	315	74	66
46	7.021	0.213	0.108	2.45	80	1.0	-	0.15	-0.02	92	310	74	66
47	7.180	0.159	0.108	2.45	80	1.0	-	0.15	0.00	92	307	74	66
48	7.336	0.156	0.107	2.45	81	1.0	-	0.12	-0.03	91	304	74	66
49	7.494	0.158	0.107	2.45	81	1.0	-	0.11	-0.01	91	300	74	66
50	7.645	0.151	0.106	2.45	81	1.0	107	0.10	-0.01	90	297	74	66
51	7.806	0.161	0.107	2.46	81	1.0	-	0.08	-0.02	90	294	74	66
52	7.958	0.152	0.107	2.46	82	0.9	-	0.06	-0.02	89	292	74	66
53	8.115	0.157	0.107	2.46	82	0.9	-	0.06	0.00	89	289	74	66
54	8.270	0.155	0.106	2.47	82	1.0	-	0.04	-0.02	88	286	74	66
55	8.426	0.156	0.106	2.46	82	1.0	-	0.02	-0.02	88	284	74	66
56	8.585	0.159	0.107	2.47	83	1.0	-	0.01	-0.01	88	282	73	66
57	8.737	0.152	0.105	2.48	83	0.9	100	0.00	-0.01	88	280	73	66
Avg/Tot	8.737	0.153	0.108	2.29	74.7	0.9	100			101.3	426.1	72.9	66.1

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	-0.002		0.01	69	0.6		69	-0.075	5.52	0.057
1	0.101	0.103	2.48	68	1.8	-	70	-0.085	6.75	0.065
2	0.259	0.158	2.49	68	1.9	-	72	-0.091	8.84	0.229
3	0.413	0.154	2.49	68	1.6	-	72	-0.094	10.40	0.674
4	0.566	0.153	2.48	68	1.7	-	73	-0.097	10.64	0.955
5	0.721	0.155	2.48	69	1.5	-	73	-0.098	10.77	0.746
6	0.872	0.151	2.48	69	2.0	-	74	-0.099	10.85	0.563
7	1.027	0.155	2.47	69	1.5	-	74	-0.100	10.95	0.524
8	1.179	0.152	2.48	69	1.7	-	74	-0.100	11.08	0.428
9	1.335	0.156	2.48	69	1.8	-	75	-0.100	11.02	0.309
10	1.486	0.151	2.49	69	1.8	97	75	-0.100	10.96	0.223
11	1.641	0.155	2.48	70	2.1	-	75	-0.098	11.25	0.123
12	1.793	0.152	2.47	70	1.6	-	76	-0.097	11.05	0.084
13	1.948	0.155	2.48	70	2.0	-	76	-0.098	10.87	0.068
14	2.100	0.152	2.49	70	2.1	-	76	-0.097	10.75	0.058
15	2.253	0.153	2.49	70	1.5	-	76	-0.096	10.61	0.053
16	2.411	0.158	2.49	71	2.0	-	77	-0.097	10.37	0.061
17	2.562	0.151	2.48	71	1.5	-	77	-0.095	10.23	0.057
18	2.720	0.158	2.49	71	1.6	-	77	-0.093	9.94	0.064
19	2.872	0.152	2.49	72	1.9	-	77	-0.094	9.69	0.053
20	3.028	0.156	2.49	72	1.8	101	77	-0.094	9.67	0.073
21	3.180	0.152	2.48	72	2.0	-	77	-0.094	9.96	0.313
22	3.336	0.156	2.49	73	1.9	-	77	-0.094	9.92	0.394
23	3.491	0.155	2.48	73	1.6	-	78	-0.092	9.79	0.366
24	3.644	0.153	2.49	73	1.5	-	78	-0.091	9.76	0.267
25	3.801	0.157	2.48	74	1.6	-	78	-0.091	9.64	0.196
26	3.953	0.152	2.48	74	1.6	-	78	-0.090	9.43	0.212
27	4.108	0.155	2.48	74	1.9	-	78	-0.090	9.29	0.149
28	4.260	0.152	2.49	75	1.7	-	78	-0.088	8.95	0.071
29	4.419	0.159	2.48	75	1.8	-	78	-0.088	8.59	0.037
30	4.573	0.154	2.49	75	2.1	101	78	-0.088	8.41	0.043
31	4.729	0.156	2.49	76	2.0	-	78	-0.086	8.36	0.038

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	4.885	0.156	2.49	76	1.9	-	78	-0.086	8.10	0.030
33	5.038	0.153	2.49	77	1.6	-	78	-0.085	7.83	0.033
34	5.196	0.158	2.49	77	1.6	-	78	-0.082	7.42	0.020
35	5.349	0.153	2.49	77	1.8	-	78	-0.081	6.64	0.019
36	5.507	0.158	2.49	78	2.1	-	78	-0.079	6.07	0.024
37	5.661	0.154	2.49	78	1.6	-	78	-0.076	5.48	0.065
38	5.818	0.157	2.50	78	1.9	-	78	-0.075	5.19	0.074
39	5.976	0.158	2.50	79	1.5	-	78	-0.071	4.96	0.084
40	6.127	0.151	2.49	79	1.5	100	78	-0.069	4.78	0.087
41	6.288	0.161	2.51	79	1.6	-	78	-0.070	4.67	0.103
42	6.443	0.155	2.50	80	1.6	-	77	-0.068	4.61	0.124
43	6.600	0.157	2.50	80	1.8	-	77	-0.066	4.61	0.146
44	6.756	0.156	2.50	80	2.1	-	77	-0.066	4.59	0.176
45	6.913	0.157	2.52	81	1.6	-	77	-0.064	4.57	0.194
46	7.071	0.158	2.51	81	2.0	-	77	-0.065	4.56	0.212
47	7.226	0.155	2.51	81	2.1	-	77	-0.063	4.56	0.230
48	7.386	0.160	2.51	82	1.8	-	77	-0.064	4.57	0.248
49	7.540	0.154	2.51	82	1.5	-	77	-0.061	4.52	0.259
50	7.696	0.156	2.52	82	2.0	100	77	-0.062	4.51	0.274
51	7.858	0.162	2.52	82	1.8	-	77	-0.062	4.36	0.302
52	8.012	0.154	2.52	83	2.0	-	76	-0.062	4.35	0.321
53	8.173	0.161	2.52	83	1.8	-	76	-0.061	4.32	0.335
54	8.328	0.155	2.53	83	2.1	-	76	-0.062	4.33	0.340
55	8.486	0.158	2.51	84	2.0	-	76	-0.061	4.33	0.349
56	8.645	0.159	2.52	84	1.9	-	76	-0.060	4.24	0.360
57	8.801	0.156	2.52	84	1.8	100	76	-0.060	4.21	0.392
Avg/Tot	8.803	0.154	2.45	75.2	1.8	100	76.3	-0.082	7.70	0.213

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
0	-0.002		-0.03	72	0.1		68
1	0.121	0.123	1.09	72	1.6	-	68
2	0.276	0.155	1.08	72	1.8	-	69
3	0.430	0.154	1.08	72	1.7	-	69
4	0.585	0.155	1.09	72	1.6	-	69
5	0.739	0.154	1.09	72	1.6	-	70
6	0.893	0.154	1.09	72	1.7	-	70
7	1.047	0.154	1.09	72	1.7	-	70
8	1.202	0.155	1.10	72	1.7	-	71
9	1.358	0.156	1.11	73	1.7	-	71
10	1.514	0.156	1.11	73	1.9	102	72
11	1.668	0.154	1.11	73	1.7	-	72
12	1.825	0.157	1.12	73	1.7	-	72
13	1.982	0.157	1.12	74	1.7	-	72
14	2.136	0.154	1.12	74	1.9	-	73
15	2.293	0.157	1.11	74	1.9	-	73
16	2.453	0.160	1.13	74	1.9	-	73
17	2.610	0.157	1.13	75	1.9	-	73
18	2.767	0.157	1.12	75	1.8	-	74
19	2.925	0.158	1.13	75	1.9	-	74
20	3.082	0.157	1.13	75	1.8	105	74
21	3.240	0.158	1.12	76	1.9	-	74
22	3.398	0.158	1.13	76	1.7	-	74
23	3.555	0.157	1.12	76	1.7	-	75
24	3.713	0.158	1.13	77	1.7	-	75
25	3.871	0.158	1.13	77	1.8	-	75
26	4.028	0.157	1.12	78	1.8	-	75
27	4.183	0.155	1.13	77	1.9	-	75
28	4.343	0.160	1.13	78	1.9	-	75
29	4.503	0.160	1.13	78	1.9	-	75
30	4.662	0.159	1.14	79	1.7	105	75
31	4.821	0.159	1.14	79	1.9	-	75

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
32	4.980	0.159	1.14	79	1.7	-	75
33	5.140	0.160	1.15	80	1.9	-	75
34	5.298	0.158	1.14	80	1.9	-	75
35	5.459	0.161	1.15	80	1.8	-	75
36	5.618	0.159	1.15	80	1.9	-	75
37	5.779	0.161	1.15	81	1.9	-	75
38	5.940	0.161	1.15	81	1.8	-	75
39	6.101	0.161	1.15	81	1.8	-	75
40	6.259	0.158	1.16	81	1.8	106	75
41	6.423	0.164	1.16	81	1.9	-	75
42	6.584	0.161	1.16	82	1.7	-	75
43	6.746	0.162	1.16	82	1.7	-	75
44	6.908	0.162	1.17	82	1.8	-	75
45	7.069	0.161	1.16	82	1.8	-	75
46	7.231	0.162	1.17	82	1.8	-	75
47	7.394	0.163	1.17	83	1.9	-	75
48	7.555	0.161	1.17	83	1.8	-	75
49	7.719	0.164	1.17	83	1.8	-	75
50	7.878	0.159	1.18	83	1.8	106	75
51	8.045	0.167	1.18	84	1.8	-	74
52	8.207	0.162	1.17	84	1.9	-	74
53	8.371	0.164	1.18	84	1.9	-	74
54	8.534	0.163	1.17	84	1.8	-	74
55	8.697	0.163	1.18	84	2.0	-	74
56	8.861	0.164	1.18	84	1.9	-	74
57	9.023	0.162	1.18	85	1.8	107	74
Avg/Tot	9.025	0.158	1.12	77.9	1.8	105	73.5

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Stove ΔT: 67

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
0	314	598	240	468	188	361.5	65.1
1	314	587	238	459	191	357.7	65.2
2	313	601	205	463	191	354.6	65.4
3	312	597	188	481	191	353.7	65.5
4	312	594	177	506	191	355.8	65.4
5	311	594	185	533	191	362.9	65.3
6	311	595	191	560	191	369.6	65.3
7	312	597	197	587	191	376.6	65.3
8	312	600	203	610	191	383.3	65.3
9	313	603	209	630	192	389.3	65.5
10	314	607	214	646	192	394.7	65.6
11	316	611	217	658	192	398.6	65.6
12	317	614	218	665	192	401.1	65.6
13	318	617	218	670	192	402.9	65.7
14	319	620	216	672	190	403.4	65.7
15	320	622	218	673	190	404.5	65.7
16	322	624	219	671	188	404.7	65.7
17	323	625	205	669	188	402.0	65.7
18	324	626	205	665	187	401.5	65.7
19	325	626	203	660	187	400.2	65.7
20	326	626	199	656	187	398.9	65.8
21	327	626	199	654	186	398.3	65.9
22	327	626	199	652	186	398.0	65.9
23	328	626	198	650	185	397.2	66.0
24	329	625	196	648	186	396.9	66.1
25	330	625	196	646	185	396.3	66.2
26	331	625	195	643	185	395.8	66.2
27	332	625	197	640	184	395.5	66.2
28	334	625	204	635	183	396.0	66.1
29	335	625	207	627	183	395.1	66.1
30	335	624	211	619	183	394.4	66.1
31	337	623	213	612	182	393.5	66.1
32	337	622	213	604	182	391.6	66.1
33	338	621	208	596	182	388.9	66.2
34	338	619	210	587	182	387.1	66.1
35	338	617	211	577	181	384.8	66.2
36	338	612	211	563	181	380.9	66.2
37	337	608	206	547	181	375.7	66.2
38	336	591	206	529	180	368.6	66.2
39	335	581	202	511	180	361.5	66.3
40	333	566	200	493	179	354.2	66.2
41	331	530	217	475	179	346.4	66.4
42	329	485	214	458	179	333.1	66.5
43	327	451	216	443	179	323.1	66.4
44	324	439	215	429	178	317.1	66.4
45	322	431	211	417	178	311.7	66.4
46	319	426	208	406	178	307.2	66.4
47	316	424	203	396	178	303.2	66.5

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Stove ΔT: **67**

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
48	313	420	196	386	178	298.7	66.5
49	310	420	192	378	178	295.7	66.5
50	308	424	191	371	178	294.3	66.4
51	305	438	190	365	178	295.1	66.5
52	302	444	190	359	178	294.5	66.5
53	300	474	190	353	177	298.9	66.5
54	297	495	189	348	177	301.3	66.4
55	294	483	187	344	177	296.9	66.4
56	291	472	185	340	177	292.9	66.4
57	289	487	184	336	177	294.6	66.4
Average	320.7	566.1	203.9	538.6	183.9	362.6	66.0

LAB SAMPLE DATA - ASTM E2515

Client: Enerco
Model: H080
Run #: 3

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	**A**	G01217	243.3	244.1	0.8
	B	G01218	244.0	244.9	0.9
	C - 1st Hour	G01219	243.9	244.8	0.9
	Amb	G01220	244.6	244.6	0.0
Probes	**A**	2A	116058.4	116058.5	0.1
	B	2B	116174.3	116174.4	0.1
	C - 1st Hour	2C	116429.2	116429.2	0.0
O-rings	**A**	2A	3550.1	3550.2	0.1
	B	2B	3569.1	3569.2	0.1
	C - 1st Hour	2C	3386.0	3386.0	0.0

Placed in Dessicator on:	2/4/2025

Balance Audit (mg):		200.0		200.0					
		Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time
Filters	**A**	244.3	2/6 10:00	244.1	2/7 8:30				
	B	245.0	2/6 10:00	244.9	2/7 8:30				
	C - 1st Hour	244.9	2/6 10:00	244.8	2/7 8:30				
	Amb	244.6	2/6 10:00	244.6	2/7 8:30				
Probes	**A**	116058.4	2/6 10:00	116058.5	2/7 8:30				
	B	116174.5	2/6 10:00	116174.4	2/7 8:30				
	C - 1st Hour	116429.2	2/6 10:00	116429.2	2/7 8:30				
O-Rings	**A**	3550.2	2/6 10:00	3550.2	2/7 8:30				
	B	3569.1	2/6 10:00	3569.2	2/7 8:30				
	C - 1st Hour	3385.9	2/6 10:00	3386.0	2/7 8:30				

Train A Aggregate, mg:	**1.0**
Train B Aggregate, mg:	**1.1**
Train C Aggregate, mg:	**0.9**
Ambient, mg:	**0.0**

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: **3** Test Date: **2/4/2025**

Wood Heater Run Notes

Test Control Settings

Primary Air Setting(s): Open 1.50”
Targeted Burn Category: III

Preburn Notes

Time	Notes
18:00	+4.9 lb
51:00	+1.6 lb
71:00	PB End

Test Notes

Test Burn Start Time: 9:39 Test Fuel Loaded by: 25 seconds
Door Closed: 30 seconds Air Control Set at: 0 seconds
Other Loading Notes: Fan on high at 0:00

Time	Notes
	-None-

Test Burn End Time: 10:36

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 17.32 CO (%): 4.350
Mid Gas CO_2 (%): 10.00 CO (%): 2.500

Calibration Results:

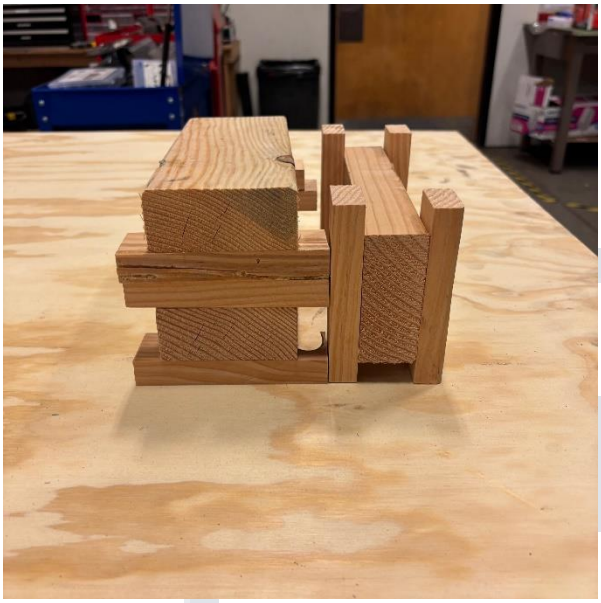
	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	8:20	8:22	8:23	15:31	15:32	15:34
CO_2	0.00	17.31	10.14	0.04	17.36	10.29
CO	0.000	4.353	2.523	0.000	4.368	2.531

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

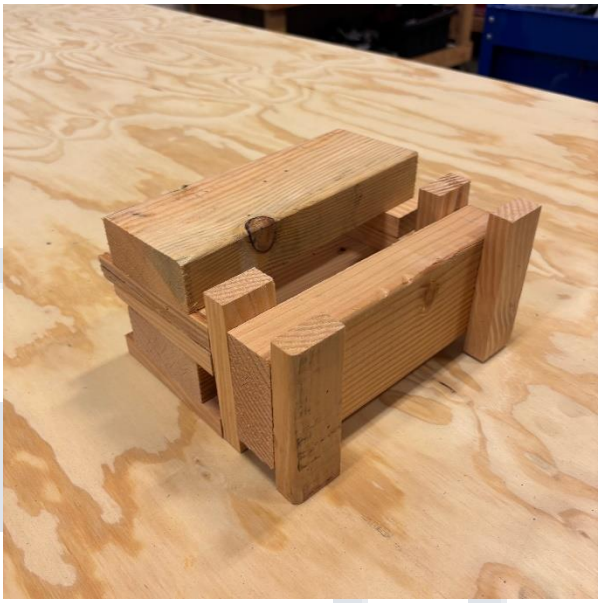
Technician Signature:  Date: 2/24/2025

ASTM E2780 Wood Heater Run Sheets

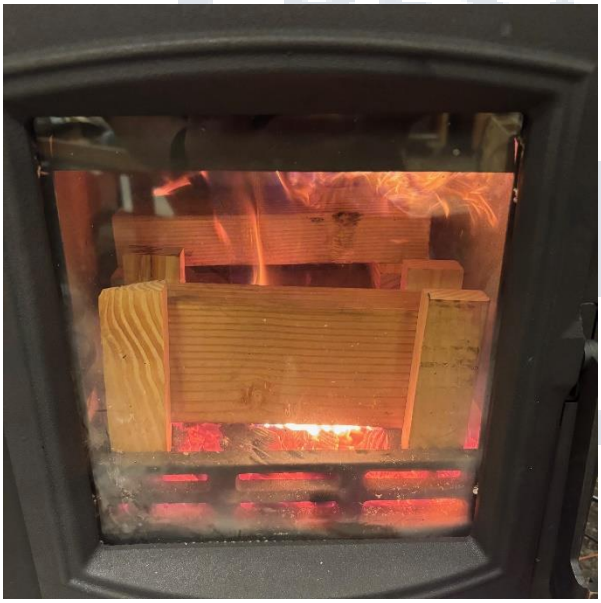
Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: **3** Test Date: **2/4/2025**



Test Fuel Front/Side View



Test Fuel Iso View



Test Fuel Loaded in Stove

Air Setting

Technician Signature: _____ Date: 2/24/2025

WOOD STOVE TEST DATA PACKET
ASTM E2780/E2515

Run 4 Data Summary

Client:	Enerco
Model:	H080
Job #:	24-367
Tracking #:	218
Test Date:	2/4/2025

Technician Signature — Date: 2/24/2025

TEST RESULTS - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Burn Rate (kg/hr):	0.95

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	24.277	16.071	16.563	9.648
Average Gas Velocity in Dilution Tunnel (ft/sec)	21.0			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	13956.7			
Average Gas Meter Temperature (°F)	66.2	82.0	84.2	80.8
Total Sample Volume (dscf)	24.379	15.854	16.057	9.556
Average Tunnel Temperature (°F)	84.2			
Total Time of Test (min)	104			
Total Particulate Catch (mg)	0.0	1.8	1.9	2.1
Particulate Concentration, dry-standard (g/dscf)	0.0000000	0.0001135	0.0001183	0.0002197
Total PM Emissions (g)	0.00	2.75	2.86	3.07
Particulate Emission Rate (g/hr)	0.00	1.58	1.65	3.07
Emissions Factor (g/kg)	-	1.66	1.73	-
Difference from Average Total Particulate Emissions (g)	-	0.06	0.06	-
Difference from Average Total Particulate Emissions (%)	-	2.1%	2.1%	
Difference from Average Emissions Factor (g/kg)	-	0.04	0.04	-

Final Average Results	
Total Particulate Emissions (g)	2.80
Particulate Emission Rate (g/hr)	1.62
Emissions Factor (g/kg)	1.70
HHV Efficiency (%)	73.4%
LHV Efficiency (%)	79.4%
CO Emissions (g/min)	1.10

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	75.4	OK
Face Velocity	< 30 ft/min	9.0	OK
Leakage Rate	Less than 4% of average sample rate	0 cfm	OK
Ambient Temp	55-90 °F	Min:65/Max:67.3	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
Stove Surface ΔT	<126°F	108.8	OK

B415.1 Efficiency Results

Manufacturer:	Enerco
Model:	H080
Date:	02/04/25
Run:	4
Control #:	24-367
Test Duration:	104
Output Category:	2

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	73.4%	79.4%
Combustion Efficiency	95.0%	95.0%
Heat Transfer Efficiency	77.3%	83.5%

Output Rate (kJ/h)	13,465	12,773	**(Btu/h)**
Burn Rate (kg/h)	0.93	2.04	**(lb/h)**
Input (kJ/h)	18,335	17,393	**(Btu/h)**

Test Load Weight (dry kg)	1.60	3.54	**dry lb**
MC wet (%)	18.15		
MC dry (%)	22.18		
Particulate (g)	2.80		
CO (g)	114		
Test Duration (h)	1.73		

Emissions	**Particulate**	**CO**
g/MJ Output	0.12	4.90
g/kg Dry Fuel	1.75	71.33
g/h	1.62	66.02
g/min	0.03	1.10
lb/MM Btu Output	0.28	11.39

Air/Fuel Ratio (A/F)	15.32

VERSION: **2.4** **4/15/2010**

WOODSTOVE FUEL DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Preburn Fuel Information

Size	Length (in)	Moisture Content (% DB)	Size	Length (in)	Moisture Content (% DB)
2x4	9.00	22.2			
2x4	9.00	24.2			
2x4	9.00	19.5			
2x4	9.00	22.2			

Total Fuel Weight (lbs): 4.12
Average Moisture (%DB): 22.0

Firebox Volume (ft^3): 0.60
Total 2x4 Crib Weight, with spacers (lbs): 4.32
Total 4x4 Crib Weight, with spacers (lbs): 0.00
Total Wet Fuel Weight, with spacers (lbs): 4.32

Coal Bed Range (20-25%):
Min (lbs): 0.86
Max (lbs): 1.08

Test Fuel Information

Size	Length (in)	Weight (lbs)	Moisture Content (%DB)			Dry Weight (lbs)
2x4	9.37	1.01	19.5	23.1	24.2	0.83
2x4	9.37	1.10	23.9	24.0	24.3	0.89
2x4	9.37	1.01	19.2	19.9	21.5	0.84

Total Dry Weight, no spacers (lbs): 2.55
Total Dry Weight, with spacers (lbs): 3.64

Spacer Moisture Readings (%DB)

11.1	9.4						
11.2	10.4						
10.0	9.8						
11.0	9.2						
12.6	9.6						

Quality Checks	Requirement	Observed	Result
Fuel Density	25 - 36 (lbs/ft^3, DB)	29.9	OK
Loading Density	6.3 - 7.7 (lbs/ft^3, WB)	7.20	OK
2x4 Fuel Mix	35 - 65 % of total weight	N/A	N/A

DILUTION TUNNEL & MISC. DATA - ASTM E2780 / E2515

Client:	Enerco	Job #:	24-367
Model:	H080	Tracking #:	218
Run #:	4	Technician:	AK
Test Start Time:	13:13	Date:	2/4/2025

Total Sampling Time (min):	104		
Recording Interval (min):	1		
Meter Box γ Factor:	1.019	(A)	
Meter Box γ Factor:	1.005	(B)	
Meter Box γ Factor:	1.024	(C)	
Meter Box γ Factor:	1.013	(Ambient)	
Induced Draft Check (in. H_2O):	0		
Smoke Capture Check (%):	100%		
Date Flue Pipe Last Cleaned:	1/31/2025		
Test Fuel Scale Audit (lbs)	10.00		
Platform Scale Audit (lbs)	10.0		

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	29.60	29.54	29.57
Relative Humidity (%)	17.7	17.0	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	0	0	
Ambient Sample Volume:		24.277	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 @	-7	in. Hg
(C)	0.001	0.000	cfm @	-6	in. Hg
(Ambient)	0.000	0.000	cfm @	-12	in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.084	68
2	0.110	68
3	0.108	68
4	0.090	68
5	0.072	68
6	0.096	68
7	0.104	68
8	0.088	68
Center	0.103	68

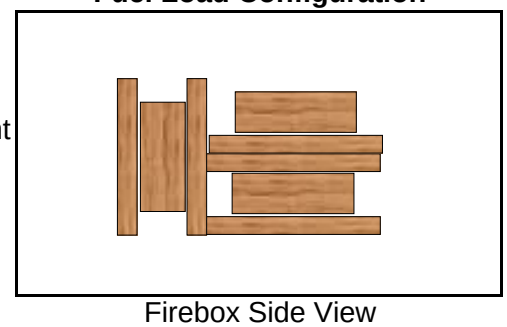
Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	6	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.1963	ft^2
V_{strav}:	20.39	ft/sec
V_{scent}:	21.39	ft/sec
F_p:	0.953	[ratio]
Initial Tunnel Flow:	232.7	scf/min

Static Pressure: -0.180 in. H_2O

TEST FUEL PROPERTIES

Fuel Load Configuration

Firebox Front



Firebox Back

Firebox Side View

Actual Fuel Used Properties

Fuel Type:	D. Fir
HHV (kJ/kg)	19,810
%C	48.73
%H	6.87
%O	43.9
%Ash	0.5
MC (%DB)	22.2

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Recording Interval (min): 1
Run Time (min): 64

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
0	3.70	-0.094	205	278	425	649	125	336.2	523	66
1	3.61	-0.089	209	272	446	662	124	342.5	480	66
2	3.50	-0.089	214	279	453	668	124	347.6	459	67
3	3.40	-0.091	219	280	452	673	125	350.0	450	67
4	3.30	-0.090	224	287	449	680	127	353.2	445	67
5	3.20	-0.091	229	291	448	686	128	356.3	443	67
6	3.08	-0.089	233	298	448	692	130	360.2	445	67
7	2.98	-0.090	238	300	448	698	131	362.8	444	67
8	2.90	-0.091	242	302	449	704	133	365.9	444	67
9	2.78	-0.091	246	304	452	709	134	369.0	445	67
10	2.68	-0.089	250	307	455	715	135	372.4	447	67
11	2.59	-0.092	254	310	459	720	136	376.0	448	67
12	2.49	-0.091	258	312	463	726	138	379.4	448	67
13	2.38	-0.091	262	315	466	731	139	382.7	448	67
14	2.28	-0.091	266	317	469	736	140	385.6	450	67
15	2.18	-0.091	269	319	473	741	141	388.5	452	67
16	2.08	-0.090	273	321	477	746	142	391.8	454	67
17	1.99	-0.090	277	324	482	750	143	394.8	454	67
18	1.88	-0.090	280	326	485	754	143	397.7	455	67
19	1.78	-0.090	284	328	490	758	145	400.8	455	67
20	2.63	-0.099	288	340	494	762	146	405.9	487	67
21	2.47	-0.094	291	594	424	767	148	444.9	486	67
22	2.34	-0.095	294	599	385	767	150	438.9	493	67
23	2.20	-0.095	297	603	364	767	151	436.3	494	67
24	2.08	-0.094	300	606	351	765	153	434.8	494	68
25	1.97	-0.095	303	608	355	762	154	436.4	491	68
26	1.86	-0.095	305	609	348	760	155	435.4	492	68
27	1.76	-0.092	308	611	345	759	156	435.6	491	68
28	1.64	-0.094	310	612	345	758	156	436.2	491	68
29	1.54	-0.092	312	614	341	758	156	436.3	486	68
30	1.45	-0.091	314	616	336	756	157	435.9	482	68
31	1.36	-0.091	316	619	331	754	158	435.5	476	68
32	1.27	-0.090	318	621	329	749	158	435.1	467	68
33	1.20	-0.088	320	622	332	744	159	435.4	460	68
34	1.15	-0.085	322	622	331	737	160	434.3	446	68
35	1.10	-0.082	324	616	327	726	161	430.6	425	68
36	1.05	-0.080	326	624	292	711	162	423.0	409	68
37	2.62	-0.079	328	609	278		163	344.2	391	67
38	2.60	-0.088	329	534	289	677	164	398.5	397	67
39	2.49	-0.089	330	620	247	670	164	406.0	417	68
40	2.39	-0.087	331	617	250	669	164	406.3	431	68
41	2.29	-0.088	332	614	252	670	166	406.9	436	68
42	2.20	-0.088	333	613	255	671	166	407.4	436	68
43	2.10	-0.085	334	611	260	671	167	408.5	432	68
44	2.01	-0.086	335	609	268	671	167	409.9	430	68

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Recording Interval (min): 1
Run Time (min): 64

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
45	1.93	-0.086	336	608	261	670	167	408.3	429	68
46	1.85	-0.083	337	606	258	669	167	407.5	426	68
47	1.77	-0.086	338	605	259	668	168	407.5	426	68
48	1.70	-0.086	339	604	257	668	167	407.0	425	68
49	1.63	-0.086	340	603	255	668	167	406.5	425	68
50	1.55	-0.085	341	602	251	668	168	406.1	422	68
51	1.48	-0.083	342	602	248	668	168	405.5	421	68
52	1.41	-0.082	342	599	275	667	169	410.5	416	68
53	1.37	-0.082	343	584	269	663	169	405.6	405	68
54	1.32	-0.079	344	580	263	656	169	402.5	396	67
55	1.28	-0.076	345	581	279	647	169	404.3	383	68
56	1.25	-0.072	346	550	300	634	169	399.7	368	68
57	1.24	-0.072	346	539	317	619	169	397.8	352	67
58	1.22	-0.069	346	526	302	602	169	389.2	337	68
59	1.21	-0.068	346	507	297	585	169	380.8	325	67
60	1.19	-0.066	346	497	299	568	170	375.9	317	67
61	1.17	-0.065	346	473	286	553	170	365.4	309	67
62	1.15	-0.064	345	466	281	538	170	360.0	301	67
63	1.13	-0.063	345	461	280	523	170	355.9	294	67
64	1.13	-0.062	344	449	280	511	171	350.8	290	67

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.000		0.107	0.01	73	0.1		4.32		87	295	69	67
1	0.092	0.092	0.107	1.99	73	0.9	-	4.26	-0.06	92	308	70	67
2	0.231	0.139	0.109	2.03	73	0.9	-	4.13	-0.13	95	345	70	67
3	0.377	0.146	0.107	2.06	73	0.9	-	3.99	-0.14	97	402	71	67
4	0.515	0.138	0.106	2.08	73	0.9	-	3.85	-0.14	98	446	71	67
5	0.663	0.148	0.108	2.11	73	0.9	-	3.70	-0.15	97	451	71	67
6	0.804	0.141	0.109	2.13	73	0.9	-	3.60	-0.10	96	439	71	66
7	0.954	0.150	0.107	2.14	73	0.9	-	3.47	-0.13	96	431	71	66
8	1.098	0.144	0.106	2.15	73	0.9	-	3.37	-0.10	96	426	72	66
9	1.244	0.146	0.106	2.16	73	0.9	-	3.26	-0.11	95	426	72	67
10	1.391	0.147	0.109	2.19	73	0.9	91	3.15	-0.11	95	424	72	66
11	1.537	0.146	0.108	2.19	73	0.9	-	3.05	-0.10	95	424	72	67
12	1.692	0.155	0.106	2.21	73	0.9	-	2.93	-0.12	95	422	72	67
13	1.837	0.145	0.109	2.22	74	0.9	-	2.81	-0.12	95	417	72	67
14	1.990	0.153	0.107	2.24	74	0.9	-	2.72	-0.09	94	409	72	67
15	2.136	0.146	0.107	2.26	74	1.0	-	2.63	-0.09	93	401	72	67
16	2.290	0.154	0.106	2.28	74	1.0	-	2.52	-0.11	93	397	72	67
17	2.437	0.147	0.107	2.28	74	0.9	-	2.43	-0.09	93	393	72	67
18	2.592	0.155	0.107	2.30	75	0.9	-	2.34	-0.09	92	393	73	67
19	2.739	0.147	0.108	2.31	75	0.9	-	2.24	-0.10	92	393	73	67
20	2.893	0.154	0.107	2.32	75	0.9	99	2.16	-0.08	92	392	73	67
21	3.040	0.147	0.107	2.32	75	0.9	-	2.07	-0.09	92	392	73	67
22	3.195	0.155	0.108	2.33	76	0.9	-	1.99	-0.08	92	390	73	67
23	3.344	0.149	0.107	2.35	76	1.0	-	1.90	-0.09	92	389	73	67
24	3.498	0.154	0.107	2.35	76	1.0	-	1.82	-0.08	92	388	73	67
25	3.648	0.150	0.107	2.36	76	0.9	-	1.74	-0.08	92	386	73	67
26	3.805	0.157	0.107	2.35	77	0.9	-	1.65	-0.09	91	384	73	67
27	3.955	0.150	0.107	2.37	77	1.0	-	1.57	-0.08	91	382	73	66
28	4.110	0.155	0.107	2.37	77	1.0	-	1.50	-0.07	91	381	73	67
29	4.260	0.150	0.107	2.37	78	0.9	-	1.42	-0.08	91	382	73	67
30	4.414	0.154	0.106	2.39	78	0.9	100	1.35	-0.07	91	379	73	67
31	4.567	0.153	0.107	2.39	78	0.9	-	1.28	-0.07	91	377	73	67

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.720	0.153	0.107	2.39	78	1.0	-	1.21	-0.07	91	375	73	67
33	4.874	0.154	0.106	2.39	79	1.0	-	1.15	-0.06	90	372	73	67
34	5.029	0.155	0.107	2.40	79	0.9	-	1.08	-0.07	90	367	73	67
35	5.190	0.161	0.105	2.40	79	1.0	-	1.02	-0.06	90	363	73	67
36	5.345	0.155	0.106	2.41	79	0.9	-	0.96	-0.06	90	360	73	67
37	5.500	0.155	0.107	2.41	80	0.9	-	0.91	-0.05	90	358	73	67
38	5.651	0.151	0.106	2.41	80	1.0	-	0.85	-0.06	89	354	73	67
39	5.809	0.158	0.106	2.42	80	1.0	-	0.80	-0.05	89	349	73	67
40	5.962	0.153	0.106	2.43	81	0.9	101	0.76	-0.04	89	343	73	67
41	6.122	0.160	0.105	2.42	81	1.0	-	0.72	-0.04	88	338	73	67
42	6.275	0.153	0.107	2.43	81	0.9	-	0.67	-0.05	88	333	73	67
43	6.431	0.156	0.106	2.43	81	0.9	-	0.65	-0.02	87	325	73	66
44	6.590	0.159	0.107	2.43	81	0.9	-	0.62	-0.03	87	313	73	67
45	6.753	0.163	0.106	2.44	82	1.0	-	0.60	-0.02	86	304	73	67
46	6.921	0.168	0.106	2.44	82	1.0	-	0.58	-0.02	85	292	73	67
47	7.080	0.159	0.107	2.45	82	0.9	-	0.57	-0.01	85	284	72	67
48	7.237	0.157	0.107	2.45	82	1.0	-	0.55	-0.02	84	273	72	67
49	7.389	0.152	0.106	2.44	83	1.0	-	0.53	-0.02	84	265	72	66
50	7.553	0.164	0.106	2.45	83	1.0	103	0.52	-0.01	83	257	72	66
51	7.706	0.153	0.105	2.45	83	0.9	-	0.51	-0.01	83	251	72	67
52	7.867	0.161	0.106	2.45	83	1.0	-	0.51	0.00	82	246	72	66
53	8.021	0.154	0.105	2.46	83	1.0	-	0.49	-0.02	82	240	72	66
54	8.178	0.157	0.105	2.47	84	0.9	-	0.49	0.00	82	235	72	66
55	8.336	0.158	0.106	2.47	84	1.0	-	0.47	-0.02	82	232	72	66
56	8.489	0.153	0.105	2.47	84	0.9	-	0.46	-0.01	81	229	72	66
57	8.648	0.159	0.105	2.48	84	0.9	-	0.46	0.00	81	225	72	66
58	8.801	0.153	0.106	2.46	84	1.0	-	0.43	-0.03	81	223	72	66
59	8.961	0.160	0.105	2.47	85	1.0	-	0.42	-0.01	80	220	72	66
60	9.115	0.154	0.105	2.47	85	1.0	101	0.41	-0.01	80	217	72	66
61	9.273	0.158	0.105	2.47	85	1.0	-	0.40	-0.01	80	214	72	66
62	9.430	0.157	0.106	2.47	85	1.0	-	0.38	-0.02	80	211	72	66
63	9.586	0.156	0.105	2.49	85	1.0	-	0.37	-0.01	79	210	71	66

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.744	0.158	0.105	2.48	86	1.0	-	0.36	-0.01	79	210	71	66
65	9.898	0.154	0.105	2.47	86	0.9	-	0.36	0.00	79	207	71	66
66	10.059	0.161	0.106	2.49	86	1.0	-	0.34	-0.02	79	207	71	65
67	10.213	0.154	0.105	2.49	86	0.9	-	0.33	-0.01	78	205	71	66
68	10.371	0.158	0.106	2.49	86	1.0	-	0.33	0.00	78	204	71	66
69	10.529	0.158	0.105	2.48	86	1.0	-	0.32	-0.01	79	202	71	66
70	10.686	0.157	0.107	2.49	86	1.0	101	0.30	-0.02	79	201	71	66
71	10.844	0.158	0.106	2.50	86	1.0	-	0.31	0.01	78	201	71	66
72	10.998	0.154	0.106	2.50	87	1.0	-	0.28	-0.03	78	200	71	66
73	11.160	0.162	0.105	2.49	87	1.0	-	0.27	-0.01	78	200	71	66
74	11.314	0.154	0.105	2.49	87	1.0	-	0.25	-0.02	78	197	71	65
75	11.473	0.159	0.106	2.50	87	1.0	-	0.24	-0.01	78	195	71	65
76	11.632	0.159	0.105	2.50	87	0.9	-	0.23	-0.01	77	194	71	65
77	11.788	0.156	0.106	2.51	87	1.0	-	0.23	0.00	77	194	71	65
78	11.948	0.160	0.105	2.50	87	1.0	-	0.22	-0.01	77	193	71	65
79	12.103	0.155	0.106	2.51	87	1.0	-	0.20	-0.02	77	193	71	65
80	12.264	0.161	0.106	2.50	87	1.0	100	0.20	0.00	77	192	70	65
81	12.421	0.157	0.105	2.51	88	1.0	-	0.19	-0.01	77	192	70	65
82	12.580	0.159	0.106	2.50	88	0.9	-	0.18	-0.01	76	191	70	65
83	12.741	0.161	0.105	2.51	88	1.0	-	0.17	-0.01	76	189	70	65
84	12.895	0.154	0.104	2.52	88	1.0	-	0.16	-0.01	77	188	70	65
85	13.057	0.162	0.105	2.50	88	1.0	-	0.14	-0.02	77	186	70	66
86	13.213	0.156	0.106	2.52	88	1.0	-	0.14	0.00	76	187	70	66
87	13.372	0.159	0.104	2.52	88	1.0	-	0.14	0.00	76	185	70	65
88	13.531	0.159	0.106	2.51	88	1.0	-	0.12	-0.02	76	183	70	66
89	13.688	0.157	0.106	2.51	88	1.0	-	0.12	0.00	76	183	70	66
90	13.848	0.160	0.105	2.52	88	1.0	101	0.11	-0.01	76	182	70	66
91	14.003	0.155	0.105	2.51	89	0.9	-	0.11	0.00	76	182	70	65
92	14.165	0.162	0.105	2.52	89	1.0	-	0.08	-0.03	76	182	70	66
93	14.321	0.156	0.106	2.52	89	1.0	-	0.08	0.00	76	182	70	66
94	14.480	0.159	0.106	2.51	89	1.0	-	0.08	0.00	75	181	70	66
95	14.641	0.161	0.107	2.53	89	1.0	-	0.08	0.00	75	179	70	66

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
96	14.795	0.154	0.106	2.53	89	1.0	-	0.07	-0.01	75	179	70	66
97	14.957	0.162	0.106	2.52	89	1.0	-	0.06	-0.01	75	178	70	65
98	15.114	0.157	0.105	2.53	89	1.0	-	0.04	-0.02	75	177	70	65
99	15.274	0.160	0.105	2.52	89	1.0	-	0.03	-0.01	75	177	70	66
100	15.434	0.160	0.106	2.52	89	1.0	101	0.03	0.00	75	176	70	65
101	15.591	0.157	0.106	2.54	89	0.9	-	0.03	0.00	75	175	70	65
102	15.753	0.162	0.105	2.52	89	1.0	-	0.01	-0.02	75	173	70	65
103	15.910	0.157	0.104	2.52	89	1.0	-	0.01	0.00	75	174	70	65
104	16.071	0.161	0.106	2.52	89	1.0	101	0.00	-0.01	75	174	70	65
Avg/Tot	16.071	0.155	0.106	2.39	82.0	0.9	100			84.2	281.8	71.5	66.2

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	0.000		0.01	75	0.7		71	-0.069	5.94	0.075
1	0.109	0.109	2.54	74	1.7	-	72	-0.072	8.07	0.095
2	0.266	0.157	2.53	74	1.7	-	73	-0.086	10.18	0.470
3	0.421	0.155	2.53	74	1.9	-	73	-0.090	10.84	0.531
4	0.580	0.159	2.53	74	1.6	-	73	-0.093	11.03	0.743
5	0.733	0.153	2.54	74	1.5	-	74	-0.088	11.26	0.696
6	0.891	0.158	2.54	74	1.6	-	74	-0.087	9.90	0.855
7	1.048	0.157	2.53	74	1.5	-	74	-0.086	9.83	0.808
8	1.202	0.154	2.53	74	1.9	-	74	-0.086	9.87	0.854
9	1.360	0.158	2.53	74	1.9	-	74	-0.086	9.88	0.820
10	1.515	0.155	2.52	75	2.0	97	74	-0.086	9.95	0.852
11	1.673	0.158	2.53	75	1.6	-	74	-0.086	10.10	0.875
12	1.827	0.154	2.52	75	1.5	-	75	-0.084	9.91	0.878
13	1.985	0.158	2.53	75	2.0	-	75	-0.083	9.97	0.822
14	2.143	0.158	2.53	75	1.7	-	75	-0.082	9.79	0.777
15	2.297	0.154	2.53	75	2.1	-	75	-0.082	10.22	0.697
16	2.457	0.160	2.54	76	1.8	-	75	-0.082	10.72	0.714
17	2.611	0.154	2.54	76	1.7	-	75	-0.081	10.80	0.672
18	2.769	0.158	2.53	76	1.6	-	75	-0.081	10.85	0.671
19	2.926	0.157	2.54	76	2.0	-	75	-0.082	11.09	0.643
20	3.082	0.156	2.54	77	1.5	100	75	-0.081	11.14	0.635
21	3.241	0.159	2.54	77	1.6	-	75	-0.081	11.19	0.577
22	3.396	0.155	2.54	77	1.5	-	75	-0.082	11.16	0.572
23	3.556	0.160	2.55	77	2.0	-	75	-0.081	11.14	0.563
24	3.710	0.154	2.53	78	1.7	-	75	-0.080	10.92	0.575
25	3.870	0.160	2.55	78	2.1	-	75	-0.079	10.87	0.527
26	4.028	0.158	2.54	78	1.6	-	75	-0.080	10.81	0.542
27	4.183	0.155	2.54	78	1.6	-	75	-0.079	10.87	0.519
28	4.344	0.161	2.55	79	1.7	-	75	-0.080	10.73	0.552
29	4.499	0.155	2.55	79	1.6	-	75	-0.079	10.78	0.530
30	4.659	0.160	2.55	79	1.7	101	75	-0.078	10.69	0.538
31	4.818	0.159	2.56	80	1.9	-	75	-0.077	10.73	0.525

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	4.973	0.155	2.55	80	1.7	-	75	-0.077	10.73	0.509
33	5.135	0.162	2.56	80	1.9	-	75	-0.078	10.72	0.430
34	5.290	0.155	2.55	80	1.8	-	75	-0.077	10.39	0.405
35	5.450	0.160	2.56	81	1.7	-	75	-0.076	9.93	0.527
36	5.610	0.160	2.56	81	1.8	-	75	-0.074	9.91	0.663
37	5.766	0.156	2.56	81	1.8	-	75	-0.073	9.64	0.806
38	5.928	0.162	2.56	82	2.0	-	75	-0.073	9.31	0.749
39	6.084	0.156	2.56	82	1.7	-	75	-0.071	9.06	0.457
40	6.244	0.160	2.56	82	2.0	101	75	-0.072	8.86	0.435
41	6.405	0.161	2.57	82	1.7	-	75	-0.071	8.83	0.310
42	6.561	0.156	2.56	83	1.5	-	75	-0.069	8.78	0.210
43	6.723	0.162	2.57	83	2.1	-	75	-0.066	8.41	0.156
44	6.880	0.157	2.57	83	1.5	-	75	-0.065	7.89	0.109
45	7.041	0.161	2.57	84	2.0	-	75	-0.063	7.42	0.124
46	7.201	0.160	2.57	84	2.0	-	75	-0.061	6.93	0.128
47	7.359	0.158	2.57	84	1.6	-	75	-0.060	6.67	0.106
48	7.521	0.162	2.58	84	1.6	-	74	-0.059	6.45	0.115
49	7.679	0.158	2.58	85	2.0	-	74	-0.057	6.05	0.139
50	7.840	0.161	2.58	85	1.8	101	74	-0.057	6.00	0.101
51	8.001	0.161	2.57	85	1.8	-	74	-0.054	5.89	0.106
52	8.160	0.159	2.58	85	1.6	-	74	-0.053	5.87	0.128
53	8.321	0.161	2.58	86	1.6	-	74	-0.053	5.86	0.155
54	8.482	0.161	2.59	86	1.8	-	74	-0.050	5.83	0.178
55	8.640	0.158	2.59	86	2.0	-	74	-0.049	5.88	0.211
56	8.803	0.163	2.58	86	2.0	-	74	-0.049	5.85	0.234
57	8.961	0.158	2.58	86	1.5	-	74	-0.050	5.91	0.256
58	9.123	0.162	2.59	87	1.5	-	74	-0.049	5.89	0.274
59	9.284	0.161	2.59	87	1.5	-	73	-0.048	5.90	0.285
60	9.443	0.159	2.58	87	1.5	100	73	-0.047	5.81	0.312
61	9.605	0.162	2.59	87	1.9	-	73	-0.046	5.77	0.327
62	9.766	0.161	2.59	87	1.7	-	73	-0.047	5.73	0.348
63	9.925	0.159	2.58	88	1.5	-	73	-0.046	5.73	0.365

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
64	10.089	0.164	2.59	88	1.8	-	73	-0.045	5.71	0.399
65	10.247	0.158	2.59	88	1.8	-	73	-0.046	5.67	0.406
66	10.410	0.163	2.59	88	1.8	-	73	-0.046	5.71	0.431
67	10.571	0.161	2.60	89	2.0	-	73	-0.045	5.67	0.431
68	10.731	0.160	2.59	89	1.9	-	73	-0.045	5.70	0.441
69	10.893	0.162	2.60	89	1.5	-	73	-0.045	5.64	0.427
70	11.054	0.161	2.59	89	1.7	100	73	-0.045	5.66	0.441
71	11.214	0.160	2.59	89	1.8	-	73	-0.044	5.67	0.456
72	11.379	0.165	2.60	89	1.5	-	73	-0.045	5.66	0.459
73	11.537	0.158	2.60	90	1.8	-	72	-0.044	5.65	0.471
74	11.700	0.163	2.60	90	1.6	-	72	-0.045	5.68	0.479
75	11.862	0.162	2.60	90	2.0	-	72	-0.044	5.46	0.567
76	12.022	0.160	2.60	90	1.5	-	72	-0.043	5.39	0.586
77	12.185	0.163	2.60	90	1.5	-	72	-0.042	5.31	0.611
78	12.347	0.162	2.60	90	1.6	-	72	-0.042	5.31	0.641
79	12.507	0.160	2.61	90	1.9	-	72	-0.042	5.12	0.684
80	12.672	0.165	2.60	90	2.0	100	72	-0.042	5.14	0.705
81	12.830	0.158	2.60	91	1.5	-	72	-0.042	5.15	0.729
82	12.994	0.164	2.61	91	2.0	-	72	-0.043	5.12	0.747
83	13.156	0.162	2.60	91	2.0	-	72	-0.041	5.08	0.751
84	13.317	0.161	2.60	91	1.7	-	72	-0.042	5.04	0.775
85	13.479	0.162	2.60	91	2.1	-	72	-0.041	4.98	0.822
86	13.643	0.164	2.61	91	1.8	-	72	-0.041	4.94	0.849
87	13.803	0.160	2.60	91	1.7	-	72	-0.042	4.91	0.859
88	13.966	0.163	2.61	91	1.8	-	72	-0.042	4.80	0.873
89	14.128	0.162	2.60	92	1.5	-	72	-0.040	4.77	0.901
90	14.289	0.161	2.60	92	1.5	100	72	-0.040	4.80	0.911
91	14.453	0.164	2.60	92	1.5	-	72	-0.040	4.76	0.920
92	14.613	0.160	2.61	92	1.6	-	72	-0.040	4.81	0.893
93	14.776	0.163	2.60	92	1.5	-	71	-0.041	4.81	0.903
94	14.939	0.163	2.61	92	1.8	-	71	-0.040	4.78	0.908
95	15.100	0.161	2.61	92	1.5	-	71	-0.039	4.68	0.958

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
96	15.263	0.163	2.60	92	1.5	-	71	-0.039	4.49	0.985
97	15.427	0.164	2.61	92	1.6	-	71	-0.041	4.44	1.007
98	15.587	0.160	2.60	92	1.7	-	71	-0.039	4.48	1.008
99	15.751	0.164	2.61	92	1.5	-	71	-0.040	4.31	1.010
100	15.913	0.162	2.61	93	1.8	100	71	-0.038	4.45	0.993
101	16.074	0.161	2.62	93	1.7	-	71	-0.038	4.49	0.973
102	16.239	0.165	2.61	93	1.7	-	71	-0.039	4.38	1.003
103	16.399	0.160	2.61	93	1.7	-	71	-0.038	4.45	1.025
104	16.563	0.164	2.61	93	2.0	100	71	-0.038	4.38	1.034
Avg/Tot	16.563	0.159	2.55	84.2	1.7	100	73.4	-0.060	7.40	0.575

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
0	0.000		-0.03	76	0.1		70
1	0.130	0.130	1.09	75	1.9	-	70
2	0.285	0.155	1.08	75	1.9	-	70
3	0.441	0.156	1.09	75	1.8	-	70
4	0.598	0.157	1.10	75	1.9	-	70
5	0.752	0.154	1.10	76	1.8	-	70
6	0.910	0.158	1.11	76	1.9	-	70
7	1.067	0.157	1.12	76	1.9	-	70
8	1.224	0.157	1.11	76	1.8	-	70
9	1.382	0.158	1.12	76	1.8	-	71
10	1.540	0.158	1.12	76	1.7	96	71
11	1.696	0.156	1.12	76	1.7	-	71
12	1.855	0.159	1.12	77	1.7	-	71
13	2.014	0.159	1.13	77	1.8	-	71
14	2.171	0.157	1.12	77	1.7	-	71
15	2.330	0.159	1.13	77	1.7	-	71
16	2.489	0.159	1.13	77	1.9	-	71
17	2.647	0.158	1.12	77	1.8	-	71
18	2.806	0.159	1.14	78	1.8	-	72
19	2.964	0.158	1.13	78	1.8	-	72
20	3.124	0.160	1.13	79	1.7	99	72
21	3.284	0.160	1.14	79	1.8	-	72
22	3.442	0.158	1.14	79	1.9	-	72
23	3.603	0.161	1.15	79	1.7	-	72
24	3.762	0.159	1.14	79	1.8	-	72
25	3.923	0.161	1.15	80	1.9	-	72
26	4.083	0.160	1.15	80	1.8	-	72
27	4.245	0.162	1.16	80	1.9	-	72
28	4.405	0.160	1.15	80	1.7	-	72
29	4.567	0.162	1.16	81	1.9	-	72
30	4.727	0.160	1.16	81	1.7	100	72
31	4.890	0.163	1.16	81	1.7	-	72

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
32	5.051	0.161	1.16	81	1.8	-	72
33	5.214	0.163	1.17	82	1.9	-	72
34	5.376	0.162	1.17	82	1.8	-	72
35	5.539	0.163	1.17	82	1.8	-	72
36	5.701	0.162	1.17	82	1.9	-	72
37	5.865	0.164	1.18	82	1.9	-	72
38	6.027	0.162	1.17	83	1.7	-	72
39	6.191	0.164	1.18	83	1.7	-	72
40	6.354	0.163	1.18	83	1.7	102	72
41	6.517	0.163	1.18	83	2.0	-	72
42	6.682	0.165	1.18	83	1.8	-	72
43	6.845	0.163	1.18	84	1.8	-	72
44	7.010	0.165	1.19	84	1.7	-	72
45	7.174	0.164	1.18	84	1.8	-	72
46	7.337	0.163	1.18	84	1.8	-	72
47	7.502	0.165	1.19	84	1.9	-	72
48	7.666	0.164	1.18	85	1.9	-	72
49	7.831	0.165	1.19	85	1.9	-	72
50	7.996	0.165	1.19	85	1.7	102	72
51	8.160	0.164	1.19	85	1.8	-	72
52	8.326	0.166	1.20	86	1.9	-	72
53	8.491	0.165	1.19	86	1.9	-	72
54	8.655	0.164	1.19	86	1.7	-	72
55	8.821	0.166	1.20	86	1.9	-	72
56	8.986	0.165	1.19	86	1.9	-	72
57	9.151	0.165	1.20	87	1.7	-	71
58	9.318	0.167	1.20	87	1.8	-	71
59	9.483	0.165	1.20	87	1.8	-	71
60	9.648	0.165	1.20	87	1.9	102	71
Avg/Tot	9.648	0.161	1.14	80.8	1.8	100	71.4

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Stove ΔT: **109**

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
0	343	441	277	502	175	347.7	67.3
1	342	328	334	495	178	335.6	67.5
2	341	289	337	497	181	328.8	67.6
3	338	301	400	511	181	346.3	67.6
4	336	359	277	534	182	337.7	67.6
5	334	557	311	556	180	387.4	67.8
6	333	559	218	564	178	370.3	67.7
7	332	561	200	568	179	368.1	67.4
8	331	562	215	572	180	371.9	67.6
9	331	563	213	575	181	372.5	67.3
10	330	563	208	578	180	371.9	67.4
11	330	564	206	580	180	371.8	67.4
12	330	565	203	583	179	371.8	67.5
13	329	566	202	584	179	371.7	67.4
14	329	567	198	584	179	371.3	67.3
15	329	567	198	584	178	371.3	67.2
16	329	567	193	583	179	370.2	67.1
17	329	566	194	582	179	370.0	67.0
18	328	566	193	581	178	369.2	67.1
19	328	565	192	580	177	368.3	67.0
20	328	564	190	580	178	367.9	66.9
21	328	563	189	580	177	367.4	66.9
22	328	564	193	580	176	367.9	67.0
23	328	564	193	579	176	367.7	67.0
24	327	564	192	579	175	367.3	67.0
25	327	564	193	578	174	367.1	67.1
26	327	564	189	576	173	365.8	67.1
27	327	564	187	575	172	364.9	67.2
28	326	564	186	573	171	364.0	67.3
29	326	564	185	572	171	363.4	67.3
30	326	564	181	571	169	361.9	67.4
31	326	564	181	568	169	361.3	67.5
32	325	564	178	567	168	360.2	67.4
33	325	563	180	564	167	360.0	67.4
34	325	563	181	562	167	359.6	67.5
35	325	563	181	559	168	359.0	67.3
36	324	562	182	556	166	358.1	67.3
37	324	560	184	551	167	357.4	67.2
38	324	559	185	547	166	356.0	67.2
39	324	556	184	542	166	354.4	67.3
40	324	553	183	536	166	352.3	67.4
41	324	552	183	529	165	350.7	67.5
42	324	546	183	523	164	348.0	67.6
43	323	546	182	516	165	346.3	67.5
44	323	519	180	507	165	338.6	67.5
45	323	510	180	496	166	335.1	67.4
46	323	506	182	486	166	332.4	67.3
47	322	488	184	475	167	327.1	67.2

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Stove ΔT: 109

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
48	321	481	186	463	168	324.0	67.1
49	321	475	188	452	167	320.5	67.1
50	320	470	193	440	166	317.6	67.2
51	318	466	192	429	165	314.1	67.2
52	317	490	191	419	165	316.2	67.2
53	315	482	190	408	166	312.4	67.1
54	313	461	189	399	166	305.6	67.1
55	312	464	196	389	167	305.4	67.1
56	310	448	199	381	167	300.9	67.0
57	308	437	197	373	166	296.1	67.0
58	306	420	196	366	166	290.8	67.1
59	304	411	196	360	165	287.2	67.1
60	302	405	195	354	165	284.0	67.2
61	301	414	193	348	165	284.0	67.2
62	299	418	192	343	165	283.2	67.2
63	297	412	191	338	164	280.2	67.0
64	295	404	189	333	165	277.4	67.1
65	293	405	188	329	166	276.3	66.9
66	291	422	187	326	166	278.4	67.0
67	289	401	186	323	165	272.8	67.1
68	288	425	185	319	165	276.2	67.0
69	286	404	184	317	167	271.5	66.9
70	284	409	183	314	166	271.1	66.9
71	282	390	182	312	167	266.6	66.9
72	281	395	181	309	166	266.3	67.0
73	279	380	180	307	166	262.4	67.0
74	278	385	179	305	165	262.3	67.0
75	276	381	178	303	164	260.2	67.1
76	274	374	176	301	163	257.7	67.0
77	273	380	175	299	162	257.7	67.1
78	271	367	175	296	163	254.5	67.0
79	270	364	174	294	163	252.9	67.1
80	268	361	173	292	162	251.2	67.1
81	267	370	172	290	163	252.1	67.1
82	266	382	171	288	163	253.9	67.1
83	265	410	171	286	165	259.3	66.8
84	263	423	170	284	164	260.8	67.1
85	262	414	169	282	165	258.3	67.0
86	261	409	168	280	164	256.3	66.9
87	259	410	167	279	163	255.6	67.1
88	258	402	166	277	163	253.2	66.9
89	257	395	165	275	163	250.9	67.0
90	256	402	164	273	162	251.4	67.0
91	254	402	163	272	162	250.7	67.2
92	253	398	163	270	162	249.0	67.1
93	252	373	162	268	162	243.4	66.9
94	251	388	161	267	162	245.7	67.0
95	250	394	160	265	162	246.1	67.0

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

Stove ΔT: **109**

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
96	249	392	159	264	162	245.1	67.0
97	248	363	158	262	161	238.3	67.0
98	246	372	157	261	161	239.4	67.0
99	245	364	156	259	161	237.1	67.2
100	244	397	156	258	161	243.2	67.1
101	243	400	155	256	161	243.0	67.1
102	242	398	155	255	162	242.3	66.9
103	240	396	154	253	161	240.9	67.1
104	240	389	154	252	160	239.0	67.1
Average	300.6	465.6	190.4	425.1	168.3	310.0	67.2

LAB SAMPLE DATA - ASTM E2515

Client: Enerco
Model: H080
Run #: 4

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/4/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	**A**	G01221	244.9	246.2	1.3
	B	G01222	244.2	246.0	1.8
	C - 1st Hour	G01223	241.5	243.5	2.0
	Amb	G01224	245.6	245.6	0.0
Probes	**A**	3A	115881.3	115881.5	0.2
	B	3B	116121.2	116121.2	0.0
	C - 1st Hour	3C	116618.6	116618.6	0.0
O-rings	**A**	3A	3576.2	3576.5	0.3
	B	3B	3564.6	3564.7	0.1
	C - 1st Hour	3C	3618.6	3618.7	0.1

Placed in Dessicator on:	2/4/2025

		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**		246.1	2/6 10:00	246.2	2/7 8:30				
	B		246.0	2/6 10:00	246.0	2/7 8:30				
	C - 1st Hour		243.4	2/6 10:00	243.5	2/7 8:30				
	Amb		245.6	2/6 10:00	245.6	2/7 8:30				
Probes	**A**		115881.6	2/6 10:00	115881.3	2/7 8:30	115881.5	2/10 11:30		
	B		116121.3	2/6 10:00	116121.2	2/7 8:30				
	C - 1st Hour		116618.6	2/6 10:00	116618.6	2/7 8:30				
O-Rings	**A**		3576.6	2/6 10:00	3576.5	2/7 8:30				
	B		3564.6	2/6 10:00	3564.7	2/7 8:30				
	C - 1st Hour		3618.6	2/6 10:00	3618.7	2/7 8:30				

Train A Aggregate, mg:	**1.8**
Train B Aggregate, mg:	**1.9**
Train C Aggregate, mg:	**2.1**
Ambient, mg:	**0.0**

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: **4** Test Date: **2/4/2025**

Wood Heater Run Notes

Test Control Settings

Primary Air Setting(s): Open 0.30”
Targeted Burn Category: II

Preburn Notes

Time	Notes
19:00	+0.9 lb
37:00	+2.2 lb
64:00	PB End

Test Notes

Test Burn Start Time: 13:13 Test Fuel Loaded by: 20 seconds
Door Closed: 30 seconds Air Control Set at: 300 seconds
Other Loading Notes: Fan on high at 5:00

Time	Notes
	-None-

Test Burn End Time: 14:57

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 17.32 CO (%): 4.350
Mid Gas CO_2 (%): 10.00 CO (%): 2.500

Calibration Results:

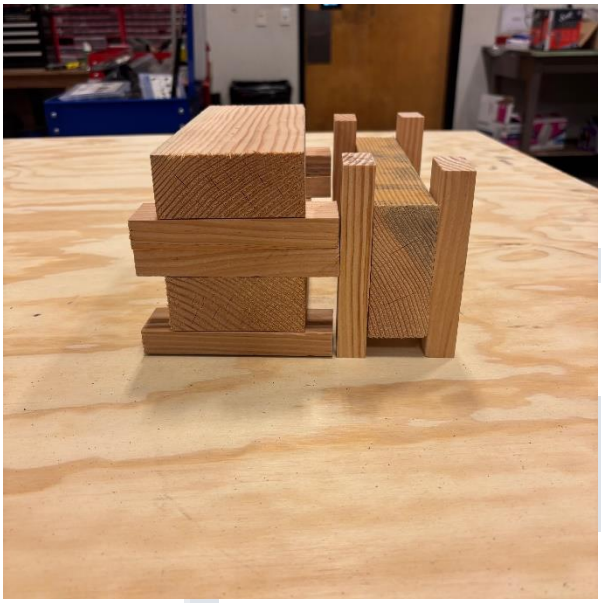
	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	8:20	8:22	8:23	15:31	15:32	15:34
CO_2	0.00	17.31	10.14	0.04	17.36	10.29
CO	0.000	4.353	2.523	0.000	4.368	2.531

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

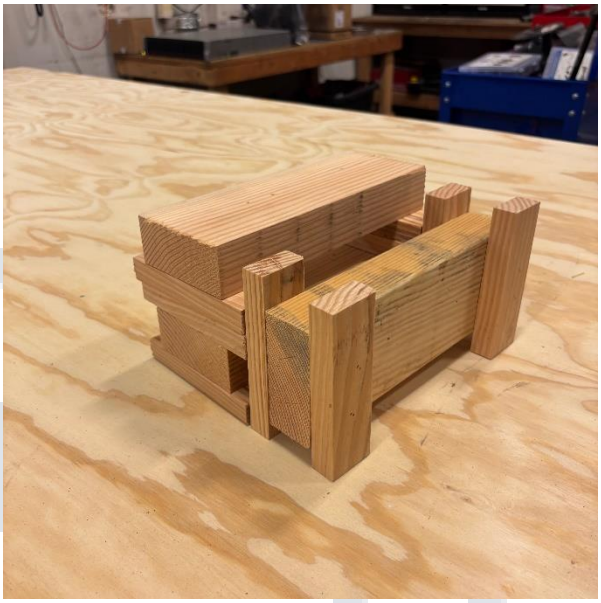
Technician Signature: Date: 2/24/2025

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: **4** Test Date: **2/4/2025**



Test Fuel Front/Side View



Test Fuel Iso View

Test Fuel Loaded in Stove

Air Setting

Technician Signature: _____ Date: 2/24/2025

WOOD STOVE TEST DATA PACKET
ASTM E2780/E2515

Run 5 Data Summary

Client:	Enerco
Model:	H080
Job #:	24-367
Tracking #:	218
Test Date:	2/5/2025

Technician Signature — Date: 2/24/2025

TEST RESULTS - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

Burn Rate (kg/hr):	1.08

	Ambient Sample	Sample Train A	Sample Train B	1st Hour Filter
Total Sample Volume (ft^3)	20.487	13.521	13.788	9.645
Average Gas Velocity in Dilution Tunnel (ft/sec)	20.9			
Average Gas Flow Rate in Dilution Tunnel (dscf/hr)	13955.0			
Average Gas Meter Temperature (°F)	64.8	78.0	79.1	77.8
Total Sample Volume (dscf)	20.758	13.520	13.576	9.667
Average Tunnel Temperature (°F)	85.5			
Total Time of Test (min)	88			
Total Particulate Catch (mg)	0.1	1.2	1.3	0.6
Particulate Concentration, dry-standard (g/dscf)	0.0000048	0.0000888	0.0000958	0.0000621
Total PM Emissions (g)	0.10	1.72	1.86	0.80
Particulate Emission Rate (g/hr)	0.07	1.17	1.27	0.80
Emissions Factor (g/kg)	-	1.08	1.17	-
Difference from Average Total Particulate Emissions (g)	-	0.07	0.07	-
Difference from Average Total Particulate Emissions (%)	-	4.0%	4.0%	
Difference from Average Emissions Factor (g/kg)	-	0.05	0.05	-

Final Average Results	
Total Particulate Emissions (g)	1.79
Particulate Emission Rate (g/hr)	1.22
Emissions Factor (g/kg)	1.13
HHV Efficiency (%)	71.2%
LHV Efficiency (%)	76.9%
CO Emissions (g/min)	1.29

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	74.3	OK
Face Velocity	< 30 ft/min	9.5	OK
Leakage Rate	Less than 4% of average sample rate	0.001 cfm	OK
Ambient Temp	55-90 °F	Min:64/Max:65.7	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
Stove Surface ΔT	<126°F	30.4	OK

B415.1 Efficiency Results

Manufacturer:	Enerco
Model:	H080
Date:	02/05/25
Run:	5
Control #:	24-367
Test Duration:	88
Output Category:	2

Test Results in Accordance with CSA B415.1-09

	HHV Basis	LHV Basis
Overall Efficiency	71.2%	76.9%
Combustion Efficiency	95.0%	95.0%
Heat Transfer Efficiency	74.9%	81.0%

Output Rate (kJ/h)	14,899	14,133	**(Btu/h)**
Burn Rate (kg/h)	1.06	2.33	**(lb/h)**
Input (kJ/h)	20,939	19,862	**(Btu/h)**

Test Load Weight (dry kg)	1.55	3.42	**dry lb**
MC wet (%)	17.87		
MC dry (%)	21.76		
Particulate (g)	1.79		
CO (g)	113		
Test Duration (h)	1.47		

Emissions	**Particulate**	**CO**
g/MJ Output	0.08	5.19
g/kg Dry Fuel	1.15	73.09
g/h	1.22	77.25
g/min	0.02	1.29
lb/MM Btu Output	0.19	12.05

Air/Fuel Ratio (A/F)	15.99

VERSION: **2.4** **4/15/2010**

WOODSTOVE FUEL DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

Preburn Fuel Information

Size	Length (in)	Moisture Content (% DB)	Size	Length (in)	Moisture Content (% DB)
2x4	9.00	22.2			
2x4	9.00	23.7			
2x4	9.00	22.2			
2x4	9.00	23.3			
2x4	9.00	21.7			
2x4	9.00	19.4			

Total Fuel Weight (lbs): 6.27
Average Moisture (%DB): 22.1

Firebox Volume (ft^3): 0.60
Total 2x4 Crib Weight, with spacers (lbs): 4.17
Total 4x4 Crib Weight, with spacers (lbs): 0.00
Total Wet Fuel Weight, with spacers (lbs): 4.17

Coal Bed Range (20-25%):
Min (lbs): 0.83
Max (lbs): 1.04

Test Fuel Information

Size	Length (in)	Weight (lbs)	Moisture Content (%DB)			Dry Weight (lbs)
2x4	9.37	1.04	23.7	24.1	24.6	0.84
2x4	9.37	0.99	19.4	21.2	22.3	0.82
2x4	9.37	0.93	19.0	19.6	21.9	0.77

Total Dry Weight, no spacers (lbs): 2.43
Total Dry Weight, with spacers (lbs): 3.50

Spacer Moisture Readings (%DB)

13.1	12.6						
11.4	12.2						
14.3	13.0						
14.9	12.0						
13.1	12.5						

Quality Checks	Requirement	Observed	Result
Fuel Density	25 - 36 (lbs/ft^3, DB)	28.5	OK
Loading Density	6.3 - 7.7 (lbs/ft^3, WB)	6.95	OK
2x4 Fuel Mix	35 - 65 % of total weight	N/A	N/A

DILUTION TUNNEL & MISC. DATA - ASTM E2780 / E2515

Client:	Enerco	Job #:	24-367
Model:	H080	Tracking #:	218
Run #:	5	Technician:	AK
Test Start Time:	12:16	Date:	2/5/2025

Total Sampling Time (min):	88	
Recording Interval (min):	1	
Meter Box γ Factor:	1.019	(A)
Meter Box γ Factor:	1.005	(B)
Meter Box γ Factor:	1.024	(C)
Meter Box γ Factor:	1.013	(Ambient)
Induced Draft Check (in. H_2O):	0	
Smoke Capture Check (%):	100%	
Date Flue Pipe Last Cleaned:	1/31/2025	
Test Fuel Scale Audit (lbs)	10.00	
Platform Scale Audit (lbs)	10.0	

	Pre-Test	Post Test	Avg.
Barometric Pressure (in. Hg)	29.75	29.76	29.76
Relative Humidity (%)	20.3	19.3	
Room Air Velocity (ft/min)	<50	<50	
Pitot Tube Leak Check	0	0	
Ambient Sample Volume:		20.487	ft^3

Sample Train Leak Checks

	Pre-test	Post-test			
(A)	0.000	0.000	cfm @	-7	in. Hg
(B)	0.000	0.000	cfm @	-7	in. Hg
(C)	0.000	0.001	cfm @	-6	in. Hg
(Ambient)	0.000	0.000	cfm @	-12	in. Hg

DILUTION TUNNEL FLOW

Traverse Data

Point	dP (in H_2O)	Temp (°F)
1	0.086	69
2	0.108	69
3	0.112	69
4	0.088	69
5	0.076	69
6	0.100	69
7	0.106	69
8	0.086	69
Center	0.105	69

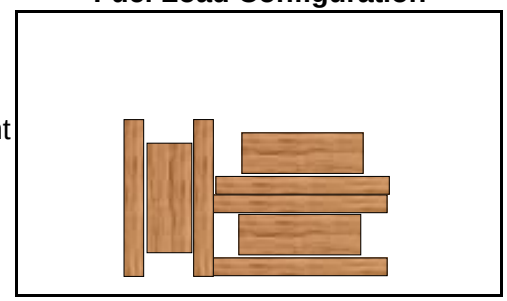
Dilution Tunnel H_2O:	2.00	percent
Tunnel Diameter:	6	inches
Pitot Tube Cp:	0.99	[unitless]
Dilution Tunnel MW(dry):	29.00	lb/lb-mole
Dilution Tunnel MW(wet):	28.78	lb/lb-mole
Tunnel Area:	0.1963	ft^2
V_{strav}:	20.49	ft/sec
V_{scent}:	21.56	ft/sec
F_p:	0.950	[ratio]
Initial Tunnel Flow:	234.7	scf/min

Static Pressure: -0.180 in. H_2O

TEST FUEL PROPERTIES

Fuel Load Configuration

Firebox Front



Firebox Back

Firebox Side View

Actual Fuel Used Properties

Fuel Type:	D. Fir
HHV (kJ/kg)	19,810
%C	48.73
%H	6.87
%O	43.9
%Ash	0.5
MC (%DB)	21.8

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

Recording Interval (min): 1
Run Time (min): 81

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
0	4.14	-0.082	143	356	390	579	95	312.3	404	63
1	4.07	-0.078	148	360	378	570	96	310.1	383	63
2	3.94	-0.080	152	357	379	561	98	309.6	368	63
3	3.84	-0.079	157	331	361	554	102	300.8	370	63
4	3.76	-0.078	161	314	357	549	104	296.9	367	63
5	3.66	-0.079	165	279	353	546	107	289.9	368	63
6	3.57	-0.079	169	274	352	545	109	289.8	367	63
7	3.47	-0.082	172	276	350	546	110	291.0	372	63
8	3.34	-0.082	175	280	345	553	111	292.7	381	63
9	3.25	-0.083	178	283	348	560	112	296.2	390	63
10	3.14	-0.084	181	288	351	570	113	300.6	398	63
11	3.03	-0.085	184	292	355	581	115	305.4	405	63
12	2.93	-0.085	187	293	359	592	117	309.3	410	63
13	2.82	-0.085	190	293	366	602	118	313.7	413	63
14	2.73	-0.086	193	296	372	613	120	318.8	415	64
15	2.62	-0.082	196	299	378	623	122	323.5	414	64
16	2.53	-0.085	199	301	382	632	123	327.3	409	64
17	2.44	-0.081	203	302	385	640	124	330.6	405	64
18	2.36	-0.082	206	302	386	644	125	332.9	398	64
19	2.27	-0.082	210	304	387	646	127	334.7	395	64
20	2.20	-0.080	214	307	386	648	126	336.0	389	64
21	2.13	-0.080	217	311	385	648	127	337.5	385	64
22	2.06	-0.079	221	315	385	648	128	339.4	378	64
23	1.98	-0.078	224	316	390	648	129	341.3	372	64
24	1.91	-0.079	228	314	388	648	131	341.6	371	64
25	1.84	-0.080	231	313	387	648	133	342.5	370	64
26	1.77	-0.078	235	314	385	649	133	343.3	369	64
27	1.69	-0.080	238	316	380	651	134	343.8	372	64
28	1.61	-0.080	241	317	377	653	135	344.5	375	64
29	1.54	-0.078	245	318	372	656	136	345.3	377	64
30	1.47	-0.081	248	319	372	660	137	347.2	380	64
31	1.40	-0.078	251	320	370	665	136	348.4	384	64
32	1.33	-0.079	254	321	372	668	138	350.6	384	64
33	1.25	-0.079	257	321	375	672	137	352.4	381	64
34	1.18	-0.079	260	323	378	675	137	354.6	379	64
35	1.12	-0.079	263	322	378	677	138	355.6	377	64
36	1.05	-0.078	266	324	378	678	140	357.2	374	64
37	0.99	-0.078	269	324	380	679	141	358.6	370	64
38	1.80	-0.094	272	326	392	679	140	362.0	366	64
39	3.07	-0.080	276	318	383	675	142	358.7	377	64
40	2.99	-0.080	278	313	387	672	144	358.9	375	64
41	2.92	-0.079	281	311	378	671	144	357.0	371	64
42	2.84	-0.078	283	306	384	668	143	357.0	368	64
43	2.78	-0.077	285	305	390	665	144	357.8	362	64
44	2.70	-0.077	287	306	390	660	144	357.2	361	64

WOODSTOVE PREBURN DATA - ASTM E2780

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

Recording Interval (min): 1
Run Time (min): 81

			Temperatures (°F)							
Elapsed Time (min)	Scale Reading (lbs)	Flue Draft (in H_2O)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Flue	Ambient
45	2.64	-0.075	289	306	382	656	145	355.4	356	64
46	2.57	-0.077	290	306	382	653	146	355.2	356	64
47	2.50	-0.074	291	308	393	649	146	357.5	352	64
48	2.44	-0.076	292	307	398	646	147	357.9	351	65
49	2.38	-0.075	293	306	418	642	149	361.5	349	64
50	2.32	-0.076	294	305	417	639	149	360.9	347	65
51	2.26	-0.074	295	305	415	636	149	359.7	343	64
52	2.19	-0.073	296	304	413	633	147	358.5	339	64
53	2.15	-0.074	296	305	410	630	149	358.0	338	64
54	2.08	-0.073	297	305	406	627	148	356.5	336	64
55	2.02	-0.073	297	306	407	624	149	356.5	334	64
56	1.96	-0.071	298	306	373	621	150	349.6	333	64
57	1.91	-0.069	298	305	365	618	151	347.3	331	64
58	1.86	-0.070	298	304	366	615	152	347.0	329	64
59	1.81	-0.072	299	304	367	612	152	346.8	326	64
60	1.76	-0.072	299	304	399	610	152	352.5	326	64
61	1.71	-0.071	299	304	389	607	153	350.5	323	64
62	1.67	-0.070	300	303	397	605	153	351.5	321	64
63	1.60	-0.071	300	302	400	603	152	351.3	322	64
64	1.57	-0.068	300	303	395	601	152	350.2	323	64
65	1.52	-0.070	300	303	398	600	152	350.5	320	64
66	1.47	-0.070	301	304	395	598	153	350.2	319	64
67	1.41	-0.068	301	306	395	597	153	350.4	320	64
68	1.37	-0.068	301	306	394	597	155	350.6	321	64
69	1.33	-0.068	302	307	393	597	156	350.8	321	64
70	1.28	-0.070	302	307	399	597	157	352.4	320	64
71	1.23	-0.069	303	308	400	598	157	353.1	323	64
72	1.19	-0.072	303	308	399	599	159	353.7	324	64
73	1.14	-0.070	304	309	406	601	158	355.5	323	64
74	1.10	-0.068	304	309	408	603	158	356.6	324	64
75	1.07	-0.068	305	309	410	605	158	357.4	323	64
76	1.03	-0.067	306	310	411	605	157	357.7	318	64
77	1.00	-0.068	307	311	376	603	159	351.1	313	64
78	0.97	-0.066	307	311	409	599	159	357.0	307	64
79	0.95	-0.062	308	312	408	594	161	356.6	300	64
80	0.94	-0.063	309	312	406	588	163	355.5	294	65
81	0.92	-0.061	309	312	404	582	164	354.1	289	65

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
0	0.000		0.106	0.01	69	0.1		4.16		82	289	67	65
1	0.092	0.092	0.109	1.94	69	0.9	-	4.10	-0.06	89	313	68	65
2	0.228	0.136	0.108	1.97	68	0.8	-	3.97	-0.13	91	353	68	64
3	0.368	0.140	0.108	2.01	69	0.9	-	3.81	-0.16	95	406	69	65
4	0.507	0.139	0.106	2.03	68	0.9	-	3.70	-0.11	94	426	69	65
5	0.647	0.140	0.106	2.07	69	0.9	-	3.57	-0.13	92	420	69	65
6	0.791	0.144	0.110	2.08	69	0.9	-	3.46	-0.11	91	417	69	64
7	0.931	0.140	0.106	2.10	69	0.9	-	3.35	-0.11	91	420	69	65
8	1.079	0.148	0.107	2.12	69	0.9	-	3.24	-0.11	91	418	70	64
9	1.224	0.145	0.108	2.14	69	0.9	-	3.13	-0.11	91	419	70	65
10	1.369	0.145	0.108	2.16	69	0.9	90	3.02	-0.11	91	421	70	65
11	1.526	0.157	0.106	2.17	69	0.9	-	2.91	-0.11	91	423	70	65
12	1.677	0.151	0.106	2.19	70	0.9	-	2.81	-0.10	91	427	70	65
13	1.835	0.158	0.107	2.20	70	0.9	-	2.70	-0.11	91	431	70	65
14	1.981	0.146	0.108	2.21	70	0.9	-	2.60	-0.10	91	433	70	64
15	2.132	0.151	0.105	2.22	70	0.9	-	2.51	-0.09	91	432	71	65
16	2.278	0.146	0.107	2.26	70	0.9	-	2.40	-0.11	92	435	71	65
17	2.431	0.153	0.106	2.26	71	0.9	-	2.28	-0.12	93	436	71	65
18	2.580	0.149	0.106	2.28	71	0.9	-	2.18	-0.10	92	439	71	65
19	2.736	0.156	0.107	2.30	71	0.9	-	2.07	-0.11	92	442	71	65
20	2.884	0.148	0.107	2.31	72	0.9	100	1.97	-0.10	93	442	71	65
21	3.036	0.152	0.108	2.32	72	0.9	-	1.87	-0.10	92	445	71	65
22	3.183	0.147	0.107	2.33	72	0.9	-	1.78	-0.09	92	444	71	65
23	3.335	0.152	0.107	2.34	72	0.9	-	1.70	-0.08	92	447	72	65
24	3.483	0.148	0.107	2.34	73	0.9	-	1.61	-0.09	92	447	72	65
25	3.636	0.153	0.107	2.35	73	0.9	-	1.52	-0.09	92	446	72	65
26	3.784	0.148	0.109	2.36	73	0.9	-	1.44	-0.08	92	449	72	65
27	3.939	0.155	0.107	2.36	74	0.9	-	1.35	-0.09	92	451	72	65
28	4.105	0.166	0.107	2.37	74	0.9	-	1.27	-0.08	92	451	72	65
29	4.274	0.169	0.107	2.39	74	0.9	-	1.20	-0.07	92	450	72	65
30	4.428	0.154	0.106	2.39	75	0.9	102	1.11	-0.09	93	451	72	65
31	4.585	0.157	0.107	2.38	75	0.9	-	1.04	-0.07	93	453	72	65

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
32	4.735	0.150	0.109	2.40	75	0.9	-	0.94	-0.10	94	451	72	65
33	4.891	0.156	0.107	2.40	76	1.0	-	0.88	-0.06	93	445	72	65
34	5.041	0.150	0.108	2.40	76	0.9	-	0.80	-0.08	93	439	72	65
35	5.197	0.156	0.108	2.41	76	0.9	-	0.74	-0.06	92	426	72	66
36	5.348	0.151	0.106	2.41	76	0.9	-	0.69	-0.05	90	404	72	66
37	5.503	0.155	0.107	2.41	77	0.9	-	0.65	-0.04	90	387	72	65
38	5.655	0.152	0.107	2.43	77	1.0	-	0.63	-0.02	89	371	72	65
39	5.809	0.154	0.107	2.43	77	0.9	-	0.60	-0.03	88	355	72	65
40	5.961	0.152	0.106	2.44	78	0.9	101	0.57	-0.03	87	341	72	65
41	6.115	0.154	0.106	2.43	78	0.9	-	0.56	-0.01	86	328	72	66
42	6.276	0.161	0.106	2.44	78	0.9	-	0.54	-0.02	86	317	72	65
43	6.430	0.154	0.106	2.46	79	1.0	-	0.54	0.00	85	308	72	65
44	6.587	0.157	0.105	2.45	79	0.9	-	0.53	-0.01	85	300	72	65
45	6.738	0.151	0.106	2.45	79	0.9	-	0.52	-0.01	85	288	72	65
46	6.899	0.161	0.105	2.46	79	0.9	-	0.51	-0.01	84	283	72	65
47	7.049	0.150	0.107	2.44	80	0.9	-	0.49	-0.02	85	275	72	65
48	7.209	0.160	0.107	2.46	80	0.9	-	0.48	-0.01	84	273	72	65
49	7.361	0.152	0.108	2.45	80	1.0	-	0.47	-0.01	83	270	72	65
50	7.518	0.157	0.104	2.48	80	0.9	102	0.46	-0.01	83	269	72	65
51	7.672	0.154	0.105	2.48	81	0.9	-	0.44	-0.02	83	267	72	65
52	7.827	0.155	0.106	2.47	81	0.9	-	0.43	-0.01	82	266	72	65
53	7.985	0.158	0.106	2.48	81	0.9	-	0.42	-0.01	82	264	72	65
54	8.139	0.154	0.106	2.49	81	0.9	-	0.41	-0.01	82	262	72	64
55	8.295	0.156	0.106	2.48	82	0.9	-	0.40	-0.01	82	259	72	65
56	8.448	0.153	0.105	2.49	82	0.9	-	0.39	-0.01	81	256	71	64
57	8.607	0.159	0.106	2.48	82	1.0	-	0.36	-0.03	81	254	71	65
58	8.769	0.162	0.105	2.49	82	0.9	-	0.36	0.00	81	252	71	64
59	8.946	0.177	0.104	2.49	83	0.9	-	0.35	-0.01	81	250	71	65
60	9.113	0.167	0.104	2.49	83	0.9	104	0.33	-0.02	81	248	71	65
61	9.270	0.157	0.105	2.49	83	0.9	-	0.32	-0.01	80	246	71	65
62	9.429	0.159	0.105	2.51	83	0.9	-	0.30	-0.02	80	244	71	65
63	9.581	0.152	0.106	2.50	83	0.9	-	0.30	0.00	80	243	71	65

BOX A TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

	Particulate Sampling Data							Fuel Weight (lb)		Temperature Data (°F)			
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Dilution Tunnel dP (in H_2O)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Scale Reading	Weight Change	Dilution Tunnel	Flue	Filter	Ambient
64	9.741	0.160	0.106	2.50	84	0.9	-	0.29	-0.01	80	242	71	65
65	9.896	0.155	0.106	2.51	84	0.9	-	0.28	-0.01	79	240	71	65
66	10.056	0.160	0.107	2.51	84	0.9	-	0.27	-0.01	80	239	71	65
67	10.209	0.153	0.106	2.52	84	1.0	-	0.26	-0.01	80	238	71	65
68	10.367	0.158	0.106	2.51	84	1.0	-	0.23	-0.03	80	239	71	64
69	10.526	0.159	0.105	2.51	84	0.9	-	0.23	0.00	80	236	71	65
70	10.680	0.154	0.105	2.51	85	0.9	101	0.21	-0.02	79	235	71	64
71	10.840	0.160	0.106	2.52	85	0.9	-	0.22	0.01	79	236	71	64
72	10.995	0.155	0.105	2.51	85	1.0	-	0.19	-0.03	79	235	71	64
73	11.155	0.160	0.105	2.52	85	0.9	-	0.19	0.00	79	235	71	64
74	11.310	0.155	0.105	2.53	85	1.0	-	0.17	-0.02	79	233	71	65
75	11.468	0.158	0.107	2.52	85	1.0	-	0.16	-0.01	78	232	71	65
76	11.627	0.159	0.107	2.53	85	0.9	-	0.14	-0.02	78	232	71	65
77	11.781	0.154	0.106	2.52	86	1.0	-	0.13	-0.01	78	230	70	65
78	11.942	0.161	0.105	2.53	86	0.9	-	0.12	-0.01	78	229	70	65
79	12.098	0.156	0.107	2.52	86	0.9	-	0.11	-0.01	78	228	70	65
80	12.257	0.159	0.106	2.53	86	1.0	101	0.10	-0.01	78	229	70	64
81	12.413	0.156	0.106	2.53	86	1.0	-	0.09	-0.01	78	230	70	65
82	12.572	0.159	0.105	2.54	86	0.9	-	0.08	-0.01	78	228	70	65
83	12.732	0.160	0.105	2.53	86	0.9	-	0.07	-0.01	78	227	70	64
84	12.886	0.154	0.104	2.52	86	0.9	-	0.06	-0.01	78	226	70	64
85	13.048	0.162	0.106	2.53	87	0.9	-	0.05	-0.01	78	226	70	64
86	13.203	0.155	0.105	2.54	87	1.0	-	0.03	-0.02	78	226	70	64
87	13.362	0.159	0.105	2.54	87	1.0	-	0.02	-0.01	78	224	70	64
88	13.521	0.159	0.105	2.54	87	1.0	101	0.00	-0.02	79	224	70	64
Avg/Tot	13.521	0.154	0.106	2.37	78.0	0.9	100			85.5	328.2	70.9	64.8

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
0	0.000		0.01	69	0.6		69	-0.070	5.48	0.181
1	0.103	0.103	2.49	69	2.0	-	70	-0.078	3.27	0.180
2	0.259	0.156	2.48	69	2.0	-	71	-0.088	6.87	0.413
3	0.410	0.151	2.49	69	1.9	-	71	-0.090	10.44	0.835
4	0.564	0.154	2.48	69	2.0	-	71	-0.085	10.70	0.842
5	0.716	0.152	2.48	69	2.1	-	71	-0.085	9.73	0.508
6	0.871	0.155	2.49	69	1.5	-	72	-0.085	9.98	0.609
7	1.024	0.153	2.48	69	2.0	-	72	-0.086	10.17	0.544
8	1.177	0.153	2.50	69	1.5	-	72	-0.084	10.06	0.537
9	1.332	0.155	2.49	69	2.1	-	72	-0.086	10.09	0.488
10	1.483	0.151	2.50	69	1.5	96	72	-0.086	10.26	0.544
11	1.640	0.157	2.50	70	2.1	-	72	-0.087	10.24	0.697
12	1.791	0.151	2.50	70	1.9	-	72	-0.086	10.31	0.583
13	1.948	0.157	2.50	70	2.1	-	73	-0.087	10.35	0.626
14	2.099	0.151	2.50	70	1.9	-	73	-0.086	10.32	0.657
15	2.254	0.155	2.49	70	1.6	-	73	-0.086	10.44	0.684
16	2.409	0.155	2.51	71	1.5	-	73	-0.085	10.53	0.760
17	2.564	0.155	2.51	71	2.1	-	73	-0.088	10.44	0.814
18	2.719	0.155	2.50	71	1.7	-	73	-0.087	10.47	0.806
19	2.871	0.152	2.50	72	2.0	-	73	-0.088	10.38	0.817
20	3.029	0.158	2.51	72	2.1	100	73	-0.088	10.49	0.784
21	3.181	0.152	2.51	72	1.9	-	74	-0.087	10.43	0.766
22	3.338	0.157	2.51	73	1.6	-	74	-0.089	10.35	0.801
23	3.491	0.153	2.51	73	1.5	-	74	-0.086	10.25	0.762
24	3.648	0.157	2.52	73	1.8	-	74	-0.087	10.19	0.790
25	3.804	0.156	2.52	74	1.7	-	74	-0.088	10.29	0.783
26	3.957	0.153	2.52	74	1.8	-	74	-0.088	10.28	0.766
27	4.115	0.158	2.51	74	2.1	-	74	-0.087	10.45	0.746
28	4.269	0.154	2.52	75	1.6	-	74	-0.087	10.45	0.737
29	4.427	0.158	2.53	75	2.1	-	74	-0.088	10.39	0.731
30	4.580	0.153	2.52	75	1.6	101	74	-0.089	10.51	0.696
31	4.738	0.158	2.53	76	1.6	-	74	-0.089	10.68	0.619

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
32	4.895	0.157	2.53	76	2.1	-	74	-0.087	10.69	0.622
33	5.049	0.154	2.53	76	1.6	-	74	-0.087	10.67	0.640
34	5.207	0.158	2.53	77	1.6	-	74	-0.087	10.23	0.566
35	5.361	0.154	2.53	77	1.9	-	74	-0.081	10.02	0.356
36	5.520	0.159	2.53	77	1.5	-	74	-0.078	9.28	0.224
37	5.675	0.155	2.53	78	1.7	-	74	-0.077	8.40	0.215
38	5.833	0.158	2.54	78	1.8	-	74	-0.074	7.60	0.189
39	5.990	0.157	2.54	78	1.6	-	74	-0.071	6.84	0.221
40	6.145	0.155	2.54	78	2.1	101	74	-0.070	6.20	0.210
41	6.305	0.160	2.55	79	1.6	-	74	-0.069	5.86	0.216
42	6.460	0.155	2.54	79	1.8	-	74	-0.066	5.67	0.155
43	6.618	0.158	2.55	79	1.8	-	74	-0.066	5.51	0.146
44	6.777	0.159	2.55	80	2.1	-	74	-0.064	5.38	0.136
45	6.933	0.156	2.55	80	2.0	-	74	-0.062	5.33	0.133
46	7.093	0.160	2.55	80	1.6	-	74	-0.060	5.34	0.146
47	7.249	0.156	2.56	81	2.1	-	74	-0.061	5.33	0.163
48	7.408	0.159	2.56	81	1.8	-	74	-0.060	5.36	0.187
49	7.566	0.158	2.56	81	2.1	-	73	-0.060	5.35	0.201
50	7.723	0.157	2.56	82	2.0	101	73	-0.061	5.39	0.217
51	7.883	0.160	2.55	82	1.7	-	73	-0.059	5.45	0.225
52	8.039	0.156	2.56	82	2.0	-	73	-0.058	5.47	0.229
53	8.199	0.160	2.56	82	2.0	-	73	-0.059	5.50	0.228
54	8.357	0.158	2.56	83	1.7	-	73	-0.057	4.91	0.313
55	8.515	0.158	2.57	83	1.6	-	73	-0.057	4.90	0.353
56	8.675	0.160	2.56	83	1.6	-	73	-0.056	4.89	0.359
57	8.832	0.157	2.56	83	1.7	-	73	-0.056	4.93	0.383
58	8.993	0.161	2.57	84	1.7	-	73	-0.056	4.89	0.395
59	9.151	0.158	2.57	84	1.6	-	73	-0.056	4.95	0.416
60	9.309	0.158	2.57	84	1.8	101	73	-0.054	4.94	0.433
61	9.470	0.161	2.57	84	1.9	-	73	-0.054	4.94	0.445
62	9.628	0.158	2.58	85	2.0	-	73	-0.054	4.93	0.465
63	9.788	0.160	2.57	85	1.9	-	73	-0.054	4.92	0.480

BOX B TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

	Particulate Sampling Data							Flue Gas Data		
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)	Flue Draft (in H_2O)	CO_2 (%)	CO (%)
64	9.948	0.160	2.58	85	1.7	-	73	-0.054	4.94	0.490
65	10.106	0.158	2.58	85	1.7	-	72	-0.053	4.89	0.501
66	10.267	0.161	2.58	86	1.6	-	72	-0.052	4.90	0.509
67	10.424	0.157	2.58	86	1.5	-	72	-0.054	4.92	0.522
68	10.585	0.161	2.58	86	1.6	-	72	-0.052	4.95	0.515
69	10.746	0.161	2.59	86	2.1	-	72	-0.052	4.88	0.522
70	10.903	0.157	2.57	86	1.6	101	72	-0.052	4.87	0.531
71	11.066	0.163	2.58	87	1.8	-	72	-0.053	4.82	0.570
72	11.223	0.157	2.58	87	1.5	-	72	-0.051	4.75	0.584
73	11.384	0.161	2.59	87	1.6	-	72	-0.053	4.78	0.591
74	11.545	0.161	2.59	87	2.1	-	72	-0.053	4.73	0.605
75	11.703	0.158	2.59	87	1.8	-	72	-0.052	4.74	0.614
76	11.865	0.162	2.59	87	1.6	-	72	-0.051	4.74	0.627
77	12.025	0.160	2.59	88	1.6	-	72	-0.051	4.72	0.623
78	12.184	0.159	2.59	88	2.0	-	72	-0.051	4.82	0.622
79	12.347	0.163	2.59	88	1.7	-	72	-0.052	4.86	0.624
80	12.505	0.158	2.59	88	2.0	100	72	-0.053	4.96	0.580
81	12.666	0.161	2.59	88	1.5	-	72	-0.051	4.93	0.586
82	12.828	0.162	2.60	88	1.6	-	72	-0.053	4.66	0.591
83	12.985	0.157	2.59	89	1.8	-	72	-0.051	4.66	0.599
84	13.149	0.164	2.59	89	2.1	-	71	-0.051	4.56	0.627
85	13.306	0.157	2.58	89	2.0	-	72	-0.050	4.54	0.636
86	13.468	0.162	2.59	89	1.6	-	72	-0.050	4.57	0.625
87	13.630	0.162	2.59	89	1.7	-	72	-0.050	4.59	0.630
88	13.788	0.158	2.59	89	2.1	101	72	-0.051	4.61	0.624
Avg/Tot	13.788	0.157	2.52	79.1	1.8	100	72.7	-0.069	7.13	0.509

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
0	0.000		-0.03	72	0.1		68
1	0.130	0.130	1.09	71	1.7	-	68
2	0.285	0.155	1.09	71	1.8	-	68
3	0.439	0.154	1.09	71	1.7	-	68
4	0.592	0.153	1.09	71	1.8	-	68
5	0.746	0.154	1.09	71	1.7	-	69
6	0.902	0.156	1.10	72	1.9	-	69
7	1.058	0.156	1.11	72	1.8	-	69
8	1.213	0.155	1.11	72	1.8	-	69
9	1.369	0.156	1.12	72	1.7	-	69
10	1.527	0.158	1.13	72	1.7	96	69
11	1.684	0.157	1.13	72	1.7	-	70
12	1.841	0.157	1.13	73	1.7	-	70
13	2.000	0.159	1.14	73	1.8	-	70
14	2.157	0.157	1.14	73	1.9	-	70
15	2.316	0.159	1.14	73	1.7	-	70
16	2.475	0.159	1.15	74	1.8	-	70
17	2.632	0.157	1.14	74	1.7	-	70
18	2.792	0.160	1.15	74	1.8	-	71
19	2.951	0.159	1.15	74	1.7	-	71
20	3.110	0.159	1.15	75	1.7	99	71
21	3.270	0.160	1.15	75	1.7	-	71
22	3.428	0.158	1.15	75	1.9	-	71
23	3.589	0.161	1.16	76	1.9	-	71
24	3.748	0.159	1.15	76	1.7	-	71
25	3.908	0.160	1.16	76	1.7	-	71
26	4.069	0.161	1.16	77	1.7	-	71
27	4.229	0.160	1.16	77	1.9	-	71
28	4.390	0.161	1.17	78	1.8	-	72
29	4.550	0.160	1.16	78	1.9	-	72
30	4.712	0.162	1.17	78	1.7	100	72
31	4.872	0.160	1.17	78	1.7	-	72

BOX C TEST DATA - ASTM E2780 / ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

	Particulate Sampling Data						
Elapsed Time (min)	Gas Meter (ft^3)	Sample Rate (cfm)	Orifice dH (in H_2O)	Meter Temp (°F)	Meter Vacuum (in Hg)	Pro. Rate (%)	Filter (°F)
32	5.035	0.163	1.18	79	1.9	-	72
33	5.196	0.161	1.17	79	1.7	-	72
34	5.359	0.163	1.18	79	1.8	-	72
35	5.521	0.162	1.18	79	1.7	-	72
36	5.684	0.163	1.19	80	1.9	-	72
37	5.846	0.162	1.19	80	1.7	-	72
38	6.009	0.163	1.19	80	1.9	-	72
39	6.173	0.164	1.19	81	1.9	-	72
40	6.336	0.163	1.19	81	1.7	101	72
41	6.501	0.165	1.20	81	1.7	-	72
42	6.665	0.164	1.20	81	1.8	-	72
43	6.828	0.163	1.20	81	1.9	-	72
44	6.994	0.166	1.21	82	1.9	-	72
45	7.157	0.163	1.20	82	1.7	-	72
46	7.323	0.166	1.21	82	1.8	-	72
47	7.488	0.165	1.21	82	1.8	-	72
48	7.652	0.164	1.20	83	1.9	-	72
49	7.819	0.167	1.21	83	1.8	-	72
50	7.984	0.165	1.21	83	1.9	102	72
51	8.149	0.165	1.21	83	1.9	-	72
52	8.316	0.167	1.22	83	1.9	-	72
53	8.481	0.165	1.21	84	1.9	-	71
54	8.646	0.165	1.21	84	1.9	-	71
55	8.814	0.168	1.22	84	1.7	-	71
56	8.980	0.166	1.22	84	1.9	-	71
57	9.145	0.165	1.21	84	1.9	-	71
58	9.312	0.167	1.23	85	1.7	-	71
59	9.479	0.167	1.22	85	1.8	-	71
60	9.645	0.166	1.22	85	1.7	103	71
Avg/Tot	9.645	0.161	1.15	77.8	1.8	100	70.8

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

Stove ΔT: 30

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
0	309	311	404	578	166	353.5	64.0
1	310	319	464	568	173	366.8	64.4
2	310	311	401	563	177	352.4	64.8
3	309	316	321	569	179	338.8	64.6
4	309	314	331	581	173	341.7	64.7
5	309	315	351	596	168	347.6	64.6
6	309	322	368	611	166	355.2	64.3
7	310	332	384	628	164	363.5	64.5
8	311	335	395	644	166	370.1	64.4
9	312	332	405	659	165	374.5	64.2
10	313	332	413	674	166	379.6	64.2
11	314	341	423	688	165	385.8	64.2
12	315	359	432	701	165	394.2	64.1
13	316	353	439	713	164	396.8	64.2
14	318	360	446	723	164	402.2	64.3
15	319	386	455	733	162	411.1	64.8
16	321	381	461	741	162	413.1	64.8
17	322	385	467	750	160	416.7	65.0
18	324	394	471	756	159	420.7	65.1
19	325	396	474	762	158	423.1	65.2
20	327	393	475	767	157	423.8	65.1
21	328	391	477	772	157	424.9	65.1
22	330	391	477	775	157	426.0	64.7
23	331	390	477	778	155	426.1	64.8
24	332	388	477	780	157	426.8	64.5
25	333	388	477	781	156	427.1	64.7
26	335	388	477	782	155	427.3	64.7
27	336	392	476	783	155	428.5	64.5
28	337	384	475	784	155	426.9	64.7
29	338	363	474	785	156	423.1	64.8
30	339	365	478	787	154	424.5	65.3
31	340	407	479	789	155	433.8	65.2
32	341	434	483	791	153	440.3	65.3
33	342	543	488	794	152	463.5	65.3
34	343	460	491	795	151	447.9	65.5
35	343	423	490	795	152	440.6	65.5
36	344	390	489	792	153	433.6	65.2
37	346	377	490	786	152	430.1	65.4
38	347	343	474	777	152	418.5	65.2
39	348	364	457	764	152	417.0	65.5
40	348	344	454	749	153	409.6	65.3
41	349	349	444	733	153	405.6	65.4
42	349	346	426	715	153	397.9	65.2
43	349	356	408	698	154	392.9	65.0
44	349	350	409	681	155	388.7	65.2
45	348	359	439	666	154	393.1	65.4
46	347	356	434	650	155	388.5	65.3
47	347	370	430	636	155	387.6	65.6

WOODSTOVE SURFACE TEMPERATURE DATA

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

Stove ΔT: 30

	Temperature Data (°F)						
Elapsed Time (min)	FB Left	FB Right	FB Back	FB Top	FB Bottom	Stove Surface Average	Catalyst Exit
48	346	366	428	623	154	383.4	65.6
49	345	361	428	611	154	379.6	65.7
50	344	354	436	600	153	377.2	65.7
51	342	343	451	589	155	375.9	65.6
52	341	340	462	579	154	375.3	65.5
53	340	331	484	570	155	376.0	65.2
54	339	328	486	561	155	373.8	65.2
55	337	326	485	554	155	371.3	65.2
56	336	325	483	547	155	369.0	65.0
57	334	324	481	540	156	366.9	65.1
58	333	316	480	533	155	363.3	65.2
59	331	309	478	527	154	360.0	65.3
60	330	308	476	522	154	357.9	65.3
61	328	303	474	516	156	355.3	65.0
62	327	298	472	512	156	353.0	64.9
63	325	298	470	507	157	351.3	64.9
64	324	297	469	503	157	349.7	64.9
65	322	296	467	499	158	348.3	65.1
66	321	297	466	495	157	346.9	65.2
67	319	295	464	491	157	345.2	65.2
68	318	295	463	488	156	343.7	65.4
69	316	293	461	485	155	342.0	65.1
70	315	292	460	482	157	341.0	65.0
71	314	292	458	479	156	339.8	65.0
72	312	292	457	476	156	338.5	64.9
73	311	291	455	474	156	337.3	65.0
74	310	290	454	472	157	336.3	64.8
75	308	290	452	469	157	335.2	64.9
76	307	289	451	467	157	334.1	64.9
77	306	289	449	465	157	333.2	65.0
78	305	289	448	463	157	332.2	65.1
79	303	289	446	461	157	331.3	65.3
80	302	289	445	459	156	330.2	65.4
81	301	289	444	457	156	329.1	65.5
82	300	289	443	455	155	328.3	65.6
83	299	287	441	454	155	327.3	65.6
84	298	289	440	452	155	326.8	65.6
85	297	287	439	451	155	325.7	65.7
86	296	287	438	449	154	324.8	65.7
87	295	286	436	448	154	323.9	65.6
88	294	285	435	446	155	323.0	65.3
Average	324.7	339.2	450.3	618.5	157.5	378.0	65.0

LAB SAMPLE DATA - ASTM E2515

Client: Enerco
Model: H080
Run #: 5

Job #: 24-367
Tracking #: 218
Technician: AK
Date: 2/5/2025

		Sample ID	Tare, mg	Final, mg	Catch, mg
Filters	**A**	G01225	244.2	245.1	0.9
	B	G01226	242.9	244.0	1.1
	C - 1st Hour	G01227	244.0	244.5	0.5
	Amb	G01228	244.2	244.3	0.1
Probes	**A**	4A	116023.9	116024.1	0.2
	B	4B	116182.9	116183.0	0.1
	C - 1st Hour	4C	116998.5	116998.5	0.0
O-rings	**A**	4A	3371.5	3371.6	0.1
	B	4B	3576.1	3576.2	0.1
	C - 1st Hour	4C	3367.3	3367.4	0.1

Placed in Dessicator on:	2/5/2025

		Balance Audit (mg):	200.0		200.0					
			Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time	Weight (mg)	Date/Time
Filters	**A**		245.0	2/7 8:30	245.1	2/10 11:30				
	B		244.0	2/7 8:30	244.0	2/10 11:30				
	C - 1st Hour		244.4	2/7 8:30	244.5	2/10 11:30				
	Amb		244.3	2/7 8:30	244.3	2/10 11:30				
Probes	**A**		116024.0	2/7 8:30	116024.1	2/10 11:30				
	B		116183.0	2/7 8:30	116183.0	2/10 11:30				
	C - 1st Hour		116998.5	2/7 8:30	116998.5	2/10 11:30				
O-Rings	**A**		3371.7	2/7 8:30	3371.6	2/10 11:30				
	B		3576.2	2/7 8:30	3576.2	2/10 11:30				
	C - 1st Hour		3367.4	2/7 8:30	3367.4	2/10 11:30				

Train A Aggregate, mg:	**1.2**
Train B Aggregate, mg:	**1.3**
Train C Aggregate, mg:	**0.6**
Ambient, mg:	**0.1**

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: 5 Test Date: **2/5/2025**

Wood Heater Run Notes

Test Control Settings

Primary Air Setting(s): Open 0.30”
Targeted Burn Category: II

Preburn Notes

Time	Notes
37:00 81:00	+2.1 lb PB End

Test Notes

Test Burn Start Time: 12:16 Test Fuel Loaded by: 25 seconds
Door Closed: 30 seconds Air Control Set at: 210 seconds
Other Loading Notes: Fan off – fan confirmation

Time	Notes
	-None-

Test Burn End Time: 13:44

Flue Gas Concentration Measurement

Calibration Gas Values: Span Gas CO_2 (%): 17.32 CO (%): 4.350
Mid Gas CO_2 (%): 10.00 CO (%): 2.500

Calibration Results:

	Pre Test			Post Test		
	Zero	Span	Mid	Zero	Span	Mid
Time	10:39	10:40	10:41	14:05	14:06	14:07
CO_2	0.00	17.30	10.18	0.00	17.26	10.23
CO	0.000	4.350	2.531	-0.017	4.309	2.494

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

Technician Signature:  Date: 2/24/2025

ASTM E2780 Wood Heater Run Sheets

Client: **Enerco** Job Number: **F24-367** Tracking #: **218**
Model: **H080** Run Number: 5 Test Date: **2/5/2025**

Test Fuel Front/Side View

Test Fuel Iso View

Test Fuel Loaded in Stove

Air Setting

Technician Signature: Date: 2/24/2025

ASTM E2515 - Glass Fiber Filters

Date:	12/23	1/2	-	-			
Time:	12:00	08:30	—	—			
	Weight 1	**Weight 2**	**Weigth 3**	**Weight 4**	**Initial**	**Project**	**Run**
G01189	229.1	229.3	-	-	A	22-741 Alber	#7
G01190	227.0	227.2	-	-	A	↓	↓
G01191	228.2	228.4	-	-	A		
G01192	228.7	228.8	-	-	A		
G01193	229.4	229.5	-	-	A	24-350	#1
G01194	228.0	228.0	-	-	A		
G01195	228.4	228.3	-	-	A		
G01196	227.8	227.8	-	-	A		
G01197	228.7	228.7	-	-	A		#2
G01198	227.7	227.7	-	-	A		
G01199	228.1	228.0	-	-	A		
G01200	228.4	228.6	-	-	A		
G01201	228.3	228.2	-	-	A		#3
G01202	228.1	228.0	-	-	A		
G01203	228.5	228.4	-	-	A		
G01204	229.2	229.2	-	-	A	↓	

Date:	1/6	1/9	-	-			
Time:	13:00	14:00	-				
	Weight 1	**Weight 2**	**Weigth 3**	**Weight 4**	**Initial**	**Project**	**Run**
G01205	227.9	227.7	-	-	A	24-350	#4
G01206	227.8	227.6	-	-	A		
G01207	229.6	229.5	-	-	A		
G01208	227.2	227.2	-	-	A	↓	↓
G01209	243.6	243.8	-	-	A	24-367	#1
G01210	245.2	245.1	-	-	A		
G01211	244.5	244.3	-	-	A		
G01212	244.9	244.7	-	-	A	↓	↓
G01213	244.7	244.9	-	-	A		#2
G01214	244.5	244.6	-	-	A		
G01215	241.9	242.1	-	-	A		
G01216	243.6	243.7	-	-	A		
G01217	243.4	243.3	-	-	A		#3
G01218	244.0	244.0	-	-	A		
G01219	243.8	243.9	-	-	A		
G01220	244.5	244.6	-	-	A	↓	↓

ASTM E2515 - Glass Fiber Filters

Paired Filter Weights

Date:	1/27/25	1/30/25	-	"			
Time:	0830	0915	"	"			
	Weight 1	**Weight 2**	**Weigth 3**	**Weight 4**	**Initial**	**Project**	**Run**
G01221	244.9	244.9	"	"	A	24-367	#4
G01222	244.2	244.2	"	"	A		
G01223	241.4	241.5	"	"	A		
G01224	245.4	245.6	"	"	A		
G01225	244.3	244.2	"	"	A		#5
G01226	242.9	242.9	"	"	A		
G01227	244.2	244.0	"	"	A		
G01228	244.1	244.2	"	"	A		
G01229	243.9	244.1	"	"	A		
G01230	243.7	243.7	"	"	A		
G01231	243.6	243.7	"	"	A		
G01232	242.6	242.7	"	"	A		
G01233	243.7	243.8	"	"	A		
G01234	244.1	244.3	"	"	A		
G01235	244.2	244.2	"	"	A		
G01236	243.3	243.5	"	"	A		

Date:							
Time:							
	Weight 1	**Weight 2**	**Weigth 3**	**Weight 4**	**Initial**	**Project**	**Run**
G01237							
G01238							
G01239							
G01240							
G01241							
G01242							
G01243							
G01244							
G01245							
G01246							
G01247							
G01248							
G01249							
G01250							
G01251							
G01252							

ASTM E2515 - Probe Samples 11-20

Date:	12/16 ~~14:30~~	12/17 ~~10:00~~		
Time:	14:30	10:00		

	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
11A	116868.4	116868.2	-	-	A	22-741 Alder	#1
11B	117341.9	117341.9	-	-	A		
11C	116187.6	116187.4	-	-	A		#2
12A	116708.5	116708.5	-	-	A		
12B	117774.4	117774.2	-	-	A		#3
12C	117173.6	117173.4	-	-	A		
13A	117316.2	117316.2	-	-	A		
13B	116942.2	116942.2	-	-	A		#4
13C	115650.9	115650.9	-	-	A		#5
14A	116634.3	116634.2	-	-	A		
14B	116620.7	116620.6	-	-	A		#6
14C	116531.2	116531.2	-	-	A		
15A	117242.2	117242.0	-	-	A		
15B	116755.0	116755.0	-	-	A		#7
15C	116848.3	116848.2	-	-	A		

Date:	1/3 ~~12:15~~	1/6	1/8	-	
Time:	12:15	19:00	13:20	-	

	Weight 1	Weight 2	Weigth 3	Weight 4	Initial	Project	Run
16A	116380.3	116380.1	-	-	A	24-350	#1
16B	115862.9	115862.7	-	-	A		
16C	114147.9	114148.0	-	-	A		
17A	116810.9	116810.8	-	-	A	24-350	#2
17B	117140.9	117140.7	-	-	A		
17C	113141.4	113141.2	-	-	A		
18A	117500.3	117500.1	-	-	A	24-350	#3
18B	117332.3	117332.1	-	-	A		
18C	114335.0	114334.9	-	-	A		
19A	117026.4	117026.2	-	-	A	24-350	#4
19B	117013.3	117013.1	-	-	A		
19C	114231.2	114231.0	-	-	A		
20A	115627.9	115627.4	115627.4	-	A	24-367	#1
20B	115987.3	115966.9	115987.1	-	A		
20C	113775.8	113775.6	-	-	A		

ASTM E2515 - Probe Samples 1-10

Date:	1/20/25	1/27/25	1/30/25				
Time:	09:30	0820	12:30				
	Weight 1	**Weight 2**	**Weigth 3**	**Weight 4**	**Initial**	**Project**	**Run**
1A	115627.4	115627.6	-	-			
1B	115902.5	115902.7	-	-		24-367	#1
1C	116433.3	116433.5	-	-			
2A	116058.0	116058.5	116058.4	-			
2B	116173.8	116174.5	116174.3	-		24-367	#3
2C	116429.0	116429.2	-	-			
3A	115881.1	115881.3	-	-			
3B	116121.0	116121.2	-	-		24-367	#4
3C	116618.4	116618.6	-	-			
4A	116023.7	116024.0	116023.9	-			
4B	116182.7	116183.0	116182.9	-		24-367	#5
4C	116998.2	116998.6	116998.5	-			
5A	116757.7	116757.8	-	-			
5B	116875.9	116875.9	-	-			
5C	115855.6	115855.9	115856.0	-			

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

ASTM E2515 - O-Ring Samples 11-20

Date:	12/16 ~~14:30~~	12/17 ~~12:00~~					
Time:	14:30	10:00					
	Weight 1	**Weight 2**	**Weigth 3**	**Weight 4**	**Initial**	**Project**	**Run**
11A	3423.80	3423.2	-	-	A	22-791 Alder	#1
11B	4233.96	4233.8	-	-	A		
11C	3588.20	3588.1	-	-	A		#2
12A	3585.0	3585.2	-	-	A		
12B	3615.0	3615.2	-	-	A		
12C	3550.4	3550.6	-	-	A		#3
13A	3595.8	3595.8	-	-	A		
13B	7641.4	3641.4	-	-	A		#4
13C	4409.3	4409.5	-	-	A		#5
14A	3342.7	3342.8	-	-	A		
14B	3367.3	3367.4	-	-	A		
14C	3444.01	3444.3	-	-	A		#6
15A	3569.7	3569.8	-	-	A		
15B	3570.7	3570.7	-	-	A		#7
15C	3397.2	3397.3	-	-	A		

Date:	1/3 ~~12:15~~	1/6					
Time:	12:15	19:00					
	Weight 1	**Weight 2**	**Weigth 3**	**Weight 4**	**Initial**	**Project**	**Run**
16A	3572.3	3572.2	-	-	A		
16B	3637.7	3637.5	-	-	A	24-350	#1
16C	3601.3	3601.1	-	-	A		
17A	3612.6	3612.4	-	-	A		
17B	3569.0	3568.9	-	-	A	24-350	#2
17C	3597.4	3597.0	-	-	A		
18A	3602.6	3602.4	-	-	A		
18B	3545.6	3545.4	-	-	A	24-350	#3
18C	3528.0	3527.8	-	-	A		
19A	3585.7	3585.5	-	-	A		
19B	3632.2	3632.4	-	-	A	24-350	#4
19C	3614.7	3614.5	-	-	A		
20A	3558.5	3558.6	-	-	A		
20B	3614.1	3614.1	-	-	A	24-367	#1
20C	3610.6	3610.4	-	-	A		

ASTM E2515 - O-Ring Samples 1-10

Paired Weights

Date:	1/20/25	1/27/25	1/30/25	2/3/24			
Time:	0930	0830	1230	0900			
	Weight 1	**Weight 2**	**Weigth 3**	**Weight 4**	**Initial**	**Project**	**Run**
1A	3565.8	3565.2	3565.0	-	A	24-367	#2
1B	3554.2	3553.7	3553.5	-	A		
1C	4164.8	4163.7	4163.5	-	A		
2A	3550.9	3550.3	3550.1	-	A	24-367	#3
2B	3570.2	3569.4	3569.0	3569.1	A		
2C	3387.5	3386.2	3385.9	3386.0	A		
3A	3577.4	3576.4	3576.2	-	A	24-367	#4
3B	3565.6	3564.7	3564.6	-	A		
3C	3614.7	3618.7	3618.6	-	A		
4A	3373.2	3371.8	3371.4	3371.5	A	24-367	#5
4B	3577.0	3576.3	3575.9	3576.1	A		
4C	3368.9.0	3367.8	3367.1	3367.3	A		
5A	3533.6	3532.7	3532.5	-	A		
5B	3528.9	3528.1	3528.0	-			
5C	3372.2	3370.8	3370.7	-			

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

Pre-Conditioning Data

Client: Enerco
Model: WS80
Date(s): 12/5/2024 - 1/24/25
Job #: 24-367
Tracking #: 218
Technician: AK

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	502	N/A	+1.65 lb, doug fir 19-25%DB, air med
1	316	N/A	
2	208	N/A	
3	462	N/A	+1.95 lb, doug fir 19-25%DB, air med
4	447	N/A	
5	239	N/A	
6	244	N/A	+4.9 lb, doug fir 19-25%DB, air med
7	471	N/A	
8	274	N/A	
9	462	N/A	+1.65 lb, doug fir 19-25%DB, air med
10	262	N/A	
11	179	N/A	
12	559	N/A	+2.7 lb, doug fir 19-25%DB, air med
13	498	N/A	
14	473	N/A	+5.2 lb, doug fir 19-25%DB, air med
15	333	N/A	
16	279	N/A	
17	285	N/A	+2.65 lb, doug fir 19-25%DB, air med
18	306	N/A	
19	311	N/A	+5.4 lb, doug fir 19-25%DB, air med
20	411	N/A	
21	271	N/A	
22	185	N/A	
23	436	N/A	+6.25 lb, doug fir 19-25%DB, air med
24	458	N/A	
25	255	N/A	
26	214	N/A	
27	278	N/A	+4.2 lb, doug fir 19-25%DB, air med
28	335	N/A	
29	615	N/A	
30	289	N/A	
31	403	N/A	
32	289	N/A	+0.5 lb, doug fir 19-25%DB, air med
33	453	N/A	+1.35 lb, doug fir 19-25%DB, air med
34	208	N/A	
35	166	N/A	
36	352	N/A	+4.95 lb, doug fir 19-25%DB, air med
37	402	N/A	
38	383	N/A	+0.2 lb, doug fir 19-25%DB, air med
39	259	N/A	
40	519	N/A	+1.8 lb, doug fir 19-25%DB, air med
41	269	N/A	
42	172	N/A	
43	312	N/A	+0.45 lb, doug fir 19-25%DB, air med
44	206	N/A	
45	457	N/A	+1.95 lb, doug fir 19-25%DB, air med
46	442	N/A	
47	236	N/A	
48	241	N/A	+4.9 lb, doug fir 19-25%DB, air med
49	466	N/A	
50	271	N/A	

Signature/Date: 2/24/2025

Sample Calculations – ASTM E2780 & E2515

Client: Enerco
Model: H080
Run: 5

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_{Sdb} – Weight of test fuel spacers, dry basis, kg

M_{Cdb}– Weight of test fuel crib, excluding nails and spacers, dry basis, kg

D_{Cdb} - Density of fuel crib, excluding spacers and nails, dry basis, lbs/ft^3

M_{FTAdb} - Total weight of fuel crib excluding nails, dry basis, kg

BR – Dry burn rate, 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 – Particulate emissions for test run, g/hr

PM_F – Particulate emission factor for test run, g/dry kg of fuel burned

M_{Sdb} – Weight of test fuel spacers, dry basis, kg
ASTM E2780 equation (1)

$$M_{Sdb} = (M_{Swb})(100/(100 + FM_S))$$

Where,

FM_S = average fuel moisture of test fuel spacers, % dry basis

M_{Swb} = weight of test fuel spacers, wet basis, kg

Sample Calculation:

FM_S = 12.9 %

M_{Swb} = 1.2 lbs

0.4536 = Conversion factor from lbs to kg

M_{Sdb} = [(1.2 x 0.4536) (100/(100 + 12.9)

M_{Sdb} = **0.49** kg

M_{Cdb}– Weight of test fuel crib, excluding nails and spacers, dry basis, kg
ASTM E2780 equation (2)

$$M_{Cdb} = \Sigma[(M_{CPnwb})(100/(100 + FM_{CPn}))]$$

Where,

M_{CPnwb} = weight of each test fuel piece n in fuel crib, excluding nails and spacers, wet basis, kg

FM_{CPn} = Average fuel moisture of test fuel n in fuel crib, % dry basis

Sample Calculation (test fuel piece 1):

MC_{Pnwb} = 1.04

FM_{CPn} = 24.1

= 1.0 (100/(100+ 24.1)

= 0.8 lbs

Total dry crib weight, excluding spacers = 2.43 lbs

M_{Cdb} = **1.10** kg

D_{Cdb} - Density of fuel crib, excluding spacers and nails, dry basis, lbs/ft^3
ASTM E2780 equation (3)

$$D_{Cdb} = M_{Cdb}/V_C$$

Where,

V_C = Volume of fuel crib, ft^3

Sample calculation:

V_C = 147.6 in^3
1728 = conversion from in^3 to ft^3

D_{Cdb} = 2.43 / 147.6 * 1728

= **28.45** lbs/ft^3

M_{FTAdb} - Total weight of fuel crib excluding nails, dry basis, kg
ASTM E2780 equation (4)

$$M_{FTAdb} = M_{Sdb} + M_{Cdb}$$

Sample calculation:

$$M_{FTAdb} = 0.49 + 1.10$$

$$= \mathbf{1.59} \text{ kg}$$

BR – dry burn rate, kg/hr
ASTM E2780 equation (5)

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

Where,

θ = Total length of test run, min

Sample Calculation:

M_{Bdb} = 1.59 kg
θ = 88 min

$$BR = \frac{60 \times 1.59}{88}$$

BR = **1.08** kg/hr

V_s – Average gas velocity in the dilution tunnel, ft/sec
ASTM E2515 equations (9)

$$v_s = F_P \times k_p \times C_p \times (\sqrt{\Delta P})_{avg} \times \sqrt{\frac{T_{s(avg)}}{P_s \times M_s}}$$

Where:

F_p	=	Adjustment factor for pitot tube center point reading = $\frac{V_{strav}}{V_{scent}}$, 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 H_2O
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. H_20; (in Hg = in H_20/13.6)
M_s	=	
		**The dilution tunnel wet molecular weight; M_s = 28.78 assuming a dry weight of 29 lb/lb-mole

Sample calculation:

$$Fp = \frac{20.49}{21.56} = 0.950$$

$$V_s = 0.950 \times 85.49 \times 0.99 \times 0.326 \times \left(\frac{85.5 + 460}{\left(29.76 + \frac{-0.18}{13.6}\right) \times 28.78} \right)^{1/2}$$

V_s = **20.94** 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 Ms 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)

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

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
$T_{s(avg)}$	=	Absolute average gas temperature in the dilution tunnel, °R; (°R = °F + 460)
P_{std}	=	Standard absolute pressure, 29.92 in Hg

Sample calculation:

$$Q_{sd} = 3600 \times (1 - 0.02) \times 20.94 \times 0.1963 \times \frac{528}{85.5 + 460} \times \frac{29.76 + \frac{-0.18}{13.6}}{29.92}$$

Q_{sd} = **13955.0** dscf/hr

$V_{m(std)}$ – Volume of Gas Sampled Corrected to Dry Standard Conditions, dscf
ASTM E2515 equation (6)

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

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_2O
T_m	=	Absolute average dry gas meter temperature, °R

Sample Calculation:

Using equation for Train A:

$$V_{m(std)} = 17.64 \times 13.521 \times 1.019 \times \frac{\left(29.76 + \frac{2.37}{13.6}\right)}{(78.0 + 460)}$$

$V_{m(std)}$ = **13.520** dscf

Using equation for Train B:

$$V_{m(std)} = 17.64 \times 13.788 \times 1.005 \times \frac{\left(29.76 + \frac{2.52}{13.6}\right)}{(79.1 + 460)}$$

$V_{m(std)}$ = **13.576** dscf

Using equation for ambient train:

$$V_{m(std)} = 17.64 \times 20.49 \times 1.013 \times \frac{\left(29.755 + \frac{0.00}{13.6}\right)}{(64.8 + 460)}$$

$V_{m(std)}$ = **20.758** 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 + 0.9 + 0.1

m_n = **1.2** mg

Using equation for Train B:

m_n = 0.1 + 1.1 + 0.1

m_n = **1.3** mg

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

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

Where:

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

Sample calculation:

For Train A:

$$C_s = 0.001 \times \frac{1.2}{13.52}$$

C_s = **0.00009** g/dscf

For Train B

$$C_s = 0.001 \times \frac{1.3}{13.58}$$

C_s = **0.00010** g/dscf

For Ambient Train

$$C_r = 0.001 \times \frac{0.1}{20.76}$$

C_r = **0.000005** 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 = (0.000089 - 0.000005) x 13955.0 x 88 /60

E_T = **1.72** g

For Train B

E_T = (0.000096 - 0.000005) x 13955.0 x 88 /60

E_T = **1.86** g

Average

E = **1.79** g

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, ^oR

T_m = Absolute average dry gas meter temperature, ^oR

T_{si} = Absolute average gas temperature in the dilution tunnel during the "ith" time interval, ^oR

T_s = Absolute average gas temperature in the dilution tunnel, ^oR

Sample calculation (for the first 10-min interval of Train 1):

$$PR = \left(\frac{88 \times 1.369 \times 20.94 \times (90.8 + 460) \times (78.0 + 460)}{10 \times 13.521 \times 21.21 \times (85.5 + 460) \times (69.1 + 460)} \right) \times 100$$

PR = **90** %

PM_R – Particulate emissions for test run, g/hr
ASTM E2780 equation (6)

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

Where,

E_T = Total particulate emissions, grams

θ = Total length of full integrated test run, min

Sample Calculation:

E_T (Dual train average) = 1.79 g

θ = 88 min

$PM_R = 60 \times (1.79 / 88)$

PM_R = **1.22** g/hr

PM_F – Particulate emission factor for test run, g/dry kg of fuel burned
ASTM E2780 equation (7)

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

Sample Calculation:

E_T (Dual train average) = 1.79 g

M_{Bdb} = 1.59 kg

PM_F = 1.79 / 1.59

PM_F = **1.13** 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: H080
Date: 02/05/25
Run: 5
Control #: 24-367
Test Duration: 88 min

	HHV	LHV
Eff	71.16%	76.91%
Comb Eff	94.96%	94.96%
HT Eff	74.93%	80.99%
Output	14,899	kJ/h
Burn Rate	1.06	kg/h
Grams CO	113	g
Input	20,939	kJ/h
MC wet	17.87	

Note: In the "Input data", "Calc. % O_2", "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.

Ultimate CO_2
$CO_{2\text{-ult}}$ 19.64
F_0
1.061

Overall Heating Efficiency: 71.16%
Combustion Efficiency: 94.96%
Heat Transfer Efficiency: 74.93%

Heat Output: 14,133 Btu/h 14,899 kJ/h
Heat Input: 19,862 Btu/h 20,939 kJ/h

Burn Duration: 1.47 h

Burn Rate: 2.33 lb/h 1.057 kg/h

Stack Temp: 328.6 Deg. F 164.8 Deg. C

Air Fue
Dry Molecular W
Dry Moles Exhaus
Air Fuel Ratio

Averages	0.51	7.13	1.89	20.44	13.05	164.54	18.20	94.7%	75.5%	71.5%	17.26	0.51
INPUT DATA			Oxygen Calculation			Input Data		Combust Eff	Heat Transfer	Net Eff	Air Fuel	Wet Wt Now
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)	%	%	%	Ratio	Wt
0	1.89	0.18	5.48	247.3%	20.57	15.00	142.8	18.2	98.1%	74.7%	73.3%	20.9	1.89
1	1.86	0.18	3.27	469.9%	20.71	17.36	155.8	18.2	97.0%	63.2%	61.3%	34.2	1.86
2	1.80	0.41	6.87	169.9%	20.46	13.39	178.2	18.1	95.7%	73.9%	70.7%	16.1	1.80
3	1.73	0.84	10.44	74.2%	20.20	9.34	207.6	18.0	94.0%	76.4%	71.9%	10.4	1.73
4	1.68	0.84	10.70	70.2%	20.18	9.06	219.1	18.1	94.1%	75.9%	71.4%	10.1	1.68
5	1.62	0.51	9.73	91.9%	20.26	10.28	215.7	18.4	96.1%	75.2%	72.3%	11.5	1.62
6	1.57	0.61	9.98	85.6%	20.24	9.96	214.0	18.1	95.4%	75.6%	72.1%	11.1	1.57
7	1.52	0.54	10.17	83.3%	20.23	9.79	215.4	17.9	96.0%	75.7%	72.6%	11.0	1.52
8	1.47	0.54	10.06	85.5%	20.24	9.92	214.3	18.1	96.0%	75.7%	72.6%	11.1	1.47
9	1.42	0.49	10.09	85.7%	20.24	9.91	214.9	18.0	96.4%	75.7%	72.9%	11.1	1.42
10	1.37	0.54	10.26	81.9%	20.23	9.70	216.2	18.1	96.0%	75.8%	72.7%	10.9	1.37
11	1.32	0.70	10.24	79.6%	20.22	9.63	217.2	18.2	94.9%	75.6%	71.7%	10.7	1.32
12	1.27	0.58	10.31	80.4%	20.22	9.62	219.7	18.2	95.7%	75.6%	72.3%	10.8	1.27
13	1.23	0.63	10.35	79.0%	20.22	9.55	221.6	18.1	95.4%	75.5%	72.0%	10.7	1.23
14	1.18	0.66	10.32	79.0%	20.22	9.57	222.5	18.2	95.2%	75.3%	71.7%	10.7	1.18
15	1.14	0.68	10.44	76.5%	20.21	9.42	222.2	18.0	95.1%	75.5%	71.8%	10.6	1.14
16	1.09	0.76	10.53	74.1%	20.19	9.29	223.9	18.1	94.6%	75.4%	71.3%	10.4	1.09
17	1.03	0.81	10.44	74.5%	20.20	9.35	224.6	18.2	94.1%	75.3%	70.9%	10.4	1.03
18	0.99	0.81	10.47	74.2%	20.20	9.33	226.2	18.2	94.2%	75.2%	70.9%	10.4	0.99
19	0.94	0.82	10.38	75.4%	20.20	9.41	227.6	18.2	94.1%	75.0%	70.6%	10.5	0.94
20	0.89	0.78	10.49	74.2%	20.20	9.31	227.8	18.3	94.4%	75.1%	70.9%	10.4	0.89
21	0.85	0.77	10.43	75.5%	20.20	9.39	229.3	18.2	94.5%	75.0%	70.8%	10.5	0.85
22	0.81	0.80	10.35	76.2%	20.20	9.46	229.1	18.3	94.2%	74.9%	70.5%	10.5	0.81
23	0.77	0.76	10.25	78.4%	20.21	9.59	230.5	18.2	94.4%	74.7%	70.5%	10.6	0.77
24	0.73	0.79	10.19	79.0%	20.22	9.63	230.3	18.2	94.2%	74.6%	70.3%	10.7	0.73
25	0.69	0.78	10.29	77.4%	20.21	9.53	230.0	18.3	94.3%	74.8%	70.5%	10.6	0.69
26	0.65	0.77	10.28	77.8%	20.21	9.55	231.6	18.2	94.4%	74.6%	70.5%	10.6	0.65
27	0.61	0.75	10.45	75.5%	20.20	9.38	233.0	18.3	94.6%	74.7%	70.7%	10.5	0.61
28	0.58	0.74	10.45	75.7%	20.20	9.39	232.8	18.4	94.7%	74.8%	70.8%	10.5	0.58
29	0.54	0.73	10.39	76.6%	20.21	9.45	231.9	18.5	94.7%	74.8%	70.8%	10.5	0.54
30	0.50	0.70	10.51	75.3%	20.20	9.34	232.9	18.4	95.0%	74.8%	71.1%	10.5	0.50
31	0.47	0.62	10.68	73.8%	20.19	9.20	234.1	18.3	95.6%	75.0%	71.7%	10.4	0.47
32	0.43	0.62	10.69	73.6%	20.19	9.19	232.7	18.3	95.6%	75.1%	71.8%	10.4	0.43
33	0.40	0.64	10.67	73.7%	20.19	9.21	229.7	18.4	95.5%	75.3%	71.9%	10.4	0.40
34	0.36	0.57	10.23	81.9%	20.23	9.71	226.3	18.4	95.8%	75.0%	71.9%	10.9	0.36
35	0.34	0.36	10.02	89.4%	20.26	10.06	218.8	18.5	97.4%	75.4%	73.4%	11.4	0.34
36	0.31	0.22	9.28	106.7%	20.31	10.92	206.8	18.7	98.3%	75.4%	74.2%	12.5	0.31
37	0.29	0.22	8.40	128.0%	20.37	11.86	196.9	18.7	98.3%	75.0%	73.7%	13.7	0.29

el Ratio (A/F)	
Weight (M_d)	29.66
st Gas (N_t):	556.25
o (A/F)	15.99

%HC 0.88

Combustion Efficiency: 94.96%
Total Input (kJ): 30,710 29,127 (Btu)
Total Output (kJ): 21,852 20,726 (Btu)
Efficiency: 71.16%
Total CO (g): 113.30

Moisture of Wood (wet basis): 17.8682
Initial Dry Weight Wt_{do} (kg): 1.55
Moisture Content Dry 21.76

Load Weight (kg): **1.89**

Fuel Heating	**HHV**	**LHV**		**HHV**
Value in kj/kg - CV:	**19,810**	**18,329**	Btu/lb	**8522.5**

73.01	**0.43**	**72.52**	**30795**	**4.06**	**6.87**	**2.74**	**19810.00**	**17.87**	**79.31**	**21.04**	**1.89**	**6.40**	**0.05**	**0.19**	**37.71**
% Wet	**Dry Wt.**	**% Dry**		**Fuel Properties**				**Mw**	**Mass Balance**					**kg Wood per**	
Consumed	**Now**	**Comsumed**	**Total**	**Carbon**	**Hydrogen**	**Oxygen**	**Calorific**	**Moisture**	**(moles/100 mole dry flue gas)**					**100 mole dfp**	
x	**Wt_{dn}**	**y**	**Input**	**/12= [a]**	**/1= [b]**	**/16= [c]**	**Value**	**Fuel Burnt**	**[h]**	**[u]**	**[w]**	**[j]**	**[k]**	**Nk**	**CO_2**
0.00	1.55	0.00	0	4.06	6.87	2.74	19810.00	17.87	79.34	21.05	1.39	4.78	0.00	0.14	39.49
1.44	1.53	1.44	923	4.06	6.87	2.74	19810.00	17.87	79.20	21.01	0.85	2.92	0.00	0.08	38.70
4.57	1.48	4.57	1070	4.06	6.87	2.74	19810.00	17.87	79.33	21.04	1.80	6.11	0.04	0.18	38.29
8.41	1.42	8.41	997	4.06	6.87	2.74	19810.00	17.87	79.39	21.06	2.80	9.41	0.11	0.28	37.44
11.06	1.38	11.06	886	4.06	6.87	2.74	19810.00	17.87	79.40	21.06	2.87	9.64	0.11	0.29	37.48
14.18	1.33	14.18	886	4.06	6.87	2.74	19810.00	17.87	79.48	21.08	2.54	8.59	0.06	0.25	38.57
16.83	1.29	16.83	812	4.06	6.87	2.74	19810.00	17.87	79.45	21.08	2.62	8.87	0.07	0.26	38.20
19.47	1.25	19.47	812	4.06	6.87	2.74	19810.00	17.87	79.50	21.09	2.65	8.99	0.06	0.26	38.51
22.12	1.21	22.12	812	4.06	6.87	2.74	19810.00	17.87	79.49	21.09	2.62	8.89	0.06	0.26	38.52
24.76	1.17	24.76	812	4.06	6.87	2.74	19810.00	17.87	79.51	21.09	2.62	8.88	0.06	0.26	38.73
27.40	1.13	27.40	812	4.06	6.87	2.74	19810.00	17.87	79.50	21.09	2.68	9.06	0.06	0.27	38.53
30.05	1.08	30.05	775	4.06	6.87	2.74	19810.00	17.87	79.43	21.07	2.71	9.15	0.09	0.27	37.91
32.45	1.05	32.45	775	4.06	6.87	2.74	19810.00	17.87	79.49	21.08	2.70	9.13	0.07	0.27	38.38
35.10	1.01	35.10	775	4.06	6.87	2.74	19810.00	17.87	79.47	21.08	2.72	9.20	0.08	0.27	38.22
37.50	0.97	37.50	701	4.06	6.87	2.74	19810.00	17.87	79.46	21.08	2.72	9.19	0.08	0.27	38.09
39.66	0.94	39.66	738	4.06	6.87	2.74	19810.00	17.87	79.45	21.07	2.76	9.31	0.08	0.27	38.01
42.31	0.89	42.31	849	4.06	6.87	2.74	19810.00	17.87	79.43	21.07	2.80	9.44	0.10	0.28	37.74
45.19	0.85	45.19	812	4.06	6.87	2.74	19810.00	17.87	79.40	21.06	2.80	9.40	0.10	0.28	37.52
47.60	0.81	47.60	775	4.06	6.87	2.74	19810.00	17.87	79.40	21.06	2.80	9.42	0.10	0.28	37.55
50.24	0.77	50.24	775	4.06	6.87	2.74	19810.00	17.87	79.39	21.06	2.78	9.35	0.10	0.28	37.49
52.64	0.73	52.64	738	4.06	6.87	2.74	19810.00	17.87	79.41	21.06	2.80	9.42	0.10	0.28	37.64
55.05	0.70	55.05	701	4.06	6.87	2.74	19810.00	17.87	79.42	21.07	2.78	9.36	0.10	0.28	37.69
57.21	0.66	57.21	627	4.06	6.87	2.74	19810.00	17.87	79.40	21.06	2.77	9.31	0.10	0.28	37.54
59.13	0.63	59.13	627	4.06	6.87	2.74	19810.00	17.87	79.41	21.06	2.73	9.20	0.10	0.27	37.66
61.30	0.60	61.30	664	4.06	6.87	2.74	19810.00	17.87	79.39	21.06	2.73	9.17	0.10	0.27	37.53
63.46	0.57	63.46	627	4.06	6.87	2.74	19810.00	17.87	79.40	21.06	2.75	9.25	0.10	0.27	37.59
65.38	0.54	65.38	627	4.06	6.87	2.74	19810.00	17.87	79.41	21.06	2.74	9.23	0.10	0.27	37.65
67.55	0.50	67.55	627	4.06	6.87	2.74	19810.00	17.87	79.43	21.07	2.78	9.36	0.09	0.28	37.78
69.47	0.47	69.47	554	4.06	6.87	2.74	19810.00	17.87	79.43	21.07	2.78	9.35	0.09	0.28	37.81
71.15	0.45	71.15	591	4.06	6.87	2.74	19810.00	17.87	79.43	21.07	2.76	9.31	0.09	0.27	37.82
73.32	0.41	73.32	591	4.06	6.87	2.74	19810.00	17.87	79.45	21.07	2.78	9.38	0.09	0.28	37.98
75.00	0.39	75.00	627	4.06	6.87	2.74	19810.00	17.87	79.50	21.09	2.80	9.47	0.08	0.28	38.32
77.40	0.35	77.40	591	4.06	6.87	2.74	19810.00	17.87	79.50	21.09	2.81	9.48	0.08	0.28	38.31
78.85	0.33	78.85	517	4.06	6.87	2.74	19810.00	17.87	79.49	21.08	2.80	9.47	0.08	0.28	38.24
80.77	0.30	80.77	517	4.06	6.87	2.74	19810.00	17.87	79.49	21.08	2.68	9.06	0.07	0.27	38.44
82.21	0.28	82.21	406	4.06	6.87	2.74	19810.00	17.87	79.57	21.11	2.56	8.73	0.04	0.26	39.28
83.41	0.26	83.41	332	4.06	6.87	2.74	19810.00	17.87	79.58	21.11	2.34	8.02	0.02	0.23	39.79
84.38	0.24	84.38	221	4.06	6.87	2.74	19810.00	17.87	79.52	21.09	2.12	7.27	0.01	0.21	39.74

Moisture Content M_{Cwb}: 17.86822

Dry kg : 1.55
CA: 49
HY: 7
OX: 43.9

LHV
7885.2

83.16	**2.83**	**0.28**	**473.04**	**33.97**	**12.09**	**437.69**	**5906.29**	**4410.69**	**4280.67**	**4234.99**	**5760.63**	**5119.83**	**291.35**	**19933.89**	**27470.96**
Moles per kg of Dry Wood					**Moisture**	**Stack Temp**	**Heat Content Change - Ambient to Stack Temperature Flue Gas Constituent**						**Room Temp**		
O_2	**CO**	**HC**	**N_2**	**H_2O**	**Present**	**K**	**CO_2**	**O_2**	**CO**	**N_2**	**CH_4**	**H_2O**	**K**	**CO_2**	**O_2**
108.20	1.31	0.02	572.29	34.49	12.09	415.98	4961.22	3735.62	3633.09	3592.72	4771.67	4347.73	291.32	195.92	404.20
205.59	2.13	-0.02	938.16	34.56	12.09	428.98	5504.51	4133.21	4016.95	3972.91	5319.36	4806.20	291.32	213.03	849.74
74.68	2.30	0.22	442.53	34.09	12.09	451.37	6453.79	4823.16	4681.87	4631.72	6286.72	5599.97	291.26	247.14	360.18
33.50	2.99	0.38	284.71	33.76	12.09	480.71	7720.96	5735.07	5558.37	5500.67	7597.95	6645.59	291.15	289.03	192.11
31.73	2.95	0.38	278.15	33.76	12.09	492.21	8218.68	6090.14	5898.87	5838.39	8119.78	7051.52	291.26	308.07	193.23
40.75	2.01	0.23	315.07	34.07	12.09	488.82	8059.81	5976.25	5789.51	5729.95	7954.43	6921.10	291.54	310.87	243.54
38.15	2.33	0.28	304.29	33.97	12.09	487.15	7997.55	5932.47	5747.68	5688.43	7887.76	6871.29	291.26	305.52	226.33
37.07	2.06	0.24	301.03	34.04	12.09	488.59	8069.09	5984.03	5797.26	5737.58	7961.63	6930.44	291.04	310.75	221.86
37.99	2.06	0.24	304.50	34.05	12.09	487.43	8011.79	5942.76	5757.59	5698.25	7902.41	6883.10	291.21	308.59	225.76
38.05	1.87	0.21	305.28	34.10	12.09	488.04	8040.60	5963.44	5777.45	5717.95	7932.32	6906.80	291.15	311.39	226.91
36.43	2.04	0.24	298.64	34.04	12.09	489.32	8094.34	6001.65	5814.06	5754.26	7988.95	6950.43	291.21	311.87	218.63
35.64	2.58	0.32	294.05	33.89	12.09	490.37	8134.18	6029.67	5840.83	5780.83	8031.61	6982.31	291.37	308.40	214.88
35.83	2.17	0.26	295.98	34.01	12.09	492.82	8243.35	6107.59	5915.55	5854.95	8145.99	7071.40	291.32	316.40	218.81
35.27	2.31	0.28	293.47	33.96	12.09	494.71	8328.31	6168.20	5973.68	5912.60	8235.04	7140.70	291.26	318.31	217.58
35.35	2.43	0.30	293.40	33.93	12.09	495.65	8367.66	6196.07	6000.35	5939.07	8276.74	7172.48	291.32	318.72	219.01
34.29	2.49	0.31	289.22	33.91	12.09	495.32	8359.35	6190.56	5995.17	5933.91	8267.13	7166.34	291.15	317.78	212.29
33.31	2.73	0.34	284.82	33.84	12.09	497.04	8430.79	6241.11	6043.54	5981.90	8342.93	7223.96	291.26	318.21	207.92
33.60	2.93	0.37	285.30	33.78	12.09	497.76	8458.32	6260.41	6061.97	6000.20	8372.52	7245.91	291.37	317.31	210.34
33.46	2.89	0.37	284.87	33.79	12.09	499.32	8526.76	6309.06	6108.56	6046.43	8444.68	7301.44	291.37	320.21	211.09
33.98	2.95	0.38	286.66	33.77	12.09	500.76	8592.49	6355.87	6153.44	6090.95	8513.74	7354.94	291.32	322.11	215.96
33.43	2.81	0.36	284.99	33.81	12.09	500.93	8595.61	6357.82	6155.23	6092.74	8517.63	7357.06	291.43	323.56	212.53
33.95	2.77	0.35	287.09	33.82	12.09	502.43	8663.85	6406.40	6201.79	6138.93	8589.41	7412.55	291.37	326.58	217.49
34.30	2.91	0.37	288.02	33.79	12.09	502.21	8651.94	6397.81	6193.53	6130.74	8577.12	7402.70	291.43	324.78	219.45
35.23	2.80	0.35	291.86	33.82	12.09	503.65	8717.79	6444.67	6238.43	6175.28	8646.42	7456.22	291.37	328.31	227.08
35.50	2.91	0.37	292.54	33.79	12.09	503.48	8710.43	6439.45	6233.44	6170.32	8638.64	7450.26	291.37	326.94	228.61
34.82	2.86	0.36	290.11	33.80	12.09	503.15	8691.50	6425.74	6220.24	6157.25	8619.22	7434.52	291.48	326.72	223.74
34.96	2.81	0.35	290.80	33.82	12.09	504.71	8766.51	6479.36	6271.68	6208.27	8697.65	7495.85	291.32	330.10	226.50
33.91	2.70	0.34	287.18	33.85	12.09	506.15	8824.02	6519.72	6310.21	6246.51	8759.42	7541.72	291.48	333.34	221.11
33.98	2.67	0.33	287.51	33.85	12.09	505.98	8814.54	6512.86	6303.61	6239.97	8749.68	7533.85	291.54	333.28	221.29
34.37	2.66	0.33	289.01	33.86	12.09	505.09	8771.03	6481.74	6273.75	6210.36	8704.23	7498.24	291.65	331.72	222.78
33.76	2.52	0.31	287.13	33.90	12.09	506.04	8814.89	6512.97	6303.67	6240.05	8750.35	7533.92	291.59	334.83	219.86
33.01	2.22	0.27	285.17	33.98	12.09	507.26	8873.17	6554.54	6343.54	6279.59	8811.47	7581.44	291.48	340.03	216.34
32.92	2.23	0.27	284.83	33.98	12.09	505.87	8813.85	6512.65	6303.47	6239.83	8748.35	7533.71	291.43	337.68	214.41
33.00	2.29	0.28	284.93	33.96	12.09	502.82	8672.57	6412.04	6207.05	6144.17	8599.81	7418.77	291.59	331.61	211.61
36.48	2.13	0.25	298.59	34.02	12.09	499.43	8523.21	6306.00	6105.49	6043.41	8442.11	7297.74	291.59	327.59	230.05
39.45	1.40	0.14	311.98	34.24	12.09	491.93	8191.74	6070.04	5879.36	5819.09	8093.46	7028.19	291.65	321.74	239.44
46.85	0.96	0.06	341.28	34.39	12.09	479.98	7662.12	5691.37	5516.02	5458.75	7540.05	6594.95	291.87	304.85	266.64
56.11	1.02	0.06	376.14	34.41	12.09	470.09	7233.78	5384.24	5221.11	5166.32	7094.33	6243.23	291.87	287.45	302.12

SUMS					AVERAGE	SUMS						
72160.00	159847.36	22166.95	148403.75	52804.85	5649.30	8861.77	1550.44	7311.33	21933.50	1546.37	113.30	7.28
Energy Losses (kJ/kg of Dry Fuel)					Total							
Flue Gas Constituent					Loss	Total	Chemical	Sensible and	Total	Chem	Grams Produced	
CO	N_2	CH_4	H_2O Comb	H_2O Fuel MC	Rate	Loss	Loss 1	Latent Loss	Output	Loss 2	CO	HC
374.15	2056.09	14.52	1666.45	583.98	5295.31	0.00	0	0.00	0	0	0.00	0.00
611.97	3727.21	-17.87	1685.79	589.52	7659.40	356.78	27	329.50	566	27	2.78	-0.01
662.72	2049.66	193.33	1689.87	599.12	5802.01	313.51	46	267.91	757	46	3.49	0.19
864.11	1566.12	343.51	1708.61	611.75	5575.26	280.48	60	220.71	716	60	4.22	0.31
852.13	1623.98	340.38	1722.70	616.66	5657.14	252.97	52	200.56	633	52	3.69	0.27
581.54	1805.36	204.75	1733.66	615.08	5494.80	245.72	35	211.16	640	35	2.52	0.16
673.43	1730.92	250.19	1726.81	614.48	5527.68	226.59	37	189.37	585	37	2.68	0.18
594.91	1727.20	216.12	1732.68	615.20	5418.73	222.12	33	189.44	590	33	2.36	0.16
593.97	1735.10	214.40	1731.27	614.62	5423.70	222.32	33	189.75	590	33	2.36	0.16
541.03	1745.57	190.30	1734.81	614.91	5364.91	219.91	29	190.45	592	29	2.15	0.14
590.18	1718.45	214.90	1733.50	615.44	5402.98	221.48	32	189.04	591	32	2.35	0.16
745.23	1699.83	286.31	1726.49	615.82	5596.96	219.00	40	179.33	556	40	2.83	0.20
627.18	1732.94	232.48	1735.63	616.90	5480.35	214.44	33	181.38	561	33	2.38	0.16
668.00	1735.19	251.75	1735.80	617.74	5544.37	216.94	35	181.58	558	35	2.53	0.18
701.12	1742.54	266.63	1735.18	618.12	5601.32	198.30	34	164.64	503	34	2.40	0.17
719.55	1716.23	276.52	1733.85	618.05	5594.26	208.47	36	172.00	530	36	2.60	0.18
787.74	1703.79	308.80	1732.13	618.74	5677.32	243.30	46	197.14	606	46	3.27	0.24
845.49	1711.87	334.54	1729.94	619.01	5768.50	236.46	48	188.94	576	48	3.36	0.24
836.00	1722.46	330.41	1732.29	619.68	5772.13	225.85	45	181.03	549	45	3.17	0.23
852.98	1746.05	337.32	1733.31	620.33	5828.05	228.04	46	182.30	547	46	3.23	0.23
813.54	1736.38	320.24	1735.33	620.35	5761.94	214.72	41	173.23	523	41	2.94	0.21
800.82	1762.45	313.69	1737.96	621.02	5780.01	204.62	39	165.88	497	39	2.74	0.20
840.29	1765.74	331.07	1735.64	620.90	5837.87	184.92	36	148.48	443	36	2.58	0.19
810.08	1802.33	316.00	1739.17	621.55	5844.53	185.13	35	150.11	442	35	2.48	0.18
841.95	1805.07	330.06	1737.36	621.48	5891.47	197.59	39	159.00	467	39	2.73	0.20
827.42	1786.29	324.47	1737.47	621.29	5847.39	185.22	36	149.39	442	36	2.54	0.18
811.45	1805.37	317.00	1740.40	622.03	5852.85	185.39	35	150.30	442	35	2.49	0.18
780.33	1793.86	304.39	1743.40	622.59	5799.02	183.68	34	149.96	444	34	2.39	0.17
771.74	1794.03	300.41	1743.59	622.49	5786.84	161.73	29	132.32	392	29	2.09	0.15
769.41	1794.88	298.80	1742.57	622.06	5782.22	172.38	31	141.12	418	31	2.22	0.16
727.64	1791.67	280.76	1745.84	622.49	5723.10	170.62	30	141.11	420	30	2.10	0.15
642.45	1790.72	243.23	1751.76	623.07	5607.61	177.62	28	150.09	450	28	1.97	0.14
644.72	1777.27	244.40	1750.00	622.49	5590.96	166.68	26	140.66	424	26	1.86	0.13
663.47	1750.65	252.84	1745.13	621.10	5576.39	145.46	23	121.99	371	23	1.68	0.12
614.65	1804.52	225.75	1744.10	619.64	5566.31	145.20	22	123.67	372	22	1.55	0.10
403.23	1815.44	125.77	1746.28	616.38	5268.27	107.98	11	97.33	298	11	0.80	0.05
277.17	1862.97	58.05	1739.06	611.14	5119.88	85.86	6	80.33	246	6	0.45	0.02
293.10	1943.28	52.01	1727.64	606.89	5212.49	58.27	4	54.48	163	4	0.32	0.01

Appendix B: Labels & Manuals

Model No / N° de modèle / Modelo No.:

☐ H080

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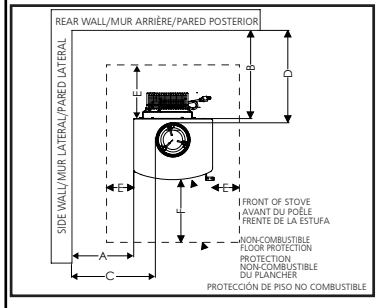
DATE OF MANUFACTURE / DATE DE FABRICATION

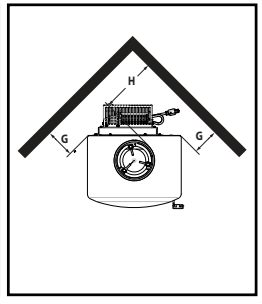
2025	2026	2027	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2025	2026	2027	JANV ENE	FÉV FEB	MAR MAR	AVR ABR	MAI MAY	JUIN JUN	JUIL JUL	AOÛT AGO	SEPT SEP	OCT OCT	NOV NOV	DÉC DIC

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

ATTENTION : CHAUD 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.

CUIDADO: SE CALIENTA CUANDO
ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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 16 inches (40.6 cm) to the front, at least 8" (20.3 cm) beyond each side of the room heater. The room heater shall not be less than 10" (25.4 cm) from the side and 11 inches (27.9 cm) from the rear to combustible materials. The vent pipe must be at least 18" (45.7 cm) from side wall and 14.5 inches (36.8 cm) from back wall. Minimum floor-to-ceiling distance 84" (213.4 cm).

A combustible floor must be protected with non-insulated ember board per CSA B365. See manual for additional information on floor protection.

	USA / EE.UU / ÉTATS-UNIS/CANADA
A	10 in. (25.4 cm)
B	11 in. (27.9 cm)
C	18 in. (45.7 cm)
D	14.5 in. (36.8 cm)
E	8 in. (20.3 cm)
F	16 in. (40.6 cm)
G	10 in. (25.4 cm)
H	15.5 in. (39.4 cm)

NH-50010-21000001

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour l'installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle, le dépassant d'au-moins 40,6 cm (16 po) sur le devant, d'au moins 20,3 cm (8 po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de 25,4 cm (10 po) du mur arrière et devra avoir au moins 11 po (27,9 cm) de dégagement sur les côtés. Le tuyau de ventilation devra être dégagé d'au moins 45,7 cm (18 po) de latérale mur et 14,5 pouces (36,8 cm) du mur du fond. Distance minimale du plancher au plafond : 213,4 cm (84 po).

Un plancher combustible doit être protégé par un panneau de braise non isolé selon la norme CSA B365. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

DISTANCIA MÍNIMA A COMBUSTIBLES

Cuando se instala en un piso combustible, se requiere protección de piso no combustible para cubrir el área debajo del calefactor y extenderse al menos 16" (40,6 cm) hacia el frente, al menos 8" (20,3 cm) más allá de cada lado del calefactor ambiental. El calefactor ambiental debe estar separado 10" (25,4 cm) por el costado y 11" (27,9 cm) por la parte trasera de materiales combustibles. El tubo de ventilación debe estar al menos a 18" (45,7 cm) de lateral paredy 14,5 pulgadas (36,8 cm) desde la pared trasera. Distancia mínima de piso a techo 84" (213,4 cm).

Un piso combustible debe protegerse con un tablero de brasas sin aislamiento según CSA B365. Consulte el manual para obtener información adicional sobre la protección del piso.

- Do not overfire - If heater or chimney connector glows, you are overfiring
- ⚠ **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 chimney frequently - Under certain conditions of use, creosote buildup may occur.
- 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 solid wood 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, solid wood fuel type, also suitable for use in mobile homes.
- Do not use grate or elevated fire - build wood fire directly on hearth.

MODEL	WEIGHTED AVERAGE OVERALL EFFICIENCY	PARTICULATE EMISSIONS (g/hr)
H080	72 %	1.6

- Blower part number F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Blower Electrical Information

- Voltage: 120 VAC
- Current: .26 A
- Frequency: 60 Hz
- Phase: Single Ø
- 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.
- ⚠ **CAUTION:** Burn untreated wood only. Other materials such as wood preservatives, metal foils, coal, plastic, garbage, sulphur, or oil, may damage the stove.
- 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.
- 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 Solid Wood Fuel.
- ⚠ WARNING: Do Not obstruct space beneath the heater.
- Install and Use Only in Accordance With Enerco Group Inc.'s Installation And Operating Instructions.
- Replace glass window with ceramic single-pane glass.
- Use only an approved UL-1777 (US)/ULC S635 or ULCS640 (CAN) lined masonry or listed Type HT factory-built chimney listed to UL 103 or ULC S629 (Canada). Use 24-ga black chimney connector.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood.
- 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

Room Heater, Solid Fuel Type, Also For Use In 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.

- Ne pas surchauffer : si le poêle ou raccord de cheminée reluit, vous surchauffez le poêle.
- ⚠ 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 du bâtiment local.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, le créosote peut s'accumuler.
- 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'installations dans votre région.
- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
H080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.
- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
H080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.
- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

Certified to ULC S627:2023 Standard For Space Heaters For Use With Solid Fuels.
Certified to UL 1482 - 2022 Standard for Solid-Fuel Type Room Heater
Certified to 28R, ASTM E2515, ASTM E2780, and CSA B415.1
Test Method and Standard Met: 2020 Crib Wood Standard

PFS C US

Report Number: F24-368

Refer to the Intertek Directory of Building Products (https://bpdirectory.intertek.com) for detailed information.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Certifié selon ULC S627-2023 Norme sur les appareils de chauffage à combustibles solides
Certifié selon UL 1482 - 2022 Norme sur les radiateurs de type combustible solide
Certifié selon 28R, ASTM E2515, ASTM E2780, et CSA B415.1
Méthode d'essai et norme respectées: Norme 2020 sur le bois de corde

Reportez-vous au répertoire des produits de construction d'Intertek (https://bpdirectory.intertek.com) pour obtenir des informations détaillées.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1 800 251-0001
Fabriqué en Chine

Certificado según ULC S627-2023 Estándar para calefactores ambientales que usan combustibles sólidos.
Certificado según UL 1482 - 2022 Estándar para unidades ambientales que usan combustibles sólidos.
Certificado según 28R, ASTM E2515, ASTM E2780, y CSA B415.1
Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

Consulte la lista de productos de construcción de Intertek (https://bpdirectory.intertek.com) para obtener información detallada.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabricada en China

66971 REV A

Model No / N° de modèle / Modelo No.:

☐ C080

☐

☐

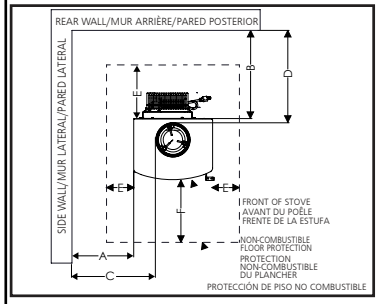
DATE OF MANUFACTURE / DATE DE FABRICATION

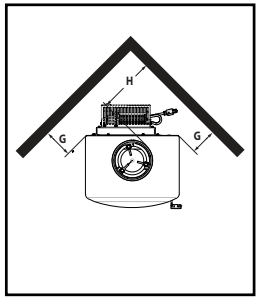
2025	2026	2027	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2025	2026	2027	JANV ENE	FÉV FEB	MAR MAR	AVR ABR	MAI MAY	JUIN JUN	JUIL JUL	AOÛT AGO	SEPT SEP	OCT OCT	NOV NOV	DÉC DIC

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

ATTENTION : CHAUD 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.

CUIDADO: SE CALIENTA CUANDO
ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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 16 inches (40.6 cm) to the front, at least 8" (20.3 cm) beyond each side of the room heater. The room heater shall not be less than 10" (25.4 cm) from the side and 11 inches (27.9 cm) from the rear to combustible materials. The vent pipe must be at least 18" (45.7 cm) from side wall and 14.5 inches (36.8 cm) from back wall. Minimum floor-to-ceiling distance 84" (213.4 cm).

A combustible floor must be protected with non-insulated ember board per CSA B365. See manual for additional information on floor protection.

	USA / EE.UU / ÉTATS-UNIS/CANADA
A	10 in. (25.4 cm)
B	11 in. (27.9 cm)
C	18 in. (45.7 cm)
D	14.5 in. (36.8 cm)
E	8 in. (20.3 cm)
F	16 in. (40.6 cm)
G	10 in. (25.4 cm)
H	15.5 in. (39.4 cm)

NH-50010-21000001

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour l'installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle, le dépassant d'au-moins 40,6 cm (16 po) sur le devant, d'au moins 20,3 cm (8 po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de 25,4 cm (10 po) du mur arrière et devra avoir au moins 11 po (27,9 cm) de dégagement sur les côtés. Le tuyau de ventilation devra être dégagé d'au moins 45,7 cm (18 po) de latérale mur et 14,5 pouces (36,8 cm) du mur du fond. Distance minimale du plancher au plafond : 213,4 cm (84 po).

Un plancher combustible doit être protégé par un panneau de braise non isolé selon la norme CSA B365. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

DISTANCIA MÍNIMA A COMBUSTIBLES

Cuando se instala en un piso combustible, se requiere protección de piso no combustible para cubrir el área debajo del calefactor y extenderse al menos 16" (40,6 cm) hacia el frente, al menos 8" (20,3 cm) más allá de cada lado del calefactor ambiental. El calefactor ambiental debe estar separado 10" (25,4 cm) por el costado y 11" (27,9 cm) por la parte trasera de materiales combustibles. El tubo de ventilación debe estar al menos a 18" (45,7 cm) de lateral paredy 14,5 pulgadas (36,8 cm) desde la pared trasera. Distancia mínima de piso a techo 84" (213,4 cm).

Un piso combustible debe protegerse con un tablero de brasas sin aislamiento según CSA B365. Consulte el manual para obtener información adicional sobre la protección del piso.

- Do not overfire - If heater or chimney connector glows, you are overfiring
- ⚠ **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 chimney frequently - Under certain conditions of use, creosote buildup may occur.
- 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 solid wood 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, solid wood fuel type, also suitable for use in mobile homes.
- Do not use grate or elevated fire - build wood fire directly on hearth.

MODEL	WEIGHTED AVERAGE OVERALL EFFICIENCY	PARTICULATE EMISSIONS (g/hr)
C080	72 %	1.6

- Blower part number F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Blower Electrical Information

- Voltage: 120 VAC
- Current: .26 A
- Frequency: 60 Hz
- Phase: Single Ø
- 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.
- ⚠ **CAUTION:** Burn untreated wood only. Other materials such as wood preservatives, metal foils, coal, plastic, garbage, sulphur, or oil, may damage the stove.
- 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.
- 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 Solid Wood Fuel.
- ⚠ WARNING: Do Not obstruct space beneath the heater.
- Install and Use Only in Accordance With Enerco Group Inc.'s Installation And Operating Instructions.
- Replace glass window with ceramic single-pane glass.
- Use only an approved UL-1777 (US)/ULC S635 or ULCS640 (CAN) lined masonry or listed Type HT factory-built chimney listed to UL 103 or ULC S629 (Canada). Use 24-ga black chimney connector.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood.
- 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

Room Heater, Solid Fuel Type, Also For Use In 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.

- Ne pas surchauffer : si le poêle ou raccord de cheminée reluit, vous surchauffez le poêle.
- ⚠ 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 du bâtiment local.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, le créosote peut s'accumuler.
- 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'installations dans votre région.
- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
C080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.
- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
C080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.

- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

Certified to ULC S627:2023 Standard For Space Heaters For Use With Solid Fuels.
Certified to UL 1482 - 2022 Standard for Solid-Fuel Type Room Heater
Certified to 28R, ASTM E2515, ASTM E2780, and CSA B415.1
Test Method and Standard Met: 2020 Crib Wood Standard

PFS C US
Report Number: F24-368

Refer to the Intertek Directory of Building Products (https://bpdirectory.intertek.com) for detailed information.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Certifié selon ULC S627-2023 Norme sur les appareils de chauffage à combustibles solides
Certifié selon UL 1482 - 2022 Norme sur les radiateurs de type combustible solide
Certifié selon 28R, ASTM E2515, ASTM E2780, et CSA B415.1
Méthode d'essai et norme respectées: Norme 2020 sur le bois de corde

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Fabriqué en Chine

Certificado según ULC S627-2023 Estándar para calefactores ambientales que usan combustibles sólidos.
Certificado según UL 1482 - 2022 Estándar para unidades ambientales que usan combustibles sólidos.
Certificado según 28R, ASTM E2515, ASTM E2780, y CSA B415.1
Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

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

Model No / N° de modèle / Modelo No.:

☐ J080

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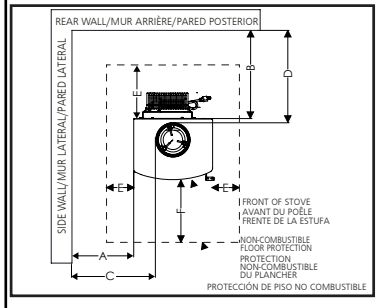
DATE OF MANUFACTURE / DATE DE FABRICATION

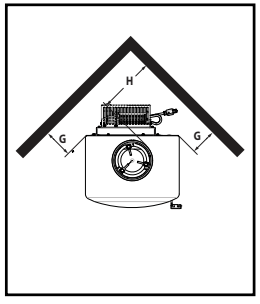
2025	2026	2027	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2025	2026	2027	JANV ENE	FÉV FEB	MAR MAR	AVR ABR	MAI MAY	JUIN JUN	JUIL JUL	AOÛT AGO	SEPT SEP	OCT OCT	NOV NOV	DÉC DIC

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

ATTENTION : CHAUD 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.

CUIDADO: SE CALIENTA CUANDO
ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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 16 inches (40.6 cm) to the front, at least 8" (20.3 cm) beyond each side of the room heater. The room heater shall not be less than 10" (25.4 cm) from the side and 11 inches (27.9 cm) from the rear to combustible materials. The vent pipe must be at least 18" (45.7 cm) from side wall and 14.5 inches (36.8 cm) from back wall. Minimum floor-to-ceiling distance 84" (213.4 cm).

A combustible floor must be protected with non-insulated ember board per CSA B365. See manual for additional information on floor protection.

	USA / EE.UU / ÉTATS-UNIS/CANADA
A	10 in. (25.4 cm)
B	11 in. (27.9 cm)
C	18 in. (45.7 cm)
D	14.5 in. (36.8 cm)
E	8 in. (20.3 cm)
F	16 in. (40.6 cm)
G	10 in. (25.4 cm)
H	15.5 in. (39.4 cm)

[NH-50010-21000001]

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour l'installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle, le dépassant d'au-moins 40,6 cm (16 po) sur le devant, d'au moins 20,3 cm (8 po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de 25,4 cm (10 po) du mur arrière et devra avoir au moins 11 po (27,9 cm) de dégagement sur les côtés. Le tuyau de ventilation devra être dégagé d'au moins 45,7 cm (18 po) de latérale mur et 14,5 pouces (36,8 cm) du mur du fond. Distance minimale du plancher au plafond : 213,4 cm (84 po).

Un plancher combustible doit être protégé par un panneau de braise non isolé selon la norme CSA B365. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

DISTANCIA MÍNIMA A COMBUSTIBLES

Cuando se instala en un piso combustible, se requiere protección de piso no combustible para cubrir el área debajo del calefactor y extenderse al menos 16" (40,6 cm) hacia el frente, al menos 8" (20,3 cm) más allá de cada lado del calefactor ambiental. El calefactor ambiental debe estar separado 10" (25,4 cm) por el costado y 11" (27,9 cm) por la parte trasera de materiales combustibles. El tubo de ventilación debe estar al menos a 18" (45,7 cm) de lateral paredy 14,5 pulgadas (36,8 cm) desde la pared trasera. Distancia mínima de piso a techo 84" (213,4 cm).

Un piso combustible debe protegerse con un tablero de brasas sin aislamiento según CSA B365. Consulte el manual para obtener información adicional sobre la protección del piso.

- Do not overfire - If heater or chimney connector glows, you are overfiring
- ⚠ **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 chimney frequently - Under certain conditions of use, creosote buildup may occur.
- 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 solid wood 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, solid wood fuel type, also suitable for use in mobile homes.
- Do not use grate or elevated fire - build wood fire directly on hearth.

MODEL	WEIGHTED AVERAGE OVERALL EFFICIENCY	PARTICULATE EMISSIONS (g/hr)
J080	72 %	1.6

- Blower part number F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Blower Electrical Information

- Voltage: 120 VAC
- Current: .26 A
- Frequency: 60 Hz
- Phase: Single Ø
- 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.
- ⚠ **CAUTION:** Burn untreated wood only. Other materials such as wood preservatives, metal foils, coal, plastic, garbage, sulphur, or oil, may damage the stove.
- 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.
- 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 Solid Wood Fuel.
- ⚠ WARNING: Do Not obstruct space beneath the heater.
- Install and Use Only in Accordance With Enerco Group Inc.'s Installation And Operating Instructions.
- Replace glass window with ceramic single-pane glass.
- Use only an approved UL-1777 (US)/ULC S635 or ULCS640 (CAN) lined masonry or listed Type HT factory-built chimney listed to UL 103 or ULC S629 (Canada). Use 24-ga black chimney connector.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood.
- 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

Room Heater, Solid Fuel Type, Also For Use In 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.

- Ne pas surchauffer : si le poêle ou raccord de cheminée reluit, vous surchauffez le poêle.
- ⚠ 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 du bâtiment local.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, le créosote peut s'accumuler.
- 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'installations dans votre région.
- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
J080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.
- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
J080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.

- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

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Certificado según UL 1482 - 2022 Estándar para unidades ambientales que usan combustibles sólidos.
Certificado según 28R, ASTM E2515, ASTM E2780, y CSA B415.1
Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

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Model No / N° de modèle / Modelo No.:

☐ N080

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CAUTION: HOT WHILE IN OPERATION.
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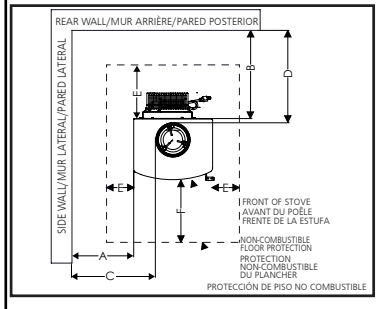
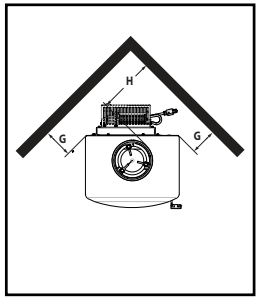
CUIDADO: SE CALIENTA CUANDO
ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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 16 inches (40.6 cm) to the front, at least 8" (20.3 cm) beyond each side of the room heater. The room heater shall not be less than 10" (25.4 cm) from the side and 11 inches (27.9 cm) from the rear to combustible materials. The vent pipe must be at least 18" (45.7 cm) from side wall and 14.5 inches (36.8 cm) from back wall. Minimum floor-to-ceiling distance 84" (213.4 cm).

A combustible floor must be protected with non-insulated ember board per CSA B365. See manual for additional information on floor protection.

	USA / EE.UU / ÉTATS-UNIS/CANADA
A	10 in. (25.4 cm)
B	11 in. (27.9 cm)
C	18 in. (45.7 cm)
D	14.5 in. (36.8 cm)
E	8 in. (20.3 cm)
F	16 in. (40.6 cm)
G	10 in. (25.4 cm)
H	15.5 in. (39.4 cm)

[NH-50010-21000001]

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour l'installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle, le dépassant d'au-moins 40,6 cm (16 po) sur le devant, d'au moins 20,3 cm (8 po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de 25,4 cm (10 po) du mur arrière et devra avoir au moins 11 po (27,9 cm) de dégagement sur les côtés. Le tuyau de ventilation devra être dégagé d'au moins 45,7 cm (18 po) de latérale mur et 14,5 pouces (36,8 cm) du mur du fond. Distance minimale du plancher au plafond : 213,4 cm (84 po).

Un plancher combustible doit être protégé par un panneau de braise non isolé selon la norme CSA B365. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

DISTANCIA MÍNIMA A COMBUSTIBLES

Cuando se instala en un piso combustible, se requiere protección de piso no combustible para cubrir el área debajo del calefactor y extenderse al menos 16" (40,6 cm) hacia el frente, al menos 8" (20,3 cm) más allá de cada lado del calefactor ambiental. El calefactor ambiental debe estar separado 10" (25,4 cm) por el costado y 11" (27,9 cm) por la parte trasera de materiales combustibles. El tubo de ventilación debe estar al menos a 18" (45,7 cm) de lateral paredy 14,5 pulgadas (36,8 cm) desde la pared trasera. Distancia mínima de piso a techo 84" (213,4 cm).

Un piso combustible debe protegerse con un tablero de brasas sin aislamiento según CSA B365. Consulte el manual para obtener información adicional sobre la protección del piso.

- Do not overfire - If heater or chimney connector glows, you are overfiring
- ⚠ **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 chimney frequently - Under certain conditions of use, creosote buildup may occur.
- 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 solid wood 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, solid wood fuel type, also suitable for use in mobile homes.
- Do not use grate or elevated fire - build wood fire directly on hearth.

MODEL	WEIGHTED AVERAGE OVERALL EFFICIENCY	PARTICULATE EMISSIONS (g/hr)
N080	72 %	1.6

- Blower part number F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Blower Electrical Information

- Voltage: 120 VAC
- Current: .26 A
- Frequency: 60 Hz
- Phase: Single Ø
- 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.
- ⚠ **CAUTION:** Burn untreated wood only. Other materials such as wood preservatives, metal foils, coal, plastic, garbage, sulphur, or oil, may damage the stove.

- 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.
- 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 Solid Wood Fuel.
- ⚠ WARNING: Do Not obstruct space beneath the heater.
- Install and Use Only in Accordance With Enerco Group Inc.'s Installation And Operating Instructions.
- Replace glass window with ceramic single-pane glass.
- Use only an approved UL-1777 (US)/ULC S635 or ULCS640 (CAN) lined masonry or listed Type HT factory-built chimney listed to UL 103 or ULC S629 (Canada). Use 24-ga black chimney connector.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood.
- 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

Room Heater, Solid Fuel Type, Also For Use In 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.

- Ne pas surchauffer : si le poêle ou raccord de cheminée reluit, vous surchauffez le poêle.
- ⚠ 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 du bâtiment local.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, le créosote peut s'accumuler.
- 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'installations dans votre région.
- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
N080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.

- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
N080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.

- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

Certified to ULC S627:2023 Standard For Space Heaters For Use With Solid Fuels.
Certified to UL 1482 - 2022 Standard for Solid-Fuel Type Room Heater
Certified to 28R, ASTM E2515, ASTM E2780, and CSA B415.1
Test Method and Standard Met: 2020 Crib Wood Standard

PFS C US

Report Number: F24-368

Refer to the Intertek Directory of Building Products (https://bpdirectory.intertek.com) for detailed information.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Certifié selon ULC S627-2023 Norme sur les appareils de chauffage à combustibles solides
Certifié selon UL 1482 - 2022 Norme sur les radiateurs de type combustible solide
Certifié selon 28R, ASTM E2515, ASTM E2780, et CSA B415.1
Méthode d'essai et norme respectées: Norme 2020 sur le bois de corde

Reportez-vous au répertoire des produits de construction d'Intertek (https://bpdirectory.intertek.com) pour obtenir des informations détaillées.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1 800 251-0001
Fabriqué en Chine

Certificado según ULC S627-2023 Estándar para calefactores ambientales que usan combustibles sólidos.
Certificado según UL 1482 - 2022 Estándar para unidades ambientales que usan combustibles sólidos.
Certificado según 28R, ASTM E2515, ASTM E2780, y CSA B415.1
Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

Consulte la lista de productos de construcción de Intertek (https://bpdirectory.intertek.com) para obtener información detallada.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabricada en China

67013 REV A

Model No / N° de modèle / Modelo No.:

☐ D080

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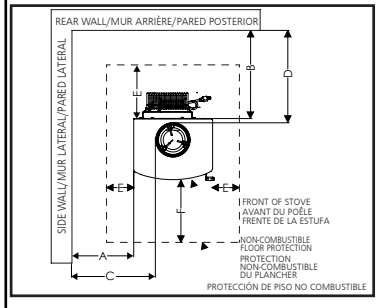
DATE OF MANUFACTURE / DATE DE FABRICATION

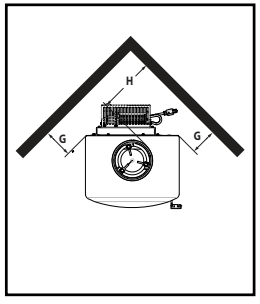
2025	2026	2027	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2025	2026	2027	JANV ENE	FÉV FEB	MAR MAR	AVR ABR	MAI MAY	JUIN JUN	JUIL JUL	AOÛT AGO	SEPT SEP	OCT OCT	NOV NOV	DÉC DIC

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

ATTENTION : CHAUD 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.

CUIDADO: SE CALIENTA CUANDO
ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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- 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.

- Ne pas surchauffer : si le poêle ou raccord de cheminée reluit, vous surchauffez le poêle.
- ⚠ 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 du bâtiment local.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, le créosote peut s'accumuler.
- 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'installations dans votre région.
- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
D080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.
- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
D080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.

- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

Certified to ULC S627:2023 Standard For Space Heaters For Use With Solid Fuels.
Certified to UL 1482 - 2022 Standard for Solid-Fuel Type Room Heater
Certified to 28R, ASTM E2515, ASTM E2780, and CSA B415.1
Test Method and Standard Met: 2020 Crib Wood Standard

PFS C US

Report Number: F24-368

Refer to the Intertek Directory of Building Products (https://bpdirectory.intertek.com) for detailed information.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Certifié selon ULC S627-2023 Norme sur les appareils de chauffage à combustibles solides
Certifié selon UL 1482 - 2022 Norme sur les radiateurs de type combustible solide
Certifié selon 28R, ASTM E2515, ASTM E2780, et CSA B415.1
Méthode d'essai et norme respectées: Norme 2020 sur le bois de corde

Reportez-vous au répertoire des produits de construction d'Intertek (https://bpdirectory.intertek.com) pour obtenir des informations détaillées.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1 800 251-0001
Fabriqué en Chine

Certificado según ULC S627-2023 Estándar para calefactores ambientales que usan combustibles sólidos.
Certificado según UL 1482 - 2022 Estándar para unidades ambientales que usan combustibles sólidos.
Certificado según 28R, ASTM E2515, ASTM E2780, y CSA B415.1
Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

Consulte la lista de productos de construcción de Intertek (https://bpdirectory.intertek.com) para obtener información detallada.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabricada en China

67015 REV A

Model No / N° de modèle / Modelo No.:

☐ R080

☐

☐

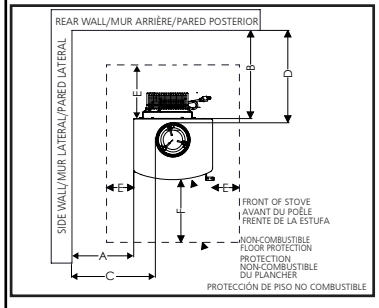
DATE OF MANUFACTURE / DATE DE FABRICATION

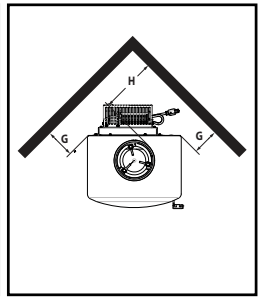
2025	2026	2027	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2025	2026	2027	JANV ENE	FÉV FEB	MAR MAR	AVR ABR	MAI MAY	JUIN JUN	JUIL JUL	AOÛT AGO	SEPT SEP	OCT OCT	NOV NOV	DÉC DIC

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

ATTENTION : CHAUD 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.

CUIDADO: SE CALIENTA CUANDO
ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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 16 inches (40.6 cm) to the front, at least 8" (20.3 cm) beyond each side of the room heater. The room heater shall not be less than 10" (25.4 cm) from the side and 11 inches (27.9 cm) from the rear to combustible materials. The vent pipe must be at least 18" (45.7 cm) from side wall and 14.5 inches (36.8 cm) from back wall. Minimum floor-to-ceiling distance 84" (213.4 cm).

A combustible floor must be protected with non-insulated ember board per CSA B365. See manual for additional information on floor protection.

	USA / EE.UU / ÉTATS-UNIS/CANADA
A	10 in. (25.4 cm)
B	11 in. (27.9 cm)
C	18 in. (45.7 cm)
D	14.5 in. (36.8 cm)
E	8 in. (20.3 cm)
F	16 in. (40.6 cm)
G	10 in. (25.4 cm)
H	15.5 in. (39.4 cm)

NH-50010-21000001

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour l'installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle, le dépassant d'au-moins 40,6 cm (16 po) sur le devant, d'au moins 20,3 cm (8 po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de 25,4 cm (10 po) du mur arrière et devra avoir au moins 11 po (27,9 cm) de dégagement sur les côtés. Le tuyau de ventilation devra être dégagé d'au moins 45,7 cm (18 po) de latérale mur et 14,5 pouces (36,8 cm) du mur du fond. Distance minimale du plancher au plafond : 213,4 cm (84 po).

Un plancher combustible doit être protégé par un panneau de braise non isolé selon la norme CSA B365. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

DISTANCIA MÍNIMA A COMBUSTIBLES

Cuando se instala en un piso combustible, se requiere protección de piso no combustible para cubrir el área debajo del calefactor y extenderse al menos 16" (40,6 cm) hacia el frente, al menos 8" (20,3 cm) más allá de cada lado del calefactor ambiental. El calefactor ambiental debe estar separado 10" (25,4 cm) por el costado y 11" (27,9 cm) por la parte trasera de materiales combustibles. El tubo de ventilación debe estar al menos a 18" (45,7 cm) de lateral paredy 14,5 pulgadas (36,8 cm) desde la pared trasera. Distancia mínima de piso a techo 84" (213,4 cm).

Un piso combustible debe protegerse con un tablero de brasas sin aislamiento según CSA B365. Consulte el manual para obtener información adicional sobre la protección del piso.

- Do not overfire - If heater or chimney connector glows, you are overfiring
- ⚠ **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 chimney frequently - Under certain conditions of use, creosote buildup may occur.
- 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 solid wood 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, solid wood fuel type, also suitable for use in mobile homes.
- Do not use grate or elevated fire - build wood fire directly on hearth.

MODEL	WEIGHTED AVERAGE OVERALL EFFICIENCY	PARTICULATE EMISSIONS (g/hr)
R080	72 %	1.6

- Blower part number F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Blower Electrical Information

- Voltage: 120 VAC
- Current: .26 A
- Frequency: 60 Hz
- Phase: Single Ø
- 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.
- ⚠ **CAUTION:** Burn untreated wood only. Other materials such as wood preservatives, metal foils, coal, plastic, garbage, sulphur, or oil, may damage the stove.
- 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.
- 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 Solid Wood Fuel.
- ⚠ WARNING: Do Not obstruct space beneath the heater.
- Install and Use Only in Accordance With Enerco Group Inc.'s Installation And Operating Instructions.
- Replace glass window with ceramic single-pane glass.
- Use only an approved UL-1777 (US)/ULC S635 or ULCS640 (CAN) lined masonry or listed Type HT factory-built chimney listed to UL 103 or ULC S629 (Canada). Use 24-ga black chimney connector.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood.
- 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

Room Heater, Solid Fuel Type, Also For Use In 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.

- Ne pas surchauffer : si le poêle ou raccord de cheminée reluit, vous surchauffez le poêle.
- ⚠ 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 du bâtiment local.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, le créosote peut s'accumuler.
- 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'installations dans votre région.
- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
R080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.
- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
R080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.

- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

Certified to ULC S627:2023 Standard For Space Heaters For Use With Solid Fuels.
Certified to UL 1482 - 2022 Standard for Solid-Fuel Type Room Heater
Certified to 28R, ASTM E2515, ASTM E2780, and CSA B415.1
Test Method and Standard Met: 2020 Crib Wood Standard

PFS C US

Report Number: F24-368

Refer to the Intertek Directory of Building Products (https://bpdirectory.intertek.com) for detailed information.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Certifié selon ULC S627-2023 Norme sur les appareils de chauffage à combustibles solides
Certifié selon UL 1482 - 2022 Norme sur les radiateurs de type combustible solide
Certifié selon 28R, ASTM E2515, ASTM E2780, et CSA B415.1
Méthode d'essai et norme respectées: Norme 2020 sur le bois de corde

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Certificado según ULC S627-2023 Estándar para calefactores ambientales que usan combustibles sólidos.
Certificado según UL 1482 - 2022 Estándar para unidades ambientales que usan combustibles sólidos.
Certificado según 28R, ASTM E2515, ASTM E2780, y CSA B415.1
Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

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

Model No / N° de modèle / Modelo No.:

☐ T080

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DATE OF MANUFACTURE / DATE DE FABRICATION

2025	2026	2027	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
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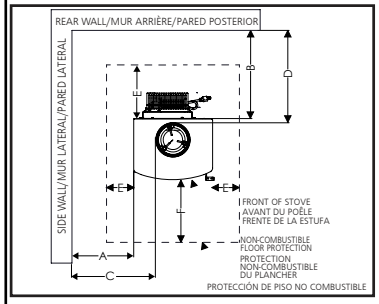
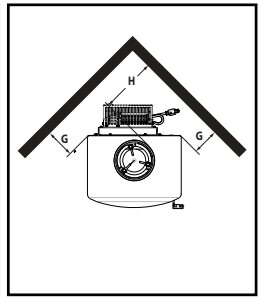
CAUTION: HOT WHILE IN OPERATION.
DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.

ATTENTION : CHAUD 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.

CUIDADO: SE CALIENTA CUANDO
ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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 16 inches (40.6 cm) to the front, at least 8" (20.3 cm) beyond each side of the room heater. The room heater shall not be less than 10" (25.4 cm) from the side and 11 inches (27.9 cm) from the rear to combustible materials. The vent pipe must be at least 18" (45.7 cm) from side wall and 14.5 inches (36.8 cm) from back wall. Minimum floor-to-ceiling distance 84" (213.4 cm).

A combustible floor must be protected with non-insulated ember board per CSA B365. See manual for additional information on floor protection.

	USA / EE.UU / ÉTATS-UNIS/CANADA
A	10 in. (25.4 cm)
B	11 in. (27.9 cm)
C	18 in. (45.7 cm)
D	14.5 in. (36.8 cm)
E	8 in. (20.3 cm)
F	16 in. (40.6 cm)
G	10 in. (25.4 cm)
H	15.5 in. (39.4 cm)

NH-50010-21000001

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour l'installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle, le dépassant d'au-moins 40,6 cm (16 po) sur le devant, d'au moins 20,3 cm (8 po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de 25,4 cm (10 po) du mur arrière et devra avoir au moins 11 po (27,9 cm) de dégagement sur les côtés. Le tuyau de ventilation devra être dégagé d'au moins 45,7 cm (18 po) de latérale mur et 14,5 pouces (36,8 cm) du mur du fond. Distance minimale du plancher au plafond : 213,4 cm (84 po).

Un plancher combustible doit être protégé par un panneau de braise non isolé selon la norme CSA B365. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

DISTANCIA MÍNIMA A COMBUSTIBLES

Cuando se instala en un piso combustible, se requiere protección de piso no combustible para cubrir el área debajo del calefactor y extenderse al menos 16" (40,6 cm) hacia el frente, al menos 8" (20,3 cm) más allá de cada lado del calefactor ambiental. El calefactor ambiental debe estar separado 10" (25,4 cm) por el costado y 11" (27,9 cm) por la parte trasera de materiales combustibles. El tubo de ventilación debe estar al menos a 18" (45,7 cm) de lateral paredy 14,5 pulgadas (36,8 cm) desde la pared trasera. Distancia mínima de piso a techo 84" (213,4 cm).

Un piso combustible debe protegerse con un tablero de brasas sin aislamiento según CSA B365. Consulte el manual para obtener información adicional sobre la protección del piso.

- Do not overfire - If heater or chimney connector glows, you are overfiring
- ⚠ **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 chimney frequently - Under certain conditions of use, creosote buildup may occur.
- 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 solid wood 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, solid wood fuel type, also suitable for use in mobile homes.
- Do not use grate or elevated fire - build wood fire directly on hearth.

MODEL	WEIGHTED AVERAGE OVERALL EFFICIENCY	PARTICULATE EMISSIONS (g/hr)
T080	72 %	1.6

- Blower part number F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Blower Electrical Information

- Voltage: 120 VAC
- Current: .26 A
- Frequency: 60 Hz
- Phase: Single Ø
- 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.
- ⚠ **CAUTION:** Burn untreated wood only. Other materials such as wood preservatives, metal foils, coal, plastic, garbage, sulphur, or oil, may damage the stove.
- 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.
- 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 Solid Wood Fuel.
- ⚠ WARNING: Do Not obstruct space beneath the heater.
- Install and Use Only in Accordance With Enerco Group Inc.'s Installation And Operating Instructions.
- Replace glass window with ceramic single-pane glass.
- Use only an approved UL-1777 (US)/ULC S635 or ULCS640 (CAN) lined masonry or listed Type HT factory-built chimney listed to UL 103 or ULC S629 (Canada). Use 24-ga black chimney connector.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood.
- 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

Room Heater, Solid Fuel Type, Also For Use In 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.

- Ne pas surchauffer : si le poêle ou raccord de cheminée reluit, vous surchauffez le poêle.
- ⚠ 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 du bâtiment local.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, le créosote peut s'accumuler.
- 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'installations dans votre région.
- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
T080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.
- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
T080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.

- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

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Test Method and Standard Met: 2020 Crib Wood Standard

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Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

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2025	2026	2027	JANV ENE	FÉV FEB	MAR MAR	AVR ABR	MAI MAY	JUIN JUN	JUIL JUL	AOÛT AGO	SEPT SEP	OCT OCT	NOV NOV	DÉC DIC

CAUTION: HOT WHILE IN OPERATION.

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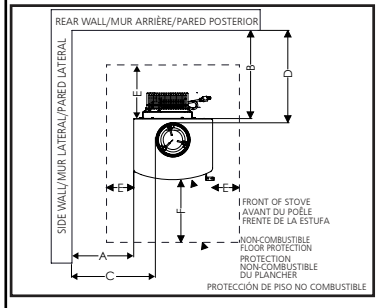
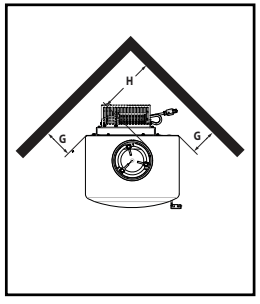
CUIDADO: SE CALIENTA CUANDO

ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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 16 inches (40.6 cm) to the front, at least 8" (20.3 cm) beyond each side of the room heater. The room heater shall not be less than 10" (25.4 cm) from the side and 11 inches (27.9 cm) from the rear to combustible materials. The vent pipe must be at least 18" (45.7 cm) from side wall and 14.5 inches (36.8 cm) from back wall. Minimum floor-to-ceiling distance 84" (213.4 cm).

A combustible floor must be protected with non-insulated ember board per CSA B365. See manual for additional information on floor protection.

	USA / EE.UU / ÉTATS-UNIS/CANADA
A	10 in. (25.4 cm)
B	11 in. (27.9 cm)
C	18 in. (45.7 cm)
D	14.5 in. (36.8 cm)
E	8 in. (20.3 cm)
F	16 in. (40.6 cm)
G	10 in. (25.4 cm)
H	15.5 in. (39.4 cm)

[NH-50010-21000001]

DÉGAGEMENTS MINIMAUX DE MATIÈRES COMBUSTIBLES

Pour l'installation sur un plancher combustible, une protection non combustible doit être placée sous le poêle, le dépassant d'au-moins 40,6 cm (16 po) sur le devant, d'au moins 20,3 cm (8 po) sur les trois autres côtés de l'unité. L'unité devra être placée à non moins de 25,4 cm (10 po) du mur arrière et devra avoir au moins 11 po (27,9 cm) de dégagement sur les côtés. Le tuyau de ventilation devra être dégagé d'au moins 45,7 cm (18 po) de latérale mur et 14,5 pouces (36,8 cm) du mur du fond. Distance minimale du plancher au plafond : 213,4 cm (84 po).

Un plancher combustible doit être protégé par un panneau de braise non isolé selon la norme CSA B365. Pour plus d'information sur les protecteurs de planchers, voir le manuel.

DISTANCIA MÍNIMA A COMBUSTIBLES

Cuando se instala en un piso combustible, se requiere protección de piso no combustible para cubrir el área debajo del calefactor y extenderse al menos 16" (40,6 cm) hacia el frente, al menos 8" (20,3 cm) más allá de cada lado del calefactor ambiental. El calefactor ambiental debe estar separado 10" (25,4 cm) por el costado y 11" (27,9 cm) por la parte trasera de materiales combustibles. El tubo de ventilación debe estar al menos a 18" (45,7 cm) de lateral paredy 14,5 pulgadas (36,8 cm) desde la pared trasera. Distancia mínima de piso a techo 84" (213,4 cm).

Un piso combustible debe protegerse con un tablero de brasas sin aislamiento según CSA B365. Consulte el manual para obtener información adicional sobre la protección del piso.

- Do not overfire - If heater or chimney connector glows, you are overfiring
- ⚠ **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 chimney frequently - Under certain conditions of use, creosote buildup may occur.
- 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 solid wood 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, solid wood fuel type, also suitable for use in mobile homes.
- Do not use grate or elevated fire - build wood fire directly on hearth.

MODEL	WEIGHTED AVERAGE OVERALL EFFICIENCY	PARTICULATE EMISSIONS (g/hr)
V080	72 %	1.6

- Blower part number F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Blower Electrical Information

- Voltage: 120 VAC
- Current: .26 A
- Frequency: 60 Hz
- Phase: Single Ø
- 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.
- ⚠ **CAUTION:** Burn untreated wood only. Other materials such as wood preservatives, metal foils, coal, plastic, garbage, sulphur, or oil, may damage the stove.
- 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.
- 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 Solid Wood Fuel.
- ⚠ WARNING: Do Not obstruct space beneath the heater.
- Install and Use Only in Accordance With Enerco Group Inc.'s Installation And Operating Instructions.
- Replace glass window with ceramic single-pane glass.
- Use only an approved UL-1777 (US)/ULC S635 or ULCS640 (CAN) lined masonry or listed Type HT factory-built chimney listed to UL 103 or ULC S629 (Canada). Use 24-ga black chimney connector.
- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood.
- 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

Room Heater, Solid Fuel Type, Also For Use In 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.

- Ne pas surchauffer : si le poêle ou raccord de cheminée reluit, vous surchauffez le poêle.
- ⚠ 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 du bâtiment local.
- Inspecter et nettoyer la cheminée fréquemment. Dans certaines conditions, le créosote peut s'accumuler.
- 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'installations dans votre région.
- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
V080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.
- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
V080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.

- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

Certified to ULC S627:2023 Standard For Space Heaters For Use With Solid Fuels.
Certified to UL 1482 - 2022 Standard for Solid-Fuel Type Room Heater
Certified to 28R, ASTM E2515, ASTM E2780, and CSA B415.1
Test Method and Standard Met: 2020 Crib Wood Standard

PFS C US

Report Number: F24-368

Refer to the Intertek Directory of Building Products (https://bpdirectory.intertek.com) for detailed information.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Certifié selon ULC S627-2023 Norme sur les appareils de chauffage à combustibles solides
Certifié selon UL 1482 - 2022 Norme sur les radiateurs de type combustible solide
Certifié selon 28R, ASTM E2515, ASTM E2780, et CSA B415.1
Méthode d'essai et norme respectées: Norme 2020 sur le bois de corde

Reportez-vous au répertoire des produits de construction d'Intertek (https://bpdirectory.intertek.com) pour obtenir des informations détaillées.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1 800 251-0001
Fabriqué en Chine

Certificado según ULC S627-2023 Estándar para calefactores ambientales que usan combustibles sólidos.
Certificado según UL 1482 - 2022 Estándar para unidades ambientales que usan combustibles sólidos.
Certificado según 28R, ASTM E2515, ASTM E2780, y CSA B415.1
Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

Consulte la lista de productos de construcción de Intertek (https://bpdirectory.intertek.com) para obtener información detallada.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabricada en China

Model No / N° de modèle / Modelo No.:

☐ WS080

☐

☐

DATE OF MANUFACTURE / DATE DE FABRICATION

2025	2026	2027	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
2025	2026	2027	JANV ENE	FÉV FEB	MAR MAR	AVR ABR	MAI MAY	JUIN JUN	JUIL JUL	AOÛT AGO	SEPT SEP	OCT OCT	NOV NOV	DÉC DIC

CAUTION: HOT WHILE IN OPERATION.

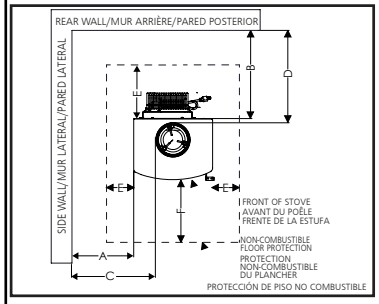
DO NOT TOUCH. KEEP CHILDREN, CLOTHING, AND FURNITURE AWAY. CONTACT MAY CAUSE SKIN BURNS. SEE NAMEPLATE AND INSTRUCTIONS.

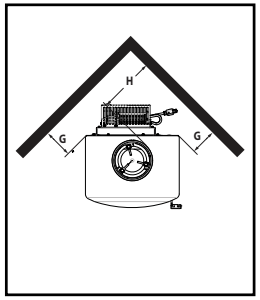
ATTENTION : CHAUD DURANT

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.

CUIDADO: SE CALIENTA CUANDO

ESTÁ FUNCIONANDO. NO TOCAR. MANTENGA ALEJADOS A LOS NIÑOS, LA ROPA Y LOS MUEBLES. EL CONTACTO PUEDE CAUSAR QUEMADURAS EN LA PIEL. VER LA PLACA DE IDENTIFICACIÓN Y LAS INSTRUCCIONES.





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NH-50010-21000001

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- U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood.
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- Pour utilisation avec bois de corde 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 à bois de corde. Convient aussi pour les maisons mobiles. Ne pas utiliser de grille ou élever le feu. Brûler le bois directement sur le fond la chambre de combustion.

MODÈLE	RENDEMENT GÉNÉRAL MOYEN PONDERE	ÉMISSIONS DE PARTICULES (g/hr)
WS080	72 %	1,6

- Numéro de pièce du ventilateur F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Information électrique du souffleur

- Tension : 120 V c.a.
- Courant : ,26 A
- Fréquence : 60 Hz
- Phase : 1 Ø
- Placer le cordon d'alimentation à l'écart du poêle. Ne pas laisser le cordon toucher toute pièce chaude.
- Avant de nettoyer le souffleur, 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 souffleur 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'enceinte retirés.
- ⚠ ATTENTION : Pièces chaudes. Ne pas faire fonctionner l'unité avec des pièces retirées.
- ⚠ DANGER : Potentiel de décharge électrique. Couper l'alimentation avant d'entretenir l'unité.
- ⚠ ATTENTION : Ne brûlez que du bois non traité. D'autres matériaux comme les agents de conservation du bois, la feuille métallique, le charbon, le plastique, les déchets, le soufre ou l'huile peuvent endommager le poêle.
- Pour remplacer l'assemblage du souffleur, débrancher en premier l'unité et puis retirer le panneau arrière et, au besoin, les panneaux latéraux et dévisser l'assemblage du souffleur. Débrancher les fils raccordés. Remplacer le souffleur par un neuf et inverser la procédure ci-dessus.
- Ne jamais utiliser d'essence, de carburant à lanterne de type essence, de kérosène ou de liquide d'allumage de charbon pour allumer ou raviver le feu dans cette unité. Garder toutes ces substances bien à l'écart du poêle lors de son fonctionnement. Pour d'autres spécifications sur le bois acceptable, se référer au manuel.
- ⚠ AVERTISSEMENT : Ne pas obstruer l'espace sous le poêle.
- Installer et utiliser seulement selon le Guide d'installation et de fonctionnement de Enerco Group Inc.
- Remplacer la fenêtre vitrée par du verre de céramique à vitrage unique.
- Utilisez uniquement une maçonnerie doublée approuvée UL-1777 (US)/ULC S635 ou ULCS640 (CAN) ou une cheminée préfabriquée de type HT homologuée UL 103 ou ULC S629 (Canada). Utilisez un connecteur de cheminée noir de calibre 24.
- Appareil homologué par l'US ENVIRONMENTAL PROTECTION AGENCY pour se conformer aux normes 2020 sur les émissions de particules en employant du bois de corde.
- Pour un bon fonctionnement ce poêle à 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 règlementation fédérale.

Pour maisons mobiles

Appareil de chauffage de pièce, type à combustible solide, également pour une utilisation dans les 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

- No lo sobrecaliente: si el calefactor o el conector de la chimenea se vuelve incandescente, está sobrecalentando.
- ⚠ **CUIDADO:** Se requieren métodos especiales cuando la chimenea pasa a través de una pared o del techo. Consulte las instrucciones del fabricante y los códigos locales de construcción.
- Inspeccione y limpie la chimenea con frecuencia - Bajo ciertas condiciones de uso, puede aparecer acumulación de creosota.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Comuníquese con las entidades locales de construcción o departamento de bomberos para averiguar las restricciones y los requisitos de inspección de instalación en su área.
- Para usar con combustible de madera maciza únicamente.
- No conecte esta unidad a una chimenea que alimente a otro aparato.
- Mantenga las compuertas de inspección y de eliminación de cenizas bien cerradas durante el funcionamiento.
- Calefactor para habitación, para combustible de madera maciza, también apto para usar en casas rodantes.
- No use una rejilla ni eleve el fuego. Haga el fuego a leña directamente en el hogar.

MODELO	EFICIENCIA GLOBAL PROMEDIO PONDERADA	EMISIONES DE PARTÍCULAS (g/h)
WS080	72 %	1,6

- Número de pieza del ventilador F500308 (Ningbo Hanks Heating Appliances Technology Co., LTD)

Información eléctrica del ventilador

- Voltaje: 120 V CA
- Corriente: ,26 A
- Frecuencia: 60 Hz
- Fases: Simple Ø
- Pase el cable de alimentación por detrás y lejos de la unidad. No deje que el cable de alimentación entre en contacto con partes calientes.
- Para limpiar el soplador, primero desconecte la alimentación de la unidad. Luego remueva el panel posterior y use una aspiradora para eliminar la acumulación de polvo en las aspas del soplador o dentro del conducto del soplador.
- ⚠ CUIDADO: Las piezas móviles pueden causar lesiones. No use la unidad con alguna cubierta removida.
- ⚠ CUIDADO: Piezas calientes. No use la unidad con algún componente removido.
- ⚠ PELIGRO: Riesgo de descarga eléctrica. Desenchufe la unidad antes de repararla.

- ⚠ CUIDADO: Queme solamente madera sin tratar. Otros materiales, como conservantes para madera, láminas metálicas, carbón, plástico, basura, azufre o aceite pueden dañar la estufa.
- Para reemplazar el soplador, primero desenchufe la unidad y luego remueva los paneles posterior y lateral según sea necesario, y desconecte el soplador mediante los tornillos que lo sujetan al calefactor. Desconecte los cables. Reemplácelo con un nuevo soplador y repita los pasos anteriores en orden inverso.
- Nunca use gasolina, combustible para linterna tipo gasolina, queroseno, líquido encendedor para carbón, o líquidos similares para iniciar o "refrescar" un fuego en este calefactor. Mantenga todos los líquidos de este tipo alejados del calefactor mientras esté en uso. Consulte el manual por las especificaciones de otros combustibles de madera maciza aceptables.
- ⚠ ADVERTENCIA:No obstruya el espacio debajo del calefactor.
- Instale y use este producto solo de acuerdo con las instrucciones de instalación y funcionamiento de Enerco Group, Inc.
- Reemplace la ventana de vidrio con vidrio cerámico de un solo panel.
- Utilice únicamente mampostería revestida aprobada por UL-1777 (EE. UU.) / ULC S635 o ULCS640 (CAN) o una chimenea construida en fábrica tipo HT listada en UL 103 o ULC S629 (Canadá). Utilice un conector de chimenea negro de calibre 24.
- AGENCIA DE PROTECCIÓN AMBIENTAL DE LOS ESTADOS UNIDOS. Certificado de cumplimiento con las normas de emisión de partículas de 2020 utilizando leña curada.
- Este calefactor a madera necesita inspección y reparación periódicas para su correcto funcionamiento. Consulte el manual del propietario para obtener más información.
- Está en contra de las reglamentaciones federales operar este calefactor a madera de una manera inconsistente con las instrucciones de operación incluidas en el manual del propietario.

Para Casas Rodantes

Calefactor de habitación, tipo combustible sólido, también para uso en casas rodantes.

- No obstruya las aberturas del aire de combustión.
- UTILIZAR SOLAMENTE CON LAS PUERTAS CERRADAS.
- Debe suministrar aire fresco desde el exterior de la casa rodante a través de la conexión de entrada de aire en la parte posterior del calefactor.

- Este producto puede estar cubierto por una o más patentes de EE.UU. o internacionales, o solicitudes de patente pendientes en los EE.UU. y en otros países. Visite www.enercogroupinc.com/patents para más información.

Certified to ULC S627:2023 Standard For Space Heaters For Use With Solid Fuels.
Certified to UL 1482 - 2022 Standard for Solid-Fuel Type Room Heater
Certified to 28R, ASTM E2515, ASTM E2780, and CSA B415.1
Test Method and Standard Met: 2020 Crib Wood Standard

PFS C US

Report Number: F24-368

Refer to the Intertek Directory of Building Products (https://bpdirectory.intertek.com) for detailed information.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Made in China

Certifié selon ULC S627-2023 Norme sur les appareils de chauffage à combustibles solides
Certifié selon UL 1482 - 2022 Norme sur les radiateurs de type combustible solide
Certifié selon 28R, ASTM E2515, ASTM E2780, et CSA B415.1
Méthode d'essai et norme respectées: Norme 2020 sur le bois de corde

Reportez-vous au répertoire des produits de construction d'Intertek (https://bpdirectory.intertek.com) pour obtenir des informations détaillées.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1 800 251-0001
Fabriqué en Chine

Certificado según ULC S627-2023 Estándar para calefactores ambientales que usan combustibles sólidos.
Certificado según UL 1482 - 2022 Estándar para unidades ambientales que usan combustibles sólidos.
Certificado según 28R, ASTM E2515, ASTM E2780, y CSA B415.1
Método de prueba y estándar cumplido: Estándar de madera de cordón 2020

Consulte la lista de productos de construcción de Intertek (https://bpdirectory.intertek.com) para obtener información detallada.
Enerco Group, Inc. | 4560 W160th Street, Cleveland, Ohio 44135 | 1-800-251-0001
Fabricada en China

67023 REV A

	OPERATING INSTRUCTIONS AND OWNER'S MANUAL	Model #
		C080

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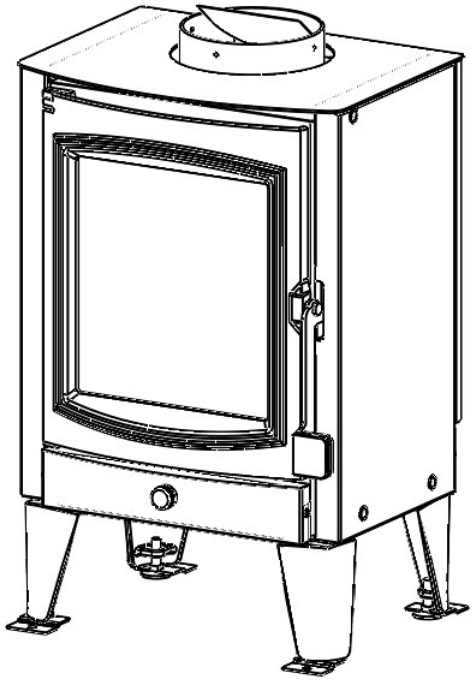
MINI WOOD FIRE STOVE



PFS® C US
Report Number : F24-368

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⚠ SAFETY NOTICE: IF THIS STOVE IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. FOR YOUR SAFETY, FOLLOW THE INSTALLATION INSTRUCTIONS. 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. NEVER OPERATE THIS STOVE WHILE UNATTENDED.

⚠ CAUTION: A CHIMNEY FIRE MAY CAUSE IGNITION OF WALL STUDS OR RAFTERS WHICH WERE ASSUMED TO BE A SAFE DISTANCE FROM THE CHIMNEY. IF A CHIMNEY FIRE HAS OCCURRED, HAVE YOUR CHIMNEY INSPECTED BY A QUALIFIED EXPERT BEFORE USING AGAIN.

⚠ CAUTION: IT IS IMPORTANT TO USE ONLY THE SPECIFIED COMPONENTS. USE OF COMPONENTS OTHER THAN SPECIFIED COMPONENTS MAY RESULT IN INCREASED RISK TO YOU, YOUR STOVE, AND YOUR HOME.

- Due to the high surface temperatures this unit should be located an appropriate distance from any and all combustible materials. Comply with all clearances to combustibles, see page 6.
- Assembled stove must be connected to a flue vented to the outdoors in accordance with local guidelines, see installation requirements & guidelines page 7 through page 11.
- Only use with permitted fuels, see page 13. **DO NOT BURN GARBAGE.**

SAVE THESE INSTRUCTIONS IN A SAFE PLACE FOR FUTURE REFERENCE.

Enerco Group Inc.
4560 West 160th st Cleveland, Ohio 44135 1-800-251-0001
67008 REV A

INSTALLER: LEAVE THIS MANUAL WITH THE APPLIANCE. CONSUMER: SAVE THESE INSTRUCTIONS.

	OPERATING INSTRUCTIONS AND OWNER'S MANUAL	Model #
		D080

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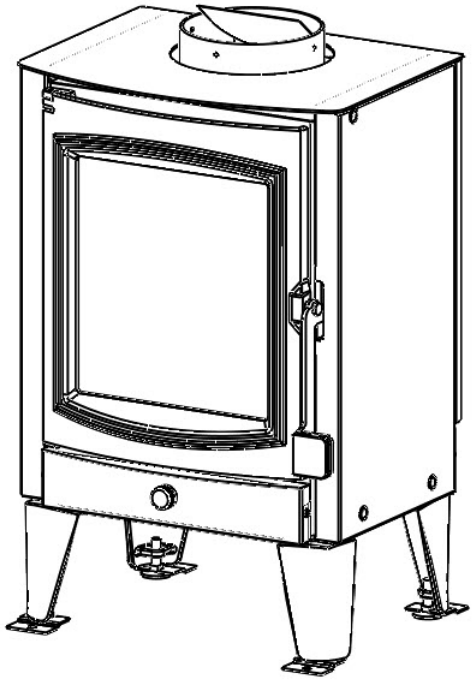
MINI WOOD FIRE STOVE



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Report Number : F24-368

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Enerco Group Inc.
4560 West 160th st Cleveland, Ohio 44135 1-800-251-0001
67014 REV A

	OPERATING INSTRUCTIONS AND OWNER'S MANUAL	Model #
		J080

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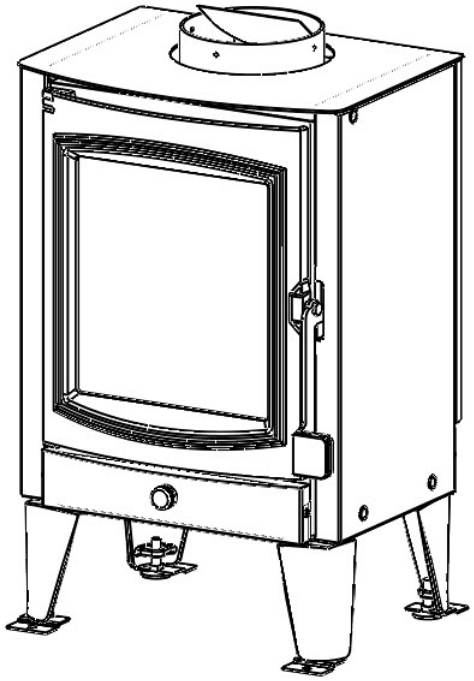
MINI WOOD FIRE STOVE



PFS® C US
Report Number : F24-368

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Enerco Group Inc.
4560 West 160th st Cleveland, Ohio 44135 1-800-251-0001
67010 REV A

	OPERATING INSTRUCTIONS AND OWNER'S MANUAL	Model #
		N080

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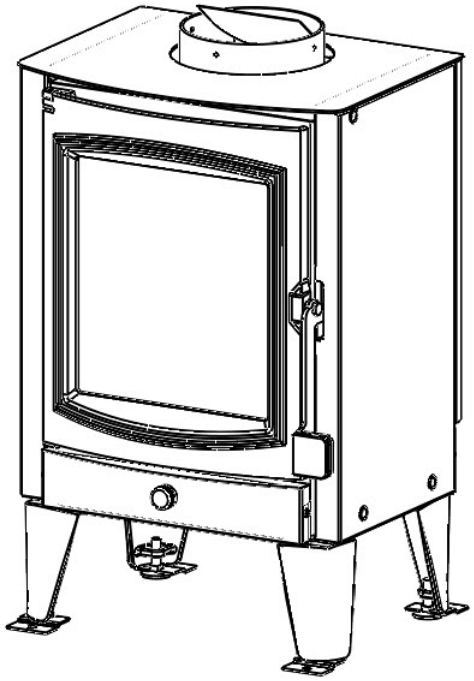
MINI WOOD FIRE STOVE



PFS® C US
Report Number : F24-368

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Enerco Group Inc.
4560 West 160th st Cleveland, Ohio 44135 1-800-251-0001
67012 REV A

	OPERATING INSTRUCTIONS AND OWNER'S MANUAL	Model #
		R080

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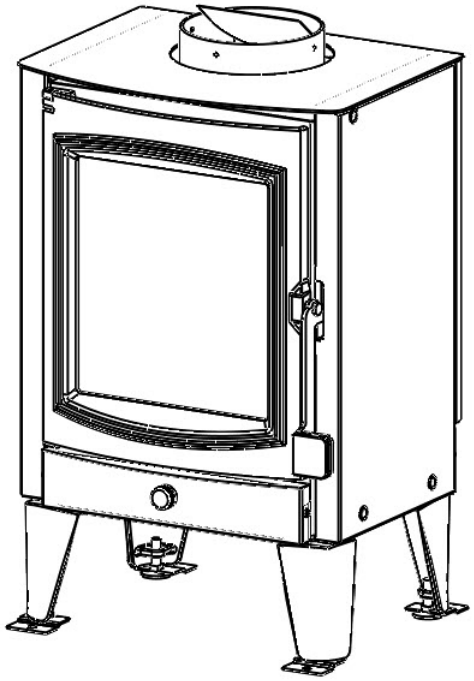
MINI WOOD FIRE STOVE



PFS® C US
Report Number : F24-368

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Enerco Group Inc.
4560 West 160th st Cleveland, Ohio 44135 1-800-251-0001
67016 REV A

	OPERATING INSTRUCTIONS AND OWNER'S MANUAL	Model #
		T080

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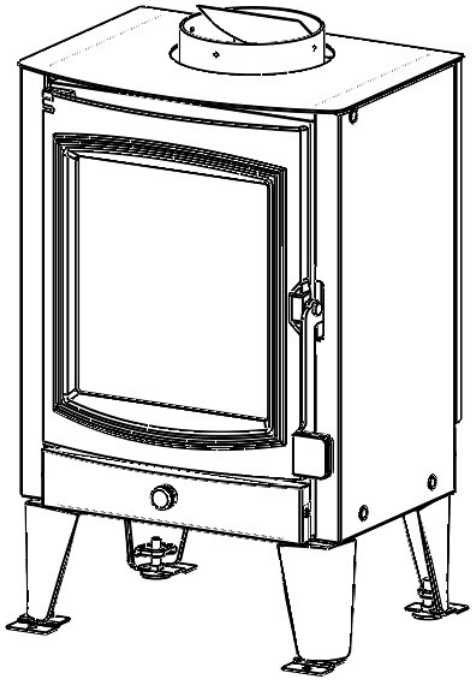
MINI WOOD FIRE STOVE



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Report Number : F24-368

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Enerco Group Inc.
4560 West 160th st Cleveland, Ohio 44135 1-800-251-0001
67018 REV A

	OPERATING INSTRUCTIONS AND OWNER'S MANUAL	Model #
		V080

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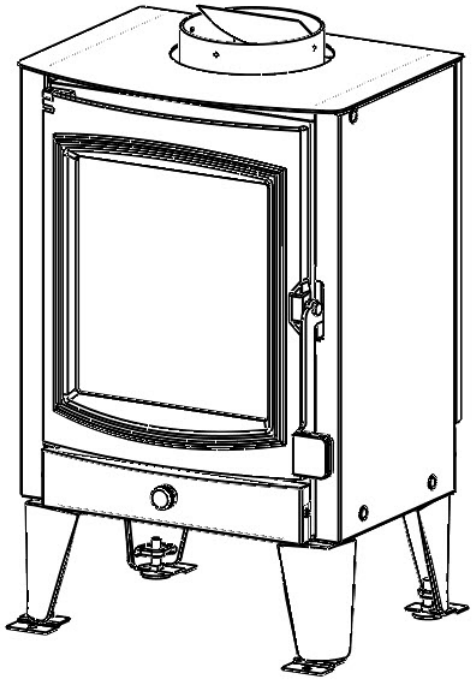
MINI WOOD FIRE STOVE



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Report Number : F24-368

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⚠ SAFETY NOTICE: IF THIS STOVE IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. FOR YOUR SAFETY, FOLLOW THE INSTALLATION INSTRUCTIONS. 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. NEVER OPERATE THIS STOVE WHILE UNATTENDED.

⚠ CAUTION: A CHIMNEY FIRE MAY CAUSE IGNITION OF WALL STUDS OR RAFTERS WHICH WERE ASSUMED TO BE A SAFE DISTANCE FROM THE CHIMNEY. IF A CHIMNEY FIRE HAS OCCURRED, HAVE YOUR CHIMNEY INSPECTED BY A QUALIFIED EXPERT BEFORE USING AGAIN.

⚠ CAUTION: IT IS IMPORTANT TO USE ONLY THE SPECIFIED COMPONENTS. USE OF COMPONENTS OTHER THAN SPECIFIED COMPONENTS MAY RESULT IN INCREASED RISK TO YOU, YOUR STOVE, AND YOUR HOME.

- Due to the high surface temperatures this unit should be located an appropriate distance from any and all combustible materials. Comply with all clearances to combustibles, see page 6.
- Assembled stove must be connected to a flue vented to the outdoors in accordance with local guidelines, see installation requirements & guidelines page 7 through page 11.
- Only use with permitted fuels, see page 13. **DO NOT BURN GARBAGE.**

SAVE THESE INSTRUCTIONS IN A SAFE PLACE FOR FUTURE REFERENCE.

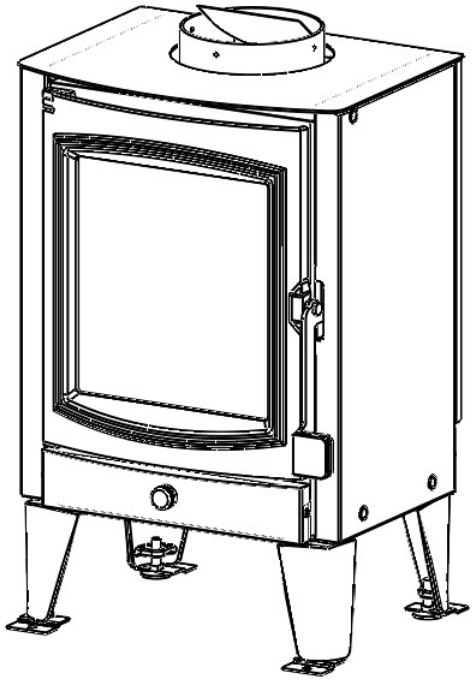
Enerco Group Inc.
4560 West 160th st Cleveland, Ohio 44135 1-800-251-0001
67020 REV A

INSTALLER: LEAVE THIS MANUAL WITH THE APPLIANCE. CONSUMER: SAVE THESE INSTRUCTIONS.

	OPERATING INSTRUCTIONS AND OWNER'S MANUAL	Model #
		WS080

⚠ CAUTION! PLEASE READ THIS ENTIRE MANUAL BEFORE YOU INSTALL OR USE YOUR NEW ROOM HEATER. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH. IMPROPER INSTALLATION WILL VOID YOUR WARRANTY!

MINI WOOD FIRE STOVE



PFS® C US
Report Number : F24-368

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- Assembled stove must be connected to a flue vented to the outdoors in accordance with local guidelines, see installation requirements & guidelines page 7 through page 11.
- Only use with permitted fuels, see page 13. **DO NOT BURN GARBAGE.**

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67022 REV A

CLEVELAND IRON WORKS

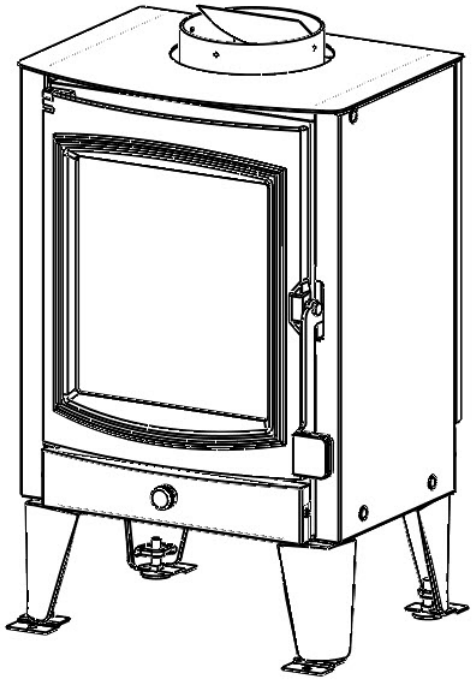
OPERATING INSTRUCTIONS AND OWNER'S MANUAL

Model #

H080

⚠ CAUTION! PLEASE READ THIS ENTIRE MANUAL BEFORE YOU INSTALL OR USE YOUR NEW ROOM HEATER. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH. IMPROPER INSTALLATION WILL VOID YOUR WARRANTY!

MINI WOOD FIRE STOVE



PFS® C US
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- Only use with permitted fuels, see page 13. **DO NOT BURN GARBAGE.**

SAVE THESE INSTRUCTIONS IN A SAFE PLACE FOR FUTURE REFERENCE.

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66972 REV A

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.

GENERAL HAZARD 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.

⚠ ONLY PERSONS WHO CAN UNDERSTAND AND FOLLOW THE INSTRUCTIONS SHOULD USE OR SERVICE THIS STOVE.

⚠ IF YOU NEED ASSISTANCE OR STOVE INFORMATION SUCH AS AN INSTRUCTIONS MANUAL, LABELS, ETC. CONTACT THE MANUFACTURER.

CAUTION:

⚠ IF THE STOVE OR STOVE PIPE GLOWS RED THE UNIT IS OVERFIRING. CLOSE STOVE DOOR AND IMMEDIATELY SHUT ALL AIR CONTROLS (PUSH AIR CONTROL TO THE "IN" POSITION) TO REDUCE AIR SUPPLY AND SLOW DOWN COMBUSTION.

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.

⚠**WARNING:** This product can expose you to chemicals including carbon monoxide, which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information visit www.P65Warnings.ca.gov

Contents

SPECIFICATIONS

Model #	H080
	DIMENSIONS
Stove Dimensions WxLxH [in (cm)]	16.7 x 14.6 x 26 (42.5 x 37.08 x 65.95)
Flue Collar	6.0 in. Round
	OPERATION SPECIFICATIONS
Fuel	Wood
	EPA and SAFETY COMPLIANCE SPECIFICATIONS
EPA Compliance*	Certified
Heat Output Range (BTU/HR)	10,710 to 26,631
Particulate Emissions (g/hr)	1.6
Avg Overall Efficiency (HHV)	72% (1)(2)
Avg Overall Efficiency (LHV)	78% (1)(3)
Optimal Efficiency (LHV)	78% (3)(4)
Optimal Heat Transfer Energy (HHV)	76% (2)(4)(5)
Tested To	UL-1482-2022 7th Edition Standard for solid-fuel type room heater
	ULC S627:2023 Standard for Space Heaters for use with Solid Fuels

Wood Stove Efficiency Reference:
1. Measured per CSA B415.1-10
2. Higher Heating Value of the fuel
3. Lower Heating Value of the fuel
4. Low Burn Rate & Extended Burn Time
5. Heat transfer efficiency represents the appliance's ability to convert the energy contained in the solid fuels into energy transferred to the room in the form of heat and does not take into account the chemical losses during combustion.

* U.S. ENVIRONMENTAL PROTECTION AGENCY Certified to comply with 2020 particulate emission standards using crib wood. This wood stove heater meets the 2020 U.S. Environmental Protection Agency's crib wood emission limits for wood heaters sold after May 15, 2020. Under specific test conditions this heater has been shown to deliver heat at ranges ranging from 10,710 to 26,631 Btu/hr with 1.6 g/hr and 72% efficiency.
NOTE: The BTU ratings mentioned above are based on the EPA test protocol under specific test conditions. Our advertised BTU's are based on the first hour of operation at high burn rate burning dry crib wood.

⚠ CAUTION: PLEASE READ THIS ENTIRE MANUAL BEFORE YOU INSTALL AND USE YOUR NEW STOVE. FAILURE TO FOLLOW INSTRUCTIONS MAY RESULT IN PROPERTY DAMAGE, BODILY INJURY, OR EVEN DEATH.

THIS WOOD HEATER NEEDS PERIODIC INSPECTION AND REPAIR FOR PROPER OPERATION. IT IS AGAINST FEDERAL REGULATIONS TO OPERATE THIS WOOD HEATER IN A MANNER INCONSISTENT WITH OPERATING INSTRUCTIONS IN THIS MANUAL.

ASSEMBLY

TOOLS REQUIRED (NOT SUPPLIED)

- Safety Glasses
- Gloves
- Pencil
- Tape Measure
- Tin Snips
- Phillips Screwdriver or comparable electric screw driver & drill bit.
- A ratchet wrench with a 7/16" and 1/2" sockets or wrenches to install flue collar and leg assembly to the unit.
- An 1/8" drill bit to drill pilot holes into the vent pipe for securing each section.

PARTS & MATERIALS REQUIRED (NOT SUPPLIED)

- Floor Protection (see "FLOORING SPACE" and "FLOORING MATERIAL" on page 6)
- All chimney and chimney connector components for your particular chimney installation.
- Additional items for Mobile home/transportable buildings may be needed. See "For use in Mobile home/ transportable buildings" section of this manual.

⚠ 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. Contact Enerco Group with any comments, concerns, or questions.

LEG INSTALLATION

Carefully lay the heater on its back and install all four legs using a total of four (4) 1/4-20 hex bolts and four (4) washers. See Figures 1 & 2.

NOTE: To prevent scratching lay cardboard down before placing the heater on its back.

FIGURE 1

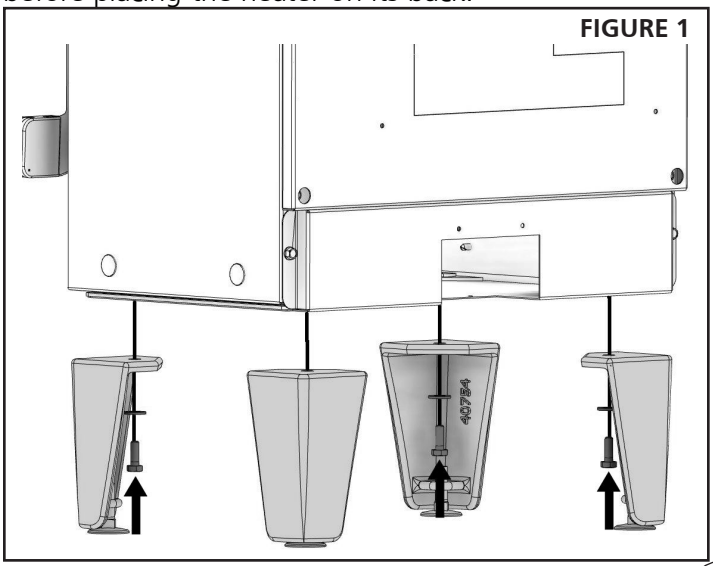
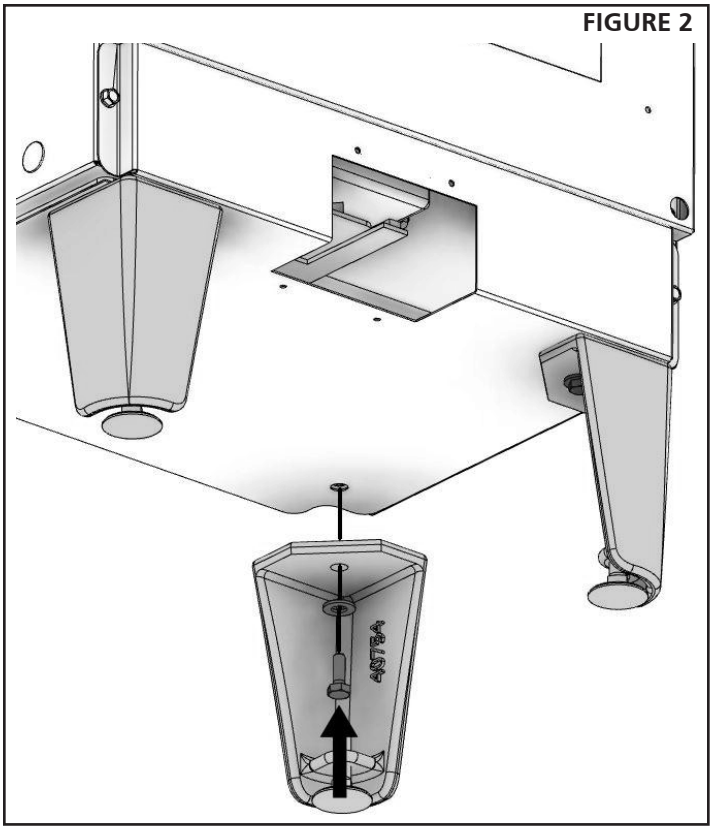


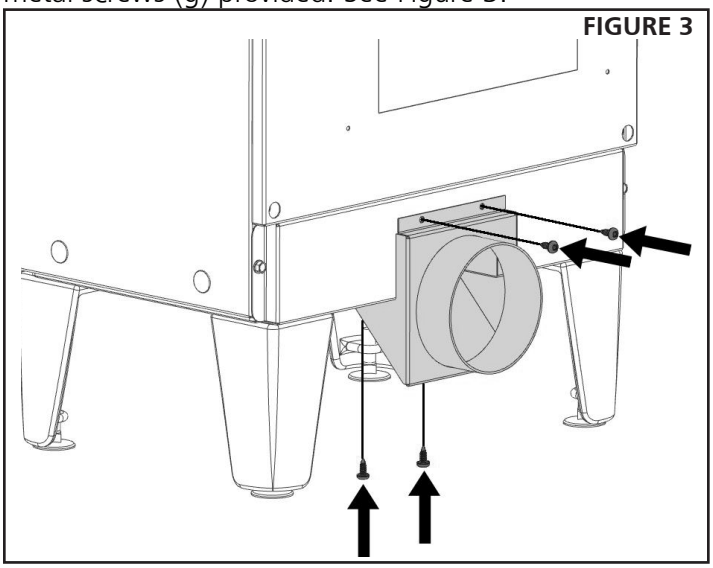
FIGURE 2



AIR INTAKE

Attach the air intake using the four (4) sheet metal screws (g) provided. See Figure 3.

FIGURE 3



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.**
- **FOR INSTALLATIONS IN A MOBILE HOME, DO NOT INSTALL IN A SLEEPING ROOM. OBEY ALL ADDITIONAL REQUIREMENTS. SEE PAGE 8.**
- **THIS ROOM HEATER SHALL NOT BE INSTALLED IN A FACTORY-BUILT FIREPLACE.**
- **IF THIS STOVE IS NOT PROPERLY INSTALLED, A HOUSE FIRE MAY RESULT. TO REDUCE THE RISK OF FIRE, FOLLOW THE INSTALLATION INSTRUCTIONS.**
- **CONSULT YOUR MUNICIPAL BUILDING DEPARTMENT OR FIRE OFFICIALS ABOUT PERMITS, RESTRICTIONS AND INSTALLATIONS REQUIREMENTS IN YOUR AREA.**
- **USE SMOKE DETECTORS IN THE ROOM WHERE YOUR STOVE IS INSTALLED.**
- **KEEP FURNITURE AND DRAPES WELL AWAY FROM THE STOVE.**
- **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.**
- **IN THE EVENT OF A CHIMNEY FIRE, PUSH THE AIR CONTROL FULL CLOSED TO DEPRIVE THE FIRE OF OXYGEN. CALL THE FIRE DEPARTMENT.**
- **DO NOT CONNECT TO ANY AIR DISTRIBUTION DUCT OR SYSTEM.**
- **A SOURCE OF FRESH AIR INTO THE ROOM OR SPACE HEATED SHALL BE PROVIDED WHEN REQUIRED.**
- **NEVER LEAVE CHILDREN NEAR THE STOVE UNATTENDED WHILE THE STOVE IS OPERATING.**

CARBON MONOXIDE

WARNING:
⚠ WHEN USED WITHOUT ADEQUATE COMBUSTION AND VENTILATION AIR OR WITH PROHIBITED FUELS, THIS STOVE MAY GIVE OFF EXCESSIVE CARBON MONOXIDE, AN ODORLESS, POISONOUS GAS.

WARNING:
⚠ EARLY SIGNS OF CARBON MONOXIDE POISONING RESEMBLE THE FLUE, WITH HEADACHE, DIZZINESS AND/OR NAUSEA. IF YOU HAVE THESE SIGNS, STOVE MAY NOT BE WORKING PROPERLY. GET FRESH AIR AT ONCE! HAVE 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 strongly recommended to reduce risk to you and your loved ones as much as possible by installing a Carbon Monoxide detector. Follow the installation, operation, & maintenance instructions provided by the manufacturer of your detector.

SMOKE DETECTORS

Have at least 1 smoke detector on each floor of your building. Follow the installation, operation, & maintenance instructions provided by the manufacturer of your detector. Avoid nuisance alarms by not placing the detector outside the immediate vicinity of the stove. Typically a good installation location for smoke detectors is near bedrooms.

FOR MORE SAFETY INFORMATION

For auxiliary information regarding wood stove safety and operation information contact the National Fire Protection Association (NFPA) by mail at:
NFPA, Batterymarch Park, Quincy, MA 02269
or visit the NFPA website:
https://www.nfpa.org/

CLEARANCE TO COMBUSTIBLES
(Refer to Figure 4 and Table 1)

The following stated clearances represent the minimum distances between the stove and any other object. No objects should encroach into this space. This includes but is not limited to carpet, furniture, children, pets, clothing, fuel, or any other object. These clearances may not be reduced by any means or regulatory authority within United States or Canada.

The stove shall not be less than 10 inches (25.4 cm) (A) from a side wall and 11 inches (27,9 cm) (B) from the back wall. The wall of a vertical vent pipe must not be less than 18 inches (45,7 cm) (C) from side wall and 14.5 inches (36.8 cm) (D) from back wall.

The Minimum floor-to-ceiling distance of the room is 84 inches (213.4 cm).

The minimum distance between the ceiling and the wall of any horizontal vent pipe is 18 inches (45.7 cm).

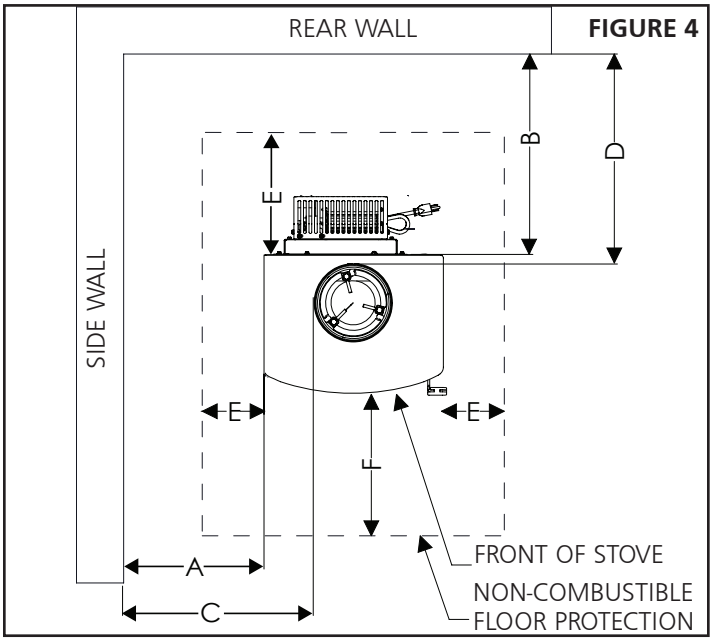


FIGURE 4

	USA/Canada
A	10 in. (25.4 cm)
B	11 in. (27.9 cm)
C	18 in. (45.7 cm)
D	14.5 in. (36.8 cm)
E	8 in. (20.3 cm)
F	16 in. (40.6 cm)
G	10 in. (25.4 cm)
H	15.5 in. (39.4 cm)

Table 1

FLOORING SPACE (Refer to Figure 4 and Table 1)
The floor protector must extend at least 16 in. (40.6 cm) (F) to the front and at least 8 in. (20.3 cm) (E) beyond each side of the fuel loading and ash removal opening.

FLOORING MATERIAL
The stove may be installed on solid concrete or solid masonry flooring. A combustible floor must be protected with non-insulated ember board per CSA B365. Space heaters meeting the requirements of CAN/ULC-S627 are suitable for installation on a combustible floor and do not require radiant floor protection.

CORNER INSTALLATION (Refer to Figure 5 and Table 1)
The stove shall not be less than 10 inches (25.4 cm) (G) from a corner. The wall of a vertical vent pipe must not be less than 15.5 inches (39.4 cm) (H) from any corner.

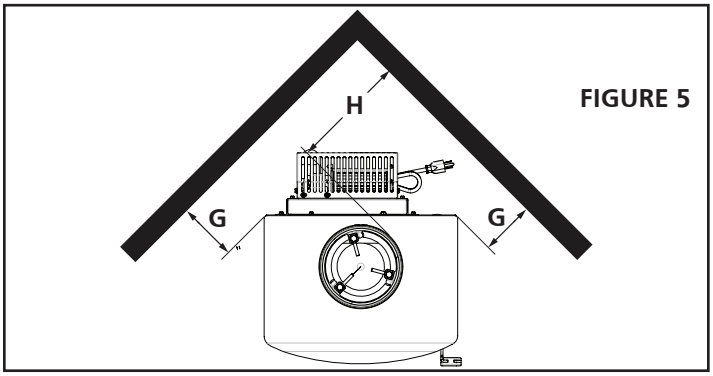


FIGURE 5

ACCESSORY INSTALLATION
BLOWER KIT (F500308) (Not Included)
1. Remove blank from back panel of the heater.
2. Use the provided six (6) sheet metal screws to attach the blower mounting bracket to the rear of the stove as shown in Figure 6.

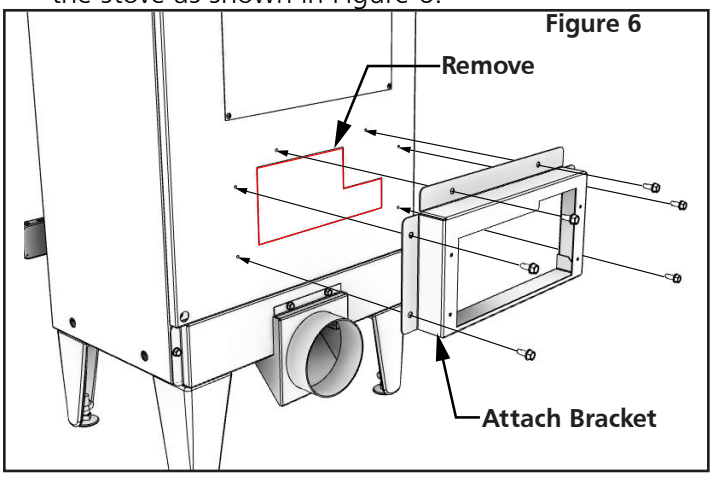


Figure 6

3. Attach the blower assembly to the blower bracket.

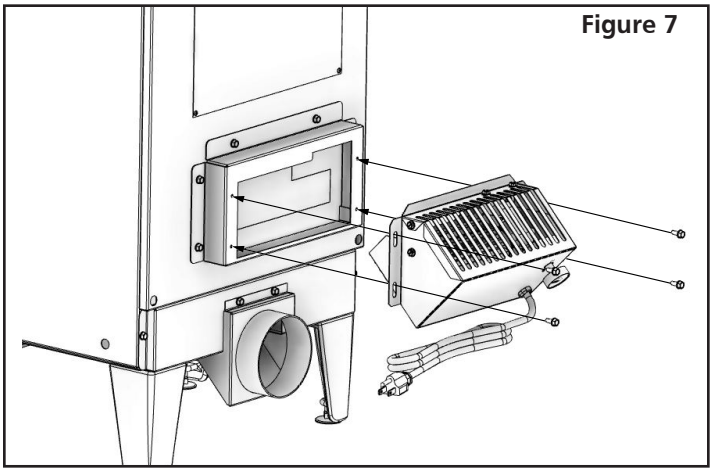


Figure 7

ELECTRICAL CONSIDERATIONS

The Blower Motor requires 120V, 60 Hz AC and will draw 0.26 amps of current. If you plan to ever use the blower, the rear of the stove will need to be within power cord distance, which is roughly 65 inches (165 cm) of an electrical outlet. Lay the power cord out such that it will not come into contact with the stove's surface so it does not overheat and get damaged. Keep power cord at least 12 inches from stove surfaces.

OUTSIDE AIR KIT (F236694)

This wood stove is approved to be installed with an outside air intake which is necessary for a mobile home/transportable building. Outside combustion air may be required if:

1. Existing fuel-fired equipment in the house, such as fireplaces or other heating appliances, smell, do not operate properly, suffer smoke roll-out when opened, or back-drafts occur whether or not there is combustion present.
2. Stove does not draw steadily, smoke roll-out occurs, wood burns poorly, or back-drafts occur whether or not there is combustion present.
3. Opening a window slightly on a calm (windless) day alleviates any of the above symptoms.
4. A ventilation system is installed in the house.
5. The house is equipped with a well-sealed vapor barrier and tight fitting windows and/or has any powered devices that exhaust house air.
6. There is excessive condensation on windows in the winter.

To install, slide the hose clamp over the aluminium flex pipe then slide the flex pipe over the air intake tube of the stove. Tighten the hose clamp over the end of the aluminium flex hose to secure.

SECURING STOVE WITH LEGS TO THE FLOOR

1. A Leg bracket engages around the square extrusion of the leveling bolt inserted into the leg.
2. Once appliance is leveled, position the bracket and attach to the floor using the two (2) provided 1/4 x 1-1/2 lag screws (h) to secure the unit to the floor. **NOTE:** The two (2) provided 1/4 x 1-1/2 lag screws (h) may not be suitable for installation in your mobile home / transportable building. Refer to local codes to determine what requirements are required for your unit.

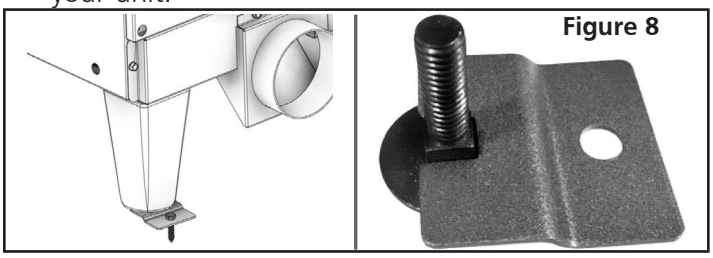


Figure 8

3. Install one bracket per leg or consult your local authority having jurisdiction to determine how many points of attachment are required.

INSTALLATION

Take measurements of your space and plan for your chimney system as detailed in the following instructions.

This stove may also be installed for use in a mobile home. In addition to the following instructions, review and adhere to the mandatory requirements on page 11.

> ⚠ **WARNING: When this stove is not properly installed, a house fire may result. To reduce the risk of fire, follow the installation instructions. Contact local building or fire officials about restrictions and installation inspection requirements in your area.**

POSITIONING THE STOVE

When deciding on a location for the stove, choose a location that will favor the most efficient heat distribution possible throughout the house. Install the stove in the room where the most time is spent and in the most spacious room possible. A stove installed in an open living room will have a higher efficiency than one placed in a basement or outdoors in sub-freezing temperatures. Burning dry wood will also make the stove more efficient than burning wet wood.

When deciding on the position and orientation of the stove be sure to obey all clearance to combustibles, have the stove on smooth level floor and not raised up, and if using the blower accessory have the stove within 65 inches (165 cm) distance of a 120v electrical supply.

⚠ WARNING: DO NOT INSTALL NEAR EXITS OR STAIRS. ENSURE STOVE CAN NOT BLOCK AN EVACUATION IN THE EVENT OF A FIRE.

MOBILE HOME/TRANSPORTABLE BUILDING REQUIREMENTS

- **WARNING! DO NOT INSTALL IN SLEEPING ROOM.**
- **CAUTION! THE STRUCTURAL INTEGRITY OF THE MOBILE HOME/TRANSPORTABLE BUILDING FLOOR, WALL, AND CEILING/ROOF MUST BE MAINTAINED.**
- **INSTALL IN ACCORDANCE WITH 24 CFR, PART 3280 (HUD).**
- **USE A FACTORY BUILT CHIMNEY THAT COMPLIES WITH UL 103 STANDARDS; THEREFORE IT MUST BE A TYPE HT (2100 F).**
- **USE A SPARK ARRESTER.**
- **THE STOVE MUST BE ATTACHED TO THE STRUCTURE OF THE MOBILE HOME/ TRANSPORTABLE BUILDING.**

ADDITIONAL INSTALLATION REQUIREMENTS

⚠ CAUTION: THE STRUCTURAL INTEGRITY OF THE MOBILE HOME FLOOR, WALL, CEILING, AND ROOF MUST BE MAINTAINED.

- The stove must be on installed on a level surface which can support the weight of the stove.
- The stove must be bolted to the level surface so that it permanently secured and can not be moved, tipped, or have ventilation seals compromised.
- The stove must be grounded with #8 grounding wire and terminated at each end with a National Electrical Code (NEC) approved grounding device. A paint penetrating washer such as a star washer shall be installed where connected to steel frame of the Mobile Home.
- The space heater is to be connected to a factory-built chimney conforming to UL 103, Standard for 650 C Factory-Built Chimneys
- The chimney must comply with all applicable codes and requirements of the authority having jurisdiction.
- The use of outside combustion air is mandatory when installing this wood stove in a mobile or manufactured home.
- The chimney must be removed for any mobile home transportation, and reinstalled per all instructions after transportation.

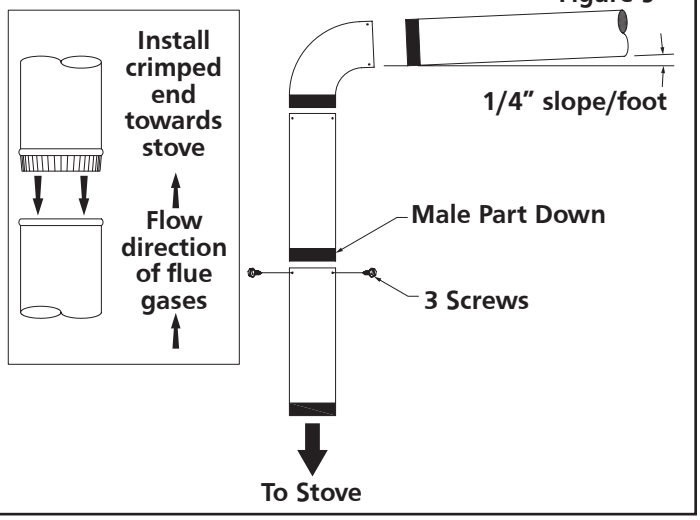
CHIMNEY CONNECTORS REQUIREMENTS AND INSTALLATION

If you have any questions regarding ventilation options of your stove, contact either:

- The manufacturer Enerco Group Company at 1-800-251-0001. Our office hours are 8:00 AM – 5:00 PM, EST, Monday through Friday.
- The National Fire Protection Association (NFPA) and request a copy of the latest editions of NFPA Standard 211 and NFPA Standard 908. The mailing address of the NFPA is Battery March Park, Quincy, MA 02269.

⚠ CAUTION: THIS STOVE SHALL NOT BE INSTALLED IN A BEDROOM OR BATHROOM.

Figure 9



- The chimney connector and chimney must have the same diameter as the stove outlet (6"). If this is not the case, contact your dealer to ensure there will be no problem with the draft.
- The stovepipe must be made of aluminized or cold roll steel and have a minimum thickness of 0.021" or 0.53 mm. It is strictly forbidden to use galvanized steel.
- The smoke pipe should be assembled to promote the male section (crimped end) of the pipe to be faced down. Attach each section to another with three metal screws spaced an equal distance apart.
- The pipe must be short and straight. All sections installed horizontally must slope at least 1/4 inch per foot, with the upper end of the section toward the chimney.

- Any installation with a horizontal run of chimney pipe must conform to NFPA 211. To ensure a good draft, the total length of the coupling pipe should never exceed 8' to 10' (2.4m to 3.04m). The exception is for cases of vertical installation, in a cathedral-roof style where the smoke exhaust system can be much longer and connected without problem to the chimney at the ceiling of the room.
- There should never be more than two 90 degree elbows in the smoke exhaust system.
- The installation of a "barometric draft stabilizer" (fireplace register) on a smoke exhaust system is prohibited.
- The installation of a draft damper is also not recommended. With a controlled combustion wood stove, the draft is regulated upon intake of the combustion air in the stove and not at the exhaust.

⚠ 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.

⚠ 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.

Where passage through a wall or partition of combustible construction is desired, the installation shall conform to chimney manufacturer's instructions.

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

IMPORTANCE OF PROPER DRAFT

Draft is the flow of air that moves from an appliance up through the chimney. Its strength depends on factors like chimney length, local geography, and nearby obstructions. Too much draft can lead to high appliance temperatures, while insufficient draft can cause smoke to spill into the room and block the chimney. An excessive draft results in uncontrollable burns or overheating, while inadequate draft causes back-puffing and smoke leakage.

CHIMNEY REQUIREMENTS

GENERAL

⚠ CAUTION: DO NOT USE MAKESHIFT COMPROMISES WHEN INSTALLING THE VENTING SYSTEM; HAVE EXISTING CHIMNEY SYSTEMS INSPECTED BEFORE USE AND BE CERTAIN ALL NEW CHIMNEY SYSTEMS ARE INSTALLED TO THE MANUFACTURER'S SPECIFICATIONS AND WITH ONLY UL LISTED COMPONENTS (ULC IF CANADA).

For the sake of exhausting combustion products and also establishing a draft which provides oxygen for combustion, the stove must be installed for use in conjunction with a 6" factory-built or masonry chimney:

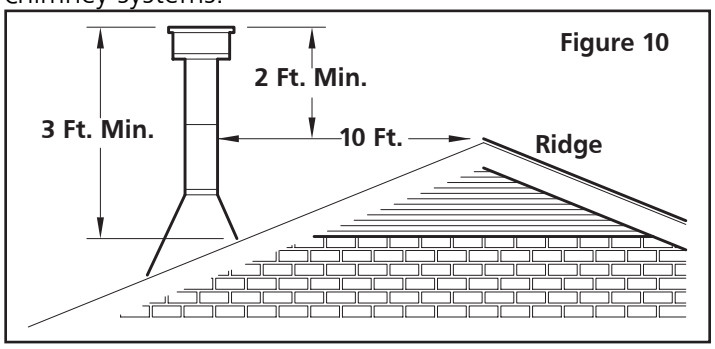
- If you are using a factory-built chimney, it must comply with UL 103 or CAN/ULC-S629 standard; therefore it must be a Type HT (2100 F). It must be installed according to the manufacturer's specifications. Consider the chimney's location to ensure it is not too close to neighbors or situated in a valley, as these conditions may create unhealthy or nuisance issues.
- If you are using a masonry chimney, it must be built in compliance with the specifications of the National Building Code. It must be lined with firebricks, metal, or clay tiles sealed together with fire cement.

Flues:

- Round flues are the most efficient.
- The interior diameter of the chimney flue must match the stove's smoke exhaust. A flue that's too small can cause draft issues, while a larger flue can cool gases too quickly, leading to creosote buildup and an increased risk of chimney fires.
  Note: The chimney, not the stove, creates the draft effect. The stove's performance relies on having an adequate draft from the chimney.

⚠ CAUTION: DO NOT CONNECT THIS UNIT TO A CHIMNEY FLUE SERVING ANOTHER APPLIANCE.

Refer to Figure 10 and the following notes regarding chimney systems:



—The chimney must rise above the roof at least 3' (0.9m) from the uppermost point of contact.

—It must exceed any part of the building or other obstruction within a 10' (3.04m) distance by a height of 2' (0.6m).

—An interior chimney is preferable to an exterior chimney because it stays hotter, warmed by the house's ambient air. This slower cooling of gases reduces creosote buildup and lowers the risk of chimney fires.

—The draft caused by the tendency for hot air to rise will be increased with an interior chimney.

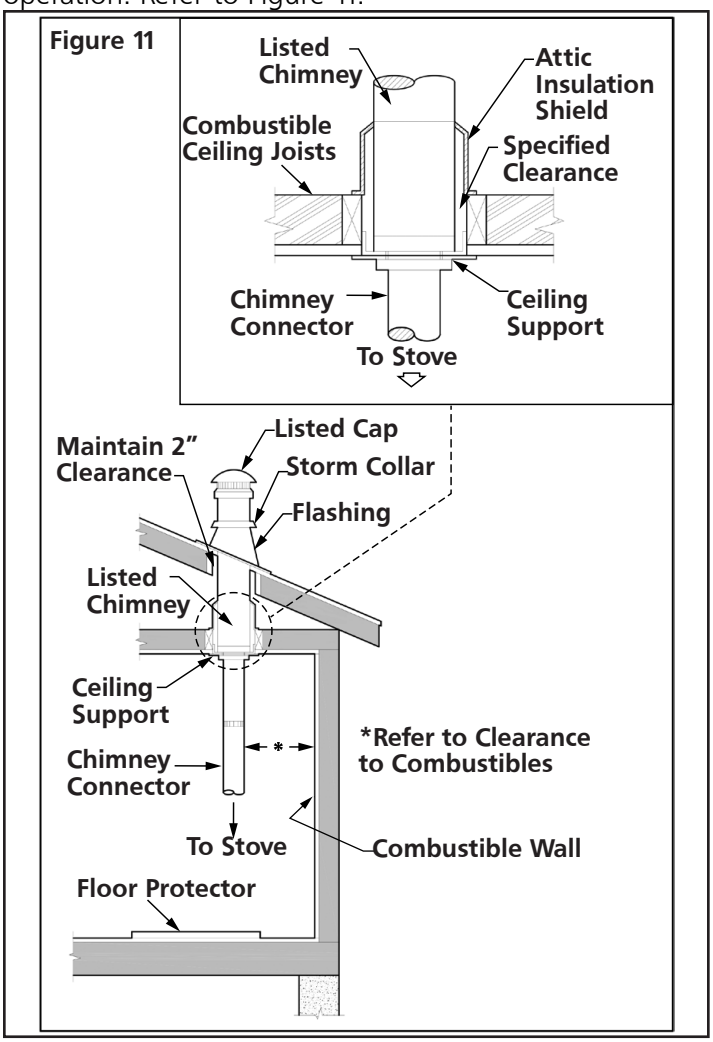
—A fire screen at the chimney's end should be regularly inspected to ensure it isn't obstructed, as this can block the draft. It should also be cleaned if used frequently.

Contact your local building authority for approved methods of installation and any necessary permits and/or inspections.

MANUFACTURED CHIMNEY

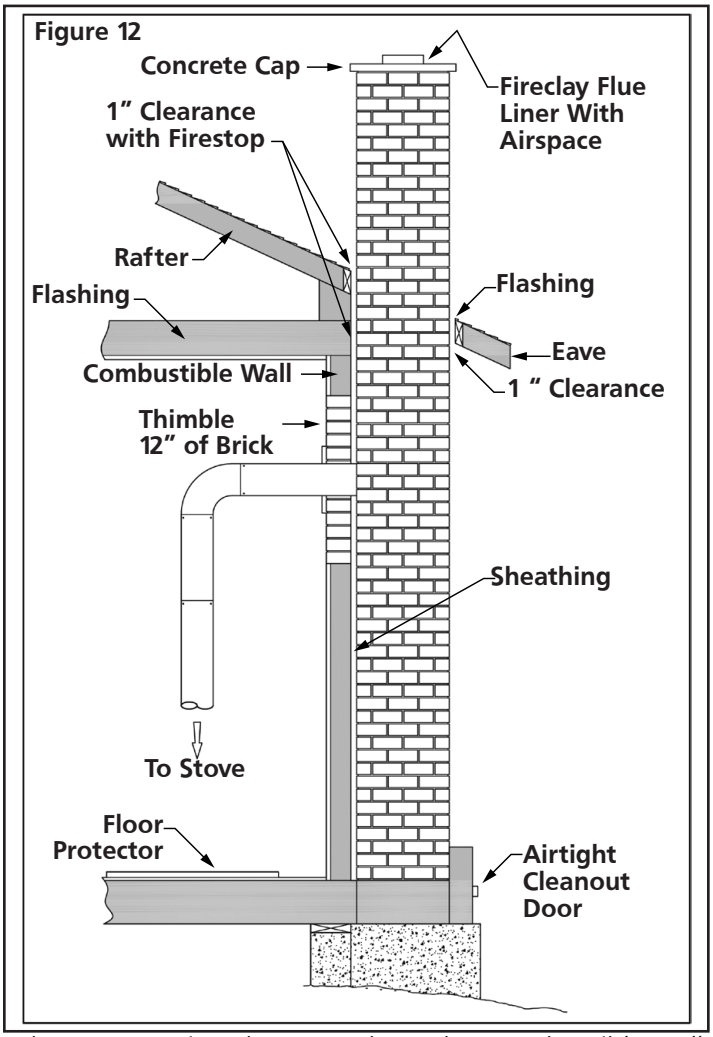
⚠ WARNING: DO NOT USE SINGLE-WALL CONNECTION PIPE AS A CHIMNEY.

When a manufactured chimney is used, the manufacturer's installation instructions must be followed. You must also purchase (from the same manufacturer) and install the ceiling support package or wall pass-through and "T" section package, firestops (where needed), insulation shield, roof flashing, chimney cap, etc. Maintain proper clearance to the structure as recommended by the manufacturer. The chimney must be the required height above the roof or other obstructions for safety and proper draft operation. Refer to Figure 11.



MASONRY CHIMNEY

To ensure a masonry chimney meets National Fire Protection Association (NFPA) standards, have it professionally inspected for cracks, loose mortar, deterioration, or blockages. Clean the chimney before installing and operating the stove.



When connecting the stove through a combustible wall to a masonry chimney, special installation methods are required. Refer to Figures 13-16.

COMBUSTIBLE WALL CHIMNEY CONNECTOR PASS-THROUGHS (US ONLY)

Brick Masonry: 12" (304.8 mm) Clearance to Combustible Wall Member: Using a minimum thickness 3.5" (89 mm) brick and a 5/8" (15.9 mm) minimum wall thickness clay liner, construct a wall pass-through. The clay liner must conform to ASTM C315 (Standard Specification for Clay Fire Linings) or its equivalent. Keep a minimum of 12" (304.8 mm) of brick masonry between the clay liner and wall combustibles. The fireclay liner shall run from outer surface of brick wall to, but not beyond, the inner surface of chimney flue liner and shall be firmly cemented in place.

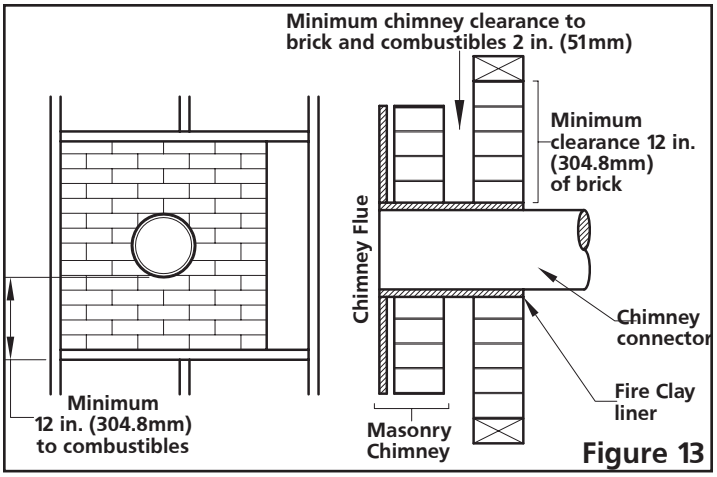


Figure 13

Insulated Sleeve: 9" (228.6 mm) Clearance to Combustible Wall Member: Using a 6" (152.4 mm) inside diameter, listed, factory-built Solid-Pak chimney section with insulation of 1" (25.4 mm) or more, build a wall passthrough with a minimum 9" (228.6 mm) air space between the outer wall of the chimney length and wall combustibles. Use sheet metal supports fastened securely to wall surfaces on all sides, to maintain the 9" (228.6 mm) air space. When fastening supports to chimney length, do not penetrate the chimney liner (the inside wall of the Solid-Pak chimney). The inner end of the Solid-Pak chimney section shall be flush with the inside of the masonry chimney flue, and sealed with a non-water soluble refractory cement. Use this cement to also seal to the brick masonry penetration.

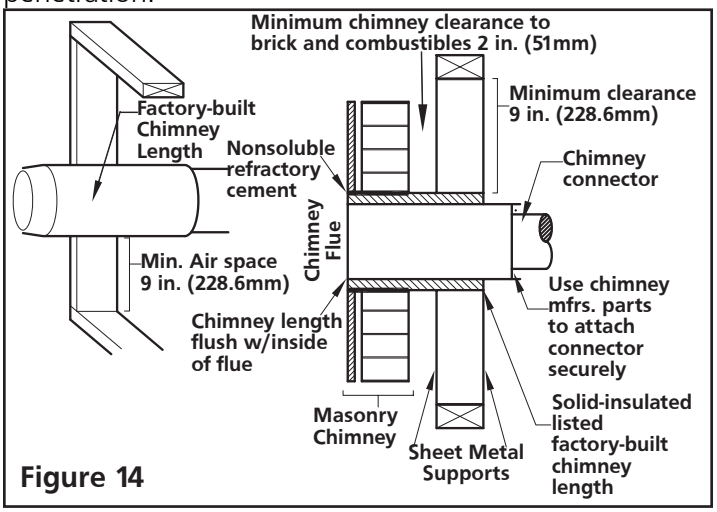


Figure 14

Ventilated Thimble: Sheet steel chimney connector, minimum 24 gauge (.024" [.61 mm]) in thickness, 6" (152.4 mm) , with a ventilated thimble, minimum 24 gauge in thickness, having two 1 inch (25.4 mm) air channels, separated from combustibles by a minimum of 6 inches (152.4 mm) of glass fiber insulation. Opening shall be covered, and thimble supported with a sheet steel support, minimum 24 gauge in thickness. There should also be a support sized to fit and hold the metal chimney connector. See that the supports are fastened securely to wall surfaces on all sides and that fasteners used to secure the metal chimney connector do not penetrate chimney flue liner.

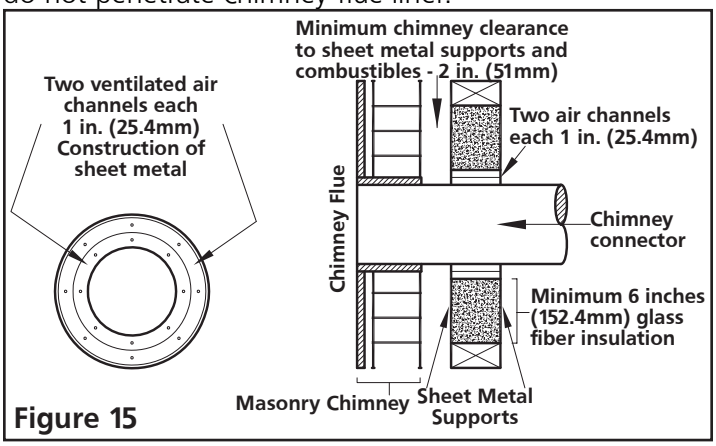


Figure 15

Chimney Section Pass-Through: 2" (50.8 mm) Clearance to Combustible Wall Member: Solid insulated, listed factory-built chimney length with an inside diameter 2 inches (51 mm) larger than the chimney connector and having 1 inch (25.4 mm) or more of insulation, serving as a pass-through for a single wall sheet steel chimney connector of minimum 24 gauge thickness, with a minimum 2 inches (51 mm) of air space between the outer wall of chimney section and combustibles. Minimum length of chimney section shall be 12 inches (305 mm) chimney section spaced 1 inch (25.4 mm) away from connector using sheet steel support plates on both ends of chimney section. Opening shall be covered, and chimney section supported on both sides with sheet steel support securely fastened to wall surfaces of minimum 24 gauge thickness. Fasteners used to secure chimney section shall not penetrate chimney flue liner.

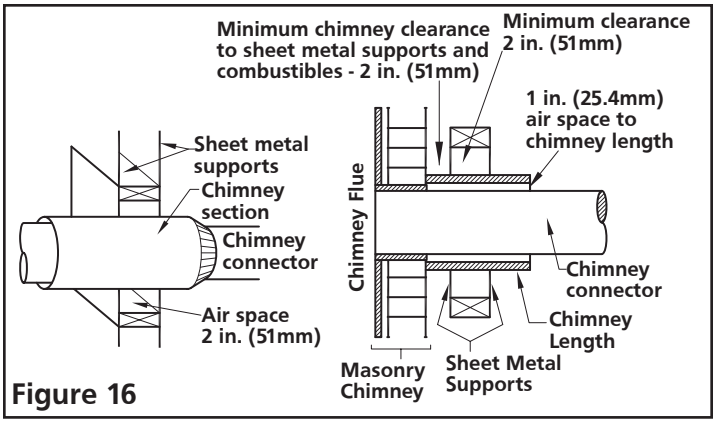


Figure 16

NOTES:

- Connectors to a masonry chimney, except for the Insulated Sleeve, shall extend in one continuous section through the wall pass-through system and the chimney wall, to but not past the inner flue liner face.
- A chimney connector shall not pass through an attic or roof space, closet or similar concealed space, or a floor, or ceiling.

⚠ **WARNING: Additional combustion air should be provided from the outdoors if these or other indications suggest that infiltration air is inadequate:**

- **The solid-fuel-fired appliance does not draw steadily, experiences smoke roll-out, burns poorly, or back-drafts whether or not there is combustion present.**
- **Existing fuel-fired equipment in the house, such as fireplaces or other heating appliances, smell, do not operate properly, suffer smoke roll-out when opened, or back-draft, whether or not there is combustion present.**
- **Any of the above symptoms are alleviated by opening a window slightly on a calm (windless) day.**
- **The house is equipped with a well-sealed vapor barrier and tight fitting windows and/or has any powered devices which exhaust house air.**
- **There is excessive condensation on windows in the winter and**
- **A ventilation system is stalled in the house.**

OPERATION

⚠ CAUTION: NEVER ATTEMPT TO USE ANY OF THE FOLLOWING MATERIALS AS FUEL.

- Unseasoned wood (green, wet, or freshly cut wood);
- Pressure treated wood;
- Paper products, cardboard, or particleboard;
- Salt water driftwood or other previously salt water saturated materials;
- Garbage;
- Animal remains or manures;
- Lawn clippings or yard waste;
- Waste petroleum products,
- Materials containing
  - —asbestos
  - —plastic
  - —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.

APPROVED FUEL:

⚠ CAUTION: BURN UNTREATED WOOD ONLY. OTHER MATERIALS SUCH AS WOOD PRESERVATIVES, METAL FOILS, COAL, PLASTIC, GARBAGE, SULPHUR, OR OIL, MAY DAMAGE THE STOVE.

- Your wood stove is designed to burn only well-seasoned natural wood, with no other materials. While any seasoned natural wood is suitable, some types provide better energy yields. Air-dried, seasoned hardwoods offer higher efficiency and lower emissions than softwoods or green, freshly cut hardwoods.
- Deadwood on the forest floor is typically wet and needs full seasoning, while standing deadwood is usually about 2/3 seasoned.
- Smaller pieces of wood will dry faster. All logs exceeding 6" in diameter should be split.
- Wood should be stored off the ground with air circulating between logs. Leave 24-48 inches of space between rows in a sunny spot. Cover only the top layer to protect it from the elements. Wood is likely ready to burn if cracks radiate from the center of the log ends.
- If wood sizzles in the fire, it may not be fully cured and needs more seasoning, even if the surface appears dry.
- It's crucial to use only dry wood in your wood stove. Wood should dry for 9 to 15 months until its moisture content is below 20% of its weight.
- Wood may not be dry even after one or more years if stored improperly; in poor conditions, it may rot instead of drying.
- Most wood stove issues arise from using wood that is too damp or poorly dried.

⚠ CAUTION: Attempts to use wet or unseasoned wood will result in:

- **Ignition difficulty.**
- **Accelerated creosote build-up resulting in chimney fire.**
- **Incomplete combustion.**
- **Low heat yield.**
- **Blackening of the glass in door.**

Certain fire starters, like paper, cardboard, sawdust, and wax, can help wood catch fire initially. However, these may release toxic fumes, reduce stove efficiency, and cause smoke. It's essential to understand the guidelines and risks for any fire starters you use.

⚠ CAUTION: NEVER USE GASOLINE, GASOLINE-TYPE LANTERN FUEL, KEROSENE, CHARCOAL LIGHTER FLUID, OR SIMILAR LIQUIDS TO START OR 'FRESHEN UP' A FIRE IN THIS STOVE. KEEP ALL SUCH LIQUIDS WELL AWAY FROM THE STOVE WHILE IT IS IN USE.

Do not store fire wood or fire starting materials on floor protector, underneath stovepipe, or anywhere withing minimum clearances from combustible surfaces specified on page 6.

Wood should be stored in a dry, well ventilated area.

TESTING WOOD

- When the stove is thoroughly warmed, place one piece of split wood (about five inches in diameter) parallel to the door on the bed of red embers.
- Close the door. If the wood ignites within 90 seconds from the time it was placed in the stove, your wood is correctly dried. If ignition takes longer, your wood is damp.
- If wood hisses and releases water or vapor at the ends, it is too wet or freshly cut and should not be used. Burning this wood can lead to creosote buildup in the chimney, increasing the risk of a chimney fire.

TAMPER WARNING

The wood heater has a manufacturer-set minimum low burn rate that must not be changed. Altering this setting or operating the heater contrary to the manual's instructions is against federal regulations.

EFFICIENCIES

Efficiency can be measured using either the lower heating value (LHV) or the higher heating value (HHV) of the fuel. LHV considers water vapor leaving the combustion process, while HHV assumes water condenses completely, meaning some heat is lost up the chimney. Therefore, efficiency based on LHV is typically higher than that based on HHV. To achieve optimal efficiency, it's important to understand your appliance's burn characteristics and burn well-seasoned wood. Higher burn rates aren't always best; after a good fire is established, a lower burn rate can be more efficient by slowing heat loss up the chimney and using less wood.

PAINT CURING

NOTE: BECAUSE OF HIGH OPERATING TEMPERATURES, THIS STOVE USES A SPECIAL HIGH-TEMPERATURE PAINT. TO ENABLE THE PAINT TO BOND DURABLY TO THE STOVE, FOLLOW THE FOLLOWING PROCEDURE:

1. Build a small fire in the stove for 20 minutes.
2. Build another small fire in the stove which lasts 20 minutes.
3. Build a final medium sized fire in the stove which lasts 20 minutes.

The paint curing process is now complete. Provide cross ventilation to eliminate odors or smoke cause by curing process.

OPERATING PRECAUTIONS

1. Inspect stovepipe at the start of the season and at least once every 60 days. Replace immediately if stovepipe is rusting or leaks smoke into room.
2. Use only the approved fuel.

⚠ WARNING: BURNING FUELS OTHER THAN CRIB WOOD, PARTICULARLY COAL AND CHARCOAL, CAN RESULT IN HAZARDOUS CONCENTRATIONS OF CARBON MONOXIDE BEING EMITTED INTO THE DWELLING. FOR THESE REASONS, NEVER BURN COAL OR CHARCOAL IN THIS CRIB WOOD STOVE. INSTALLING A CARBON MONOXIDE DETECTOR AND BEING AWARE OF THE SYMPTOMS OF CARBON MONOXIDE POISONING CAN HELP REDUCE THE RISK OF CARBON MONOXIDE RELATED ISSUES.

3. Inspect the glass door. ***CAUTION:*** Do not operate if the glass is cracked or broken. Never load fuel above firebrick height that would cause the stove to overfire.
4. Do not position fuel against the glass.

⚠ WARNING: THIS UNIT WAS DESIGNED FOR OPERATION ONLY WITH THE DOOR CLOSED AND TIGHTLY LATCHED. OPERATING THIS UNIT WITH THE DOOR LATCHED LOOSELY OR OPEN WILL ALLOW EXCESSIVE COMBUSTION AIR TO REACH THE FIRE AND WILL RESULT IN DANGEROUSLY HIGH UNIT TEMPERATURES. HIGH UNIT TEMPERATURES "OVERFIRING" CAN DAMAGE THE UNIT, VOID THE WARRANTY OR IGNITE CREOSOTE DEPOSITED IN THE CHIMNEY SYSTEM BY PREVIOUS, SLOW BURNING FIRES.

5. Do not obstruct the lower air inlet (bottom of the firebox by door) or the secondary air tubes (along the top of the firebox).
6. Check all seals on the door are in good condition.

MINIMUM BURN RATE

⚠ CAUTION: DO NOT OPERATE STOVE IF THE GLASS IS BROKEN.

1. Start on maximum setting with approximately 1.9lbs of kindling, keeping the door slightly open for a couple minutes for good ignition.

⚠ WARNING: DO NOT USE GRATE OR ELEVATE FIRE – BUILD WOOD FIRE DIRECTLY ON FIREBRICK. NEVER PUT WOOD ABOVE THE FIREBRICK LINING OF THE FIREBOX. DO NOT OPERATE WITH THE MAIN DOOR OPEN – OPERATING THE STOVE WITH THE MAIN DOOR OPEN WILL CREATE AN OVER-FIRE.

2. When weight reaches approximately 0.2lbs insert preload (with bottom pieces standing on their side) and leave door cracked for 30 seconds.

⚠ WARNING: NEVER LEAVE A RUNNING STOVE UNATTENDED WHILE DOOR IS OPEN. THE DOOR MAY ONLY BE OPEN FOR FIRE STARTING AND FIRE TENDING. TO CLOSE: FIRMLY ROTATE DOOR HANDLE CLOCK WISE UNTIL THE DOOR IS SECURELY LATCHED. DO NOT SLAM THE DOOR.

3. When weight reaches 4.2lbs start the fan at low speed and set air damper to the low setting (fully closed).

4. At 0.9lbs the load can be inserted and fan set to maximum setting.

5. Close the door and reopen air inlet to fully open position for 5 minutes before closing the air inlet back to minimum setting.

⚠ CAUTION: WHEN TENDING THE STOVE ALWAYS WEAR FIRE RETARDANT CLOTHING AND PROTECTIVE EYEWARE.

MEDIUM LOW BURN RATE

1. Start on maximum setting with approximately 2lbs of kindling, keeping door slightly open for a couple of minutes for good ignition.

2. When weight reaches approximately 0.2lbs insert preload (with bottom pieces standing on their side) and leave door cracked for 30 seconds.

3. When the stove burns off about 0.5lbs start the fan at low speed and set the air inlet to the medium low setting (0.3" out from the minimum setting).

4. At 0.9lbs the load can be inserted and fan set to maximum setting.

5. Close the door and reopen air inlet to fully open position for 5 minutes before closing the air inlet back to Medium Low setting.

MEDIUM HIGH BURN RATE

1. Start on maximum setting with approximately 2.5lbs of kindling, keeping the door slightly open for a couple minutes for good ignition, set fan speed to medium setting.

2. When weight reaches approximately 0.2lbs insert the preload with an extra piece (with bottom pieces lying flat).

3. At 0.9lbs the load can be inserted and fan set to maximum setting.

4. Leave door slightly cracked until flame catches then fully close door. Set to Medium High Setting (rod 1.5" out from minimum setting).

MAXIMUM BURN RATE

1. Start on maximum setting with approximately 2.5lbs of kindling, keeping the door slightly open for a couple minutes for good ignition, set fan speed to maximum.

2. When weight reaches approximately 0.2lbs or 25 minutes, insert preload and close the door.

3. At 0.9lbs the load can be inserted and door closed.

⚠ CAUTION: NEVER OVERFIRE YOUR STOVE. IF ANY PART OF THE STOVE STARTS TO GLOW RED, OVER FIRING IS HAPPENING. READJUST THE AIR INTAKE CONTROL AT A LOWER SETTING.

⚠ WARNING: IN CASE OF CHIMNEY FIRE:
1. CLOSE AIR INLET CONTROL BY PUSHING AIR CONTROL IN TOWARDS STOVE.
2. GET OUT OF THE HOUSE OR BUILDING.
3. CALL THE FIRE DEPARTMENT.

OPERATION NOTES

- The amount of visible smoke can effectively indicate the efficiency of the combustion process in your wood stove.
- Visible smoke is made up of unburned fuel and moisture. To minimize smoke, adjust the air settings of your stove. Wood that is improperly seasoned or has high moisture content will produce excessive smoke and burn inefficiently.
- The air tubes in the unit ensure an accurate mix of secondary air for optimal efficiency. Damage or deterioration of these tubes can reduce combustion efficiency.
- Burning wood produces smoke and carbon monoxide (CO), which is toxic at high concentrations. Modern combustion systems reduce CO emissions, but exposure in confined spaces can be dangerous. Ensure stove gaskets and chimney joints are properly sealed, and use smoke and CO monitors in areas with potential CO buildup.

CREOSOTE - FORMATION AND NEED FOR REMOVAL

Failure to remove creosote may result in a dangerous chimney fire.

When wood is burned slowly, it produces tar and other organic vapors, which combine with expelled moisture to form creosote. The creosote vapors condense in the relatively cool chimney flue of a slow-burning fire. As a result, creosote residue accumulates on the flue lining. When ignited this creosote makes an extremely hot fire. The chimney connector and chimney should be inspected at least once every two months during the heating season to determine if a creosote buildup has occurred. If a significant layer of creosote has accumulated (eighth of an inch, 3 mm, or more) it should be removed to reduce the risk of a chimney fire.

It is recommended to install a magnetic thermometer on the smoke exhaust pipe, about 18" above the stove, to monitor exhaust gas temperature. The ideal temperature range is between 275 F and 500 F. Below this range, creosote buildup is encouraged, and above 500 F, heat is wasted.

MINIMIZING CREOSOTE FORMATION

To slow the build up of creosote within your chimney, comply with the following guidelines:

- Burn only the recommended fuel "APPROVED FUEL" on page 13.
- Do not mix green or wet wood with the approved fuel. Wood that does not ignite but instead hisses, sizzles, and blackens is definitely too wet. It will cause accelerated creosote build up in chimney and will also reduce the heat output of the stove.
- Leave the air control fully open for about 5 min. every time you reload the stove to bring it back to proper operating temperatures. The secondary combustion can only take place if the firebox is hot enough.
- Check for creosote deposit once every two months and have your chimney cleaned at least once a year.
- If a chimney or creosote fire occurs, close all dampers immediately. Wait for the fire to go out and the heater to cool, then inspect the chimney for damage. If no damage results, perform a chimney cleaning to ensure no more creosote deposits is remaining in the chimney.

⚠ CAUTION: A CHIMNEY FIRE MAY CAUSE IGNITION OF WALL STUDS OR RAFTERS WHICH WERE ASSUMED TO BE A SAFE DISTANCE FROM THE CHIMNEY. IF A CHIMNEY FIRE HAS OCCURRED, HAVE YOUR CHIMNEY INSPECTED BY A QUALIFIED EXPERT BEFORE USING AGAIN.

DISPOSAL OF ASHES

Whenever ash accumulates within the fire box or ash pan to a height of 3-4 inches:

1. After ashes have cooled, open ash pan and remove excess ashes. Leave an ash bed approximately 1 inch deep on the firebox bottom to help maintain a hot charcoal bed.
   NOTE: You may also purchase a Ash Vacuum, model# AV65GALB/AV65GALSS.

2. Ashes should be placed in a metal container with a tight fitting lid and moved outdoors immediately. The closed container of ashes should be placed on a noncombustible floor or on the ground, well away from all combustible materials, pending final disposal. If the ashes are disposed of by burial in soil or otherwise locally dispersed, they should be retained in the closed container until all cinders have thoroughly cooled.

3. Other waste shall not be placed in ash containers.

⚠ CAUTIONS:

- **ASHES COULD CONTAIN HOT EMBERS EVEN AFTER TWO DAYS WITHOUT OPERATING THE STOVE.**
- **THE ASH PAN CAN BECOME VERY HOT. WEAR GLOVES TO PREVENT INJURY.**

MAINTENANCE

⚠ CAUTION: THIS WOOD HEATER NEEDS PERIODIC INSPECTION AND REPAIR FOR PROPER OPERATION. IT IS AGAINST FEDERAL REGULATIONS TO OPERATE THIS WOOD HEATER IN A MANNER INCONSISTENT WITH OPERATING INSTRUCTIONS IN THIS MANUAL.

⚠ WARNING: THE CHIMNEY CONNECTOR MUST BE IN GOOD CONDITION AND BE KEPT CLEAN TO SAFELY USE THIS STOVE.

DAILY MAINTENANCE

- Inspect the firebox for ash accumulation; remove excess ash and follow instructions below regarding disposal.

MONTHLY MAINTENANCE

- Check the blower for dust accumulation (if installed); check the door handle for proper operation and to be certain an airtight seal is still being made by the door.
- Inspect the chimney system and chimney connector and sweep if necessary. Although cleaning may be required less than monthly, ALWAYS inspect the venting system monthly to decrease the chance of a chimney fire.
- Visually inspect the ceramic fiberboards in the firebox for cracks and/or breakage. Slight surface cracks will not affect the performance of the boards, but cracked or crumbling boards should be replaced immediately.
- Visually inspect the air tubes for cracks, warping and corrosion. Although these tubes are constructed from stainless steel, they operate at very high temperatures and can eventually wear out from normal use.

YEARLY MAINTENANCE

- Check all gaskets (window and door) for wear and to be certain they still maintain an airtight seal. See the following page for instructions.
- Thoroughly clean the chimney system and the chimney connector system. Since the chimney connector is generally exposed to high exhaust temperatures, inspect it carefully for leaks and weak spots; replace any questionable pieces. In the case of straight through the roof chimney system, be certain to remove the ceramic fiberboards before pushing the chimney sweeping brush down into the firebox. Forcefully hitting the top of the board with a cleaning brush or rod can damage or destroy the boards.
- Remove all ash from the stove. Leave the air control open during the non-heating months to allow some air to flow through the stove to help prevent corrosion.

⚠ WARNING: DO NOT ATTEMPT TO CLEAN OR SERVICE WHILE THE STOVE IS HOT. BEFORE OPENING THE STOVE DOOR FOR ANY TYPE OF SERVICE, BE SURE THAT THE STOVE IS COOL AND THAT THE BLOWER IS UNPLUGGED.

⚠ WARNING: USE ONLY MANUFACTURER'S REPLACEMENT PARTS. USE OF ANY OTHER PARTS COULD CAUSE INJURY OR DEATH.

CLEANING GLASS

Be certain the stove and the glass are completely cool. The build-up on the glass will generally be light and water is normally sufficient to remove the deposits. If stubborn soot persists, use a cleaner made specifically for this purpose. Rinse the glass with clean water and dry the glass before resuming normal operation. These cleanings help prevent the accumulation of acidic ash build up which can weaken the glass and result in cracks. It is not acceptable to operate the stove with cracked or broken glass.

⚠ WARNING: DO NOT CLEAN GLASS WITH ABRASIVE CLEANERS OR BY ANY OTHER PROCESS WHICH MAY SCRATCH OR DAMAGE THE GLASS. DO NOT CLEAN WHEN HOT!

REPLACING GLASS

⚠ WARNING: DO NOT ABUSE THE GLASS DOOR BY STRIKING IT OR SLAMMING THE DOOR SHUT.

Replace the door glass only with 5 mm high-temperature ceramic single-pane glass. The glass size is 15 in.(381 mm) x 11.25 in.(285.75 mm). DO NOT use substitute materials! Never replace ceramic glass with tempered or any other type of glass. Contact the manufacturer for more information on ordering factory original or equivalent parts.

1. Remove the door from the stove and rest it face down on a firm work surface.
2. Using a 5/16" wrench, remove the ten window bracket retaining screws.
3. Remove the four window tabs from the door. Take extra care to avoid shards of glass if the glass window has been broken.
4. Lift the old glass panel out of the door and discard.
5. The glass panel must be wrapped with a self-adhesive fiberglass rope gasket. If you purchased a new glass, it will come already wrapped. If reusing the same piece of glass, remove old gasket, scrape off old adhesive and wrapped with the new gasket. This gasket serves to cushion the glass from the cast iron door.
6. Reinstall the window retaining tabs using the ten screws previously removed. Do not over-tighten the screws.

REMOVING DAMAGED GASKETS

⚠ WARNING: NEVER OPERATE THE STOVE WITHOUT THE GASKET OR WITH A DAMAGED OR BROKEN GASKET. OPERATING WITHOUT A GASKET OR DAMAGED GASKET WILL RESULT IN DAMAGE TO YOUR STOVE AND CAN RESULT IN A HOUSE FIRE.

Over time the sealing gaskets along the glass (3mm x 16mm flat, fiberglass rope) and door (9/16" dia. fiberglass rope) may lose their rigidity. These seals are essential for providing a seal which allows the stove to operate safely. Inspect the gaskets periodically, and if they become worn contact the manufacturer for information on original or equivalent gasket.

To replace the gasket:

1. Ensure that all coals and fuel are extinguished and that the stove is cool to the touch.
2. Remove old gasket and clean the gasket gutter.
3. Apply a thin coat of high temperature gasket cement along the inside of the gasket gutter.
4. Press the beginning of the replacement gasket into the most up and most left position of the prepared gasket gutter.
5. Continue pressing the replacement gasket clockwise along the gasket gutter until it has wrapped back to where the gasket was pressed in initially.
6. Trim any excess replacement gasket away ,and press the remaining butt into the gutter to complete the seal.

Replacing Air Tubes

NOTE: HANDLE THE FRONT AIR TUBE DELICATELY TO AVOID DAMAGING IT OR DAMAGING THE STOVE ITSELF.

1. Use a 5/16" open end or socket wrench to remove the screw securing the air tube.
2. Remove the air tube by sliding it into the space to the right, followed by sliding the tube left and partially forward, and finally remove the tube by sliding to the right and out of the firebox. Overall this pattern looks like the letter Z. See Figure 17.

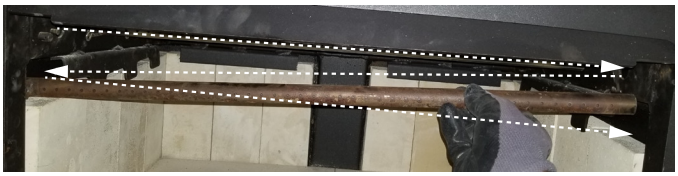


Figure 17 Front Air Tube Removal

3. Installation of the same, or a replacement, front air tube is step 1 done in reverse. The other air tubes may be removed and replaced by the same manner.

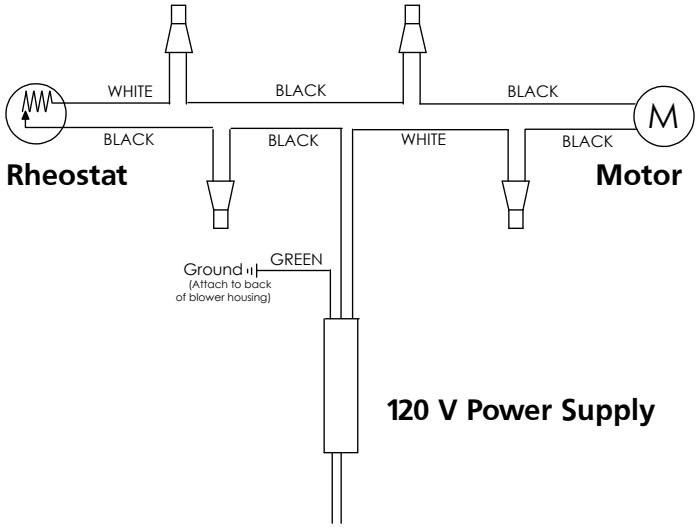
CERAMIC FIBERBOARD REPLACEMENT

To replace a cracked or broken board, first remove the front burner tube as described above. Then tilt the front of the board down and slide out the board you need to replace. Install the new board (the two boards should sit flush on the tubes side by side). Replace the tube previously removed.

To replace the ceramic blanket, follow the previous steps to remove the ceramic boards, then pull out the blanket. Replace with new blanket following the previous steps in reverse order.

BLOWER CLEANING

To remove debris such as dust and dirt, lightly vacuum the outside of the enclosure of the 120 Volt / 60 Hz / 0.26 Amp blower. Be sure that the motor is unplugged before vacuuming, or before preforming any other stove maintenance.



NOTE: IF ANY OF THE ORIGINAL WIRE SUPPLIED WITH THE APPLIANCE MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 105˚C AND RATED FOR 600V.

Figure 18 Blower Wiring Diagram

CANADIAN INSTALLATION INSTRUCTIONS

- Do not obstruct the space under the heater and do not obstruct the combustion air openings.
- Refer to the chimney manufacturer's instructions for disassembling the chimney for transportation of a transportable building.
- This heater meets the requirements of CAN/ ULC-S627 and is suitable for installation on a combustible floor and does not require radiant floor protection.
- The parts or materials to be employed for ember protectors and the minimum areas to be covered and their relation to the space heater, as well as the notice: "In Canada, to comply with CSA B365, Installation Code for Solid-Fuel Burning Appliances and Equipment, any combustible covering beneath the appliance and/or within the area extending horizontally at least 450 mm (18 in) beyond the appliance on any side equipped with a door, and at least 200 mm (8 in) beyond the appliance on other sides, shall be protected by a continuous, durable, non-combustible pad that will provide ember protection.
- The 450 mm (18 in) ember protection required on any side with a door shall extend for the full width of the appliance plus the 200 mm (8 in) required on each side of the appliance without a door.
- Where an appliance is installed less than 200 mm (8 in) from a wall, the ember pad need only extend to the base of the wall.
- An ember pad shall not be placed on top of a carpet unless the pad is structurally supported to prevent displacement and distortion.

NOTE: Do not install the chimney directly at the outlet of the appliance. A chimney connector (flue pipe) is required.

If this appliance is installed in a transportable building, removal of the chimney is required for transportation of the building.

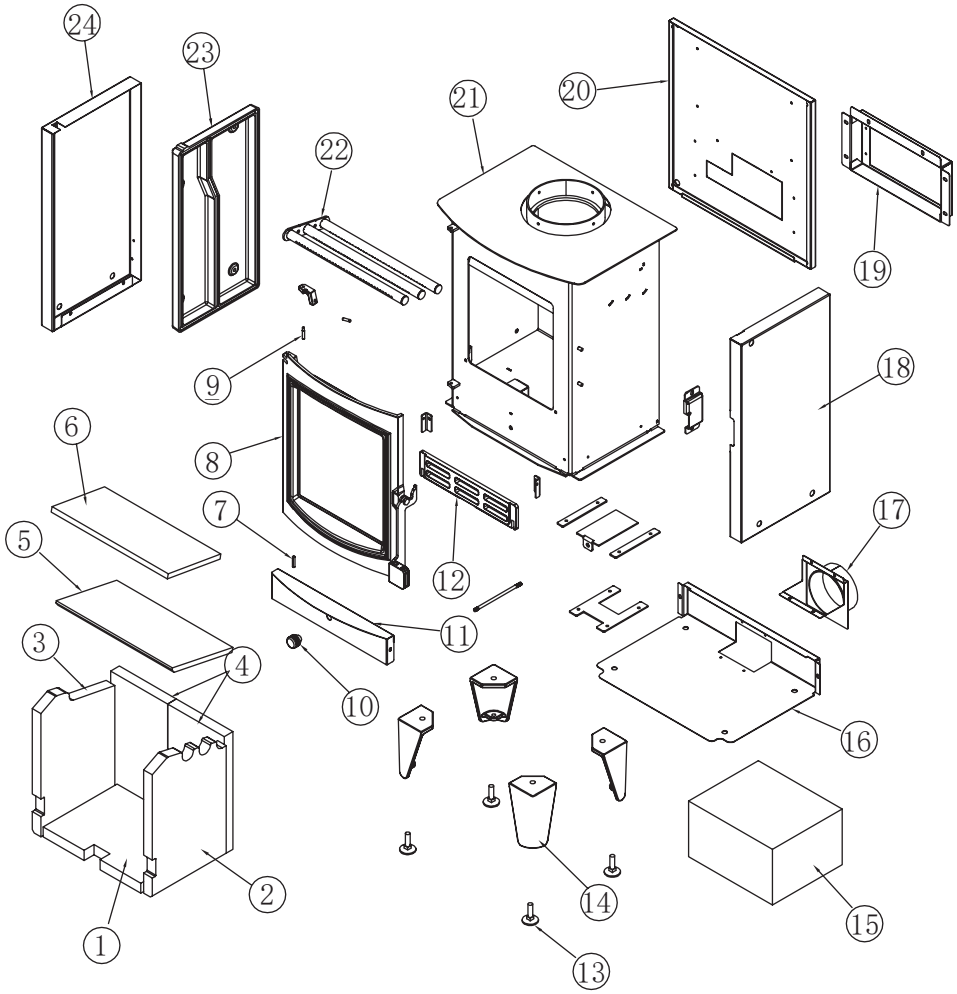
DO NOT INSTALL IN ANY FIREPLACE

TROUBLESHOOTING

SYMPTOM	CAUSE	SOLUTION
Stove smokes into room	Weak Draft.	Be certain chimney is sufficiently tall. Refer to Chimney Requirements on Page 10. If necessary, add additional height to chimney.
	Negative Pressure in the Home.	Add an outside combustion air hookup to the unit.
Fire is difficult to start	Weak Draft.	Be certain chimney is sufficiently tall. Refer to Chimney Requirements on Page 10. If necessary, add additional height to chimney.
	Cold Chimney	Heat the flue by burning crumbled newspaper in the stove.
		Install an insulated chase around external chimney.
	Downdraft in Chimney	Be certain chimney is sufficiently tall. Refer to Chimney Requirements on Page 10.
		Try heating the flue with a hair dryer to correct the draft.
Glass is dirty	Wet or Green Wood.	Only burn wood that is seasoned for at least one year and that is dry and free of ice and snow..
	Operating Stove at Low Burn Rate.	Operate the stove at higher burn rates to help keep the glass clean.
	Wood Loaded too Close to Glass.	Never load wood so that it is touching the glass viewing window.
Coals build up in firebox	Operating Stove at High Burn Rates.	Reduce combustion air control and allow coals to burn down before reloading.
Fire burns out of control	Excessive Draft.	Reduce chimney height.
	Air Leakage.	Inspect window and door gaskets and replace if necessary.
	Burning Excessively Dry Wood.	Only burn seasoned crib wood. Do not burn kiln dried or pallet wood.
Excessive smoke from stack	Operating Stove at Low Burn Rate.	Operate the stove at a higher burn rate which will create secondary combustion.
	Wet or Green Wood.	Only burn wood that is seasoned for at least one year and that is dry and free of ice and snow.
	Not Charring Fresh Wood Load	Char the fresh wood load until it is completely ignited and active secondary combustion is present in the firebox.

SERVICE PARTS MODEL H080

NOTE: Not all parts available. For questions contact Manufacturer.



⚠ 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.

ITEM NO.	PART NUM.	DESCRIPTION
1	66995	Bottom Fire Brick
2	66996	Right Fire Brick
3	66997	Left Fire Brick
4	66998	Rear Fire Brick
5	66999	Top Fire Brick
6	67000	Ceramic Fiber Board
7	N/A	Door Pin
8	67001	Door Assembly
9	N/A	Door Hinge
10	67002	Air Control Handle Knob
11	N/A	Lower Decorative Plate
12	67003	Cast Iron Grate

ITEM NO.	PART NUM.	DESCRIPTION
13	67004	Foot
14	67005	Leg
15	N/A	Honeycomb Paper
16	N/A	Base Plate
17	N/A	Intake Duct
18	N/A	Right Side Panel
19	N/A	Fan Connecting Plate
20	N/A	Rear Cover
21	N/A	Top Cover
22	67006	Tube Assembly
23	N/A	Cast Iron Plate
24	N/A	Left Side Panel
25	67007	Damper (Not Shown)

NOTES:

NOTES:

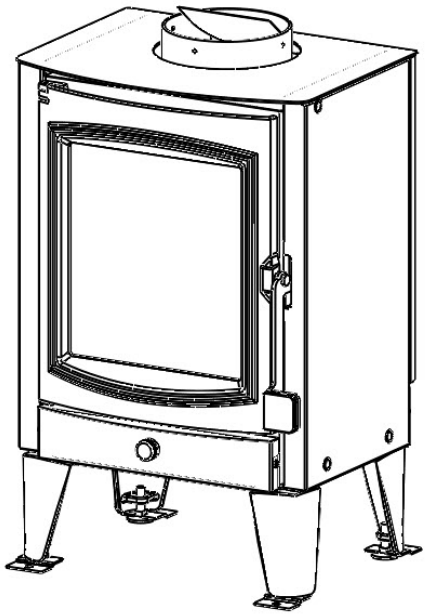
CLEVELAND IRON WORKS

OPERATING INSTRUCTIONS AND OWNER'S MANUAL

Model #

H080

READ INSTRUCTIONS CAREFULLY: YOUR SAFETY IS IMPORTANT TO YOU AND TO OTHERS. Read and follow all instructions. Place instructions in a safe place for future reference. Do not allow anyone who has not read these instructions to assemble, light, adjust or operate the stove.



WARNING:

USE ONLY 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 LOCAL DEALER OR DIRECT FROM THE FACTORY.

FOR INFORMATION REGARDING SERVICE:

Please call Toll-Free 1-800-251-0001
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:

The company warrants this product (excluding firebricks) to be free from imperfections in material or workmanship, under normal and proper use in accordance with instructions of The Company, for a period of 5 years from the date of delivery to the buyer. The Company, at its option, will repair or replace products returned by the buyer to the factory, transportation prepaid within said five year period and found by the Company to have imperfections in material or workmanship.

If a part is damaged or missing, call our Technical Support Department at 1-800-251-0001.

Address any Warranty Claims to the Service Department, Enerco Group, Inc., 4560 W. 160TH ST., CLEVELAND, OHIO 44135. Include your name, address and telephone number 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.

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.

Enerco Group Inc. reserves the right to make changes at any time, without notice or obligation, in colors, specifications, accessories, materials and models.

Enerco Group Inc., 4560 W. 160TH ST., CLEVELAND, OHIO 44135 • 1-800-251-0001

Appendix C: Calibrations

Dry Gas Meter Calibration

DUT	
Manufacturer:	Apex
Model:	XC-60
Lab ID #:	53
Serial #:	1902130
Calibration Date:	2/1/2025
Calibration Expiration:	8/1/2025
Barometric Pressure:	30.02 in. Hg

Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer:	Apex	NI	Aquatech	Dwyer
Model:	SK25DA	9213	DBX2	W17AE
Lab ID#:	47	215	202	124
Calibration Expiration Date:	5/1/2025	2/26/2025	6/17/2025	6/16/2025
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. Caibrate 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)	236.809	287.051	244.102
Standard DGM Temperature (°F)	70.6	70.3	71.8
Standard DGM Pressure (in H_2O)	0.00	0.00	0.0
DGM Initial Volume (ft^3)	0.000	0.000	0.000
DGM Final Volume (ft^3)	8.217	10.148	8.812
DGM Temperature (°F)	80.2	86.9	91.0
DGM Pressure (in H_2O)	3.43	2.25	1.38
Net Volume for Standard DGM (ft^3)	8.363	10.137	8.620
Net Volume for DGM (ft^3)	8.217	10.148	8.812

Dry Gas Meter γ Factor	1.025	1.022	1.008
γ Factor Deviation From Average	0.007	0.004	0.011

Average Gas Meter γ Factor: 1.019

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

Calculations:

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

Dry Gas Meter Calibration

DUT	
Manufacturer:	Apex
Model:	XC-60
Lab ID #:	54
Serial #:	1902133
Calibration Date:	2/1/2025
Calibration Expiration:	8/1/2025
Barometric Pressure:	30.02 in. Hg

Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer:	Apex	NI	Aquatech	Dwyer
Model:	SK25DA	9213	DBX2	W17AE
Lab ID#:	47	215	202	124
Calibration Expiration Date:	5/1/2025	2/26/2025	6/17/2025	6/16/2025
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. Caibrate 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)	145.607	267.121	243.468
Standard DGM Temperature (°F)	63.5	66.0	67.5
Standard DGM Pressure (in H_2O)	0.00	0.00	0.0
DGM Initial Volume (ft^3)	0.000	0.000	0.000
DGM Final Volume (ft^3)	5.095	9.615	8.854
DGM Temperature (°F)	69.9	81.0	89.9
DGM Pressure (in H_2O)	2.93	1.93	3.42
Net Volume for Standard DGM (ft^3)	5.142	9.433	8.598
Net Volume for DGM (ft^3)	5.095	9.615	8.854

Dry Gas Meter γ Factor	1.012	1.002	1.002
γ Factor Deviation From Average	0.007	0.003	0.004

Average Gas Meter γ Factor: 1.005

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

Calculations:

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

Established 1974

QUALITY CONTROL SERVICES

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2340 SE 11TH Ave. Portland, Oregon 97214 • Box 14831 Portland, Oregon 97293
(503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com

A2LA ACCREDITED
CERTIFICATE #1550.01

PFS Teco
11785 SE Hwy 212 STE#305
Clackamas, OR 97015

Report Number: DIRI0182484A0912013i241204

A2LA ACCREDITED
CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Scale	Digiweigh	DWP12i 300kg x 0.	82484A0912013i	#050	Lab
Units	**Readability**	**SOP**	**Cal Date**	**Last Cal Date**	**Cal Due Date**
kg	0.01	QC033	12/4/24	12/28/23	12/2025

FUNCTIONAL CHECKS

SHIFT TEST	LINEARITY	REPEATABILITY	ENVIRONMENTAL CONDITIONS
Test Wt: 100 / Tol: 0.05	Test Wt: HB44 / Tol: HB44	Test Wt: 100 / Tol: 0.01	☐ Good ☑ Fair ☐ Poor
As-Found: Pass:☑ Fail:☐	As-Found: Pass:☑ Fail:☐	As-Found: Pass:☑ Fail:☐	Temperature: 17.2°C
As-Left: Pass:☑ Fail:☐	As-Left: Pass:☑ Fail:☐	As-Left: Pass:☑ Fail:☐	

CALIBRATION DATA

Standard	As-Found	As-Left	Expanded Uncertainty
400	399.98	399.98	0.006
200	200.00	200.00	0.005
100	100.00	100.00	0.005
75	75.00	75.00	0.005
50	50.00	50.00	0.005
25	25.00	25.00	0.005

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Avoirdupois Cast W	Rice Lake	25 and 50lb	PWO990-CA	7/26/24	7/2026	20221688

Permanent Information Concerning this Equipment:
12 month calibration cycle. Scale calibrates in kg only.

Comments/Information Concerning this Calibration
12/04/2024: RH-37%

Report prepared/reviewed by: TLP **Date:** 12.04.2024 **Technician:** T.Peterson
Signature:

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.

Report and Certificate of Calibration

CAL-CERT CALIBRATION CERTIFICATION

www.Cal-Cert.com

Toll Free 800-356-4662

Address 5777 SE International Way Milwaukie, OR 97222

Local 503-654-9620

A2LA ACCREDITED CERT #4986.01

Report #:	33086-203325-4525		**Customer PO#:** 1109		
Customer Name:	PFS TECO				
Customer Address:	1507 Matt Pass				
City:	Cottage Grove		**State:** WI	**Zip:** 53527	
Contact:	Ethan Frederick				
Service Address:	11785 SE Highway 212, Suite 305		Clackamas, OR 97015		

Calibration Standards

10-01442 | Compound Gauge | Fluke | SN: 4582643 | Cal: 01/26/2024 | Due: 01/31/2025 | Vendor: Fluke | Report #: EVL943251
LP-01782 | Thermo-Hygrometer | Comark | SN: 06247790052 | Cal: 01/24/2024 | Due: 01/31/2025 | Range: 122 °F 95 %RH | Report #: 32568-205513-3646

Instrument Data

Calibration Date:	February 26, 2024	**Reference:**	ASME B40.100
Recommended Due Date:	February 26, 2025	**Cal-Cert Procedure:**	CP-003
Calibration Frequency:	12 Months	**Indicating System:**	Digital
Manufacturer:	Newport Industries	**Temperature:**	64 °F
Type:	Pressure Transducer	**Humidity:**	36% RH
Model Number:	Unknown	**Cal Factor:**	None
Serial #:	Unknown	**Asset #:**	54B
Capacity:	1 PSI	**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 PSI	Standard As Found PSI	Standard Verification Reading #1 PSI	Error PSI	Standard Verification Reading #2 PSI	Error PSI	Tolerance PSI	Expanded Uncertainty ± PSI
0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.005
0.10	0.10	0.10	0.00	0.10	0.00	0.01	0.005
0.25	0.25	0.25	0.00	0.25	0.00	0.01	0.006
0.50	0.50	0.50	0.00	0.50	0.00	0.01	0.014
0.75	0.75	0.75	0.00	0.74	-0.01	0.01	0.018
1.00	1.00	1.00	0.00	0.99	-0.01	0.01	0.013
0.75	0.76	0.76	0.01	0.76	0.01	0.01	0.005
0.50	0.50	0.50	0.00	0.51	0.01	0.01	0.015
0.25	0.25	0.25	0.00	0.26	0.01	0.01	0.017
0.10	0.11	0.11	0.01	0.11	0.01	0.01	0.008
0.00	0.00	0.00	0.00	0.00	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.

Service Engineer: Steven White **Date:** February 26, 2024

Technical Manager: Marshall Doyle **Signature:** 

Report #: 33086-203325-4525

Report and Certificate of Calibration

CAL-CERT CALIBRATION CERTIFICATION

www.Cal-Cert.com

Toll Free 800-356-4662

Address 5777 SE International Way Milwaukie, OR 97222

Local 503-654-9620

ACCREDITED CERT #4986.01

Report #: 33086-203326-4525 **Customer PO#:** 1109
Customer Name: PFS TECO
Customer Address: 1507 Matt Pass
City: Cottage Grove **State:** WI **Zip:** 53527
Contact: Ethan Frederick
Service Address: 11785 SE Highway 212, Suite 305 Clackamas, OR 97015

Calibration Standards

10-01442 | Compound Gauge | Fluke | SN: 4582643 | Cal: 01/26/2024 | Due: 01/31/2025 | Vendor: Fluke | Report #: EVL943251
LP-01782 | Thermo-Hygrometer | Comark | SN: 06247790052 | Cal: 01/24/2024 | Due: 01/31/2025 | Range: 122 °F 95 %RH | Report #: 32568-205513-3646

Instrument Data

Calibration Date: February 26, 2024
Recommended Due Date: February 26, 2025
Calibration Frequency: 12 Months
Manufacturer: Newport Industries
Type: Pressure Transducer
Model Number: Unknown
Serial #: Unknown
Capacity: 5 In H2O
Tolerance: ± 1.00% of Span
Gauge Class: A

Reference: ASME B40.100
Cal-Cert Procedure: CP-003
Indicating System: Digital
Temperature: 64 °F
Humidity: 36% RH
Cal Factor: None
Asset #: 54C
Service Location: Service Address
As Found: Pass
As Left: Pass

Instrument Range: 5.00 **Range Resolution:** 0.01 **Mode Verified:** Pressure

UUT Reading In H2O	Standard As Found In H2O	Standard Verification Reading #1 In H2O	Error In H2O	Standard Verification Reading #2 In H2O	Error In H2O	Tolerance In H2O	Expanded Uncertainty ± In H2O
0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.005
0.50	0.50	0.50	0.00	0.48	-0.02	0.05	0.045
1.25	1.25	1.25	0.00	1.23	-0.02	0.05	0.036
2.50	2.49	2.49	-0.01	2.49	-0.01	0.05	0.006
3.75	3.74	3.74	-0.01	3.74	-0.01	0.05	0.007
5.00	4.98	4.98	-0.02	4.99	-0.01	0.05	0.026
3.75	3.74	3.74	-0.01	3.74	-0.01	0.05	0.023
2.50	2.50	2.50	0.00	2.49	-0.01	0.05	0.014
1.25	1.26	1.26	0.01	1.24	-0.01	0.05	0.042
0.50	0.51	0.51	0.01	0.50	0.00	0.05	0.04
0.00	0.00	0.00	0.00	0.01	0.01	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.

Service Engineer: Steven White **Date:** February 26, 2024

Technical Manager: Marshall Doyle **Signature:** 

Report #: 33086-203326-4525

Dry Gas Meter Calibration

DUT	
Manufacturer:	Apex
Model:	XC-50-DIR
Lab ID #:	203
Serial #:	A2204292
Calibration Date:	2/1/2025
Calibration Expiration:	8/1/2025
Barometric Pressure:	30.02 in. Hg

Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer:	Apex	NI	Aquatech	Dwyer
Model:	SK25DA	9213	DBX2	W17AE
Lab ID#:	47	215	202	124
Calibration Expiration Date:	5/1/2025	2/26/2025	6/17/2025	6/16/2025
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. Caibrate 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)	166.553	142.180	215.972
Standard DGM Temperature (°F)	66.2	65.6	68.1
Standard DGM Pressure (in H_2O)	0.00	0.00	0.0
DGM Initial Volume (ft^3)	0.000	0.000	0.000
DGM Final Volume (ft^3)	5.748	5.020	7.675
DGM Temperature (°F)	72.1	80.1	84.0
DGM Pressure (in H_2O)	1.10	0.81	1.41
Net Volume for Standard DGM (ft^3)	5.882	5.021	7.627
Net Volume for DGM (ft^3)	5.748	5.020	7.675

Dry Gas Meter γ Factor	1.030	1.024	1.018
γ Factor Deviation From Average	0.006	0.000	0.006

Average Gas Meter γ Factor: 1.024

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

Calculations:

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

Report and Certificate of Calibration

CAL-CERT CALIBRATION CERTIFICATION

www.Cal-Cert.com

Toll Free 800-356-4662

Address 5777 SE International Way Milwaukie, OR 97222

Local 503-654-9620

A2LA ACCREDITED CERT #4986.01

Report #:	33086-203319-4525	**Customer PO#:** 1109		
Customer Name:	PFS TECO			
Customer Address:	1507 Matt Pass			
City:	Cottage Grove	**State:** WI	**Zip:** 53527	
Contact:	Ethan Frederick			
Service Address:	11785 SE Highway 212, Suite 305	Clackamas, OR 97015		

Calibration Standards

10-01442 | Compound Gauge | Fluke | SN: 4582643 | Cal: 01/26/2024 | Due: 01/31/2025 | Vendor: Fluke | Report #: EVL943251
LP-01782 | Thermo-Hygrometer | Comark | SN: 06247790052 | Cal: 01/24/2024 | Due: 01/31/2025 | Range: 122 °F 95 %RH | Report #: 32568-205513-3646

Instrument Data

Calibration Date:	February 26, 2024	**Reference:**	ASME B40.100
Recommended Due Date:	February 26, 2025	**Cal-Cert Procedure:**	CP-003
Calibration Frequency:	12 Months	**Indicating System:**	Digital
Manufacturer:	Red Lion	**Temperature:**	65 °F
Type:	Pressure Transducer	**Humidity:**	36% 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: 1.00 **Range Resolution:** 0.001 **Mode Verified:** Pressure

UUT Reading In H2O	Standard As Found In H2O	Standard Verification Reading #1 In H2O	Error In H2O	Standard Verification Reading #2 In H2O	Error In H2O	Tolerance In H2O	Expanded Uncertainty ± In H2O
0.000	0.000	0.000	0.00	0.000	0.00	0.01	0.0005
0.100	0.098	0.098	0.00	0.099	0.00	0.01	0.0036
0.250	0.252	0.252	0.00	0.250	0.00	0.01	0.0055
0.500	0.502	0.502	0.00	0.499	0.00	0.01	0.0065
0.750	0.751	0.751	0.00	0.748	0.00	0.01	0.0086
1.000	1.001	1.001	0.00	0.998	0.00	0.01	0.0068
0.750	0.752	0.752	0.00	0.749	0.00	0.01	0.0073
0.500	0.501	0.501	0.00	0.499	0.00	0.01	0.0065
0.250	0.251	0.251	0.00	0.250	0.00	0.01	0.0024
0.100	0.103	0.103	0.00	0.101	0.00	0.01	0.0057
0.000	0.001	0.001	0.00	0.000	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.

Service Engineer: Steven White **Date:** February 26, 2024

Technical Manager: Marshall Doyle **Signature:** 

Report #: 33086-203319-4525

Report and Certificate of Calibration

CAL-CERT CALIBRATION CERTIFICATION

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Toll Free 800-356-4662

Address 5777 SE International Way Milwaukie, OR 97222

Local 503-654-9620

A2LA ACCREDITED CERT #4986.01

Report #:	33086-203320-4525	**Customer PO#:**	1109		
Customer Name:	PFS TECO				
Customer Address:	1507 Matt Pass				
City:	Cottage Grove	**State:**	WI	**Zip:**	53527
Contact:	Ethan Frederick				
Service Address:	11785 SE Highway 212, Suite 305	Clackamas, OR 97015			

Calibration Standards

10-01442 | Compound Gauge | Fluke | SN: 4582643 | Cal: 01/26/2024 | Due: 01/31/2025 | Vendor: Fluke | Report #: EVL943251
LP-01782 | Thermo-Hygrometer | Comark | SN: 06247790052 | Cal: 01/24/2024 | Due: 01/31/2025 | Range: 122 °F 95 %RH | Report #: 32568-205513-3646

Instrument Data

Calibration Date:	February 26, 2024	**Reference:**	ASME B40.100
Recommended Due Date:	February 26, 2025	**Cal-Cert Procedure:**	CP-003
Calibration Frequency:	12 Months	**Indicating System:**	Digital
Manufacturer:	Red Lion	**Temperature:**	66 °F
Type:	Pressure Transducer	**Humidity:**	38% RH
Model Number:	Unknown	**Cal Factor:**	None
Serial #:	Unknown	**Asset #:**	203C
Capacity:	5 In H2O	**Service Location:**	Service Address
Tolerance:	± 1.00% of Span	**As Found:**	Pass
Gauge Class:	A	**As Left:**	Pass

Instrument Range: 5.00 **Range Resolution:** 0.01 **Mode Verified:** Pressure

UUT Reading In H2O	Standard As Found In H2O	Standard Verification Reading #1 In H2O	Error In H2O	Standard Verification Reading #2 In H2O	Error In H2O	Tolerance In H2O	Expanded Uncertainty ± In H2O
0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.005
0.50	0.50	0.50	0.00	0.49	-0.01	0.05	0.038
1.25	1.25	1.25	0.00	1.22	-0.03	0.05	0.067
2.50	2.48	2.48	-0.02	2.47	-0.03	0.05	0.021
3.75	3.72	3.72	-0.03	3.71	-0.04	0.05	0.043
5.00	5.00	5.00	0.00	4.99	-0.01	0.05	0.045
3.75	3.72	3.72	-0.03	3.71	-0.04	0.05	0.034
2.50	2.49	2.49	-0.01	2.47	-0.03	0.05	0.05
1.25	1.23	1.23	-0.02	1.23	-0.02	0.05	0.008
0.50	0.50	0.50	0.00	0.49	-0.01	0.05	0.018
0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.005

Manufacturer: Red Lion **Type:** Pressure Transducer **Serial #:** Unknown

Remarks:

We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.

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.

Service Engineer: Steven White **Date:** February 26, 2024

Technical Manager: Marshall Doyle **Signature:** 

Report #: 33086-203320-4525

Dry Gas Meter Calibration

DUT	
Manufacturer:	Apex
Model:	XC-60
Lab ID #:	55
Serial #:	810016
Calibration Date:	2/1/2025
Calibration Expiration:	8/1/2025
Barometric Pressure:	30.02 in. Hg

Equipment Used:	Ref. Std. DGM	Thermometer	Barometer	Manometer
Manufacturer:	Apex	NI	Aquatech	Dwyer
Model:	SK25DA	9213	DBX2	W17AE
Lab ID#:	47	215	202	124
Calibration Expiration Date:	5/1/2025	2/26/2025	6/17/2025	6/16/2025
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. Caibrate 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)	148.998	157.125	207.888
Standard DGM Temperature (°F)	70.2	71.1	69.8
Standard DGM Pressure (in H_2O)	0.00	0.00	0.0
DGM Initial Volume (ft^3)	0.000	0.000	0.000
DGM Final Volume (ft^3)	5.249	5.608	7.444
DGM Temperature (°F)	80.0	82.2	83.8
DGM Pressure (in H_2O)	0.00	0.00	0.00
Net Volume for Standard DGM (ft^3)	5.262	5.549	7.341
Net Volume for DGM (ft^3)	5.249	5.608	7.444

Dry Gas Meter γ Factor	1.019	1.008	1.010
γ Factor Deviation From Average	1.019	1.008	1.010

Average Gas Meter γ Factor: 1.012

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

Calculations:

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

Report and Certificate of Calibration

CAL-CERT
CALIBRATION CERTIFICATION

Portland Laboratory
5777 SE International Way
Milwaukie, OR 97222
800-356-4662
503-654-9620

Anaheim Laboratory
120 S. Chaparral Ct Suite 110
Anaheim Hills, CA 92808
888-700-4100
714-696-5300

www.Cal-Cert.com

Report #: 36866-28785-3646 **Customer PO#:** 1122
Customer Name: PFS TECO
Customer Address: 11785 SE Highway 212, Suite 305
City: Clackamas **State:** OR **Zip:** 97015
Contact: Ethan Frederick
Service Address: 5777 SE International Way Milwaukie, OR 97222

Calibration Standards

10-00391 | Thermo-Hygrometer | Comark | SN: 6217150001 | Cal: 05/02/2024 | Due: 04/30/2025 | Vendor: Cal-Cert | Range: 122 °F 95 %RH | Report #: 34722-30759-4525
LP-01158 | Electrical Meter | Keithley | SN: 1388607 | Cal: 07/24/2023 | Due: 07/31/2025 | Vendor: Techmaster Electronics | Report #: TSV-0-545118

Instrument Data

Calibration Date: September 25, 2024
Recommended Due Date: September 25, 2025
Calibration Frequency: 12 Months
Manufacturer: Delmhorst
Type: Resistivity Meter
Model Number: MCS-1
Serial #: #094
Capacity: 120 Megaohms
Tolerance: 1.00 % of indication

Reference: Manufactures Tolerances
Cal-Cert Procedure: CP-080
Indicating System: Digital
Temperature: 72 °F
Humidity: 49% RH
Asset #: #094
Service Location: Cal-Cert Lab
As Found: Pass
As Left: Pass

Instrument Range: 120 Megaohms **Resolution:** 0.001 **Mode Verified:** Resistance

Standard Reading	UUT As Found	UUT Reading #1	Error	UUT Reading #2	Error	
0.000	0.000	0.000	0.000	0.000	0.000	
1,100,000	1,095,000	1,095,000	-5,000.000	1,095,000	-5,000.000	
120,000,000	120,830,000	120,830,000	830,000.000	120,830,000	830,000.000	OUT OF TOLERANCE OUT OF TOLERANCE

Expanded Uncertainty± **2.50 Megaohms**

Remarks:

We sincerely thank you for your business. Please call us at 503-654-9620 for all your sales and calibration needs.
Cleaning and preventative maintenance were performed as part of this service.

This certificate is hereby issued that the above instrument was tested for accuracy with calibrated standards traceable to the National Institute of Standards and Technology (NIST). The information provided on this form complies with the data gathering and reporting requirements of ANSI/NCSL Z540.1, and meets the requirements of all applicable references and Cal-Cert procedures listed above.
Any stated measurement uncertainty includes the uncertainty of the Calibration standards used, combined with the uncertainty of the measurement process using the RSS method with a k=2 for an approximate 95% level of confidence. The calibration process meets or exceeds a ratio of 4:1 unless otherwise stated.
All tolerances were derived from the applicable standards and pass/fail determination is based on those tolerances. The customer determined any recommended due dates indicated on the certificate.

Service Engineer: Brent Enbysk **Date:** September 25, 2024

Quality Manager: Jason Wimmer **Signature:** 

CERTIFICATE OF CALIBRATION

CUSTOMER:	**PFS-TECO :** CLACKAMAS, OR	**CALIBRATION DATE:**	***06/17/2024***
PO NUMBER:	1120	**CALIBRATION DUE:**	*06/17/2025*
INST. MANUFACTURER:	DWYER	**PROCEDURE:**	T.O.33K6-4-1769-1
INST. DESCRIPTION:	VELOMETER	**CALIBRATION FLUID:**	AIR @ 14.7 PSIA 70°F
MODEL NUMBER:	471	**RECEIVED CONDITION:**	WITHIN MFG. SPECS.
SERIAL NUMBER:	**CP288559 ID# 095**	**LEFT CONDITION:**	WITHIN MFG. SPECS.
RATED ACCURACY:	SEE NOTES BELOW.	**AMBIENT CONDITIONS:**	763mm HGA 53% RH 70°F
UNCERTAINTY GIVEN:	± 0.43% RD ; k=2	**CERTIFICATE FILE #:**	**490265.2024**

NOTES: ± 3.0% FS (0-500 / 0-1500) ** ± 4.0% F.S. (0-5000) **± 5.0% F.S. (0-15000) ** ± 2 °F

Q.MANUAL IM 2.0 REV 2020.2 DATED 7-27-2020

DECISION RULE: SIMPLE ACCEPTANCE. MEASUREMENT UNCERTAINTIES NOT TAKEN INTO CONSIDERATION WHEN DETERMINING PASS/FAIL

UUT INDICATED FT/MIN	DM.STD. ACTUAL FT/MIN	UUT INDICATED DEG. F	DM STD. ACTUAL DEG. F
70	73	0 TO 200°F	0 TO 200°F
126	130	44.7	44.1
242	249	71.8	71.0
495	508	99.9	99.3
521	533		
1039	1066		
1490	1530		
507	522		
3214	3311		
4998	5156		
6975	7182		
14853	15322		

STANDARDS USED:		
A312 ± .02% RD -140 TO 1372 DEG °C TRACE# 2023004415	**DUE**	**11/13/24**
A800 flow nozzles +/- .2% RD (.2-5, 5-100, 100-1650 SCFM)TRACE# 144613547,1424683640,1583314714	**DUE**	**02/14/25**

All instruments used in the performance of the shown calibration have traceability to the National Institute of Standards and Technology (NIST). The uncertainty ratio between the calibration standards (DM.STD.) and the Unit Under Test (UUT) is a minimum of 4:1, unless otherwise noted. 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

Issuing Date: 06/17/2024

Approved By:

Cal. Technician: A.N.

Calibrated at: ✓ Lab
___ On-Site (Customer's)

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

ACCREDITED
0723.01
Calibration

PO: 1033
Order Date: 03/08/2021
Authorized By: N/A

Property #: 097
User: N/A
Department: N/A
Make: Unknown
Model: 10 Lbs.
Serial #: 097
Description: Mass
Procedure: DCN 500901
Accuracy: Raw Data

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

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

Measurement Data

Parameter / Measurement Description	Range	Unit	Reference	Min	Max	*Error	UUT	Uncertainty
Before/After								Accredited = ü
Mass								
Raw Data		g	4535.92370000	0.0000000	0.0000000	0.1785299	4536.1022299 g	3.5E-01 ü

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to either the SI or to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by JCGM 106:2012. Unless otherwise stated, a test accuracy ratio (TAR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above. This report may not be reproduced, except in full, without written approval of JJ Calibrations.

Reviewer

3 Issued 03/25/2021 Rev # 15

Inspector

Established 1974

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A2LA ACCREDITED

CERTIFICATE #1550.01

PFS Teco
11785 SE Hwy 212 STE#305
Clackamas, OR 97015

Report Number: DIRI0134307497241204

A2LA ACCREDITED
CERTIFICATE OF CALIBRATION WITH DATA

INSTRUMENT INFORMATION

Item	Make	Model	Serial Number	Customer ID	Location
Balance	Sartorius	ENTRIS224-1S	34307497	#107	Lab
Units	**Readability**	**SOP**	**Cal Date**	**Last Cal Date**	**Cal Due Date**
g	0.0001	QC012	12/4/24	6/12/24	6/2025

FUNCTIONAL CHECKS

ECCENTRICITY
Test Wt: 100 Tol: 0.0003
As-Found: Pass: ☑ Fail: ☐
As-Left: Pass: ☑ Fail: ☐

LINEARITY
Test Wt: 50 x 4 Tol: 0.0002
As-Found: Pass: ☑ Fail: ☐
As-Left: Pass: ☑ Fail: ☐

STANDARD DEVIATION
Test Wt: 100 Tol: 0.0001

1. 100.0000	5. 99.9999	9. 99.9999
2. 100.0000	6. 100.0000	10. 100.0000
3. 100.0000	7. 100.0000	Result
4. 99.9999	8. 99.9999	0.00005

ENVIRONMENTAL CONDITIONS
☐ Good ☑ Fair ☐ Poor
Temperature: 20.8°C

A2LA ACCREDITED SECTION OF REPORT

Standard	As-Found	As-Left	Expanded Uncertainty
200	200.0007	199.9999	0.00017
100	100.0006	99.9999	0.00016
50	50.0004	50.0000	0.00015
20	20.0003	20.0000	0.00015
0.1	0.0999	0.0999	0.00015
0.05	0.0498	0.0499	0.00015

CALIBRATION STANDARDS

Item	Make	Model	Serial Number	Cal Date	Cal Due Date	NIST ID
Weight Set	Rice Lake	20 kg to 1mg	2831W	3/31/24	3/2025	20240774

Permanent Information Concerning this Equipment:
6 month calibration cycle

Comments/Info Concerning this Calibration:
12/04/2024: Adjusted span. RH=36%

Report prepared/reviewed by: TLP **Date:** 12-04-2024 **Technician:** E.J. Vasko

Signature:

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 and readability 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. Results relate only to the item(s) tested. Unless otherwise noted, statements of conformity do not include measurement

Established 1974

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ACCREDITED
CERTIFICATE #1550.01

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

Material	Assumed Density	Range	Tolerance Class
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/cm^3).**

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.

Quality Control Services, Inc.
Metrology Laboratory Manager
E-mail dthompson@qc-services.com

Date: 05/09/22

Signature David S. Thompson

Established 1974

QUALITY CONTROL SERVICES

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(503) 236-2712 • FAX (503) 235-2535 • www.qc-services.com

ACCREDITED
CERTIFICATE #1550.01

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.

Quality Control Services, Inc.
Metrology Laboratory Manager
E-mail dthompson@qc-services.com

Date: 05/09/22

Signature David S. Thompson

Report and Certificate of Calibration

CAL-CERT CALIBRATION CERTIFICATION

www.Cal-Cert.com

Toll Free 800-356-4662

Address 5777 SE International Way Milwaukie, OR 97222

Local 503-654-9620

A2LA ACCREDITED CERT #4986.01

Report #: 34220-232033-4847 **Customer PO#:** 1114
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: 509020 | Cal: 12/28/2022 | Due: 12/28/2024 | Vendor: BHD Test and Measurement | Report #: 99826
LP-00693 | Surface Plate | Starrett | SN: 863629 | Cal: 01/19/2024 | Due: 01/31/2025 | Vendor: Cal-Cert | Range: 12 sq ft | Report #: 32565-31044-14
LP-01346 | Thermo-Hygrometer | Comark | SN: 06210350198 | Cal: 03/08/2024 | Due: 03/31/2025 | Vendor: Cal-Cert | Range: 122 °F 95 %RH | Report #: 33563-67215-3616

Instrument Data

Calibration Date:	April 3, 2024	**Reference:**	NAVAIR 17-20MD-06
Calibration Due Date:	April 3, 2025	**Cal-Cert Procedure:**	CP-010
Calibration Frequency:	12 Months	**Indicating System:**	Vernier
Manufacturer:	Dwyer Instruments	**Temperature:**	68 °F
Type:	Depth Micrometer	**Humidity:**	36% RH
Model Number:	Unknown	**Asset #:**	221
Serial #:	Unknown	**Service Location:**	Cal-Cert Lab
Minimum Capacity:	0.0 Inches	**As Found:**	PASS
Maximum Capacity:	1 Inches	**As Left:**	PASS
Resolution:	0.001 Inches		

Instrument Range: 1.000 Inches **Range Resolution:** 0.001 Inches

Calibration Standard Inches	As Found Inches	As Left Reading 1 Inches	As Left Reading 2 Inches	Tolerance ± Inches
0.000	0.000	0.000	0.000	0.001
0.200	0.200	0.200	0.200	0.001
0.400	0.401	0.401	0.401	0.001
0.600	0.601	0.601	0.601	0.001
0.800	0.800	0.800	0.800	0.001
1.000	1.000	1.000	1.000	0.001

Expanded Uncertainty ± 0.00115 Inches

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.

Service Engineer: Justin Roye **Date:** April 3, 2024

Quality Manager: Jason Wimmer **Signature:**

Micrometer with additional anvils or rods CF-010-03

Report #: 34220-232033-4847 **Revision 10** **7/22/2017**

Established 1974

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

A2LA ACCREDITED

CERTIFICATE #1550.01

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 - 1000lbx0.	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: 400 Tol: 0.10	Test Wt: HB44 Tol: HB44	Test Wt: 200 Tol: 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: TVP **Date:** 12.04.2024 **Technician:** E.J. Vasko

Signature:

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.

Certificate of Calibration

Certificate Number: 809185

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: 1110
Order Date: 02/02/2024
Authorized By: N/A

Property #: 209
User: N/A
Department: N/A
Make: Craftsman
Model: CMHT37365
Serial #: 209
Description: Tape Measure, 25'
Procedure: 500614
Accuracy: ± 0.0625"

Calibrated on: 02/15/2024
*Recommended Due: 02/15/2025
Environment: 19 °C 40 % RH
* As Received: Within Tolerance
* As Returned: Within Tolerance
Action Taken: Calibrated
Technician: 126

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.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
591A	Mitutoyo	PH-3500	Optical Comparator	09/19/2024	801238

Measurement Data

Parameter / Measurement Description	Range	Unit	Reference	Min	Max	*Error	UUT	Uncertainty	Accredited = ü
Before/After									
Length									
0-1"		Inch	1.000000	0.93750	1.06250	0.00175	0.99825 Inch	1.1E-02	ü
299-300"		Inch	1.00000	0.9375	1.0625	0.0012	0.9988 Inch	1.1E-02	ü

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to the SI through an NMI such as but not limited to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by ILAC G8:2019. Unless otherwise stated, a test uncertainty ratio (TUR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above.

Reviewer

3 Issued 02/15/2024 Rev # 15

Inspector

Certificate of Calibration

Certificate Number: 809187

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: 1110
Order Date: 02/02/2024
Authorized By: N/A

Property #: 213
User: N/A
Department: N/A
Make: Neiko
Model: 0-6"
Serial #: 213
Description: Caliper, Digital 6"
Procedure: DCN 500777
Accuracy: ±0.001"

Calibrated on: 02/15/2024
*Recommended Due: 02/15/2025
Environment: 19 °C 40 % RH
* As Received: Within Tolerance
* As Returned: Within Tolerance
Action Taken: Calibrated
Technician: 126

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.

Received/returned with case.

Standards Used

Std ID	Manufacturer	Model	Nomenclature	Due Date	Trace ID
103A	Brown & Sharpe	598-81-14	Gage Block Set, 90 Pieces	06/20/2025	789657
229A	Brown & Sharpe	599-1-31	Micrometer, 1"	06/30/2024	797418
628A	Mitutoyo	Custom Long Blocks	Long Block Set, 13 pc.	12/08/2024	806252

Measurement Data

Parameter / Measurement Description	Range	Unit	Reference	Min	Max	*Error	UUT	Uncertainty	Accredited = ü
Before/After									
Length - Outside									
		Inch	0.2500	0.249	0.251	0.000	0.250 Inch	5.8E-04	ü
		Inch	0.5000	0.499	0.501	0.000	0.500 Inch	5.8E-04	ü
		Inch	0.7500	0.749	0.751	0.000	0.750 Inch	5.8E-04	ü
		Inch	1.0000	0.999	1.001	0.000	1.000 Inch	5.8E-04	ü
		Inch	3.0000	2.999	3.001	0.000	3.000 Inch	5.8E-04	ü
		Inch	6.00000	5.9990	6.0010	0.0005	6.0005 Inch	5.8E-04	ü
Step		Inch	1.0000	0.999	1.001	0.000	1.000 Inch	5.8E-04	ü
Length									
Depth		Inch	1.00000	0.9990	1.0010	0.0005	1.0005 Inch	5.8E-04	ü
Duty Cycle									
I.D. Jaws		Inch	0.5000	0.499	0.501	0.001	0.501 Inch	5.8E-04	ü

This instrument has been calibrated in accordance with the JJ Calibrations Quality Assurance Manual and is traceable to the SI through an NMI such as but not limited to National Institute of Standards and Technology (NIST). The quality system and this certificate are in compliance with ANSI/NCSL Z540-1-1994, ISO/IEC 17025-2017, ISO 10012-1, the ISO 9000 family and QS 9000. The expanded uncertainties of measurements for this calibration are based upon 95% (2 sigma) confidence limits. Unless stated in the comments, certificates reflect the "Simple Acceptance Rule" as specified by ILAC G8:2019. Unless otherwise stated, a test uncertainty ratio (TUR) of 4:1, if achievable, is maintained. The results reported herein apply only to the calibration of the item described above.

Reviewer

3 Issued 02/15/2024 Rev # 15

Inspector

Thermocouple Readout Calibration

DUT

Manufacturer:	National Instruments
Model:	NI 9213
Lab ID #:	215
Serial #:	1B182FB
Calibration Date:	8/26/2024
Calibration Expiration:	2/26/2025
Barometric Pressure:	29.91 in. Hg

Equipment Used:	**Ref. Std. TC Signal Generator**
Manufacturer:	Omega
Model:	CL23A
Lab ID#:	165
Cal. Expiration Date:	1/3/2025

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 calcuated with RSS method with k=2 for a 95% confidence interval.

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.9	0.9	
	500	500.8	0.8	
Tunnel	1000	1000.9	0.9	0.906
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	
	500	500.8	0.8	
Flue	1000	1000.9	0.9	0.906
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	
	500	500.8	0.8	
Filter A	1000	1000.6	0.6	0.906
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	
	500	500.8	0.8	
Filter B	1000	1000.6	0.6	0.906
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	
	500	500.8	0.8	
Filter C	1000	1000.6	0.6	0.906
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:	8/26/2024
Calibration Expiration:	2/26/2025
Barometric Pressure:	29.91 in. Hg

Equipment Used:	Ref. Std. TC Signal Generator
Manufacturer:	Omega
Model:	CL23A
Lab ID#:	165
Cal. Expiration Date:	1/3/2025

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 calcuated with RSS method with k=2 for a 95% confidence interval.

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.8	0.8	
	500	500.8	0.8	
Meter A	1000	1000.6	0.6	0.906
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	
	500	500.8	0.8	
Meter B	1000	1000.6	0.6	0.906
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	
	500	500.2	0.2	
Meter C	1000	1000	0	0.906
Type K	1500	1500	0	
	2000	1999.7	0.3	

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.5	0.5	
	500	500.2	0.2	
FB Top	1000	1000.3	0.3	0.906
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	
	500	500.2	0.2	
FB Bottom	1000	1000	0	0.906
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:	8/26/2024
Calibration Expiration:	2/26/2025
Barometric Pressure:	29.91 in. Hg

Equipment Used:	Ref. Std. TC Signal Generator
Manufacturer:	Omega
Model:	CL23A
Lab ID#:	165
Cal. Expiration Date:	1/3/2025

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 calcuated with RSS method with k=2 for a 95% confidence interval.

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

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

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

Channel	Std. TC Signal	DUT	Error	Expanded Uncertainty
	0	0.5	0.5	
	500	500.3	0.3	
Catalyst	1000	1000.2	0.2	0.906
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	
	50	500.2	450.2	
Ambient	100	1000	900	0.906
Type T	150	1500	1350	
	200	1999.7	1799.7	

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.
6700 S. Alameda...
Los Angeles, ... 8

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 5000 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/vapours; Wash 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 if you feel unwell; Store locked up; Dispose of contents/container in accordance with local/regional/national/international regulations. 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 ... minutes.Hold the eyelids open and away from the eyeballs to ensure that all surfaces ...

Compressed gas, n.o.s.
(Carbon Monoxide, Carbon Dioxide, Oxygen, Nitrogen)
UN1956

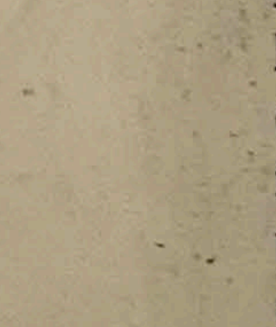
SPG 5P10162.5VM2
Part Number

Primary Standard, +/- 0.02% Absolute

2.500 % Carbon Monoxide	CAS:	630-08-0
10.00 % Carbon Dioxide	CAS:	124-38-9
10.00 % Oxygen	CAS:	7782-44-7
Balance Nitrogen	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 throroughly 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 # 206493
Expires: 2-2024

NorLAB

To Order Call: 800-657-6672

In Emergency Call: 1-800-424-9300

NorLAB, Inc.
698 W Gowen Road
Boise, Idaho, 83705

Appendix F: Communication (CBI)

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

30-DAY NOTIFICATION FORM

PURSUANT TO 40 CFR PART 60 SUBPARTS AAA AND QQQQ

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, Sections 60.533 and 60.5475. This document may be revised periodically without public notice. If you have additional questions, please contact Rafael Sanchez at 202-564-7028 or via email at

- The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to
- This notice must be received by the EPA at least 30 days before the start of testing.

GENERAL INFORMATION

Manufacturer's Name:
Enerco Group, Inc.

Appliance Type (Circle One):	Adjustable Burn Rate Wood Heater	Pellet Stove	Single Burn Rate Heater	Hydronic Heater	Forced Air Furnace	Other:
Hydronic Heater Type (Circle One):	Traditional	Full Storage	Partial Storage	Indoor/Outdoor	Other:	
Forced-Air Furnace Type (Circle One):	Small (less than 65,000 BTU/hr heat output)		Large (greater than 65,000 BTU/hr heat output)		Other:	
Fuel Type:	Crib	Pellet	Cordwood	Other:		

Model Name and Number:

Mini Wood Stove:

WS080, C080, D080, H080, J080, N080, R080, T080, V080

Catalyst: Yes_____ No__X____

Mailing Address:
4560 West 160th Street, Cleveland, OH 44135

Street Address:
Same as above

City:	**State:**	**ZIP Code:**
Cleveland	OH	44135
Phone: 800.251.0001	**Fax:**	**Web Site:** www.clevelandironworks.com

Address of Manufacturing Facility:
Ningbo Hanks Heating Appliance Technology Co. Ltd
No. 5 Xier Road, Lizhou Street

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)
30-DAY NOTIFICATION FORM
PURSUANT TO 40 CFR PART 60 SUBPARTS AAA AND QQQQ
NEW SOURCE PERFORMANCE STANDARDS FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES

Disclaimer: The statutory provisions and the EPA regulations described in this document contain legally binding requirements. This document is not a substitute for those provisions or regulations, nor is it a regulation itself. In the event of a discrepancy, please refer to 40 CFR PART 60 Subparts AAA AND QQQQ, Sections 60.533 and 60.5475. This document may be revised periodically without public notice. If you have additional questions, please contact Rafael Sanchez at 202-564-7022 or via email at [redacted].

- The manufacturer of an affected wood/pellet heater/central heater model line must notify the Administrator of the date that certification testing is scheduled to begin by email to [redacted].
- This notice must be received by the EPA at least 30 days before the start of testing.

City:	State	ZIP Code:
Huangjianshan Village	China	315400

EPA APPROVED TEST LABORATORY

Name and Title of Authorized Representative: John Steinert, Vice President Hearth Products Division
Company: PFS TECO

Phone: (503) 819-1601	E-mail: [redacted]	Fax:
City: Clackamas	State: OR	ZIP Code: 97015

EPA APPROVED THIRD-PARTY CERTIFIER

Name and Title of Authorized Representative: John Steinert, Vice President Hearth Products Division
Company: PFS TECO

Phone: (503) 819-1601	E-mail: [redacted]	Fax:
City: Clackamas	State: OR	ZIP Code: 97015

COMPLIANCE TEST INFORMATION

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

30-DAY NOTIFICATION FORM

PURSUANT TO 40 CFR PART 60 SUBPARTS AAA AND QQQQ

NEW STANDARDS OF PERFORMANCE FOR NEW RESIDENTIAL WOOD HEATERS, NEW RESIDENTIAL HYDRONIC HEATERS AND FORCED-AIR FURNACES

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Test Method(s):

Per EPA Method 28R
ASTM E2515
ASTM E2780
CSA B415.1-22

Date(s) of Proposed Test:

~~November 8, 2024~~ ~~November 1, 2024~~ ~~AB 10/1/24~~ ~~November 20, 2024~~

Testing Location: PFS TECO ~~January 24, 2025~~ ~~AB 11/1/24~~ ~~AB 11/1/24~~

~~February 5, 2025~~ ~~AB 12/19/24~~

~~JEFF DANIEL~~ ~~STACK MANAGER~~

Print Name and Title of Authorized Official

Signature

Date

February 3, 2025
AB 1/31/25

Remarks:

Mini Wood Stove

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