

TEST REPORT

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RENDERED TO

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PRODUCT EVALUATED:
MODEL NAPOLEON TPS35 WOOD PELLET FUELED ROOM HEATER

Report of Testing Model TPS35 Pellet-Fuel Room Heater for compliance with the applicable requirements of the following criteria: EPA Method 28 "Certification and auditing of wood heaters" and Method 5G Determination of particulate matter emissions from wood heaters."

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II.D SUMMARY OF OTHER DATA

EMISSIONS

Run Number	Test Date	Burn Rate (kg/hr)	Emission Rate (g/hr)	Adjusted Emission Rate (g/hr)
1	10/25/10	0.661	4.400	6.224
2	10/25/10	1.688	0.985	1.797
3	10/26/10	2.166	1.024	1.856
4	10/26/10	0.612	3.345	4.958

WEIGHTED AVERAGE CALCULATION

Test No.	Burn Rate	(E) Average Emission Rate g/hr	Heat Output (Btu/hr)	Probability	(K) Weighting Factor	(KxE)
1	0.661	6.224	7970.47	0.1274	0.7314	4.5520
2	1.688	1.797	20354.24	0.8364	0.8059	1.4482
3	2.166	1.856	26118.06	0.9333	0.1636	0.3036
4	0.612	4.958	7379.62	0.1050	0.1274	0.6316
Totals:					1.82824	6.9354
Weighted average emission rate:						3.7935

TEST FACILITY CONDITIONS

Run	Room Temp. °F before	Room Temp °F after	Baro. Pres. In. Hg before	Baro. Pres. In. Hg after	R.H. % before	R.H. % after	Air Vel. Ft/min before	Air Vel. Ft/min after
1	77	80	28.56	28.57	21	21	0	0
2	80	80	28.57	28.52	21	21	0	0
3	75	79	27.91	27.96	21	21	0	0
4	79	79	27.96	28.06	21	21	0	0

DILUTION TUNNEL FLOW RATE MEASUREMENTS AND SAMPLING DATA (5G-3)

Run No.	Burn Time (min)	Velocity (ft/sec)	Volumetric Flow Rate (dscf/min)	Total Temp. (°R)	Sample		Particulate Catch (mg)	
					1	2	1	2
1	120	13.39	139.31	547.43	27.54	27.75	14.6	14.5
2	120	12.24	121.86	571.99	27.16	27.04	3.8	3.5
3	120	13.41	131.25	569.11	26.66	27.18	3.5	3.5
4	120	13.08	132.39	551.93	26.49	26.71	11.3	11.1

DILUTION TUNNEL DUAL TRAIN PRECISION

Run No.	Sample Ratios		Total Emissions (g)		% Deviation	% Deviation of 7.5% of 7.5 grams*
	Train 1	Train 2	Train 1	Train 2		
1	607.03	602.45	8.86	8.74	1.20	NA
2	538.40	540.82	2.05	1.89	6.45	NA
3	590.83	579.35	2.07	2.03	1.63	NA
4	599.83	594.81	6.78	6.60	2.18	NA

*= As described in Method 5G-3 section 16.2.5

GENERAL SUMMARY OF RESULTS

Run No.	Burn Rate (kg/hr)	Average Surface Temp (°F)	Change In Surface Temp (°F)	Initial Draft (in/H ₂ O)	Run Time (min)	Average Draft (in/H ₂ O)
1	0.661	275.72	-8.36	0.016	120	0.016
2	1.688	583.39	8.14	0.034	120	0.034
3	2.166	701.14	34.46	0.034	120	0.036
4	0.612	298.14	11.93	0.020	120	0.020

III. PROCESS DESCRIPTION

III.A TEST SET-UP DESCRIPTON

A standard 6" diameter single wall pipe and insulated chimney system was installed to 15' above floor level. The unit controls were set to the lowest setting during the test.

III.B AIR SUPPLY SYSTEM

Blower induced combustion air enters through a 3 inch opening in the back of the stove. Working under a slight negative pressure in the firebox, air is drawn through the unit's fire pot. The products of combustion exit the top of the firebox, pass through the heat exchanger and are then forced out of the rear through a 3-inch flue connection. Convection air is drawn from the bottom of the unit up through the heat exchanger and out through the louvers located above the door.

III.C TEST FUEL PROPERTIES

The pellets used had a moisture content of 4.5% using the wet basis and 4.7% on the dry basis.