



Phantom-X 210-285
Residential High Efficiency
Gas Boilers
PHNTM210, PHNTM285 Submittal Sheet

PHNTM Floor Standing Heating Boilers

Wholesaler	_____
Job Name	_____
Mechanical Contractor	_____
Model Number	_____ Quantity: _____
Gas Type	_____
BTU/hr INPUT	_____
BTU/hr OUTPUT	_____
Venting Application	_____

Standard Features

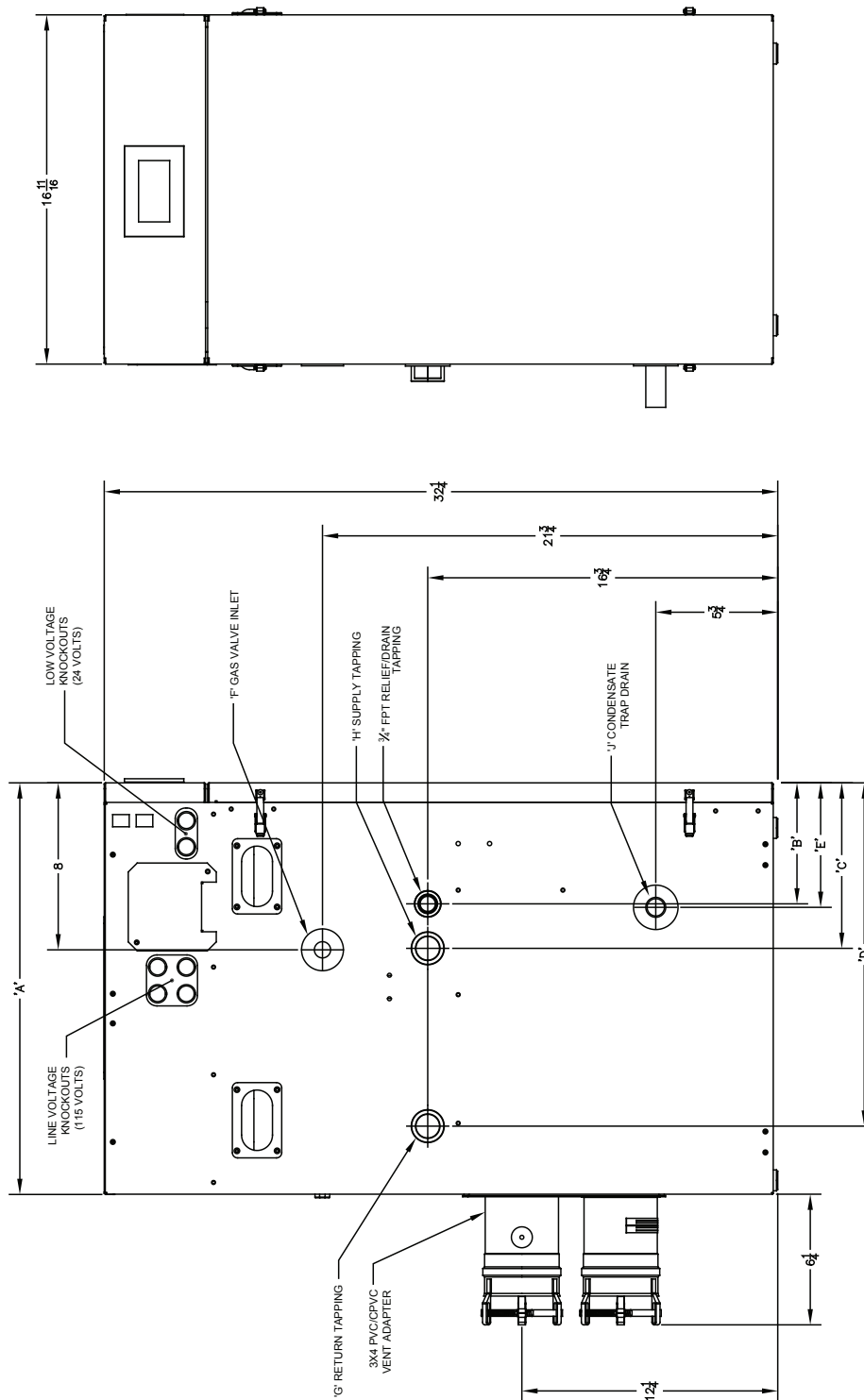
- ASME Constructed Stainless Steel Water Tube Heat Exchanger
- 30 psi Relief Valve
- 190F Maximum Operating Supply Temperature
- Energy Star Qualified
- 95.0% AFUE
- Fully Modulating Burner System with 5:1 Turndown Ratio
- Vent Adapter Allows For 3" CPVC/PVC or Single Wall Polypropylene or Stainless Venting
 - Note: See Installation Manual for a List of Approved Vent Systems, Vent Length Limitations, and Other Installation Requirements
- Polypropylene Condensate Trap
- Boiler, System and Domestic Hot Water Pump Output Terminals
- Tight Clearances to Combustible Material
- Field Convertible to LP Gas
- Microprocessor Based Honeywell Sola Control System with Touch Screen User Interface Consisting of:
 - o Direct Spark Ignition System
 - o Supply, Return, Flue, and Outdoor Sensors
 - o Lead/Lag and Selectable DHW Priority
 - o Warm Weather Shutdown
 - o Pump Exercise
 - o Central Heating System Freeze Protection
 - o Energy Management System (EMS) 4-20mA Interface
 - o Plug & Play Multiple Boiler Peer-Peer Communication Network Connections For Up to 8 Multiple Boiler Installations
 - o Remote Firing Rate and External Limit Terminal Contacts
 - o Terminal Contacts for Optional Header Sensor
- 12 Year Limited Heat Exchanger Warranty, 5 Year Warranty On Parts

Optional Equipment

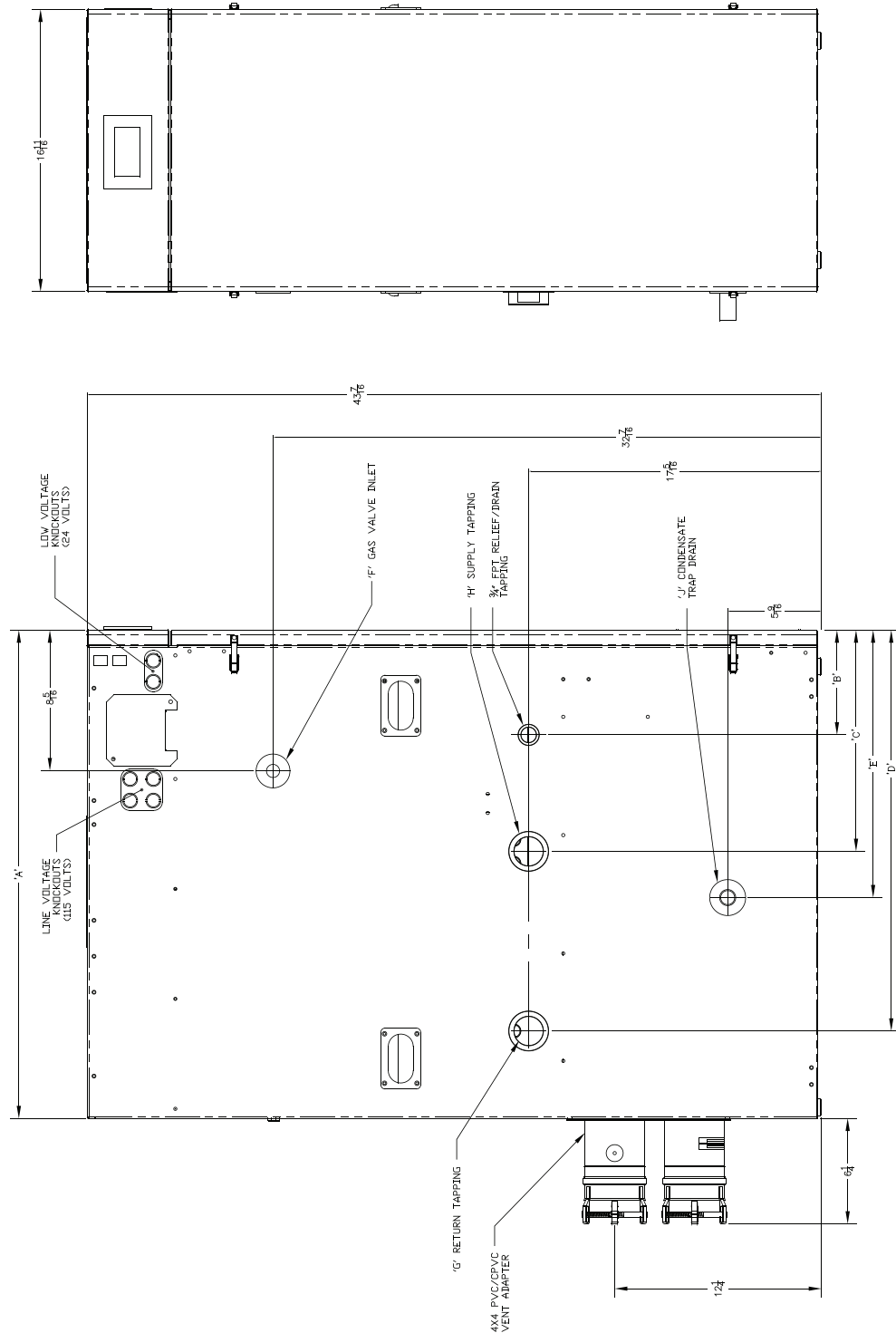
- Sage Zone Panel
- Condensate Neutralizer
- Header Sensor Kit - Required for multiple boiler systems
- LWCO Kit
- 50 psi Relief Valve

Special Job Notes:

PHNTM210



PHNTM285





Ratings for Phantom Series Gas-Fired Boilers

Model Number	Input (MBH)		Output (MBH)	Net AHRI Ratings Water ¹ (MBH)	AFUE (%)
	Min.	Max.			
PHNTM210	42	210	194	169	95.0
PHNTM285	57	285	262	228	95.0

Ratings shown are for installations at sea level and elevations up to 2000 ft. For elevations above 2000 ft., the boiler will naturally derate by 2.5% for each 1000 ft. above sea level. Boilers not suitable for use with LP gas above 7000ft.

¹ Net AHRI Water Ratings based on piping and pickup allowance of 1.15. The manufacturer should be consulted before selecting a boiler for installations having unusual piping and pickup requirements, such as intermittent system operation, extensive piping systems, etc.

Specification	Boiler Model	
	PHNTM210	PHNTM285
Altitude (ft. above sea level) - USA	0-10000*	0-10000*
Altitude (ft. above sea level) - Canada	0-4500*	0-4500*
Fuel	Shipped for Natural Gas, Field Converted for LP Gas*	
Max. Setpoint Water Temperature (°F)	190	
Max. Allowable Working Pressure (psi)	160	
Factory supplied Safety Relief Valve (psi) *	30	
Boiler Water Volume (gal.)	1.7	
Heat Transfer area (sq. ft.)	21.8	
Approx. Shipping weight (lb.)	206	

* Special configurations required above 2000ft. Boilers not suitable for LP gas above 7000ft.

Dimension	Boiler Model	
	PHNTM210	PHNTM285
A - Inch (mm)	23-15/16 (608)	21-13/16 (554)
B - Inch (mm)	5-13/16 (147)	7-5/16 (185)
C - Inch (mm)	7-5/16 (186)	14-1/8 (358)
D - Inch (mm)	17-1/8 (435)	18 (456)
E - Inch (mm)	5-15/16 (151)	12-1/4 (312)
Gas Inlet F (FPT)	1/2"	3/4"
Return G (FPT)	1"	1-1/4"
Supply H (FPT)	1"	1-1/4"
Condensate Drain J *	* Factory Provided Socket End Compression Pipe Joining Clamp for 3/4" Schedule 40 PVC Pipe	
Boiler Two-Pipe CPVC/PVC Vent Connector (Figs. 1A, 1B) - Inch	3 x 4	4 x 4

Venting Note: Sizes noted are for two pipe CPVC/PVC & certain specified two pipe polypropylene and certain specified stainless steel vent systems. Concentric vent terminals permitted in most installations. See installation manual for venting option details.

Flow Range Requirement Through Boiler

Boiler Model	Boiler Supply Connection, Inch, FPT	Boiler Return Connection, Inch, FPT	Minimum Required Flow (GPM) @ 35°F ΔT	Boiler Head Loss, Ft. @ 35°F ΔT	Required Flow, (GPM) @ 30°F ΔT	Boiler Head Loss, Ft. @ 30°F ΔT	Required Flow, (GPM) @ 25°F ΔT	Boiler Head Loss, Ft. @ 25°F ΔT	Maximum Required Flow (GPM) @ 20°F ΔT	Boiler Head Loss, Ft. @ 20°F ΔT
PHNTM210	1	1	11.1	5.4	12.9	7.1	15.5	9.8	19.4	14.4
PHNTM285	1¼	1¼	15.1	5.9	17.7	7.8	21.2	10.7	26.5	16.0

Notes: Required Flow (GPM) = ** Output (MBH) x 1000/500 x ΔT

** Output (MBH) - Select Value for specific Boiler Model from Ratings Table. See also Table below for near boiler piping sizing. Using boiler antifreeze will result in higher fluid density and may require larger circulators.

Recommended Circulators for 50 ft. Equivalent ft. Near Boiler Piping [Approximately 20 ft. Straight Pipe, (4) 90° Elbows, and (2) Full Port Ball Valves]

Boiler Model	Boiler Supply Connection, Inch, FPT	Boiler Return Connection, Inch, FPT	Near-Boiler Piping Supply Pipe Size, Inch	Near-Boiler Piping Return Pipe Size, Inch	Flow, GPM @ 25°F Temp. Differential	Combined Boiler & Piping Loop Head Loss, Ft.	Recommended Circulator Make & Model
PHNTM210	1	1	1¼	1¼	15.5	11.7	Taco 0014 ⁽²⁾
PHNTM285	1¼	1¼	1½	1½	21.5	12.3	Taco 0013 ⁽²⁾

Notes:

⁽¹⁾ Temperature Differential = 20°F

⁽²⁾ Taco Circulators shown are not equipped with internal flow check valve (IFC).

When selecting Circulators other than recommended, contact Circulator Manufacturer for sizing information.

Near-Boiler Piping Size shown is based on 2 to 5.5 Ft/Sec. velocity range to avoid potential noise and pipe erosion.

