

99%\*  
Thermal Efficiency

# NEXUS<sup>®</sup>

Gas-Fired High Efficiency Unit Heater

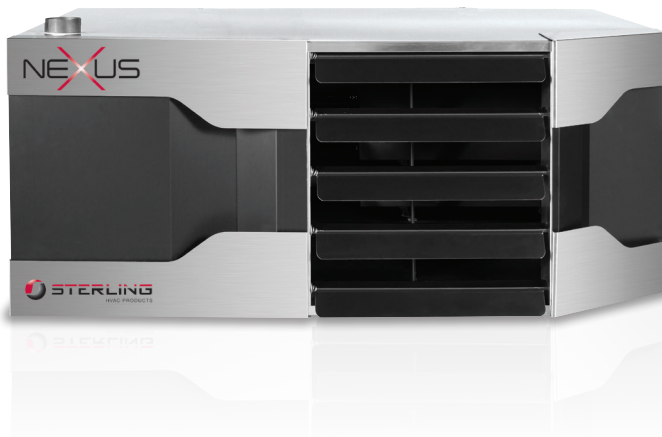


 **STERLING**<sup>®</sup>  
HVAC PRODUCTS





## The World's Best High Efficiency Unit Heater



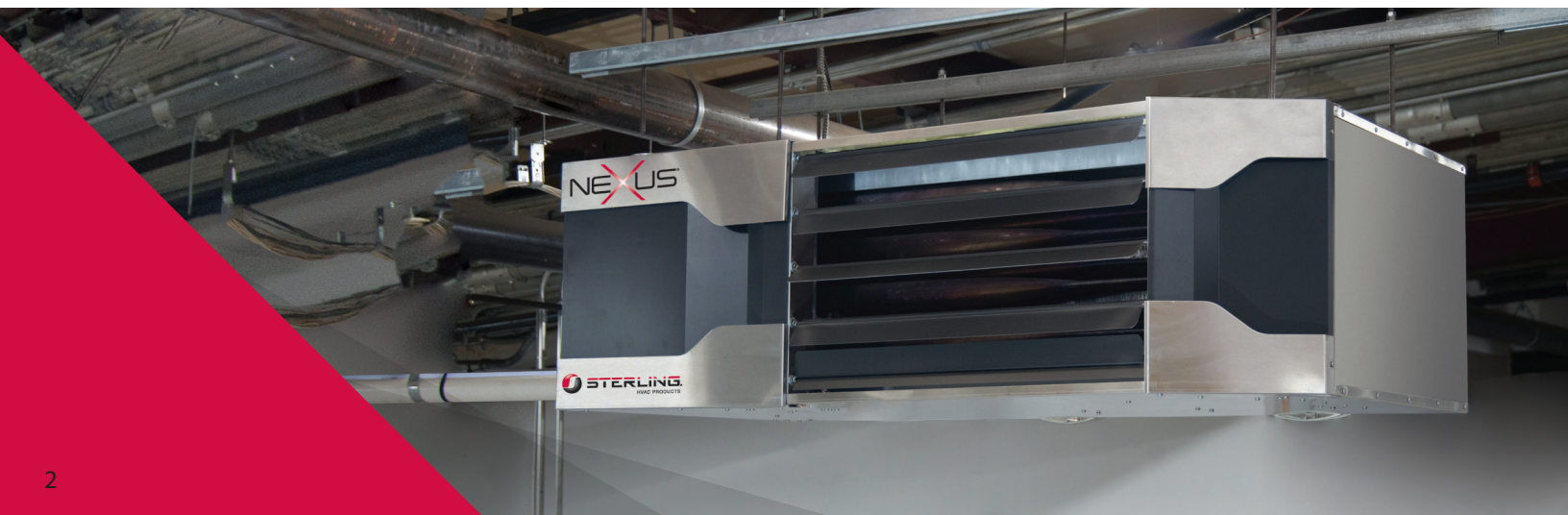
*"The less fossil fuels we burn the better it is for our future; all of my designs concentrate on this philosophy. We lead in innovation using the environment as our number one concern. We don't follow...we lead."*

*-Ken Cohen, Designer*

Sterling's **Nexus** brings gas-fired unit heaters to unprecedented levels of efficiency. Its industry leading 99%\* thermal efficiency combines the latest innovations, including a tri-metal stainless steel heat exchanger and a state-of-the-art proprietary combustion control system.

Efficiency matters...not only is the **Nexus** the most energy efficient unit heater available, it is the most environmentally friendly too. Reduced emissions, low fuel utilization and a reduced carbon footprint give **Nexus** our green stamp of approval!

\*Up to 99% maximum efficiency at full turndown, 95+% certified efficiency at high fire.



## Application Flexibility

In today's marketplace where time is money, **Nexus** is designed to be user and service friendly. Whether natural or LP gas, conversions are simple and quick through a single orifice conversion with kits included as a standard feature. Multiple operating voltages, flexible venting options and some of the longest throws in the segment make **Nexus** the only choice for any application. Units can operate in a single unit mode, multi-unit networks or linked to a building management system with seamless control communication.

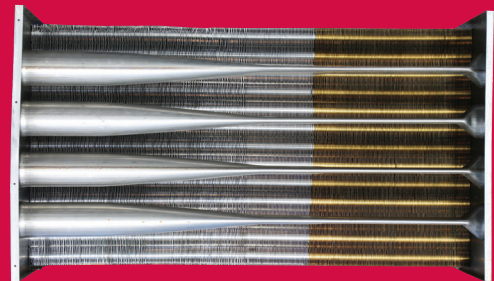
## Sophisticated Styling

**Nexus** brings a whole new look to the unit heater arena with a beautiful commercial-grade brushed stainless steel jacket with contrasting black trim. Its corrosion resistant exterior and double-wall construction provide both durability and increased efficiency through reduced heat loss...appealing and functional.

## Heat Exchanger

**Nexus'** tri-metal heat exchanger is the most advanced on the market today. Engineered for maximum efficiency; our tri-metal hybrid design utilizes all of today's technologies for optimum heat transfer.

A unique combination of metals and tube configurations scrub every last bit of heat energy from the combustion process. The use of stainless steel with high conductivity brass and even higher conductivity aluminum all working in conjunction with turbulators to improve the heat transfer from the hot flue gases to the bi-metal fins produces up to 95+% operating efficiency at full fire.



## Altitude Auto-Adjust

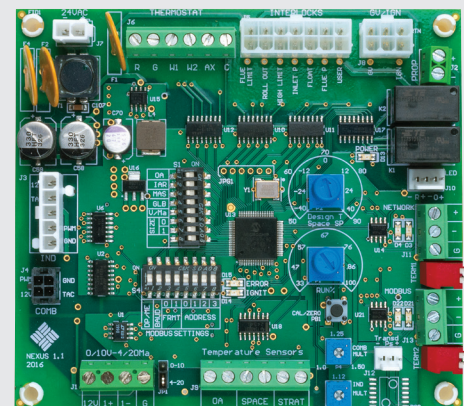
Units auto-adjust the air/fuel mixture for altitude adjustments so there are no field adjustments required.

**Nexus** also has **SafeSense** technology for blocked inlet/flue conditions. Units will maintain clean combustion in a partial blockage situation without decreasing performance insuring safe combustion at all times. In a situation of unsafe combustion, units will shut themselves down until the necessary corrective actions are completed.

## Safety & Performance

Premium performance in the safest possible way... All units use Sterling's proprietary combustion control platform which guarantees clean combustion regardless of the operating conditions.

Combustion is constantly monitored through **Nexus'** electronic air/fuel coupling control platform, consistently maintaining safe levels of emissions.



# NEXUS<sup>®</sup>

## Gas Controls

The only fully modulating, high efficiency unit heater produced, **Nexus** utilizes a burner control and configuration that allows a 3:1 turndown for precision discharge temperature control, with this technology units run more efficiently for a longer period of time with reduced cycling. Competitors use in-shot burners and only offer 1:1 on/off configuration that often times result in over/under heating the occupied space and increased wear and tear on the equipment with constant cycling.

## Indoor Air Reset

**Nexus'** indoor air reset technology essentially learns the heating needs of the building by constantly monitoring run-time percentages and modulates accordingly.

Indoor Air Reset allows **Nexus** to operate at full modulation (low fire) for as long as reasonable to maintain the heating load. By running at low fire units run longer at higher efficiency resulting in less cycling, lower fuel costs and increased occupancy comfort.

## Modbus Communication to Building Automation System

The Nexus Control Board includes Modbus communication as a standard feature without requiring additional control modules. The control board provides feedback to the building automation system allowing for the remote monitoring of over 30 data points including unit fault codes. This allows user to know what is wrong with the unit without even entering the building.

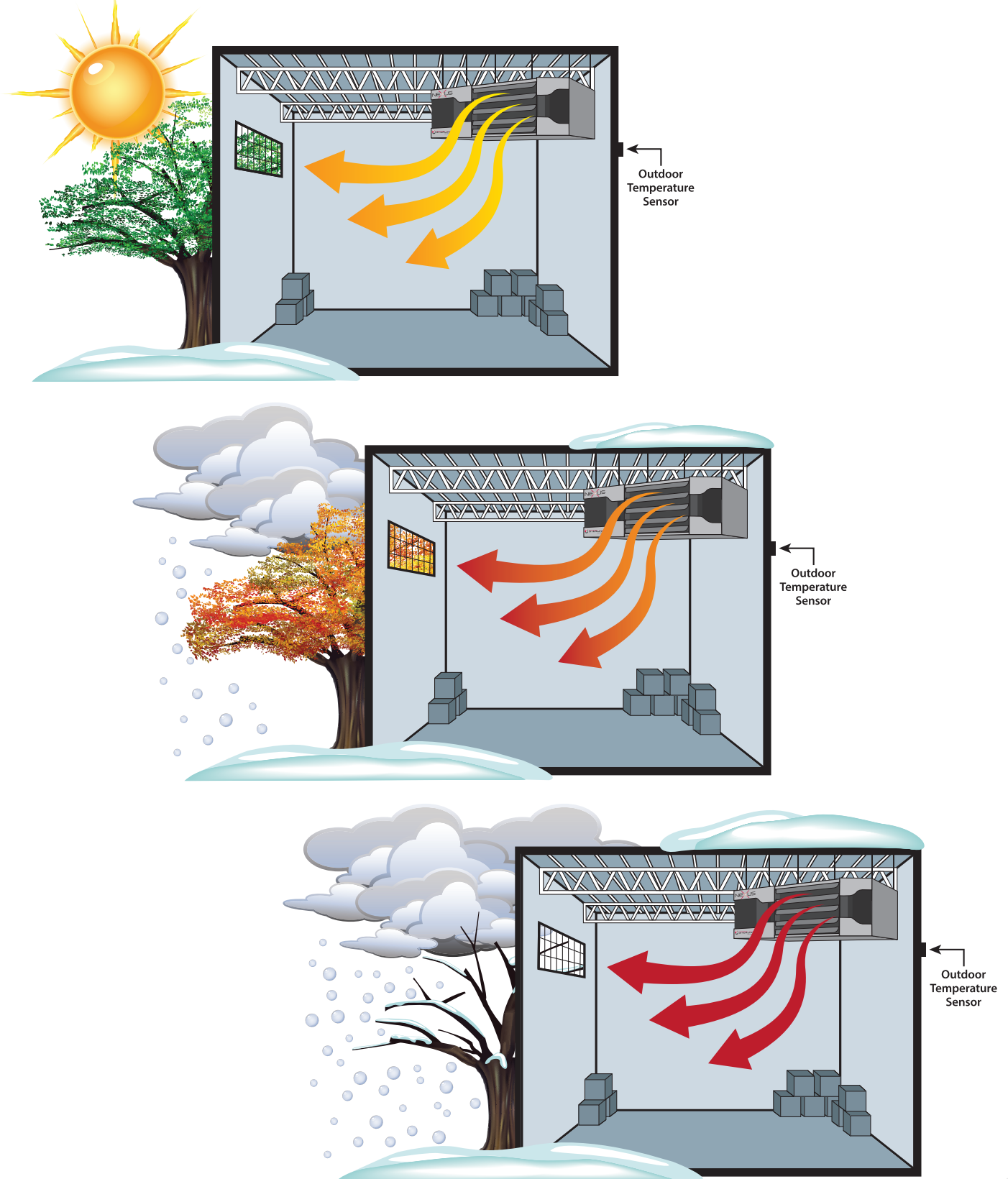
## Stratification Sensor

The optional stratification sensor allows the unit to take advantage of excess heat that may be up at the ceiling to provide "free" heating to the space. When the sensor detects air stratification near the unit, the unit will re-use that excess heat to warm the occupied area of the space without the need for mechanical (gas) heat, resulting in a lower fuel cost.

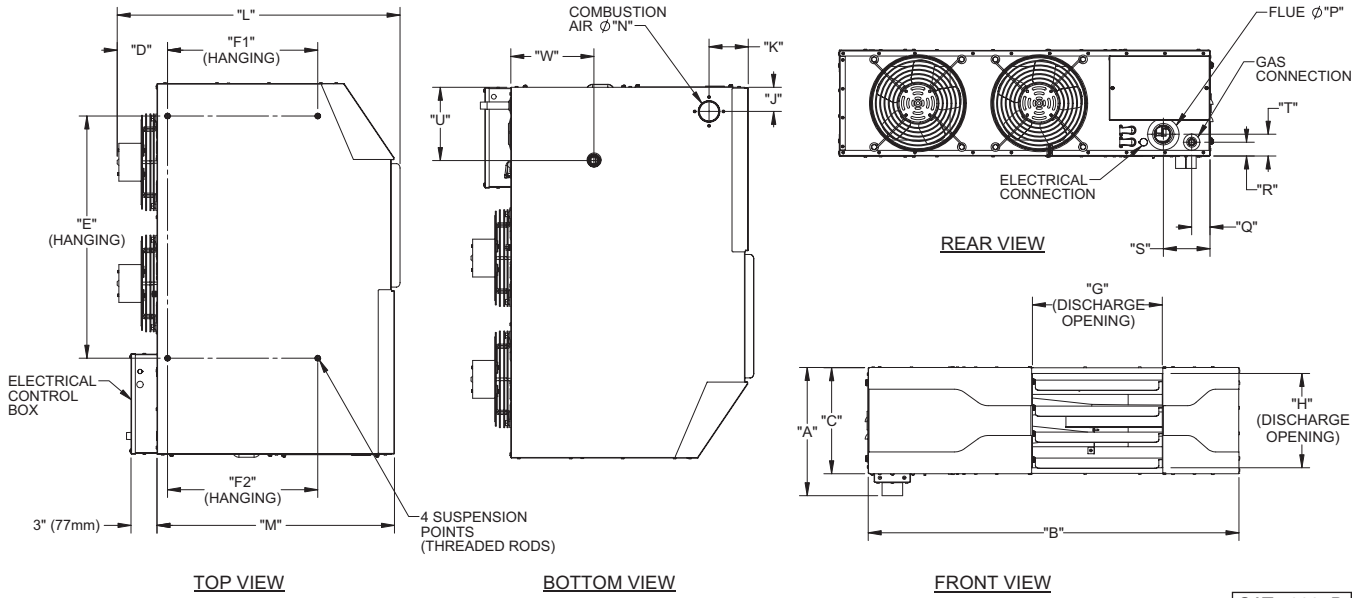


## Outdoor Air Reset Modulation

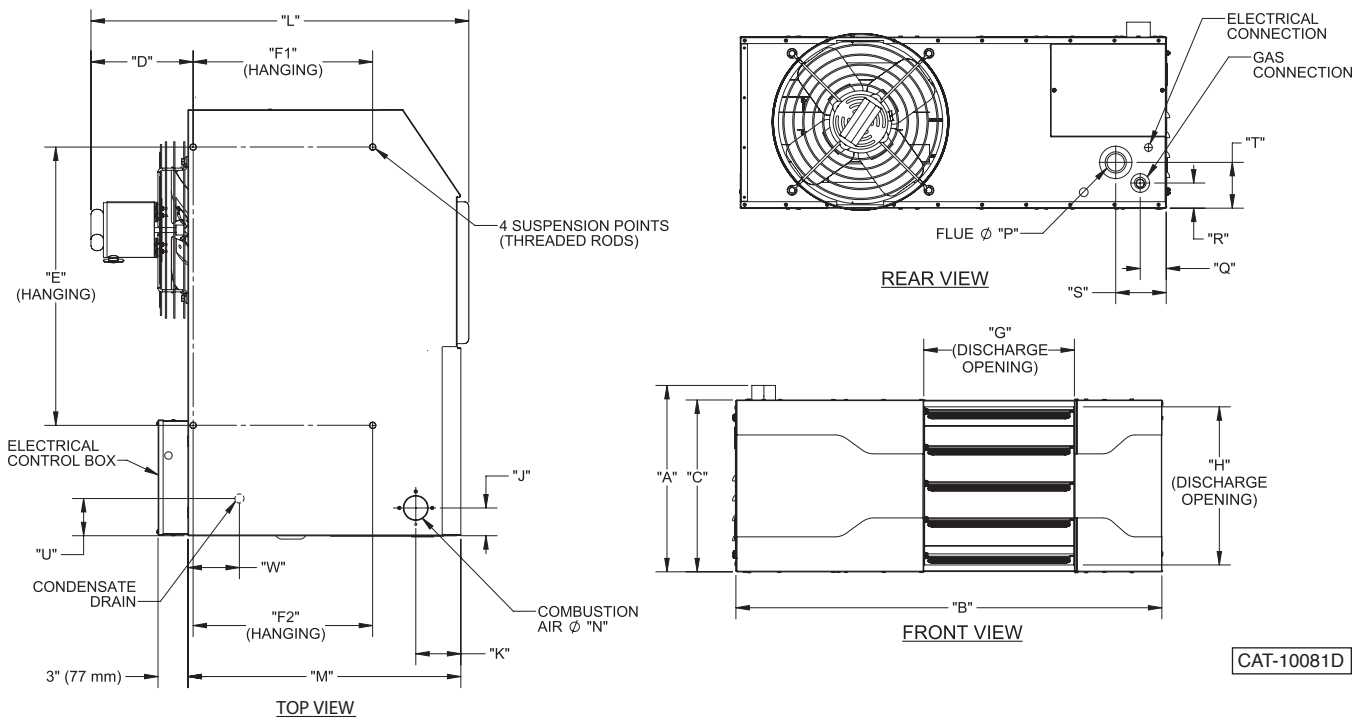
Units automatically vary discharge temperatures based on the outside air temperature providing seamless modulation for optimum efficiencies. By running at lower discharge temperatures subject to the outdoor temperatures, units run longer at higher efficiency resulting in less cycling, lower fuel costs, and increased occupancy comfort. As the outdoor temperature drops, discharge temperatures increase and vice versa. Outdoor Air Reset is optimal in regions with substantial daily temperature swings.



## HU 050 Dimensional Data



## HU 100-400 Dimensional Data





## Dimensions

Unit Capacity (MBH)	50	100	150	200	300	400	
<b>DIMENSIONAL DATA - inches (mm)</b>							
"A" Height to Top of Combustion Air Inlet	13-5/8 (346)	18-3/4 (476)	18-3/4 (476)	18-3/4 (476)	27-1/8 (689)	34-7/8 (886)	
"B" Jacket Width of Unit	42-13/16 (1087)	42-13/16 (1087)	54-13/16 (1392)	54-13/16 (1392)	54-13/16 (1392)	54-13/16 (1392)	
"C" Unit Height	12-1/4 (311)	17-1/4 (438)	17-1/4 (438)	17-1/4 (438)	25-11/16 (653)	33-7/16 (850)	
"D" Depth to Rear of Housing	5-3/4 (147)	11 (279)	10-5/16 (261)	11 (279)	10-7/8 (277)	11-1/2 (292)	
"E" Hanging Distance Width	28 (710)	27-15/16 (710)	38 (965)	38 (965)	41-3/4 (1060)	41-3/4 (1060)	
"F1" Hanging Distance Depth	17-3/8 (440)	17-1/4 (438)	21-1/8 (537)	21-1/4 (540)	20 (508)	20 (508)	
"F2" Hanging Distance Depth	17-3/8 (440)	17-1/4 (438)	21-1/8 (537)	21-1/4 (540)	26 (660)	26 (660)	
"G" Discharge Opening Width	15 (381)	15 (381)	26 (660)	26 (660)	26 (660)	26 (660)	
"H" Discharge Opening Height	10-1/8 (256)	15-7/8 (403)	15-7/8 (403)	15-7/8 (403)	24-3/8 (619)	32-1/8 (816)	
"J" Side Panel to Centerline Combustion Air	2-3/4 (70)	2-13/16 (71)	3-3/4 (95)	3-3/4 (95)	3-3/4 (95)	3-3/4 (95)	
"K" Front Panel to Centerline Combustion Air	4-1/2 (115)	4-1/2 (114)	5-5/16 (135)	5-5/16 (135)	5-5/16 (135)	5-5/16 (135)	
"L" Overall Unit Depth	32-5/8 (829)	38 (965)	41 (1040)	42 (1067)	42 (1067)	42 (1067)	
"M" Side Depth	27-7/16 (696)	27-7/16 (697)	31-1/4 (794)	31-1/4 (794)	31-1/4 (794)	31-1/4 (794)	
"N" Combustion Air Inlet Connection Dia.	2 (51)	2 (51)	2 (51)	3 (76)	4 (102)	4 (102)	
"P" Flue Connection Diameter	2 (51)	2 (51)	2 (51)	3 (76)	4 (102)	4 (102)	
"Q" Side Panel to Centerline Gas Connection	2-1/8 (54)	2-5/8 (67)	2-5/8 (67)	2-5/8 (67)	2-5/8 (67)	2-5/8 (67)	
"R" Bottom Panel to Centerline Gas Connection	1-1/2 (40)	2-1/2 (64)	2-1/2 (64)	2-1/2 (64)	2-1/2 (64)	2-1/2 (64)	
"S" Side Panel to Centerline Flue	5-3/8 (137)	5-1/8 (130)	6-1/2 (165)	6-1/16 (154)	5-3/8 (137)	5-3/8 (137)	
"T" Bottom Panel to Centerline Flue	2-1/2 (64)	4-5/8 (117)	4-5/8 (117)	4-5/8 (117)	8-1/8 (206)	13-1/8 (334)	
"U" Side to Centerline Condensate Drain Connection	8-1/2 (214)	8-1/2 (216)	9-1/2 (241)	9-1/2 (241)	9-1/2 (241)	9-1/2 (241)	
"W" Rear to Centerline Condensate Drain Connection	9-9/16 (243)	9-9/16 (243)	10-9/16 (268)	10-9/16 (268)	10-1/8 (257)	10-1/8 (257)	
Approximate Unit Weight -	lb (kg)	120 (54.4)	180 (81.6)	209 (94.8)	260 (117.9)	323 (146.5)	385 (174.6)
Approximate Ship Weight -	lb (kg)	168 (76.2)	228 (103.4)	254 (115.2)	305 (138.3)	388 (176.0)	460 (208.6)



## Performance and Dimensional Data

Model	HU050	HU100	HU150	HU200	HU300	HU400
Input BTU/HR	50,000	100,000	150,000	200,000	300,000	400,000
Output BTU/HR	48,600	96,000	143,000	192,000	285,000	384,000
Thermal Efficiency	97%	96%	95%	96%	95%	96%
Air Temp Rise	57°F	55°F	50°F	55°F	55°F	55°F
Condensate Production (Gal/Hr)	0.41	0.73	1.06	1.38	1.71	3.00
Turn Down Ratio	3:1	3:1	3:1	3:1	3:1	3:1
Modulating Control	YES	YES	YES	YES	YES	YES
Fuel Type	NG/LP	NG/LP	NG/LP	NG/LP	NG/LP	NG/LP
Venting Category	IV	IV	IV	IV	IV	IV
Entering Airflow (CFM @ 70°F)	790	1,616	2,661	3,232	4,848	6,464
Outlet Velocity (FPM)	697	977	928	1,127	1,101	1,114
Heat Throw @ 20' Mounting Height	N/A	150 Ft	N/A	150 Ft	150 Ft	150 Ft
Min. Gas Pressure Natural	5 Inch wc	5 Inch wc	5 Inch wc	5 Inch wc	5 Inch wc	5 Inch wc
Min. Gas Pressure LP	8 Inch wc	8 Inch wc	8 Inch wc	8 Inch wc	8 Inch wc	8 Inch wc
Max. Gas Pressure Natural / LP	14 Inch wc	14 Inch wc	14 Inch wc	14 Inch wc	14 Inch wc	14 Inch wc
Motor HP	1/14 (2)	1/2	1/12	1/2	1	1
Motor Qty	2	1	2	2	2	2
Motor RPM	1,500	1,500	1,500	1,500	1,625	1,625
Gas Connection Size	1/2"	1/2"	1/2"	1/2"	3/4"	3/4"
Condensate Discharge Size	3/4"	3/4"	3/4"	3/4"	3/4"	3/4"
Condensate Trap	YES	YES	YES	YES	YES	YES
Combustion Air Intake	2"	2"	2"	3"	4"	4"
Combustion Air Intake Material	PVC/CPVC	PVC/CPVC	PVC/CPVC	PVC/CPVC	PVC/CPVC	PVC/CPVC
Flue Size	2"	2"	2"	3"	4"	4"
Flue Material	PVC/CPVC	PVC/CPVC	PVC/CPVC	PVC/CPVC	PVC/CPVC	PVC/CPVC
<b>Electrical Data</b>						
Supply Voltage/Phase	115V - 1PH	115V - 1PH	115V - 1PH	115V - 1PH	115V - 1PH	115V - 1PH
FLA	10.8	10.3	17.6	17.6	31.2	31.2
Motor Amps (total fan motor amps)	5.2	6.0	12.0	12.0	22.0	22.0
<b>Dimensions</b>						
Height	12-1/4"	17-1/4"	17-1/4"	17-1/4"	25-11/16"	33-7/16"
Width	42-13/16"	42-13/16"	54-13/16"	54-13/16"	54-13/16"	54-13/16"
Depth	32-5/8"	38"	41"	42"	42"	42"
Weight	120 lbs.	180 lbs.	209 lbs.	260 lbs.	323 lbs.	385 lbs.
<b>Clearance Service/Combustible</b>						
Air Intake Side	18"	18"	18"	18"	36"	36"
Access Side	18"	18"	18"	18"	18"	18"
Non Access Side	2"	6"	6"	6"	6"	6"
Top	2"	6"	6"	6"	6"	6"
Bottom	2"	6"	6"	6"	6"	6"