



EUH Series Electric Unit Heaters

REZNOR®

Bringing the Heat since 1888™

Agenda

- Why Electric Unit Heaters?
 - Market Drivers
- Reznor EUH Series Electric Unit Heaters Introduction
 - Product Offering
 - Product Specifications & Dimensions
 - Selection and Sizing
 - Controls
 - Installation
 - Unique Features
 - Ideal Applications
 - Literature Availability
 - Product Availability
 - EUH Phase in
 - EGEB/EGHB Phase-Out Plan
 - ACE Setup

Market Drivers

Decarbonization

- **Renewable electricity replacing natural gas & propane**
- Gas unit heater replacement with alternates inevitable

Energy Efficiency

- **100% heating efficiency**
- Building energy efficiency requirements

Single Source

- **Minimize confusion on the job**
- Single professional look for the job



Product Specification

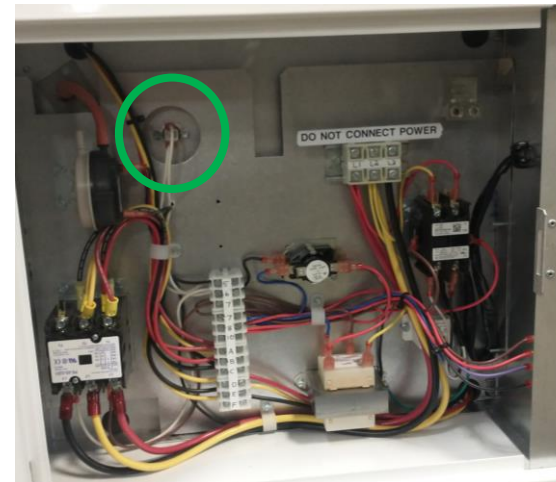
Model	3			5			7			10			15			20		25	30
Voltage	208	240	480	208	240	480	208	240	480	208	240	480	208	240	480	240	480	480	480
Low Heat Capacity (kW)	-	-	-	-	-	-	-	-	-	-	-	-	5.6	10.0	10.0	10.0	10.0	15.0	20.0
High Heat Capacity (kW)	2.3	3.0	3.0	4.0	5.3	5.3	5.5	7.3	7.3	7.5	9.9	9.9	11.3	15.0	15.0	20.0	20.0	25.0	30.0
Minimum Air-flow (CFM)	125			158			296			191			263			357		446	504
Maximum Air-flow (CFM)	431			479			740			957			1215			1290		1612	1663
Heat Rise (°F)	22			33			32			33			39			49		49	57

- Develop 8 capacities in 3-30 kW = 97% of Sales
 - Retain EGHB 40-60 kW to satisfy need
- 5 voltages required = 90% of Sales
- Incorporate 208-240/1-3 in 1 unit for 3-10 kW models
- Physically appear similar to Reznor Unit Heaters
- Incorporate external input controls (BMS)
- Two-Stage Heat for larger models
- Product Differentiators:
 - 4 voltage in 1 sku eliminates distributor stocking reluctance
 - Incorporate ability to control Destratification Fans and Unit Heaters (Gas and/or Electric) from same thermostat
 - Offered on Gas UH now, extend to EUH



Product Design Review

- 2 Cabinet sizes for Optimization
 - 3-10 models
 - 15-30 models
- Stainless Steel Sheathed and Finned Heating Elements
 - Stainless Steel drives **Reliability** via corrosion resistance
 - Not all vendors use SS for entire external construction
 - **Safety** first: Electrical connections enclosed, sheath is non-energized
 - Utilize only 4 capacities of elements to enable full range while driving supply chain efficiency
- Safeties
 - Automatic Reset Thermal Overload Protection on Fan Motor
 - Automatic Reset High Temperature Limit Switch
 - **Air-flow Proving Switch**



Performance Results

Model	3			5			7			10			15			20		25	30
Voltage	208	240	480	208	240	480	208	240	480	208	240	480	208	240	480	240	480	480	480
Low Heat Capacity (kW)	-	-	-	-	-	-	-	-	-	-	-	-	5.6	10.0	10.0	10.0	10.0	15.0	20.0
High Heat Capacity (kW)	2.3	3.0	3.0	4.0	5.3	5.3	5.5	7.3	7.3	7.5	9.9	9.9	11.3	15.0	15.0	20.0	20.0	25.0	30.0
Minimum Air-flow (CFM)	125			158			296			191			263			357		446	504
Maximum Air-flow (CFM)	431			479			740			957			1215			1290		1612	1663
Heat Rise (°F)	22			33			32			33			39			49		49	57

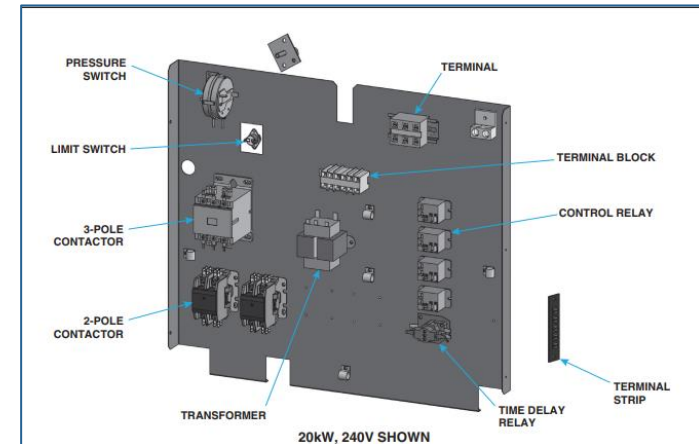
- 208V Capacity is 25% derate compared to 240V
- 230V = 240V Capacity

Voltage Availability

- *Designed for Availability*

- 208-240V/3-1 phase
 - Incorporates all 4 variants
 - 208V is a derate of 240V
 - Factory set 1 phase
 - 3 Phase Selection accomplished simply in field
- 480V/3 ph available in all sizes
- Model 15-30 are 3 phase only
- Larger Sizes in Larger Voltages to minimize amperage requirements
- Developing:
 - 600V/3 ph for 15-30 kW models
 - 277V/1 ph for 3-10 kW models
 - June 2024 Launch

Availability										
SIZE		Option	3	5	7	10	15	20	25	30
SUPPLY VOLTAGE / PHASE	208-240/3-1	AK44	Y	Y	Y	Y	N	N	N	N
	208-240/3	AK20	N	N	N	N	Y	N	N	N
	240/3	AK6	N	N	N	N	N	Y	N	N
	480/3	AK7	Y	Y	Y	Y	Y	Y	Y	Y



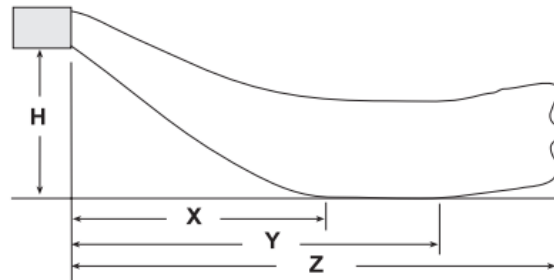
- b. Units with voltage option AK44 are factory-wired for 208V/240V/1Ph supply. Field-modification to the unit wiring is required for 3Ph applications. Refer to the wiring diagram to change the black contactor wires as follows:
- (1) Loosen terminal screws T1, T2, and T3 on 3-pole contactor (see [Figure 6](#)) terminals.
 - (2) Disconnect black wires from T1 and T2 terminals and connect them to T3 terminal.
 - (3) Tighten all terminal screws.

Tech Data

- See *EUH-TSL*
- Full Electrical Information
 - FLA, MCA, MOP
 - Disconnect/Circuit Breaker Size
- Heater Throw Data
 - Similar to Gas UH

Heater Throw Distances with Standard Horizontal Louvers

The graphic shows throw patterns and the table lists throw distances for heaters suspended at varying mounting heights. The louver angles listed are relative to the top of the heater.



H = Distance from bottom of heater to the floor
 X = Distance from heater to start of floor coverage
 Y = Distance to end of floor coverage
 Z = Distance at which air velocity drops below 50 feet (15.2 meters) per minute

Technical Data

Parameter	Unit of Measure	Unit Size (kW)							
		3	5	7	10	15	20	25	30
Heating capacity	kW	3	5	7	10	15	20	25	30
	BTU/h	10,236	17,060	23,884	34,121	51,182	68,242	85,303	102,364
Control amps, 24V	amp	1.6							
Fan motor size	HP	0.03		0.07			0.17		
Fan size	inch	10			12	16		18	
Minimum air volume (limit cutout)	CFM	125	158	296	191	263	357	446	504
	meter ³ /minute	3.54	4.476	8.38	5.40	7.44	10.11	12.63	14.27
Maximum air volume	CFM	431	479	740	957	1215	1290	1612	1663
	meter ³ /minute	12.20	13.56	20.90	27.10	34.40	36.53	45.65	47.09

Parameter	Unit of Measure	Unit Size (kW)											
		3			5			7			10		
		Voltage											
		208	240	480	208	240	480	208	240	480	208	240	480
Nominal kW	kW	3			5			7			10		
Actual kW		2.3	3.0		4.0	5.3		5.5	7.3		7.5	9.9	
Minimum current ampacity, 1Ph	amp	11.6	13.3	6.9	19.9	22.9	11.7	27.3	31.4	16.0	37.0	42.2	21.3
Full load amps, 1Ph*		11.1	12.8	6.4	19.4	22.4	11.2	26.8	30.9	15.5	36.5	41.7	20.8
Minimum current ampacity, 3Ph		7.0	8.0	4.4	11.8	13.5	7.2	16.0	18.4	9.6	21.6	24.6	12.7
Full load amps, 3Ph*		6.5	7.5	3.9	11.3	13.0	6.7	15.5	17.9	9.1	21.1	24.1	12.2
Maximum overcurrent protection**		20.0	15.0		25.0		15.0	30.0		20.0	45.0	50.0	30.0
Temperature rise	°F	22			33			32			33		
*Includes fan motor.													
**Circuit breaker size.													

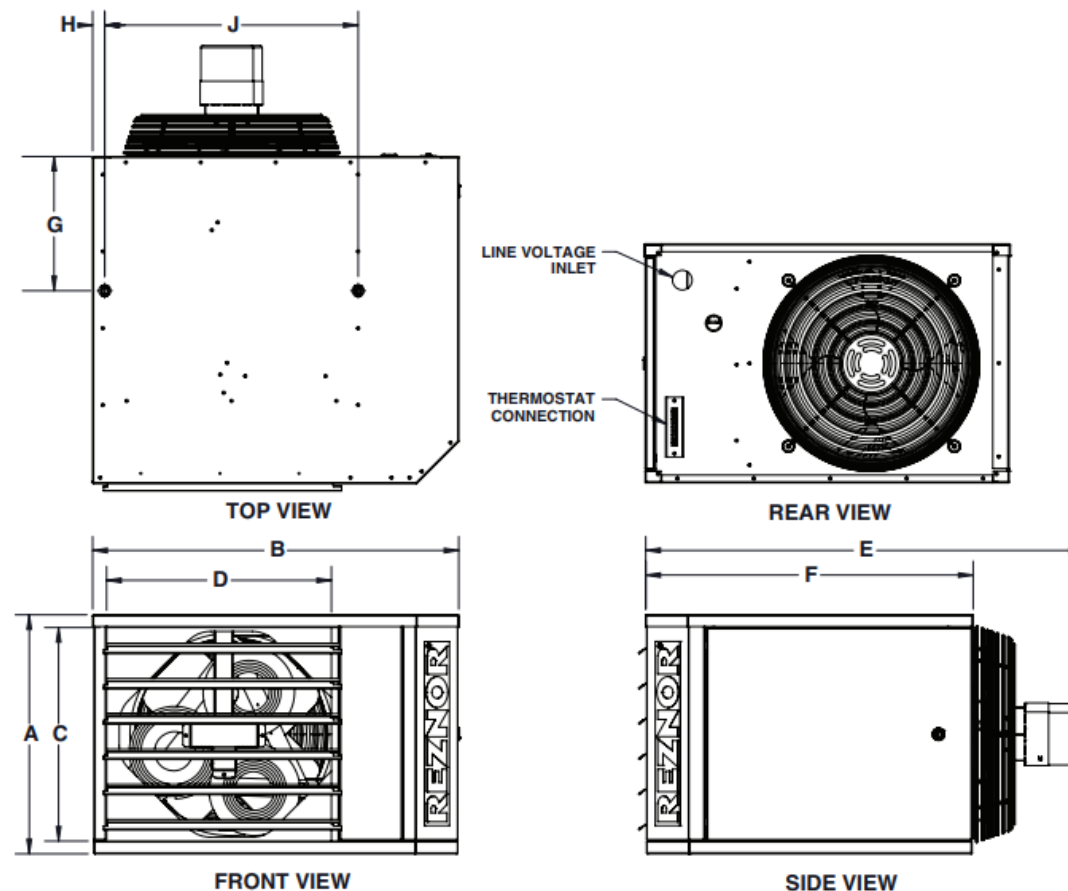
Setting	Parameter	Unit of Measure	Unit Size (kW)							
			15			20		25	30	
			Voltage							
			208	240	480	240	480	480	480	
—	Minimum current ampacity, 3Ph	amp	32.5	37.4	19.3	49.4	25.4	31.4	37.4	
Low heat	Nominal kW	kW	7.4	10.0					15.0	20.0
	Actual kW		5.6							
	Full load amps, 3Ph*	amp	26.8	41.3	20.6	41.7	20.8	31.3	25.0	
	Maximum overcurrent protection**		40.0	45.0	25.0	60.0	40.0	45.0		
	Temperature rise	°F	19	26		24		29	28	
High heat	Nominal kW	kW	15.0	15.0		20.0		25.0	30.0	
	Actual kW		11.3							
	Full load amps, 3Ph*	amp	31.5	36.4	18.3	48.4	24.4	30.4	36.4	
	Maximum overcurrent protection**		40.0	45.0	25.0	60.0	40.0	45.0		
	Temperature rise	°F	39			49			57	
*Includes fan motor.										
**Circuit breaker size.										

Dimension

- Similar to smaller Gas UH
 - **Standardize to Reznor Look**
 - **Reznor Robust Design Criteria**
- Standardize Parts with Gas UH
 - Easier to Run in Plant
 - Easier to Service in Field



Dimensions



Cabinet Size	Unit Size (kW)	Dimension (See Graphic Above)								
		A	B	C	D	E	F	G*	H	J
		Inches (mm)								
1	3, 5, 7, 10	15-1/4 (388)	23-11/32 (593)	13-5/8 (347)	14-11/32 (365)	27-31/32 (711)	20-7/8 (531)	8-1/2 (216)	25/32 (20)	16-5/32 (411)
2	15, 20, 25, 30	21-1/8 (537)	28-5/32 (716)	19-1/2 (496)	19-11/32 (492)	33-13/32 (849)	24-3/4 (629)	10-1/2 (267)		21-7/32 (539)

*Hanger dimension for two-point suspension.

Air Throw Data

- Full set of throw data available
- Not commonly available in electric heating units



Mounting Height

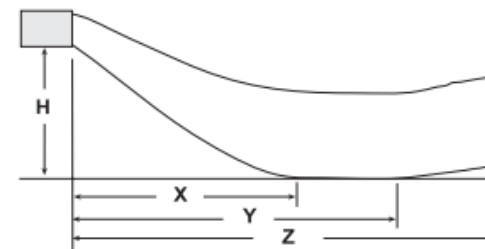


If touched, the internal heater surfaces that are accessible from outside the heater will cause burns. Suspend the heater a minimum of 6 feet (1.8 meters) above the floor.

In general, a unit should be located 6–14 feet (1.8–4.3 meters) above the floor. At those points where infiltration of cold air is excessive, such as at entrance doors and shipping doors, it is desirable to locate the unit so that it will discharge directly toward the source of cold air from a distance of 15–20 feet (4.6–6.1 meters).

Heater Throw

Figure 1 shows throw patterns and **Table 2** lists throw distances for heaters suspended at varying mounting heights. The louver angles listed are relative to the top of the heater.



H = Distance from bottom of heater to the floor
X = Distance from heater to start of floor coverage
Y = Distance to end of floor coverage
Z = Distance at which air velocity drops below 50 feet (15.2 meters) per minute

Figure 1. Heater Throw Patterns (Refer to Table 2)

Table 2. Heater Throw Distances with Standard Horizontal Louvers										
H* (Feet (Meters))	Distance* or Angle	Unit Size (kW)								
		3	5	7	10	15	20	25	30	
		Feet (Meters)								
6 (1.8)	X	4 (1.2)	5 (1.5)	7 (2.1)	6 (1.8)	13 (4.0)	11 (3.4)	10 (3.0)		
	Y	8 (2.4)	13 (4.0)	15 (4.6)	14 (4.3)	19 (5.8)	23 (7.0)	28 (8.5)	27 (8.2)	
	Z	18 (5.5)	22 (6.7)	36 (11.0)		37 (11.3)		42 (12.8)	41 (12.5)	
	Downward louver angle	36°	27°			22°				
8 (2.4)	X	—	5 (1.5)	9 (2.7)	6 (1.8)	14 (4.3)	11 (3.4)	9 (2.7)	8 (2.4)	
	Y		10 (3.0)	15 (4.6)	14 (4.3)	19 (5.8)	28 (8.5)			
	Z		16 (4.9)	32 (9.8)	36 (11.0)	37 (11.3)	39 (11.9)			
	Downward louver angle		36°	34°	30°	27°				
10 (3.0)	X	—	6 (1.8)		6 (1.8)	13 (4.0)	12 (3.7)	8 (2.4)	9 (2.7)	
	Y		15 (4.6)		14 (4.3)	18 (5.5)	28 (8.5)	27 (8.2)	25 (7.6)	
	Z		26 (7.9)		34 (10.4)		38 (11.6)	36 (11.0)		
	Downward louver angle		36°		32°					
12 (3.7)	X	—	12 (3.7)		10 (3.0)	11 (3.4)	10 (3.0)	12 (3.7)	10 (3.0)	
	Y		14 (4.3)		15 (4.6)	16 (4.9)	22 (6.7)	24 (7.3)	22 (6.7)	
	Z		20 (6.1)		33 (10.0)	27 (8.2)	31 (9.4)	34 (10.4)		
	Downward louver angle		36°		45°					36°
14 (4.3)	X	—							12 (3.7)	
	Y								18 (5.5)	16 (4.9)
	Z								25 (7.6)	
	Downward louver angle								45°	

*See Figure 1.

*See Figure 1.

Option Review

Factory Installed Options

- Voltage Selection
- BA6 Factory installed disconnect

Availability										
SIZE		Option	3	5	7	10	15	20	25	30
SUPPLY VOLTAGE / PHASE	208-240/3-1	AK44	Y	Y	Y	Y	N	N	N	N
	208-240/3	AK20	N	N	N	N	Y	N	N	N
	240/3	AK6	N	N	N	N	N	Y	N	N
	480/3	AK7	Y	Y	Y	Y	Y	Y	Y	Y

Large selection of Field Installed Option

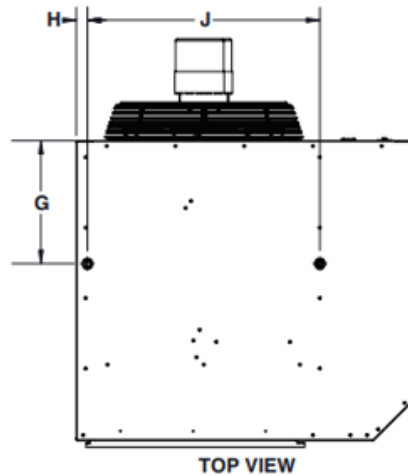
- Many Controls Options Available
- Multiple Mounting Options if wall mounting is not desired

Table 6. Field-Installed Options	
Option	Description
CL31, CL32	Multiple fan control: option CL31 includes components for one control unit and one additional unit—option CL32 includes components for each additional non-control unit
CL1	Single-stage thermostat
CL22	Two-stage thermostat
CL90	BACnet-capable thermostat
CM1	Locking cover for CL1 thermostat
CM1B	Locking cover for CL22 thermostat
CM3	Bracket assembly for mounting thermostat on unit
CN3F	Remote ON/OFF switch in 2 × 4 box
CK8	Adapts 3/8-inch hangers for two-point suspension from 1-inch threaded pipe
CK22	Angle brackets for low ceiling mounting (does not include hanger rods)
IT13	Unit-mounted thermostat

Hanging Options

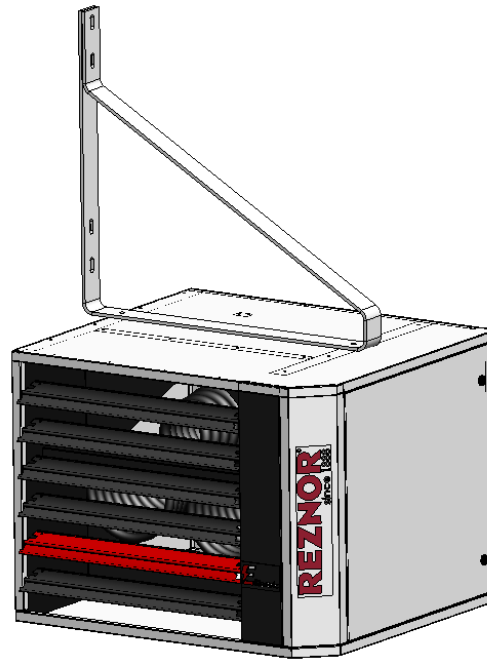
2-pt Ceiling Hanging

- Same to Gas-fired UH
 - Uses 3/8" threaded rod std.
 - 1" pipe option (CK8)
 - Verified level installation



Wall Hangers

- Still being finalized
- Provided with unit
- Connects to 2-point hanging points



Low Ceiling Hanger

- CK22
- Same as Gas-fired UH

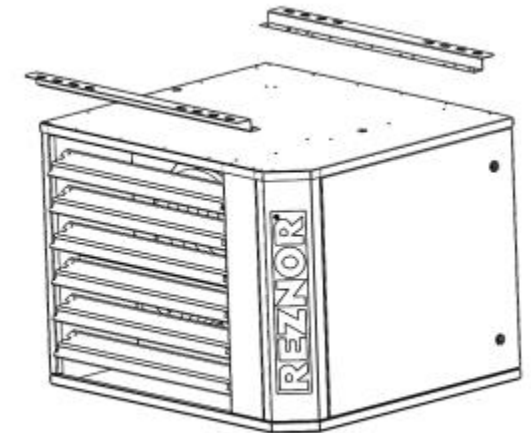


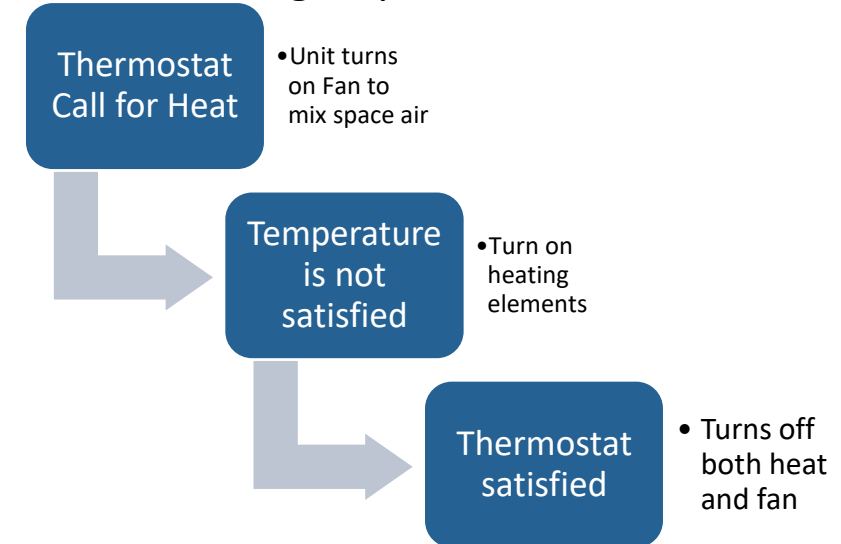
Figure 1. Ceiling Suspension Kit

CONTROLS

Control Options:

- On/Off Switch
- Wall Thermostat
 - Fan Switch
- Unit Mounted Thermostat
 - IT13
 - CL1 and CM3 Bundle
- 2 Stage T-stat Control With Unit Heater
- CL31 & CL 32 Multi-unit Control
 - Up To 5 Units
 - Potentially mix with other Reznor Products
- CL90 BACnet Control Thermostat

Possible 2 Stage Operation



Also Possible to Stage Control with Reznor Huracan™ Destratification Fans



ACE Information During Selection

- ACE Provides Electrical Data
- For Multi-voltage units
 - ACE shows factory voltage setting
 - Nameplate provides data for each voltage so correct breaker, wiring, etc. can be field supplied.
 - Same data as supplied within the submittal

The screenshot displays the REZNOR ACE software interface. The main configuration area shows the following details:

- REZNOR Segments:** Reznor
- Model:** NORTEK-RCH-A
- Unit No.:** 1007198
- Size:** 3080 / 16 / 56
- Unit Type:** EUH
- Options:** AK44
- Factory Installed Options:**
 - Voltage Options: AK44 208-240/1-3 VOLTAGE
 - Factory Installed Disconnect
- Field Installed Options:**
 - Recommend Selecting a Control Option
 - Wall Thermostat, Wall Thermostat Guard, Unit Mounted Thermostat
 - Unit Suspension/Support, Multi-Heater Control Single Rem..., Multi-Heater Control Additional R...
 - 2 Position Switches

A summary panel on the right provides additional information:

- Summary:** Total List Price: \$1,199.00, Total Weight: 50 lb
- Model Overview:** EUH, 2.3-30 kW Electric resistive, low static axial fan commercial and industrial unit heaters
- Schedule:**
 - Power:**

Voltage (V/Ph/Hz):	230 / 1 / 60
FLA (A):	22.4
MCA (A):	22.5
MOP (A):	25
- Itemized Pricing:** Total: \$1,199.00

Industry-best Availability

- Lead-time: 15 working days
 - Same as Reznor gas-fired unit heaters
 - Enables inventory reduction and savings
 - Typical competitor lead-time 8-12 weeks



Conclusion

- EUH offers a standard range of electric unit heaters in most common voltages with more being developed
- Consolidated voltages into a single unit reduces complexity, enabling sku and stocking savings with reduced selection effort
- 24V controls to enable usage with simple or enhanced thermostats
- Multi-unit control and other enhanced control options to optimize space energy efficiency
- Sleek, modern, attractive design built Reznor Robust™
- Industry-best 15 day lead-time to ship new orders