



**TRANE®**

# Electric Unit Heaters

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Model UHWA



Model UHAA



Model UHRA



Model UHXA



Model UHEC



Model UHCA



Model UHEC









# Introduction

## Introduction

Electric unit heaters have been a traditional means of heating hard-to-warm spaces for many years. Their uncomplicated approach in auxiliary heating make them easy to install and maintain. Their versatile characteristics allow Trane's electric unit heaters to fill nearly every heating application gap, while their structural integrity makes them a reliable heat source to blend into today's building décor.

Trane's electric unit heaters are available in 6 variations. The following chart presents a brief overview of the different electric unit heater models Trane offers.

<i>Model</i>	<i>Description</i>	<i>Application</i>
UHEC 3 to 50 kW 	Horizontal and Vertical Spot Heating Electric Unit Heater	Applied as an auxiliary heat source in walkways, stairways, vestibules, and entrances. The horizontal and vertical spot heater may be used in commercial, industrial and institutional applications.
UHRA 3 to 48 kW 	Hose-Down, Corrosion-Resistant Electric Unit Heater	Used in industrial applications where dirt or dust may be extensive. The totally enclosed, watertight casing is corrosion-resistant for non-hazardous locations.
UHXA 3 to 25 kW 	Explosion-Proof Electric Unit Heater	Designed for hazardous locations, the UHXA model may be applied where flammable gases, vapors, powdered metals or dust may be present.
UHCA 2 to 5 kW 	Commercial, Ceiling-Mounted Electric Unit Heater	The surface- or recessed mounted model may be applied in restricted areas or where wall space is limited. This may included vestibules, lobbies, rest rooms, small-offices or guard buildings.
UHWA 2 to 5 kW 	Heavy Duty, Wall Mounted Electric Unit Heater  Series 20 and 50	Suited for public buildings such as schools, stores, offices, dormitories, hospitals and transportation terminals.
UHAA 1.5 to 4.8 kW 	Architectural Wall Mounted Electric Unit Heater	The rugged construction and attractive design of the UHAA model make them appropriate for offices, lobbies, and reception areas for schools and dormitories.

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# Features and Benefits

# Model UHEC

### Electric Unit Heaters

- Thirty-seven models to choose from ranging from 3.3 to 50 kW. Available for 208, 240/208, 277 or 480-volt operation.
- One unit can be used for either horizontal or vertical discharge.
- Specially designed inlet louvers, venturi and outlet diffuser provide uniform air temperature and throw characteristics.
- Single-phase units, easily converted to three-phase power, are available in 3.3 to 10 kW for 208 and 240-volt operation.
- Two-speed fan operation standard on 25 kW units and above.
- Meets all requirements of UL listing standard 1278 when installed as directed.

UHEC electric unit heaters are ideal for applications ranging from new construction to auxiliary heat to renovation. They are available in 37 models ranging from 3.3 kW to 50 kW. In addition to a wide capacity range, each compact, attractive unit can be mounted in either a horizontal or vertical discharge arrangement.

### Flexibility

The Trane electric unit heater shows its flexibility in installation and operation. Intended for industrial, commercial or institutional use, the Trane electric unit heater is available for 208 to 480-volt, single or three-phase operation. Units from 3.3 to 10 kW for 208 and 240-volt operation may be converted easily from single to three-phase operation in the field. Two-speed fan operation on 25 kW units and above provides greater airflow flexibility.

### Uniform Air Distribution

The Trane unit heater uniformly directs the air to exactly where it's needed. A specially designed deep-drawn venturi assures uniform air distribution. The outward-drawn venturi channels the air forward for maximum, uniform air throw. Outlet diffusers are provided to properly direct the heated discharge air.

In order to minimize the potential for hot spots on the heating coil, inlet louvers evenly distribute intake air over the entire heating element.

Trane electric unit heaters are designed with totally enclosed, permanently lubricated industrial motors. The air-over-motor design reduces operating temperatures, promoting long motor life. Thermal overloads provide additional protection for major circuits, in case normal operating temperatures are exceeded.

### Quick and Easy Low-Cost Installation

Installation time and costs are minimized. Compact and completely factory wired, the Trane electric unit heater requires only a single-source power supply connection. The units are available with factory installed 24-volt control transformers and contactors.

**Outlet Louvers** — Individually adjustable from 30° up to 45° down.

**Motor and Fan** — Totally enclosed, permanently lubricated, sealed bearing, all-angle motor and fan combination through 20 kW and two-speed permanent capacitor-type motor on 25 through 50 kW units.

**Contactors** — All units 25 kW and larger are equipped with two contactors and two element banks for either single or two-stage heating operation.

**Fusing** — Element, motor and transformer primary fusing are factory installed and wired where required to NEC. Branch circuit fusing installed where required on 48 amps and up.

**Casing** — Die-formed heavy-gauge steel with baked enamel finish.

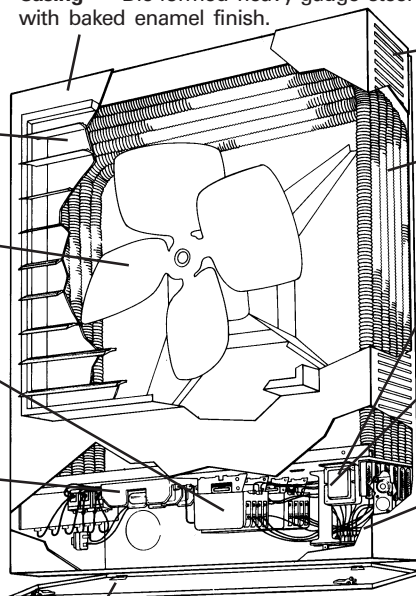
**Intake Louvers** — Designed to provide uniform air distribution across entire heating element.

**Element** — High mass, all steel finned, tubular heating element.

**Transformer** — 24-volt control circuit for closer temperature control and added safety. Standard on most models, optional on 3.0 and 5 kW 208, 240/208, 277-volt models.

**Thermal Overloads** — Automatic reset thermal cutouts disconnect motor and element in the event normal operating temperatures are exceeded.

**Terminal Panel** — Single-point terminal board wiring for easy control accessories installation.



**Access Panel** — Full width access panel secured by quarter-turn fasteners.



# Features and Benefits

## Model UHEC

Mounting the unit is easily accomplished with the use of hanger rods connected to weld nuts on the unit casing. An accessory mounting bracket is available for single-point mounting. Field installed accessories such as built-in thermostats, disconnect switches and summer fan switches are provided with spade terminals for easy installation to a single-point terminal board.

### Reliable Operation

Trane electric UHEC unit heaters operate reliably when installed and operated as directed. In addition to meeting all requirements of UL listing standard 1025, the heating element is backed with a five-year warranty.

### Easy Access

In the event that service is required, easy access to the control components is provided with a full-length access panel secured by quarter-turn fasteners. For added convenience, unit wiring diagrams are located inside the access panel for easy reference during installation and servicing.



**Horizontal Discharge**



**Vertical Discharge**

# Features and Benefits

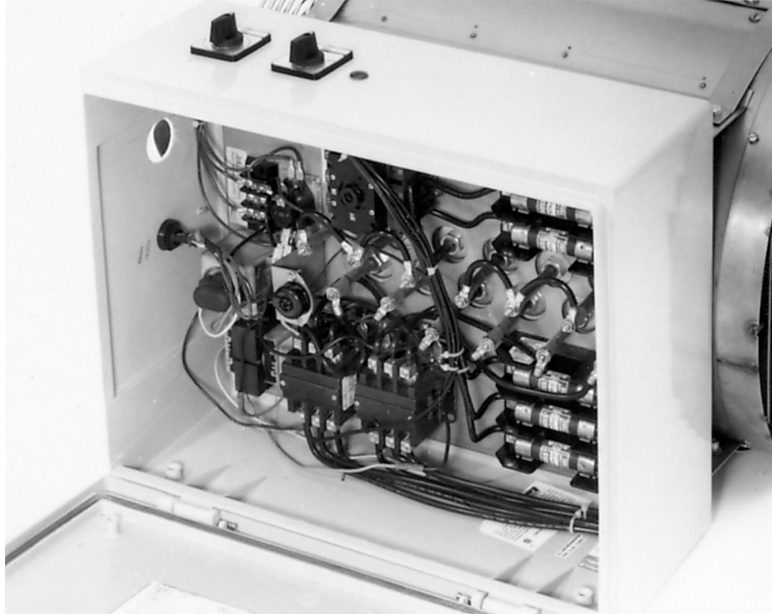
## Model UHRA

### Hose-Down Electric Unit Heaters

Trane UHRA hose-down electric unit heaters are constructed for use in areas that require washing or hosing of equipment due to a dirty or dusty industrial environment in non-hazardous locations. The totally enclosed, watertight casing made with corrosion-resistant material, makes the unit ideal for industrial heating applications. All controls are built-in and the safety temperature controls are wired in a nonmetallic NEMA 4x control panel with single-point power connections.

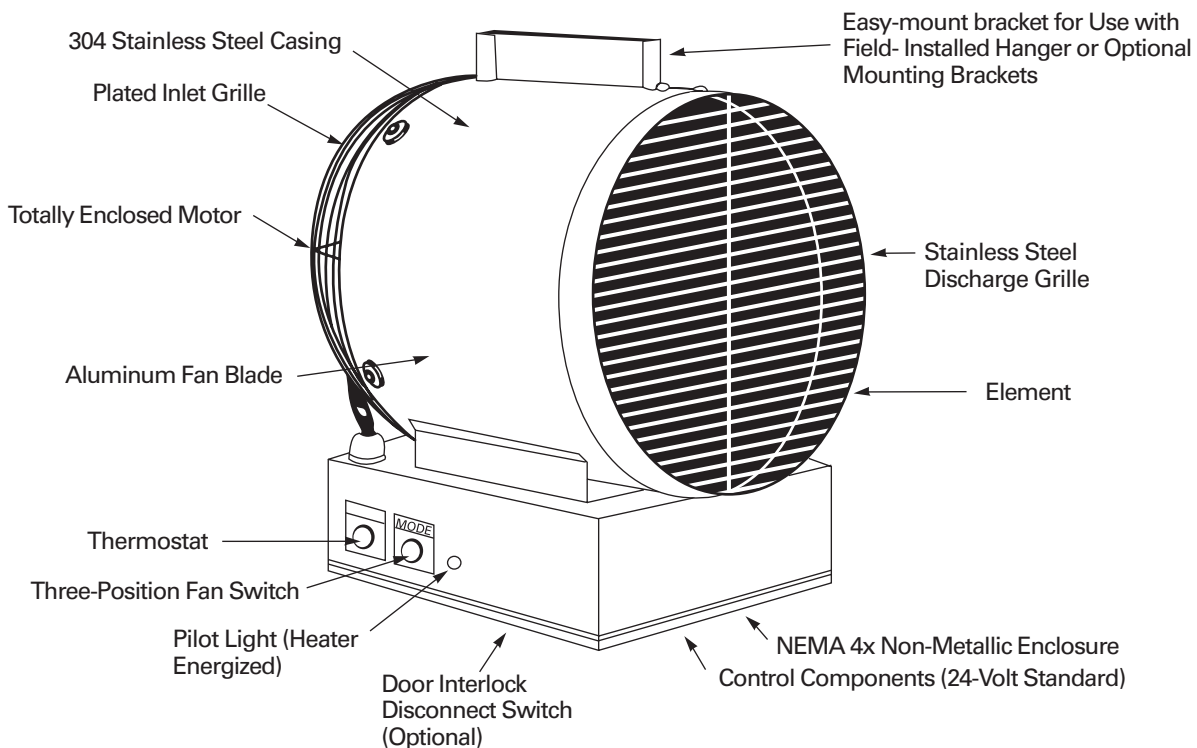
### Standard Features

- Heavy-duty 304 stainless steel casing
- NEMA 4x nonmetallic control panel
- 24-volt transformer and control circuit
- Three-position switch (off - heat - fan)
- Disconnect switch with enclosure interlock
- Capillary thermostat with stainless steel sensor
- Automatic reset thermal cutout
- Totally enclosed UL listed motor
- Pilot light (power on indicator)
- Chrome-plated finned tubular element
- Control panel on bottom of unit for ease of installation and service



### Control Enclosure

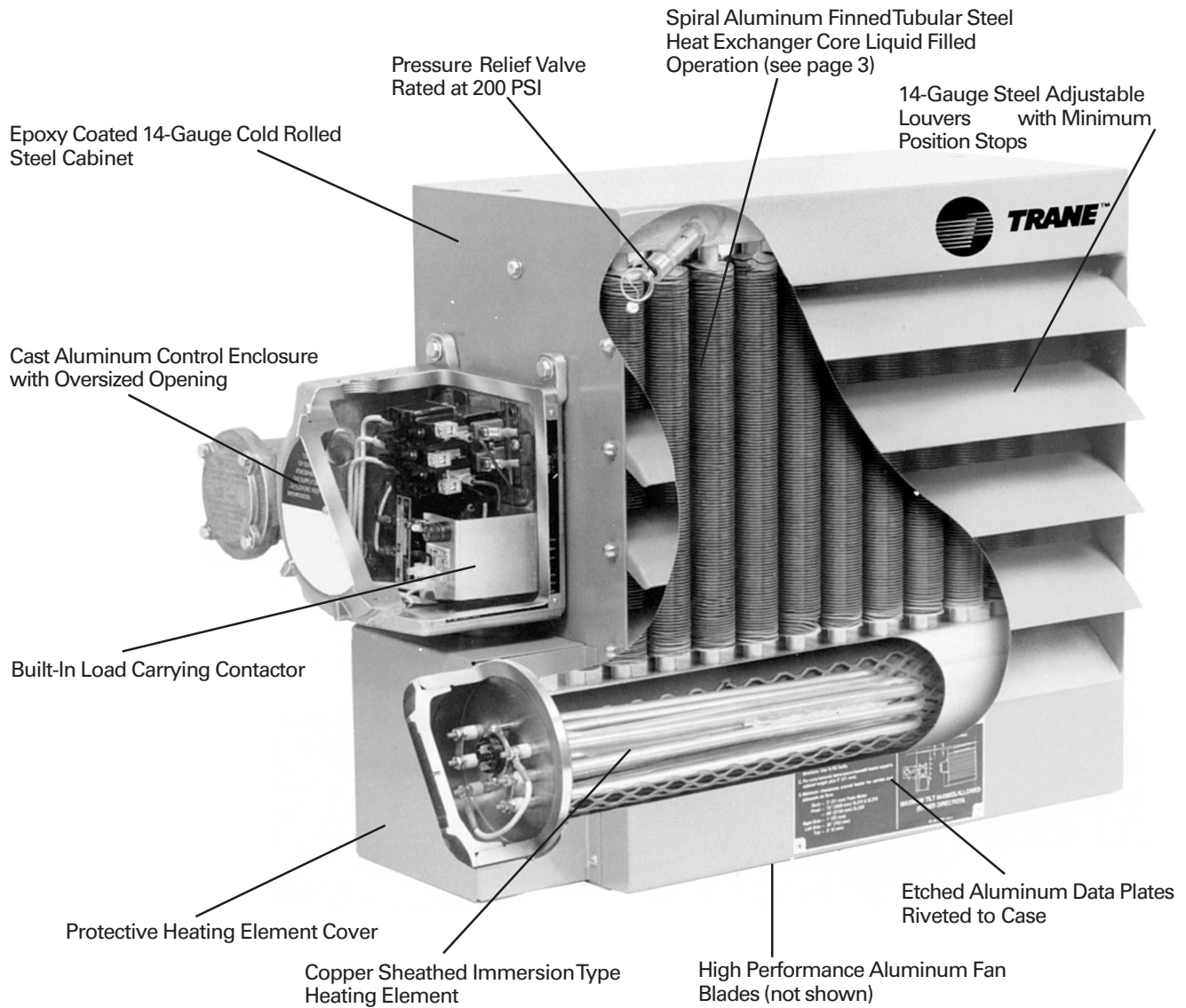
- Single-point power connection
- Meets all UL, NEC and OSHA requirements (when installed as directed)
- Corrosion-resistant in high humidity and water-saturated areas (for areas where corrosion-resistance is needed in non-hazardous areas).



# Features and Benefits

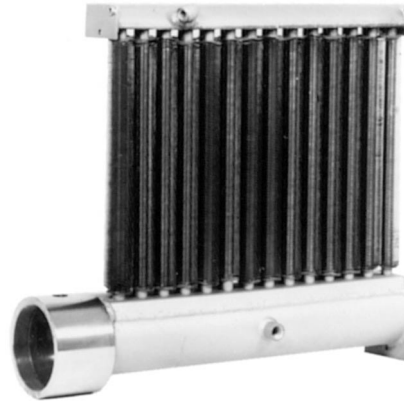
## Model UHXA

### Trane Explosion-Proof Electric Unit Heaters

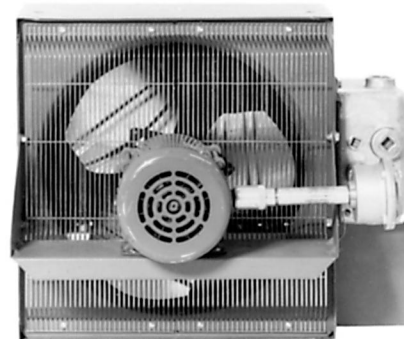


# Features and Benefits

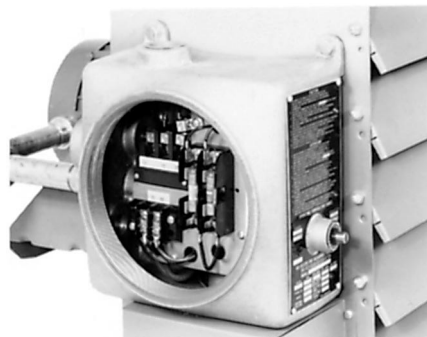
## Model UHXA



**Liquid to air heat exchanger with low watt density heating elements in ethylene glycol solution that provides freeze protection to -45°C.**



**Ball bearing permanently lubricated explosion-proof motor. Chrome plated guard meets OSHA requirements.**



**Heavy-duty control contactor with 24-volt control circuit provided on all models.**

Designed for rugged industrial applications in hazardous locations where the possibility of explosion or fire exists due to the presence of certain flammable gases, vapors, powdered metals or dusts.

- Permanently sealed, liquid to air, finned tube heat exchanger core.
- Ethylene glycol water mixture used as heat transfer fluid in the heater core, providing -45°C, (-49°F) freeze damage protection.
- High-performance electric motor driven fan blows air across finned tubes to effect uniform heat transfer and area heat distribution.
- Automatic reset capillary type high limit provides high temperature regulation and is rated for 100,000 cycles of service.
- Stainless steel and aluminum pressure relief valve handles any over-pressure.
- 14-gauge steel cabinet contains heater core, motor and fan assembly.
- Narrow gap safety fan guard shields all moving parts.
- Adjustable louvers allow directional control of air.
- Copper conductor wires enclosed in rigid metal conduits carry all electrical power.
- Box lugs are furnished for field connections within an approved enclosure.



# Features and Benefits

# Model UHWA Series 20 and 50

### Heavy-Duty Wall Heaters

Trane heavy-duty wall mounted electric forced-air unit heaters are architecturally styled in a vandal-resistant design for all commercial, institutional and many industrial applications. They are particularly suited for schools, office buildings, dormitories, stores, hospitals and other public buildings.

The high capacity and wide range of voltage/phase and control systems provides application versatility to meet most installation requirements. A wide selection of built-in factory installed and wired, pre-engineered control systems minimizes system design and installation time.

All units are equipped with zero voltage reset thermal cut-outs for overheat protection and a totally enclosed, permanently lubricated motor. Optional circuit breaker, control transformer and a selection of integral or wall-mounted thermostat controls are part of the unit package.

### Solid Construction and Dependable Components

#### Sleeve

Sleeve for surface or semi-recessed installation. 16 gauge (1.5 mm thickness) zinc coated steel.

#### Element

Totally enclosed, corrosion-resistant. Maximum finning for lower operating temperature and longer life. Will not become dust clogged. (No filter required.)

#### Thermal Cut-Out

Exclusive "zero voltage reset" type for high degree of effectiveness if normal operating temperatures are exceeded.

#### Transformer

Optional factory assembled and wired in 50 Series. Choice of 24 or 120 volt secondary.

#### Entrance Terminals

Line side termination enclosed for safe servicing of heaters when supplied with circuit breakers.

#### Circuit Breakers

Reduces installation cost by allowing one or more heaters to be wired from feeder and feeder tap. Separate control circuit switch supplied when required. All power can be turned off before front cover is removed.



#### Louvered Grille

Heavy-duty welded steel for maximum impact resistance. Closely spaced (pencil proof), tamperproof.

#### Motor Shield

Protects motor by separating return air from heated air.

#### Motor

Heavy-duty unit bearing, permanently lubricated, totally enclosed, impedance protected.

#### Blade

Highly efficient, space saving blade-over-motor design, individually balanced.

#### Contactors

Optional, definite purpose, heavy-duty type with flame path separators and dust covers. Choice of heater voltage, 120 volt or 24 volt holding coil.

#### Thermostat

Optional heavy-duty hydraulic snap action type with sensing bulb in return airstream. Disconnects all ungrounded conductors in OFF position.



Series 50 with exposed thermostat knob and covered circuit breaker and control switch only



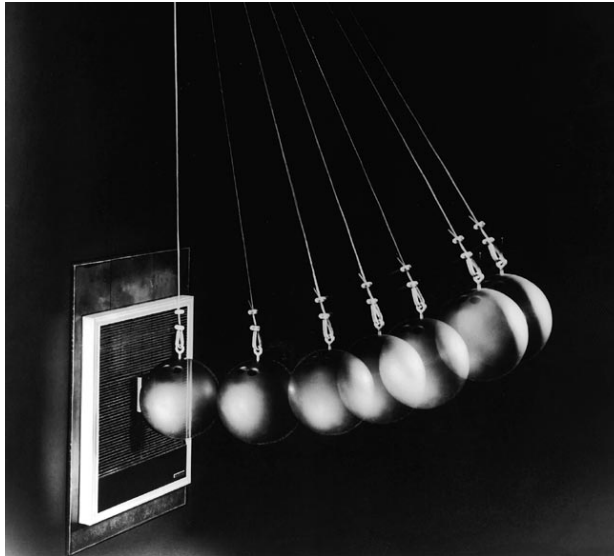
Series 20 and 50 with tamper-resistant thermostat cover plate which is included with each heater.



Series 50 with tamper-resistant cover removed.

## Features and Benefits

## Model UHWA Series 20 and 50



- Architecturally styled and vandal-resistant for schools, churches, stores, office buildings, transportation terminals, dormitories, hospitals.
- Use in vestibules, entrance ways, lobbies, corridors, stairways, reception rooms, rest rooms, offices.
- Simple application design — Wide selection of built-in, factory installed and wired, pre-engineered control systems. Saves design and on-the-job time.
- Versatile application — Higher capacity and wider range of voltage/phase and control systems than any similar heaters previously available.
- Heater front withstands with less than  $\frac{1}{16}$ " (1.6 mm) permanent distortion, 10.8 ft lbs (324 poundals) impact and 400 lbs (181.4 kg) static force applied to an 8 sq. in. (5160 sq. mm) area at center grille location.

## Features and Benefits

## Model UHCA Series 70 and 80



### Series 80 Recess mounted for 2' (609.6 mm) x 2' (609.6 mm) "T" bar or plaster ceilings

**Mounting Bracket** — features swing up installation on surface mounted 70 Series. Bracket center notched to accept screws of ceiling outlet box (installed by others). Recessed heater 80 Series has junction box attached to heater can.

**Motor** — heavy-duty unit bearing, permanently lubricated, totally enclosed, impedance protected.

**Blade** — highly efficient, space-saving blade over motor design, individually balanced.

**Thermal Cut-Out** — exclusive "zero voltage reset" type for highest degree of effectiveness in event normal operating temperatures are exceeded. Heater must be manually shut off for five minutes to reset. (See page 8.)

**Element** — totally enclosed and corrosion resistant. Maximum finning for lower operating temperatures and long life. Will not become dust clogged. (No filter required.)

**Discharge Venturi** — bull's-eye design permitting heated air to leave in uniform pattern.

**Plaster Trim** — optional plaster trim for recessed mounted heaters (series 80) only. Provides finished ceiling appearance.

### Commercial and Industrial Ceiling - Mounted Fan Forced Heaters

#### Series 70 and 80 Features

- Crisp, unique styling to blend into any architectural design — unit designed for long life and warranted for five years.
- Higher velocity ceiling-mounted heater gets air down to warm those hard to heat areas where public accessibility is not desired or where wall area is restricted.
- Single or multiple installations at a fraction of the cost of cabinet unit heaters.
- Five-year warranty.
- 2,000 to 5,000 watts.
- 208, 204 V single and three-phase. 277 V single-phase.
- UL listed and conform to Underwriters' Standard 1025.

#### Commercial and Institutional Applications

- Use in vestibules, entrance ways, lobbies, restrooms and small office and guard building applications.
- A unique design offers surface and recessed applications with higher wattage capacity and wider range of voltage and phase capabilities than other heaters of this type.
- Control: Line voltage and low voltage control capabilities using accessory thermostat (see page 8).
- Unit mounted controls for Series 80 only with fan purge.





## Features and Benefits

## Model UHAA Series 3320



### Architectural Quality

- Built - in tamper resistant thermostat
- Built - in tamper resistant disconnect switch
- Richly styled, rugged grille
- Whisper-quiet sound level
- Fan delay
- Decorator designed for functional beauty and versatility.
- Five-year element, limited warranty
- UL listed

### Optional Accessories

3320EX33	Surface Mounting Adapter
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### Factory-Installed Accessories

Suffix R	Day/Night Relay
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**Rugged Grille** — Grille made of 18 gauge (1.2 mm thickness) steel painted with a dark brown baked enamel finish.

**Richly Styled Grille** — Grille is highlighted by a snap-on, 14-gauge (1.9 mm thickness) aluminum frame, secured to the heater with an inconspicuous fastener.

**Element** — Steel sheath with plate heat exchanger.

**Fan Delay Switch** — To allow the fan to continue to run for a short period after the thermostat is satisfied, to expel warm air from inside the heater. Also delays fan on start up to insure delivery of heated air. This switch also prolongs element life.

**“Unique” Vane Axial Fan Wheel** — Draws in large volumes of air then quietly and gently discharges 175 cfm (82.6 l/s) of heated air downward into the room.

# Application Considerations

## Model UHXA

Abbreviated descriptions of UL classes, groups and divisions. Before selecting any heater for a particular application, refer to Article 500 as well as other standards referenced in the National Electric Code.

- **Class I:** Equipment does not have surface operating temperature in excess of the ignition temperature of the specific gas or vapor.
- **Class II:** Equipment does not have surface temperature greater than the ignition temperature of the specified dust.
- **Group D:** Atmospheres such as but not limited to acetone, alcohol, gasoline, lacquer solvent vapors, natural gas, propane or other gases or vapors of equivalent hazard.
- **Group E:** Atmospheres containing combustible metal dust regardless of resistivity, or other combustible dust of similar hazard characteristics having resistivity of less than  $10^5$  ohm-centimeter.
- **Group F:** Atmospheres containing carbon black, charcoal, coal or coke dust.
- **Group G:** Atmospheres containing combustible dust having resistivity of  $10^5$  ohm-centimeter or greater.
- **Division I:** A location in which ignitable concentrations of flammable material exist under normal operating conditions.
- **Division II:** Locations in which flammable materials will normally be confined within closed containers and escape only in the case of accidental rupture, breakdown or during maintenance operations. Any equipment approved for Division I is automatically also approved for Division II.

Selection and application of electric unit heaters should consider the location, classification and properties of flammable vapors, liquids, gases, dusts and fibers which may be present. Each room, section or area should be considered individually.

For further information consult National Electric Code and National Fire Prevention Association (ANSI) standards. All models conform to OSHA requirements when mounted at any height.

### Installation Conditions

- 1**  
Refer to owner's manual.

- 2**  
The Trane explosion-proof electric unit heaters have been listed by the Underwriters Laboratories for maximum surface temperatures. Use only in atmospheres having an ignition temperature higher than 165°C (T3B) for Class I and Class II operation.

- 3**  
Altitude restrictions — see specification table.

- 4**  
Heater must be installed in permanently mounted upright position and connected to fixed power supply.

- 5**  
Do not operate in atmospheres corrosive to steel and aluminum.



# Selection Procedure

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## **Model UHEC, UHRA, UHXA, UHWA, UHCA, UHAA**

Calculate the heating loads using the NEMA, ASHRAE, or other accepted heating load calculation method. Determine the quantity and size of unit heaters to be used. To maintain uniform temperature and recommended air circulation, it is suggested that cfm should be adequate to accomplish three air changes per hour.

For maximum comfort, the use of smaller units with lower airflows is suggested to provide more uniform temperature and even airflow. In warehouses and storage areas where uniform heat distribution and temperature control is of lesser importance, it is desirable to use fewer units with greater capacity.

Unit heaters mounted in the horizontal discharge position are most effective when heat is directed along the perimeter of the building wall with the airflow of each unit supporting the airflow of the other units to create a constant flow of warm air.

## **Model UHEC and Model UHRA**

Unit heaters in the vertical position are ideal for use in high ceiling areas and areas where low mounting heights would interfere with personnel or equipment activity. Units mounted in the vertical discharge position should not be mounted higher than the unit's published maximum mounting height ratings. When unit heaters are used to temper areas such as loading dock doors, one or more units should be arranged to blanket the exposed opening.



# Model Number Description

# Model UHEC, UHRA, UHXA

## Model UHEC

**Digits 1-3 — Electric Unit Heater**

**Digit 4 — Development Sequence**

**Digits 5-6 — Unit Capacity**

03 — 3.3 kW  
05 — 5 kW  
07 — 7.5 kW  
10 — 10 kW  
15 — 15 kW  
20 — 20 kW  
25 — 25 kW  
30 — 30 kW  
40 — 40 kW  
50 — 50 kW

**Digit 7 — Element Phase**

1 — Single-phase  
2 — Single-phase/three-phase (field convertible)  
3 — Three-phase

**Digit 8 — Element and Motor Voltage**

A — 208 V  
B — 240/208 V  
C — 277 V — Single-phase only  
D — 480 V — Three-phase only

**Digit 9 — 24-Volt Control Transformer**

0 — None - wired for direct line voltage  
A — Transformer - for 24-volt control circuits

**Digit 10 — Design Sequence**

**Digit 11 — Contactors**

0 — None - wired for direct line voltage  
A — Contactor - for 24-volt control circuits

## Model UHRA

**Digits 1-3 — Electric Hose-Down Corrosion Resistant Unit Heater**

**Digit 4 — Development Sequence**

**Digits 5-6 — Unit Capacity**

03 — 3.3 kW  
05 — 5 kW  
07 — 7.5 kW  
10 — 10 kW  
15 — 15 kW  
20 — 20 kW  
25 — 25 kW  
30 — 30 kW  
40 — 40 kW  
48 — 48 kW

**Digit 7 — Element Phase**

1 — Single-phase  
3 — Three-phase

**Digit 8 — Element Voltage**

A — 208 V  
G — 240 V  
C — 277 V  
D — 480 V  
F — 600 V

**Digit 9 — 24-Volt Control Transformer/Relay**

A — Transformer/Relay — Standard

**Digit 10 — Design Sequence**

**Digit 11 — Thermostat/off/on/fan switch — Factory installed and wired**

T — Thermostat/off/on/fan switch — Standard

## Model UHXA

**Digits 1-3 — Electric Explosion-Proof Unit Heater**

**Digit 4 — Development Sequence**

**Digits 5-6 — Unit Capacity**

03 — 3 kW  
05 — 5 kW  
07 — 7.5 kW  
10 — 10 kW  
15 — 15 kW  
20 — 20 kW  
25 — 25 kW

**Digit 7 — Element Phase**

1 — Single Phase  
3 — Three Phase

**Digit 8 — Voltage**

A — 208 Volts  
B — 240 Volts  
D — 480 Volts  
F — 600 Volts

**Digit 9 — Control Voltage**

1 — 24 Volts (STD)  
2 — 120 Volts (For 208, 240 & 480 Volts only)  
3 — 208 Volts (For 208 Volts only)  
4 — 240 Volts (For 240 Volts only)

**Digit 10 — Design Sequence**

**Notes:**

1. Available in 3 phase only.
2. Available in 480 volts or 600 volts, 3 phase only.
3. Available for 3 kW, 5 kW and 7.5 kW in 208 and 240 volts and 10 kW in 240 volts only.



# Model Number Description

## Model UHWA

### Model UHWA

**Digits 1-3: Unit Type**

UHW = Electric Wall Mounted Unit Heater

**Digit 4: Development Sequence****Digits 5 - 6: Unit Capacity**

02 = 2 kW

03 = 3 kW

04 = 4 kW

05 = 5 kW

**Digit 7: Element Phase**

1 = 1 Phase/60 Cycle

3 = 3 Phase/60 Cycle

**Digit 8: Element and Motor Voltage**

A = 208 Volt

B = 240 Volt

C = 277 Volt

**Digit 9: Unit Series**

2 = Unit Series 20

5 = Unit Series 50

**Digit 10: Current Design Sequence****Digit 11: Built-in Thermostat**

0 = None

T = Unit Mounted Tamper Proof  
Thermostat

**Digit 12: Wall Box**

2 = Series 20 Wall Box

5 = Series 50 Wall Box

**Digit 13: Extension Sleeves**

0 = No Extension Sleeves

A = 4" (102 mm) Ext Surface Mounted  
(20 Series)

B = 2" (51 mm) Ext Semi-Recessed  
(20 Series)

C = 1" (25 mm) Ext Semi-Recessed  
(20 Series)

D = 4" (102mm) Ext Surface Mounted  
(50 Series)

E = 2" (51 mm) Ext Semi-Recessed  
(50 Series)

F = 1" (25 mm) Ext Semi-Recessed  
(50 Series)

**Digit 14: Wall Mounted Line Voltage Thermostat**

1 = DPST 1-Phase Line Voltage

2 = DPST 1-Phase Tamper Resistant

3 = DPST 3-Phase Line Voltage

4 = SPST Pilot Duty Line Voltage

5 = SPST Pilot Duty Tamper Resistant

**Digit 15: Contactors**

H = Line Voltage

J = 24V

K = 120V

**Digit 18: Circuit Breaker**

L = Unit Mounted

**Digit 19: Transformer 24 Volt**

M = 24V Transformer

**Digit 20: Transformer 120 Volt**

P = 120V Transformer





# Model Number Description

## Model UHCA

### Model UHCA

#### Digit 1-3: Unit Type

UHC = Electric Ceiling Mounted Commercial Heater

#### Digit 4: Development Sequence

#### Digits 5-6: Unit Capacity

02 = 2 kW  
03 = 3 kW  
04 = 4 kW  
05 = 5 kW

#### Digit 7: Element Phase

1 = 1 Phase/60 Cycle  
3 = 3 Phase/60 Cycle

#### Digit 8: Element and Motor Voltage

A = 208 Volt  
B = 240 Volt  
C = 277 Volt

#### Digit 9: Unit Series

2 = Surface Mounted, Unit Series 70  
5 = Recess Mounted, Unit Series 80

#### Digit 10: Current Design Sequence

#### Digit 12-13: Unit Mounted Thermostat

T1 = Single Pole Thermostat  
T2 = Double Pole Thermostat

#### Digit 14: Unit Mounted Disconnect

S = Unit Mounted Disconnect Switch

#### Digit 15-16: Unit Mounted Relay

R1 = Unit Mounted 24 Volt Transformer/Relay  
R = Unit Mounted Line Voltage Relay  
R2 = Unit Mounted 120 Volt Relay

#### Digit 17: Plaster Trim

A = Plaster Trim

#### Digit 18: Wall Mounted Line Voltage Thermostat

1 = DPST 1-Phase Line Voltage Thermostat  
2 = DPST 1-Phase Tamper Resistant Thermostat  
3 = DPST 3-Phase Line Voltage Thermostat  
4 = SPST Pilot Duty Line Voltage Thermostat  
5 = SPST Pilot Duty Tamper Resistant Thermostat

#### Digit 19: Control Panels

A = 24V Control Panel for 208V, 1-Contactor  
B = 24V Control Panel for 240V, 1-Contactor  
C = 24V Control Panel for 277V, 1-Contactor  
D = 24V Control Panel for 208V, 2-Contactor  
E = 24V Control Panel for 240V, 2-Contactor  
F = 24V Control Panel for 277V, 2-Contactor  
G = 24V Control Panel for 208V, 3-Contactor  
H = 24V Control Panel for 240V, 3-Contactor  
J = 24V Control Panel for 277V, 3-Contactor  
1 = 120V Control Panel for 208V, 1-Contactor  
2 = 120V Control Panel for 240V, 1-Contactor  
3 = 120V Control Panel for 277V, 1-Contactor  
4 = 120V Control Panel for 208V, 2-Contactor  
5 = 120V Control Panel for 240V, 2-Contactor  
6 = 120V Control Panel for 277V, 2-Contactor  
7 = 120V Control Panel for 208V, 3-Contactor  
8 = 120V Control Panel for 240V, 3-Contactor  
9 = 120V Control Panel for 277V, 3-Contactor

#### Digit 20: Low Voltage Thermostat Option

0 = No Low Voltage T-Stat  
7 = Low Voltage T-Stat

#### Digit 21: Thermal Relay with Transformer

0 = No Thermal Relay  
A = SPST Relay w/Transformer

#### Digit 22: Tamper Proof Kit

8 = Tamper Proof Kit



# Model Number Description

## Model UHAA

### Model UHAA

**Digit 1 - 3: Unit Type**

UHA = Electric Architectural Wall Heater

**Digit 4: Development Sequence****Digits 5-6: Unit Capacity**

15 = 1.5 kW

02 = 2 kW

03 = 3 kW

04 = 4 kW

48 = 4.8 kW

**Digit 7: Element Phase**

1 = 1 Phase/60 Cycle

**Digit 8: Element and Motor Voltage**

A = 208 Volt

B = 240 Volt

C = 277 Volt

E = 120 Volt

**Digit 9: Built-in Thermostat**

T = Unit Mounted Tamperproof Thermostat

**Digit 10: Current Design Sequence****Digit 11: Unit Mounted Disconnect**

D = Unit Mounted Disconnect Switch

**Digit 12: Day/Night Relay**

0 = None

R = Unit Mounted Day/Night Relay

**Digit 13: Surface Mounting Adapter Option**

0 = None

A = 3320EX33 Surface Mounting Adapter



# General Data

# Model UHEC

Table GD-1 — Model UHEC

Unit Model Number	Capacity		Electrical Data								Air Delivery Data				
	kW Rating	Btu/Hr (000)	Element and Motor Voltage	Element Phase	Std. Control Voltage	Max. Amp Rating	Min. Circuit Fuse Size	Supply Wire Gauge (60°C)	Motor Data Hp	Rpm	Airflow At Outlet (Cfm)	Approx. Air Rise @ Outlet (F)	Horiz. Air Throw (Ft)	Rec. Max. Mounting Height (Ft)	
														Horiz.	Vert.
UHEC-031A0C0	3.3	11.2	208	1	208	15.9	20A	12G	1/125	1550	400	26	12	9	9
UHEC-031B0C0	3.3/2.5	11.2/8.5	240/208	1	240/208	13.7/11.9	20A/15A	12GA/14GA	1/125	1550	400	26	12	9	9
UHEC-031AACA	3.3	11.2	208	1	24	15.9	20A	12G	1/125	1550	400	26	12	9	9
UHEC-032A0C0	3.3	11.2	208	1-3	208	15.9/9.2†	20A	12GA	1/125	1550	400	26	12	9	9
UHEC-032B0C0	3.3/2.5	11.2/8.5	240/208	1-3	240/208	13.7/11.9 7.9/6.9†	20A/15A	12GA/14GA	1/125	1550	400	26	12	9	9
UHEC-031C0C0	3.3	11.2	277	1	277	11.9	15A	14GA	1/125	1550	400	26	12	9	9
UHEC-031CACA	3.3	11.2	277	1	24	11.9	15A	14G	1/125	1550	400	26	12	9	9
UHEC-033DACA	3.3	11.2	480	3	24	4.0	15A	14GA	1/125	1550	400	26	12	9	9
UHEC-031BACA	3.3/2.5	11.2/8.5	240/208	1	24	13.7/11.9	20A/15A	12GA/14GA	1/125	1550	400	26	12	9	9
UHEC-032AACA	3.3	11.2	208	1-3	24	15.9/9.2†	20A	12GA	1/125	1550	400	26	12	9	9
UHEC-032BACA	3.3/2.5	11.2/8.5	240/208	1-3	24	13.7/11.9 7.9/6.9†	20A/15A	12GA/14GA	1/125	1550	400	26	12	9	9
UHEC-051A0C0	5.0	17.1	208	1	208	24.1	35A	8GA	1/125	1550	400	40	12	9	9
UHEC-052AACA	5.0	17.1	208	1-3	24	24.1/13.9	35A	8GA	1/125	1550	400	40	12	9	9
UHEC-051B0C0	5.0/3.7	17.1/12.8	240/208	1	240/208	20.9/18.1	30A/25A	10GA/10GA	1/125	1550	400	40	12	9	9
UHEC-052A0C0	5.0	17.1	208	1-3	208	24.1/13.9†	35A	8GA	1/125	1550	400	40	12	9	9
UHEC-052B0C0	5.0/3.7	17.1/12.8	240/208	1-3	240/208	20.9/18.1 12.1/10.4†	30A/25A	10GA/10GA	1/125	1550	400	40	12	9	9
UHEC-052BACA	5.0/3.7	17.1/12.8	240/208	1-3	24	20.9/18.1 12.1/10.4†	30A/25A	10GA/10GA	1/125	1550	400	40	12	9	9
UHEC-051C0C0	5.0	17.1	277	1	277	18.1	25A	10GA	1/125	1550	400	40	12	9	9
UHEC-053DACA	5.0	17.1	480	3	24	6.1	15A	14GA	1/125	1550	400	40	12	9	9
UHEC-051AACA	5.0	17.1	208	1	24	24.1	35A	8GA	1/125	1550	400	40	12	9	9
UHEC-051BACA	5.0/3.7	17.1/12.8	240/208	1	24	20.9/18.1	30A/25A	10GA/10GA	1/125	1550	400	40	12	9	9
UHEC-05ACACA	5.0	17.1	277	1	24	18.1	25A	10GA	1/125	1550	400	40	12	9	9
UHEC-072AACA	7.5	25.6	208	1-3	24	36.1/20.8 20.8†	50A	6GA	1/50	1550	700	34	22	10	12
UHEC-072BACA	7.5/5.6	25.6/19.2	240/208	1-3	24	31.3/27.1 18.1/15.6†	40A/35A	8GA/8GA	1/50	1550	700	34	22	10	12
UHEC-071CACA	7.5	25.6	277	1	24	27.1	35A	8GA	1/50	1550	700	34	22	10	12
UHEC-073DACA	7.5	25.6	480	3	24	9.1	15A	14GA	1/50	1550	700	34	22	10	12
UHEC-102AACA	10.0	34.1	208	1-3	24	47.8/27.7†	60A	4GA	1/50	1550	700	45	22	10	14
UHEC-102BACA	10.0/7.5	34.1/25.6	240/208	1-3	24	42.2/36.1 24/20.8†	60A/50A	4GA/6GA	1/50	1550	700	45	22	10	14
UHEC-101CACA	10.0	34.1	277	1	24	36.1	50A	6GA	1/50	1550	700	45	22	10	14
UHEC-103DACA	10.0	34.1	480	3	24	12.1	20A	12GA	1/50	1550	700	45	22	10	14
UHEC-153AACA	15.0	51.2	208	3	24	41.7	60A	4GA	1/20	1550	1100	43	32	11	20
UHEC-153BACA	15.0/11.2	51.2/38.4	240/208	3	24	36.1/31.3	50A/40A	6GA/6GA	1/20	1550	1100	43	32	11	20
UHEC-153DACA	15.0	51.2	480	3	24	18.1	25A	10GA	1/20	1550	1100	43	32	11	20
UHEC-203BACA	19.7/14.8	67.2/50.5	240/208	3	24	47.8/41.1	70A/60A	4GA/4GA	1/20	1550	1100	57	32	12	18
UHEC-203DACA	20.0	68.3	480	3	24	24.1	35A	8GA	1/20	1550	1100	57	32	12	18
UHEC-253AACA	25.0	85.3	208	3	24	69.5	90A	2GA	1/12	1550	2000/1800	40/44	45	12	22
UHEC-253BACA	25.0/18.7	85.3/64.0	240/208	3	24	60.2/52.1	80A/70A	3GA/4GA	1/12	1550	2000/1800	40/44	45	12	22
UHEC-253DACA	25.0	85.3	480	3	24	30.1	40A	8GA	1/15	1550	2000/1800	40/44	45	12	22
UHEC-303AACA	30.0	102.4	208	3	24	83.4	110A	1GA	1/12	1550	2000/1800	47/53	40	12	20
UHEC-303BACA	30.0/22.5	102.4/76.8	240/208	3	24	72.3/62.5	100A/80A	1GA/3GA	1/12	1550	2000/1800	47/53	40	12	20
UHEC-303DACA	30.0	102.4	480	3	24	36.2	50A	6GA	1/15	1550	2000/1800	47/53	40	12	20
UHEC-403AACA	40.0	136.5	208	3	24	111.2	150A	1/0*	1/4	1550	3100/2800	40/45	55	15	24
UHEC-403BACA	40.0/30.0	136.5/102.4	240/208	3	24	96.4/83.4	125A/110A	1/0/1GA	1/4	1550	3100/2800	40/45	55	15	24
UHEC-403DACA	39.0	133.1	480	3	24	47.0	70A	4GA	1/5	1550	3100/2800	40/45	55	15	24
UHEC-503AACA	50.0	170.6	208	3	24	139.0	175A	2/0*	1/4	1550	3100/2800	51/56	50	15	22
UHEC-503BACA	50.0/37.5	170.6/128.0	240/208	3	24	120.5/104.3	175A/175A	2/0/2/0	1/4	1550	3100/2800	51/56	50	15	22
UHEC-503DACA	50.0	170.6	480	3	24	60.3	80A	3GA	1/5	1550	3100/2800	51/56	50	15	22

Notes: 1. Maximum amp rating indicates single-phase on those units suitable for both single and three-phase. 2. 25 through 50 kW models are wired for two-stage, low voltage control. These units are also equipped with two-speed motors for Hi-Lo fan operation with addition of fan switch option. 3. Dual voltage unit ratings indicate highest voltage performance. 4. 1 kW equals 3,413 BTU.

\*Supply wire on these models should have insulation rated 75°C minimum.

† Amp Rating for three-phase operation.



# General Data

# Model UHEC

**Table GD-2 – Model UHEC – Metric**

Unit Heater Capacity kW Rating	Motor Data		Airflow at Outlet (L/S)	Approx. Air Rise @ Outlet (C)	Horiz. Air Throw (M)	Rec. Max Mounting Height (M)	
	Watts	R.P.S.				Horizontal	Vertical
3.3	6	25.8	189	14.4	3.7	2.7	2.7
5.0	6	25.8	189	22.2	3.7	2.7	2.7
7.5	14	25.8	330	18.9	6.7	3.0	3.7
10	14	25.8	330	25.0	6.7	3.0	4.3
15	37	25.8	519	23.9	9.8	3.4	6.1
20	37	25.8	519	31.7	9.8	3.7	5.5
25	62	25.8	944/	22.2/	13.7	3.7	6.7
			849	24.4	13.7	3.7	6.7
25 480/3 Mtr	50	25.8	944/	22.2/	13.7	3.7	6.7
			849	24.4	13.7	3.7	6.7
30	62	25.8	944/	26.1/	12.2	3.7	6.1
			849	29.4	12.2	3.7	6.1
30 480/3 Mtr	50	25.8	944/	26.1/	12.2	3.7	6.1
			849	29.4	12.2	3.7	6.1
40	186	25.8	1463/	22.2/	16.8	4.6	7.3
			1321	25.0	16.8	4.6	7.3
40 480/3 Mtr	149	25.8	1463/	22.2/	16.8	4.6	7.3
			1321	25.0	16.8	4.6	7.3
50	186	25.8	1463/	28.3/	15.2	4.6	6.7
			1321	31.1	15.2	4.6	6.7
50 480/3 Mtr	149	25.8	1463/	28.3/	15.2	4.6	6.7
			1321	31.1	15.2	4.6	6.7

Note 1. 25 through 50 kW models are equipped with two-speed motors for Hi-Lo fan operation with addition of fan switch option.



# General Data

# Model UHRA

**Table GD-3 — Model UHRA**

Unit Model Number	kW Rating	Btu/Hr	Motor & Heater Volts/Phase	Control Volts	Max Amp Rating	Motor HP	Motor RPM
031AAAT	3.3	11,200	208/1	24	15.9	35 mhp	1550 (26 rps)
033AAAT			208/3		9.2		
031GAAT			240/1		13.8		
033GAAT			240/3		8.0		
031CAAT			277/1		12.0		
033DAAT	480/3	4.0					
033FAAT	600/3	3.2					
051AAAT	5.0	17,100	208/1	24	24.1	35 mhp	1550 (26 rps)
053AAAT			208/3		13.9		
051GAAT			240/1		20.9		
053GAAT			240/3		12.1		
051CAAT			277/1		18.1		
053DAAT	480/3	6.1					
053FAAT	600/3	4.9					
071AAAT	7.5	25,600	208/1	24	36.1	35 mhp	1550 (26 rps)
073AAAT			208/3		20.9		
071GAAT			240/1		31.3		
073GAAT			240/3		18.1		
071CAAT			277/1		27.1		
073DAAT	480/3	9.1					
073FAAT	600/3	7.3					
101AAAT	10	34,130	208/1	24	48.1	35 mhp	1550 (26 rps)
103AAAT			208/3		27.8		
101GAAT			240/1		41.7		
103GAAT			240/3		24.1		
101CAAT			277/1		36.2		
103DAAT	480/3	12.1					
103FAAT	600/3	9.7					
151AAAT	15	51,200	208/1	24	72.2	35 mhp	1550 (26 rps)
153AAAT			208/3		41.7		
151GAAT			240/1		62.5		
153GAAT			240/3		36.2		
153DAAT			480/3		18.1		
153FAAT	600/3	14.5					
203AAAT	20	68,260	208/3	24	55.6	1/3 (249 w)	1625 (27 rps)
203GAAT			240/3		48.2		
203DAAT			480/3		24.1		
203FAAT			600/3		19.3		
253AAAT	25	85,325	208/3	24	69.5	1/3 (249 w)	1625 (27 rps)
253GAAT			240/3		60.3		
253DAAT			480/3		30.2		
253FAAT			600/3		24.1		
303AAAT	30	102,390	208/3	24	83.4	1/3 (249 w)	1625 (27 rps)
303GAAT			240/3		72.3		
303DAAT			480/3		36.2		
303FAAT			600/3		29.0		
403DAAT	40	136,520	480/3	24	48.2	1/3 (249 w)	1625 (27 rps)
403FAAT			600/3		38.6		
483DAAT	48	163,824	480/3	24	57.9	1/3 (249 w)	1625 (27 rps)
483FAAT			600/3		46.3		

**Table GD-4 — Air Delivery Data**

Unit Model Number UHRA	kW	Cfm Outlet	FFM Outlet	F Deg. Temp. Rise Outlet	Air Throw Feet	Rec. Mtg. Height
031AAAT	3.3	400 (189 L/S)	500 (2540 MM/S)	26°F (-3.3°C)	20 Ft. (6.1 M)	6 Ft. (1.8 M)
033AAAT						
031GAAT						
033GAAT						
031CAAT						
033DAAT						
033FAAT						
051AAAT	5.0	400 (189 L/S)	500 (2540 MM/S)	40°F (4.4°C)	20 Ft. (6.1 M)	6 Ft. (1.8 M)
053AAAT						
051GAAT						
053GAAT						
051CAAT						
053DAAT						
053FAAT						
071AAAT	7.5	400 (189 L/S)	500 (2540 MM/S)	60°F (16°C)	20 Ft. (6.1 M)	6 Ft. (1.8 M)
073AAAT						
071GAAT						
073GAAT						
071CAAT						
073DAAT						
073FAAT						
101AAAT	10	700 (330 L/S)	660 (3353 MM/S)	45°F (7.2°C)	28 Ft. (8.5 M)	6 Ft. (1.8 M)
103AAAT						
101GAAT						
103GAAT						
101CAAT						
103DAAT						
103FAAT						
151AAAT	15	700 (330 L/S)	660 (3353 MM/S)	68°F (20°C)	28 Ft. (8.5 M)	6 Ft. (1.8 M)
153AAAT						
151GAAT						
153GAAT						
153DAAT						
153FAAT						
203AAAT	20	1400 (661 L/S)	1000 (5080 MM/S)	45°F (7.2°C)	35 Ft. (10.7 M)	6 Ft. (1.8 M)
203GAAT						
203DAAT						
203FAAT						
253AAAT	25	1400 (661 L/S)	1000 (5080 MM/S)	56°F (13.3°C)	35 Ft. (10.7 M)	6 Ft. (1.8 M)
253GAAT						
253DAAT						
253FAAT						
303AAAT	30	1400 (661 L/S)	1000 (5080 MM/S)	68°F (20°C)	35 Ft. (10.7 M)	6 Ft. (1.8 M)
303GAAT						
303DAAT						
303FAAT						
403DAAT	40	1800 (849 L/S)	1000 (5080 MM/S)	70°F (21°C)	42 Ft. (12.8 M)	6 Ft. (1.8 M)
403FAAT						
483DAAT	48	1800 (849 L/S)	1000 (5080 MM/S)	84°F (29°C)	42 Ft. (12.8 M)	6 Ft. (1.8 M)
483FAAT						



# General Data

# Model UHRA

**Table GD-5 – Air Delivery Characteristics**

Heater Capacity (kW Rating)	Velocity of Air Movement (FPM)			Throw Distance	Weight
	Distance from Heater				
	6 Ft. (1.8 M)	12 Ft. (3.7 M)	24 Ft. (7.3 M)		
3.3, 5.0	210	80	25	36 Ft.	45 lbs.
7.5	(12.8 M/S)	(4.9 M/S)	(1.5 M/S)	(11 M)	(20.4 Kg)
10, 15	270	95	45	46 Ft.	55 lbs.
	(16.5 M/S)	(5.8 M/S)	(2.7 M/S)	(14 M)	(24.9 Kg)

**Table GD-6 – Air Delivery Characteristics**

Heater Capacity (kW Rating)	Velocity of Air Movement (FPM)			Throw Distance	Weight
	Distance from Heater				
	10 Ft. (3.0 M)	20 Ft. (6.1 M)	30 Ft. (9.1 M)		
20, 25,	750	450	300	55 Ft.	85 lbs.
30	(45.7 M/S)	(27.4 M/S)	(18.3 M/S)	(16.8 M)	(39 Kg)
40, 48	900	500	350	65 Ft.	130 lbs.
	(54.9 M/S)	(30.5 M/S)	(21.3 M/S)	(19.8 M)	(59 Kg)

**Table GD-7 – Unit Electrical Data**

Model Number	Watts	BTU/Hr. Output
UHRA-03	3,300	11,261
UHRA-05	5,000	17,062
UHRA-07	7,500	25,594
UHRA-10	10,000	34,125
UHRA-15	15,000	51,188
UHRA-20	20,000	68,250
UHRA-25	25,000	85,313
UHRA-30	30,000	102,375
UHRA-40	40,000	136,500
UHRA-48	48,000	163,800



# General Data

# Model UHXA

**Table GD-8 – Model UHXA**

Unit Size	Model No. UHXA	Volts/Phase	Motor HP	Heater Amps	Line Amps	BTU/Hr.	Air Temp. Rise Deg. F	Air Temp. Rise Deg. C	Min. Cir. Ampacity	Max Fuse Amps	Min* Wire AWG
3 kW	031A1B	208/1		14.4	16.3				20.4	25	10
	033A1B	208/3		8.3	9.8				12.3	15	14
	033B1B	240/1	1/4	12.5	14.8	10239	16.6	9.2	18.5	20	12
	033B1B	240/3	(186W)	7.2	8.6				10.8	15	14
	033D1B	480/3		3.6	4.3				5.4	15	14
	033F1B	600/3		2.9	3.5				4.4	15	14
5 kW	051A1B	208/1		24.0	26.0				32.4	35	8
	053A1B	208/3		13.9	15.4				19.2	20	12
	051B1B	240/1	1/4	20.8	23.1	17065	27.6	15.3	28.9	30	10
	053B1B	240/3	(186 W)	12.0	13.4				16.8	20	12
	053D1B	480/3		6.0	6.7				8.4	15	14
	053F1B	600/3		4.8	5.4				6.8	15	14
7.5 kW	071A1B	208/1		36.1	38.0				47.5	50	8
	073A1B	208/3		20.8	22.3				27.9	30	10
	071B1B	240/1	1/4	31.3	33.6	25598	41.4	23.0	42.0	45	8
	073B1B	240/3	(186 W)	18.0	19.4				24.3	25	10
	073D1B	480/3		9.0	9.7				12.2	15	14
	073F1B	600/3		7.2	7.8				9.8	15	14
10 kW	103A1B	208/3		27.8	29.3				36.6	40	8
	101B1B	240/1		41.7	44.0				55.0	60	6
	103B1B	240/3	1/4	24.1	25.5	34130	21.7	12.1	31.8	35	8
	103D1B	480/3	(186 W)	12.0	12.7				15.9	20	12
	103F1B	600/3		9.6	10.2				12.8	15	14
	15 kW	153A1B	208/3		41.6	43.5				54.4	60
153B1B		240/3	1/2	36.1	38.1	51195	19.2	10.7	47.6	50	8
153D1B		480/3	(186 W)	18.0	19.0				23.8	25	10
153F1B		600/3		14.4	15.2				19.0	20	12
203D1B		480/3	1/2	24.1	25.1				31.3	35	8
203F1B		600/3	(373 W)	19.2	20.0	68260	26.2	14.6	25.1	30	10
20 kW	253D1B	480/3	1/2	30.1	31.1				38.8	40	8
	253F1B	600/3	(373 W)	24.1	24.9	85325	32.8	18.2	31.1	35	8

\*Supply conductors must be suitable for 90°C

1. 1 watt equals 3.413 Btu.

2. 1 kW equals 3,413 Btu.

3. 24 volt control voltage is standard and includes built-in contactor and 24 volt control transfer.



# General Data Model UHXA

**Table GD-9 – Model UHXA with 120 Volt Control Voltage**

Unit Size	Model No. UHXA	Volts/Phase	Motor HP	Heater Amps	Line Amps	BTU/Hr.	Air Temp. Rise Deg. F	Air Temp. Rise Deg. C	Min. Cir. Ampacity	Max Fuse Amps	Min* Wire AWG
3 kW	031A2B	208/1		14.4	16.3				20.4	25	10
	033A2B	208/3		8.3	9.8				12.3	15	14
	033B2B	240/1	1/4	12.5	14.8	10239	16.6	9.2	18.5	20	12
	033B2B	240/3	(186W)	7.2	8.6				10.8	15	14
	033D2B	480/3		3.6	4.3				5.4	15	14
5 kW	051A2B	208/1		24.0	26.0				32.4	35	8
	053A2B	208/3		13.9	15.4				19.2	20	12
	051B2B	240/1	1/4	20.8	23.1	17065	27.6	15.3	28.9	30	10
	053B2B	240/3	(186 W)	12.0	13.4				16.8	20	12
	053D2B	480/3		6.0	6.7				8.4	15	14
7.5 kW	071A2B	208/1		36.1	38.0				47.5	50	8
	073A2B	208/3		20.8	22.3				27.9	30	10
	071B2B	240/1	1/4	31.3	33.6	25598	41.4	23.0	42.0	45	8
	073B2B	240/3	(186 W)	18.0	19.4				24.3	25	10
	073D2B	480/3		9.0	9.7				12.2	15	14
10 kW	103A2B	208/3		27.8	29.3				36.6	40	8
	101B2B	240/1		41.7	44.0				55.0	60	6
	103B2B	240/3	1/4	24.1	25.5	34130	21.7	12.1	31.8	35	8
	103D2B	480/3	(186 W)	12.0	12.7				15.9	20	12
15 kW	153A2B	208/3		41.6	43.5				54.4	60	6
	153B2B	240/3	1/2	36.1	38.1	51195	19.2	10.7	47.6	50	8
	153D2B	480/3	(186 W)	18.0	19.0				23.8	25	10
20 kW	203D2B	480/3	1/2 (373 W)	24.1	25.1	68260	26.2	14.6	31.3	35	8
25 kW	253D2B	480/3	1/2 (373 W)	30.1	31.1	85325	32.8	18.2	38.8	40	8

\*Supply conductors must be suitable for 90°C.

1. 120 volt control voltage is standard and includes built-in contactor and 120 volt control transformer.
2. Not available for 600 volt heaters.

**Table GD-10 – Model UHXA with 208 or 240 Volt Control Voltage**

Unit Size	Model No. UHXA	Volts/Phase	Motor HP	Heater Amps	Line Amps	BTU/Hr.	Air Temp. Rise Deg. F	Air Temp. Rise Deg. C	Min. Cir. Ampacity	Max Fuse Amps	Min* Wire AWG	Control Voltage
3 kW	031A3B	208/1		14.4	16.3				20.4	25	10	208
	033A3B	208/3		8.3	9.8				12.3	15	14	208
	033B4B	240/1	1/4	12.5	14.8	10239	16.6	9.2	18.5	20	12	240
	033B4B	240/3	(186 W)	7.2	8.6				10.8	15	14	240
5 kW	051A3B	208/1		24.0	26.0				32.4	35	8	208
	053A3B	208/3		13.9	15.4				19.2	20	12	208
	051B4B	240/1	1/4	20.8	23.1	17065	27.6	15.3	28.9	30	10	240
	053B4B	240/3	(186 W)	12.0	13.4				16.8	20	12	240
7.5 kW	071A3B	208/1		36.1	38.0				47.5	50	8	208
	073A3B	208/3		20.8	22.3				27.9	30	10	208
	071B4B	240/1	1/4	31.3	33.6	25598	41.4	23.0	42.0	45	8	240
	073B4B	240/3	(186 W)	18.0	19.4				24.3	25	10	240
10 kW	103A3B	208/3		27.8	29.3				36.6	40	8	208
	101B4B	240/1		41.7	44.0	34130	21.7	12.1	55.0	60	6	240
	103B4B	240/3	1/4	24.1	25.5				31.8	35	8	240
15 kW	153A3B	208/3		41.6	43.5				54.4	60	6	208
	153B4B	240/3	1/2	36.1	38.1	51195	19.2	10.7	47.6	50	8	240

\*Supply conductors must be suitable for 90°C.

1. Not available for 480 and 600 volt heaters.





# General Data

# Model UHXA

**Table GD-11 – Model UHXA**

Unit Size	3 kW, 5 kW & 7.5 kW	10 kW	15 kW, 20 kW & 25 kW
Capacities Available	3 kW 10,236 Btu 5 kW 17,060 Btu 7.5 kW 25,590 Btu	10 kW 34,120 Btu	15 kW 51,180 Btu 20 kW 68,240 Btu 25 kW 85,300 Btu
UL Listing	Class I, Group D, Divisions 1 & 2 Class II, Groups E, F & G, Divisions 1 & 2		
UL Temperature Code	Class I: T3B 165°C (329°F) Class II: T3B 165°C (329°F)		
CFM @ 70°F (21°C)	580	1500	2450
L/S @ 21°C (70°F)	274	708	1156
FPM	1000	1600	2000
MMS	5080	8128	10160
Air Temperature Rise	3 kW 16.3°F 9.1°C 5 kW 27.2°F 15.1°C 7.5 kW 40.8°F 22.7°C	10 kW 21.0°F 11.7°C	15 kW 19.0°F 10.6°C 20 kW 25.5°F 14.2°C 25 kW 32.3°F 17.9°C
Horizontal Throw	24 ft. 7.3 M	40 ft. 12.2 M	43 ft. 13.1 M
Max. Mtg. Height from floor	8 ft. 2.4 M	10 ft. 3.1 M	13 ft. 4.0 M
Max. Operational Altitude	3 kW, 5 kW, 10 kW & 15 kW - 8000 ft. (2438 M) 20 kW - 7000 ft. (2134 M) 7.5 kW & 25 kW - 5500 ft. (1676 M)		
Ambient Temperature Limits	Min. -45°C, (-49°F) Max. 40°C, (104°F)		
RPM/RPS	1725/29	1725/29	1725/29
Propeller Fan — 3 wing, Aluminum	12" Dia. (305 mm)	16" Dia. (406 mm)	20" Dia. (508 mm)
Motor	Motor Voltage/Phase same as element. PSC, Explosion-Proof, Permanently Lubricated, Ball Bearing 1/4 HP (186 W)      1/4 HP (186 W)      1/2 HP (373 W)		
Heat Exchanger	Heavy wall, liquid filled with immersion elements.		
Core Material	Steel with aluminum fins.		
Heat Transfer Fluid	Ethylene-glycol solution, protected to -45°C (-49°F).		
Heating Elements	Three, low watt density, immersion type copper sheathed.		
Thermal Cut-Out	Snap action capillary type rated 100,000 cycles pilot duty.		
Relief Valve	Stainless steel and aluminum construction, opens @ 200 PSI (1379 kPa).		
Cabinet	14-gauge cold rolled steel, epoxy coated, individually adjustable louvers.		
Fan Guard	Wire, less than 1/4" (6.4 mm) spacing, plated, split design for easy removal.		
Fasteners	Zinc plated.		
Conduit Material	3/4 (19.1 mm) rigid metal.		
Control Box	Cast aluminum with oversized opening. (2) 1" (25.4 mm) NPS with conduits stops for field wiring.		
Hanger Connections	5/8" (15.9 mm) NC tap, 2 holes.		
Contactors	Heavy-duty, break all ungrounded conductors rated 100,000 cycles @ full load. Built-in and prewired.		
Control Transformer	Built-in and prewired - 24 volt secondary (standard) and 120 volt (optional).		
Control Circuits	24 volt standard on all models. 120 volt optional on 208, 240 and 480 volt models. Line voltage on 208 and 240 volt models only.		
Remote wall mounted Thermostats Models TW161 & TW162	Explosion-proof 40-90°F operating range 22A, 125-277 VAC - 3/4 HP @ 125 VAC; 1 1/2 HP @ 250-277 VAC.		
Built-in "T" Option	125 VA pilot duty Sensing Bulb and Capillary made from 300 Series Stainless Steel ASW Tube.		
Heater Net Weight	3, 5 & 7.5 kW 132 lbs (60 Kg)	10 kW 158 lbs (72 Kg)	15, 20 & 25 kW 190 lbs (86 Kg)
Shipping Weight	3, 5 & 7.5 kW 167 lbs (76 Kg)	10 kW 193 lbs (88 Kg)	15, 20 & 25 kW 225 lbs (102 Kg)



# General Data

# Model UHWA Series 20 and 50

**Table GD-12 — Electric Wall-Mounted Unit Heaters — Series 20**

Watts	Model No. UHWA	Order No. 233	Element + Motor Voltage	Element Phase	Ship Wt. Lbs	Ship Wt. Kg	BTU	Degree F Air Rise	Degree C Air Rise
2000 Watts	021A2AT	-400	208	1	41	18.6	6,826	27	15
	021B2AT	-402	240	1					
	021C2AT	-404	277	1					
3000 Watts	031A2AT	-406	208	1	41	18.6	10,239	41	23
	031B2AT	-408	240	1					
	031C2AT	-410	277	1					
4000 Watts	041A2AT	-412	208	1	41	18.6	13,652	57	32
	041B2AT	-414	240	1					
	041C2AT	-416	277	1					
	043A2AT	-418	208	3					
	043B2AT	-420	240	3					
5000 Watts	051A2AT	-422	208	1	41	18.6	17,065	73	41
	051B2AT	-424	240	1					
	051C2AT	-426	277	1					
	053A2AT	-428	208	3					
	053B2AT	-430	240	3					

Note: ONLY thermostat and/or contactor may be built-in on Series 20 wall heaters.

**Table GD-13 — Electric Wall-Mounted Unit Heaters — Series 50**

Watts	Model No. UHWA	Order No. 233	Element + Motor Voltage	Element Phase	Ship Wt. Lbs	Ship Wt. Kg	BTU	Degree F Air Rise	Degree C Air Rise
2000 Watts	021A5AT	-431	208	1	54	24.5	6,826	27	15
	021B5AT	-433	240	1					
	021C5AT	-435	277	1					
3000 Watts	031A5AT	-437	208	1	55	24.9	10,239	41	23
	031B5AT	-439	240	1					
	031C5AT	-441	277	1					
4000 Watts	041A5AT	-443	208	1	55	24.9	13,652	57	32
	041B5AT	-445	240	1					
	041C5AT	-447	277	1					
	043A5AT	-449	208	3					
	043B5AT	-451	240	3					
5000 Watts	051A5AT	-453	208	1	55	24.9	17,065	73	41
	051B5AT	-455	240	1					
	051C5AT	-457	277	1					
	053A5AT	-459	208	3					
	053B5AT	-461	240	3					

Note: If circuit breaker and/or transformers are required, the Series 50 wall heater must be ordered. 1 Watt Equals 3.413 Btu.



# General Data

# Model UHCA Series 70 and 80

**Table GD-14 — Series 70 Electric Ceiling Surface Heaters**

Watts	Model No. UHCA	Order No. 233	Element + Motor Voltage	Element Phase	Mounting Application	Amp Rating	BTU	*Degree F Air Rise	*Degree C Air Rise
2000	021A7A	-300	208	1	Surface	9.6	6,826	15	13.9
	021B7A	-302	240	1	Surface	8.3			
	021C7A	-304	277	1	Surface	7.2			
3000	031A7A	-306	208	1	Surface	14.4	10,239	32	17.8
	031B7A	-308	240	1	Surface	12.5			
	031C7A	-310	277	1	Surface	10.8			
4000	041A7A	-312	208	1	Surface	19.2	13,652	40	22.2
	041B7A	-314	240	1	Surface	16.7			
	041C7A	-316	277	1	Surface	14.4			
	043A7A	-318	208	3	Surface	11.1			
	043B7A	-320	240	3	Surface	9.6			
5000	051A7A	-322	208	1	Surface	24.1	17,065	44	24.4
	051B7A	-324	240	1	Surface	20.8			
	051C7A	-326	277	1	Surface	18.1			
	053A7A	-328	208	3	Surface	13.9			
	053B7A	-330	240	3	Surface	12.1			

Surface Mounted Ceiling Heaters — Series 70 designed to be mounted to standard 4 inch (101.6 mm) ceiling box furnished and installed by others. Approximate weight 32 lbs (14.5 kg) packed and shipped as complete unit.

**Table GD-15 — Series 80 Electric Ceiling Recessed Heaters**

Watts	Model No. UHCA	Order No. 233	Element + Motor Voltage	Element Phase	Mounting Application	Amp Rating	BTU	*Degree F Air Rise	*Degree C Air Rise
2000	021A8A	-331	208	1	Recessed	9.6	6,826	15	13.9
	021B8A	-333	240	1	Recessed	8.3			
	021C8A	-335	277	1	Recessed	7.2			
3000	031A8A	-337	208	1	Recessed	14.4	10,239	32	17.8
	031B8A	-339	240	1	Recessed	12.5			
	031C8A	-341	277	1	Recessed	10.8			
4000	041A8A	-343	208	1	Recessed	19.2	13,652	40	22.2
	041B8A	-345	240	1	Recessed	16.7			
	041C8A	-347	277	1	Recessed	14.4			
	043A8A	-349	208	3	Recessed	11.1			
	043B8A	-351	240	3	Recessed	9.6			
5000	051A8A	-353	208	1	Recessed	24.1	17,065	44	24.4
	051B8A	-355	240	1	Recessed	20.8			
	051C8A	-357	277	1	Recessed	18.1			
	053A8A	-359	208	3	Recessed	13.9			
	053B8A	-361	240	3	Recessed	12.1			

Recessed Mounted Ceiling Heaters — Series 80 packed as a complete unit. Contains junction box, heater box and grille. For finished ceiling application, use plaster trim (PT3480) which is an optional accessory. Approximate weight 35 lbs (15.9 kg) for use with 2' (609.6 mm) x 2' (609.6 mm) T-bar or hard surface.

\* Use PT3480 plaster trim for Series 80 when recessed in a hard finished ceiling. Option Accessory.

Performance Data —

\*Degree F (c) air rise measured at 710 fpm (3606.8 mm/s) and 425 cfm (201 l/s) in both 70 and 80 Series.

Throw designed for 8 foot (2438.4 mm) to 12 foot (3657.6 mm) ceilings.

DB RE 10-12WATT = 63.9



# Model UHAA Series 3320

## General Data

**Table GD-16 – Electrical Specifications and Ordering Information**

Unit No.	Volts	kW	Watts	Btu/Hr Output	Wgt Lbs	Wgt Kg
UHAA151ETAD	120					
UHAA151BTAD	240	1.5	1500	5119	22	10
UHAA151ATAD	208					
UHAA151CTAD	277					
UHAA021BTAD	240					
UHAA021ATAD	208	2.0	2000	6825	22	10
UHAA021CTAD	277					
UHAA031BTAD	240					
UHAA031ATAD	208	3.0	3000	10240	22	10
UHAA031CTAD	277					
UHAA041BTAD	240					
UHAA041ATAD	208	4.0	4000	13650	22	10
UHAA041CTAD	277					
UHAA481BTAD	240					
UHAA481ATAD	208	4.8	4800	16380	22	10
UHAA481CTAD	277					

Notes: 1 watt equals 3.413 btu.  
1000 Watts Equals 1 kW.

# Control Wiring Model UHXA

The Trane heaters have been designed for explosion-proof service with single and 3-phase inputs of 208, 240, 480 and

600 volts. They meet stringent UL requirements. However, it is essential that correct installation procedures be

followed to eliminate all potential hazards arising from faulty installation.

<p>Single Phase Heater with 24 Volt Control</p> <p>WD1</p>	<p><b>24 Volt Control</b></p> <p><b>WD1 – Single Phase 208, 240 Volt</b></p> <p><b>WD2 – Three Phase 208, 240, 480 Volt</b></p>	<p>Three Phase Heater with 24 Volt Control</p> <p>WD2</p>
<p>Single Phase Heater with 120 Volt Control</p> <p>WD3</p>	<p><b>120 Volt Control</b></p> <p><b>WD3 – Single Phase 208, 240 Volt</b></p> <p><b>WD4 – Three Phase 208, 240, 480 Volt</b></p>	<p>Three Phase Heater with 120 Volt Control</p> <p>WD4</p>
<p>Single Phase Heater Line Voltage Control 208V or 240V Models Only</p> <p>WD5</p>	<p><b>Line Voltage Control</b></p> <p><b>WD5 – Single Phase 208, 240 Volt</b></p> <p><b>WD6 – Three Phase 208, 240 Volt</b></p>	<p>Three Phase Heater Line Voltage Control 208V or 240V Models Only</p> <p>WD6</p>
<p>600 Volt Three Phase Heater with 24 Volt Control</p> <p>WD7</p>	<p><b>600 Volt</b></p> <p><b>WD7 – Three Phase 24 Volt Only</b></p> <p><b>WD8 – Three Phase 120 Volt Only</b></p>	<p>600 Volt Three Phase Heater with 120 Volt Control</p> <p>WD8</p>



# Model UHWA Series 20 and 50

## Controls

### Control Systems

Type of Control	WD	Heater Type
Built-in thermostat control	1	20 & 50 (1)
Wall mounted thermostat, heater voltage, line duty. For single phase heaters use SP or DP (DP if used as a disconnect) of sufficient capacity. For three-phase heaters use TW1512 which cycles two poles simultaneously.	2	20 & 50 (1)
Wall mounted, heater voltage, pilot duty, one or more heaters. Heater has built-in contactor with heater voltage coil.	3	20 & 50 (1)
Wall mounted, 120V, pilot duty, one or more heaters. Heater has built-in contactor with 120V coil.	4	20 & 50
Wall mounted, 24V, pilot duty, one or more heaters. Heater has built-in contactor with 24V coil.	4	20 & 50
Wall mounted, 24V. Heater has built-in contactor with 24V coil and heater voltage/24V transformer.	5	50 Only
Wall mounted, pilot duty, 120V. Heater has built-in contactor with 120V coil and heater voltage/120V transformer.	5	50 Only

(1) If built-in circuit breaker and/or built-in transformer are desired, 50 Series must be ordered.

Transformer with 24V secondary (A1) available on all models.

Transformer with 120V secondary (A2) available on following models only:

All three-phase models

277 V one-phase up to 4000 watts

208 and 240 V one-phase up to 3000 watts

### Accessories

#### For accessory built-in controls:

- T Built-in thermostat breaks all ungrounded conductors in OFF position.
- C Circuit breaker (Series 50 only) arranged to be disconnected before removal of front with line side terminals covered for safe maintenance. Additional control circuit switch installed if required.
- R Built-in contactor holding coil same as heater voltage.
- R1 Built-in contactor 24V holding coil.
- R2 Built-in contactor 120V holding coil.
- A1 Built-in control transformer, (Series 50 only) 24V secondary.
- A2 Built-In control transformer, (Series 50 only) 120V secondary available on all three-phase heaters, up to 3000 watts on 208 and 240V, one - phase and up to 4000 watts on 277V, 1-phase.

#### For semi-recessed and surface mounting:

##### 20 Series

- 20 EX 34 Extension sleeve for full surface mounting.
- 20 EX 16 Extension sleeve for extending front additional 2" (50.8 mm) from finished wall. Heater recesses 2 1/4" (57.2 mm).
- 20 EX 8 Extension sleeve for extending front additional 1" (25.4 mm) from finished wall. Heater recesses 3 1/4" (82.6 mm).
- 20 Box Must be used on all heater installations.

##### 50 Series

- 50 EX 34 Extension sleeve for full surface mounting.
- 50 EX 16 Extension sleeve for extending front additional 2" (50.8 mm) from finished wall. Heater recesses 2 1/4" (57.2 mm).
- 50 EX 8 Extension sleeve for extending front additional 1" (25.4 mm) from finished wall. Heater recesses 3 1/4" (82.6 mm).
- 50 Box Must be used on all heater installations.

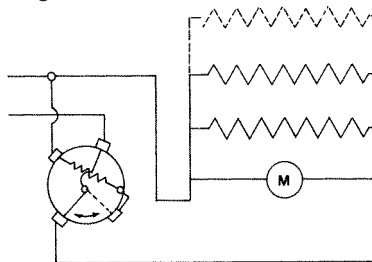
# Control Wiring

## Model UHCA Series 70 and 80

### Optional Control Systems

- Heaters operated from wall mounted, line voltage, heavy-duty thermostats.
- **Direct Line Voltage.** More than one heater may be controlled from one thermostat providing total amperage of heaters does not exceed thermostat rating.
- **Single-Phase Heaters.** Use any good quality single pole thermostat of sufficient ampacity. Use double pole thermostat if positive off is desired. Knob operated and tamper resistant type available.
- **Three-Phase Heaters.** Use TW1512. Makes and breaks two poles simultaneously.
- **Control Panels.** For control of one or more single or three-phase ceiling heaters from one 24V or 120V thermostat. Panels are in NEMA 1 enclosures and have one or more 30 amp, three-pole, 600 VAC contactor(s), operating voltage to control voltage transformer and transformer fusing. (User must provide separate circuit for each contactor.)

Single Phase

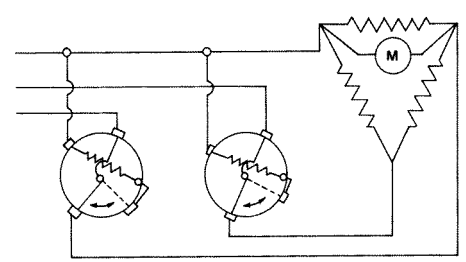


Typical heater element, motor, zero voltage reset thermal cut-out

### Optional

- Unit Mounted Controls for Series 80 Recessed Ceiling Heater only shall be factory installed and wired on the Heater.
- T2 = Tamper Proof Built-in Thermostat Double Pole.
- S = Disconnect Switch.
- R1 = Transformer with 24 volt Secondary and Relay for low voltage control.
- R = Relay — Coil operates on heater supply voltage.
- R2 = Relay — Provided with 120 volt control coil.
- Three-phase heaters shall be used with a control panel when controlled by a low voltage (24V or 120V) thermostat.
- **Low Voltage Thermostat (Wall Mounted).** Heaters operated from wall mounted, low voltage thermostats.
- **Thermal Relay With Built-In Line Voltage/24 Volt Transformer.** Relay with built-in line volt/24 V transformer are provided for use with wall mounted low voltage thermostat. For remote mounting only.

Three Phase



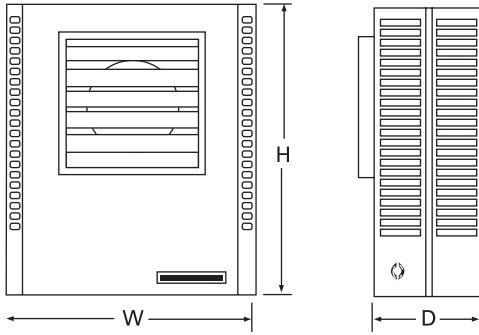
Fan purge (off delay to dissipate residual heat on shut off) supplied as a standard control on heaters with factory installed options.



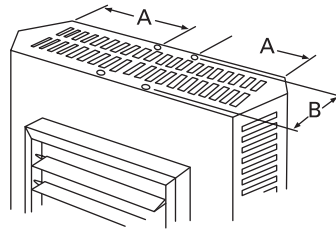
# Dimensional Data

# Model UHEC

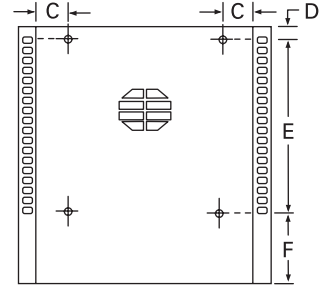
### Unit Casing



### Horizontal Air Discharge



### Vertical Air Discharge



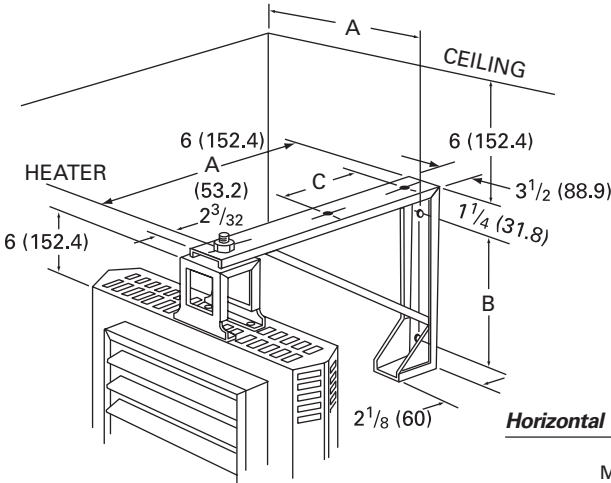
### Unit Casing (Inches)

Unit Size	H	W	D
3.3-5	17 3/4 (451)	14 15/32 (368)	6 1/2 (165)
7.5-10	24 5/16 (618)	21 1/2 (546)	6 1/2 (165)
15-20	28 11/16 (729)	21 1/2 (546)	6 1/2 (165)
25-50	34 (864)	29 1/4 (743)	10 1/16 (256)

### Weld-Nut Location Dimensions, Inches (mm)

Unit Size	Horizontal			Vertical		
	A	B	C	D	E	F
3.3-5	3 1/32 (77)	5 1/4 (133)	2 7/16 (62)	1 5/32 (29)	11 5/32 (283)	5 7/16 (138)
7.5-10	7 17/32 (191)	5 1/4 (133)	3 1/2 (89)	1 7/8 (48)	16 1/16 (408)	6 3/8 (162)
15-20	7 17/32 (191)	5 1/4 (133)	3 1/2 (89)	1 7/8 (48)	20 7/16 (519)	6 3/8 (162)
25-50	10 27/32 (275)	8 13/16 (224)	6 13/16 (173)	1 7/8 (48)	26 1/2 (673)	5 5/8 (143)

### Horizontal Air Discharge



### Horizontal Wall/Ceiling Swivel Bracket Clearance Requirements (Inches)

Unit Size	Model Mounting Bracket	Minimum Distance			Mounting Bracket Wt. lbs. (Kg)	Dimensions		
		Ceiling To Unit	Adjacent Surface To Unit	Floor To Unit*		A	B	C
3.3-5	A5105	12 (305)	12 (305)	84 (2134)	6 (2.7)	19 15/64 (487)	10 1/2 (267)	9 1/4 (235)
7.5-20	A5120	18 (457)	12 (305)	84 (2134)	9 (4.1)	23 (584)	12 (305)	19 1/8 (486)
25-50	A5150	18 (457)	12 (305)	84 (2134)	11 (5.0)	26 21/32 (677)	13 1/2 (343)	19 7/8 (505)

\*Do not exceed unit's maximum mounting height.

All dimensions approximate.  
Certified prints available on request.

### Vertical Mounting Bracket Clearance Requirements (Inches)

Unit Size	Model Mounting Bracket	Minimum Distance			Mounting Bracket Wt. lbs. (Kg)	Dimensions		
		Ceiling To Unit	Adjacent Surface To Unit	Floor To Unit*		E	F	G
3.3-5	V5105	12 (305)	12 (305)	84 (2134)	9 (4.1)	26 (660)	9 1/8 (232)	18 3/4 (476)
7.5-20	V5120	18 (457)	24 (610)	84 (2134)	13 (5.9)	36 9/16 (929)	13 7/8 (352)	24 1/2 (622)
25-50	V5150	18 (457)	24 (610)	84 (2134)	13 (5.9)	42 (1067)	13 7/8 (352)	28 1/16 (713)

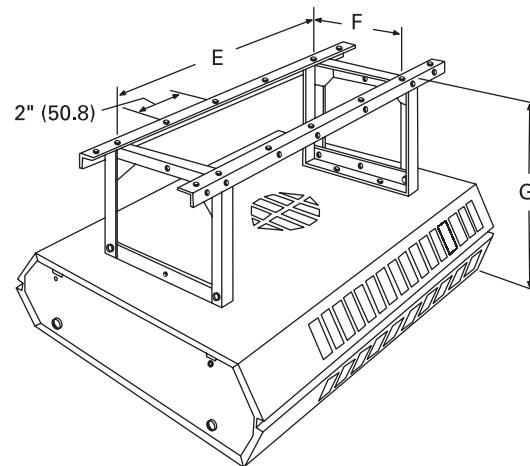
\*Do not exceed unit's maximum mounting height.



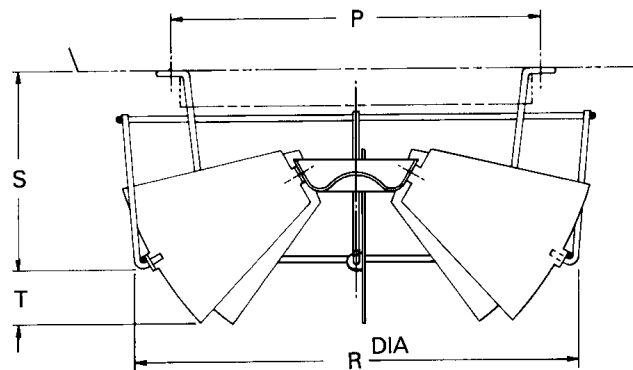
# Dimensional Data

## Model UHEC

### Vertical Air Discharge



### Louver Cone Diffuser



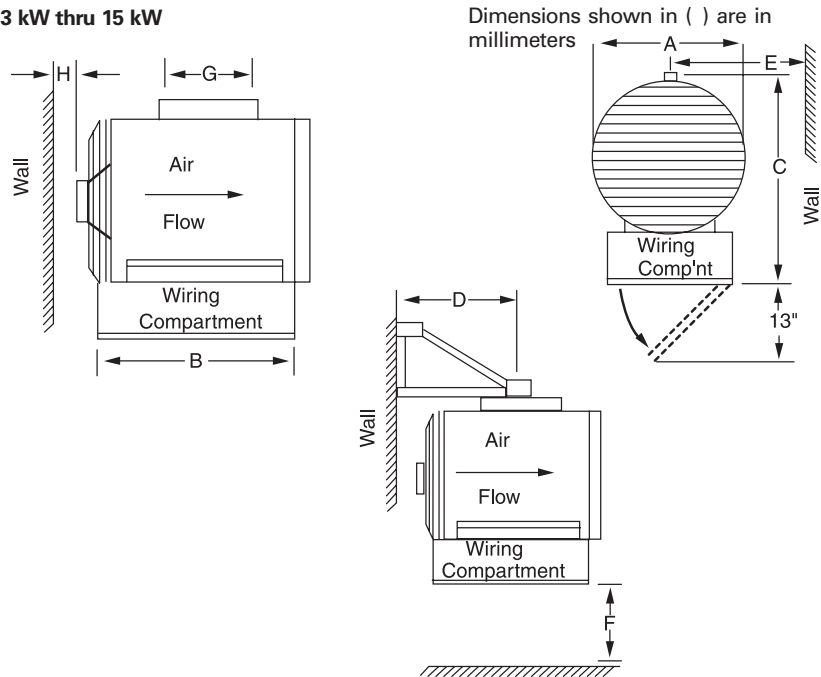
**Louver Cone Diffuser Dimensions, in. (mm)**

Unit Size	P	R	S	T
03 & 05	N/A	N/A	N/A	N/A
07 & 10	11 <sup>5</sup> / <sub>8</sub> (295.3)	14 <sup>1</sup> / <sub>4</sub> (362.0)	6 <sup>1</sup> / <sub>2</sub> (165.1)	1 <sup>3</sup> / <sub>4</sub> (44.5)
15 & 20	11 <sup>5</sup> / <sub>8</sub> (295.3)	14 <sup>1</sup> / <sub>4</sub> (362.0)	6 <sup>1</sup> / <sub>2</sub> (165.1)	1 <sup>3</sup> / <sub>4</sub> (44.5)
25-50	17 <sup>1</sup> / <sub>8</sub> (435.0)	21 (533.4)	9 <sup>3</sup> / <sub>4</sub> (247.7)	2 <sup>3</sup> / <sub>4</sub> (69.9)

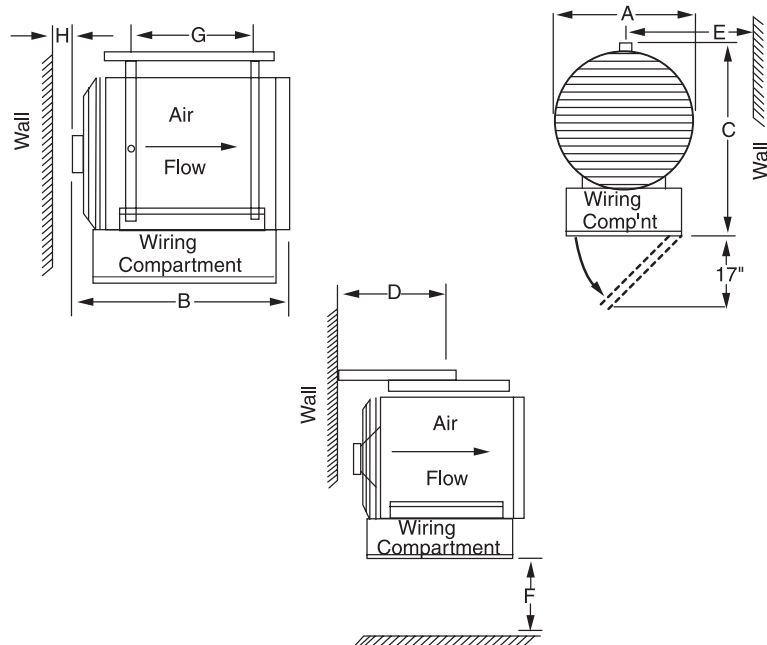
# Dimensional Data

## Model UHRA

### 3 kW thru 15 kW



### 20 kW thru 48 kW



Unit Size	Dimensions, in. (mm)							
	A	B	C	D	E	F	G	H
03,05,07	12" (305)	18" (457)	19 3/4" (502)	15 1/4" (387)	16 1/2" (419)	6 Ft. (1.8 M)	8" (203)	6" (152)
10,15	14" (356)	19" (483)	21 3/4" (552)	15 1/4" (387)	18" (457)	6 Ft. (1.8 M)	8" (203)	6" (152)
20,25,30	16" (406)	27" (686)	28 3/4" (730)	19 1/2" (495)	17 1/2" (445)	6 Ft. (1.8 M)	15 1/2" (394)	4 1/2" (114)
40,48	18" (457)	31" (787)	30 3/4" (781)	19 1/2" (495)	19 1/2" (495)	6 Ft. (1.8 M)	21 3/4" (552)	2 3/4" (70)

# Dimensional Data

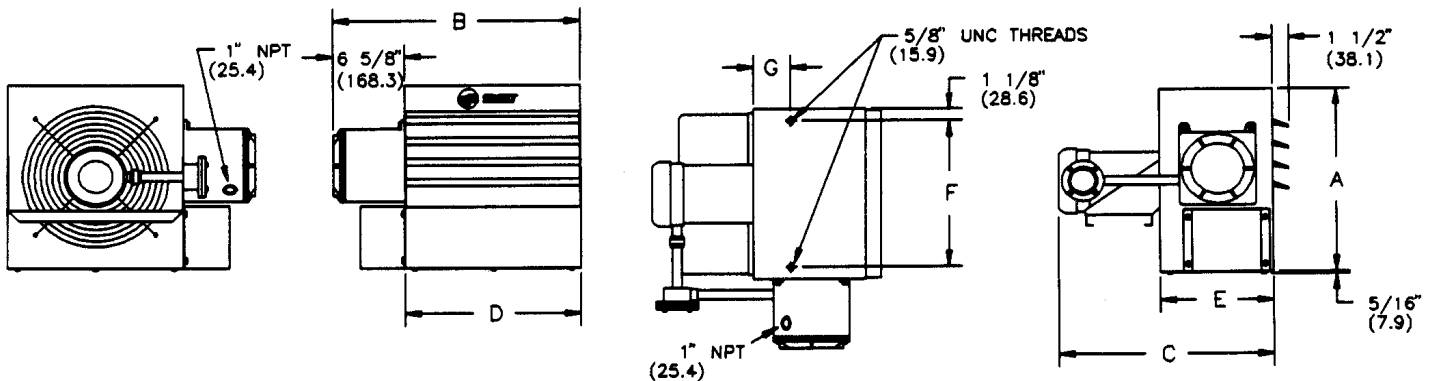
# Model UHXA

### Physical Dimensions, in. (mm)

Unit Size	A	B	C		D	E	F	G
			3 PH.	1 PH.				
3-5 7.5 kW	17 3/4"	22 3/8"	19 3/4"	20 5/8"	16 1/4"	10 1/2"	14"	3"
10 kW	20 3/4"	26 3/8"	20 3/4"	21 5/8"	20 1/4"	11 1/2"	18"	4"
15-20 25 kW	24 3/4"	30 3/8"	22 1/2"	—	24 1/4"	12 1/2"	22"	4 1/2"

Unit Size	A	B	C		D	E	F	G
			3 PH.	1 PH.				
3-5 7.5 kW	(450.9)	(568.3)	(501.7)	(523.9)	(412.8)	(266.7)	(355.6)	(76.2)
10 kW	(527.1)	(669.9)	(527.1)	(549.3)	(514.4)	(292.1)	(457.2)	(101.6)
15-20 25 kW	(628.7)	(771.5)	(571.5)	—	(616.0)	(317.5)	(558.8)	(114.3)

Dimensions shown in ( ) are in millimeters



### Mounting Bracket Kit

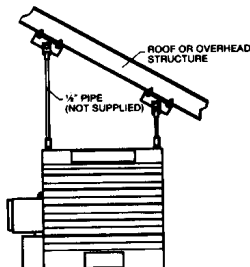
In examples HLPM and HLWM, heater may be rotated horizontally at attachment point as required.

### HLPM Floor Mounting Bracket

Particularly useful in buildings with insufficient strength to use other types of mounts. Requires 3 1/2" (89 mm) pipe [4" (102 mm) O.D. — not supplied].

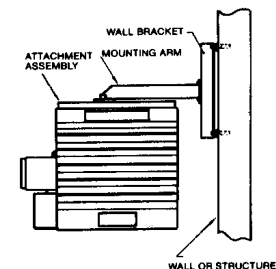
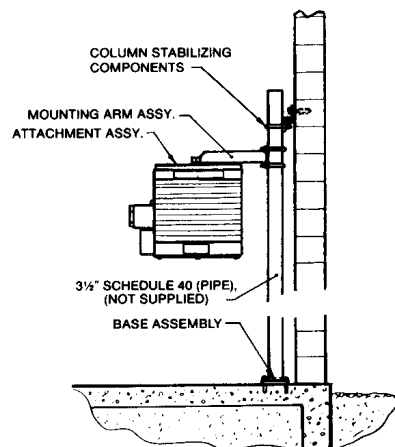
### HLWM Wall Mounting Bracket

Ideal for use in buildings that have substantial walls. Arm only can also be bolted directly to structural steel.



### HLHM Ceiling Mounting Bracket

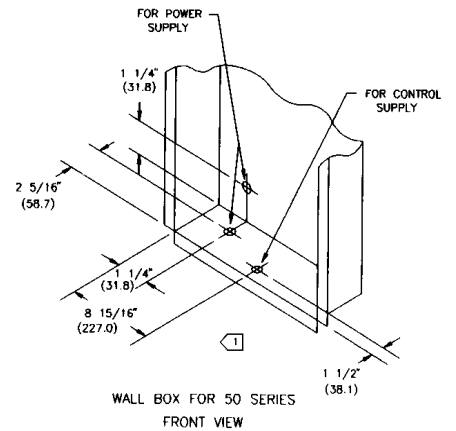
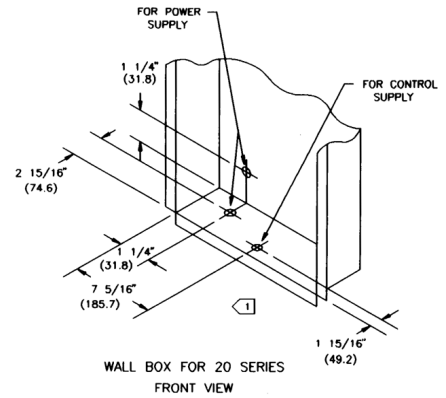
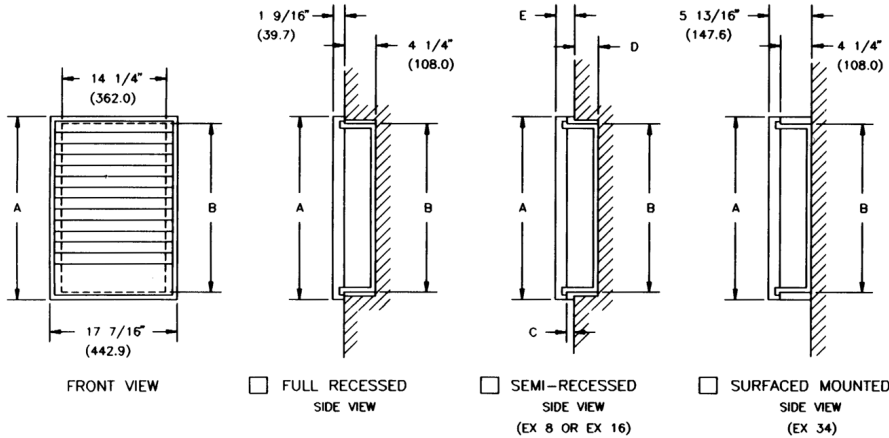
Simple and economical if adequate overhead structure exists. Requires 1/2" (13 mm) pipe, cut and threaded (not supplied).



# Dimensional Data

# Model UHWA Series 20 and 50

Dimensions shown in are inches (mm)

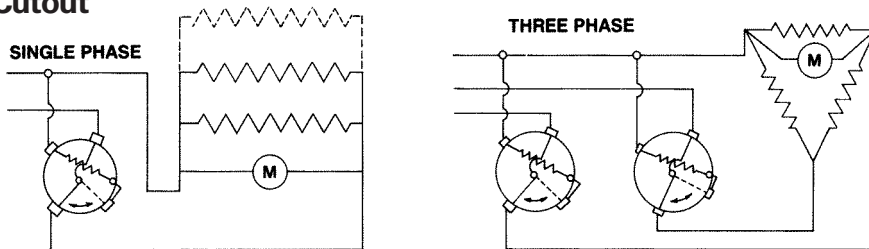


### 20/50 DIMENSIONS

UNIT	EXTENDERS								
	EX 8			EX 16			EX 16		
A	B	C	D	E	C	D	E	C	E
20 SERIES 21 15/32" (545.3)	19 3/8" (492.1)	1" (25.4)	3 1/4" (82.6)	2 9/16" (65.1)	2" (50.8)	2 1/4" (57.2)	3 9/16" (90.5)	2" (50.8)	3 9/16" (90.5)
50 SERIES 25 1/32" (635.8)	23 1/16" (585.8)	1" (25.4)	3 1/4" (82.6)	2 9/16" (65.1)	2" (50.8)	2 1/4" (57.2)	3 9/16" (90.5)	2" (50.8)	3 9/16" (90.5)

- 1 FOR SEMI-RECESSED AND SURFACE MOUNTING, USE THE FOLLOWING EXTENSION SLEEVES.  
 EX 34 EXTENSION SLEEVE FOR FULL SURFACE MOUNTING.  
 EX 16 EXTENSION SLEEVE FOR EXTENDING FRONT ADDITIONAL 2" (50.8) FROM FINISHED WALL. HEATER RECESSES 2 1/4" (57.15).  
 EX 8 EXTENSION SLEEVE FOR EXTENDING FRONT RECESSES 3 1/4" (82.55).
- 2 ONLY THERMOSTAT AND/OR CONTACTOR MAY BE BUILT-IN THE SERIES 20 HEATERS.
- 3 IF CIRCUIT BREAKER AND/OR TRANSFORMER ARE REQUIRED SERIES 50 ONLY MUST BE ORDERED.

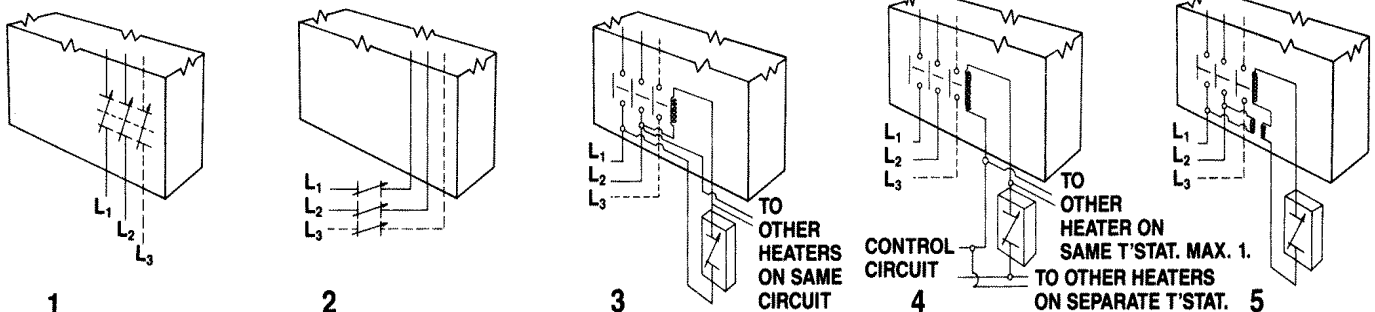
## Typical Heater Element, Motor, "Zero Voltage Reset" Thermal Cutout



## Control System Wiring Diagrams

ONLY CONTROL CIRCUITS SHOWN  
SEE HEATER DIAGRAMS BELOW

1 POWER SUPPLY KO'S 1/2"-3/4"-1" (12.7-19.05-25.4). CONTROL SUPPLY KO'S 1/2" (12.7). DO NOT MOUNT HEATER CLOSER THAN 12" (304.8) TO ADJACENT WALL OR TO FLOOR.

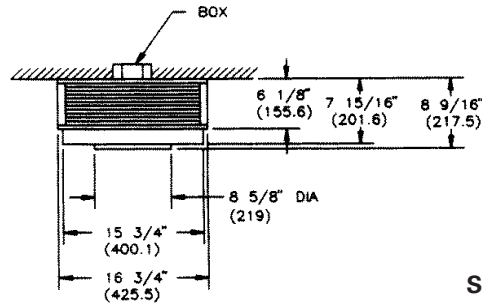


# Dimensional Data

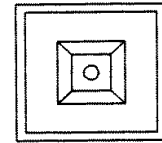
# Model UHCA Series 70 and 80

## Series 70 — Surface Mounted

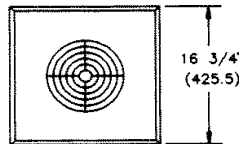
Note: Dimensions shown in inches (mm)



SIDE VIEW  
(ALL SIDES IDENTICAL)

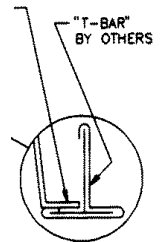


TOP VIEW



BOTTOM VIEW

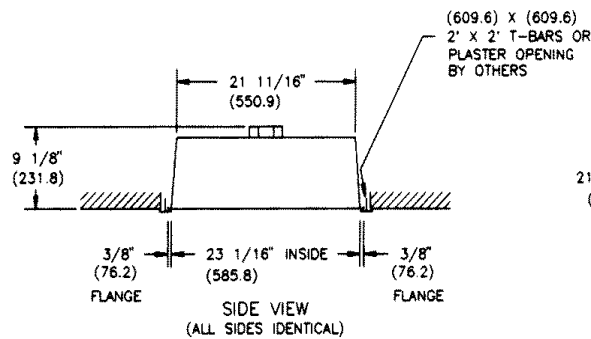
## Series 70 — Surfaced Details



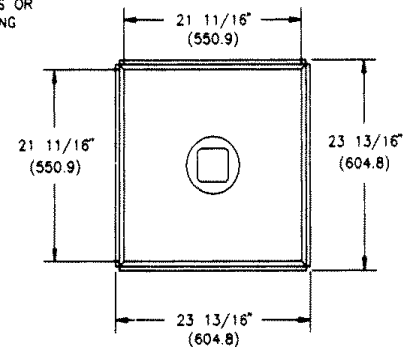
RECESSED T-BAR  
INSTALLATION

INSTALLATION

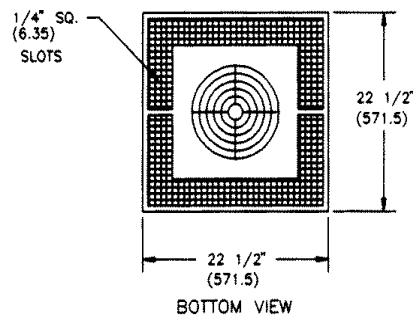
## Series 80 — Recessed Mounted



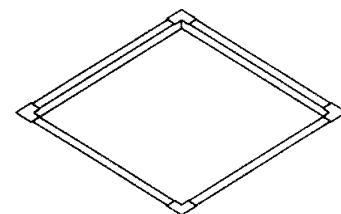
SIDE VIEW  
(ALL SIDES IDENTICAL)



TOP VIEW



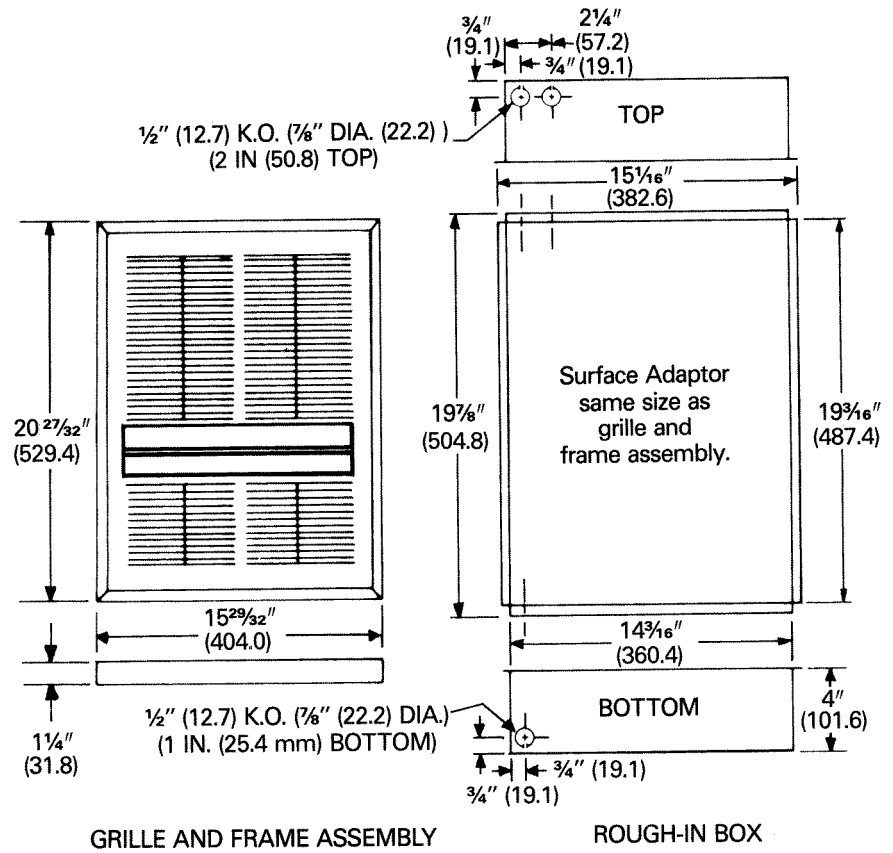
BOTTOM VIEW



# Dimensional Data

# Model UHAA Series 3320

Dimensions are shown in inches (mm)

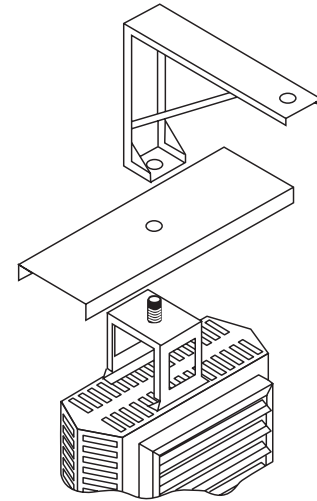


# Options

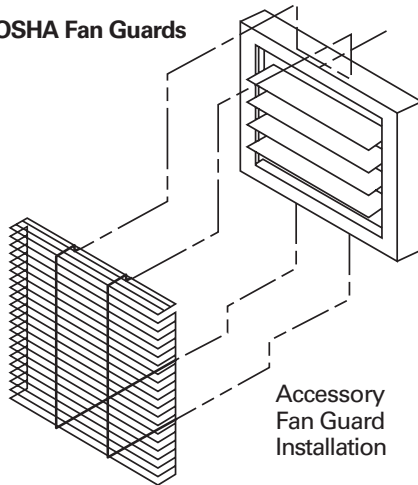
# Model UHEC

### Dust Shield

Used On	Horizontal	
	Heater and Wall Brackets	Dust Shield
3.3 kW	A5105	DS5105
7.5 kW to 20.0 kW	A5120	DS5120
25.0 kW to 50.0 kW	A5150	DS5150



### OSHA Fan Guards



### Stratification Control Option

Electric UHEC unit heaters are an efficient way to provide quick, efficient heat when and where it's required. A wall thermostat with an optional stratification thermostat makes the Trane unit heater even more energy efficient. The stratification thermostat recovers trapped ceiling heat, saving electrical energy. When ceiling temperatures are high, the stratification thermostat allows the fan to operate without energizing the heating element. Recovering this otherwise wasted heat assures substantial energy savings.

### Diffuser Options

Optional diffusers lend added air pattern versatility to individual vertical down blown installations as shown in illustrations.

Description	Used On	Model No.	Max. Mtg. Ht.	Dim. A	Dim. B	Diffuser Pattern	
1. Louver Diffuser (Standard) Louvers can be individually adjusted for rectangular coverage over doorways as an air curtain or to meet rectangular floor pattern heating requirements.	3.3 & 5.0 kW	STD	9' (2.7 M)	20' (6.1 M)	10' (3.0 M)		
	7.5 & 10.0 kW	STD	12' (3.7 M)	40' (12.2 M)	22' (6.7 M)		
	15.0 & 20.0 kW	STD	18' (5.5 M)	52' (15.8 M)	30' (9.1 M)		
	25.0 & 30.0 kW	STD	22' (6.7 M)	75' (22.9 M)	42' (12.8 M)		
	40.0 & 50.0 kW	STD	24' (7.3 M)	84' (25.6 M)	47' (14.3 M)		
2. General Distribution (No Diffuser) Trane's Airchute Venturi permits general downflow air pattern distribution as required at a higher mounting height.	3.3 & 5.0 kW	NR	9' (2.7 M)	15' (4.6 M)			
	7.5 & 10.0 kW	NR	12' (3.7 M)	30' (9.1 M)			
	15.0 & 20.0 kW	NR	18' (5.5 M)	40' (12.2 M)			
	25.0 & 30.0 kW	NR	22' (6.7 M)	55' (16.8 M)			
	40.0 & 50.0 kW	NR	24' (7.3 M)	64' (19.5 M)			
3. Anemostat Diffuser (Optional) For application where draft restriction is required at lower unit mounting heights.	3.3 & 5.0 kW	NA	—	—			
	7.5 & 10.0 kW	AD5120	10' (3.0 M)	30' (9.1 M)			
	15.0 & 20.0 kW	AD5120	15' (4.6 M)	38' (11.6 M)			
	25.0 & 30.0 kW	AD5150	17' (5.2 M)	50' (15.2 M)			
	40.0 & 50.0 kW	AD5150	20' (6.1 M)	60' (18.3 M)			
4. Louver Cone Diffuser (Optional) Individually adjustable blades permit increased floor coverage at 45° open. Additional throw is accomplished when blades are 90° vertical. Allow higher mounting height.	3.3 & 5.0 kW	NA	45° 90°	45° 90°			
	7.5 & 10.0 kW	RD5120	—	—			
	15.0 & 20.0 kW	RD5120	10' 3.0 M 14' 4.3 M	36' 11.0 M 30' 9.1 M			
	25.0 & 30.0 kW	RD5150	14' 4.3 M 21' 6.4 M	42' 12.8 M 35' 10.7 M			
	40.0 & 50.0 kW	RD5150	20' 6.1 M 30' 9.1 M 18' 5.5 M 28' 8.5 M	62' 18.9 M 44' 13.4 M 68' 20.7 M 54' 16.5 M			

STD=Standard NR=None Required NA=Not Applicable

## Options

### Model UHEC

#### Unit-Mounted Room and Stratification Thermostats

Unit-mounted thermostats for field installation are available in low voltage (24V) for either single or two-stage operation, and line voltage (up to 277V) for single-stage operation. All room thermostats have an adjustable temperature setting range of 45°F (7.2°C) to 90°F (32.2°C); and the stratification thermostat has a range of 70°F (21.1°C) to 130°F (54.4°C).

Low voltage thermostats should only be used with units provided with contactors and a low voltage control transformer. Line voltage thermostats can be used with all units provided the thermostat's maximum amp and voltage ratings are not exceeded. Line voltage thermostats have a maximum amp rating of 25 amps, and maximum voltage rating of 277V. Two-stage thermostats can be used on unit sizes 25 kW and above to provide automatic two-stage heating operation.

#### Unit and Wall Mounted Summer-Fan Switches

Unit mounted and wall mounted summer-fan switches are available for line voltage (up to 277V) and low voltage (24V). Summer fan switches allow fan only operation without energizing the unit's heating element. During the nonheating season, the summer fan switch will allow the unit's fan to provide air circulation without providing heat.

### Model UHRA

- Remote 24-volt thermostat
- Stainless steel wall/ceiling mounting bracket (3.3-15 kW)
- Cast iron painted mounting bracket available on all units for wall/ceiling or pipe mounting
- Hanging bracket for use with threaded rod

#### Wall-Mounted Room Thermostat

Wall-mounted thermostats are available in low voltage (24V) for either single or two-stage operation, and line voltage (up to 277V) for single-stage operation. All Line voltage thermostats have an adjustable temperature setting range of 40°F (4.4°C) to 90°F (32.2°C). Single stage low voltage thermostats have a range of 50°F (10°C) to 80°F (26.7°C), and two-stage low voltage thermostats have a range of 45°F (7.2°C) to 85°F (29.4°C).

The same guidelines for the application of unit-mounted thermostats are also applicable to wall-mounted thermostats.

#### Unit and Wall Mounted Power Disconnect Switches

Unit and wall mounted power disconnect switches are available to provide a positive disconnect of the unit from the power supply. Two-pole and three-pole power disconnect switches are available with voltage ratings from 25 to 63 amps.





## Options

## Model UHXA

### Mounting Bracket Kits

Trane makes three mounting kits available — the HLPm Pipe Mounting Bracket, the HLHM Ceiling Mounting Bracket, and the HLWM Wall Mounting Bracket. Each of these is illustrated and described on page 20 of this brochure. To order, specify the type of bracket with the heater model desired.

### Explosion-Proof Thermostat

#### Specifications

- TW161 Single Pole
- 22 Amps 125-277 VAC
- 3/4 Hp 125 VAC
- 1½ Hp 250-277 VAC
- 5½" H x 5½" W x 4¾" D
- Can be used for heating or cooling applications



### Built-In Hydraulic Thermostat

#### Optional On All Models

- Stainless steel bulb and capillary
- 125 VA pilot duty
- Used on 24 volt, 120 volt or 208-240 volt line voltage control
- 60°F to 90°F temperature range
- Adjustable from front of unit with screwdriver.





# Mechanical Specifications

## Model UHEC

Heaters shall be installed and wired in accordance with the manufacturer's recommendations and applicable national and local codes.

### Casing

Casings fabricated of die-formed, heavy gauge steel and finished in high gloss, baked enamel. Supply air shall be drawn through a stamped louver periphery evenly across the heating element, and discharged through an outward drawn venturi. Adjustable discharge louvers shall be provided to control the direction of airflow. A large, hinged access door shall extend the width of the heater and locked in position by quarter-turn fasteners. Heater and supply wiring diagram shall be permanently attached to the inside of the access door.

### Elements

Elements shall be high mass, all steel tubular finned type, copper brazed. Centrally located and installed in fixed element banks.

### Motors

Motors shall be totally enclosed, all angle industrial rated. All units 3.3 through 20 kW will utilize sealed bearings to assure permanent lubrication. 25 through 50 kW units are provided with a two-speed, permanent capacitor-type.

### Fan Blades

Fan blades shall be of the axial flow type designed for quiet efficient operation. Fan speed does not exceed 1,600 rpm (26.7 R.P.S.).

### Wiring

Heaters designed for a single circuit, with elements, motor and control circuits subdivided with factory wired fuses to conform to the National Electric Code and Underwriter's Laboratory, Inc., Standard 1278. All three-phase heaters shall have balanced phases.

### Thermal Overload Protection

All heaters shall be equipped with automatic reset thermal overloads which shut down the element and motor if safe operating temperatures are exceeded.

### Fusing

Element, motor and transformer primary fusing are factory installed and wired where required by NEC. Branch circuit fusing is installed where required (48 amps and up).

### Control

Contactors and control circuit transformers where required are factory installed and wired. Only direct line supply and thermostat connections in the field are required. Two-stage operation is standard on all units 25 kW and larger with use of two-stage thermostats. Built-in fan override is provided to purge unit casing of excess heat after unit shutdown. The units are listed under the Reexamination Service of Underwriter's Laboratories, Inc. Units are warranted to be free from defective material and workmanship for a period of one year with the exception of the heating elements which are warranted for five years.

### Control Options

- Integral power disconnects (where applicable) — supplied to disconnect all ungrounded connectors in the "Off" position. Disconnect is isolated from unit wiring by use of a metal plate and fish paper.

- Thermostats (unit-mounted); (wall-mounted) — heavy-duty hydraulic actuating-type. Thermostat range 45°F (7.2°C) to 90°F (32.2°C). Unit-mounted thermostat can be rendered tamperproof by removing the temperature adjustment knob.
- Independent fan operation for summer air circulation — provided from a line or low voltage (unit-mounted) (wall-mounted) fan switch.
- Combination low voltage wall thermostat and fan switch — provided to give wall mounted control of element and fan.
- Stratification thermostat with a range of 70°F (21.1°C) to 130°F (54.4°C) — provided for units mounted in the vertical discharge position to provide an energy saver cycle recovering warm stratified air.

### Optional Dust Shield

- For use on horizontal units with wall brackets only, to protect from dust and other particles falling inside the unit heater.

### Optional Diffusers

- Louver Cone Diffuser — shall have individually adjustable blades to permit increased floor coverage at 45 degrees open. Additional throw is accomplished when blades are 90 degrees vertical, allowing higher mounting height.
- Anemostat Diffuser — for applications where draft restriction is required at a lower unit mounting height.

### Quiet Operation

The heater's air chute is specifically designed with an outward deep-drawn venturi to provide the maximum throw of warm air forward in either the horizontal or vertical mounting position.

### Sound Ratings of Free Field

Unit Size	dba Rating
3.3-5.0 kW	56
7.5-10 kW	57
15-20 kW	71
25-30 kW	70 High/70 Low Speed
40-50 kW	79 High/73 Low Speed

### OSHA Fan Guards - Optional

Model No.	Unit Size	Number of Holes	Dim. From Edge	Center to Center Dimension
OFG-5101	2-5 kW	4	1/4" (6.4 mm)	3 3/4" (95 mm)
OFG-5102	7-20 kW	4	1/4" (6.4 mm)	4 3/4" (121 mm)
OFG-5103	25-50 kW	4	1/4" (6.4 mm)	4 3/4" (121 mm)

1. For units with existing holes in louver frame, the fan guard snaps into place.
2. To retrofit the fan guard, holes must be drilled 1/8" (3.2 mm) diameter.
3. OSHA approved.

# Mechanical Specifications

## Model UHRA

Heaters shall be installed and wired in accordance with the manufacturers recommendations and applicable national and local codes.

### Casing

The casing that houses the heating elements shall be fabricated from 16-gauge 304 stainless steel with a 304 stainless steel outlet protective grille and angled outlet louvers to insure uniform air flow and delivery temperature across the entire face of the heater. The inlet grille shall be chrome plated. The control enclosure compartment factory installed to the bottom of the heater shall be NEMA 4x nonmetallic provided with a hinged and latched access door that opens from the bottom to simplify wiring installation and maintenance. A single point line voltage connection is provided for 208, 240, 277, 480 and 600 volt service.

### Elements

Heavy duty heating elements shall be manufactured from rugged finned tubular steel and chrome-plated for corrosion resistance. Factory wired and sealed for washdown applications.

### Motors

Motors shall be totally enclosed permanently lubricated manufactured with corrosion resistant windings to resist moisture and corrosion, factory wired to NEMA 4x enclosure and UL Listed. Both the motor and fan blade shall be factory installed within the heaters casing on rubber isolators to minimize vibration and noise.

### Fan Blades

Fan Blades shall be manufactured from anodized aluminum and finished with an epoxy coating.

### Thermal Overload Protection

All heaters equipped with corrosion resistant auto reset thermal overloads shall be sealed to prevent moisture to enclosure. Shuts down the element and motor if safe operating temperatures are exceeded.

### Controls

All heaters shall be provided as standard with 24-volt transformer and control circuit, fusing (NEC required), pilot light

(power-on indicator), thermostat with stainless steel capillary sensor and three-position switch (heat- off-fan) factory installed and wired in the control enclosure compartment to the terminal block for ease of wiring.

- Fan delay relay shall be provided as standard factory installed and wired in the control enclosure to maintain fan operation for approximately 2<sup>1</sup>/<sub>2</sub> minutes (150 S) after the heating cycle has ended.
- Disconnect switch with control enclosure compartment door interlock shall be furnished as standard factory installed and wired.

### Installation

All heaters shall be used in (non-hazardous) locations with corrosive atmospheres where humidity, incidental water, water-saturated or direct spray of water is the normal condition.

### Supply Connections

Supply connections shall meet all local and NEC requirements and shall be suitable for use in WET or CORROSIVE atmospheres and locations.

### Wiring Instructions

The heaters wiring diagram for field connections shall be located inside the control enclosure and all field wiring connections shall terminate in coded terminal blocks. Terminal blocks shall be suitable for either copper or aluminum field wiring. A single power supply circuit shall be provided for all voltages thru 48 kW size heaters.

### UL, NEC and OSHA

Heaters shall meet all UL, NEC and OSHA requirements when installed as directed per Installation Operation Maintenance Manual (UHRA-IOM-1) dated March 1994.

### Mounting Bracket Kits

Wall Mounting Bracket Kits — Model A5520 shall be manufactured from stainless steel and epoxy coated. Models W5520, W5550, H5550, P5520 and P5550 shall be manufactured from epoxy coated steel.



# Mechanical Specifications

## Model UHXA

Heaters shall be installed and wired in accordance with the manufacturer's recommendations and applicable national and local codes for use in hazardous classified locations and shall be UL listed.

### UL Classes

For Class I, Group D, Divisions 1 and 2 and Class II, Groups E, F and G, Divisions 1 and 2.

Abbreviated descriptions of UL classes, groups and divisions.

Before selecting any heater for a particular application, refer to Article 500 as well as other standards referenced in the National Electric Code.

- **Class I:** Equipment does not have surface operating temperature in excess of the ignition temperature of the specific gas or vapor.
- **Class II:** Equipment does not have surface temperature greater than the ignition temperature of the specified dust.
- **Group D:** Atmospheres such as but not limited to acetone, alcohol, gasoline, lacquer solvent vapors, natural gas, propane or other gases or vapors of equivalent hazard.
- **Group E:** Atmospheres containing combustible metal dust regardless of resistivity, or other combustible dust of similar hazard characteristics having resistivity of less than  $10^5$  ohm-centimeter.
- **Group F:** Atmospheres containing carbon black, charcoal, coal or coke dust.
- **Group G:** Atmospheres containing combustible dust having resistivity of  $10^5$  ohm-centimeter or greater.
- **Division I:** A location in which ignitable concentrations of flammable material exist under normal operating conditions.
- **Division II:** Locations in which flammable materials will normally be confined within closed containers and escape only in the case of accidental rupture, breakdown or during maintenance operations. Any equipment approved for Division I is automatically also approved for Division II.

### UL Temperature Codes

The UL temperature code is T3B 165°C (329°F) for Class 1 and Class 2, indicating maximum operating surface temperatures.

### Cabinet

Cabinet fabricated of 14-gauge (1.9 mm thickness) cold rolled steel, with individually adjustable louvers, epoxy coated. A wire fan guard chrome-plated with less than  $\frac{1}{4}$ " (6.4 mm) spacing conforms to NEMA requirements and shields all moving parts to meet OSHA requirements. Zinc plated fasteners, conduit made of cadmium-plated seamless steel tubing, cast aluminum control box with opening and  $2\frac{5}{8}$ " (16 mm) NC top hanger connections.

### Heat Exchanger

Heat exchanger double walled, liquid filled with three low watt density immersion type copper sheathed elements hermetically sealed into the core made of steel with aluminum fins. Heat transfer fluid of ethylene-glycol solution protected to -45°C (-49°F).

### Motors

Motors PSC, explosion-proof, permanently lubricated, ball bearing type, 1725 rpm (29 rps). Motor voltage/phase same as element.

### Fan Blade

Fan blades are made of aluminum designed for quiet efficient operation.

### Controls Factory Installed

Contactors shall be built-in and pre-wired into an explosion-proof enclosure. Contactors shall be heavy duty and break all ungrounded conductors and be rated for 100,000 cycles at all full load. Control transformers where required shall be built-in and pre-wired. Control circuits shall be 24 volts on 208, 240, 480 and 600 volt heaters or 120 volts on 208, 240 and 480 volt heaters or 208 volts on 208 volt heaters or 240 volts on 240 volt heaters.

### Thermal Overload Protection

All heaters equipped with automatic reset thermal overload switch capillary type rated for 100,000 cycles of reliable service for temperature regulation.

### Relief Valve

Over-pressure arising from excessive external temperature is relieved by a pressure relief valve factory installed in the top header tank. Made of stainless steel opens @ 200 psi (1379 kPa).

### Control Options:

- Explosion-proof thermostat (wall-mounted) - SPST 40°F (4.4°C) - 90°F (32.2°C) 22 amps, 125-277 VAC,  $\frac{3}{4}$  HP (559 W) @ 125 VAC,  $1\frac{1}{2}$  hp (1119 W) @ 250-277 VAC.
- Explosion-proof thermostat (wall-mounted) - DPST 40°F (4.4°C) - 90°F (32.2°C) 22 amps, 125-277 VAC,  $\frac{3}{4}$  hp (559 W) @ 125 VAC,  $1\frac{1}{2}$  hp (1119 W) @ 250-277 VAC.
- Explosion-proof hydraulic thermostat (built-in) — 45°F (7.2°C) -90°F (32.2°C) 125 VA pilot duty.

### Mounting Bracket Kits:

- Wall mounting bracket, ideal for use in buildings that have substantial walls. Note the arm only can be bolted directly to structural steel.
- Ceiling mounting bracket, must have adequate overhead structure to mount to. Note  $\frac{1}{2}$ " (12.7 mm) pipe, cut and threaded and supplied by others is required.
- Floor mounting bracket should be used in buildings with insufficient strength to use other types of mounting brackets. To be used with  $3\frac{1}{2}$ " (88.9 mm) schedule 40 pipe 4" (101.6 mm) OD supplied by others.



# Mechanical Specifications

# Model UHWA Series 20 and 50

Contractor shall supply and install heavy-duty, wall-mounted forced-air electric unit heaters of the wattage, voltage and phase as indicated on the plans. The heater is designed to provide an even distribution of heated air to the space by drawing return air in the periphery of the heater across the element, which shall then be discharged from the center section of the heater by means of an electric motor and axial flow fan blade.

Heaters are recessed to extend no more than 1 1/2" (38.1 mm) from the finished wall, surface mounted to extend no more than 5 3/4" (146.1 mm) from the finished wall or semi-recessed to extend no more than 2 1/2" (63.5 mm) from the finished wall.

## Enclosure

Heater front can withstand, with less than 1/16" (1.6 mm) permanent distortion, 10.8 ft. lbs (324 poundals) impact and 400 lbs. (181.4 kg) static force applied to an 8 sq. in. (51.6 sq mm) area at center grille location.

The combination return and supply grille assembly are constructed of 1/16" (1.6 mm) x 3/8" (9.5 mm) rounded edge horizontal steel. Louvers are spaced for maximum opening of 1/4" (6.4 mm). Louvers are welded at every intersection to three evenly spaced 1/16" (1.6 mm) diameter vertical members and completely framed in a heavy - gauge natural anodized aluminum extrusion. Front assembly are be attached to the chassis by hidden tamper-resistant (Allen-head) machine screws. All other parts are 16-gauge (1.5 mm thickness) steel zinc coated both sides painted in a high gloss bronze colored baked enamel finish.

## Motor

Motors are permanently lubricated unit bearing, totally enclosed, shaded pole type with impedance protection. Motors will operate at no more than 1400 rpm (23.3 rps) and are the same voltage as the heater. A protective shield shall surround the motor to separate return air from heated air.

## Performance

Heaters have a rating of 245 cfm (115.6 l/s) at 660 fpm (3352.8 mm/s) with a maximum temperature rise of 73 F (40.6 C).

## Elements

Element assemblies consist of two or three corrosion-resistant steel sheathed type elements mechanically bonded to common corrosion-resistant steel fins. Each sheathed element consist of helically coiled nickel chromium alloy- resistant wire completely embedded in and surrounded by magnesium oxide, enclosed and wedged into corrosion- resistant steel sheaths. Elements have 2" (50.8 mm) cold conductor pins extending into the sheath and have a density of no more than 60 watts per inch (25.4 mm).

## Thermal Overload

Heaters are equipped with a "zero voltage reset" thermal overload which disconnects elements and motor in the event normal operating temperatures are exceeded. For safety, if opened due to abnormal temperatures, thermal overload will remain open until manually reset by turning heater off for five minutes. Automatic reset thermal overloads which allow the element to continue to cycle under abnormal conditions will not be accepted.

## Warranty

Heaters are warranted for 5 years.

## Approval

Heaters are Underwriters' Laboratories listed. Heaters are conform to Underwriters' Laboratories, Inc. Standard 1025, Paragraphs 31.20, 31.21, 31.22 and 31.23. Heaters not conforming to these paragraphs will not be acceptable.

## Optional Control Systems

Heaters are operated from wall - mounted, line voltage, heavy-duty (tamper-resistant) thermostats.

Heaters with built-in, pre-wired contactors are operated from wall - mounted, line voltage, pilot duty (tamper-resistant) thermostats.

Heaters with built-in, pre-wired contactors (and control transformers) will be operated from wall-mounted, pilot duty (24 V) or (120 V) wall-mounted tamper-resistant thermostats.

Heaters are controlled by integrally mounted thermostats. Thermostats are heavy-duty, hydraulic type with a range of 40 F (4.4 C) to 80 F (26.7 C) and with remote sensing bulb placed in the return air. Thermostats shall be electrically rated at least 125 percent of heater rating. Thermostats also act as a disconnect by breaking all ungrounded conductors in the OFF position. (Thermostat control knob is covered by a 16-gauge (1.5 mm thickness) tamper- resistant access plate to prevent adjustment by unauthorized personnel.)

## Contactors

Where required, heaters are equipped with heavy-duty, definite purpose contactors with flame path separators and dust covers. Contactors will cycle all ungrounded conductors. Contactors have holding coils (of the same voltage as the heater), or 120 volts or 24 volts.

Contactors are be rated at least 125 percent of heater rating and are UL approved for 250,000 cycles.

## Control Transformers

Heater are equipped with a Class 2 control transformer, sealed rating of 20 VA, to supply control circuits of 24 volts or 120 volts. (120 volt secondaries not available in single phase heaters over 3 kW.)

## Circuit Breakers

Heaters equipped with built-in circuit breakers in order to allow the heaters to be supplied from feeder taps. A separate switch providing a positive off for control circuits are included where required. Circuit breakers and control switches are arranged so that all line side conductors will be separately enclosed when heater front is removed for servicing so that no current-carrying parts are accessible without the use of additional tools.



# Mechanical Specifications

# Model UHCA Series 70 and 80

Contractor shall supply and install heavy duty ceiling-mounted forced-air electric heater(s) of the wattage, voltage and phase as indicated on the plans. The heater is designed to provide an even distribution of heated air to the space to be heated by drawing return air in the periphery of the heater, across and through the element and be discharged from the center section of the heater by means of an electric motor and axial flow fan blade.

Heaters that are recessed type and mounted flush with the finished ceiling or surfaced mounted to extend no more than 8 <sup>9</sup>/<sub>16</sub>" (217.5 mm) from the finished ceiling.

### Enclosure — Recessed

The return grille assembly is constructed of a one piece heavy gauge steel with <sup>1</sup>/<sub>4</sub>" (6.4 mm) sq. slots for return air and concentric rings for uniform air discharge. Grille assembly is attached to the chassis by tamper-resistant (Allen head) machine screws. All parts of enclosure are heavy gauge steel, zinc coated both sides and finished in neutral, off-white colored, baked enamel.

### Surface Mounted

Enclosure are constructed of <sup>1</sup>/<sub>16</sub>" (1.6 mm) x <sup>3</sup>/<sub>8</sub>" (9.5 mm) rounded edge horizontal steel louvers which are spaced for maximum opening of <sup>5</sup>/<sub>16</sub>" (7.9 mm). Louvers are welded at every intersection to evenly spaced <sup>1</sup>/<sub>8</sub>" (3.2 mm) diameter vertical members. Discharge grille to have concentric rings for uniform air discharge. Grille assembly are attached to chassis by tamper-resistant (Allen head) machine screws. All parts of enclosure are heavy gauge steel, zinc coated both sides and finished in neutral, off-white colored, baked enamel.

### Motor

Motors are permanently lubricated, unit bearing, totally enclosed shaded pole type with impedance protection. Motors operate at no more than 1,300 rpm (21.7 RPS) and are the same voltage as the heater.

### Performance

Heaters have a rating of 425 cfm (200.6 l/s) at 710 fpm (3606.8 mm/s) with a maximum temperature rise of 44 F (24.4 C) and 63.9 DB RE 10-12 watt.

### Elements

Element assemblies consist of two or three corrosion-resistant, steel-sheathed type elements mechanically bonded to common corrosion-resistant steel fins. Each sheathed element consist of helically coiled nickel chromium alloy resistant wire completely embedded in and surrounded by magnesium oxide, enclosed and wedged into corrosion resistant steel sheaths. Elements have 2" (50.8 mm) cold conductor pins extending into sheath and have a density of no more than 60 watts per inch (25.4 mm).

### Thermal Overload

Heaters are be equipped with a "zero voltage reset" thermal overload which disconnects elements and motor in the event normal operating temperatures are exceeded. For safety, if opened due to abnormal temperatures, thermal overload will remain open until manually reset by turning heater off for five minutes. Automatic reset thermal overloads which allow the element to continue to cycle under abnormal conditions will not be accepted.

### Approval

Heaters are Underwriters' Laboratories listed. Heaters conform to Underwriters' Standard 1025.



# Mechanical Specifications

## Model UHAA Series 3320

Furnish and install heavy-duty forced air wall heaters, Series 3320 where specified. Heaters are architectural styled, constructed of a 18-gauge (1.2 mm thickness) steel housing with a 14-gauge (1.9 mm thickness) extruded aluminum frame. The rugged steel grille and heater box are painted with a rust resistant dark brown baked enamel color finish. Rough-in dimensions of 19 <sup>3</sup>/<sub>16</sub>" (487.4 mm) high x 14 <sup>3</sup>/<sub>16</sub>" (360.4 mm) wide x 4" (101.6 mm) deep. Power wiring is connected through two <sup>1</sup>/<sub>2</sub>" (12.7 mm) knockouts in the top of the heater and one <sup>1</sup>/<sub>2</sub>" (12.7 mm) knockout on the bottom of the heater. Units are available in ratings from 1500 to 4800 watts at 240, 208 and 277 volts and 1500 watts at 120 volts. The heaters have a low-speed 600 rpm (10 rps), four-pole motor which drives a vane axial blower to deliver a quiet 175 cfm (82.6 l/s) of down flow air.

The heating element are of the sealed tubular type with large, parallel steel fins for quick heat transfer.

Unit's have as standard, thermal overload cut-off for added safety, fan delay switch, manual tamper resistant disconnect switch and a tamper resistant thermostat which are calibrated to provide a range of 55 F (12.8 C) to 85 F (29.4 C). All items factory installed and wired.

Optional accessories include a surface mounting adapter and day-night relays. All heaters are listed by Underwriter's Laboratories, Inc. The heating element are supplied with a manufacturer's five - year limited warranty.



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