

# 240 SERIES UNIT HEATER



## Applications

- Factories
- Storage Areas
- Garages
- Warehouses
- Mechanical Rooms
- Workshops
- Pump Houses
- Service Areas in Air Handling Units
- Shipping and Receiving Areas

The 240 Series unit heater is available in 50 standard models with ratings up to 50 KW at voltages of 208, 240, 277, and 480 volts, single or three-phase. They are available with a wide variety of factory built-in or field-installed options.

**Temperature Control:** Single-stage or two-stage control with built-in or remote-mounted thermostats are available on all heaters.

**Control Options:** Available as factory built-in or field-installed to meet job specifications.

**Custom KW's:** Custom KW's are available up to 50 KW.

**Discharge Direction:** The 240 Series heater can be mounted for horizontal or vertical discharge using an optional universal wall/ceiling mounting bracket or with field-furnished threaded rods for ceiling mounting.

**Color Options:** The standard color is camel. Six optional colors are available: grey, yellow, red, white, blue or textured beige. Heaters may also be supplied with a corrosion resistant galvanized steel finish.



Colors represented are approximate.

## Standard Construction Features

**Heating Elements** - Industrial grade, 0.475" diameter steel sheath with brazed copper plated steel fins and epoxy sealed ends. Draw-thru airflow design pulls air across the heating elements to ensure cool element operation and even air distribution resulting in long element life.

**Housing** - Heating elements and motor are enclosed in a heavy gauge galvanized steel cabinet with a durable polyester powder coat finish.

**Outlet Grille** - Individually adjustable louvers are provided to direct airflow. A protective outlet fan guard is provided to prevent insertion of foreign objects.

**Fan Motor** - Permanently lubricated and thermally protected motor.

**Built-in Controls** - All units include an automatic reset thermal cutout that will de-energize the heater if an overtemperature condition occurs. A manual reset thermal

cutout, in addition to an automatic reset thermal cutout, is standard on heaters 10 KW and above. A fan delay is provided to allow the elements to heat up before fan startup and purges the heater of residual heat after shutdown. A 24-volt transformer and disconnecting contactor are provided on most heaters. Single-phase heaters rated at 5 KW or less have line voltage controls; 24-volt control and contactor are available. Power fusing is standard on all heaters rated over 48 amps.

**Mounting** - Universal horizontal or vertical discharge. Optional diffusers are available for vertical discharge. An Anemostat diffuser can be used to provide draft-free air movement at lower mounting heights. For higher mounting heights, radial diffuser with adjustable fins can be used to increase floor coverage or adjusted for a vertical down blast of air.

KW	Volts	Ph	Total Amps*	CFM	Approx. Air Temp Rise °F (°C)	2-Stage Control	Std Control Voltage	Installed Weight lb (kg)	Max Air Throw - Feet (m)	Catalog Number
3.3	208	1	16.2	350	27 (15)	1B	208	25 (11.34)	15 (4.57)	HX-240-U1033C(2)
	240	1	14.1	350	27 (15)	1B	240	25 (11.34)	15 (4.57)	HX-240-U1033J(2)
	277	1	12.2	350	27 (15)	1B	277	25 (11.34)	15 (4.57)	HX-240-U1033N(2)
3.7	480	3	4.7	350	27 (15)	1A	24	25 (11.34)	15 (4.57)	HX-240-U1037U
3.8	208	3	10.9	350	27 (15)	1A	24	25 (11.34)	15 (4.57)	HX-240-U1038D
	240	3	9.4	350	27 (15)	1A	24	25 (11.34)	15 (4.57)	HX-240-U1038K
5	208	1	24.3	350	46 (26)	1B	208	25 (11.34)	15 (4.57)	HX-240-U1050C(2)
	240	1	21.1	350	46 (26)	1B	240	25 (11.34)	15 (4.57)	HX-240-U1050J(2)
	277	1	18.4	350	46 (26)	1B	277	25 (11.34)	15 (4.57)	HX-240-U1050N(2)
	208	3	14.2	350	46 (26)	1A	24	25 (11.34)	15 (4.57)	HX-240-U1050D
	240	3	12.3	350	46 (26)	1A	24	25 (11.34)	15 (4.57)	HX-240-U1050K
6.7	480	3	6.2	350	46 (26)	1A	24	25 (11.34)	15 (4.57)	HX-240-U1050U
	208	1	32.9	650	37 (21)	1B	24	40 (18.14)	18 (5.49)	HX-240-U2067C
	240	1	28.6	650	37 (21)	1B	24	40 (18.14)	18 (5.49)	HX-240-U2067J
7.5	277	1	24.8	650	37 (21)	1B	24	40 (18.14)	18 (5.49)	HX-240-U2067N
	208	1	36.8	650	37 (21)	1B	24	40 (18.14)	18 (5.49)	HX-240-U2075C
	240	1	32.0	650	37 (21)	1B	24	40 (18.14)	18 (5.49)	HX-240-U2075J
	208	3	21.5	650	37 (21)	1A	24	40 (18.14)	18 (5.49)	HX-240-U2075D
	240	3	18.7	650	37 (21)	1A	24	40 (18.14)	18 (5.49)	HX-240-U2075K
9.9	480	3	9.4	650	37 (21)	1A	24	40 (18.14)	18 (5.49)	HX-240-U2075U
	208	1	48.3	650	49 (27)	1B	24	40 (18.14)	18 (5.49)	HX-240-U2099C
10	240	1	42.4	650	49 (27)	1B	24	40 (18.14)	18 (5.49)	HX-240-U2100J
	277	1	36.7	650	49 (27)	1B	24	40 (18.14)	18 (5.49)	HX-240-U2100N
	208	3	28.5	650	49 (27)	1A	24	40 (18.14)	18 (5.49)	HX-240-U2100D
	240	3	24.8	650	49 (27)	1A	24	40 (18.14)	18 (5.49)	HX-240-U2100K
	480	3	12.4	650	49 (27)	1A	24	40 (18.14)	18 (5.49)	HX-240-U2100U
13.2	277	1	48.4	1500	52 (29)	1B	24	55 (24.95)	41 (12.5)	HX-240-U3132N
13.3	208	1	64.8	1500	52 (29)	1C	24	55 (24.95)	41 (12.5)	HX-240-U3133C-X
	240	1	56.3	1500	52 (29)	1C	24	55 (24.95)	41 (12.5)	HX-240-U3133J-X
15	208	3	42.5	1500	52 (29)	1B	24	55 (24.95)	41 (12.5)	HX-240-U3150D
	240	3	36.9	1500	52 (29)	1B	24	55 (24.95)	41 (12.5)	HX-240-U3150K
	480	3	18.4	1500	52 (29)	1B	24	55 (24.95)	41 (12.5)	HX-240-U3150U
19.9	208	1	96.5	1500	60 (33)	1C	24	55 (24.95)	41 (12.5)	HX-240-U3199C-X (1)
	240	3	48.7	1500	60 (33)	1B	24	55 (24.95)	41 (12.5)	HX-240-U3199K
20	240	1	84.2	1500	60 (33)	1C	24	55 (24.95)	41 (12.5)	HX-240-U3200J-X (1)
	277	1	72.9	1500	60 (33)	1C	24	55 (24.95)	41 (12.5)	HX-240-U3200N-X
	208	3	56.4	1500	60 (33)	1C	24	55 (24.95)	41 (12.5)	HX-240-U3200D-X
	480	3	24.5	1500	60 (33)	1B	24	55 (24.95)	41 (12.5)	HX-240-U3200U
25	208	3	70.9	3100	49 (27)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4250D-X
	240	3	61.6	3100	49 (27)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4250K-X
	480	3	30.8	3100	49 (27)	1B	24	155 (70.3)	62 (18.9)	HX-240-U4250U
33.3	208	3	93.9	3100	49 (27)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4333D-X
	240	3	81.6	3100	49 (27)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4333K-X
	480	3	40.8	3100	49 (27)	1B	24	155 (70.3)	62 (18.9)	HX-240-U4333U
37.5	208	3	105.6	3100	61 (34)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4375D-X
	240	3	91.7	3100	61 (34)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4375K-X
	480	3	45.8	3100	61 (34)	1A	24	155 (70.3)	62 (18.9)	HX-240-U4375U
49.8	208	3	139.7	3100	68 (38)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4498D-X
50	240	3	121.8	3100	68 (38)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4500K-X
	480	3	60.8	3100	68 (38)	1C	24	155 (70.3)	62 (18.9)	HX-240-U4500U-X

\*Total Amps = Heating element amps and motor amps.

1. Disconnect switch unavailable on 240-U3199C-X and 240-U3200J-X

2. All standard heaters are supplied with 24V transformer and contactor except single-phase heaters rated at 5KW or less. Optional low voltage transformer and contactor are available for these heaters, see Factory Built-in Option 'R1'.

2-stage heaters can be field wired as single stage.

1A = Optional 2-stage control, unbalanced (option X)

1B = Optional 2-stage control, balanced (option X)

1C = 2-stage control provided as standard (option X)

If heater part number includes '-X' in table above, 2-stage control is provided standard. Do not add Option 'X' pricing.

## Factory-Installed Options

Code	Description
Consult Factory	Custom KW - CONSULT FACTORY
D	Door Interlocking Power Disconnect Switch
F	Fusing under 48 Amps, not available on heaters up to 10KW
M	Manual Reset Cutout (In addition to automatic cutout) on heaters up to 10KW
P (1)	"Heater On" Pilot Light
R1	Built-in 24V transformer and contactor for 3 to 5 KW, single phase heaters.
R2 (1) (2)	120V Transformer to replace 24V Transformer, fused secondary and grounded
S1	Summer Fan Switch
S2 (1)	Summer Fan Switch – Remote Pilot Duty
T	Built-in Thermostat - 1 - Stage Built-in Thermostat - 2 - Stage (Option 'X' required)
V1*	Anemostat (Cone) Diffuser
V2	Radial Diffuser
X (2)	2-Stage Control

\*consult factory for lead times

1. When specifying Option 'P' (pilot light) or Option 'S2' (remote fan switch) or Option 'R2' (120V control for single-phase heaters rated up to 5KW), Option 'R1' must also be specified.

2. Option 'R2' (120V control) and Option 'X' (2-stage control) cannot be combined on heaters rated up to 5 KW.

## Field-Installed Mechanical Option Kits

Catalog Number	Description
1024149	Universal wall & ceiling mounting bracket up to 10 KW
1024150	Universal wall & ceiling mounting bracket over 10 KW up to 20 KW
1024151	Universal wall & ceiling mounting bracket over 20 KW
1024155*	Anemostat (Cone) Diffuser up to 5 KW
1024156*	Anemostat (Cone) Diffuser over 5 KW up to 20 KW
1024157*	Anemostat (Cone) Diffuser over 20 KW
1024152	Radial Diffuser up to 5 KW
1024153	Radial Diffuser over 5 KW up to up to 20KW
1024154	Radial Diffuser over 20 KW
1023941	Horizontal Dust Shield up to 10 KW
1024059	Horizontal Dust Shield over 10 KW up to 20KW
1024060	Horizontal Dust Shield over 20 KW

\* Consult factory for lead times

## Finish/Color Options

Code	Finish	Color
None	Polyester Powder Coat	Camel
A0		Grey
A1		Yellow
A2		Red
A3		White
A4		Blue
A5	Galvanized Steel (unpainted)	—
A7	Polyester Powder Coat	Beige

## Remote Thermostat Selection Chart

KW	Catalog Number	Volts	Ph	1-Stage Line Voltage	1-Stage Low Voltage(b)	2-Stage Low Voltage(b)
3.3	HX-240-U1033C	208	1	1007014	1006998(a)	1007030(a)
	HX- 240-U1033J	240	1	1007014	1006998(a)	1007030(a)
	HX- 240-U1033N	277	1	1007014	1006998(a)	1007030(a)
3.7	HX- 240-U1037U	480	3	NA	1006998	1007030
3.8	HX- 240-U1038D	208	3	NA	1006998	1007030
	HX- 240-U1038K	240	3	NA	1006998	1007030
5	HX- 240-U1050C	208	1	NA	1006998(a)	1007030(a)
	HX- 240-U1050J	240	1	1007014	1006998(a)	1007030(a)
	HX- 240-U1050N	277	1	1007014	1006998(a)	1007030(a)
<b>All Other 240 Series</b>				NA	1006998	1007030

(a) Add option 'R1' for 24V control on these units.

(b) Option 'R2' is unavailable with any HEATREX supplied remote low voltage thermostats.

## Field-Installed Electrical Option Kits (shipped loose for field installation into heater)

Catalog Number	Description
1024162	Disconnect Switch, 600V, Three-Pole, 40 Amp
1024163	Disconnect Switch, 600V, Three-Pole, 80 Amp
1024164	Disconnect Switch, 600V, Three-Pole, 100 Amp
1024166	Built-in Thermostat – 1 - Stage
1024167	Built-in Thermostat– 2 - Stage (Option 'X' required)
1024168(1)(3)	Heater On Pilot Light (24V)
1024169(2)(4)	Heater On Pilot Light (120V)
1024170	Summer Fan Switch - Built-in up to 277V
1024171	Summer Fan Switch - Built in over 277V and 24V control.
1024172(1)(3)	Summer Fan Switch - Remote, 24V Control

(1) When specifying these options for single-phase heaters rated up to 5KW, Option 'R1' must also be specified.

(2) When specifying this option with any heater, option 'R2' must also be specified.

(3) When specifying these options with 3 to 5 KW single-phase heaters, Option 'R1' must also be specified.

(4) When specifying this option, with any heater, option 'R2' must also be specified.

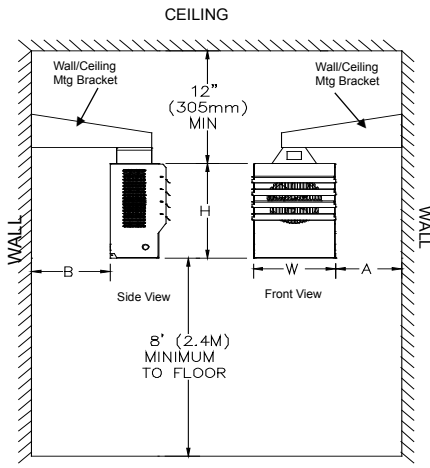


FIG. 1 HORIZONTAL WALL MOUNTING WITH MOUNTING ARM

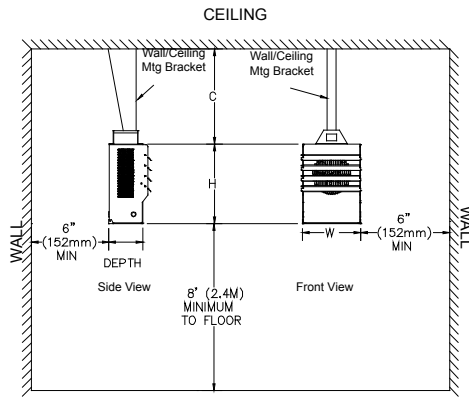


FIG. 2 HORIZONTAL CEILING MOUNT WITH MTG ARM

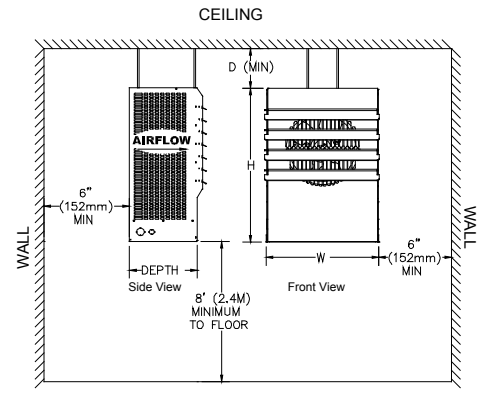


FIG. 3 HORIZONTAL CEILING MOUNT WITH THREADED ROD

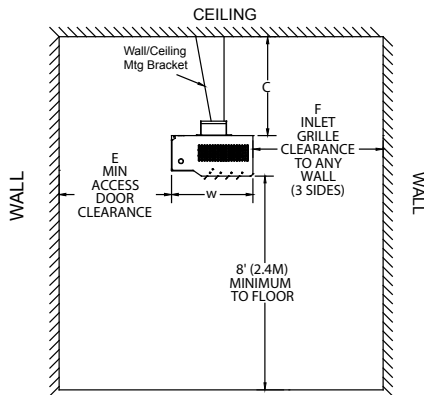


FIG. 4 VERTICAL CEILING MOUNT WITH MTG ARM

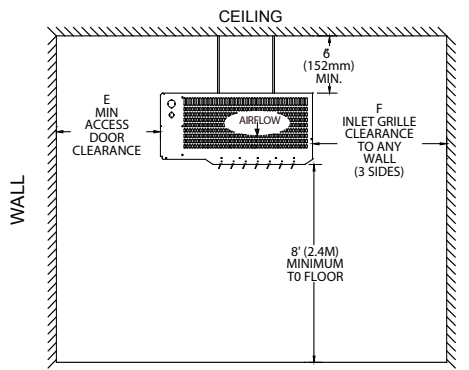


FIG. 5 VERTICAL CEILING MOUNT WITH THREADED ROD

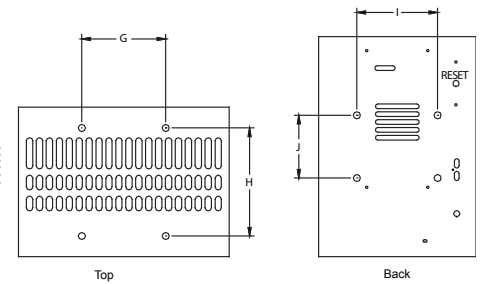


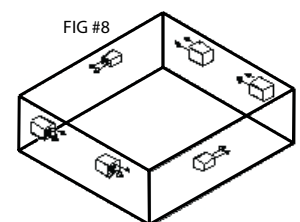
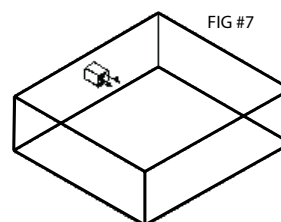
FIG. 6 THREADED ROD (3/8 - 16) ATTACHMENT POINT DIMENSIONS

## Heater Dimensions

KW	W In. (mm)	H In. (mm)	Depth In. (mm)	A In. (mm)	B In. (mm)	C In. (mm)	D In. (mm)	E In. (mm)	F In. (mm)	G In. (mm)	H In. (mm)	I In. (mm)	J In. (mm)
up to 5	12.875 (327)	17.750 (450)	7.625 (194)	8 (203)	11.188 (284)	18 (457)	10 (254)	8 (203)	16 (406)	5 (127)	6.44 (164)	6.44 (164)	5 (127)
5.1 to 10	16.875 (429)	24.250 (616)	7.625 (194)	6 (152)	9.313 (237)	18 (457)	10 (254)	8 (203)	16 (406)	5 (127)	6.44 (164)	6.44 (164)	5 (127)
10.1 to 20	16.875 (429)	24.250 (616)	11.375 (289)	6 (152)	9.313 (237)	18 (457)	12 (305)	12 (305)	32 (813)	5 (127)	10.13 (257)	5 (127)	10.13 (257)
20.1 to 50	26.937 (684)	35.500 (902)	15.625 (397)	9.281 (236)	14.937 (380)	13 (330)	12 (305)	16 (406)	32 (813)	7 (178)	12.92 (328)	7 (178)	12.92 (328)

## Application

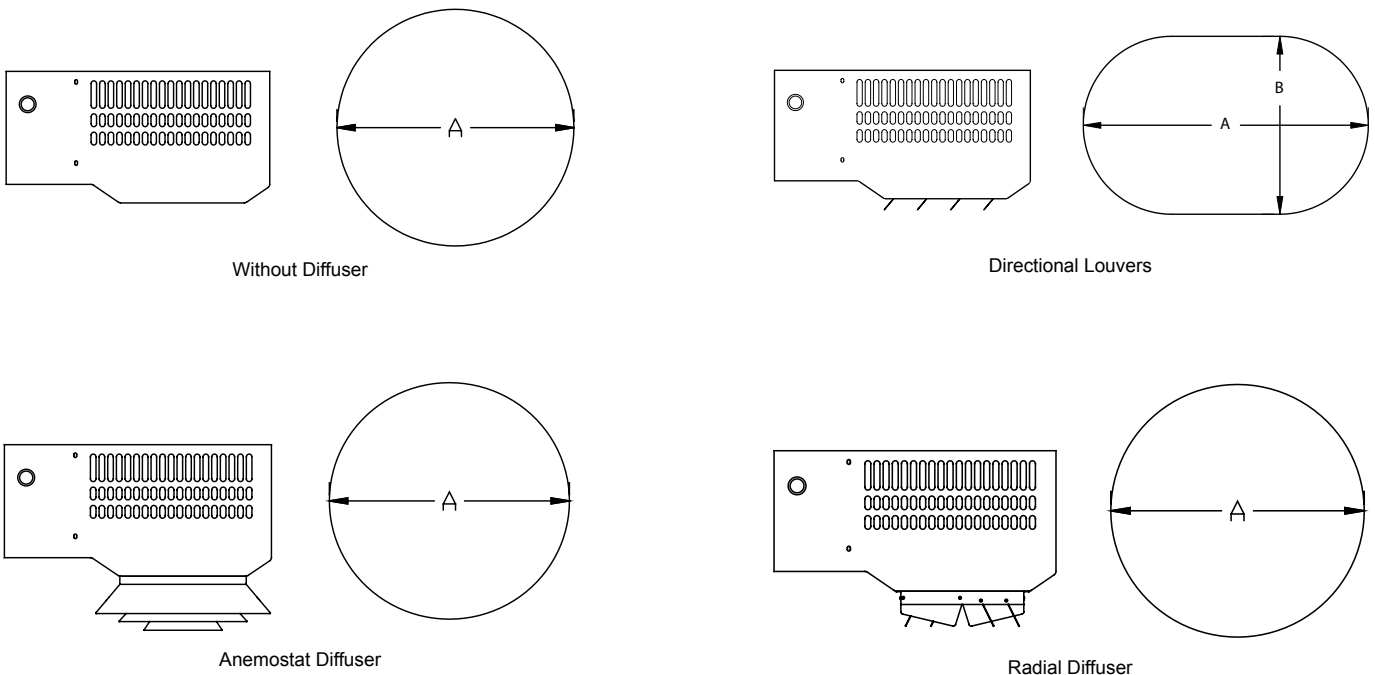
Small rooms may only require one unit heater (FIG #7) while other may require multiple unit heaters for proper perimeter circulation (FIG #8).



## UHIR Vertical Mounting Air Pattern Table

Description	Used On	Max Mtg. Height ft (m)	A ft (m)	B ft (m)	
<b>WITHOUT DIFFUSER</b> For a straight downward air pattern, directional louvers can be removed in order to maximize airflow.	up to 5 KW	10 (3.0)	17 (5.2)	—	
	over 5 KW up to 10	15 (4.6)	28 (8.5)	—	
	over 10 KW up to 20	20 (6.1)	38 (11.6)	—	
	over 20 KW up to 50	25 (7.6)	68 (20.7)	—	
<b>DIRECTIONAL LOUVERS (standard)</b> Provides a directional (straight line) airflow which results in a rectangular air pattern. Louvers can be adjusted through a 35 degree range of motion.	up to 5 KW	10 (3.0)	22 (6.7)	12 (3.7)	
	over 5 KW up to 10	15 (4.6)	40 (12.2)	20 (6.1)	
	over 10 KW up to 20	20 (6.1)	53 (16.2)	27 (8.2)	
	over 20 KW up to 50	25 (7.6)	85 (25.9)	45 (13.7)	
<b>ANEMOSTAT DIFFUSER</b> Ideal for low mounting heights. Fabricated using 3 diverging hollow cones which disperse heat to the floor area at a minimum velocity for comfort.	up to 5 KW	9 (2.7)	17 (5.2)	—	
	over 5 KW up to 10	13 (4.0)	29 (8.8)	—	
	over 10 KW up to 20	17 (5.2)	40 (12.2)	—	
	over 20 KW up to 50	21 (6.4)	68 (20.7)	—	
<b>RADIAL DIFFUSER</b> Ideal for high ceiling mounting. Louvers can be adjusted to direct airflow straight down when fully open to 45 degrees in a radial pattern which increases floor coverage by approximately 20%.	OPEN	up to 5 KW	10 (3.0)	20 (6.1)	—
		over 5 KW up to 10	15 (4.6)	30 (9.1)	—
		over 10 KW up to 20	20 (6.1)	38 (11.6)	—
		over 20 KW up to 50	25 (7.6)	65 (19.8)	—
	45°	up to 5 KW	9 (2.7)	24 (7.3)	—
		over 5 KW up to 10	11 (3.4)	36 (11.0)	—
		over 10 KW up to 20	15 (4.5)	46 (14.0)	—
		over 20 KW up to 50	18 (5.5)	78 (23.8)	—

### Diffuser Pattern



## Architect's and Engineer's Specifications

Check off options which you require. Standard built-in controls have already been checked off.

- 1) Electric Unit Heaters shall be manufactured by HEATREX, with controls built-in and factory pre-wired as shown below. Heater is to be a forced fan type, UL Listed, of the KW rating, voltage and phase specified in the schedule.
- 2) Finned tubular heating elements shall have steel type fins copper brazed to a 0.475" diameter steel sheath epoxy sealed for moisture resistance.
- 3) Provide the following standard built-in controls:
  - Automatic reset thermal cutout for primary over-temperature protection and a secondary manual reset cutout shall be provided on heaters rated above 10 KW.
  - 24 VAC transformer and disconnecting magnetic contactor.\*
  - Fan delay to eliminate cold drafts when fan starts up, and dissipate stored element heat before fan shuts down
  - Fan motor is permanently lubricated and thermally protected.
  - Built-in power fusing for heater loads over 48 amps.
- 4) Cabinet shall be heavy gauge steel protected from corrosion by either a galvanized coating or a durable baked on polyester powder coat finish.
- 5) Outlet grille shall have individually adjustable directional louvers, an Anemostat (cone) diffuser or radial diffuser. In addition, an outlet protective grille shall prevent debris from reaching the element compartment. Inlet grille shall comply with OSHA requirements for a fan blade guard.
- 6) Single point, line voltage connection for incoming power enables heater, fan and controls to be connected to the same branch circuit.
- 7) Provide mounting bracket with single point suspension to allow heater to be rotated a full 360°.  Universal wall and ceiling mounting bracket
- 8) Additional controls shall be built-in and factory pre-wired as indicated below. [Check off options to be included]
  - Door Interlocking Disconnect Switch
  - Built-in Thermostat
  - Manual Reset Cutout (In addition to automatic cutout)
  - "Heater On" Pilot Light
  - Fusing under 48 Amps on heaters greater than 10KW
  - Summer Fan Switch – Built-in
  - Summer Fan Switch – Remote Pilot Duty
  - Built-in 24V transformer and contactor for single phase heaters rated up to 5 KW.
  - 120V Transformer to replace 24V Transformer
  - 2 Stage Control (see heater schedule for selection)
  - Anemostat Diffuser in place of Louvers – Vertical Mount
  - Radial Diffuser in place of Louvers – Vertical Mount
  - Dust Shield - Horizontal Mount
  - Custom KW specified as xx.xx
- 9) Factory furnished for field mounting. [Check off options to be included]
  - Disconnect Switch 40A / 3 Pole
  - Disconnect Switch 80A / 3 Pole
  - Disconnect Switch 100A / 3 Pole
  - Built On Thermostat – 1 Stage
  - Built On Thermostat – 2 Stage
  - Heater On Pilot Light (24V)
  - Heater On Pilot Light (120V)
  - Built On Fan Switch
  - Anemostat (Cone) Diffuser up to 5 KW
  - Anemostat (Cone) Diffuser over 5 KW up to 20 KW
  - Anemostat (Cone) Diffuser over 20 KW
  - Radial Diffuser up to 5 KW
  - Radial Diffuser over 5 KW up to 20 KW
  - Radial Diffuser over 20 KW
  - Horizontal Mount Dust Shield up to 5 KW
  - Horizontal Mount Dust Shield over 5 KW up to 20 KW
  - Horizontal Mount Dust Shield over 20KW

\* Note: For single-phase heaters rated up to 5 KW, a contactor and transformer are not required when controlled by a load-carrying thermostat. The contactor and transformer are required when used with a remote fan switch, HEATREX supplied remote thermostat, 24 volt control or a heater on pilot light.

# Catalog Numbering System for 240 Series Unit Heaters

HX-240 - U 1 033 D - A  
I II III IV V VI

**I** – Basic catalog series

**II** – U designates Agency Approval code. U = UL and C-UL Listed

**III** – Cabinet Size     1 – Cabinet Size 1  
                                   2 – Cabinet Size 2  
                                   3 – Cabinet Size 3  
                                   4 – Cabinet Size 4

**IV** - Element kilowatt rating rounded to the nearest tenth kilowatt

010 (1.0 KW) through 500 (50.0 KW). KW ratings are limited by the following:

Cabinet Size	Maximum KW
1	5.0
2	10.0
3	20.0
4	50.0

**v** - Unit voltage rating, code letter stands for voltage and phase as shown in table

Code	Volts	Phase	Code	Volts	Phase
C	208	1	K	240	3
D	208	3	N	277	1
E	220	1	O	+	1 or 3
F	220	3	T	480	1
G	230	1	U	480	3
H	230	3	V	208-240	1
J	240	1			

+ - For suffix letter "O", the voltage may be any voltage between 0 and 480 Vac

**VI** – Options – Built On

- A0 = Custom color Grey
- A1 = Custom color Yellow
- A2 = Custom color Red
- A3 = Custom color White
- A4 = Custom color Blue
- A5 = Galvanized Steel (unpainted)
- A7 = Custom color Textured Beige
- D = Disconnect Switch
- F = Fusing under 48 amps for heaters > 10 KW
- M = Manual Reset Thermal Cutout for heaters <= 10 KW
- P = "Heater On" Pilot Light
- R1 = Built-On 24V transformer and contactor for single-phase heaters rated up to 5KW.
- R2 = 120V Transformer Secondary
- S1 = Summer Fan Switch – Built On
- S2 = Summer Fan Switch – Remote Pilot Duty
- T = Built On Room Thermostat
- V1 = Anemostat Diffuser
- V2 = Radial Diffuser
- X = Two-Stage Heater Control





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