



VUH

Vertical Delivery Blower Heater

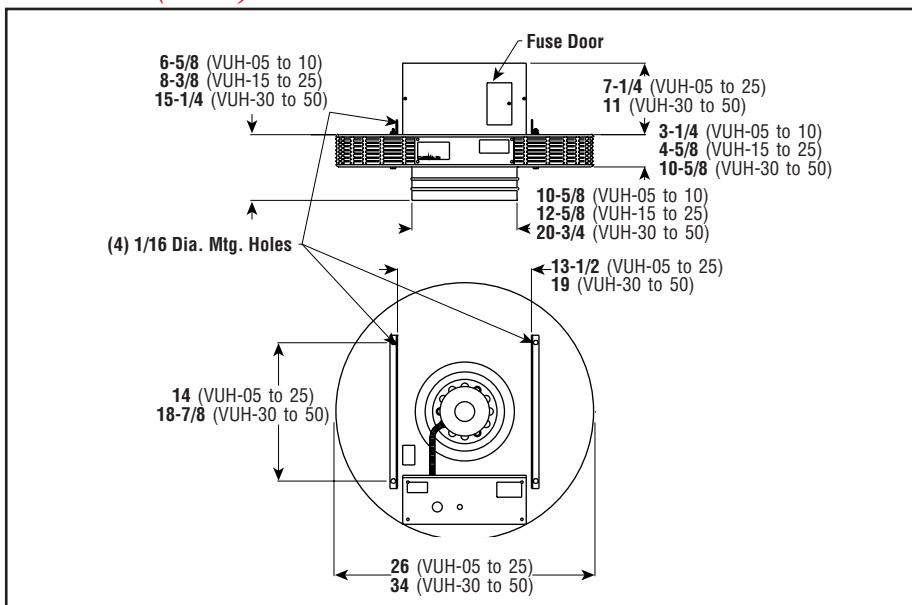
- 5 - 50 kW
- 17,060 - 170,600 Btuh
- 208, 240, 277 and 480 Volt
- 1 or 3 Phase
- Diffusers Optional

Description

Versatile, high performance VUH heaters can be used for complete primary, supplementary or dual system heating applications in all types of commercial and industrial applications. They direct warm air downward, and are particularly applicable in high bay industrial buildings where columns, towering machinery or warehouse stock would obstruct good horizontal movement of air. Four types of optional diffuser designs can be used to produce a variety of air distribution patterns.



Dimensions (Inches)



Applications

- Shipping and Receiving Areas
- Power Generating Stations
- Aircraft Hangers
- Warehouses
- Garages
- High Bay Areas

Features

Sub-divided Circuits with Individual Fuse Protection — Standard on all heaters with a total current draw of 48 Amps or greater and are electrically balanced. The fuse compartment is conveniently located for easy access.

Integral 120V Control Transformer — Standard on 480V models, eliminates the need for an external control source (24V optional).

Heavy Duty Magnetic Contactors — No external contactors are needed; integral, 3-pole, magnetic contactors are standard on all models.

Thermal Cutouts open the control circuit and disconnect power to the heating elements if overheating occurs. **Automatic Reset** allows the control circuit to reclose and restore power when the temperature returns to normal levels.

Suspension Mount with Hangers or Brackets — VUH heaters have top angle brackets with four (4) mounting holes for suspension mounting of heaters from ceiling with hangers, or rigid angle brackets. The junction box/control compartment is located on the top housing for overhead wiring.

Optional Features

Diffusers — Radial, Cone, Louver and Anemostat diffusers are available to direct heat coverage.

Fan Only Relay

Advantages

- Clean and Reliable
- Easy Maintenance
- Built-in Controls
- Attractive Appearance

FORCED AIR

VUH

Vertical Delivery Blower Heater *(cont'd.)*

Construction

Cabinet — Heavy 18 gauge steel, phosphate undercoated for corrosion resistance.

Finish — An almond powder coat provides a good, clean appearance complementary to modern structures.

Metal Sheath Fintube® Heating Elements — The electric heat bank - Chromalox patented metal sheath Fintube® heating elements. They are shock proof! Heat radiation fins are corrosion-resistant copper-clad steel, furnace brazed to the tubular heating elements to assure superior heat transfer. They don't come loose! Wide spacing prevents clogging. Air is evenly drawn across the circumferential

elements preventing hot spots and prolonging element life.

Fan Motor stays cool. A baffle isolates it from the heat radiation of the heating elements. VUH motors run smoothly with low vibration and noise. They're mounted with vibration isolators. Thermal overload protection includes automatic reset. (These totally enclosed units operate on the same line power as the heating bank. Connect direct to the power contactor...no need for separate internal or external motor control components.)

Dynamically Balanced Fan for smooth, quiet operation. Blade pitch is carefully selected so that the volume of air moved results in the optimum discharge air temperature.

Specifications and Ordering Information

| Electrical (60 Hz) | | | | Motor | | | | Air Delivery | | | | Mtg. Height (Ft.) | Ordering | | | |
|--------------------|-------|-------------|-------|-------|-------|------|-------|--------------|-------|-------------------|-----------|-------------------|----------|-----|------------|--|
| kW | Volts | Ckt & Phase | Amps | Volts | Phase | HP | RPM | CFM | FPM | Outlet Temp. (°F) | Model | | Stock | PCN | Wt. (Lbs.) | |
| 5 | 208 | 1 - 1/3 | 24/14 | 208 | 1 | 1/25 | 1,550 | 450 | 730 | 102 | VUH-05-83 | S | 300548 | 48 | | |
| 5 | 240 | 1 - 1/3 | 21/12 | 240 | 1 | 1/25 | 1,550 | 450 | 730 | 102 | VUH-05-23 | S | 300556 | 48 | | |
| 5 | 277 | 1 - 1 | 18 | 277 | 1 | 1/25 | 1,550 | 450 | 730 | 102 | VUH-05-71 | S | 300564 | 48 | | |
| 5 | 480 | 1 - 3 | 6 | 480 | 1 | 1/25 | 1,550 | 450 | 730 | 102 | VUH-05-43 | S | 300572 | 48 | | |
| 7.5 | 208 | 1 - 1/3 | 36/21 | 208 | 1 | 1/25 | 1,550 | 550 | 880 | 102 | VUH-07-83 | S | 300580 | 48 | | |
| 7.5 | 240 | 1 - 1/3 | 32/18 | 240 | 1 | 1/25 | 1,550 | 550 | 880 | 102 | VUH-07-23 | S | 300599 | 48 | | |
| 7.5 | 277 | 1 - 1 | 27 | 277 | 1 | 1/25 | 1,550 | 550 | 880 | 102 | VUH-07-71 | NS | 300601 | 48 | | |
| 7.5 | 480 | 1 - 3 | 9 | 480 | 1 | 1/25 | 1,550 | 550 | 880 | 102 | VUH-07-43 | S | 300610 | 48 | | |
| 9.8 | 208 | 1 - 1/3 | 42/27 | 208 | 1 | 1/25 | 1,550 | 712 | 1,160 | 104 | VUH-10-83 | S | 300628 | 48 | | |
| 10 | 240 | 1 - 1/3 | 42/24 | 240 | 1 | 1/25 | 1,550 | 712 | 1,160 | 104 | VUH-10-23 | S | 300636 | 48 | | |
| 10 | 277 | 1 - 1 | 36 | 277 | 1 | 1/25 | 1,550 | 712 | 1,160 | 104 | VUH-10-71 | NS | 300644 | 48 | | |
| 10 | 480 | 1 - 3 | 12 | 480 | 1 | 1/25 | 1,550 | 712 | 1,160 | 104 | VUH-10-43 | S | 300652 | 48 | | |
| 15 | 208 | 1 - 3 | 42 | 208 | 3 | 1/6 | 1,725 | 1,300 | 1,600 | 93 | VUH-15-83 | S | 300660 | 85 | | |
| 15 | 240 | 1 - 3 | 36 | 240 | 3 | 1/6 | 1,725 | 1,300 | 1,600 | 93 | VUH-15-23 | S | 300679 | 85 | | |
| 15 | 480 | 1 - 3 | 18 | 480 | 3 | 1/6 | 1,725 | 1,300 | 1,600 | 93 | VUH-15-43 | S | 300687 | 85 | | |
| 19.5 | 240 | 1 - 3 | 47 | 240 | 3 | 1/6 | 1,725 | 1,300 | 1,600 | 104 | VUH-20-23 | S | 300695 | 85 | | |
| 20 | 480 | 1 - 3 | 24 | 480 | 3 | 1/6 | 1,725 | 1,300 | 1,600 | 104 | VUH-20-43 | S | 300708 | 85 | | |
| 25 | 480 | 1 - 3 | 30 | 480 | 3 | 1/6 | 1,725 | 1,300 | 1,600 | 115 | VUH-25-43 | S | 300716 | 85 | | |
| 30 | 208 | 2 - 3 | 83 | 208 | 3 | 1/3 | 1,140 | 2,500 | 1,200 | 96 | VUH-30-83 | NS | 300724 | 250 | | |
| 30 | 240 | 2 - 3 | 72 | 240 | 3 | 1/3 | 1,140 | 2,500 | 1,200 | 96 | VUH-30-23 | NS | 300732 | 250 | | |
| 30 | 480 | 2 - 3 | 36 | 480 | 3 | 1/3 | 1,140 | 2,500 | 1,200 | 96 | VUH-30-43 | S | 300740 | 250 | | |
| 38.5 | 240 | 2 - 3 | 93 | 240 | 3 | 1/3 | 1,140 | 2,500 | 1,200 | 108 | VUH-40-23 | NS | 301110 | 250 | | |
| 39 | 480 | 2 - 3 | 47 | 480 | 3 | 1/3 | 1,140 | 2,500 | 1,200 | 108 | VUH-40-43 | S | 300759 | 250 | | |
| 50 | 480 | 2 - 3 | 60 | 480 | 3 | 1/3 | 1,140 | 2,500 | 1,200 | 120 | VUH-50-43 | S | 300767 | 250 | | |

Stock Status: S = stock AS = assembly stock NS = non-stock
To Order—Specify model, PCN, kW, volts, phase and quantity.

Notes —

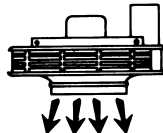
- VUH-05, 07 and 10 models 208 and 240V are factory wired for 3 phase operation and field convertible for 1 phase operation. Line and Amp ratings include motor Amps.
- All stock 208 and 240V models have built-in contactors with 208/240V holding coils. All stock 277 and 480V models have built-in control transformer and contactors with 120V holding coil.
- Fan only option is available for external control. Motor voltage is isolated through a motor relay which must be purchased separately. Control is pilot-duty 120V circuits. Optional heat recovery thermostat for economical recovery of stratified air may be used in conjunction with the fan only option by means of an ARR-219 thermostat. Thermostat to be mounted externally on the VUH junction box with capillary extended away from the heater to sense true ceiling air temperature.
- All heaters are also available on special order with 24 or 120V relay holding coils with a built-in transformer. All models are also available with 24 or 120V relay holding coils for wiring to a separate 24 or 120V control circuit.
- VUH-30, 40 and 50 models are equipped as standard with two integral relays. These heaters are shipped as standard for two-stage control but relay holding coil terminals may be jumpered in the field for single-stage control, if desired.
- All fan motors are totally enclosed with thermal overload protection. 1/25 and 1/6 HP motors are all angle sleeve bearing type. 1/3 HP motors are ball bearing type.
- Outlet temperature is based on 60°F entering air.

VUH Vertical Delivery Blower Heater (cont'd.)

Diffuser Selection & Heat Coverage

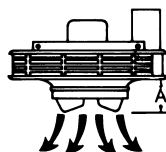
Without Diffuser

VUH heaters are used without a diffuser where a straight downflow air pattern is required. However, any diffuser can be added to the basic heater.



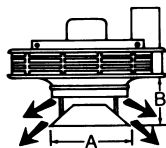
Radial

VUR increases floor coverage. Has adjustable fins which, when turned to a vertical position, direct air downward in a pattern tighter than that of a heater without a diffuser. The heater can be mounted 15 to 20% higher than a heater with no diffuser, and will still maintain the same coverage at floor level. Conversely, when the fins are tilted to a 45° angle, floor coverage of warmed air is up to 25% greater (than no diffuser) at relatively low mounting heights.



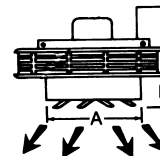
Cone

VUC permits low mounting of the heater. Throws air outward over large area rather than downward. Cone can be lowered or raised to change the air flow pattern.



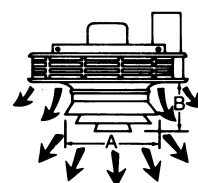
Louver

VUL permits directional (straight line) air flow such as in air curtain applications over doorways. Louvers can be turned in either direction.



Anemostat

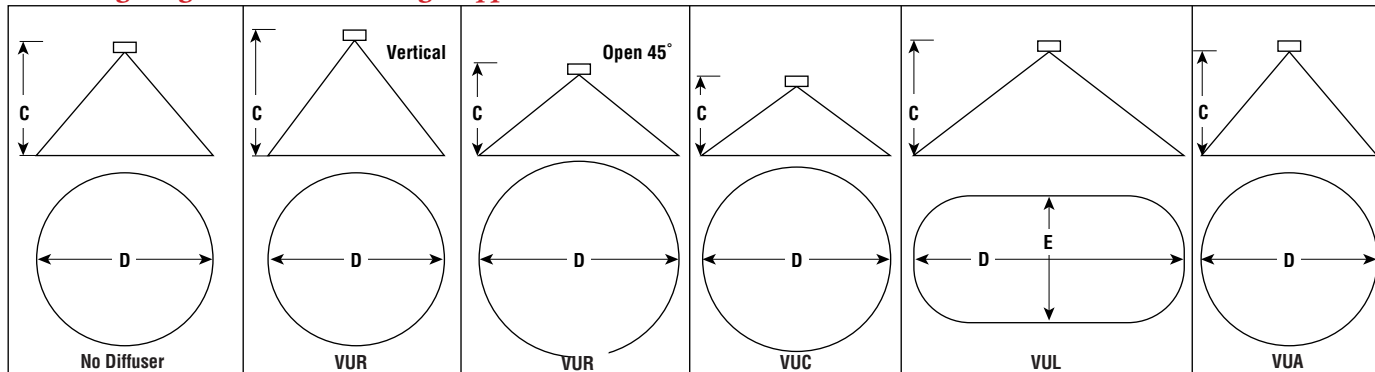
VUA "comfort" diffuser gives draft-free air movement at low mounting heights. Floor coverage is same as heaters with no diffusers.



Diffuser — Specifications

| Heater | Radial | | | Cone | | | Louver | | | Anemostat | | | | | |
|---------------|--------|-------|------------|-------|--------|--------|------------|-------|-----------|-----------|------------|--------|--------|--------|------------|
| | Model | A | Wt. (Lbs.) | Model | A | B | Wt. (Lbs.) | Model | A | B | Wt. (Lbs.) | Model | A | B | Wt. (Lbs.) |
| VUH-05 to -10 | VUR-ES | 5 | 4 | — | — | — | — | — | — | — | — | VUA-ES | 17 | 5-7/8 | 4 |
| VUH-05 to -15 | — | — | — | VUC-S | 16 | 13-1/4 | 3 | VUL-S | 16-1/8 sq | 7-1/4 | 9 | — | — | — | — |
| VUH-15 | VUR-S | 6-5/8 | 4 | — | — | — | — | — | — | — | — | VUA-S | 19-1/4 | 11-1/4 | 4 |
| VUH-20 to -25 | VUR-S | 6-5/8 | 4 | VUC-S | 16 | 13-1/4 | 3 | VUL-S | 16-1/8 sq | 7-1/4 | 9 | VUA-S | 19-1/4 | 11-1/4 | 4 |
| VUH-30 to -50 | VUR-L | 9-1/2 | 8 | VUC-L | 22-1/2 | 16-7/8 | 7 | VUL-L | 22-1/8 sq | 7-1/4 | 14 | VUA-L | 30-1/2 | 15-1/2 | 11 |

Mounting Heights & Floor Coverage (Approximate Dimensions in Feet)



FORCED AIR

| Heater | Dimensions (Ft.) | | | | | | | | | | | | |
|--------|------------------|----|------|----|--------------|----|-----|----|-----|----|----|-----|----|
| | No Diffuser | | VUR | | VUR Open 45° | | VUC | | VUL | | | VUA | |
| | C | D | C | D | C | D | C | D | C | D | E | C | D |
| VUH-05 | 10 | 26 | 12 | 26 | 11 | 32 | 10 | 30 | 10 | 40 | 18 | 10 | 26 |
| VUH-07 | 12 | 30 | 14 | 30 | 12.5 | 36 | 12 | 35 | 12 | 46 | 21 | 12 | 30 |
| VUH-10 | 14 | 39 | 17 | 39 | 16 | 46 | 14 | 44 | 14 | 59 | 27 | 14 | 39 |
| VUH-15 | 25 | 41 | 29 | 41 | 20 | 47 | 18 | 44 | 25 | 61 | 28 | 25 | 40 |
| VUH-20 | 23 | 43 | 26.5 | 43 | 19 | 48 | 17 | 46 | 23 | 64 | 29 | 23 | 43 |
| VUH-25 | 20 | 45 | 23 | 45 | 17 | 49 | 15 | 48 | 20 | 66 | 30 | 20 | 45 |
| VUH-30 | 33 | 64 | 38 | 64 | 23 | 73 | 29 | 70 | 33 | 94 | 43 | 33 | 67 |
| VUH-40 | 30 | 66 | 35 | 66 | 23 | 73 | 20 | 70 | 30 | 96 | 44 | 30 | 69 |
| VUH-50 | 27 | 69 | 31 | 69 | 21 | 73 | 19 | 72 | 27 | 99 | 45 | 27 | 70 |

Notes — A. Mounting height and floor coverage data is approximate and depends upon the heater location and its surroundings, such as obstructions, drafts etc.
 B. Specific location and mounting height will vary with the installation.

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Vertical Delivery

Blower Heater (*cont'd.*)

Diffuser Accessories — Specifications and Ordering Information

| Model | Description | SS | PCN | Wt. (Lbs.) |
|--------|-----------------------------|----|--------|------------|
| VUR-ES | Radial Diffuser 5-10 KW | ST | 300775 | 2 |
| VUR-S | Radial Diffuser 15-25 KW | ST | 300783 | 2 |
| VUR-L | Radial Diffuser 30-50 KW | ST | 300791 | 2 |
| VUC-S | Cone Diffuser 5-25 KW | ST | 300804 | 2 |
| VUC-L | Cone Diffuser 30-50 KW | ST | 300812 | 2 |
| VUL-S | Louver Diffuser 5-25 KW | ST | 300820 | 2 |
| VUL-L | Louver Diffuser 30-50 KW | ST | 300839 | 2 |
| VUA-ES | Anemostat Diffuser 5-10 KW | NS | 300847 | 2 |
| VUA-S | Anemostat Diffuser 15-25 KW | NS | 300855 | 2 |
| VUA-L | Anemostat Diffuser 30-50 KW | NS | 300863 | 2 |

Model Numbers

Chromalox Horizontal Unit Heater

Heating Elements

- 02 = 2.6 kW 20 = 20.0 kW
- 04 = 4.0 kW 25 = 25.0 kW
- 05 = 5.0 kW 30 = 30.0 kW
- 07 = 7.5 kW 35 = 35.0 kW
- 10 = 10.0 kW 40 = 40.0 kW
- 12 = 12.5 kW 45 = 45.0 kW
- 15 = 15.0 kW

Heater Voltage and Phase

- 81 = 208V, 1 Phase 71 = 277V, 1 Phase
- 83 = 208V, 3 Phase 43 = 480V, 3 Phase
- 21 = 240V, 1 Phase 63 = 600V, 3 Phase
- 23 = 240V, 3 Phase

Control

- 00 No Contactor(s)
- 30 24V Control Internal Transformer
- 31 24V Control Externally Supplied
- 32 120V Control Internal Transformer
- 33 120V Control Externally Supplied
- 34 208/240V Control Internally Supplied, No Transformer
- 35 277V Control Internally Supplied

- 00 No Fan Relay
- 45 Fan Relay Provided

VUH 05 21 34 00 Typical Model Number