

VERTICAL AHU ENGINEERING SPECIFICATIONS

BULLETIN 20-019

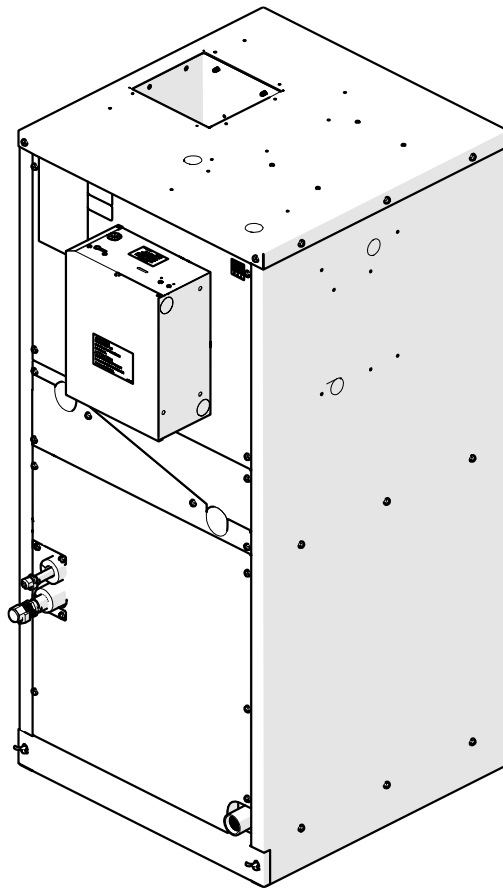


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Certified to UL Standard 1995
Conforms to CAN/CSA Standard C22.2 NO. 236

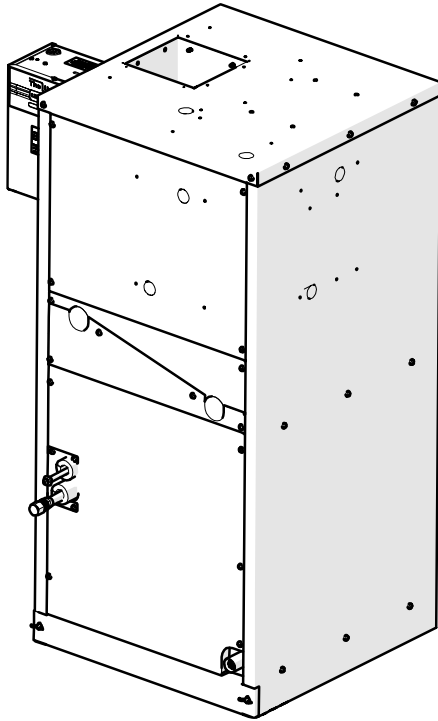


Intertek



Unico products comply with the European regulations that guarantee product safety.

DESIGN & SPECIFICATIONS



Model Number Key

| | | | | | |
|---|------|-----|-----|----|----------------------------------------------|
| V | 2430 | B-1 | EC2 | BX | |
| | | | | | Heating Coil |
| | | | | | X=non included |
| | | | | | H=hot water coil included |
| | | | | | Cooling Coil |
| | | | | | B=ac/heat pump coil, 3-row with R410A TXV |
| | | | | | E=ac/heat pump coil, 4-row with R410A TXV |
| | | | | | C=chilled water coil |
| | | | | | Motor Type, Power Supply |
| | | | | | Revision EC2=Variable Speed, |
| | | | | | 1, 2, 3, etc. 1 ph, 50/60 Hz, 120/208-230 V |
| | | | | | Configuration |
| | | | | | B=Both left and right hand (universal) |
| | | | | | Nominal Cooling Capacity Range |
| | | | | | 2430=24000 to 30000 Btu/hr (7.0 to 8.8 kW) |
| | | | | | 3036=30000 to 36000 Btu/hr (8.8 to 10.5 kW) |
| | | | | | 3642=36000 to 42000 Btu/hr (10.5 to 12.3 kW) |
| | | | | | Model Series |
| | | | | | V=Single piece vertical fan-coil unit |

APPLICATIONS

The Unico System is a complete indoor comfort system that includes an indoor fan coil unit and small duct system. The fan coil unit and duct system were designed to operate together to provide the proper airflow in every installation. The conditioned air is supplied through a series of small diameter ducts as a stream of air that entrains and mixes with the room air. This process of aspiration produces a more even temperature distribution in the room than a conventional system.

The Unico vertical air handler Unit is a compact one-piece fan coil unit in a vertical up-flow configuration.

For cooling, the unit is designed for R-410A refrigerant (both A/C and Heat Pump) or a chilled water coil. For heating, the unit offers an optional hot water coil or a separately mounted electric heater (Refer to Bulletin 30-34 for proper heater selection).

CABINET CONSTRUCTION

The cabinet is fully insulated with 1" closed cell foam rubber insulation. The cabinet is constructed of 22 gauge (0.7-mm) galvanized steel with removable access panels on the front for ease of service. See dimensional drawing.

Fan coil ships with a 1 inch (50 mm) MERV 7 pleated filter. It can be upgraded with a higher MERV filter either 1 or 2 inch (50 or 100 mm).

FEATURES AND CONTROLS

The fan coil unit includes an efficient variable-speed electronically commutated motor (ECM), control box with the S-M-A-R-T¹ control board (SCB) and a USB communications board.

Balanced wheels – All blower wheels are individually balanced.

Direct drive motor – The wheel is mounted directly to the motor shaft to improve drive efficiency and lower costs.

Shaft key – The wheel is attached to the motor shaft using a square keyway instead of a set screw.

Quick motor replacement (QMR) – The QMR feature is a quick twist-and-lock motor mount for easy maintenance. The motor is mounted to the inlet ring which is attached to the blower housing with six screws through twist-lock keyholes. When the motor or wheel require service, the entire assembly may be removed as a whole.

Separate control box – The control box is separate from the cabinet (ships inside the cabinet) for easy accessibility. It may be mounted to the top or front of the cabinet or even on a wall, whichever is more convenient. Knockout and starter holes for the screws are provided to assist in mounting.

¹ Software Managed Airflow Rate and Temperatures

Control voltage transformer – a 48VA 24-volt transformer provides control voltage power to the thermostat, electric heaters, and other optional equipment.

Heat pump AFS bypass – removes the anti-frost switch (AFS) from the circuit during heat pump heating mode which eliminates nuisance shutdowns during defrost mode.

Modes of operation – The SCB control board has 6 independent modes of operation, each with its own programmable airflow and RPM limit settings (Fan-Only, Low-Cool, High-Cool, Low-Heat, High-Heat, and Emergency-Heat).

Soft-start and soft-stop – For quieter operation, the unit will slowly ramp the motor from stop to full speed, and vice versa.

Constant airflow – The EC control will deliver the airflow requested without any user adjustments to the duct system or requiring the user to measure the amperage.

Optimized for efficiency and sound – The EC control will use the lowest motor speed to achieve the required airflow, which minimizes sound and maximizes electrical efficiency.

Pre-set airflow rate – The SCB is pre-programmed with two different air flow rates for the High-Cool Mode. These rates are based on the nominal tonnage of the unit (See the *Applications* section) and can be selected with a board mounted switch. The airflow for each of the six different airflow control modes are a fixed percentage of the selected High Cool airflow.

Laptop configurable – The airflow for each Mode of operation is adjustable to any value between the blower minimum and maximum using the ECMconfig software (available for download at www.unicosystem.com) and an ordinary USB cable.

Point-to-point wiring – The control boards have separate terminals for the thermostat, electric heater, outdoor condenser and other options for easy wiring and troubleshooting.

Screw terminal connections – terminal blocks with large screws and wire washers to securely connect the control wires.

Electric heater interlocks – The ECM control board includes three electric heater safety lockouts. The lockout prevents the heaters from operating when there is no signal for fan or if the airflow is too low. This prevents the heating elements from overheating, which can severely reduce their useful life.

The other lockout prevents the electric heater third stage from operating if the heat pump is on. This prevents nuisance shutdowns from overheating the electric heater. This feature can be added to the ST control box by using an outside thermostat.

Boiler relay – The SCB includes a separate dry-contact relay (HotW) that can be used to turn on the boiler, boiler pump, or hot water coil valve when the system is running in heating mode

Chilled water relay – The control box includes a separate dry-contact relay (ColdW) to turn on a chiller or zone pump when the system is running in Cooling mode.

Fan cycling – The control board includes a separate switch to provide periodic cycling of the fan. This will minimize or prevent condensation in the ducts located in unconditioned spaces during winter, or to provide fresh air if the system is connected to a fresh air source.

EAC, ERV, or HRV relay – For the optimum in indoor air quality, the control board includes a dry-contact relay to turn on an electronic air cleaner, energy recovery ventilator, or heat recovery ventilator any time the fan is on, or to control a fresh air damper for ventilation per ASHRAE 62.2-2010.

Potable water circulation – For improved health and safety, the control board provides a switch-selectable feature to turn on the boiler pump periodically (if installed as part of a domestic hot water system) to prevent the formation of stagnant water.

Humidifier integration – The control board includes a humidistat input with a humidifier output. If the humidistat calls for humidity, the humidifier output will turn on. It will also turn on the blower at High or Low Heat airflow (User-selectable) if the fan is not already running.

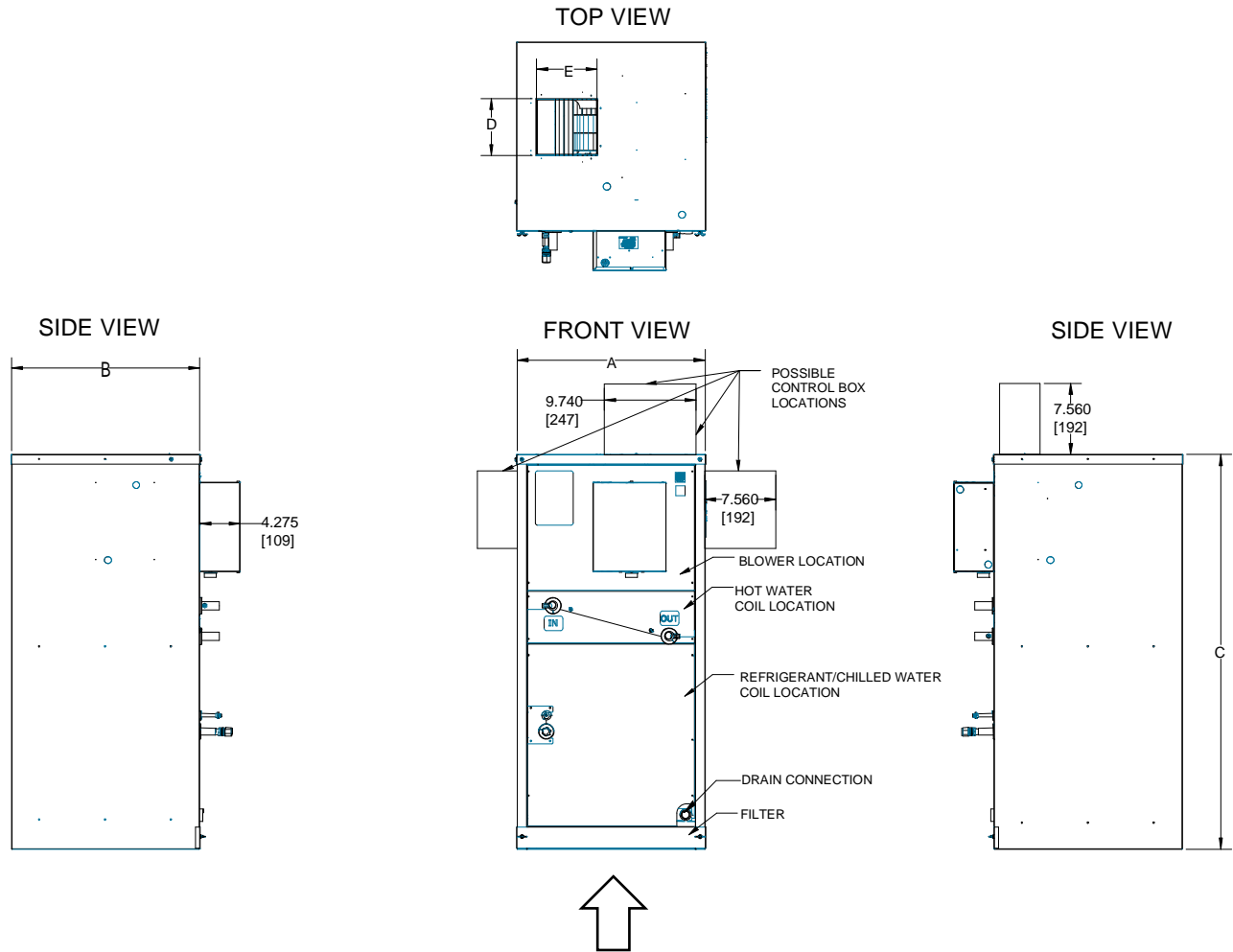
Air-to-water heat pump (heat pump chiller) compatibility – For systems with multiple air handlers connected to one AWHP. This feature allows one air handler (Leader) to control the mode of operation (heating or cooling) of other connected indoor units (Followers) to avoid runaway cooling or heating.

Low airflow indicator – The S.M.A.R.T. control board (SCB) includes an indicator light that signals the user if the desired airflow is not being met. This is usually caused by a restrictive duct system or too few outlets.

Optimized for zoning – The ECMconfig software includes programmable motor speed limits to prevent the motor from over-speeding as zone dampers are closed without the need for a bypass damper. Refer to the Unico Tech Bulletin on zoning for more information.

Laptop troubleshooting – The ECMconfig software will also provide the user with feedback indicating the actual airflow, motor speed, communication status between the boards and the motor, and the state of various inputs and outputs.

DIMENSIONAL DATA



Note: The control box, expansion valve and condensate trap ships inside the spare parts box.

| Model | A | B | C | D | E |
|-------|-------------|------------|-------------|------------|-----------|
| V2430 | 20.0 (508) | 20.0 (508) | 42.0 (1067) | 6.0 (152) | 6.4 (162) |
| V3036 | 20.0 (508) | 24.0 (610) | 42.0 (1067) | 7.1 (179) | 6.3 (160) |
| V3642 | 23.75 (603) | 25.0 (635) | 44.0 (1118) | 7.16 (182) | 6.4 (162) |

| Model | Filter Size, inch (mm) |
|-------|------------------------------|
| V2430 | 18 x 18 x 1 (457 x 457 x 50) |
| V3036 | 18 x 22 x 1 (457 x 559 x 50) |
| V3642 | 21 x 22 x 1 (533 x 559 x 50) |

Weights & Shipping Measurements

| Model No. | | V2430B-1EC2BX | V2430B-1EC2EX | V3036B-1EC2BX | V3036B-1EC2EX | V3642B-1EC2BX | V3642B-1EC2EX |
|-------------------------------|------|---------------|---------------|---------------|---------------|---------------|---------------|
| Weight., lbs. (kg) | Net | 117 (53) | 109 (50) | 138 (63) | 129 (59) | 151 (68) | 163 (74) |
| | Ship | 177 (80) | 169 (77) | 200 (91) | 191 (87) | 215 (98) | 227 (103) |
| Shipping Dimensions Inch (mm) | W | 27.2 (692) | 27.2 (692) | 27.2 (692) | 27.2 (692) | 31.2 (793) | 31.2 (793) |
| | D | 21.6 (549) | 21.6 (549) | 24.6 (625) | 24.6 (625) | 25.6 (651) | 25.6 (651) |
| | H | 44.3 (1125) | 44.3 (1125) | 44.3 (1125) | 44.3 (1125) | 46.3 (1176) | 46.3 (1176) |

SPECIFICATIONS

Blower and Motor Specifications

| Model No. | | V2430B-1EC2 | V3036B-1EC2 | V3642B-1EC2 |
|--------------------------------|------------------|-----------------------|-------------|-------------|
| Electrical Power | Phase, Hz, Volts | 1, 50/60, 120/208-230 | | |
| Nominal Motor Size | hp (kW) | 1/2 (0.37) | 1 (0.75) | |
| Motor Type | | EC (variable speed) | | |
| Minimum Circuit Ampacity | amps | 7.0/4.0 | 12.8/7.7 | |
| Max. Over Current Protection | amps | 15 | 20/15 | |
| Motor Full Load Current | amps | 5.6/3.2 | 10.5/6.1 | |
| Motor Speed | RPM | 0 – 1800 | | |
| Blower Wheel Nom. Diameter | in. (mm) | 9.5 (241) | | |
| Blower Wheel Width | in. (mm) | 3.75 (95) | 5.0 (127) | 5.0 (127) |
| Nominal Air Flow Rate | CFM (L/s) | 600 (283) | 750 (354) | 900 (425) |
| Nominal Plenum Static Pressure | in. w.c. (kPa) | 1.5 (0.373) | | |
| Minimum Plenum Size, ID | in. (mm) | 7 (178) | 9 (229) | |
| Sound Pressure Level* | dB(A) | 53 | 53 | 57 |
| | NC | 48 | 48 | 52 |

* Sound Pressure Level measured for V2430, V3036, and V3642 at 740 CFM, 900 CFM, and 1200 CFM respectively.

Refrigerant Coil Specifications

| System Type* | AC and Heat Pump | | | AC and Heat Pump | | | |
|--------------------------------------------------|-----------------------------------------------|-----------------------|------------------------|----------------------|-----------------------|------------------------|----------------|
| Model No. | V2430B-1EC2B | V3036B-1EC2B | V3642B-1EC2B | V2430B-1EC2E | V3036B-1EC2E | V3642B-1EC2E | |
| Coil Part No. | A01948-G01 | A01951-G01 | A01958-G01 | A10914-G01 | A01950-G01 | A01957-G01 | |
| Compatible Condenser Size, ton (kW) | 2.0-2.5 (7.0-8.8) | 2.5-3.0 (8.8-10.5) | 3.0-3.5 (10.5-12.3) | 2.0-2.5 (7.0-8.8) | 2.5-3.0 (8.8-10.5) | 3.0-3.5 (10.5-12.3) | |
| Net Face Area, ft ² (m ²) | 2.72 (0.25) | 3.55 (0.33) | 4.75 (0.44) | 3.11 (0.29) | 4.00 (0.37) | 4.75 (0.44) | |
| Tube diameter, in. (mm) | 3/8 (9.52) | 3/8 (9.52) | 3/8 (9.52) | 3/8 (9.52) | 3/8 (9.52) | 3/8 (9.52) | |
| Fin Density, fins/in. (fins/m) | 15 (590) | 15 (590) | 15 (590) | 14 (551) | 14 (551) | 14 (551) | |
| Number of rows | 3 | 3 | 3 | 4 | 4 | 4 | |
| Number of circuits | 4 | 6 | 6 | 6 | 6 | 8 | |
| Design Pressure, psig (MPa) | 500 (3.5) | 500 (3.5) | 500 (3.5) | 500 (3.5) | 500 (3.5) | 500 (3.5) | |
| Refrigerant Type** | R-22, R-407C, R-410A | | | | | | |
| Expansion Device | TXV with internal Check Valve (shipped loose) | | | | | | |
| TX Valve Part No. | R-22/ R-407C | A00808-002 | A00808-004 | A00808-004 | A00808-002 | A00808-004 | A00808-004 |
| | R-410A | A00808-013 | A00808-014 | A00808-014 | A00808-013 | A00808-014 | A00808-014 |
| Suction line† | O.D., inch (mm) | 5/8 (15.88) | 3/4 (19.05) | 3/4 (19.05) | 5/8 (15.88) | 3/4 (19.05) | 3/4 (19.05) |
| | Connection, in. | 1/2 Male Flare | 5/8 Male Flare | 3/4 Male Flare | 1/2 Male Flare | 5/8 Male Flare | 3/4 Male Flare |
| Liquid Line | Part No. | A01910-001 | A01952-001 | A01959-001 | A01910-001 | A01952-001 | A01959-001 |
| | O.D. inch (mm) | 3/8 (9.52) | 3/8 (9.52) | 3/8 (9.52) | 3/8 (9.52) | 3/8 (9.52) | 3/8 (9.52) |
| | Connection, in. | 1/4 Male Flare | 3/8 Male Flare | 3/8 Male Flare | 1/4 Male Flare | 3/8 Male Flare | 3/8 Male Flare |
| Condensate | Connection, in. | 3/4 FPT | 3/4 FPT | 3/4 FPT | 3/4 FPT | 3/4 FPT | 3/4 FPT |

* Heat pump coil selection depends on outdoor unit model. Refer to AHRI directory for a proper match.

** Unit ships with R410-A expansion valve. For R-22 and R-407C, order valve separately.

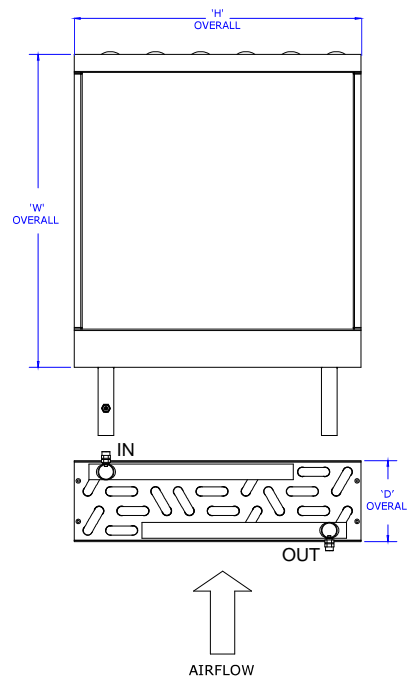
† Suction line stubs with flare nuts are long enough to be cut off and brazed to directly.

Chilled Water Coil Specifications

| Model No. | | V2430-1EC2C | V3036-1EC2C | V3642-1EC2C |
|--------------------------------------------------|------------------------|-------------|-------------|-------------|
| CWC model | | A02389-G01 | A02395-G01 | A02396-G01 |
| No. of Rows | | 4 | | |
| Tube diameter | inch (mm) | 3/8 (9.5) | | |
| Tube material | | Copper | | |
| Fin density | fins/inch (fins/mm) | 14 (0.55) | | |
| Fin material | | Al | | |
| Design Pressure | Psig (kPa) | 320 (2206) | 320 (2206) | 320 (2206) |
| Net Face Area, ft ² (m ²) | | 3.11 (0.29) | 4.00 (0.37) | 4.75 (0.44) |
| No. of Circuits | | 6 | 8 | 10 |
| Water Connection Size, ODF Sweat | inch [mm] | 7/8 (22.2) | 7/8 (22.2) | 7/8 (22.2) |

Hot Water Coil Specifications

| Model No. | | V2430-1EC2*H | V3036-1EC2*H | V364-1EC2*H | |
|--------------------|-------------------------------------|--------------|--------------|-------------|-------------|
| HWC model | | HW-V2430 | HW-V3036 | HW-V3642 | |
| No. of Rows | | 4 | | | |
| Tube diameter | inch (mm) | 1/2 (12.7) | | | |
| Tube material | | Cu | | | |
| Fin density | fins/in (fins/mm) | 10 (0.40) | | | |
| Fin material | | Al | | | |
| Face Area | inch ² (m ²) | 199 (0.128) | 259 (0.167) | 342 (0.221) | |
| No. of Circuits | | 3 | | | |
| Connections, ODF | | 7/8 (22.2) | | | |
| Weight | Net | Lbs. (kg) | 8 (3.6) | 11 (5.0) | 16 (7.3) |
| | Ship | Lbs. (kg) | 12 (5.4) | 15 (6.8) | 24 (10.9) |
| Coil Dimensions | W | inch (mm) | 17.38 (442) | 21.38 (543) | 22.38 (569) |
| | D | inch (mm) | 4.50 (114) | 4.50 (114) | 4.50 (114) |
| | H | inch (mm) | 15.86 (403) | 15.86 (403) | 19.61 (498) |



HOT WATER COIL PERFORMANCE

| V2430 | | | Airflow, SCFM (m³/h) | | | | | | Water Pressure Drop | |
|----------------------------|------------------------|-------------|----------------------------------------|-------------|-----------|----------|------------|--|----------------------------|-------|
| Entering Water Temp | Water Flow Rate | | 400 (680) | | 500 (850) | | 600 (1020) | | | |
| | | | Total Capacity | | | | | | ft. w.c. | (kPa) |
| °F (°C) | GPM (L/s) | MBH (kW) | MBH (kW) | MBH (kW) | MBH (kW) | MBH (kW) | MBH (kW) | | | |
| 100 (38) | 2 (0.13) | 8.50 (2.48) | 9.70 (2.84) | 10.7 (3.13) | 0.47 | (1.40) | | | | |
| | 4 (0.25) | 9.40 (2.74) | 10.9 (3.21) | 12.4 (3.62) | 1.60 | (4.78) | | | | |
| | 6 (0.38) | 9.70 (2.83) | 11.4 (3.34) | 13.0 (3.81) | 3.29 | (9.83) | | | | |
| 120 (49) | 2 (0.13) | 14.3 (4.18) | 16.3 (4.78) | 18.0 (5.28) | 0.47 | (1.40) | | | | |
| | 4 (0.25) | 15.7 (4.59) | 18.4 (5.38) | 20.7 (6.08) | 1.60 | (4.78) | | | | |
| | 6 (0.38) | 16.2 (4.74) | 19.1 (5.60) | 21.8 (6.38) | 3.29 | (9.83) | | | | |
| 140 (60) | 2 (0.13) | 20.1 (5.89) | 23.0 (6.74) | 25.4 (7.46) | 0.47 | (1.40) | | | | |
| | 4 (0.25) | 22.0 (6.46) | 25.8 (7.57) | 29.2 (8.56) | 1.60 | (4.78) | | | | |
| | 6 (0.38) | 22.7 (6.65) | 26.9 (7.87) | 30.6 (8.97) | 3.29 | (9.83) | | | | |
| 160 (71) | 2 (0.13) | 26.0 (7.62) | 29.8 (8.73) | 33.0 (9.66) | 0.47 | (1.40) | | | | |
| | 4 (0.25) | 28.4 (8.33) | 33.4 (9.78) | 37.8 (11.1) | 1.60 | (4.78) | | | | |
| | 6 (0.38) | 29.3 (8.58) | 34.7 (10.2) | 39.5 (11.6) | 3.29 | (9.83) | | | | |
| Recommended No. of Outlets | | | 12 | | 15 | | 18 | | | |

| V3036 | | | Airflow, SCFM (m³/h) | | | | | | | | Water Pressure Drop | |
|----------------------------|------------------------|-------------|----------------------------------------|-------------|-------------|----------|------------|----------|------------|--|----------------------------|-------|
| Entering Water Temp | Water Flow Rate | | 450 (760) | | 625 (1060) | | 750 (1270) | | 875 (1490) | | | |
| | | | Total Capacity | | | | | | | | ft. w.c. | (kPa) |
| °F (°C) | GPM (L/s) | MBH (kW) | MBH (kW) | MBH (kW) | MBH (kW) | MBH (kW) | MBH (kW) | MBH (kW) | MBH (kW) | | | |
| 100 (38) | 2 (0.13) | 9.80 (2.86) | 11.8 (3.46) | 12.9 (3.77) | 13.9 (3.79) | 0.56 | (1.7) | | | | | |
| | 4 (0.25) | 10.8 (4.07) | 13.6 (3.16) | 15.3 (3.98) | 16.8 (4.45) | 1.90 | (5.7) | | | | | |
| | 6 (0.38) | 11.1 (4.48) | 14.3 (4.92) | 16.2 (3.26) | 17.9 (4.18) | 3.89 | (11.6) | | | | | |
| | 8 (0.50) | 11.3 (4.70) | 14.6 (4.75) | 16.7 (5.26) | 18.6 (3.32) | 6.48 | (19.4) | | | | | |
| 120 (49) | 2 (0.13) | 16.4 (4.80) | 19.9 (5.82) | 21.8 (6.35) | 23.4 (6.39) | 0.56 | (1.7) | | | | | |
| | 4 (0.25) | 18.1 (6.86) | 22.8 (5.29) | 25.7 (6.68) | 28.2 (7.46) | 1.90 | (5.7) | | | | | |
| | 6 (0.38) | 18.6 (7.52) | 23.9 (8.27) | 27.1 (5.46) | 30.1 (6.99) | 3.89 | (11.6) | | | | | |
| | 8 (0.50) | 18.9 (7.88) | 24.4 (7.95) | 27.9 (8.82) | 31.1 (5.54) | 6.48 | (19.4) | | | | | |
| 140 (60) | 2 (0.13) | 23.1 (6.76) | 28.0 (8.21) | 30.8 (8.98) | 33.1 (9.02) | 0.56 | (1.7) | | | | | |
| | 4 (0.25) | 25.4 (9.69) | 32.1 (7.43) | 36.2 (9.40) | 39.8 (10.5) | 1.90 | (5.7) | | | | | |
| | 6 (0.38) | 26.1 (10.6) | 33.5 (11.6) | 38.2 (7.66) | 42.3 (9.83) | 3.89 | (11.6) | | | | | |
| | 8 (0.50) | 26.5 (11.1) | 34.3 (11.2) | 39.2 (12.4) | 43.7 (7.77) | 6.48 | (19.4) | | | | | |
| 160 (71) | 2 (0.13) | 29.8 (8.74) | 36.3 (10.6) | 39.8 (11.6) | 42.8 (11.7) | 0.56 | (1.7) | | | | | |
| | 4 (0.25) | 32.7 (12.6) | 41.4 (9.59) | 46.7 (12.1) | 51.4 (13.6) | 1.90 | (5.7) | | | | | |
| | 6 (0.38) | 33.7 (13.7) | 43.3 (15.1) | 49.2 (9.87) | 54.6 (12.7) | 3.89 | (11.6) | | | | | |
| | 8 (0.50) | 34.2 (14.3) | 44.2 (14.4) | 50.5 (16.0) | 56.3 (10.0) | 6.48 | (19.4) | | | | | |
| Recommended No. of Outlets | | | 14 | | 19 | | 23 | | 27 | | | |

WARNING!
 To prevent injury or damage from high temperatures, do not install floor outlets when operating with discharge temperature above 160°F (71°C).

Caution
 To prevent damage to the EC motor from overheating, do not operate in the shaded region where discharge temperature is more 150 °F (65 °C).

| V3642 | | Airflow, SCFM (m³/h) | | | | | | | | Water Pressure Drop | | | |
|----------------------------|------------------------|----------------------------------------|--------|------|--------|------|--------|------|--------|----------------------------|-------|----------|--------|
| Entering Water Temp | Water Flow Rate | 500 | (850) | 750 | (1270) | 875 | (1490) | 1000 | (1700) | | | | |
| | | Total Capacity | | | | | | | | | | | |
| °F | (°C) | GPM | (L/s) | MBH | (kW) | MBH | (kW) | MBH | (kW) | MBH | (kW) | ft. w.c. | (kPa) |
| 100 | (38) | 2 | (0.13) | 11.1 | 3.26 | 14.0 | 4.10 | 15.1 | 4.42 | 16.0 | 4.68 | 0.72 | (2.2) |
| | | 4 | (0.25) | 12.3 | 3.61 | 16.4 | 4.81 | 18.1 | 5.31 | 19.7 | 5.76 | 2.47 | (7.4) |
| | | 6 | (0.38) | 12.7 | 3.72 | 17.3 | 5.07 | 19.3 | 5.65 | 21.1 | 6.18 | 5.08 | (15.2) |
| | | 8 | (0.50) | 12.9 | 3.78 | 17.7 | 5.20 | 19.9 | 5.82 | 21.8 | 6.40 | 8.45 | (25.3) |
| | | 10 | (0.63) | 13.0 | 3.82 | 18.0 | 5.28 | 20.2 | 5.93 | 22.3 | 6.53 | 12.55 | (37.5) |
| 120 | (49) | 2 | (0.13) | 18.7 | 5.47 | 23.5 | 6.89 | 25.3 | 7.43 | 26.9 | 7.88 | 0.72 | (2.2) |
| | | 4 | (0.25) | 20.6 | 6.04 | 27.5 | 8.06 | 30.4 | 8.91 | 33.0 | 9.66 | 2.47 | (7.4) |
| | | 6 | (0.38) | 21.2 | 6.22 | 28.9 | 8.48 | 32.3 | 9.46 | 35.3 | 10.35 | 5.08 | (15.2) |
| | | 8 | (0.50) | 21.6 | 6.31 | 29.7 | 8.69 | 33.2 | 9.74 | 36.5 | 10.70 | 8.45 | (25.3) |
| | | 10 | (0.63) | 21.7 | 6.37 | 30.1 | 8.82 | 33.8 | 9.91 | 37.3 | 10.92 | 12.55 | (37.5) |
| 140 | (60) | 2 | (0.13) | 26.2 | 7.69 | 33.2 | 9.71 | 35.7 | 10.47 | 37.9 | 11.10 | 0.72 | (2.2) |
| | | 4 | (0.25) | 28.9 | 8.48 | 38.7 | 11.34 | 42.8 | 12.53 | 46.4 | 13.6 | 2.47 | (7.4) |
| | | 6 | (0.38) | 29.8 | 8.73 | 40.7 | 11.91 | 45.4 | 13.29 | 49.6 | 14.55 | 5.08 | (15.2) |
| | | 8 | (0.50) | 30.2 | 8.86 | 41.6 | 12.20 | 46.7 | 13.68 | 51.3 | 15.04 | 8.45 | (25.3) |
| | | 10 | (0.63) | 30.5 | 8.93 | 42.2 | 12.38 | 47.5 | 13.91 | 52.3 | 15.34 | 12.55 | (37.5) |
| 160 | (71) | 2 | (0.13) | 33.9 | 9.93 | 42.8 | 12.55 | 46.2 | 13.53 | 49.0 | 14.36 | 0.72 | (2.2) |
| | | 4 | (0.25) | 37.3 | 10.92 | 49.9 | 14.63 | 55.2 | 16.18 | 59.9 | 17.56 | 2.47 | (7.4) |
| | | 6 | (0.38) | 38.4 | 11.25 | 52.4 | 15.36 | 58.5 | 17.14 | 64.0 | 18.77 | 5.08 | (15.2) |
| | | 8 | (0.50) | 38.9 | 11.40 | 53.7 | 15.72 | 60.2 | 17.63 | 66.2 | 19.39 | 8.45 | (25.3) |
| | | 10 | (0.63) | 39.2 | 11.50 | 54.4 | 15.94 | 61.2 | 17.92 | 67.5 | 19.77 | 12.55 | (37.5) |
| Recommended No. of Outlets | | | | 15 | | 23 | | 27 | | 30 | | | |

Capacities are based on 70°F (21°C) return air temperature (T_{in})
 Conversion Factors: MBH = 1000 Btu/hr, 1 kW = 3413 Btu/hr
 Recommended number of outlets is based on 33 CFM (60 m³/h) per outlet for a quiet system.

WARNING!
 To prevent injury or damage from high temperatures, do not install floor outlets when operating with discharge temperature above 160°F (71°C).

Caution
 To prevent damage to the EC motor from overheating, do not operate in the shaded region where discharge temperature is more 150 °F (65 °C).

Hot Water Coil Air Pressure Drop, in. w.c., (Pa)

| Air Flow Rate | | Hot Water Coil Model | | | | | |
|---------------|---------------------|----------------------|------|----------|------|----------|------|
| CFM | (m ³ /h) | HW-V2430 | | HW-V3036 | | HW-V3642 | |
| 400 | (680) | 0.11 | (26) | 0.08 | (20) | - | - |
| 500 | (850) | 0.16 | (39) | 0.10 | (25) | 0.06 | (15) |
| 625 | (1060) | 0.23 | (58) | 0.15 | (36) | 0.09 | (22) |
| 750 | (1270) | 0.32 | (80) | 0.20 | (50) | 0.12 | (31) |
| 875 | (1490) | - | - | 0.27 | (66) | 0.16 | (40) |
| 1000 | (1700) | - | - | 0.34 | (83) | 0.21 | (51) |
| 1100 | (1870) | - | - | - | - | 0.24 | (60) |
| 1250 | (2120) | - | - | - | - | - | - |

Note: Evaluated at 70°F db (21°C)

CHILLED WATER COIL PERFORMANCE (COOLING MODE)

The performance tables below are based on 80°F db/67°F wb (27°C db/19°C wb) entering air and pure water. See capacity multiplier tables for correction factors for different temperatures and glycol concentrations.

| V2430 | | | | Airflow | | | | | | | | | | | | Water Pressure Drop | |
|-----------------------------------|------|-----------------|------|------------------|-----|------|------------------|-----|------|-----------------|-----|------|------------------|-----|------|---------------------|-------|
| Entering Water Temp | | Water Flow Rate | | 300CFM (142 L/s) | | | 400CFM (189 L/s) | | | 500CFM (236L/s) | | | 625CFM (295 L/s) | | | | |
| | | | | Total Capacity | | SHR | Total Capacity | | SHR | Total Capacity | | SHR | Total Capacity | | SHR | | |
| °F | °C | GPM | L/s | MBH | kW | | MBH | MBH | | kW | MBH | | kW | kW | | MBH | kW |
| 40 | 4.4 | 2 | 0.13 | 16.1 | 4.7 | 0.62 | 18.8 | 5.5 | 0.63 | 20.6 | 6.0 | 0.66 | 22 | 6.6 | 0.70 | 1.19 | 3.56 |
| | | 4 | 0.25 | 18.3 | 5.4 | 0.60 | 22.8 | 6.7 | 0.60 | 26.6 | 7.8 | 0.62 | 30 | 8.9 | 0.63 | 4.06 | 12.14 |
| | | 6 | 0.38 | 18.8 | 5.5 | 0.60 | 24.2 | 7.1 | 0.60 | 28.8 | 8.4 | 0.61 | 34 | 9.8 | 0.62 | 8.34 | 24.93 |
| 46 | 7.7 | 2 | 0.13 | 13.1 | 3.8 | 0.66 | 15.2 | 4.5 | 0.69 | 16.8 | 4.9 | 0.73 | 18 | 5.4 | 0.77 | 1.19 | 3.56 |
| | | 4 | 0.25 | 15.0 | 4.4 | 0.63 | 18.6 | 5.5 | 0.64 | 21.6 | 6.3 | 0.66 | 24 | 7.2 | 0.68 | 4.06 | 12.14 |
| | | 6 | 0.38 | 15.4 | 4.5 | 0.62 | 19.8 | 5.8 | 0.63 | 23.4 | 6.9 | 0.64 | 27 | 8.0 | 0.65 | 8.34 | 24.93 |
| 50 | 10.0 | 2 | 0.13 | 11.0 | 3.2 | 0.70 | 12.9 | 3.8 | 0.74 | 14.3 | 4.2 | 0.78 | 16 | 4.6 | 0.84 | 1.19 | 3.56 |
| | | 4 | 0.25 | 12.6 | 3.7 | 0.66 | 15.7 | 4.6 | 0.68 | 18.1 | 5.3 | 0.70 | 21 | 6.0 | 0.72 | 4.06 | 12.14 |
| | | 6 | 0.38 | 13.0 | 3.8 | 0.65 | 16.6 | 4.9 | 0.66 | 19.6 | 5.7 | 0.68 | 23 | 6.7 | 0.69 | 8.34 | 24.93 |
| 55 | 12.8 | 2 | 0.13 | 8.2 | 2.4 | 0.80 | 9.8 | 2.9 | 0.86 | 11.2 | 3.3 | 0.90 | 12 | 3.6 | 1.00 | 1.19 | 3.56 |
| | | 4 | 0.25 | 9.4 | 2.8 | 0.74 | 11.7 | 3.4 | 0.77 | 13.5 | 4.0 | 0.81 | 16 | 4.5 | 0.84 | 4.06 | 12.14 |
| | | 6 | 0.38 | 9.7 | 2.8 | 0.74 | 12.4 | 3.6 | 0.75 | 14.7 | 4.3 | 0.77 | 17 | 5.0 | 0.80 | 8.34 | 24.93 |
| Recommended No. of Outlets | | | | 12 | | | 15 | | | 18 | | | 21 | | | | |

| V3036 | | | | Airflow | | | | | | | | | | | | Water Pressure Drop | |
|-----------------------------------|------|-----------------|------|------------------|-----|-------|-----------------|------|-------|------------------|------|-------|-----------------|------|-------|---------------------|-------|
| Entering Water Temp | | Water Flow Rate | | 500CFM (236 L/s) | | | 600CFM (283L/s) | | | 700CFM (330 L/s) | | | 800CFM (378L/s) | | | | |
| | | | | Total Capacity | | SHR | Total Capacity | | SHR | Total Capacity | | SHR | Total Capacity | | SHR | | |
| °F | °C | GPM | L/s | MBH | kW | | MBH | kW | | MBH | kW | | MBH | kW | | MBH | kW |
| 40 | 4.4 | 2 | 0.13 | 21.2 | 6.2 | 0.662 | 22.6 | 6.6 | 0.687 | 23.8 | 7.0 | 0.718 | 24.8 | 7.3 | 0.751 | 0.62 | 1.85 |
| | | 4 | 0.25 | 27.2 | 8.0 | 0.614 | 30.4 | 8.9 | 0.623 | 37.0 | 10.8 | 0.640 | 39.5 | 11.6 | 0.639 | 2.11 | 6.31 |
| | | 6 | 0.38 | 29.4 | 8.6 | 0.608 | 33.6 | 9.8 | 0.611 | 42.0 | 12.3 | 0.622 | 45.5 | 13.3 | 0.626 | 4.32 | 12.91 |
| | | 8 | 0.50 | 30.4 | 8.9 | 0.600 | 35.2 | 10.3 | 0.605 | 44.5 | 13.0 | 0.614 | 48.5 | 14.2 | 0.620 | 7.19 | 21.49 |
| 45 | 7.2 | 2 | 0.13 | 17.9 | 5.2 | 0.697 | 19.3 | 5.7 | 0.741 | 23.0 | 6.7 | 0.780 | 24.0 | 7.0 | 0.808 | 0.62 | 1.85 |
| | | 4 | 0.25 | 23.2 | 6.8 | 0.638 | 25.8 | 7.6 | 0.652 | 31.2 | 9.1 | 0.675 | 33.4 | 9.8 | 0.691 | 2.11 | 6.31 |
| | | 6 | 0.38 | 25.0 | 7.3 | 0.625 | 28.4 | 8.3 | 0.633 | 35.2 | 10.3 | 0.645 | 38.5 | 11.3 | 0.657 | 4.32 | 12.91 |
| | | 8 | 0.50 | 25.8 | 7.6 | 0.625 | 29.8 | 8.7 | 0.628 | 37.6 | 11.0 | 0.637 | 41.0 | 12.0 | 0.647 | 7.19 | 21.49 |
| 50 | 10.0 | 2 | 0.13 | 14.7 | 4.3 | 0.771 | 16.0 | 4.7 | 0.810 | 19.1 | 5.6 | 0.853 | 20.0 | 5.9 | 0.903 | 0.62 | 1.85 |
| | | 4 | 0.25 | 18.7 | 5.5 | 0.686 | 20.8 | 6.1 | 0.717 | 25.4 | 7.4 | 0.742 | 27.0 | 7.9 | 0.764 | 2.11 | 6.31 |
| | | 6 | 0.38 | 20.2 | 5.9 | 0.671 | 23.0 | 6.7 | 0.685 | 28.6 | 8.4 | 0.699 | 30.8 | 9.0 | 0.714 | 4.32 | 12.91 |
| | | 8 | 0.50 | 20.8 | 6.1 | 0.665 | 24.0 | 7.0 | 0.668 | 30.2 | 8.9 | 0.683 | 33.2 | 9.7 | 0.695 | 7.19 | 21.49 |
| 55 | 12.8 | 2 | 0.13 | 11.5 | 3.4 | 0.892 | 12.7 | 3.7 | 0.930 | 15.1 | 4.4 | 1.000 | 16.2 | 4.7 | 1.000 | 0.62 | 1.85 |
| | | 4 | 0.25 | 13.9 | 4.1 | 0.796 | 15.6 | 4.6 | 0.828 | 19.2 | 5.6 | 0.861 | 20.8 | 6.1 | 0.885 | 2.11 | 6.31 |
| | | 6 | 0.38 | 15.0 | 4.4 | 0.766 | 17.2 | 5.0 | 0.784 | 21.2 | 6.2 | 0.810 | 23.2 | 6.8 | 0.824 | 4.32 | 12.91 |
| | | 8 | 0.50 | 15.5 | 4.5 | 0.749 | 17.9 | 5.2 | 0.759 | 22.6 | 6.6 | 0.784 | 24.6 | 7.2 | 0.795 | 7.19 | 21.49 |
| Recommended No. of Outlets | | | | 15 | | | 18 | | | 21 | | | 24 | | | | |

| V3642 | | | | Airflow | | | | | | | | | | | | Water Pressure Drop | |
|----------------------------|------|-----------------|------|-----------------|------|-------|-----------------|------|-------|------------------|------|-------|------------------|------|-------|---------------------|-------|
| Entering Water Temp | | Water Flow Rate | | 600CFM (283L/s) | | | 800CFM (378L/s) | | | 1000CFM (472L/s) | | | 1100CFM (519L/s) | | | | |
| | | | | Total Capacity | | SHR | Total Capacity | | SHR | Total Capacity | | SHR | Total Capacity | | SHR | | |
| °F | °C | GPM | L/s | MBH | kW | | MBH | kW | | MBH | kW | | MBH | kW | | ft. w.g. | kPa |
| 40 | 4.4 | 4 | 0.13 | 30.0 | 8.8 | 0.625 | 34.6 | 10.1 | 0.653 | 37.8 | 11.1 | 0.684 | 39.0 | 11.4 | 0.701 | 1.17 | 3.50 |
| | | 6 | 0.25 | 33.4 | 9.8 | 0.611 | 40.0 | 11.7 | 0.626 | 44.5 | 13.0 | 0.644 | 46.5 | 13.6 | 0.655 | 2.39 | 7.14 |
| | | 8 | 0.38 | 35.0 | 10.3 | 0.608 | 43.0 | 12.6 | 0.617 | 49.0 | 14.4 | 0.630 | 51.5 | 15.1 | 0.633 | 3.98 | 11.90 |
| | | 10 | 0.50 | 36.0 | 10.6 | 0.613 | 45.0 | 13.2 | 0.612 | 52.0 | 15.2 | 0.619 | 55.0 | 16.1 | 0.624 | 5.91 | 17.66 |
| 45 | 7.2 | 4 | 0.13 | 25.4 | 7.4 | 0.656 | 29.2 | 8.6 | 0.692 | 32.0 | 9.4 | 0.732 | 33.2 | 9.7 | 0.757 | 1.17 | 3.50 |
| | | 6 | 0.25 | 28.2 | 8.3 | 0.639 | 33.6 | 9.8 | 0.657 | 37.8 | 11.1 | 0.682 | 39.5 | 11.6 | 0.703 | 2.39 | 7.14 |
| | | 8 | 0.38 | 29.8 | 8.7 | 0.624 | 36.2 | 10.6 | 0.644 | 41.5 | 12.2 | 0.660 | 43.5 | 12.7 | 0.675 | 3.98 | 11.90 |
| | | 10 | 0.50 | 30.4 | 8.9 | 0.622 | 37.8 | 11.1 | 0.634 | 43.5 | 12.7 | 0.652 | 46.0 | 13.5 | 0.663 | 5.91 | 17.66 |
| 50 | 10.0 | 4 | 0.13 | 20.6 | 6.0 | 0.714 | 23.8 | 7.0 | 0.763 | 26.4 | 7.7 | 0.816 | 27.4 | 8.0 | 0.838 | 1.17 | 3.50 |
| | | 6 | 0.25 | 22.8 | 6.7 | 0.690 | 27.2 | 8.0 | 0.717 | 30.6 | 9.0 | 0.758 | 32.0 | 9.4 | 0.776 | 2.39 | 7.14 |
| | | 8 | 0.38 | 24.0 | 7.0 | 0.668 | 29.2 | 8.6 | 0.700 | 33.4 | 9.8 | 0.719 | 35.0 | 10.3 | 0.736 | 3.98 | 11.90 |
| | | 10 | 0.50 | 24.8 | 7.3 | 0.664 | 30.6 | 9.0 | 0.686 | 35.2 | 10.3 | 0.708 | 37.2 | 10.9 | 0.717 | 5.91 | 17.66 |
| 55 | 12.8 | 4 | 0.13 | 15.5 | 4.5 | 0.823 | 18.3 | 5.4 | 0.895 | 20.0 | 5.9 | 1.000 | 21.2 | 6.2 | 1.000 | 1.17 | 3.50 |
| | | 6 | 0.25 | 17.0 | 5.0 | 0.790 | 20.4 | 6.0 | 0.832 | 23.2 | 6.8 | 0.874 | 24.6 | 7.2 | 0.900 | 2.39 | 7.14 |
| | | 8 | 0.38 | 17.9 | 5.2 | 0.759 | 21.8 | 6.4 | 0.799 | 25.0 | 7.3 | 0.836 | 26.6 | 7.8 | 0.853 | 3.98 | 11.90 |
| | | 10 | 0.50 | 18.4 | 5.4 | 0.750 | 22.6 | 6.6 | 0.779 | 26.4 | 7.7 | 0.817 | 28.0 | 8.2 | 0.833 | 5.91 | 17.66 |
| Recommended No. of Outlets | | | | 21 | | | 24 | | | 27 | | | 30 | | | | |

CHILLED WATER COIL PERFORMANCE (HEATING MODE)

The performance tables below are based on 70°F db (21°C db) entering air. See capacity multiplier tables for correction factors for different temperatures and glycol concentrations.

| V2430 | | | | Airflow | | | | | | | | Water Pressure Drop | |
|----------------------------|------|-----------------|------|------------------|-----|------------------|------|-----------------|------|------------------|------|---------------------|-------|
| Entering Water Temp | | Water Flow Rate | | 300CFM (142 L/s) | | 400CFM (189 L/s) | | 500CFM (236L/s) | | 625CFM (295 L/s) | | | |
| | | | | Total Capacity | | Total Capacity | | Total Capacity | | Total Capacity | | | |
| °F | °C | GPM | L/s | MBH | kW | MBH | kW | MBH | kW | MBH | kW | ft. w.g. | kPa |
| 95 | 35 | 2 | 0.13 | 7.2 | 2.1 | 9.3 | 2.7 | 11.1 | 3.3 | 12.9 | 3.8 | 1.19 | 3.56 |
| | | 4 | 0.25 | 7.3 | 2.1 | 9.7 | 2.8 | 11.9 | 3.5 | 14.4 | 4.2 | 4.06 | 12.14 |
| | | 6 | 0.38 | 7.4 | 2.2 | 9.7 | 2.8 | 12.1 | 3.5 | 14.8 | 4.3 | 8.34 | 24.93 |
| 110 | 43.3 | 2 | 0.13 | 11.6 | 3.4 | 15.0 | 4.4 | 17.8 | 5.2 | 20.8 | 6.1 | 0.86 | 2.57 |
| | | 4 | 0.25 | 11.7 | 3.4 | 15.5 | 4.5 | 19.1 | 5.6 | 23.2 | 6.8 | 2.95 | 8.82 |
| | | 6 | 0.38 | 11.8 | 3.5 | 15.6 | 4.6 | 19.3 | 5.7 | 23.6 | 6.9 | 6.06 | 18.11 |
| 120 | 48.9 | 2 | 0.13 | 14.5 | 4.2 | 18.7 | 5.5 | 22.4 | 6.6 | 26.0 | 7.6 | 0.86 | 2.57 |
| | | 4 | 0.25 | 14.7 | 4.3 | 19.4 | 5.7 | 23.8 | 7.0 | 29.0 | 8.5 | 2.95 | 8.82 |
| | | 6 | 0.38 | 14.7 | 4.3 | 19.5 | 5.7 | 24.2 | 7.1 | 29.6 | 8.7 | 6.06 | 18.11 |
| 140 | 60.0 | 2 | 0.13 | 20.4 | 6.0 | 26.2 | 7.7 | 31.4 | 9.2 | 36.6 | 10.7 | 0.86 | 2.57 |
| | | 4 | 0.25 | 20.6 | 6.0 | 27.2 | 8.0 | 33.4 | 9.8 | 40.5 | 11.9 | 2.95 | 8.82 |
| | | 6 | 0.38 | 20.6 | 6.0 | 27.4 | 8.0 | 33.8 | 9.9 | 41.5 | 12.2 | 6.06 | 18.11 |
| 160 | 71.1 | 2 | 0.13 | 26.2 | 7.7 | 33.8 | 9.9 | 40.5 | 11.9 | 47.0 | 13.8 | 0.86 | 2.57 |
| | | 4 | 0.25 | 26.4 | 7.7 | 35.0 | 10.3 | 43.0 | 12.6 | 52.5 | 15.4 | 2.95 | 8.82 |
| | | 6 | 0.38 | 26.6 | 7.8 | 35.2 | 10.3 | 43.5 | 12.7 | 53.5 | 15.7 | 6.06 | 18.11 |
| Recommended No. of Outlets | | | | 12 | | 15 | | 18 | | 21 | | | |

WARNING!
To prevent injury or damage from high temperatures, do not install floor outlets when operating with discharge temperature above 160°F (71°C).

Caution
To prevent damage to the EC motor from overheating, do not operate in the shaded region where discharge temperature is more 150 °F (65 °C).

| V3036 | | | | Airflow | | | | | | | | Water Pressure Drop | |
|-----------------------------------|------|-----------------|------|------------------|------|-----------------|------|------------------|------|-----------------|------|---------------------|-------|
| Entering Water Temp | | Water Flow Rate | | 500CFM (236 L/s) | | 600CFM (283L/s) | | 700CFM (330 L/s) | | 800CFM (378L/s) | | | |
| | | | | Total Capacity | | Total Capacity | | Total Capacity | | Total Capacity | | | |
| °F | °C | GPM | L/s | MBH | kW | MBH | kW | MBH | kW | MBH | kW | ft. w.g. | kPa |
| 95 | 35 | 2 | 0.13 | 11.3 | 3.3 | 12.9 | 3.8 | 14.1 | 4.1 | 15.1 | 4.4 | 0.62 | 1.85 |
| | | 4 | 0.25 | 12.0 | 3.5 | 14.2 | 4.2 | 16.1 | 4.7 | 17.9 | 5.2 | 2.11 | 6.31 |
| | | 6 | 0.38 | 12.2 | 3.6 | 14.4 | 4.2 | 16.6 | 4.9 | 18.7 | 5.5 | 4.32 | 12.91 |
| | | 8 | 0.50 | 12.2 | 3.6 | 14.5 | 4.2 | 16.8 | 4.9 | 19.0 | 5.6 | 7.19 | 21.49 |
| 110 | 43.3 | 2 | 0.13 | 18.2 | 5.3 | 20.6 | 6.0 | 22.8 | 6.7 | 24.4 | 7.2 | 0.45 | 1.35 |
| | | 4 | 0.25 | 19.3 | 5.7 | 22.8 | 6.7 | 26.0 | 7.6 | 28.8 | 8.4 | 1.53 | 4.57 |
| | | 6 | 0.38 | 19.5 | 5.7 | 23.2 | 6.8 | 26.6 | 7.8 | 30.0 | 8.8 | 3.14 | 9.39 |
| | | 8 | 0.50 | 19.5 | 5.7 | 23.2 | 6.8 | 26.8 | 7.9 | 30.4 | 8.9 | 5.22 | 15.60 |
| 120 | 48.9 | 2 | 0.13 | 22.8 | 6.7 | 26.0 | 7.6 | 28.6 | 8.4 | 30.6 | 9.0 | 0.45 | 1.35 |
| | | 4 | 0.25 | 24.2 | 7.1 | 28.4 | 8.3 | 32.4 | 9.5 | 36.2 | 10.6 | 1.53 | 4.57 |
| | | 6 | 0.38 | 24.4 | 7.2 | 29.0 | 8.5 | 33.4 | 9.8 | 37.4 | 11.0 | 3.14 | 9.39 |
| | | 8 | 0.50 | 24.4 | 7.2 | 29.0 | 8.5 | 33.6 | 9.8 | 38.0 | 11.1 | 5.22 | 15.60 |
| 140 | 60.0 | 2 | 0.13 | 32.0 | 9.4 | 36.4 | 10.7 | 40.0 | 11.7 | 43.0 | 12.6 | 0.45 | 1.35 |
| | | 4 | 0.25 | 33.8 | 9.9 | 40.0 | 11.7 | 45.5 | 13.3 | 50.5 | 14.8 | 1.53 | 4.57 |
| | | 6 | 0.38 | 34.0 | 10.0 | 40.5 | 11.9 | 46.5 | 13.6 | 52.5 | 15.4 | 3.14 | 9.39 |
| | | 8 | 0.50 | 34.2 | 10.0 | 41.0 | 12.0 | 47.0 | 13.8 | 53.5 | 15.7 | 5.22 | 15.60 |
| 160 | 71.1 | 2 | 0.13 | 41.5 | 12.2 | 47.0 | 13.8 | 52.0 | 15.2 | 55.5 | 16.3 | 0.45 | 1.35 |
| | | 4 | 0.25 | 43.5 | 12.7 | 51.5 | 15.1 | 58.5 | 17.1 | 65.5 | 19.2 | 1.53 | 4.57 |
| | | 6 | 0.38 | 44.0 | 12.9 | 52.0 | 15.2 | 60.0 | 17.6 | 67.5 | 19.8 | 3.14 | 9.39 |
| | | 8 | 0.50 | 44.0 | 12.9 | 52.5 | 15.4 | 60.5 | 17.7 | 68.5 | 20.1 | 5.22 | 15.60 |
| Recommended No. of Outlets | | | | 15 | | 18 | | 21 | | 24 | | | |

WARNING!
 To prevent injury or damage from high temperatures, do not install floor outlets when operating with discharge temperature above 160°F (71°C).

Caution
 To prevent damage to the EC motor from overheating, do not operate in the shaded region where discharge temperature is more 150 °F (65 °C).

| V3642 | | | | Airflow | | | | | | | | Water Pressure Drop | |
|-----------------------------------|------|-----------------|------|-----------------|------|-----------------|------|------------------|------|------------------|------|---------------------|-------|
| Entering Water Temp | | Water Flow Rate | | 600CFM (283L/s) | | 800CFM (378L/s) | | 1000CFM (472L/s) | | 1100CFM (519L/s) | | | |
| | | | | Total Capacity | | Total Capacity | | Total Capacity | | Total Capacity | | | |
| °F | °C | GPM | L/s | MBH | kW | MBH | kW | MBH | kW | MBH | kW | ft. w.g. | kPa |
| 95 | 35 | 4 | 0.13 | 14.1 | 4.1 | 17.9 | 5.2 | 21.0 | 6.2 | 22.2 | 6.5 | 1.17 | 3.50 |
| | | 6 | 0.25 | 14.4 | 4.2 | 18.6 | 5.5 | 22.4 | 6.6 | 24.0 | 7.0 | 2.39 | 7.14 |
| | | 8 | 0.38 | 14.5 | 4.2 | 19.0 | 5.6 | 23.0 | 6.7 | 24.8 | 7.3 | 3.98 | 11.90 |
| | | 10 | 0.50 | 14.6 | 4.3 | 19.1 | 5.6 | 23.4 | 6.9 | 25.2 | 7.4 | 5.91 | 17.66 |
| 110 | 43.3 | 4 | 0.13 | 22.6 | 6.6 | 28.8 | 8.4 | 33.8 | 9.9 | 35.8 | 10.5 | 0.85 | 2.54 |
| | | 6 | 0.25 | 23.2 | 6.8 | 30.0 | 8.8 | 36.0 | 10.6 | 38.5 | 11.3 | 1.74 | 5.20 |
| | | 8 | 0.38 | 23.2 | 6.8 | 30.4 | 8.9 | 36.8 | 10.8 | 40.0 | 11.7 | 2.89 | 8.64 |
| | | 10 | 0.50 | 23.4 | 6.9 | 30.6 | 9.0 | 37.4 | 11.0 | 40.5 | 11.9 | 4.3 | 12.85 |
| 120 | 48.9 | 4 | 0.13 | 28.4 | 8.3 | 36.0 | 10.6 | 42.5 | 12.5 | 45.0 | 13.2 | 0.85 | 2.54 |
| | | 6 | 0.25 | 29.0 | 8.5 | 37.4 | 11.0 | 45.0 | 13.2 | 48.5 | 14.2 | 1.74 | 5.20 |
| | | 8 | 0.38 | 29.2 | 8.6 | 38.0 | 11.1 | 46.0 | 13.5 | 50.0 | 14.7 | 2.89 | 8.64 |
| | | 10 | 0.50 | 29.2 | 8.6 | 38.5 | 11.3 | 47.0 | 13.8 | 51.0 | 14.9 | 4.3 | 12.85 |
| 140 | 60.0 | 4 | 0.13 | 40.0 | 11.7 | 50.5 | 14.8 | 59.5 | 17.4 | 63.5 | 18.6 | 0.85 | 2.54 |
| | | 6 | 0.25 | 40.5 | 11.9 | 52.5 | 15.4 | 63.5 | 18.6 | 68.0 | 19.9 | 1.74 | 5.20 |
| | | 8 | 0.38 | 41.0 | 12.0 | 53.5 | 15.7 | 65.0 | 19.0 | 70.0 | 20.5 | 2.89 | 8.64 |
| | | 10 | 0.50 | 41.0 | 12.0 | 53.5 | 15.7 | 65.5 | 19.2 | 71.0 | 20.8 | 4.3 | 12.85 |
| 160 | 71.1 | 4 | 0.13 | 51.5 | 15.1 | 65.5 | 19.2 | 77.0 | 22.6 | 82.0 | 24.0 | 0.85 | 2.54 |
| | | 6 | 0.25 | 52.0 | 15.2 | 67.5 | 19.8 | 81.5 | 23.9 | 88.0 | 25.8 | 1.74 | 5.20 |
| | | 8 | 0.38 | 52.5 | 15.4 | 68.5 | 20.1 | 83.5 | 24.5 | 90.5 | 26.5 | 2.89 | 8.64 |
| | | 10 | 0.50 | 52.5 | 15.4 | 69.0 | 20.2 | 84.5 | 24.8 | 92.0 | 27.0 | 4.3 | 12.85 |
| Recommended No. of Outlets | | | | 21 | | 24 | | 27 | | 30 | | | |

WARNING!

To prevent injury or damage from high temperatures, do not install floor outlets when operating with discharge temperature above 160°F (71°C).

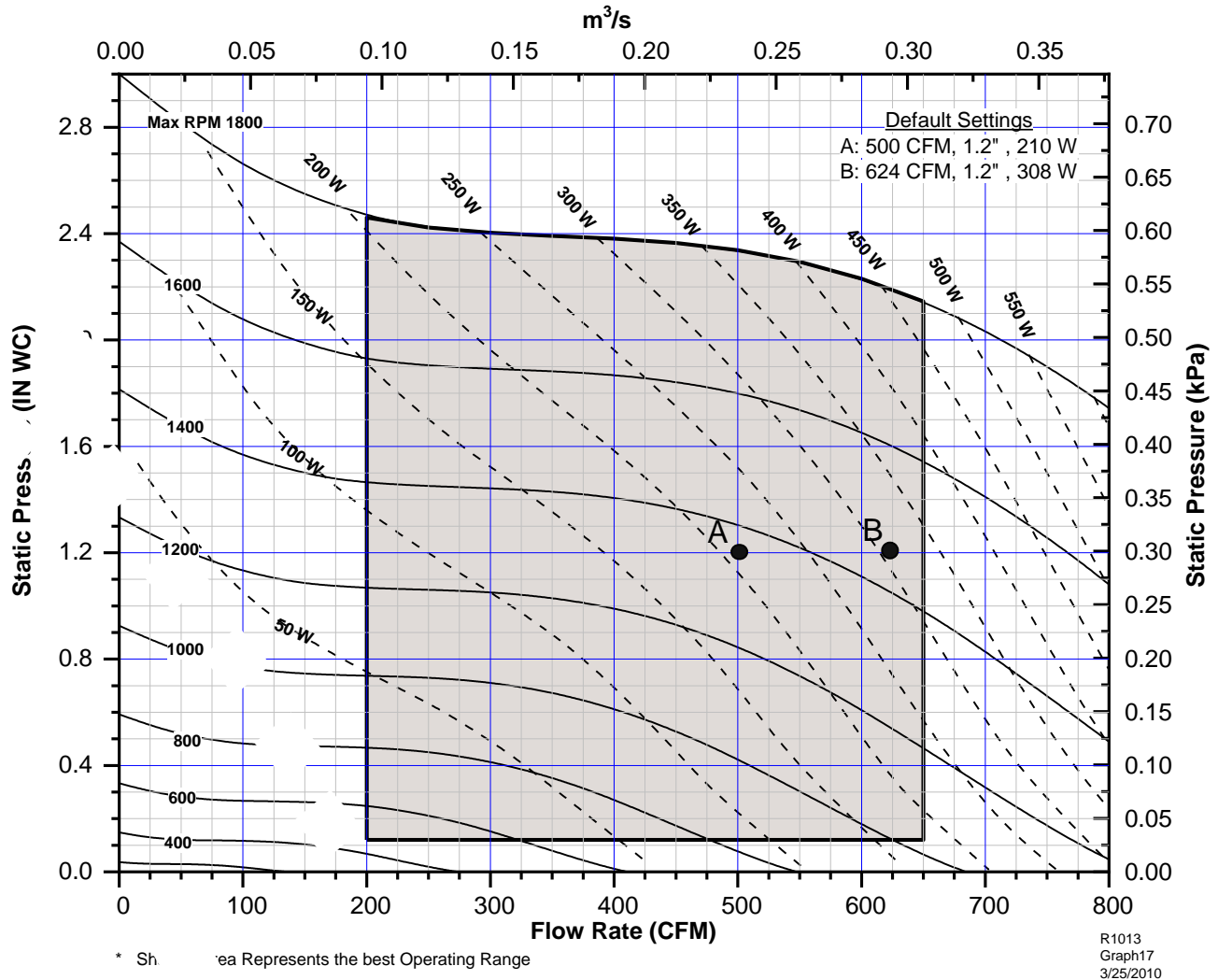
Caution

To prevent damage to the EC motor from overheating, do not operate in the shaded region where discharge temperature is more 150 °F (65 °C).

BLOWER PERFORMANCE

V2430B-1EC2

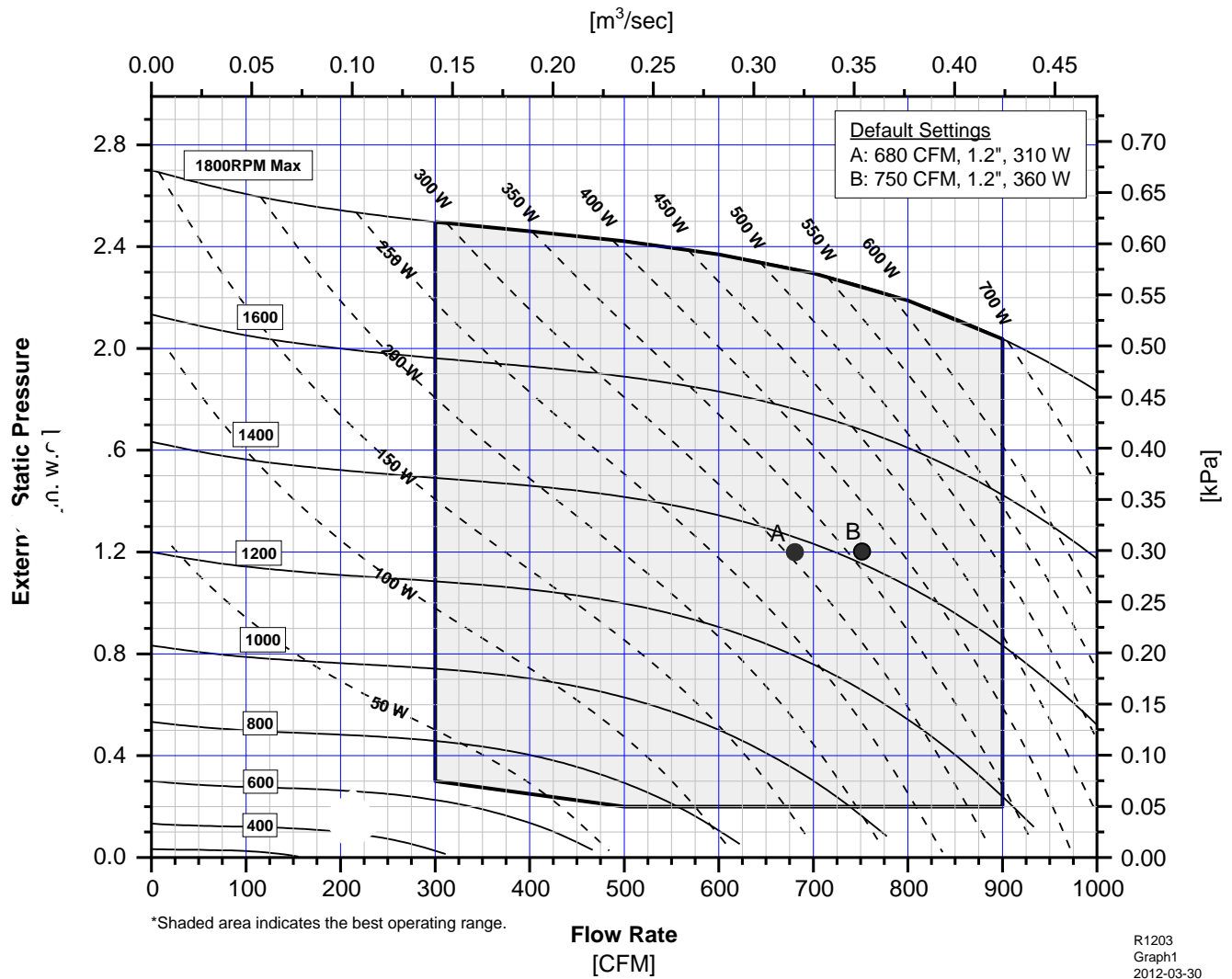
50/60 Hz



| SP, in. wc (Pa) | 0.25 (62) | 0.5 (124) | 0.75 (186) | 1 (248) | 1.2 (298) | 1.5 (373) | 1.75 (435) |
|--------------------------|-----------|-----------|------------|----------|-----------|-----------|------------|
| CFM (m ³ /hr) | RPM W | RPM W | RPM W | RPM W | RPM W | RPM W | RPM W |
| 100 (0.05) | 580 10 | 810 20 | 990 30 | 1140 45 | 1240 55 | 1380 75 | 1480 90 |
| 200 (0.09) | 600 15 | 830 30 | 1010 50 | 1160 70 | 1270 85 | 1420 110 | 1530 130 |
| 300 (0.14) | 680 35 | 860 50 | 1020 75 | 1170 95 | 1280 115 | 1430 150 | 1540 175 |
| 400 (0.19) | 790 60 | 940 85 | 1070 110 | 1200 135 | 1300 160 | 1440 195 | 1550 225 |
| 500 (0.24) | 910 105 | 1040 130 | 1160 160 | 1270 190 | 1360 215 | 1480 255 | 1580 290 |
| 600 (0.28) | 1040 165 | 1150 195 | 1260 230 | 1360 265 | 1430 290 | 1540 335 | 1630 375 |
| 700 (0.33) | 1170 245 | 1280 285 | 1370 325 | 1460 360 | 1530 395 | 1630 440 | 1710 485 |
| 800 (0.38) | 1310 355 | 1400 400 | 1490 445 | 1570 485 | 1640 520 | 1730 575 | 1800 620 |

V3036B-1EC2

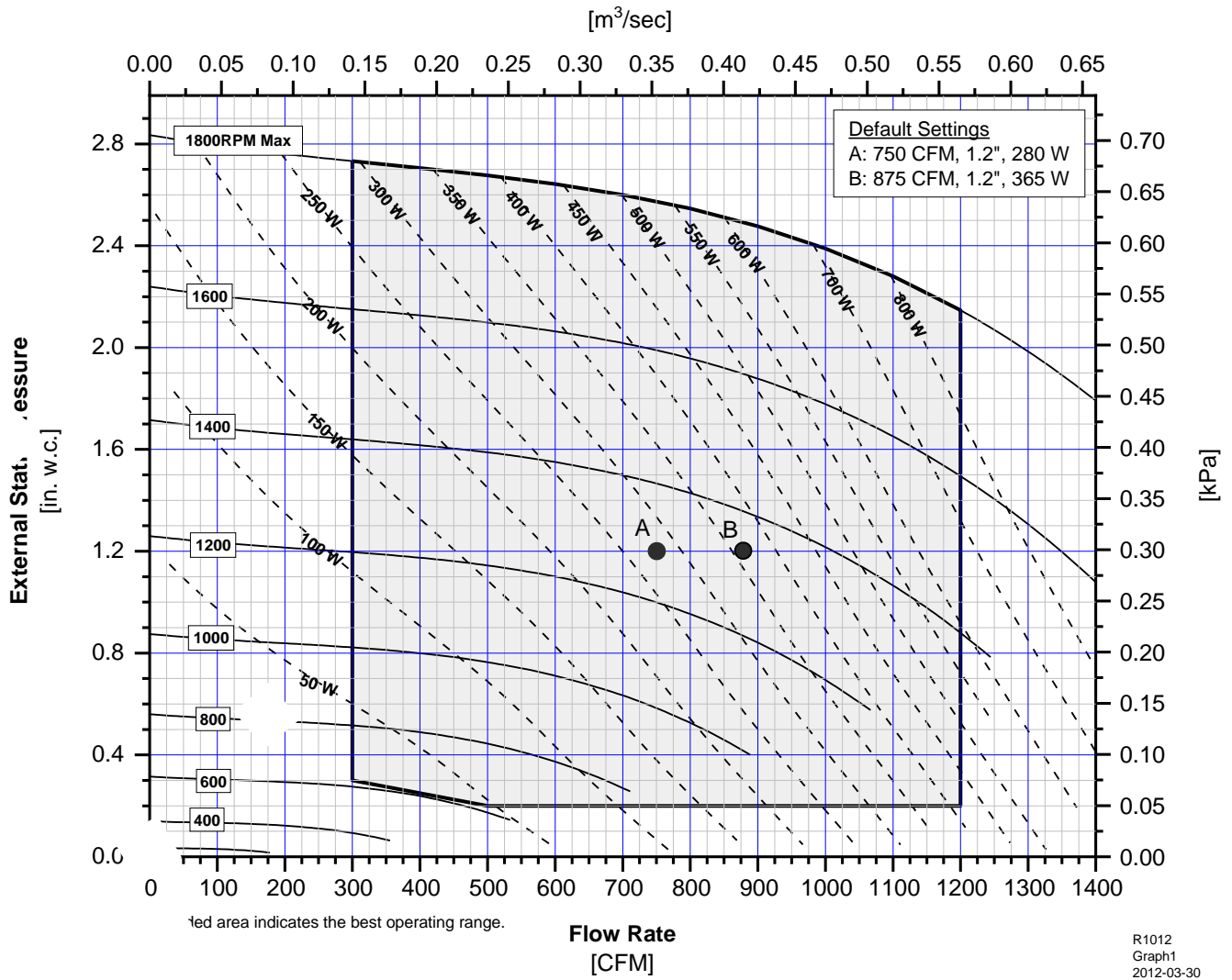
50/60 Hz



| SP, in. wc (Pa) | 0.25 (62) | 0.5 (124) | 0.75 (186) | 1 (248) | 1.2 (298) | 1.5 (373) | 1.75 (435) |
|--------------------------|-----------|-----------|------------|----------|-----------|-----------|------------|
| CFM (m ³ /hr) | RPM W | RPM W | RPM W | RPM W | RPM W | RPM W | RPM W |
| 100 (0.05) | 570 10 | 800 20 | 980 40 | 1120 55 | 1230 70 | 1370 100 | 1480 120 |
| 200 (0.09) | 590 15 | 810 35 | 990 50 | 1140 75 | 1250 90 | 1390 120 | 1500 145 |
| 300 (0.14) | 620 30 | 830 50 | 1010 70 | 1150 95 | 1260 120 | 1400 150 | 1510 180 |
| 400 (0.19) | 690 50 | 870 70 | 1030 100 | 1170 130 | 1280 155 | 1420 190 | 1530 225 |
| 500 (0.24) | 770 80 | 920 105 | 1070 135 | 1200 170 | 1300 200 | 1440 240 | 1540 280 |
| 600 (0.28) | 870 120 | 1000 150 | 1120 185 | 1240 225 | 1340 255 | 1470 305 | 1570 345 |
| 700 (0.33) | 980 180 | 1090 215 | 1200 255 | 1300 295 | 1390 330 | 1510 380 | 1600 430 |
| 800 (0.38) | 1090 255 | 1180 295 | 1280 335 | 1370 380 | 1450 420 | 1560 475 | 1650 525 |
| 900 (0.42) | 1200 355 | 1290 395 | 1370 440 | 1460 490 | 1520 530 | 1630 590 | 1710 645 |
| 1000 (0.47) | 1320 475 | 1390 520 | 1470 570 | 1550 620 | 1610 665 | 1700 730 | 1780 790 |

V3642B-1EC2

50/60 Hz



| SP, in. wc (Pa) | 0.25 (62) | 0.5 (124) | 0.75 (186) | 1 (248) | 1.2 (298) | 1.5 (373) | 1.75 (435) |
|--------------------------|-----------|-----------|------------|----------|-----------|-----------|------------|
| CFM (m ³ /hr) | RPM W | RPM W | RPM W | RPM W | RPM W | RPM W | RPM W |
| 100 (0.05) | 550 10 | 770 20 | 940 35 | 1080 50 | 1180 65 | 1320 90 | 1430 115 |
| 200 (0.09) | 560 15 | 780 30 | 950 45 | 1090 65 | 1190 85 | 1330 110 | 1440 135 |
| 300 (0.14) | 580 25 | 790 40 | 960 65 | 1100 85 | 1200 105 | 1340 135 | 1450 165 |
| 400 (0.19) | 610 35 | 810 60 | 970 85 | 1110 110 | 1210 135 | 1350 170 | 1450 200 |
| 500 (0.24) | 660 55 | 840 80 | 990 110 | 1130 145 | 1230 170 | 1360 210 | 1470 245 |
| 600 (0.28) | 720 75 | 880 110 | 1020 145 | 1150 180 | 1250 210 | 1380 255 | 1480 295 |
| 700 (0.33) | 790 110 | 930 145 | 1060 185 | 1180 230 | 1270 260 | 1400 310 | 1500 355 |
| 800 (0.38) | 860 150 | 990 195 | 1110 235 | 1220 285 | 1310 320 | 1430 375 | 1520 425 |
| 900 (0.42) | 940 200 | 1050 250 | 1160 300 | 1270 350 | 1350 390 | 1460 450 | 1550 505 |
| 1000 (0.47) | 1020 265 | 1120 315 | 1220 370 | 1320 425 | 1390 470 | 1500 540 | 1590 595 |
| 1100 (0.52) | 1100 340 | 1200 400 | 1290 455 | 1380 515 | 1450 565 | 1550 640 | 1630 700 |
| 1200 (0.57) | 1190 435 | 1270 495 | 1360 555 | 1440 620 | 1510 670 | 1600 750 | 1680 820 |
| 1101 (0.52) | 1270 540 | 1350 605 | 1430 670 | 1510 740 | 1570 795 | 1660 880 | 1730 950 |
| 1400 (0.66) | 1360 660 | 1430 730 | 1510 805 | 1580 875 | 1630 935 | 1720 1025 | 1790 1100 |

ACOUSTICAL DATA

Sound is always present and is important to comfort. Understanding how sound is defined is essential to understanding how to design a proper Unico System. Sound is defined as a physical disturbance in pressure that is detectable by the human ear. Sound is usually presented as Sound Pressure Level (SPL) in decibels (dB) but can also be presented as Sound Power Level (SWL). Sound pressure is what you hear so it is the only value that is important to the occupant. However, determining the value is difficult because it is dependent on the surroundings and distance from the sound source. For instance, a carpeted room is much quieter than a room with wood floors.

For the Unico System, it is also important to consider sound transmission losses through ceilings and walls. The blower is never placed in the occupied room, so the sound is always less than the published value. This reduction in sound level depends on the construction of the ceiling or wall. For instance, a ceiling structure made of gypsum board with insulation above it will have a much greater sound transmission loss (TL) than a dropped ceiling without insulation.

The data shown in this catalog was measured in a large room with hard surfaces for the walls and floor. It is considered to be the worst case (i.e. loudest). The sound level in the occupied space will always be considerably less than this, depending on where the unit is located. To determine the actual sound level, subtract the TL for the barrier from the sound data of the unit. The table below shows typical TL values for common construction configurations. Subtract these values from the Unico air handler data.

Transmission Loss for Common Construction, dB

| Construction Type | Frequency, Hz | | | | | | |
|-----------------------------|---------------|-----|-----|----|----|----|-----------|
| | 125 | 250 | 500 | 1k | 2k | 4k | R |
| Sheet Metal, 24 GA | 13 | 17 | 20 | 27 | 34 | 39 | 18 |
| Ceiling Tile, mineral fiber | 13 | 21 | 27 | 31 | 35 | 40 | 20 |
| Gypsum Frame wall | 12 | 23 | 31 | 38 | 42 | 37 | 20 |
| Gypsum Frame wall, insul. | 15 | 30 | 32 | 43 | 46 | 38 | 23 |
| Wood Floor, uninsulated | 22 | 28 | 37 | 43 | 46 | 43 | 25 |
| Wood Floor, insulated | 29 | 40 | 51 | 57 | 60 | 58 | 26 |
| Concrete Block, 190-mm | 38 | 41 | 43 | 50 | 55 | 61 | 26 |
| Concrete, 100-mm (4 in.) | 41 | 41 | 45 | 52 | 56 | 64 | 26 |

Ref: *Handbook of Acoustical Measurements and Noise Control*, 1998

R = Overall Loss for typical Blower Module (based on MB4260H-50HZ)

