Carrier

Product Data

WeatherMaster®
Single Package Heat Pump
Rooftop

15 to 25 Nominal Tons

ecoblue™ technology

Puron ADVANCE™

50GEQ*17, 24, 28

Single-Packaged Heat Pump with Optional Electric Heat and Puron Advance™ Refrigerant (R-454B)

Features/Benefits

Introducing Carrier's WeatherMaster® packaged heat pump rooftop units (RTUs) with Puron Advance™ and EcoBlue™ Fan Technology.

The WeatherMaster line have always stood for cooling solutions that are innovative, high quality, and easy to use. Carrier's new 50GEQ rooftops continue our legacy of progress with Puron Advance™, our low global warming potential refrigerant. With competitive efficiencies, EcoBlue fan technology, locally available stock, and direct fit footprints, new installations and replacements are easier than ever.

New major design features include:

- Puron Advance (R-454B) refrigerant, which delivers a 75% reduction in global warming potential (GWP) compared to the original Puron (R-410A). Puron Advance's GWP of 466 easily exceeds the EPA (Environmental Protection Agency) requirement of <700 GWP.
- A patented, industry-first vane axial indoor fan system with an electronically commutated variable speed motor for simplicity and efficiency. When compared to traditional belt-driven forward curve fans, our reliable system has:
  - 75% fewer moving parts
  - Up to 40% greater efficiency
  - No fan belts, pulleys, shaft, or shaft bearings
  - Better sound and comfort due to slow ramp-up capability
  - Internal protection from phase reversal and phase loss situations
  - High external static capability
  - Slide-out blower assembly design
- Reliable 2 stage cooling with tandem scroll compressors technology, fully active evaporator coil.
- Unit control board (UCB) with intuitive indoor fan adjustment that uses simple dial and switch configuration
- Reliable copper tube/aluminum fin condenser coil with 5/16 in. tubing to help reduce refrigerant charge and weight versus prior designs

WeatherMaster® 50GEQ units 15 to 25 tons are specifically designed for dedicated factory-supplied vertical air flow or horizontal air flow. No special field kits are required. Designed to fit on pre-installed curbs by other manufacturer, these units can also fit on some of Carrier's past installed roof curbs.

Two-speed staged air volume (SAV) Vane Axial indoor fan speed control helps deliver IEERs up to 17.0 and COP up to 3.5.

With "no-strip" screw collars, handled access panels, and more, the unit is easy to install, easy to maintain, and easy to use. Your new 15 to 25 ton Carrier WeatherMaster RTU provides optimum comfort and control from a packaged rooftop.

Value-added features include:

- Puron Advance refrigerant (R-454B)
- SystemVu™ intuitive, intelligent controls option
- Single point electrical connections
- All 15 to 25 ton models use TXV refrigerant metering devices
- Tandem Scroll compressors with internal line-break overload protection
- Units come with an easy access tool-less filter door. Filter track tilts out for filter removal and replacement. All filters are the same size in each unit

Easy to install

Lighter units make for easy replacement and aid in the structural approval process. Units have simple, fast plug-in connections to the standard integrated unit control board (UCB). Clearly labeled connections points to reduce installation time. Also, a large control box provides room to work and room to mount Carrier accessory controls.

Easy to maintain

With the EcoBlue vane axial fan system and direct drive ECM motor, belts and pulleys are a thing of the past. This frees up maintenance, installation and commissioning time. Should an adjustment be necessary, it can easily be made via the UCB in the control box. For regular service activities, our easy-access handles provide a quick solution to all commonly accessed service panels, and our sloped, corrosion-resistant composite drain pan sheds water and will not rust. Service gauge connections are included on compressor suction/discharge lines and before and after the filter drier to monitor system operation during maintenance.

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Features/Benefits (cont)

Easy to use

Carrier's re-designed unit control board puts all connections and troubleshooting points in one convenient place. Most low voltage connections use the same board and are easy to access. Setting up the fan is simple using an intuitive switch and rotary dial arrangement. Our rooftops have high and low pressure switches, a filter drier, and 2 in. filters standard.

Heat pump flexibility

50GEQ models offer onboard electromechanical heating standard. Our robust systems are rigorously tested to ensure reliable reverse cycle heating operation. The result is a clean, environmentally responsible heat source to keep occupants comfortable year-round. All 50GEQ models can be easily controlled with a standard thermostat and remove the need to burn fossil fuels to heat your building. Should you need supplemental heat, we offer a full line of single point powered electric heaters that can easily be installed at site.

Puron Advance™ features

In 2018, Carrier announced Puron Advance (R-454B) as our next generation refrigerant for light commercial rooftops. With a GWP of 466 and similar working pressure and performance to R-410A, Puron Advance easily exceeds the EPA's new, stringent <700 GWP refrigerant requirement while minimizing unit redesign. Like other next generation refrigerants (R-32, etc.), R-454B is classified as an "A2L" refrigerant by ASHRAE®[1] (American Society of Heating, Refrigerating, and Air-Conditioning Engineers). This designation means that R-454B is "mildly flammable" under certain conditions. While this is a change from legacy "A1 — No Flame Propagation" refrigerants like Puron (R-410A), A2Ls are still very low on the flammability scale and quite safe for use. A2L refrigerants are difficult to ignite and have an extremely low flame speed — much less so than natural gas, propane, or even rubbing alcohol. At Carrier, we are committed to safety. As such, all of our Puron Advance rooftop units include a factory installed dissipation control board and leak sensor designed to last the lifetime of the unit. This system is certified to UL 60335-2-40 and designed to work right away, without any field configuration or wiring. In the event of a leak, these systems are designed to automatically identify and resolve the issue by dissipating the refrigerant to minimize risk to equipment, buildings, or occupants.

EcoBlue™ Technology

Our direct drive EcoBlue indoor fan system uses vane axial fan design and electronically commutated motor. The benefit is clear: when compared to legacy belt drive systems, this vane axial design has 75% fewer moving parts, uses up to 40% less energy, and has no belts, blower bearings, or shaft.

Streamlined control and integration

Carrier controllers make connecting WeatherMaster rooftop heat pump units to existing building automation systems easy. The units are compatible with conventional thermostat controls or SystemVu™ controls for greater comfort, diagnostics, and building network integration.

Operating efficiency and flexibility

The 50GEQ packaged rooftops exceed ASHRAE 90.1 and IECC®[1] (International Energy Conservation Code) minimum IEER efficiency requirements.

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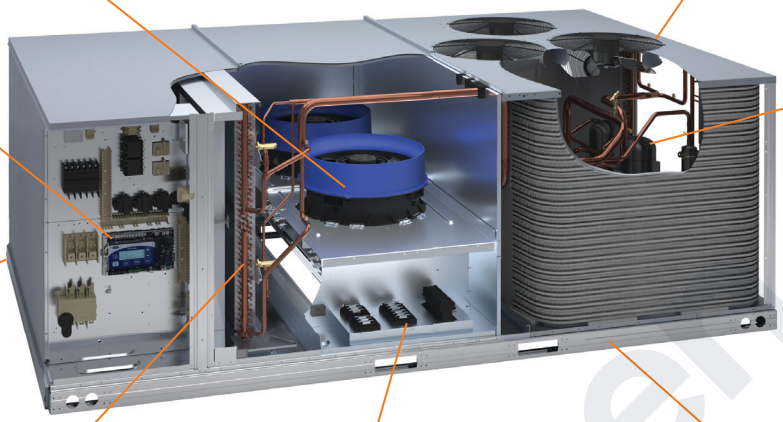
1. Third-party trademarks and logos are the property of their respective owners.

Features/Benefits (cont)

Vane Axial Indoor Fan
– Direct drive ECM
– Slow ramp up
– Phase loss protection
– No belts or pulleys
– Slide out design

WeatherMaster® with ecoblue™ technology

50GEQ 15 – 25 Ton Models shown



High Efficiency Outdoor Fan
– Quite operation
– Balanced blades
– Efficient airflow collar

Unit Controls
– E/M base unit controller
Switch/dial fan setting
Large terminal connections
– SystemVu™ control option

Compression
– Fully hermetic scroll
– Internally protected
– Multi stage design
– Safety switch protected

Air Management
– Factory - Field economizers
– Upgraded MERV-13 filters
– Tool-less Filter Access door

Efficient Coils
– Round tube/plate fin
– Copper/Aluminum
– Special coating available
– New 5/16 in. condenser tube
– TXV metering device

Heating
– Electric Heating
Field installed accessory
Intergal fusing
Multiple kW sizes available
Terminal block connections
Single point power

Cabinet Design
– Heavy gauge base rails
– Large handled access panels
– Embossed strengthened base pan

Model number nomenclature

50GEQ*17-28 Model Number Nomenclature

Position:	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Example:	5	0	G	E	Q	M	2	4	A	2	A	6	-	0	A	0	A	0

Unit Heat Type
50 = Cooling Packaged Rooftop

Model Series - WeatherMaster®
GE = High Efficiency Puron Advance™

Heat Type
Q = Heat Pump
(Field-Installed Electic Heat)

Refrigerant Options
M = Two Stage Cooling/Single Circuit

Cooling Tons
17 = 15.0 tons
24 = 20.0 tons
28 = 25.0 tons

Sensor Options
A = None
B = Return Air Smoke Detector (RA)
C = Supply Air Smoke Detector (SA)
D = RA + SA Smoke Detector
J = Condensate Overflow Switch (COFS)
K = Condensate Overflow Switch + RA Smoke Detector
L = Condensate Overflow Switch + RA and SA Smoke Detectors
M = Condensate Overflow Switch + SA Smoke Detector

Indoor Fan Options - Vane Axial EcoBlue™ Fan System
2 = Standard/Medium Static Motor - Vertical Supply
3 = High Static Motor - Vertical Supply
5 = Standard/Medium Static Motor - Vertical Supply and Filter Status Switch
6 = High Static Motor - Vertical Supply and Filter Status Switch
J = High Static Motor - Horizontal Supply
L = High Static Motor - Horizontal Supply and Filter Status Switch

Coil Options – RTPF (Outdoor – Indoor – Hail Guard)
A = Al/Cu – Al/Cu
B = Precoat Al/Cu – Al/Cu
C = E-coat Al/Cu – Al/Cu
D = E-coat Al/Cu – E-coat Al/Cu
M = Al/Cu – Al/Cu – Louvered Hail Guard
N = Precoat Al/Cu – Al/Cu – Louvered Hail Guard
P = E-coat Al/Cu – Al/Cu – Louvered Hail Guard
Q = E-coat Al/Cu – E-coat Al/Cu – Louvered Hail Guards
R = Cu/Cu – Al/Cu – Louvered Hail Guard
S = Cu/Cu – Cu/Cu – Louvered Hail Guard

Voltage
1 = 575-3-60
5 = 208/230-3-60
6 = 460-3-60

Design Revision
- = Factory Design Revision

NOTE(S):
[a] Not available on the following models/options: 575V, Head Pressure Control, Phase Loss Monitor,Non-Fused Disconnect, HACR Breaker, Powered Convenience Outlet.
[b] FDD (Fault Detection and Diagnostic) capability per California Title 24 section 120.2

Base Unit Controls
0 = Standard Electromechanical Controls (can be used with field installed economizers and dampers)
3 = SystemVu™ Controller
8 = Electromechanical Controls with POL224 EconomizerONE (with FDD[b])

Intake / Exhaust Options
A = None
B = Temperature Economizer with Barometric Relief
F = Enthalpy Economizer with Barometric Relief
L = ULL (Ultra Low Leak) Temperature Economizer with Barometric Relief and CO_2 Sensor
M = ULL Enthalpy Economizer with Barometric Relief and CO_2 Sensor
N = ULL Temperature Economizer with Power Exhaust and CO_2 Sensor, Vertical Only
P = ULL Enthalpy Economizer with Power Exhaust and CO_2 Sensor, Vertical Only
U = ULL Temperature Economizer with Barometric Relief
V = ULL Temperature Economizer with Power Exhaust, Vertical Only
W = ULL Enthalpy Economizer with Barometric Relief
X = ULL Enthalpy Economizer with Power Exhaust, Vertical Only

Service Options
0 = None
1 = Unpowered Convenience Outlet (NPCO)
2 = Powered Convenience Outlet (PCO)
3 = Hinged Panels (HP)
4 = Hinged Panels + NPCO
5 = Hinged Access Panels + PCO
6 = MERV-13 Filters (M13)
7 = NPCO + MERV-13 Filters
8 = PCO + MERV-13 Filters
9 = Hinged Panels + MERV-13 Filters
A = HP + NPCO + MERV-13 Filters
B = HP + PCO + MERV-13 Filters
C = Foil Faced Insulation (FF)
D = FF + NPCO
E = FF + PCO
F = FF + HP
G = FF + HP + NPCO
H = FF + HP + PCO
J = FF + MERV-13 Filters
K = FF + NPCO + MERV-13 Filters
L = FF + PCO + MERV-13 Filters
M = FF + HP + MERV-13 Filters
N = FF + HP + NPCO + MERV-13 Filters
P = FF + HP + PCO + MERV-13 Filters

Electrical Options
A = None
B = HACR Breaker
C = Non-Fused Disconnect (NFDC)
N = Phase Monitor/Protection (PMR)
P = PMR + HACR
Q = PMR + NFDC
1 = HSCCR[a] (High Short Circuit Current Rating) Protection

Packaging Compliance
0 = Standard

Capacity ratings

50GEQ AHRI Ratings, Cooling Mode[a,b,c]

UNIT	COOLING STAGES	NOMINAL CAPACITY (tons)	NET COOLING CAPACITY (Btuh)	TOTAL POWER (kW)	EER	IEER WITH 2-SPEED INDOOR FAN MOTOR	AHRI RATING CFM	AHRI PART LOAD CFM
Vertical Units								
50GEQ*17	2	15	178,000	15.6	11.40	17.3	6,000	3,600
50GEQ*24	2	20	230,000	21.7	10.60	16.4	8,000	4,800
50GEQ*28	2	25	294,000	29.1	10.10	15.5	9,500	6,000
Horizontal Units								
50GEQ*17	2	15	178,000	15.6	11.40	17.3	6,000	3,600
50GEQ*24	2	20	228,000	21.5	10.60	15.9	8,000	4,800
50GEQ*28	2	25	290,000	29.3	9.90	14.9	9,500	6,000

NOTE(S):

a. Rated in accordance with AHRI Standards 340/360.
b. Rating are based on:
Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temperature and 95°F (35°C) db outdoor air temperature.
IEER Standard: A measure that expresses cooling part-load EER efficiency for commercial unitary air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities.
c. All 50GEQ units comply with ASHRAE 90.1-2019 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and DOE-2023 (Department of Energy) Energy Standard for minimum IEER requirements.

LEGEND

AHRI — Air-Conditioning, Heating and Refrigeration Institute
EER — Energy Efficiency Ratio
IEER — Integrated Energy Efficiency Ratio

50GEQ Vertical and Horizontal Units — AHRI Ratings, Heating Mode[a,b,c]

UNIT	HEATING, LOW 17°F (–8°C) AMBIENT		HEATING, HIGH 47°F (8°C) AMBIENT		AHRI RATING CFM
	Net Capacity (Btuh)	COP	Net Capacity (Btuh)	COP	
50GEQ*17	96,000	2.30	166,000	3.50	6,000
50GEQ*24	134,000	2.25	232,000	3.40	8,000
50GEQ*28	172,000	2.20	300,000	3.40	9,500

NOTE(S):

a. Rated in accordance with AHRI Standards 340/360.
b. Rating are based on:
Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temperature and 95°F (35°C) db outdoor air temperature.
IEER Standard: A measure that expresses cooling part-load EER efficiency for commercial unitary air-conditioning and heat pump equipment on the basis of weighted operation at various load capacities.
c. All 50GEQ units comply with ASHRAE 90.1-2019 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and DOE-2023 (Department of Energy) Energy Standard for minimum IEER requirements.

LEGEND

AHRI — Air-Conditioning, Heating and Refrigeration Institute
COP — Coefficient of Performance

Capacity ratings (cont)

Sound Rating Table[a]

UNIT	COOLING STAGES	OUTDOOR SOUND (dB) AT 60 Hz[b]								
		A-WEIGHTED[c]	63	125	250	500	1000	2000	4000	8000
50GEQ17	2	84.1	96.2	84	92.6	92.2	83.9	80.4	81.8	78.7
50GEQ17	2	85.9	103	86	101.3	97.1	88.3	84.4	83.3	80.7
50GEQ28	2	85.9	103.0	86	101.3	97.1	88.3	84.4	83.3	80.7

NOTE(S):

a. Outdoor sound data is measured in accordance with AHRI.
b. Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure depends on specific environmental factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.
c. A-weighted sound ratings filter out very high and very low frequencies, to better approximate the response of “average” human ear. A-weighted measurements for Carrier units are taken in accordance with AHRI.

LEGEND

dB — Decibel

Minimum - Maximum Airflow Ratings (cfm) — Cooling Units and Accessory Electric Heat

UNIT	COOLING			ELECTRIC HEAT[a]	
	MINIMUM 2-SPEED AIRFLOW (LOW SPEED)	MINIMUM 2-SPEED AIRFLOW (HIGH SPEED)	MAXIMUM AIRFLOW CFM	MINIMUM AIRFLOW CFM	MAXIMUM AIRFLOW CFM
50GEQM17	2,700	4,500	7,500	4,500	7,500
50GEQM24	3,000	6,000	10,000	6,000	10,000
50GEQM28	3,750	7,500	12,500	7,500	12,500

NOTE(S):

a. Electric heat modules and single point kits are available as field-installed accessories for 50GEQ units.

Physical data

50GEQ 17 to 28 Physical Data

50GEQ UNIT	50GEQ*17	50GEQ*24	50GEQ*28
NOMINAL TONS	15	20	25
BASE UNIT OPERATING WT (lb)[a]	1627	2057	2125
REFRIGERATION SYSTEM			
No. Circuits/No. Compressors/Type	1/2/Scroll	1/2/Scroll	1/2/Scroll
Puron Advance™ (R-454B) Charge (lb-oz)	31-0	45-0	47-0
Cooling Metering Device	TXV	TXV	TXV
Heating Metering Device	TXV	TXV	TXV
High-Pressure Trip/Reset (psig)	630/505	630/505	630/505
Loss of Charge Trip/Reset	27/44	27/44	27/44
EVAPORATOR COIL			
Material (Tube/Fin)	Cu/Al	Cu/Al	Cu/Al
Coil Type	3/8 in. RTPF	3/8 in. RTPF	3/8 in. RTPF
Rows/FPI	3/17	4/17	4/17
Total Face Area (ft^2)	22	26	26
Condensate Drain Connection Size	3/4 in.	3/4 in.	3/4 in.
CONDENSER COIL			
Material (Tube/Fin)	Cu/Al	Cu/Al	Cu/Al
Coil Type	5/16 in. RTPF	5/16 in. RTPF	5/16 in. RTPF
Rows/FPI	2/18	2/18	2/18
Total Face Area (ft^2)	50.1	70.8	70.8
EVAPORATOR FAN AND MOTOR			
Standard/Medium Static 3 Phase			
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct
Max Cont bhp	2.4	2.4	3.0
Range (rpm)	250-2000	250-2000	250-2200
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22
Vertical High Static 3 Phase			
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct
Max Cont bhp	3	5	5
Range (rpm)	250-2200	250-2200	250-2200
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22
Horizontal High Static 3 Phase			
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct
Max Cont bhp	5	5	5
Range (rpm)	250-2200	250-2200	250-2200
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22
CONDENSER FAN AND MOTOR			
Qty / Motor Drive Type	4 / Direct	6 / Direct	6 / Direct
Motor hp / rpm	1/4 / 1100	1/4 /1100	1/4 /1100
Fan Diameter (in.)	22	22	22
FILTERS			
RA Filter Qty / Size (in.)	6 / 25x25x2	9 / 16x25x2	9 / 16x25x2
OA Inlet Screen Qty / Size (in.)	4 / 16x25x1	4 / 16x25x1	4 / 16x25x1

NOTE(S):

a. Base unit operating weight does not include weight of options.

LEGEND

bhp — Brake Horsepower
FPI — Fins Per Inch
OA — Outdoor Air
RA — Return Air

Options and accessories

ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
ELECTRIC HEAT		
Electric Resistance Heaters		X
Single Point Kits		X
CABINET		
Hinged Access Panels	X	
MERV-13, 4 in. Filters	X	
MERV-13, 2 in. Filters		X
MERV-8, 2 in. Filters		X
4 in. Filter Rack (filters not included)		X
Condenser Coil Hail Guard	X	X
COIL OPTIONS		
Cu/Cu Indoor and/or Outdoor Coils[a]	X	
Pre-Coated Outdoor Coils	X	
Premium, E-Coated Indoor and/or Outdoor Coils	X	
CONTROLS		
Thermostats, Temperature Sensors, and Subbases		X
SystemVu™ DDC Communicating Controller	X	
Smoke Detector (supply and/or return air)	X	X
Horn Strobe Annunciator[b]		X
Time Guard II Compressor Delay Control Circuit		X
Phase Monitor	X	X
Condensate Overflow Switch	X	X
ECONOMIZERS AND OUTDOOR AIR DAMPERS		
EconomizerONE for Electromechanical Controls, complies with FDD (standard and ultra low leak damper models)[c]	X	X
Wi-Fi Stick for EconomizerONE (optional)		X
EconoMi$er® 2 for DDC Controls (standard and ultra low leak damper models)[d]	X	X
Motorized Two-Position Outdoor-Air Damper		X
Manual Outdoor-Air Damper (25% and 50%)		X
Barometric Relief[e]	X	X
Power Exhaust — Centrifugal Design	X	X

ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
ECONOMIZER SENSORS AND IAQ DEVICES		
Single Dry Bulb Temperature Sensors[f]	X	X
Differential Dry Bulb Temperature Sensors[f]		X
Single Enthalpy Sensors[f]	X	X
Differential Enthalpy Sensors[f]		X
CO_2 Sensor (wall, duct, or unit mounted)[f]	X	X
INDOOR FAN MOTOR		
Optional Indoor Fan Motors	X	
LOW AMBIENT CONTROLS		
Winter Start Kit[g]		X
Low Ambient Controller to –20°F (–28°C)[g]		X
POWER OPTIONS		
Convenience Outlet (powered)	X	
Convenience Outlet (unpowered)	X	
Convenience Outlet, 20 amp (unpowered)		X
Non-Fused Disconnect[h]	X	
HACR Circuit Breaker[i]	X	
High SCCR Protection[j]	X	
ROOF CURBS		
Roof Curb 14 in. (356 mm)		X
Roof Curb 24 in. (610 mm)		X

NOTE(S):

a. Cu/Cu coils are only available with louvered hail guards.
b. Requires a field-supplied 24V transformer for each application. See price pages for details.
c. FDD (Fault Detection and Diagnostic) capability per California Title 24 section 120.2.
d. Models with SystemVu controls comply with California Title 24 Fault Detection and Diagnostic (FDD).
e. Included with economizer.
f. Sensors used to optimize economizer performance.
g. See application data for assistance.
h. Non-fused disconnect switch cannot be used when unit FLA electrical rating exceeds:
   208//230V-3-60 = 200 amps
   460/575V-3-60 = 100 amps
i. HACR circuit breaker cannot be used when unit MOCP electrical rating exceeds:
   17 sizes -
   208V/230V = 125 amps
   460V = 60 amps
   575V = 50 amps
   24 sizes -
   208V/230V = 175 amps
   460V = 80 amps
   575V = 60 amps
   28 size -
   208V/230V = 200 amps
   460V = 90 amps
   575V = 70 amps
   On 575V applications, HACR breaker can only be used with WYE power distribution systems. Use on Delta power distribution systems is prohibited.
   Carrier RTUBuilder automatically selects the amps limitations.
j. High SCCR (Short Circuit Current Rating) is not available on the following: units with Low Ambient controls, Phase loss monitor, Non-fused disconnect, Powered convenience outlet, and 575-v models.

Options and accessories (cont)

Factory-installed options

Economizer (dry-bulb or enthalpy)

Economizers save money. They bring in fresh, outside air for ventilation and provide outside air to cool your building. This is the preferred method of low-ambient cooling. When used with CO_2 sensors, economizers can provide even more savings by adjusting the ventilation air intake to just the correct amount.

Economizers are available, installed and tested by the factory, with either enthalpy or dry-bulb temperature inputs. Additional sensors are available as accessories to optimize the economizers.

Economizers include a gravity-controlled barometric relief system to help equalize building pressures. This can be a cost effective solution to prevent building pressurization. Economizers are available in ultra low leak and standard low leak versions. They can be factory-installed or easily field-installed.

Unit mounted CO_2 sensor

The CO_2 sensor works with the economizer to intake only the correct amount of outside air for ventilation. As occupants fill your building, the CO_2 sensor detects their presence through increasing CO_2 levels, and opens the economizer appropriately. When the occupants leave, the CO_2 levels decrease, and the sensor appropriately closes the economizer. This intelligent control of the ventilation air, called demand controlled ventilation (DCV), reduces the overall load on the rooftop, saving money. It is also available as a field-installed accessory.

Phase monitor protection

The Phase Monitor Control will monitor the sequence of 3-phase electrical system to provide a phase reversal protection; and monitor the 3-phase voltage inputs to provide a phase loss protection for the 3-phase device. It will work on either a Delta or Wye power connection.

Smoke detector (supply and/or return air)

Trust the experts. Smoke detectors make your application safer and your job easier. Carrier smoke detectors immediately shut down the rooftop unit when smoke is detected. They are available, installed by the factory, for supply air, return air, or both.

Thru-the-base connections

Thru-the-base connections, included as standard, are necessary to ensure proper connection and seal when routing wire and piping through the rooftop's basepan and curb. These couplings eliminate roof penetration and should be considered for gas lines, main power lines, as well as control power.

Hinged access panels

Allows access to unit's major components with specifically designed hinged access panels. Panels are filter, control box access, and indoor fan motor access.

Cu/Cu (indoor and outdoor) coils

Copper fins and copper tubes are mechanically bonded to copper tubes and copper tube sheets. A polymer strip prevents coil assembly from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan. Only available with louvered hail guards.

E-coated (outdoor and indoor) coils

A flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins. Coating process shall ensure complete coil encapsulation of tubes, fins and headers.

Pre-coated outdoor coils

A durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments. The coating minimizes galvanic action between dissimilar metals. Coating is applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.

Condenser coil hail guard

Sleek, louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact.

Convenience outlet (powered or un-powered)

Reduce service and/or installation costs by including a convenience outlet in your specification. Carrier will install this service feature at our factory. Provides a convenient, 15 amp, 115-v GFCI receptacle with "Wet in Use" cover. The "powered" option allows the installer to power the outlet from the line side of the disconnect or load side as required by code. The "unpowered" option is to be powered from a separate 115/120-v power source.

The unpowered convenience outlet is available as a 15 amp factory-installed option or a 20 amp field-installed accessory.

Non-fused disconnect

This OSHA-compliant, factory-installed, safety switch allows a service technician to locally secure power to the rooftop. When selecting a factory-installed non-fused disconnect, note they are sized for the unit as ordered from the factory. The sizing of these do not accommodate field-installed items such as power exhaust devices, etc. If field installing electric heat with factory-installed non-fused disconnect switch, a single point kit may or may not be required.

HACR Breaker

These manual reset devices provide overload and short circuit protection for the unit. Breakers are factory wired and mounted on the units, with an access cover to provide protection from the environment.

SystemVu™ controller

Carrier's SystemVu controller is an optional factory-installed and tested controller.

This controller takes on a whole new approach to provide an intuitive, intelligent controller that not only monitors and controls the unit, but also provides linkage to multiple building automation systems.

Each SystemVu controller makes it easy to set up, service, troubleshoot, gain historical data, generate reports and provide comfort only Carrier is noted for.

Key features include:

- Easy to read back lit 4 line text screen for superior visibility.
- Quick operational condition LEDs of: Run, Alert, and Fault.
- Simple navigation with large keypad buttons of: Navigation arrows, Test, Back, Enter and Menu.

Options and accessories (cont)

- Capable of being controlled with a conventional thermostat, space sensor or build automation system.
- Service capabilities include:
  - Auto run test
  - Manual run test
  - Component run hours and starts
  - Commissioning reports
  - Data logging
- Full range of diagnosis:
  - Read refrigerant pressures without the need of gauges
  - Sensor faults
  - Compressor reverse rotation
  - Economizer diagnostics that meet California Title 24 requirements
- Quick data transfer via USB port:
  - Unit configuration uploading/downloading
  - Data logging
  - Software upgrades
- Built in capacity for:
  - i-Vu® open systems
  - BACnet®[1] systems
  - CCN systems
- Configuration and alarm point capability:
  - Contain over 100 alarm codes
  - Contain over 260 status, troubleshooting, diagnostic and maintenance points
  - Contain over 270 control configuration setpoints

1. Third-party trademarks and logos are the property of their respective owners.

Condensate overflow switch

This sensor and related controller monitors the condensate level in the drain pan and shuts down compression operation when overflow conditions occur. It includes:

- Indicator light — solid red (more than 10 seconds on water contact — compressors disabled), blinking red (sensor disconnected)
- 10-second delay to break — eliminates nuisance trips from splashing or waves in pan (sensor needs 10 seconds of constant water contact before tripping)
- Disables the compressors operation when condensate plug is detected, but still allows fans to run for economizer.

MERV-13 4 in. return air filters

This factory option upgrades the return air filters from standard unit filters to high efficiency 4 in. MERV-13 filters. Uses non-woven MERV-13 filter media with a high strength, moisture-resistant frame. Filter media is securely fastened inside the filter frame on all 4 sides.

High Short Circuit Current Rating (SCCR) protection

This factory-installed option provides high short circuit current protection to each compressor, plus all indoor and outdoor fan motors of 60 kA (for 208/230-3-60 units) and 65 kA (for 460-3-60 units) against high potential fault current situations.

Standard unit comes with 5 kA rating.

This option is not available with factory installed non-fused disconnect, low ambient controls, powered convenience outlet, phase loss monitor/protection, HACR breaker, and 575 Volt models.

Filter maintenance indicator

When the optional factory-installed filter maintenance indicator is used, a factory-installed differential pressure switch measures pressure drop across the outside air filter and activates a field-supplied dry contact indicator when the pressure differential exceeds the adjustable switch setpoint.

Options and accessories (cont)

Field-installed accessories

Condenser coil hail guard

Sleek, louvered panels protect the condenser coil from hail damage, foreign objects, and incidental contact. This can be purchased as a factory-installed option or as a field-installed accessory.

Differential enthalpy sensor

The differential enthalpy sensor is comprised of an outdoor and return air enthalpy sensors to provide differential enthalpy control. The sensor allows the unit to determine if outside air is suitable for free cooling.

Wall or duct mounted CO_2 sensor

The IAQ sensor shall be available in duct or wall mount. The sensor provides demand ventilation indoor air quality (IAQ) control.

4 in. filter rack kit

The 4 in. filter rack accessory kit is designed to hold 4 in. MERV-8 or MERV-13 filters. Filters not included in kit.

MERV-8 and MERV-13 return air filters

These field-installed accessories provide a return air filter upgrade from standard unit filters to high efficiency 2 in. MERV-8 or 2 in. MERV-13 filters. Uses non-woven filter media with high strength, moisture-resistant frame. Filter media is securely fastened inside the filter frame on all 4 sides.

Phase monitor protection

The Phase Monitor Control will monitor the sequence of 3-phase electrical system to provide a phase reversal protection; and monitor the 3-phase voltage inputs to provide a phase loss protection for the 3-phase device. It will work on either a Delta or Wye power connection.

Winter start kit

The winter start kit by Carrier extends the low ambient limit of your rooftop to 25°F (–4°C). The kit bypasses the low pressure switch, preventing nuisance tripping of the low pressure switch. Other low ambient precautions may still be prudent.

Low ambient controller

The low ambient controller is a head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling when economizer usage is either not appropriate or desired. The low ambient controller will either cycle the outdoor fan motors or operate them at reduced speed to maintain the unit operation, depending on the model. This controller allows cooling operation down to –20°F (–28°C) ambient conditions.

Roof curb (14 in./356 mm or 24 in./610 mm)

Full perimeter roof curb with exhaust capability provides separate air streams for energy recovery from the exhaust air without supply air contamination.

Filter status indicator accessory

Monitors static pressure across supply and exhaust filters and provides indication when filters become clogged.

Power exhaust

Superior internal building pressure control. This field-installed accessory may eliminate the need for costly, external pressure control fans.

Manual OA damper

Manual outdoor air dampers are an economical way to bring in ventilation air. The dampers are available in 25% and 50% versions.

Motorized two-position damper

The Carrier two-position, motorized outdoor air damper admits up to 100% outside air. Using reliable, gear-driven technology, the two-position damper opens to allow ventilation air and closes when the rooftop stops, stopping unwanted infiltration.

Electric heaters

Carrier offers a full-line of field-installed accessory heaters. The heaters are very easy to use, install and are all pre-engineered and certified.

Time Guard II control circuit

This accessory protects your compressor by preventing short-cycling in the event of some other failure, prevents the compressor from restarting for 30 seconds after stopping. Not required with SystemVu™ controller or authorized commercial thermostats.

Wi-Fi stick for EconomizerONE (optional)

The accessory Wi-Fi/WLAN stick can be connected to the EconomizerONE POL224 economizer controller via the USB host interface. The Wi-Fi stick enables a wireless connection to be made between a smartphone and the economizer controller via the Climatix™[1] mobile application for commissioning, troubleshooting, and maintenance operations. The Wi-Fi stick is required to utilize the mobile application but is not needed to configure the controller should a user prefer to use the controller's onboard keypad.

Climatix™ mobile application

The Climatix mobile application offers a best-in-class user interface and a simple step-by-step commissioning workflow using a mobile device. The user interface walks users through the setup of the controller and allows users to view the operating mode and parameters. Users can adjust setpoints, initiate damper tests, and save the final configuration as a favorite to expedite setup in the future.

The application is available on Android™[1] and Apple iOS®[1] platforms. The Wi-Fi stick for the EconomizerONE is required to join the Siemens-WiFi-Stick network and setup the controller on a smartphone.

NOTE: The Climatix app is not required to commission the EconomizerONE controller. The unit can be set up using the controller's on board button system.

1. Third-party trademarks and logos are the property of their respective owners.

Options and accessories (cont)

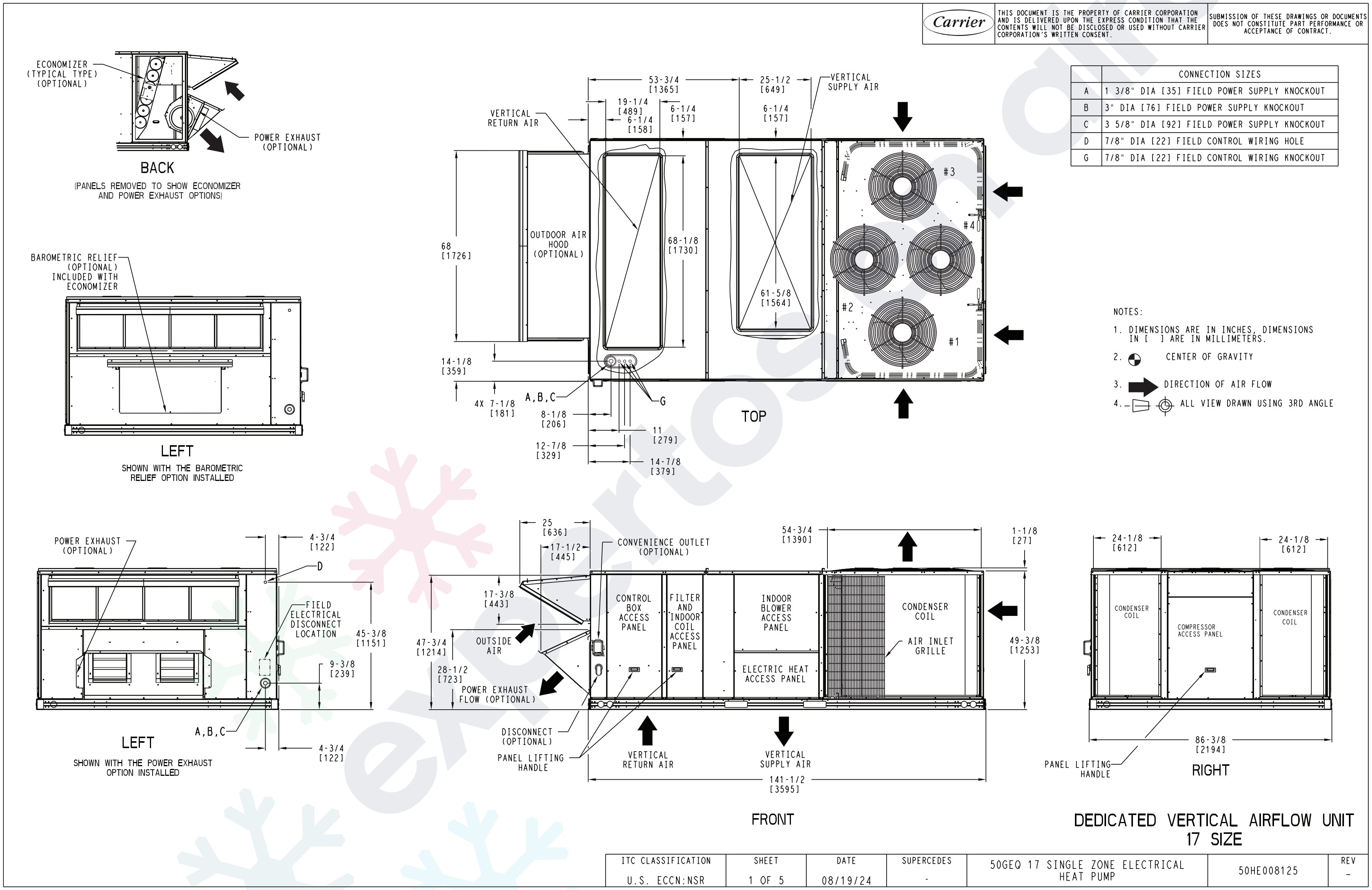
Option and Accessory Weights[a]

OPTION / ACCESSORY NAME	50GEQ UNIT WEIGHT					
	17		24		28	
	lb	kg	lb	kg	lb	kg
Power Exhaust	198	90	198	90	198	90
EconomizerONE and EconoMi$er® 2	293	133	304	138	304	138
Two-Position Damper	50	23	50	23	50	23
Manual Damper	35	16	35	16	35	16
Electric Heater	85	39	85	39	85	39
Hail Guard (louvered)	90	41	90	41	100	46
Cu/Cu Condenser and Evaporator Coils	305	139	448	204	448	204
Roof Curb (14 in. curb)	240	109	255	116	255	116
Roof Curb (24 in. curb)	340	154	355	161	355	161
CO_2 Sensor	5	3	5	3	5	3
Optional Indoor Motor[b]	30	14	30	14	0	0
Low Ambient Controller	9	4	9	4	9	4
Winter Start Kit	5	2	5	2	5	2
Return Air Smoke Detector	7	3	7	3	7	3
Supply Air Smoke Detector	7	3	7	3	7	3
Fan Filter Switch	2	1	2	1	2	1
Non-Fused Disconnect	15	7	15	7	15	7
Powered Convenience Outlet	36	16	36	16	36	16
Unpowered Convenience Outlet	4	2	4	2	4	2
Enthalpy Sensor	2	1	2	1	2	1
Differential Enthalpy Sensor	3	2	3	2	3	2

NOTE(S):

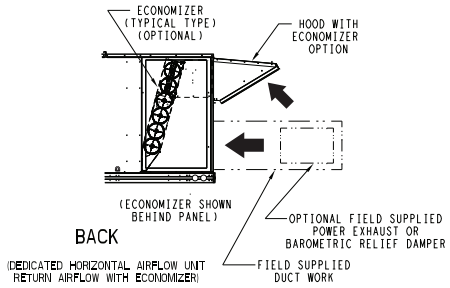
a. Where multiple variations are available, the heaviest combination is listed.
b. Add the Optional Indoor Motor weight to the weight of the base unit.

50GEQ*17 Base Unit Dimensions



	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

50GEQ*17 Base Unit Dimensions (cont)



	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
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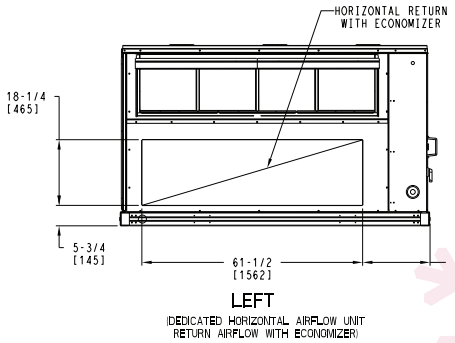
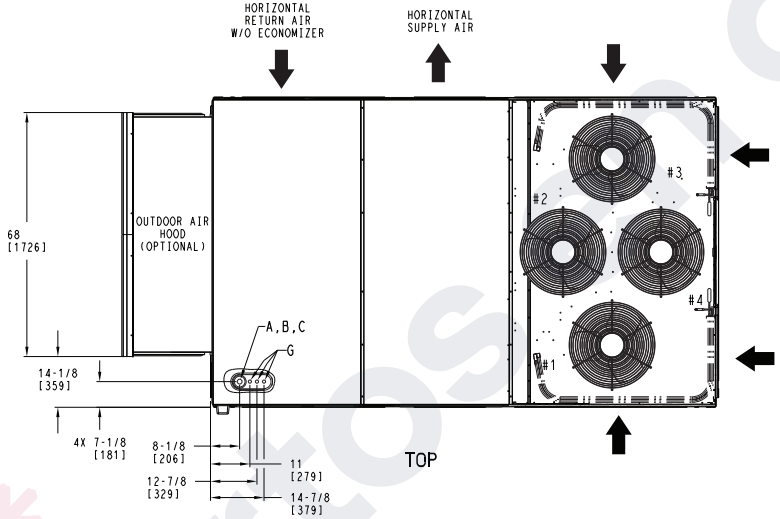
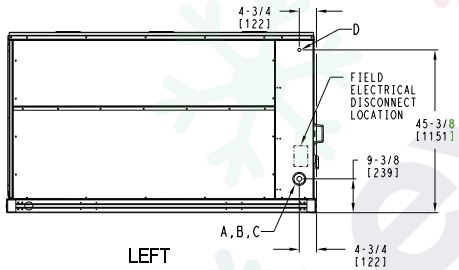
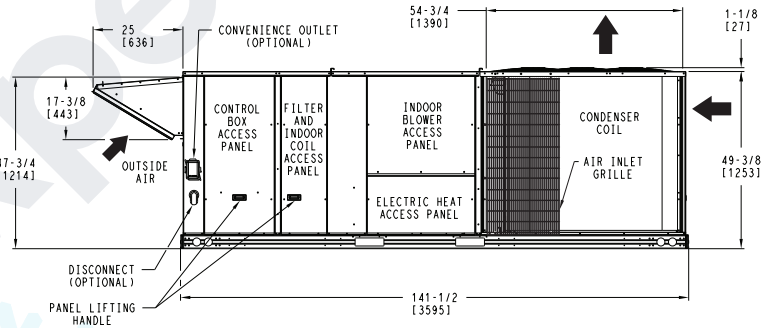
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

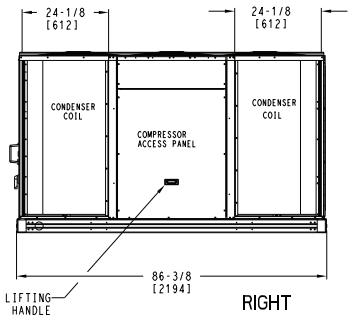




NOTES:
1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW
4. ALL VIEW DRAWN USING 3RD ANGLE





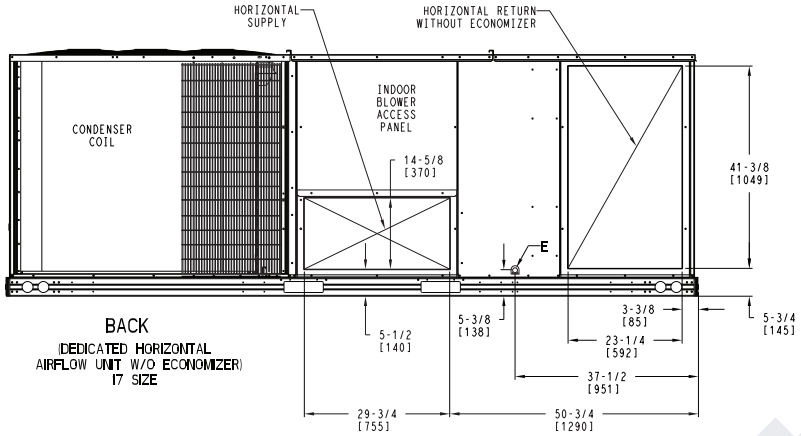


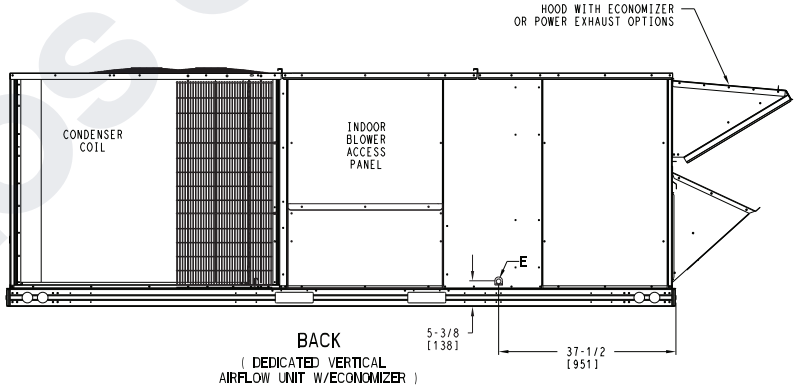
DEDICATED HORIZONTAL AIRFLOW UNIT
17 SIZE

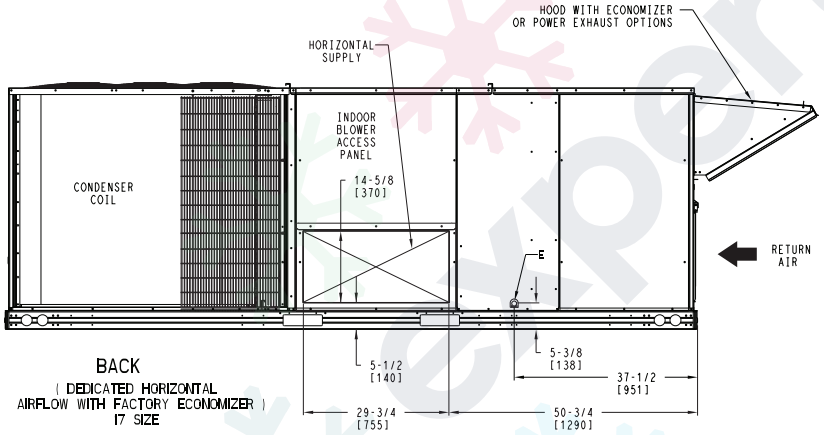
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES		REV
U.S. ECCN:NSR	2 OF 5	08/19/24	-	50GEQ 17 SINGLE ZONE ELECTRICAL HEAT PUMP	50HE008125	-

50GEQ*17 Base Unit Dimensions (cont)

	CONNECTION SIZES
E	3/4"-14 NPT CONDENSATE DRAIN





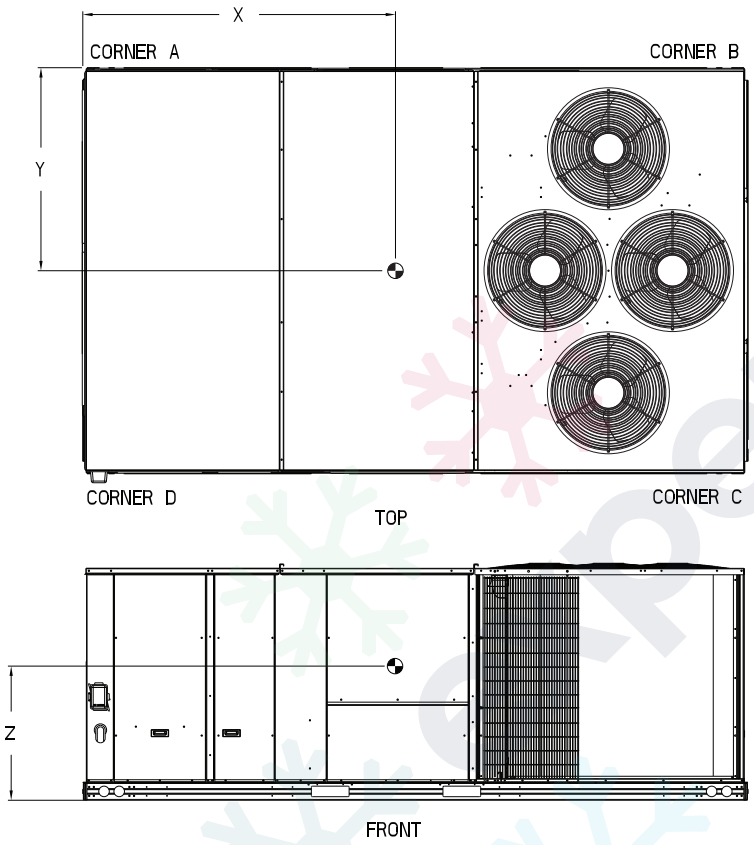


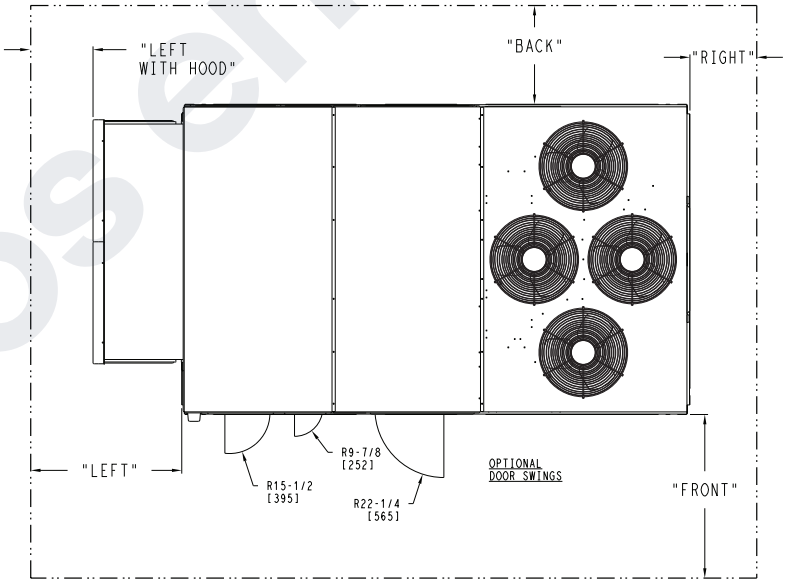
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	08/19/24	-	50GEQ 17 SINGLE ZONE ELECTRICAL HEAT PUMP	50HE008125	-

50GEQ*17 Base Unit Dimensions (cont)

UNIT	OUTDOOR COIL TYPE	STD. UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50GEQ 17	RTPF	1925	873	430	195	514	233	534	242	447	203	77 [1956]	44 [1118]	16 1/2 [419]

* STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.





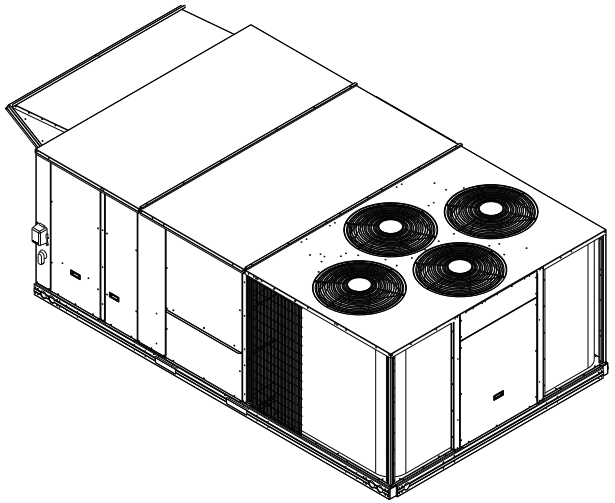
NOTES:

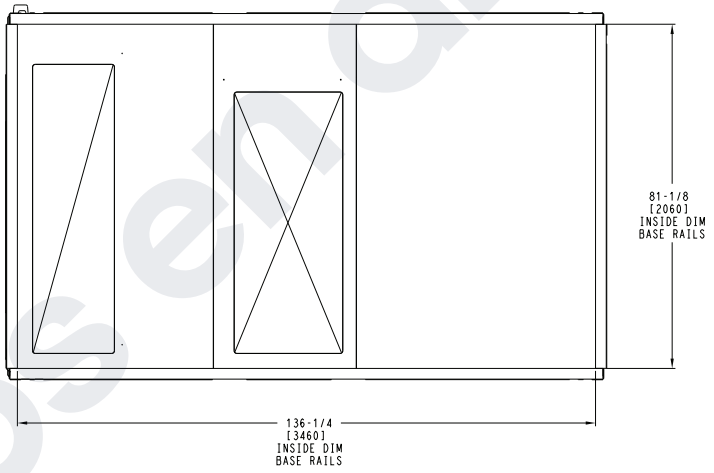
1. CLEARANCE ABOVE THE UNIT TO BE 72"
2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	CLEARANCE		
	SERVICE WITH:	SERVICE WITH:	OPERATING
SURFACE	CONDUCTIVE BARRIER	NONCONDUCTIVE BARRIER	CLEARANCE
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK	42 [1067mm]	36 [914mm]	18 [457mm]
LEFT WITH HOOD	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

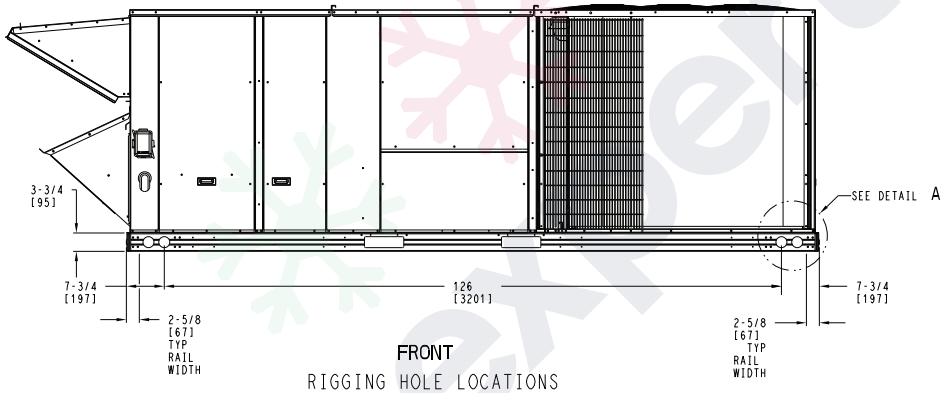
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES		REV
U.S. ECCN:NSR	4 OF 5	08/19/24	-	50GEQ 17 SINGLE ZONE ELECTRICAL HEAT PUMP	50HE008125	-

50GEQ*17 Base Unit Dimensions (cont)

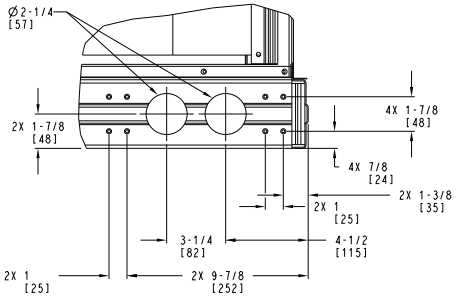




BOTTOM
INSIDE BASERAIL DIMENSIONS



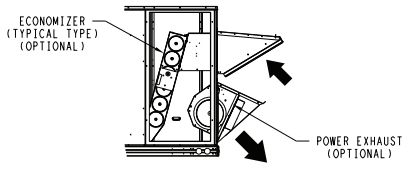
FRONT
RIGGING HOLE LOCATIONS



DETAIL A
TYP 4 PLCS

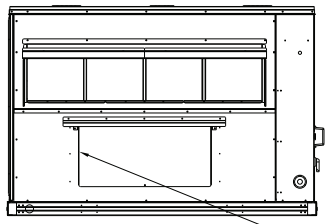
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	50GEQ 17 SINGLE ZONE ELECTRICAL HEAT PUMP		REV
U.S. ECCN:NSR	5 OF 5	08/19/24	-		50HE008125	-

50GEQ*24-28 Base Unit Dimensions



BACK

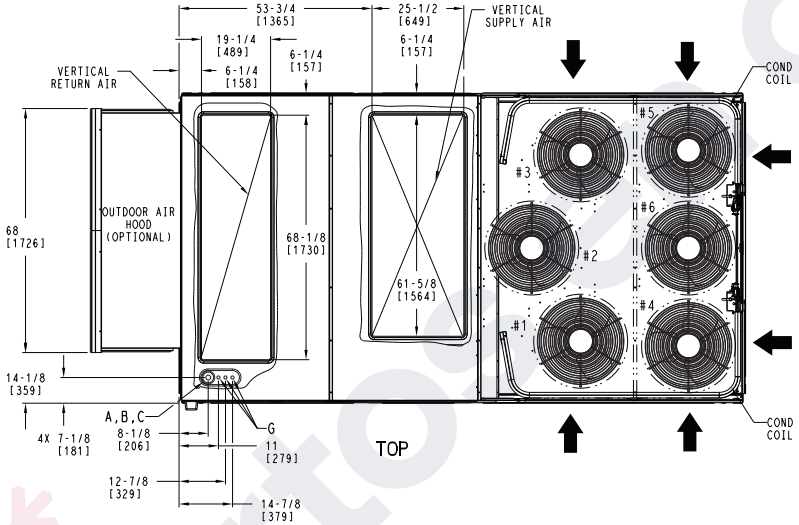
(PANELS REMOVED TO SHOW ECONOMIZER AND POWER EXHAUST OPTIONS)



LEFT

SHOWN WITH THE BAROMETRIC RELIEF OPTION INSTALLED

BAROMETRIC RELIEF (OPTIONAL) INCLUDED WITH ECONOMIZER

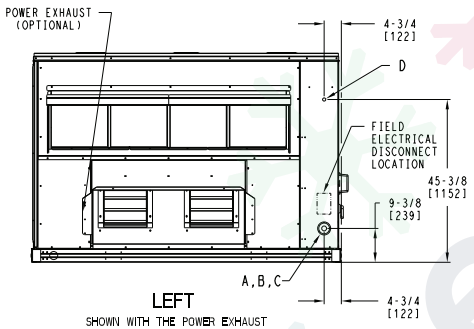


TOP

	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

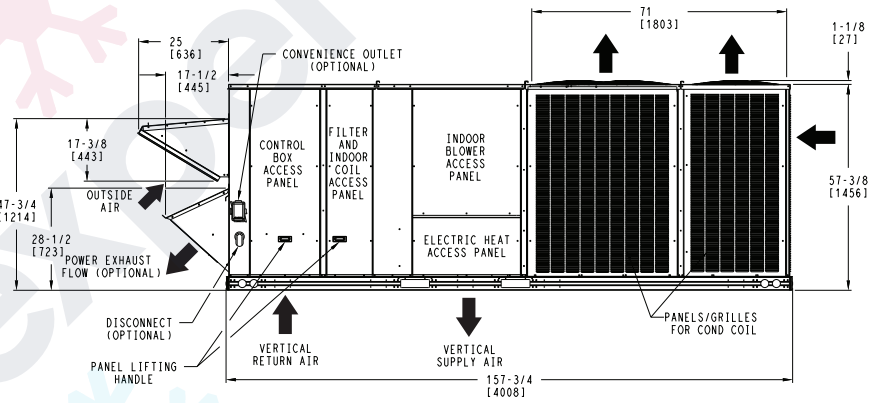
NOTES:

1. DIMENSIONS ARE IN INCHES, DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW
4. ALL VIEW DRAWN USING 3RD ANGLE

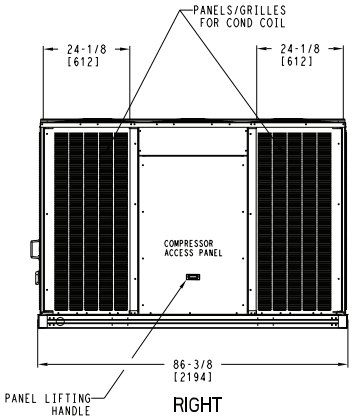


LEFT

SHOWN WITH THE POWER EXHAUST OPTION INSTALLED



FRONT

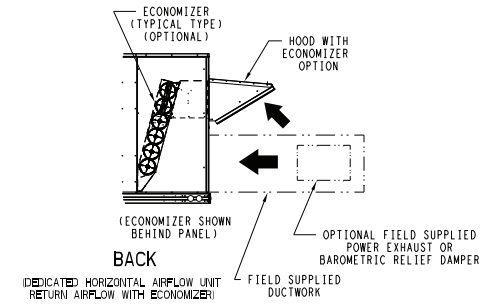


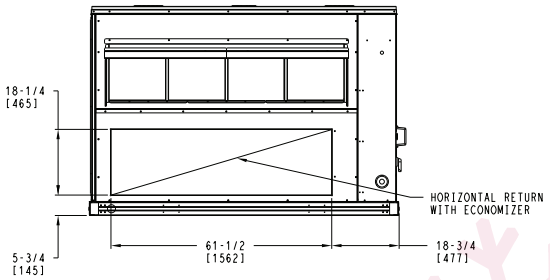
RIGHT

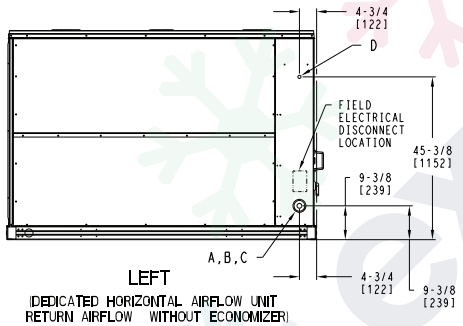
DEDICATED VERTICAL AIRFLOW UNIT
24 28 SIZE

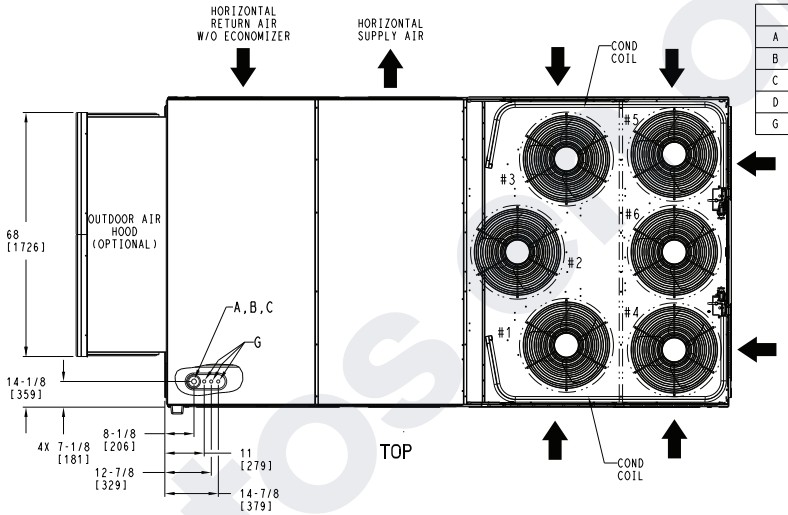
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES		
U.S. ECCN:NSR	1 OF 5	08/20/24	-	50GEQ 24 28 SINGLE ZONE ELECTRICAL HEAT PUMP	50HE008128	REV -

50GEQ*24-28 Base Unit Dimensions (cont)









	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
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D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

NOTES:

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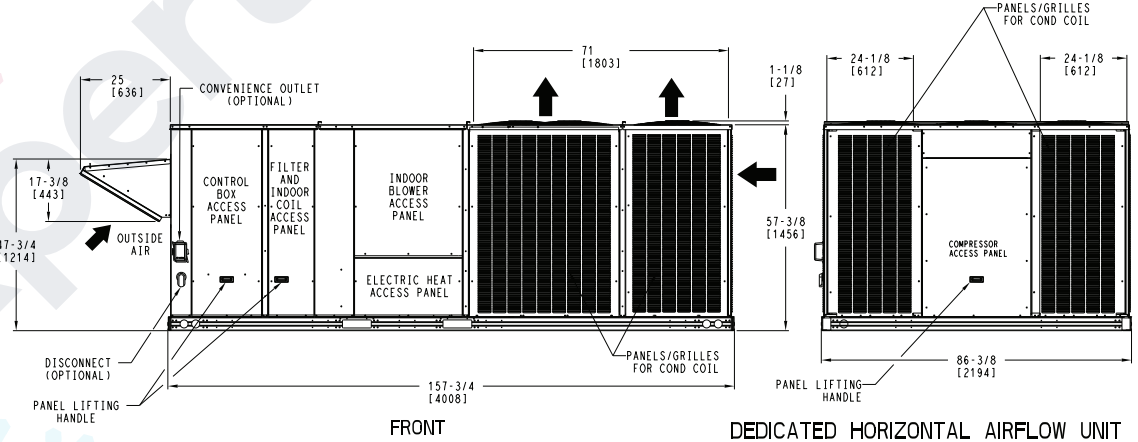
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW
4. ALL VIEW DRAWN USING 3RD ANGLE

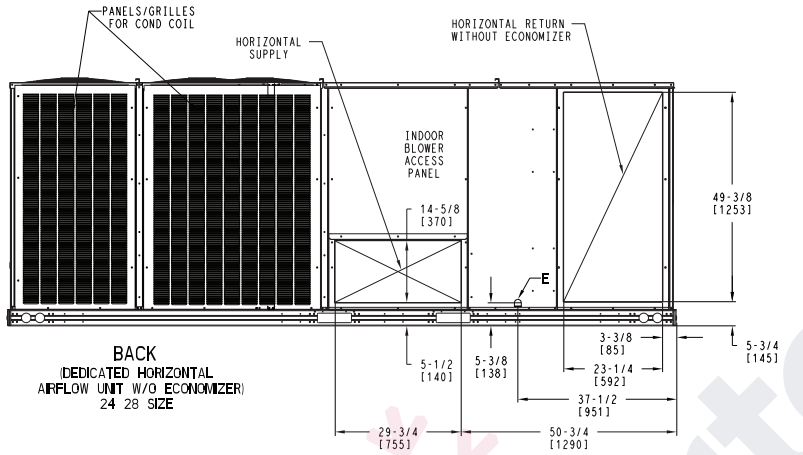


DEDICATED HORIZONTAL AIRFLOW UNIT
24 28 SIZE

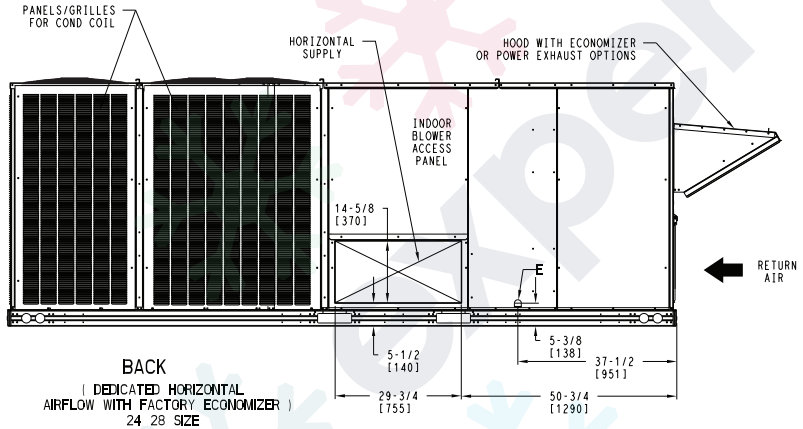
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	2 OF 5	08/20/24	-	50GEQ 24 28 SINGLE ZONE ELECTRICAL HEAT PUMP	50HE008128	-

50GEQ*24-28 Base Unit Dimensions (cont)

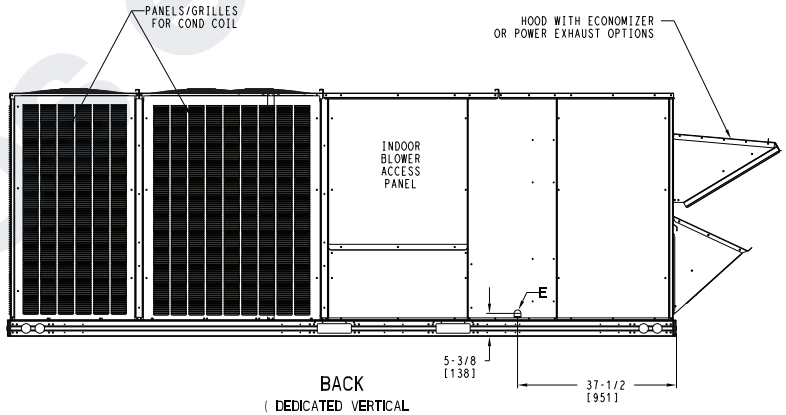
	CONNECTION SIZES
E	3/4"-14 NPT CONDENSATE DRAIN



BACK
(DEDICATED HORIZONTAL AIRFLOW UNIT W/O ECONOMIZER)
24 28 SIZE



BACK
(DEDICATED HORIZONTAL AIRFLOW WITH FACTORY ECONOMIZER)
24 28 SIZE



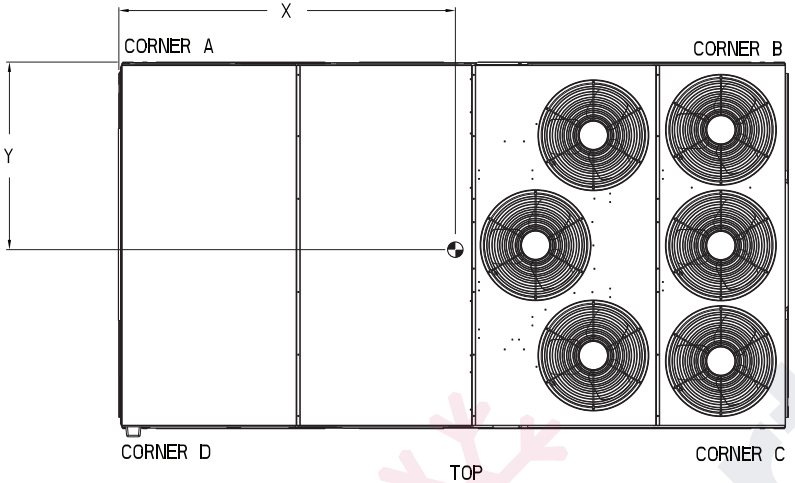
BACK
(DEDICATED VERTICAL AIRFLOW UNIT W/ECONOMIZER)
24 28 SIZE

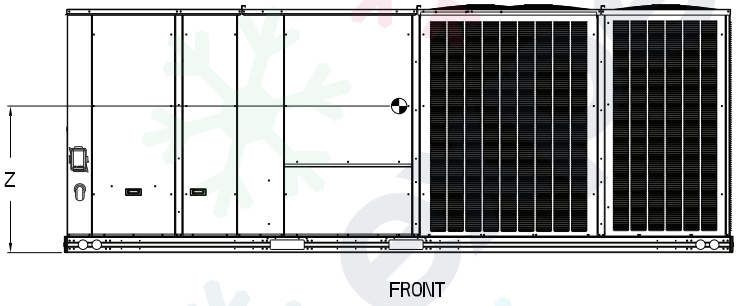
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	08/20/24	-	50 GEQ 24 28 SINGLE ZONE ELECTRICAL HEAT PUMP	50HE008128	-

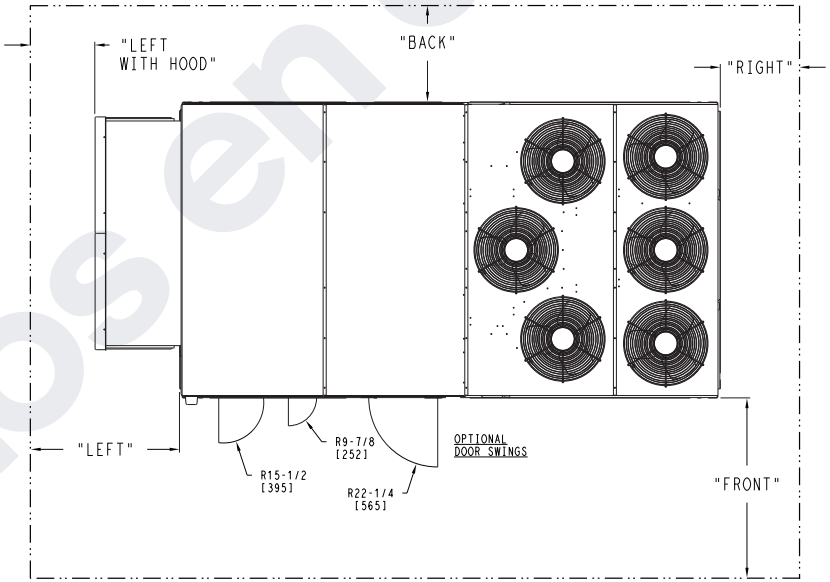
50GEQ*24-28 Base Unit Dimensions (cont)

UNIT	OUTDOOR COIL TYPE	STD UNIT WEIGHT *		CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C.G.		
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z
50GEQ 24	RTPF	2307	1046	479	217	586	266	683	310	559	254	86 3/4 [2203]	46 1/2 [1181]	19 [483]
50GEQ 28	RTPF	2370	1075	487	221	607	275	708	321	568	258	87 1/2 [2223]	46 1/2 [1181]	19 [483]

* STANDARD UNIT WEIGHT IS WITHOUT ELECTRIC HEAT AND WITHOUT PACKAGING.
FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.







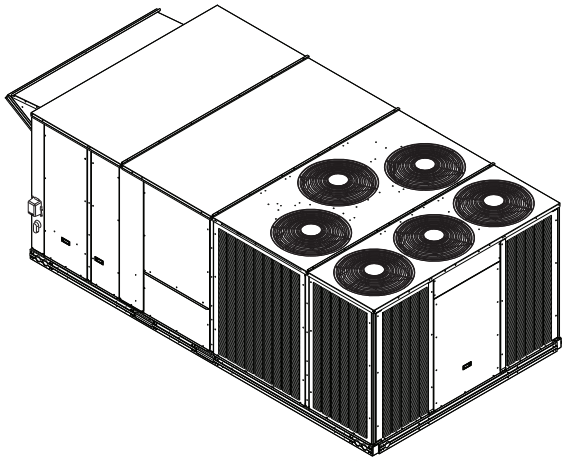
NOTES:

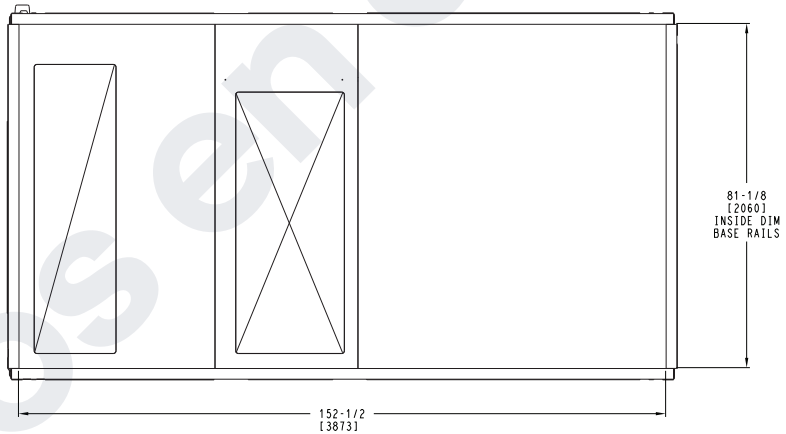
1. CLEARANCE ABOVE THE UNIT TO BE 72"
2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	CLEARANCE		
	SERVICE WITH:	SERVICE WITH:	OPERATING
SURFACE	CONDUCTIVE BARRIER	NONCONDUCTIVE BARRIER	CLEARANCE
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]
BACK	42 [1067mm]	36 [914mm]	18 [457mm]
LEFT WITH HOOD	36 [914mm]	36 [914mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	4 OF 5	08/20/24	-	50GEQ 24 28 SINGLE ZONE ELECTRICAL HEAT PUMP	50HE008128	-

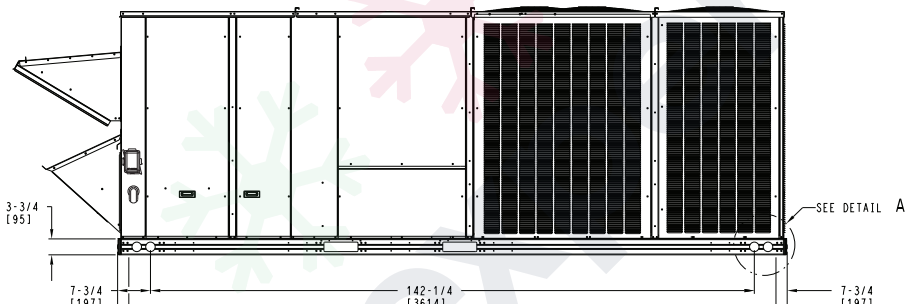
50GEQ*24-28 Base Unit Dimensions (cont)





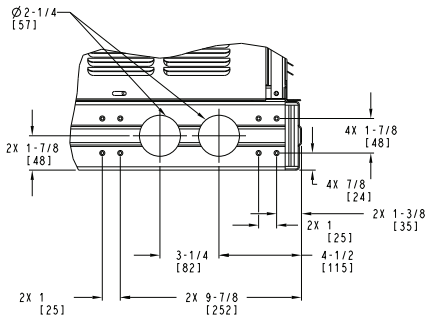
BOTTOM

INSIDE BASERAIL DIMENSIONS



FRONT

RIGGING HOLE LOCATIONS



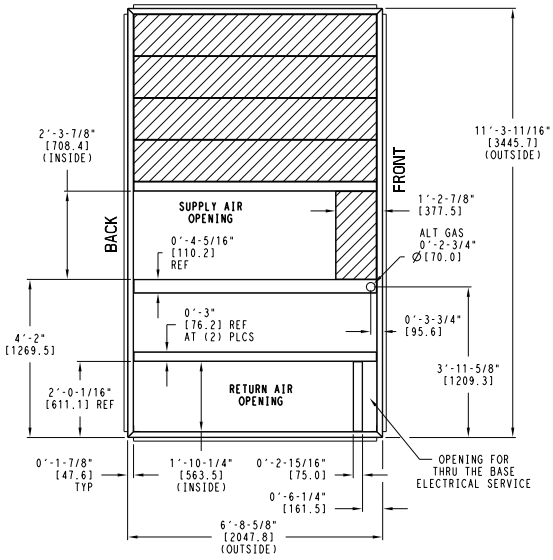
DETAIL A
TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	5 OF 5	08/20/24	-	50GEQ 24 28 SINGLE ZONE ELECTRICAL HEAT PUMP	50HE008128	-

Accessory dimensions

Roof Curb Dimensions — 50GEQ*17

"A"	ROOF CURB ACCESSORY
1′-2" [356.0]	CRRFCURB047A00
2′-0" [610.0]	CRRFCURB048A00



NOTES:

1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.

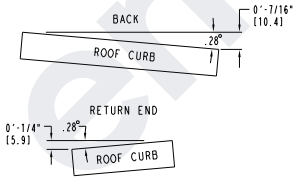
2 DIMENSIONS IN [ ] ARE IN MILLIMETERS.

3 ROOF CURB GALVANIZED STEEL.

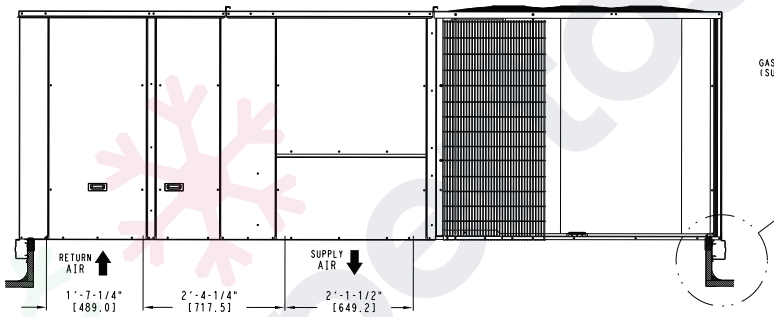
4 ATTACH DUCTWORK TO CURB (FLANGES ON DUCT REST ON CURB)

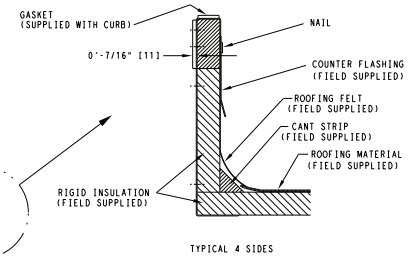
5 SERVICE CLEARANCE 4 ft ON EACH SIDE

➡ DIRECTION OF AIR FLOW

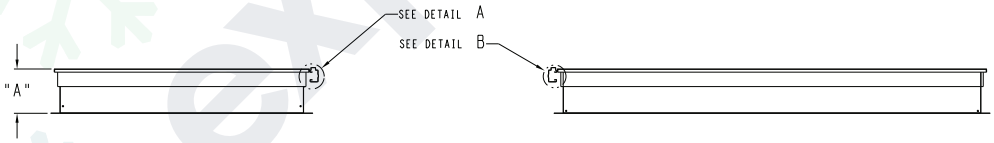


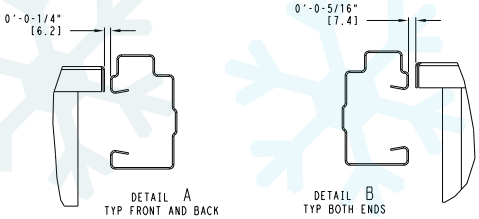
MAX CURB LEVELING TOLERANCES

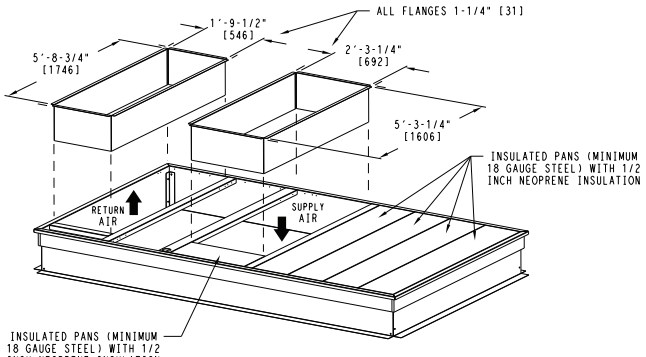




TYPICAL 4 SIDES



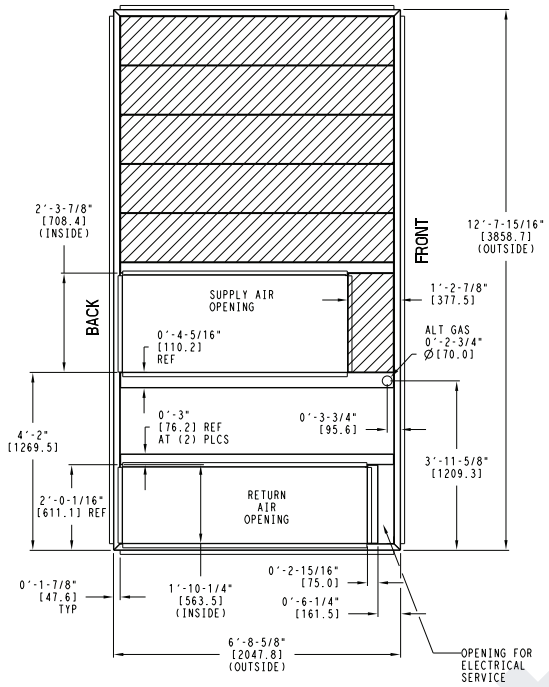




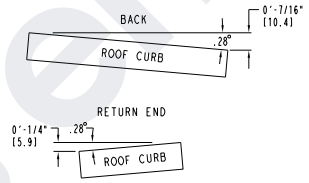
Accessory dimensions (cont)

Roof Curb Dimensions — 50GEQ*24-28

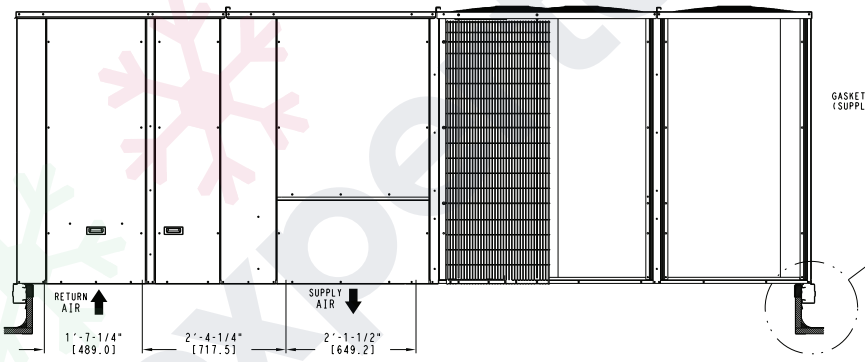
"A"	ROOF CURB ACCESSORY
1′-2" [356.0]	CRRFCURB049A00
2′-0" [610.0]	CRRFCURB050A00

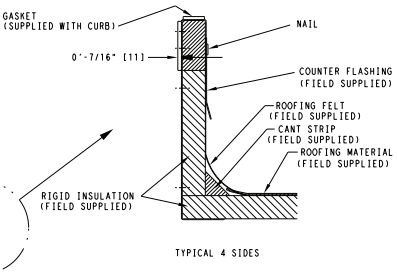


NOTES:
1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.
2 BOLT HEADS TO BE ON INSIDE OF FLANGE. CLEARANCE IS [11] 0-0-7/16" TYP ALL CORNERS.
3 DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4 ROOF CURB GALVANIZED STEEL.
5 ATTACH DUCTWORK TO CURB (FLANGES ON DUCT REST ON CURB)
6 SERVICE CLEARANCE 4 ft ON EACH SIDE
DIRECTION OF AIR FLOW

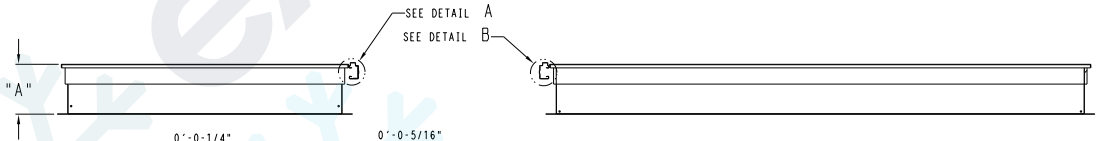


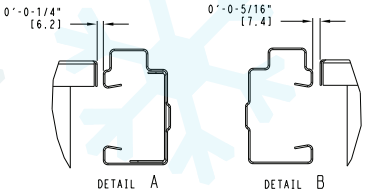
MAX CURB LEVELING TOLERANCES

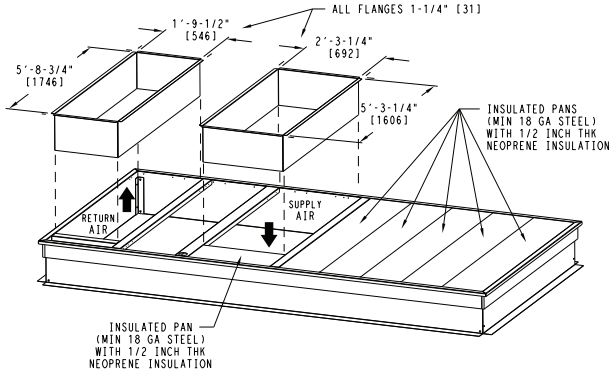




TYPICAL 4 SIDES







Performance data

50GEQM17 Two Stage Cooling Capacities

50GEQM17				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
4500 cfm	EAT (wb)	58	TC	162.6	162.6	184.5	154.8	154.8	176.0	146.6	146.6	167.1	137.9	137.9	157.5	128.7	128.7	147.4
			SHC	140.7	162.6	184.5	133.6	154.8	176.0	126.2	146.6	167.1	118.3	137.9	157.5	110.0	128.7	147.4
		62	TC	172.2	172.2	173.9	162.8	162.8	168.1	152.7	152.7	162.2	142.1	142.1	156.0	131.0	131.0	149.5
			SHC	126.2	150.0	173.9	120.5	144.3	168.1	114.6	138.4	162.2	108.4	132.2	156.0	102.0	125.8	149.5
		67	TC	190.6	190.6	190.6	180.4	180.4	180.4	169.7	169.7	169.7	158.3	158.3	158.3	146.3	146.3	146.3
			SHC	103.5	127.5	151.4	97.8	121.7	145.6	91.9	115.8	139.7	85.8	109.7	133.6	79.5	103.3	127.2
		72	TC	210.7	210.7	210.7	199.6	199.6	199.6	188.1	188.1	188.1	175.9	175.9	175.9	163.0	163.0	163.0
			SHC	80.4	104.3	128.1	74.6	98.5	122.4	68.7	92.6	116.5	62.7	86.5	110.4	56.4	80.2	104.0
		76	TC	—	227.8	227.8	—	216.1	216.1	—	203.9	203.9	—	191.0	191.0	—	177.3	177.3
			SHC	—	85.2	108.2	—	79.5	102.6	—	73.6	96.8	—	67.6	90.8	—	61.3	84.6
5250 cfm	EAT (wb)	58	TC	172.5	172.5	195.6	164.5	164.5	186.8	155.8	155.8	177.3	146.5	146.5	167.1	136.7	136.7	156.4
			SHC	149.5	172.5	195.6	142.2	164.5	186.8	134.3	155.8	177.3	125.9	146.5	167.1	117.1	136.7	156.4
		62	TC	178.4	178.4	192.3	168.5	168.5	186.3	158.1	158.1	180.0	147.4	147.4	173.2	138.7	138.7	158.6
			SHC	137.2	164.8	192.3	131.3	158.8	186.3	125.2	152.6	180.0	118.8	146.0	173.2	108.6	133.6	158.6
		67	TC	196.3	196.3	196.3	186.1	186.1	186.1	174.9	174.9	174.9	163.0	163.0	163.0	150.5	150.5	150.5
			SHC	110.5	138.2	165.9	104.8	132.5	160.1	98.8	126.5	154.1	92.6	120.2	147.9	86.2	113.8	141.4
		72	TC	216.9	216.9	216.9	205.3	205.3	205.3	193.3	193.3	193.3	180.6	180.6	180.6	167.3	167.3	167.3
			SHC	83.4	111.0	138.7	77.6	105.3	132.9	71.6	99.3	126.9	65.5	93.1	120.7	59.1	86.7	114.3
		76	TC	—	234.2	234.2	—	222.0	222.0	—	209.3	209.3	—	195.8	195.8	—	181.6	181.6
			SHC	—	88.8	115.6	—	83.0	109.9	—	77.0	103.9	—	70.9	97.8	—	64.5	91.4
6000 cfm	EAT (wb)	58	TC	181.4	181.4	205.5	172.6	172.6	195.9	163.4	163.4	185.8	153.7	153.7	175.1	143.3	143.3	163.7
			SHC	157.3	181.4	205.5	149.3	172.6	195.9	141.0	163.4	185.8	132.3	153.7	175.1	122.9	143.3	163.7
		62	TC	183.6	183.6	209.3	175.6	175.6	196.7	166.4	166.4	185.7	156.5	156.5	175.1	143.5	143.5	170.8
			SHC	147.4	178.4	209.3	138.5	167.6	196.7	130.2	158.0	185.7	121.9	148.5	175.1	116.3	143.5	170.8
		67	TC	201.5	201.5	201.5	190.5	190.5	190.5	178.9	178.9	178.9	166.7	166.7	166.7	153.8	153.8	155.0
			SHC	117.3	148.6	180.0	111.4	142.7	174.1	105.3	136.6	167.9	99.1	130.3	161.6	92.6	123.8	155.0
		72	TC	221.8	221.8	221.8	209.9	209.9	209.9	197.5	197.5	197.5	184.3	184.3	184.3	170.5	170.5	170.5
			SHC	86.1	117.4	148.7	80.3	111.6	142.9	74.2	105.5	136.8	68.0	99.2	130.5	61.5	92.8	124.0
		76	TC	—	239.1	239.1	—	226.6	226.6	—	213.4	213.4	—	199.4	199.4	—	184.9	184.9
			SHC	—	91.9	122.3	—	86.1	116.5	—	80.0	110.5	—	73.8	104.3	—	67.3	97.8
6750 cfm	EAT (wb)	58	TC	188.6	188.6	213.5	179.5	179.5	203.5	169.9	169.9	193.1	159.7	159.7	181.9	148.9	148.9	169.9
			SHC	163.7	188.6	213.5	155.4	179.5	203.5	146.8	169.9	193.1	137.6	159.7	181.9	127.8	148.9	169.9
		62	TC	190.1	190.1	219.0	182.4	182.4	203.6	170.1	170.1	201.0	159.9	159.9	189.5	149.0	149.0	177.1
			SHC	154.1	186.6	219.0	143.7	173.7	203.6	139.2	170.1	201.0	130.3	159.9	189.5	120.9	149.0	177.1
		67	TC	205.4	205.4	205.4	193.9	193.9	193.9	182.1	182.1	182.1	169.6	169.6	174.8	156.4	156.4	168.2
			SHC	123.6	158.5	193.4	117.7	152.6	187.5	111.6	146.4	181.3	105.3	140.0	174.8	98.7	133.5	168.2
		72	TC	225.5	225.5	225.5	213.4	213.4	213.4	200.6	200.6	200.6	187.2	187.2	187.2	173.1	173.1	173.1
			SHC	88.5	123.3	158.2	82.6	117.5	152.3	76.5	111.4	146.2	70.2	105.0	139.9	63.8	98.5	133.3
		76	TC	—	242.9	242.9	—	230.1	230.1	—	216.5	216.5	—	202.3	202.3	—	187.4	187.4
			SHC	—	94.7	128.6	—	88.7	122.7	—	82.6	116.6	—	76.3	110.3	—	69.8	103.8
7500 cfm	EAT (wb)	58	TC	194.8	194.8	220.4	185.4	185.4	210.2	175.4	175.4	199.2	164.8	164.8	187.5	153.6	153.6	175.2
			SHC	169.1	194.8	220.4	160.6	185.4	210.2	151.7	175.4	199.2	142.1	164.8	187.5	132.0	153.6	175.2
		62	TC	195.1	195.1	229.3	185.7	185.7	218.7	175.6	175.6	207.4	165.0	165.0	195.4	153.8	153.8	182.6
			SHC	160.8	195.1	229.3	152.6	185.7	218.7	143.9	175.6	207.4	134.7	165.0	195.4	124.9	153.8	182.6
		67	TC	208.4	208.4	208.4	196.8	196.8	200.5	184.7	184.7	194.2	172.0	172.0	187.7	158.6	158.6	181.0
			SHC	129.6	168.0	206.4	123.7	162.1	200.5	117.6	155.9	194.2	111.3	149.5	187.7	104.7	142.8	181.0
		72	TC	228.6	228.6	228.6	216.2	216.2	216.2	203.2	203.2	203.2	189.5	189.5	189.5	175.1	175.1	175.1
			SHC	90.6	129.0	167.3	84.7	123.1	161.5	78.6	116.9	155.3	72.3	110.6	148.9	65.8	104.0	142.3
		76	TC	—	245.9	245.9	—	232.8	232.8	—	219.0	219.0	—	204.5	204.5	—	189.3	189.3
			SHC	—	97.1	134.5	—	91.1	128.5	—	84.9	122.4	—	78.6	116.0	—	72.1	109.4

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EAT (db) — Entering Air Temperature (dry bulb)
EAT (wb) — Entering Air Temperature (wet bulb)
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTE: See minimum-maximum airflow ratings on page 7.

Performance data (cont)

50GEQM17 Single Stage Cooling Capacities

50GEQM17				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
2700 cfm	EAT (wb)	58	TC	102.7	102.7	116.9	97.4	97.4	111.1	91.8	91.8	105.0	85.9	85.9	98.6	79.6	79.6	91.7
			SHC	88.6	102.7	116.9	83.7	97.4	111.1	78.5	91.8	105.0	73.2	85.9	98.6	67.5	79.6	91.7
		62	TC	111.3	111.3	111.3	104.7	104.7	104.7	97.8	97.8	99.1	90.6	90.6	94.6	82.9	82.9	90.0
			SHC	78.6	93.1	107.6	74.4	88.9	103.4	70.1	84.6	99.1	65.7	80.1	94.6	61.1	75.5	90.0
		67	TC	123.9	123.9	123.9	117.0	117.0	117.0	109.6	109.6	109.6	101.9	101.9	101.9	93.6	93.6	93.6
			SHC	65.4	79.9	94.4	61.2	75.7	90.2	57.0	71.4	85.9	52.5	67.0	81.5	48.0	62.4	76.9
		72	TC	137.9	137.9	137.9	130.4	130.4	130.4	122.6	122.6	122.6	114.3	114.3	114.3	105.5	105.5	105.5
			SHC	51.9	66.4	80.9	47.8	62.3	76.8	43.5	58.0	72.5	39.1	53.6	68.1	34.6	49.0	63.5
		76	TC	—	149.7	149.7	—	142.1	142.1	—	133.8	133.8	—	125.1	125.1	—	115.9	115.9
			SHC	—	55.3	68.5	—	51.3	65.1	—	47.0	61.0	—	42.6	56.7	—	38.1	52.3
3150 cfm	EAT (wb)	58	TC	110.0	110.0	125.0	104.3	104.3	118.8	98.3	98.3	112.3	92.0	92.0	105.4	85.4	85.4	98.2
			SHC	95.0	110.0	125.0	89.8	104.3	118.8	84.4	98.3	112.3	78.6	92.0	105.4	72.6	85.4	98.2
		62	TC	115.9	115.9	119.2	109.0	109.0	114.9	101.8	101.8	110.5	94.2	94.2	105.8	86.3	86.3	100.9
			SHC	85.7	102.5	119.2	81.4	98.2	114.9	77.0	93.7	110.5	72.4	89.1	105.8	67.7	84.3	100.9
		67	TC	128.7	128.7	128.7	121.4	121.4	121.4	113.7	113.7	113.7	105.5	105.5	105.5	96.9	96.9	96.9
			SHC	70.1	86.9	103.7	65.9	82.7	99.5	61.5	78.3	95.1	57.0	73.8	90.5	52.3	69.1	85.8
		72	TC	142.8	142.8	142.8	134.9	134.9	134.9	126.8	126.8	126.8	118.1	118.1	118.1	109.0	109.0	109.0
			SHC	54.2	71.0	87.8	50.0	66.8	83.6	45.7	62.4	79.2	41.2	58.0	74.7	36.6	53.3	70.1
		76	TC	—	155.0	155.0	—	146.8	146.8	—	138.2	138.2	—	129.1	129.1	—	119.4	119.4
			SHC	—	58.0	74.2	—	53.8	70.1	—	49.5	65.9	—	45.1	61.5	—	40.5	56.9
3600 cfm	EAT (wb)	58	TC	116.2	116.2	131.9	110.2	110.2	125.4	103.9	103.9	118.5	97.3	97.3	111.3	90.2	90.2	103.6
			SHC	100.5	116.2	131.9	95.0	110.2	125.4	89.3	103.9	118.5	83.2	97.3	111.3	76.9	90.2	103.6
		62	TC	119.6	119.6	130.3	112.5	112.5	125.8	105.1	105.1	121.1	97.4	97.4	116.2	90.3	90.3	108.2
			SHC	92.4	111.4	130.3	88.0	106.9	125.8	83.4	102.3	121.1	78.7	97.4	116.2	72.5	90.3	108.2
		67	TC	132.4	132.4	132.4	124.8	124.8	124.8	116.8	116.8	116.8	108.4	108.4	108.4	99.5	99.5	99.5
			SHC	74.5	93.6	112.6	70.2	89.3	108.3	65.7	84.8	103.8	61.2	80.2	99.2	56.4	75.4	94.5
		72	TC	146.4	146.4	146.4	138.5	138.5	138.5	130.0	130.0	130.0	121.1	121.1	121.1	111.6	111.6	111.6
			SHC	56.2	75.2	94.3	52.0	71.0	90.0	47.6	66.6	85.6	43.0	62.1	81.1	38.4	57.4	76.4
		76	TC	—	158.9	158.9	—	150.5	150.5	—	141.5	141.5	—	132.1	132.1	—	122.1	122.1
			SHC	—	60.4	78.9	—	56.2	74.7	—	51.8	70.4	—	47.3	65.9	—	42.6	61.2
4050 cfm	EAT (wb)	58	TC	121.5	121.5	137.8	115.2	115.2	130.9	108.6	108.6	123.8	101.7	101.7	116.2	94.3	94.3	108.2
			SHC	105.1	121.5	137.8	99.4	115.2	130.9	93.5	108.6	123.8	87.2	101.7	116.2	80.5	94.3	108.2
		62	TC	122.7	122.7	140.7	115.7	115.7	135.7	108.8	108.8	129.1	101.8	101.8	121.2	94.4	94.4	112.9
			SHC	98.6	119.6	140.7	94.0	114.8	135.7	88.5	108.8	129.1	82.4	101.8	121.2	76.0	94.4	112.9
		67	TC	135.4	135.4	135.4	127.5	127.5	127.5	119.3	119.3	119.3	110.7	110.7	110.7	101.6	101.6	102.8
			SHC	78.6	99.9	121.2	74.3	95.6	116.8	69.8	91.0	112.3	65.2	86.4	107.6	60.4	81.6	102.8
		72	TC	149.6	149.6	149.6	141.3	141.3	141.3	132.6	132.6	132.6	123.4	123.4	123.4	113.7	113.7	113.7
			SHC	58.0	79.3	100.7	53.7	75.0	96.3	49.3	70.6	91.8	44.7	66.0	87.2	40.0	61.2	82.5
		76	TC	—	162.0	162.0	—	153.4	153.4	—	144.2	144.2	—	134.5	134.5	—	124.3	124.3
			SHC	—	62.5	83.2	—	58.2	79.0	—	53.8	74.6	—	49.2	70.1	—	44.5	65.4
4500 cfm	EAT (wb)	58	TC	126.0	126.0	142.9	119.6	119.6	135.8	112.7	112.7	128.3	105.5	105.5	120.4	97.9	97.9	112.1
			SHC	109.2	126.0	142.9	103.3	119.6	135.8	97.1	112.7	128.3	90.5	105.5	120.4	83.6	97.9	112.1
		62	TC	128.1	128.1	142.5	119.7	119.7	141.4	112.9	112.9	133.7	105.6	105.6	125.6	98.0	98.0	117.0
			SHC	100.8	121.6	142.5	98.0	119.7	141.4	92.0	112.9	133.7	85.6	105.6	125.6	79.0	98.0	117.0
		67	TC	137.8	137.8	137.8	129.8	129.8	129.8	121.4	121.4	121.4	112.6	112.6	115.8	103.3	103.3	111.0
			SHC	82.6	106.1	129.6	78.2	101.7	125.1	73.7	97.1	120.6	69.0	92.4	115.8	64.2	87.6	111.0
		72	TC	152.0	152.0	152.0	143.6	143.6	143.6	134.6	134.6	134.6	125.3	125.3	125.3	115.4	115.4	115.4
			SHC	59.6	83.1	106.6	55.3	78.8	102.3	50.8	74.3	97.8	46.2	69.7	93.1	41.5	64.9	88.4
		76	TC	—	164.7	164.7	—	155.7	155.7	—	146.3	146.3	—	136.4	136.4	—	126.0	126.0
			SHC	—	64.5	87.4	—	60.1	83.1	—	55.7	78.7	—	51.1	74.1	—	46.3	69.3

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EAT (db) — Entering Air Temperature (dry bulb)
EAT (wb) — Entering Air Temperature (wet bulb)
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTE: See minimum-maximum airflow ratings on page 7.

Performance data (cont)

50GEQM24 Two Stage Cooling Capacities

50GEQM24				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
6000 cfm	EAT (wb)	58	TC	201.2	201.2	214.9	187.2	187.2	213.2	174.8	174.8	199.7	162.0	162.0	185.7	148.0	148.0	170.3
			SHC	166.1	190.5	214.9	161.2	187.2	213.2	150.0	174.8	199.7	138.4	162.0	185.7	125.7	148.0	170.3
		62	TC	214.8	214.8	214.8	202.2	202.2	202.2	188.2	188.2	188.2	172.7	172.7	176.4	155.7	155.7	166.0
			SHC	150.1	176.7	203.3	141.9	168.5	195.0	133.2	159.6	186.1	123.7	150.1	176.4	113.7	139.8	166.0
		67	TC	236.7	236.7	236.7	223.6	223.6	223.6	208.8	208.8	208.8	192.8	192.8	192.8	175.1	175.1	175.1
			SHC	124.2	151.0	177.8	116.3	143.1	169.9	107.8	134.5	161.3	98.8	125.5	152.2	89.2	115.9	142.5
		72	TC	261.6	261.6	261.6	247.6	247.6	247.6	232.4	232.4	232.4	215.5	215.5	215.5	196.9	196.9	196.9
			SHC	98.1	124.7	151.3	90.2	116.8	143.4	81.9	108.5	135.1	73.1	99.7	126.3	63.7	90.3	116.9
		76	TC	—	283.1	283.1	—	268.4	268.4	—	252.4	252.4	—	234.9	234.9	—	215.7	215.7
			SHC	—	103.2	136.2	—	95.3	128.3	—	87.1	111.1	—	78.4	103.4	—	69.2	94.6
7000 cfm	EAT (wb)	58	TC	208.7	208.7	236.8	197.7	197.7	224.9	185.5	185.5	211.6	172.1	172.1	196.9	157.5	157.5	180.9
			SHC	180.6	208.7	236.8	170.5	197.7	224.9	159.4	185.5	211.6	147.3	172.1	196.9	134.1	157.5	180.9
		62	TC	222.6	222.6	222.6	209.6	209.6	213.0	195.2	195.2	203.8	179.3	179.3	193.9	161.7	161.7	183.0
			SHC	161.2	191.4	221.5	153.0	183.0	213.0	144.1	174.0	203.8	134.5	164.2	193.9	124.1	153.5	183.0
		67	TC	244.9	244.9	244.9	231.3	231.3	231.3	216.0	216.0	216.0	199.2	199.2	199.2	180.9	180.9	180.9
			SHC	131.8	162.2	192.7	123.7	154.2	184.7	115.1	145.5	175.9	105.9	136.3	166.6	96.2	126.5	156.8
		72	TC	270.2	270.2	270.2	255.6	255.6	255.6	239.7	239.7	239.7	222.2	222.2	222.2	203.0	203.0	203.0
			SHC	101.5	131.8	162.1	93.6	123.8	154.1	85.1	115.4	145.7	76.1	106.4	136.7	66.7	97.0	127.3
		76	TC	—	292.0	292.0	—	276.6	276.6	—	260.0	260.0	—	241.7	241.7	—	221.9	221.9
			SHC	—	107.0	134.2	—	99.0	127.1	—	90.7	119.3	—	81.8	110.8	—	72.5	101.7
8000 cfm	EAT (wb)	58	TC	218.5	218.5	247.8	207.0	207.0	235.2	194.5	194.5	221.6	180.7	180.7	206.4	165.6	165.6	189.8
			SHC	189.3	218.5	247.8	178.8	207.0	235.2	167.4	194.5	221.6	154.9	180.7	206.4	141.3	165.6	189.8
		62	TC	229.1	229.1	238.5	215.7	215.7	230.0	201.1	201.1	220.5	184.6	184.6	210.0	166.3	166.3	198.9
			SHC	171.6	205.0	238.5	163.3	196.6	230.0	154.2	187.3	220.5	144.3	177.2	210.0	133.8	166.3	198.9
		67	TC	251.2	251.2	251.2	237.1	237.1	237.1	221.5	221.5	221.5	204.3	204.3	204.3	185.5	185.5	185.5
			SHC	138.5	172.4	206.3	130.3	164.3	198.2	121.7	155.6	189.4	112.4	146.2	180.0	102.7	136.3	170.0
		72	TC	276.8	276.8	276.8	261.7	261.7	261.7	245.3	245.3	245.3	227.2	227.2	227.2	207.6	207.6	207.6
			SHC	104.4	138.2	172.0	96.3	130.1	164.0	87.8	121.6	155.4	78.7	112.6	146.4	69.2	103.0	136.8
		76	TC	—	298.9	298.9	—	283.0	283.0	—	265.8	265.8	—	247.0	247.0	—	226.7	226.7
			SHC	—	110.1	141.8	—	102.1	134.1	—	93.6	126.0	—	84.7	117.3	—	75.3	108.1
9000 cfm	EAT (wb)	58	TC	227.0	227.0	257.2	215.1	215.1	244.2	202.2	202.2	230.2	188.0	188.0	214.6	172.2	172.2	197.3
			SHC	196.8	227.0	257.2	185.9	215.1	244.2	174.2	202.2	230.2	161.4	188.0	214.6	147.2	172.2	197.3
		62	TC	234.5	234.5	254.4	220.7	220.7	245.4	207.2	207.2	226.3	188.9	188.9	224.6	172.4	172.4	205.8
			SHC	181.3	217.8	254.4	172.7	209.1	245.4	158.8	192.5	226.3	153.3	188.9	224.6	138.9	172.4	205.8
		67	TC	256.5	256.5	256.5	242.0	242.0	242.0	226.0	226.0	226.0	208.4	208.4	208.4	189.3	189.3	189.3
			SHC	144.7	182.0	219.3	136.6	173.8	211.0	127.8	165.0	202.1	118.5	155.6	192.6	108.7	145.6	182.4
		72	TC	282.2	282.2	282.2	266.7	266.7	266.7	249.8	249.8	249.8	231.2	231.2	231.2	211.3	211.3	211.3
			SHC	106.9	144.1	181.3	98.7	136.0	173.2	90.1	127.4	164.6	81.0	118.2	155.4	71.4	108.5	145.7
		76	TC	—	304.4	304.4	—	288.1	288.1	—	270.5	270.5	—	251.2	251.2	—	230.5	230.5
			SHC	—	112.9	148.2	—	104.7	140.3	—	96.2	132.0	—	87.2	123.2	—	77.8	113.9
10000 cfm	EAT (wb)	58	TC	234.0	234.0	265.0	222.0	222.0	251.9	208.8	208.8	237.5	194.2	194.2	221.5	178.0	178.0	203.7
			SHC	203.0	234.0	265.0	192.0	222.0	251.9	180.1	208.8	237.5	166.9	194.2	221.5	152.3	178.0	203.7
		62	TC	238.7	238.7	268.7	223.9	223.9	264.2	209.6	209.6	248.1	194.3	194.3	230.8	178.2	178.2	212.5
			SHC	190.0	229.4	268.7	183.6	223.9	264.2	171.2	209.6	248.1	157.9	194.3	230.8	143.8	178.2	212.5
		67	TC	260.9	260.9	260.9	246.0	246.0	246.0	229.8	229.8	229.8	211.9	211.9	211.9	192.4	192.4	194.2
			SHC	150.6	191.1	231.6	142.4	182.8	223.2	133.6	173.9	214.3	124.2	164.4	204.6	114.3	154.3	194.2
		72	TC	286.6	286.6	286.6	270.6	270.6	270.6	253.4	253.4	253.4	234.7	234.7	234.7	214.4	214.4	214.4
			SHC	109.0	149.6	190.2	100.8	141.3	181.9	92.1	132.7	173.2	83.0	123.4	163.9	73.4	113.8	154.2
		76	TC	—	309.0	309.0	—	292.3	292.3	—	274.4	274.4	—	254.7	254.7	—	233.7	233.7
			SHC	—	115.2	154.0	—	107.1	146.0	—	98.5	137.6	—	89.4	128.7	—	79.9	119.4

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EAT (db) — Entering Air Temperature (dry bulb)
EAT (wb) — Entering Air Temperature (wet bulb)
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTE: See minimum-maximum airflow ratings on page 7.

Performance data (cont)

50GEQM24 Single Stage Cooling Capacities

50GEQM24				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
3600 cfm	EAT (wb)	58	TC	140.0	140.0	157.8	135.5	135.5	152.7	130.6	130.6	147.2	124.3	124.3	140.2	117.3	117.3	132.3
			SHC	122.2	140.0	157.8	118.2	135.5	152.7	113.9	130.6	147.2	108.5	124.3	140.2	102.4	117.3	132.3
		62	TC	150.0	150.0	150.0	144.4	144.4	144.4	137.9	137.9	138.2	130.3	130.3	134.5	121.2	121.2	130.0
			SHC	108.3	126.4	144.4	105.5	123.5	141.5	102.3	120.3	138.2	98.6	116.6	134.5	94.2	112.1	130.0
		67	TC	163.8	163.8	163.8	157.7	157.7	157.7	150.4	150.4	150.4	142.1	142.1	142.1	132.9	132.9	132.9
			SHC	90.2	108.3	126.3	87.4	105.5	123.5	84.2	102.2	120.2	80.5	98.6	116.6	76.6	94.6	112.6
		72	TC	178.6	178.6	178.6	171.6	171.6	171.6	164.2	164.2	164.2	155.6	155.6	155.6	145.7	145.7	145.7
			SHC	71.5	89.5	107.5	68.6	86.6	104.5	65.6	83.6	101.6	62.2	80.2	98.2	58.4	76.3	94.3
		76	TC	—	190.9	190.9	—	183.4	183.4	—	176.0	176.0	—	166.9	166.9	—	156.7	156.7
			SHC	—	73.9	93.7	—	71.1	86.8	—	68.3	85.0	—	65.0	82.0	—	61.3	78.5
4200 cfm	EAT (wb)	58	TC	147.4	147.4	166.1	142.6	142.6	160.8	137.5	137.5	155.0	130.8	130.8	147.4	123.5	123.5	139.3
			SHC	128.6	147.4	166.1	124.4	142.6	160.8	120.0	137.5	155.0	114.1	130.8	147.4	107.8	123.5	139.3
		62	TC	154.5	154.5	157.3	148.6	148.6	154.3	142.0	142.0	151.0	134.0	134.0	146.9	125.0	125.0	142.0
			SHC	115.9	136.6	157.3	113.0	133.7	154.3	109.8	130.4	151.0	105.9	126.4	146.9	101.4	121.7	142.0
		67	TC	168.2	168.2	168.2	162.1	162.1	162.1	154.5	154.5	154.5	146.1	146.1	146.1	136.4	136.4	136.4
			SHC	94.8	115.6	136.3	92.2	112.9	133.7	88.9	109.6	130.4	85.3	106.0	126.7	81.3	101.9	122.6
		72	TC	184.1	184.1	184.1	176.4	176.4	176.4	168.1	168.1	168.1	159.3	159.3	159.3	149.1	149.1	149.1
			SHC	73.7	94.4	115.1	70.7	91.4	112.1	67.4	88.1	108.8	64.1	84.7	105.4	60.2	80.9	101.5
		76	TC	—	197.4	197.4	—	188.4	188.4	—	180.2	180.2	—	170.8	170.8	—	160.2	160.2
			SHC	—	76.8	96.1	—	73.5	93.0	—	70.5	90.3	—	67.2	87.1	—	63.5	83.5
4800 cfm	EAT (wb)	58	TC	154.1	154.1	173.7	149.0	149.0	168.0	142.6	142.6	160.7	136.4	136.4	153.8	128.4	128.4	144.7
			SHC	134.5	154.1	173.7	130.0	149.0	168.0	124.4	142.6	160.7	119.0	136.4	153.8	112.0	128.4	144.7
		62	TC	158.4	158.4	169.6	152.4	152.4	166.3	145.4	145.4	162.6	137.5	137.5	157.5	128.6	128.6	150.5
			SHC	123.2	146.4	169.6	120.1	143.2	166.3	116.7	139.6	162.6	112.3	134.9	157.5	106.7	128.6	150.5
		67	TC	172.6	172.6	172.6	165.3	165.3	165.3	157.5	157.5	157.5	148.9	148.9	148.9	138.8	138.8	138.8
			SHC	99.7	123.1	146.4	96.6	119.9	143.2	93.3	116.5	139.8	89.8	113.0	136.3	85.6	108.8	132.0
		72	TC	187.8	187.8	187.8	179.8	179.8	179.8	171.3	171.3	171.3	162.2	162.2	162.2	151.8	151.8	151.8
			SHC	75.5	98.8	122.0	72.4	95.7	119.0	69.2	92.4	115.7	65.8	89.0	112.3	62.0	85.2	108.4
		76	TC	—	200.4	200.4	—	191.6	191.6	—	183.6	183.6	—	173.8	173.8	—	162.8	162.8
			SHC	—	78.6	100.8	—	75.5	97.8	—	72.7	95.1	—	69.3	91.8	—	65.6	88.2
5400 cfm	EAT (wb)	58	TC	158.9	158.9	179.1	154.0	154.0	173.6	147.5	147.5	166.3	140.9	140.9	158.8	132.4	132.4	149.3
			SHC	138.7	158.9	179.1	134.4	154.0	173.6	128.7	147.5	166.3	122.9	140.9	158.8	115.5	132.4	149.3
		62	TC	161.8	161.8	180.8	155.7	155.7	177.2	148.0	148.0	173.1	141.0	141.0	165.0	132.8	132.8	155.4
			SHC	129.8	155.3	180.8	126.6	151.9	177.2	122.8	148.0	173.1	117.0	141.0	165.0	110.2	132.8	155.4
		67	TC	175.2	175.2	175.2	168.2	168.2	168.2	159.9	159.9	159.9	151.2	151.2	151.2	141.0	141.0	141.2
			SHC	103.8	129.7	155.6	101.0	126.9	152.7	97.5	123.3	149.1	94.0	119.7	145.5	89.9	115.5	141.2
		72	TC	190.8	190.8	190.8	182.2	182.2	182.2	174.1	174.1	174.1	164.4	164.4	164.4	153.6	153.6	153.6
			SHC	77.1	102.9	128.8	73.9	99.7	125.5	70.9	96.7	122.5	67.3	93.2	119.0	63.5	89.3	115.1
		76	TC	—	204.5	204.5	—	195.4	195.4	—	186.2	186.2	—	176.2	176.2	—	164.9	164.9
			SHC	—	81.2	106.7	—	77.8	102.7	—	74.6	99.6	—	71.3	96.3	—	67.5	92.7
6000 cfm	EAT (wb)	58	TC	164.2	164.2	185.1	158.1	158.1	178.2	151.7	151.7	171.0	144.6	144.6	163.1	136.2	136.2	153.6
			SHC	143.4	164.2	185.1	138.0	158.1	178.2	132.4	151.7	171.0	126.2	144.6	163.1	118.8	136.2	153.6
		62	TC	165.7	165.7	187.8	158.6	158.6	185.6	152.1	152.1	177.9	144.7	144.7	169.3	136.0	136.0	159.1
			SHC	134.3	161.1	187.8	131.7	158.6	185.6	126.2	152.1	177.9	120.1	144.7	169.3	112.8	136.0	159.1
		67	TC	177.1	177.1	177.1	170.2	170.2	170.2	162.3	162.3	162.3	153.1	153.1	154.4	142.8	142.8	150.0
			SHC	107.8	136.2	164.5	105.0	133.3	161.6	101.7	130.0	158.2	98.0	126.2	154.4	93.9	121.9	150.0
		72	TC	193.6	193.6	193.6	184.3	184.3	184.3	176.0	176.0	176.0	166.1	166.1	166.1	155.4	155.4	155.4
			SHC	78.7	107.1	135.5	75.3	103.7	132.0	72.3	100.7	129.0	68.8	97.1	125.4	65.0	93.3	121.5
		76	TC	—	206.1	206.1	—	197.9	197.9	—	188.3	188.3	—	178.0	178.0	—	166.6	166.6
			SHC	—	82.5	109.8	—	79.7	107.1	—	76.5	104.0	—	73.1	100.7	—	69.4	97.1

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EAT (db) — Entering Air Temperature (dry bulb)
EAT (wb) — Entering Air Temperature (wet bulb)
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTE: See minimum-maximum airflow ratings on page 7.

Performance data (cont)

50GEQM28 Two Stage Cooling Capacities

50GEQM28				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
7500cfm	EAT (wb)	58	TC	259.0	259.0	294.6	243.8	243.8	278.1	227.4	227.4	260.4	209.5	209.5	240.8	190.1	190.1	219.5
			SHC	223.3	259.0	294.6	209.4	243.8	278.1	194.5	227.4	260.4	178.2	209.5	240.8	160.7	190.1	219.5
		62	TC	279.8	279.8	279.8	262.0	262.0	262.0	242.3	242.3	246.8	220.6	220.6	233.5	197.0	197.0	219.3
			SHC	197.4	234.1	270.7	186.0	222.6	259.1	173.8	210.3	246.8	160.8	197.1	233.5	146.9	183.1	219.3
		67	TC	309.6	309.6	309.6	290.9	290.9	290.9	270.3	270.3	270.3	247.6	247.6	247.6	222.9	222.9	222.9
			SHC	162.3	199.1	235.9	151.0	187.8	224.6	139.1	175.8	212.6	126.4	163.1	199.8	113.0	149.7	186.3
		72	TC	342.5	342.5	342.5	322.7	322.7	322.7	301.0	301.0	301.0	277.2	277.2	277.2	251.6	251.6	251.6
			SHC	126.5	163.0	199.6	115.2	151.8	188.4	103.4	140.0	176.6	90.9	127.5	164.1	77.9	114.5	151.1
		76	TC	—	370.5	370.5	—	349.6	349.6	—	327.0	327.0	—	302.3	302.3	—	275.9	275.9
			SHC	—	133.6	174.8	—	122.4	156.1	—	110.7	145.3	—	98.4	133.4	—	85.6	120.9
8750 cfm	EAT (wb)	58	TC	275.0	275.0	312.4	259.5	259.5	295.7	242.4	242.4	277.0	223.6	223.6	256.4	203.2	203.2	234.1
			SHC	237.5	275.0	312.4	223.4	259.5	295.7	207.8	242.4	277.0	190.7	223.6	256.4	172.3	203.2	234.1
		62	TC	290.3	290.3	297.4	271.9	271.9	285.6	251.6	251.6	272.8	229.3	229.3	258.6	206.7	206.7	237.3
			SHC	213.8	255.6	297.4	202.1	243.9	285.6	189.7	231.2	272.8	176.2	217.4	258.6	158.9	198.1	237.3
		67	TC	320.1	320.1	320.1	300.7	300.7	300.7	279.3	279.3	279.3	255.7	255.7	255.7	230.3	230.3	230.3
			SHC	172.8	214.9	257.1	161.4	203.5	245.6	149.3	191.4	233.4	136.4	178.4	220.4	123.0	164.8	206.7
		72	TC	353.2	353.2	353.2	332.6	332.6	332.6	310.0	310.0	310.0	285.3	285.3	285.3	259.0	259.0	259.0
			SHC	131.0	172.9	214.8	119.6	161.5	203.4	107.7	149.6	191.5	95.0	136.9	178.8	81.9	123.8	165.7
		76	TC	—	381.5	381.5	—	359.7	359.7	—	336.2	336.2	—	310.5	310.5	—	283.4	283.4
			SHC	—	138.6	178.0	—	127.2	167.1	—	115.4	155.6	—	102.9	143.4	—	90.0	130.6
10000 cfm	EAT (wb)	58	TC	288.6	288.6	327.6	272.5	272.5	310.1	254.7	254.7	290.7	235.1	235.1	269.3	214.0	214.0	246.1
			SHC	249.6	288.6	327.6	234.9	272.5	310.1	218.7	254.7	290.7	201.0	235.1	269.3	181.9	214.0	246.1
		62	TC	298.7	298.7	322.4	279.8	279.8	309.9	258.9	258.9	296.0	239.8	239.8	267.6	219.1	219.1	240.1
			SHC	229.0	275.7	322.4	217.0	263.5	309.9	203.9	249.9	296.0	183.5	225.6	267.6	163.2	201.7	240.1
		67	TC	328.4	328.4	328.4	308.3	308.3	308.3	286.3	286.3	286.3	262.0	262.0	262.0	236.0	236.0	236.0
			SHC	182.5	229.8	277.1	171.0	218.2	265.5	158.8	206.0	253.1	145.8	192.9	240.0	132.3	179.2	226.2
		72	TC	361.6	361.6	361.6	340.2	340.2	340.2	317.0	317.0	317.0	291.5	291.5	291.5	264.7	264.7	264.7
			SHC	134.8	181.9	229.0	123.3	170.4	217.5	111.2	158.3	205.4	98.5	145.6	192.7	85.3	132.3	179.3
		76	TC	—	390.0	390.0	—	367.5	367.5	—	343.3	343.3	—	317.0	317.0	—	289.2	289.2
			SHC	—	142.8	187.8	—	131.3	176.6	—	119.4	164.8	—	106.8	152.4	—	93.7	139.5
11250 cfm	EAT (wb)	58	TC	300.0	300.0	340.3	283.3	283.3	322.1	264.9	264.9	302.0	244.8	244.8	280.0	223.0	223.0	256.1
			SHC	259.8	300.0	340.3	244.5	283.3	322.1	227.8	264.9	302.0	209.5	244.8	280.0	189.9	223.0	256.1
		62	TC	305.6	305.6	344.9	288.1	288.1	323.7	265.6	265.6	315.3	245.0	245.0	292.1	223.1	223.1	267.3
			SHC	242.6	293.8	344.9	226.3	275.0	323.7	215.9	265.6	315.3	197.9	245.0	292.1	178.9	223.1	267.3
		67	TC	335.0	335.0	335.0	314.4	314.4	314.4	291.9	291.9	291.9	267.1	267.1	267.1	240.7	240.7	244.5
			SHC	191.6	243.8	296.1	180.0	232.2	284.3	167.7	219.8	271.9	154.7	206.6	258.6	141.1	192.8	244.5
		72	TC	368.2	368.2	368.2	346.1	346.1	346.1	322.5	322.5	322.5	296.6	296.6	296.6	269.2	269.2	269.2
			SHC	138.1	190.2	242.4	126.5	178.7	231.0	114.4	166.5	218.5	101.6	153.6	205.7	88.3	140.3	192.3
		76	TC	—	396.8	396.8	—	373.7	373.7	—	349.0	349.0	—	322.1	322.1	—	293.8	293.8
			SHC	—	146.4	196.6	—	134.9	185.2	—	122.8	173.3	—	110.1	160.7	—	97.0	147.8
12500 cfm	EAT (wb)	58	TC	309.9	309.9	351.3	292.6	292.6	332.5	273.7	273.7	311.9	253.0	253.0	289.1	230.7	230.7	264.6
			SHC	268.5	309.9	351.3	252.8	292.6	332.5	235.6	273.7	311.9	216.8	253.0	289.1	196.7	230.7	264.6
		62	TC	311.2	311.2	366.6	293.0	293.0	346.3	274.0	274.0	324.9	253.2	253.2	301.5	230.9	230.9	276.2
			SHC	255.8	311.2	366.6	239.8	293.0	346.3	223.1	274.0	324.9	204.9	253.2	301.5	185.5	230.9	276.2
		67	TC	340.5	340.5	340.5	319.4	319.4	319.4	296.4	296.4	296.4	271.3	271.3	276.3	244.6	244.6	262.1
			SHC	200.2	257.3	314.3	188.6	245.5	302.4	176.2	233.0	289.8	163.1	219.7	276.3	149.5	205.8	262.1
		72	TC	373.6	373.6	373.6	351.2	351.2	351.2	327.0	327.0	327.0	300.8	300.8	300.8	273.0	273.0	273.0
			SHC	141.0	198.0	255.1	129.3	186.3	243.3	117.1	174.1	231.0	104.3	161.2	218.1	91.0	147.9	204.7
		76	TC	—	402.4	402.4	—	378.8	378.8	—	353.6	353.6	—	326.3	326.3	—	297.6	297.6
			SHC	—	149.6	204.7	—	137.9	193.2	—	125.7	181.2	—	112.9	168.5	—	99.7	155.5

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EAT (db) — Entering Air Temperature (dry bulb)
EAT (wb) — Entering Air Temperature (wet bulb)
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTE: See minimum-maximum airflow ratings on page 7.

Performance data (cont)

50GEQM28 Single Stage Cooling Capacities

50GEQM28				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
4500 cfm	EAT (wb)	58	TC	158.4	158.4	180.5	149.4	149.4	170.8	139.8	139.8	160.3	129.3	129.3	149.0	118.0	118.0	136.7
			SHC	136.3	158.4	180.5	128.0	149.4	170.8	119.2	139.8	160.3	109.6	129.3	149.0	99.4	118.0	136.7
		62	TC	168.9	168.9	169.6	158.1	158.1	162.5	146.5	146.5	155.1	134.1	134.1	147.3	120.5	120.5	138.8
			SHC	121.9	145.7	169.6	114.8	138.7	162.5	107.5	131.3	155.1	99.8	123.5	147.3	91.5	115.1	138.8
		67	TC	187.9	187.9	187.9	176.4	176.4	176.4	164.2	164.2	164.2	151.0	151.0	151.0	136.6	136.6	136.6
			SHC	99.9	123.8	147.7	92.9	116.8	140.7	85.6	109.5	133.4	78.0	101.8	125.7	69.9	93.8	117.6
		72	TC	208.6	208.6	208.6	196.4	196.4	196.4	183.4	183.4	183.4	169.4	169.4	169.4	154.3	154.3	154.3
			SHC	77.5	101.3	125.2	70.5	94.3	118.2	63.2	87.1	110.9	55.7	79.5	103.4	47.8	71.6	95.4
		76	TC	—	226.7	226.7	—	213.8	213.8	—	200.2	200.2	—	185.6	185.6	—	169.7	169.7
			SHC	—	83.1	105.9	—	76.1	99.1	—	68.9	92.0	—	61.4	84.6	—	53.5	76.8
5250 cfm	EAT (wb)	58	TC	169.1	169.1	192.3	159.5	159.5	182.0	149.3	149.3	171.0	138.4	138.4	159.1	126.4	126.4	146.0
			SHC	145.8	169.1	192.3	137.0	159.5	182.0	127.7	149.3	171.0	117.7	138.4	159.1	106.8	126.4	146.0
		62	TC	175.3	175.3	188.1	164.1	164.1	180.7	152.2	152.2	173.0	142.1	142.1	156.7	128.7	128.7	146.9
			SHC	133.1	160.6	188.1	125.9	153.3	180.7	118.3	145.7	173.0	106.7	131.7	156.7	97.8	122.4	146.9
		67	TC	194.4	194.4	194.4	182.4	182.4	182.4	169.6	169.6	169.6	155.9	155.9	155.9	140.9	140.9	140.9
			SHC	107.3	134.9	162.6	100.1	127.8	155.4	92.7	120.3	148.0	85.0	112.6	140.2	76.8	104.4	131.9
		72	TC	215.2	215.2	215.2	202.5	202.5	202.5	189.0	189.0	189.0	174.5	174.5	174.5	158.8	158.8	158.8
			SHC	80.9	108.5	136.1	73.8	101.4	129.0	66.5	94.1	121.7	58.8	86.4	114.0	50.8	78.3	105.9
		76	TC	—	233.7	233.7	—	220.2	220.2	—	206.0	206.0	—	190.7	190.7	—	174.2	174.2
			SHC	—	87.1	113.9	—	80.0	106.8	—	72.6	99.6	—	65.0	92.0	—	57.0	84.1
6000 cfm	EAT (wb)	58	TC	177.9	177.9	202.2	167.9	167.9	191.4	157.4	157.4	179.9	145.9	145.9	167.4	133.4	133.4	153.7
			SHC	153.6	177.9	202.2	144.5	167.9	191.4	134.8	157.4	179.9	124.3	145.9	167.4	113.0	133.4	153.7
		62	TC	180.6	180.6	205.2	171.5	171.5	189.9	157.6	157.6	187.7	146.1	146.1	174.8	133.5	133.5	160.7
			SHC	143.5	174.3	205.2	132.5	161.2	189.9	127.5	157.6	187.7	117.3	146.1	174.8	106.3	133.5	160.7
		67	TC	199.3	199.3	199.3	186.9	186.9	186.9	173.8	173.8	173.8	159.6	159.6	159.6	144.4	144.4	145.8
			SHC	114.2	145.5	176.8	106.9	138.2	169.5	99.4	130.7	162.0	91.6	122.8	154.0	83.4	114.6	145.8
		72	TC	220.4	220.4	220.4	207.1	207.1	207.1	193.2	193.2	193.2	178.3	178.3	178.3	162.1	162.1	162.1
			SHC	84.0	115.3	146.6	76.7	108.1	139.4	69.3	100.6	131.9	61.6	92.9	124.2	53.4	84.7	116.0
		76	TC	—	239.1	239.1	—	225.0	225.0	—	210.4	210.4	—	194.7	194.7	—	177.7	177.7
			SHC	—	90.7	121.2	—	83.5	114.0	—	76.0	106.7	—	68.3	99.0	—	60.3	91.1
6750 cfm	EAT (wb)	58	TC	185.5	185.5	210.6	175.2	175.2	199.4	164.1	164.1	187.4	152.1	152.1	174.4	139.1	139.1	160.1
			SHC	160.4	185.5	210.6	150.9	175.2	199.4	140.8	164.1	187.4	129.9	152.1	174.4	118.1	139.1	160.1
		62	TC	185.7	185.7	219.3	175.4	175.4	207.8	164.3	164.3	195.4	152.4	152.4	182.1	139.3	139.3	167.4
			SHC	152.2	185.7	219.3	143.0	175.4	207.8	133.2	164.3	195.4	122.7	152.4	182.1	111.2	139.3	167.4
		67	TC	203.2	203.2	203.2	190.5	190.5	190.5	177.2	177.2	177.2	162.7	162.7	167.4	147.1	147.1	159.1
			SHC	120.7	155.6	190.6	113.4	148.3	183.1	105.9	140.7	175.6	97.9	132.6	167.4	89.6	124.4	159.1
		72	TC	224.4	224.4	224.4	210.9	210.9	210.9	196.6	196.6	196.6	181.3	181.3	181.3	164.8	164.8	164.8
			SHC	86.7	121.7	156.7	79.4	114.4	149.4	71.9	106.9	141.8	64.1	99.1	134.0	55.9	90.9	125.8
		76	TC	—	243.3	243.3	—	228.9	228.9	—	213.8	213.8	—	197.7	197.7	—	180.4	180.4
			SHC	—	94.0	128.2	—	86.7	120.9	—	79.2	113.5	—	71.4	105.8	—	63.3	97.7
7500 cfm	EAT (wb)	58	TC	192.0	192.0	217.9	181.2	181.2	206.2	169.8	169.8	193.7	157.5	157.5	180.3	144.1	144.1	165.6
			SHC	166.2	192.0	217.9	156.3	181.2	206.2	145.9	169.8	193.7	134.6	157.5	180.3	122.5	144.1	165.6
		62	TC	192.3	192.3	226.8	181.4	181.4	214.7	170.0	170.0	201.9	157.6	157.6	188.1	144.2	144.2	173.0
			SHC	157.7	192.3	226.8	148.1	181.4	214.7	138.0	170.0	201.9	127.2	157.6	188.1	115.4	144.2	173.0
		67	TC	206.5	206.5	206.5	193.6	193.6	196.4	179.9	179.9	188.7	165.2	165.2	180.6	149.3	149.3	171.7
			SHC	127.0	165.5	203.9	119.6	158.0	196.4	112.1	150.4	188.7	104.1	142.3	180.6	95.6	133.7	171.7
		72	TC	227.7	227.7	227.7	213.8	213.8	213.8	199.3	199.3	199.3	183.8	183.8	183.8	166.9	166.9	166.9
			SHC	89.3	127.8	166.3	81.9	120.4	158.9	74.3	112.8	151.3	66.5	105.0	143.5	58.3	96.8	135.2
		76	TC	—	246.7	246.7	—	231.9	231.9	—	216.5	216.5	—	200.2	200.2	—	182.6	182.6
			SHC	—	97.0	134.7	—	89.6	127.4	—	82.0	119.9	—	74.2	112.2	—	66.1	104.1

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EAT (db) — Entering Air Temperature (dry bulb)
EAT (wb) — Entering Air Temperature (wet bulb)
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

NOTE: See minimum-maximum airflow ratings on page 7.

Performance data (cont)

50GEQM17 Heating Capacities

50GEQ*17 (15 Tons)											
Return Air (°F db)	CFM (Standard Air)		Temperature Air Entering Outdoor Coil (°F db at 70% rh)								
			-10	0	10	17	30	40	47	50	60
55	4500	Capacity	59.9	68.4	89.6	104.4	131.3	154.0	171.3	177.5	202.7
		Int. Cap.	55.4	62.9	82.2	95.2	115.1	154.0	171.3	177.5	202.7
	6000	Capacity	50.3	70.2	92.3	106.3	135.6	159.6	177.9	184.5	211.7
		Int. Cap.	46.5	64.6	84.7	96.9	118.8	159.6	177.9	184.5	211.7
	7500	Capacity	52.6	72.5	95.2	110.2	139.3	164.0	183.1	189.8	218.3
		Int. Cap.	48.7	66.7	87.4	100.5	122.0	164.0	183.1	189.8	218.3
70	4500	Capacity	46.2	64.9	84.7	99.1	124.7	146.5	162.8	168.8	192.5
		Int. Cap.	42.7	59.7	77.7	90.3	109.3	146.5	162.8	168.8	192.5
	6000	Capacity	47.7	66.7	86.9	102.2	129.0	152.0	169.4	175.8	201.5
		Int. Cap.	44.1	61.4	79.8	93.2	113.0	152.0	169.4	175.8	201.5
	7500	Capacity	50.0	69.1	89.7	105.1	132.8	156.4	174.7	181.3	208.3
		Int. Cap.	46.2	63.5	82.3	95.9	116.4	156.4	174.7	181.3	208.3
80	4500	Capacity	54.6	62.8	81.9	95.8	120.5	141.7	157.2	163.1	185.8
		Int. Cap.	50.5	57.8	75.2	87.3	105.6	141.7	157.2	163.1	185.8
	6000	Capacity	46.2	64.6	84.2	98.8	124.7	147.0	163.8	169.9	194.6
		Int. Cap.	42.7	59.4	77.3	90.1	109.3	147.0	163.8	169.9	194.6
	7500	Capacity	48.5	67.0	86.9	101.9	128.5	151.6	169.1	175.5	201.4
		Int. Cap.	44.9	61.6	79.7	92.9	112.6	151.6	169.1	175.5	201.4

LEGEND

— — Do Not Operate
Capacity — Instantaneous Capacity (1000 Btuh) — includes indoor fan motor heat at AHRI static conditions
Int. Cap. — Integrated Capacity = instantaneous capacity minus the effects of frost on the OD coil and the heat required to defrost it
rh — Relative Humidity
db — Dry Bulb
— Standard rating point

50GEQM24 Heating Capacities

50GEQ*24 (20 Tons)											
Return Air (°F db)	CFM (Standard Air)		Temperature Air Entering Outdoor Coil (°F db at 70% rh)								
			-10	0	10	17	30	40	47	50	60
55	6000	Capacity	77.5	100.2	134.5	151.9	189.0	221.3	244.0	251.2	285.3
		Int. Cap.	71.7	92.2	123.5	138.5	165.6	221.3	244.0	251.2	285.3
	8000	Capacity	79.8	100.1	136.1	153.5	190.7	223.4	246.7	254.2	289.9
		Int. Cap.	73.8	92.1	124.9	140.0	167.1	223.4	246.7	254.2	289.9
	10000	Capacity	82.9	105.5	138.4	155.2	193.0	225.7	249.3	256.9	293.7
		Int. Cap.	76.7	97.1	127.0	141.5	169.1	225.7	249.3	256.9	293.7
70	6000	Capacity	70.4	93.8	129.9	147.5	183.8	216.0	238.4	245.2	277.6
		Int. Cap.	65.1	86.3	119.2	134.5	161.1	216.0	238.4	245.2	277.6
	8000	Capacity	73.9	97.1	132.6	147.2	186.7	219.2	242.3	249.3	283.6
		Int. Cap.	68.3	89.3	121.7	134.2	163.6	219.2	242.3	249.3	283.6
	10000	Capacity	77.3	100.4	135.6	153.4	189.7	222.1	245.5	252.9	288.0
		Int. Cap.	71.5	92.4	124.5	139.9	166.2	222.1	245.5	252.9	288.0
80	6000	Capacity	64.1	89.0	125.7	141.9	178.6	211.1	233.4	240.2	271.8
		Int. Cap.	59.3	81.9	115.4	129.4	156.5	211.1	233.4	240.2	271.8
	8000	Capacity	67.8	91.5	129.4	146.6	182.6	215.4	238.1	245.1	278.4
		Int. Cap.	62.7	84.2	118.8	133.7	160.0	215.4	238.1	245.1	278.4
	10000	Capacity	71.5	95.5	132.6	150.2	186.3	218.9	242.0	248.9	283.5
		Int. Cap.	66.1	87.9	121.7	136.9	163.2	218.9	242.0	248.9	283.5

LEGEND

— — Do Not Operate
Capacity — Instantaneous Capacity (1000 Btuh) — includes indoor fan motor heat at AHRI static conditions
Int. Cap. — Integrated Capacity = instantaneous capacity minus the effects of frost on the OD coil and the heat required to defrost it
rh — Relative Humidity
db — Dry Bulb
— Standard rating point

Performance data (cont)

50GEQM28 Heating Capacities

50GEQ*28 (25 Tons)

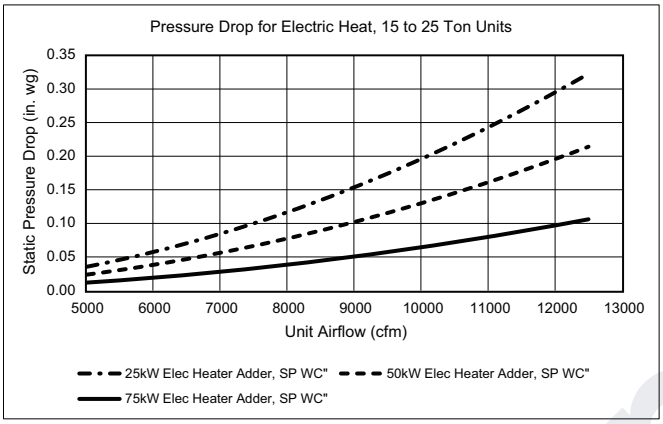
Return Air (°F db)	CFM (Standard Air)		Temperature Air Entering Outdoor Coil (°F db at 70% rh)								
			-10	0	10	17	30	40	47	50	60
55	7500	Capacity	107.5	135.5	174.5	196.7	243.5	285.8	311.5	323.1	363.4
		Int. Cap.	99.5	124.7	160.1	179.3	213.4	285.8	311.5	323.1	363.4
	10000	Capacity	111.8	139.7	177.9	200.2	247.4	289.9	316.0	325.2	370.3
		Int. Cap.	103.4	128.6	163.3	182.5	216.8	289.9	316.0	325.2	370.3
	12500	Capacity	116.9	144.6	182.3	204.5	251.5	293.7	320.5	329.9	376.1
		Int. Cap.	108.1	133.1	167.3	186.4	220.4	293.7	320.5	329.9	376.1
70	7500	Capacity	97.4	126.1	167.9	189.8	235.6	277.8	304.1	314.9	355.7
		Int. Cap.	90.1	116.0	154.1	173.1	206.4	277.8	304.1	314.9	355.7
	10000	Capacity	102.4	131.0	172.6	194.5	241.0	283.6	310.5	322.5	362.6
		Int. Cap.	94.7	120.5	158.4	177.3	211.2	283.6	310.5	322.5	362.6
	12500	Capacity	108.0	136.5	177.3	199.3	246.2	289.5	315.9	328.7	369.5
		Int. Cap.	99.9	125.6	162.7	181.7	215.7	289.5	315.9	328.7	369.5
80	7500	Capacity	—	117.9	161.0	183.4	228.6	270.8	299.4	307.7	347.7
		Int. Cap.	—	108.5	147.8	167.3	200.3	270.8	299.4	307.7	347.7
	10000	Capacity	—	123.9	166.4	189.0	234.7	278.1	307.6	316.0	358.6
		Int. Cap.	—	114.0	152.8	172.3	205.7	278.1	307.6	316.0	358.6
	12500	Capacity	—	129.2	172.4	194.7	240.7	283.9	311.6	323.1	367.5
		Int. Cap.	—	118.9	158.3	177.5	210.9	283.9	311.6	323.1	367.5

LEGEND

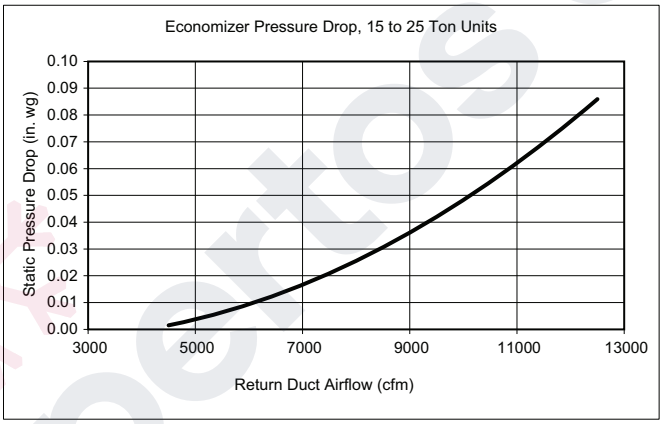
— — Do Not Operate
Capacity — Instantaneous Capacity (1000 Btuh) — includes indoor fan motor heat at AHRI static conditions
Int. Cap. — Integrated Capacity = instantaneous capacity minus the effects of frost on the OD coil and the heat required to defrost it
rh — Relative Humidity
db — Dry Bub
— Standard rating point

Performance data (cont)

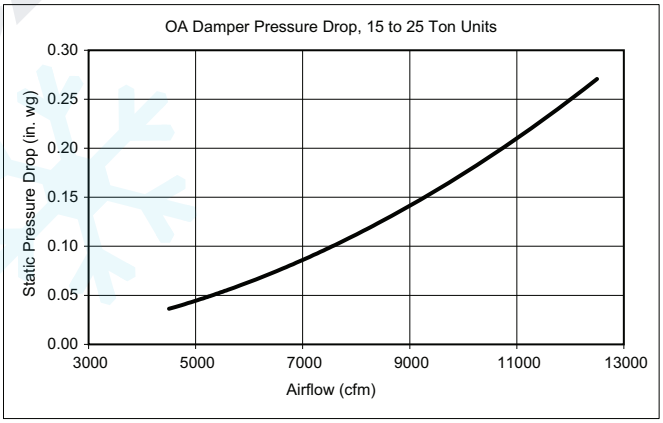
Pressure Drop for Electric Heating Units
15 to 25 Ton Units



Static Pressure Drop — Accessory Economizer
15 to 25 Ton Units



Outside Air Damper Leakage
15 to 25 Ton Units



General Fan Performance Notes

1. Interpolation is permissible. Do not extrapolate.
2. External static pressure is the static pressure difference between the return duct and the supply duct plus the static pressure caused by any FIOPs or accessories.
3. Tabular data accounts for pressure loss due to clean filters, unit casing, and wet coils.
4. Factory options and accessories may effect static pressure losses. Selection software is available, through your salesperson, to help you select the best motor/drive combination for your application.
5. The fan performance tables offer motor recommendations. In cases when 2 motors would work, the lower horsepower option is recommended.
6. For information on the electrical properties of the fan motors, please see the Electrical information section of this book.
7. For more information on the performance limits of the fan motors, see the application data section of this book.
8. The EPACT (Energy Policy Act of 1992) regulates energy requirements for specific types of indoor fan motors. Motors regulated by EPACT include any general purpose, T-frame (3-digit, 143 and larger), single-speed, foot mounted, polyphase, squirrel cage induction motors of NEMA (National Electrical Manufacturers Association) design A and B, manufactured for use in the United States. Ranging from 1 to 200 Hp, these continuous-duty motors operate on 230 and 460 volt, 60 Hz power. If a motor does not fit into these specifications, the motor does not have to be replaced by an EPACT compliant energy-efficient motor. Variable-speed motors are exempt from EPACT compliance requirements.

Fan data (cont)

50GEQ*17 — 15 Ton Vertical Supply (rpm - bhp)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
4500	936	0.61	1065	0.90	1180	1.23	1285	1.59	1380	1.97
4875	991	0.73	1112	1.03	1224	1.37	1325	1.74	1418	2.14
5250	1048	0.86	1161	1.18	1268	1.53	1366	1.91	1457	2.32
5625	1106	1.02	1211	1.34	1314	1.71	1410	2.11	1498	2.53
6000	1166	1.19	1263	1.52	1362	1.90	1454	2.31	1540	2.75
6375	1226	1.38	1317	1.72	1410	2.11	1499	2.53	1584	2.99
6750	1287	1.59	1371	1.93	1460	2.33	1546	2.76	1628	3.23
7125	1349	1.82	1428	2.16	1511	2.56	1594	3.01	1674	3.48
7500	1412	2.07	1485	2.40	1563	2.80	1643	3.26	1721	3.74

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
4500	1470	2.38	1554	2.81	1634	3.27	1710	3.74	1782	4.24
4875	1505	2.55	1588	3.00	1666	3.46	1741	3.95	1812	4.46
5250	1542	2.75	1623	3.21	1700	3.69	1773	4.18	1844	4.71
5625	1581	2.97	1660	3.44	1735	3.93	1807	4.44	1876	4.97
6000	1622	3.21	1699	3.69	1772	4.19	1843	4.71	1911	5.25
6375	1663	3.46	1739	3.95	1811	4.46	1880	4.99	1946	5.54
6750	1706	3.71	1780	4.22	1850	4.74	1918	5.28	1983	5.83
7125	1750	3.98	1822	4.49	1891	5.02	1958	5.57	2022	6.14
7500	1794	4.24	1866	4.77	1933	5.30	1999	5.86	—	—

Std/Med Static 936-2000 rpm, 4.8 Max bhp (2.4 Max bhp per fan motor)

High Static 936-2200 rpm, 6.0 Max bhp (3.0 Max bhp per fan motor)

50GEQ*17 — Standard/Medium Static — 15 Ton Vertical Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
4500	936	4.5	1065	5.2	1180	5.8	1285	6.3	1380	6.8
4875	991	4.8	1112	5.4	1224	6.0	1325	6.5	1418	7.0
5250	1048	5.1	1161	5.7	1268	6.2	1366	6.7	1457	7.2
5625	1106	5.4	1211	5.9	1314	6.5	1410	7.0	1498	7.4
6000	1166	5.7	1263	6.2	1362	6.7	1454	7.2	1540	7.6
6375	1226	6.0	1317	6.5	1410	7.0	1499	7.4	1584	7.9
6750	1287	6.3	1371	6.8	1460	7.2	1546	7.7	1628	8.1
7125	1349	6.7	1428	7.1	1511	7.5	1594	7.9	1674	8.3
7500	1412	7.0	1485	7.4	1563	7.8	1643	8.2	1721	8.6

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
4500	1470	7.3	1554	7.7	1634	8.1	1710	8.5	1782	8.9
4875	1505	7.5	1588	7.9	1666	8.3	1741	8.7	1812	9.0
5250	1542	7.6	1623	8.1	1700	8.5	1773	8.8	1844	9.2
5625	1581	7.8	1660	8.3	1735	8.6	1807	9.0	1876	9.4
6000	1622	8.1	1699	8.5	1772	8.8	1843	9.2	—	—
6375	1663	8.3	1739	8.7	1811	9.0	1880	9.4	—	—
6750	1706	8.5	1780	8.9	1850	9.2	—	—	—	—
7125	1750	8.7	1822	9.1	1891	9.4	—	—	—	—
7500	1794	8.9	1866	9.3	—	—	—	—	—	—

Std/Med Static 936-2000 rpm

Fan data (cont)

50GEQ*17 — High Static — 15 Ton Vertical Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
4500	936	4.2	1065	4.8	1180	5.3	1285	5.8	1380	6.2
4875	991	4.4	1112	5.0	1224	5.5	1325	6.0	1418	6.4
5250	1048	4.7	1161	5.2	1268	5.7	1366	6.2	1457	6.6
5625	1106	5.0	1211	5.4	1314	5.9	1410	6.4	1498	6.8
6000	1166	5.2	1263	5.7	1362	6.1	1454	6.6	1540	7.0
6375	1226	5.5	1317	5.9	1410	6.4	1499	6.8	1584	7.2
6750	1287	5.8	1371	6.2	1460	6.6	1546	7.0	1628	7.4
7125	1349	6.1	1428	6.4	1511	6.8	1594	7.2	1674	7.6
7500	1412	6.4	1485	6.7	1563	7.1	1643	7.4	1721	7.8

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
4500	1470	6.6	1554	7.0	1634	7.4	1710	7.7	1782	8.1
4875	1505	6.8	1588	7.2	1666	7.5	1741	7.9	1812	8.2
5250	1542	7.0	1623	7.3	1700	7.7	1773	8.0	1844	8.4
5625	1581	7.1	1660	7.5	1735	7.9	1807	8.2	1876	8.5
6000	1622	7.3	1699	7.7	1772	8.0	1843	8.4	1911	8.7
6375	1663	7.5	1739	7.9	1811	8.2	1880	8.5	1946	8.8
6750	1706	7.7	1780	8.1	1850	8.4	1918	8.7	1983	9.0
7125	1750	7.9	1822	8.3	1891	8.6	1958	8.9	2022	9.2
7500	1794	8.1	1866	8.5	1933	8.8	1999	9.1	—	—

High Static 936-2200 rpm

Fan data (cont)

50GEQ*24 — 20 Ton Vertical Supply (rpm - bhp)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6,000	1038	0.84	1148	1.14	1251	1.47	1351	1.86	1448	2.28
6,500	1103	1.01	1207	1.32	1304	1.66	1398	2.05	1490	2.48
7,000	1169	1.19	1269	1.52	1360	1.87	1448	2.26	1535	2.69
7,500	1234	1.38	1332	1.74	1418	2.09	1501	2.48	1583	2.91
8,000	1299	1.58	1395	1.95	1478	2.32	1557	2.72	1634	3.14
8,500	1364	1.78	1459	2.18	1540	2.56	1615	2.95	1689	3.37
9,000	1427	1.97	1524	2.40	1602	2.79	1674	3.18	1745	3.60
9,500	1491	2.17	1589	2.62	1665	3.02	1735	3.41	1802	3.83
10,000	1553	2.36	1653	2.84	1729	3.25	1797	3.65	1862	4.06

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6,000	1539	2.74	1624	3.22	1703	3.72	1777	4.22	1847	4.74
6,500	1578	2.95	1662	3.44	1741	3.96	1816	4.49	1887	5.04
7,000	1619	3.16	1701	3.66	1779	4.19	1854	4.74	1924	5.30
7,500	1663	3.38	1742	3.88	1818	4.41	1892	4.97	1962	5.55
8,000	1711	3.60	1786	4.10	1859	4.62	1931	5.18	2000	5.76
8,500	1761	3.83	1832	4.31	1903	4.83	1972	5.37	2039	5.94
9,000	1813	4.04	1882	4.52	1949	5.02	2015	5.55	2081	6.11
9,500	1868	4.26	1933	4.72	1998	5.21	2061	5.72	2124	6.27
10,000	1925	4.49	1987	4.94	2049	5.41	2110	5.91	2170	6.43

Std/Med Static 1038-2000 rpm, 4.8 Max bhp (2.4 Max bhp per fan motor)

High Static 1038-2200 rpm, 10.0 Max bhp (5.0 Max bhp per fan motor)

50GEQ*24 — Standard/Medium Static — 20 Ton Vertical Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
6,000	1038	5.1	1148	5.6	1251	6.1	1351	6.7	1448	7.2
6,500	1103	5.4	1207	5.9	1304	6.4	1398	6.9	1490	7.4
7,000	1169	5.7	1269	6.2	1360	6.7	1448	7.2	1535	7.6
7,500	1234	6.1	1332	6.6	1418	7.0	1501	7.4	1583	7.9
8,000	1299	6.4	1395	6.9	1478	7.3	1557	7.7	1634	8.1
8,500	1364	6.7	1459	7.2	1540	7.6	1615	8.0	1689	8.4
9,000	1427	7.1	1524	7.6	1602	8.0	1674	8.3	1745	8.7
9,500	1491	7.4	1589	7.9	1665	8.3	1735	8.6	1802	9.0
10,000	1553	7.7	1653	8.2	1729	8.6	1797	9.0	1862	9.3

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
6,000	1539	7.6	1624	8.1	1703	8.5	1777	8.9	1847	9.2
6,500	1578	7.8	1662	8.3	1741	8.7	1816	9.1	1887	9.4
7,000	1619	8.0	1701	8.5	1779	8.9	1854	9.2	—	—
7,500	1663	8.3	1742	8.7	1818	9.1	1892	9.4	—	—
8,000	1711	8.5	1786	8.9	1859	9.3	—	—	—	—
8,500	1761	8.8	1832	9.1	1903	9.5	—	—	—	—
9,000	1813	9.0	1882	9.4	1949	9.7	—	—	—	—
9,500	1868	9.3	1933	9.7	—	—	—	—	—	—
10,000	1925	9.6	1987	9.9	—	—	—	—	—	—

Std/Med Static 1038-2000 rpm

Fan data (cont)

50GEQ*24 — High Static — 20 Ton Vertical Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
6,000	1038	4.6	1148	5.1	1251	5.6	1351	6.1	1448	6.5
6,500	1103	4.9	1207	5.4	1304	5.9	1398	6.3	1490	6.7
7,000	1169	5.2	1269	5.7	1360	6.1	1448	6.5	1535	6.9
7,500	1234	5.5	1332	6.0	1418	6.4	1501	6.8	1583	7.2
8,000	1299	5.8	1395	6.3	1478	6.7	1557	7.0	1634	7.4
8,500	1364	6.1	1459	6.6	1540	7.0	1615	7.3	1689	7.6
9,000	1427	6.4	1524	6.9	1602	7.2	1674	7.6	1745	7.9
9,500	1491	6.7	1589	7.2	1665	7.5	1735	7.9	1802	8.2
10,000	1553	7.0	1653	7.5	1729	7.8	1797	8.1	1862	8.4

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
6,000	1539	6.9	1624	7.3	1703	7.7	1777	8.0	1847	8.4
6,500	1578	7.1	1662	7.5	1741	7.9	1816	8.2	1887	8.6
7,000	1619	7.3	1701	7.7	1779	8.1	1854	8.4	1924	8.7
7,500	1663	7.5	1742	7.9	1818	8.2	1892	8.6	1962	8.9
8,000	1711	7.7	1786	8.1	1859	8.4	1931	8.8	2000	9.1
8,500	1761	8.0	1832	8.3	1903	8.6	1972	8.9	2039	9.3
9,000	1813	8.2	1882	8.5	1949	8.8	2015	9.1	2081	9.5
9,500	1868	8.5	1933	8.8	1998	9.1	2061	9.4	2124	9.6
10,000	1925	8.7	1987	9.0	2049	9.3	2110	9.6	2170	9.9

High Static 1038-2200 rpm

Fan data (cont)

50GEQ*28 — 25 Ton Vertical Supply (rpm - bhp)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
7,500	1099	1.27	1174	1.55	1256	1.90	1343	2.32	1433	2.82
8,125	1177	1.58	1246	1.87	1319	2.22	1397	2.64	1479	3.13
8,750	1256	1.92	1319	2.23	1385	2.58	1456	3.00	1530	3.48
9,375	1337	2.32	1394	2.63	1455	2.99	1519	3.40	1586	3.87
10,000	1417	2.74	1471	3.06	1526	3.42	1585	3.83	1646	4.29
10,625	1498	3.18	1548	3.51	1600	3.88	1654	4.28	1710	4.73
11,250	1579	3.65	1626	3.98	1675	4.36	1725	4.76	1777	5.20
11,875	1661	4.17	1705	4.51	1751	4.88	1798	5.29	1846	5.72
12,500	1743	4.78	1785	5.14	1828	5.52	1872	5.93	1917	6.37

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
7,500	1521	3.38	1604	3.96	1683	4.58	1757	5.21	1828	5.86
8,125	1561	3.68	1642	4.28	1720	4.92	1794	5.58	1864	6.26
8,750	1606	4.02	1683	4.63	1758	5.28	1830	5.95	1900	6.66
9,375	1655	4.40	1727	5.00	1798	5.64	1869	6.33	1937	7.05
10,000	1710	4.81	1776	5.39	1843	6.02	1910	6.70	1976	7.42
10,625	1769	5.24	1829	5.79	1891	6.40	1954	7.06	2018	7.78
11,250	1831	5.69	1887	6.23	1944	6.81	2003	7.45	2063	8.14
11,875	1896	6.20	1948	6.72	2001	7.29	2056	7.90	2111	8.56
12,500	1964	6.85	2012	7.36	2061	7.91	2112	8.51	2164	9.16

Std/Med Static 1099-2200 rpm, 6.0 Max bhp (3.0 Max bhp per fan motor)

High Static 1099-2200 rpm, 10.0 Max bhp (5.0 Max bhp per fan motor)

50GEQ*28 — Standard/Medium Static — 25 Ton Vertical Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
7,500	1099	4.9	1174	5.3	1256	5.6	1343	6.0	1433	6.5
8,125	1177	5.3	1246	5.6	1319	5.9	1397	6.3	1479	6.7
8,750	1256	5.6	1319	5.9	1385	6.2	1456	6.6	1530	6.9
9,375	1337	6.0	1394	6.3	1455	6.6	1519	6.9	1586	7.2
10,000	1417	6.4	1471	6.6	1526	6.9	1585	7.2	1646	7.4
10,625	1498	6.8	1548	7.0	1600	7.2	1654	7.5	1710	7.7
11,250	1579	7.1	1626	7.4	1675	7.6	1725	7.8	1777	8.0
11,875	1661	7.5	1705	7.7	1751	7.9	1798	8.1	1846	8.4
12,500	1743	7.9	1785	8.1	1828	8.3	1872	8.5	1917	8.7

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
7,500	1521	6.9	1604	7.2	1683	7.6	1757	8.0	1828	8.3
8,125	1561	7.1	1642	7.4	1720	7.8	1794	8.1	1864	8.4
8,750	1606	7.3	1683	7.6	1758	8.0	1830	8.3	—	—
9,375	1655	7.5	1727	7.8	1798	8.1	1869	8.5	—	—
10,000	1710	7.7	1776	8.0	1843	8.4	—	—	—	—
10,625	1769	8.0	1829	8.3	1891	8.6	—	—	—	—
11,250	1831	8.3	1887	8.6	—	—	—	—	—	—
11,875	1896	8.6	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1099-2200 rpm

Fan data (cont)

50GEQ*28 — High Static — 25 Ton Vertical Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
7,500	1099	4.9	1174	5.3	1256	5.6	1343	6.0	1433	6.5
8,125	1177	5.3	1246	5.6	1319	5.9	1397	6.3	1479	6.7
8,750	1256	5.6	1319	5.9	1385	6.2	1456	6.6	1530	6.9
9,375	1337	6.0	1394	6.3	1455	6.6	1519	6.9	1586	7.2
10,000	1417	6.4	1471	6.6	1526	6.9	1585	7.2	1646	7.4
10,625	1498	6.8	1548	7.0	1600	7.2	1654	7.5	1710	7.7
11,250	1579	7.1	1626	7.4	1675	7.6	1725	7.8	1777	8.0
11,875	1661	7.5	1705	7.7	1751	7.9	1798	8.1	1846	8.4
12,500	1743	7.9	1785	8.1	1828	8.3	1872	8.5	1917	8.7

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
7,500	1521	6.9	1604	7.2	1683	7.6	1757	8.0	1828	8.3
8,125	1561	7.1	1642	7.4	1720	7.8	1794	8.1	1864	8.4
8,750	1606	7.3	1683	7.6	1758	8.0	1830	8.3	1900	8.6
9,375	1655	7.5	1727	7.8	1798	8.1	1869	8.5	1937	8.8
10,000	1710	7.7	1776	8.0	1843	8.4	1910	8.7	1976	9.0
10,625	1769	8.0	1829	8.3	1891	8.6	1954	8.9	2018	9.2
11,250	1831	8.3	1887	8.6	1944	8.8	2003	9.1	2063	9.4
11,875	1896	8.6	1948	8.8	2001	9.1	2056	9.3	2111	9.6
12,500	1964	8.9	2012	9.1	2061	9.4	2112	9.6	2164	9.8

High Static 1099-2200 rpm

Fan data (cont)

50GEQ*17 — 15 Ton Horizontal Supply (rpm - bhp)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
4500	1055	0.71	1171	0.97	1279	1.26	1379	1.58	1472	1.92
4875	1122	0.85	1231	1.12	1334	1.43	1430	1.76	1520	2.11
5250	1190	1.01	1293	1.30	1390	1.61	1482	1.95	1569	2.32
5625	1259	1.19	1356	1.49	1448	1.81	1536	2.16	1621	2.54
6000	1329	1.39	1420	1.69	1508	2.03	1592	2.39	1674	2.78
6375	1399	1.60	1486	1.92	1570	2.26	1650	2.63	1728	3.02
6750	1470	1.83	1553	2.16	1632	2.51	1710	2.89	1785	3.28
7125	1541	2.08	1620	2.42	1696	2.77	1770	3.15	1842	3.56
7500	1612	2.34	1688	2.69	1761	3.06	1832	3.44	1902	3.85

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
4500	1560	2.29	1642	2.67	1721	3.29	1796	3.74	1870	4.22
4875	1605	2.49	1685	2.88	1762	3.29	1835	3.99	1906	4.47
5250	1652	2.70	1730	3.10	1805	3.53	1877	4.27	1946	4.75
5625	1701	2.94	1777	3.35	1850	3.78	1920	4.57	1988	5.07
6000	1751	3.18	1826	3.60	1897	4.04	1966	4.90	2032	5.41
6375	1803	3.43	1876	3.86	1945	4.31	2013	5.26	2078	5.79
6750	1857	3.70	1927	4.13	1995	4.59	2061	5.65	2125	6.19
7125	1913	3.98	1981	4.42	2047	4.88	2111	6.07	2173	6.62
7500	1969	4.27	2035	4.72	2099	5.18	2162	6.52	—	—

High Static 1055-2200 rpm,10.0 Max bhp (5.0 Max bhp per fan motor

50GEQ*17 — High Static — 15 Ton Horizontal Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
4500	1055	4.7	1171	5.3	1279	5.7	1379	6.2	1472	6.6
4875	1122	5.0	1231	5.5	1334	6.0	1430	6.4	1520	6.9
5250	1190	5.3	1293	5.8	1390	6.3	1482	6.7	1569	7.1
5625	1259	5.7	1356	6.1	1448	6.5	1536	6.9	1621	7.3
6000	1329	6.0	1420	6.4	1508	6.8	1592	7.2	1674	7.6
6375	1399	6.3	1486	6.7	1570	7.1	1650	7.5	1728	7.8
6750	1470	6.6	1553	7.0	1632	7.4	1710	7.7	1785	8.1
7125	1541	7.0	1620	7.3	1696	7.7	1770	8.0	1842	8.3
7500	1612	7.3	1688	7.6	1761	8.0	1832	8.3	1902	8.6

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
4500	1560	7.0	1642	7.4	1721	7.8	1796	8.1	1870	8.5
4875	1605	7.3	1685	7.6	1762	8.0	1835	8.3	1906	8.6
5250	1652	7.5	1730	7.8	1805	8.2	1877	8.5	1946	8.8
5625	1701	7.7	1777	8.0	1850	8.4	1920	8.7	1988	9.0
6000	1751	7.9	1826	8.3	1897	8.6	1966	8.9	2032	9.2
6375	1803	8.2	1876	8.5	1945	8.8	2013	9.1	2078	9.4
6750	1857	8.4	1927	8.7	1995	9.1	2061	9.4	2125	9.7
7125	1913	8.7	1981	9.0	2047	9.3	2111	9.6	2173	9.9
7500	1969	8.9	2035	9.2	2099	9.5	2162	9.8	—	—

High Static 1055-2200 rpm

Fan data (cont)

50GEQ*24 — 20 Ton Horizontal Supply (rpm - bhp)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6,000	1267	1.20	1361	1.49	1451	1.81	1538	2.15	1621	2.52
6,500	1356	1.45	1443	1.75	1527	2.07	1609	2.43	1688	2.80
7,000	1446	1.73	1527	2.04	1606	2.37	1683	2.73	1758	3.11
7,500	1537	2.03	1612	2.35	1687	2.69	1760	3.05	1831	3.44
8,000	1628	2.36	1699	2.68	1769	3.03	1838	3.40	1906	3.79
8,500	1719	2.71	1786	3.04	1853	3.40	1918	3.77	1983	4.16
9,000	1811	3.09	1875	3.43	1938	3.79	2000	4.17	2061	4.56
9,500	1904	3.50	1964	3.85	2024	4.21	2083	4.59	2142	4.99
10,000	1997	3.94	2054	4.29	2111	4.66	2167	5.04	—	—

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
6,000	1700	2.90	1777	3.32	1850	3.74	1921	4.19	1989	4.65
6,500	1764	3.20	1838	3.62	1909	4.05	1977	4.50	2043	4.97
7,000	1831	3.51	1901	3.93	1970	4.37	2036	4.83	2100	5.30
7,500	1900	3.84	1968	4.27	2033	4.71	2098	5.17	2160	5.64
8,000	1972	4.20	2037	4.63	2100	5.07	2162	5.53	—	—
8,500	2046	4.57	2108	5.00	2169	5.45	—	—	—	—
9,000	2122	4.97	2181	5.40	—	—	—	—	—	—
9,500	2199	5.40	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

High Static 1267-2200 rpm, 10.0 Max bhp (5.0 Max bhp per fan motor

50GEQ*24 — High Static — 20 Ton Horizontal Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
6,000	1267	5.7	1361	6.1	1451	6.5	1538	6.9	1621	7.3
6,500	1356	6.1	1443	6.5	1527	6.9	1609	7.3	1688	7.6
7,000	1446	6.5	1527	6.9	1606	7.3	1683	7.6	1758	8.0
7,500	1537	6.9	1612	7.3	1687	7.6	1760	8.0	1831	8.3
8,000	1628	7.4	1699	7.7	1769	8.0	1838	8.3	1906	8.6
8,500	1719	7.8	1786	8.1	1853	8.4	1918	8.7	1983	9.0
9,000	1811	8.2	1875	8.5	1938	8.8	2000	9.1	2061	9.4
9,500	1904	8.6	1964	8.9	2024	9.2	2083	9.5	2142	9.7
10,000	1997	9.1	2054	9.3	2111	9.6	2167	9.8	—	—

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
6,000	1700	7.7	1777	8.0	1850	8.4	1921	8.7	1989	9.0
6,500	1764	8.0	1838	8.3	1909	8.7	1977	9.0	2043	9.3
7,000	1831	8.3	1901	8.6	1970	8.9	2036	9.2	2100	9.5
7,500	1900	8.6	1968	8.9	2033	9.2	2098	9.5	2160	9.8
8,000	1972	8.9	2037	9.2	2100	9.5	2162	9.8	—	—
8,500	2046	9.3	2108	9.6	2169	9.9	—	—	—	—
9,000	2122	9.6	2181	9.9	—	—	—	—	—	—
9,500	2199	10.0	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

High Static 1267-2200 rpm

Fan data (cont)

50GEQ*28 — 25 Ton Horizontal Supply (rpm - bhp)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
7,500	1406	2.11	1483	2.47	1559	2.87	1636	3.32	1711	3.80
8,125	1509	2.60	1580	2.98	1651	3.40	1722	3.86	1792	4.35
8,750	1614	3.16	1679	3.56	1744	3.98	1810	4.45	1876	4.96
9,375	1719	3.78	1779	4.19	1840	4.63	1902	5.11	1963	5.62
10,000	1824	4.44	1880	4.87	1938	5.33	1995	5.81	2053	6.34
10,625	1930	5.16	1983	5.60	2036	6.06	2091	6.56	2145	7.09
11,250	2036	5.91	2086	6.35	2137	6.83	2187	7.32	—	—
11,875	2143	6.67	2190	7.12	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
7,500	1783	4.30	1853	4.82	1921	5.37	1986	5.94	2048	6.51
8,125	1861	4.87	1928	5.42	1993	5.98	2055	6.56	2116	7.16
8,750	1941	5.49	2005	6.05	2067	6.63	2128	7.24	2187	7.86
9,375	2024	6.16	2085	6.74	2144	7.33	—	—	—	—
10,000	2111	6.89	2168	7.46	—	—	—	—	—	—
10,625	2199	7.63	—	—	—	—	—	—	—	—
11,250	—	—	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

High Static 1406-2200 rpm, 10.0 Max bhp (5.0 Max bhp per fan motor

50GEQ*28 — High Static — 25 Ton Horizontal Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
7,500	1406	6.3	1483	6.7	1559	7.0	1636	7.4	1711	7.7
8,125	1509	6.8	1580	7.1	1651	7.5	1722	7.8	1792	8.1
8,750	1614	7.3	1679	7.6	1744	7.9	1810	8.2	1876	8.5
9,375	1719	7.8	1779	8.1	1840	8.3	1902	8.6	1963	8.9
10,000	1824	8.3	1880	8.5	1938	8.8	1995	9.1	2053	9.3
10,625	1930	8.8	1983	9.0	2036	9.2	2091	9.5	2145	9.7
11,250	2036	9.2	2086	9.5	2137	9.7	2187	9.9	—	—
11,875	2143	9.7	2190	10.0	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
7,500	1783	8.1	1853	8.4	1921	8.7	1986	9.0	2048	9.3
8,125	1861	8.4	1928	8.7	1993	9.0	2055	9.3	2116	9.6
8,750	1941	8.8	2005	9.1	2067	9.4	2128	9.7	2187	9.9
9,375	2024	9.2	2085	9.5	2144	9.7	—	—	—	—
10,000	2111	9.6	2168	9.9	—	—	—	—	—	—
10,625	2199	10.0	—	—	—	—	—	—	—	—
11,250	—	—	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

High Static 1406-2200 rpm

Electrical data

Legend and Notes

Applicable for Electrical Data Tables on pages 46 to 68

LEGEND

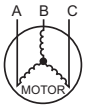
BRKR	—	Circuit Breaker
C.O.	—	Convenience Outlet
FLA	—	Full Load Amps
IFM	—	Indoor Fan Motor
LRA	—	Locked Rotor Amps
MCA	—	Minimum Circuit Amps
P.E.	—	Power Exhaust
PWRD C.O.	—	Powered Convenience Outlet
RLA	—	Rated Load Amps
SCCR	—	Short Circuit Current Rating
UNPWR C.O.	—	Unpowered Convenience Outlet

NOTES:

1. In compliance with NEC requirements for multi-motor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. Canadian units may be fuse or circuit breaker.
2. For 208/230 v units, where one value is show it is the same for either 208 or 230 volts.
3. **Unbalanced 3-Phase Supply Voltage**: Never operate a motor where a phase imbalance in supply voltage is greater than 2%. Use the following formula to determine the percentage of voltage imbalance.

$$\text{\% Voltage Imbalance} = 100 \times \frac{\text{max voltage deviation from average voltage}}{\text{average voltage}}$$

Example: Supply voltage is 230-3-60



AB = 224-v
BC = 231-v
AC = 226-v

$$\text{Average Voltage} = \frac{(224 + 231 + 226)}{3} = \frac{681}{3} = 227$$

Determine maximum deviation from average voltage.
(AB) 227-224 = 3-v
(BC) 231-227 = 4-v
(AC) 227-226 = 1-v
Maximum deviation is 4-v.
Determine percent of voltage imbalance.

$$\text{\% Voltage Imbalance} = 100x \frac{4}{227} = 1.76\%$$

This amount of phase imbalance is satisfactory as it is below the maximum allowable 2%.

IMPORTANT: If the supply voltage phase imbalance is more than 2%, contact your local electric utility company immediately.

Electrical data (cont)

50GEQ*17-28 Cooling Electrical Data

50GEQ UNIT SIZE	V-Ph-Hz	UNIT VOLTAGE RANGE		STD SCCR kA	HIGH SCCR kA[a]	COMP 1		COMP 2		OFM (EA)		IFM		
		MIN	MAX			RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	EFFCY AT FULL LOAD	FLA
50GEQ*17 Vertical	208-3-60	187	253	5	60	31.8	255	23.6	157	350	1.5	STD/MED	90.0%	6.4
												HIGH	90.0%	7.5
	230-3-60	187	253	5	60	31.8	255	23.6	157	350	1.5	STD/MED	90.0%	6.4
												HIGH	90.0%	7.5
	460-3-60	414	506	5	65	15.0	123	10.1	75	277	0.9	STD/MED	90.0%	3.0
												HIGH	90.0%	3.5
	575-3-60	518	633	5	—	11.9	94	8.6	48	397	0.6	STD/MED	90.0%	2.5
												HIGH	90.0%	3.0
50GEQ*17 Horizontal	208-3-60	187	253	5	60	31.8	255	23.6	157	350	1.5	HIGH	90.0%	12.6
	230-3-60	187	253	5	60	31.8	255	23.6	157	350		HIGH	90.0%	12.6
	460-3-60	414	506	5	65	15.0	123	10.1	75	277	0.9	HIGH	90.0%	5.6
	575-3-60	518	633	5	—	11.9	94	8.6	48	397	0.6	HIGH	90.0%	4.6
50GEQ*24 Vertical	208-3-60	187	253	5	60	45.4	270	31.9	208	397	1.9	STD/MED	90.0%	6.4
												HIGH	90.0%	12.6
	230-3-60	187	253	5	60	45.4	270	31.9	208	397	1.9	STD/MED	90.0%	6.4
												HIGH	90.0%	12.6
	460-3-60	414	506	5	65	21.6	147	13.9	1	397	0.9	STD/MED	90.0%	3.0
												HIGH	90.0%	5.6
	575-3-60	518	633	5	—	15.3	109	10.0	78	397	0.7	STD/MED	90.0%	2.5
												HIGH	90.0%	4.6
50GEQ*24 Horizontal	208-3-60	187	253	5	60	45.4	270	31.9	208	397	1.9	HIGH	90.0%	12.6
	230-3-60	187	253	5	60	45.4	270	31.9	208	397	1.9	HIGH	90.0%	12.6
	460-3-60	414	506	5	65	21.6	147	13.9	1	397	0.9	HIGH	90.0%	5.6
	575-3-60	518	633	5	—	15.3	109	10.0	78	397	0.7	HIGH	90.0%	4.6
50GEQ*28 Vertical	208-3-60	187	253	5	60	51.3	3	45.4	270	397	1.9	STD/MED	90.0%	7.5
												HIGH	90.0%	12.6
	230-3-60	187	253	5	60	51.3	3	45.4	270	397	1.9	STD/MED	90.0%	7.5
												HIGH	90.0%	12.6
	460-3-60	414	506	5	65	22.4	150	21.6	147	397	0.9	STD/MED	90.0%	3.5
												HIGH	90.0%	5.6
	575-3-60	518	633	5	—	19.9	109	15.3	109	397	0.7	STD/MED	90.0%	3.0
												HIGH	90.0%	4.6
50GEQ*28 Horizontal	208-3-60	187	253	5	60	51.3	3	45.4	270	397	1.9	HIGH	90.0%	12.6
	230-3-60	187	253	5	60	51.3	3	45.4	270	397	1.9	HIGH	90.0%	12.6
	460-3-60	414	506	5	65	22.4	150	21.6	147	397	0.9	HIGH	90.0%	5.6
	575-3-60	518	633	5	—	19.9	109	15.3	109	397	0.7	HIGH	90.0%	4.6

NOTE(S):

a. High SCCR (Short Circuit Current Rating) is not available on the following: units with Low Ambient controls, Phase loss monitor, Non-fused disconnect, Powered convenience outlet, and 575-v models.

Electrical data (cont)

50GEQ*17-28 Unit Wire/Fuse Sizing Electrical Data

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	HIGH SCCR kA[a]	NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET							
					No Power Exhaust				With Power Exhaust (powered from unit)			
					MCA	Fuse or HACR Breaker	Disconnect Size		MCA	Fuse or HACR Breaker	Disconnect Size	
							FLA	LRA			FLA	LRA
50GEQ*17 Vertical	208/230-3-60	STD/MED	5	60	82	100	85	442	94	125	99	462
		HIGH			84	100	88	446	96	125	101	466
	460-3-60	STD/MED	5	65	38	50	40	214	45	50	47	226
		HIGH			40	50	41	216	46	60	48	228
	575-3-60	STD/MED	5	—	31	40	32	158	36	45	38	166
		HIGH			32	40	33	158	37	45	39	166
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	60	113	150	117	514	125	150	130	534
		HIGH			125	150	131	532	137	175	145	552
	460-3-60	STD/MED	5	65	52	60	54	267	58	80	61	279
		HIGH			58	70	60	275	64	80	67	287
	575-3-60	STD/MED	5	—	38	50	40	207	43	50	45	215
		HIGH			42	50	45	211	47	60	50	219
50GEQ*28 Vertical	208/230-3-60	STD/MED	5	60	136	175	142	610	148	175	155	630
		HIGH			146	175	153	624	158	200	167	644
	460-3-60	STD/MED	5	65	62	80	65	319	68	90	72	331
		HIGH			66	80	70	325	72	90	77	337
	575-3-60	STD/MED	5	—	50	60	52	238	55	70	58	246
		HIGH			54	60	56	242	58	70	61	250
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	60	95	125	1	460	106	125	113	480
	460-3-60	HIGH	5	65	44	50	46	222	50	60	53	234
	575-3-60	HIGH	5	—	35	45	37	162	40	50	42	170
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	60	125	150	131	532	137	175	145	552
	460-3-60	HIGH	5	65	58	70	60	275	64	80	67	287
	575-3-60	HIGH	5	—	42	50	45	211	47	60	50	219
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	60	146	175	153	624	158	200	167	644
	460-3-60	HIGH	5	65	66	80	70	325	72	90	77	337
	575-3-60	HIGH	5	—	54	60	56	242	58	70	61	250

NOTE(S):

a. High SCCR (Short Circuit Current Rating) is not available on the following: units with Low Ambient controls, Phase loss monitor, Non-fused disconnect, Powered convenience outlet, and 575-v models.

Electrical data (cont)

50GEQ*17-28 Unit Wire/Fuse Sizing Electrical Data (cont)

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCC R kA	WITH POWERED CONVENIENCE OUTLET							
				No Power Exhaust				With Power Exhaust (powered from unit)			
				MCA	Fuse or HACR Breaker	Disconnect Size		MCA	Fuse or HACR Breaker	Disconnect Size	
						FLA	LRA			FLA	LRA
50GEQ*17 Vertical	208/230-3-60	STD/MED	5	87	100	91	447	99	125	104	467
		HIGH		89	100	93	451	101	125	107	471
	460-3-60	STD/MED	5	41	50	42	216	47	60	50	228
		HIGH		42	50	44	218	48	60	51	230
	575-3-60	STD/MED	5	33	40	34	160	37	45	40	168
		HIGH		34	45	35	160	38	50	41	168
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	118	150	122	519	130	150	136	539
		HIGH		130	175	137	537	142	175	150	557
	460-3-60	STD/MED	5	54	60	56	269	61	80	64	281
		HIGH		60	80	62	277	66	80	70	289
	575-3-60	STD/MED	5	40	50	42	209	45	60	47	217
		HIGH		44	50	46	213	49	60	52	221
50GEQ*28 Vertical	208/230-3-60	STD/MED	5	141	175	147	615	152	200	161	635
		HIGH		151	200	159	629	163	200	172	649
	460-3-60	STD/MED	5	64	80	67	321	70	90	75	333
		HIGH		68	90	72	327	75	90	79	339
	575-3-60	STD/MED	5	52	60	54	240	57	70	60	248
		HIGH		55	70	58	244	60	70	63	252
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	99	125	105	465	111	125	119	485
	460-3-60	HIGH	5	46	60	48	224	52	60	56	236
	575-3-60	HIGH	5	37	45	39	164	42	50	44	172
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	130	175	137	537	142	175	150	557
	460-3-60	HIGH	5	60	80	62	277	66	80	70	289
	575-3-60	HIGH	5	44	50	46	213	49	60	52	221
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	151	200	159	629	163	200	172	649
	460-3-60	HIGH	5	68	90	72	327	75	90	79	339
	575-3-60	HIGH	5	55	70	58	244	60	70	63	252

Electrical data (cont)

50GEQ*17-28 Unit HACR Sizing Electrical Data

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET							
				No Power Exhaust				With Power Exhaust (powered from unit)			
				MCA	HACR Breaker	Disconnect Size		MCA	HACR Breaker	Disconnect Size	
						FLA	LRA			FLA	LRA
50GEQ*17 Vertical	208/230-3-60	STD/MED	5	82	100	85	442	94	125	99	462
		HIGH		84	100	88	446	96	125	101	466
	460-3-60	STD/MED	5	38	50	40	214	45	50	47	226
		HIGH		40	50	41	216	46	60	48	228
	575-3-60	STD/MED	5	31	40	32	158	36	45	38	166
		HIGH		32	40	33	158	37	45	39	166
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	113	150	117	514	125	150	130	534
		HIGH		125	150	131	532	137	175	145	552
	460-3-60	STD/MED	5	52	60	54	267	58	80	61	279
		HIGH		58	70	60	275	64	80	67	287
	575-3-60	STD/MED	5	38	50	40	207	43	50	45	215
		HIGH		42	50	45	211	47	60	50	219
50GEQ*28 Vertical	208/230-3-60	STD/MED	5	136	175	142	610	148	175	155	630
		HIGH		146	175	153	624	158	200	167	644
	460-3-60	STD/MED	5	62	80	65	319	68	90	72	331
		HIGH		66	80	70	325	72	90	77	337
	575-3-60	STD/MED	5	50	60	52	238	55	70	58	246
		HIGH		54	60	56	242	58	70	61	250
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	125	150	131	532	137	175	145	552
	460-3-60	HIGH	5	58	70	60	275	64	80	67	287
	575-3-60	HIGH	5	42	50	45	211	47	60	50	219
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	125	150	131	532	137	175	145	552
	460-3-60	HIGH	5	58	70	60	275	64	80	67	287
	575-3-60	HIGH	5	42	50	45	211	47	60	50	219
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	146	175	153	624	158	200	167	644
	460-3-60	HIGH	5	66	80	70	325	72	90	77	337
	575-3-60	HIGH	5	54	60	56	242	58	70	61	250

Electrical data (cont)

50GEQ*17-28 Unit HACR Sizing Electrical Data (cont)

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	WITH POWERED CONVENIENCE OUTLET							
				No Power Exhaust				With Power Exhaust (powered from unit)			
				MCA	HACR Breaker	Disconnect Size		MCA	HACR Breaker	Disconnect Size	
						FLA	LRA			FLA	LRA
50GEQ*17 Vertical	208/230-3-60	STD/MED	5	87	100	91	447	99	125	104	467
		HIGH		89	100	93	451	101	125	107	471
	460-3-60	STD/MED	5	41	50	42	216	47	60	50	228
		HIGH		42	50	44	218	48	60	51	230
	575-3-60	STD/MED	5	33	40	34	160	37	45	40	168
		HIGH		34	45	35	160	38	50	41	168
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	118	150	122	519	130	150	136	539
		HIGH		130	175	137	537	142	175	150	557
	460-3-60	STD/MED	5	54	60	56	269	61	80	64	281
		HIGH		60	80	62	277	66	80	70	289
	575-3-60	STD/MED	5	40	50	42	209	45	60	47	217
		HIGH		44	50	46	213	49	60	52	221
50GEQ*28 Vertical	208/230-3-60	STD/MED	5	141	175	147	615	152	200	161	635
		HIGH		151	200	159	629	163	200	172	649
	460-3-60	STD/MED	5	64	80	67	321	70	90	75	333
		HIGH		68	90	72	327	75	90	79	339
	575-3-60	STD/MED	5	52	60	54	240	57	70	60	248
		HIGH		55	70	58	244	60	70	63	252
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	130	175	137	537	142	175	150	557
	460-3-60	HIGH	5	60	80	62	277	66	80	70	289
	575-3-60	HIGH	5	44	50	46	213	49	60	52	221
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	130	175	137	537	142	175	150	557
	460-3-60	HIGH	5	60	80	62	277	66	80	70	289
	575-3-60	HIGH	5	44	50	46	213	49	60	52	221
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	151	200	159	629	163	200	172	649
	460-3-60	HIGH	5	68	90	72	327	75	90	79	339
	575-3-60	HIGH	5	55	70	58	244	60	70	63	252

Electrical data (cont)

50GEQ*17 Unit Wire/Fuse Sizing Electrical Data

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	HIGH SCCR kA[a]	ELECTRIC HEATER				NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET							
									NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
					STD SCCR CRHEATER ****00	HIGH SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	FUSE OR HACR BRKR	DISCONNECT SIZE		MCA	FUSE OR HACR BRKR	DISCONNECT SIZE	
											FLA	LRA			FLA	LRA
50GEQ*17 Vertical	208/230-3-60	STD/MED	5	60	—	—	—	—	82	100	85	442	94	125	99	462
					454A	454A	18.8/25.0	52.1/60.1	147/157	150/175	145/154	494/502	159/169	175/175	159/168	514/522
					455A	455A	37.6/50.0	104.2/120.3	212/202	225/225	205/224	546/562	224/214	225/225	219/237	566/582
					456A	456A	56.3/75.0	156.4/180.4	239/263	250/3	265/293	598/622	250/274	3/3	279/306	618/642
		HIGH	5	60	—	—	—	—	84	100	88	446	96	125	101	466
					454A	454A	18.8/25.0	52.1/60.1	150/160	150/175	148/157	498/506	161/171	175/175	161/171	518/526
					455A	455A	37.6/50.0	104.2/120.3	215/205	225/225	208/226	550/566	226/216	250/225	221/240	570/586
					456A	456A	56.3/75.0	156.4/180.4	241/265	250/3	268/295	602/626	253/277	3/3	281/309	622/646
	460-3-60	STD/MED	5	65	—	—	—	—	38	50	40	214	45	50	47	226
					457A	457A	25.0	30.1	76	80	75	244	82	90	82	256
					458A	458A	50.0	60.1	99	110	109	274	105	110	116	286
					459A	459A	75.0	90.2	129	150	144	304	135	150	151	316
		HIGH	5	65	—	—	—	—	40	50	41	216	46	60	48	228
					457A	457A	25.0	30.1	77	80	76	246	83	90	83	258
					458A	458A	50.0	60.1	1	110	110	276	106	110	117	288
					459A	459A	75.0	90.2	130	150	145	306	136	150	152	318
	575-3-60	STD/MED	5	—	—	—	—	—	31	40	32	158	36	45	38	166
					460A	—	24.8	23.9	61	70	60	182	66	70	65	190
					461A	—	49.6	47.7	90	1	87	206	95	1	92	214
					462A	—	74.4	71.6	102	110	114	230	107	125	120	238
		HIGH	5	—	—	—	—	—	32	40	33	158	37	45	39	166
					460A	—	24.8	23.9	62	70	61	182	67	70	66	190
					461A	—	49.6	47.7	92	1	88	206	96	1	94	214
					462A	—	74.4	71.6	104	110	116	230	108	125	121	238
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	60	—	—	—	—	95	125	1	460	106	125	113	480
					463A	463A	18.8/25.0	52.1/60.1	160/170	175/175	160/169	512/520	172/182	175/2	173/182	532/540
					464A	464A	37.6/50.0	104.2/120.3	225/215	225/225	219/238	564/580	237/227	250/250	233/252	584/6
					465A	465A	56.3/75.0	156.4/180.4	251/275	3/3	279/307	616/640	263/287	3/3	293/321	636/660
	460-3-60	HIGH	5	65	—	—	—	—	44	50	46	222	50	60	53	234
					466A	466A	25.0	30.1	81	90	81	252	88	90	88	264
					467A	467A	50.0	60.1	104	110	115	282	110	125	122	294
					468A	468A	75.0	90.2	134	150	150	312	140	150	157	324
	575-3-60	HIGH	5	—	—	—	—	—	35	45	37	162	40	50	42	170
					469A	—	24.8	23.9	65	70	64	186	70	70	70	194
					470A	—	49.6	47.7	95	1	92	210	1	1	97	218
					471A	—	74.4	71.6	107	110	119	234	112	125	125	242

NOTE(S):

a. High SCCR (Short Circuit Current Rating) is not available on the following: units with Low Ambient controls, Phase loss monitor, Non-fused disconnect, and 575-v models.

Electrical data (cont)

50GEQ*17 Unit Wire/Fuse Sizing Electrical Data (cont)

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			W/POWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	FUSE OR HACR BRKR	FLA	LRA	MCA	FUSE OR HACR BRKR	FLA	LRA
50GEQ*17 Vertical	208/230-3-60	STD/ MED	5	—	—	—	87	100	91	447	99	125	104	467
				454A00	18.8/25.0	52.1/60.1	152/162	175/175	151/160	499/507	164/174	175/175	164/174	519/527
				455A00	37.6/50.0	104.2/120.3	217/207	225/225	211/229	551/567	229/219	250/250	224/243	571/587
				456A00	56.3/75.0	156.4/180.4	243/267	300/300	271/298	603/627	255/279	300/300	284/312	623/647
		HIGH	5	—	—	—	89	100	93	451	101	125	107	471
				454A00	18.8/25.0	52.1/60.1	154/164	175/175	153/162	503/511	166/176	175/200	167/176	523/531
				455A00	37.6/50.0	104.2/120.3	219/210	225/225	213/232	555/571	231/221	250/250	227/245	575/591
				456A00	56.3/75.0	156.4/180.4	246/270	300/300	273/301	607/631	257/281	300/300	287/314	627/651
	460-3-60	STD/ MED	5	—	—	—	41	50	42	216	47	60	50	228
				457A00	25.0	30.1	78	80	77	246	84	90	84	258
				458A00	50.0	60.1	101	110	112	276	107	125	119	288
				459A00	75.0	90.2	131	150	146	306	137	150	153	318
		HIGH	5	—	—	—	42	50	44	218	48	60	51	230
				457A00	25.0	30.1	79	80	78	248	86	90	85	260
				458A00	50.0	60.1	102	110	113	278	108	125	120	290
				459A00	75.0	90.2	132	150	147	308	138	150	154	320
	575-3-60	STD/ MED	5	—	—	—	33	40	34	160	37	45	40	168
				460A00	24.8	23.9	62	70	62	184	67	70	67	192
				461A00	49.6	47.7	92	100	89	208	97	100	94	216
				462A00	74.4	71.6	104	110	116	232	109	125	122	240
		HIGH	5	—	—	—	34	45	35	160	38	50	41	168
				460A00	24.8	23.9	64	70	63	184	68	70	68	192
				461A00	49.6	47.7	93	100	90	208	98	100	96	216
				462A00	74.4	71.6	105	110	118	232	110	125	123	240
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	—	—	—	99	125	105	465	111	125	119	485
				463A00	18.8/25.0	52.1/60.1	164/174	175/175	165/174	517/525	176/186	200/200	179/188	537/545
				464A00	37.6/50.0	104.2/120.3	230/220	250/250	225/243	569/585	241/232	250/250	239/257	589/605
				465A00	56.3/75.0	156.4/180.4	256/280	300/300	285/313	621/645	268/292	300/300	299/326	641/665
	460-3-60	HIGH	5	—	—	—	46	60	48	224	52	60	56	236
				466A00	25.0	30.1	84	90	83	254	90	90	90	266
				467A00	50.0	60.1	106	110	118	284	112	125	125	296
				468A00	75.0	90.2	136	150	152	314	142	150	159	326
	575-3-60	HIGH	5	—	—	—	37	45	39	164	42	50	44	172
				469A00	24.8	23.9	67	70	66	188	72	80	72	196
				470A00	49.6	47.7	96	100	94	212	101	110	99	220
				471A00	74.4	71.6	108	125	121	236	113	125	127	244

Electrical data (cont)

50GEQ*17 Unit HACR Sizing Electrical Data

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	HACR BRKR	FLA	LRA	MCA	HACR BRKR	FLA	LRA
50GEQ*17 Vertical	208/230-3-60	STD/MED	5	—	—	—	82	100	85	442	94	125	99	462
				454A	18.8/25.0	52.1/60.1	157/157	175/175	145/154	502/502	169/169	175/175	159/168	522/522
				455A	37.6/50.0	104.2/120.3	212/212	225/225	205/224	562/562	224/224	225/225	219/237	582/582
				456A	56.3/75.0	156.4/180.4	263/263	300/300	265/293	622/622	274/274	300/300	279/306	642/642
		HIGH	5	—	—	—	84	100	88	446	96	125	101	466
				454A	18.8/25.0	52.1/60.1	160/160	175/175	148/157	506/506	171/171	175/175	161/171	526/526
				455A	37.6/50.0	104.2/120.3	215/215	225/225	208/226	566/566	226/226	250/250	221/240	586/586
				456A	56.3/75.0	156.4/180.4	265/265	300/300	268/295	626/626	277/277	300/300	281/309	646/646
	460-3-60	STD/MED	5	—	—	—	38	50	40	214	45	50	47	226
				457A	25.0	30.1	76	80	75	244	82	90	82	256
				458A	50.0	60.1	99	110	109	274	105	110	116	286
				459A	75.0	90.2	129	150	144	304	135	150	151	316
		HIGH	5	—	—	—	40	50	41	216	46	60	48	228
				457A	25.0	30.1	77	80	76	246	83	90	83	258
				458A	50.0	60.1	100	110	110	276	106	110	117	288
				459A	75.0	90.2	130	150	145	306	136	150	152	318
	575-3-60	STD/MED	5	—	—	—	31	40	32	158	36	45	38	166
				460A	24.8	23.9	61	70	60	182	66	70	65	190
				461A	49.6	47.7	90	100	87	206	95	100	92	214
				462A	74.4	71.6	102	110	114	230	107	125	120	238
		HIGH	5	—	—	—	32	40	33	158	37	45	39	166
				460A	24.8	23.9	62	70	61	182	67	70	66	190
				461A	49.6	47.7	92	100	88	206	96	100	94	214
				462A	74.4	71.6	104	110	116	230	108	125	121	238
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	—	—	—	125	150	131	532	137	175	145	552
				463A	18.8/25.0	52.1/60.1	200/200	225/225	191/200	592/592	212/212	225/225	204/214	612/612
				464A	37.6/50.0	104.2/120.3	256/256	300/300	251/269	652/652	267/267	300/300	264/283	672/672
				465A	56.3/75.0	156.4/180.4	306/306	350/350	311/338	712/712	318/318	350/350	324/352	732/732
	460-3-60	HIGH	5	—	—	—	58	70	60	275	64	80	67	287
				466A	25.0	30.1	95	100	95	305	101	110	102	317
				467A	50.0	60.1	118	125	129	335	124	150	136	347
				468A	75.0	90.2	148	175	164	365	154	175	171	377
	575-3-60	HIGH	5	—	—	—	42	50	45	211	47	60	50	219
				469A	24.8	23.9	72	80	72	235	77	80	78	243
				470A	49.6	47.7	102	110	99	259	107	110	105	267
				471A	74.4	71.6	114	125	127	283	119	125	132	291

Electrical data (cont)

50GEQ*17 Unit HACR Sizing Electrical Data (cont)

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			W/POWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	HACR BRKR	FLA	LRA	MCA	HACR BRKR	FLA	LRA
50GEQ*17 Vertical	208/230-3-60	STD/MED	5	—	—	—	87	100	91	447	99	125	104	467
				454A	18.8/25.0	52.1/60.1	162/162	175/175	151/160	507/507	174/174	175/175	164/174	527/527
				455A	37.6/50.0	104.2/120.3	217/217	225/225	211/229	567/567	229/229	250/250	224/243	587/587
				456A	56.3/75.0	156.4/180.4	267/267	300/300	271/298	627/627	279/279	300/300	284/312	647/647
		HIGH	5	—	—	—	89	100	93	451	101	125	107	471
				454A	18.8/25.0	52.1/60.1	164/164	175/175	153/162	511/511	176/176	200/200	167/176	531/531
				455A	37.6/50.0	104.2/120.3	219/219	225/225	213/232	571/571	231/231	250/250	227/245	591/591
				456A	56.3/75.0	156.4/180.4	270/270	300/300	273/301	631/631	281/281	300/300	287/314	651/651
	460-3-60	STD/MED	5	—	—	—	41	50	42	216	47	60	50	228
				457A	25.0	30.1	78	80	77	246	84	90	84	258
				458A	50.0	60.1	101	110	112	276	107	125	119	288
				459A	75.0	90.2	131	150	146	306	137	150	153	318
		HIGH	5	—	—	—	42	50	44	218	48	60	51	230
				457A	25.0	30.1	79	80	78	248	86	90	85	260
				458A	50.0	60.1	102	110	113	278	108	125	120	290
				459A	75.0	90.2	132	150	147	308	138	150	154	320
	575-3-60	STD/MED	5	—	—	—	33	40	34	160	37	45	40	168
				460A	24.8	23.9	62	70	62	184	67	70	67	192
				461A	49.6	47.7	92	100	89	208	97	100	94	216
				462A	74.4	71.6	104	110	116	232	109	125	122	240
		HIGH	5	—	—	—	34	45	35	160	38	50	41	168
				460A	24.8	23.9	64	70	63	184	68	70	68	192
				461A	49.6	47.7	93	100	90	208	98	100	96	216
				462A	74.4	71.6	105	110	118	232	110	125	123	240
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	—	—	—	130	175	137	537	142	175	150	557
				463A	18.8/25.0	52.1/60.1	205/205	225/225	196/206	597/597	217/217	225/225	210/219	617/617
				464A	37.6/50.0	104.2/120.3	260/260	300/300	256/275	657/657	272/272	300/300	270/288	677/677
				465A	56.3/75.0	156.4/180.4	310/310	350/350	316/344	717/717	322/322	350/350	330/358	737/737
	460-3-60	HIGH	5	—	—	—	60	80	62	277	66	80	70	289
				466A	25.0	30.1	97	100	97	307	104	110	104	319
				467A	50.0	60.1	120	150	132	337	126	150	139	349
				468A	75.0	90.2	150	175	166	367	156	175	173	379
	575-3-60	HIGH	5	—	—	—	44	50	46	213	49	60	52	221
				469A	24.8	23.9	74	80	74	237	79	80	79	245
				470A	49.6	47.7	104	110	101	261	109	110	107	269
				471A	74.4	71.6	116	125	129	285	121	125	134	293

Electrical data (cont)

50GEQ*24 Unit Wire/Fuse Sizing Electrical Data

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	HIGH SCCR kA[a]	ELECTRIC HEATER				NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET							
									NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
					STD SCCR CRHEATER ****00	HIGH SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	FUSE OR HACR BRKR	DISCONNECT SIZE		MCA	FUSE OR HACR BRKR	DISCONNECT SIZE	
											FLA	LRA			FLA	LRA
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	60	—	—	—	—	113	150	117	514	125	150	130	534
					454A	454A	18.8/25.0	52.1/60.1	178/188	200/200	177/186	566/574	190/200	200/225	190/199	586/594
					455A	455A	37.6/50.0	104.2/120.3	243/233	250/250	237/255	618/634	255/245	300/300	250/269	638/654
					456A	456A	56.3/75.0	156.4/180.4	269/293	300/350	297/324	670/694	281/305	300/350	310/338	690/714
		HIGH	5	60	—	—	—	—	125	150	131	532	137	175	145	552
					454A	454A	18.8/25.0	52.1/60.1	190/200	200/225	191/200	584/592	202/212	225/225	204/214	604/612
					455A	455A	37.6/50.0	104.2/120.3	256/246	300/300	251/269	636/652	267/257	300/300	264/283	656/672
					456A	456A	56.3/75.0	156.4/180.4	282/306	300/350	311/338	688/712	294/318	350/350	324/352	708/732
	460-3-60	STD/MED	5	65	—	—	—	—	52	60	54	267	58	80	61	279
					457A	457A	25.0	30.1	90	100	89	297	96	100	96	309
					458A	458A	50.0	60.1	112	125	123	327	119	125	130	339
					459A	459A	75.0	90.2	142	150	158	357	149	175	165	369
		HIGH	5	65	—	—	—	—	58	70	60	275	64	80	67	287
					457A	457A	25.0	30.1	95	100	95	305	101	110	102	317
					458A	458A	50.0	60.1	118	125	129	335	124	150	136	347
					459A	459A	75.0	90.2	148	175	164	365	154	175	171	377
	575-3-60	STD/MED	5	—	—	—	—	—	38	50	40	207	43	50	45	215
					460A	—	24.8	23.9	68	70	67	231	73	80	73	239
					461A	—	49.6	47.7	98	100	95	255	103	110	100	263
					462A	—	74.4	71.6	110	125	122	279	115	125	128	287
		HIGH	5	—	—	—	—	—	42	50	45	211	47	60	50	219
					460A	—	24.8	23.9	72	80	72	235	77	80	78	243
					461A	—	49.6	47.7	102	110	99	259	107	110	105	267
					462A	—	74.4	71.6	114	125	127	283	119	125	132	291
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	60	—	—	—	—	125	150	131	532	137	175	145	552
					463A	463A	18.8/25.0	52.1/60.1	190/200	200/225	191/200	584/592	202/212	225/225	204/214	604/612
					464A	464A	37.6/50.0	104.2/120.3	256/246	300/300	251/269	636/652	267/257	300/300	264/283	656/672
					465A	465A	56.3/75.0	156.4/180.4	282/306	300/350	311/338	688/712	294/318	350/350	324/352	708/732
	460-3-60	HIGH	5	65	—	—	—	—	58	70	60	275	64	80	67	287
					466A	466A	25.0	30.1	95	100	95	305	101	110	102	317
					467A	467A	50.0	60.1	118	125	129	335	124	150	136	347
					468A	468A	75.0	90.2	148	175	164	365	154	175	171	377
	575-3-60	HIGH	5	—	—	—	—	—	42	50	45	211	47	60	50	219
					469A	—	24.8	23.9	72	80	72	235	77	80	78	243
					470A	—	49.6	47.7	102	110	99	259	107	110	105	267
					471A	—	74.4	71.6	114	125	127	283	119	125	132	291

NOTE(S):

a. High SCCR (Short Circuit Current Rating) is not available on the following: units with Low Ambient controls, Phase loss monitor, Non-fused disconnect, and 575-v models.

Electrical data (cont)

50GEQ*24 Unit Wire/Fuse Sizing Electrical Data (cont)

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			W/POWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	FUSE OR HACR BRKR	FLA	LRA	MCA	FUSE OR HACR BRKR	FLA	LRA
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	—	—	—	118	150	122	519	130	150	136	539
				454A	18.8/25.0	52.1/60.1	183/193	200/200	182/191	571/579	195/205	225/225	196/205	591/599
				455A	37.6/50.0	104.2/120.3	248/238	250/250	242/261	623/639	260/250	300/300	256/274	643/659
				456A	56.3/75.0	156.4/180.4	274/298	300/350	302/330	675/699	286/310	300/350	316/343	695/719
		HIGH	5	—	—	—	130	175	137	537	142	175	150	557
				454A	18.8/25.0	52.1/60.1	195/205	225/225	196/206	589/597	207/217	225/225	210/219	609/617
				455A	37.6/50.0	104.2/120.3	260/250	300/300	256/275	641/657	272/262	300/300	270/288	661/677
				456A	56.3/75.0	156.4/180.4	286/310	300/350	316/344	693/717	298/322	350/350	330/358	713/737
	460-3-60	STD/MED	5	—	—	—	54	60	56	269	61	80	64	281
				457A	25.0	30.1	92	100	91	299	98	100	98	311
				458A	50.0	60.1	115	125	126	329	121	150	133	341
				459A	75.0	90.2	145	175	160	359	151	175	167	371
		HIGH	5	—	—	—	60	80	62	277	66	80	70	289
				457A	25.0	30.1	97	100	97	307	104	110	104	319
				458A	50.0	60.1	120	150	132	337	126	150	139	349
				459A	75.0	90.2	150	175	166	367	156	175	173	379
	575-3-60	STD/MED	5	—	—	—	40	50	42	209	45	60	47	217
				460A	24.8	23.9	70	70	69	233	75	80	75	241
				461A	49.6	47.7	100	100	96	257	104	110	102	265
				462A	74.4	71.6	112	125	124	281	116	125	129	289
		HIGH	5	—	—	—	44	50	46	213	49	60	52	221
				460A	24.8	23.9	74	80	74	237	79	80	79	245
				461A	49.6	47.7	104	110	101	261	109	110	107	269
				462A	74.4	71.6	116	125	129	285	121	125	134	293
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	—	—	—	130	175	137	537	142	175	150	557
				463A	18.8/25.0	52.1/60.1	195/205	225/225	196/206	589/597	207/217	225/225	210/219	609/617
				464A	37.6/50.0	104.2/120.3	260/250	300/300	256/275	641/657	272/262	300/300	270/288	661/677
				465A	56.3/75.0	156.4/180.4	286/310	300/350	316/344	693/717	298/322	350/350	330/358	713/737
	460-3-60	HIGH	5	—	—	—	60	80	62	277	66	80	70	289
				466A	25.0	30.1	97	100	97	307	104	110	104	319
				467A	50.0	60.1	120	150	132	337	126	150	139	349
				468A	75.0	90.2	150	175	166	367	156	175	173	379
	575-3-60	HIGH	5	—	—	—	44	50	46	213	49	60	52	221
				469A	24.8	23.9	74	80	74	237	79	80	79	245
				470A	49.6	47.7	104	110	101	261	109	110	107	269
				471A	74.4	71.6	116	125	129	285	121	125	134	293

Electrical data (cont)

50GEQ*24 Unit HACR Sizing Electrical Data

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	HACR BRKR	FLA	LRA	MCA	HACR BRKR	FLA	LRA
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	—	—	—	113	150	117	514	125	150	130	534
				454A	18.8/25.0	52.1/60.1	178/188	200/200	177/186	566/574	190/200	200/225	190/199	586/594
				455A	37.6/50.0	104.2/120.3	243/233	250/250	237/255	618/634	255/245	300/300	250/269	638/654
				456A	56.3/75.0	156.4/180.4	269/293	300/350	297/324	670/694	281/305	300/350	310/338	690/714
		HIGH	5	—	—	—	125	150	131	532	137	175	145	552
				454A	18.8/25.0	52.1/60.1	190/200	200/225	191/200	584/592	202/212	225/225	204/214	604/612
				455A	37.6/50.0	104.2/120.3	256/246	300/300	251/269	636/652	267/257	300/300	264/283	656/672
				456A	56.3/75.0	156.4/180.4	282/306	300/350	311/338	688/712	294/318	350/350	324/352	708/732
	460-3-60	STD/MED	5	—	—	—	52	60	54	267	58	80	61	279
				457A	25.0	30.1	90	100	89	297	96	100	96	309
				458A	50.0	60.1	112	125	123	327	119	125	130	339
				459A	75.0	90.2	142	150	158	357	149	175	165	369
		HIGH	5	—	—	—	58	70	60	275	64	80	67	287
				457A	25.0	30.1	95	100	95	305	101	110	102	317
				458A	50.0	60.1	118	125	129	335	124	150	136	347
				459A	75.0	90.2	148	175	164	365	154	175	171	377
	575-3-60	STD/MED	5	—	—	—	38	50	40	207	43	50	45	215
				460A	24.8	23.9	68	70	67	231	73	80	73	239
				461A	49.6	47.7	98	100	95	255	103	110	100	263
				462A	74.4	71.6	110	125	122	279	115	125	128	287
		HIGH	5	—	—	—	42	50	45	211	47	60	50	219
				460A	24.8	23.9	72	80	72	235	77	80	78	243
				461A	49.6	47.7	102	110	99	259	107	110	105	267
				462A	74.4	71.6	114	125	127	283	119	125	132	291
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	—	—	—	125	150	131	532	137	175	145	552
				463A	18.8/25.0	52.1/60.1	190/200	200/225	191/200	584/592	202/212	225/225	204/214	604/612
				464A	37.6/50.0	104.2/120.3	256/246	300/300	251/269	636/652	267/257	300/300	264/283	656/672
				465A	56.3/75.0	156.4/180.4	282/306	300/350	311/338	688/712	294/318	350/350	324/352	708/732
	460-3-60	HIGH	5	—	—	—	58	70	60	275	64	80	67	287
				466A	25.0	30.1	95	100	95	305	101	110	102	317
				467A	50.0	60.1	118	125	129	335	124	150	136	347
				468A	75.0	90.2	148	175	164	365	154	175	171	377
	575-3-60	HIGH	5	—	—	—	42	50	45	211	47	60	50	219
				469A	24.8	23.9	72	80	72	235	77	80	78	243
				470A	49.6	47.7	102	110	99	259	107	110	105	267
				471A	74.4	71.6	114	125	127	283	119	125	132	291

Electrical data (cont)

50GEQ*24 Unit HACR Sizing Electrical Data (cont)

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			W/POWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	HACR BRKR	FLA	LRA	MCA	HACR BRKR	FLA	LRA
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	—	—	—	118	150	122	519	130	150	136	539
				454A	18.8/25.0	52.1/60.1	193/193	200/200	182/191	579/579	205/205	225/225	196/205	599/599
				455A	37.6/50.0	104.2/120.3	248/248	250/250	242/261	639/639	260/260	300/300	256/274	659/659
				456A	56.3/75.0	156.4/180.4	298/298	350/350	302/330	699/699	310/310	350/350	316/343	719/719
		HIGH	5	—	—	—	130	175	137	537	142	175	150	557
				454A	18.8/25.0	52.1/60.1	205/205	225/225	196/206	597/597	217/217	225/225	210/219	617/617
				455A	37.6/50.0	104.2/120.3	260/260	300/300	256/275	657/657	272/272	300/300	270/288	677/677
				456A	56.3/75.0	156.4/180.4	310/310	350/350	316/344	717/717	322/322	350/350	330/358	737/737
	460-3-60	STD/MED	5	—	—	—	54	60	56	269	61	80	64	281
				457A	25.0	30.1	92	100	91	299	98	100	98	311
				458A	50.0	60.1	115	125	126	329	121	150	133	341
				459A	75.0	90.2	145	175	160	359	151	175	167	371
		HIGH	5	—	—	—	60	80	62	277	66	80	70	289
				457A	25.0	30.1	97	100	97	307	104	110	104	319
				458A	50.0	60.1	120	150	132	337	126	150	139	349
				459A	75.0	90.2	150	175	166	367	156	175	173	379
	575-3-60	STD/MED	5	—	—	—	40	50	42	209	45	60	47	217
				460A	24.8	23.9	70	70	69	233	75	80	75	241
				461A	49.6	47.7	100	100	96	257	104	110	102	265
				462A	74.4	71.6	112	125	124	281	116	125	129	289
		HIGH	5	—	—	—	44	50	46	213	49	60	52	221
				460A	24.8	23.9	74	80	74	237	79	80	79	245
				461A	49.6	47.7	104	110	101	261	109	110	107	269
				462A	74.4	71.6	116	125	129	285	121	125	134	293
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	—	—	—	130	175	137	537	142	175	150	557
				463A	18.8/25.0	52.1/60.1	205/205	225/225	196/206	597/597	217/217	225/225	210/219	617/617
				464A	37.6/50.0	104.2/120.3	260/260	300/300	256/275	657/657	272/272	300/300	270/288	677/677
				465A	56.3/75.0	156.4/180.4	310/310	350/350	316/344	717/717	322/322	350/350	330/358	737/737
	460-3-60	HIGH	5	—	—	—	60	80	62	277	66	80	70	289
				466A	25.0	30.1	97	100	97	307	104	110	104	319
				467A	50.0	60.1	120	150	132	337	126	150	139	349
				468A	75.0	90.2	150	175	166	367	156	175	173	379
	575-3-60	HIGH	5	—	—	—	44	50	46	213	49	60	52	221
				469A	24.8	23.9	74	80	74	237	79	80	79	245
				470A	49.6	47.7	104	110	101	261	109	110	107	269
				471A	74.4	71.6	116	125	129	285	121	125	134	293

Electrical data (cont)

50GEQ*28 Unit Wire/Fuse Sizing Electrical Data

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	HIGH SCCR kA[a]	ELECTRIC HEATER				NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET							
									NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
					STD SCCR CRHEATER ****00	HIGH SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	FUSE OR HACR BRKR	DISCONNECT SIZE		MCA	FUSE OR HACR BRKR	DISCONNECT SIZE	
											FLA	LRA			FLA	LRA
50GEQ*28 Vertical	208/230-3-60	STD/MED	5	60	—	—	—	—	136	175	142	610	148	175	155	630
					454A	454A	18.8/25.0	52.1/60.1	201/211	225/225	201/211	662/670	213/223	250/250	215/224	682/690
					455A	455A	37.6/50.0	104.2/120.3	266/256	300/300	261/280	714/730	278/268	300/300	275/293	734/750
					456A	456A	56.3/75.0	156.4/180.4	292/316	350/350	321/349	766/790	304/328	350/350	335/363	786/810
		HIGH	5	60	—	—	—	—	146	175	153	624	158	200	167	644
					454A	454A	18.8/25.0	52.1/60.1	211/221	225/250	213/222	676/684	223/233	250/250	227/236	696/704
					455A	455A	37.6/50.0	104.2/120.3	276/266	300/300	273/292	728/744	288/278	300/300	287/305	748/764
					456A	456A	56.3/75.0	156.4/180.4	302/326	350/350	333/361	780/804	314/338	350/400	347/374	800/824
	460-3-60	STD/MED	5	65	—	—	—	—	62	80	65	319	68	90	72	331
					457A	457A	25.0	30.1	100	100	99	349	106	110	107	361
					458A	458A	50.0	60.1	122	150	134	379	128	150	141	391
					459A	459A	75.0	90.2	152	175	169	409	158	175	176	421
		HIGH	5	65	—	—	—	—	66	80	70	325	72	90	77	337
					457A	457A	25.0	30.1	104	110	104	355	110	125	111	367
					458A	458A	50.0	60.1	126	150	139	385	132	150	146	397
					459A	459A	75.0	90.2	156	175	173	415	163	175	181	427
	575-3-60	STD/MED	5	—	—	—	—	—	50	60	52	238	55	70	58	246
					460A	—	24.8	23.9	80	90	80	262	85	90	85	270
					461A	—	49.6	47.7	110	110	107	286	115	125	113	294
					462A	—	74.4	71.6	122	150	135	310	127	150	140	318
		HIGH	5	—	—	—	—	—	54	60	56	242	58	70	61	250
					460A	—	24.8	23.9	84	90	83	266	88	100	89	274
					461A	—	49.6	47.7	113	125	111	290	118	125	116	298
					462A	—	74.4	71.6	125	150	138	314	130	150	144	322
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	65	—	—	—	—	146	175	153	624	158	200	167	644
					463A	463A	18.8/25.0	52.1/60.1	211/221	225/250	213/222	676/684	223/233	250/250	227/236	696/704
					464A	464A	37.6/50.0	104.2/120.3	276/266	300/300	273/292	728/744	288/278	300/300	287/305	748/764
					465A	465A	56.3/75.0	156.4/180.4	302/326	350/350	333/361	780/804	314/338	350/400	347/374	800/824
	460-3-60	HIGH	5	65	—	—	—	—	66	80	70	325	72	90	77	337
					466A	466A	25.0	30.1	104	110	104	355	110	125	111	367
					467A	467A	50.0	60.1	126	150	139	385	132	150	146	397
					468A	468A	75.0	90.2	156	175	173	415	163	175	181	427
	575-3-60	HIGH	5	—	—	—	—	—	54	60	56	242	58	70	61	250
					469A	—	24.8	23.9	84	90	83	266	88	100	89	274
					470A	—	49.6	47.7	113	125	111	290	118	125	116	298
					471A	—	74.4	71.6	125	150	138	314	130	150	144	322

NOTE(S):

a. High SCCR (Short Circuit Current Rating) is not available on the following: units with Low Ambient controls, Phase loss monitor, Non-fused disconnect, and 575-v models.

Electrical data (cont)

50GEQ*28 Unit Wire/Fuse Sizing Electrical Data (cont)

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			W/POWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	FUSE OR HACR BRKR	FLA	LRA	MCA	FUSE OR HACR BRKR	FLA	LRA
50GEQ*28 Vertical	208/230-3-60	STD/MED	5	—	—	—	141	175	147	615	152	200	161	635
				454A	18.8/25.0	52.1/60.1	206/216	225/250	207/216	667/675	218/228	250/250	221/230	687/695
				455A	37.6/50.0	104.2/120.3	271/261	300/300	267/285	719/735	283/273	300/300	280/299	739/755
				456A	56.3/75.0	156.4/180.4	297/321	350/350	327/355	771/795	309/333	350/350	341/368	791/815
		HIGH	5	—	—	—	151	200	159	629	163	200	172	649
				454A	18.8/25.0	52.1/60.1	216/226	250/250	219/228	681/689	228/238	250/250	232/242	701/709
				455A	37.6/50.0	104.2/120.3	281/271	300/300	279/297	733/749	293/283	300/300	292/311	753/769
				456A	56.3/75.0	156.4/180.4	307/331	350/350	339/366	785/809	319/343	350/400	352/380	805/829
	460-3-60	STD/MED	5	—	—	—	64	80	67	321	70	90	75	333
				457A	25.0	30.1	102	110	102	351	108	110	109	363
				458A	50.0	60.1	124	150	137	381	130	150	144	393
				459A	75.0	90.2	154	175	171	411	161	175	178	423
		HIGH	5	—	—	—	68	90	72	327	75	90	79	339
				457A	25.0	30.1	106	110	107	357	112	125	114	369
				458A	50.0	60.1	128	150	141	387	135	150	148	399
				459A	75.0	90.2	159	175	176	417	165	175	183	429
	575-3-60	STD/MED	5	—	—	—	52	60	54	240	57	70	60	248
				460A	24.8	23.9	82	90	82	264	87	100	87	272
				461A	49.6	47.7	112	125	109	288	116	125	115	296
				462A	74.4	71.6	124	150	137	312	128	150	142	320
		HIGH	5	—	—	—	55	70	58	244	60	70	63	252
				460A	24.8	23.9	85	90	85	268	90	100	91	276
				461A	49.6	47.7	115	125	113	292	120	125	118	300
				462A	74.4	71.6	127	150	140	316	132	150	146	324
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	—	—	—	151	200	159	629	163	200	172	649
				463A	18.8/25.0	52.1/60.1	216/226	250/250	219/228	681/689	228/238	250/250	232/242	701/709
				464A	37.6/50.0	104.2/120.3	281/271	300/300	279/297	733/749	293/283	300/300	292/311	753/769
				465A	56.3/75.0	156.4/180.4	307/331	350/350	339/366	785/809	319/343	350/400	352/380	805/829
	460-3-60	HIGH	5	—	—	—	68	90	72	327	75	90	79	339
				466A	25.0	30.1	106	110	107	357	112	125	114	369
				467A	50.0	60.1	128	150	141	387	135	150	148	399
				468A	75.0	90.2	159	175	176	417	165	175	183	429
	575-3-60	HIGH	5	—	—	—	55	70	58	244	60	70	63	252
				469A	24.8	23.9	85	90	85	268	90	100	91	276
				470A	49.6	47.7	115	125	113	292	120	125	118	300
				471A	74.4	71.6	127	150	140	316	132	150	146	324

Electrical data (cont)

50GEQ*28 Unit HACR Sizing Electrical Data

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			NO CONVENIENCE OUTLET OR UNPOWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	HACR BRKR	FLA	LRA	MCA	HACR BRKR	FLA	LRA
50GEQ*28 Vertical	208/230-3-60	STD/MED	5	—	—	—	136	175	142	610	148	175	155	630
				454A	18.8/25.0	52.1/60.1	211/211	225/225	201/211	670/670	223/223	250/250	215/224	690/690
				455A	37.6/50.0	104.2/120.3	266/266	300/300	261/280	730/730	278/278	300/300	275/293	750/750
				456A	56.3/75.0	156.4/180.4	316/316	350/350	321/349	790/790	328/328	350/350	335/363	810/810
		HIGH	5	—	—	—	146	175	153	624	158	200	167	644
				454A	18.8/25.0	52.1/60.1	221/221	250/250	213/222	684/684	233/233	250/250	227/236	704/704
				455A	37.6/50.0	104.2/120.3	276/276	300/300	273/292	744/744	288/288	300/300	287/305	764/764
				456A	56.3/75.0	156.4/180.4	326/326	350/350	333/361	804/804	338/338	400/400	347/374	824/824
	460-3-60	STD/MED	5	—	—	—	62	80	65	319	68	90	72	331
				457A	25.0	30.1	100	100	99	349	106	110	107	361
				458A	50.0	60.1	122	150	134	379	128	150	141	391
				459A	75.0	90.2	152	175	169	409	158	175	176	421
		HIGH	5	—	—	—	66	80	70	325	72	90	77	337
				457A	25.0	30.1	104	110	104	355	110	125	111	367
				458A	50.0	60.1	126	150	139	385	132	150	146	397
				459A	75.0	90.2	156	175	173	415	163	175	181	427
	575-3-60	STD/MED	5	—	—	—	50	60	52	238	55	70	58	246
				460A	24.8	23.9	80	90	80	262	85	90	85	270
				461A	49.6	47.7	110	110	107	286	115	125	113	294
				462A	74.4	71.6	122	150	135	310	127	150	140	318
		HIGH	5	—	—	—	54	60	56	242	58	70	61	250
				460A	24.8	23.9	84	90	83	266	88	100	89	274
				461A	49.6	47.7	113	125	111	290	118	125	116	298
				462A	74.4	71.6	125	150	138	314	130	150	144	322
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	—	—	—	146	175	153	624	158	200	167	644
				463A	18.8/25.0	52.1/60.1	221/221	250/250	213/222	684/684	233/233	250/250	227/236	704/704
				464A	37.6/50.0	104.2/120.3	276/276	300/300	273/292	744/744	288/288	300/300	287/305	764/764
				465A	56.3/75.0	156.4/180.4	326/326	350/350	333/361	804/804	338/338	400/400	347/374	824/824
	460-3-60	HIGH	5	—	—	—	66	80	70	325	72	90	77	337
				466A	25.0	30.1	104	110	104	355	110	125	111	367
				467A	50.0	60.1	126	150	139	385	132	150	146	397
				468A	75.0	90.2	156	175	173	415	163	175	181	427
	575-3-60	HIGH	5	—	—	—	54	60	56	242	58	70	61	250
				469A	24.8	23.9	84	90	83	266	88	100	89	274
				470A	49.6	47.7	113	125	111	290	118	125	116	298
				471A	74.4	71.6	125	150	138	314	130	150	144	322

Electrical data (cont)

50GEQ*28 Unit HACR Sizing Electrical Data (cont)

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			W/POWERED CONVENIENCE OUTLET							
							NO POWER EXHAUST				w/POWER EXHAUST (powered from unit)			
									DISCONNECT SIZE				DISCONNECT SIZE	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	HACR BRKR	FLA	LRA	MCA	HACR BRKR	FLA	LRA
50GEQ*28 Vertical	208/230-3-60	STD/ MED	5	—	—	—	141	175	147	615	152	200	161	635
				454A	18.8/25.0	52.1/60.1	216/216	250/250	207/216	675/675	228/228	250/250	221/230	695/695
				455A	37.6/50.0	104.2/120.3	271/271	300/300	267/285	735/735	283/283	300/300	280/299	755/755
				456A	56.3/75.0	156.4/180.4	321/321	350/350	327/355	795/795	333/333	350/350	341/368	815/815
		HIGH	5	—	—	—	151	200	159	629	163	200	172	649
				454A	18.8/25.0	52.1/60.1	226/226	250/250	219/228	689/689	238/238	250/250	232/242	709/709
				455A	37.6/50.0	104.2/120.3	281/281	300/300	279/297	749/749	293/293	300/300	292/311	769/769
				456A	56.3/75.0	156.4/180.4	331/331	350/350	339/366	809/809	343/343	400/400	352/380	829/829
	460-3-60	STD/ MED	5	—	—	—	64	80	67	321	70	90	75	333
				457A	25.0	30.1	102	110	102	351	108	110	109	363
				458A	50.0	60.1	124	150	137	381	130	150	144	393
				459A	75.0	90.2	154	175	171	411	161	175	178	423
		HIGH	5	—	—	—	68	90	72	327	75	90	79	339
				457A	25.0	30.1	106	110	107	357	112	125	114	369
				458A	50.0	60.1	128	150	141	387	135	150	148	399
				459A	75.0	90.2	159	175	176	417	165	175	183	429
	575-3-60	STD/ MED	5	—	—	—	52	60	54	240	57	70	60	248
				460A	24.8	23.9	82	90	82	264	87	100	87	272
				461A	49.6	47.7	112	125	109	288	116	125	115	296
				462A	74.4	71.6	124	150	137	312	128	150	142	320
		HIGH	5	—	—	—	55	70	58	244	60	70	63	252
				460A	24.8	23.9	85	90	85	268	90	100	91	276
				461A	49.6	47.7	115	125	113	292	120	125	118	300
				462A	74.4	71.6	127	150	140	316	132	150	146	324
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	—	—	—	151	200	159	629	163	200	172	649
				463A	18.8/25.0	52.1/60.1	226/226	250/250	219/228	689/689	238/238	250/250	232/242	709/709
				464A	37.6/50.0	104.2/120.3	281/281	300/300	279/297	749/749	293/293	300/300	292/311	769/769
				465A	56.3/75.0	156.4/180.4	331/331	350/350	339/366	809/809	343/343	400/400	352/380	829/829
	460-3-60	HIGH	5	—	—	—	68	90	72	327	75	90	79	339
				466A	25.0	30.1	106	110	107	357	112	125	114	369
				467A	50.0	60.1	128	150	141	387	135	150	148	399
				468A	75.0	90.2	159	175	176	417	165	175	183	429
	575-3-60	HIGH	5	—	—	—	55	70	58	244	60	70	63	252
				469A	24.8	23.9	85	90	85	268	90	100	91	276
				470A	49.6	47.7	115	125	113	292	120	125	118	300
				471A	74.4	71.6	127	150	140	316	132	150	146	324

Electrical data (cont)

50GEQ*17 Electric Heat Data — Standard SCCR Unit

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	STD ELECTRIC HEATER PART NUMBER CRHEATER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	STD SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA			
								NO C.O. OR UNPOWERED C.O.		w/PWRD C.O.	
								NO P.E.	w/P.E. (pwrd fr/unit)	NO P.E.	w/P.E. (pwrd fr/unit)
50GEQ*17 Vertical	208/230-3-60	STD/MED	5	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	056	056	056	056
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	056	056	056	056
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	056	056	056	056
		HIGH	5	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	056	056	056	056
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	056	056	056	056
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	056	056	056	056
	460-3-60	STD/MED	5	CRHEATER457A00	25.0	23.0	78.3	057	057	057	057
				CRHEATER458A00	50.0	45.9	156.7	057	057	057	057
				CRHEATER459A00	75.0	68.9	235.0	057	057	057	057
		HIGH	5	CRHEATER457A00	25.0	23.0	78.3	057	057	057	057
				CRHEATER458A00	50.0	45.9	156.7	057	057	057	057
				CRHEATER459A00	75.0	68.9	235.0	057	057	057	057
	575-3-60	STD/MED	5	CRHEATER460A00	24.8	22.8	77.7	—	—	—	—
				CRHEATER461A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER462A00	74.4	68.3	233.1	057	057	057	057
		HIGH	5	CRHEATER460A00	24.8	22.8	77.7	—	—	—	—
				CRHEATER461A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER462A00	74.4	68.3	233.1	057	057	057	057
50GEQ*17 Horizontal	208/230-3-60	HIGH	5	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	056	056	056	056
				CRHEATER464A00	50.0	37.6/45.9	128.1/156.7	056	056	056	056
				CRHEATER465A00	75.0	56.3/68.9	192.2/235.0	056	056	056	056
	460-3-60	HIGH	5	CRHEATER466A00	25.0	23.0	78.3	057	057	057	057
				CRHEATER467A00	50.0	45.9	156.7	057	057	057	057
				CRHEATER468A00	75.0	68.9	235.0	057	057	057	057
	575-3-60	HIGH	5	CRHEATER469A00	24.8	22.8	77.7	—	—	—	057
				CRHEATER470A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER471A00	74.4	68.3	233.1	057	057	057	057

Electrical data (cont)

50GEQ*17 Electric Heat Data — High SCCR Unit

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	HIGH SCCR kA	HIGH SCCR ELECTRIC HEATER PART NUMBER CRHEATER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	HIGH SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA	
								NO C.O. OR UNPOWERED C.O.	
								NO P.E.	w/P.E. (pwrd fr/unit)
50GEQ*17 Vertical	208/230-3-60	STD/MED	60	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	058	058
		HIGH	60	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	058	058
	460-3-60	STD/MED	65	CRHEATER457A00	25.0	23.0	78.3	059	059
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
		HIGH	65	CRHEATER457A00	25.0	23.0	78.3	059	059
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
	575-3-60	STD/MED	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—
		HIGH	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—
50GEQ*17 Horizontal	208/230-3-60	HIGH	60	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER464A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER465A00	75.0	56.3/68.9	192.2/235.0	058	058
	460-3-60	HIGH	65	CRHEATER466A00	25.0	23.0	78.3	059	059
				CRHEATER467A00	50.0	45.9	156.7	059	059
				CRHEATER468A00	75.0	68.9	235.0	059	059
	575-3-60	HIGH	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—

Electrical data (cont)

50GEQ*24 Electric Heat Data — Standard SCCR Unit

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	STD ELECTRIC HEATER PART NUMBER CRHEATER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	STD SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA			
								NO C.O. OR UNPOWERED C.O.		w/PWRD C.O.	
								NO P.E.	w/P.E. (pwrd fr/unit)	NO P.E.	w/P.E. (pwrd fr/unit)
50GEQ*24 Vertical	208/230-3-60	STD/MED	5	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	056	056	056	056
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	056	056	056	056
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	056	056	056	056
		HIGH	5	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	056	056	056	056
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	056	056	056	056
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	056	056	056	056
	460-3-60	STD/MED	5	CRHEATER457A00	25.0	23.0	78.3	057	057	057	057
				CRHEATER458A00	50.0	45.9	156.7	057	057	057	057
				CRHEATER459A00	75.0	68.9	235.0	057	057	057	057
		HIGH	5	CRHEATER457A00	25.0	23.0	78.3	057	057	057	057
				CRHEATER458A00	50.0	45.9	156.7	057	057	057	057
				CRHEATER459A00	75.0	68.9	235.0	057	057	057	057
	575-3-60	STD/MED	5	CRHEATER460A00	24.8	22.8	77.7	—	057	—	057
				CRHEATER461A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER462A00	74.4	68.3	233.1	057	057	057	057
		HIGH	5	CRHEATER460A00	24.8	22.8	77.7	057	057	057	057
				CRHEATER461A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER462A00	74.4	68.3	233.1	057	057	057	057
50GEQ*24 Horizontal	208/230-3-60	HIGH	5	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	056	056	056	056
				CRHEATER464A00	50.0	37.6/45.9	128.1/156.7	056	056	056	056
				CRHEATER465A00	75.0	56.3/68.9	192.2/235.0	056	056	056	056
	460-3-60	HIGH	5	CRHEATER466A00	25.0	23.0	78.3	057	057	057	057
				CRHEATER467A00	50.0	45.9	156.7	057	057	057	057
				CRHEATER468A00	75.0	68.9	235.0	057	057	057	057
	575-3-60	HIGH	5	CRHEATER469A00	24.8	22.8	77.7	057	057	057	057
				CRHEATER470A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER471A00	74.4	68.3	233.1	057	057	057	057

Electrical data (cont)

50GEQ*24 Electric Heat Data — High SCCR Unit

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	HIGH SCCR kA	HIGH SCCR ELECTRIC HEATER PART NUMBER CRHEATER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	HIGH SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA	
								NO C.O. OR UNPOWERED C.O.	
								NO P.E.	w/P.E. (pwrd fr/unit)
50GEQ*24 Vertical	208/230-3-60	STD/MED	60	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	058	058
		HIGH	60	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	058	058
	460-3-60	STD/MED	65	CRHEATER457A00	25.0	23.0	78.3	059	059
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
		HIGH	55	CRHEATER457A00	25.0	23.0	78.3	059	059
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
	575-3-60	STD/MED	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—
		HIGH	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—
50GEQ*24 Horizontal	208/230-3-60	HIGH	60	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER464A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER465A00	75.0	56.3/68.9	192.2/235.0	058	058
	460-3-60	HIGH	65	CRHEATER466A00	25.0	23.0	78.3	059	059
				CRHEATER467A00	50.0	45.9	156.7	059	059
				CRHEATER468A00	75.0	68.9	235.0	059	059
	575-3-60	HIGH	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—

Electrical data (cont)

50GEQ*28 Electric Heat Data — Standard SCCR Unit

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	STD ELECTRIC HEATER PART NUMBER CRHEATER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	STD SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA			
								NO C.O. OR UNPOWERED C.O.		w/PWRD C.O.	
								NO P.E.	w/P.E. (pwrd fr/unit)	NO P.E.	w/P.E. (pwrd fr/unit)
50GEQ*28 Vertical	208/230-3-60	STD/MED	5	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	056	056	056	056
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	056	056	056	056
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	056	056	056	056
		HIGH	5	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	056	056	056	056
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	056	056	056	056
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	056	056	056	056
	460-3-60	STD/MED	5	CRHEATER457A00	25.0	23.0	78.3	057	057	057	057
				CRHEATER458A00	50.0	45.9	156.7	057	057	057	057
				CRHEATER459A00	75.0	68.9	235.0	057	057	057	057
		HIGH	5	CRHEATER457A00	25.0	23.0	78.3	057	057	057	057
				CRHEATER458A00	50.0	45.9	156.7	057	057	057	057
				CRHEATER459A00	75.0	68.9	235.0	057	057	057	057
	575-3-60	STD/MED	5	CRHEATER460A00	24.8	22.8	77.7	057	057	057	057
				CRHEATER461A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER462A00	74.4	68.3	233.1	057	057	057	057
		HIGH	5	CRHEATER460A00	24.8	22.8	77.7	057	057	057	057
				CRHEATER461A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER462A00	74.4	68.3	233.1	057	057	057	057
50GEQ*28 Horizontal	208/230-3-60	HIGH	5	CRHEATER454A00	18.8/23.0	64.1/78.3	25.0	056	056	056	056
				CRHEATER455A00	37.6/45.9	128.1/156.7	50.0	056	056	056	056
				CRHEATER456A00	56.3/68.9	192.2/235.0	75.0	056	056	056	056
	460-3-60	HIGH	5	CRHEATER457A00	23.0	78.3	25.0	057	057	057	057
				CRHEATER458A00	45.9	156.7	50.0	057	057	057	057
				CRHEATER459A00	68.9	235.0	75.0	057	057	057	057
	575-3-60	HIGH	5	CRHEATER460A00	22.8	77.7	24.8	057	057	057	057
				CRHEATER461A00	45.6	155.4	49.6	057	057	057	057
				CRHEATER462A00	68.3	233.1	74.4	057	057	057	057

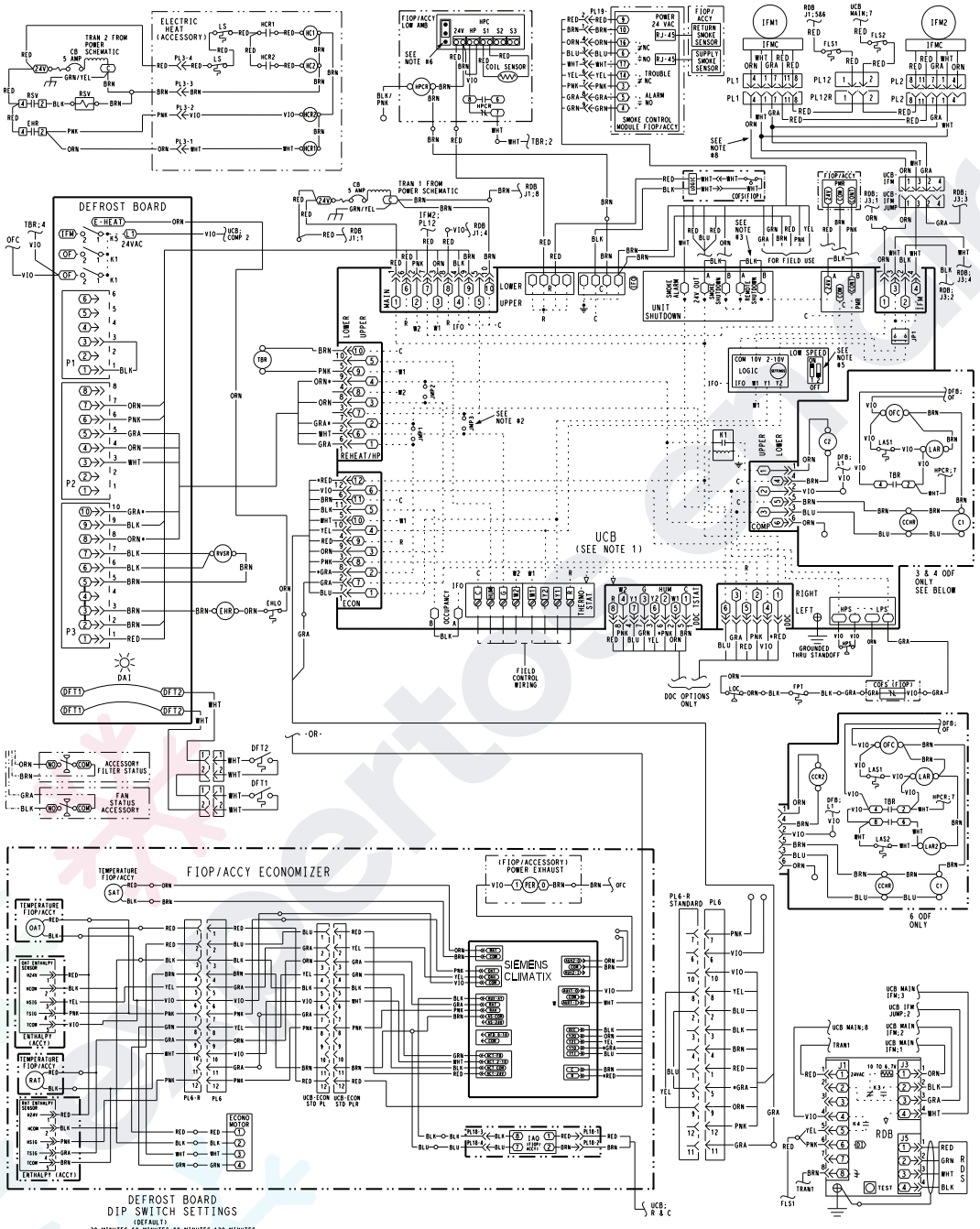
Electrical data (cont)

50GEQ*28 Electric Heat Data — High SCCR Unit

50GEQ UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	HIGH SCCR kA	HIGH SCCR ELECTRIC HEATER PART NUMBER CRHEATER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	HIGH SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA	
								NO C.O. OR UNPOWERED C.O.	
								NO P.E.	w/P.E. (pwrd fr/unit)
50GEQ*28 Vertical	208/230-3-60	STD/MED	60	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	058	058
		HIGH	60	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER455A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER456A00	75.0	56.3/68.9	192.2/235.0	058	058
	460-3-60	STD/MED	65	CRHEATER457A00	25.0	23.0	78.3	059	059
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
		HIGH	65	CRHEATER457A00	25.0	23.0	78.3	059	059
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
	575-3-60	STD/MED	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—
		HIGH	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—
50GEQ*28 Horizontal	208/230-3-60	HIGH	60	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	058	058
				CRHEATER464A00	50.0	37.6/45.9	128.1/156.7	058	058
				CRHEATER465A00	75.0	56.3/68.9	192.2/235.0	058	058
	460-3-60	HIGH	65	CRHEATER466A00	25.0	23.0	78.3	059	059
				CRHEATER467A00	50.0	45.9	156.7	059	059
				CRHEATER468A00	75.0	68.9	235.0	059	059
	575-3-60	HIGH	—	—	24.8	22.8	77.7	—	—
				—	49.6	45.6	155.4	—	—
				—	74.4	68.3	233.1	—	—

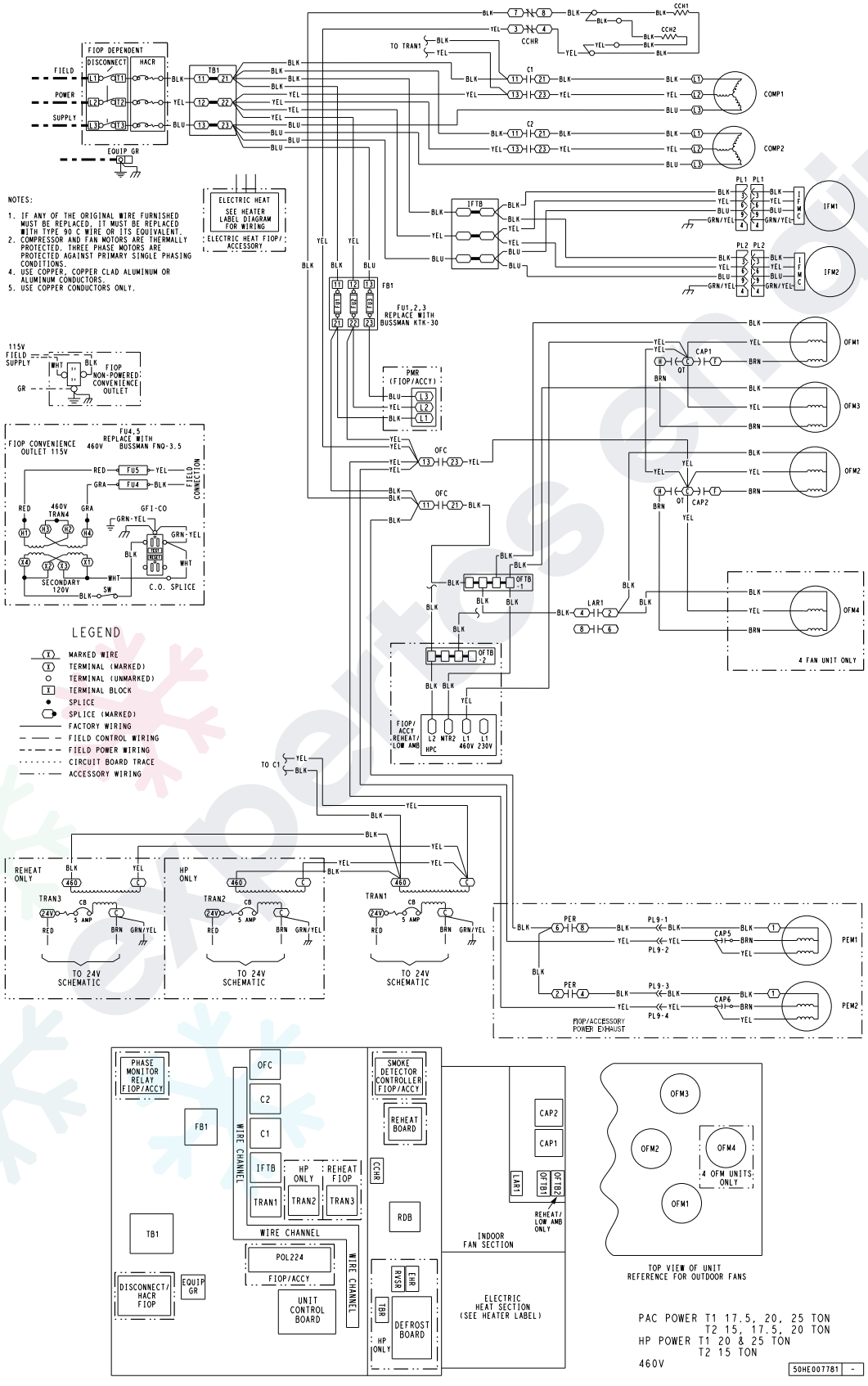
Typical wiring diagrams

Typical 50GEQ*17-28 Control Wiring Diagram, Electromechanical with POL224 Controller, 460/575-3-60 Unit Shown



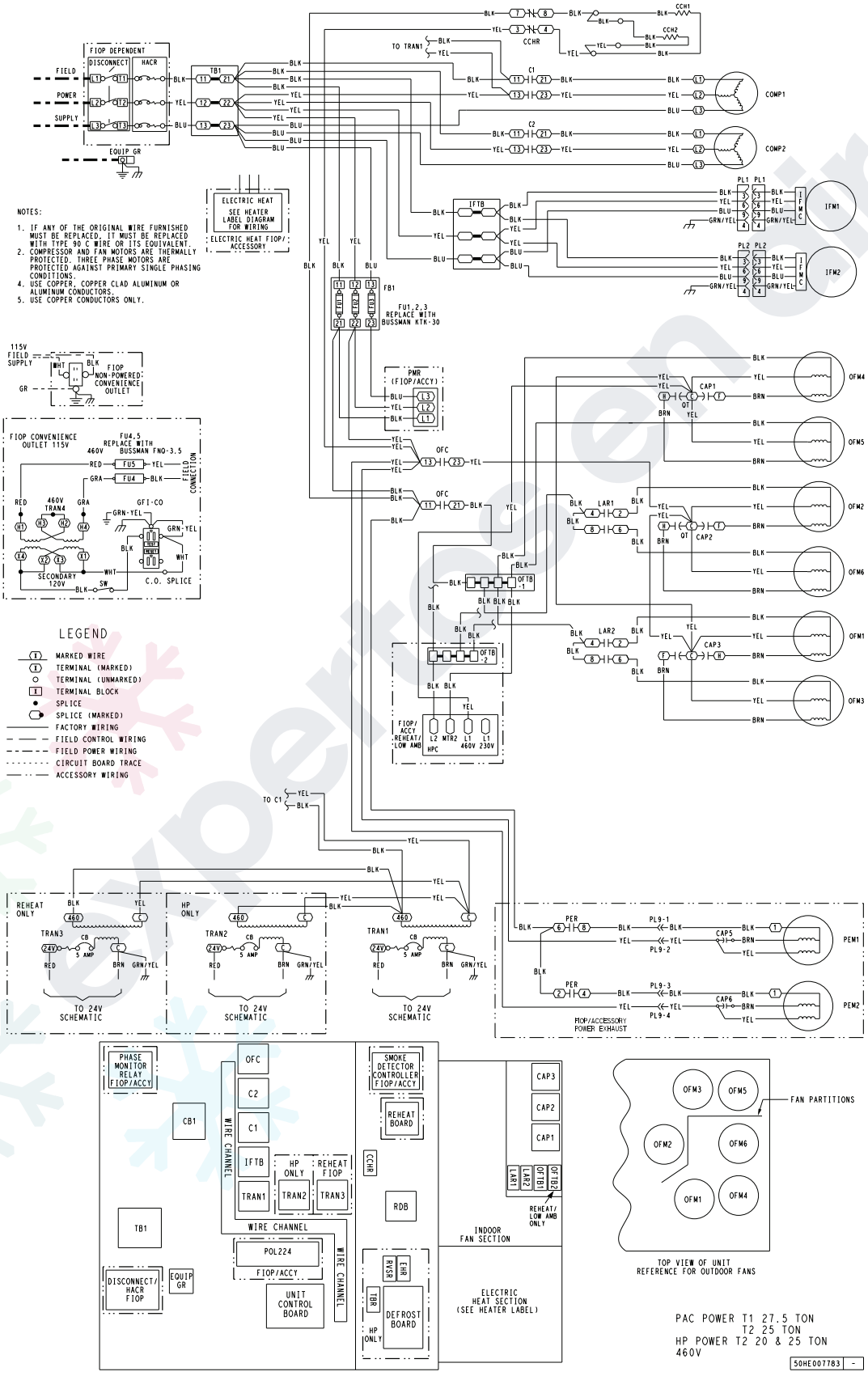
Typical wiring diagrams (cont)

Typical 50GEQ*17 Power Wiring Diagram, Electromechanical Controller, 15 Ton 460-3-60 Unit Shown



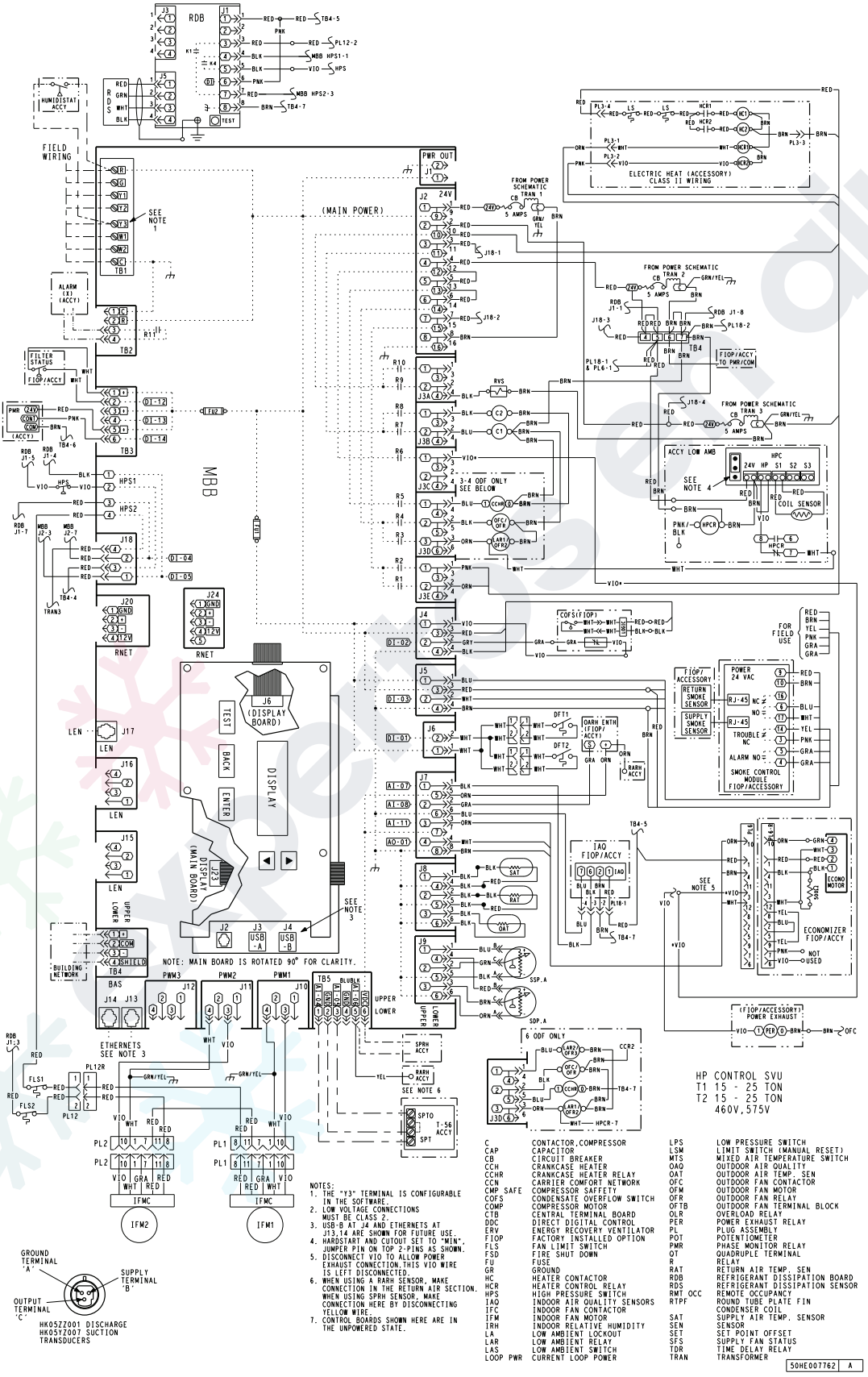
Typical wiring diagrams (cont)

Typical 50GEQ*24-28 Power Wiring Diagram, Electromechanical Controller, 460-3-60 Unit Shown



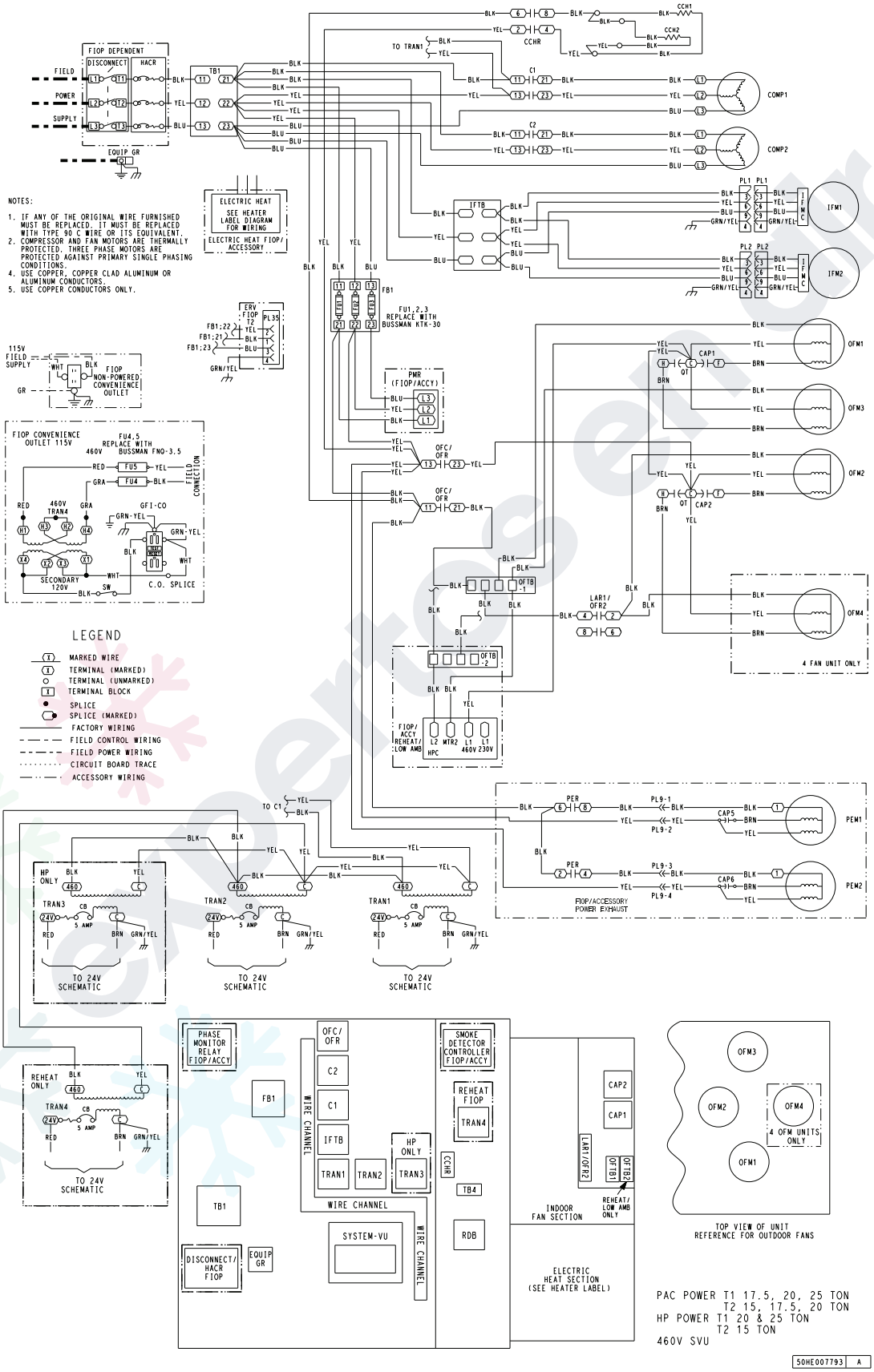
Typical wiring diagrams (cont)

Typical 50GEQ*17-28 Control Wiring Diagram, SystemVu™ Controller, 460-3-60 Unit Shown



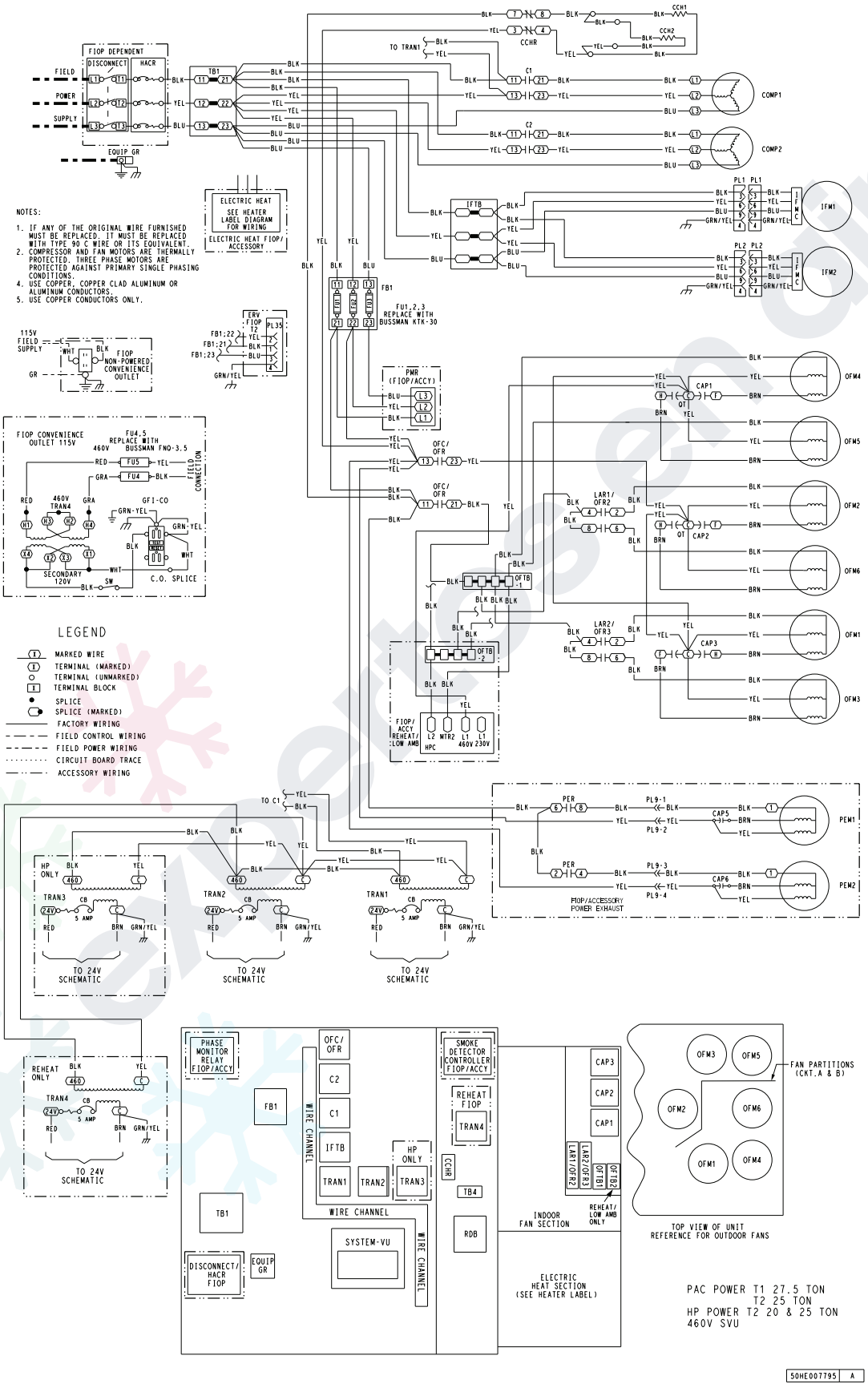
Typical wiring diagrams (cont)

Typical 50GEQ*17 Power Wiring Diagram, SystemVu™ Controller, 15 Ton 460-3-60 Unit Shown



Typical wiring diagrams (cont)

Typical 50GEQ*24-28 Power Wiring Diagram, SystemVu™ Controller, 460-3-60 Unit Shown



Sequence of operation

General

The sequence below describes the sequence of operation for an electromechanical unit with and without a factory-installed EconomizerONE (POL224 controller). For information regarding a direct digital controller, see the start-up, operations, and troubleshooting manual for the applicable controller.

Electromechanical units without economizer

Cooling

When the thermostat calls for cooling, terminals G and Y1 are energized. The indoor fan will run at the low fan speed and the C1 compressor contactor (CC) is energized causing the compressor and outdoor fan to run. The low indoor fan speed is 60% or 66% of the user set fan speed depending on unit size.

If additional cooling is needed, the thermostat will add the call for Y2. This will increase the indoor fan speed to the user set fan speed and energize the C2 contactor and second compressor for full compressor capacity. The outdoor fan is the same speed for Y1 and Y2.

When the thermostat removes the call for Y2 but leaves the Y1, the indoor fan will slow to the reduced percentage of the user set fan speed, the C2 contactor will de-energize, the second compressor will turn off, and the outdoor fan will remain on. When the thermostat removes the call for Y1 the compressor contactor will de-energize shutting down the compressor and the outdoor fan. When the thermostat removes the call for G, the indoor fan will turn off after the specific unit fan off delay.

NOTE: Per ASHRAE 90.1-2019 and IECC-2018 standards, during the first stage cooling operation the Unit Control Board (UCB) will adjust the fan motor speed to provide 60% or 66% of the total cfm established for the unit.

Defrost

When the temperature of the outdoor coil drops below 28°F (–2°C) as sensed by the defrost thermostat (DFT2) and the defrost timer is at the end of a timed period (adjustable at 30, 60, 90 or 120 minutes), the reversing valve solenoid (RVS) is energized and the OFC is de-energized. This switches the position of the reversing valve and shuts off the outdoor fan. The electric heaters (if installed) will be energized.

Heating, unit with economizer

Upon a request for heating from the space thermostat terminal, W1 will be energized with 24V. The indoor fan will run at high speed, and outdoor fan contactor (OFC), C1 and C2 will be energized in heating. The indoor fan, outdoor fans, and both stages of the compressor are energized. The reversing valve is de-energized and switch positions. The economizer is set to minimum position (ventilation position). If the space temperature continues to fall with W1 energized, W2 will bring on all electric heat (HC).

As the space temperature rises the W2 will de-energize and the compressors will continue to operate, until the thermostat set point is achieved de-energizing W1. If the thermostat is set to Auto, the indoor fan will de-energize and the economizer will close. If the indoor fan is set to On, the indoor fan will continue to operate and the economizer will remain at minimum position (vent position).

On units equipped for 2 stages of heat, when additional heat is needed, heater contactor no. 2 is energized through W2. The economizer damper moves to the minimum position. When the thermostat is satisfied, the damper moves to the fully closed position.

Heating, unit without economizer

Upon a request for heating from the space thermostat, terminal W1 will be energized with 24V. The IFC, outdoor fan contactor (OFC), C1, and C2 will be energized. The indoor fan, outdoor fans, and compressor no. 1, and compressor no. 2 are energized and reversing valves are de-energized and switch position.

If the space temperature continues to fall while W1 is energized, W2 will be energized with 24V, and the heater contactor(s) (HC) will be energized, which will energize the electric heater(s).

When the space thermostat is satisfied, W2 will be de-energized first, and the electric heater(s) will be de-energized. Upon a further rise in space temperature, W1 will be de-energized.

IMPORTANT: The thermostat must be configured for Electric Heat so it will energize G with the W1 call.

Electromechanical units with factory-installed EconomizerONE

When free cooling is not available, the compressors will be controlled by the zone thermostat. When free cooling is available, the outdoor-air damper is modulated by the EconomizerONE control to provide a 50°F (10°C) to 55°F (13°C) mixed-air temperature into the zone. As the mixed air temperature fluctuates above 55°F (13°C) or below 50°F (10°C) dampers will be modulated (open or close) to bring the mixed-air temperature back within control. If mechanical cooling is utilized with free cooling, the outdoor-air damper will maintain its current position at the time the compressor is started. If the increase in cooling capacity causes the mixed-air temperature to drop below 45°F (7°C), then the outdoor-air damper position will be decreased to the minimum position. If the mixed-air temperature continues to fall, the outdoor-air damper will close. Control returns to normal once the mixed-air temperature rises above 48°F (9°C). The power exhaust fans will be energized and de-energized, if installed, as the outdoor-air damper opens and closes.

If field-installed accessory CO_2 sensors are connected to the EconomizerONE control, a demand controlled ventilation strategy will begin to operate. As the CO_2 level in the zone increases above the CO_2 set-point (on the EconomizerONE controller), the minimum position of the damper will be increased proportionally until the Maximum Ventilation setting is reached. As the CO_2 level decreases because of the increase in fresh air, the outdoor-air damper will follow the higher demand condition from either the DCV mode or from the free cooling mode. For EconomizerONE operation, there must be a thermostat call for the fan (G). If the unit is occupied and the fan is on, the damper will operate at minimum position. Otherwise, the damper will be closed.

When the EconomizerONE control is in the occupied mode and a call for cooling exists (Y1 on the thermostat), the control will first check for indoor fan operation. If the fan is not on, then cooling will not be activated. If the fan is on, then the control will open the EconomizerONE damper to the minimum position.

Sequence of operation (cont)

On the initial power to the EconomizerONE control, it will take the damper up to 2-1/2 minutes before it begins to position itself. After the initial power-up, further changes in damper position can take up to 90 seconds to initiate. Damper movement from full closed to full open (or vice versa) will take between 1-1/2 and 2-1/2 minutes. If free cooling can be used as determined from the appropriate changeover command (dry bulb, outdoor enthalpy, differential dry bulb, or differential enthalpy), then the control will modulate the dampers open and closed to maintain the mixed-air temperature set-point at 50°F (10°C) to 55°F (13°C). If there is a further demand for cooling (cooling second stage — Y2 is energized), then the control will bring on compressor stage 1 to maintain the mixed-air temperature setpoint. The EconomizerONE damper will be open at maximum position.

NOTE: On 2-speed units, the EconomizerONE controller will adjust the damper position as the Indoor Fan Speed changes, per its configured values.

Heating

The sequence of operation for the heating is the same as an electromechanical unit without economizer. The only difference is how the economizer acts. The economizer will stay at the Economizer Minimum Position while the evaporator fan is operating. The outdoor-air damper is closed when the indoor fan is not operating. Refer to Service and Maintenance manual for further details.

SystemVu™ controller (factory option)

For details on operating 50GEQ units equipped with the factory-installed SystemVu controller option, refer to FEQ/GEQ/QE Series Single Package Rooftop Units with SystemVu Controller Controls, Start-Up, Operation and Troubleshooting manual.

Application data

Minimum operating ambient temperature (cooling)

In mechanical cooling mode, your Carrier rooftop unit can safely operate down to an outdoor ambient temperature of 40°F (4°C). It is possible to provide cooling at lower outdoor ambient temperatures by using less outside air, economizers, and/or accessory low ambient kits.

Maximum operating ambient temperature (cooling)

The maximum operating ambient temperature for cooling mode is 125°F (52°C). While cooling operation above 125°F (52°C) may be possible, it could cause either a reduction in performance, reliability, or a protective action by the unit's internal safety devices.

Multiple motor and drive packages

Some applications need larger horsepower motors, some need more airflow, and some need both. Regardless of the case, your Carrier expert has a factory installed combination to meet your application. A wide selection of motors are available, factory installed, to handle nearly any application.

Minimum and maximum airflow (heating and cooling)

To maintain safe and reliable operation of your rooftop, operate within the heating airflow limits during heating mode and cooling airflow limits during cooling mode. Operating above the maximum may cause blow-off, undesired airflow noise, or airflow related problems with the rooftop unit. Operating below the minimum may cause problems with coil freeze-up and unsafe heating operation. Heating and cooling limitations differ when evaluating operating CFM, minimum value is the HIGHER of the cooling and heating minimum CFM values published on page 7 and the maximum value is the LOWER of the cooling and heating minimum values published on page 7.

Heating-to-cooling changeover

Your unit will automatically change from heating to cooling mode when using a thermostat with an auto-changeover feature.

Airflow

All units are draw-though in cooling mode and blow-through in heating mode.

Outdoor air application strategies

Economizers reduce operating expenses and compressor run time by providing a free source of cooling and a means of ventilation to match application changing needs. In fact, they should be considered for most applications. Also, consider the various economizer control methods and their benefits, as well as sensors required to accomplish your application goals. Please contact your local Carrier representative for assistance.

Motor limits, brake horsepower (bhp)

Due to internal design of Carrier units, the air path, and specially designed motors, the full horsepower (maximum continuous bhp) band, as listed in the Fan Performance tables, can be used with the utmost confidence. There is no need for extra safety factors, as Carrier motors are designed and rigorously tested to use the entire, listed bhp range without either nuisance tripping or premature motor failure.

Sizing a rooftop

Bigger is not necessarily better. While an air conditioner needs to have enough capacity to meet the design loads, it does not need excess capacity. In fact, excess capacity typically results in very poor part load performance and humidity control.

Using higher design temperatures than ASHRAE recommends for your location, adding "safety factors" to the calculated load, are all signs of oversizing air conditioners. Oversizing the air conditioner leads to poor humidity control, reduced efficiency, higher utility bills, larger indoor temperature swings, excessive noise, and increased wear and tear on the air conditioner.

Rather than oversizing an air conditioner, engineers should "right-size" or even slightly "under-size" air conditioners. Correctly sizing an air conditioner controls humidity better; promotes efficiency; reduces utility bills; extends equipment life, and maintains even, comfortable temperatures. Please contact your local Carrier representative for assistance.

Low ambient applications

The optional Carrier economizer can adequately cool your space by bringing in fresh, cool outside air. In fact, when so equipped, accessory low-ambient kit may not be necessary. In low ambient conditions, unless the outdoor air is excessively humid or contaminated, economizer-based "free cooling" is the preferred less costly and energy conscious method. In low ambient applications where outside air might not be desired (such as contaminated or excessively humid outdoor environments), your Carrier rooftop can operate to ambient temperatures down to –0°F (–18°C) using the recommended accessory low ambient controller.

Guide specifications

Note about this specification:

This specification is in the "Masterformat" as published by the Construction Specification Institute. Please feel free to copy this specification directly into your building spec.

Puron ADVANCE™

Cooling Only/Electric Heat Packaged Rooftop Heat Pump

HVAC Guide Specifications

Size Range: **15 to 25 Nominal Tons**

Carrier Model Number: **50GEQ*17-28**

Part 1 — (23 06 80) Schedules for Decentralized HVAC Equipment

1.01 (23 06 80.13) Decentralized Unitary HVAC Equipment Schedule:

A. (23 06 80.13.A.) Rooftop Unit (RTU) Schedule:

Schedule is per the project specification requirements.

Part 2 — (23 07 16) HVAC Equipment Insulation

2.01 (23 07 16.13) Decentralized, Rooftop Units:

A. (23 07 16.13.A.) Evaporator Fan Compartment:

1. Interior cabinet surfaces shall be insulated with a minimum 1/2 in. thick, minimum 1-1/2 lb density, flexible fiberglass insulation bonded with a phenolic binder, neoprene coated on the air side.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

B. (23 07 16.13.B.) Electric Heat Compartment:

1. Aluminum foil-faced fiberglass insulation shall be used.
2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

Part 3 — (23 09 13) Instrumentation and Control Devices for HVAC

3.01 (23 09 13.23) Sensors and Transmitters:

A. (23 09 13.23.A.) Thermostats:

Thermostat must:

a. energize both "W" and "G" when calling for heat.

b. have capability to energize 1 or 2 different stages of cooling, and 2 different stages of heating.

c. be heat pump design and include capability for occupancy scheduling.

Part 4 — (23 09 23) Direct Digital Control system for HVAC

4.01 (23 09 23.13) Decentralized, Rooftop Units:

A. (23 09 23.13.A.) SystemVu™ intelligent integrated Direct Digital Control (DDC) shall provide:

1. Integrated unit operation for comfort cooling, heating ventilation as well as all monitoring, recording and reporting capabilities. Controller shall also provide diagnostics and alarms of abnormal unit operation through the controller. Controller shall have an intuitive user display and be able to be used in a standalone operation or via building automation system (BAS).
2. Quick Unit Status LEDs of: RUN — meaning all systems are go, ALERT — that indicates there is currently a non-critical issue with the unit, like filters need to be replaced and FAULT — that indicates the unit has a critical issue and will possibly shut down.
3. Six large navigation keys for easy access. Navigation keys shall consist of: TEST, BACK, ENTER, and MENU along with UP and DOWN arrows.
4. Full back lit user display with 4 line by 30 character text capabilities. Display menu shall be designed to provide guided major menus and sub menus main menus provided below:
   a. Shutdown Unit
   b. Run Status
   c. Settings
   d. Alerts/Faults
   e. Service
   f. Inputs
   g. Outputs
   h. USB
5. The capability for standalone operation with conventional thermostat/sensor or use with building automation systems (BAS) of Carrier i-Vu®, BACnet®[1] MS/TP and Carrier Comfort Network® (CCN) systems. No special modules or boards are required for these capabilities. Has the capability to work with Equipment Touch™ and System Touch™ devices and ZS Sensors.
6. The ability to read refrigerant pressures at display or via BAS network of Discharge Pressure and Suction Pressure. The need for traditional refrigerant gauges is not required.
7. USB Data Port for flash drive interaction. This will allow the transfer of data for uploads, downloads, perform software upgrades, back-up and restore data and file transfer data such as component number of starts and run hours.
8. Reverse Rotation Protection of compressors if field 3-phase wiring is misapplied.

1. Third-party trademarks and logos are the property of their respective owners.

9. Provide Service Capabilities of:
   a. Auto run test
   b. Manual run test
   c. Component run hours and starts
   d. Commissioning reports
   e. Data logging
   f. Alarm history
10. Economizer control and diagnostics. Set up economizer operation, receive feedback from actuator. Also meets the most recent California Title 24, ASHRAE 90.1 and IECC®[1] Fault Detection and Diagnostic (FDD) requirements.
11. Unit cooling operation down to 40°F (4°C).
12. Controller shall have easy access connections around the controller perimeter area and consist of Mate-N-Lok®[1], terminal block and RJ style modular jack connections.
13. 365 day real time clock, 20 holiday schedules along with occupied and unoccupied scheduling.
14. Auto-Recognition for easy installation and commissioning of devices like economizers, space sensors, etc.
15. A 5°F temperature difference between cooling and heating set points to meet the latest ASHRAE 90.1 Energy Standard.
16. Contains return air sensor, supply air sensor and outdoor air sensor to help monitor and provide data for the unit comfort operation, diagnostic and alarms.
17. Use of Carrier's field accessory Equipment Touch™ and System Touch™ devices.
18. Supply Air Tempering control operates the electric heat to maintain a minimum supply air temperature during conditions where very cold outdoor air causes the supply air temperature to fall below the configured Supply Air Tempering Setpoint. This occurs during periods where DCV is active and increasing the amount of outdoor air or in cases where the system is operating at very low airflow and the calculated economizer position has increased to maintain a constant ventilation rate.
19. Demand limiting in units with SystemVu™ controller is achieved through set point expansion. The systems heating and cooling set points are expanded in steps or levels. The degree to which the set points may be expanded is defined by the 6 demand level offsets and the 2 commanded demand limit levels.
20. 3-year limited part warranty.

1. Third-party trademarks and logos are the property of their respective owners.

Part 5 — (23 09 33) Electric and Electronic Control System for HVAC

5.01 (23 09 33.13) Decentralized, Rooftop Units:

A. (23 09 33.13.A.) General:

1. Shall be complete with self-contained low-voltage control circuit protected by a resettable circuit breaker on the 24-v transformer side. Transformer shall have 75 VA capability.
2. Shall utilize color-coded wiring.
3. Shall include a Unit Control Board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, DDC control options, and low and high pressure switches. Controller shall also provide an intuitive means to adjust the indoor fan speed through a simple switch and pot adjustment design.
4. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.
5. Shall include integrated defrost system to prevent excessive frost accumulation during heating duty, and shall be controlled as follows:
   a. Defrost shall be initiated on the basis of time and coil temperature.
   b. A 30, 60, 90, 120 minute timer shall activate the defrost cycle only if the coil temperature is low enough to indicate a heavy frost condition.
   c. Defrost cycle shall terminate when defrost thermostat is satisfied and shall have a positive termination time of 10 minutes.
6. Defrost system shall also include:
   a. Defrost Cycle Indicator LED.
   b. DIP switch selectable defrost time between 30, 60, 90 and 120 minutes. Factory set at 30 minutes.
   c. Molded plug connection to ensure proper connection.

B. (23 09 33.13.B.) Safeties:

1. Compressor over-temperature, over-current. High internal pressure differential.
2. Low Pressure Switch.

   Low pressure switch shall use different color wire than the high pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
3. High Pressure Switch.

   High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.

4. Heating section shall be provided with the following minimum protections:

   High temperature limit switches.

5. AL2 Refrigerant Leak Dissipation System (Electromechanical):
   a. Leak dissipation system shall consist of control board and A2L sensor certified to UL 60335-2-40.
   b. System shall be designed for the life of the unit.
   c. Dissipation system shall be automatic, ship pre-wired, and require no additional field connections to thermostat to function.
   d. Refrigerant leak sensor shall be installed in UL certified location and orientation. Sensor shall be self-correcting and resettable. Single use refrigerant leak sensor shall not be permitted.
   e. Factory installed dissipation controller shall use onboard microprocessor and include:
      1) Automatic reset after a dissipation event has occurred.
      2) Onboard LED with flash code to indicate current unit status and hardware failures.
      3) Depressible "Test" button to allow for a system test and recall/reset of leak detection history.
      4) 24V dry contact alarm terminal to allow for external notification of leak detection.
   f. Dissipation control board shall be accessible via normal maintenance locations and LED shall be visible.
   g. Dissipation system shall "Fail Safe" per UL requirements.
   h. Dissipation shall allow smoke and building fire systems to override in case of event.

6. A2L Refrigerant Leak Dissipation System (SystemVu):
   a. Leak dissipation system shall consist of control board and A2L sensor certified to UL 60335-2-40, integrated with SystemVu controller.
   b. System shall be designed for the life of the unit.
   c. Dissipation system shall be automatic, ship pre-wired, and require no additional field connections to function.
   d. Refrigerant leak sensor shall be installed in UL certified location and orientation. Sensor shall be self-correcting and resettable. Single use refrigerant leak sensor shall not be permitted.
   e. Factory installed dissipation system shall use onboard microprocessor and include:
      1) Automatic leak detection and dissipation algorithm.
      2) Automatic reset after a dissipation event has occurred.
      3) Onboard LED with flash code to indicate current unit status and hardware failures.
      4) Depressible "Test" button to allow for a system test and recall/reset of leak detection history.
      5) 24V dry contact alarm terminal on dissipation control board to allow for external notification of leak detection.
      6) Ability to notify BAS system of dissipation event via readable alarm point through SystemVu.
      7) Recallable dissipation alarm history on SystemVu controller.
   f. Dissipation control board shall be accessible via normal maintenance locations and LED shall be visible.
   g. Dissipation system shall "Fail Safe" per UL requirements.
   h. Dissipation shall allow smoke and building fire systems to override in case of event.

Part 6 — (23 09 93) Sequence of Operation for HVAC Controls

6.01 (23 09 93.13) Decentralized, Rooftop Units:

A. (23 09 93.13.A.) INSERT SEQUENCE OF OPERATION

Part 7 — (23 40 13) Panel Air Filters

7.01 (23 40 13.13) Decentralized, Rooftop Units:

A. (23 40 13.13.A.) Standard Filter Section:
   1. Shall consist of factory installed, low velocity, disposable 2 in. thick fiberglass filters of commercially available sizes.
   2. Unit shall use only one filter size, Multiple sizes are not acceptable.
   3. Filters shall be accessible through an access panel with "no-tool" removal as described in the unit cabinet section of this specification (23 81 19.13.G).

Part 8 — (23 81 19) Self-Contained Air Conditioners

8.01 (23 81 19.13) Small-Capacity Self-Contained Air Conditioners:

A. (23 81 19.13.A.) General:
   1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing fully hermetic scroll compressors for cooling duty and heat pump heating duty.
   2. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
   3. Unit shall use Puron Advance™ (R-454) refrigerant.
   4. Unit shall be installed in accordance with the manufacturer's instructions.

5. Unit must be selected and installed in compliance with local, state, and federal codes.

B. (23 81 19.13.B.) Quality Assurance:
1. Unit meets ASHRAE 90.1 minimum efficiency requirements.
2. Unit shall be rated in accordance with AHRI Standards 340/360.
3. Unit shall be designed to conform to ASHRAE 15.
4. Unit shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
5. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
6. Unit casing shall be capable of withstanding 500 hour salt spray exposure per ASTM B117 (scribed specimen).
7. Unit shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001:2015.
8. Roof curb shall be designed to conform to NRCA Standards.
9. Unit shall be subjected to a completely automated run test on the assembly line. The data for each unit will be stored at the factory, and must be available upon request.
10. Unit shall be designed in accordance with UL Standard 60335-1 and 60335-2-40, including testing to withstand rain. Unit shall be IPX4 rated.
11. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
12. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.

C. (23 81 19.13.C.) Delivery, Storage, and Handling:
1. Unit shall be stored and handled per manufacturer's recommendations.
2. Lifted by crane requires either shipping top panel or spreader bars.
3. Unit shall only be stored or positioned in the upright position.

D. (23 81 19.13.D.) Project Conditions:
1. As specified in the contract.

E. (23 81 19.13.E.) Operating Characteristics:
1. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature meeting maximum load criteria of AHRI Standard 340/360 at ±10% voltage.
2. Compressor with standard controls shall be capable of operation down to 40°F (4°C) ambient outdoor temperatures in cooling mode.
3. Compressor with standard controls shall be capable of operation down to –10°F (–23°C) ambient outdoor temperatures or lower in heat pump heating mode.
4. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
5. Unit shall be factory configured for either vertical or horizontal supply and return configurations. Unit shall not require field conversion.

F. (23 81 19.13.F.) Electrical Requirements:
1. Main power supply voltage, phase, and frequency must match those required by the manufacturer.

G. (23 81 19.13.G.) Unit Cabinet:
1. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a prepainted baked enamel finish on all externally exposed surfaces.
2. Unit cabinet exterior paint shall be: film thickness, (dry) 0.003 in. minimum, gloss (per ASTM D523, 60°F/16°C): 60, Hardness: H-2H Pencil hardness.
3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 340/360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2 in. thick, 1 lb density, flexible fiberglass insulation, neoprene coated on the air side. Aluminum foil-faced fiberglass insulation shall be used in the heat compartment.
4. Base of unit shall have a minimum of 4 locations for thru-the-base gas and electrical connections (factory-installed or field-installed), standard.
5. Base Rail:
   a. Unit shall have base rails on a minimum of 2 sides.
   b. Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
   c. Holes shall be provided in the base rail for moving the rooftop by fork truck.
   d. Base rail shall be a minimum of 16 gauge thickness.
6. Condensate Pan and Connections:
   a. Shall be a sloped condensate drain pan made of a corrosion resistant material.
   b. Shall comply with ASHRAE Standard 62.
   c. Shall use a 3/4 in. 14 NPT drain connection, through the side of the drain pan. Connection shall be made per manufacturer's recommendations.
7. Top Panel:
   a. Shall be a multi-top panel with watertight flanges and locking systems.

8. Electrical Connections:
   a. All unit power wiring shall enter unit cabinet at a single, factory prepared, knockout location.
   b. Thru-the-Base Capability.
      1) Standard unit shall have a thru-the-base electrical location(s) using a raised, embossed portion of the unit basepan.
      2) Optional, factory approved, water-tight connection method must be used for thru-the-base electrical connections.
      3) No basepan penetration, other than those authorized by the manufacturer, is permitted.
9. Component Access Panels (standard):
   a. Cabinet panels shall be easily removable for servicing.
   b. Unit shall have one factory installed, tool-less, removable, filter access panel.
   c. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
   d. Handles shall be UV modified, composite. They shall be permanently attached, and recessed into the panel.
   e. Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.
   f. Collars shall be removable and easily replaceable using manufacturer recommended parts.

H. (23 81 19.13.H.) Coils:
1. Standard Aluminum Fin-Copper Tube Coils:
   a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
   b. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 60335-2-40 burst test at 1775 psig.
   c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 60335-2-40 burst test at 1980 psig.
2. Optional Pre-Coated Aluminum-Fin Condenser Coils:
   a. Shall have a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments.
   b. Coating shall be applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.
   c. Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.
   d. Corrosion durability of fin stock shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117.
   e. Corrosion durability of fin stock shall be confirmed through testing to have no visible corrosion after 48 hour immersion in a room temperature solution of 5% salt, 1% acetic acid.
   f. Fin stock coating shall pass 2000 hours of the following: one week exposure in the prohesion chamber followed by one week of accelerated ultraviolet light testing. Prohesion chamber: the solution shall contain 3.5% sodium chloride and 0.35% ammonium sulfate. The exposure cycle is one hour of salt fog application at ambient followed by one hour drying at 95°F (35°C).
3. Optional Copper-Fin Evaporator and Condenser Coils:
   a. Shall be constructed of copper fins mechanically bonded to copper tubes and copper tube sheets.
   b. Galvanized steel tube sheets shall not be acceptable.
   c. A polymer strip shall prevent coil assembly from contacting the sheet metal coil pan to minimize potential for galvanic corrosion between coil and pan.
4. Optional E-Coated Aluminum-Fin Evaporator and Condenser Coils:
   a. Shall have a flexible epoxy polymer coating uniformly applied to all coil surface areas without material bridging between fins.
   b. Coating process shall ensure complete coil encapsulation of tubes, fins and headers.
   c. Color shall be high gloss black with gloss per ASTM D523.
   d. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges.
   e. Superior hardness characteristics of 2H per ASTM D3363 and cross-hatch adhesion of 4B-5B per ASTM D3359.
   f. Impact resistance shall be up to 160 in.-lb (ASTM D2794).
   g. Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247 and ASTM D870).
   h. Corrosion durability shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117.

I. (23 81 19.13.I.) Refrigerant Components:
1. Refrigerant circuit shall include the following control, safety, and maintenance features:
   a. Thermostatic Expansion Valve (TXV) shall help provide optimum performance across the entire operating range. Shall contain

removable power element to allow change out of power element and bulb without removing the valve body.

b. Refrigerant filter drier — Solid core design with pre and post filter service gauge connections for filter diagnostics and maintenance.

c. Service gauge connections on suction and discharge lines.

d. Pressure gauge access through a specially designed access port in the unit.

2. There shall be gauge line access port in the skin of the rooftop, covered by a black, removable plug.

a. The plug shall be easy to remove and replace.

b. When the plug is removed, the gauge access port shall enable maintenance personnel to route their pressure gauge lines.

c. This gauge access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.

d. The plug shall be made of a leak proof, UV resistant, composite material.

3. Compressors:

a. Unit shall use tandem scroll compressor assembly on single independent refrigeration circuit with two stages of cooling for efficient comfort cooling operation.

b. Evaporator coils shall be a full active design to help better control latent removal and minimize unconditioned bypass air.

c. Compressor motors shall be cooled by refrigerant gas passing through motor windings.

d. Compressors shall be internally protected from high discharge temperature conditions.

e. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.

f. Compressor shall be factory mounted on rubber grommets.

g. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.

h. Crankcase heaters shall not be required for normal operating range, unless required by the manufacturer due to refrigerant charge limits.

J. (23 81 19.13.J.) Filter Section:

1. Filters access is specified in the unit cabinet section of this specification.

2. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.

3. Shall consist of factory installed, low velocity, throw-away 2 in. thick fiberglass filters.

4. Filters shall be standard, commercially available sizes.

5. Only one size filter per unit is allowed.

K. (23 81 19.13.K.) Evaporator Fan and Motor with EcoBlue™ Technology:

1. Direct Drive Evaporator Fan Motor:

a. Shall be a ECM motor design.

b. Shall be direct drive design for all static options.

c. Shall have permanently lubricated bearings.

d. Shall have inherent automatic-reset thermal overload protection.

e. Shall have slow ramp up to speed capabilities.

f. Shall require no fan/motor belts for operation, adjustments and or initial fan speed set up.

g. Fan DC voltage set up on Unit Control Board can eliminate the need of removal of blower access door, required on conventional belt drive systems.

h. Shall be internally protected from electrical phase reversal and loss.

2. Evaporator Fan:

a. Speed shall be easily set with dedicated selection switch and adjustment pot on unit control board or through SystemVu™ controller.

b. Shall provide 2 stage cooling capacity control, the indoor fan speed is automatically controlled to meet the code-compliant <66% low fan speed and 100% at full fan speed operation.

c. Blower fan shall be a Vane Axial fan design with fan assembly secured directly to ECM motor. Additional shafts, belts, pulleys/sheaves, and bearing blocks to drive fan shall not be permitted or necessary.

d. Additional variable frequency drive to control fan motor speed shall not be permitted or necessary. All speed control electronics must be onboard fan motor assembly.

e. Shall be constructed of high impact composite material on stator rotor and air inlet casing.

f. Shall be a patented design with a corrosion resistant material.

g. Fan assembly design shall be integrated to fan deck, dynamically balanced, and require no additional vibration isolation for normal operation.

h. Shall have slow ramp up to speed capabilities to help reduce sound and comfort issues typically associated with single speed belt drive systems.

i. Units shall contain 2 separate vane axial fan assemblies designed to meet factory configured airflow orientation.

j. Shall be a slide out design with removal of a few support brackets.

3. Shall include an easily accessible Unit Control Board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, economizer, thermostat, DDC control options, and low, high and mixed air temperature switches. Controller shall also provide an intuitive means to adjust the indoor fan speed through a simple switch and pot adjustment design.

L. (23 81 19.13.L.) Condenser Fans and Motors:

1. Condenser Fan Motors:
   a. Shall be a totally enclosed motor.
   b. Shall use permanently lubricated bearings.
   c. Shall have inherent thermal overload protection with an automatic reset feature.
   d. Shall use a shaft-down design on all sizes.
2. Condenser Fans:
   a. Shall be a direct-driven propeller type fan.
   b. Shall have galvalum blades riveted to steel spider that have corrosion-resistant properties and shall be dynamically balanced.

M. (23 81 19.13.M.) Special Features Options and Accessories:

1. Integrated EconomizerONE and EconoMi$er® 2 Low Leak Rate Models.
   a. Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.
   b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory installed option.
   c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
   d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below set points.
   e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
   f. Low leak rate shall be equipped with dampers not to exceed 2% leakage at 1 in. wg pressure differential.
   g. Economizer controller on EconomizerONE models shall be Siemens POL224 that provides:
      1) Combined minimum and DCV maximum damper position potentiometers with compressor staging relay.
      2) Optional configuration via WLAN stick and Siemens Climatix™[1] smartphone app for easy setup.
      3) Functions with solid-state analog enthalpy or dry bulb changeover control sensing.
      4) LED indicators for free cooling, sensor, and damper operation.
      5) One-line LCD interface screen for setup, configuration and troubleshooting.
      6) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24, ASHRAE 90.1 and IECC®[1].
      7) Sensor failure loss of communication identification.
      8) Capabilities for use with multiple-speed or single speed indoor fan systems.
      9) Digital sensors: Dry bulb and Enthalpy.
   h. Economizer controller on EconoMi$er 2 models with SystemVu™ controls shall be a 4-20 mA design controlled directly by the controller. SystemVu controllers meet California Title 24, ASHRAE 90.1 and IECC Fault Detection and Diagnostic (FDD) requirements.
   i. Shall be capable of introducing up to 100% outdoor air.
   j. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air and contain seals that meet ASHRAE 90.1 requirements.
   k. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.
   l. Dry bulb outdoor air temperature sensor shall be provided as standard. Enthalpy sensor is also available on factory installed only. Outdoor air sensor setpoint shall be adjustable and shall range from 40°F to 100°F (4°C to 38°C). Additional sensor options shall be available as accessories.
   m. The economizer controller shall also provide control of an accessory power exhaust unit function. Factory set at 100%, with a range of 0% to 100%.
   n. The economizer shall maintain minimum airflow into the building during occupied period and provide design ventilation rate for full occupancy.
   o. Dampers shall be completely closed when the unit is in the unoccupied mode.
   p. Economizer controller shall accept a 0 to 10 vdc CO_2 sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor air damper to provide ventilation based on the sensor input.

1. Third-party trademarks and logos are the property of their respective owners.

q. Compressor lockout temperature on POL224 control is adjustable from –45°F to 80°F (–43°C to 26°C), set at a factory default of 32°F (0°C).

r. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.

s. Contains LED indication for free cooling, sensor, and damper operation.

2. Integrated EconomizerONE and EconoMi$er® 2 Ultra Low Leak Rate Models.

a. Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.

b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory-installed option.

c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.

d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below set points.

e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.

f. Ultra Low Leak design meets California Title 24 section 140.4 and ASHRAE 90.1 requirements for 4 cfm per sq ft on the outside air dampers and 10 cfm per sq ft on the return dampers.

g. Economizer controller on EconomizerONE models shall be the Siemens POL224 that provides:

1) One-line LCD interface screen for setup, configuration and troubleshooting.

2) Optional configuration via WLAN stick and Siemens Climatix smartphone app for easy setup.

3) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24, ASHRAE 90.1 and IECC.

4) Sensor failure loss of communication identification.

5) Capabilities for use with multiple-speed indoor fan systems.

6) Digital sensors: Dry bulb and Enthalpy.

h. Economizer controller on EconoMi$er 2 models with SystemVu controls shall be a 4 to 20mA design controlled directly by the controller. SystemVu controller meets California Title 24, ASHRAE 90.1 and IECC Fault Detection and Diagnostic (FDD) requirements.

i. Shall be capable of introducing up to 100% outdoor air.

j. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air and contain seals that meet ASHRAE 90.1 requirements.

k. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.

l. Dry bulb outdoor air temperature sensor shall be provided as standard. Enthalpy sensor is also available on factory installed only. Outdoor air sensor setpoint shall be adjustable and shall range from 40°F to 100°F (4°C to 38°C). Additional sensor options shall be available as accessories.

m. The economizer controller shall also provide control of an accessory power exhaust unit function. Factory set at 100%, with a range of 0% to 100%.

n. The economizer shall maintain minimum airflow into the building during occupied period and provide design ventilation rate for full occupancy.

o. Dampers shall be completely closed when the unit is in the unoccupied mode.

p. Economizer controller shall accept a 0 to 10 vdc CO_2 sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor air damper to provide ventilation based on the sensor input.

q. Compressor lockout temperature on POL224 control is adjustable from –45°F to 80°F (–43°C to 26°C), set at a factory default of 32°F (0°C).

r. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.

s. Shall contain LED indication for free cooling, sensor, and damper operation.

3. Wi-Fi/WLAN stick for EconomizerONE POL224 (field-installed):

This item allows use of the Siemens Climatix mobile application.

4. Two-Position Damper (field-installed only):

a. Damper shall be a Two-Position Damper. Damper travel shall be from the full closed position to the field adjustable %-open set point.

b. Damper shall include adjustable damper travel from 25% to 100% (full open).

c. Damper shall include single or dual blade, gear driven dampers and actuator motor.

d. Actuator shall be direct coupled to damper gear. No linkage arms or control rods shall be acceptable.
e. Damper will admit up to 100% outdoor air for applicable rooftop units.
f. Damper shall close upon indoor (evaporator) fan shutoff and/or loss of power.
g. The damper actuator shall plug into the rooftop unit's wiring harness plug. No hard wiring shall be required.
h. Outside air hood shall include aluminum water entrainment filter.

5. Manual Damper (field-installed only):

   Manual damper package shall consist of damper, air inlet screen, and rain hood which can be preset to admit up to 25% or 50% outdoor air for year round ventilation.

6. Low Ambient Control Package:
   a. Controller shall control coil head pressure by condenser fan speed modulation or condenser fan cycling and wind baffles.
   b. Shall consist of solid-state control and condenser coil temperature sensor to maintain condensing temperature between 90°F (32°C) and 110°F (43°C) at outdoor ambient temperatures down to –20°F (–29°C). For full low ambient control range, winter start kit is required.
7. Condenser Coil Hail Guard Assembly (factory or field installed):
   a. Shall protect against damage from hail.
   b. Shall be louvered type.
8. Unit-Mounted, Non-Fused Disconnect Switch:
   a. Available on 15 to 25 ton units with FLA of 100 amps or less (460/575V) or 200 amps or less (208/230V).
   b. Switch shall be factory installed, internally mounted.
   c. National Electric Code (NEC) and UL approved non-fused switch shall provide unit power shutoff.
   d. Shall be accessible from outside the unit.
   e. Shall provide local shutdown and lockout capability.
   f. Sized **only** for the unit as ordered from the factory. Does not accommodate field-installed devices.
9. HACR Breaker:
   a. These manual reset devices provide overload and short circuit protection for the unit. Factory wired and mounted with the units, with access cover to help provide environmental protection. On 575V applications, HACR breaker can only be used with WYE power distribution systems. Use on Delta power distribution systems is prohibited.
   b. Sized only for the unit as ordered from the factory. Does not accommodate field-installed devices.
10. Convenience Outlet:
    a. Factory Installed Powered Convenience Outlet.
       1) Outlet shall be powered from main line power to the rooftop unit.
       2) Outlet shall be powered from line side or load side of disconnect by installing contractor, as required by code. If outlet is powered from load side of disconnect, unit electrical ratings shall be UL certified and rated for additional outlet amperage.
       3) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
       4) Outlet shall include 15 amp GFI receptacles with independent fuse protection.
       5) Voltage required to operate convenience outlet shall be provided by a factory installed step-down transformer.
       6) Outlet shall be accessible from outside the unit.
       7) Outlet shall include a field installed "Wet in Use" cover.
    b. Factory-Installed Non-Powered Convenience Outlet.
       1) Outlet shall be powered from a separate 115/120-v power source.
       2) A transformer shall not be included.
       3) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
       4) Outlet shall include 15 amp GFI receptacles with independent fuse protection.
       5) Outlet shall be accessible from outside the unit.
       6) Outlet shall include a field installed "Wet in Use" cover.
    c. Field-Installed Non-Powered Convenience Outlet.
       1) Outlet shall be powered from a separate 115/120-v power source.
       2) A transformer shall not be included.
       3) Outlet shall be field-installed and internally mounted with easily accessible 115-v female receptacle.
       4) Outlet shall include 20 amp GFI receptacles. This kit provides a flexible installation method which allows code compliance for height requirements of the GFCI outlet from the finished roof surface as well as the capability to relocate the outlet to a more convenient location.

5) Outlet shall be accessible from outside the unit.
6) Outlet shall include a field installed "Wet in Use" cover.

11. Thru-the-Base Connectors:
    a. Shall provide connectors to permit electrical connections to be brought to the unit through the unit basepan.
    b. Minimum of 4 connections locations per unit.
12. Centrifugal Fan Power Exhaust:
    a. Power exhaust shall be used in conjunction with an integrated economizer.
    b. Power exhaust to be of centrifugal fan type.
    c. Horizontal power exhaust shall be mounted in return ductwork.
    d. Power exhaust shall be controlled by economizer controller operation. Exhaust fans shall be energized when dampers open past the 0 to 100% adjustable setpoint on the economizer control.
13. Roof Curbs (Vertical):
    a. Full perimeter roof curb with exhaust capability providing separate air streams for energy recovery from the exhaust air without supply air contamination.
    b. Formed galvanized steel with wood nailer strip and shall be capable of supporting entire unit weight.
    c. Permits installation and securing of ductwork to curb prior to mounting unit on the curb.
14. Outdoor Air Enthalpy Sensor:
    The outdoor air enthalpy sensor shall be used to provide single enthalpy control. When used in conjunction with a return air enthalpy sensor, the unit will provide differential enthalpy control. The sensor allows the unit to determine if outside air is suitable for free cooling.
15. Return Air Enthalpy Sensor:
    The return air enthalpy sensor shall be used in conjunction with an outdoor air enthalpy sensor to provide differential enthalpy control.
16. Indoor Air Quality (CO_2) Sensor:
    a. Shall be able to provide demand ventilation indoor air quality (IAQ) control.
    b. The IAQ sensor shall be available in duct mount, wall mount, or wall mount with LED display. The setpoint shall have adjustment capability.
17. Smoke Detectors:
    a. Shall be a 4-wire controller and detector.
    b. Shall be environmental compensated with differential sensing for reliable, stable, and drift-free sensitivity.
    c. Shall use magnet-activated test/reset sensor switches.
    d. Shall have tool-less connection terminal access.
    e. Shall have a recessed momentary switch for testing and resetting the detector.
    f. Controller shall include:
        1) One set of normally open alarm initiation contacts for connection to an initiating device circuit on a fire alarm control panel.
        2) Two Form-C auxiliary alarm relays for interface with rooftop unit or other equipment.
        3) One Form-C supervision (trouble) relay to control the operation of the Trouble LED on a remote test/reset station.
        4) Capable of direct connection to 2 individual detector modules.
        5) Can be wired to up to 14 other duct smoke detectors for multiple fan shutdown applications.
18. Winter Start Kit:
    a. Shall contain a bypass device around the low pressure switch.
    b. Shall be required when mechanical cooling is required down to 40°F (4°C).
    c. Shall not be required to operate on an economizer for cooling when below an outdoor ambient of 40°F (4°C).
    d. Is not compatible with SystemVu controls.
19. Time Guard:
    a. Shall prevent compressor short-cycling by providing a 5 minute delay (±2 minutes) before restarting a compressor after shutdown for any reason.
    b. One device shall be required per compressor.
20. Hinged Access Panels:
    a. Shall provide easy access through integrated quarter turn latches.
    b. Shall be on major panels of: filter, control box, fan motor, and compressor.
21. Condensate Overflow Switch:
    This sensor and related controller monitors the condensate level in the drain pan and shuts down compression operation when overflow conditions occur. It includes:
    a. Indicator light — solid red (more than 10 seconds of water contact — compressors disabled), blinking red (sensor disconnected).
    b. 10 second delay to break — eliminates nuisance trips from splashing or waves in pan (sensor needs 10 seconds of constant water contact before tripping).

Guide specifications (cont)

c. Disables the compressor(s) operation when condensate plug is detected, but sill allows fans to run for economizer.

22. Foil Faced Insulation:

    Throughout unit cabinet air stream, non-fibrous and cleanable foil faced insulation is used.

23. MERV-13 – 4 in. Return Air Filters (factory installed only):
    a. Factory option to upgrade standard unit filters to 4 in. MERV-13 filters.
    b. Upgraded option shall include factory installed 4 in. filter rack.

24. 4 in. Return Air Filter Rack (field installed only):

    Accessory kit designed to hold 4 in. MERV-8 or MERV-13 filters. Filters not included in kit.

25. 2 in. MERV-13 Return Air Filters:
    a. Accessory kit to field upgrade standard unit filters to 2 in. MERV-13 filters.
    b. Correct size and quantity of filters shall ship in a single box

26. 2 in. MERV-8 Return Air Filters:
    a. Accessory kit to field upgrade standard unit filters to 2 in. MERV-8 filters.
    b. Correct size and quantity of filters shall ship in a single box.

27. Phase Monitor Control:
    a. Shall monitor the sequence of 3-phase electrical system to provide a phase reversal protection.
    b. Shall monitor the 3-phase voltage inputs to provide a phase loss protection for the 3-phase device.
    c. Will work on either a Delta or Wye power connection.

28. Horn/Strobe Annunciator:
    a. Provides an audible/visual signaling device for use with factory-installed option or field installed accessory smoke detectors.
    b. Requires installation of a field-supplied 24-v transformer suitable for 4.2 VA (AC) or 3.0 VA (DC) per horn/strobe accessory.
    c. Requires field-supplied electrical box, North American 1-gang box, 2 in. x 4 in. (51 mm x 102 mm).
    d. Shall have a clear colored lens.

29. Electric Heat:
    a. Heating Section:
        1) Heater element open coil resistance wire, nickel-chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
        2) Heater assemblies are provided with integral fusing for protection of internal heater circuits. Auto re-set thermo limit controls, magnetic heater contactors (24-v coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.

30. High Short Circuit Current Rating (SCCR) Protection:
    a. Factory-installed option shall provide high short circuit current protection to compressor and all indoor and outdoor fan motors of 60 kA (208/230V) or 65 kA (460V) against high potential fault current situations. (Standard unit comes with 5 kA rating.)
    b. This option is not available with factory installed powered convenience outlet, non-fused disconnect, HACR breaker, low ambient controls, phase loss monitor/protection, or 575 Volt models.