Product Data

WeatherMaker®
Single Packaged Rooftop

17.5 to 27.5 Nominal Tons

ecoblue™ technology

48/50FC**20, 24, 28, 30
48FC: Single-Package Gas Heating/Electric Cooling Rooftop Units
50FC: Electric Cooling Rooftop Units with Optional Electric Heat with Puron® Refrigerant (R-410A) and EcoBlue Technology

Features/Benefits

The New Carrier WeatherMaker® rooftop units (RTU) with EcoBlue™ Technology were designed by customers with integrated new technology to provide value added benefits never seen in this type of equipment before.

New major design features include:

- Patented, industry's first efficient indoor fan system using Vane Axial fan with electronically commutated variable speed motor. As compared to today's typically used belt drive with forward curve fans, system provides reliable operation with:
  - 75% fewer moving parts
  - No fan belts, pulleys, shaft, and shaft bearings
  - 40% more efficient than traditional belt drive forward curve fans
  - Slow ramp up capability for better sound and comfort control
  - 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, and mixed air temperature protection on all models
- New unit control board with intuitive indoor fan adjustment that uses simple dial and switch adjustments
- Reliable copper tube/aluminum fin condenser coil with 5/16 in. tubing to help reduce refrigerant charge and reduce weight versus prior designs

WeatherMaker® 48/50FC units up to 27.5 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 14.7.

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 17.5 to 27.5 ton Carrier WeatherMaker rooftop unit (RTU) provides optimum comfort and control from a packaged rooftop.

Value-added features include:

- optional Humidi-MiZer® adaptive dehumidification system for improved part load humidity performance
- SystemVu™ intuitive intelligent controls option that provides:
  - Large full text — multi line display
  - USB Flash Port for data transfer
  - Built in iVu®, CCN and BACnet[1]
  - Read refrigerant pressures from display — no gauges
  - Quick LED Status — Run, Alert, Fault
  - Conventional thermostat or sensor capabilities
  - Historical component runtime and starts
  - Supply air tempering
  - Navigator™ and Network Service Tool compatible
- Single point gas and electrical connections
- All 17.5 to 27.5 ton models use fixed TXV refrigerant metering devices
- 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.

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

Installation ease

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 new EcoBlue Vane Axial fan system and direct drive ECM motor, there is no longer a need to adjust or replace belts or pulleys as in past designs. This frees up maintenance, installation and commissioning time.

Easy access handles by Carrier provide quick and easy access to all normally serviced components. Our "no-strip" screw system has superior holding power and guides screws into position while preventing the screw from stripping the unit's metal.

Sloped, corrosion resistant composite drain pan sheds water; and won't rust.

Table of contents

Features/Benefits (cont)

Easy to use

The newly re-designed Unit Control Board by Carrier puts all connections and troubleshooting points in one convenient place. Most low voltage connections are made to the same board and make it easy to access it. Setting up the fan is simple, using an intuitive switch and rotary dial arrangement.

Carrier rooftops have high and low pressure switches, a new mixed air temperature switch, a filter drier, and 2-in. filters standard.

EcoBlue™ Technology

Direct drive EcoBlue Technology indoor fan system uses Vane Axial fan design and electrically commutated motors.

This new Vane Axial design, compared to past belt drive systems, has 75% fewer moving parts, uses up to 40% less energy, and has no fan belts, blower bearings, or shaft. Full fan and motor assembly also slides out for easier maintenance and service.

Streamlined control and integration

Carrier controllers make connecting WeatherMaker® rooftops into 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

These 48/50FC packaged rooftops meet the Department of Energy (DOE) 2023 efficiency standard, as well as the latest ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) 90.1 and IECC®[1] (International Energy Conservation Code) minimum IEER efficiency requirements.

Comfort control

Carrier's patented Humidi-MiZer® adaptive dehumidification system is an all-inclusive factory-installed option on gas heating/electric cooling and electric cooling/electric heat models. This system provides reliable, flexible operation to meet indoor part load sensible and latent requirements as well as multiple gas heat and electric heat sized to fit an array of applications.

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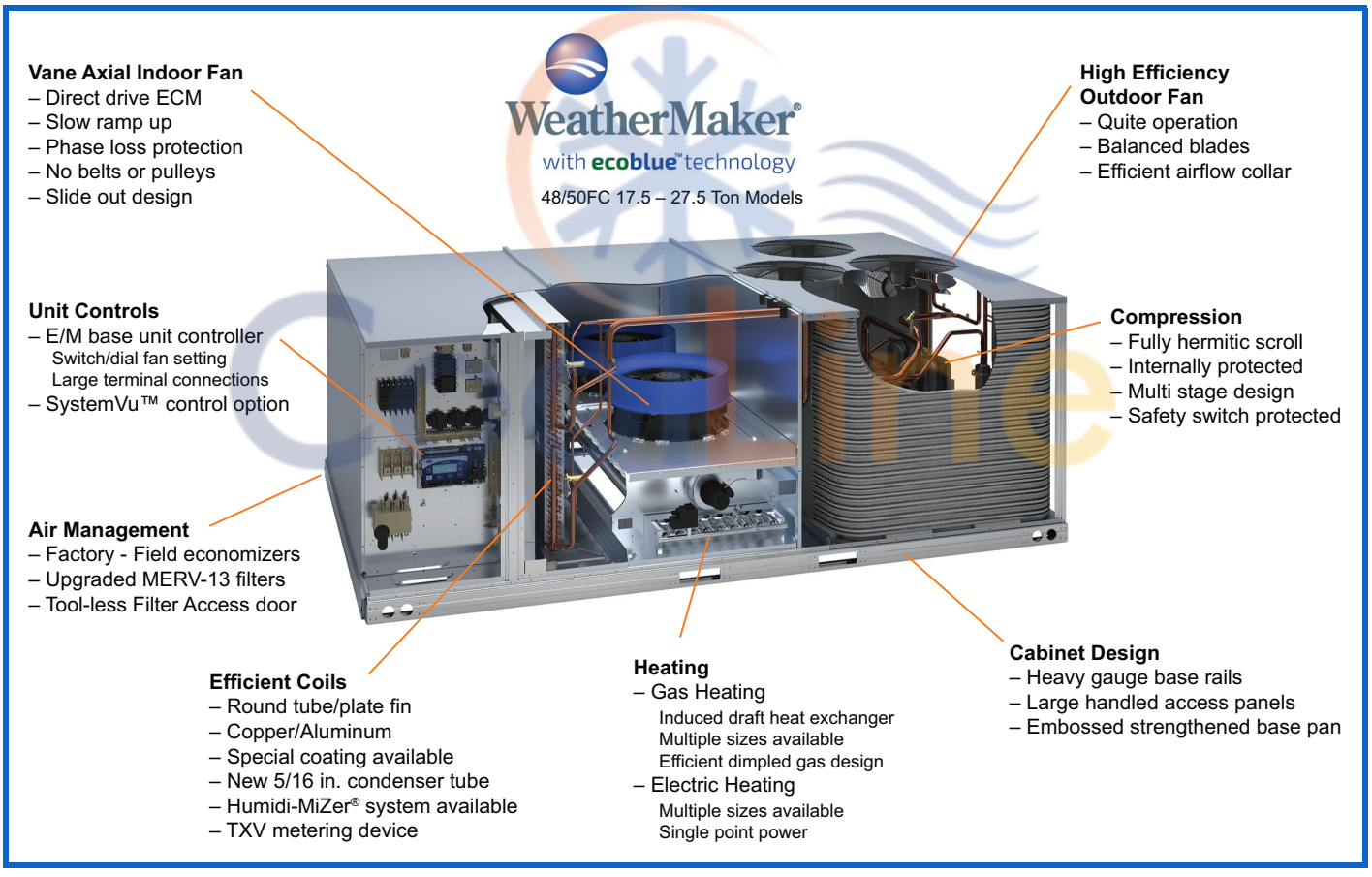

Model number nomenclature

48FC Model Number Nomenclature

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

Unit Heat Type
48 — Gas Heat Packaged Rooftop

Model Series - WeatherMaker®
FC — Standard Efficiency (EcoBlue™ Technology)

Heat Options
D = Low Heat
E = Medium Heat
F = High Heat
S = Low Heat w/ Stainless Steel Heat Exchanger
R = Medium Heat w/ Stainless Steel Heat Exchanger
T = High Heat w/ Stainless Steel Heat Exchanger

Refrig. Systems Options
M = Two Stage Cooling/Single Circuit Models
N = Two Stage Cooling/Single Circuit Models with Humidi-MiZer® System

Cooling Tons
20 = 17.5 tons
24 = 20.0 tons
28 = 25.0 tons
30 = 27.5 tons

Sensor Options
A = None
B = Return Air Smoke Detector (RA)
C = Supply Air Smoke Detector (SA)
D = RA + SA Smoke Detector
E = CO_2 Sensor
F = RA Smoke Detector and CO_2
G = SA Smoke Detector and CO_2
H = RA + SA Smoke Detector and CO_2
J = Condensate Overflow Switch
K = Condensate Overflow Switch + RA Smoke Detectors
L = Condensate Overflow Switch + RA and SA Smoke Detectors
M = Condensate Overflow Switch + SA Smoke Detector
N = Condensate Overflow Switch + CO_2
P = Condensate Overflow Switch + RA Smoke Detector and CO_2
Q = Condensate Overflow Switch + SA Smoke Detector and CO_2
R = Condensate Overflow Switch + RA and SA Smoke Detector and CO_2

Indoor Fan Options - Vane Axial EcoBlue Fan System
2 = Standard/Medium Static Motor - Vertical Supply
3 = High Static 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 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
E = Cu/Cu – Al/Cu
F = Cu/Cu – Cu/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 Guard
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

Packaging Compliance
0 = Standard

Electrical Options
A = None
C = Non-Fused Disconnect
D = Thru-the-Base Connections
F = Non-Fused Disconnect and Thru-the-Base Connections
N = Phase Monitor/Protection
Q = Phase Monitor/Protection and Non-Fused Disconnect
R = Phase Monitor/Protection and Thru-the-Base Connections
T = Phase Monitor/Protection with Non-Fused Disconnect and Thru-the-Base Connections
1 = HSCCR Protection
2 = HSCCR Protection and Thru-the-Base Connections

Service Options
0 = None
1 = Unpowered Convenience Outlet
2 = Powered Convenience Outlet
3 = Hinged Access Panels
4 = Hinged Access Panels and Unpowered Convenience Outlet
5 = Hinged Access Panels and Powered Convenience Outlet
6 = 4" MERV 13 High Efficiency Filter Track
7 = Unpowered Convenience Outlet and 4" MERV 13 High Efficiency Filter Track
8 = Powered Convenience Outlet and 4" MERV 13 High Efficiency Filter Track
9 = Hinged Access Panels and 4" MERV 13 High Efficiency Filter Track
A = Hinged Access Panels, Unpowered Convenience Outlet and 4" MERV 13 High Efficiency Filter Track
B = Hinged Access Panels, Powered Convenience Outlet and 4" MERV 13 High Efficiency Filter Track

Intake / Exhaust Options
A = None
B = Low Leak Temp Economizer with Baro Relief (Electro-Mechanical Controls Only)
D = Low Leak Temp Economizer with PE (cent) Vert Only (EM Only)
F = Low Leak Enthalpy Economizer with Baro Relief (EM Only)
H = Low Leak Enthalpy Economizer with PE (cent) Vert Only (EM Only)
U = ULTRA Low Leak Temp Economizer with Baro Relief
V = ULTRA Low Leak Temp Economizer with PE (cent) Vert Only
W = ULTRA Low Leak Enthalpy Economizer wtih Baro Relief
X = ULTRA Low Leak Enthalpy Economizer with PE (cent) Vert Only

Base Unit Controls
0 = Electromechanical Controller (allows for use of field-installed economizers)
3 = SystemVu™ Controls
8 = Electromechanical Controls with POL224 EconomizerONE (with Fault Detection and Diagnostic)

Design Revision
- = Factory Design Revision

Model number nomenclature (cont)

50FC 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	F	C	-	M	2	4	A	2	A	5	-	0	A	0	A	0

Unit Heat Type
50 = Cooling with Optional Electric Heat Packaged Rooftop

Model Series - WeatherMaker®
FC = Standard Efficiency (EcoBlue™ Technology)

Electric Heat Size
- = No Heat
(Field Installed Available)

Refrig. Systems Options
M = Two Stage Cooling/One Circuit Models
N = Two Stage Cooling/One Circuit Models with Humidi-MiZer® System

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P = E-coat Al/Cu – Al/Cu – Louvered Hail Guard
Q = E-coat Al/Cu – E-coat Al/Cu – Louvered Hail Guard
R = Cu/Cu – Al/Cu – Louvered Hail Guard
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D = Low Leak Temp Economizer with PE (cent) Vert Only (EM Only)
F = Low Leak Enthalpy Economizer with Baro Relief (EM Only)
H = Low Leak Enthalpy Economizer with PE (cent) Vert Only (EM Only)
U = ULTRA Low Leak Temp Economizer with Baro Relief
V = ULTRA Low Leak Temp Economizer with PE (cent) Vert Only
W = ULTRA Low Leak Enthalpy Economizer with Baro Relief
X = ULTRA Low Leak Enthalpy Economizer with PE (cent) Vert Only

Base Unit Controls
0 = Electromechanical Controller (allows for use of field-installed economizers)
3 = SystemVu™ Controller
8 = Electromechanical Controls with POL224 EconomizerONE (with Fault Detection and Diagnostic)

Design Revision
- = Factory Design Revision

Capacity ratings

48FC AHRI Ratings[a,b,c,d]

48FC UNIT	COOLING STAGES	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (kW)	EER	IEER WITH 2-SPEED INDOOR FAN MOTOR	AHRI RATING CFM
48FC20**	2	17.5	206.0	19.1	10.8	14.5	6,125
48FC24**	2	20.0	248.0	24.8	10.0	14.5	7,000
48FC28**	2	25.0	282.0	28.8	9.8	14.0	8,750
48FC30**	2	27.5	315.0	32.1	9.8	14.0	10,000

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 48FC 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.
d. 48FC units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.

LEGEND

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

50FC AHRI Ratings[a,b,c,d]

50FC UNIT	COOLING STAGES	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY (MBH)	TOTAL POWER (kW)	EER	IEER WITH 2-SPEED INDOOR FAN MOTOR	AHRI RATING CFM
50FC-*20	2	17.5	206.0	19.1	11.0	14.7	6,125
50FC-*24	2	20.0	248.0	24.8	10.2	14.7	7,000
50FC-*28	2	25.0	282.0	28.8	10.0	14.2	8,750
50FC-*30	2	27.5	315.0	32.1	10.0	14.2	10,000

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 50FC 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.
d. 50FC units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.

LEGEND

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

Capacity ratings (cont)

Sound Ratings Table[a,b,c]

48/50FC UNIT	COOLING STAGES	OUTDOOR SOUND (dB) at 60 Hz								
		A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
20	2	84.1	92.2	83.9	80.4	81.8	78.7	76.5	72.2	65.4
24	2	86.5	95.6	87.5	84.2	84.2	81.7	77.9	73.2	66.3
28	2	85.9	97.1	88.3	84.4	83.3	80.7	77.4	73.4	67.3
30	2	85.9	97.1	88.3	84.4	83.3	80.7	77.4	73.4	67.3

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) — Natural Gas and Propane

UNIT	HEAT LEVEL	COOLING			HEATING[a]	
		MINIMUM 2-SPEED AIRFLOW (LOW SPEED)	MINIMUM 2-SPEED AIRFLOW (HIGH SPEED)	MAXIMUM AIRFLOW CFM	MINIMUM AIRFLOW CFM	MAXIMUM AIRFLOW CFM
48FC20**	LOW	3,150	5,250	8,750	3,000	11,000
	MED				3,880	9,300
	HIGH				4,620	10,000
48FC24**	LOW	3,600	6,000	10,000	3,000	11,000
	MED				3,880	11,630
	HIGH				4,620	10,000
48FC28**	LOW	4,950	7,500	12,500	3,000	16,500
	MED				3,880	15,500
	HIGH				4,620	15,000
48FC30**	LOW	6,000	10,000	13,750	3,000	16,500
	MED				3,880	15,500
	HIGH				4,620	15,000

NOTE(S):

a. Heating rating values are identical for aluminum heat exchangers and stainless steel heat exchangers.

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
50FC20**	3,150	5,250	8,750	5,250	8,750
50FC24**	3,600	6,000	10,000	6,000	10,000
50FC28**	4,950	7,500	12,500	7,500	12,500
50FC30**	6,000	10,000	13,750	10,000	13,750

NOTE(S):

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

Capacity ratings (cont)

Heat Rating Table — Natural Gas and Propane

UNIT	GAS HEAT	AL/SS HEAT EXCHANGER		TEMPERATURE RISE (°F)	THERMAL EFFICIENCY (%)
		INPUT/OUTPUT STAGE 1 (MBH)	INPUT/OUTPUT STAGE 2 (MBH)		
48FC20**	LOW	176 / 142	220 / 178	15-45	81
	MED	248 / 200	310 / 251	25-55	81
	HIGH	320 / 260	400 / 324	30-60	81
48FC24**	LOW	176 / 142	220 / 178	15-45	81
	MED	248 / 200	310 / 251	20-55	81
	HIGH	320 / 260	400 / 324	30-60	81
48FC28**	LOW	176 / 142	220 / 178	10-45	81
	MED	248 / 200	310 / 251	15-55	81
	HIGH	320 / 260	400 / 324	20-60	81
48FC30**	LOW	176 / 142	220 / 178	10-45	81
	MED	248 / 200	310 / 251	15-55	81
	HIGH	320 / 260	400 / 324	20-60	81

LEGEND

MBH — Btuh in thousands

Physical data

48/50FC 20 to 24 Physical Data

48/50FC UNIT	48/50FC*M20	48/50FC*N20	48/50FC*M24	48/50FC*N24
NOMINAL TONS	17.5	17.5	20.0	20.0
BASE UNIT OPERATING WT (lb) 48FC/50FC[a]	1800/1673	1800/1673	2000/1873	2000/1873
REFRIGERATION SYSTEM				
No. Circuits/No. Compressors/Type	1/2/Scroll	1/2/Scroll	1/2/Scroll	1/2/Scroll
Puron® (R-410A) Charge (lb-oz)	28-14	—	32-0	—
Humidi-MiZer® Puron (R-410A) Charge (lb-oz)	—	40-2	—	43-0
Metering Device	TXV	—	TXV	—
Humidi-MiZer Metering Device	—	TXV	—	TXV
High-Pressure Trip/Reset (psig)	630/505	630/505	630/505	630/505
Low-Pressure Trip/Reset	54/117	54/117	54/117	54/117
EVAPORATOR COIL				
Material (Tube/Fin)	Cu/Al	Cu/Al	Cu/Al	Cu/Al
Coil Type	3/8 in. RTPF	3/8 in. RTPF	3/8 in. RTPF	3/8 in. RTPF
Rows/FPI	4/15	4/15	4/15	4/15
Total Face Area (ft^2)	22	22	22	22
Condensate Drain Connection Size	3/4 in.	3/4 in.	3/4 in.	3/4 in.
CONDENSER COIL				
Material (Tube/Fin)	Cu/Al	Cu/Al	Cu/Al	Cu/Al
Coil Type	5/16 in. RTPF	5/16 in. RTPF	5/16 in. RTPF	5/16 in. RTPF
Rows/FPI	2/18	2/18	2/18	2/18
Total Face Area (ft^2)	19.6	19.6	23.8	23.8
HUMIDI-MIZER COIL				
Material	—	Cu/Al	—	Cu/Al
Coil Type	—	5/16 in. RTPF	—	5/16 in. RTPF
Rows/FPI	—	1/18	—	1/18
Total Face Area (ft^2)	—	21.4	—	21.4
EVAPORATOR FAN AND MOTOR				
Vertical Standard Static 3 Phase				
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct	2 / Direct
Maximum Cont bhp (per motor)	2.4	2.4	2.4	2.4
Range (rpm)	250-2000	250-2000	250-2000	250-2000
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22	22
Vertical High Static 3 Phase				
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct	2 / Direct
Maximum Cont bhp (per motor)	3	5	5	5
Range (rpm)	250-2200	250-2200	250-2200	250-2200
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22	22
Horizontal High Static 3 Phase				
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct	2 / Direct
Maximum Cont bhp (per motor)	5	5	5	5
Range (rpm)	250-2200	250-2200	250-2200	250-2200
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22	22
CONDENSER FAN AND MOTOR				
Qty / Motor Drive Type	3 / Direct	3 / Direct	4 / Direct	4 / Direct
Motor hp / rpm	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan Diameter (in.)	22	22	22	22
FILTERS				
RA Filter Qty / Size (in.)	6 / 20x25x2	6 / 20x25x2	6 / 20x25x2	6 / 20x25x2
OA Inlet Screen Qty / Size (in.)	4 / 16x25x1	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

Physical data (cont)

48/50FC 28 to 30 Physical Data

48/50FC UNIT	48/50FC*M28	48/50FC*N28	48/50FC*M30	48/50FC*N30
NOMINAL TONS	25.0	25.0	27.5	27.5
BASE UNIT OPERATING WT (lb) 48FC/50FC[a]	2174/2047	2174/2047	2351/2224	2351/2224
REFRIGERATION SYSTEM				
No. Circuits/No. Compressors/Type	1/2/Scroll	1/2/Scroll	1/2/Scroll	1/2/Scroll
Puron® (R-410A) Charge (lb-oz)	37-10	—	46-0	—
Humidi-MiZer® Puron (R-410A) Charge (lb-oz)	—	43-8	—	55-3
Metering Device	TXV	—	TXV	—
Humidi-MiZer Metering Device	—	TXV	—	TXV
High-Pressure Trip/Reset (psig)	630/505	630/505	630/505	630/505
Low-Pressure Trip/Reset	54/117	54/117	54/117	54/117
EVAPORATOR COIL				
Material (Tube/Fin)	Cu/Al	Cu/Al	Cu/Al	Cu/Al
Coil Type	3/8 in. RTPF	3/8 in. RTPF	3/8 in. RTPF	3/8 in. RTPF
Rows/FPI	4/15	4/15	4/15	4/15
Total Face Area (ft^2)	23.1	23.1	26	26
Condensate Drain Connection Size	3/4 in.	3/4 in.	3/4 in.	3/4 in.
CONDENSER COIL				
Material (Tube/Fin)	Cu/Al	Cu/Al	Cu/Al	Cu/Al
Coil Type	5/16 in. RTPF	5/16 in. RTPF	5/16 in. RTPF	5/16 in. RTPF
Rows/FPI	2/18	2/18	2/18	2/18
Total Face Area (ft^2)	25.3	25.3	28.9	28.9
HUMIDI-MIZER COIL				
Material	—	Cu/Al	—	Cu/Al
Coil Type	—	5/16 in. RTPF	—	5/16 in. RTPF
Rows/FPI	—	1/18	—	1/18
Total Face Area (ft^2)	—	22.4	—	25.3
EVAPORATOR FAN AND MOTOR				
Vertical Standard Static 3 Phase				
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct	2 / Direct
Maximum Cont bhp (per motor)	3	3	3	3
Range (rpm)	250-2000	250-2000	250-2000	250-2000
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22	22
Vertical High Static 3 Phase				
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct	2 / Direct
Maximum Cont bhp (per motor)	3	5	5	5
Range (rpm)	250-2200	250-2200	250-2200	250-2200
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22	22
Horizontal High Static 3 Phase				
Motor Qty / Drive Type	2 / Direct	2 / Direct	2 / Direct	2 / Direct
Maximum Cont bhp (per motor)	5	5	5	5
Range (rpm)	250-2200	250-2200	250-2200	250-2200
Fan Qty / Type	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial	2 / Vane Axial
Fan Diameter (in.)	22	22	22	22
CONDENSER FAN AND MOTOR				
Qty / Motor Drive Type	4 / Direct	4 / Direct	6 / Direct	6 / Direct
Motor hp / rpm	1/4 / 1100	1/4 / 1100	1/4 / 1100	1/4 / 1100
Fan Diameter (in.)	22	22	22	22
FILTERS				
RA Filter Qty / Size (in.)	9 / 20x25x2	9 / 20x25x2	9 / 20x25x2	9 / 20x25x2
OA Inlet Screen Qty / Size (in.)	4 / 16x25x1	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

Physical data (cont)

48FC 20 to 30 Gas Heat Data

48FC UNIT	48FC**20	48FC**24	48FC**28	48FC**30
NOMINAL TONS	17.5	20.0	25.0	27.5
GAS CONNECTION				
No. of Gas Valves	1	1	1	1
Natural Gas Supply Line Pressure (in. wg)/(psig)	5-13 / 0.18-0.47	5-13 / 0.18-0.47	5-13 / 0.18-0.47	5-13 / 0.18-0.47
Liquid Propane Supply Line Pressure (in. wg)/(psig)	11-13 / 0.40-0.47	11-13 / 0.40-0.47	11-13 / 0.40-0.47	11-13 / 0.40-0.47
HEAT ANTICIPATOR SETTING (AMPS)				
First Stage	0.14	0.14	0.14	0.14
Second Stage	0.14	0.14	0.14	0.14
NATURAL GAS HEAT				
LOW				
No. of Stages / No. of Burners (total)	2 / 5	2 / 5	2 / 5	2 / 5
Connection Size	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT
Rollout Switch Opens / Closes (°F)	195 / 115	195 / 115	195 / 115	195 / 115
Temperature Rise (°F)	15-45	15-45	10-45	10-45
MEDIUM				
No. of Stages / No. of Burners (total)	2 / 7	2 / 7	2 / 7	2 / 7
Connection Size	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT
Rollout Switch Opens / Closes (°F)	195 / 115	195 / 115	195 / 115	195 / 115
Temperature Rise (°F)	25-55	20-55	15-55	15-55
HIGH				
No. of Stages / No. of Burners (total)	2 / 9	2 / 9	2 / 9	2 / 9
Connection Size	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT
Rollout Switch Opens / Closes (°F)	195 / 115	195 / 115	195 / 115	195 / 115
Temperature Rise (°F)	30-60	30-60	20-60	20-60
LIQUID PROPANE HEAT				
LOW				
No. of Stages / No. of Burners (total)	2 / 5	2 / 5	2 / 5	2 / 5
Connection Size	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT
Rollout Switch Opens / Closes (°F)	195 / 115	195 / 115	195 / 115	195 / 115
Temperature Rise (°F)	15-45	15-45	10-45	10-45
MEDIUM				
No. of Stages / No. of Burners (total)	2 / 7	2 / 7	2 / 7	2 / 7
Connection Size	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT
Rollout Switch Opens / Closes (°F)	195 / 115	195 / 115	195 / 115	195 / 115
Temperature Rise (°F)	25-55	20-55	15-55	15-55
HIGH				
No. of Stages / No. of Burners (total)	2 / 9	2 / 9	2 / 9	2 / 9
Connection Size	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT	3/4 in. NPT
Rollout Switch Opens / Closes (°F)	195 / 115	195 / 115	195 / 115	195 / 115
Temperature Rise (°F)	30-60	30-60	20-60	20-60

Options and accessories

ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
GAS HEAT (48FC units only)		
Low, Medium or High Gas Heat — Aluminized Heat Exchanger	X	
Low, Medium or High Gas Heat — Stainless Steel Heat Exchanger	X	
Propane Conversion Kit		X
High Altitude Conversion Kit		X
Flue Discharge Deflector		X
ELECTRIC HEAT (50FC units only)		
Electric Resistance Heaters		X
Single Point Kits		X
CABINET		
Hinged Access Panels	X	
UV-C Ultraviolet Lamp[a]		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
COIL OPTIONS		
Cu/Cu Indoor and/or Outdoor Coils	X	
Pre-Coated Outdoor Coils	X	
Premium, E-Coated Outdoor Coils	X	
HUMIDITY CONTROL		
Humidi-MiZer® Adaptive Dehumidification System	X	
CONDENSER PROTECTION		
Condenser Coil Hail Guard (louvered design)	X	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

ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
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 (Low and Ultra Low Leak air 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
Condensate Overflow Switch	X	X
ECONOMIZER SENSORS AND IAQ DEVICES		
Single Dry Bulb Temperature Sensors[f]	X	X
Differential Dry Bulb Temperature Sensors[f]		X
Differential Enthalpy Sensors[f]		X
CO_2 Sensor (wall, duct, or unit mounted)[f]	X	X
INDOOR MOTOR AND DRIVE		
Multiple Motor and Drive Packages	X	
LOW AMBIENT CONTROLS		
Winter Start Kit[g]		X
Low Ambient Controller to 0°F (–18°C)[g]		X
POWER OPTIONS		
Convenience Outlet (powered)	X	
Convenience Outlet (unpowered)	X	
Convenience Outlet, 20 amp (unpowered)		X
Non-Fused Disconnect[h]	X	
High SCCR Protection[i]	X	
ROOF CURBS		
Roof Curb 14 in. (356 mm)		X
Roof Curb 24 in. (610 mm)		X

NOTE(S):

a. UV-C kits can not be used on units with Humidi-MiZer system.
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 200 amps (all voltages).
i. High SCCR (Short Circuit Current Rating) is not available on the following: units with Humidi-MiZer system, Low Ambient controls, Phase loss monitor, Non-fused disconnect, Powered convenience outlet, and 575V 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 cool, outside air to cool your building. This is the preferred method of low-ambient cooling. When coupled to CO_2 sensors, economizers can provide even more savings by coupling the ventilation air to only that amount required.

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 powered exhaust system to help equalize building pressures.

Economizers 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.

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.

Optional Humidi-MiZer® adaptive dehumidification system

Carrier's Humidi-MiZer adaptive dehumidification system is an all-inclusive factory-installed option that can be ordered with any WeatherMaker® 48/50FC*20-30 rooftop unit.

This system expands the envelope of operation of Carrier's WeatherMaker rooftop products to provide unprecedented flexibility to meet year round comfort conditions.

The Humidi-MiZer adaptive dehumidification system has a unique dual operational mode setting. The Humidi-MiZer system provides greater dehumidification of the occupied space by 2 modes of dehumidification operations in addition to its normal design cooling mode.

The WeatherMaker 48/50FC*20-30 rooftop coupled with the Humidi-MiZer system is capable of operating in normal design cooling mode, sub-cooling mode, and hot gas reheat mode. Normal design cooling mode is when the unit will operate under its normal sequence of operation by cycling compressors to maintain comfort conditions.

Sub-cooling mode will operate to satisfy part load type conditions when the space requires combined sensible and a higher proportion of latent load control. Hot Gas Reheat mode will operate when outdoor temperatures diminish and the need for latent capacity is required for sole humidity control Hot Gas Reheat mode will provide neutral air for maximum dehumidification operation.

NOTE: Humidi-MiZer system includes Low Ambient controller.

Hinged access panels

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

Cu/Cu (indoor) 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.

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.

Stainless steel heat exchanger (48FC units only)

The stainless steel heat exchanger option provides the tubular heat exchanger be made out of a minimum 20 gauge type 409 stainless steel for applications where the mixed air to the heat exchanger is expected to drop below 45°F (7°C). Stainless steel may be specified on applications where the presence of airborne contaminants require its use (applications such as paper mills) or in area with very high outdoor humidity that may result in severe condensation in the heat exchanger during cooling operation.

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, 115v 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 115/120v 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.

Options and accessories (cont)

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.
- 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 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

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.

Power exhaust with barometric relief

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

MERV-13 4 in. return air filters

This factory option upgrades the return air filters from standard unit filters to high efficiency MERV-13 filters. Non-woven MERV-13 filter media with high strength, moisture-resistant frame. Filter media is securely fasted 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, Humidi-MiZer system, Low Ambient controls, Phase loss monitor/protection, Powered convenience outlet, and 575 Volt models.

Field-installed accessories

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.

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.

Propane conversion kit (48FC units only)

Convert your gas heat rooftop from standard natural gas operation to Propane using this field-installed kit.

High altitude conversion kit (48FC units only)

High altitudes have less oxygen, which affects the fuel/air mixture in heat exchangers. In order to maintain a proper fuel/air mixture, heat exchangers operating in altitudes above 2000 ft (610 m) require different orifices. To select the correct burner orifices or determine the heat capacity for a high altitude application, use either the selection software, or the unit's service manual. High altitudes have less oxygen, which means heat exchangers need less fuel. The new gas orifices in this field-installed kit make the

Options and accessories (cont)

necessary adjustment for high altitude applications. They restore the optimal fuel to air mixture and maintain healthy combustion on altitudes above 2000 ft (610 m).

NOTE: Typical natural gas heating value ranges from 975 to 1050 Btu/ft^3 at sea level nationally. The heating value goes down approximately 1.7% per every thousand feet elevation. Standard factory orifices can typically be used up to 2000 ft (610 m) elevation without any operational issues.

Flue discharge deflector (48FC units only)

The flue discharge deflector is a useful accessory when flue gas recirculation is a concern. By venting the flue discharge upwards, the deflector minimizes the chance for a neighboring unit to intake the flue exhaust.

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-13 2 in. return air filters

This kit includes MERV-13 2 in. filters (qty 4) to accommodate unit filter rack size.

MERV-8 2 in. return air filters

This kit includes MERV-8 2 in. filters (qty 4) to accommodate unit filter rack size.

UV-C ultraviolet lamp kit

High-output, low temperature ultraviolet lamp. Accessory kit includes lamp, interlock switch, mounting brackets, necessary wires, wire ties, screws and labels to field install kit in unit return air plenum. Separate dedicated 115v power source required. See appropriate installation instructions.

NOTE: UV-C kit can not be used on units with Humidi-MiZer system.

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 0°F (–18°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.

NOTE: See application tip "ROOFTOP-18-01" prior to use of this damper on 20-30 size models.

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.

NOTE: See application tip "ROOFTOP-18-01" prior to use of this damper on 20-30 size models.

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.

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.

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

Options and accessories (cont)

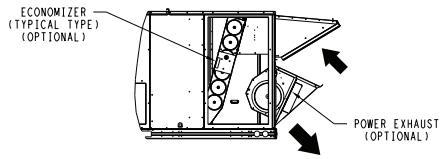
Options and Accessory Weights[a]

OPTION / ACCESSORY NAME	48/50FC UNIT WEIGHT							
	20		24		28		30	
	lb	kg	lb	kg	lb	kg	lb	kg
Humidi-MiZer® System[b]	82	37	82	37	82	37	90	41
Power Exhaust	198	90	198	90	198	90	198	90
EconomizerONE or EconoMi$er® 2	293	133	293	133	304	138	304	138
Two-Position Damper	50	23	50	23	50	23	65	29
Manual Damper	35	16	35	16	35	16	40	18
Medium Gas Heat (48FC units only)	21	10	21	10	21	10	21	10
High Gas Heat (48FC units only)	42	19	42	19	42	19	42	19
Hail Guard (louvered)	90	41	90	41	100	46	100	46
Cu/Cu Condenser Coil	166	76	203	92	244	111	278	126
Cu/Cu Evaporator Coil	128	58	128	58	163	74	163	74
Roof Curb (14 in. curb)	240	109	255	116	255	116	255	116
Roof Curb (24 in. curb)	340	154	355	161	355	161	355	161
CO_2 Sensor	5	3	5	3	5	3	5	3
Flue Discharge Deflector	7	3	7	3	7	3	7	3
Optional Indoor Motor[c]	30	14	30	14	0	0	0	0
Low Ambient Controller	9	4	9	4	9	4	9	4
Winter Start Kit	5	2	5	2	5	2	5	2
Return Air Smoke Detector	7	3	7	3	7	3	7	3
Supply Air Smoke Detector	7	3	7	3	7	3	7	3
Fan Filter Switch	2	1	2	1	2	1	2	1
Non-Fused Disconnect	15	7	15	7	15	7	15	7
Powered Convenience Outlet	36	16	36	16	36	16	36	16
Unpowered Convenience Outlet	4	2	4	2	4	2	4	2
Enthalpy Sensor	2	1	2	1	2	1	2	1
Differential Enthalpy Sensor	3	1	3	1	3	1	3	1
4 in. MERV 13 Filters	22	10	22	10	22	10	22	10

NOTE(S):

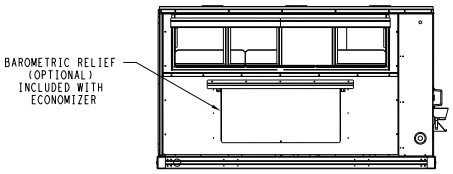
a. Where multiple variations are available, the heaviest combination is listed.
b. For Humidi-MiZer system, add Low Ambient controller weight.
c. Add the Optional Indoor Motor weight to the weight of the base unit.

48FC**20 Base Unit Dimensions



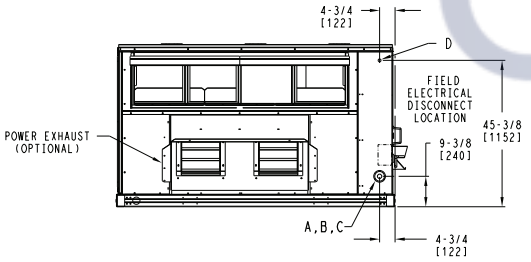
BACK

(PANELS REMOVED TO SHOW ECONOMIZER AND POWER EXHAUST OPTIONS)



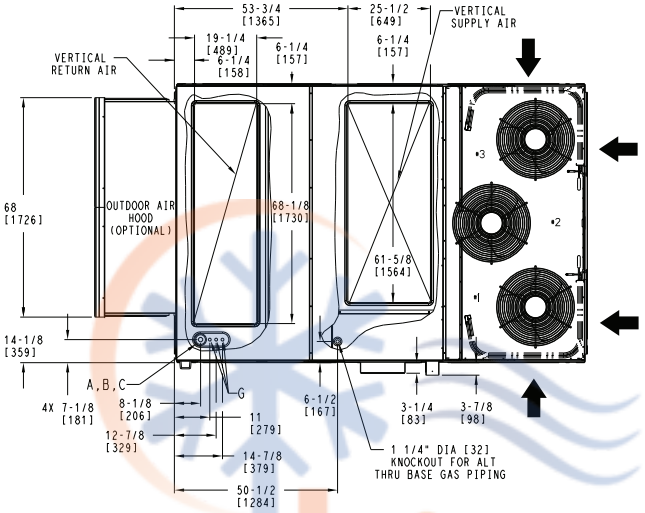
LEFT

SHOWN WITH THE BAROMETRIC RELIEF OPTION INSTALLED



LEFT

SHOWN WITH THE POWER EXHAUST OPTION INSTALLED

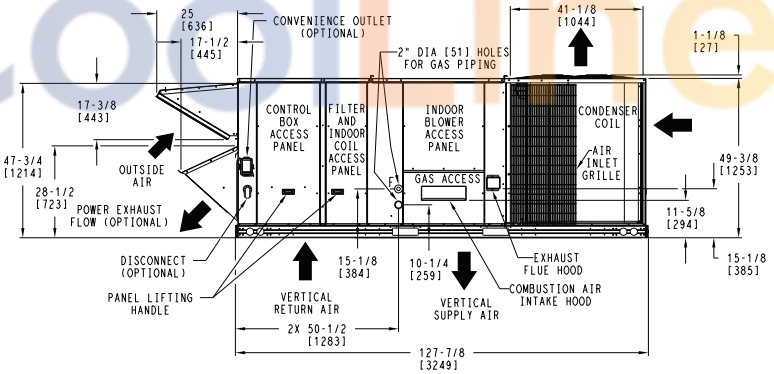


TOP

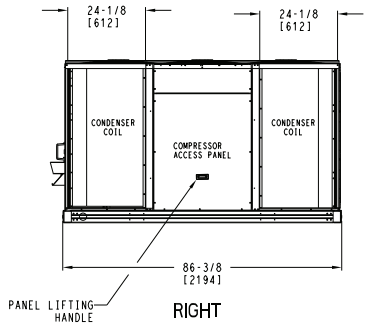
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
F	3/4"-14 NPT GAS CONNECTION (NOT SHOWN)
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

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



FRONT

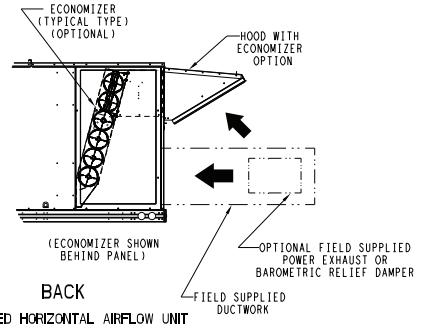


RIGHT

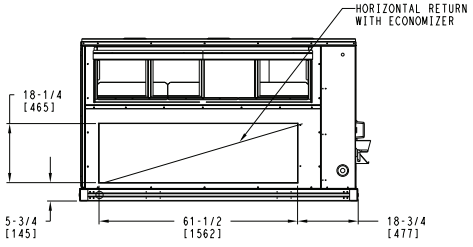
DEDICATED VERTICAL AIRFLOW UNIT
20 SIZE

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	1 OF 5	06/10/22	02/09/22	48FC 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003870	A

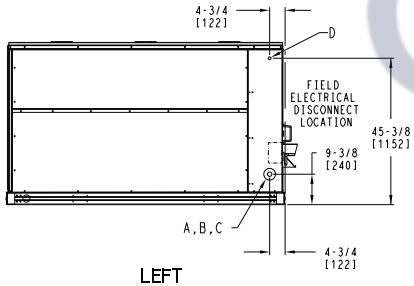
48FC**20 Base Unit Dimensions (cont)



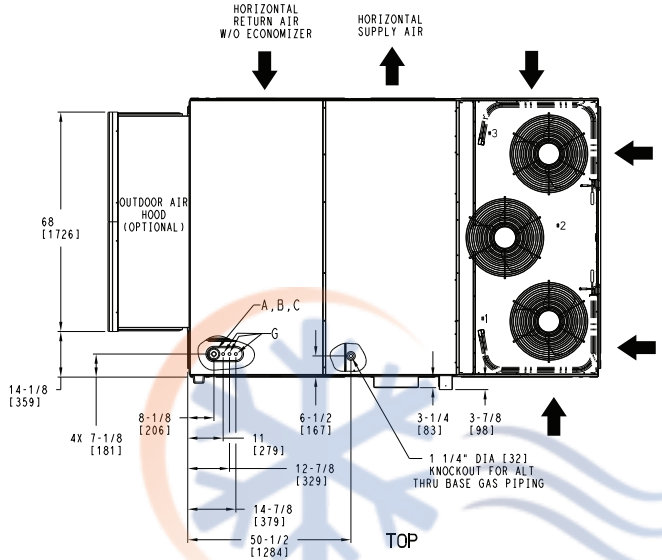
(DEDICATED HORIZONTAL AIRFLOW UNIT RETURN AIRFLOW WITH ECONOMIZER)



(DEDICATED HORIZONTAL AIRFLOW UNIT RETURN AIRFLOW WITH ECONOMIZER)



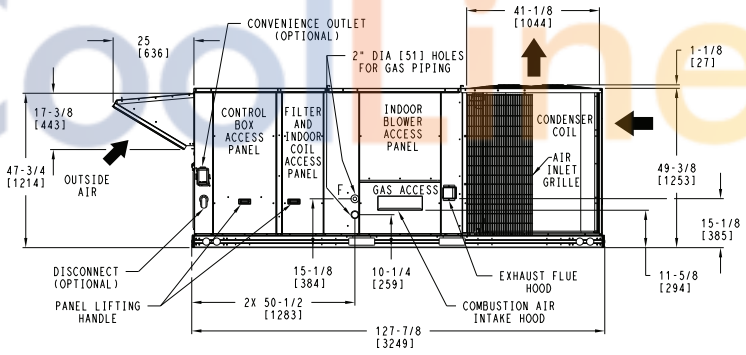
(DEDICATED HORIZONTAL AIRFLOW UNIT RETURN AIRFLOW WITHOUT ECONOMIZER)

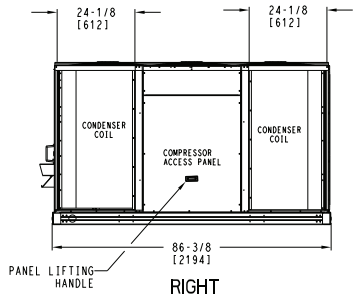


	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
F	3/4"-14 NPT GAS CONNECTION (NOT SHOWN)
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

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



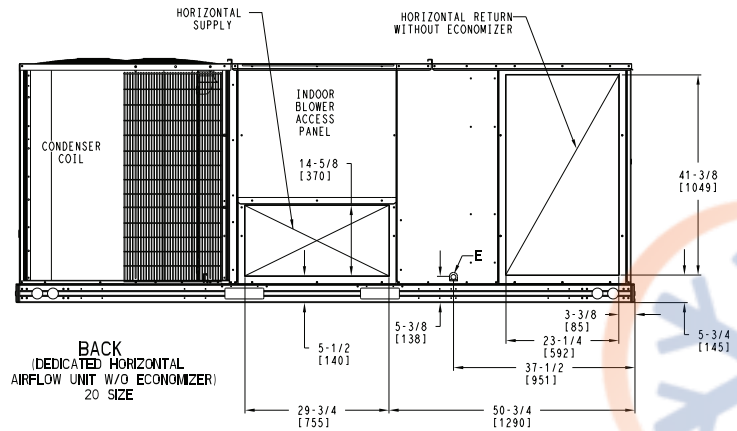


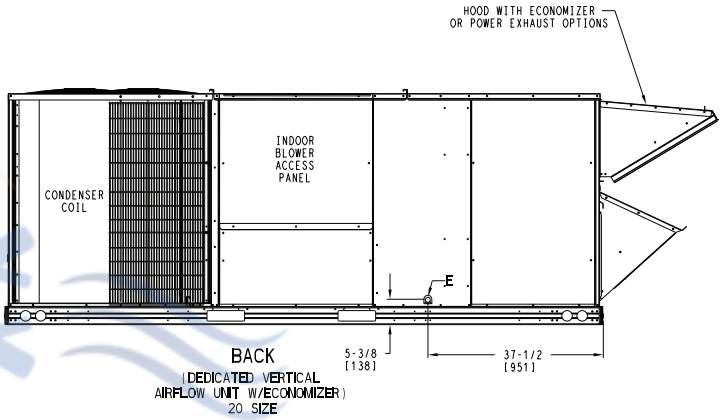
DEDICATED HORIZONTAL AIRFLOW UNIT
20 SIZE

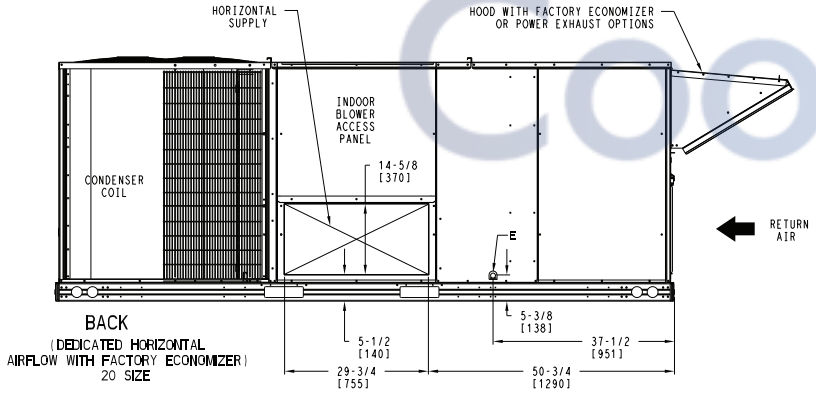
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	2 OF 5	06/10/22	02/09/22	48FC 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003870	A

48FC**20 Base Unit Dimensions (cont)

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





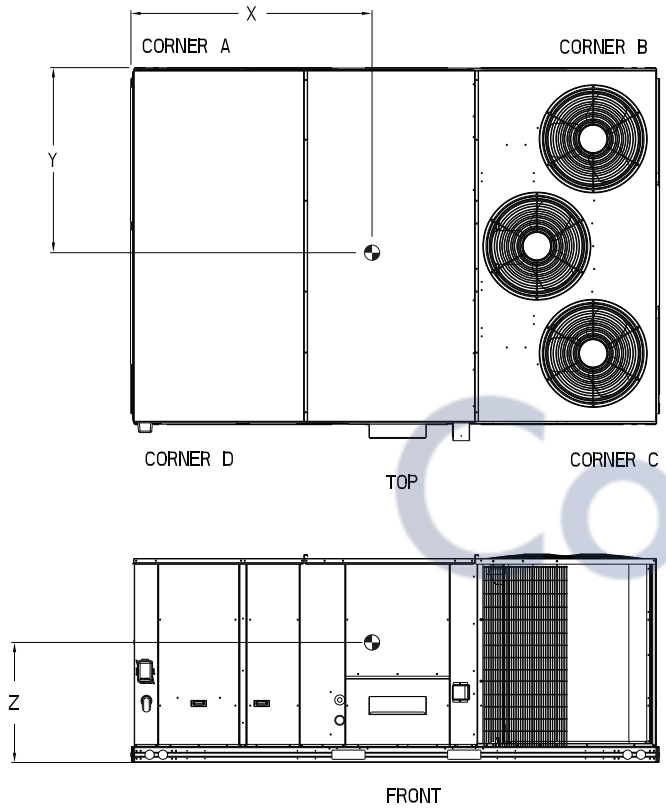


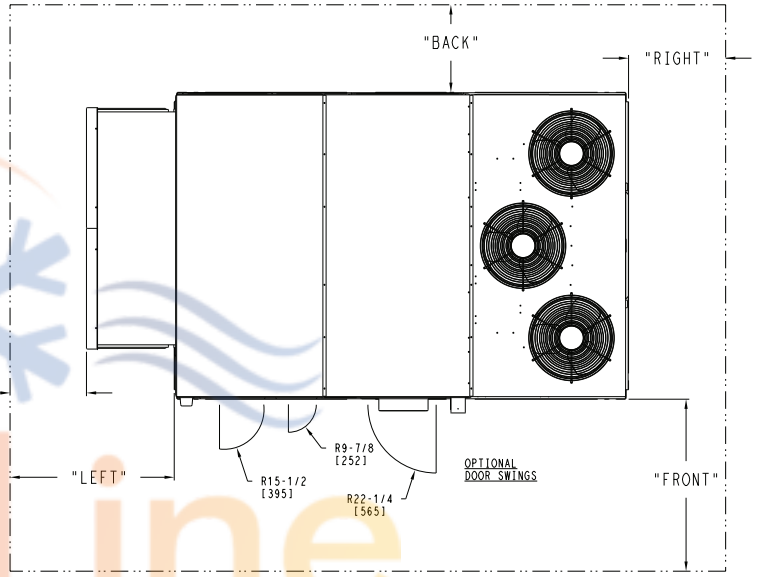
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	06/10/22	02/09/22	48FC 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003870	A

48FC**20 Base Unit Dimensions (cont)

UNIT	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
48FC20	1800	816	383	174	479	217	521	236	417	189	71 [1803]	45 [1143]	16 1/2 [419]

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





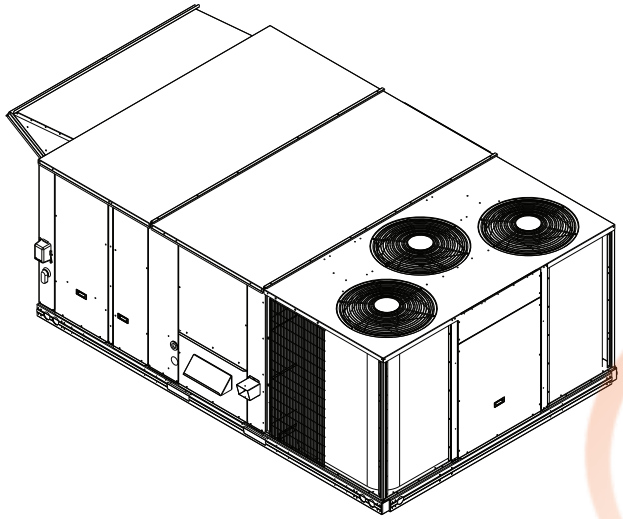
NOTES:

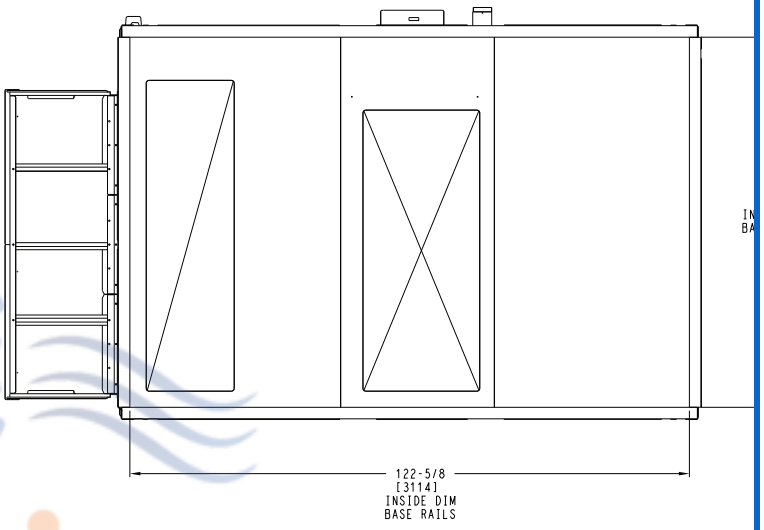
1. CLEARANCE ABOVE THE UNIT TO BE 72"
2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	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	06/10/22	02/09/22	48FC 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003870	A

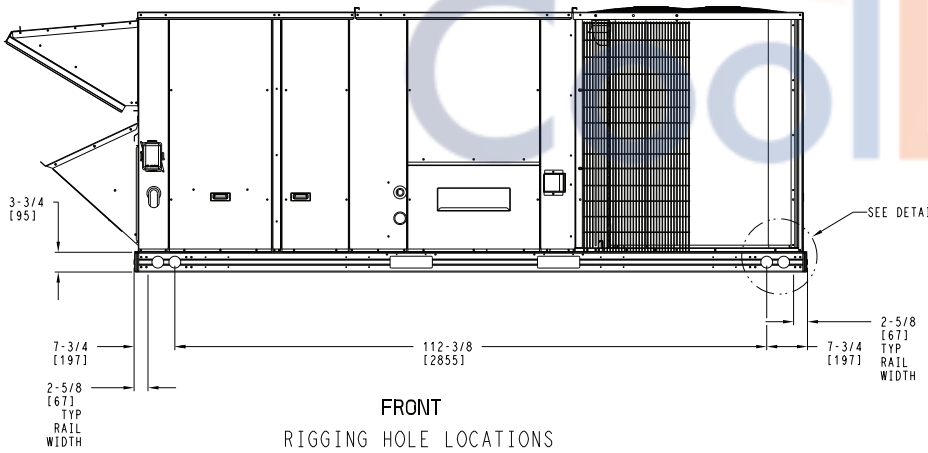
48FC**20 Base Unit Dimensions (cont)





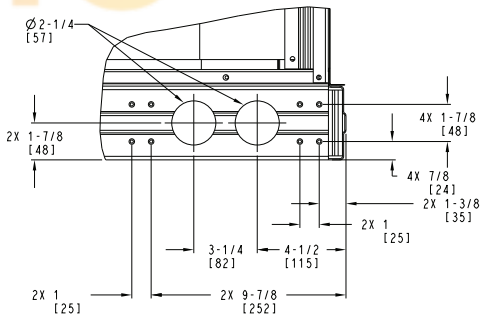
BOTTOM

INSIDE BASERAIL DIMENSIONS



FRONT

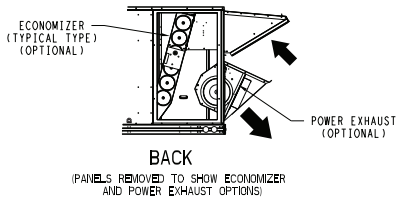
RIGGING HOLE LOCATIONS

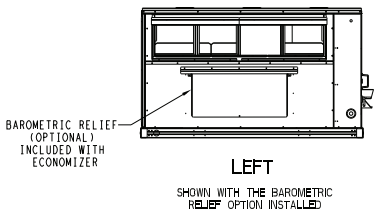


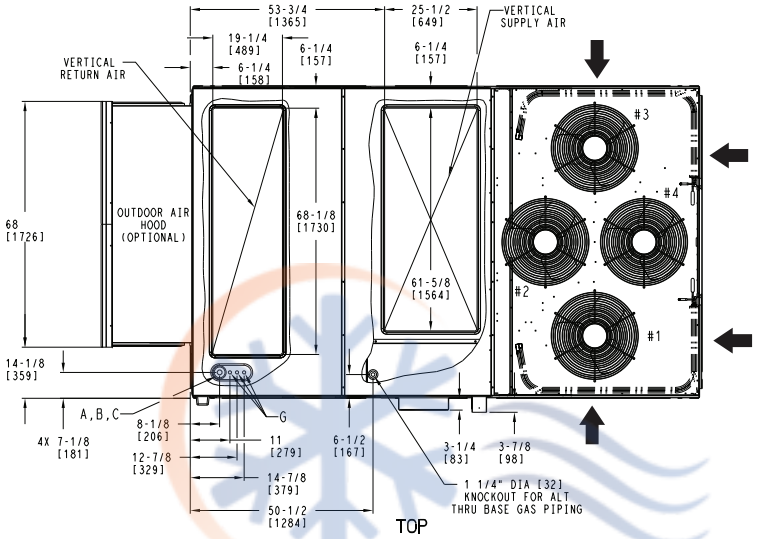
DETAIL A
TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	48FC 20 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE00
U.S. ECCN:NSR	5 OF 5	06/10/22	02/09/22		

48FC**24-28 Base Unit Dimensions





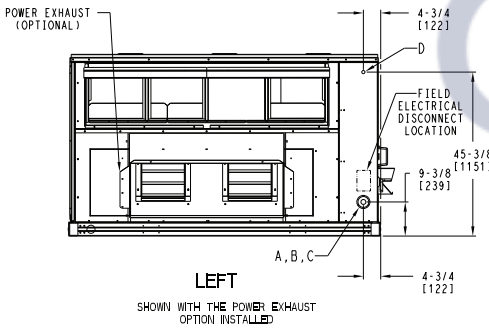


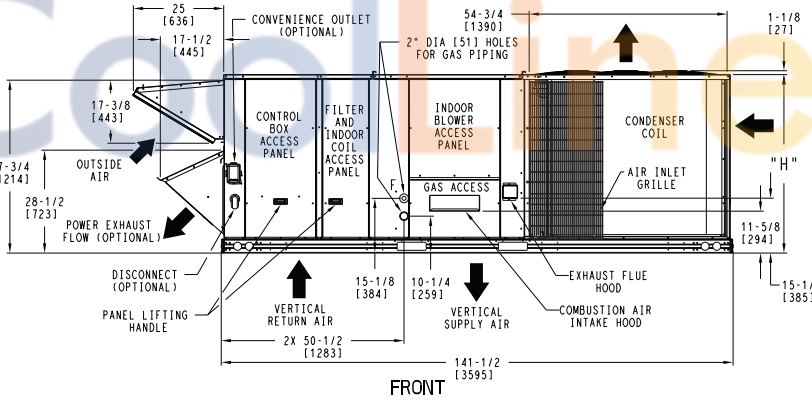
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
F	3/4"-14 NPT GAS CONNECTION (NOT SHOWN)
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

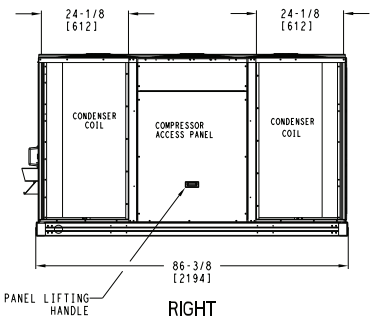
UNIT	H
24 SIZE	49-3/8 [1253]
28 SIZE	57-3/8 [1456]

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



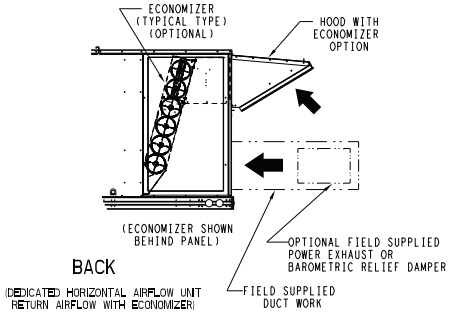


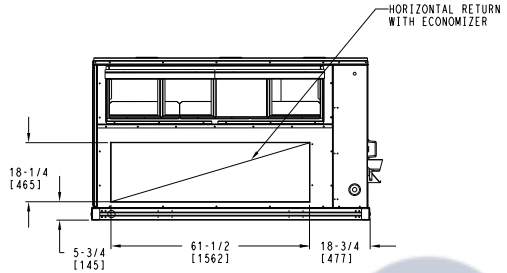


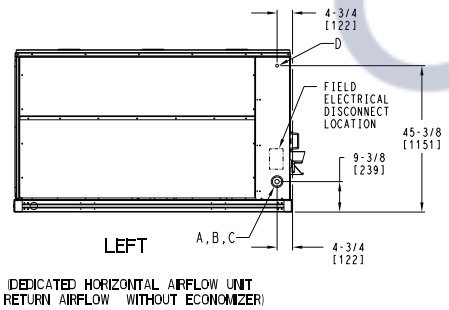
DEDICATED VERTICAL AIRFLOW UNIT
24,28 SIZE

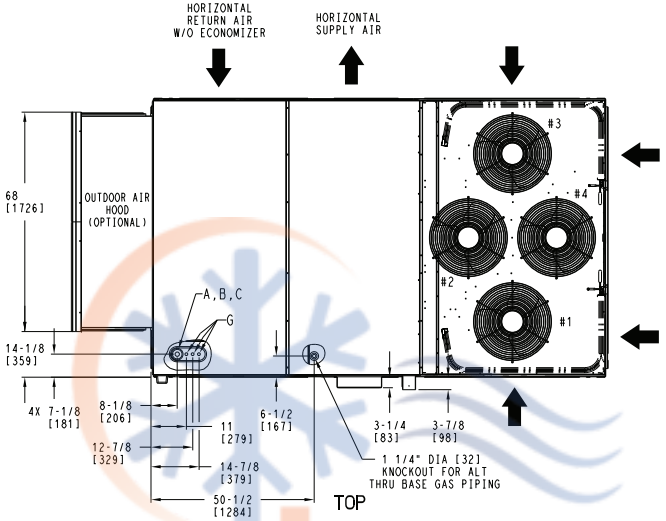
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	1 OF 5	06/10/22	02/10/22	48FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003872	A

48FC**24-28 Base Unit Dimensions (cont)







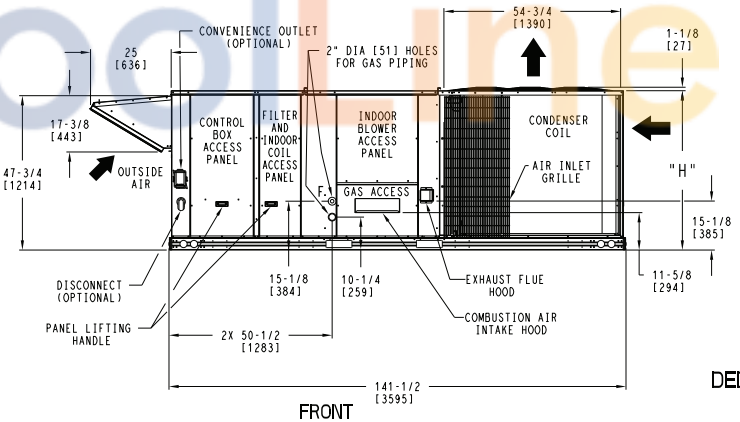


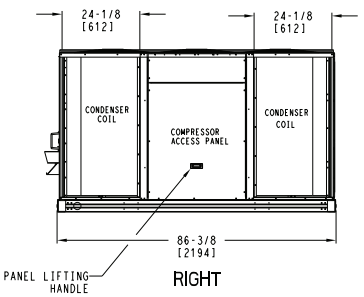
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
F	3/4"-14 NPT GAS CONNECTION (NOT SHOWN)
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

UNIT	H
24 SIZE	49-3/8 [1253]
28 SIZE	57-3/8 [1456]

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





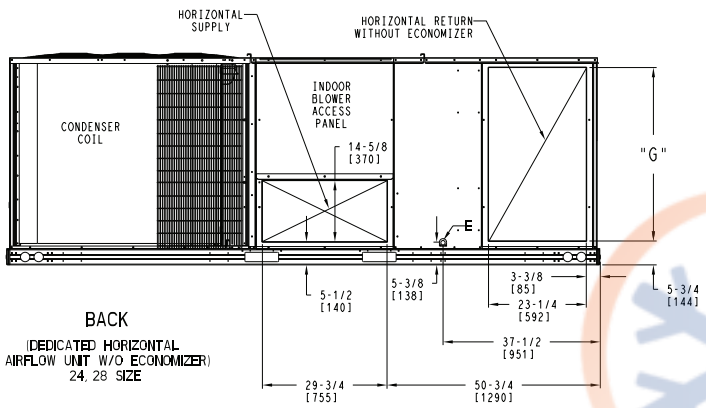
DEDICATED HORIZONTAL AIRFLOW UNIT
24,28 SIZE

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES		
U.S. ECCN:NSR	2 OF 5	06/10/22	02/10/22	48FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003872	REV A

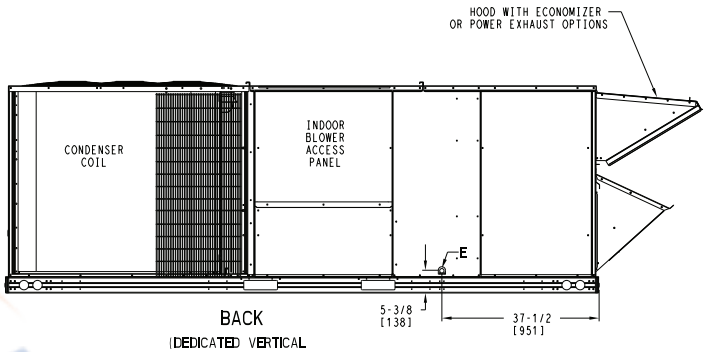
48FC**24-28 Base Unit Dimensions (cont)

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

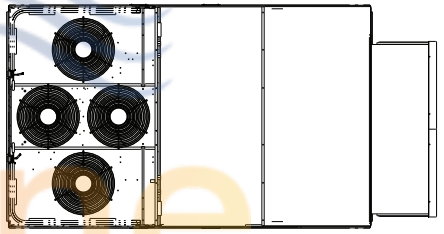
UNIT	G
24 SIZE	41-3/8 [1049]
28 SIZE	49-1/4 [1251]



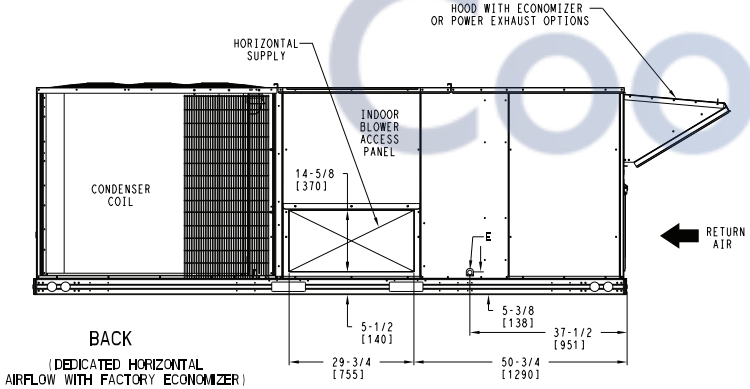
BACK
(DEDICATED HORIZONTAL AIRFLOW UNIT W/O ECONOMIZER)
24, 28 SIZE



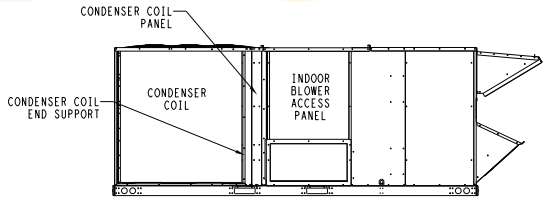
BACK
(DEDICATED VERTICAL AIRFLOW UNIT W/ECONOMIZER)
24, 28 SIZE



28 SIZE CONDENSER COIL TOP VIEW



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



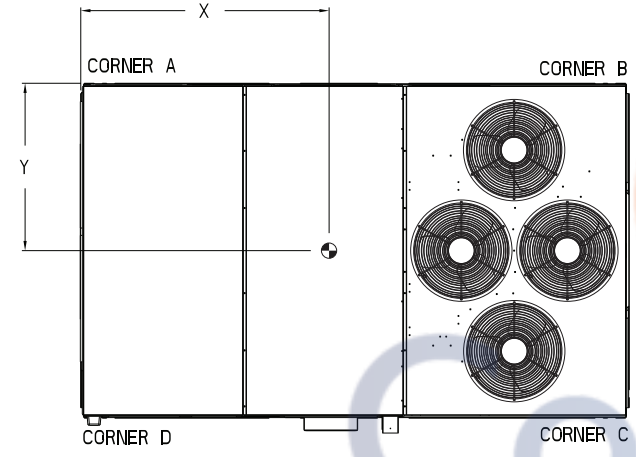
28 SIZE CONDENSER COIL END BRACKET SUPPORT

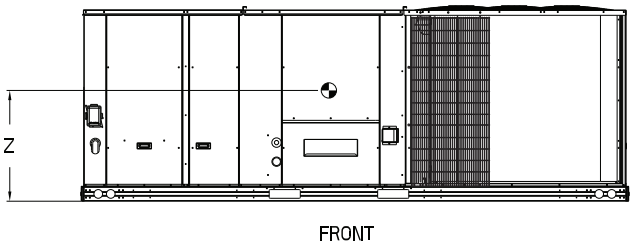
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	06/10/22	02/10/22	48FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003872	A

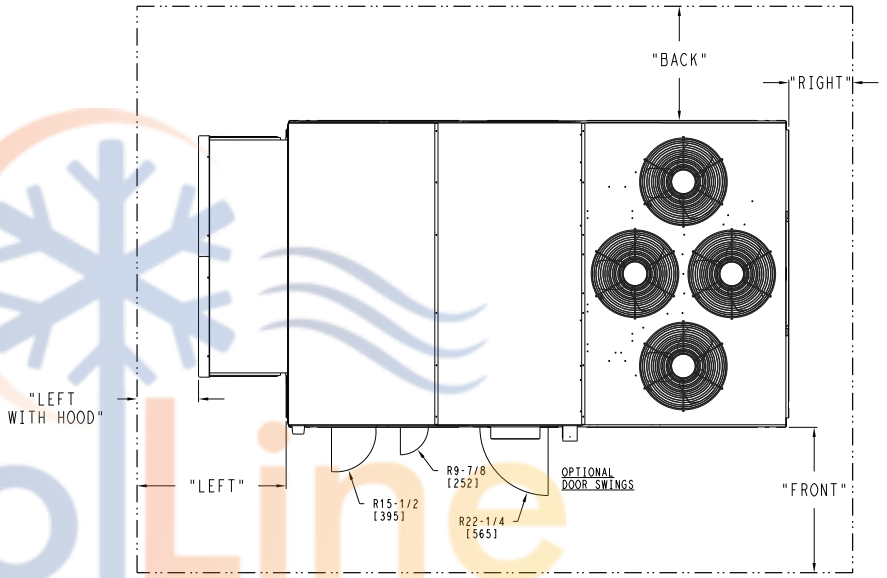
48FC**24-28 Base Unit Dimensions (cont)

UNIT	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
48FC24	2000	907	429	195	505	229	576	261	489	222	76 1/2 [1943]	46 [1168]	16 1/2 [419]
48FC28	2174	986	458	208	583	264	634	288	498	226	79 1/4 [2013]	45 [1143]	19 [483]

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







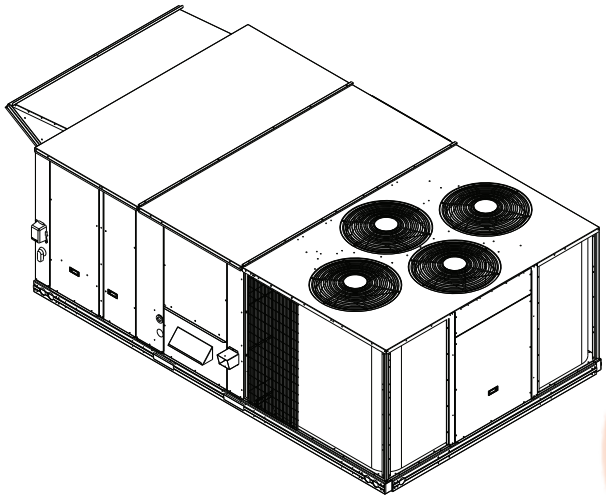
NOTES:

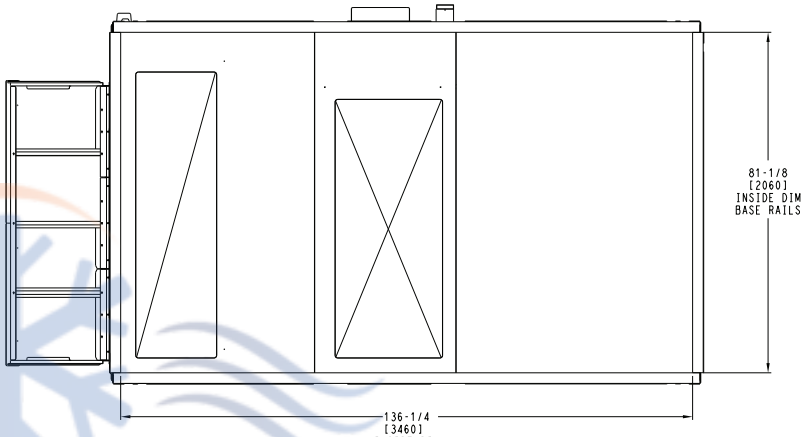
1. CLEARANCE ABOVE THE UNIT TO BE 72"
2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	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	06/10/22	02/10/22	48FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003872	A

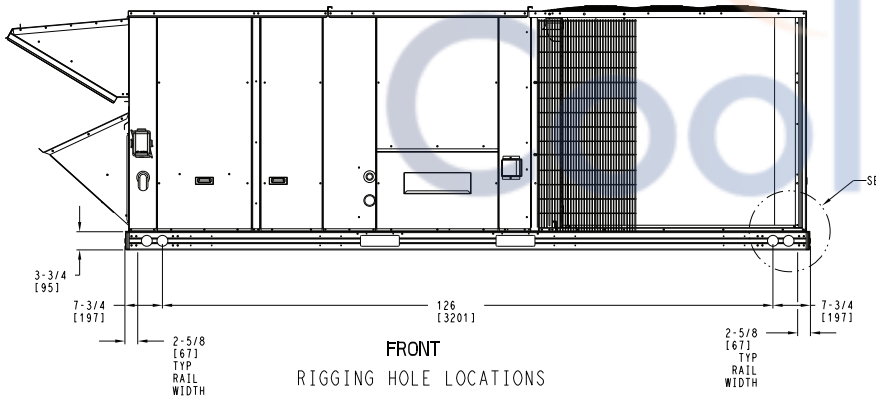
48FC**24-28 Base Unit Dimensions (cont)





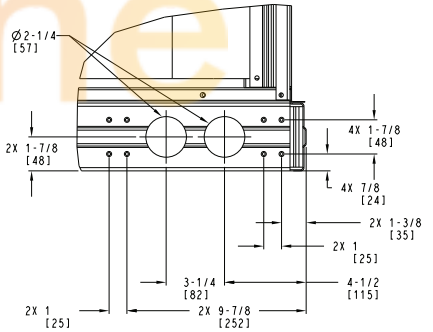
BOTTOM

INSIDE BASERAIL DIMENSIONS



FRONT

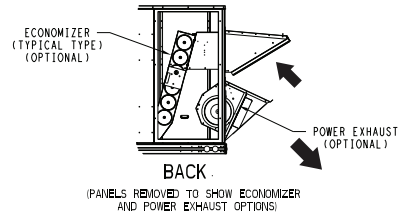
RIGGING HOLE LOCATIONS

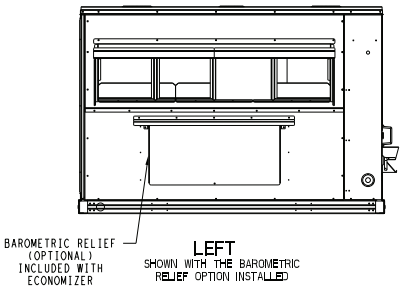


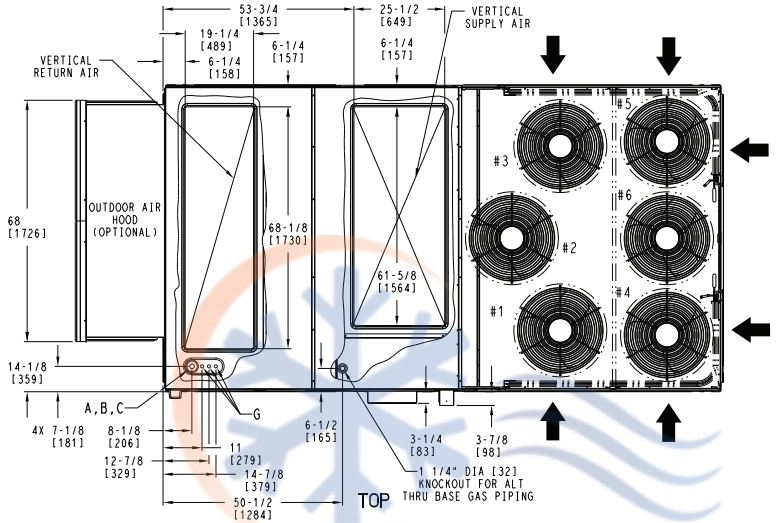
DETAIL A
TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	5 OF 5	06/10/22	02/10/22	48FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003872	A

48FC**30 Base Unit Dimensions



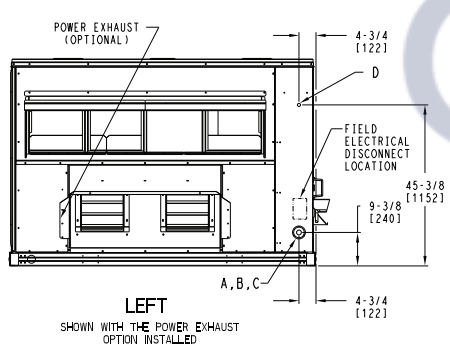


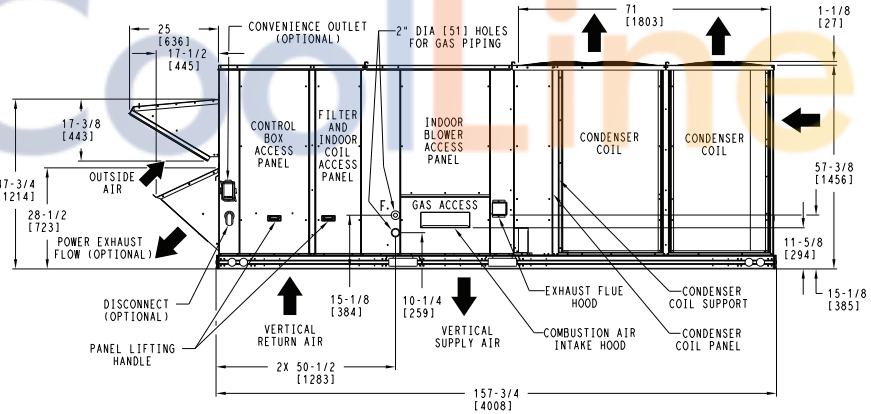


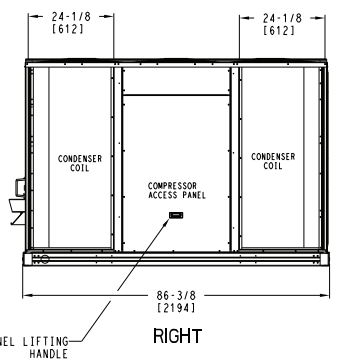
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
F	3/4"-14 NPT GAS CONNECTION (NOT SHOWN)
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

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



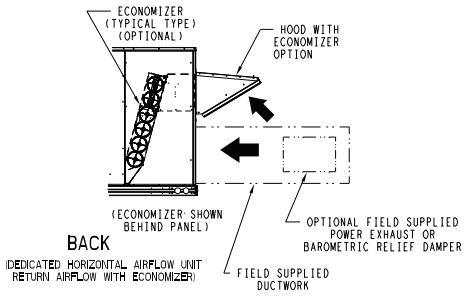


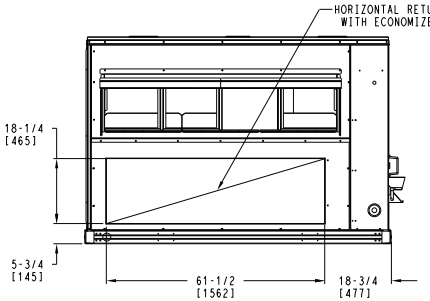


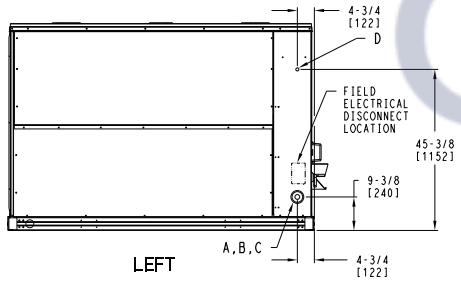
DEDICATED VERTICAL AIRFLOW UNIT
30 SIZE

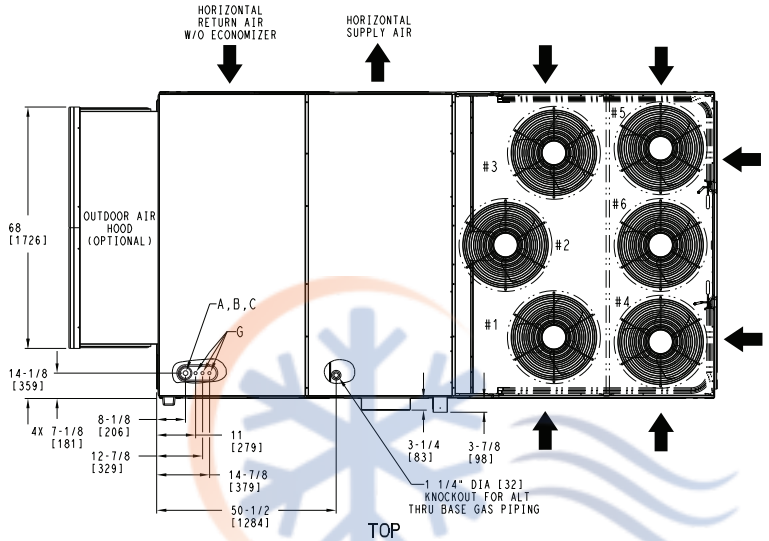
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	1 OF 5	06/10/22	02/10/22	48FC 30 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003874	A

48FC**30 Base Unit Dimensions (cont)



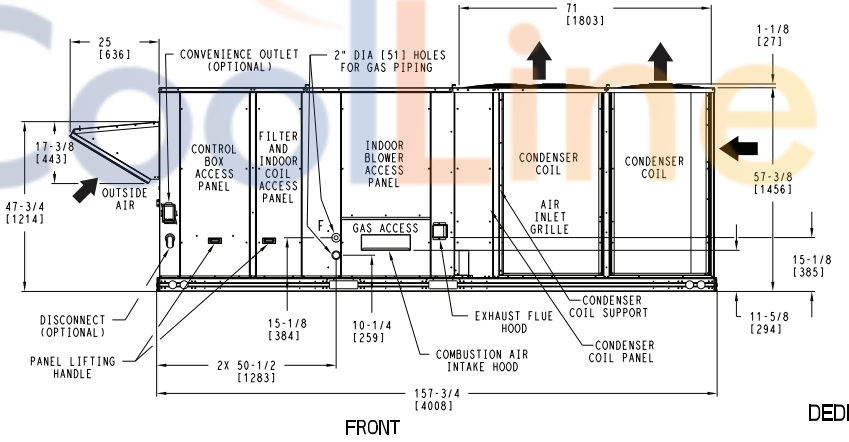


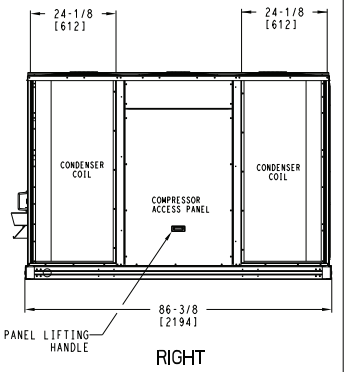




	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
F	3/4"-14 NPT GAS CONNECTION (NOT SHOWN)
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

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



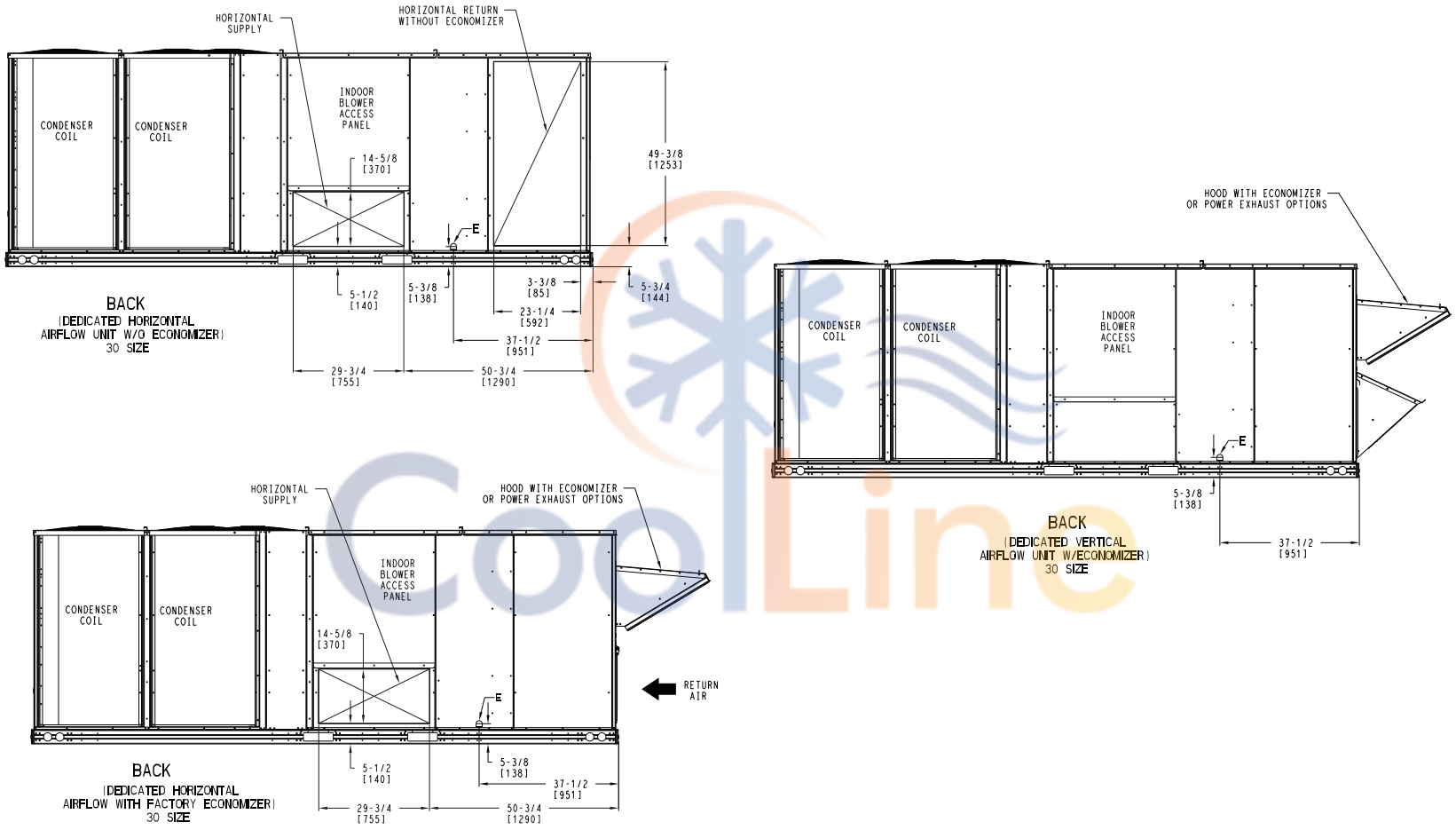


DEDICATED HORIZONTAL AIRFLOW UNIT
30 SIZE

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	2 OF 5	06/10/22	02/10/22	48FC 30 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003874	A

48FC**30 Base Unit Dimensions (cont)

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

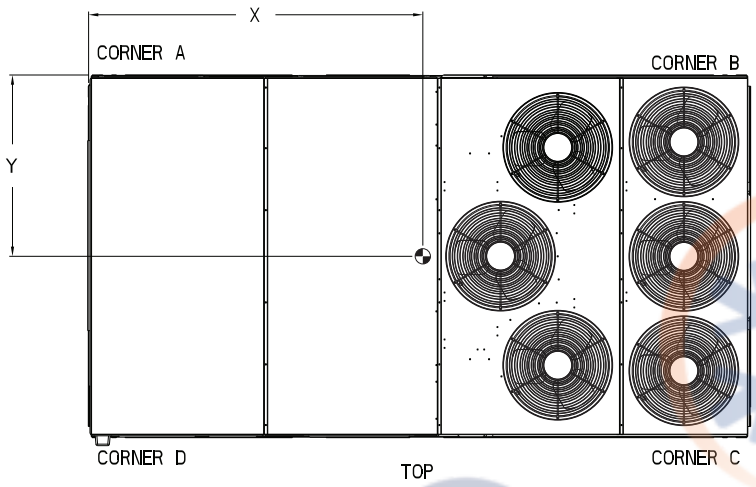


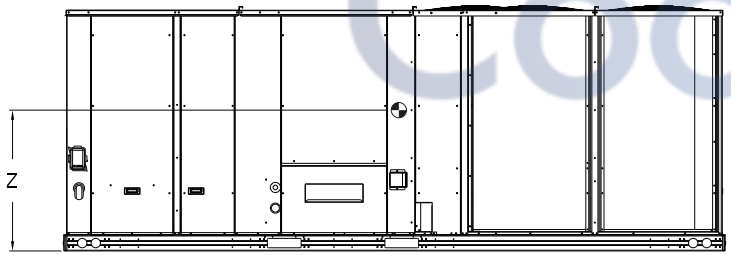
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	06/10/22	02/10/22	48FC 30 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003874	A

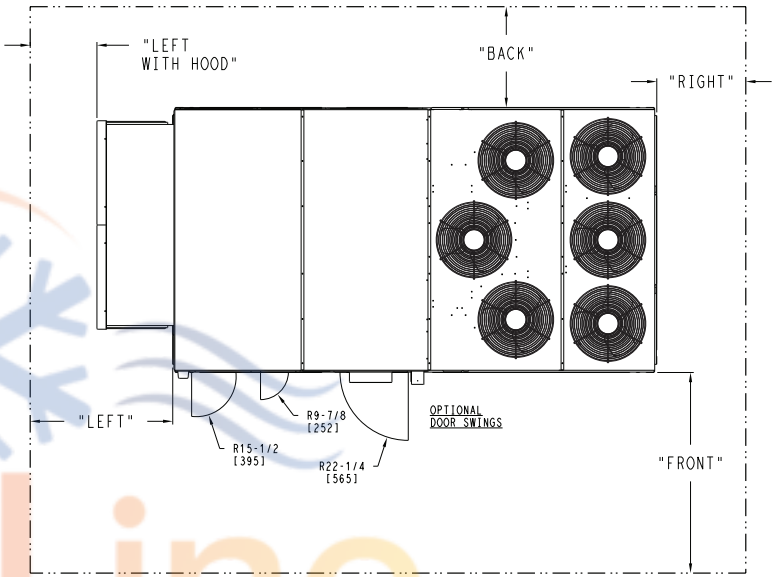
48FC**30 Base Unit Dimensions (cont)

UNIT	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
48FC30	2351	1066	529	240	651	295	645	293	525	238	87 [2210]	43 [1092]	19 [483]

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







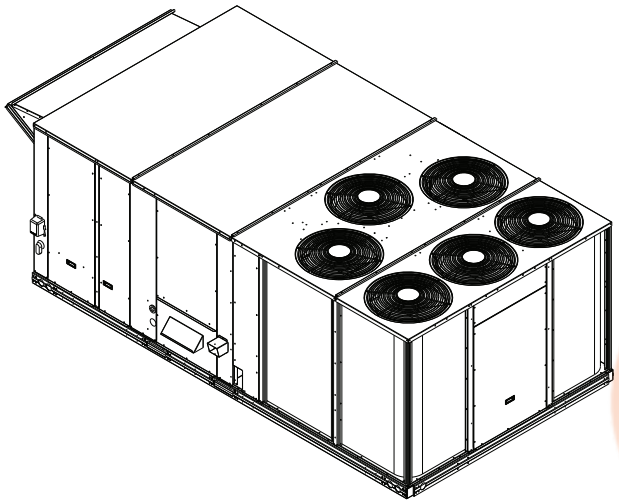
NOTES:

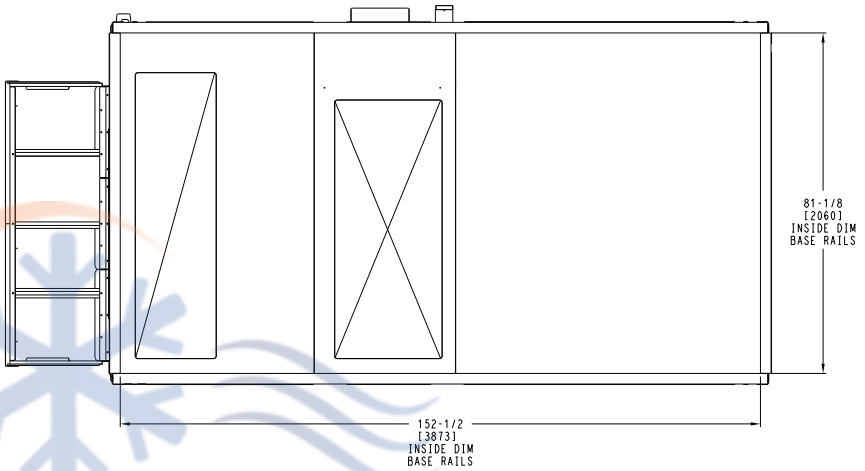
1. CLEARANCE ABOVE THE UNIT TO BE 72"
2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	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	06/10/22	02/10/22	48FC 30 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003874	A

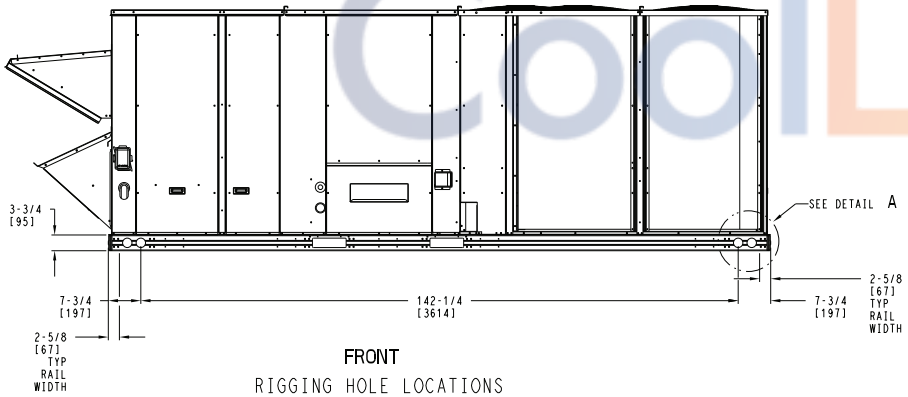
48FC**30 Base Unit Dimensions (cont)





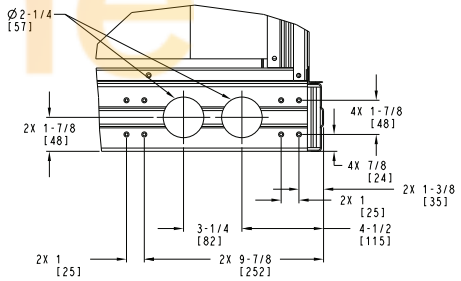
BOTTOM

INSIDE BASERAIL DIMENSIONS



FRONT

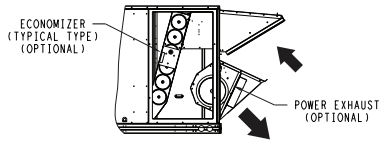
RIGGING HOLE LOCATIONS



DETAIL A
TYP 4 PLCS

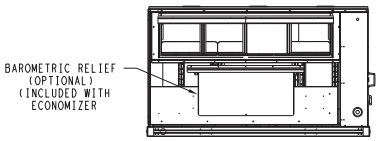
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	5 OF 5	06/10/22	02/10/22	48FC 30 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50HE003874	A

50FC**20 Base Unit Dimensions



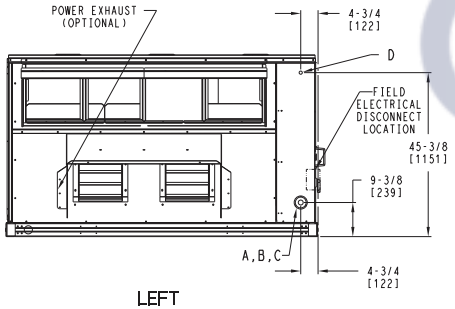
BACK

(PANELS REMOVED TO SHOW ECONOMIZER AND POWER EXHAUST OPTIONS)



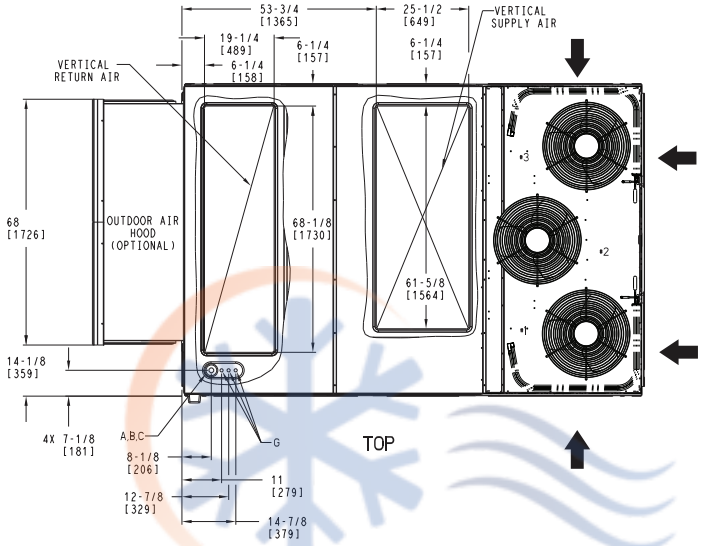
LEFT

SHOWN WITH THE BAROMETRIC RELIEF OPTION INSTALLED



LEFT

SHOWN WITH THE POWER EXHAUST OPTION INSTALLED

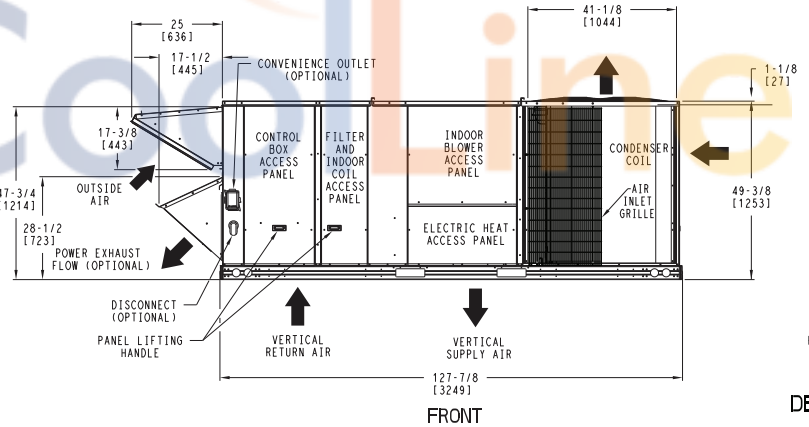


TOP

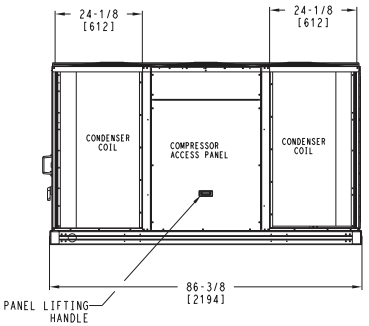
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

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



FRONT

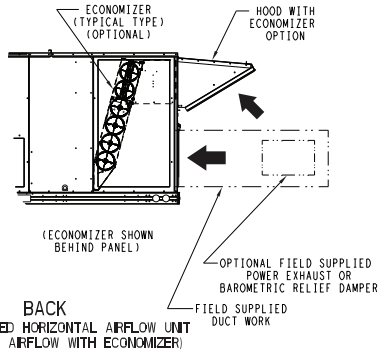


RIGHT

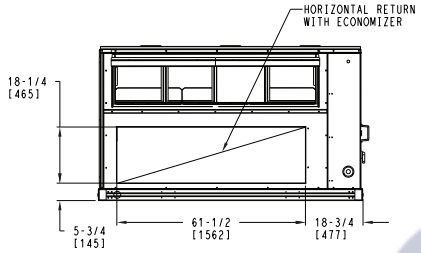
DEDICATED VERTICAL AIRFLOW UNIT
20 SIZE

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	1 OF 5	06/10/22	02/10/22	50FC 20 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003871	A

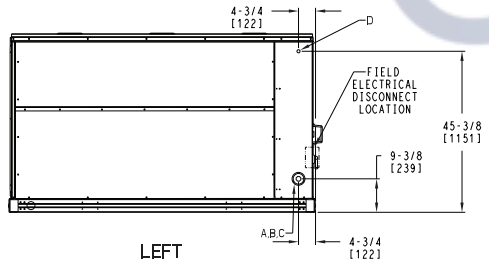
50FC**20 Base Unit Dimensions (cont)



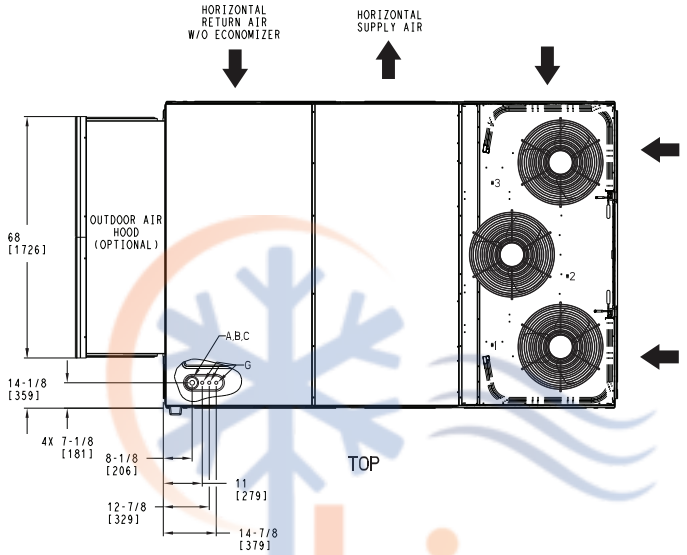
BACK
(DEDICATED HORIZONTAL AIRFLOW UNIT RETURN AIRFLOW WITH ECONOMIZER)



LEFT
(DEDICATED HORIZONTAL AIRFLOW UNIT RETURN AIRFLOW WITH ECONOMIZER)



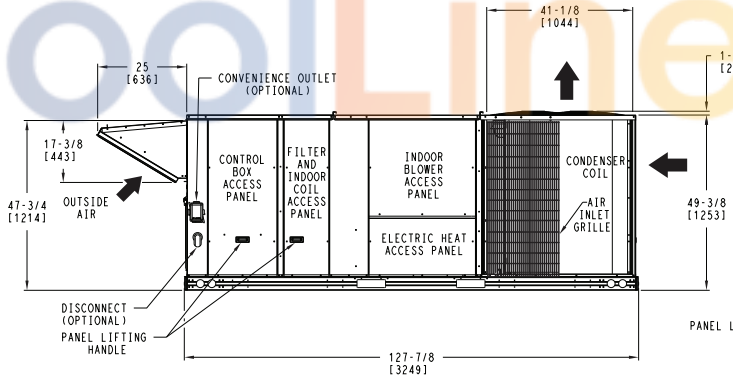
LEFT
(DEDICATED HORIZONTAL AIRFLOW UNIT RETURN AIRFLOW WITHOUT ECONOMIZER)



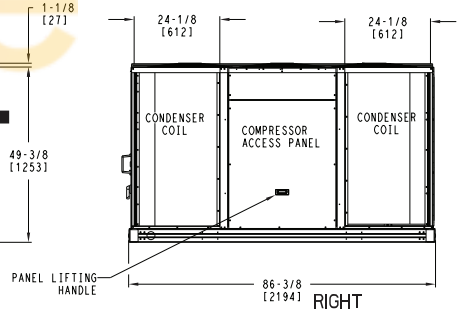
TOP

	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



FRONT



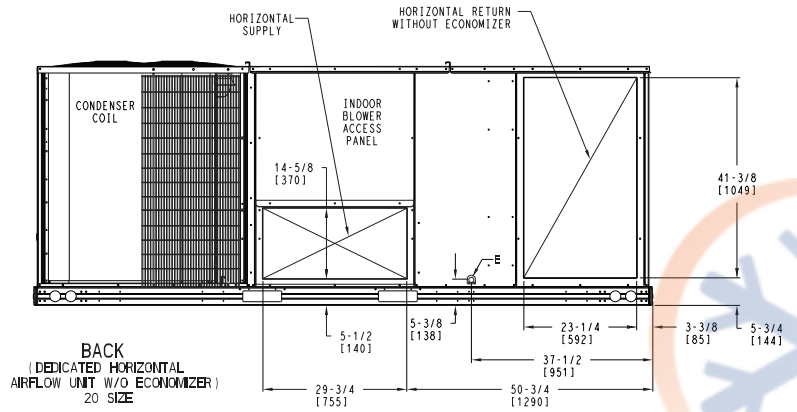
RIGHT

DEDICATED HORIZONTAL AIRFLOW UNIT
20 SIZE

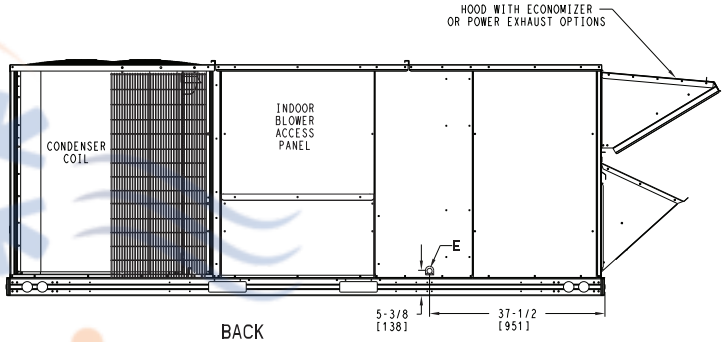
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	2 OF 5	06/10/22	02/10/22	50FC 20 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003871	A

50FC**20 Base Unit Dimensions (cont)

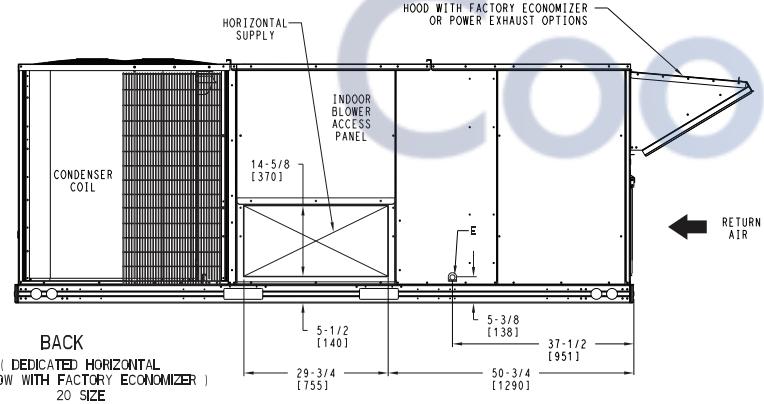
	CONNECTION SIZES
E	3/4"-14 NPT CONDENSATE DRAIN



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



BACK
(DEDICATED VERTICAL AIRFLOW UNIT W/ECONOMIZER)
20 SIZE



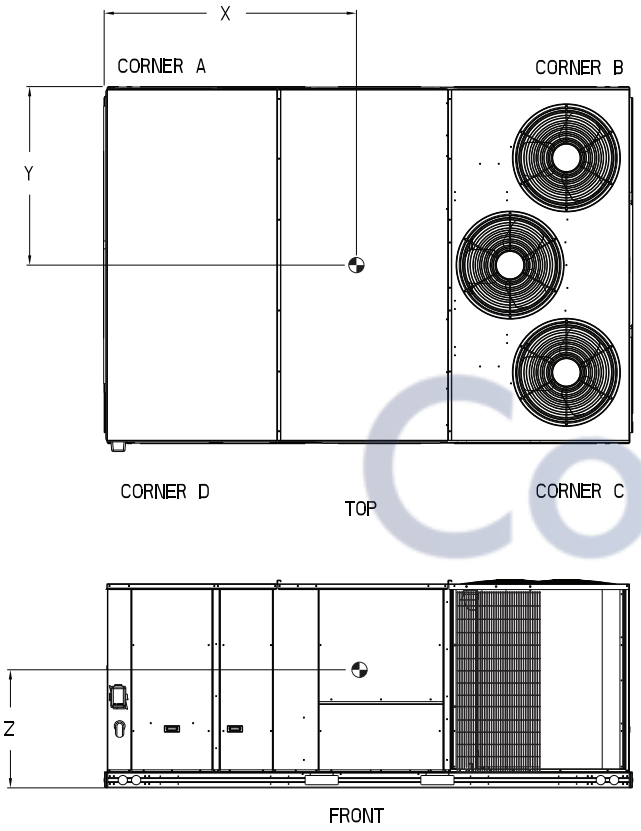
BACK
(DEDICATED HORIZONTAL AIRFLOW WITH FACTORY ECONOMIZER)
20 SIZE

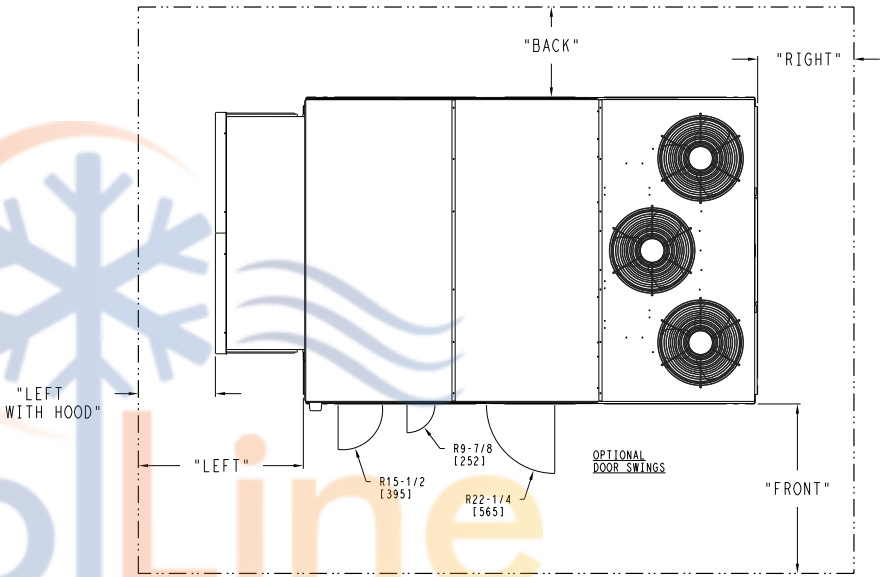
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	06/10/22	02/10/22	50FC 20 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003871	A

50FC**20 Base Unit Dimensions (cont)

UNIT	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
50FC20	1673	759	356	161	445	202	484	220	388	176	71 [1803]	45 [1143]	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.





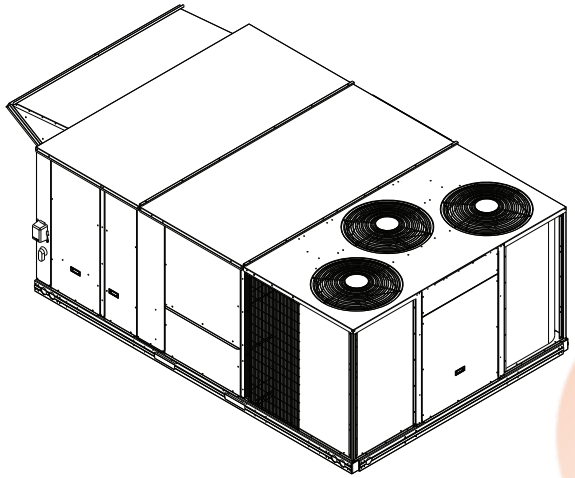
NOTES:

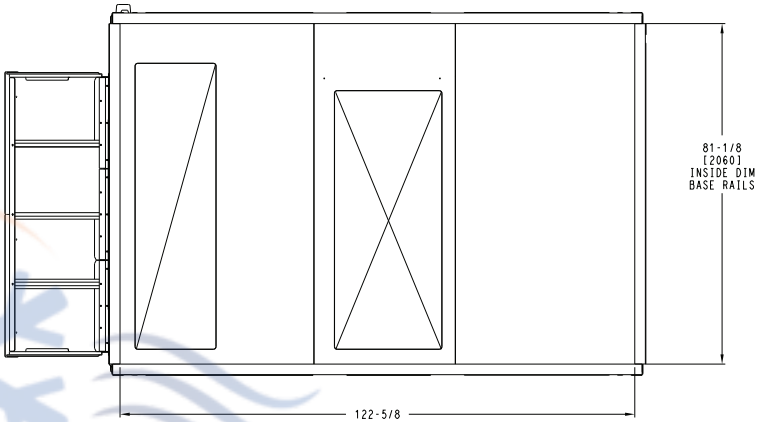
1. CLEARANCE ABOVE THE UNIT TO BE 72"
2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	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]

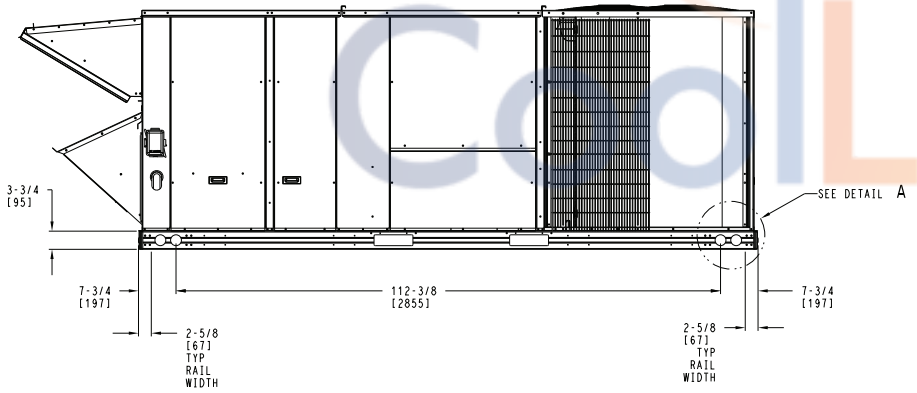
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	4 OF 5	06/10/22	02/10/22	50FC 20 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003871	A

50FC**20 Base Unit Dimensions (cont)

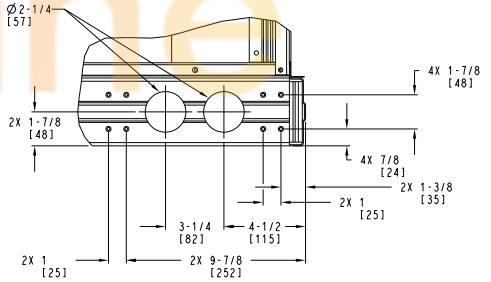




BOTTOM
INSIDE BASERAIL DIMENSIONS



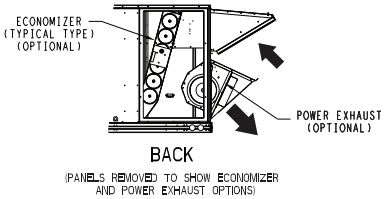
FRONT
RIGGING HOLE LOCATIONS

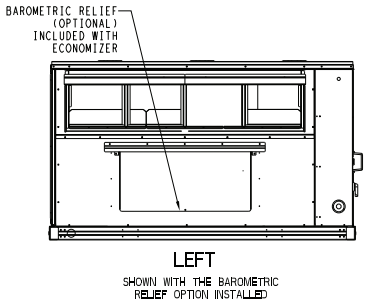


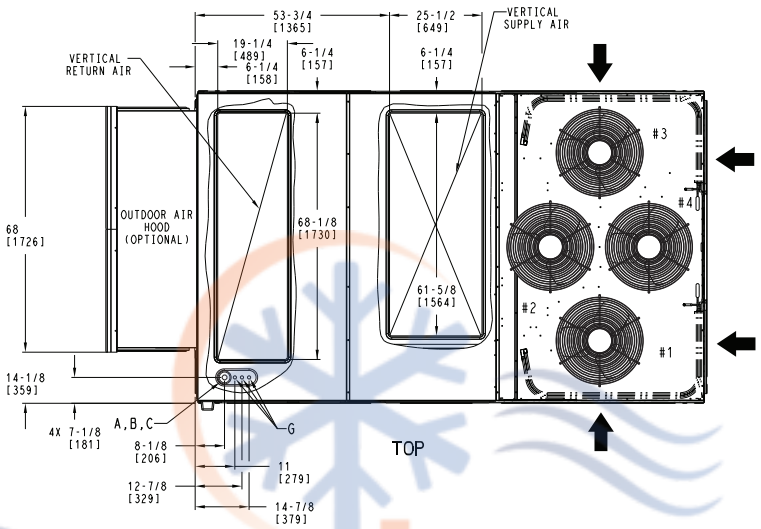
DETAIL A
TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	5 OF 5	06/10/22	02/10/22	50FC 20 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003871	A

50FC**24-28 Base Unit Dimensions



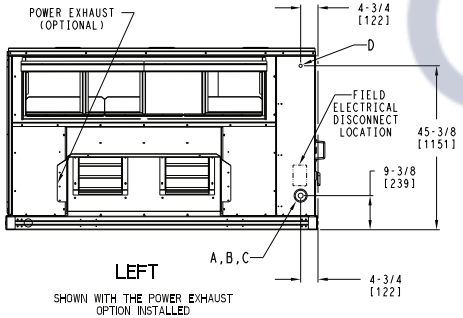


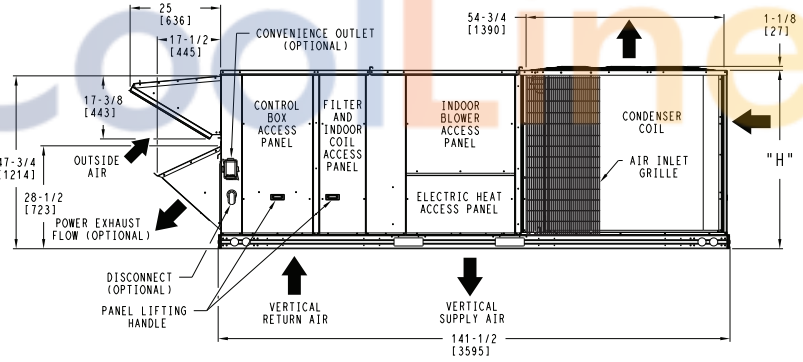


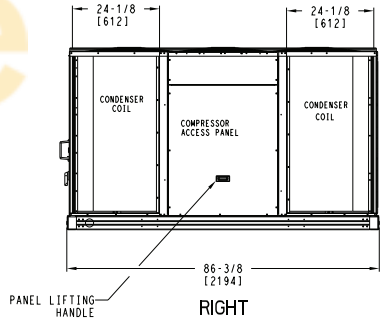
	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

UNIT	H
24 SIZE	49-3/8 [1253]
28 SIZE	57-3/8 [1456]

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



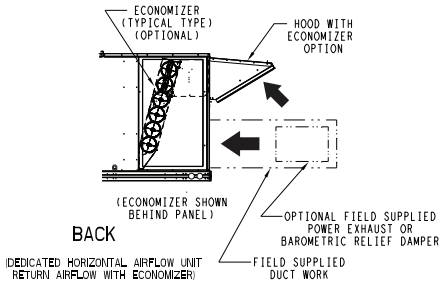


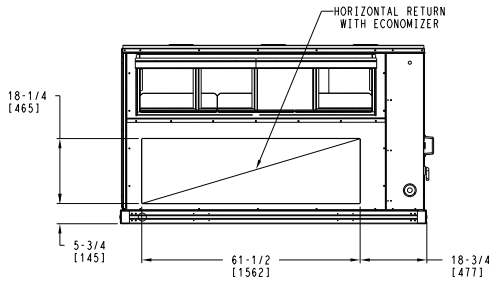


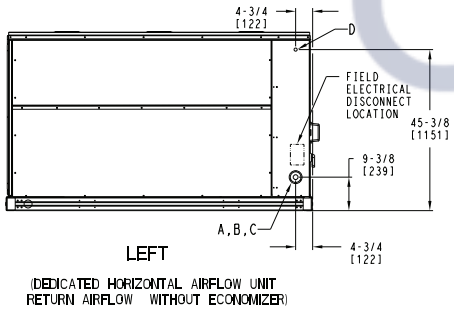
DEDICATED VERTICAL AIRFLOW UNIT
24,28 SIZE

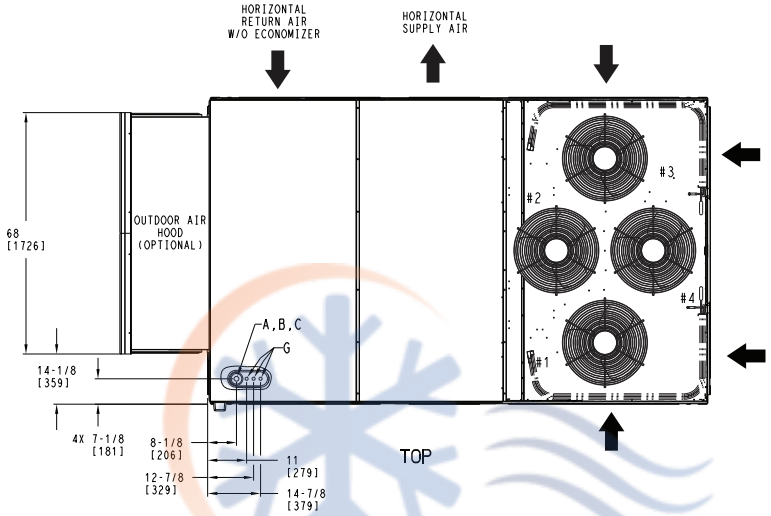
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	1 OF 5	06/10/22	02/10/22	50FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003873	A

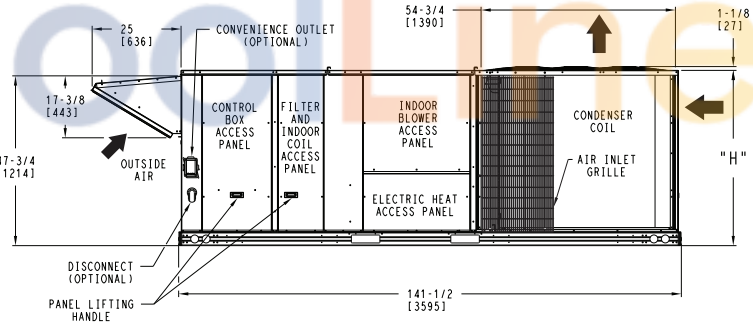
50FC**24-28 Base Unit Dimensions (cont)

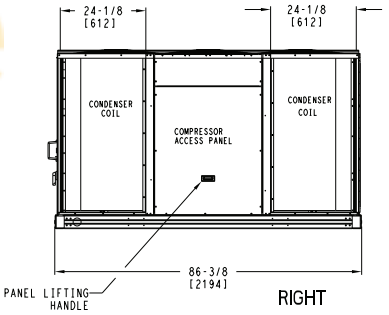












	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

UNIT	H
24 SIZE	49-3/8 [1253]
28 SIZE	57-3/8 [1456]

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

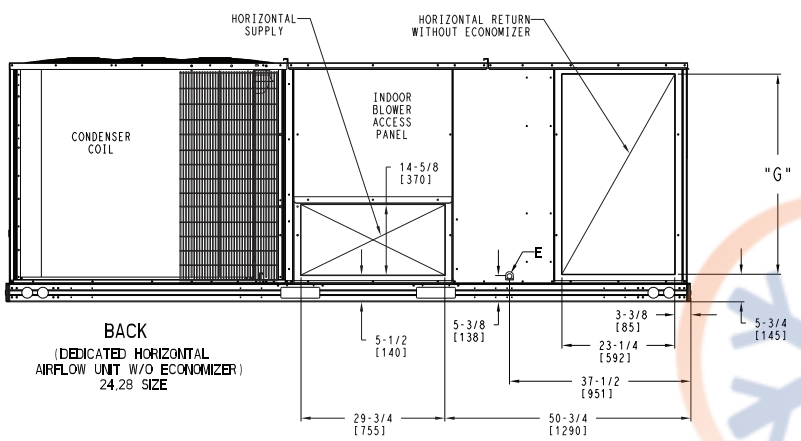
DEDICATED HORIZONTAL AIRFLOW UNIT 24,28 SIZE

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	2 OF 5	06/10/22	02/10/22	50FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003873	A

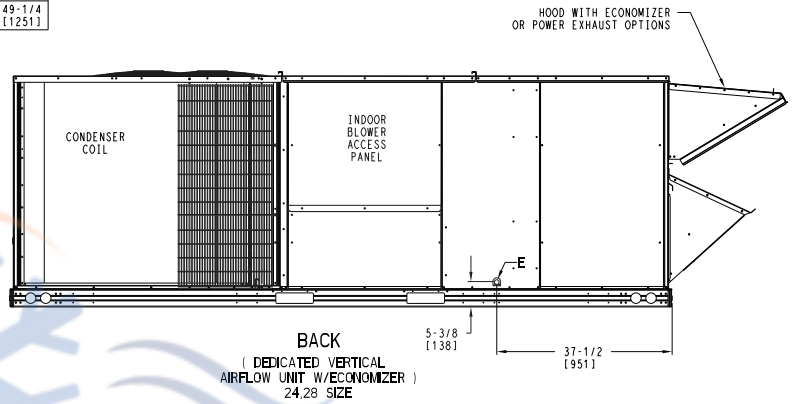
50FC**24-28 Base Unit Dimensions (cont)

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

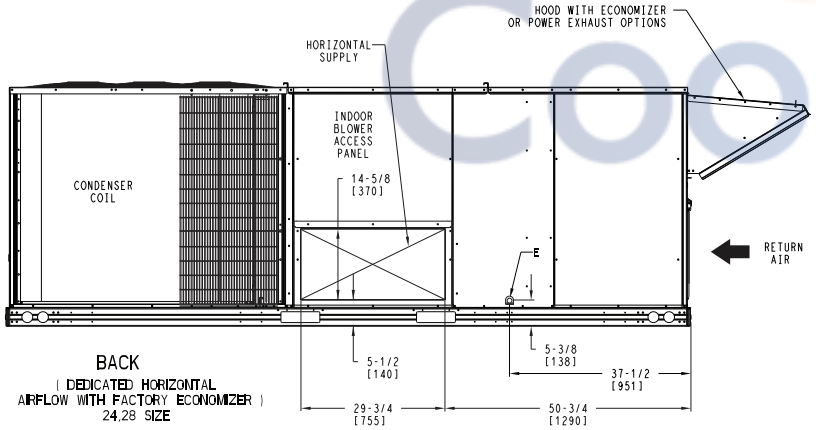
UNIT	G
24 SIZE	41-3/8 [1049]
28 SIZE	49-1/4 [1251]



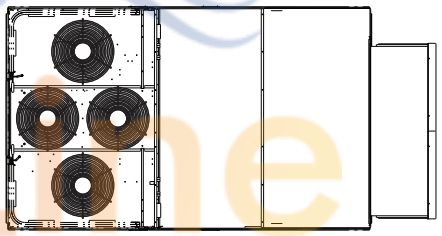
BACK
(DEDICATED HORIZONTAL AIRFLOW UNIT W/O ECONOMIZER)
24,28 SIZE



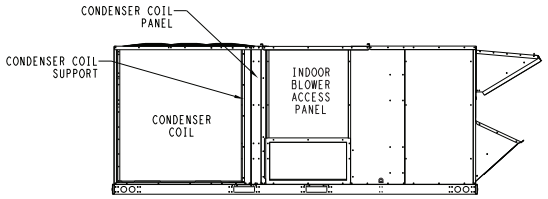
BACK
(DEDICATED VERTICAL AIRFLOW UNIT W/ECONOMIZER)
24,28 SIZE



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



28 SIZE CONDENSER COIL TOP VIEW



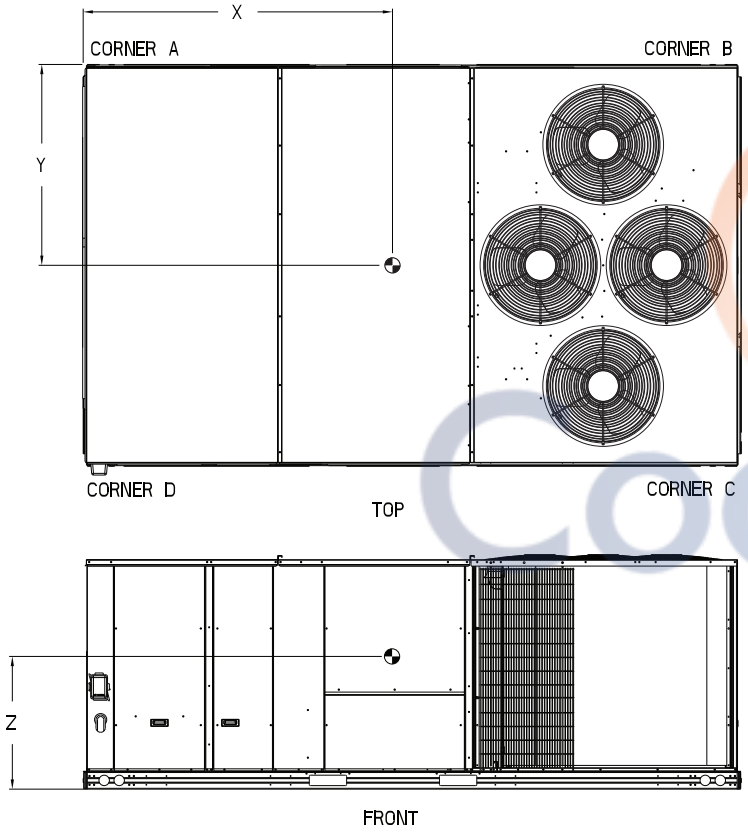
28 SIZE CONDENSER COIL END BRACKET SUPPORT

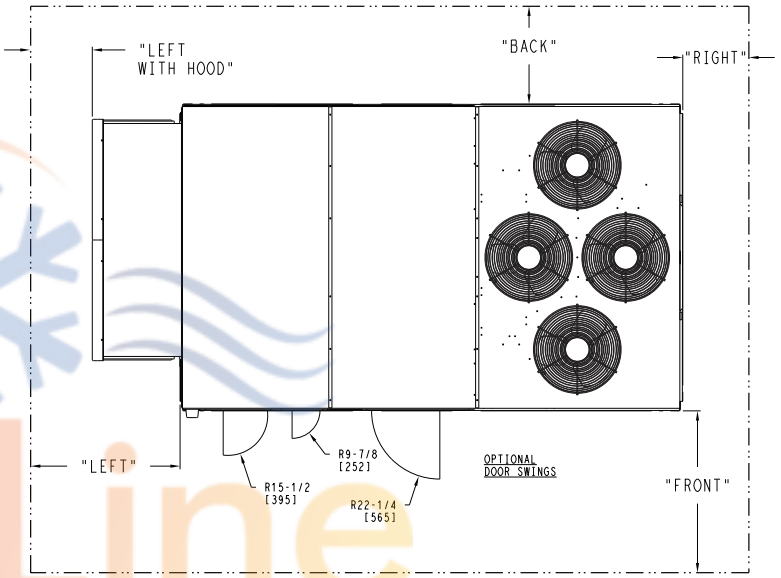
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	50FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT		REV
U.S. ECCN:NSR	3 OF 5	06/10/22	02/10/22		50HE003873	A

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

UNIT	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
50FC24	1873	850	402	182	473	215	539	244	458	208	76 1/2 [1943]	46 [1168]	16 1/2 [419]
50FC28	2047	929	431	195	549	249	597	271	469	213	79 1/4 [2013]	45 [1143]	19 [483]

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





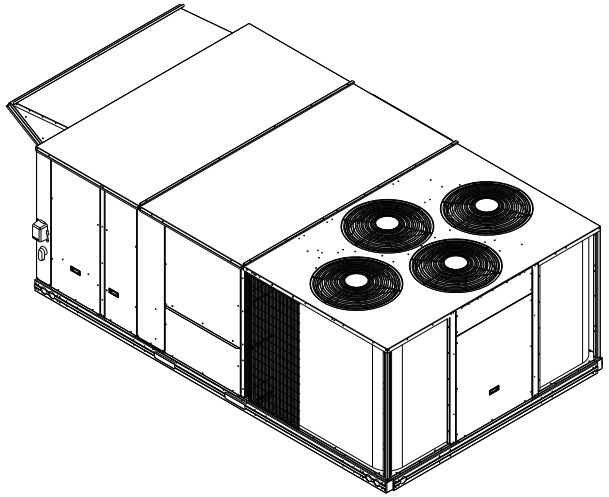
NOTES:

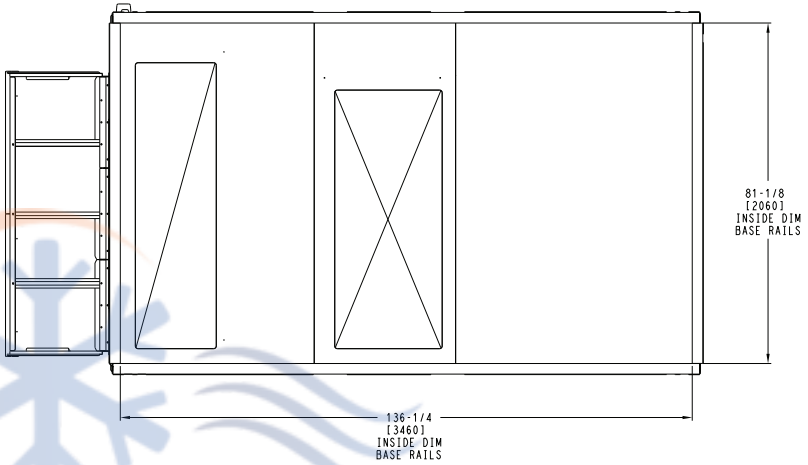
1. CLEARANCE ABOVE THE UNIT TO BE 72"
2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	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]

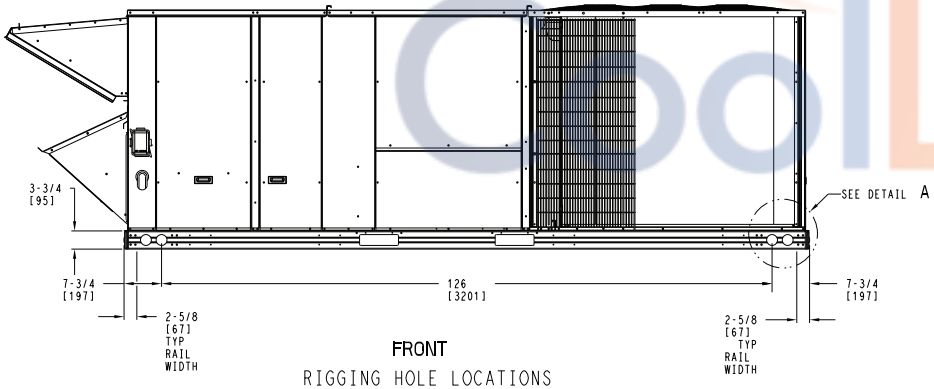
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	4 OF 5	06/10/22	02/10/22	50FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003873	A

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

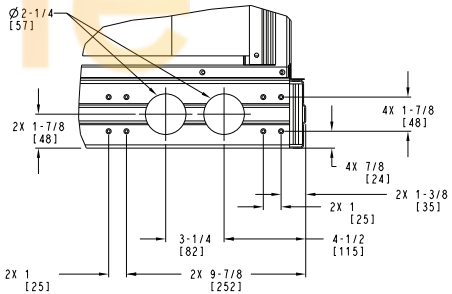




BOTTOM
INSIDE BASERAIL DIMENSIONS



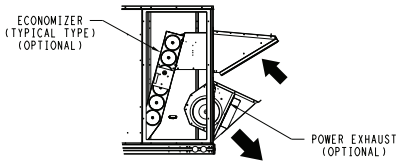
FRONT
RIGGING HOLE LOCATIONS



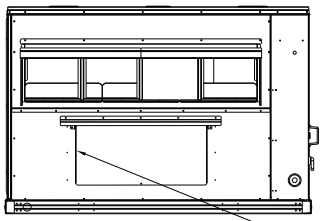
DETAIL A
TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	5 OF 5	06/10/22	02/10/22	50FC 24,28 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003873	A

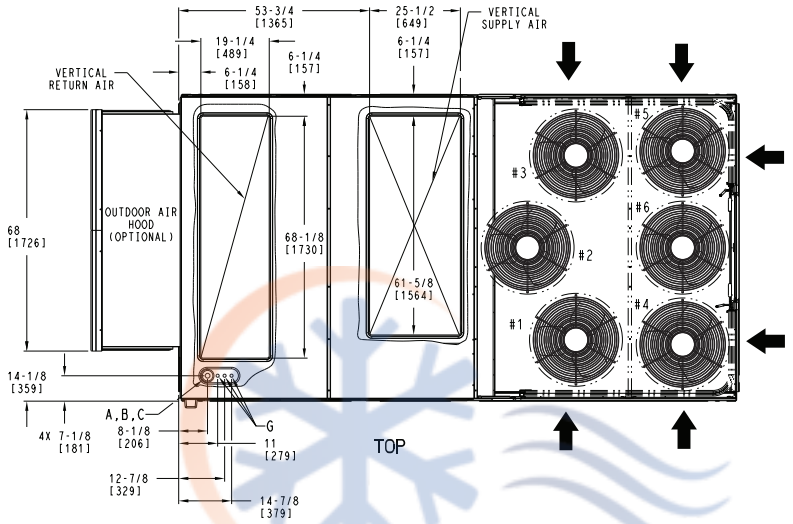
50FC**30 Base Unit Dimensions



BACK
(PANELS REMOVED TO SHOW ECONOMIZER AND POWER EXHAUST OPTIONS)



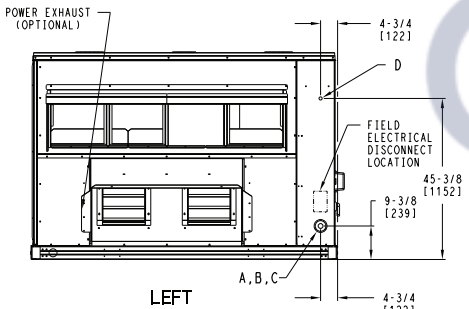
LEFT
SHOWN WITH THE BAROMETRIC RELIEF OPTION INSTALLED



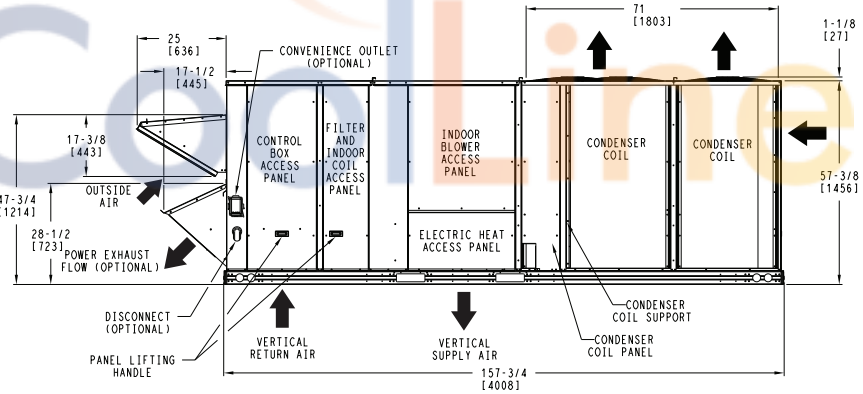
TOP

	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

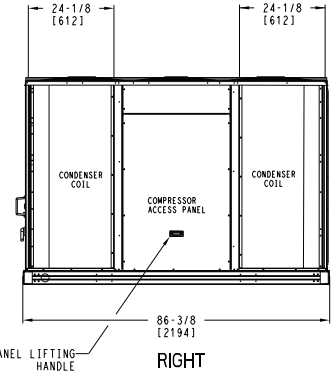
NOTES:
1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [ ] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW
4. ALL VIEW DRAWN USING 3RD ANGLE



LEFT
SHOWN WITH THE POWER EXHAUST OPTION INSTALLED



FRONT

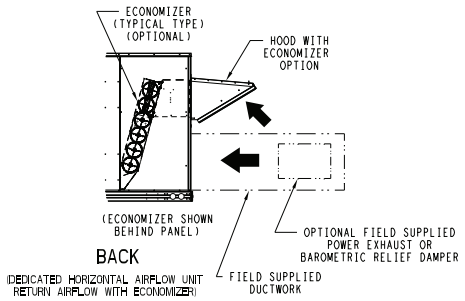


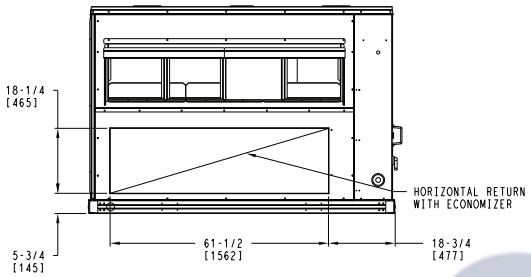
RIGHT

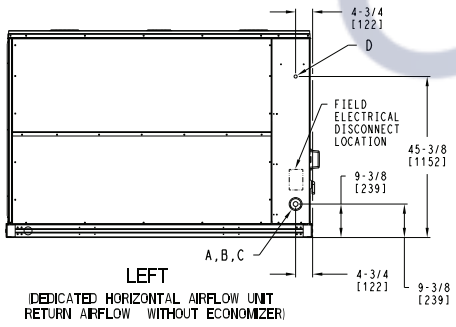
DEDICATED VERTICAL AIRFLOW UNIT
30 SIZE

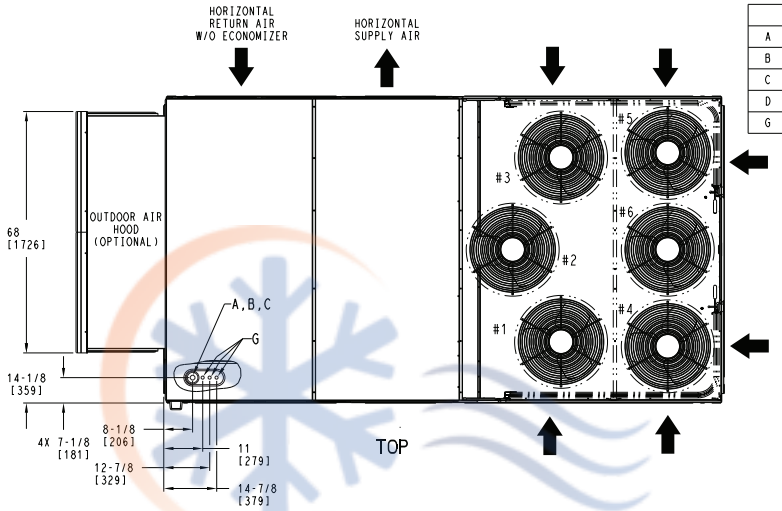
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	1 OF 5	06/10/22	02/10/22	50FC 30 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003875	A

50FC**30 Base Unit Dimensions (cont)



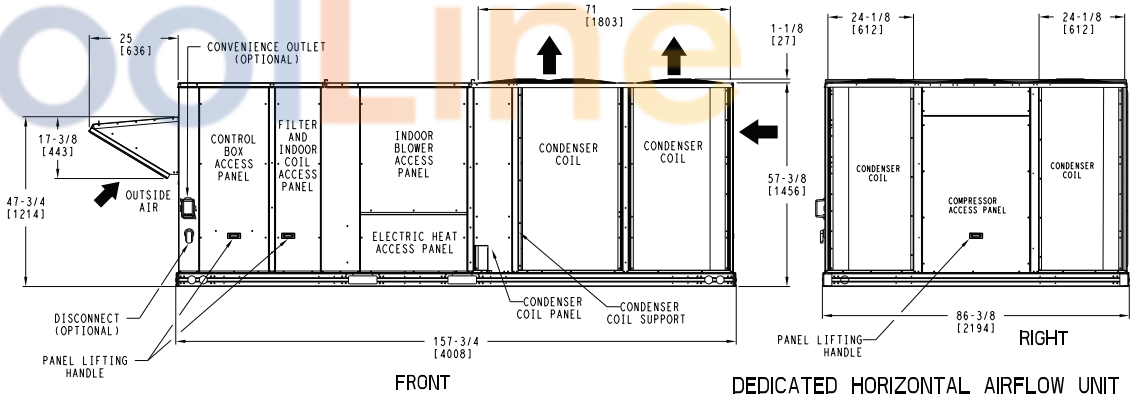






	CONNECTION SIZES
A	1 3/8" DIA [35] FIELD POWER SUPPLY KNOCKOUT
B	3" DIA [76] FIELD POWER SUPPLY KNOCKOUT
C	3 5/8" DIA [92] FIELD POWER SUPPLY KNOCKOUT
D	7/8" DIA [22] FIELD CONTROL WIRING HOLE
G	7/8" DIA [22] FIELD CONTROL WIRING KNOCKOUT

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

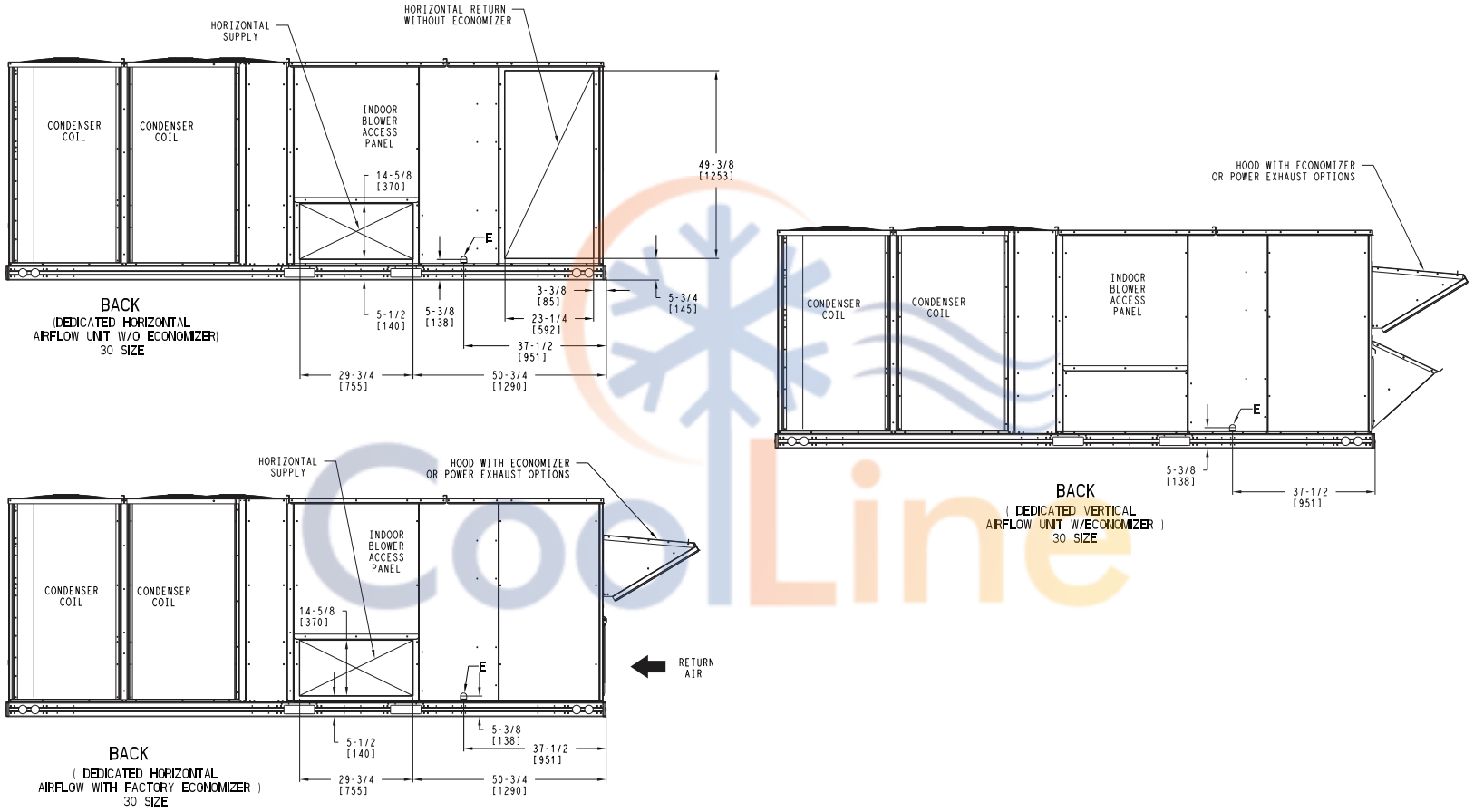


DEDICATED HORIZONTAL AIRFLOW UNIT
30 SIZE

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	2 OF 5	06/10/22	02/10/22	50FC 30 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003875	A

50FC**30 Base Unit Dimensions (cont)

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

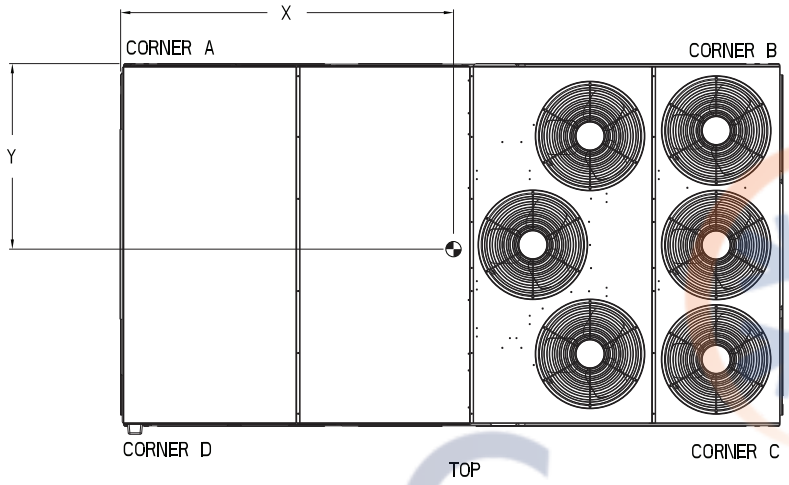


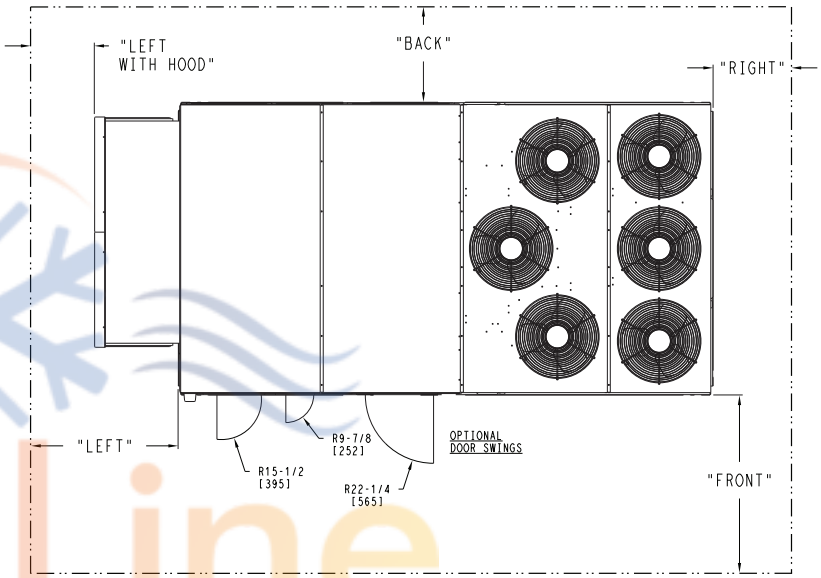
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	3 OF 5	06/10/22	02/10/22	50FC 30 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003875	A

50FC**30 Base Unit Dimensions (cont)

UNIT	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
50FC30	2224	1009	501	227	616	279	611	277	497	225	87 [2210]	43 [1092]	19 [483]

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



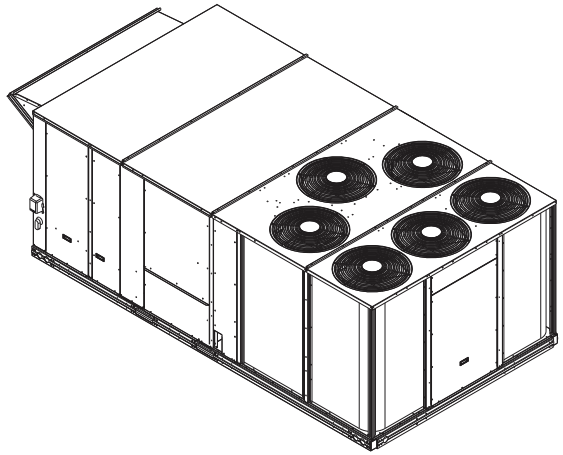


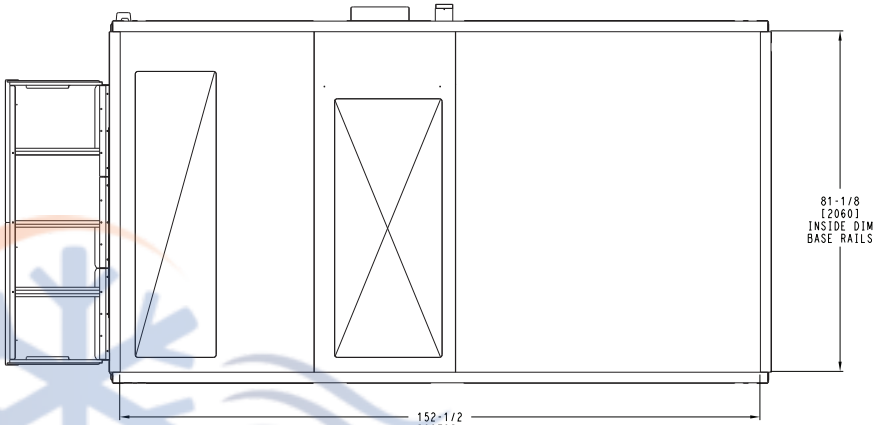
NOTES:
1. CLEARANCE ABOVE THE UNIT TO BE 72"
2. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

	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]

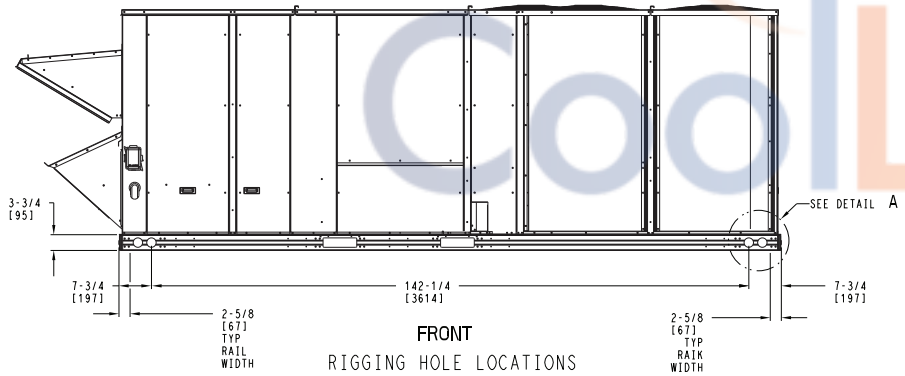
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	4 OF 5	06/10/22	02/10/22	50FC 30 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003875	A

50FC**30 Base Unit Dimensions (cont)

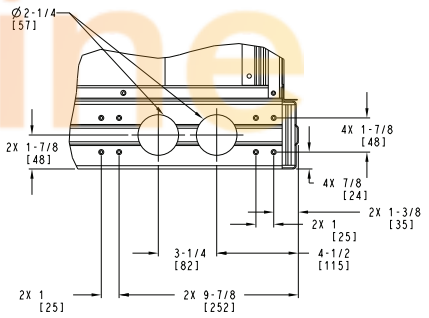




BOTTOM
INSIDE BASERAIL DIMENSIONS



FRONT
RIGGING HOLE LOCATIONS

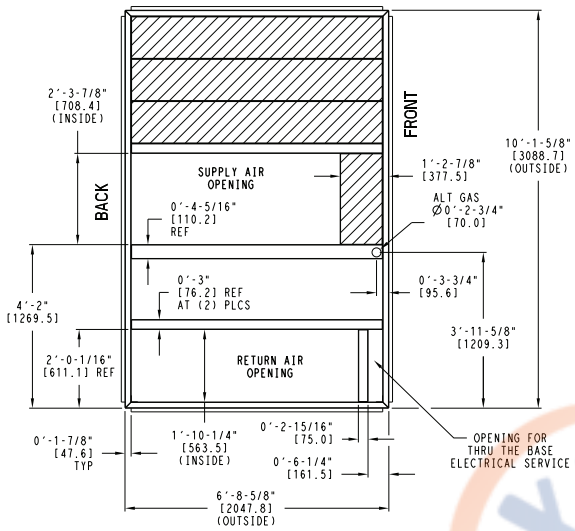


DETAIL A
TYP 4 PLCS

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES			REV
U.S. ECCN:NSR	5 OF 5	06/10/22	02/10/22	50FC 30 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	50HE003875	A

Roof Curb Dimensions — 48/50FC 20

"A"	ROOF CURB ACCESSORY
1′-2" [356.0]	CRRFCURB045A00
2′-0" [610.0]	CRRFCURB046A00



NOTES:

1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.

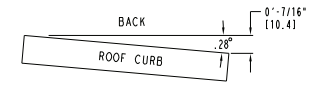
2 DIMENSIONS IN [ ] ARE IN MILLIMETERS.

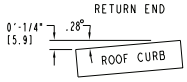
3 ROOF CURB GALVANIZED STEEL.

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

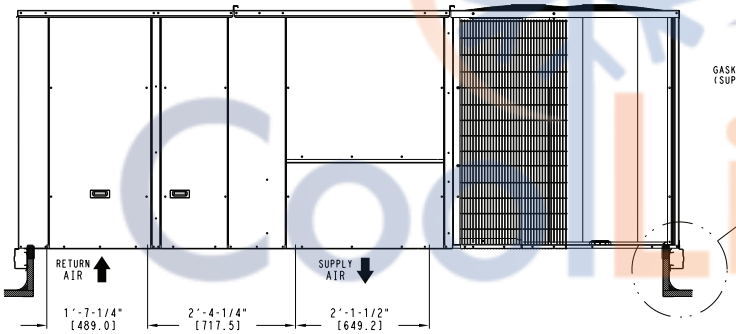
5 SERVICE CLEARANCE 4 ft ON EACH SIDE

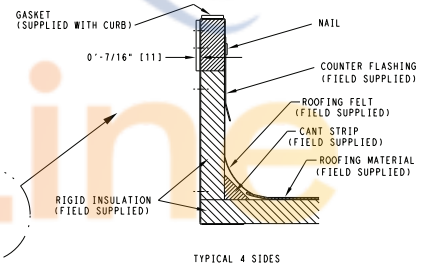
DIRECTION OF AIR FLOW



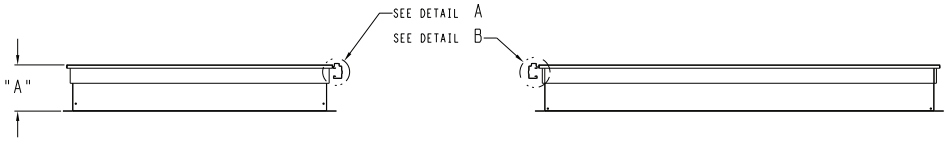


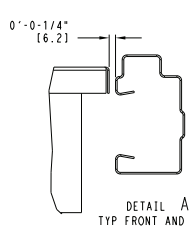
MAX CURB LEVELING TOLERANCES



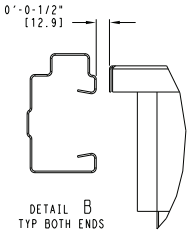


TYPICAL 4 SIDES

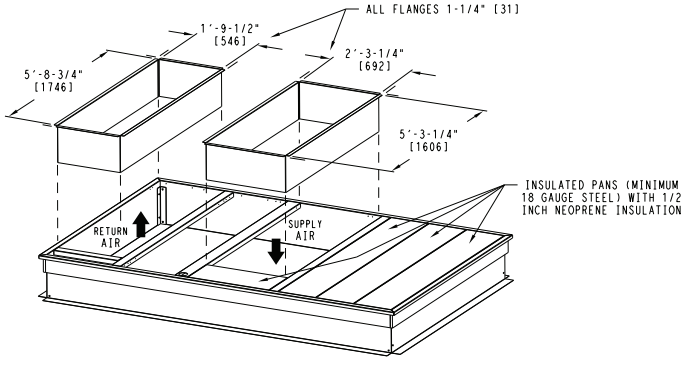




DETAIL A
TYP FRONT AND BACK



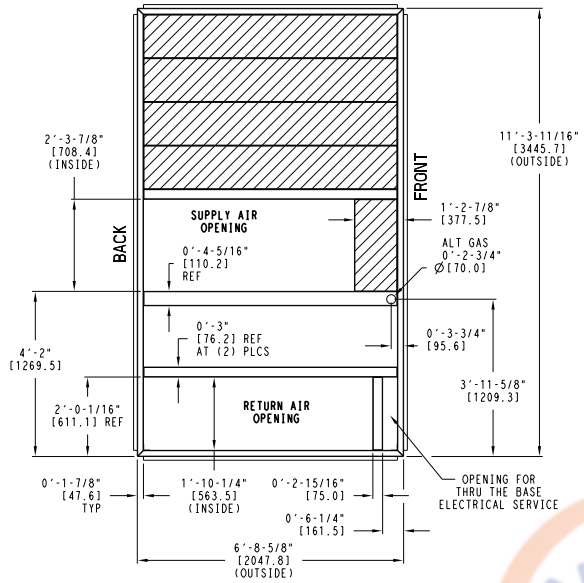
DETAIL B
TYP BOTH ENDS



Accessory dimensions (cont)

Roof Curb Dimensions — 48/50FC 24-28

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



NOTES:

1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.

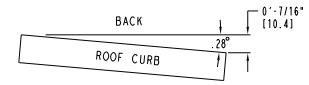
2 DIMENSIONS IN [ ] ARE IN MILLIMETERS.

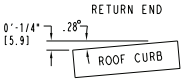
3 ROOF CURB GALVANIZED STEEL.

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

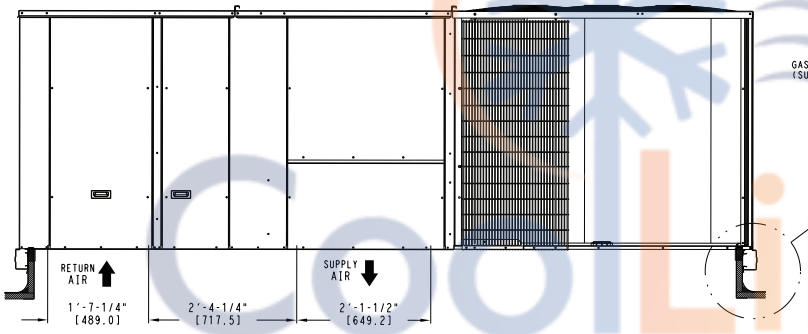
5 SERVICE CLEARANCE 4 ft ON EACH SIDE

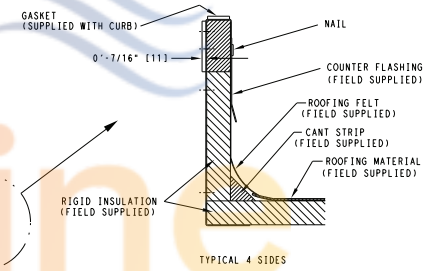
DIRECTION OF AIR FLOW

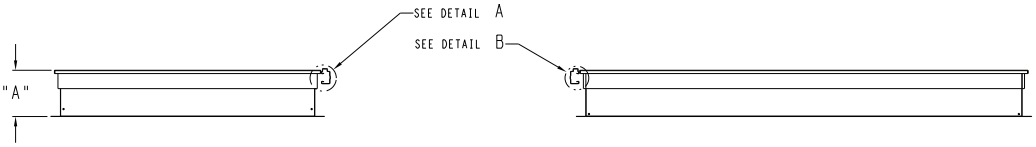


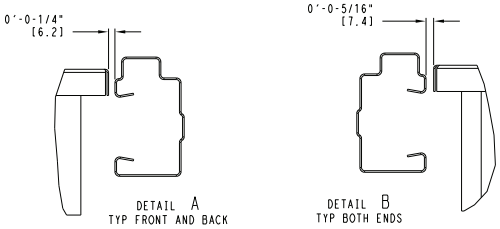


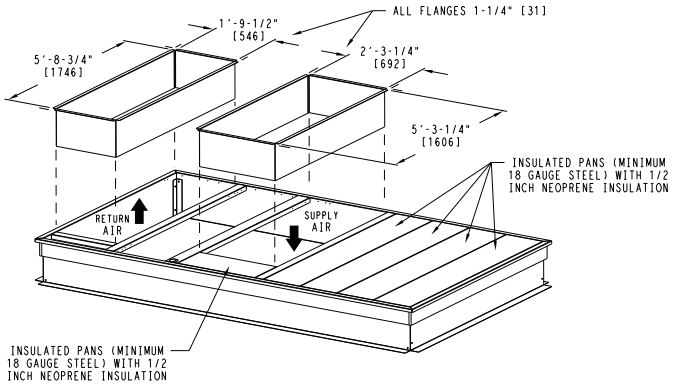
MAX CURB LEVELING TOLERANCES







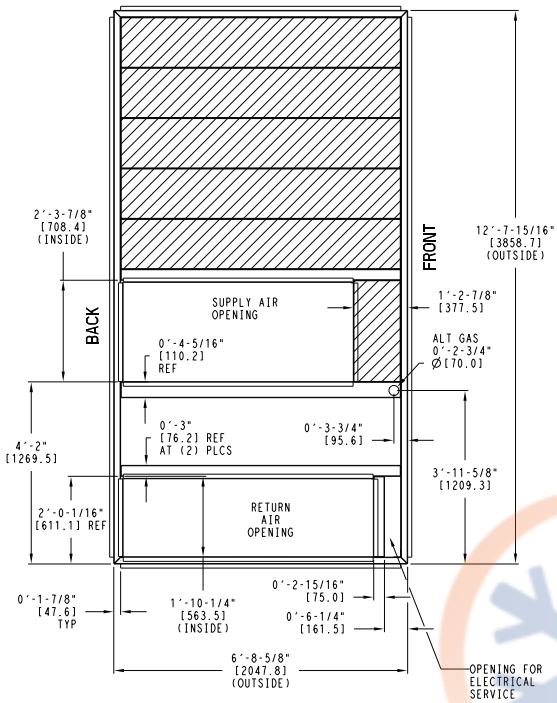




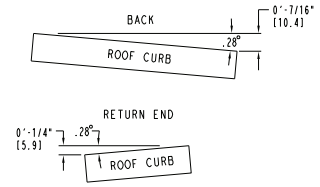
Accessory dimensions (cont)

Roof Curb Dimensions — 48/50FC 30

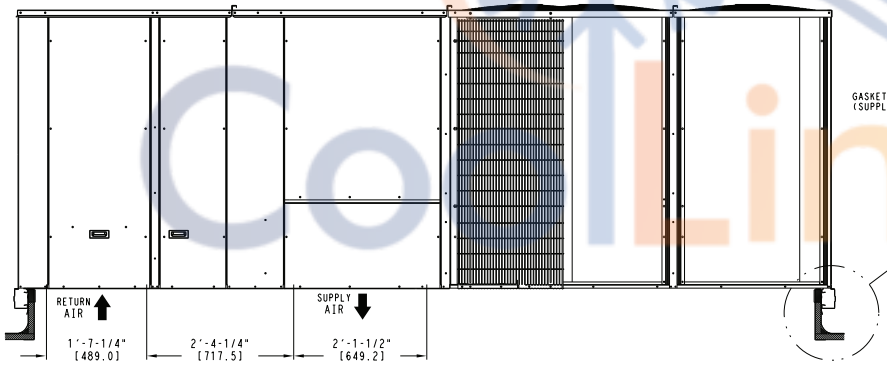
"A"	ROOF CURB ACCESSORY
1′-2" [356.0]	CRRFCURB049A00
2′-0" [610.0]	CRRFCURB050A00

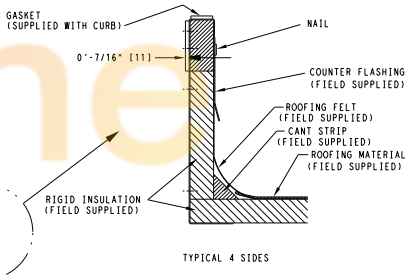


NOTES:
1 ROOF CURB ACCESSORY IS SHIPPED UNASSEMBLED.
2 BOLT HEADS TO BE ON INSIDE OF FLANGE. CLEARANCE IS [11] 0-0-7/16" TYP ALL CORNERS.
3 DIMENSIONS IN [ ] ARE IN MILLIMETERS.
4 ROOF CURB GALVANIZED STEEL.
5 ATTACH DUCTWORK TO CURB (FLANGES ON DUCT REST ON CURB)
6 SERVICE CLEARANCE 4 ft ON EACH SIDE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

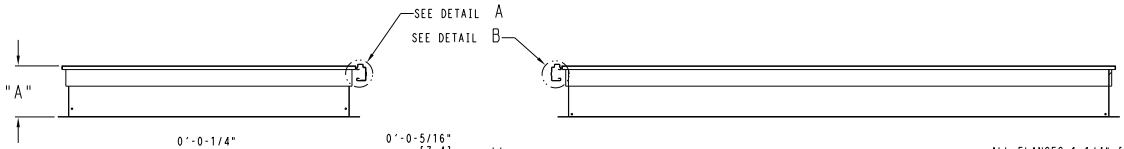


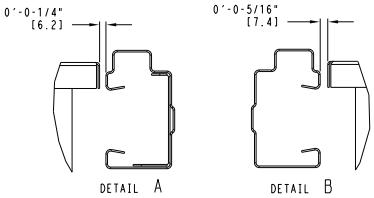
MAX CURB LEVELING TOLERANCES

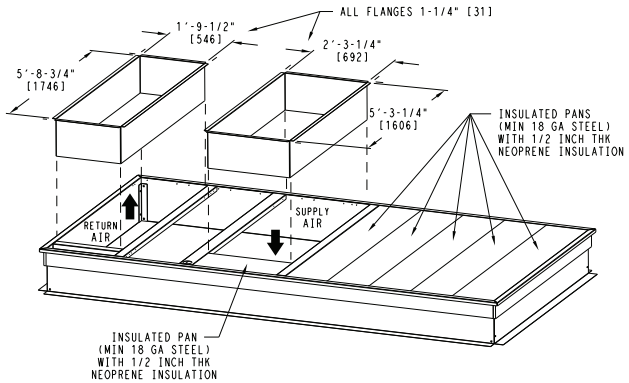




TYPICAL 4 SIDES







Performance data

48/50FC**20 Two Stage Cooling Capacities

48/50FC**20				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EA (db)			EA (db)			EA (db)			EA (db)			EA (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
5250 cfm	EA (wb)	58	TC	186.8	186.8	212.0	177.0	177.0	201.3	166.8	166.8	190.2	156.0	156.0	178.4	144.4	144.4	165.6
			SHC	161.5	186.8	212.0	152.7	177.0	201.3	143.4	166.8	190.2	133.7	156.0	178.4	123.2	144.4	165.6
		62	TC	199.2	199.2	199.2	187.3	187.3	191.5	174.8	174.8	183.9	161.7	161.7	176.1	147.6	147.6	167.8
			SHC	144.8	171.8	198.8	137.6	164.5	191.5	130.1	157.0	183.9	122.4	149.2	176.1	114.2	141.0	167.8
		67	TC	219.6	219.6	219.6	207.0	207.0	207.0	193.6	193.6	193.6	179.6	179.6	179.6	164.6	164.6	164.6
			SHC	119.3	146.4	173.4	112.2	139.2	166.3	104.8	131.9	158.9	97.2	124.2	151.3	89.3	116.3	143.3
		72	TC	242.0	242.0	242.0	228.4	228.4	228.4	214.1	214.1	214.1	199.2	199.2	199.2	183.1	183.1	183.1
			SHC	93.4	120.3	147.2	86.3	113.2	140.1	79.0	105.9	132.8	71.5	98.4	125.3	63.7	90.6	117.4
		76	TC	—	260.7	260.7	—	246.5	246.5	—	231.5	231.5	—	215.6	215.6	—	—	—
			SHC	—	98.9	124.8	—	91.9	118.0	—	84.7	110.9	—	77.2	103.5	—	—	—
6150 cfm	EA (wb)	58	TC	198.4	198.4	224.9	188.1	188.1	213.7	177.1	177.1	201.7	165.6	165.6	189.1	153.3	153.3	175.5
			SHC	171.8	198.4	224.9	162.4	188.1	213.7	152.6	177.1	201.7	142.2	165.6	189.1	131.1	153.3	175.5
		62	TC	206.3	206.3	219.4	193.8	193.8	211.8	180.7	180.7	203.7	167.2	167.2	195.0	157.0	157.0	171.7
			SHC	157.1	188.3	219.4	149.7	180.7	211.8	141.9	172.8	203.7	133.6	164.3	195.0	118.6	145.1	171.7
		67	TC	226.7	226.7	226.7	213.5	213.5	213.5	199.5	199.5	199.5	184.9	184.9	184.9	169.3	169.3	169.3
			SHC	127.5	158.8	190.0	120.2	151.5	182.7	112.7	143.9	175.2	105.0	136.2	167.4	96.9	128.1	159.2
		72	TC	249.2	249.2	249.2	235.1	235.1	235.1	220.2	220.2	220.2	204.5	204.5	204.5	187.9	187.9	187.9
			SHC	97.2	128.3	159.4	90.0	121.1	152.2	82.6	113.7	144.7	75.0	106.0	137.1	67.1	98.1	129.1
		76	TC	—	268.0	268.0	—	253.2	253.2	—	237.6	237.6	—	221.1	221.1	—	—	—
			SHC	—	103.3	133.5	—	96.3	126.6	—	89.0	119.3	—	81.4	111.8	—	—	—
7000 cfm	EA (wb)	58	TC	207.4	207.4	235.1	196.7	196.7	223.3	185.2	185.2	210.7	173.1	173.1	197.4	160.2	160.2	183.2
			SHC	179.8	207.4	235.1	170.0	196.7	223.3	159.7	185.2	210.7	148.8	173.1	197.4	137.2	160.2	183.2
		62	TC	218.0	218.0	218.0	198.8	198.8	229.0	189.4	189.4	205.6	177.5	177.5	190.6	160.4	160.4	191.1
			SHC	155.4	182.5	209.7	159.9	194.4	229.0	145.0	175.3	205.6	133.8	162.2	190.6	129.6	160.4	191.1
		67	TC	231.9	231.9	231.9	218.2	218.2	218.2	203.8	203.8	203.8	188.7	188.7	188.7	172.6	172.6	173.5
			SHC	134.7	169.8	204.9	127.3	162.4	197.5	119.7	154.7	189.8	111.8	146.8	181.8	103.6	138.6	173.5
		72	TC	254.4	254.4	254.4	239.8	239.8	239.8	224.4	224.4	224.4	208.4	208.4	208.4	191.3	191.3	191.3
			SHC	100.4	135.3	170.3	93.1	128.0	163.0	85.6	120.5	155.4	77.9	112.8	147.7	69.9	104.8	139.6
		76	TC	—	273.5	273.5	—	258.1	258.1	—	242.0	242.0	—	225.0	225.0	—	—	—
			SHC	—	107.3	141.3	—	100.1	134.2	—	92.7	126.8	—	85.0	119.2	—	—	—
7900 cfm	EA (wb)	58	TC	215.7	215.7	244.3	204.4	204.4	231.9	192.4	192.4	218.7	179.8	179.8	204.9	166.3	166.3	190.0
			SHC	187.1	215.7	244.3	176.9	204.4	231.9	166.0	192.4	218.7	154.7	179.8	204.9	142.6	166.3	190.0
		62	TC	220.0	220.0	238.8	207.0	207.0	232.4	192.6	192.6	227.8	180.0	180.0	213.5	166.5	166.5	198.2
			SHC	170.7	204.7	238.8	163.7	198.1	232.4	157.4	192.6	227.8	146.5	180.0	213.5	134.8	166.5	198.2
		67	TC	236.2	236.2	236.2	222.1	222.1	222.1	207.3	207.3	207.3	191.9	191.9	196.5	175.5	175.5	187.8
			SHC	141.8	180.9	220.0	134.3	173.4	212.5	126.6	165.6	204.6	118.6	157.5	196.5	110.3	149.1	187.8
		72	TC	258.6	258.6	258.6	243.7	243.7	243.7	228.0	228.0	228.0	211.5	211.5	211.5	—	—	—
			SHC	103.5	142.4	181.3	96.2	135.1	174.0	88.6	127.5	166.4	80.8	119.7	158.5	—	—	—
		76	TC	—	277.9	277.9	—	262.1	262.1	—	245.6	245.6	—	228.3	228.3	—	—	—
			SHC	—	111.1	149.0	—	103.8	141.8	—	96.4	134.3	—	88.6	126.6	—	—	—
8750 cfm	EA (wb)	58	TC	222.2	222.2	251.5	210.5	210.5	238.7	198.1	198.1	225.1	185.1	185.1	210.8	171.1	171.1	195.4
			SHC	192.9	222.2	251.5	182.3	210.5	238.7	171.1	198.1	225.1	159.4	185.1	210.8	146.8	171.1	195.4
		62	TC	222.4	222.4	261.6	210.7	210.7	248.4	198.3	198.3	234.3	185.2	185.2	219.5	171.3	171.3	203.7
			SHC	183.2	222.4	261.6	173.0	210.7	248.4	162.2	198.3	234.3	150.9	185.2	219.5	138.9	171.3	203.7
		67	TC	239.5	239.5	239.5	225.1	225.1	226.1	210.1	210.1	218.0	194.3	194.3	209.6	177.7	177.7	200.9
			SHC	148.2	190.9	233.7	140.7	183.4	226.1	132.8	175.4	218.0	124.7	167.2	209.6	116.3	158.6	200.9
		72	TC	261.8	261.8	261.8	246.6	246.6	246.6	230.6	230.6	230.6	213.9	213.9	213.9	—	—	—
			SHC	106.2	148.8	191.4	98.8	141.4	184.0	91.2	133.7	176.3	83.4	125.9	168.3	—	—	—
		76	TC	—	281.3	281.3	—	265.2	265.2	—	248.4	248.4	—	230.8	230.8	—	—	—
			SHC	—	114.5	156.0	—	107.2	148.7	—	99.6	141.2	—	91.9	133.4	—	—	—

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EA (db) — Entering Air Temperature (dry bulb)
EA (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)

48/50FC**20 Single Stage Cooling Capacities

48/50FC**20				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EA (db)			EA (db)			EA (db)			EA (db)			EA (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
3150 cfm	EA (wb)	58	TC	105.2	105.2	120.2	98.5	98.5	113.0	91.5	91.5	105.4	84.1	84.1	97.5	76.4	76.4	89.1
			SHC	90.2	105.2	120.2	84.0	98.5	113.0	77.5	91.5	105.4	70.8	84.1	97.5	63.7	76.4	89.1
		62	TC	111.7	111.7	114.6	103.6	103.6	109.2	95.2	95.2	103.7	86.5	86.5	98.0	77.4	77.4	92.0
			SHC	81.2	97.9	114.6	75.9	92.6	109.2	70.5	87.1	103.7	64.8	81.4	98.0	59.0	75.5	92.0
		67	TC	124.8	124.8	124.8	116.3	116.3	116.3	107.5	107.5	107.5	98.2	98.2	98.2	88.5	88.5	88.5
			SHC	66.3	83.0	99.7	61.0	77.7	94.4	55.6	72.3	89.0	50.1	66.8	83.4	44.5	61.1	77.8
		72	TC	139.0	139.0	139.0	130.1	130.1	130.1	120.7	120.7	120.7	111.0	111.0	111.0	100.7	100.7	100.7
			SHC	51.0	67.7	84.3	45.8	62.5	79.1	40.5	57.1	73.8	35.0	51.6	68.3	29.4	46.0	62.6
		76	TC	—	151.2	151.2	—	141.9	141.9	—	132.2	132.2	—	121.9	121.9	—	111.1	111.1
			SHC	—	55.2	71.3	—	50.0	66.1	—	44.7	60.9	—	39.3	55.5	—	33.7	49.9
3700 cfm	EA (wb)	58	TC	112.8	112.8	128.6	105.7	105.7	121.0	98.2	98.2	112.9	90.4	90.4	104.5	82.3	82.3	95.6
			SHC	96.9	112.8	128.6	90.4	105.7	121.0	83.5	98.2	112.9	76.4	90.4	104.5	69.0	82.3	95.6
		62	TC	116.1	116.1	128.0	107.8	107.8	122.4	99.2	99.2	116.5	91.5	91.5	106.9	82.4	82.4	100.2
			SHC	89.3	108.7	128.0	83.8	103.1	122.4	78.1	97.3	116.5	70.8	88.8	106.9	64.6	82.4	100.2
		67	TC	129.3	129.3	129.3	120.5	120.5	120.5	111.3	111.3	111.3	101.6	101.6	101.6	91.5	91.5	91.5
			SHC	71.7	91.2	110.6	66.4	85.8	105.2	60.9	80.3	99.7	55.2	74.6	94.0	49.5	68.8	88.2
		72	TC	143.6	143.6	143.6	134.4	134.4	134.4	124.7	124.7	124.7	114.5	114.5	114.5	103.7	103.7	103.7
			SHC	53.7	73.0	92.4	48.4	67.7	87.1	43.0	62.3	81.7	37.4	56.7	76.1	31.7	51.0	70.3
		76	TC	—	156.1	156.1	—	146.4	146.4	—	136.2	136.2	—	125.6	125.6	—	—	—
			SHC	—	58.3	77.1	—	53.0	71.9	—	47.6	66.5	—	42.1	61.0	—	—	—
4200 cfm	EA (wb)	58	TC	118.5	118.5	135.0	111.1	111.1	127.0	103.3	103.3	118.5	95.2	95.2	109.8	86.7	86.7	100.5
			SHC	102.0	118.5	135.0	95.2	111.1	127.0	88.1	103.3	118.5	80.7	95.2	109.8	72.9	86.7	100.5
		62	TC	119.5	119.5	139.1	112.7	112.7	128.3	103.5	103.5	123.9	95.4	95.4	114.8	86.8	86.8	105.3
			SHC	96.0	117.6	139.1	88.2	108.3	128.3	83.2	103.5	123.9	75.9	95.4	114.8	68.4	86.8	105.3
		67	TC	132.4	132.4	132.4	123.3	123.3	123.3	113.9	113.9	113.9	104.0	104.0	104.0	93.6	93.6	97.3
			SHC	76.3	98.2	120.1	70.9	92.8	114.6	65.4	87.2	109.0	59.6	81.4	103.2	53.8	75.5	97.3
		72	TC	146.8	146.8	146.8	137.3	137.3	137.3	127.4	127.4	127.4	116.9	116.9	116.9	105.9	105.9	105.9
			SHC	55.8	77.6	99.4	50.5	72.2	94.0	45.0	66.8	88.5	39.4	61.1	82.8	33.6	55.3	77.0
		76	TC	—	159.4	159.4	—	149.5	149.5	—	—	—	—	—	—	—	—	—
			SHC	—	60.8	82.1	—	55.5	76.8	—	—	—	—	—	—	—	—	—
4750 cfm	EA (wb)	58	TC	123.9	123.9	140.9	116.1	116.1	132.5	108.1	108.1	123.9	99.6	99.6	114.7	90.8	90.8	105.0
			SHC	106.8	123.9	140.9	99.7	116.1	132.5	92.3	108.1	123.9	84.6	99.6	114.7	76.5	90.8	105.0
		62	TC	124.0	124.0	146.8	116.2	116.2	138.2	108.2	108.2	129.3	99.8	99.8	119.9	90.9	90.9	109.9
			SHC	101.2	124.0	146.8	94.3	116.2	138.2	87.1	108.2	129.3	79.7	99.8	119.9	71.8	90.9	109.9
		67	TC	135.1	135.1	135.1	125.8	125.8	125.8	116.2	116.2	118.9	106.0	106.0	113.0	95.5	95.5	107.0
			SHC	81.1	105.6	130.1	75.6	100.1	124.6	70.0	94.4	118.9	64.2	88.6	113.0	58.3	82.6	107.0
		72	TC	149.7	149.7	149.7	139.9	139.9	139.9	129.8	129.8	129.8	119.0	119.0	119.0	107.8	107.8	107.8
			SHC	58.0	82.4	106.8	52.6	77.0.	101.3	47.1	71.4	95.8	41.4	65.7	90.0	35.6	59.8	84.1
		76	TC	—	162.4	162.4	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	63.5	87.2	—	—	—	—	—	—	—	—	—	—	—	—
5250 cfm	EA (wb)	58	TC	128.0	128.0	145.5	120.1	120.1	136.9	111.8	111.8	128.0	103.0	103.0	118.5	93.9	93.9	108.5
			SHC	110.5	128.0	145.5	103.2	120.1	136.9	95.6	111.8	128.0	87.6	103.0	118.5	79.3	93.9	108.5
		62	TC	128.2	128.2	151.6	120.2	120.2	142.8	111.9	111.9	133.5	103.2	103.2	123.8	94.0	94.0	113.5
			SHC	104.7	128.2	151.6	97.7	120.2	142.8	90.3	111.9	133.5	82.6	103.2	123.8	74.5	94.0	113.5
		67	TC	137.1	137.1	138.9	127.7	127.7	133.3	117.9	117.9	127.6	107.6	107.6	121.6	96.8	96.8	115.3
			SHC	85.3	112.1	138.9	79.8	106.5	133.3	74.1	100.8	127.6	68.2	94.9	121.6	62.2	88.7	115.3
		72	TC	151.8	151.8	151.8	141.8	141.8	141.8	131.4	131.4	131.4	120.6	120.6	120.6	109.2	109.2	109.2
			SHC	59.8	86.6	113.3	54.4	81.1	107.8	48.8	75.5	102.2	43.1	69.7	96.4	37.2	63.8	90.4
		76	TC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EA (db) — Entering Air Temperature (dry bulb)
EA (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)

48/50FC*N20 — Unit with Humidi-MiZer® System in Subcooling Mode — Cooling Capacities

TEMP (°F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR — SCFM/BF (80°F db)								
		5250/0.13			7000 /0.16			8750/0.19		
		Air Entering Evaporator — Ewb (°F)								
		72	67	62	72	67	62	72	67	62
75	TC	201.0	168.0	203.0	208.0	196.0	224.0	226.0	205.0	233.0
	SHC	113.0	126.0	68.0	128.0	169.0	89.0	157.0	194.0	101.0
	kW	16.6	15.8	18.2	16.5	16.7	18.9	17.2	16.9	19.1
85	TC	174.0	167.0	195.0	202.0	169.0	207.0	210.0	189.0	214.0
	SHC	87.0	126.0	61.0	123.0	142.0	73.0	141.0	179.0	83.0
	kW	17.5	17.7	20.1	18.4	17.5	20.4	18.6	18.2	20.5
95	TC	174.0	154.0	180.0	186.0	166.0	191.0	194.0	174.0	198.0
	SHC	88.0	114.0	47.0	108.0	141.0	59.0	126.0	165.0	69.0
	kW	19.7	19.3	21.9	20.0	19.6	22.2	20.2	19.8	22.4
105	TC	159.0	140.0	164.0	170.0	152.0	174.0	177.0	159.0	181.0
	SHC	74.0	101.0	33.0	93.0	127.0	43.0	111.0	151.0	53.0
	kW	21.4	21.0	23.8	21.7	21.3	24.0	21.9	21.5	24.2
115	TC	144.0	126.0	147.0	154.0	136.0	157.0	161.0	143.0	163.0
	SHC	60.0	87.0	18.0	78.0	113.0	27.0	96.0	136.0	37.0
	kW	23.3	22.8	25.8	23.6	23.1	26.0	23.7	23.3	26.2
125	TC	128.0	112.0	241.0	138.0	121.0	251.0	144.0	127.0	53.0
	SHC	46.0	74.0	104.0	63.0	99.0	117.0	80.0	121.0	50.0
	kW	25.3	24.9	17.5	25.6	25.1	17.7	25.7	25.3	10.4

48/50FC*N20 — Unit with Humidi-MiZer System in Hot Gas Reheat Mode — Cooling Capacities

TEMP (°F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR — Ewb (°F)								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative)			75 Dry Bulb 64 Wet Bulb (56% Relative)			75 Dry Bulb 65.3 Wet Bulb (60% Relative)		
		Air Entering Evaporator — cfm								
		5250	7000	8750	5250	7000	8750	5250	7000	8750
80	TC	86.0	92.0	93.0	89.0	95.0	100.0	95.0	102.0	104.0
	SHC	11.0	24.0	36.0	0.0	12.0	25.0	-6.0	5.0	14.0
	kW	12.9	12.9	12.9	12.9	12.9	13.0	12.9	12.9	13.0
75	TC	89.0	95.0	99.0	91.0	98.0	101.0	98.0	104.0	99.0
	SHC	13.0	28.0	42.0	3.0	14.0	26.0	-2.0	7.0	23.0
	kW	12.9	12.9	12.9	12.9	12.9	13.0	12.9	12.9	13.0
70	TC	90.0	97.0	100.0	96.0	100.0	103.0	100.0	105.0	110.0
	SHC	15.0	30.0	43.0	7.0	17.0	28.0	-1.0	9.0	20.0
	kW	12.9	12.9	12.9	12.9	12.9	13.0	12.9	12.9	13.0
60	TC	95.0	101.0	105.0	99.0	108.0	112.0	105.0	102.0	114.0
	SHC	20.0	34.0	48.0	10.0	24.0	37.0	5.0	21.0	24.0
	kW	12.9	12.9	12.9	12.9	12.9	13.0	12.9	12.9	13.0
50	TC	99.0	105.0	109.0	106.0	112.0	116.0	110.0	118.0	119.0
	SHC	24.0	38.0	52.0	17.0	29.0	41.0	10.0	20.0	28.0
	kW	12.9	12.9	12.9	12.9	12.9	13.0	12.9	12.9	13.0
40	TC	100.0	109.0	113.0	109.0	113.0	120.0	115.0	122.0	123.0
	SHC	26.0	42.0	56.0	21.0	30.0	45.0	15.0	25.0	33.0
	kW	12.9	12.9	12.9	12.9	12.9	13.0	12.9	12.9	13.0

LEGEND

Edb — Entering Dry Bulb
Ewb — Entering Wet Bulb
kW — Compressor Power Input
SCFM/BF — Standard Cubic Feet per Minute/Bypass Factor
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

Performance data (cont)

48/50FC**24 Two Stage Cooling Capacities

48/50FC**24				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EA (db)			EA (db)			EA (db)			EA (db)			EA (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
6000 cfm	EA (wb)	58	TC	217.1	217.1	228.2	205.0	205.0	215.7	194.0	194.0	204.3	179.6	179.6	189.5	165.2	165.2	174.4
			SHC	206.0	217.1	228.2	194.3	205.0	215.7	183.7	194.0	204.3	169.8	179.6	189.5	155.9	165.2	174.4
		62	TC	234.1	234.1	234.1	219.6	219.6	219.6	206.3	206.3	206.3	188.6	188.6	188.6	171.1	171.1	171.1
			SHC	185.4	196.8	208.1	176.4	187.7	199.0	167.8	179.1	190.4	157.4	168.7	179.9	147.0	158.2	169.5
		67	TC	258.1	258.1	258.1	242.4	242.4	242.4	228.4	228.4	228.4	209.3	209.3	209.3	190.4	190.4	190.4
			SHC	156.9	168.3	179.6	147.9	159.3	170.6	139.6	150.9	162.2	129.3	140.6	151.9	119.2	130.5	141.8
		72	TC	284.1	284.1	284.1	267.2	267.2	267.2	252.4	252.4	252.4	231.8	231.8	231.8	211.7	211.7	211.7
			SHC	127.7	139.1	150.4	118.7	130.0	141.4	110.6	121.9	133.1	100.3	111.6	122.9	90.3	101.6	112.9
		76	TC	—	305.8	305.8	—	287.9	287.9	—	270.9	270.9	—	250.5	250.5	—	229.3	229.3
			SHC	—	115.2	126.3	—	106.2	117.4	—	97.6	108.8	—	88.0	99.1	—	78.1	89.3
7000 cfm	EA (wb)	58	TC	230.3	230.3	242.0	217.6	217.6	228.9	205.1	205.1	216.0	190.6	190.6	201.0	175.2	175.2	185.0
			SHC	218.5	230.3	242.0	206.3	217.6	228.9	194.2	205.1	216.0	180.2	190.6	201.0	165.4	175.2	185.0
		62	TC	242.5	242.5	242.5	227.3	227.3	227.3	211.1	211.1	211.1	195.0	195.0	198.4	177.9	177.9	183.1
			SHC	201.4	214.6	227.7	192.1	205.2	218.3	182.3	195.3	208.3	172.5	185.5	198.4	158.4	170.8	183.1
		67	TC	266.6	266.6	266.6	250.1	250.1	250.1	232.7	232.7	232.7	215.5	215.5	215.5	195.8	195.8	195.8
			SHC	168.6	181.7	194.9	159.3	172.5	185.6	149.7	162.8	176.0	140.3	153.4	166.5	129.9	143.0	156.1
		72	TC	292.7	292.7	292.7	275.1	275.1	275.1	256.3	256.3	256.3	238.0	238.0	238.0	217.1	217.1	217.1
			SHC	134.7	147.8	160.9	125.5	138.6	151.7	116.0	129.1	142.1	106.7	119.8	132.8	96.6	109.6	122.6
		76	TC	—	314.5	314.5	—	295.8	295.8	—	276.0	276.0	—	256.9	256.9	—	234.8	234.8
			SHC	—	120.2	133.0	—	111.1	123.9	—	101.6	114.5	—	92.5	105.4	—	82.5	95.4
8000 cfm	EA (wb)	58	TC	241.4	241.4	253.5	228.0	228.0	239.7	214.9	214.9	226.2	199.6	199.6	210.3	183.4	183.4	193.5
			SHC	229.2	241.4	253.5	216.4	228.0	239.7	203.7	214.9	226.2	189.0	199.6	210.3	173.4	183.4	193.5
		62	TC	249.2	249.2	249.2	233.3	233.3	235.9	216.6	216.6	225.2	203.2	203.2	204.0	186.6	186.6	187.6
			SHC	216.7	231.2	245.8	206.9	221.4	235.9	196.4	210.8	225.2	178.0	191.0	204.0	163.0	175.3	187.6
		67	TC	273.2	273.2	273.2	256.1	256.1	256.1	238.0	238.0	238.0	220.3	220.3	220.3	200.0	200.0	200.0
			SHC	179.7	194.3	209.0	170.2	184.9	199.5	160.5	175.1	189.7	150.9	165.5	180.1	140.3	154.9	169.5
		72	TC	299.4	299.4	299.4	281.0	281.0	281.0	261.6	261.6	261.6	242.9	242.9	242.9	221.2	221.2	221.2
			SHC	141.3	155.9	170.5	132.0	146.6	161.1	122.4	136.9	151.4	113.0	127.5	142.0	102.7	117.2	131.6
		76	TC	—	321.3	321.3	—	301.9	301.9	—	281.3	281.3	—	261.7	261.7	—	239.0	239.0
			SHC	—	124.7	139.0	—	115.5	129.8	—	105.9	120.2	—	96.7	111.0	—	86.5	100.8
9000 cfm	EA (wb)	58	TC	250.7	250.7	263.3	236.7	236.7	248.9	223.1	223.1	234.7	207.1	207.1	218.1	190.2	190.2	200.6
			SHC	238.0	250.7	263.3	224.6	236.7	248.9	211.4	223.1	234.7	196.0	207.1	218.1	179.8	190.2	200.6
		62	TC	254.6	254.6	262.4	240.0	240.0	246.1	225.0	225.0	228.3	207.3	207.3	222.1	190.4	190.4	204.3
			SHC	230.2	246.3	262.4	215.5	230.8	246.1	199.6	213.9	228.3	192.5	207.3	222.1	176.5	190.4	204.3
		67	TC	278.4	278.4	278.4	260.8	260.8	260.8	242.2	242.2	242.2	224.1	224.1	224.1	203.3	203.3	203.3
			SHC	189.9	206.3	222.6	180.4	196.7	213.1	170.5	186.8	203.1	160.7	177.0	193.3	150.0	166.2	182.4
		72	TC	304.6	304.6	304.6	285.8	285.8	285.8	265.9	265.9	265.9	246.6	246.6	246.6	224.5	224.5	224.5
			SHC	147.3	163.6	179.8	137.9	154.1	170.4	128.1	144.3	160.5	118.6	134.8	151.0	108.2	124.4	140.5
		76	TC	—	326.6	326.6	—	306.6	306.6	—	285.6	285.6	—	265.5	265.5	—	242.3	242.3
			SHC	—	128.9	144.8	—	119.5	135.5	—	109.9	125.8	—	100.6	116.5	—	90.3	106.2
10000 cfm	EA (wb)	58	TC	258.6	258.6	271.5	244.1	244.1	256.5	228.7	228.7	240.5	213.4	213.4	224.7	195.9	195.9	206.5
			SHC	245.8	258.6	271.5	231.8	244.1	256.5	216.9	228.7	240.5	202.2	213.4	224.7	185.3	195.9	206.5
		62	TC	264.1	264.1	264.1	247.9	247.9	248.9	232.7	232.7	232.7	213.6	213.6	228.6	196.1	196.1	210.2
			SHC	228.3	243.4	258.5	218.7	233.8	248.9	203.0	217.1	231.3	198.6	213.6	228.6	182.0	196.1	210.2
		67	TC	282.6	282.6	282.6	264.7	264.7	264.7	245.6	245.6	245.6	227.1	227.1	227.1	206.0	206.0	206.0
			SHC	200.0	217.7	235.5	190.3	208.0	225.8	180.2	197.9	215.6	170.3	187.9	205.6	159.2	176.8	194.3
		72	TC	308.9	308.9	308.9	289.7	289.7	289.7	269.3	269.3	269.3	249.6	249.6	249.6	227.1	227.1	227.1
			SHC	153.2	170.9	188.5	143.7	161.3	179.0	133.8	151.4	169.1	124.2	141.8	159.4	113.7	131.2	148.8
		76	TC	—	330.9	330.9	—	310.5	310.5	—	293.0	293.0	—	268.6	268.6	—	245.0	245.0
			SHC	—	132.8	150.1	—	123.3	140.7	—	114.9	132.2	—	104.2	121.5	—	93.8	111.0

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EA (db) — Entering Air Temperature (dry bulb)
EA (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)

48/50FC**24 Single Stage Cooling Capacities

48/50FC**24				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EA (db)			EA (db)			EA (db)			EA (db)			EA (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
3600 cfm	EA (wb)	58	TC	126.5	126.5	137.1	120.4	120.4	130.7	113.7	113.7	123.5	106.5	106.5	115.9	98.5	98.5	107.4
			SHC	115.9	126.5	137.1	110.2	120.4	130.7	103.8	113.7	123.5	97.0	106.5	115.9	89.6	98.5	107.4
		62	TC	133.7	133.7	133.7	126.2	126.2	126.2	117.9	117.9	119.8	109.1	109.1	114.6	102.4	102.4	102.4
			SHC	105.8	117.5	129.2	101.3	113.0	124.7	96.5	108.2	119.8	91.3	103.0	114.6	81.3	91.5	101.6
		67	TC	147.4	147.4	147.4	139.2	139.2	139.2	130.4	130.4	130.4	120.9	120.9	120.9	110.7	110.7	110.7
			SHC	88.1	99.8	111.5	83.6	95.3	107.0	78.8	90.6	102.3	73.8	85.5	97.2	68.6	80.2	91.9
		72	TC	162.1	162.1	162.1	153.7	153.7	153.7	144.2	144.2	144.2	134.1	134.1	134.1	123.0	123.0	123.0
			SHC	69.9	81.6	93.2	65.6	77.2	88.9	60.8	72.5	84.1	55.9	67.5	79.2	50.7	62.3	73.9
		76	TC	—	175.4	175.4	—	166.1	166.1	—	156.0	156.0	—	145.2	145.2	—	133.5	133.5
			SHC	—	67.0	78.3	—	62.5	73.8	—	57.8	69.1	—	52.9	64.2	—	47.7	59.0
4200 cfm	EA (wb)	58	TC	134.2	134.2	145.5	127.5	127.5	138.4	120.3	120.3	130.8	112.6	112.6	122.5	104.1	104.1	113.5
			SHC	122.9	134.2	145.5	116.6	127.5	138.4	109.9	120.3	130.8	102.7	112.6	122.5	94.7	104.1	113.5
		62	TC	138.2	138.2	142.2	130.3	130.3	137.4	121.7	121.7	132.1	114.7	114.7	120.2	104.3	104.3	116.8
			SHC	115.1	128.7	142.2	110.3	123.9	137.4	105.2	118.6	132.1	95.8	108.0	120.2	91.7	104.3	116.8
		67	TC	151.6	151.6	151.6	143.3	143.3	143.3	134.2	134.2	134.2	124.3	124.3	124.3	113.6	113.6	113.6
			SHC	94.4	108.1	121.7	89.9	103.6	117.2	85.1	98.7	112.3	80.0	93.6	107.2	74.6	88.1	101.7
		72	TC	166.9	166.9	166.9	158.0	158.0	158.0	148.1	148.1	148.1	137.5	137.5	137.5	126.0	126.0	126.0
			SHC	73.5	87.0	100.6	69.0	82.5	96.1	64.2	77.7	91.3	59.2	72.7	86.2	53.8	67.3	80.8
		76	TC	—	180.0	180.0	—	170.5	170.5	—	160.0	160.0	—	148.7	148.7	—	136.6	136.6
			SHC	—	69.9	83.1	—	65.4	78.6	—	60.7	73.8	—	55.6	68.8	—	50.3	63.4
4800 cfm	EA (wb)	58	TC	140.2	140.2	151.8	133.4	133.4	144.6	125.8	125.8	136.5	117.6	117.6	127.8	108.7	108.7	118.4
			SHC	128.6	140.2	151.8	122.2	133.4	144.6	115.1	125.8	136.5	107.4	117.6	127.8	99.1	108.7	118.4
		62	TC	141.8	141.8	153.6	136.1	136.1	140.0	128.1	128.1	133.1	117.7	117.7	131.4	108.9	108.9	121.7
			SHC	123.6	138.6	153.6	113.2	126.6	140.0	107.1	120.1	133.1	104.1	117.7	131.4	96.0	108.9	121.7
		67	TC	155.1	155.1	155.1	146.6	146.6	146.6	137.1	137.1	137.1	126.8	126.8	126.8	115.9	115.9	115.9
			SHC	100.7	116.0	131.2	96.2	111.4	126.7	91.2	106.5	121.7	86.0	101.2	116.4	80.5	95.6	110.8
		72	TC	170.4	170.4	170.4	161.3	161.3	161.3	151.0	151.0	151.0	140.1	140.1	140.1	128.3	128.3	128.3
			SHC	76.9	92.1	107.2	72.4	87.5	102.7	67.5	82.7	97.8	62.4	77.5	92.6	57.0	72.1	87.1
		76	TC	—	183.6	183.6	—	173.9	173.9	—	163.0	163.0	—	151.3	151.3	—	—	—
			SHC	—	72.6	87.4	—	68.1	82.8	—	63.2	77.9	—	58.1	72.7	—	—	—
5400 cfm	EA (wb)	58	TC	145.3	145.3	157.4	138.3	138.3	150.0	130.4	130.4	141.5	121.9	121.9	132.5	112.6	112.6	122.6
			SHC	133.3	145.3	157.4	126.7	138.3	150.0	119.2	130.4	141.5	111.3	121.9	132.5	102.6	112.6	122.6
		62	TC	145.5	145.5	161.7	138.5	138.5	154.0	130.5	130.5	145.4	122.0	122.0	136.1	112.7	112.7	126.1
			SHC	129.4	145.5	161.7	122.9	138.5	154.0	115.6	130.5	145.4	107.8	122.0	136.1	99.4	112.7	126.1
		67	TC	158.2	158.2	158.2	149.1	149.1	149.1	139.3	139.3	139.3	128.9	128.9	128.9	117.7	117.7	119.8
			SHC	106.6	123.7	140.8	101.9	118.9	136.0	96.9	113.9	131.0	91.5	108.5	125.5	85.9	102.9	119.8
		72	TC	173.2	173.2	173.2	163.8	163.8	163.8	153.4	153.4	153.4	142.2	142.2	142.2	130.1	130.1	130.1
			SHC	79.9	96.9	113.9	75.3	92.3	109.3	70.4	87.3	104.3	65.2	82.1	99.0	59.8	76.6	93.4
		76	TC	—	187.0	187.0	—	176.5	176.5	—	165.3	165.3	—	—	—	—	—	—
			SHC	—	75.3	91.8	—	70.6	87.0	—	65.6	82.0	—	—	—	—	—	—
6000 cfm	EA (wb)	58	TC	150.2	150.2	162.5	142.5	142.5	154.4	134.3	134.3	145.7	125.5	125.5	136.3	115.9	115.9	126.1
			SHC	137.8	150.2	162.5	130.7	142.5	154.4	123.0	134.3	145.7	114.7	125.5	136.3	105.8	115.9	126.1
		62	TC	150.2	150.2	166.7	142.7	142.7	158.5	134.4	134.4	149.6	125.6	125.6	140.0	116.0	116.0	129.6
			SHC	133.7	150.2	166.7	126.8	142.7	158.5	119.3	134.4	149.6	111.2	125.6	140.0	102.5	116.0	129.6
		67	TC	160.4	160.4	160.4	151.2	151.2	151.2	141.2	141.2	141.2	130.6	130.6	134.1	119.2	119.2	127.9
			SHC	112.3	130.9	149.6	107.5	126.1	144.7	102.4	121.0	139.5	97.1	115.6	134.1	91.2	109.6	127.9
		72	TC	175.7	175.7	175.7	166.0	166.0	166.0	155.3	155.3	155.3	143.9	143.9	143.9	131.6	131.6	131.6
			SHC	83.0	101.6	120.1	78.4	96.9	115.3	73.4	91.8	110.2	68.2	86.5	104.9	62.6	80.9	99.2
		76	TC	—	189.4	189.4	—	178.7	178.7	—	—	—	—	—	—	—	—	—
			SHC	—	77.7	95.6	—	72.9	90.7	—	—	—	—	—	—	—	—	—

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EA (db) — Entering Air Temperature (dry bulb)
EA (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)

48/50FC*N24 — Unit with Humidi-MiZer® System in Subcooling Mode — Cooling Capacities

TEMP (°F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR — SCFM/BF (80°F db)								
		6000/0.14			8000 /0.15			10000/0.17		
		Air Entering Evaporator — Ewb (°F)								
		72	67	62	72	67	62	72	67	62
75	TC	271.0	242.0	215.0	288.0	259.0	234.0	300.0	270.0	244.0
	SHC	103.0	131.0	159.0	119.0	157.0	195.0	134.0	180.0	226.0
	kW	20.5	19.9	19.4	20.9	20.3	19.8	21.1	20.5	20.0
85	TC	251.0	223.0	198.0	267.0	240.0	214.0	278.0	250.0	225.0
	SHC	85.0	114.0	143.0	100.0	139.0	177.0	114.0	161.0	207.0
	kW	22.1	21.5	21.0	22.5	21.9	21.3	22.7	22.1	21.6
95	TC	230.0	204.0	180.0	245.0	219.0	195.0	254.0	228.0	204.0
	SHC	66.0	97.0	127.0	80.0	120.0	159.0	93.0	142.0	188.0
	kW	23.9	23.3	22.7	24.3	23.7	23.1	24.5	23.9	23.4
105	TC	209.0	184.0	162.0	222.0	197.0	175.0	230.0	206.0	183.0
	SHC	48.0	79.0	110.0	60.0	101.0	141.0	72.0	122.0	169.0
	kW	25.9	25.3	24.7	26.2	25.6	25.1	26.5	25.9	25.3
115	TC	187.0	164.0	142.0	199.0	175.0	154.0	206.0	182.0	161.0
	SHC	29.0	61.0	92.0	40.0	81.0	122.0	51.0	101.0	149.0
	kW	28.0	27.4	26.8	28.4	27.8	27.2	28.6	28.0	27.5
125	TC	165.0	142.0	122.0	175.0	153.0	132.0	181.0	159.0	138.0
	SHC	9.0	42.0	74.0	19.0	62.0	102.0	29.0	80.0	128.0
	kW	30.3	29.7	29.1	30.7	30.1	29.5	30.9	30.3	29.7

48/50FC*N24 — Unit with Humidi-MiZer System in Hot Gas Reheat Mode — Cooling Capacities

TEMP (°F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR — Ewb (°F)								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative)			75 Dry Bulb 64 Wet Bulb (56% Relative)			75 Dry Bulb 65.3 Wet Bulb (60% Relative)		
		Air Entering Evaporator — cfm								
		6000	8000	10000	6000	8000	10000	6000	8000	10000
80	TC	89.0	96.0	100.0	95.0	101.0	105.0	100.0	106.0	110.0
	SHC	5.0	19.0	33.0	-2.0	11.0	25.0	-5.0	7.0	19.0
	kW	16.0	16.1	16.1	16.0	16.1	16.2	16.1	16.1	16.2
75	TC	94.0	100.0	104.0	99.0	106.0	110.0	104.0	111.0	106.0
	SHC	9.0	23.0	37.0	1.0	14.0	27.0	-3.0	9.0	27.0
	kW	16.0	16.1	16.1	16.0	16.1	16.1	16.1	16.1	16.2
70	TC	98.0	105.0	109.0	103.0	110.0	114.0	108.0	115.0	119.0
	SHC	13.0	27.0	41.0	5.0	18.0	30.0	0.0	12.0	23.0
	kW	16.0	16.1	16.1	16.0	16.1	16.1	16.1	16.1	16.2
60	TC	107.0	114.0	118.0	112.0	119.0	123.0	117.0	116.0	128.0
	SHC	21.0	35.0	49.0	13.0	25.0	37.0	7.0	24.0	28.0
	kW	16.0	16.1	16.1	16.0	16.1	16.1	16.0	16.1	16.2
50	TC	115.0	123.0	128.0	120.0	128.0	132.0	125.0	132.0	137.0
	SHC	29.0	43.0	57.0	21.0	33.0	45.0	14.0	25.0	35.0
	kW	16.0	16.0	16.1	16.0	16.1	16.1	16.0	16.1	16.2
40	TC	123.0	131.0	136.0	128.0	136.0	141.0	133.0	141.0	146.0
	SHC	36.0	51.0	65.0	28.0	41.0	53.0	21.0	32.0	42.0
	kW	16.0	16.0	16.1	16.0	16.1	16.1	16.0	16.1	16.2

LEGEND

Edb — Entering Dry Bulb
Ewb — Entering Wet Bulb
kW — Compressor Power Input
SCFM/BF — Standard Cubic Feet per Minute/Bypass Factor
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

Performance data (cont)

48/50FC**28 Two Stage Cooling Capacities

48/50FC**28				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EA (db)			EA (db)			EA (db)			EA (db)			EA (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
7500 cfm	EA (wb)	58	TC	255.8	255.8	289.2	244.1	244.1	276.2	231.7	231.7	262.4	218.4	218.4	247.7	204.4	204.4	232.2
			SHC	222.4	255.8	289.2	211.9	244.1	276.2	200.9	231.7	262.4	189.1	218.4	247.7	176.7	204.4	232.2
		62	TC	272.4	272.4	272.4	257.7	257.7	262.3	242.4	242.4	253.6	226.0	226.0	244.5	208.9	208.9	234.6
			SHC	199.7	235.2	270.7	191.5	226.9	262.3	183.0	218.3	253.6	174.2	209.3	244.5	164.7	199.7	234.6
		67	TC	298.2	298.2	298.2	282.3	282.3	282.3	265.8	265.8	265.8	248.2	248.2	248.2	229.7	229.7	229.7
			SHC	165.1	200.7	236.4	157.1	192.7	228.3	148.9	184.5	220.0	140.3	175.9	211.4	131.5	167.0	202.4
		72	TC	326.3	326.3	326.3	309.1	309.1	309.1	291.4	291.4	291.4	272.6	272.6	272.6	252.8	252.8	252.8
			SHC	129.5	165.0	200.4	121.6	157.1	192.5	113.6	149.0	184.4	105.3	140.7	176.1	96.7	132.0	167.4
		76	TC	—	350.0	350.0	—	331.7	331.7	—	313.0	313.0	—	293.0	293.0	—	272.0	272.0
			SHC	—	135.8	169.8	—	128.0	162.4	—	120.1	154.7	—	111.9	146.7	—	103.4	138.3
8750 cfm	EA (wb)	58	TC	269.3	269.3	304.3	256.7	256.7	290.4	243.5	243.5	275.7	229.5	229.5	260.1	214.6	214.6	243.6
			SHC	234.3	269.3	304.3	223.1	256.7	290.4	211.3	243.5	275.7	198.8	229.5	260.1	185.6	214.6	243.6
		62	TC	280.9	280.9	294.7	265.5	265.5	285.9	249.5	249.5	276.7	234.7	234.7	255.4	215.1	215.1	253.9
			SHC	214.0	254.3	294.7	205.5	245.7	285.9	196.7	236.7	276.7	181.9	218.6	255.4	176.4	215.1	253.9
		67	TC	306.6	306.6	306.6	290.0	290.0	290.0	272.7	272.7	272.7	254.5	254.5	254.5	235.3	235.3	235.3
			SHC	174.5	215.2	255.9	166.4	207.0	247.6	158.0	198.6	239.2	149.3	189.8	230.3	140.4	180.8	221.1
		72	TC	335.0	335.0	335.0	317.0	317.0	317.0	298.5	298.5	298.5	278.9	278.9	278.9	258.4	258.4	258.4
			SHC	133.9	174.3	214.7	125.9	166.3	206.7	117.7	158.1	198.5	109.2	149.6	190.0	100.5	140.9	181.2
		76	TC	—	358.7	358.7	—	339.7	339.7	—	320.2	320.2	—	299.4	299.4	—	277.6	277.6
			SHC	—	140.9	180.1	—	133.0	172.4	—	125.1	164.6	—	116.7	156.4	—	108.1	147.9
10000 cfm	EA (wb)	58	TC	280.3	280.3	316.7	267.1	267.1	302.0	253.2	253.2	286.6	238.5	238.5	270.2	222.8	222.8	252.8
			SHC	244.0	280.3	316.7	232.2	267.1	302.0	219.9	253.2	286.6	206.7	238.5	270.2	192.9	222.8	252.8
		62	TC	287.6	287.6	316.9	271.6	271.6	307.0	256.4	256.4	289.6	241.7	241.7	267.0	223.8	223.8	263.9
			SHC	227.1	272.0	316.9	218.0	262.5	307.0	205.1	247.3	289.6	189.6	228.3	267.0	183.6	223.7	263.9
		67	TC	313.2	313.2	313.2	296.0	296.0	296.0	278.1	278.1	278.1	259.3	259.3	259.3	239.5	239.5	239.5
			SHC	183.4	228.9	274.4	175.0	220.5	265.9	166.6	211.9	257.2	157.7	203.0	248.2	148.6	193.7	238.8
		72	TC	341.6	341.6	341.6	323.0	323.0	323.0	303.9	303.9	303.9	283.8	283.8	283.8	262.6	262.6	262.6
			SHC	137.8	183.1	228.3	129.7	174.9	220.2	121.4	166.6	211.9	112.9	158.1	203.3	104.1	149.2	194.3
		76	TC	—	365.5	365.5	—	345.8	345.8	—	325.7	325.7	—	304.3	304.3	—	281.9	281.9
			SHC	—	145.6	189.7	—	137.7	181.9	—	129.6	174.0	—	121.2	165.6	—	112.5	157.0
11250 cfm	EA (wb)	58	TC	289.7	289.7	327.2	275.8	275.8	311.8	261.4	261.4	295.7	246.0	246.0	278.6	229.7	229.7	260.5
			SHC	252.2	289.7	327.2	239.9	275.8	311.8	227.0	261.4	295.7	213.4	246.0	278.6	199.0	229.7	260.5
		62	TC	294.0	294.0	330.4	276.8	276.8	324.9	261.6	261.6	307.5	246.2	246.2	289.8	229.9	229.9	271.0
			SHC	235.7	283.1	330.4	228.6	276.8	324.9	215.8	261.6	307.5	202.6	246.2	289.8	188.8	229.9	271.0
		67	TC	318.6	318.6	318.6	300.8	300.8	300.8	282.4	282.4	282.4	263.2	263.2	265.2	243.0	243.0	255.4
			SHC	191.7	241.8	291.9	183.2	233.3	283.3	174.6	224.5	274.5	165.6	215.4	265.2	156.3	205.8	255.4
		72	TC	346.9	346.9	346.9	327.9	327.9	327.9	308.1	308.1	308.1	287.6	287.6	287.6	265.9	265.9	265.9
			SHC	141.4	191.4	241.4	133.2	183.1	233.1	124.8	174.8	224.7	116.2	166.2	216.1	107.3	157.1	206.9
		76	TC	—	370.9	370.9	—	350.7	350.7	—	330.1	330.1	—	308.2	308.2	—	285.4	285.4
			SHC	—	150.0	198.8	—	142.0	190.9	—	133.9	182.9	—	125.4	174.5	—	116.7	165.8
12500 cfm	EA (wb)	58	TC	297.7	297.7	336.2	283.4	283.4	320.2	268.3	268.3	303.5	252.5	252.5	285.9	235.6	235.6	267.1
			SHC	259.3	297.7	336.2	246.5	283.4	320.2	233.1	268.3	303.5	219.1	252.5	285.9	204.1	235.6	267.1
		62	TC	298.3	298.3	349.7	283.6	283.6	332.8	268.6	268.6	315.5	253.9	253.9	298.6	235.8	235.8	277.8
			SHC	246.9	298.3	349.7	234.4	283.6	332.8	221.6	268.6	315.5	209.0	253.8	298.6	193.7	235.8	277.8
		67	TC	322.9	322.9	322.9	304.7	304.7	304.7	285.9	285.9	290.9	266.4	266.4	281.2	245.7	245.7	270.9
			SHC	199.5	254.2	308.8	191.0	245.5	300.0	182.2	236.5	290.9	173.0	227.1	281.2	163.4	217.2	270.9
		72	TC	351.3	351.3	351.3	331.7	331.7	331.7	311.5	311.5	311.5	290.7	290.7	290.7	268.6	268.6	268.6
			SHC	144.7	199.3	253.9	136.5	191.1	245.6	128.0	182.5	237.0	119.4	173.8	228.2	110.4	164.7	218.9
		76	TC	—	375.3	375.3	—	354.8	354.8	—	333.7	333.7	—	311.4	311.4	—	288.2	288.2
			SHC	—	154.3	207.6	—	146.2	199.7	—	138.0	191.5	—	129.5	183.0	—	120.7	174.2

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EA (db) — Entering Air Temperature (dry bulb)
EA (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)

48/50FC**28 Single Stage Cooling Capacities

48/50FC**28				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EA (db)			EA (db)			EA (db)			EA (db)			EA (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
4950 cfm	EA (wb)	58	TC	151.8	151.8	172.3	143.6	143.6	163.2	134.9	134.9	153.8	126.2	126.2	144.1	116.7	116.7	133.7
			SHC	131.3	151.8	172.3	123.9	143.6	163.2	116.1	134.9	153.8	108.3	126.2	144.1	99.8	116.7	133.7
		62	TC	155.0	155.0	171.4	145.4	145.4	165.4	136.1	136.1	159.0	128.3	128.3	143.6	116.9	116.9	139.5
			SHC	121.0	146.2	171.4	115.4	140.4	165.4	109.5	134.3	159.0	99.3	121.5	143.6	94.3	116.9	139.5
		67	TC	172.0	172.0	172.0	161.1	161.1	161.1	150.1	150.1	150.1	138.7	138.7	138.7	126.8	126.8	126.8
			SHC	97.6	122.8	148.1	91.9	117.2	142.4	86.3	111.5	136.7	80.6	105.8	130.9	74.7	99.8	124.9
		72	TC	188.5	188.5	188.5	177.9	177.9	177.9	165.9	165.9	165.9	153.8	153.8	153.8	141.1	141.1	141.1
			SHC	72.7	97.9	123.0	67.5	92.7	117.8	61.9	87.1	112.2	56.3	81.4	106.5	50.6	75.7	100.7
		76	TC	—	204.0	204.0	—	192.1	192.1	—	179.6	179.6	—	166.7	166.7	—	—	—
			SHC	—	77.9	102.3	—	72.6	97.0	—	67.1	91.6	—	61.5	86.0	—	—	—
5800 cfm	EA (wb)	58	TC	160.1	160.1	181.5	151.5	151.5	172.1	142.3	142.3	162.0	132.9	132.9	151.6	122.9	122.9	140.6
			SHC	138.6	160.1	181.5	130.9	151.5	172.1	122.6	142.3	162.0	114.2	132.9	151.6	105.3	122.9	140.6
		62	TC	161.5	161.5	183.7	153.8	153.8	170.4	144.9	144.9	159.6	133.0	133.0	158.0	123.0	123.0	146.6
			SHC	129.0	156.3	183.7	120.0	145.2	170.4	112.0	135.8	159.6	108.1	133.0	158.0	99.5	123.0	146.6
		67	TC	176.2	176.2	176.2	165.4	165.4	165.4	153.8	153.8	153.8	142.1	142.1	145.3	129.8	129.8	139.1
			SHC	104.5	133.7	162.9	98.9	128.0	157.1	93.1	122.2	151.3	87.3	116.3	145.3	81.3	110.2	139.1
		72	TC	193.6	193.6	193.6	181.4	181.4	181.4	169.8	169.8	169.8	157.2	157.2	157.2	144.1	144.1	144.1
			SHC	75.9	105.0	134.1	70.3	99.4	128.5	64.9	93.9	123.0	59.2	88.2	117.2	53.4	82.3	111.3
		76	TC	—	209.0	209.0	—	196.3	196.3	—	183.6	183.6	—	—	—	—	—	—
			SHC	—	81.7	110.0	—	76.3	104.5	—	70.7	99.0	—	—	—	—	—	—
6600 cfm	EA (wb)	58	TC	166.5	166.5	188.7	157.4	157.4	178.7	148.0	148.0	168.3	138.1	138.1	157.4	127.6	127.6	145.8
			SHC	144.3	166.5	188.7	136.1	157.4	178.7	127.6	148.0	168.3	118.8	138.1	157.4	109.4	127.6	145.8
		62	TC	167.0	167.0	196.7	157.6	157.6	186.1	148.1	148.1	175.3	138.2	138.2	164.0	127.8	127.8	152.1
			SHC	137.2	167.0	196.7	129.1	157.6	186.1	121.0	148.1	175.3	112.4	138.2	164.0	103.4	127.8	152.1
		67	TC	179.3	179.3	179.3	168.5	168.5	170.2	156.5	156.5	164.2	144.5	144.5	158.3	132.0	132.0	151.7
			SHC	110.6	143.3	176.0	105.0	137.6	170.2	99.2	131.7	164.2	93.3	125.8	158.3	87.1	119.4	151.7
		72	TC	197.3	197.3	197.3	184.4	184.4	184.4	172.4	172.4	172.4	159.6	159.6	159.6	146.2	146.2	146.2
			SHC	78.7	111.4	144.0	72.9	105.6	138.2	67.4	100.0	132.6	61.7	94.2	126.7	55.8	88.3	120.7
		76	TC	—	212.4	212.4	—	199.5	199.5	—	—	—	—	—	—	—	—	—
			SHC	—	85.1	116.8	—	79.5	111.3	—	—	—	—	—	—	—	—	—
7450 cfm	EA (wb)	58	TC	172.4	172.4	195.3	162.9	162.9	184.8	153.0	153.0	173.9	142.7	142.7	162.5	131.8	131.8	150.5
			SHC	149.4	172.4	195.3	140.9	162.9	184.8	132.0	153.0	173.9	122.8	142.7	162.5	113.1	131.8	150.5
		62	TC	172.5	172.5	203.1	163.0	163.0	192.3	153.1	153.1	181.1	142.8	142.8	169.3	131.9	131.9	156.9
			SHC	141.9	172.5	203.1	133.7	163.0	192.3	125.2	153.1	181.1	116.3	142.8	169.3	106.9	131.9	156.9
		67	TC	182.3	182.3	189.5	171.1	171.1	183.5	158.8	158.8	177.5	146.6	146.6	170.8	133.9	133.9	163.8
			SHC	116.9	153.2	189.5	111.2	147.4	183.5	105.3	141.4	177.5	99.1	135.0	170.8	92.7	128.2	163.8
		72	TC	200.1	200.1	200.1	186.9	186.9	186.9	174.7	174.7	174.7	161.6	161.6	161.6	148.0	148.0	148.0
			SHC	81.4	117.7	153.9	75.5	111.8	148.1	70.0	106.2	142.4	64.2	100.4	136.5	58.3	94.3	130.3
		76	TC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8250 cfm	EA (wb)	58	TC	177.0	177.0	200.4	166.6	166.6	189.0	157.0	157.0	178.4	146.4	146.4	166.7	135.2	135.2	154.3
			SHC	153.5	177.0	200.4	144.2	166.6	189.0	135.6	157.0	178.4	126.1	146.4	166.7	116.1	135.2	154.3
		62	TC	176.4	176.4	207.6	167.3	167.3	197.3	157.1	157.1	185.7	146.5	146.5	173.6	135.3	135.3	160.8
			SHC	145.2	176.4	207.6	137.3	167.3	197.3	128.5	157.1	185.7	119.4	146.5	173.6	109.8	135.3	160.8
		67	TC	183.9	183.9	201.8	172.2	172.2	195.7	166.1	166.1	166.1	148.4	148.4	181.9	137.5	137.5	162.5
			SHC	122.5	162.1	201.8	116.6	156.2	195.7	95.6	122.2	148.8	104.2	143.0	181.9	93.0	127.8	162.5
		72	TC	202.1	202.1	202.1	189.6	189.6	189.6	176.5	176.5	176.5	163.2	163.2	163.2	149.3	149.3	149.3
			SHC	83.7	123.4	163.1	78.1	117.7	157.3	72.3	111.8	151.4	66.5	105.9	145.4	60.5	99.8	139.1
		76	TC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EA (db) — Entering Air Temperature (dry bulb)
EA (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)

48/50FC*N28 — Unit with Humidi-MiZer® System in Subcooling Mode — Cooling Capacities

TEMP (°F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR — SCFM/BF (80°F db)								
		6000/0.14			8000 /0.15			10000/0.17		
		Air Entering Evaporator — Ewb (°F)								
		72	67	62	72	67	62	72	67	62
75	TC	316.0	292.0	263.0	343.0	312.0	282.0	353.0	321.0	292.0
	SHC	124.0	168.0	204.0	152.0	200.0	245.0	168.0	225.0	279.0
	kW	24.1	23.8	23.2	25.0	24.3	23.6	25.1	24.4	23.8
85	TC	302.0	272.0	244.0	320.0	289.0	262.0	332.0	301.0	273.0
	SHC	112.0	150.0	187.0	131.0	179.0	226.0	148.0	206.0	261.0
	kW	26.5	25.8	25.1	26.9	26.2	25.6	27.2	26.5	25.9
95	TC	280.0	252.0	225.0	297.0	268.0	242.0	307.0	278.0	252.0
	SHC	93.0	131.0	169.0	110.0	160.0	208.0	126.0	186.0	241.0
	kW	28.7	28.0	27.3	29.1	28.4	27.7	29.4	28.7	28.0
105	TC	259.0	230.0	206.0	274.0	245.0	220.0	284.0	255.0	230.0
	SHC	74.0	113.0	151.0	90.0	139.0	189.0	105.0	165.0	221.0
	kW	31.2	30.4	29.7	31.6	30.8	30.1	31.9	31.1	30.4
115	TC	237.0	209.0	185.0	251.0	222.0	199.0	260.0	231.0	208.0
	SHC	55.0	93.0	133.0	70.0	119.0	169.0	84.0	143.0	200.0
	kW	33.8	33.0	32.3	34.2	33.4	32.7	34.5	33.6	33.0
125	TC	212.0	187.0	164.0	225.0	199.0	177.0	232.0	206.0	185.0
	SHC	33.0	74.0	115.0	46.0	98.0	149.0	60.0	121.0	179.0
	kW	36.5	35.7	35.1	36.9	36.1	35.4	37.1	36.3	35.7

48/50FC*N28 — Unit with Humidi-MiZer System in Hot Gas Reheat Mode — Cooling Capacities

TEMP (°F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR — Ewb (°F)								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative)			75 Dry Bulb 64 Wet Bulb (56% Relative)			75 Dry Bulb 65.3 Wet Bulb (60% Relative)		
		Air Entering Evaporator — cfm								
		7500	10000	12500	7500	10000	12500	7500	10000	12500
80	TC	130.0	139.0	145.0	138.0	147.0	154.0	146.0	154.0	162.0
	SHC	39.0	60.0	81.0	31.0	49.0	67.0	24.0	39.0	55.0
	kW	17.8	17.9	17.9	17.9	17.9	18.0	17.9	18.0	18.0
75	TC	134.0	144.0	150.0	143.0	152.0	158.0	150.0	160.0	155.0
	SHC	44.0	65.0	85.0	35.0	53.0	71.0	27.0	44.0	66.0
	kW	17.8	17.9	17.9	17.9	17.9	18.0	17.9	18.0	18.0
70	TC	138.0	147.0	154.0	146.0	156.0	162.0	154.0	163.0	170.0
	SHC	47.0	68.0	89.0	39.0	57.0	75.0	32.0	47.0	63.0
	kW	17.8	17.9	17.9	17.9	17.9	18.0	17.9	18.0	18.0
60	TC	146.0	156.0	162.0	154.0	164.0	171.0	162.0	161.0	175.0
	SHC	55.0	76.0	96.0	46.0	65.0	82.0	39.0	63.0	68.0
	kW	17.8	17.9	17.9	17.9	17.9	18.0	17.9	18.0	18.0
50	TC	154.0	163.0	170.0	162.0	172.0	179.0	169.0	179.0	186.0
	SHC	63.0	83.0	104.0	53.0	72.0	90.0	46.0	62.0	78.0
	kW	17.8	17.9	17.9	17.9	17.9	18.0	17.9	18.0	18.0
40	TC	160.0	171.0	177.0	169.0	179.0	186.0	176.0	187.0	194.0
	SHC	69.0	91.0	111.0	61.0	79.0	97.0	53.0	69.0	85.0
	kW	17.8	17.9	17.9	17.9	17.9	18.0	17.9	18.0	18.0

LEGEND

Edb — Entering Dry Bulb
Ewb — Entering Wet Bulb
kW — Compressor Power Input
SCFM/BF — Standard Cubic Feet per Minute/Bypass Factor
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

Performance data (cont)

48/50FC**30 Two Stage Cooling Capacities

48/50FC**30				AMBIENT TEMPERATURE (°F)														
				85			95			105			115			125		
				EA (db)			EA (db)			EA (db)			EA (db)			EA (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
8250 cfm	EA (wb)	58	TC	273.2	273.2	311.4	263.3	263.3	300.1	252.6	252.6	288.1	240.9	240.9	274.7	227.9	227.9	260.0
			SHC	234.9	273.2	311.4	226.4	263.3	300.1	217.2	252.6	288.1	207.0	240.9	274.7	195.8	227.9	260.0
		62	TC	295.4	295.4	295.4	282.2	282.2	282.4	267.7	267.7	275.4	252.2	252.2	267.8	235.3	235.3	259.7
			SHC	209.2	249.0	288.8	202.9	242.7	282.4	196.1	235.8	275.4	188.8	228.3	267.8	181.0	220.3	259.7
		67	TC	327.8	327.8	327.8	313.2	313.2	313.2	297.3	297.3	297.3	280.2	280.2	280.2	261.6	261.6	261.6
			SHC	172.5	212.4	252.3	166.3	206.1	246.0	159.7	199.5	239.3	152.6	192.4	232.2	145.0	184.8	224.5
		72	TC	363.4	363.4	363.4	347.2	347.2	347.2	329.7	329.7	329.7	310.9	310.9	310.9	290.5	290.5	290.5
			SHC	135.1	174.7	214.3	128.9	168.5	208.1	122.3	161.9	201.5	115.3	154.8	194.4	107.8	147.4	186.9
		76	TC	—	393.4	393.4	—	375.8	375.8	—	356.8	356.8	—	336.5	336.5	—	—	—
			SHC	—	143.8	180.9	—	137.6	175.7	—	131.1	169.5	—	124.1	162.8	—	—	—
9650 cfm	EA (wb)	58	TC	290.5	290.5	330.7	279.9	279.9	318.6	268.2	268.2	305.4	255.3	255.3	290.8	241.3	241.3	274.9
			SHC	250.3	290.5	330.7	241.1	279.9	318.6	231.0	268.2	305.4	219.9	255.3	290.8	207.7	241.3	274.9
		62	TC	306.5	306.5	317.6	292.5	292.5	310.8	277.3	277.3	303.3	260.8	260.8	294.9	245.0	245.0	277.5
			SHC	226.7	272.2	317.6	220.2	265.5	310.8	213.0	258.1	303.3	205.1	250.0	294.9	192.8	235.1	277.5
		67	TC	339.3	339.3	339.3	323.6	323.6	323.6	306.8	306.8	306.8	288.6	288.6	288.6	269.0	269.0	269.0
			SHC	184.4	230.1	275.8	178.0	223.6	269.2	171.1	216.7	262.2	163.7	209.3	254.8	155.9	201.4	246.8
		72	TC	375.2	375.2	375.2	357.9	357.9	357.9	339.3	339.3	339.3	319.4	319.4	319.4	—	—	—
			SHC	141.0	186.3	231.7	134.5	179.9	225.2	127.7	173.1	218.4	120.5	165.8	211.2	—	—	—
		76	TC	—	405.4	405.4	—	386.7	386.7	—	366.7	366.7	—	345.2	345.2	—	—	—
			SHC	—	150.6	194.3	—	144.2	188.2	—	137.4	181.7	—	130.3	174.7	—	—	—
11000 cfm	EA (wb)	58	TC	304.5	304.5	346.2	293.0	293.0	333.2	280.5	280.5	319.1	266.8	266.8	303.5	251.8	251.8	286.5
			SHC	262.7	304.5	346.2	252.7	293.0	333.2	241.9	280.5	319.1	230.0	266.8	303.5	217.0	251.8	286.5
		62	TC	315.2	315.2	343.5	300.4	300.4	336.0	284.5	284.5	327.1	267.6	267.6	316.8	256.5	256.5	280.9
			SHC	242.4	292.9	343.5	235.3	285.6	336.0	227.3	277.2	327.1	218.4	267.6	316.8	197.5	239.2	280.9
		67	TC	347.9	347.9	347.9	331.5	331.5	331.5	313.9	313.9	313.9	295.0	295.0	295.0	274.6	274.6	274.6
			SHC	195.0	246.0	297.1	188.3	239.3	290.3	181.2	232.2	283.1	173.7	224.5	275.4	165.7	216.4	267.2
		72	TC	384.0	384.0	384.0	365.9	365.9	365.9	346.5	346.5	346.5	325.8	325.8	325.8	—	—	—
			SHC	146.0	196.8	247.5	139.4	190.1	240.9	132.4	183.1	233.9	125.0	175.8	226.5	—	—	—
		76	TC	—	414.5	414.5	—	394.9	394.9	—	374.0	374.0	—	351.7	351.7	—	—	—
			SHC	—	156.5	205.7	—	149.9	199.4	—	143.0	192.6	—	135.8	185.5	—	—	—
12400 cfm	EA (wb)	58	TC	316.8	316.8	360.0	304.6	304.6	346.2	291.3	291.3	331.1	276.8	276.8	314.6	260.9	260.9	296.7
			SHC	273.6	316.8	360.0	263.0	304.6	346.2	251.5	291.3	331.1	238.9	276.8	314.6	225.2	260.9	296.7
		62	TC	322.4	322.4	367.5	309.4	309.4	348.4	296.1	296.1	326.6	277.0	277.0	327.6	261.2	261.2	309.0
			SHC	256.8	312.2	367.5	244.1	296.2	348.4	230.0	278.3	326.6	226.4	277.0	327.6	213.4	261.2	309.0
		67	TC	355.1	355.1	355.1	338.0	338.0	338.0	319.8	319.8	319.8	300.2	300.2	300.2	279.2	279.2	287.2
			SHC	205.2	261.7	318.2	198.4	254.8	311.2	191.1	247.4	303.7	183.4	239.6	295.8	175.2	231.2	287.2
		72	TC	391.4	391.4	391.4	372.5	372.5	372.5	352.5	352.5	352.5	331.1	331.1	331.1	—	—	—
			SHC	150.7	206.9	263.1	144.0	200.2	256.4	136.9	193.0	249.2	129.4	185.5	241.7	—	—	—
		76	TC	—	422.0	422.0	—	401.6	401.6	—	380.0	380.0	—	357.1	357.1	—	—	—
			SHC	—	162.1	216.8	—	155.5	210.3	—	148.5	203.5	—	141.1	196.2	—	—	—
13750 cfm	EA (wb)	58	TC	327.1	327.1	371.5	314.2	314.2	356.9	300.3	300.3	341.1	285.0	285.0	323.8	268.5	268.5	305.1
			SHC	282.7	327.1	371.5	271.6	314.2	356.9	259.4	300.3	341.1	246.2	285.0	323.8	231.9	268.5	305.1
		62	TC	328.4	328.4	387.9	314.5	314.5	371.5	300.6	300.6	355.1	292.1	292.1	305.6	268.7	268.7	317.6
			SHC	269.0	328.4	387.9	257.5	314.5	371.5	246.0	300.6	355.1	218.7	262.1	305.6	219.8	268.7	317.6
		67	TC	360.8	360.8	360.8	343.2	343.2	343.2	324.4	324.4	324.4	304.4	304.4	314.5	283.0	283.0	305.4
			SHC	214.5	276.1	337.6	207.5	269.0	330.5	200.1	261.5	322.8	192.2	253.4	314.5	183.7	244.6	305.4
		72	TC	397.2	397.2	397.2	377.8	377.8	377.8	357.2	357.2	357.2	335.2	335.2	335.2	—	—	—
			SHC	154.9	216.3	277.6	148.1	209.4	270.7	140.9	202.2	263.5	133.3	194.5	255.8	—	—	—
		76	TC	—	427.9	427.9	—	407.0	407.0	—	384.8	384.8	—	361.3	361.3	—	—	—
			SHC	—	167.3	227.1	—	160.5	220.5	—	153.4	213.5	—	145.9	206.1	—	—	—

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EA (db) — Entering Air Temperature (dry bulb)
EA (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)

48/50FC**30 Single Stage Cooling Capacities

48/50FC**30				AMBIENT TEMPERATURE (°F)															
				85			95			105			115			125		
				EA (db)			EA (db)			EA (db)			EA (db)			EA (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
4950 cfm	EA (wb)	58	TC	159.1	159.1	181.8	153.3	153.3	175.2	147.1	147.1	168.1	140.3	140.3	160.3	132.8	132.8	151.8
			SHC	136.4	159.1	181.8	131.4	153.3	175.2	126.1	147.1	168.1	120.3	140.3	160.3	113.9	132.8	151.8
		62	TC	167.9	167.9	175.8	159.9	159.9	172.1	151.5	151.5	168.2	142.5	142.5	163.8	136.0	136.0	151.3
			SHC	123.9	149.8	175.8	120.3	146.2	172.1	116.5	142.3	168.2	112.4	138.1	163.8	104.7	128.0	151.3
		67	TC	188.8	188.8	188.8	179.9	179.9	179.9	170.5	170.5	170.5	160.5	160.5	160.5	149.6	149.6	149.6
			SHC	101.4	127.4	153.4	97.8	123.8	149.8	94.1	120.1	146.1	90.2	116.2	142.2	86.1	112.0	138.0
		72	TC	211.9	211.9	211.9	202.0	202.0	202.0	191.5	191.5	191.5	180.4	180.4	180.4	168.4	168.4	168.4
			SHC	78.5	104.4	130.4	75.0	100.9	126.8	71.3	97.2	123.1	67.4	93.3	119.2	63.3	89.1	115.0
		76	TC	—	231.6	231.6	—	220.8	220.8	—	209.4	209.4	—	197.3	197.3	—	184.4	184.4
			SHC	—	85.7	110.7	—	82.1	107.2	—	78.4	103.6	—	74.5	99.7	—	70.4	95.7
5800 cfm	EA (wb)	58	TC	170.6	170.6	194.6	164.1	164.1	187.2	157.2	157.2	179.3	149.8	149.8	170.8	141.5	141.5	161.4
			SHC	146.7	170.6	194.6	141.1	164.1	187.2	135.1	157.2	179.3	128.7	149.8	170.8	121.6	141.5	161.4
		62	TC	174.7	174.7	196.0	166.3	166.3	191.7	157.6	157.6	187.1	150.1	150.1	178.1	141.7	141.7	168.3
			SHC	136.2	166.1	196.0	132.2	162.0	191.7	128.0	157.6	187.1	121.9	150.0	178.1	115.2	141.7	168.3
		67	TC	195.7	195.7	195.7	186.2	186.2	186.2	176.2	176.2	176.2	165.5	165.5	165.5	154.0	154.0	154.0
			SHC	109.9	140.0	170.2	106.1	136.3	166.5	102.3	132.4	162.6	98.2	128.3	158.4	93.8	123.9	153.9
		72	TC	219.1	219.1	219.1	208.6	208.6	208.6	197.4	197.4	197.4	185.6	185.6	185.6	172.9	172.9	172.9
			SHC	82.8	112.9	143.0	79.1	109.2	139.2	75.2	105.3	135.3	71.2	101.2	131.2	66.9	96.9	126.9
		76	TC	—	239.1	239.1	—	227.6	227.6	—	215.5	215.5	—	—	—	—	—	—
			SHC	—	90.6	119.9	—	86.9	116.2	—	83.0	112.3	—	—	—	—	—	—
6600 cfm	EA (wb)	58	TC	179.7	179.7	204.6	172.6	172.6	196.6	165.2	165.2	188.1	157.1	157.1	179.0	148.3	148.3	168.9
			SHC	154.7	179.7	204.6	148.7	172.6	196.6	142.3	165.2	188.1	135.3	157.1	179.0	127.7	148.3	168.9
		62	TC	183.3	183.3	203.9	173.0	173.0	204.9	165.4	165.4	196.1	157.3	157.3	186.5	148.5	148.5	176.0
			SHC	142.6	173.2	203.9	140.9	172.9	204.9	134.8	165.4	196.1	128.2	157.3	186.5	121.0	148.5	176.0
		67	TC	200.7	200.7	200.7	190.8	190.8	190.8	180.3	180.3	180.3	169.2	169.2	172.9	157.4	157.4	168.3
			SHC	117.3	151.3	185.3	113.4	147.4	181.4	109.4	143.3	177.3	105.2	139.0	172.9	100.7	134.5	168.3
		72	TC	224.3	224.3	224.3	213.2	213.2	213.2	201.7	201.7	201.7	189.4	189.4	189.4	176.3	176.3	176.3
			SHC	86.4	120.3	154.2	82.5	116.4	150.3	78.6	112.4	146.3	74.4	108.3	142.1	70.1	103.8	137.6
		76	TC	—	244.6	244.6	—	232.5	232.5	—	—	—	—	—	—	—	—	—
			SHC	—	94.9	127.9	—	91.0	124.1	—	—	—	—	—	—	—	—	—
7450 cfm	EA (wb)	58	TC	187.8	187.8	213.6	180.3	180.3	205.1	172.4	172.4	196.1	163.7	163.7	186.3	154.4	154.4	175.6
			SHC	162.0	187.8	213.6	155.5	180.3	205.1	148.7	172.4	196.1	141.2	163.7	186.3	133.2	154.4	175.6
		62	TC	188.1	188.1	222.5	180.5	180.5	213.6	172.6	172.6	204.2	163.9	163.9	194.0	154.6	154.6	182.9
			SHC	153.6	188.1	222.5	147.4	180.5	213.6	140.9	172.6	204.2	133.9	163.9	194.0	126.2	154.6	182.9
		67	TC	205.1	205.1	205.1	194.7	194.7	196.4	183.9	183.9	192.2	172.4	172.4	187.7	160.1	160.1	182.8
			SHC	124.7	162.6	200.6	120.7	158.6	196.4	116.6	154.4	192.2	112.3	150.0	187.7	107.6	145.2	182.8
		72	TC	228.7	228.7	228.7	217.2	217.2	217.2	205.2	205.2	205.2	192.5	192.5	192.5	179.0	179.0	179.0
			SHC	89.8	127.7	165.5	85.9	123.7	161.6	81.8	119.7	157.5	77.6	115.4	153.1	73.1	110.8	148.5
		76	TC	—	249.0	249.0	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	99.0	135.9	—	—	—	—	—	—	—	—	—	—	—	—
8250 cfm	EA (wb)	58	TC	194.5	194.5	221.0	186.6	186.6	212.1	178.2	178.2	202.5	169.1	169.1	192.2	159.3	159.3	181.0
			SHC	168.0	194.5	221.0	161.2	186.6	212.1	153.9	178.2	202.5	146.1	169.1	192.2	137.5	159.3	181.0
		62	TC	194.7	194.7	230.1	186.8	186.8	220.8	178.4	178.4	210.9	169.3	169.3	200.1	159.4	159.4	188.5
			SHC	159.3	194.7	230.1	152.8	186.8	220.8	145.9	178.4	210.9	138.5	169.3	200.1	130.4	159.4	188.5
		67	TC	208.4	208.4	214.4	197.7	197.7	210.2	186.6	186.6	205.8	174.8	174.8	200.9	162.4	162.4	195.4
			SHC	131.3	172.8	214.4	127.2	168.7	210.2	123.0	164.4	205.8	118.5	159.7	200.9	113.6	154.5	195.4
		72	TC	232.1	232.1	232.1	220.3	220.3	220.3	207.9	207.9	207.9	194.9	194.9	194.9	181.1	181.1	181.1
			SHC	92.8	134.4	175.9	88.8	130.3	171.8	84.7	126.1	167.6	80.4	121.8	163.1	75.8	117.1	158.4
		76	TC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

— — Do Not Operate
cfm — Cubic Feet Per Minute (Supply Air)
EA (db) — Entering Air Temperature (dry bulb)
EA (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)

48/50FC*N30 — Unit with Humidi-MiZer® System in Subcooling Mode — Cooling Capacities

TEMP (°F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR — SCFM/BF (80°F db)								
		6000/0.14			8000 /0.15			10000/0.17		
		Air Entering Evaporator — Ewb (°F)								
		72	67	62	72	67	62	72	67	62
75	TC	317.0	286.0	253.0	347.0	309.0	274.0	362.0	323.0	283.0
	SHC	108.0	150.0	187.0	137.0	185.0	232.0	157.0	214.0	266.0
	kW	28.4	27.9	27.3	29.2	28.4	27.8	29.5	28.7	27.9
85	TC	306.0	270.0	237.0	325.0	290.0	256.0	328.0	303.0	270.0
	SHC	98.0	135.0	172.0	117.0	168.0	215.0	126.0	196.0	253.0
	kW	30.7	30.0	29.3	31.2	30.4	29.8	31.1	30.7	30.1
95	TC	287.0	252.0	220.0	305.0	270.0	238.0	317.0	282.0	252.0
	SHC	81.0	119.0	157.0	99.0	149.0	198.0	116.0	177.0	236.0
	kW	32.9	32.2	31.5	33.4	32.6	32.0	33.7	32.9	32.3
105	TC	267.0	234.0	204.0	283.0	250.0	220.0	294.0	260.0	231.0
	SHC	63.0	103.0	142.0	80.0	132.0	181.0	96.0	158.0	217.0
	kW	35.4	34.7	34.0	35.8	35.1	34.5	36.1	35.4	34.7
115	TC	245.0	215.0	187.0	260.0	229.0	201.0	269.0	238.0	211.0
	SHC	44.0	86.0	126.0	60.0	113.0	164.0	75.0	138.0	199.0
	kW	38.1	37.4	36.7	38.5	37.8	37.2	38.8	38.1	37.5
125	TC	223.0	194.0	167.0	236.0	207.0	180.0	244.0	214.0	189.0
	SHC	25.0	68.0	109.0	39.0	93.0	146.0	53.0	118.0	179.0
	kW	41.0	40.3	39.6	41.4	40.7	40.0	41.7	41.0	40.3

48/50FC*N30 — Unit with Humidi-MiZer System in Hot Gas Reheat Mode — Cooling Capacities

TEMP (°F) AIR ENTERING CONDENSER (Edb)		AIR ENTERING EVAPORATOR — Ewb (°F)								
		75 Dry Bulb 62.5 Wet Bulb (50% Relative)			75 Dry Bulb 64 Wet Bulb (56% Relative)			75 Dry Bulb 65.3 Wet Bulb (60% Relative)		
		Air Entering Evaporator — cfm								
		8250	11000	13750	8250	11000	13750	8250	11000	13750
80	TC	127.0	137.0	139.0	134.0	141.0	148.0	142.0	149.0	153.0
	SHC	13.0	37.0	55.0	-1.0	16.0	37.0	-10.0	4.0	19.0
	kW	20.7	20.8	21.2	21.0	21.2	21.3	21.1	21.4	23.6
75	TC	135.0	144.0	148.0	142.0	149.0	154.0	148.0	155.0	152.0
	SHC	21.0	44.0	66.0	7.0	24.0	43.0	-5.0	11.0	49.0
	kW	20.7	20.8	20.9	20.9	21.2	21.3	21.2	21.3	21.0
70	TC	142.0	151.0	157.0	151.0	159.0	165.0	157.0	166.0	173.0
	SHC	28.0	51.0	74.0	16.0	36.0	56.0	6.0	24.0	43.0
	kW	20.6	20.8	20.9	20.7	20.8	20.9	20.8	20.9	21.0
60	TC	156.0	165.0	172.0	165.0	174.0	180.0	172.0	167.0	188.0
	SHC	42.0	65.0	88.0	30.0	50.0	70.0	20.0	48.0	55.0
	kW	20.6	20.8	20.9	20.7	20.8	20.9	20.8	20.9	21.0
50	TC	170.0	177.0	186.0	178.0	185.0	194.0	185.0	193.0	202.0
	SHC	55.0	75.0	102.0	43.0	59.0	83.0	33.0	45.0	68.0
	kW	20.6	21.2	20.8	20.7	21.2	20.9	20.8	21.3	21.0
40	TC	183.0	193.0	199.0	191.0	201.0	208.0	198.0	209.0	216.0
	SHC	68.0	92.0	115.0	56.0	76.0	96.0	46.0	63.0	80.0
	kW	20.6	20.8	20.8	20.7	20.8	20.9	20.8	20.9	21.0

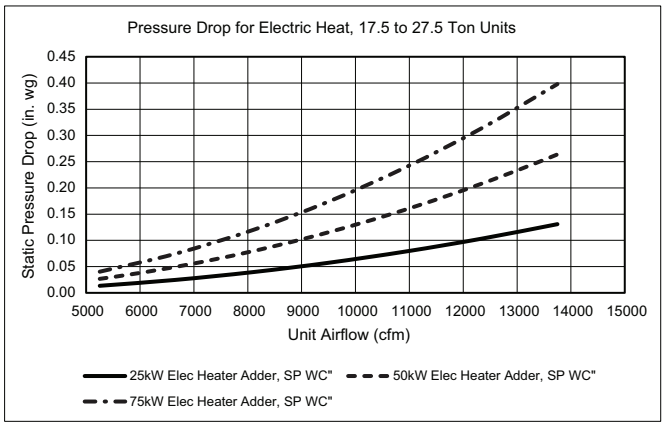
LEGEND

Edb — Entering Dry Bulb
Ewb — Entering Wet Bulb
kW — Compressor Power Input
SCFM/BF — Standard Cubic Feet per Minute/Bypass Factor
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

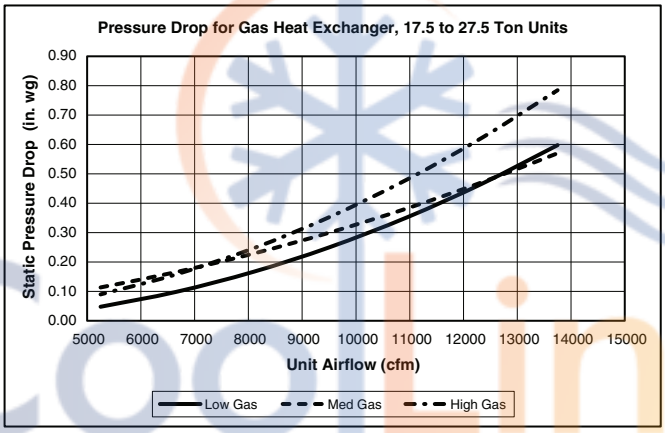
Performance data (cont)

Pressure Drop — Heating

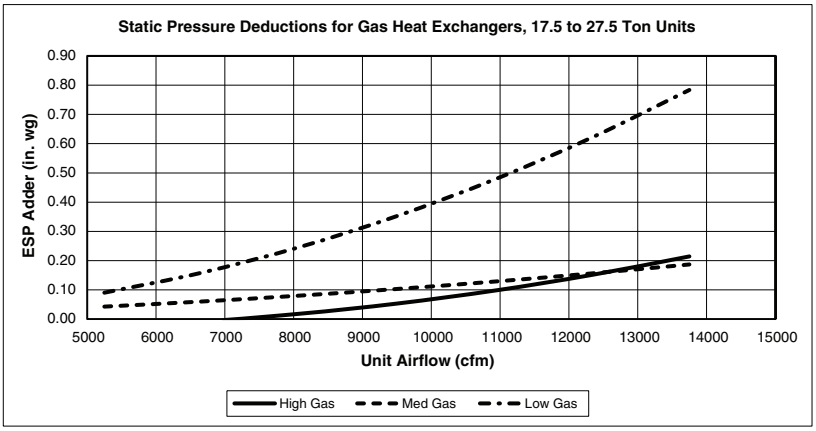
17.5 to 27.5 Ton Electric Heat Units



17.5 to 27.5 Ton Gas Heat Units

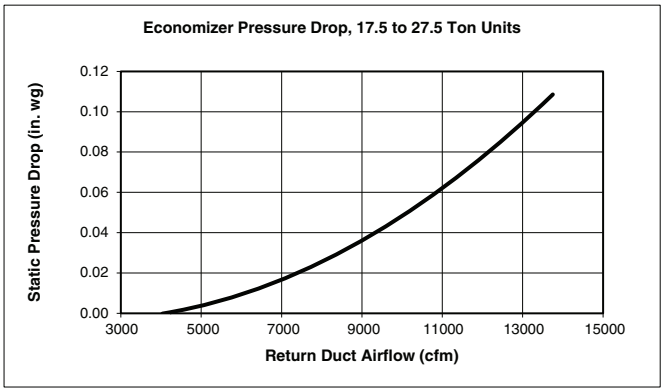


Static Pressure 17.5 to 27.5 Ton Units

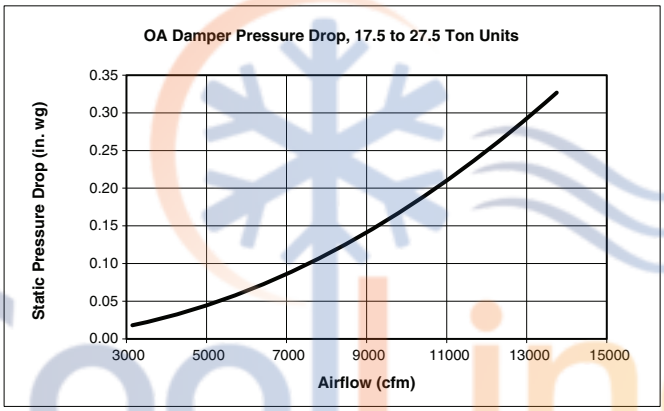


Pressure Drops for Options and Accessories

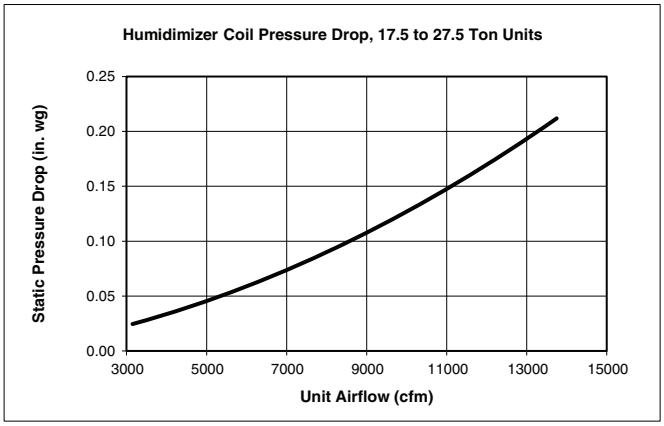
Economizer Pressure Drop, 17.5 to 27.5 Ton Units



Outside Air Damper Pressure Drop, 17.5 to 27.5 Ton Units



Humidi-Mizer Coil Pressure Drop, 17.5 to 27.5 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, wet coils, and highest gas heat exchanger (when gas heat unit).
4. Factory options and accessories may effect static pressure losses. Gas heat unit fan tables assume highest gas heat models; for fan selections with low or medium heat models, the user must deduct low and medium heat static pressures. 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/drive recommendations. In cases when 2 motor/drive combinations 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)

48FCFM20 — 17.5 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
5250	1099	1.00	1210	1.33	1313	1.70	1408	2.10	1496	2.51
5690	1172	1.21	1276	1.56	1375	1.96	1466	2.37	1551	2.81
6125	1247	1.46	1344	1.83	1438	2.24	1525	2.67	1607	3.12
6565	1322	1.73	1413	2.12	1502	2.54	1587	3.00	1666	3.47
7000	1399	2.04	1484	2.43	1568	2.87	1649	3.34	1726	3.83
7440	1477	2.37	1556	2.77	1637	3.23	1714	3.70	1788	4.20
7875	1555	2.72	1629	3.13	1705	3.59	1779	4.07	1851	4.59
8315	1633	3.08	1703	3.50	1775	3.96	1846	4.45	1916	4.98
8750	1712	3.46	1778	3.88	1847	4.35	1915	4.84	1981	5.36

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
5250	1579	2.96	1658	3.42	1733	3.91	1805	4.42	1875	4.95
5690	1631	3.26	1707	3.74	1780	4.24	1851	4.77	1919	5.32
6125	1685	3.60	1759	4.09	1830	4.61	1899	5.15	1965	5.71
6565	1742	3.96	1814	4.48	1883	5.01	1949	5.55	2014	6.13
7000	1800	4.34	1870	4.87	1937	5.41	2002	5.97	—	—
7440	1859	4.73	1927	5.26	1993	5.82	—	—	—	—
7875	1920	5.12	1986	5.67	—	—	—	—	—	—
8315	1982	5.51	2047	6.07	—	—	—	—	—	—
8750	2046	5.91	—	—	—	—	—	—	—	—

Std/Med Static 1099-2000 rpm, 4.8 maximum bhp (2.4 maximum bhp per fan motor)

High Static 1099-2200 rpm, 6.0 maximum bhp (3.0 maximum bhp per fan motor)

48FCFM20 — Standard/Medium Static — 17.5 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
5250	1099	5.4	1210	5.9	1313	6.5	1408	7.0	1496	7.4
5690	1172	5.7	1276	6.3	1375	6.8	1466	7.3	1551	7.7
6125	1247	6.1	1344	6.6	1438	7.1	1525	7.6	1607	8.0
6565	1322	6.5	1413	7.0	1502	7.4	1587	7.9	1666	8.3
7000	1399	6.9	1484	7.3	1568	7.8	1649	8.2	1726	8.6
7440	1477	7.3	1556	7.7	1637	8.1	1714	8.5	1788	8.9
7875	1555	7.7	1629	8.1	1705	8.5	1779	8.9	1851	9.2
8315	1633	8.1	1703	8.5	1775	8.8	1846	9.2	—	—
8750	1712	8.5	1778	8.9	1847	9.2	—	—	—	—

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
5250	1579	7.8	1658	8.2	1733	8.6	1805	9.0	—	—
5690	1631	8.1	1707	8.5	1780	8.9	1851	9.2	—	—
6125	1685	8.4	1759	8.8	1830	9.1	—	—	—	—
6565	1742	8.7	1814	9.0	—	—	—	—	—	—
7000	1800	9.0	—	—	—	—	—	—	—	—
7440	1859	9.3	—	—	—	—	—	—	—	—
7875	—	—	—	—	—	—	—	—	—	—
8315	—	—	—	—	—	—	—	—	—	—
8750	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1099-2000 rpm

Fan data (cont)

48FCFM20 — High Static — 17.5 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
5250	1099	4.9	1210	5.4	1313	5.9	1408	6.3	1496	6.8
5690	1172	5.3	1276	5.7	1375	6.2	1466	6.6	1551	7.0
6125	1247	5.6	1344	6.0	1438	6.5	1525	6.9	1607	7.3
6565	1322	5.9	1413	6.4	1502	6.8	1587	7.2	1666	7.5
7000	1399	6.3	1484	6.7	1568	7.1	1649	7.5	1726	7.8
7440	1477	6.7	1556	7.0	1637	7.4	1714	7.8	1788	8.1
7875	1555	7.0	1629	7.4	1705	7.7	1779	8.1	1851	8.4
8315	1633	7.4	1703	7.7	1775	8.0	1846	8.4	1916	8.7
8750	1712	7.7	1778	8.1	1847	8.4	1915	8.7	1981	9.0

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
5250	1579	7.1	1658	7.5	1733	7.8	1805	8.2	1875	8.5
5690	1631	7.4	1707	7.7	1780	8.1	1851	8.4	1919	8.7
6125	1685	7.6	1759	8.0	1830	8.3	1899	8.6	1965	8.9
6565	1742	7.9	1814	8.2	1883	8.5	1949	8.8	2014	9.1
7000	1800	8.2	1870	8.5	1937	8.8	2002	9.1	—	—
7440	1859	8.4	1927	8.7	1993	9.0	—	—	—	—
7875	1920	8.7	1986	9.0	—	—	—	—	—	—
8315	1982	9.0	2047	9.3	—	—	—	—	—	—
8750	2046	9.3	—	—	—	—	—	—	—	—

High Static 1099-2200 rpm

Fan data (cont)

48FCFM24 — 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	1225	1.38	1325	1.75	1419	2.15	1508	2.58	1591	3.03
6,500	1312	1.69	1403	2.07	1493	2.50	1578	2.95	1658	3.42
7,000	1399	2.04	1484	2.43	1568	2.87	1649	3.34	1726	3.83
7,500	1488	2.42	1566	2.82	1646	3.27	1723	3.75	1797	4.26
8,000	1577	2.82	1650	3.23	1725	3.69	1798	4.18	1870	4.70
8,500	1667	3.25	1735	3.66	1806	4.13	1875	4.62	1944	5.15
9,000	1757	3.68	1822	4.10	1888	4.57	1954	5.06	2019	5.58
9,500	1848	4.13	1909	4.55	1971	5.01	2034	5.50	2096	6.02
10,000	1939	4.58	1997	5.00	2056	5.46	2115	5.94	2175	6.47

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	1670	3.51	1744	3.99	1816	4.51	1885	5.04	1951	5.59
6,500	1733	3.91	1806	4.42	1875	4.95	1942	5.50	2006	6.06
7,000	1800	4.34	1870	4.87	1937	5.41	2002	5.97	2064	6.55
7,500	1868	4.78	1936	5.33	2001	5.88	2064	6.45	2125	7.04
8,000	1938	5.24	2004	5.79	2067	6.35	2128	6.93	2187	7.52
8,500	2010	5.69	2073	6.24	2135	6.82	2194	7.40	—	—
9,000	2083	6.13	2144	6.69	—	—	—	—	—	—
9,500	2157	6.56	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1225-2000 rpm, 4.8 maximum bhp (2.4 maximum bhp per fan motor)

High Static 1225-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

48FCFM24 — 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	1225	5.5	1325	6.0	1419	6.4	1508	6.8	1591	7.2
6,500	1312	5.9	1403	6.3	1493	6.7	1578	7.1	1658	7.5
7,000	1399	6.3	1484	6.7	1568	7.1	1649	7.5	1726	7.8
7,500	1488	6.7	1566	7.1	1646	7.4	1723	7.8	1797	8.1
8,000	1577	7.1	1650	7.5	1725	7.8	1798	8.1	1870	8.5
8,500	1667	7.5	1735	7.9	1806	8.2	1875	8.5	—	—
9,000	1757	8.0	1822	8.3	1888	8.6	—	—	—	—
9,500	1848	8.4	1909	8.7	—	—	—	—	—	—
10,000	1939	8.8	—	—	—	—	—	—	—	—

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	1670	7.6	1744	7.9	1816	8.2	—	—	—	—
6,500	1733	7.8	1806	8.2	—	—	—	—	—	—
7,000	1800	8.2	—	—	—	—	—	—	—	—
7,500	1868	8.5	—	—	—	—	—	—	—	—
8,000	—	—	—	—	—	—	—	—	—	—
8,500	—	—	—	—	—	—	—	—	—	—
9,000	—	—	—	—	—	—	—	—	—	—
9,500	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1225-2000 rpm

Fan data (cont)

48FCFM24 — 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	1225	5.5	1325	6.0	1419	6.4	1508	6.8	1591	7.2
6,500	1312	5.9	1403	6.3	1493	6.7	1578	7.1	1658	7.5
7,000	1399	6.3	1484	6.7	1568	7.1	1649	7.5	1726	7.8
7,500	1488	6.7	1566	7.1	1646	7.4	1723	7.8	1797	8.1
8,000	1577	7.1	1650	7.5	1725	7.8	1798	8.1	1870	8.5
8,500	1667	7.5	1735	7.9	1806	8.2	1875	8.5	1944	8.8
9,000	1757	8.0	1822	8.3	1888	8.6	1954	8.9	2019	9.2
9,500	1848	8.4	1909	8.7	1971	8.9	2034	9.2	2096	9.5
10,000	1939	8.8	1997	9.1	2056	9.3	2115	9.6	2175	9.9

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	1670	7.6	1744	7.9	1816	8.2	1885	8.5	1951	8.9
6,500	1733	7.8	1806	8.2	1875	8.5	1942	8.8	2006	9.1
7,000	1800	8.2	1870	8.5	1937	8.8	2002	9.1	2064	9.4
7,500	1868	8.5	1936	8.8	2001	9.1	2064	9.4	2125	9.7
8,000	1938	8.8	2004	9.1	2067	9.4	2128	9.7	2187	9.9
8,500	2010	9.1	2073	9.4	2135	9.7	2194	10.0	—	—
9,000	2083	9.5	2144	9.7	—	—	—	—	—	—
9,500	2157	9.8	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

High Static 1225-2200 rpm

Fan data (cont)

48FCFM28 — 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	1184	1.59	1267	1.95	1355	2.39	1444	2.89	1531	3.44
8,125	1270	1.98	1345	2.35	1425	2.80	1507	3.31	1590	3.89
8,750	1357	2.43	1425	2.81	1498	3.26	1574	3.79	1651	4.37
9,375	1444	2.92	1508	3.33	1575	3.79	1644	4.31	1715	4.89
10,000	1533	3.46	1592	3.88	1653	4.34	1718	4.88	1784	5.46
10,625	1621	4.03	1676	4.45	1734	4.93	1794	5.46	1855	6.04
11,250	1711	4.64	1762	5.07	1816	5.55	1871	6.07	1929	6.65
11,875	1800	5.30	1849	5.75	1899	6.23	1951	6.75	2005	7.33
12,500	1890	6.10	1936	6.56	1983	7.05	2032	7.58	2083	8.17

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	1614	4.04	1693	4.66	1766	5.29	1837	5.95	1903	6.61
8,125	1669	4.49	1746	5.15	1818	5.81	1888	6.51	1954	7.21
8,750	1727	5.00	1801	5.67	1872	6.37	1940	7.09	2005	7.83
9,375	1787	5.53	1858	6.22	1927	6.94	1994	7.69	2058	8.45
10,000	1851	6.10	1918	6.78	1985	7.52	2049	8.27	2112	9.06
10,625	1918	6.68	1981	7.36	2044	8.08	2107	8.85	2167	9.63
11,250	1987	7.27	2047	7.95	2107	8.67	2166	9.42	—	—
11,875	2060	7.95	2116	8.62	2172	9.32	—	—	—	—
12,500	2134	8.78	2187	9.45	—	—	—	—	—	—

Std/Med Static 1184-2000 rpm, 6.0 maximum bhp (3.0 maximum bhp per fan motor)

High Static 1184-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

48FCFM28 — 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	1184	5.3	1267	5.7	1355	6.1	1444	6.5	1531	6.9
8,125	1270	5.7	1345	6.1	1425	6.4	1507	6.8	1590	7.2
8,750	1357	6.1	1425	6.4	1498	6.8	1574	7.1	1651	7.5
9,375	1444	6.5	1508	6.8	1575	7.1	1644	7.4	1715	7.8
10,000	1533	6.9	1592	7.2	1653	7.5	1718	7.8	1784	8.1
10,625	1621	7.3	1676	7.6	1734	7.8	1794	8.1	—	—
11,250	1711	7.7	1762	8.0	1816	8.2	—	—	—	—
11,875	1800	8.2	1849	8.4	—	—	—	—	—	—
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	1614	7.3	1693	7.7	1766	8.0	1837	8.3	—	—
8,125	1669	7.5	1746	7.9	1818	8.2	—	—	—	—
8,750	1727	7.8	1801	8.2	—	—	—	—	—	—
9,375	1787	8.1	1858	8.4	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—
10,625	—	—	—	—	—	—	—	—	—	—
11,250	—	—	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1184-2000 rpm

Fan data (cont)

48FCFM28 — 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	1184	5.3	1267	5.7	1355	6.1	1444	6.5	1531	6.9
8,125	1270	5.7	1345	6.1	1425	6.4	1507	6.8	1590	7.2
8,750	1357	6.1	1425	6.4	1498	6.8	1574	7.1	1651	7.5
9,375	1444	6.5	1508	6.8	1575	7.1	1644	7.4	1715	7.8
10,000	1533	6.9	1592	7.2	1653	7.5	1718	7.8	1784	8.1
10,625	1621	7.3	1676	7.6	1734	7.8	1794	8.1	1855	8.4
11,250	1711	7.7	1762	8.0	1816	8.2	1871	8.5	1929	8.7
11,875	1800	8.2	1849	8.4	1899	8.6	1951	8.9	2005	9.1
12,500	1890	8.6	1936	8.8	1983	9.0	2032	9.2	2083	9.5

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	1614	7.3	1693	7.7	1766	8.0	1837	8.3	1903	8.6
8,125	1669	7.5	1746	7.9	1818	8.2	1888	8.6	1954	8.9
8,750	1727	7.8	1801	8.2	1872	8.5	1940	8.8	2005	9.1
9,375	1787	8.1	1858	8.4	1927	8.7	1994	9.0	2058	9.3
10,000	1851	8.4	1918	8.7	1985	9.0	2049	9.3	2112	9.6
10,625	1918	8.7	1981	9.0	2044	9.3	2107	9.6	2167	9.8
11,250	1987	9.0	2047	9.3	2107	9.6	2166	9.8	—	—
11,875	2060	9.4	2116	9.6	2172	9.9	—	—	—	—
12,500	2134	9.7	2187	9.9	—	—	—	—	—	—

High Static 1184-2200 rpm

Fan data (cont)

48FCFM30 — 27.5 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
8,250	1280	2.03	1353	2.40	1431	2.84	1512	3.35	1593	3.91
8,940	1376	2.53	1442	2.91	1513	3.36	1586	3.88	1661	4.45
9,625	1472	3.09	1533	3.49	1597	3.94	1664	4.46	1733	5.03
10,300	1569	3.69	1625	4.10	1684	4.56	1746	5.08	1809	5.65
11,000	1666	4.32	1719	4.75	1773	5.21	1830	5.73	1888	6.29
11,700	1764	5.02	1813	5.45	1864	5.92	1917	6.44	1971	7.00
12,375	1863	5.84	1909	6.28	1956	6.76	2005	7.28	2056	7.85
13,075	1961	6.94	2005	7.41	2049	7.91	2095	8.46	2142	9.04
13,750	2060	8.64	2101	9.17	2143	9.73	—	—	—	—

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
8,250	1672	4.52	1748	5.17	1821	5.84	1890	6.53	1957	7.25
8,940	1736	5.08	1809	5.75	1879	6.44	1947	7.17	2012	7.91
9,625	1803	5.67	1872	6.35	1940	7.06	2006	7.81	2070	8.58
10,300	1874	6.28	1939	6.96	2004	7.68	2067	8.43	2129	9.21
11,000	1948	6.91	2009	7.58	2070	8.29	2131	9.05	2190	9.82
11,700	2026	7.60	2083	8.26	2140	8.96	2198	9.71	—	—
12,375	2107	8.45	2160	9.10	—	—	—	—	—	—
13,075	2191	9.67	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1280-2200 rpm, 6.0 maximum bhp (3.0 maximum bhp per fan motor)

High Static 1280-2200 rpm, 10.0 maximum bhp (5 maximum bhp per fan motor)

48FCFM30 — Standard/Medium Static — 27.5 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
8,250	1280	5.8	1353	6.1	1431	6.5	1512	6.8	1593	7.2
8,940	1376	6.2	1442	6.5	1513	6.8	1586	7.2	1661	7.5
9,625	1472	6.6	1533	6.9	1597	7.2	1664	7.5	1733	7.8
10,300	1569	7.1	1625	7.3	1684	7.6	1746	7.9	1809	8.2
11,000	1666	7.5	1719	7.8	1773	8.0	1830	8.3	—	—
11,700	1764	8.0	1813	8.2	1864	8.4	—	—	—	—
12,375	1863	8.4	—	—	—	—	—	—	—	—
13,075	—	—	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

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
8,250	1672	7.6	1748	7.9	1821	8.3	—	—	—	—
8,940	1736	7.9	1809	8.2	—	—	—	—	—	—
9,625	1803	8.2	—	—	—	—	—	—	—	—
10,300	—	—	—	—	—	—	—	—	—	—
11,000	—	—	—	—	—	—	—	—	—	—
11,700	—	—	—	—	—	—	—	—	—	—
12,375	—	—	—	—	—	—	—	—	—	—
13,075	—	—	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1280-2200 rpm

Fan data (cont)

48FCFM30 — High Static — 27.5 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
8,250	1280	5.8	1353	6.1	1431	6.5	1512	6.8	1593	7.2
8,940	1376	6.2	1442	6.5	1513	6.8	1586	7.2	1661	7.5
9,625	1472	6.6	1533	6.9	1597	7.2	1664	7.5	1733	7.8
10,300	1569	7.1	1625	7.3	1684	7.6	1746	7.9	1809	8.2
11,000	1666	7.5	1719	7.8	1773	8.0	1830	8.3	1888	8.6
11,700	1764	8.0	1813	8.2	1864	8.4	1917	8.7	1971	8.9
12,375	1863	8.4	1909	8.7	1956	8.9	2005	9.1	2056	9.3
13,075	1961	8.9	2005	9.1	2049	9.3	2095	9.5	2142	9.7
13,750	2060	9.4	2101	9.5	2143	9.7	2186	9.9	—	—

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
8,250	1672	7.6	1748	7.9	1821	8.3	1890	8.6	1957	8.9
8,940	1736	7.9	1809	8.2	1879	8.5	1947	8.8	2012	9.1
9,625	1803	8.2	1872	8.5	1940	8.8	2006	9.1	2070	9.4
10,300	1874	8.5	1939	8.8	2004	9.1	2067	9.4	2129	9.7
11,000	1948	8.8	2009	9.1	2070	9.4	2131	9.7	2190	10.0
11,700	2026	9.2	2083	9.5	2140	9.7	2198	10.0	—	—
12,375	2107	9.6	2160	9.8	—	—	—	—	—	—
13,075	2191	10.0	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

High Static 1280-2200 rpm

Fan data (cont)

48FCFM20 — 17.5 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
5250	1237	1.14	1337	1.43	1432	1.76	1522	2.11	1607	2.49
5690	1323	1.38	1417	1.69	1506	2.03	1592	2.40	1673	2.79
6125	1411	1.66	1499	1.99	1583	2.34	1664	2.72	1742	3.12
6560	1499	1.96	1582	2.30	1661	2.66	1738	3.05	1813	3.47
7000	1589	2.29	1666	2.64	1742	3.02	1815	3.42	1886	3.84
7440	1678	2.65	1752	3.02	1823	3.40	1893	3.81	1961	4.23
7875	1768	3.04	1838	3.42	1906	3.81	1973	4.23	2038	4.66
8310	1859	3.46	1925	3.85	1990	4.25	2054	4.67	2116	5.11
8750	1950	3.91	2013	4.30	2075	4.71	2136	5.14	2196	5.59

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
5250	1688	2.88	1764	3.29	1837	3.72	1908	4.17	1976	4.63
5690	1751	3.20	1825	3.62	1896	4.06	1965	4.52	2031	4.99
6125	1817	3.54	1889	3.97	1958	4.43	2024	4.89	2088	5.37
6560	1885	3.89	1954	4.34	2021	4.80	2086	5.28	2148	5.76
7000	1955	4.27	2022	4.73	2087	5.20	2150	5.68	—	—
7440	2027	4.67	2092	5.14	2154	5.61	—	—	—	—
7875	2101	5.10	2163	5.57	—	—	—	—	—	—
8310	2177	5.56	—	—	—	—	—	—	—	—
8750	—	—	—	—	—	—	—	—	—	—

High Static 1237-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

48FCFM20 — High Static — 17.5 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
5250	1237	5.6	1337	6.0	1432	6.5	1522	6.9	1607	7.3
5690	1323	6.0	1417	6.4	1506	6.8	1592	7.2	1673	7.6
6125	1411	6.4	1499	6.8	1583	7.2	1664	7.5	1742	7.9
6560	1499	6.8	1582	7.1	1661	7.5	1738	7.9	1813	8.2
7000	1589	7.2	1666	7.5	1742	7.9	1815	8.2	1886	8.6
7440	1678	7.6	1752	7.9	1823	8.3	1893	8.6	1961	8.9
7875	1768	8.0	1838	8.3	1906	8.6	1973	9.0	2038	9.3
8310	1859	8.4	1925	8.7	1990	9.0	2054	9.3	2116	9.6
8750	1950	8.8	2013	9.1	2075	9.4	2136	9.7	2196	10.0

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
5250	1688	7.6	1764	8.0	1837	8.3	1908	8.7	1976	9.0
5690	1751	7.9	1825	8.3	1896	8.6	1965	8.9	2031	9.2
6125	1817	8.2	1889	8.6	1958	8.9	2024	9.2	2088	9.5
6560	1885	8.5	1954	8.9	2021	9.2	2086	9.5	2148	9.8
7000	1955	8.9	2022	9.2	2087	9.5	2150	9.8	—	—
7440	2027	9.2	2092	9.5	2154	9.8	—	—	—	—
7875	2101	9.5	2163	9.8	—	—	—	—	—	—
8310	2177	9.9	—	—	—	—	—	—	—	—
8750	—	—	—	—	—	—	—	—	—	—

High Static 1237-2200 rpm

Fan data (cont)

48FCFM24 — 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	1386	1.58	1475	1.90	1561	2.25	1643	2.62	1722	3.02
6,500	1487	1.92	1570	2.26	1650	2.62	1728	3.01	1803	3.42
7,000	1589	2.29	1666	2.64	1742	3.02	1815	3.42	1886	3.84
7,500	1691	2.71	1764	3.07	1835	3.46	1904	3.86	1972	4.29
8,000	1794	3.16	1863	3.54	1930	3.93	1996	4.35	2060	4.78
8,500	1898	3.65	1963	4.04	2026	4.44	2089	4.87	2150	5.31
9,000	2002	4.18	2064	4.58	2124	4.99	2183	5.41	—	—
9,500	2106	4.70	2165	5.11	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

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	1798	3.44	1870	3.87	1940	4.32	2007	4.78	2072	5.26
6,500	1875	3.84	1945	4.29	2012	4.75	2077	5.22	2140	5.71
7,000	1955	4.27	2022	4.73	2087	5.20	2150	5.68	—	—
7,500	2038	4.74	2102	5.20	2164	5.67	—	—	—	—
8,000	2123	5.23	2184	5.70	—	—	—	—	—	—
8,500	—	—	—	—	—	—	—	—	—	—
9,000	—	—	—	—	—	—	—	—	—	—
9,500	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

High Static 1386-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

48FCFM24 — 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	1386	6.2	1475	6.7	1561	7.1	1643	7.4	1722	7.8
6,500	1487	6.7	1570	7.1	1650	7.5	1728	7.8	1803	8.2
7,000	1589	7.2	1666	7.5	1742	7.9	1815	8.2	1886	8.6
7,500	1691	7.7	1764	8.0	1835	8.3	1904	8.6	1972	8.9
8,000	1794	8.1	1863	8.4	1930	8.8	1996	9.1	2060	9.4
8,500	1898	8.6	1963	8.9	2026	9.2	2089	9.5	2150	9.8
9,000	2002	9.1	2064	9.4	2124	9.6	2183	9.9	—	—
9,500	2106	9.6	2165	9.8	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

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	1798	8.1	1870	8.5	1940	8.8	2007	9.1	2072	9.4
6,500	1875	8.5	1945	8.8	2012	9.1	2077	9.4	2140	9.7
7,000	1955	8.9	2022	9.2	2087	9.5	2150	9.8	—	—
7,500	2038	9.3	2102	9.5	2164	9.8	—	—	—	—
8,000	2123	9.6	2184	9.9	—	—	—	—	—	—
8,500	—	—	—	—	—	—	—	—	—	—
9,000	—	—	—	—	—	—	—	—	—	—
9,500	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

High Static 1386-2200 rpm

Fan data (cont)

48FCFM28 — 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	1494	2.53	1571	2.94	1648	3.39	1722	3.87	1795	4.38
8,125	1606	3.13	1678	3.57	1748	4.04	1818	4.54	1886	5.07
8,750	1719	3.82	1786	4.28	1852	4.77	1917	5.29	1981	5.84
9,375	1833	4.58	1895	5.06	1957	5.57	2018	6.11	2078	6.67
10,000	1947	5.41	2005	5.90	2063	6.43	2121	6.99	2178	7.57
10,625	2062	6.29	2117	6.81	2171	7.35	—	—	—	—
11,250	2177	7.22	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
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	1864	4.91	1931	5.46	1996	6.03	2058	6.61	2117	7.19
8,125	1953	5.63	2017	6.20	2079	6.79	2139	7.40	2197	8.02
8,750	2044	6.41	2105	7.01	2165	7.62	—	—	—	—
9,375	2138	7.26	2197	7.88	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—
10,625	—	—	—	—	—	—	—	—	—	—
11,250	—	—	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

High Static 1494-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

48FCFM28 –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	1494	6.7	1571	7.1	1648	7.5	1722	7.8	1795	8.1
8,125	1606	7.3	1678	7.6	1748	7.9	1818	8.2	1886	8.6
8,750	1719	7.8	1786	8.1	1852	8.4	1917	8.7	1981	9.0
9,375	1833	8.3	1895	8.6	1957	8.9	2018	9.2	2078	9.4
10,000	1947	8.8	2005	9.1	2063	9.4	2121	9.6	2178	9.9
10,625	2062	9.4	2117	9.6	2171	9.9	—	—	—	—
11,250	2177	9.9	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
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	1864	8.4	1931	8.8	1996	9.1	2058	9.3	2117	9.6
8,125	1953	8.9	2017	9.2	2079	9.4	2139	9.7	2197	10.0
8,750	2044	9.3	2105	9.6	2165	9.8	—	—	—	—
9,375	2138	9.7	2197	10.0	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—
10,625	—	—	—	—	—	—	—	—	—	—
11,250	—	—	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

High Static 1494-2200 rpm

Fan data (cont)

48FCFM30 — 27.5 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
8,250	1619	3.20	1689	3.64	1759	4.11	1828	4.61	1896	5.15
8,940	1743	3.97	1808	4.43	1872	4.91	1936	5.44	2000	5.99
9,625	1868	4.82	1928	5.30	1987	5.80	2048	6.35	2107	6.92
10,300	1993	5.74	2049	6.24	2105	6.77	2161	7.32	—	—
11,000	2119	6.73	2171	7.24	—	—	—	—	—	—
11,690	—	—	—	—	—	—	—	—	—	—
12,375	—	—	—	—	—	—	—	—	—	—
13,060	—	—	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

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
8,250	1961	5.70	2025	6.27	2087	6.86	2147	7.47	—	—
8,940	2062	6.57	2122	7.16	2182	7.78	—	—	—	—
9,625	2165	7.50	—	—	—	—	—	—	—	—
10,300	—	—	—	—	—	—	—	—	—	—
11,000	—	—	—	—	—	—	—	—	—	—
11,690	—	—	—	—	—	—	—	—	—	—
12,375	—	—	—	—	—	—	—	—	—	—
13,060	—	—	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

High Static 1619-2200 rpm, 10.0 maximum bhp (maximum bhp 5.0 per fan motor)

48FCFM30 — High Static — 27.5 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
8,250	1619	7.3	1689	7.6	1759	8.0	1828	8.3	1896	8.6
8,940	1743	7.9	1808	8.2	1872	8.5	1936	8.8	2000	9.1
9,625	1868	8.5	1928	8.7	1987	9.0	2048	9.3	2107	9.6
10,300	1993	9.0	2049	9.3	2105	9.6	2161	9.8	—	—
11,000	2119	9.6	2171	9.9	—	—	—	—	—	—
11,690	—	—	—	—	—	—	—	—	—	—
12,375	—	—	—	—	—	—	—	—	—	—
13,060	—	—	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

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
8,250	1961	8.9	2025	9.2	2087	9.5	2147	9.8	—	—
8,940	2062	9.4	2122	9.6	2182	9.9	—	—	—	—
9,625	2165	9.8	—	—	—	—	—	—	—	—
10,300	—	—	—	—	—	—	—	—	—	—
11,000	—	—	—	—	—	—	—	—	—	—
11,690	—	—	—	—	—	—	—	—	—	—
12,375	—	—	—	—	—	—	—	—	—	—
13,060	—	—	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

High Static 1619-2200 rpm

Fan data (cont)

50FC-M20 — 17.5 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
5250	1048	0.86	1162	1.18	1268	1.53	1366	1.91	1457	2.32
5690	1116	1.05	1220	1.37	1322	1.74	1417	2.14	1505	2.56
6125	1185	1.25	1281	1.58	1377	1.96	1469	2.39	1555	2.83
6565	1257	1.49	1344	1.82	1435	2.22	1523	2.65	1606	3.11
7000	1329	1.75	1409	2.08	1494	2.48	1578	2.92	1658	3.39
7440	1401	2.02	1475	2.36	1555	2.77	1635	3.21	1712	3.69
7875	1475	2.32	1543	2.66	1617	3.06	1693	3.51	1768	4.00
8315	1549	2.63	1612	2.97	1681	3.36	1753	3.81	1825	4.30
8750	1623	2.95	1682	3.28	1747	3.68	1815	4.12	1883	4.61

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
5250	1543	2.76	1623	3.21	1700	3.69	1773	4.18	1844	4.71
5690	1588	3.01	1666	3.48	1741	3.97	1813	4.48	1882	5.02
6125	1635	3.29	1712	3.78	1785	4.28	1855	4.80	1922	5.34
6565	1684	3.58	1759	4.08	1830	4.60	1899	5.14	1965	5.69
7000	1735	3.89	1808	4.40	1877	4.92	1944	5.47	2009	6.04
7440	1787	4.20	1858	4.72	1926	5.25	1992	5.81	—	—
7875	1840	4.51	1909	5.03	1976	5.58	2040	6.14	—	—
8315	1894	4.81	1962	5.35	2027	5.90	—	—	—	—
8750	1950	5.12	2016	5.65	—	—	—	—	—	—

Std/Med Static 1048-2000 rpm, 4.8 maximum bhp (2.4 maximum bhp per fan motor)

High Static 1048-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

50FC-M20 — Standard/Medium Static — 17.5 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
5250	1048	5.1	1162	5.7	1268	6.2	1366	6.7	1457	7.2
5690	1116	5.5	1220	6.0	1322	6.5	1417	7.0	1505	7.5
6125	1185	5.8	1281	6.3	1377	6.8	1469	7.3	1555	7.7
6565	1257	6.2	1344	6.6	1435	7.1	1523	7.5	1606	8.0
7000	1329	6.5	1409	7.0	1494	7.4	1578	7.8	1658	8.2
7440	1401	6.9	1475	7.3	1555	7.7	1635	8.1	1712	8.5
7875	1475	7.3	1543	7.6	1617	8.0	1693	8.4	1768	8.8
8315	1549	7.7	1612	8.0	1681	8.4	1753	8.7	1825	9.1
8750	1623	8.1	1682	8.4	1747	8.7	1815	9.0	1883	9.4

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
5250	1543	7.6	1623	8.1	1700	8.5	1773	8.8	1844	9.2
5690	1588	7.9	1666	8.3	1741	8.7	1813	9.0	—	—
6125	1635	8.1	1712	8.5	1785	8.9	1855	9.3	—	—
6565	1684	8.4	1759	8.8	1830	9.1	—	—	—	—
7000	1735	8.6	1808	9.0	—	—	—	—	—	—
7440	1787	8.9	1858	9.3	—	—	—	—	—	—
7875	1840	9.2	—	—	—	—	—	—	—	—
8315	—	—	—	—	—	—	—	—	—	—
8750	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1048-2000 rpm

Fan data (cont)

50FC-M20 — High Static — 17.5 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
5250	1048	4.7	1162	5.2	1268	5.7	1366	6.2	1457	6.6
5690	1116	5.0	1220	5.5	1322	5.9	1417	6.4	1505	6.8
6125	1185	5.3	1281	5.8	1377	6.2	1469	6.6	1555	7.0
6565	1257	5.6	1344	6.0	1435	6.5	1523	6.9	1606	7.3
7000	1329	6.0	1409	6.3	1494	6.7	1578	7.1	1658	7.5
7440	1401	6.3	1475	6.7	1555	7.0	1635	7.4	1712	7.7
7875	1475	6.7	1543	7.0	1617	7.3	1693	7.7	1768	8.0
8315	1549	7.0	1612	7.3	1681	7.6	1753	7.9	1825	8.3
8750	1623	7.3	1682	7.6	1747	7.9	1815	8.2	1883	8.5

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
5250	1543	7.0	1623	7.3	1700	7.7	1773	8.0	1844	8.4
5690	1588	7.2	1666	7.5	1741	7.9	1813	8.2	1882	8.5
6125	1635	7.4	1712	7.7	1785	8.1	1855	8.4	1922	8.7
6565	1684	7.6	1759	8.0	1830	8.3	1899	8.6	1965	8.9
7000	1735	7.9	1808	8.2	1877	8.5	1944	8.8	2009	9.1
7440	1787	8.1	1858	8.4	1926	8.7	1992	9.0	—	—
7875	1840	8.3	1909	8.7	1976	9.0	2040	9.3	—	—
8315	1894	8.6	1962	8.9	2027	9.2	—	—	—	—
8750	1950	8.8	2016	9.2	—	—	—	—	—	—

High Static 1048-2200 rpm

Fan data (cont)

50FC-M24 — 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	1166	1.19	1263	1.52	1361	1.90	1454	2.31	1540	2.75
6,500	1246	1.45	1335	1.79	1427	2.18	1515	2.61	1598	3.06
7,000	1329	1.75	1409	2.08	1493	2.48	1578	2.92	1658	3.39
7,500	1412	2.07	1485	2.40	1563	2.80	1643	3.26	1720	3.73
8,000	1496	2.41	1563	2.75	1635	3.14	1710	3.60	1784	4.08
8,500	1581	2.77	1642	3.10	1709	3.50	1779	3.94	1850	4.44
9,000	1666	3.14	1723	3.47	1785	3.86	1850	4.30	1917	4.78
9,500	1752	3.52	1805	3.85	1862	4.22	1923	4.65	1986	5.12
10,000	1838	3.90	1887	4.22	1941	4.59	1998	5.01	2057	5.47

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	1621	3.21	1698	3.68	1772	4.19	1842	4.70	1911	5.25
6,500	1677	3.54	1752	4.04	1823	4.55	1892	5.08	1958	5.63
7,000	1735	3.89	1808	4.40	1877	4.92	1944	5.47	2009	6.04
7,500	1794	4.24	1865	4.76	1933	5.30	1998	5.85	2061	6.43
8,000	1855	4.59	1924	5.12	1991	5.68	2054	6.23	2116	6.81
8,500	1918	4.94	1985	5.48	2050	6.04	2112	6.60	2172	7.18
9,000	1983	5.29	2047	5.82	2110	6.37	2171	6.94	—	—
9,500	2049	5.63	2111	6.15	2172	6.70	—	—	—	—
10,000	2117	5.96	2177	6.48	—	—	—	—	—	—

Std/Med Static 1166-2000 rpm, 4.8 maximum bhp (2.4 maximum bhp per fan motor)

High Static 1166-2200 rpm, 6.0 maximum bhp (3.0 maximum bhp per fan motor)

50FC-M24 — 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	1166	5.2	1263	5.7	1361	6.1	1454	6.6	1540	7.0
6,500	1246	5.6	1335	6.0	1427	6.4	1515	6.8	1598	7.2
7,000	1329	6.0	1409	6.3	1493	6.7	1578	7.1	1658	7.5
7,500	1412	6.4	1485	6.7	1563	7.1	1643	7.4	1720	7.8
8,000	1496	6.8	1563	7.1	1635	7.4	1710	7.7	1784	8.1
8,500	1581	7.1	1642	7.4	1709	7.7	1779	8.1	1850	8.4
9,000	1666	7.5	1723	7.8	1785	8.1	1850	8.4	1917	8.7
9,500	1752	7.9	1805	8.2	1862	8.4	1923	8.7	—	—
10,000	1838	8.3	1887	8.6	1941	8.8	—	—	—	—

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	1621	7.3	1698	7.7	1772	8.0	1842	8.3	—	—
6,500	1677	7.6	1752	7.9	1823	8.3	—	—	—	—
7,000	1735	7.9	1808	8.2	—	—	—	—	—	—
7,500	1794	8.1	1865	8.5	—	—	—	—	—	—
8,000	1855	8.4	—	—	—	—	—	—	—	—
8,500	—	—	—	—	—	—	—	—	—	—
9,000	—	—	—	—	—	—	—	—	—	—
9,500	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1166-2000 rpm

Fan data (cont)

50FC-M24 — 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	1166	5.2	1263	5.7	1361	6.1	1454	6.6	1540	7.0
6,500	1246	5.6	1335	6.0	1427	6.4	1515	6.8	1598	7.2
7,000	1329	6.0	1409	6.3	1493	6.7	1578	7.1	1658	7.5
7,500	1412	6.4	1485	6.7	1563	7.1	1643	7.4	1720	7.8
8,000	1496	6.8	1563	7.1	1635	7.4	1710	7.7	1784	8.1
8,500	1581	7.1	1642	7.4	1709	7.7	1779	8.1	1850	8.4
9,000	1666	7.5	1723	7.8	1785	8.1	1850	8.4	1917	8.7
9,500	1752	7.9	1805	8.2	1862	8.4	1923	8.7	1986	9.0
10,000	1838	8.3	1887	8.6	1941	8.8	1998	9.1	2057	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	1621	7.3	1698	7.7	1772	8.0	1842	8.3	1911	8.7
6,500	1677	7.6	1752	7.9	1823	8.3	1892	8.6	1958	8.9
7,000	1735	7.9	1808	8.2	1877	8.5	1944	8.8	2009	9.1
7,500	1794	8.1	1865	8.5	1933	8.8	1998	9.1	2061	9.4
8,000	1855	8.4	1924	8.7	1991	9.0	2054	9.3	2116	9.6
8,500	1918	8.7	1985	9.0	2050	9.3	2112	9.6	2172	9.9
9,000	1983	9.0	2047	9.3	2110	9.6	2171	9.9	—	—
9,500	2049	9.3	2111	9.6	2172	9.9	—	—	—	—
10,000	2117	9.6	2177	9.9	—	—	—	—	—	—

High Static 1166-2200 rpm

Fan data (cont)

50FC-M28 — 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	1105	1.30	1181	1.58	1263	1.93	1351	2.37	1441	2.87
8,125	1183	1.60	1252	1.90	1326	2.25	1405	2.68	1487	3.18
8,750	1263	1.96	1326	2.26	1393	2.62	1464	3.05	1538	3.53
9,375	1343	2.35	1401	2.67	1462	3.03	1527	3.45	1595	3.94
10,000	1424	2.78	1478	3.10	1534	3.47	1593	3.89	1655	4.36
10,625	1506	3.23	1556	3.56	1608	3.93	1663	4.35	1719	4.81
11,250	1587	3.70	1635	4.05	1683	4.42	1734	4.83	1786	5.28
11,875	1669	4.23	1714	4.58	1760	4.96	1807	5.37	1856	5.81
12,500	1752	4.86	1794	5.22	1837	5.60	1881	6.01	1927	6.47

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	1528	3.42	1611	4.01	1690	4.63	1764	5.27	1834	5.92
8,125	1570	3.74	1650	4.34	1728	4.99	1801	5.65	1871	6.33
8,750	1615	4.09	1692	4.70	1767	5.36	1839	6.04	1909	6.76
9,375	1665	4.48	1736	5.07	1808	5.73	1878	6.42	1947	7.16
10,000	1720	4.89	1786	5.48	1853	6.12	1920	6.81	1986	7.53
10,625	1778	5.32	1840	5.89	1902	6.51	1965	7.18	2028	7.89
11,250	1841	5.78	1897	6.33	1955	6.93	2014	7.57	2074	8.27
11,875	1906	6.30	1958	6.83	2012	7.41	2067	8.03	2123	8.70
12,500	1974	6.95	2023	7.48	2073	8.05	2124	8.66	2176	9.31

Std/Med Static 1105-2000 rpm, 6.0 maximum bhp (3.0 maximum bhp per fan motor)

High Static 1105-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

50FC-M28 — 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	1105	4.9	1181	5.3	1263	5.7	1351	6.1	1441	6.5
8,125	1183	5.3	1252	5.6	1326	6.0	1405	6.3	1487	6.7
8,750	1263	5.7	1326	6.0	1393	6.3	1464	6.6	1538	6.9
9,375	1343	6.0	1401	6.3	1462	6.6	1527	6.9	1595	7.2
10,000	1424	6.4	1478	6.7	1534	6.9	1593	7.2	1655	7.5
10,625	1506	6.8	1556	7.0	1608	7.3	1663	7.5	1719	7.8
11,250	1587	7.2	1635	7.4	1683	7.6	1734	7.8	1786	8.1
11,875	1669	7.5	1714	7.8	1760	8.0	1807	8.2	1856	8.4
12,500	1752	7.9	1794	8.1	1837	8.3	—	—	—	—

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
7,500	1528	6.9	1611	7.3	1690	7.6	1764	8.0	1834	8.3
8,125	1570	7.1	1650	7.5	1728	7.8	1801	8.2	—	—
8,750	1615	7.3	1692	7.7	1767	8.0	—	—	—	—
9,375	1665	7.5	1736	7.9	1808	8.2	—	—	—	—
10,000	1720	7.8	1786	8.1	—	—	—	—	—	—
10,625	1778	8.1	1840	8.3	—	—	—	—	—	—
11,250	1841	8.3	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1105-2000 rpm

Fan data (cont)

50FC-M28 — 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	1105	4.9	1181	5.3	1263	5.7	1351	6.1	1441	6.5
8,125	1183	5.3	1252	5.6	1326	6.0	1405	6.3	1487	6.7
8,750	1263	5.7	1326	6.0	1393	6.3	1464	6.6	1538	6.9
9,375	1343	6.0	1401	6.3	1462	6.6	1527	6.9	1595	7.2
10,000	1424	6.4	1478	6.7	1534	6.9	1593	7.2	1655	7.5
10,625	1506	6.8	1556	7.0	1608	7.3	1663	7.5	1719	7.8
11,250	1587	7.2	1635	7.4	1683	7.6	1734	7.8	1786	8.1
11,875	1669	7.5	1714	7.8	1760	8.0	1807	8.2	1856	8.4
12,500	1752	7.9	1794	8.1	1837	8.3	1881	8.5	1927	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	1528	6.9	1611	7.3	1690	7.6	1764	8.0	1834	8.3
8,125	1570	7.1	1650	7.5	1728	7.8	1801	8.2	1871	8.5
8,750	1615	7.3	1692	7.7	1767	8.0	1839	8.3	1909	8.7
9,375	1665	7.5	1736	7.9	1808	8.2	1878	8.5	1947	8.8
10,000	1720	7.8	1786	8.1	1853	8.4	1920	8.7	1986	9.0
10,625	1778	8.1	1840	8.3	1902	8.6	1965	8.9	2028	9.2
11,250	1841	8.3	1897	8.6	1955	8.9	2014	9.1	2074	9.4
11,875	1906	8.6	1958	8.9	2012	9.1	2067	9.4	2123	9.6
12,500	1974	9.0	2023	9.2	2073	9.4	2124	9.6	2176	9.9

High Static 1105-2200 rpm

Fan data (cont)

50FC-M30 — 27.5 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
8,250	1193	1.64	1260	1.94	1332	2.29	1408	2.70	1488	3.19
8,940	1281	2.04	1341	2.34	1406	2.70	1474	3.11	1546	3.59
9,625	1369	2.48	1425	2.80	1483	3.16	1545	3.57	1609	4.03
10,300	1457	2.95	1509	3.28	1563	3.65	1619	4.05	1678	4.51
11,000	1547	3.46	1595	3.79	1645	4.16	1696	4.56	1750	5.01
11,690	1636	4.00	1682	4.35	1728	4.72	1776	5.12	1825	5.56
12,375	1726	4.64	1769	5.00	1812	5.37	1857	5.78	1903	6.22
13,060	1817	5.52	1857	5.89	1898	6.29	1939	6.71	1982	7.16
13,750	1907	6.85	1945	7.27	1984	7.72	2023	8.18	2063	8.68

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
8,250	1570	3.75	1650	4.35	1727	4.99	1801	5.65	1871	6.34
8,940	1620	4.13	1695	4.73	1770	5.39	1842	6.07	1911	6.78
9,625	1677	4.56	1746	5.15	1816	5.79	1885	6.48	1953	7.21
10,300	1739	5.02	1802	5.59	1866	6.20	1932	6.88	1996	7.59
11,000	1806	5.51	1863	6.04	1923	6.65	1983	7.29	2044	7.98
11,690	1876	6.03	1929	6.56	1984	7.14	2040	7.76	2096	8.42
12,375	1950	6.70	1999	7.22	2049	7.77	2101	8.38	2153	9.01
13,060	2026	7.65	2071	8.17	2118	8.74	2166	9.35	—	—
13,750	2104	9.20	2147	9.78	—	—	—	—	—	—

Std/Med Static 1193-2200 rpm, 6.0 maximum bhp (3.0 maximum bhp per fan motor)

High Static 1193-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

50FC-M30 — Standard/Medium Static — 27.5 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
8,250	1193	5.4	1260	5.7	1332	6.0	1408	6.3	1488	6.7
8,940	1281	5.8	1341	6.0	1406	6.3	1474	6.6	1546	7.0
9,625	1369	6.2	1425	6.4	1483	6.7	1545	7.0	1609	7.3
10,300	1457	6.6	1509	6.8	1563	7.1	1619	7.3	1678	7.6
11,000	1547	7.0	1595	7.2	1645	7.4	1696	7.7	1750	7.9
11,690	1636	7.4	1682	7.6	1728	7.8	1776	8.0	1825	8.3
12,375	1726	7.8	1769	8.0	1812	8.2	1857	8.4	—	—
13,060	1817	8.2	1857	8.4	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

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
8,250	1570	7.1	1650	7.5	1727	7.8	1801	8.2	—	—
8,940	1620	7.3	1695	7.7	1770	8.0	—	—	—	—
9,625	1677	7.6	1746	7.9	1816	8.2	—	—	—	—
10,300	1739	7.9	1802	8.2	—	—	—	—	—	—
11,000	1806	8.2	—	—	—	—	—	—	—	—
11,690	—	—	—	—	—	—	—	—	—	—
12,375	—	—	—	—	—	—	—	—	—	—
13,060	—	—	—	—	—	—	—	—	—	—
13,750	—	—	—	—	—	—	—	—	—	—

Std/Med Static 1193-2200 rpm

Fan data (cont)

50FC-M30 — High Static — 27.5 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
8,250	1193	5.4	1260	5.7	1332	6.0	1408	6.3	1488	6.7
8,940	1281	5.8	1341	6.0	1406	6.3	1474	6.6	1546	7.0
9,625	1369	6.2	1425	6.4	1483	6.7	1545	7.0	1609	7.3
10,300	1457	6.6	1509	6.8	1563	7.1	1619	7.3	1678	7.6
11,000	1547	7.0	1595	7.2	1645	7.4	1696	7.7	1750	7.9
11,690	1636	7.4	1682	7.6	1728	7.8	1776	8.0	1825	8.3
12,375	1726	7.8	1769	8.0	1812	8.2	1857	8.4	1903	8.6
13,060	1817	8.2	1857	8.4	1898	8.6	1939	8.8	1982	9.0
13,750	1907	8.6	1945	8.8	1984	9.0	2023	9.2	2063	9.4

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
8,250	1570	7.1	1650	7.5	1727	7.8	1801	8.2	1871	8.5
8,940	1620	7.3	1695	7.7	1770	8.0	1842	8.3	1911	8.7
9,625	1677	7.6	1746	7.9	1816	8.2	1885	8.5	1953	8.9
10,300	1739	7.9	1802	8.2	1866	8.5	1932	8.8	1996	9.1
11,000	1806	8.2	1863	8.4	1923	8.7	1983	9.0	2044	9.3
11,690	1876	8.5	1929	8.7	1984	9.0	2040	9.3	2096	9.5
12,375	1950	8.8	1999	9.1	2049	9.3	2101	9.5	2153	9.8
13,060	2026	9.2	2071	9.4	2118	9.6	2166	9.8	—	—
13,750	2104	9.6	2147	9.8	—	—	—	—	—	—

High Static 1193-2200 rpm

Fan data (cont)

50FC-M20 — 17.5 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
5250	1190	1.01	1293	1.30	1390	1.61	1482	1.95	1569	2.32
5690	1271	1.22	1366	1.52	1458	1.85	1546	2.20	1629	2.58
6125	1352	1.46	1442	1.77	1528	2.10	1612	2.47	1692	2.86
6560	1434	1.71	1519	2.04	1601	2.39	1680	2.76	1756	3.15
7000	1517	2.00	1597	2.33	1675	2.69	1750	3.06	1823	3.46
7440	1600	2.30	1677	2.65	1750	3.01	1822	3.39	1892	3.80
7875	1684	2.63	1757	2.98	1827	3.36	1895	3.74	1962	4.16
8310	1768	2.98	1838	3.35	1905	3.73	1970	4.12	2034	4.54
8750	1853	3.36	1920	3.73	1984	4.12	2046	4.52	2108	4.94

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
5250	1652	2.70	1730	3.10	1805	3.53	1876	3.96	1946	4.42
5690	1709	2.97	1785	3.39	1858	3.82	1928	4.27	1995	4.73
6125	1769	3.26	1842	3.69	1913	4.13	1981	4.58	2047	5.06
6560	1830	3.56	1901	3.99	1970	4.45	2037	4.92	2101	5.39
7000	1894	3.88	1963	4.33	2029	4.78	2094	5.25	2157	5.74
7440	1960	4.23	2026	4.67	2091	5.13	2153	5.60	—	—
7875	2027	4.58	2091	5.03	2154	5.50	—	—	—	—
8310	2097	4.97	2158	5.42	—	—	—	—	—	—
8750	2168	5.38	—	—	—	—	—	—	—	—

High Static 1190-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

50FC-M20 — High Static — 17.5 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
5250	1190	5.3	1293	5.8	1390	6.3	1482	6.7	1569	7.1
5690	1271	5.7	1366	6.2	1458	6.6	1546	7.0	1629	7.4
6125	1352	6.1	1442	6.5	1528	6.9	1612	7.3	1692	7.7
6560	1434	6.5	1519	6.9	1601	7.2	1680	7.6	1756	8.0
7000	1517	6.8	1597	7.2	1675	7.6	1750	7.9	1823	8.3
7440	1600	7.2	1677	7.6	1750	7.9	1822	8.3	1892	8.6
7875	1684	7.6	1757	8.0	1827	8.3	1895	8.6	1962	8.9
8310	1768	8.0	1838	8.3	1905	8.6	1970	8.9	2034	9.2
8750	1853	8.4	1920	8.7	1984	9.0	2046	9.3	2108	9.6

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
5250	1652	7.5	1730	7.8	1805	8.2	1876	8.5	1946	8.8
5690	1709	7.7	1785	8.1	1858	8.4	1928	8.7	1995	9.1
6125	1769	8.0	1842	8.3	1913	8.7	1981	9.0	2047	9.3
6560	1830	8.3	1901	8.6	1970	8.9	2037	9.2	2101	9.5
7000	1894	8.6	1963	8.9	2029	9.2	2094	9.5	2157	9.8
7440	1960	8.9	2026	9.2	2091	9.5	2153	9.8	—	—
7875	2027	9.2	2091	9.5	2154	9.8	—	—	—	—
8310	2097	9.5	2158	9.8	—	—	—	—	—	—
8750	2168	9.9	—	—	—	—	—	—	—	—

High Static 1190-2200 rpm

Fan data (cont)

50FC-M24 — 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	1328	1.39	1420	1.69	1508	2.03	1592	2.39	1674	2.78
6,500	1422	1.68	1508	2.00	1590	2.34	1670	2.71	1747	3.11
7,000	1517	2.00	1597	2.33	1675	2.69	1750	3.06	1823	3.46
7,500	1612	2.34	1688	2.69	1761	3.06	1832	3.44	1902	3.85
8,000	1708	2.73	1780	3.09	1849	3.46	1917	3.85	1983	4.27
8,500	1804	3.14	1873	3.51	1939	3.89	2003	4.29	2065	4.70
9,000	1901	3.58	1966	3.95	2029	4.35	2090	4.75	2150	5.17
9,500	1998	4.01	2061	4.40	2121	4.80	2179	5.21	—	—
10,000	2096	4.40	2155	4.78	—	—	—	—	—	—

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	1751	3.18	1826	3.60	1897	4.04	1966	4.50	2032	4.96
6,500	1821	3.52	1893	3.95	1962	4.40	2029	4.87	2093	5.34
7,000	1894	3.88	1963	4.33	2029	4.78	2094	5.25	2157	5.74
7,500	1969	4.27	2035	4.72	2099	5.18	2162	5.66	—	—
8,000	2047	4.69	2110	5.14	2172	5.61	—	—	—	—
8,500	2127	5.14	2187	5.59	—	—	—	—	—	—
9,000	—	—	—	—	—	—	—	—	—	—
9,500	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

High Static 1328-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

50FC-M24 — 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	1328	6.0	1420	6.4	1508	6.8	1592	7.2	1674	7.6
6,500	1422	6.4	1508	6.8	1590	7.2	1670	7.6	1747	7.9
7,000	1517	6.8	1597	7.2	1675	7.6	1750	7.9	1823	8.3
7,500	1612	7.3	1688	7.6	1761	8.0	1832	8.3	1902	8.6
8,000	1708	7.7	1780	8.1	1849	8.4	1917	8.7	1983	9.0
8,500	1804	8.2	1873	8.5	1939	8.8	2003	9.1	2065	9.4
9,000	1901	8.6	1966	8.9	2029	9.2	2090	9.5	2150	9.8
9,500	1998	9.1	2061	9.4	2121	9.6	2179	9.9	—	—
10,000	2096	9.5	2155	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	1751	7.9	1826	8.3	1897	8.6	1966	8.9	2032	9.2
6,500	1821	8.3	1893	8.6	1962	8.9	2029	9.2	2093	9.5
7,000	1894	8.6	1963	8.9	2029	9.2	2094	9.5	2157	9.8
7,500	1969	8.9	2035	9.2	2099	9.5	2162	9.8	—	—
8,000	2047	9.3	2110	9.6	2172	9.9	—	—	—	—
8,500	2127	9.7	2187	9.9	—	—	—	—	—	—
9,000	—	—	—	—	—	—	—	—	—	—
9,500	—	—	—	—	—	—	—	—	—	—
10,000	—	—	—	—	—	—	—	—	—	—

High Static 1328-2200 rpm

Fan data (cont)

50FC-M28 — 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	1415	2.15	1491	2.51	1568	2.92	1645	3.37	1719	3.85
8,125	1519	2.65	1589	3.03	1660	3.46	1732	3.93	1801	4.42
8,750	1623	3.21	1689	3.62	1755	4.06	1821	4.54	1886	5.04
9,375	1729	3.84	1790	4.26	1851	4.71	1912	5.20	1974	5.72
10,000	1835	4.53	1892	4.96	1949	5.42	2007	5.92	2065	6.45
10,625	1942	5.26	1995	5.70	2049	6.18	2103	6.68	2157	7.20
11,250	2049	6.02	2099	6.47	2149	6.95	2200	7.45	—	—
11,875	2156	6.79	—	—	—	—	—	—	—	—
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	1792	4.36	1862	4.89	1929	5.44	1993	6.00	2055	6.58
8,125	1870	4.94	1937	5.49	2002	6.07	2064	6.65	2125	7.25
8,750	1951	5.58	2015	6.15	2077	6.73	2137	7.33	2196	7.95
9,375	2035	6.26	2096	6.84	2155	7.44	—	—	—	—
10,000	2123	7.01	2180	7.59	—	—	—	—	—	—
10,625	—	—	—	—	—	—	—	—	—	—
11,250	—	—	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

High Static 1415-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

50FC-M28 — 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	1415	6.4	1491	6.7	1568	7.1	1645	7.4	1719	7.8
8,125	1519	6.9	1589	7.2	1660	7.5	1732	7.8	1801	8.2
8,750	1623	7.3	1689	7.6	1755	7.9	1821	8.3	1886	8.6
9,375	1729	7.8	1790	8.1	1851	8.4	1912	8.7	1974	9.0
10,000	1835	8.3	1892	8.6	1949	8.8	2007	9.1	2065	9.4
10,625	1942	8.8	1995	9.1	2049	9.3	2103	9.6	2157	9.8
11,250	2049	9.3	2099	9.5	2149	9.8	2200	10.0	—	—
11,875	2156	9.8	—	—	—	—	—	—	—	—
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	1792	8.1	1862	8.4	1929	8.7	1993	9.0	2055	9.3
8,125	1870	8.5	1937	8.8	2002	9.1	2064	9.4	2125	9.7
8,750	1951	8.9	2015	9.1	2077	9.4	2137	9.7	2196	10.0
9,375	2035	9.2	2096	9.5	2155	9.8	—	—	—	—
10,000	2123	9.6	2180	9.9	—	—	—	—	—	—
10,625	—	—	—	—	—	—	—	—	—	—
11,250	—	—	—	—	—	—	—	—	—	—
11,875	—	—	—	—	—	—	—	—	—	—
12,500	—	—	—	—	—	—	—	—	—	—

High Static 1415-2200 rpm

Fan data (cont)

50FC-M30 — 27.5 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
8250	1530	2.70	1599	3.09	1669	3.51	1739	3.97	1808	4.46
8940	1645	3.33	1709	3.74	1773	4.18	1837	4.64	1902	5.15
9625	1761	4.04	1819	4.45	1879	4.90	1939	5.39	1999	5.91
10300	1877	4.80	1932	5.23	1987	5.69	2043	6.19	2099	6.71
11000	1994	5.61	2045	6.05	2096	6.52	2149	7.02	—	—
11690	2111	6.44	2159	6.89	—	—	—	—	—	—
12375	—	—	—	—	—	—	—	—	—	—
13060	—	—	—	—	—	—	—	—	—	—
13750	—	—	—	—	—	—	—	—	—	—

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
8250	1876	4.99	1943	5.54	2007	6.11	2070	6.70	2130	7.30
8940	1966	5.69	2028	6.25	2090	6.84	2150	7.44	—	—
9625	2059	6.45	2118	7.02	2176	7.62	—	—	—	—
10300	2155	7.26	—	—	—	—	—	—	—	—
11000	—	—	—	—	—	—	—	—	—	—
11690	—	—	—	—	—	—	—	—	—	—
12375	—	—	—	—	—	—	—	—	—	—
13060	—	—	—	—	—	—	—	—	—	—
13750	—	—	—	—	—	—	—	—	—	—

High Static 1530-2200 rpm, 10.0 maximum bhp (5.0 maximum bhp per fan motor)

50FC-M30 — High Static — 27.5 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
8250	1530	6.9	1599	7.2	1669	7.5	1739	7.9	1808	8.2
8940	1645	7.4	1709	7.7	1773	8.0	1837	8.3	1902	8.6
9625	1761	8.0	1819	8.2	1879	8.5	1939	8.8	1999	9.1
10300	1877	8.5	1932	8.8	1987	9.0	2043	9.3	2099	9.5
11000	1994	9.0	2045	9.3	2096	9.5	2149	9.8	—	—
11690	2111	9.6	2159	9.8	—	—	—	—	—	—
12375	—	—	—	—	—	—	—	—	—	—
13060	—	—	—	—	—	—	—	—	—	—
13750	—	—	—	—	—	—	—	—	—	—

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
8250	1876	8.5	1943	8.8	2007	9.1	2070	9.4	2130	9.7
8940	1966	8.9	2028	9.2	2090	9.5	2150	9.8	—	—
9625	2059	9.3	2118	9.6	2176	9.9	—	—	—	—
10300	2155	9.8	—	—	—	—	—	—	—	—
11000	—	—	—	—	—	—	—	—	—	—
11690	—	—	—	—	—	—	—	—	—	—
12375	—	—	—	—	—	—	—	—	—	—
13060	—	—	—	—	—	—	—	—	—	—
13750	—	—	—	—	—	—	—	—	—	—

High Static 1530-2200 rpm

Legend and Notes

Applicable for Electrical Data Tables on pages 91 to 104

LEGEND

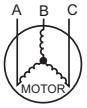
BRKR	—	Circuit Breaker
C.O.	—	Convenience Outlet
FLA	—	Full Load Amps
IFM	—	Indoor Fan Motor
LRA	—	Locked Rotor Amps
MCA	—	Minimum Circuit Amps
P.E.	—	Power Exhaust
PWRD C.O.	—	Powered Convenience Outlet
RLA	—	Rated Load Amps
SCCR	—	Short Circuit Current Rating
UNPWR C.O.	—	Unpowered Convenience Outlet

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.

$$\text{\% Voltage Imbalance} = 100x \frac{4}{227} = 1.78\%$$

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)

48/50FC**20-30 Cooling Electrical Data

48/50FC UNIT SIZE	V-Ph-Hz	UNIT VOLTAGE Range		COMP 1		COMP 2		OFM (EA)		STD SCCR kA	HIGH SCCR kA[a]	IFM			COMBUSTION FAN MOTOR (48 SERIES ONLY)	POWER EXHAUST	
		Min	Max	RLA	LRA	RLA	LRA	WATTS	FLA			Type	Effcy at Full Load	FLA	FLA	Motor Qty	FLA (Each motor)
20 Vertical	208-3-60	187	253	28.2	240	27.6	191	350	1.5	5	60	STD/MED	90.0%	6.4	0.52	2	5.9
												HIGH		7.5			
	230-3-60	187	253	28.2	240	27.6	191	350	1.5	5	60	STD/MED	90.0%	6.4	0.52	2	5.9
												HIGH		7.5			
	460-3-60	414	506	14.7	130	12.8	100	277	0.9	5	65	STD/MED	90.0%	3.0	0.3	2	3.1
												HIGH		3.5			
	575-3-60	518	633	11.3	94	9.6	78	397	0.6	5	—	STD/MED	90.0%	2.5	0.24	2	2.4
												HIGH		3.0			
24 Vertical	208-3-60	187	253	34.0	240	34.0	240	350	1.5	5	60	STD/MED	90.0%	6.4	0.52	2	5.9
												HIGH		12.6			
	230-3-60	187	253	34.0	240	34.0	240	350	1.5	5	60	STD/MED	90.0%	6.4	0.52	2	5.9
												HIGH		12.6			
	460-3-60	414	506	16.0	140	16.0	140	277	0.9	5	65	STD/MED	90.0%	3.0	0.3	2	3.1
												HIGH		5.6			
	575-3-60	518	633	12.9	108	12.9	108	397	0.6	5	—	STD/MED	90.0%	2.5	0.24	2	2.4
												HIGH		4.6			
28 Vertical	208-3-60	187	253	48.1	245	48.1	245	350	1.5	5	60	STD/MED	90.0%	7.5	0.52	2	5.9
												HIGH		12.6			
	230-3-60	187	253	48.1	245	48.1	245	350	1.5	5	60	STD/MED	90.0%	7.5	0.52	2	5.9
												HIGH		12.6			
	460-3-60	414	506	18.6	125	18.6	125	277	0.9	5	65	STD/MED	90.0%	3.5	0.3	2	3.1
												HIGH		5.6			
	575-3-60	518	633	14.7	100	14.7	100	397	0.6	5	—	STD/MED	90.0%	3.0	0.24	2	2.4
												HIGH		4.6			
30 Vertical	208-3-60	187	253	51.3	300	51.3	300	350	1.5	5	60	STD/MED	90.0%	7.5	0.52	2	5.9
												HIGH		12.6			
	230-3-60	187	253	51.3	300	51.3	300	350	1.5	5	60	STD/MED	90.0%	7.5	0.52	2	5.9
												HIGH		12.6			
	460-3-60	414	506	22.4	150	22.4	150	277	0.9	5	65	STD/MED	90.0%	3.5	0.3	2	3.1
												HIGH		5.6			
	575-3-60	518	633	19.9	109	19.9	109	397	0.6	5	—	STD/MED	90.0%	3.0	0.24	2	2.4
												HIGH		4.6			
20 Horizontal	208-3-60	187	253	28.2	240	27.6	191	350	1.5	5	60	HIGH	90.0%	12.6	0.52	2	5.9
	230-3-60	187	253	28.2	240	27.6	191	350	1.5	5	60	HIGH	90.0%	12.6	0.52	2	5.9
	460-3-60	414	506	14.7	130	12.8	100	277	0.9	5	65	HIGH	90.0%	5.6	0.3	2	3.1
	575-3-60	518	633	11.3	94	9.6	78	397	0.6	5	—	HIGH	90.0%	4.6	0.24	2	2.4
24 Horizontal	208-3-60	187	253	34.0	240	34.0	240	350	1.5	5	60	HIGH	90.0%	12.6	0.52	2	5.9
	230-3-60	187	253	34.0	240	34.0	240	350	1.5	5	60	HIGH	90.0%	12.6	0.52	2	5.9
	460-3-60	414	506	16.0	140	16.0	140	277	0.9	5	65	HIGH	90.0%	5.6	0.3	2	3.1
	575-3-60	518	633	12.9	108	12.9	108	397	0.6	5	—	HIGH	90.0%	4.6	0.24	2	2.4
28 Horizontal	208-3-60	187	253	48.1	245	48.1	245	350	1.5	5	60	HIGH	90.0%	12.6	0.52	2	5.9
	230-3-60	187	253	48.1	245	48.1	245	350	1.5	5	60	HIGH	90.0%	12.6	0.52	2	5.9
	460-3-60	414	506	18.6	125	18.6	125	277	0.9	5	65	HIGH	90.0%	5.6	0.3	2	3.1
	575-3-60	518	633	14.7	100	14.7	100	397	0.6	5	—	HIGH	90.0%	4.6	0.24	2	2.4
30 Horizontal	208-3-60	187	253	51.3	300	51.3	300	350	1.5	5	60	HIGH	90.0%	12.6	0.52	2	5.9
	230-3-60	187	253	51.3	300	51.3	300	350	1.5	5	60	HIGH	90.0%	12.6	0.52	2	5.9
	460-3-60	414	506	22.4	150	22.4	150	277	0.9	5	65	HIGH	90.0%	5.6	0.3	2	3.1
	575-3-60	518	633	19.9	109	19.9	109	397	0.6	5	—	HIGH	90.0%	4.6	0.24	2	2.4

NOTE(S):

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

Electrical data (cont)

48FC**20-30 MCA MOCP Electrical Data

48FC 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
48FC**20 Vertical	208/230-3-60	STD/MED	5	60	80	100	84	458	92	100	98	478
		HIGH			82	100	87	462	94	110	100	482
	460-3-60	STD/MED	5	65	40	50	42	244	46	60	49	256
		HIGH			41	50	43	246	47	60	50	258
	575-3-60	STD/MED	5	—	30	40	32	186	35	45	37	194
		HIGH			31	40	33	186	36	45	39	194
48FC**24 Vertical	208/230-3-60	STD/MED	5	60	95	125	100	510	107	125	113	530
		HIGH			108	125	114	528	119	150	128	548
	460-3-60	STD/MED	5	65	46	60	48	296	52	60	55	308
		HIGH			51	60	54	304	57	70	61	316
	575-3-60	STD/MED	5	—	36	45	38	232	41	50	44	240
		HIGH			41	50	43	236	45	50	49	244
48FC**28 Vertical	208/230-3-60	STD/MED	5	60	129	175	135	524	141	175	148	544
		HIGH			139	175	147	538	151	175	160	558
	460-3-60	STD/MED	5	65	52	60	55	268	59	70	62	280
		HIGH			57	70	60	274	63	80	67	286
	575-3-60	STD/MED	5	—	41	50	43	216	46	60	49	224
		HIGH			45	50	47	220	49	60	53	228
48FC**30 Vertical	208/230-3-60	STD/MED	5	60	139	175	146	640	151	200	159	660
		HIGH			150	200	157	654	161	200	171	674
	460-3-60	STD/MED	5	65	63	80	66	322	69	90	73	334
		HIGH			67	80	71	328	73	90	78	340
	575-3-60	STD/MED	5	—	54	60	57	238	59	70	62	246
		HIGH			58	70	60	242	62	80	66	250
48FC**20 Horizontal	208/230-3-60	HIGH	5	60	93	100	98	476	104	125	112	496
	460-3-60	HIGH	5	65	45	50	48	252	51	60	55	264
	575-3-60	HIGH	5	—	35	45	37	190	39	50	42	198
48FC**24 Horizontal	208/230-3-60	HIGH	5	60	108	125	114	528	119	150	128	548
	460-3-60	HIGH	5	65	51	60	54	304	57	70	61	316
	575-3-60	HIGH	5	—	41	50	43	236	45	50	49	244
48FC**28 Horizontal	208/230-3-60	HIGH	5	60	139	175	147	538	151	175	160	558
	460-3-60	HIGH	5	65	57	70	60	274	63	80	67	286
	575-3-60	HIGH	5	—	45	50	47	220	49	60	53	228
48FC**30 Horizontal	208/230-3-60	HIGH	5	60	150	200	157	654	161	200	171	674
	460-3-60	HIGH	5	65	67	80	71	328	73	90	78	340
	575-3-60	HIGH	5	—	58	70	60	242	62	80	66	250

NOTE(S):

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

Electrical data (cont)

48FC**20-30 MCA MOCP Electrical Data (cont)

48FC 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	Fuse or HACR Breaker	Disconnect Size		MCA	Fuse or HACR Breaker	Disconnect Size	
						FLA	LRA			FLA	LRA
48FC**20 Vertical	208/230-3-60	STD/MED	5	85	100	90	463	97	110	103	483
		HIGH		87	100	92	467	99	125	106	487
	460-3-60	STD/MED	5	42	50	44	246	48	60	51	258
		HIGH		43	50	45	248	49	60	52	260
	575-3-60	STD/MED	5	32	40	34	188	37	45	39	196
		HIGH		33	40	35	188	38	45	40	196
48FC**24 Vertical	208/230-3-60	STD/MED	5	100	125	105	515	112	125	119	535
		HIGH		112	125	120	533	124	150	133	553
	460-3-60	STD/MED	5	48	60	50	298	54	60	58	310
		HIGH		53	60	56	306	59	70	63	318
	575-3-60	STD/MED	5	38	50	40	234	43	50	46	242
		HIGH		42	50	45	238	47	60	50	246
48FC**28 Vertical	208/230-3-60	STD/MED	5	134	175	140	529	146	175	154	549
		HIGH		144	175	152	543	156	200	166	563
	460-3-60	STD/MED	5	55	60	58	270	61	70	65	282
		HIGH		59	70	62	276	65	80	69	288
	575-3-60	STD/MED	5	43	50	45	218	48	60	51	226
		HIGH		46	60	49	222	51	60	55	230
48FC**30 Vertical	208/230-3-60	STD/MED	5	144	175	151	645	156	200	165	665
		HIGH		154	200	163	659	166	200	176	679
	460-3-60	STD/MED	5	65	80	68	324	71	90	75	336
		HIGH		69	90	73	330	75	90	80	342
	575-3-60	STD/MED	5	56	70	59	240	61	80	64	248
		HIGH		59	70	62	244	64	80	68	252
48FC**20 Horizontal	208/230-3-60	HIGH	5	97	125	104	481	109	125	117	501
	460-3-60	HIGH	5	47	60	50	254	53	60	57	266
	575-3-60	HIGH	5	36	45	39	192	41	50	44	200
48FC**24 Horizontal	208/230-3-60	HIGH	5	112	125	120	533	124	150	133	553
	460-3-60	HIGH	5	53	60	56	306	59	70	63	318
	575-3-60	HIGH	5	42	50	45	238	47	60	50	246
48FC**28 Horizontal	208/230-3-60	HIGH	5	144	175	152	543	156	200	166	563
	460-3-60	HIGH	5	58	70	62	276	65	80	69	288
	575-3-60	HIGH	5	46	60	49	222	51	60	55	230
48FC**30 Horizontal	208/230-3-60	HIGH	5	154	200	163	659	166	200	176	679
	460-3-60	HIGH	5	69	90	73	330	75	90	80	342
	575-3-60	HIGH	5	59	70	62	244	64	80	68	252

Electrical data (cont)

50FC**20 MCA MOCP Electrical Data

50FC 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				With Power Exhaust (powered from unit)			
					STD SCCR CRHEATER ****00	HIGH SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	Fuse or HACR Breaker	Disconnect Size		MCA	Fuse or HACR Breaker	Disconnect Size	
											FLA	LRA			FLA	LRA
50FC**20	208/230-3-60	STD/MED	5	60	—	—	—	—	80	100	84	458	92	100	98	478
					454A	454A	18.8/25.0	52.1/60.1	81/91	100/100	84/84	458/458	96/106	100/110	98/98	478/478
					455A	455A	37.6/50.0	104.2/120.3	146/136	150/150	135/153	458/458	161/151	175/175	148/167	478/478
					456A	456A	56.3/75.0	156.4/180.4	172/196	200/225	195/222	458/458	187/211	200/225	208/236	478/478
		HIGH	5	60	—	—	—	—	82	100	87	462	94	110	100	482
					454A	454A	18.8/25.0	52.1/60.1	84/94	100/100	87/87	462/462	99/109	110/110	100/100	482/482
					455A	455A	37.6/50.0	104.2/120.3	149/139	150/150	137/156	462/462	164/154	175/175	151/169	482/482
					456A	456A	56.3/75.0	156.4/180.4	175/199	200/225	197/225	462/462	190/214	200/225	211/238	482/482
	460-3-60	STD/MED	5	65	—	—	—	—	40	50	42	244	46	60	49	256
					457A	457A	25.0	30.1	45	50	42	244	52	60	49	256
					458A	458A	50.0	60.1	68	70	76	244	75	80	83	256
					459A	459A	75.0	90.2	98	100	111	244	105	110	118	256
		HIGH	5	65	—	—	—	—	41	50	43	246	47	60	50	258
					457A	457A	25.0	30.1	46	50	43	246	54	60	50	258
					458A	458A	50.0	60.1	69	80	77	246	77	80	84	258
					459A	459A	75.0	90.2	99	100	112	246	107	110	119	258
	575-3-60	STD/MED	5	—	—	—	—	—	30	40	32	186	35	45	37	194
					460A	—	24.8	23.9	36	40	33	186	42	45	39	194
					461A	—	49.6	47.7	66	70	61	186	72	80	66	194
					462A	—	74.4	71.6	78	80	88	186	84	90	94	194
		HIGH	5	—	—	—	—	—	31	40	33	186	36	45	39	194
					460A	—	24.8	23.9	37	40	34	186	43	45	40	194
					461A	—	49.6	47.7	67	70	62	186	73	80	67	194
					462A	—	74.4	71.6	79	90	89	186	85	90	95	194
50FC**20 Horizontal	208/230-3-60	HIGH	5	60	—	—	—	—	93	100	98	476	104	125	112	496
					463A	463A	18.8/25.0	52.1/60.1	97/107	100/110	98/98	476/476	111/121	125/125	112/112	496/496
					464A	464A	37.6/50.0	104.2/120.3	162/152	175/175	149/167	476/476	176/167	200/175	162/181	496/496
					465A	465A	56.3/75.0	156.4/180.4	188/212	200/225	209/236	476/476	203/227	225/250	222/250	496/496
	460-3-60	HIGH	5	65	—	—	—	—	45	50	48	252	51	60	55	264
					466A	466A	25.0	30.1	52	60	48	252	59	60	55	264
					467A	467A	50.0	60.1	74	80	82	252	82	90	89	264
					468A	468A	75.0	90.2	104	110	117	252	112	125	124	264
	575-3-60	HIGH	5	—	—	—	—	—	34	45	37	190	39	50	42	198
					469A	—	24.8	23.9	41	45	38	190	47	50	44	198
					470A	—	49.6	47.7	71	80	65	190	77	80	71	198
					471A	—	74.4	71.6	83	90	93	190	89	90	98	198

NOTE(S):

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

Electrical data (cont)

50FC**20 MCA MOCP Electrical Data (cont)

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			WITH POWERED CONVENIENCE OUTLET							
							No Power Exhaust				With Power Exhaust (powered from unit)			
									Disconnect Size				Disconnect Size	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	Fuse or HACR Breaker	FLA	LRA	MCA	Fuse or HACR Breaker	FLA	LRA
50FC**20 Vertical	208/230-3-60	STD/MED	5	—	—	—	85	100	90	463	97	110	103	483
				454A	18.8/25.0	52.1/60.1	87/97	100/100	90/90	463/463	102/112	110/125	103/103	483/483
				455A	37.6/50.0	104.2/120.3	152/142	175/150	140/159	463/463	167/157	175/175	154/172	483/483
				456A	56.3/75.0	156.4/180.4	178/202	200/225	200/228	463/463	193/217	200/225	214/241	483/483
		HIGH	5	—	—	—	87	100	92	467	99	125	106	487
				454A	18.8/25.0	52.1/60.1	90/100	100/100	92/92	467/467	105/115	125/125	106/106	487/487
				455A	37.6/50.0	104.2/120.3	155/145	175/150	143/161	467/467	170/160	175/175	156/175	487/487
				456A	56.3/75.0	156.4/180.4	181/205	200/225	203/230	467/467	196/220	200/225	216/244	487/487
	460-3-60	STD/MED	5	—	—	—	42	50	44	246	48	60	51	258
				457A	25.0	30.1	48	50	44	246	56	60	51	258
				458A	50.0	60.1	70	80	79	246	78	80	86	258
				459A	75.0	90.2	100	110	113	246	108	110	120	258
		HIGH	5	—	—	—	43	50	45	248	49	60	52	260
				457A	25.0	30.1	49	50	45	248	57	60	52	260
				458A	50.0	60.1	72	80	80	248	79	80	87	260
				459A	75.0	90.2	102	110	114	248	109	110	121	260
	575-3-60	STD/MED	5	—	—	—	32	40	34	188	37	45	39	196
				460A	24.8	23.9	38	40	35	188	44	45	41	196
				461A	49.6	47.7	68	70	63	188	74	80	68	196
				462A	74.4	71.6	80	90	90	188	86	90	96	196
		HIGH	5	—	—	—	33	40	35	188	38	45	40	196
				460A	24.8	23.9	39	40	36	188	45	50	42	196
				461A	49.6	47.7	69	70	64	188	75	80	69	196
				462A	74.4	71.6	81	90	91	188	87	90	97	196
50FC**20 Horizontal	208/230-3-60	HIGH	5	—	—	—	97	125	104	481	109	125	117	501
				463A	18.8/25.0	52.1/60.1	103/113	125/125	104/104	481/481	117/127	125/150	117/117	501/501
				464A	37.6/50.0	104.2/120.3	168/158	175/175	154/173	481/481	182/172	200/175	168/186	501/501
				465A	56.3/75.0	156.4/180.4	194/218	200/250	214/242	481/481	208/232	225/250	228/256	501/501
	460-3-60	HIGH	5	—	—	—	47	60	50	254	53	60	57	266
				466A	25.0	30.1	54	60	50	254	62	70	57	266
				467A	50.0	60.1	77	80	85	254	85	90	92	266
				468A	75.0	90.2	107	125	119	254	115	125	126	266
	575-3-60	HIGH	5	—	—	—	36	45	39	192	41	50	44	200
				469A	24.8	23.9	43	45	40	192	49	50	46	200
				470A	49.6	47.7	73	80	67	192	79	80	73	200
				471A	74.4	71.6	85	90	95	192	91	100	100	200

Electrical data (cont)

50FC**24 MCA MOCP Electrical Data

50FC 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				With Power Exhaust (powered from unit)			
					STD SCCR CRHEATER ****00	HIGH SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	Fuse or HACR Breaker	Disconnect Size		MCA	Fuse or HACR Breaker	Disconnect Size	
											FLA	LRA			FLA	LRA
50FC**24 Vertical	208/230-3-60	STD/MED	5	60	—	—	—	—	95	125	100	510	107	125	113	530
					454A	454A	18.8/25.0	52.1/60.1	95/95	125/125	100/100	510/510	107/107	125/125	113/113	530/530
					455A	455A	37.6/50.0	104.2/120.3	146/136	150/150	135/153	510/510	161/151	175/175	148/167	530/530
					456A	456A	56.3/75.0	156.4/180.4	172/196	200/225	195/222	510/510	187/211	200/225	208/236	530/530
		HIGH	5	60	—	—	—	—	108	125	114	528	119	150	128	548
					454A	454A	18.8/25.0	52.1/60.1	108/108	125/125	114/114	528/528	119/121	150/150	128/128	548/548
					455A	455A	37.6/50.0	104.2/120.3	162/152	175/175	149/167	528/528	176/167	200/175	162/181	548/548
					456A	456A	56.3/75.0	156.4/180.4	188/212	200/225	209/236	528/528	203/227	225/250	222/250	548/548
	460-3-60	STD/MED	5	65	—	—	—	—	46	60	48	296	52	60	55	308
					457A	457A	25.0	30.1	46	60	48	296	53	60	55	308
					458A	458A	50.0	60.1	68	70	76	296	75	80	83	308
					459A	459A	75.0	90.2	98	100	111	296	105	110	118	308
		HIGH	5	65	—	—	—	—	51	60	54	304	57	70	61	316
					457A	457A	25.0	30.1	52	60	54	304	59	70	61	316
					458A	458A	50.0	60.1	74	80	82	304	82	90	89	316
					459A	459A	75.0	90.2	104	110	117	304	112	125	124	316
	575-3-60	STD/MED	5	—	—	—	—	—	36	45	38	232	41	50	44	240
					460A	—	24.8	23.9	36	45	38	232	42	50	44	240
					461A	—	49.6	47.7	66	70	61	232	72	80	66	240
					462A	—	74.4	71.6	78	80	88	232	84	90	94	240
		HIGH	5	—	—	—	—	—	41	50	43	236	45	50	49	244
					460A	—	24.8	23.9	41	50	43	236	47	50	49	244
					461A	—	49.6	47.7	71	80	65	236	77	80	71	244
					462A	—	74.4	71.6	83	90	93	236	89	90	98	244
50FC**24 Horizontal	208/230-3-60	HIGH	5	60	—	—	—	—	108	125	114	528	119	150	128	548
					463A	463A	18.8/25.0	52.1/60.1	108/108	125/125	114/114	528/528	119/121	150/150	128/128	548/548
					464A	464A	37.6/50.0	104.2/120.3	162/152	175/175	149/167	528/528	176/167	200/175	162/181	548/548
					465A	465A	56.3/75.0	156.4/180.4	188/212	200/225	209/236	528/528	203/227	225/250	222/250	548/548
	460-3-60	HIGH	5	65	—	—	—	—	51	60	54	304	57	70	61	316
					466A	466A	25.0	30.1	52	60	54	304	59	70	61	316
					467A	467A	50.0	60.1	74	80	82	304	82	90	89	316
					468A	468A	75.0	90.2	104	110	117	304	112	125	124	316
	575-3-60	HIGH	5	—	—	—	—	—	41	50	43	236	45	50	49	244
					469A	—	24.8	23.9	41	50	43	236	47	50	49	244
					470A	—	49.6	47.7	71	80	65	236	77	80	71	244
					471A	—	74.4	71.6	83	90	93	236	89	90	98	244

NOTE(S):

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

Electrical data (cont)

50FC**24 MCA MOCP Electrical Data (cont)

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			WITH POWERED CONVENIENCE OUTLET							
							No Power Exhaust				With Power Exhaust (powered from unit)			
									Disconnect Size				Disconnect Size	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	Fuse or HACR Breaker	FLA	LRA	MCA	Fuse or HACR Breaker	FLA	LRA
50FC**24 Vertical	208/230-3-60	STD/MED	5	—	—	—	100	125	105	515	112	125	119	535
				454A	18.8/25.0	52.1/60.1	100/100	125/125	105/105	515/515	112/112	125/125	119/119	535/535
				455A	37.6/50.0	104.2/120.3	152/142	175/150	140/159	515/515	167/157	175/175	154/172	535/535
				456A	56.3/75.0	156.4/180.4	178/202	200/225	200/228	515/515	193/217	200/225	214/241	535/535
		HIGH	5	—	—	—	112	125	120	533	124	150	133	553
				454A	18.8/25.0	52.1/60.1	112/113	125/125	120/120	533/533	124/127	150/150	133/133	553/553
				455A	37.6/50.0	104.2/120.3	168/158	175/175	154/173	533/533	182/173	200/175	168/186	553/553
				456A	56.3/75.0	156.4/180.4	194/218	200/250	214/242	533/533	209/233	225/250	228/256	553/553
	460-3-60	STD/MED	5	—	—	—	48	60	50	298	54	60	58	310
				457A	25.0	30.1	48	60	50	298	55	60	58	310
				458A	50.0	60.1	70	80	79	298	78	80	86	310
				459A	75.0	90.2	100	110	113	298	108	110	120	310
		HIGH	5	—	—	—	53	60	56	306	59	70	63	318
				457A	25.0	30.1	54	60	56	306	62	70	63	318
				458A	50.0	60.1	77	80	85	306	85	90	92	318
				459A	75.0	90.2	107	125	119	306	115	125	126	318
	575-3-60	STD/MED	5	—	—	—	38	50	40	234	43	50	46	242
				460A	24.8	23.9	38	50	40	234	44	50	46	242
				461A	49.6	47.7	68	70	63	234	74	80	68	242
				462A	74.4	71.6	80	90	90	234	86	90	96	242
		HIGH	5	—	—	—	42	50	45	238	47	60	50	246
				460A	24.8	23.9	43	50	45	238	49	60	50	246
				461A	49.6	47.7	73	80	67	238	79	80	73	246
				462A	74.4	71.6	85	90	95	238	91	100	100	246
50FC**24 Horizontal	208/230-3-60	HIGH	5	—	—	—	112	125	120	533	124	150	133	553
				463A	18.8/25.0	52.1/60.1	112/113	125/125	120/120	533/533	124/127	150/150	133/133	553/553
				464A	37.6/50.0	104.2/120.3	168/158	175/175	154/173	533/533	182/173	200/175	168/186	553/553
				465A	56.3/75.0	156.4/180.4	1934/218	200/250	214/242	533/533	209/233	225/250	228/256	553/553
	460-3-60	HIGH	5	—	—	—	53	60	56	306	59	70	63	318
				466A	25.0	30.1	54	60	56	306	62	70	63	318
				467A	50.0	60.1	77	80	85	306	84	90	92	318
				468A	75.0	90.2	107	125	119	306	115	125	126	318
	575-3-60	HIGH	5	—	—	—	42	50	45	238	47	60	50	246
				469A	24.8	23.9	43	50	45	238	49	60	50	246
				470A	49.6	47.7	73	80	67	238	79	80	73	246
				471A	74.4	71.6	85	90	95	238	91	100	100	246

Electrical data (cont)

50FC**28 MCA MOCP Electrical Data

50FC 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				With Power Exhaust (powered from unit)			
					STD SCCR CRHEATER ****00	HIGH SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	Fuse or HACR Breaker	Disconnect Size		MCA	Fuse or HACR Breaker	Disconnect Size	
											FLA	LRA			FLA	LRA
50FC**28 Vertical	208/230-3-60	STD/ MED	5	60	—	—	—	—	129	175	135	524	141	175	148	544
					454A	454A	18.8/ 25.0	52.1/60.1	129/129	175/175	135/135	524/524	141/141	175/175	148/148	544/544
					455A	455A	37.6/ 50.0	104.2/ 120.3	149/139	175/175	137/156	524/524	164/154	175/175	151/169	544/544
					456A	456A	56.3/ 75.0	156.4/ 180.4	175/199	200/225	197/225	524/524	190/214	200/225	211/238	544/544
		HIGH	5	60	—	—	—	—	139	175	147	538	151	175	160	558
					454A	454A	18.8/ 25.0	52.1/60.1	139/139	175/175	147/147	538/538	151/151	175/175	160/160	558/558
					455A	455A	37.6/ 50.0	104.2/ 120.3	162/152	175/175	149/167	538/538	176/167	200/175	162/181	558/558
					456A	456A	56.3/ 75.0	156.4/ 180.4	188/212	200/225	209/236	538/538	203/227	225/250	222/250	558/558
	460-3-60	STD/ MED	5	65	—	—	—	—	53	60	55	268	59	70	62	280
					457A	457A	25.0	30.1	53	60	55	268	59	70	62	280
					458A	458A	50.0	60.1	69	80	77	268	77	80	84	280
					459A	459A	75.0	90.2	99	100	112	268	107	110	119	280
		HIGH	5	65	—	—	—	—	57	70	60	274	63	80	67	286
					457A	457A	25.0	30.1	57	70	60	274	63	80	67	286
					458A	458A	50.0	60.1	74	80	82	274	82	90	89	286
					459A	459A	75.0	90.2	104	110	117	274	112	125	124	286
	575-3-60	STD/ MED	5	—	—	—	—	—	42	50	43	216	46	60	49	224
					460A	—	24.8	23.9	42	50	43	216	46	60	49	224
					461A	—	49.6	47.7	67	70	62	216	73	80	67	224
					462A	—	74.4	71.6	79	90	89	216	85	90	95	224
		HIGH	5	—	—	—	—	—	45	50	47	220	50	60	53	228
					460A	—	24.8	23.9	45	50	47	220	50	60	53	228
					461A	—	49.6	47.7	71	80	65	220	77	80	71	228
					462A	—	74.4	71.6	83	90	93	220	89	90	98	228
50FC**28 Horizontal	208/230-3-60	HIGH	5	60	—	—	—	—	139	175	147	538	151	175	160	558
					463A	463A	18.8/ 25.0	52.1/60.1	139/139	175/175	147/147	538/538	151/151	175/175	160/160	558/558
					464A	464A	37.6/ 50.0	104.2/ 120.3	162/152	175/175	149/167	538/538	177/167	200/175	162/181	558/558
					465A	465A	56.3/ 75.0	156.4/ 180.4	188/212	200/225	209/236	538/538	203/227	225/250	222/250	558/558
	460-3-60	HIGH	5	65	—	—	—	—	57	70	60	274	63	80	67	286
					466A	466A	25.0	30.1	57	70	60	274	63	80	67	286
					467A	467A	50.0	60.1	74	80	82	274	82	90	89	286
					468A	468A	75.0	90.2	104	110	117	274	112	125	124	286
	575-3-60	HIGH	5	—	—	—	—	—	45	50	47	220	50	60	53	228
					469A	—	24.8	23.9	45	50	47	220	50	60	53	228
					470A	—	49.6	47.7	71	80	65	220	77	80	71	228
					471A	—	74.4	71.6	83	90	93	220	89	90	98	228

NOTE(S):

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

Electrical data (cont)

50FC**28 MCA MOCP Electrical Data (cont)

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			WITH POWERED CONVENIENCE OUTLET							
							No Power Exhaust				With Power Exhaust (powered from unit)			
									Disconnect Size				Disconnect Size	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	Fuse or HACR Breaker	FLA	LRA	MCA	Fuse or HACR Breaker	FLA	LRA
50FC**28 Vertical	208/230-3-60	STD/MED	5	—	—	—	134	175	140	529	146	175	154	549
				454A	18.8/25.0	52.1/60.1	134/134	175/175	140/140	529/529	146/146	175/175	154/154	549/549
				455A	37.6/50.0	104.2/120.3	155/145	175/175	143/161	529/529	1670/160	175/175	156/175	549/549
				456A	56.3/75.0	156.4/180.4	181/205	200/225	203/230	529/529	196/220	200/225	216/244	549/549
		HIGH	5	—	—	—	144	175	152	543	156	200	166	563
				454A	18.8/25.0	52.1/60.1	144/144	175/175	152/152	543/543	156/156	200/200	166/166	563/563
				455A	37.6/50.0	104.2/120.3	168/158	175/175	154/173	543/543	183/173	200/200	168/186	563/563
				456A	56.3/75.0	156.4/180.4	194/218	200/250	214/242	543/543	209/233	225/250	228/256	563/563
	460-3-60	STD/MED	5	—	—	—	55	60	58	270	61	70	65	282
				457A	25.0	30.1	55	60	58	270	61	70	65	282
				458A	50.0	60.1	72	80	80	270	79	80	87	282
				459A	75.0	90.2	102	110	114	270	110	110	121	282
		HIGH	5	—	—	—	59	70	62	276	65	80	69	288
				457A	25.0	30.1	59	70	62	276	65	80	69	288
				458A	50.0	60.1	77	80	85	276	85	90	92	288
				459A	75.0	90.2	107	125	119	276	115	125	126	288
	575-3-60	STD/MED	5	—	—	—	43	50	45	218	48	60	51	226
				460A	24.8	23.9	43	50	45	218	48	60	51	226
				461A	49.6	47.7	69	70	64	218	75	80	69	226
				462A	74.4	71.6	81	90	91	218	87	90	97	226
		HIGH	5	—	—	—	46	60	49	222	51	60	55	230
				460A	24.8	23.9	46	60	49	222	51	60	55	230
				461A	49.6	47.7	73	80	67	222	79	80	73	230
				462A	74.4	71.6	85	90	95	222	91	100	100	230
50FC**28 Horizontal	208/230-3-60	HIGH	5	—	—	—	144	175	152	543	156	200	166	563
				463A	18.8/25.0	52.1/60.1	144/144	175/175	152/152	543/543	156/156	200/200	166/166	563/563
				464A	37.6/50.0	104.2/120.3	168/158	175/175	154/173	543/543	183/173	200/200	168/186	563/563
				465A	56.3/75.0	156.4/180.4	194/218	200/250	214/242	543/543	209/233	225/250	228/256	563/563
	460-3-60	HIGH	5	—	—	—	59	70	62	276	65	80	69	288
				466A	25.0	30.1	59	70	62	276	65	80	69	288
				467A	50.0	60.1	77	80	85	276	85	90	92	288
				468A	75.0	90.2	107	125	119	276	115	125	126	288
	575-3-60	HIGH	5	—	—	—	46	60	49	222	51	60	55	230
				469A	24.8	23.9	46	60	49	222	51	60	55	230
				470A	49.6	47.7	73	80	67	222	79	80	73	230
				471A	74.4	71.6	85	90	95	222	91	100	100	230

Electrical data (cont)

50FC**30 MCA MOCP Electrical Data

50FC 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				With Power Exhaust (powered from unit)			
					STD SCCR CRHEATER ****00	HIGH SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	Fuse or HACR Breaker	Disconnect Size		MCA	Fuse or HACR Breaker	Disconnect Size	
											FLA	LRA			FLA	LRA
50FC**30 Vertical	208/230-3-60	STD/ MED	5	60	—	—	—	—	139	175	146	640	151	200	159	660
					454A	454A	18.8/ 25.0	52.1/60.1	139/139	175/175	146/146	640/640	151/151	200/200	159/159	660/660
					455A	455A	37.6/ 50.0	104.2/ 120.3	149/139	175/175	146/156	640/640	164/154	200/200	159/169	660/660
					456A	456A	56.3/ 75.0	156.4/ 180.4	175/199	200/225	197/225	640/640	190/214	200/225	211/238	660/660
		HIGH	5	60	—	—	—	—	150	200	157	654	161	200	171	674
					454A	454A	18.8/ 25.0	52.1/60.1	150/150	200/200	157/157	654/654	161/161	200/200	171/171	674/674
					455A	455A	37.6/ 50.0	104.2/ 120.3	162/152	200/200	157/167	654/654	177/167	200/200	171/181	674/674
					456A	456A	56.3/ 75.0	156.4/ 180.4	188/212	200/225	209/236	654/654	203/227	225/250	222/250	674/674
	460-3-60	STD/ MED	5	65	—	—	—	—	63	80	66	322	69	90	73	334
					457A	457A	25.0	30.1	63	80	66	322	69	90	73	334
					458A	458A	50.0	60.1	69	80	77	322	77	90	84	334
					459A	459A	75.0	90.2	99	100	112	322	107	110	119	334
		HIGH	5	65	—	—	—	—	67	80	71	328	73	90	78	340
					457A	457A	25.0	30.1	67	80	71	328	73	90	78	340
					458A	458A	50.0	60.1	74	80	82	328	82	90	89	340
					459A	459A	75.0	90.2	104	110	117	328	112	125	124	340
	575-3-60	STD/ MED	5	—	—	—	—	—	54	60	57	238	59	70	62	246
					460A	—	24.8	23.9	54	60	57	238	59	70	62	246
					461A	—	49.6	47.7	67	70	62	238	73	80	67	246
					462A	—	74.4	71.6	79	90	89	238	85	90	95	246
		HIGH	5	—	—	—	—	—	58	70	60	242	62	80	66	250
					460A	—	24.8	23.9	58	70	60	242	62	80	66	250
					461A	—	49.6	47.7	71	80	65	242	77	80	71	250
					462A	—	74.4	71.6	83	90	93	242	89	90	98	250
50FC**30 Horizontal	208/230-3-60	HIGH	5	60	—	—	—	—	150	200	157	654	161	200	171	674
					463A	463A	18.8/ 25.0	52.1/60.1	150/150	200/200	157/157	654/654	161/161	200/200	171/171	674/674
					464A	464A	37.6/ 50.0	104.2/ 120.3	162/152	200/200	157/167	654/654	177/167	200/200	171/181	674/674
					465A	465A	56.3/ 75.0	156.4/ 180.4	188/212	200/225	209/236	654/654	203/227	225/250	222/250	674/674
	460-3-60	HIGH	5	65	—	—	—	—	67	80	71	328	73	90	78	340
					466A	466A	25.0	30.1	67	80	71	328	73	90	78	340
					467A	467A	50.0	60.1	74	80	82	328	82	90	89	340
					468A	468A	75.0	90.2	104	110	117	328	112	125	124	340
	575-3-60	HIGH	5	—	—	—	—	—	58	70	60	242	62	80	66	250
					469A	—	24.8	23.9	58	70	60	242	62	80	66	250
					470A	—	49.6	47.7	71	80	65	242	77	80	71	250
					471A	—	74.4	71.6	83	90	93	242	89	90	98	250

NOTE(S):

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

Electrical data (cont)

50FC**30 MCA MOCP Electrical Data (cont)

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	ELECTRIC HEATER			WITH POWERED CONVENIENCE OUTLET							
							No Power Exhaust				With Power Exhaust (powered from unit)			
									Disconnect Size				Disconnect Size	
				STD SCCR CRHEATER ****00	NOM (kW)	FLA	MCA	Fuse or HACR Breaker	FLA	LRA	MCA	Fuse or HACR Breaker	FLA	LRA
50FC**30 Vertical	208/230-3-60	STD/ MED	5	—	—	—	144	175	151	645	156	200	165	665
				454A	18.8/25.0	52.1/60.1	144/144	175/175	151/151	645/645	156/156	200/200	165/165	665/665
				455A	37.6/50.0	104.2/120.3	155/145	175/175	151/161	645/645	170/160	200/200	165/175	665/665
				456A	56.3/75.0	156.4/180.4	181/205	200/225	203/230	645/645	196/2120	200/225	216/244	665/665
		HIGH	5	—	—	—	154	200	163	659	166	200	176	679
				454A	18.8/25.0	52.1/60.1	154/154	200/200	163/163	659/659	166/166	200/200	176/176	679/679
				455A	37.6/50.0	104.2/120.3	168/158	200/200	163/173	659/659	183/173	200/200	176/186	679/679
				456A	56.3/75.0	156.4/180.4	194/218	200/250	214/242	659/659	209/233	225/250	228/256	679/679
	460-3-60	STD/ MED	5	—	—	—	65	80	68	324	71	90	75	336
				457A	25.0	30.1	65	80	68	324	71	90	75	336
				458A	50.0	60.1	72	80	80	324	79	90	87	336
				459A	75.0	90.2	102	110	114	324	110	110	121	336
		HIGH	5	—	—	—	69	90	73	330	75	90	80	342
				457A	25.0	30.1	69	90	73	330	75	90	80	342
				458A	50.0	60.1	77	90	85	330	85	90	92	342
				459A	75.0	90.2	107	125	119	330	115	125	126	342
	575-3-60	STD/ MED	5	—	—	—	56	70	59	240	61	80	64	248
				460A	24.8	23.9	56	70	59	240	61	80	64	248
				461A	49.6	47.7	69	70	64	240	75	80	69	248
				462A	74.4	71.6	81	90	91	240	87	90	97	248
		HIGH	5	—	—	—	59	70	62	244	64	80	68	252
				460A	24.8	23.9	59	70	62	244	64	80	68	252
				461A	49.6	47.7	73	80	67	244	79	80	73	252
				462A	74.4	71.6	85	90	95	244	91	100	100	252
50FC**30 Horizontal	208/230-3-60	HIGH	5	—	—	—	154	200	163	659	166	200	176	679
				463A	18.8/25.0	52.1/60.1	154/154	200/200	163/163	659/659	166/166	200/200	176/176	679/679
				464A	37.6/50.0	104.2/120.3	168/158	200/200	163/173	659/659	183/173	200/200	176/186	679/679
				465A	56.3/75.0	156.4/180.4	194/218	200/250	214/242	659/659	209/233	225/250	228/256	679/679
	460-3-60	HIGH	5	—	—	—	69	90	73	330	75	90	80	342
				466A	25.0	30.1	69	90	73	330	75	90	80	342
				467A	50.0	60.1	77	90	85	330	85	90	92	342
				468A	75.0	90.2	107	125	119	330	115	125	126	342
	575-3-60	HIGH	5	—	—	—	59	70	62	244	64	80	68	252
				469A	24.8	23.9	59	70	62	244	64	80	68	252
				470A	49.6	47.7	73	80	67	244	79	80	73	252
				471A	74.4	71.6	85	90	95	244	91	100	100	252

Electrical data (cont)

50FC**20 Electric Heat Data — Standard SCCR Unit

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	STD ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	STD SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA00			
								No C.O. or Unpowered C.O.		With PWRD C.O.	
								No P.E.	With P.E. (pwrd fr/unit)	No P.E	With P.E. (pwrd fr/unit)
50FC-M20 Vertical	208/230-3-60	STD/ MED	5	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	—	—	—	—
				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	—	—	—	—
				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	—	—	—	—
				CRHEATER458A00	50.0	45.9	156.7	—	057	057	057
				CRHEATER459A00	75.0	68.9	235.0	057	057	057	057
		HIGH	5	CRHEATER457A00	25.0	23.0	78.3	—	—	—	—
				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
				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
				CRHEATER462A00	74.4	68.3	233.1	057	057	057	057
50FC-M20 Horizontal	208/230-3-60	HIGH	5	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	—	—	—	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	—	—	—	—
				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	—	—	—	—
				CRHEATER470A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER471A00	74.4	68.3	233.1	057	057	057	057

50FC**20 Electric Heat Data — High SCCR Unit

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	HIGH SCCR kA	HIGH SCCR ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	HIGH SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA00	
								No C.O. or Unpowered C.O.	
								No P.E.	With P.E. (pwrd fr/unit)
50FC-M20 Vertical	208/230-3-60	STD/ MED	60	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	—	—
				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	—	—
				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	—	—
				CRHEATER458A00	50.0	45.9	156.7	—	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
		HIGH	65	CRHEATER457A00	25.0	23.0	78.3	—	—
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
50FC-M20 Horizontal	208/230-3-60	HIGH	60	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	—	—
				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	—	—
				CRHEATER467A00	50.0	45.9	156.7	059	059
				CRHEATER468A00	75.0	68.9	235.0	059	059

Electrical data (cont)

50FC**24 Electric Heat Data — Standard SCCR Unit

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	STD ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	STD SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA00			
								No C.O. or Unpowered C.O.		With PWRD C.O.	
								No P.E.	With P.E. (pwrd fr/unit)	No P.E	With P.E. (pwrd fr/unit)
50FC-M24 Vertical	208/230-3-60	STD/ MED	5	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	—	—	—	—
				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
				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	—	—	—	—
				CRHEATER458A00	50.0	45.9	156.7	—	057	057	057
				CRHEATER459A00	75.0	68.9	235.0	057	057	057	057
		HIGH	5	CRHEATER457A00	25.0	23.0	78.3	—	—	—	—
				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
				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
50FC-M24 Horizontal	208/230-3-60	HIGH	5	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	—	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	—	—	—	—
				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	—	—	—	—
				CRHEATER470A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER471A00	74.4	68.3	233.1	057	057	057	057

50FC**24 Electric Heat Data — High SCCR Unit

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	HIGH SCCR kA	HIGH SCCR ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	HIGH SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA00	
								No C.O. or Unpowered C.O.	
								No P.E.	With P.E. (pwrd fr/unit)
50FC-M24 Vertical	208/230-3-60	STD/ MED	60	CRHEATER454A00	25.0	18.8/23.0	64.1/78.3	—	—
				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
				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	—	—
				CRHEATER458A00	50.0	45.9	156.7	—	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
		HIGH	65	CRHEATER457A00	25.0	23.0	78.3	—	—
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
50FC-M24 Horizontal	208/230-3-60	HIGH	60	CRHEATER463A00	25.0	18.8/23.0	64.1/78.3	—	—
				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	—	—
				CRHEATER467A00	50.0	45.9	156.7	059	059
				CRHEATER468A00	75.0	68.9	235.0	059	059

Electrical data (cont)

50FC**28 Electric Heat Data — Standard SCCR Unit

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	STD ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	STD SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA00			
								No C.O. or Unpowered C.O.		With PWRD C.O.	
								No P.E.	With P.E. (pwrd fr/unit)	No P.E	With P.E. (pwrd fr/unit)
50FC-M28 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	—	—	—	—
				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
				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
				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
50FC-M28 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
				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	—	—	—	—
				CRHEATER470A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER471A00	74.4	68.3	233.1	057	057	057	057

50FC**28 Electric Heat Data — High SCCR Unit

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	HIGH SCCR kA	HIGH SCCR ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	HIGH SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA00	
								No C.O. or Unpowered C.O.	
								No P.E.	With P.E. (pwrd fr/unit)
50FC-M28 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	—	—
				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
				CRHEATER458A00	50.0	45.9	156.7	059	059
				CRHEATER459A00	75.0	68.9	235.0	059	059
50FC-M28 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
				CRHEATER467A00	50.0	45.9	156.7	059	059
				CRHEATER468A00	75.0	68.9	235.0	059	059

Electrical data (cont)

50FC**30 Electric Heat Data — Standard SCCR Unit

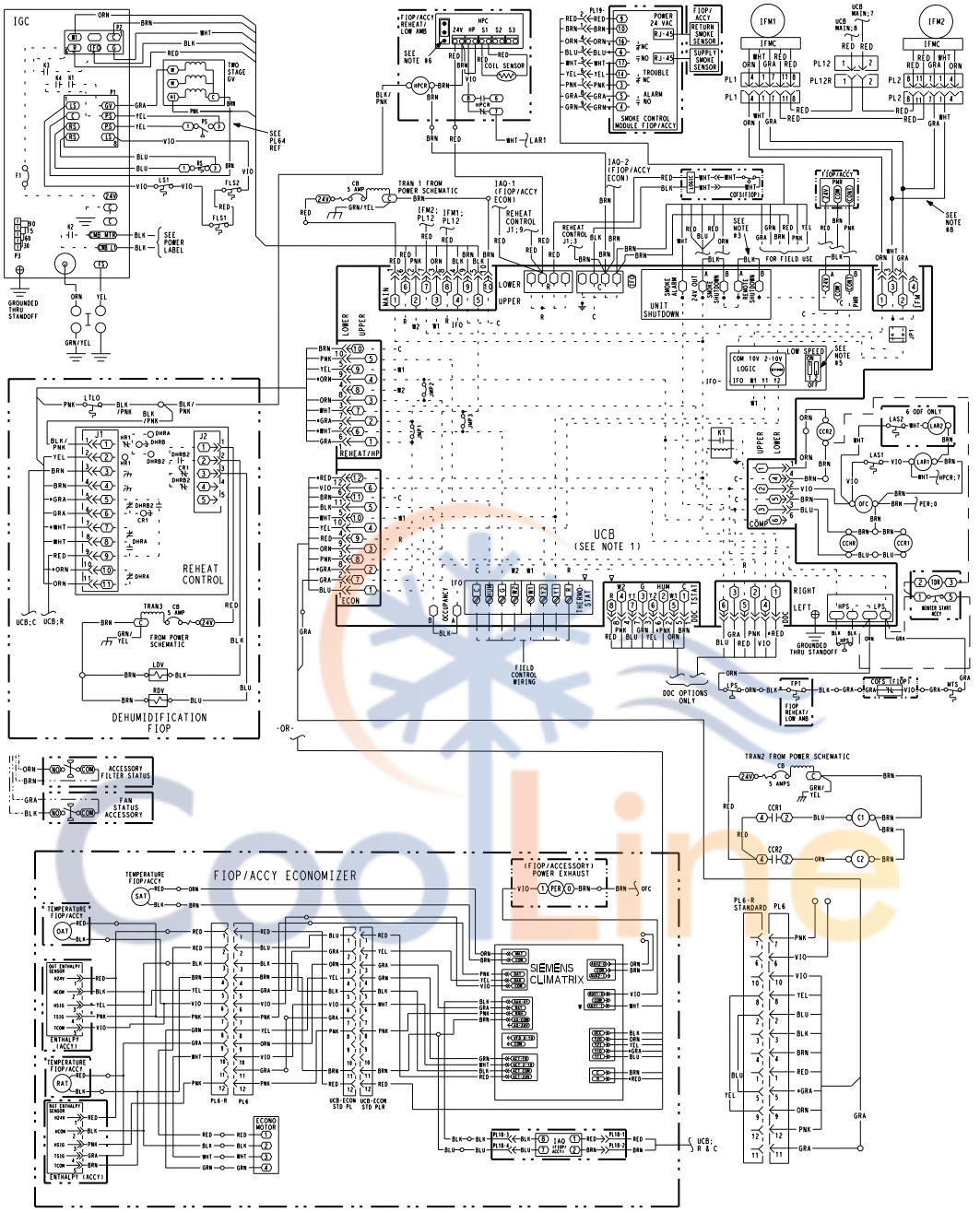
50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	STD SCCR kA	STD ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	STD SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA00			
								No C.O. or Unpowered C.O.		With PWRD C.O.	
								No P.E.	With P.E. (pwrd fr/unit)	No P.E	With P.E. (pwrd fr/unit)
50FC-M30 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
				CRHEATER461A00	49.6	45.6	155.4	—	057	—	057
				CRHEATER462A00	74.4	68.3	233.1	057	057	057	057
		HIGH	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
50FC-M30 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
				CRHEATER470A00	49.6	45.6	155.4	057	057	057	057
				CRHEATER471A00	74.4	68.3	233.1	057	057	057	057

50FC**30 Electric Heat Data — High SCCR Unit

50FC UNIT SIZE	NOM. V-Ph-Hz	IFM TYPE	HIGH SCCR kA	HIGH SCCR ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT (MBH)	HIGH SCCR SINGLE POINT OR JUNCTION KIT PART NUMBER CRSINGLEXXXA00	
								No C.O. or Unpowered C.O.	
								No P.E.	With P.E. (pwrd fr/unit)
50FC-M30 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
50FC-M30 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

Typical wiring diagrams

48FC**20-30 208/230-3-60 Units, Control Wiring Diagram, Electromechanical with POL224 Controller

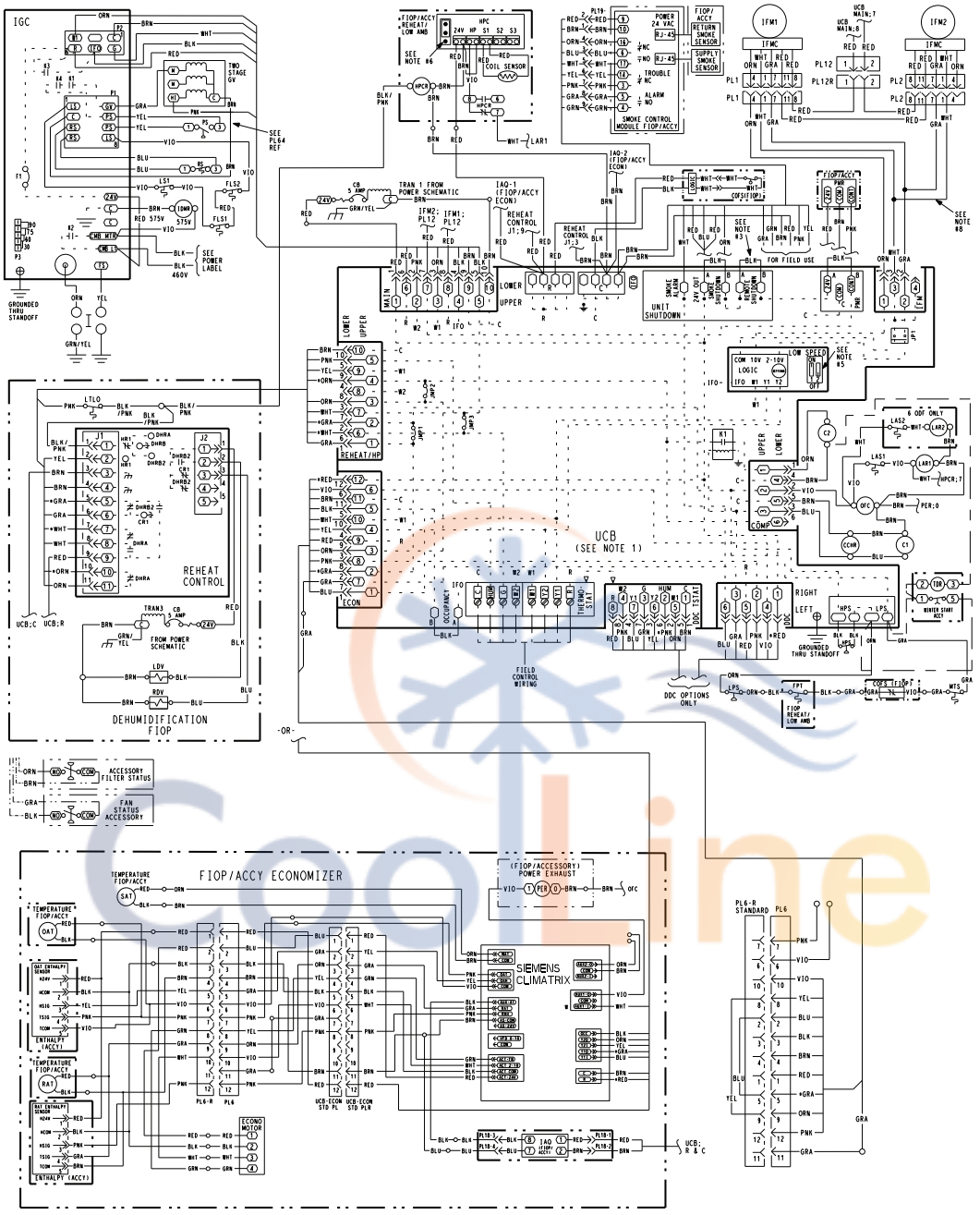


NOTES:
1. TERMINAL BOARD SCHEMATIC LAYOUT DOES NOT MATCH ACTUAL TERMINAL BOARD LAYOUT.
2. TERMINAL BOARD JUMPERS 1,2 AND 3 ARE CUT FOR REHEAT UNITS ONLY.
3. REMOVE DESIGNATED JUMPERS ON TERMINAL BOARD WHEN ADDING SMOKE DETECTORS, OCCUPANCY AND REMOTE SHUTDOWN.
4. USE ABC AS COARSE AND AS POT FINE ADJUSTMENTS FOR SETTING HIGH FAN SPEED. LOW SPEED IS AN OFFSET BASED ON DIP SWITCHES.
5. 2-PIN LOW SPEED DIP SWITCH POSITIONS ARE FACTORY SET AS SHOWN, EXCEPT FOR 25 TON. POSITIONS WILL BE 1:OFF AND 2:ON.
6. HARDSTART AND CUTOUT SET TO "MIN". JUMPER PIN ON TOP 2-PINS AS SHOWN.
7. THE * WIRE COLOR IS FOR DIFFERENTIATION WITHIN THIS SCHEMATIC.
8. ON HORIZONTAL SUPPLY UNITS, IFM2 GRA AND WHT WIRES WILL INCLUDE IN-LINE RESISTORS TO REDUCE IT'S SPEED.

ACCY	ACCESSORY	HS	HALL EFFECT SENSOR	OFM	OUTDOOR FAN MOTOR
AMB	AMBIENT	I	IGNITOR	OFR	OUTDOOR FAN RELAY
C	CONTACTOR,COMPRESSOR	IAQ	INDOOR AIR QUALITY SENSORS	OL	OVERLOAD
CAP	CAPACITOR	IDM	INDUCED DRAFT MOTOR	PER	POWER EXHAUST RELAY
CB	CIRCUIT BREAKER	IFCB	INDOOR FAN CIRCUIT BREAKER	PL	PLUG ASSEMBLY
CCH	CRANKCASE HEATER	IFM	INDOOR FAN MOTOR	POT	POTENTIOMETER
CCHR	CRANKCASE HEATER RELAY	IFMC	INDOOR FAN CONTROLLER	PMR	PHASE MONITOR RELAY
CMB	COMBUSTION	IGC	INTEGRATED GAS CONTROL	QT	QUADRUPLE TERMINAL
COFS	CONDENSATE OVERFLOW SWT	JMP	JUMPER	RARH	RETURN AIR RELATIVE HUMIDITY
COMP	COMPRESSOR MOTOR	LA	LOW AMBIENT	RAT	RETURN AIR TEMP. SENSOR
DDC	DIRECT DIGITAL CONTROL	LDV	LIQUID DIVERTER VALVE	RDV	REHEAT DISCHARGE VALVE
ERV	ENERGY RECOVERY VENTILATOR	LPS	LOW PRESSURE SWITCH	RS	ROLLOUT SWITCH
FIOP	FACTORY INSTALLED OPTION	LSM	LIMIT SWITCH (MANUAL RESET)	SAT	SUPPLY AIR TEMP. SENSOR
FLS	FAN LIMIT SWITCH	LS	LIMIT SWITCH	SEN	SENSOR
FPT	FREEZE PROTECTION THERMOSTAT	LTLO	LOW TEMPERATURE LOCKOUT	SPRH	SPACE RELATIVE HUMIDITY
FSD	FIRE SHUT DOWN	MGV	MAIN GAS VALVE	SPT	SPACE TEMPERATURE SENSOR
FS	FLAME SENSOR	MOV	VOLTAGE RESTRICTOR	SPTO	SPACE TEMPERATURE OFFSET
FU	FUSE	MTR	MOTOR	STD	STANDARD
GND	GROUND	MTS	MIXED AIR TEMPERATURE SWITCH	TB	TERMINAL BLOCK
GVR	GAS VALVE RELAY	OAQ	OUTDOOR AIR QUALITY	TDR	TIME DELAY RELAY(WINTER START)
HPC	HEAD PRESSURE CONTROL	OARH	OUTSIDE AIR RELATIVE HUMIDITY	TRAN	TRANSFORMER
HPS	HIGH PRESSURE SWITCH	OAT	OUTDOOR AIR TEMP. SENSOR	UCB	UNIT CONTROL BOARD

Typical wiring diagrams (cont)

48FC**20-30 460/575-3-60 Units, Control Wiring Diagram, Electromechanical with POL224 Controller



ACCY	ACCESSORY	HS	HALL EFFECT SENSOR	OFM	OUTDOOR FAN MOTOR
AMB	AMBIENT	I	IGNITOR	OFR	OUTDOOR FAN RELAY
C	CONTACTOR,COMPRESSOR	IAQ	INDOOR AIR QUALITY SENSORS	OL	OVERLOAD
CAP	CAPACITOR	IDM	INDUCED DRAFT MOTOR	PER	POWER EXHAUST RELAY
CB	CIRCUIT BREAKER	IFCB	INDOOR FAN CIRCUIT BREAKER	PL	PLUG ASSEMBLY
CCH	CRANKCASE HEATER	IFM	INDOOR FAN MOTOR	POT	POTENTIOMETER
CCHR	CRANKCASE HEATER RELAY	IFMC	INDOOR FAN CONTROLLER	PMR	PHASE MONITOR RELAY
CMB	COMBUSTION	IGC	INTEGRATED GAS CONTROL	QT	QUADRUPLE TERMINAL
COFS	CONDENSATE OVERFLOW SWT	JMP	JUMPER	RARH	RETURN AIR RELATIVE HUMIDITY
COMP	COMPRESSOR MOTOR	LA	LOW AMBIENT	RAT	RETURN AIR TEMP. SENSOR
DDC	DIRECT DIGITAL CONTROL	LDV	LIQUID DIVERTER VALVE	RDV	REHEAT DISCHARGE VALVE
ERV	ENERGY RECOVERY VENTILATOR	LPS	LOW PRESSURE SWITCH	RS	ROLLOUT SWITCH
FIOP	FACTORY INSTALLED OPTION	LSM	LIMIT SWITCH (MANUAL RESET)	SAT	SUPPLY AIR TEMP. SENSOR
FLS	FAN LIMIT SWITCH	LS	LIMIT SWITCH	SEN	SENSOR
FPT	FREEZE PROTECTION THERMOSTAT	LTLO	LOW TEMPERATURE LOCKOUT	SPRH	SPACE RELATIVE HUMIDITY
FSD	FIRE SHUT DOWN	MGV	MAIN GAS VALVE	SPT	SPACE TEMPERATURE SENSOR
FS	FLAME SENSOR	MOV	VOLTAGE RESTRICTOR	SPTO	SPACE TEMPERATURE OFFSET
FU	FUSE	MTR	MOTOR	STD	STANDARD
GND	GROUND	MTS	MIXED AIR TEMPERATURE SWITCH	TB	TERMINAL BLOCK
GVR	GAS VALVE RELAY	OAQ	OUTDOOR AIR QUALITY	TDR	TIME DELAY RELAY(WINTER START)
HPC	HEAD PRESSURE CONTROL	OARH	OUTSIDE AIR RELATIVE HUMIDITY	TRAN	TRANSFORMER
HPS	HIGH PRESSURE SWITCH	OAT	OUTDOOR AIR TEMP. SENSOR	UCB	UNIT CONTROL BOARD

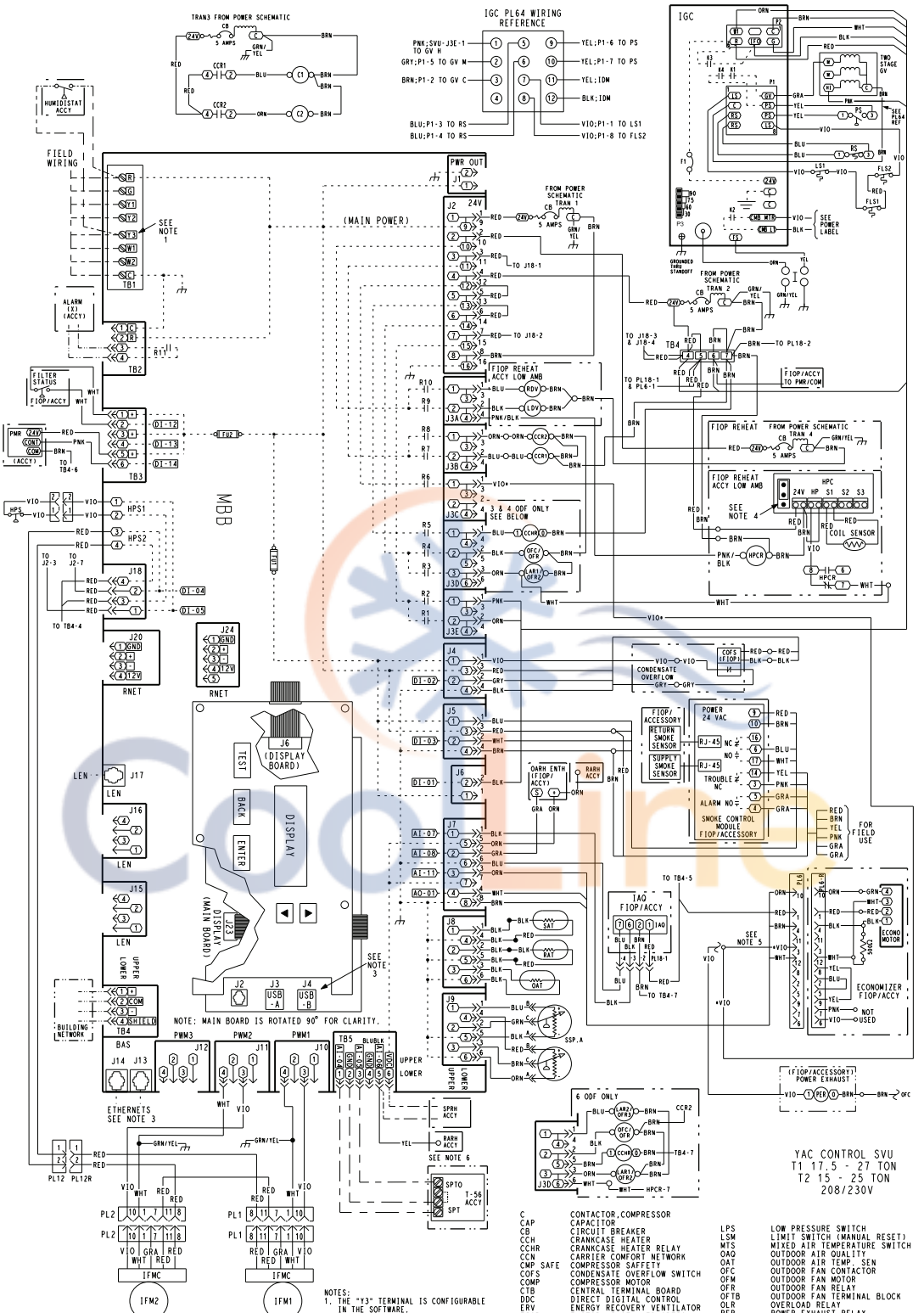
NOTES:
1. TERMINAL BOARD SCHEMATIC LAYOUT DOES NOT MATCH ACTUAL TERMINAL BOARD LAYOUT.
2. TERMINAL BOARD JUMPERS 1,2 AND 3 ARE CUT FOR REHEAT UNITS ONLY.
3. REMOVE DESIGNATED JUMPERS ON TERMINAL BOARD WHEN ADDING SMOKE DETECTORS, OCCUPANCY AND REMOTE SHUTDOWN.
4. USE ABC AS COARSE AND POT AS FINE ADJUSTMENTS FOR SETTING HIGH FAN SPEED. LOW SPEED IS AN OFFSET BASED ON DIP SWITCHES.
5. 2-PIN LOW SPEED DIP SWITCH POSITIONS ARE FACTORY SET AS SHOWN, EXCEPT FOR 25 TON; POSITIONS WILL BE 1:OFF AND 2:ON.
6. HARDSTART AND CUTOUT SET TO "MIN"; JUMPER PIN ON TOP 2-PINS AS SHOWN.
7. THE * WIRE COLOR IS FOR DIFFERENTIATION WITHIN THIS SCHEMATIC.
8. ON HORIZONTAL SUPPLY UNITS, IFM2 GRA AND WHT WIRES WILL INCLUDE IN-LINE RESISTORS TO REDUCE IT'S SPEED.

YAC CONTROL 460V , 575V T1 17.5-27.5 TON, T2 15-25 TON

50HE006333

Typical wiring diagrams (cont)

48FC**20-30 Control Wiring Diagram, SystemVu™ Controller



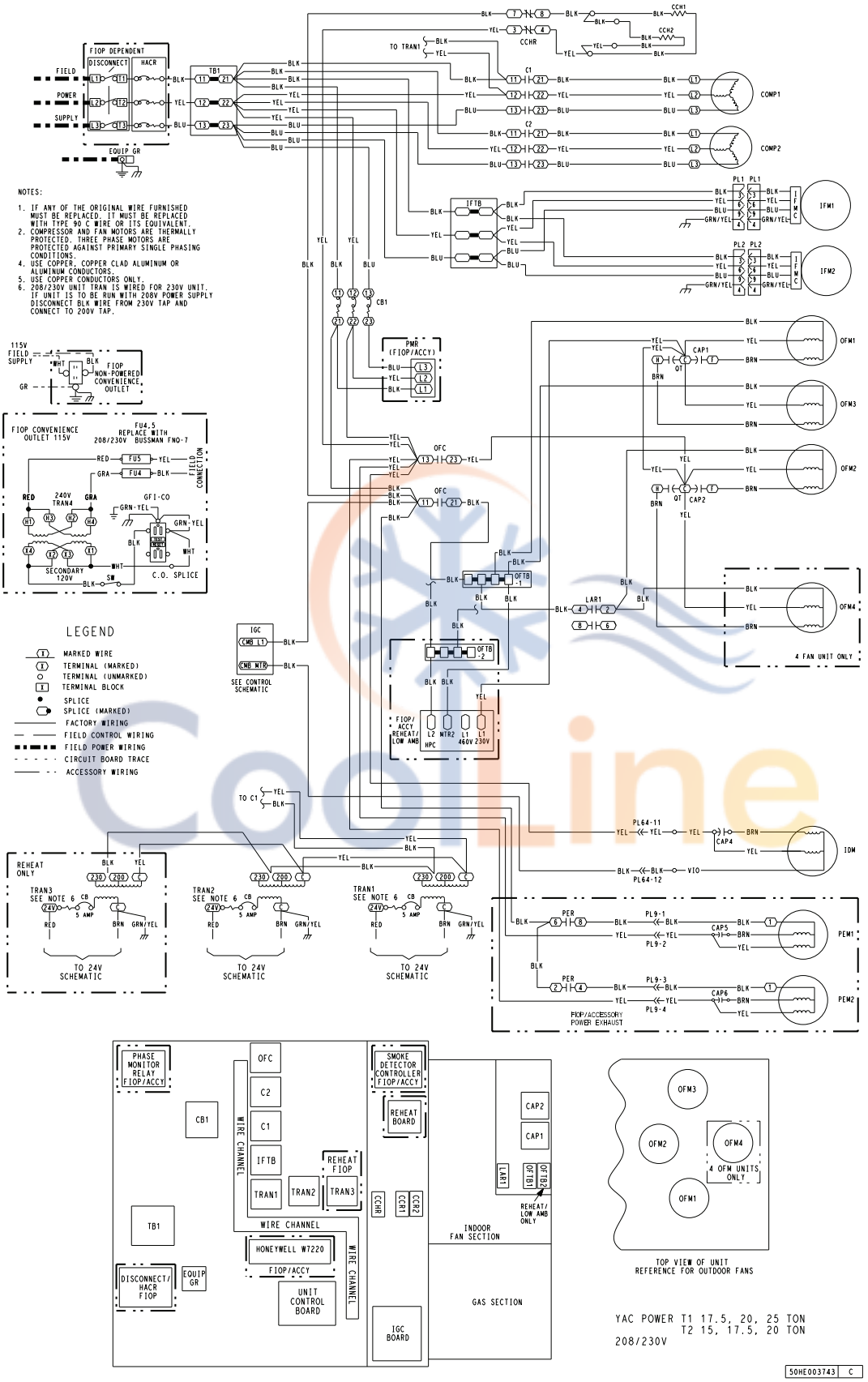
NOTES:
1. THE "T3" TERMINAL IS CONFIGURABLE IN THE SOFTWARE.
2. LOW VOLTAGE CONNECTIONS MUST BE CLASS 2.
3. USB-B AT J4 AND ETHERNETS AT J13,14 ARE SHOWN FOR FUTURE USE.
4. HARDSTART AND CUTOUT SET TO "MIN". JUMPER PIN ON TOP 2-PINS AS SHOWN.
5. DISCONNECT V1O TO ALLOW POWER EXHAUST CONNECTION. THIS V1O WIRE IS LEFT DISCONNECTED.
6. WHEN USING A RARH SENSOR, MAKE CONNECTION IN THE RETURN AIR SECTION. WHEN USING SPRH SENSOR, MAKE CONNECTION HERE BY DISCONNECTING YELLOW WIRE.

C	CONTACTOR,COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CCHR	CRANKCASE HEATER RELAY
CCN	CARRIER COMFORT NETWORK
CMP SAFE	COMPRESSOR SAFFETY
COFS	CONDENSATE OVERFLOW SWITCH
COMP	COMPRESSOR MOTOR
CTB	CENTRAL TERMINAL BOARD
DDC	DIRECT DIGITAL CONTROL
ERV	ENERGY RECOVERY VENTILATOR
FIOP	FACTORY INSTALLED OPTION
FLS	FAN LIMIT SWITCH
FSD	FIRE SHUT DOWN
FU	FUSE
GR	GROUND
HC	HEATER CONTACTOR
HCR	HEATER CONTROL RELAY
HPS	HIGH PRESSURE SWITCH
IAQ	INDOOR AIR QUALITY SENSORS
IFC	INDOOR FAN CONTACTOR
IFM	INDOOR FAN MOTOR
IRH	INDOOR RELATIVE HUMIDITY
LA	LOW AMBIENT LOCKOUT
LAR	LOW AMBIENT RELAY
LAS	LOW AMBIENT SWITCH
LOOP PWR	CURRENT LOOP POWER
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
MTS	MIXED AIR TEMPERATURE SWITCH
OAQ	OUTDOOR AIR QUALITY
OAT	OUTDOOR AIR TEMP. SEN
OFC	OUTDOOR FAN CONTACTOR
OFM	OUTDOOR FAN MOTOR
OFR	OUTDOOR FAN RELAY
OFTB	OUTDOOR FAN TERMINAL BLOCK
OLR	OVERLOAD RELAY
PER	POWER EXHAUST RELAY
PL	PLUG ASSEMBLY
POT	POTENTIOMETER
PWR	PHASE MONITOR RELAY
QT	QUADRUPLE TERMINAL
R	RELAY
RAT	RETURN AIR TEMP. SEN
RMT OCC	REMOTE OCCUPANCY
RTPF	ROUND TUBE PLATE FIN CONDENSER COIL
SAT	SUPPLY AIR TEMP. SENSOR
SEN	SENSOR
SET	SET POINT OFFSET
SFS	SUPPLY FAN STATUS
TDR	TIME DELAY RELAY
TRAN	TRANSFORMER

50HE004108 B

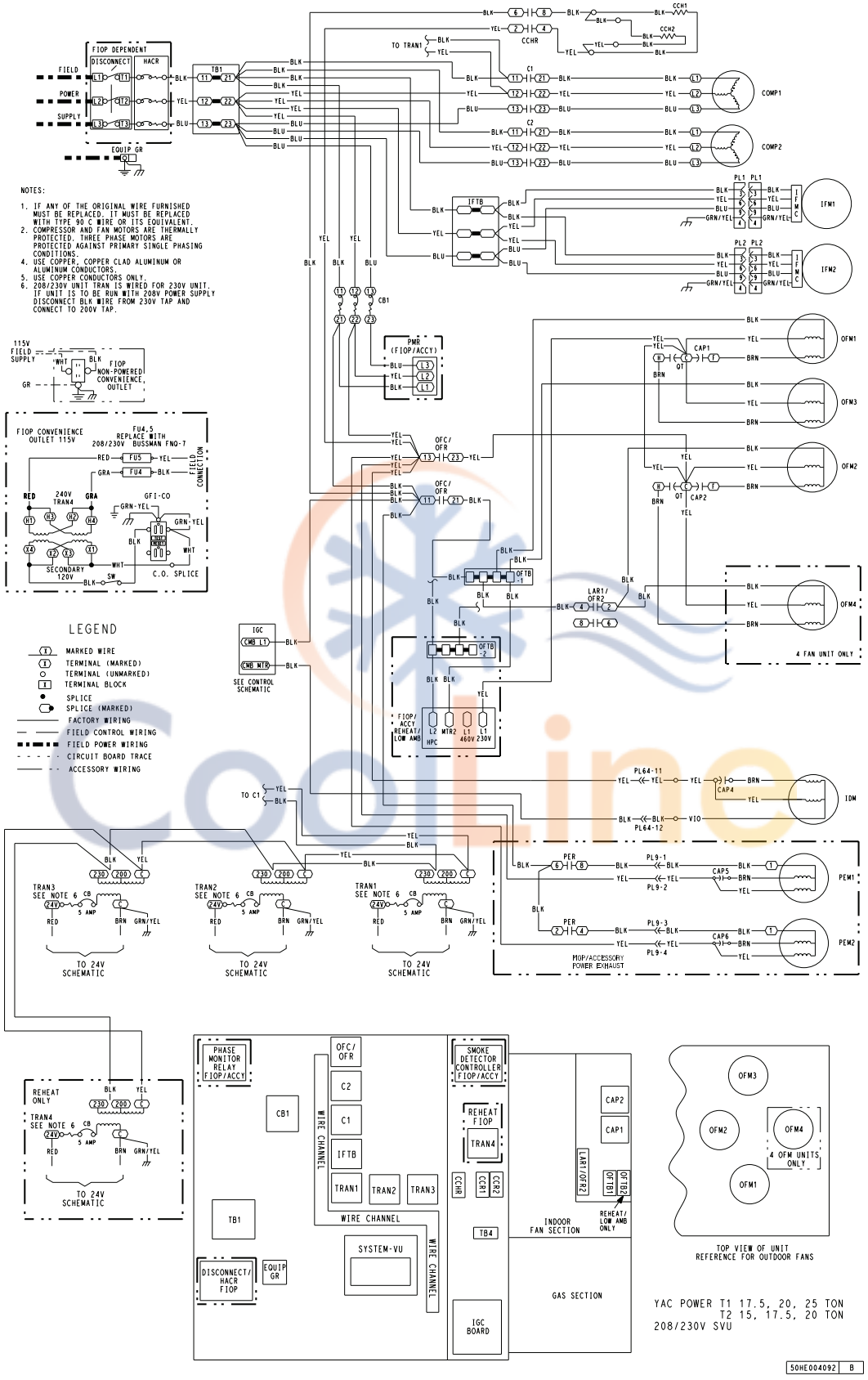
Typical wiring diagrams (cont)

48FC**20-28 Power Wiring Diagram, Electromechanical with POL224 Controller



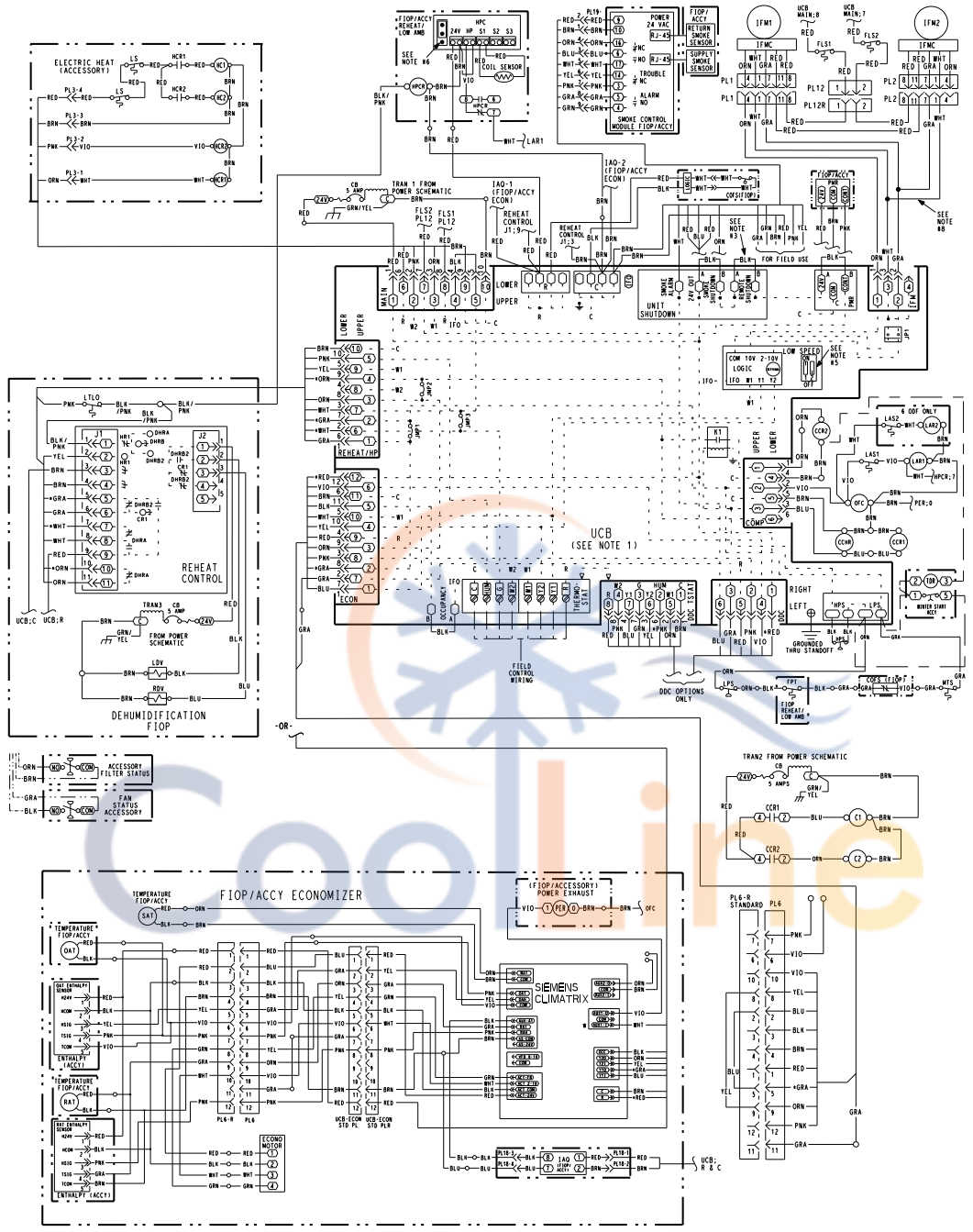
Typical wiring diagrams (cont)

48FC**20-28 Power Wiring Diagram, SystemVu™ Controller



Typical wiring diagrams (cont)

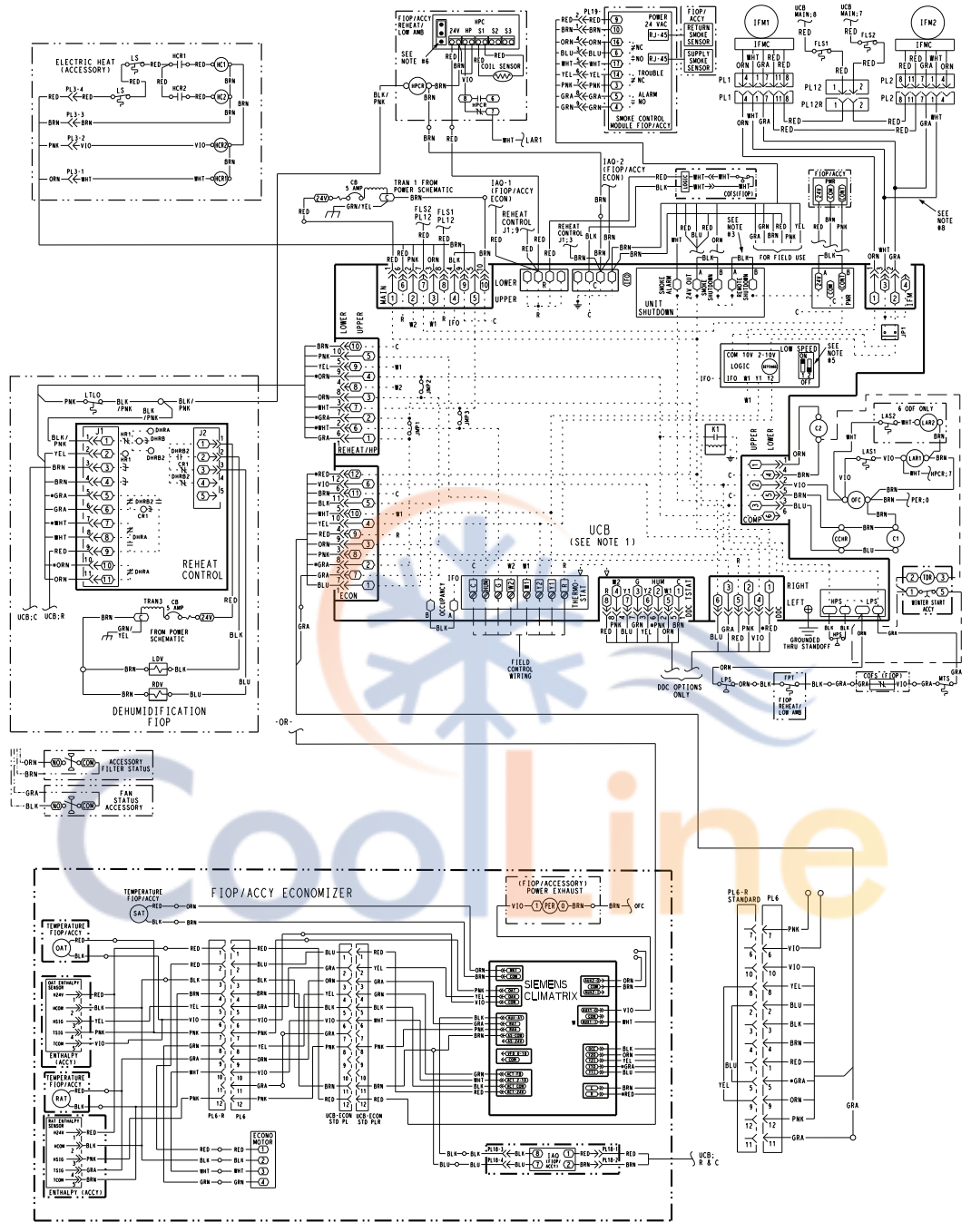
50FC-*20-30 208/230-3-60 Units, Control Wiring Diagram, Electromechanical with POL224 Controller



NOTES:
1. TERMINAL BOARD SCHEMATIC LAYOUT DOES NOT MATCH ACTUAL TERMINAL BOARD LAYOUT.
2. TERMINAL BOARD JUMPERS 1,2 AND 3 ARE CUT FOR REHEAT UNITS ONLY.
3. REMOVE DESIGNATED JUMPERS ON TERMINAL BOARD WHEN ADDING SMOKE DETECTORS, OCCUPANCY AND REMOTE SHUTDOWN.
4. USE ABC AS COARSE AND AS POT FINE ADJUSTMENTS FOR SETTING HIGH FAN SPEED. LOW SPEED IS AN OFFSET BASED ON DIP SWITCHES.
5. 2-PIN LOW SPEED DIP SWITCH POSITIONS ARE FACTORY SET AS SHOWN, EXCEPT FOR 25 TON, POSITIONS WILL BE 1:OFF AND 2:ON.
6. HARDSTART AND CUTOUT SET TO "MIN". JUMPER PIN ON TOP 2-PINS AS SHOWN.
7. THE * WIRE COLOR IS FOR DIFFERENTIATION WITHIN THIS SCHEMATIC.
8. ON HORIZONTAL SUPPLY UNITS, 1FM2 GRA AND WHT WIRES WILL INCLUDE IN-LINE RESISTORS TO REDUCE IT'S SPEED.

ACCY	ACCESSORY
AMB	AMBIENT
C	CONTACTOR,COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CCHR	CRANKCASE HEATER RELAY
CMB	COMBUSTION
COFS	CONDENSATE OVERFLOW SWT
COMP	COMPRESSOR MOTOR
DDC	DIRECT DIGITAL CONTROL
ERV	ENERGY RECOVERY VENTILATOR
FIOP	FACTORY INSTALLED OPTION
FLS	FAN LIMIT SWITCH
FPT	FREEZE PROTECTION THERMOSTAT
FSD	FIRE SHUT DOWN
FS	FLAME SENSOR
FU	FUSE
GND	GROUND
GVR	GAS VALVE RELAY
HPC	HEAD PRESSURE CONTROL
HPS	HIGH PRESSURE SWITCH
HS	HALL EFFECT SENSOR
I	IGNITOR
IAQ	INDOOR AIR QUALITY SENSORS
IDM	INDUCED DRAFT MOTOR
IFCB	INDOOR FAN CIRCUIT BREAKER
IFM	INDOOR FAN MOTOR
IFMC	INDOOR FAN CONTROLLER
IGC	INTEGRATED GAS CONTROL
JMP	JUMPER
LA	LOW AMBIENT
LDV	LIQUID DIVERTER VALVE
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
LS	LIMIT SWITCH
LTLO	LOW TEMPERATURE LOCKOUT
MGV	MAIN GAS VALVE
MOV	VOLTAGE RESTRICTOR
MTR	MOTOR
MTS	MIXED AIR TEMPERATURE SWITCH
OAQ	OUTDOOR AIR QUALITY
OARH	OUTSIDE AIR RELATIVE HUMIDITY
OAT	OUTDOOR AIR TEMP. SENSOR
OFM	OUTDOOR FAN MOTOR
OFR	OUTDOOR FAN RELAY
OL	OVERLOAD
PER	POWER EXHAUST RELAY
PL	PLUG ASSEMBLY
POT	POTENTIOMETER
PMR	PHASE MONITOR RELAY
QT	QUADRUPLE TERMINAL
RARH	RETURN AIR RELATIVE HUMIDITY
RAT	RETURN AIR TEMP. SENSOR
RDV	REHEAT DISCHARGE VALVE
RS	ROLLOUT SWITCH
SAT	SUPPLY AIR TEMP. SENSOR
SEN	SENSOR
SPRH	SPACE RELATIVE HUMIDITY
SPT	SPACE TEMPERATURE SENSOR
SPTO	SPACE TEMPERATURE OFFSET
STD	STANDARD
TB	TERMINAL BLOCK
TDR	TIME DELAY RELAY(WINTER START)
TRAN	TRANSFORMER
UCB	UNIT CONTROL BOARD

50FC-*20-30 460/575-3-60 Units, Control Wiring Diagram, Electromechanical with POL224 Controller



NOTES:
1. TERMINAL BOARD SCHEMATIC LAYOUT DOES NOT MATCH ACTUAL TERMINAL BOARD LAYOUT.
2. TERMINAL BOARD JUMPERS 1,2 AND 3 ARE CUT FOR REHEAT UNITS ONLY.
3. REMOVE DESIGNATED JUMPERS ON TERMINAL BOARD WHEN ADDING SMOKE DETECTORS, OCCUPANCY AND REMOTE SHUTDOWN.
4. USE ABC AS COARSE AND POT AS FINE ADJUSTMENTS FOR SETTING HIGH FAN SPEED. LOW SPEED IS AN OFFSET BASED ON DIP SWITCHES.
5. 2-PIN LOW SPEED DIP SWITCH POSITIONS ARE FACTORY SET AS SHOWN, EXCEPT FOR 25 TON, POSITIONS WILL BE 1:OFF AND 2:ON.
6. HARDSTART AND CUTOUT SET TO "MIN". JUMPER PIN ON TOP 2-PINS AS SHOWN.
7. THE * WIRE COLOR IS FOR DIFFERENTIATION WITHIN THIS SCHEMATIC.
8. ON HORIZONTAL SUPPLY UNITS, IFM2 GRA AND WHT WIRES WILL INCLUDE IN-LINE RESISTORS TO REDUCE IT'S SPEED.

ACCY	ACCESSORY
AMB	AMBIENT
C	CONTACTOR,COMPRESSOR
CAP	CAPACITOR
CB	CIRCUIT BREAKER
CCH	CRANKCASE HEATER
CCHR	CRANKCASE HEATER RELAY
CMB	COMBUSTION
COFS	CONDENSATE OVERFLOW SWT
COMP	COMPRESSOR MOTOR
DDC	DIRECT DIGITAL CONTROL
ERV	ENERGY RECOVERY VENTILATOR
FIOP	FACTORY INSTALLED OPTION
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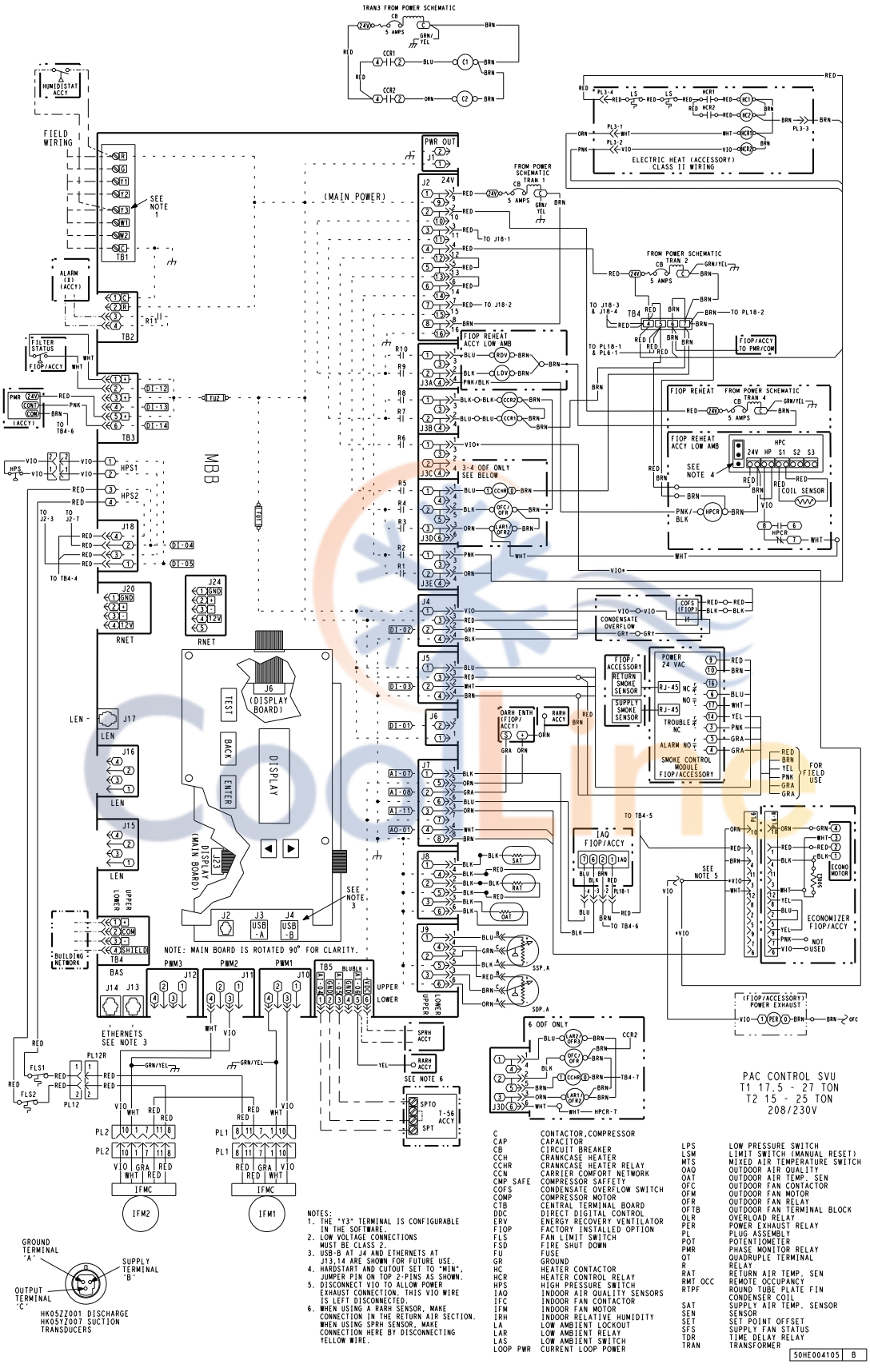
IFCB	INDOOR FAN CIRCUIT BREAKER
IFM	INDOOR FAN MOTOR
IFMC	INDOOR FAN CONTROLLER
IGC	INTEGRATED GAS CONTROL
JMP	JUMPER
LA	LOW AMBIENT
LDV	LIQUID DIVERTER VALVE
LPS	LOW PRESSURE SWITCH
LSM	LIMIT SWITCH (MANUAL RESET)
LS	LIMIT SWITCH
LTLO	LOW TEMPERATURE LOCKOUT
MGV	MAIN GAS VALVE
MOV	VOLTAGE RESTRICTOR
MTR	MOTOR
MTS	MIXED AIR TEMPERATURE SWITCH
OAQ	OUTDOOR AIR QUALITY
OARH	OUTSIDE AIR RELATIVE HUMIDITY
OAT	OUTDOOR AIR TEMP. SENSOR
OFM	OUTDOOR FAN MOTOR
OFR	OUTDOOR FAN RELAY
OL	OVERLOAD
PER	POWER EXHAUST RELAY
PL	PLUG ASSEMBLY
POT	POTENTIOMETER
PMR	PHASE MONITOR RELAY
QT	QUADRUPLE TERMINAL
RARH	RETURN AIR RELATIVE HUMIDITY
RAT	RETURN AIR TEMP. SENSOR
RDV	REHEAT DISCHARGE VALVE
RS	ROLLOUT SWITCH
SAT	SUPPLY AIR TEMP. SENSOR
SEN	SENSOR
SPRH	SPACE RELATIVE HUMIDITY
SPT	SPACE TEMPERATURE SENSOR
SPTO	SPACE TEMPERATURE OFFSET
STD	STANDARD
TB	TERMINAL BLOCK
TDR	TIME DELAY RELAY (WINTER START)
TRAN	TRANSFORMER
UCB	UNIT CONTROL BOARD

PAC CONTROL 460V, 575V T1 17.5-27.5 TON, T2 15-25 TON

50HE006330

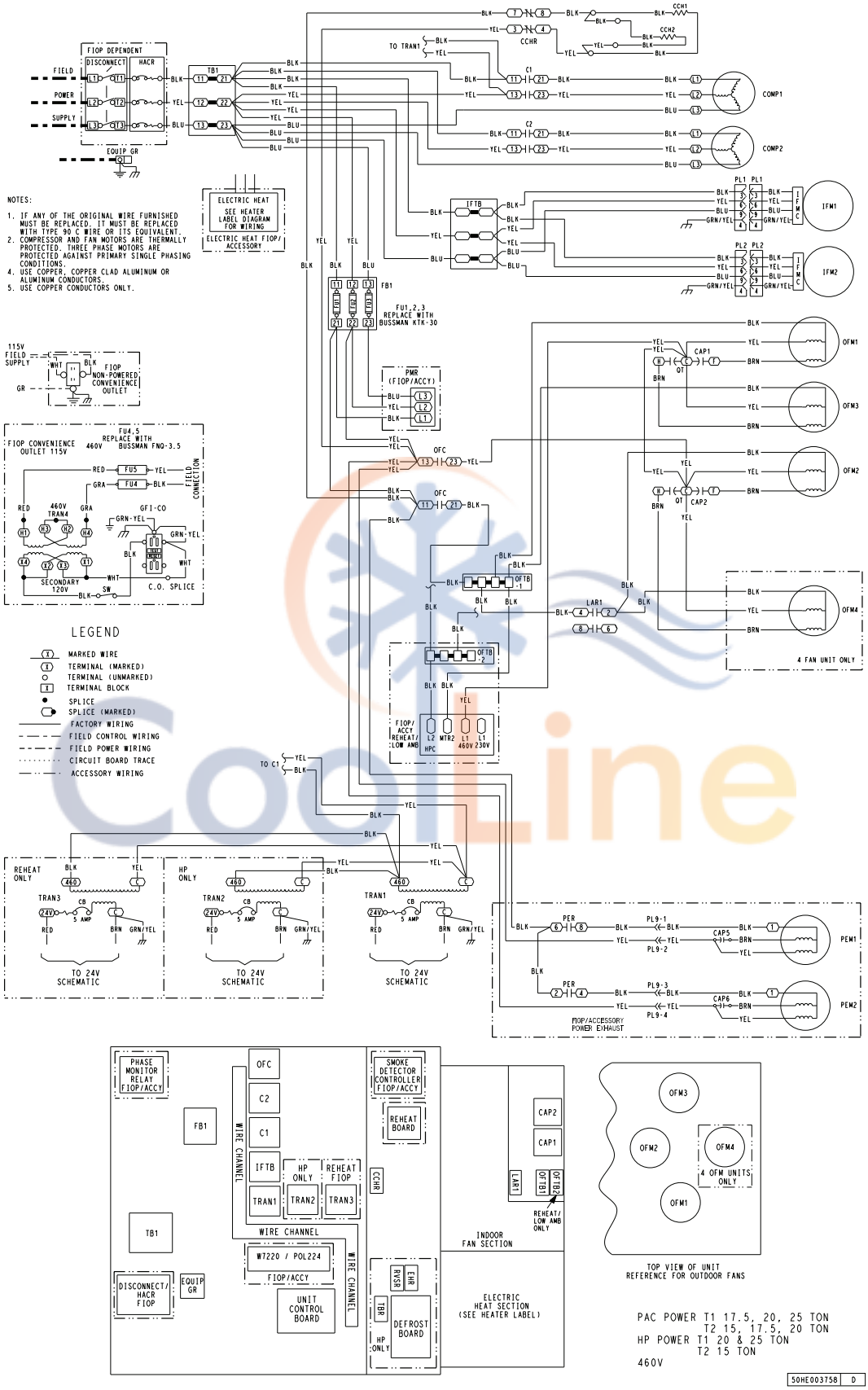
Typical wiring diagrams (cont)

50FC-*20-30 Control Wiring Diagram, SystemVu™ Controller



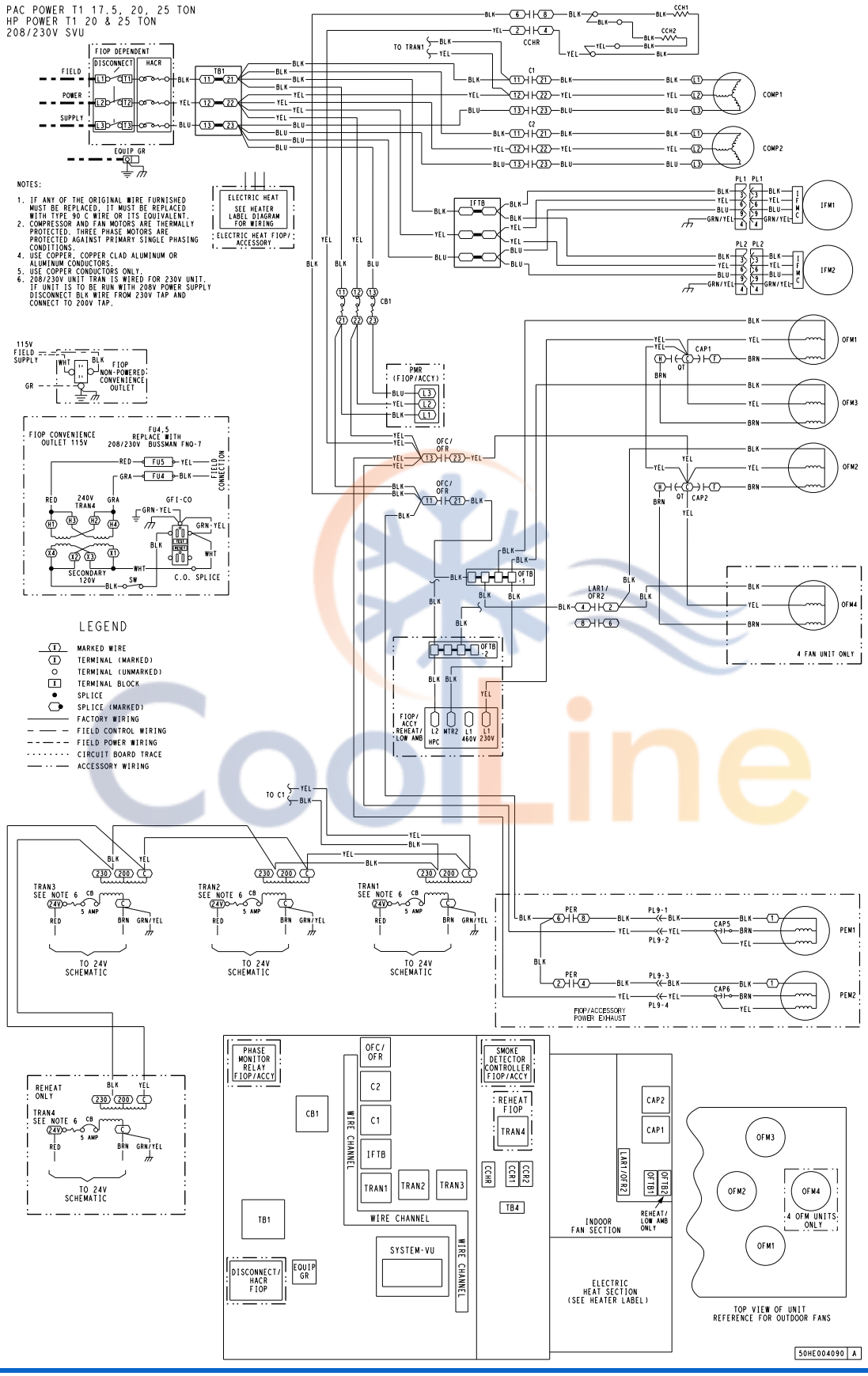
Typical wiring diagrams (cont)

50FC-*20-28 Power Wiring Diagram, Electro-Mechanical with POL224 Controller



Typical wiring diagrams (cont)

50FC-*20-28 Power Wiring Diagram, SystemVu™ Controller



Sequence of operation

General

The sequence below describes the sequence of operation for an electro-mechanical 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.

Electro-Mechanical Units without Economizer

Cooling (2-stage units)

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.

Gas Heating (48FC units)

NOTE: WeatherMaker® units have 2 stages of gas heat.

When the thermostat calls for heating, power is sent to W on the Integrated Gas Controller (IGC) board. An LED (light-emitting diode) on the IGC board turns on and remains on during normal operation. A check is made to ensure that the roll-out switch and limit switch are closed. If the check was successful, the induced-draft motor is energized, and when its speed is satisfactory, as proven by the flue gas pressure switch, the ignition activation period begins. The burners will ignite within 5 seconds. If the burners do not light, there is a 22 second delay before another 5 second attempt. This sequence is repeated for 15 minutes or until the burners light. If, after the 15 minutes, the burners still have not lit, heating is locked out. To reset the control, break 24-v power to the thermostat.

When ignition occurs, the IGC board will continue to monitor the condition of the roll-out switch, the limit switches, the flue gas pressure switch, as well as the flame sensor. 45 seconds after ignition occurs, assuming the unit is controlled through a room thermostat set for fan auto, the indoor-fan motor will energize (and the outdoor-air dampers will open to their minimum position). If, for some reason, the over-temperature limit opens prior to the start of the indoor fan blower, the unit will shorten the 45 second delay to 5 seconds less than the time from initiation of heat to when the limit tripped. Gas will not be interrupted to the burners and heating will continue. Once the fan-on delay has been modified, it will not change back to 45 seconds until power is reset to the control. On units with 2 stages of heat, when additional heat is required, W2 closes and initiates power to the second stage of the main gas valve. When the thermostat is satisfied, W1 and W2 open and the gas valve closes, interrupting the flow of gas to the main burners. If the unit is controlled through a room thermostat set for fan auto, the indoor-fan motor will continue to operate for an additional 45 seconds then stop. A LED indicator is provided on the IGC to monitor operation.

Electric Heating (50FC units)

NOTE: 50FC units are sold as cooling only. If electric heaters are required, use only factory-approved heaters. They will operate as follows.

Units have either 1 or 2 stages of electric heat. When the thermostat calls for heating, power is applied to G and the W1 terminals at the unit. The unit control will energize the indoor fan contactor and the first stage of electric heat. On units with 2-stage heating, when additional heating is required, the second stage of electric heat (if equipped) will be energized when power is applied at the W2 terminal on the unit.

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

Electro-Mechanical 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 setpoint (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 setpoint 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.

2-Speed Note: The EconomizerONE controller will adjust the damper position as the Indoor Fan Speed changes, per its configured values.

Heating

The sequence of operation for heating is the same as an electro-mechanical unit without an 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.

Optional Humidi-MiZer® dehumidification system

Units with the factory equipped Humidi-MiZer system option are capable of providing multiple modes of improved dehumidification as a variation of the normal cooling cycle. The Humidi-MiZer system option includes additional valves in the liquid line and discharge line of each refrigerant circuit, a small reheat condenser coil downstream of the evaporator, and variable-speed control of some or all outdoor fans. Operation of the revised refrigerant circuit for each mode is described below.

The Humidi-MiZer system provides 3 sub-modes of operation: Cool, Reheat1, and Reheat2.

Cool mode — Provides a normal ratio of Sensible and Latent Cooling effect from the evaporator coil.

Reheat1 — Provides increased Latent Cooling while slightly reducing the Sensible Cooling effect.

Reheat2 — Provides normal Latent Cooling but with null or minimum Sensible Cooling effect delivered to the space.

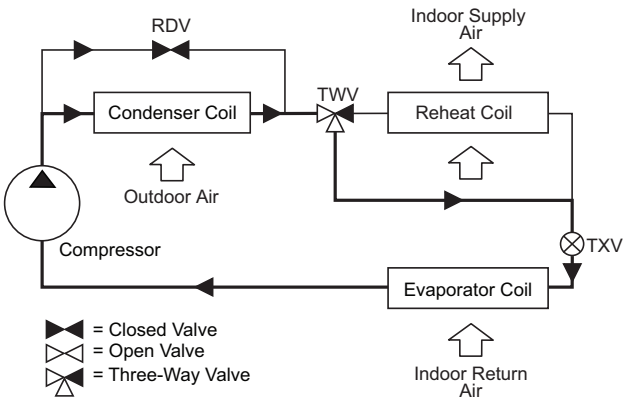
The Reheat1 and Reheat2 modes are available when the unit is not in a Heating mode and when the Low Ambient Lockout switch is closed.

Refer to the following figures for piping flow diagrams.

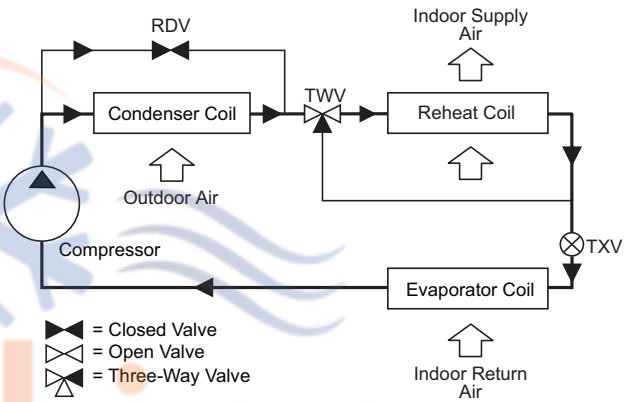
SystemVu™ controller (factory option)

For details on operating 48/50FC units equipped with the factory-installed SystemVu controller option, refer to FC/GC Series Single Package Rooftop Units with SystemVu Controller Controls, Start-Up, Operation and Troubleshooting manual.

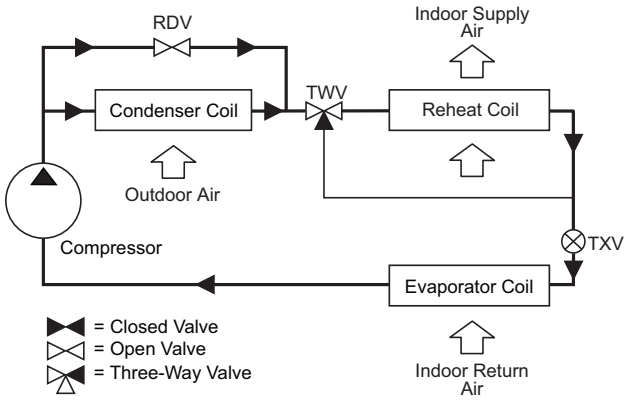
Normal Cooling Mode



Subcooling Mode (Reheat1)



Hot Gas Reheat Mode (Reheat2)



LEGEND

RDV — Reheat Discharge Valve
TWV — Three-Way Valve
TXV — Thermostatic Expansion Valve

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.

Stainless steel heat exchanger (48FC units only)

The stainless steel heat exchanger option provides the tubular heat exchanger be made out of a minimum 20 gauge type 409 stainless steel for applications where the mixed air to the heat exchanger is expected to drop below 45°F (7°C). Stainless steel may be specified on applications where the presence of airborne contaminants require its use (applications such as paper mills) or in area with very high outdoor humidity that may result in severe condensation in the heat exchanger during cooling operation.

Minimum mixed air temperature (heating) (48FC units only)

Using the factory settings, the minimum temperatures for the mixed air (the combined temperature of the warm return air and the cold outdoor air) entering the dimpled, gas heat exchangers are shown in the following table.

Minimum Temperature for Mixed Air Temperature

ALUMINIZED	STAINLESS STEEL
50°F (10°C) Continuous	40°F (4°C) Continuous
45°F (7°C) Intermittent	35°F (2°C) Intermittent

Operating at lower mixed-air temperatures may be possible, if a field-supplied, outdoor air thermostat initiates both heat stages when the temperature is less than the minimum temperatures listed above. Please contact your local Carrier representative for assistance.

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.

Propane heating (48FC units only)

Propane has different physical qualities than natural gas. As a result, propane requires different fuel to air mixture. To optimize the fuel/air mixture for propane, Carrier sells different burner orifices in an easy to install accessory kit. To select the correct burner orifices or determine the heat capacity for a propane application, use either the selection software, or the unit's service manual.

High altitude heating

High altitudes have less oxygen, which affects the fuel/air mixture in heat exchangers. In order to maintain a proper fuel/air mixture, heat exchangers operating in altitudes above 2000 ft (610 m) require different orifices. To select the correct burner orifices or determine the heat capacity for a high altitude application, use either the selection software, or the unit's service manual.

High altitudes have less oxygen, which means heat exchangers need less fuel. The new gas orifices in this field-installed kit make the necessary adjustment for high altitude applications. They restore the optimal fuel to air mixture and maintain healthy combustion on altitudes above 2000 ft (610 m).

NOTE: Typical natural gas heating value ranges from 975 to 1050 Btu/ft^3 at sea level nationally. The heating value goes down approximately 1.7% per every thousand feet elevation. Standard factory orifices can typically be used up to 2000 ft (610 m) elevation without any operational issues.

Application data (cont)

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.

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.

Gas Heat/Electric Cooling Packaged Rooftop

HVAC Guide Specifications

Size Range: **17.5 to 27.5 Nominal Tons**
Carrier Model Number: **48FC*20-30**

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:

1. 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.) Gas 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:

1. Thermostat must:
   a. energize both "W" and "G" when calling for heat.
   b. have capability to energize 1 or 2 stages of cooling, and 2 different stages of heating.
   c. 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 MS/PT 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.
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 (3°C) temperature difference between cooling and heating setpoints 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 hand-held Navigator™ display, Equipment Touch and System Touch devices.
18. Units with the factory-installed Humidi-MiZer® system option are capable of providing multiple modes of improved dehumidification as a variation of the normal cooling cycle.
19. Supply Air Tempering control operates the gas or 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.
20. Demand limiting in units with SystemVu™ controller is achieved through setpoint expansion. The systems heating and cooling setpoints are expanded in steps or levels. The degree to which the setpoints may be expanded is defined by the 6 demand level offsets and the 2 commanded demand limit levels.
21. 3-year limited part warranty.

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 75VA 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, gas controller, 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. The heat exchanger shall be controlled by an integrated gas controller (IGC) microprocessor. See gas heat section of this specification.
5. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.

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

1. Compressor over-temperature, over-current. High internal pressure differential.
2. Low Pressure Switch.
   a. 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.
   a. 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. Mixed Air Auto Reset Temperature Switch.
   a. When return air temperatures get the critical point that can cause compressor reliability issues, this switch will shut down compression only until the temperature raise accordingly. Switch opens at 60°F (16°C) and closes at 65°F (18°C).
5. Automatic Reset, Motor Thermal Overload Protector.
6. Heating section shall be provided with the following minimum protections:
   a. High temperature limit switches.
   b. Induced draft motor speed sensor.
   c. Flame rollout switch.
   d. Flame proving controls.

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

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

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 a dedicated, weather tight access pane.
4. Four-inch filter capabilities shall be capable with pre-engineered and approved Carrier filter track field installed accessory. This kit requires field furnished filters.

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 a fully hermetic scroll compressors for cooling duty and gas combustion for 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® (R-410A) 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 60335-2-40, including tested to withstand rain.
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. Accessory winter start kit is necessary if mechanically cooling at ambient temperatures down to 25°F (–4°C) or 0°F (–18°C).
3. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
4. Unit shall be factory configured for vertical supply and return configurations or horizontal supply and return configurations. Dedicated models provided with no special air conversion kits required.

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 inches 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 gas 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, possible either through the bottom or side of the drain pan. Connection shall be made per manufacturer's recommendations.
7. Top Panel:
   a. Shall be a multi-top panel linked with watertight flanges and locking systems.
8. Gas Connections:
   a. All gas piping connecting to unit gas valve shall enter the unit cabinet at a single location on side of unit (horizontal plane).
9. Electrical Connections:
   a. All unit power wiring shall enter unit cabinet at a single, factory prepared, knockout location.
   b. Thru-the-base capability.
      1) Thru-the-base provisions/connections are available as standard with every unit. When bottom connections are required, field furnished couplings are require.
      2) No basepan penetration, other than those authorized by the manufacturer, is permitted.
10. Component Access Panels (standard):
    a. Cabinet panels shall be easily removable for servicing.
    b. Unit shall have large 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.) Gas Heat:
   1. General:
      a. Heat exchanger shall be an induced draft design. Positive pressure heat exchanger designs shall not be allowed.
      b. Shall incorporate a direct-spark ignition system and redundant main gas valve.
      c. Gas supply pressure at the inlet to the rooftop unit gas valve must match that required by the manufacturer.
   2. The heat exchanger shall be controlled by an integrated gas controller (IGC) microprocessor.
      a. IGC board shall notify users of fault using an LED (light-emitting diode).
      b. The LED shall be visible without removing the control box access panel.
      c. IGC board shall contain algorithms that modify evaporator fan operation to prevent future cycling on high temperature limit switch.
      d. Unit shall be equipped with anti-cycle protection with one short cycle on unit flame rollout switch or 4 continuous short cycles on the high temperature limit switch. Fault indication shall be made using an LED.
   3. Standard Heat Exchanger Construction:
      a. Heat exchanger shall be of the tubular-section type constructed of a minimum of 20 gauge steel coated with a nominal 1.2 mil aluminum-silicone alloy for corrosion resistance.
      b. Burners shall be of the in-shot type constructed of aluminum-coated steel.
      c. Burners shall incorporate orifices for rated heat output up to 2000 ft (610 m) elevation. Additional accessory kits may be required for applications above 2000 ft (610 m) elevation, depending on local gas supply conditions.
      d. Each heat exchanger tube shall contain multiple dimples for increased heating effectiveness.
   4. Optional Stainless Steel Heat Exchanger Construction:
      a. Use energy saving, direct-spark ignition system.
      b. Use a redundant main gas valve.
      c. Burners shall be of the in-shot type constructed of aluminum-coated steel.
      d. All gas piping shall enter the unit cabinet at a single location on side of unit (horizontal plane).

e. The optional stainless steel heat exchanger shall be of the tubular-section type, constructed of a minimum of 20 gauge type 409 stainless steel.
f. Type 409 stainless steel shall be used in heat exchanger tubes and vestibule plate.
g. Complete stainless steel heat exchanger allows for greater application flexibility.

5. Induced Draft Combustion Motor and Blower
a. Shall be a direct-drive, single inlet, forward-curved centrifugal type.
b. Shall be made from steel with a corrosion resistant finish.
c. Shall have permanently lubricated sealed bearings.
d. Shall have inherent thermal overload protection.
e. Shall have an automatic reset feature.

I. (23 81 19.13.I.) 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 1995 burst test at 1775 psig.
c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 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 B117-90.
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 D523-89.
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 D3363-92A and cross-hatch adhesion of 4B-5B per ASTM D3359-93.
f. Impact resistance shall be up to 160 in. lb (ASTM D2794-93).
g. Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92).
h. Corrosion durability shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117-90.

J. (23 81 19.13.J.) 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.
c. Service gauge connections on suction and discharge lines.

2. Compressors:
a. Unit shall use 2 tandem scroll compressors on single independent refrigeration circuit.
b. Units shall have single circuit and 2 stage cooling and contain 2 dual stage compressors.

c. Evaporator coils shall be a full active design to help better control comfort latent removal.
d. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
e. Compressors shall be internally protected from high discharge temperature conditions.
f. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
g. Compressor shall be factory-mounted on rubber grommets.
h. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
i. Crankcase heaters shall not be required for normal operating range, unless required by the manufacturer due to refrigerant charge limits.

K. (23 81 19.13.K.) Return Air 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.

L. (23 81 19.13.L.) Evaporator Fan and Motor with EcoBlue™ Technology:
1. Direct Drive Evaporator Fan Motor:
a. Shall be a ECM motor design.
b. Shall have permanently lubricated bearings.
c. Shall have inherent automatic-reset thermal overload protection.
d. Shall have slow ramp up to speed capabilities.
e. Shall require no fan/motor belts for operation, adjustments and or initial fan speed set up.
f. 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.
g. Shall be internally protected from electrical phase reversal and loss.
2. Evaporator Fan:
a. 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 75% less moving parts than a conventional belt drive system.
d. Shall be constructed of a cast aluminum stator and high impact composite material on stator, rotor and air inlet casing.
e. Shall be a patented design with a corrosion resistant material and dynamically balanced.
f. Shall have slow ramp up to speed capabilities to help reduce sound and comfort issues typically associated with single speed belt drive systems.
g. Units shall contain 2 separate vane axial fan assemblies.
h. 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, gas controller, 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.

M. (23 81 19.13.M.) 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.

N. (23 81 19.13.N.) 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 setpoints.

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

f. Standard 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) Functions with solid-state analog enthalpy or dry bulb changeover control sensing.

3) LED indication for free cooling, sensor, and damper operation.

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

5) Optional configuration via WLAN stick and Siemens Climatix™[1] smartphone app for easy setup.

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.

7) Sensor failure loss of communication identification.

8) Capabilities for use with multiple-speed or single speed indoor fan systems.

9) Utilize 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 economizers 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 (–42.8°C to 26.6°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. Contain 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 setpoints.

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.

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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) Utilize digital sensors: Dry bulb and Enthalpy.

h. Economizer controller on EconoMi$er 2 models with SystemVu™ controls shall be a 4-20mA 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 economizers 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 (–42.8°C to 26.6°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 setpoint.
   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):
   a. 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. Humidi-MiZer® Adaptive Dehumidification System:
   a. The Humidi-MiZer Adaptive Dehumidification System shall be factory installed and shall provide greater dehumidification of the occupied space by 2 modes of dehumidification operations in addition to its normal design cooling mode:
      1) Subcooling mode further sub cools the hot liquid refrigerant leaving the condenser coil when both temperature and humidity in the space are not satisfied.
      2) Hot gas reheat mode shall mix a portion of the hot gas from the discharge of the compressor with the hot liquid refrigerant leaving the condenser coil to create a 2-phase heat transfer in the system, resulting in a neutral leaving air temperature when only humidity in the space is not satisfied.
      3) Includes low ambient controller.
7. 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 0°F (–18°C).

8. Propane Gas Conversion Kit:
   a. Package shall contain all the necessary hardware and instructions to convert a standard natural gas unit for use with liquefied propane, up to 2000 ft (610 m) elevation.
   b. Additional accessory kits may be required for applications above 2000 ft (610 m) elevation.
9. Condenser Coil Hail Guard Assembly:
   a. Shall protect against damage from hail.
   b. Shall be either hood style or louvered.
10. Unit-Mounted, Non-Fused Disconnect Switch:
   a. Switch shall be factory installed, internally mounted.
   b. National Electric Code (NEC) and UL approved non-fused switch shall provide unit power shutoff.
   c. Shall be accessible from outside the unit.
   d. Shall provide local shutdown and lockout capability.
   e. Sized only for the unit as ordered from the factory. Does not accommodate field-installed devices.
11. Convenience Outlet:
   a. 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 115/120v 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 115/120v 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.
12. Flue Discharge Deflector:
   a. Flue discharge deflector shall direct unit exhaust vertically instead of horizontally.
   b. Deflector shall be defined as a “natural draft” device by the National Fuel and Gas (NFG) code.
13. Centrifugal Fan Power Exhaust:
   a. Power exhaust shall be used in conjunction with an integrated economizer.
   b. Independent modules for vertical or horizontal return configurations shall be available.
   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.
14. 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.

15. High Altitude Gas Conversion Kit:
    a. Package shall contain all the necessary hardware and instructions to convert a standard natural gas unit to operate from 2000 to 7000 ft (610 to 2134 m) elevation with natural gas or from 0 to 7000 ft (0 to 2134 m) elevation with liquefied propane.
16. Outdoor Air Enthalpy Sensor:
    a. 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.
17. Return Air Enthalpy Sensor:
    a. The return air enthalpy sensor shall be used in conjunction with an outdoor air enthalpy sensor to provide differential enthalpy control.
18. 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.
19. 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.
20. 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 25°F (–4°C).
    c. Shall not be required to operate on an economizer when below an outdoor ambient of 40°F (4°C).
21. 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.
22. 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.
23. 4 in. MERV-13 Return Air Filters:
    a. Factory option to upgrade standard unit filters to 4 in. MERV-13 filters. Filter media is securely fasted inside the filter frame on all 4 sides.
24. 4 in. Filter Rack Kit:
    a. The 4 in. filter rack accessory kit is 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.
26. 2 in. MERV-8 Return Air filters:
    a. Accessory kit to field upgrade standard unit filters to 2 in. MERV-8 filters.
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.
        1) Requires installation of a field-supplied 24-v transformer suitable for 4.2 VA (AC) or 3.0 VA (DC) per horn/strobe accessory.
        2) Requires field-supplied electrical box, North American 1-gang box, 2 in. (51 mm) x 4 in. (102 mm).

3) Shall have a clear colored lens.

29. UV-C Ultraviolet Lamp Kit:
    a. High-output, low temperature ultraviolet lamp accessory. It includes:
        1) 36 in. lamp, interlock switch, mounting brackets, necessary wires, wire ties, screws and labels to field install kit in unit return air plenum.
        2) Separate dedicated 115v power source required.
        3) UV-C kit can not be used on units with Humidi-MiZer® system.

30. High Short Circuit Current Rating (SCCR) Protection:
    a. 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.)
    b. This option is not available with factory installed Non-Fused Disconnect, Humidi-MiZer system, Low Ambient controls, Phase loss monitor/protection and 575 volt models.

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.

Cooling Only/Electric Heat Packaged Rooftop

HVAC Guide Specifications

Size Range: **17.5 to 27.5 Nominal Tons**
Carrier Model Number: **50FC*20-30**

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:

1. 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:

1. Thermostat must:
   a. energize both "W" and "G" when calling for heat.
   b. have capability to energize 1 or 2 stages of cooling, and 2 different stages of heating.
   c. 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 MS/PT 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.
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 (3°C) temperature difference between cooling and heating setpoints 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 hand-held Navigator™ display, Equipment Touch and System Touch devices.
18. Units with the factory-installed Humidi-MiZer® system option are capable of providing multiple modes of improved dehumidification as a variation of the normal cooling cycle.
19. Supply Air Tempering control operates the gas or 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.
20. Demand limiting in units with SystemVu™ controller is achieved through setpoint expansion. The systems heating and cooling setpoints are expanded in steps or levels. The degree to which the setpoints may be expanded is defined by the 6 demand level offsets and the 2 commanded demand limit levels.
21. 3-year limited part warranty.

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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 75VA 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.

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

1. Compressor over-temperature, over-current. High internal pressure differential.
2. Low Pressure Switch.
   a. 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.
   a. 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. Mixed Air Auto Reset Temperature Switch.
   a. When return air temperatures get the critical point that can cause compressor reliability issues, this switch will shut down compression only until the temperature raise accordingly. Switch opens at 60°F (16°C) and closes at 65°F (18°C).
5. Automatic Reset, Motor Thermal Overload Protector.

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. Filters shall be accessible through a dedicated, weather tight access pane.
3. Four-inch filter capabilities shall be capable with pre-engineered and approved Carrier filter track field in-stalled accessory. This kit requires field furnished filters.

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 optional electric heat for 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® (R-410A) 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 60335-2-40, including tested to withstand rain.
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. Accessory winter start kit is necessary if mechanically cooling at ambient temperatures down to 25°F (–4°C) or 0°F (–18°C).
3. Unit shall discharge supply air vertically or horizontally as shown on contract drawings.
4. Unit shall be factory configured for vertical supply and return configurations or horizontal supply and return configurations. Dedicated models provided with no special air conversion kits required.

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, possible either through the bottom or 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) Thru-the-base provisions/connections are available as standard with every unit. When bottom connections are required, field furnished couplings are required.
      2) 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 large 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 1995 burst test at 1775 psig.
   c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 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 B117-90.
   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 D523-89.

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 D3363-92A and cross-hatch adhesion of 4B-5B per ASTM D3359-93.
f. Impact resistance shall be up to 160 in.-lb (ASTM D2794-93).
g. Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92).
h. Corrosion durability shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117-90.

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.
c. Service gauge connections on suction and discharge lines.
2. Compressors:
a. Unit shall use 2 tandem scroll compressors on single independent refrigeration circuit.
b. Units shall have single circuit and 2 stage cooling and contain 2 dual stage compressors.
c. Evaporator coils shall be a full active design to help better control comfort latent removal.
d. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
e. Compressors shall be internally protected from high discharge temperature conditions.
f. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
g. Compressor shall be factory mounted on rubber grommets.
h. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
i. Crankcase heaters shall not be required for normal operating range, unless required by compressor manufacturer due to refrigerant charge limits.
j. Compressors shall be a 2 stage cooling capacity design.

J. (23 81 19.13.J.) Return Air 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 have permanently lubricated bearings.
c. Shall have inherent automatic-reset thermal overload protection.
d. Shall have slow ramp up to speed capabilities.
e. Shall require no fan/motor belts for operation, adjustments and or initial fan speed set up.
f. 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.
g. Shall be internally protected from electrical phase reversal and loss.
2. Evaporator Fan:
a. 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 75% less moving parts than a conventional belt drive system.
d. Shall be constructed of a cast aluminum stator and high impact composite material on stator, rotor and air inlet casing.
e. Shall be a patented / pending design with a corrosion resistant material and dynamically balanced.
f. Shall have slow ramp up to speed capabilities to help reduce sound and comfort issues typically associated with single speed belt drive systems.
g. Units shall contain 2 separate vane axial fan assemblies.
h. 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, gas controller, 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$er® 2 Low Leak Rate Models.
      a. Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.
      b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory installed option.
      c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
      d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.
      e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
      f. Standard leak rate shall be equipped with dampers not to exceed 2% leakage at 1 in. wg pressure differential.
      g. Economizer controller on EconomizerONE models shall be Siemens POL224 that provides:
         1) Combined minimum and DCV maximum damper position potentiometers with compressor staging relay.
         2) Functions with solid-state analog enthalpy or dry bulb changeover control sensing.
         3) LED indication for free cooling, sensor, and damper operation.
         4) One-line LCD interface screen for setup, configuration and troubleshooting.
         5) Optional configuration via WLAN stick and Siemens Climatix™[1] smartphone app for easy setup.
         6) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24, ASHRAE 90.1 and IECC.
         7) Sensor failure loss of communication identification.
         8) Capabilities for use with multiple-speed or single speed indoor fan systems.
         9) Utilize digital sensors: Dry bulb and Enthalpy.
      h. Economizer controller on EconoMi$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 (–42.8°C to 26.6°C), set at a factory default of 32°F (0°C).

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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.

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 setpoints.

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) Utilize digital sensors: Dry bulb and Enthalpy.

h. Economizer controller on EconoMi$er 2 models with SystemVu™ controls shall be a 4-20mA 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 (–42.8°C to 26.6°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. 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 setpoint.

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):
   a. 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. Humidi-MiZer Adaptive Dehumidification System:
   a. The Humidi-MiZer® Adaptive Dehumidification System shall be factory installed and shall provide greater dehumidification of the occupied space by 2 modes of dehumidification operations in addition to its normal design cooling mode:
      1) Subcooling mode further sub cools the hot liquid refrigerant leaving the condenser coil when both temperature and humidity in the space are not satisfied.
      2) Hot gas reheat mode shall mix a portion of the hot gas from the discharge of the compressor with the hot liquid refrigerant leaving the condenser coil to create a 2-phase heat transfer in the system, resulting in a neutral leaving air temperature when only humidity in the space is not satisfied.
      3) Includes low ambient controller.
7. 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 0°F (–18°C).
8. Condenser Coil Hail Guard Assembly:
   a. Shall protect against damage from hail.
   b. Shall be either hood style or louvered.
9. Unit-Mounted, Non-Fused Disconnect Switch:
   a. Switch shall be factory installed, internally mounted.
   b. National Electric Code (NEC) and UL approved non-fused switch shall provide unit power shutoff.
   c. Shall be accessible from outside the unit.
   d. Shall provide local shutdown and lockout capability.
   e. Sized only for the unit as ordered from the factory. Does not accommodate field-installed devices.
10. Convenience Outlet:
   a. 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 115/120v 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 115/120v 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. Centrifugal Fan Power Exhaust:
    a. Power exhaust shall be used in conjunction with an integrated economizer.
    b. Independent modules for vertical or horizontal return configurations shall be available.
    c. 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.
12. 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.
13. Outdoor Air Enthalpy Sensor:
    a. 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.
14. Return Air Enthalpy Sensor:
    a. The return air enthalpy sensor shall be used in conjunction with an outdoor air enthalpy sensor to provide differential enthalpy control.
15. 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.
16. 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.
17. 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 25°F (–4°C).
    c. Shall not be required to operate on an economizer when below an outdoor ambient of 40°F (4°C).
18. 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.
19. 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.
20. 4 in. MERV-13 Return Air Filters:
    a. Factory option to upgrade standard unit filters to 4 in. MERV-13 filters. Filter media is securely fasted inside the filter frame on all 4 sides.
21. 4 in. Filter Rack Kit:
    a. The 4 in. filter rack accessory kit is designed to hold 4 in. MERV-8 or MERV-13 filters. Filters not included in kit.
22. 2 in. MERV-13 Return Air Filters:
    a. Accessory kit to field upgrade standard unit filters to 2 in. MERV-13 filters.
23. 2 in. MERV-8 Return Air Filters:
    a. Accessory kit to field upgrade standard unit filters to 2 in. MERV-8 filters.
24. 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.

25. Horn/Strobe Annunciator:
    a. Provides an audible/visual signaling device for use with factory-installed option or field installed accessory smoke detectors.
        1) Requires installation of a field-supplied 24-v transformer suitable for 4.2 VA (AC) or 3.0 VA (DC) per horn/strobe accessory.
        2) Requires field-supplied electrical box, North American 1-gang box, 2 in. (51 mm) x 4 in. (102 mm).
        3) Shall have a clear colored lens.
26. 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 not exceeding 48 amps each. Auto reset 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.
27. UV-C Ultraviolet Lamp Kit:
    a. High-output, low temperature ultraviolet lamp accessory. It includes:
        1) 36 in. lamp, interlock switch, mounting brackets, necessary wires, wire ties, screws and labels to field install kit in unit return air plenum.
        2) Separate dedicated 115v power source required.
        3) UV-C kit can not be used on units with Humidi-MiZer system.
28. High Short Circuit Current Rating (SCCR) Protection:
    a. 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.)
    b. This option is not available with factory installed Non-Fused Disconnect, Humidi-MiZer system, Low Ambient controls, Phase loss monitor/protection and 575 volt models.

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