



Product Data

WeatherMaker® Single Packaged Rooftop

7.5 to 15 Nominal Tons

ecoblue™  technology



48/50FC**08, 09, 12, 14, 16

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

The New Carrier WeatherMaker® rooftop units (RTU) with EcoBlue™ Technology were designed by customers for 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 and highly safety protected 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 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

48/50FC WeatherMaker® units up to 15 tons are specifically designed to fit on Carrier roof curbs that were installed back to 1989, which makes replacement easy and eliminates the need for curb adapters, changing utility connections or supporting curb overhang situations.

Two-speed staged air volume (SAV) indoor fan speed control helps deliver IEEERs up to 15.2. All models are capable of either vertical or horizontal airflow without dedicated models or field install kits. The 16 size models require a field installed supply air kit.

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 7.5 to 15 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 i-Vu®, 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
- 7.5 to 15 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

Installation ease

All WeatherMaker units are field-convertible to horizontal airflow, which makes it easy to adjust to unexpected jobsite complications. 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.

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Features/Benefits (cont)

Carrier

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.

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. 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.

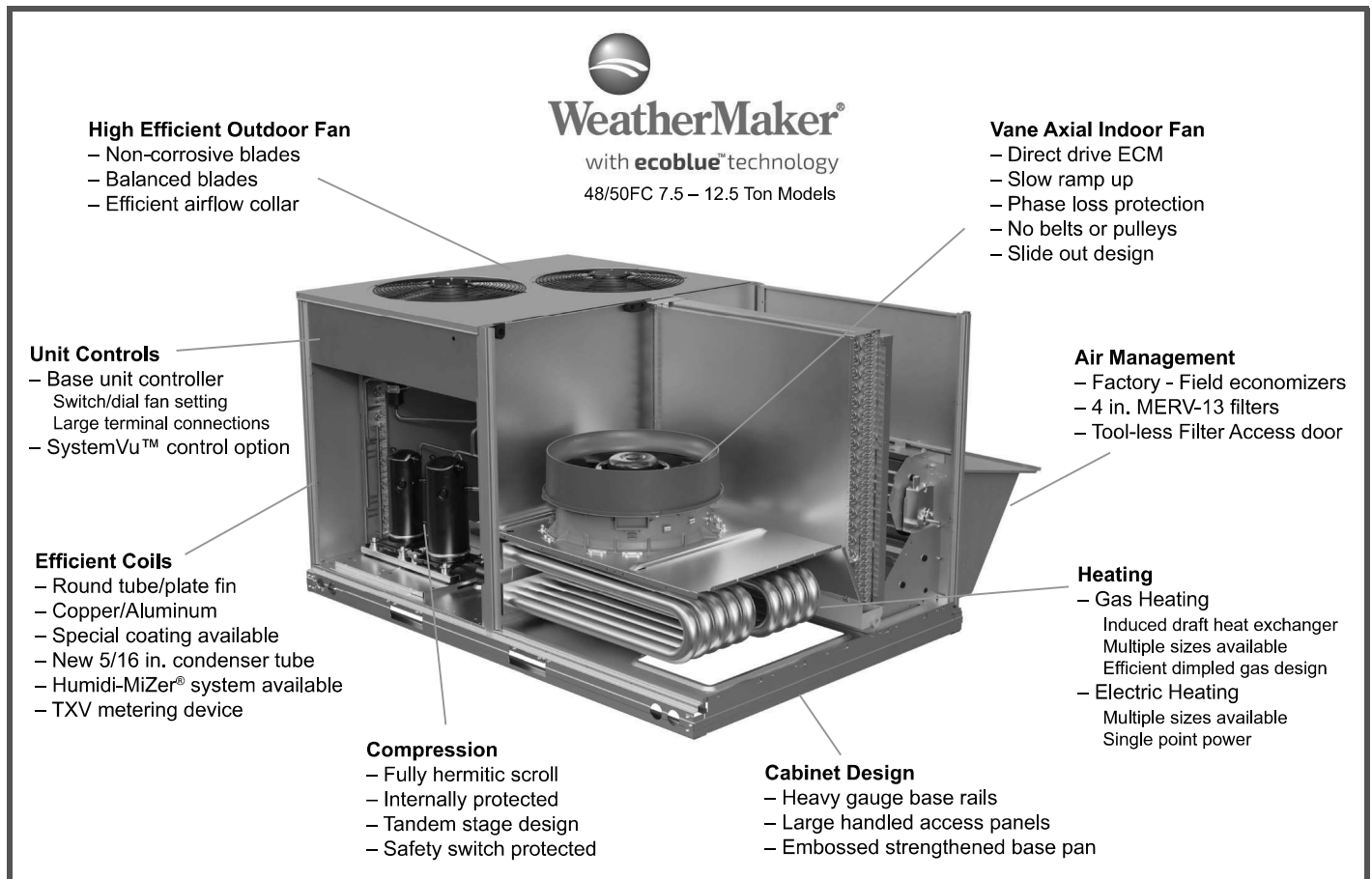
Field convertible airflow

All WeatherMaker 7.5 to 15 ton units are field-convertible to horizontal airflow, which makes it easy to adjust to unexpected jobsite. The 15 ton models require a simple supply duct cover kit to field convert from factory vertical to horizontal.

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	D	M	0	8	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 with Stainless Steel Exchanger
R = Medium Heat with Stainless Steel Exchanger
T = High Heat with Stainless Steel Exchanger

Refrig. Systems Options

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

Cooling Tons

08 = 7.5 tons
09 = 8.5 tons
12 = 10 tons
14 = 12.5 tons
16 = 15 tons

Sensor Options

A = None
B = RA Smoke Detector
C = SA Smoke Detector
D = RA + SA Smoke Detector
E = CO₂
F = RA Smoke Detector and CO₂
G = SA Smoke Detector and CO₂
H = RA + SA Smoke Detector and CO₂
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 + CO₂
P = Condensate Overflow Switch + RA Smoke Detector and CO₂
Q = Condensate Overflow Switch + SA Smoke Detector and CO₂
R = Condensate Overflow Switch + RA and SA Smoke Detector and CO₂

Indoor Fan Options

2 = Standard/Medium Static Option
3 = High Static Option
5 = Standard/Medium Static Option and Filter Status Switch
6 = High Static Option 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

Packaging Compliance

0 = Standard
1 = LTL

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 = High SCCR (Short Circuit Current Rating) Protection
2 = High SCCR 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 = Temperature Economizer with Barometric Relief
F = Enthalpy Economizer with Barometric Relief
U = Temperature Ultra Low Leak Economizer with Barometric Relief
W = Enthalpy Ultra Low Leak Economizer with Barometric Relief

Base Unit Controls

0 = Electromechanical Controls (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

Voltage

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

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	0	8	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)

Heat Size

- = No heat
(Field Installed Available)

Refrig. Systems Options

M = Two Stage Cooling, Single Circuit
N = Two Stage Cooling, Single Circuit with
Humidi-MiZer® system

Cooling Tons

08 = 7.5 tons
09 = 8.5 tons
12 = 10.0 tons
14 = 12.5 tons
16 = 15 tons

Sensor Options

A = None
B = Return Air (RA) Smoke Detector
C = Supply Air (SA) Smoke Detector
D = RA + SA Smoke Detector
E = CO₂ Sensor
F = RA Smoke Detector and CO₂ Sensor
G = SA Smoke Detector and CO₂ Sensor
H = RA + SA Smoke Detector and CO₂ Sensor
J = Condensate Overflow Switch
K = Condensate Overflow Switch and RA Smoke Detector
L = Condensate Overflow Switch and RA and SA Smoke Detectors
M = Condensate Overflow Switch and SA Smoke Detector
N = Condensate Overflow Switch + CO₂
P = Condensate Overflow Switch + RA Smoke Detector and CO₂
Q = Condensate Overflow Switch + SA Smoke Detector and CO₂
R = Condensate Overflow Switch + RA and SA Smoke Detector and CO₂

Indoor Fan Options

2 = Standard/Medium Static Motor – Vane Axial EcoBlue
3 = High Static Motor – Vane Axial EcoBlue
5 = Standard/Medium Static Motor – Vane Axial EcoBlue and
Filter Status Switch
6 = High Static Motor – Vane Axial EcoBlue and Filter Status Switch

Coil Options – (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

Packaging & Seismic Compliance

0 = Standard
1 = LTL

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 = High SCCR (Short Circuit Current Rating)
Protection
2 = High SCCR Protection and Thru-The-Base
Connections

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1 = Unpowered Convenience Outlet
2 = Powered Convenience Outlet
3 = Hinged Panels
4 = Hinged 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 = Temperature Economizer with Barometric Relief
F = Enthalpy Economizer with Barometric Relief
U = Temperature Ultra Low Leak Economizer
with Barometric Relief
W = Enthalpy Ultra Low Leak Economizer
with Barometric Relief

Base Unit Controls

0 = Electromechanical Controls (allows for use of field-
installed economizers)
3 = SystemVu™ Controller
8 = Electromechanical Controls — can be used with POL224
EconomizerONE (With Fault Detection and Diagnostic)

Design Revision

- = Factory Design Revision

Voltage

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

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
48FC*M08	2	7.5	86.0	7.7	11.2	15.0	2650
48FC*M09	2	8.5	98.0	8.8	11.2	15.0	3400
48FC*M12	2	10.0	118.0	10.7	11.0	15.0	3500
48FC*M14	2	12.5	132.0	12.9	10.2	15.0	3750
48FC*M16	2	15.0	174.0	16.1	10.8	14.5	5250

NOTE(S):

- Rated in accordance with AHRI Standards 340/360.
- 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.
- 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.
- 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-M08	2	7.5	86.0	7.5	11.4	15.2	2650
50FC-M09	2	8.5	98.0	8.6	11.4	15.2	3400
50FC-M12	2	10.0	118.0	10.5	11.2	15.2	3500
50FC-M14	2	12.5	133.0	12.8	10.4	15.2	3750
50FC-M16	2	15.0	174.0	15.8	11.0	14.7	5250

NOTE(S):

- Rated in accordance with AHRI Standards 340/360.
- 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.
- 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.
- 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
MBH — Btu/h in thousands



Capacity ratings (cont)



Sound Ratings Table^{a,b}

48/50FC UNIT	COOLING STAGES	OUTDOOR SOUND (dB) at 60 Hz								
		A-Weighted ^c	63	125	250	500	1000	2000	4000	8000
M08	2	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
M09	2	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
M12	2	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
M14	2	79	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
M16	2	87	87.0	85.2	84.6	84.9	82.8	78.4	75.3	72.9

NOTE(S):

- Outdoor sound data is measured in accordance with AHRI.
- 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.
- 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

Capacity ratings (cont)



Minimum - Maximum Airflow Ratings (cfm) — Natural Gas And Propane

48FC UNITS	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
48FC**08	LOW	1350	2250	3750	1730	3800
	MED				2100	3900
	HIGH				2240	4200
48FC**09	LOW	1275	2550	4250	1730	4750
	MED				2100	4560
	HIGH				2240	4800
48FC**12	LOW	1800	3000	5000	2100	5470
	MED				2580	5600
	HIGH				2710	5420
48FC**14	LOW	2250	3750	6250	2100	6830
	MED				2580	6720
	HIGH				2710	6330
48FC**16	LOW	2970	4500	7500	2450	9000
	MED				3000	9000
	HIGH				4040	7500

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

50FC UNITS	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
50FC-*08	1350	2250	3750	2250	3750
50FC-*09	1275	2550	4250	2550	4250
50FC-*12	1800	3000	5000	3000	5000
50FC-*14	2250	3750	6250	3750	6250
50FC-*16	2970	4500	7500	4500	7500

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

48FC UNITS	GAS HEAT	AL/SS HEAT EXCHANGER		TEMPERATURE RISE (°F)	THERMAL EFFICIENCY (%)
		Input/Output Stage 1 (MBH)	Input/Output Stage 2 (MBH)		
48FC**08	LOW	—/—	125/103	25-55	82
	MED	120/98	180/148	35-65	82
	HIGH	180/146	224/181	40-75	81
48FC**09	LOW	—/—	125/103	20-55	82
	MED	120/98	180/148	30-65	82
	HIGH	180/146	224/181	35-75	81
48FC**12	LOW	120/98	180/148	25-65	82
	MED	180/146	224/181	30-65	81
	HIGH	200/164	250/205	35-70	82
48FC**14	LOW	120/98	180/148	20-65	82
	MED	180/146	224/181	25-65	81
	HIGH	200/160	250/205	30-70	82
48FC**16	LOW	144/118	180/146	15-55	81
	MED	192/156	240/195	20-60	81
	HIGH	280/224	350/284	35-65	81

LEGEND

MBH — Btuh in thousands

48/50FC 7.5 to 8.5 Ton Physical Data

48/50FC UNIT	48/50FC*M08	48/50FC*N08	48/50FC*M09	48/50FC*N09
NOMINAL TONS	7.5	7.5	8.5	8.5
BASE UNIT OPERATING WT (lb) 48FC/50FC^a	787/743	787/743	868/805	868/805
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)	13-3	—	14-0	—
Humidi-MiZer® Puron (R-410A) Charge (lb-oz)	—	19-5	—	21-0
Metering Device	TXV	TXV	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 (psig)	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	3/15	3/15	4/15	4/15
Total Face Area (ft²)	8.9	8.9	8.9	8.9
Condensate Drain Connection Size	3/4 in.	3/4 in.	3/4 in.	3/4 in.
CONDENSER COIL				
Material	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 (ft²)	20.5	20.5	21.4	21.4
HUMIDI-MIZER COIL				
Material	—	Cu/Al	—	Cu/Al
Coil Type	—	5/16 in. RTPF	—	5/16 in. RTPF
Rows/FPI	—	2/18	—	2/18
Total Face Area (ft²)	—	6.0	—	8.0
EVAPORATOR FAN AND MOTOR				
Standard/Medium Static				
Motor Qty / Drive Type	1 / Direct	1 / Direct	1 / Direct	1 / Direct
Maximum Cont bhp	2.4	2.4	2.4	2.4
Range (rpm)	250-2000	250-2000	250-2000	250-2000
Fan Qty/Type	1/Vane Axial	1/Vane Axial	1/Vane Axial	1/Vane Axial
Fan Diameter (in.)	22	22	22	22
High Static				
Motor Qty / Drive Type	1 / Direct	1 / Direct	1 / Direct	1 / Direct
Maximum Cont Bhp	3	3	3	3
Range (rpm)	250-2200	250-2200	250-2200	250-2200
Fan Qty/Type	1/Vane Axial	1/Vane Axial	1/Vane Axial	1/Vane Axial
Fan Diameter (in.)	22	22	22	22
CONDENSER FAN AND MOTOR				
Qty / Motor Drive Type	2 / Direct	2 / Direct	2 / Direct	2 / 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.)	4 / 16x20x2	4 / 16x20x2	4 / 16x20x2	4 / 16x20x2
OA Inlet Screen Qty / Size (in.)	1 / 20x24x1	1 / 20x24x1	1 / 20x24x1	1 / 20x24x1

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 10 to 12.5 Ton Physical Data

48/50FC UNIT	48/50FC*M12	48/50FC*N12	48/50FC*M14	48/50FC*N14
NOMINAL TONS	10.0	10.0	12.5	12.5
BASE UNIT OPERATING WT (lb) 48FC/50FC^a	878/815	878/815	1041/978	1041/978
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)	15-3	—	19-8	—
Humidi-MiZer® Puron (R-410A) Charge (lb-oz)	—	23-3	—	28-6
Metering Device	TXV	TXV	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 (psig)	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 (ft²)	11.1	11.1	11.1	11.1
Condensate Drain Connection Size	3/4 in.	3/4 in.	3/4 in.	3/4 in.
CONDENSER COIL				
Material	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	3/18	3/18
Total Face Area (ft²)	25.1	25.1	25.1	25.1
HUMIDI-MIZER COIL				
Material	—	Cu/Al	—	Cu/Al
Coil Type	—	5/16 in. RTPF	—	5/16 in. RTPF
Rows/FPI	—	2/18	—	2/18
Total Face Area (ft²)	—	8.0	—	8.0
EVAPORATOR FAN AND MOTOR				
Standard/Medium Static				
Motor Qty / Drive Type	1 / Direct	1 / Direct	1 / Direct	1 / Direct
Maximum Cont Bhp	2.4	2.4	3	3
Range (rpm)	250-2000	250-2000	250-2200	250-2200
Fan Qty / Type	1 / Vane Axial	1 / Vane Axial	1 / Vane Axial	1 / Vane Axial
Fan Diameter (in.)	22	22	22	22
High Static				
Motor Qty / Drive Type	1 / Direct	1 / Direct	1 / Direct	1 / Direct
Maximum Cont Bhp	5	5	5	5
Range (rpm)	250-2200	250-2200	250-2200	250-2200
Fan Qty / Type	1 / Vane Axial	1 / Vane Axial	1 / Vane Axial	1 / Vane Axial
Fan Diameter (in.)	22	22	22	22
CONDENSER FAN AND MOTOR				
Qty / Motor Drive Type	2 / Direct	2 / Direct	1 / Direct	1 / Direct
Motor hp / rpm	1/4 / 1100	1/4 / Multiple Speeds	1 / Multiple Speeds	1 / Multiple Speeds
Fan Diameter (in.)	22	22	30	30
FILTERS				
RA Filter Qty / Size (in.)	4 / 20x20x2	4 / 20x20x2	4 / 20x20x2	4 / 20x20x2
OA Inlet Screen Qty / Size (in.)	1 / 20x24x1	1 / 20x24x1	1 / 20x24x1	1 / 20x24x1

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 15 Ton Physical Data

48/50FC UNIT	48/50FC*M16	48/50FC*N16
NOMINAL TONS	15.0	15.0
BASE UNIT OPERATING WT (lb) 48FC/50FC^a	1408/1325	1408/1325
REFRIGERATION SYSTEM		
No. Circuits/No. Compressors/Type	1 / 2/ Scroll	1 / 2/ Scroll
Puron® (R-410A) Charge (lb-oz)	24-0	34-0
Humidi-MiZer® Puron (R-410A) Charge (lb-oz)	—	34-0
Metering Device	TXV	TXV
Humidi-MiZer Metering Device	—	TXV
High-Pressure Trip/Reset (psig)	630/505	630/505
Low-Pressure Trip/Reset (psig)	54/117	54/117
EVAPORATOR COIL		
Material (Tube/Fin)	Cu/Al	Cu/Al
Coil Type	3/8 in. RTPF	3/8 in. RTPF
Rows/FPI	3/15	3/15
Total Face Area (ft²)	17.5	17.5
Condensate Drain Connection Size	3/4 in.	3/4 in.
CONDENSER COIL		
Material	Cu/Al	Cu/Al
Coil Type	5/16 in. RTPF	5/16 in. RTPF
Rows/FPI	2/18	2/18
Total Face Area (ft²)	46.2	46.2
HUMIDI-MIZER COIL		
Material	—	Cu/Al
Coil Type	—	5/16 in. RTPF
Rows/FPI	—	2/18
Total Face Area (ft²)	—	8.0
EVAPORATOR FAN AND MOTOR		
Standard/Medium Static		
Motor Qty / Drive Type	1 / Direct	1 / Direct
Maximum Cont Bhp	3	3
Range (rpm)	250-2000	250-2000
Fan Qty / Type	1 / Vane Axial	1 / Vane Axial
Fan Diameter (in.)	22	22
High Static		
Motor Qty / Drive Type	1 / Direct	1 / Direct
Maximum Cont Bhp	5	5
Range (rpm)	250-2000	250-2000
Fan Qty / Type	1 / Vane Axial	1 / Vane Axial
Fan Diameter (in.)	22	22
CONDENSER FAN AND MOTOR		
Qty / Motor Drive Type	3 / Direct	3 / Direct
Motor hp / rpm	1/4 / 1100	1/4 / 1100
Fan Diameter (in.)	22	22
FILTERS		
RA Filter Qty / Size (in.)	6 / 18x24x2	6 / 18x24x2
OA Inlet Screen Qty / Size (in.)	Vertical: 2 / 24x27x1 Horizontal: 1 / 30x39x1	Vertical: 2 / 24x27x1 Horizontal: 1 / 30x39x1

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 7.5 to 15 Ton Gas Heat Data

48FC UNIT	48FC**08	48FC**09	48FC**12	48FC**14	48FC**16
NOMINAL TONS	7.5	8.5	10.0	12.5	15
GAS CONNECTION					
No. of Gas Valves	1	1	1	1	1
Natural Gas Supply Line Pressure (in. wg)/(psig)	4-13 / 0.14-0.47	4-13 / 0.14-0.47	4-13 / 0.14-0.47	4-13 / 0.14-0.47	4-13 / 0.14-0.47
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	11-13 / 0.40-0.47
HEAT ANTICIPATOR SETTING (AMPS)					
First Stage	0.14	0.14	0.14	0.14	0.14
Second Stage	0.14	0.14	0.14	0.14	0.14
NATURAL GAS HEAT					
LOW					
No. of Stages / No. of Burners (total)	1 / 3	1 / 3	2 / 4	2 / 4	2 / 6
Connection Size	1/2 in. NPT	1/2 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	196 / 115
Temperature Rise (°F)	25-55	20-55	25-65	20-65	15-55
MEDIUM					
No. of Stages / No. of Burners (total)	2 / 4	2 / 4	2 / 5	2 / 5	2 / 8
Connection Size	3/4 in. NPT	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	197 / 115
Temperature Rise (°F)	35-65	30-65	30-65	25-65	20-60
HIGH					
No. of Stages / No. of Burners (total)	2 / 5	2 / 5	2 / 5	2 / 5	2 / 10
Connection Size	3/4 in. NPT	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	198 / 115
Temperature Rise (°F)	40-75	35-75	35-70	30-70	35-65
LIQUID PROPANE HEAT					
LOW					
No. of Stages / No. of Burners (total)	1 / 3	1 / 3	2 / 4	2 / 4	2 / 6
Connection Size	1/2 in. NPT	1/2 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	196 / 115
Temperature Rise (°F)	25-55	20-55	25-65	20-65	15-55
MEDIUM					
No. of Stages / No. of Burners (total)	1 / 3	1 / 3	2 / 5	2 / 5	2 / 8
Connection Size	1/2 in. NPT	1/2 in. NPT	1/2 in. NPT	1/2 in. NPT	3/4 in. NPT
Rollout Switch Opens / Closes (°F)	195 / 115	195 / 115	195 / 115	195 / 115	197 / 115
Temperature Rise (°F)	35-65	30-65	30-65	25-65	20-60
HIGH					
No. of Stages / No. of Burners (total)	2 / 5	2 / 5	2 / 5	2 / 5	2 / 10
Connection Size	3/4 in. NPT	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	198 / 115
Temperature Rise (°F)	40-75	35-75	35-70	30-70	35-65

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
Flue Shield (08-14 sizes only)		X
ELECTRIC HEAT (50FC units only)		
Electric Resistance Heaters		X
Single Point Kits		X
CABINET		
Thru-the-Base Electrical Or Gas- Line Connections	X	X
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
Disconnect Switch Bracket ^b		X
Supply Duct Cover ^b		X
COIL OPTIONS		
Cu/Cu Indoor and/or Outdoor Coils	X	
Pre-coated Outdoor Coils	X	
Premium, E-Coated Outdoor and Indoor 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 ^c	X	
Smoke Detector (supply and/or return air)	X	X
Horn Strobe Annunciator ^d		X
Time Guard 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, com- plies with FDD (Standard and Ultra Low Leak damper models) ^e	X	X
Wi-Fi Stick for EconomizerONE (optional)		X
EconoMi\$er® 2 for DDC controls (Low and Ultra Low Leak air damper models) ^c	X	X
Motorized Two-Position Outdoor- Air Damper		X
Manual Outdoor-Air Damper (25% and 50%)		X
Barometric Relief ^f	X	X
Power Exhaust — Prop Design		X
Condensate Overflow Switch	X	X
ECONOMIZER SENSORS AND IAQ DEVICES		
Single Dry Bulb Temperature Sensors ^g	X	X
Differential Dry Bulb Temperature Sensors ^g		X
Differential Enthalpy Sensors ^g		X
CO ₂ Sensor (wall, duct, or unit mounted) ^g	X	X
INDOOR MOTOR AND DRIVE		
Multiple Motor and Drive Packages	X	
LOW AMBIENT CONTROLS		
Winter Start Kit ^h		X
Low Ambient Controller to 0°F (-18°C) ^h		X
POWER OPTIONS		
Convenience Outlet (powered)	X	
Convenience Outlet (unpowered)	X	
Convenience Outlet, 20 amp (unpowered)		X
Non-fused Disconnect ⁱ	X	
High SCCR Protection ^j	X	
ROOF CURBS		
Roof Curb 14 in. (356 mm)		X
Roof Curb 24 in. (610 mm)		X

NOTE(S):

- UV-C kits can not be used on units with Humidi-MiZer system.
- For Size 16 units only.
- Models with SystemVu controls comply with California Title 24 Fault Detection and Diagnostic (FDD).
- Requires a field-supplied 24V transformer for each application. See price pages for details.
- FDD (Fault Detection and Diagnostic) capability per California Title 24 section 120.2.
- Included with economizer.
- Sensors used to optimize economizer performance.
- See application data for assistance.
- Non-fused disconnect switch cannot be used when unit FLA electrical rating exceeds:
 - Sizes 08-14: 80 amps, all voltages.
 - Size 16: 100 amps, all voltages.
 Carrier RTUBuilder automatically selects the amp limitations.
- 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.

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 CO₂ 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 CO₂ sensor

The CO₂ sensor works with the economizer to intake only the correct amount of outside air for ventilation. As occupants fill your building, the CO₂ sensor detects their presence through increasing CO₂ levels, and opens the economizer appropriately. When the occupants leave, the CO₂ 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**08-16 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**08-16 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.

Thru-the-base connections

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

Hinged access panels

Allows access to unit's major components with specifically designed hinged access panels. Panels are filter, control box access 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, 115-v GFCI receptacle with "Wet in Use" cover. The "powered" option allows the installer to power the outlet from the line side of the disconnect or load side as required by code. The "unpowered" option is to be powered from a separate 115/120-v power source.

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

Non-fused disconnect

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

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 fastened inside the filter frame on all 4 sides.

High Short Circuit Current Rating (SCCR) protection

This factory-installed option provides high short circuit current protection to each compressor, plus all indoor and outdoor fan motors of 10 kA 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 and 575-v 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 CO₂ 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 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/ft³ 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 115-v 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.

NOTE: 0°F (-18°C) is standard on size 14 models.

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 08-16 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 08-16 size models.

Options and accessories (cont)



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.

Disconnect switch bracket

Provides a pre-engineered and sized mounting bracket for applications requiring a unit mounted fused and non-fused disconnect of greater than 100 amps. Bracket assures that no damage will occur to coils when mounting with screws and other fasteners (16 size only).

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 Accessory Weights^a

OPTION / ACCESSORY NAME	48/50FC UNIT WEIGHT									
	08		09		12		14		16	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Humidi-MiZer® System ^b	25	12	34	16	34	16	34	16	55	25
Power Exhaust — Vertical	75	34	75	34	75	34	75	34	85	39
Power Exhaust — Horizontal	30	14	30	14	30	14	30	14	75	34
EconomizerONE or EconoMiSer® 2	75	34	75	34	75	34	75	34	135	62
Two-Position Damper	58	26	58	26	58	26	58	26	65	29
Manual Damper	18	8	18	8	18	8	18	8	25	11
Medium Gas Heat (48FC units only)	15	7	15	7	18	8	18	8	18	8
High Gas Heat (48FC units only)	30	14	30	14	27	12	27	12	36	16
Hail Guard (louvered)	17	8	17	8	17	8	17	8	44	20
Cu/Cu Condenser Coil	85	39	85	39	100	46	150	68	180	82
Cu/Cu Evaporator Coil	50	23	100	46	100	46	100	46	120	55
Roof Curb (14 in. curb)	143	65	143	65	143	65	143	65	180	82
Roof Curb (24 in. curb)	245	112	245	112	245	112	245	112	255	116
CO ₂ Sensor	2	1	2	1	2	1	2	1	2	1
Flue Discharge Deflector	7	3	7	3	7	3	7	3	7	3
Optional Indoor Motor ^c	30	14	30	14	30	14	30	14	0	0
Low Ambient Controller	9	4	9	4	9	4	9	4	9	4
Winter Start Kit	5	2	5	2	5	2	5	2	5	2
Return Air Smoke Detector	7	3	7	3	7	3	7	3	7	3
Supply Air Smoke Detector	7	3	7	3	7	3	7	3	7	3
Fan Filter Switch	2	1	2	1	2	1	2	1	2	1
Non-Fused Disconnect	15	7	15	7	15	7	15	7	15	7
Powered Convenience Outlet	36	16	36	16	36	16	36	16	36	16
Unpowered Convenience Outlet	4	2	4	2	4	2	4	2	4	2
Enthalpy Sensor	2	1	2	1	2	1	2	1	2	1
Differential Enthalpy Sensor	3	1	3	1	3	1	3	1	3	1
4 in. MERV 13 Filters	11	5	14	7	14	7	14	7	20	9

NOTE(S):

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

Base unit dimensions



48FC*08-12 Base Unit Dimensions

NOTES:
1. DIMENSIONS ARE IN INCHES - DIMENSIONS IN PARENTHESIS ARE IN MILLIMETERS.

2. CENTER OF GRAVITY

3. DIRECTION OF AIR FLOW

4. ALL VIEW DRAWN USING 3RD ANGLE

UNIT	OUTDOOR COIL TYPE	J	K	R	W
48FC-W08	RTPF	41-1/4 [1043]	33-1/4 [843]	13-7/8 [351]	14-1/2 [368]
48FC-W09	RTPF	45-3/8 [1153]	36-3/8 [925]	15-1/8 [391]	15-1/8 [391]
48FC-W12	RTPF	49-1/2 [1251]	39-5/8 [1003]	16-1/2 [413]	16-1/2 [413]
RTPF - ROUND TUBE, PLATE FIN COPPER/ALUM					

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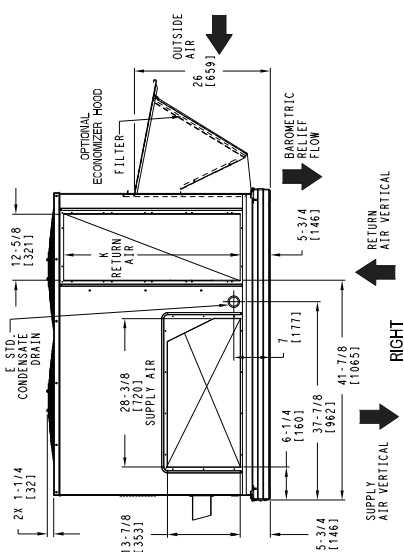
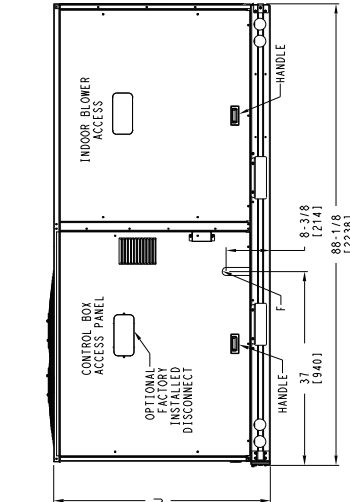
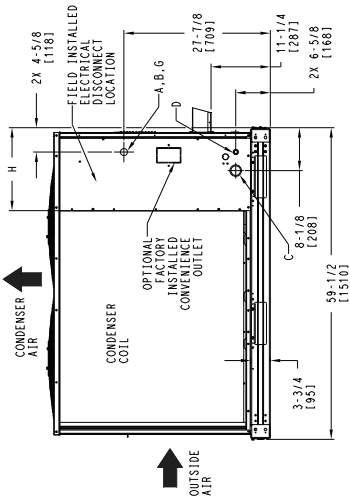
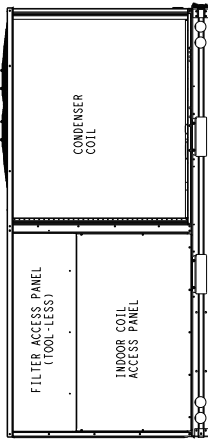
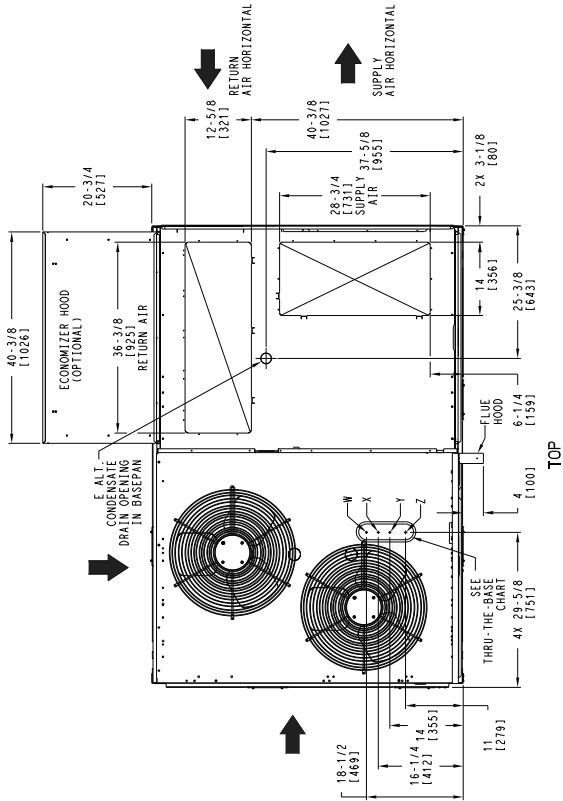


CONNECTION SIZES	
A	1 3/8" [35]
B	2 1/2" [64]
C	1 3/4" [51]
D	7/8" [22]
E	3/4" [19]
F	1/2" [13]
G	2" [51]

THRU-THE-BASE CHART (FIELD INST)
THESE NOTES REQUIRED FOR USE WITH ACCT KITS:
CABLES: 12-24 NPT GAS CONNECTION
CABLES: 12-24 NPT GAS CONNECTION
CABLES: 12-24 NPT GAS CONNECTION

WIRE USE	THREADED CONDUIT SIZE	RED'D HOLE SIZES (MAX.)
ACC.	1/2"	7/8" [22.2]
24V	1/2"	7/8" [22.2]
POWER	1 1/4" [102.004]	1 3/4" [44.4]
GAS	1 3/4" [44.4]	1 3/4" [44.4]
FLANGE & FITTING	2" [50.8]	

THRU-THE-BASE CHART (FIOP)
FOR "THRU-THE-BASE" FACTORY OPTION, FITTINGS FOR ON-SITE USE ARE PROVIDED. ** FOR BELOW LISTED MODELS, A FIELD SUPPLIED 1/2" ADAPTER IS REQUIRED BETWEEN BASE PAN FITTING AND GAS VALVE. 48FC0-S-08.09



ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	REV
U.S. - ECCN: NSR	1 OF 3	11/24/22	03/12/21	A

48FC 08-12 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT

48TM006295

Carrier

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



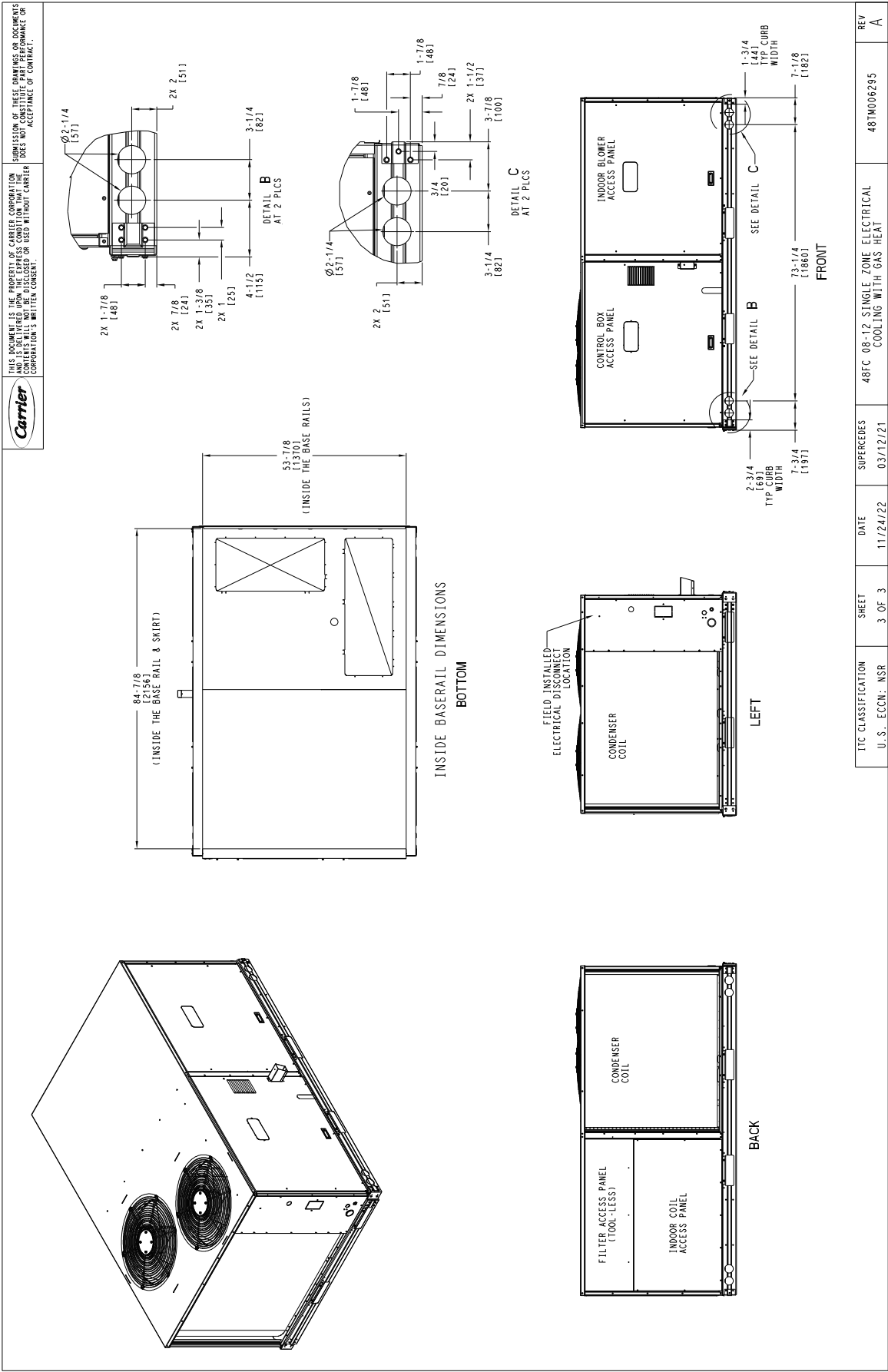
SURFACE	CLEARANCE				OPERATING CLEARANCE
	SERVICE WITH CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER			
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]		
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]		
BACK W/O ECON	48 [1219mm]	42 [1067mm]	18 [457mm]		
BACK W/ECON	36 [914mm]	36 [914mm]	18 [457mm]		
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]		
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]		
SUPERCEDES	48FC 08-12 SINGLE ZONE COOLING WITH GAS HEAT	ELECTRICAL	48I0006295		REV A
03/12/21					

ITC CLASSIFICATION	SHEET	DATE	SUPERSEDES	PL. T.O.C. (mm)	PL. T.O.C. (mm)	REV
11 S. ECON. NSR	2 OF 3	11/24/22	03/12/21	48FC 08-12 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	48T0006295	A

Base unit dimensions (cont)



48FC**08-12 Base Unit Dimensions (cont)



THRU-THE-BLAST CHART THESE VALUES ARE BASED ON THE USE OF CRBIMP2002A01.0040A1				
		THREADED CONDITION	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	X	1/2"	ACC.	7/8" [22.2]
		1 1/4"	24V	7/8" [22.2]
Y	1 1/4"	(102.004)	POWER	1 3/4" [44.4]
Z*	3/4"	FST	GAS	1 5/8" [41.3]
FOR "THRU-THE-BLAST" FACTORY OPTION, FITTINGS FOR ONLY X, Y, & Z ARE PROVIDED				
*		1002	PROVIDES 3/4" FST THRU CURB FLANGE & FITTING.	

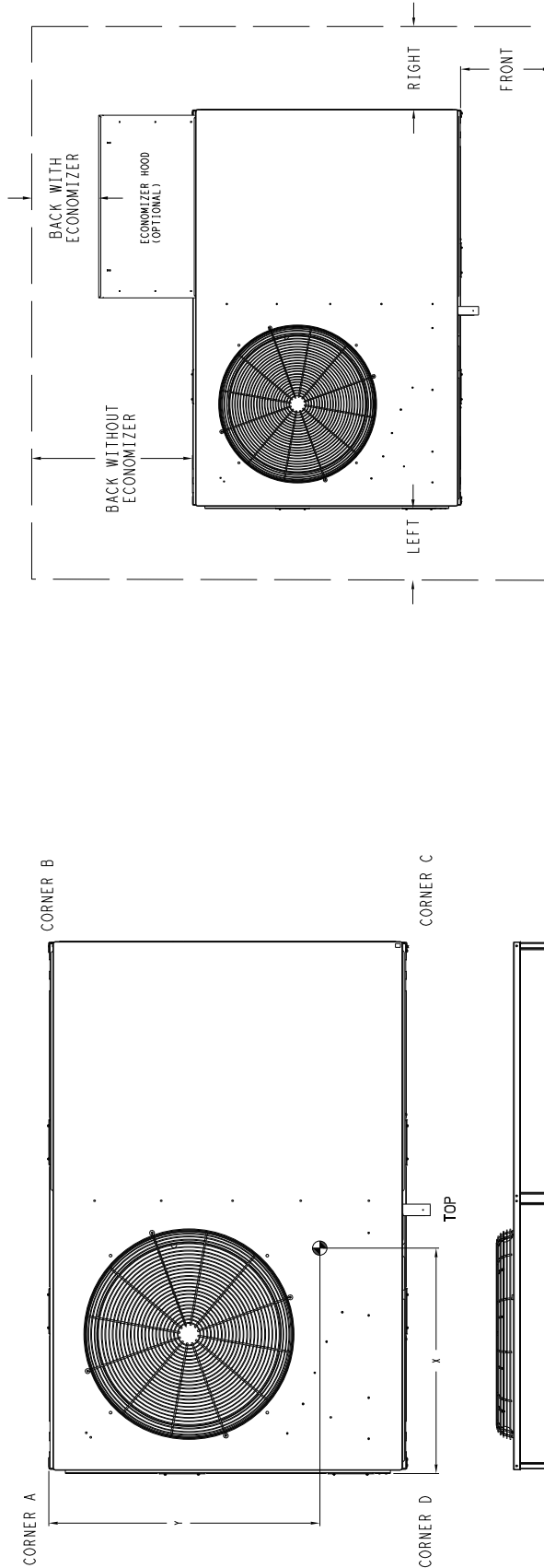
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UNIT	OUTDOOR COLLECTOR TYPE	STD. UNIT WEIGHT*** LBS.	CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		CORNER WEIGHT (D)		C. G.					
			LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z	
48FC-M14	R1PF	1047	472	243	110	195	88	269	122	335	152	38 1/4	997	34 1/2	(876)	21 7/8 (556)
R1PF - DOWN TUBE, PLATE FIN (COPPER/ALUM)																

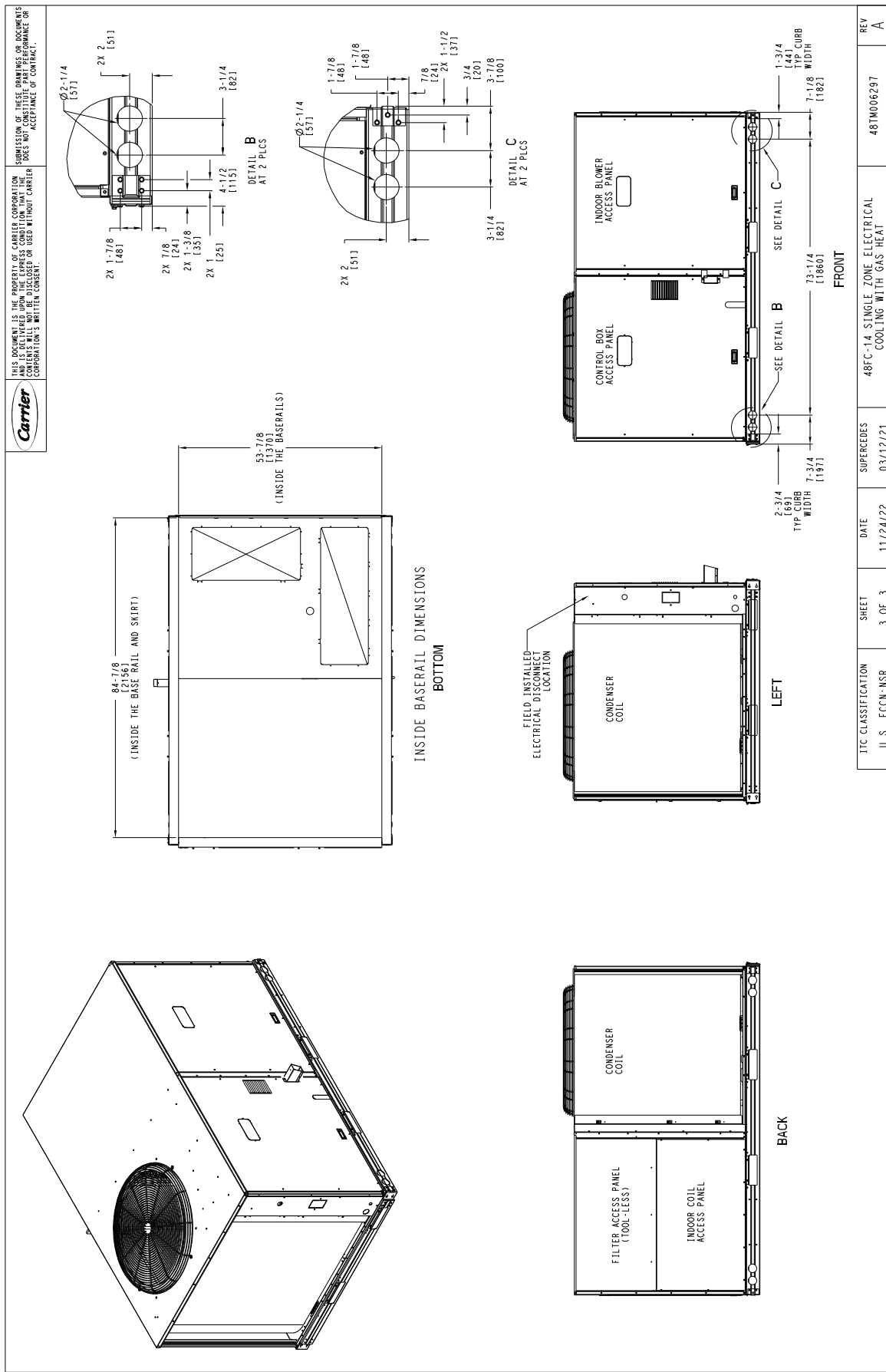
*** STANDARD UNIT WEIGHT IS WITH LOW GAS HEAT AND WITHOUT PACKAGING. FOR OTHER OPTIONS AND ACCESSORIES, REFER TO THE PRODUCT DATA CATALOG.



1. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

CLEARANCE				
SURFACE	SERVICE WITH: CONDUCTIVE BARRIER	SERVICE WITH: NONCONDUCTIVE BARRIER	OPERATING CLEARANCE	OPERATING CLEARANCE
FRONT	48 [1219mm]	36 [914mm]	18 [457mm]	18 [457mm]
LEFT	48 [1219mm]	42 [1067mm]	18 [457mm]	18 [457mm]
BACK W/O ECON	48 [1219mm]	42 [1067mm]	18 [457mm]	18 [457mm]
BACK W/ECON	36 [914mm]	36 [914mm]	18 [457mm]	18 [457mm]
RIGHT	36 [914mm]	36 [914mm]	18 [457mm]	18 [457mm]
TOP	72 [1829mm]	72 [1829mm]	72 [1829mm]	72 [1829mm]
SUPERCEDES	48FC-14 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT			REV
03/12/21				A

ITC CLASSIFICATION	SHEET	DATE	SUPERDEES	TOP		REV
				7.2 (102.9mm)	7.2 (102.9mm)	
II S ECCM-MSR	2 OF 3	11/24/22	48FC-14 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT			A



NOTES:

1. DIMENSIONS ARE IN INCHES. DIMENSIONS IN [] ARE IN MILLIMETERS.
2. CENTER OF GRAVITY
3. DIRECTION OF AIR FLOW

Top View: Shows condenser coils, economizer hood, and air flow directions. Dimensions include 61-1/8" [1552], 32-7/8" [1344], 46-7/8" [1190], 12-5/8" [321], 5-3/4" [146], 26" [660], 41-1/2" [1055], 4-7/8" [124], 44-3/8" [1126], 6-1/4" [159], 26-3/4" [679], 6-1/8" [154], 14-5/8" [373], 31-3/4" [806], 46-1/8" [1172], 34-1/2" [876], 25-5/8" [660].

Front View: Shows control box, indoor blower access panels, and gas heat access panel. Dimensions include 115-7/8" [2942], 49-1/2" [1257], 57-3/8" [1456], 1-3/8" [35], 26-3/4" [679], 6-1/8" [154], 6-5/8" [167], 6-1/8" [154], 41-1/2" [1056], 6-7/8" [175], 11-7/8" [302], 4-3/8" [111], 34-1/2" [876].

Left View: Shows condenser coil, compressor access panel, and filter/economizer access panel. Dimensions include 63-3/8" [1609], 7-3/4" [196], 13-3/4" [350], 3-3/4" [95], 22-3/4" [578], 4-5/8" [117], 4-3/8" [111], 19-1/4" [490], 35-3/4" [908], 26-1/4" [666], 4-5/8" [119].

CONNECTION SIZES

	B	D	E	F	G
2 1/2" - 164	DIA POWER SUPPLY HOLE				
7/8" - 122	DIA FIELD CONTROL WIRING HOLE				
3/4" - 14	NPT CONDENSATE DRAIN				
7/8" - 122	DIA FIELD CONVENIENCE OUTLET HOLE				
3/4" - 14	NPT GAS CONNECTION				

THRU-THE-BASE CHART
THESE HOLES REQUIRED FOR USE
CBBMPH005A00, 006A00, 007A00

ACCESSORY NO.	THREADED CONDUIT SIZE	WIRE USE SIZES (MAX.)	REQ'D HOLE SIZES (MAX.)
005	1/2"	ACC. 7/8" [222.2]	7/8" [222.2]
	1/2"	24V 7/8" [222.2]	7/8" [222.2]
	1 1/4"	POWER 1 1/2" [38.1]	1 1/2" [38.1]
	3/4" PIPE	GAS 1 3/4" [44.5]	1 3/4" [44.5]
006	1/2"	ACC. 7/8" [222.2]	7/8" [222.2]
	1/2"	24V 7/8" [222.2]	7/8" [222.2]
	1 1/2"	POWER 2" [50.8]	2" [50.8]
	3/4" PIPE	GAS 1 3/4" [44.5]	1 3/4" [44.5]
007	1/2"	ACC. 7/8" [222.2]	7/8" [222.2]
	1/2"	24V 7/8" [222.2]	7/8" [222.2]
	2"	POWER 2 1/2" [63.5]	2 1/2" [63.5]
	3/4" PIPE	GAS 1 3/4" [44.5]	1 3/4" [44.5]

FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR X & Y ARE PROVIDED AS SPECIFIED ON "006".

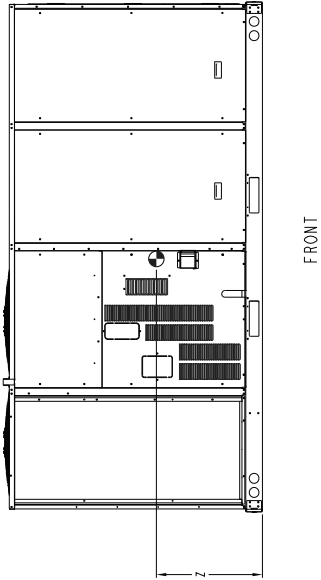
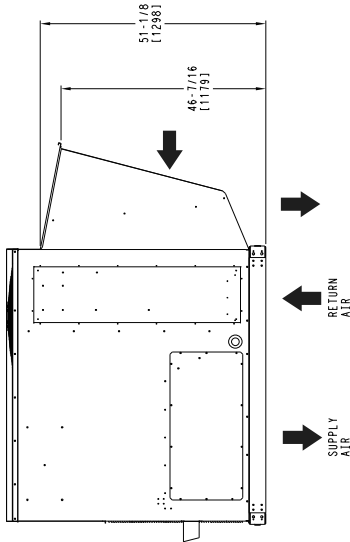
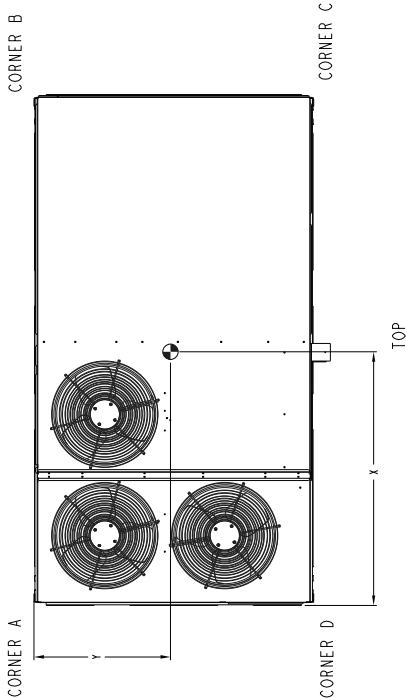
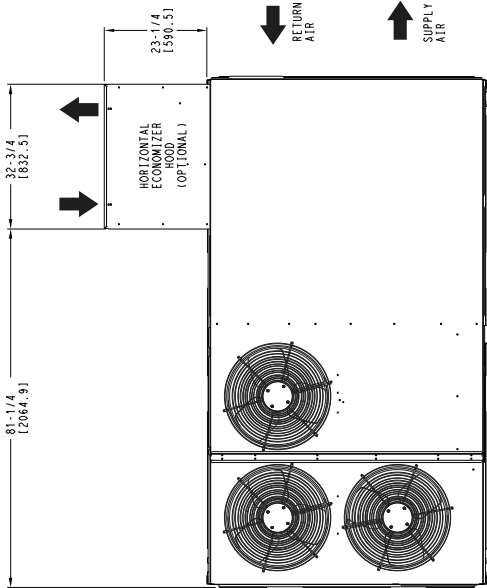


48FC**16 Base Unit Dimensions (cont)

UNIT	STD UNIT WEIGHT	CORNER WEIGHT (A)		CORNER WEIGHT (B)		CORNER WEIGHT (C)		C.G.					
		LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	Z	
48FC-M16	1408	639	373	169	341	155	332	150	362	164	55 3/8 [1407]	31 1/4 [794]	21 1/8 [537]

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

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HORIZONTAL ECONOMIZER

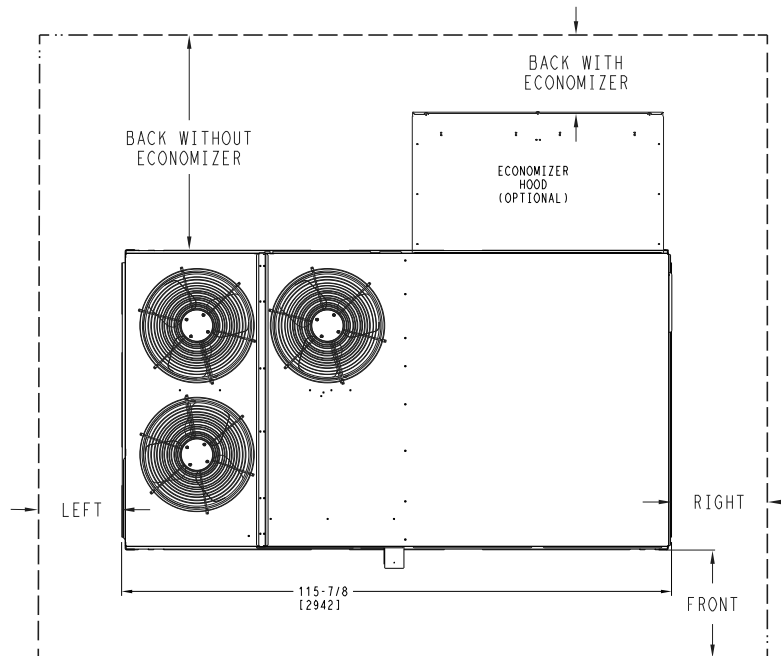
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	REV
U.S. ECCN:NSR	2 OF 2	06/28/22	06/10/21	A

48FC 16 SINGLE ZONE ELECTRICAL COOLING WITH GAS HEAT	50TMO02025	REV
		A

Base unit dimensions (cont)



48FC**16 Base Unit Dimensions — Clearances



CLEARANCE^{a, b}

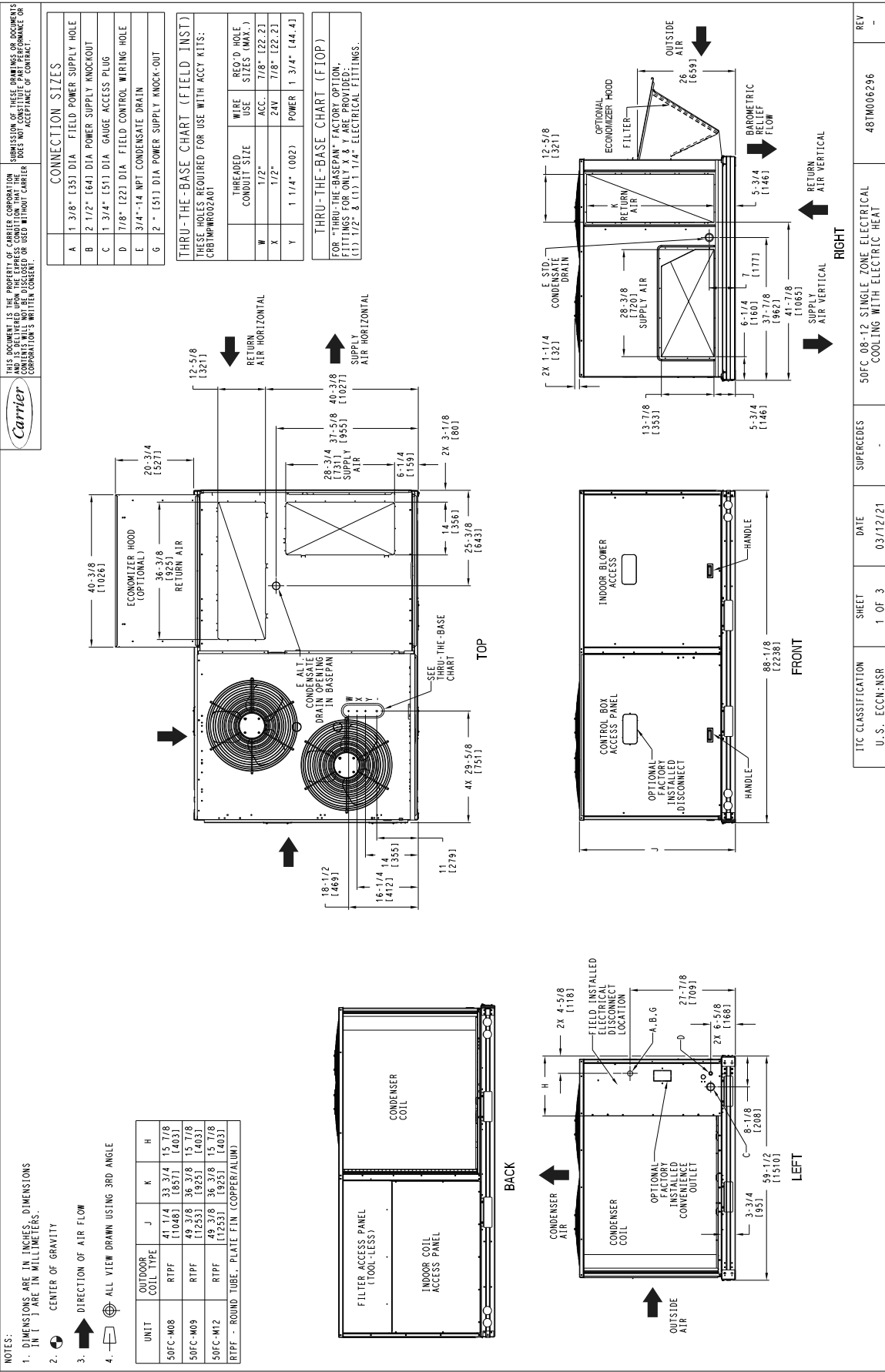
SURFACE	Service with Conductive Barrier	Service with Non-Conductive Barrier	Operating Clearance
FRONT	48 in. (1219 mm)	36 in. (914 mm)	18 in. (457 mm)
LEFT	48 in. (1219 mm)	42 in. (1067 mm)	18 in. (457 mm)
BACK WITHOUT ECONOMIZER	48 in. (1219 mm)	42 in. (1067 mm)	18 in. (457 mm)
BACK WITH ECONOMIZER	36 in. (914 mm)	36 in. (914 mm)	18 in. (457 mm)
RIGHT	36 in. (914 mm)	36 in. (914 mm)	18 in. (457 mm)
TOP	72 in. (1829 mm)	72 in. (1829 mm)	72 in. (1829 mm)

NOTE(S):

- a. For all minimum clearances local codes or jurisdictions may prevail.
- b. See page 20 for 48FC 08-12 clearances. See page 23 for 48FC 14 clearances.



50FC-08*12 Base Unit Dimensions



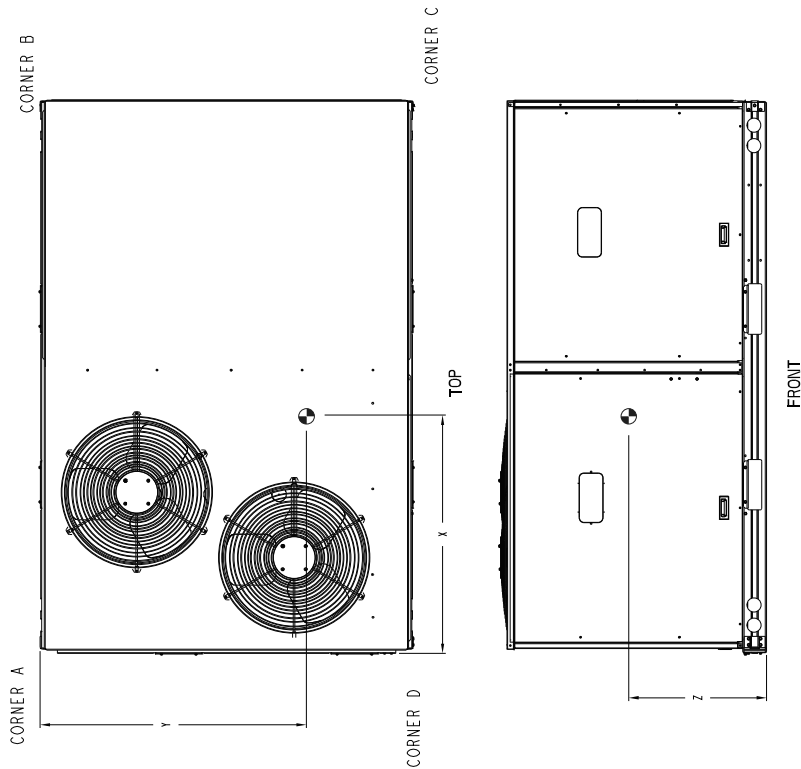
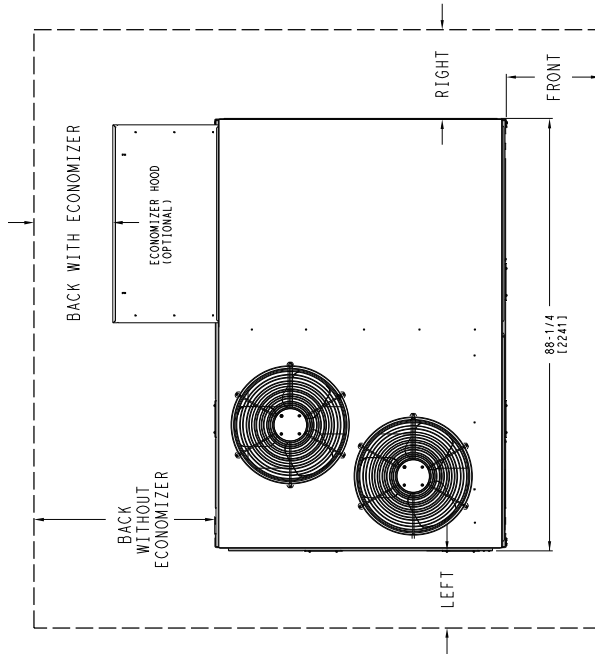
Base unit dimensions (cont)

50FC*08-12 Base Unit Dimensions (cont)

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UNIT	OUTDOOR COIL TYPE	STD. UNIT		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		
50FC-M08	RTPF	743	337	170	77	142	64	196	89	235	107	40	110 (61)	34 1/2 (838)	20 (508)	Z
50FC-M09	RTPF	805	365	196	89	251	114	201	91	157	49	112 (125/1)	26 1/2 (1631)	19 1/8 (486)		
50FC-M12	RTPF	815	370	188	90	254	115	204	92	159	72	49 1/2 (125/1)	26 1/2 (1673)	19 1/8 (486)		
50FC-M12	RTPF	815	370	188	90	254	115	204	92	159	72	49 1/2 (125/1)	26 1/2 (1673)	19 1/8 (486)		

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



NOTE:

1. FOR ALL MINIMUM CLEARANCES LOCAL CODES OR JURISDICTIONS MAY PREVAIL.

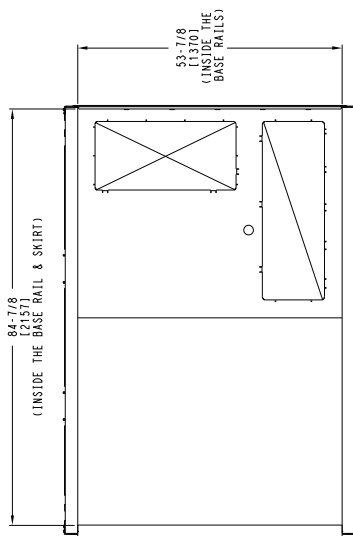
		CLEARANCE			
	SURFACE	CONDUCTIVE BARRIER	SERVICE WITH NONCONDUCTIVE BARRIER	SERVICE WITH CLEARANCE	OPERATING
	FRONT	48 [121.9mm]	36 [91.4mm]	18 [45.7mm]	
	LEFT	48 [121.9mm]	42 [106.7mm]	18 [45.7mm]	
	BACK W/O ECON	48 [121.9mm]	42 [106.7mm]	18 [45.7mm]	
	BACK W/ECON	36 [91.4mm]	36 [91.4mm]	18 [45.7mm]	
	RIGHT	36 [91.4mm]	36 [91.4mm]	18 [45.7mm]	
SUPERSEDES	TOP	72 [182.9mm]	72 [182.9mm]	72 [182.9mm]	
	50FC 08-12 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT				48T006296
					REV -

ITC CLASSIFICATION	SHEET	DATE
U.S. ECCN:NSR	2 OF 3	03/12/21

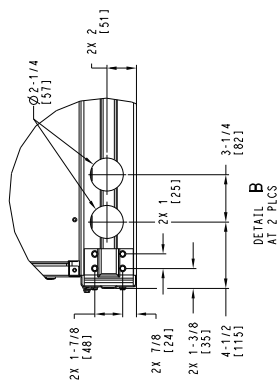
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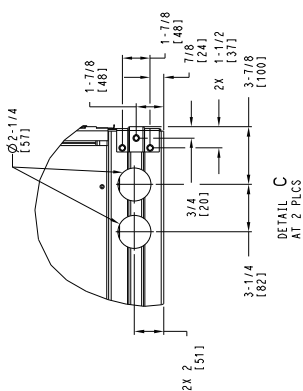
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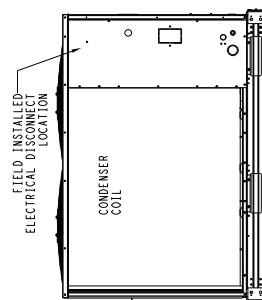
INSIDE BASERAIL DIMENSIONS



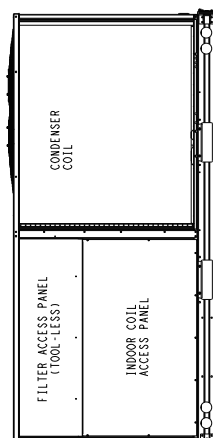
DETAIL B
AT 2 PLCS



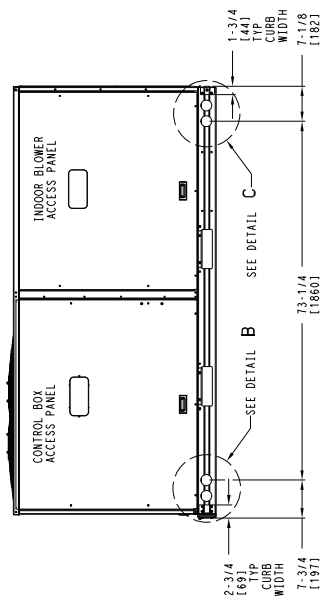
DETAIL C
AT 2 PLCS



LEFT



BACK



FRONT

ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	REV
II S FCCN-NSR	3 OF 3	03/12/21	50FC 08-12 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	48TMO06296