



Turn to the experts

Product Data

WeatherMaker®

Electric Cooling Packaged Rooftop Units, 50 Hz

21.48 to 42.5 kW (6.1 to 12.5 Nominal Tons)



50TC Sizes 08-16
Packaged Rooftop Electric Cooling Units
50 Hz

The Carrier WeatherMaker® 50TC08-16 rooftop unit (RTU) was designed by customers for customers. With no-strip screw collars, handled access panels, and more we've made your unit easy to install, easy to maintain and easy to use.

Easy to install:

All WeatherMaker® units are field-convertible to horizontal air flow; no special adapter curbs or kits are necessary.

Convertible airflow design makes it easy to adjust to unexpected job-site complications. Lighter units make easy replacement. These Carrier 50TC rooftops fit on existing Carrier curbs dating back to 1989. Also, our large control box provides room to work and room to mount Carrier accessory controls.

Easy to maintain:

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. Take accurate pressure readings by reading condenser pressure with panels on. Simply remove the black, composite plug, route the gauge line(s) through the hole, and connect them to the refrigeration service valve(s). Take refrigeration system pressure readings without affecting the condenser airflow.

Easy to use:

The Carrier master terminal board puts all the connections and troubleshooting points in one convenient place, standard. Most low voltage connections are made to the same board, making them easy to find and access. Carrier rooftops have high and low pressure switches, a filter drier, and 51 mm (2-in.) filters standard.

Unit features

- Up to 28% lighter than similar industry units. Lighter rooftops make easier replacement jobs.
- Two-stage cooling capacity control on 08-16 models.
- 50TC units fit on existing Carrier rooftop curbs making the utility connections the same. This saves time and money on replacement jobs.
- Standardized components and layout. Standardized components and controls make service and stocking parts easier.
- Scroll compressors on all units. This makes service, stocking parts, replacement, and troubleshooting easier.
- Field convertible airflow, 21.48 kW to 34.0 kW (6 to 10 tons) units. The ability to convert a unit from vertical to horizontal airflow makes it easy to overcome job site complications. The 42.5 kW (12.5 ton) models require a simple supply duct cover to field convert from factory vertical to horizontal.
- Easy-adjust, belt-drive motor available. There's no need for field-supplied drives or motors.
- Provisions for bottom or side condensate drain.
- Capable of thru-the-base or thru-the-curb electrical routing.
- Single-point electrical connection.
- Sloped, composite drain pan sheds water and won't rust.
- Standardized controls and control box layout. Standardized components and controls make stocking parts and service easier.
- Clean, large, easy to use control box.
- Color-coded wiring.
- Large, laminated wiring and power wiring drawings which are affixed to unit make troubleshooting easy.
- Single, central terminal board for test and wiring connections.
- Fast-access, handled panels for easy access to the blower and blower motor, control box, and compressors.
- "No-strip" screw system guides screws into the panel and captures them tightly without stripping the screw, the panel, or the unit.
- Standard mechanical cooling up to 52°C (125°F) or with winter start kit down to -4°C (25°F).
- 51 mm (2-in.) disposable filters on all units.
- Refrigerant filter-drier on each circuit.
- High and low pressure switches increase reliability.

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50TC MODEL NUMBER NOMENCLATURE

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
5	0	T	C	-	D	0	8	A	1	A	9	-	0	A	0	A	0

Unit Heat Type

50 – Electric Heat Packaged
Rooftop with optional
Electric Heat

Series Model

TC – WeatherMaker Series

Heat Size

- - No heat

Refrig. Systems Options

A – Standard One-Stage cooling models
D – Two-Stage cooling models 08-14

Cooling Capacity kW (Tons)

08 – 21.48 (6.1)
09 – 23.94 (6.8)
12 – 30.01 (8.5)
14 – 34.0 (10)
16 – 42.5 (12.5)

Sensor Options

A = None
B = RA Smoke Detector
C = 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

Indoor Fan Options

1 = Standard Static Option
2 = Medium Static Option
3 = High Static Option
C = High Static Option w/ High Effy Motor (Size 16 Only)

Packaging Options

0 = Standard

Electrical Options

A = None
C = Non-Fused Disconnect
D = Thru-The-Base Connections
F = Non-Fused Disconnect and
Thru-The-Base Connections

Future Use

0 = Standard

Intake / Exhaust Options

A = None
B = Temperature Economizer w/ Barometric Relief
F = Enthalpy Economizer w/ Barometric Relief
K = 2-Position Damper

Base unit controls

0 = Electromechanical Controller
1 = PremierLink Controller
2 = RTU Open Multi-Protocol Controller

Design Revision

Factory Assigned

Voltage

9 = 400-3-50

Coil Options (outdoor-indoor-hailguard)

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 Guards
N = Precoat Al/Cu - Al/Cu – Louvered Hail Guards
P = E-coat Al/Cu - Al/Cu – Louvered Hail Guards
Q = E-coat Al/Cu - E-coat Al/Cu – Louvered Hail Guards
R = Cu/Cu - Al/Cu – Louvered Hail Guards
S = Cu/Cu - Cu/Cu – Louvered Hail Guards

COOLING RATING TABLE

50TC-	COOLING STAGES	NET CAPACITY		EER	IPLV	NOMINAL AIRFLOW	
		kW	Btuh			L/s	CFM
D08	2	21.48	73,300	13.08	13.4	849	1800
D09	2	23.94	81,700	12.33	13.3	1062	2250
D12	2	30.01	102,400	11.66	13.8	1416	3000
D14	2	33.98	116,000	11.12	11.7	1416	3000
D16	2	42.49	145,000	11.00	11.5	2360	5000

LEGEND

ASHRAE — American Society of Heating, Refrigerating, and Air Conditioning Engineers
EER — Energy Efficiency Ratio
IPLV — Integrated Part Load Value

NOTES:

1. EER is tested at T1 conditions
2. Ratings are based on:
Cooling Standard: 27°C (80°F) db, 19°C (67°F) wb indoor air temp and 35°C (95°F) db outdoor air temp.
IPLV Standard: 27°C (80°F) db, 19°C (67°F) wb indoor air temp and 27°C (80°F) db outdoor air temp.
3. All 50TC units comply with ASHRAE 90.1 Energy Standard for minimum SEER and EER requirements.



MINIMUM-MAXIMUM AIRFLOW RATINGS L/s (CFM)

50TC-	COOLING		ELECTRIC HEATER	
	MINIMUM	MAXIMUM	MINIMUM	MAXIMUM
D08	850 (1800)	1416 (3000)	850 (1800)	1416 (3000)
D09	991 (2100)	1652 (3500)	991 (2100)	1652 (3500)
D12	1062 (2250)	1770 (3750)	1062 (2250)	1770 (3750)
D14	1416 (3000)	2326 (5000)	1416 (3000)	2326 (5000)
D16	2124 (4500)	3540 (7500)	2124 (4500)	3540 (7500)

SOUND PERFORMANCE TABLE

50TC-	COOLING STAGES	OUTDOOR SOUND (dB)								
		A-Weighted	63	125	250	500	1000	2000	4000	8000
D08	2	82	85.8	84.3	80.5	78.7	76.4	72.7	68.3	65.1
D09	2	82	88.6	85.0	81.6	79.5	77.4	74.1	71.0	66.3
D12	2	82	89.0	83.1	80.5	78.5	75.5	71.6	69.6	69.3
D14	2	87	87.0	85.2	84.6	84.9	82.2	78.4	75.3	72.9
D16	2	87	87.0	85.2	84.6	84.9	82.2	78.4	75.3	72.9

LEGEND

dB — Decibel

NOTES:

1. Outdoor sound data is measured in accordance with AHRI.
2. 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.
3. 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.

PHYSICAL DATA (COOLING) SI

		50TC-D08	50TC-D09	50TC-D12	50TC-D14	50TC-D16
Refrigeration System						
# Circuits / # Comp. / Type		2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll
Puron® refriger. (R-410A) charge A/B (kg)		3.1 / 3.1	4.2 / 4.2	4.0 / 4.1	5.7 / 5.8	7.2 / 7.6
Metering Device		Acutrol	Acutrol	Acutrol	Acutrol	Acutrol
High-press. Trip / Reset (kPa)		4344 / 3482	4344 / 3482	4344 / 3482	4344 / 3482	4344 / 3482
Low-press. Trip / Reset (kPa)		372 / 807	372 / 807	372 / 807	372 / 807	372 / 807
Evaporator Coil						
Material (Tube/Fin)		Cu / Al	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil Type		10mm RTPF	10mm RTPF	10mm RTPF	10mm RTPF	10mm RTPF
Rows / Fins Per Meter		3 / 591	3 / 591	4 / 591	4 / 591	3 / 591
Total Face Area (m²)		.83	1.0	1.0	1.0	1.6
Condensate Drain Conn. Size		19mm	19mm	19mm	19mm	19mm
Evap. Fan and Motor						
STANDARD STATIC 3 PHASE	Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	1.1	1.1	1.5	1.8	2.1
	r/s range	7-11	7-11	7-11	11-14	8-10
	Motor Frame Size	56	56	56	56	56Y
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (mm)	381 x 381	381 x 381	381 x 381	381 x 381	457 x 457
MEDIUM STATIC 3 PHASE	Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	1.8	1.5	2.3	2.3	2.7
	r/s range	11-15	11-15	11-15	11-15	9-12
	Motor Frame Size	56	56	56	56	56Hz
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (mm)	381 x 381	381 x 381	381 x 381	381 x 381	457 x 457
HIGH STATIC 3 PHASE	Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	2.9	2.3	2.9	2.9	4.5
	r/s range	20-19	20-19	20-19	20-19	20-14
	Motor Frame Size	56	56	56	56	S184T
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (mm)	381 x 381	381 x 381	381 x 381	381 x 381	457 x 457
Cond. Coil						
Material — Tube/Fin		Cu / Al	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil Type		10mm RTPF	10mm RTPF	10mm RTPF	10mm RTPF	10mm RTPF
Rows / Fins Per Meter		2 / 670	2 / 670	2 / 670	3 / 670	2 / 670
Total Face Area (m²)		2	2	2	2	2@2
Cond. fan / motor						
Qty / Motor Drive Type		2 / direct	2 / direct	2 / direct	1 / direct	3 / direct
Motor kW / r/s		.186 / 18	.186 / 18	.186 / 18	.746 / 20	.186 / 18
Fan diameter (mm)		559	559	559	762	559
Filters						
RA Filter # / Size (mm)		4 / 406 x 508 x 51	4 / 508 x 508 x 51	4 / 508 x 508 x 51	4 / 508 x 508 x 51	6 / 457 x 457 x 51
OA inlet screen # / Size (mm)		1 / 508 x 610 x 25	1 / 508 x 610 x 25	1 / 508 x 610 x 25	1 / 508 x 610 x 25	Vert: 2 / 610 x 686 x 25 Horiz: 1 / 792 x 991 x 25

N/A — Not applicable.

PHYSICAL DATA (COOLING) ENGLISH

Refrigeration System		50TC-D08	50TC-D09	50TC-D12	50TC-D14	50TC-D16
# Circuits / # Comp. / Type		2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll	2 / 2 / Scroll
Puron® refig. (R-410A) charge A/B (lbs - oz)		6-12 / 6-12	9-3 / 9-5	8-12 / 8-15	1 -9 / 12-12	15-4 / 16-12
Metering Device		Acutrol	Acutrol	Acutrol	Acutrol	Acutrol
High-press. Trip / Reset (psig)		630 / 505	630 / 505	630 / 505	630 / 505	630 / 505
Low-press. Trip / Reset (psig)		54 / 117	54 / 117	54 / 117	54 / 117	54 / 117
Evaporator Coil		50TC-D08	50TC-D09	50TC-D12	50TC-D14	50TC-D16
Material (Tube/Fin)		Cu / Al	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	3/8 in. RTPF
Rows / FPI		3 / 15	3 / 15	4 / 15	4 / 15	3 / 15
Total Face Area (ft²)		8.9	11.1	11.1	11.1	17.5
Condensate Drain Conn. Size		3/4 in.	3/4 in.	3/4 in.	3/4 in.	3/4 in.
Evap. Fan and Motor		50TC-D08	50TC-D09	50TC-D12	50TC-D14	50TC-D16
STANDARD STATIC 3 PHASE	Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	1.1	1.1	1.5	1.8	2.1
	RPM Range	451-689	451-689	451-689	652-843	462-590
	Motor Frame Size	56	56	56	56	56Y
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (in.)	15 x 15	15 x 15	15 x 15	15 x 15	18 x 18
MEDIUM STATIC 3 PHASE	Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	1.8	1.5	2.3	2.3	2.7
	RPM Range	665-903	665-903	665-903	665-903	562-719
	Motor Frame Size	56	56	56	56	56Hz
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (in.)	15 x 15	15 x 15	15 x 15	15 x 15	18 x 18
HIGH STATIC 3 PHASE	Motor Qty / Drive Type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	2.9	2.3	2.9	2.9	4.5
	RPM Range	881-1140	881-1140	881-1140	881-1140	695-854
	Motor Frame Size	56	56	56	56	S184T
	Fan Qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan Diameter (in.)	15 x 15	15 x 15	15 x 15	15 x 15	18 x 18
Cond. Coil		50TC-D08	50TC-D09	50TC-D12	50TC-D14	50TC-D16
Material — Tube/Fin		Cu / Al	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	3/8 in. RTPF
Rows / FPI		2 / 17	2 / 17	2 / 17	3 / 17	2 / 17
Total Face Area (ft²)		20.5	25.1	25.1	25.1	2@23.1
Cond. fan / motor		50TC-D08	50TC-D09	50TC-D12	50TC-D14	50TC-D16
Qty / Motor Drive Type		2 / direct	2/ direct	2 / direct	1 / direct	3/ direct
Motor HP / RPM		1/4 / 1100	1/4 / 1100	1/4 / 1100	1/ 1175	1/4 / 1100
Fan diameter (in.)		22	22	22	30	22
Filters		50TC-D08	50TC-D09	50TC-D12	50TC-D14	50TC-D16
RA Filter # / Size (in.)		4 / 16 x 20 x 2	4 / 20 x 20 x 2	4 / 20 x 20 x 2	4 / 20 x 20 x 2	6 / 18 x 24 x 2
OA inlet screen # / Size (in.)		1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1	Vert: 2 / 24 x 27 x 1 Horiz: 1 / 30 x 39 x 1

CATEGORY	ITEM	FACTORY INSTALLED OPTION	FIELD INSTALLED ACCESSORY
Cabinet	Thru-the-base electrical connections	X	X
Coil Options	Cu/Cu indoor and/or outdoor coils	X	
	Pre-coated outdoor coils	X	
	Premium, E-coated outdoor coils	X	
Condenser Protection	Condenser coil hail guard (louvered design)	X	X
Controls	Thermostats, temperature sensors, and subbases		X
	PremierLink™ DDC communicating controller controls	X	X
	RTU Open Multi-Protocol Direct Digital Controller (DDC)	X	
	Smoke detector (supply and/or return air)	X	
	Time Guard II compressor delay control circuit		X
	Phase Monitor		X
Economizers and Outdoor Air Dampers	EconoMi\$er® X for electro-mechanical controls, complies with FDD.	X	X
	EconoMi\$er2 for DDC controls, complies with FDD. (Standard and Ultra Low Leak air damper models)	X	X
	Motorized 2-position outdoor air damper	X	X
	Barometric relief ¹		X
	Power exhaust		X
Economizer Sensors and IAQ Devices	Single dry bulb temperature sensors ²	X	X
	Differential dry bulb temperature sensors ²		X
	Single enthalpy sensors ²	X	X
	Differential enthalpy sensors ²		X
	Wall, duct, or unit mounted CO ₂ sensor ²	X	X
Electric Heat	Electric resistance heaters		X
	Single Point Kit		X
Indoor Motor and Drive	Multiple motor and drive packages	X	
Low Ambient Control	Winter start kit ³		X
	Motormaster® head pressure controller ³		X
Power Options	Non-fused disconnect	X	
Roof Curbs	Roof curb 356 mm (14-in.)		X
	Roof curb 610 mm (24-in.)		X

NOTES:

1. Included with economizer.
2. Sensors used to optimize economizer performance.
3. See application data for assistance.

Economizer

Economizers save energy and money while improving comfort levels in the conditioned space. 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 integrated with 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 temperature dry-bulb inputs. There are also models for electromechanical and direct digital controls. Additional sensors are available as accessories to optimize the economizer.

Economizers include gravity-controlled barometric relief that helps equalize building pressure and ambient air pressures. This can be a cost effective solution to prevent building pressurization.

CO₂ Sensor

Improves productivity and saves money by working 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.

Smoke Detectors

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. Installed by the factory, they are available for supply air, return air, or both.

Louvered Hail Guards

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

Non-Fused Disconnect

This OSHA-compliant, factory-installed safety switch allows a service technician to locally secure power to the rooftop.

Power Exhaust with Barometric Relief

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

PremierLink™ Controller

This CCN controller regulates your rooftop's performance to tighter tolerances and expanded limits, as well as facilitates zoning systems and digital accessories. It also unites your Carrier HVAC equipment together on one, coherent CCN network. The PremierLink can be factory-installed, or is easily field-installed.

RTU Open, Multi-Protocol Controller

Connect the rooftop to an existing BAS without needing complicated translators or adapter modules using the RTU Open controller. This controller speaks the 4 most common building automation system languages (BACnet¹, Modbus², N2, and LonWorks³). Use this controller when you have an existing BAS.

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 PremierLink, RTU Open, or authorized commercial thermostats.

Filter or Fan Status Switches

Use these differential pressure switches to detect a filter clog or indoor fan motor failure. When used in conjunction with a compatible unit controller/thermostat, the switches will activate an alarm to warn the appropriate personnel.

Motorized Two-Position Damper

The Carrier 2-position, motorized outdoor air damper admits up to 100% outside air. Using reliable, gear-driven technology, the 2-position damper opens to allow ventilation air and closes when the rooftop stops, stopping unwanted infiltration.

Manual Outdoor Air (OA) Damper

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

Motormaster® Head Pressure Controller

The Motormaster motor controller is a low ambient, 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, not when economizer usage is either not appropriate or desired. The Motormaster will either cycle the outdoor-fan motors or operate them at reduced speed to maintain the unit operation, depending on the model.

Winter Start Kit

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

Alternate Motors and Drives

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 and pulleys (drives) are available, factory installed, to handle nearly any application.

Thru-the-Base Connections

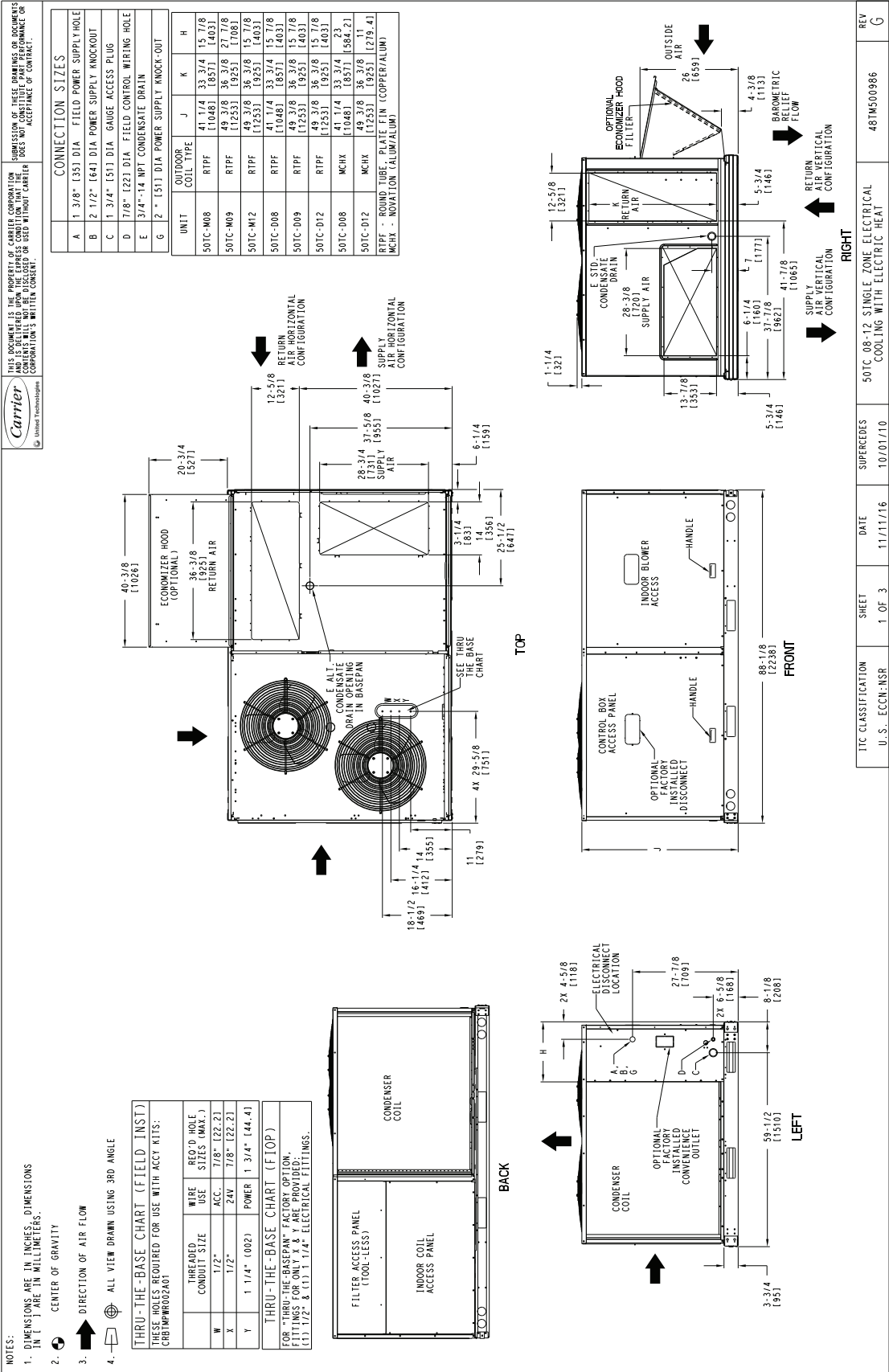
Thru-the-base connections, available as either an accessory or as a factory option, are necessary to ensure proper connection and seal when routing wire and piping through the rooftop's basepan and curb. These couplings eliminate roof penetration and should be considered for gas lines, main power lines,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

Electric Heaters

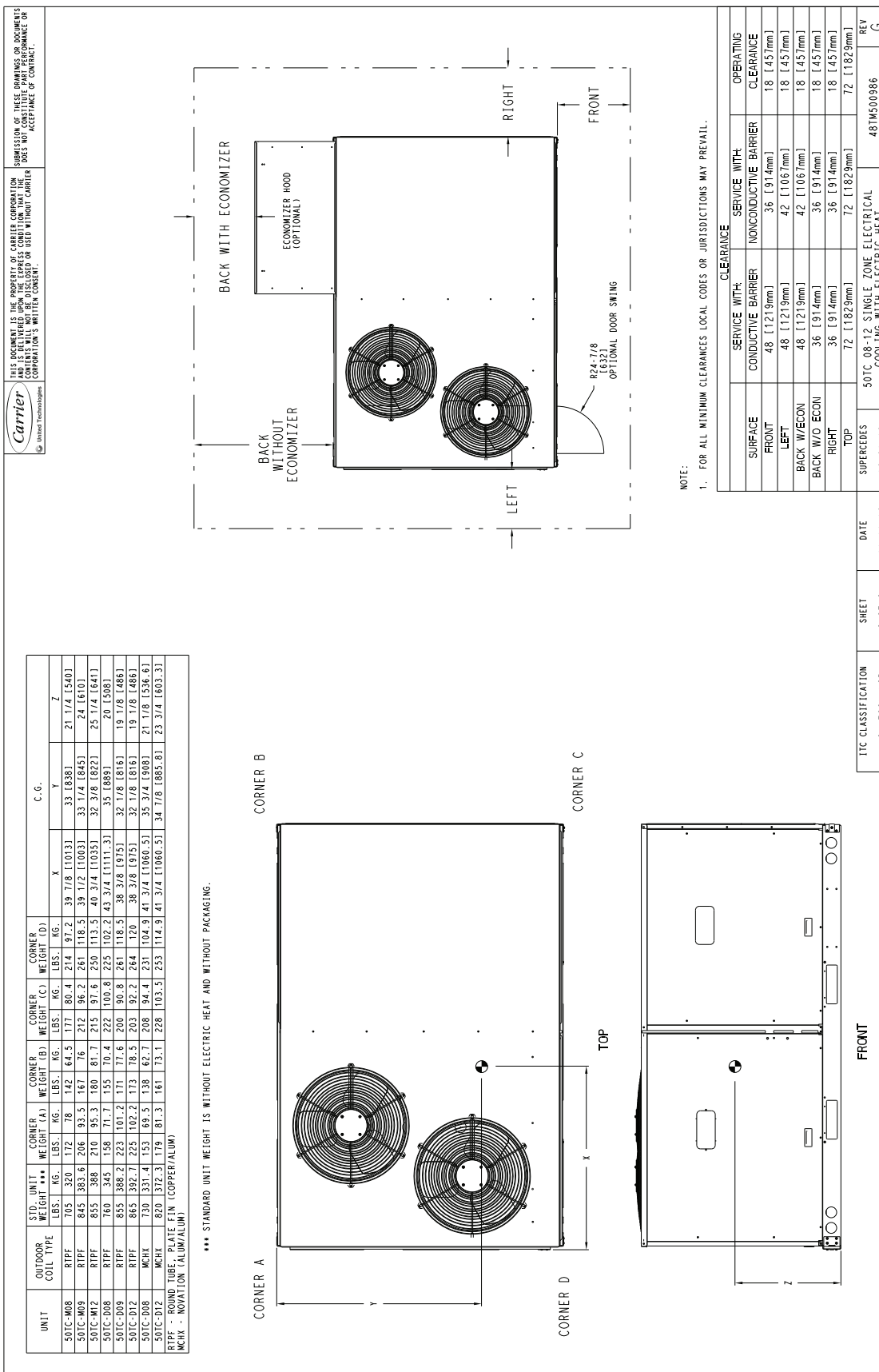
Carrier offers a full-line of field-installed accessory heaters. The heaters are very easy to install and use, and are all pre-engineered and certified.

1. BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers).
2. Modbus is a registered trademark of Schneider Electric.
3. LonWorks is a registered trademark of Echelon Corporation.

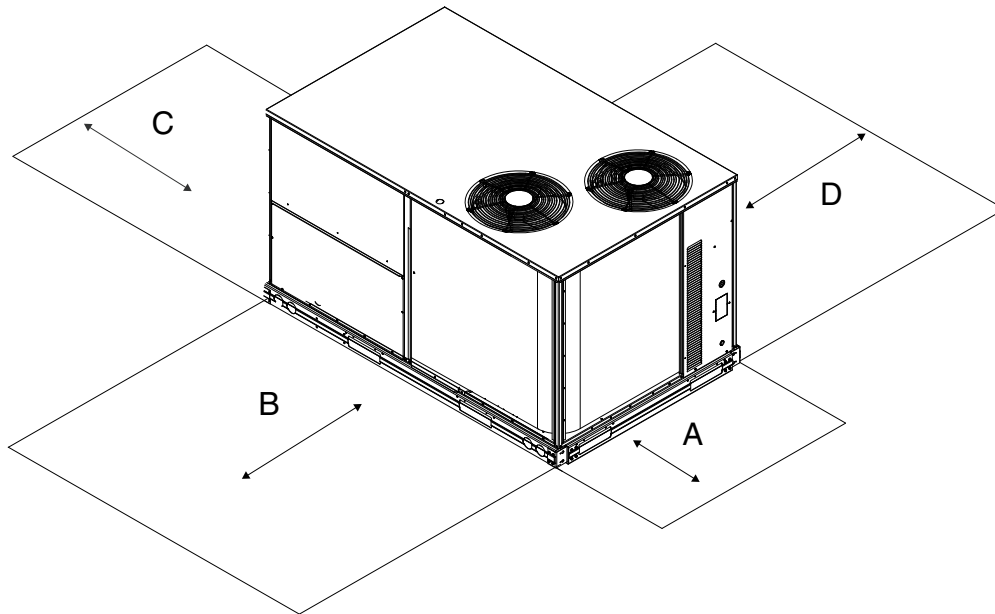
50TC08-12 UNIT DIMENSIONS



50TC08-12 UNIT DIMENSIONS (cont)



50TC08-12 SERVICE CLEARANCE



SERVICE CLEARANCE DIMENSIONS

LOCATION	DIMENSION	CONDITION
A	1219 mm (48-in.)	Unit disconnect is mounted on panel
	457 mm (18-in.)	No disconnect, convenience outlet option
	457 mm (18-in.)	Recommended service clearance
	305 mm (12-in.)	Minimum clearance
B	1067 mm (42-in.)	Surface behind servicer is grounded (e.g., metal, masonry wall)
	914 mm (36-in.)	Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)
	Special	Check sources of flue products within 3 m (10 ft) of unit fresh air intake hood
C	914 mm (36-in.)	Side condensate drain is used
	457 mm (18-in.)	Minimum clearance
D	1067 mm (42-in.)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	914 mm (36-in.)	Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

CERTIFIED DRAWING

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

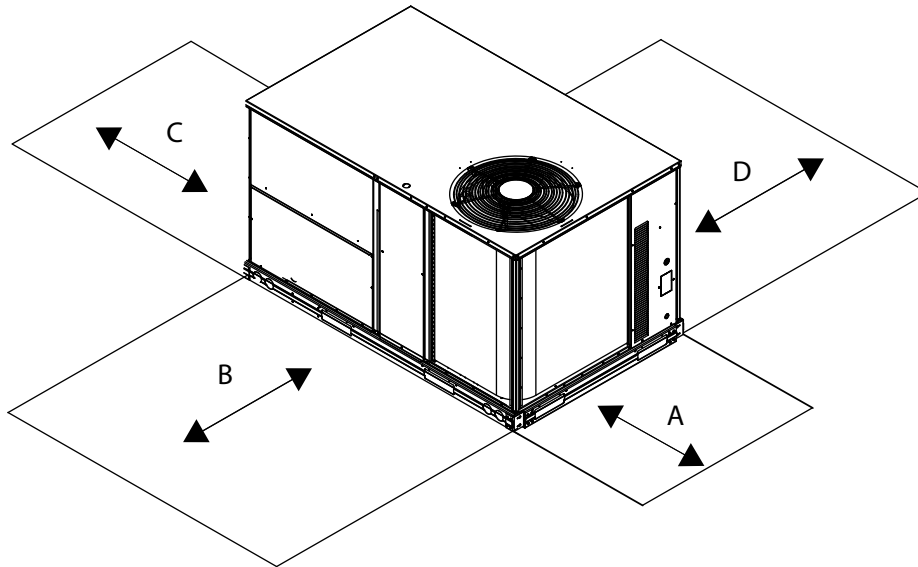
UNIT	OUTDOOR COIL TYPE	H
50TC-D14	MCXH	11-3/8 [289]
50TC-D14	RTPF	15-7/8 [403]

RTPF - ROUND TUBE, PLATE FIN (COPPER/ALUM)
 MCXH - NOVIATION (ALUM/ALUM)

FRONT
 88-1/8 [2238]
 2-5/8 [65] TYP CURB WIDTH
 49-3/8 [1253]
 36 [913]
 6-5/8 [168]
 58-1/2 [1510]
 3-3/4 [95]
 4-5/8 [118]
 ELECTRICAL DISCONNECT LOCATION
 OPTIONAL FACTORY INSTALLED CONVENIENCE OUTLET
 A. B. C. D.
 CONTROL BOX ACCESS PANEL
 OPTIONAL FACTORY INSTALLED DISCONNECT
 HANDLE
 INDOOR BLOWER ACCESS
 28-5/8 [727]
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 6-1/4 [159]

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50TC14 SERVICE CLEARANCE DIMENSIONS

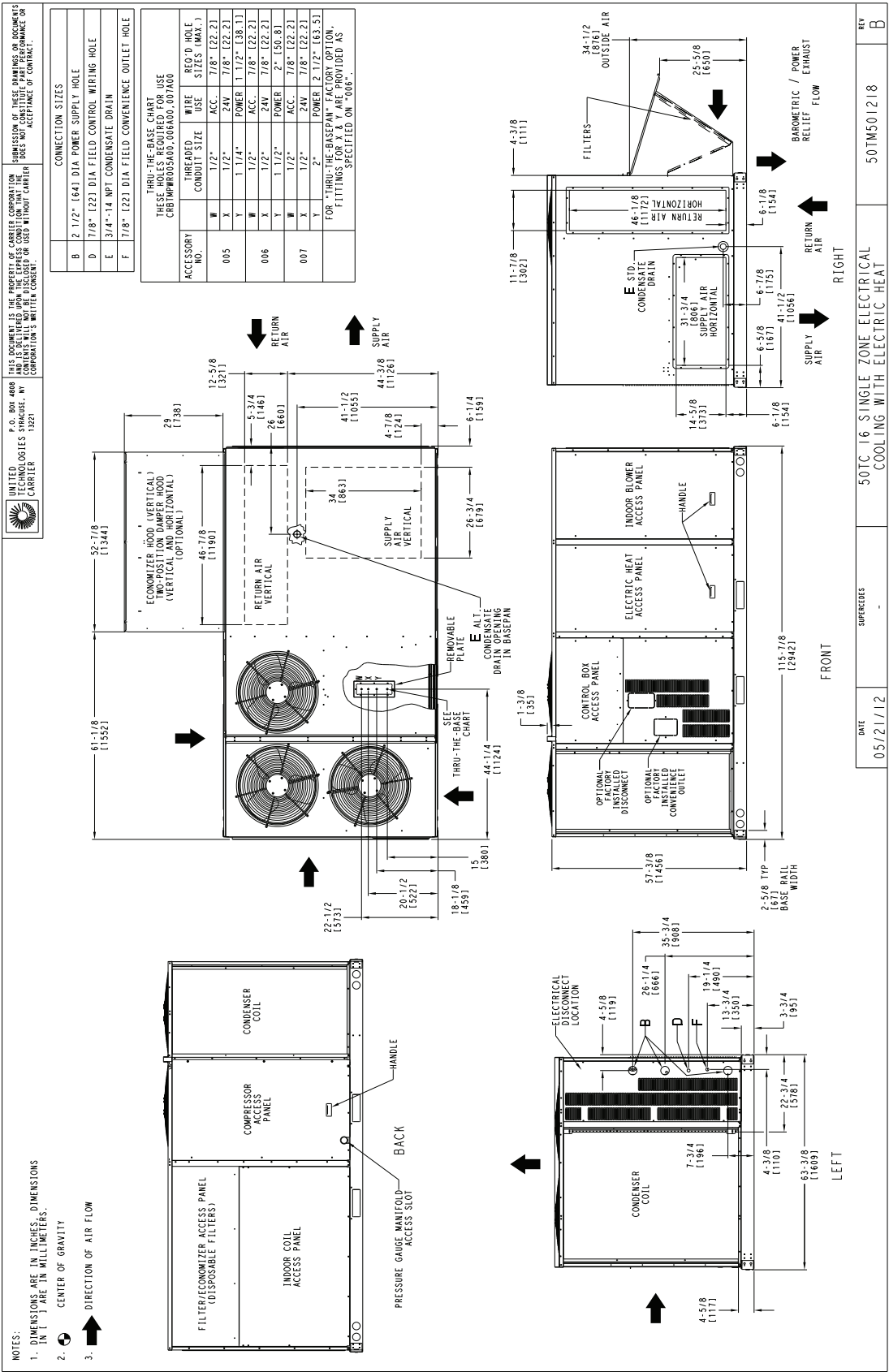


SERVICE CLEARANCE DIMENSIONS

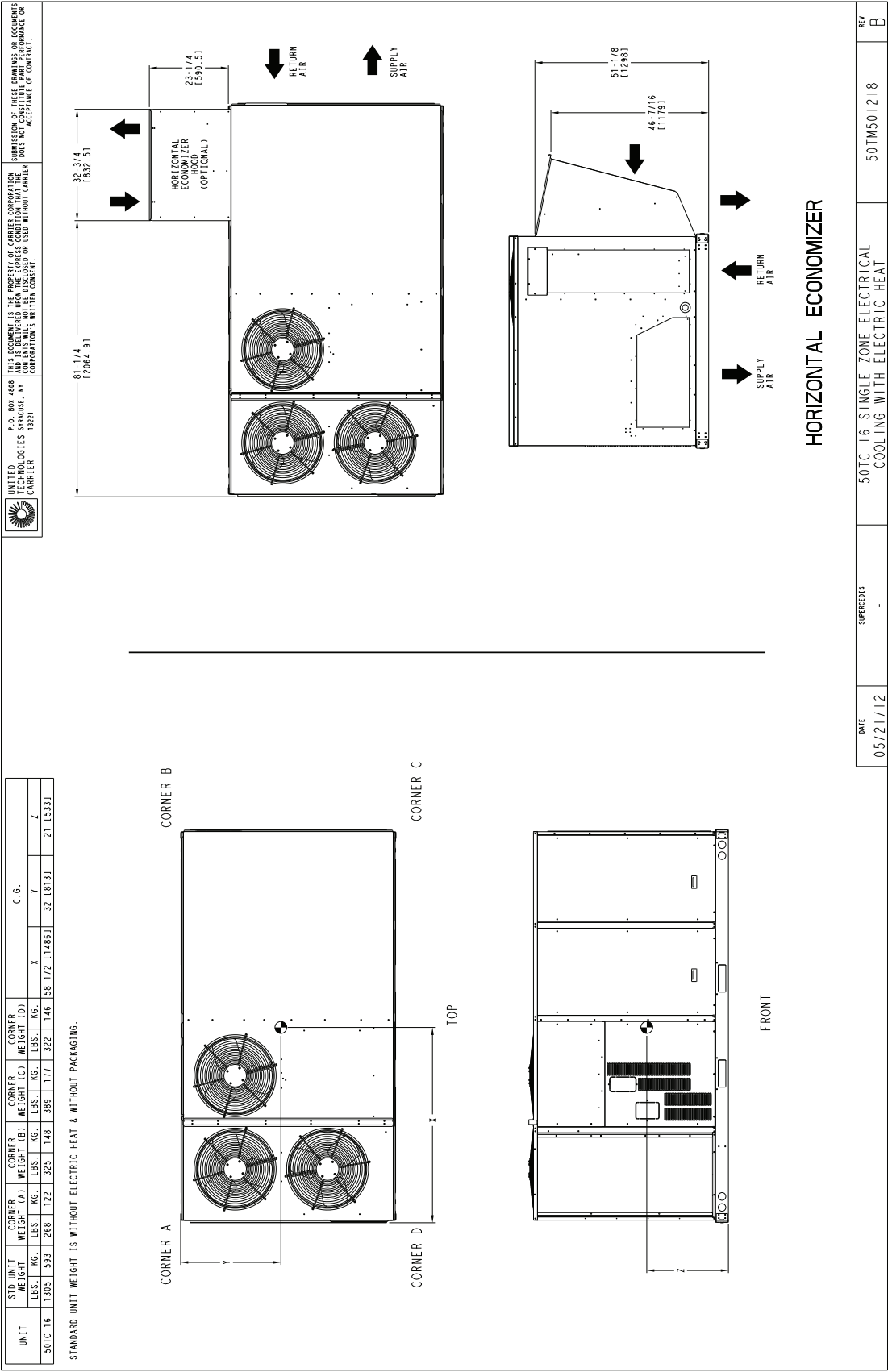
LOCATION	DIMENSION	CONDITION
A	1219 mm (48-in.)	Unit disconnect is mounted on panel
	457 mm (18-in.)	No disconnect, convenience outlet option
	457 mm (18-in.)	Recommended service clearance
	305 mm (12-in.)	Minimum clearance
B	1067 mm (42-in.)	Surface behind servicer is grounded (e.g., metal, masonry wall)
	914 mm (36-in.)	Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)
	Special	Check sources of flue products within 3 m (10 ft) of unit fresh air intake hood
C	914 mm (36-in.)	Side condensate drain is used
	457 mm (18-in.)	Minimum clearance
D	1067 mm (42-in.)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	914 mm (36-in.)	Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

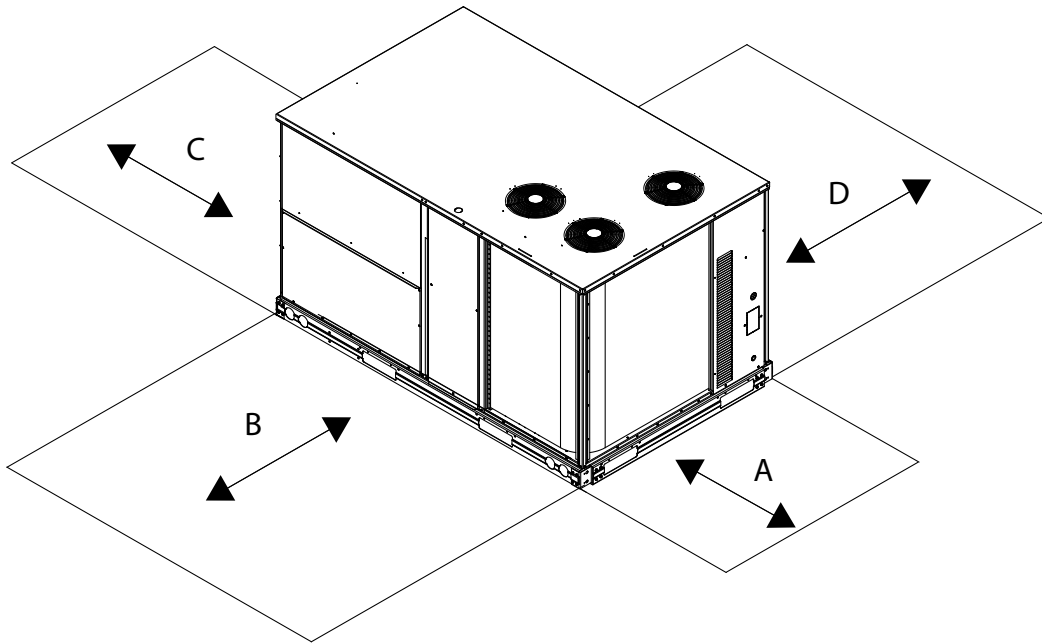
50TC16 UNIT DIMENSIONS



50TC16 UNIT DIMENSIONS (cont)



50TC16 SERVICE CLEARANCE DIMENSIONS



SERVICE CLEARANCE DIMENSIONS

LOCATION	DIMENSION	CONDITION
A	1219 mm (48-in.)	Unit disconnect is mounted on panel
	457 mm (18-in.)	No disconnect, convenience outlet option
	457 mm (18-in.)	Recommended service clearance
	305 mm (12-in.)	Minimum clearance
B	1067 mm (42-in.)	Surface behind servicer is grounded (e.g., metal, masonry wall)
	914 mm (36-in.)	Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)
	Special	Check sources of flue products within 3 m (10 ft) of unit fresh air intake hood
C	914 mm (36-in.)	Side condensate drain is used
	457 mm (18-in.)	Minimum clearance
D	1067 mm (42-in.)	Surface behind servicer is grounded (e.g., metal, masonry wall, another unit)
	914 mm (36-in.)	Surface behind servicer is electrically non-conductive (e.g., wood, fiberglass)

NOTE: Unit not designed to have overhead obstruction. Contact Application Engineering for guidance on any application planning overhead obstruction or for vertical clearances.

CRF-CURB ACCESSORY DIMENSIONS

ROOF CURB ACCESSORY #	A
CRF-CURB074A00	14" [356]
CRF-CURB075A00	24" [610]

NOTES:

1. CRF-CURB ACCESSORY IS SHIPPED DISASSEMBLED.
2. INSULATED PANELS: 1/2" THK. NEOPRENE FOAM, 1.0# DENSITY.
3. DIMENSIONS IN L. ARE IN MILLIMETERS.
4. ACTUAL SHIPMENT TO CURB CLEARANCE OF DUCT REST ON CURB).
5. ACTUAL SHIPMENT TO CURB CLEARANCE OF DUCT REST ON CURB).
6. SERVICE CLEARANCE 4 FT ON EACH SIDE.
7. DIRECTION OF AIR FLOW.
8. LOCATION OF COMMON CROSS MALL.
9. POSITION "L" FOR LARGE DUCT OPENING CURB).

SECTION C-C

SECTION D-D

DETAIL E

VIEW A-A

VIEW B-B

VIEW C-C

VIEW D-D

VIEW E-E

MAX CURB LEVELING TOLERANCES

Minimum operating ambient temp (cooling)

In mechanical cooling mode, your Carrier rooftop unit can safely operate down to an outdoor ambient temperature of 4°C (40°F) and -4°C (25°F), with an accessory winter start kit. 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 temp (cooling)

The maximum operating ambient temperature for cooling mode is 46°C (115°F). While cooling operation above 46°C (115°F) may be possible, it could cause either a reduction in performance, reliability, or a protective action by the unit's internal safety devices.

Min and max airflow (cooling mode)

To maintain safe and reliable operation of your rooftop, operate within the cooling airflow limits. Operating above the max may cause blow-off, undesired airflow noise, or airflow related problems with the rooftop unit. Operating below the min may cause problems with coil freeze-up.

Airflow

All units are draw-through 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 Carrier's internal unit design, air path, and specially designed motors, the full horsepower (maximum continuous BHP) band, as listed in the Physical Data tables, can be used with the utmost confidence. There is no need for extra safety factors, as Carrier's motors are designed and rigorously tested to use the entire, listed BHP range without either nuisance tripping or premature motor failure.

Sizing a rooftop

Bigger isn't necessarily better. While an air conditioner needs to have enough capacity to meet the design loads, it

doesn't 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, and rounding up to the next largest unit, are all signs of oversizing air conditioners. Oversizing the air conditioner can cause short-cycling, and short cycling leads to poor humidity control, reduced efficiency, higher utility bills, drastic 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 undersize 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 cool your space by bringing in fresh, cool outside air. In fact, when so equipped, an 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 -29°C (-20°F) using the recommended accessory Motormaster® low ambient controller.

Winter start

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

COOLING CAPACITIES: 50TC-D08 2-STAGE COOLING (SI)

50TC-D08				AMBIENT TEMPERATURE (°C)														
				29			35			41			46			52		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				24	27	29	24	27	29	24	27	29	24	27	29	24	27	29
849 L/s	EAT (wb)	14	THC	18.6	18.6	21.0	17.5	17.5	19.8	16.3	16.3	18.4	15.1	15.1	17.0	13.7	13.7	15.0
			SHC	16.2	18.6	21.0	15.3	17.5	19.8	14.2	16.3	18.4	13.1	15.1	17.0	12.0	13.7	15.0
		17	THC	19.7	19.7	20.4	18.3	18.3	19.6	16.6	16.6	18.8	15.1	15.1	17.7	13.7	13.7	16.0
			SHC	14.9	17.6	20.4	14.2	16.9	19.6	13.4	16.1	18.8	12.5	15.1	17.7	11.4	13.7	16.0
		19	THC	22.2	22.2	22.2	20.7	20.7	20.7	19.1	19.1	19.1	17.2	17.2	17.2	15.3	15.3	15.0
			SHC	12.6	15.3	18.0	11.9	14.6	17.4	11.2	13.9	16.7	10.5	13.2	15.9	9.7	12.4	15.0
		22	THC	24.5	24.5	24.5	23.3	23.3	23.3	21.7	21.7	21.7	19.9	19.9	19.9	18.0	18.0	18.0
			SHC	9.9	12.6	15.3	9.5	12.2	14.9	8.8	11.6	14.3	8.1	10.9	13.7	7.4	10.2	13.0
		24	THC	—	25.5	25.5	—	24.9	24.9	—	23.6	23.6	—	22.0	22.0	—	20.1	20.0
			SHC	—	10.2	13.1	—	10.0	12.9	—	9.6	12.4	—	8.9	11.8	—	8.3	11.0
991 L/s	EAT (wb)	14	THC	19.9	19.9	22.4	18.7	18.7	21.1	17.4	17.4	19.7	16.1	16.1	18.1	14.7	14.7	17.0
			SHC	17.3	19.9	22.4	16.3	18.7	21.1	15.2	17.4	19.7	14.0	16.1	18.1	12.8	14.7	17.0
		17	THC	20.5	20.5	22.4	19.0	19.0	21.6	17.5	17.5	20.5	16.1	16.1	18.9	14.7	14.7	17.0
			SHC	16.1	19.2	22.4	15.4	18.5	21.6	14.5	17.5	20.5	13.3	16.1	18.9	12.2	14.7	17.0
		19	THC	23.1	23.1	23.1	21.5	21.5	21.5	19.8	19.8	19.8	17.8	17.8	17.8	15.9	15.9	17.0
			SHC	13.4	16.5	19.6	12.7	15.9	19.0	12.0	15.2	18.3	11.3	14.4	17.6	10.5	13.6	17.0
		22	THC	24.9	24.9	24.9	24.0	24.0	24.0	22.4	22.4	22.4	20.6	20.6	20.6	18.6	18.6	19.0
			SHC	10.1	13.1	16.1	9.8	12.9	16.0	9.2	12.4	15.5	8.6	11.7	14.9	7.8	11.0	14.0
		24	THC	—	25.9	25.9	—	25.2	25.2	—	24.1	24.1	—	22.5	22.5	—	20.6	21.0
			SHC	—	10.6	13.9	—	10.3	13.7	—	9.9	13.2	—	9.3	12.6	—	8.7	12.0
1133 L/s	EAT (wb)	14	THC	20.9	20.9	23.6	19.7	19.7	22.3	18.4	18.4	20.7	17.0	17.0	19.1	15.5	15.5	17.0
			SHC	18.3	20.9	23.6	17.2	19.7	22.3	16.0	18.4	20.7	14.8	17.0	19.1	13.5	15.5	17.0
		17	THC	21.3	21.3	24.2	19.7	19.7	23.1	18.4	18.4	21.6	17.0	17.0	19.9	15.5	15.5	18.0
			SHC	17.3	20.7	24.2	16.4	19.7	23.1	15.3	18.4	21.6	14.1	17.0	19.9	12.9	15.5	18.0
		19	THC	23.7	23.7	23.7	22.1	22.1	22.1	20.3	20.3	20.3	18.3	18.3	19.1	16.3	16.3	18.0
			SHC	14.1	17.6	21.1	13.5	17.1	20.6	12.8	16.3	19.9	12.0	15.6	19.1	11.2	14.7	18.0
		22	THC	25.2	25.2	25.2	24.4	24.4	24.4	22.9	22.9	22.9	21.1	21.1	21.1	19.0	19.0	19.0
			SHC	10.3	13.6	16.9	10.0	13.5	17.0	9.5	13.1	16.6	8.9	12.4	16.0	8.2	11.7	15.0
		24	THC	—	26.2	26.2	—	25.4	25.4	—	24.4	24.4	—	22.9	22.9	—	21.0	21.0
			SHC	—	10.8	14.5	—	10.5	14.2	—	10.2	13.8	—	9.7	13.3	—	9.1	13.0
1274 L/s	EAT (wb)	14	THC	21.9	21.9	24.7	20.6	20.6	23.2	19.2	19.2	21.7	17.7	17.7	20.0	16.2	16.2	18.0
			SHC	19.0	21.9	24.7	18.0	20.6	23.2	16.8	19.2	21.7	15.5	17.7	20.0	14.1	16.2	18.0
		17	THC	21.9	21.9	25.7	20.6	20.6	24.2	19.2	19.2	22.5	17.8	17.8	20.8	16.2	16.2	19.0
			SHC	18.2	21.9	25.7	17.1	20.6	24.2	15.9	19.2	22.5	14.7	17.8	20.8	13.4	16.2	19.0
		19	THC	24.1	24.1	24.1	22.6	22.6	22.6	20.7	20.7	21.4	18.8	18.8	20.6	16.7	16.7	20.0
			SHC	14.6	18.5	22.3	14.2	18.1	22.0	13.5	17.4	21.4	12.7	16.6	20.6	11.8	15.8	20.0
		22	THC	25.4	25.4	25.4	24.7	24.7	24.7	23.3	23.3	23.3	21.5	21.5	21.5	19.4	19.4	19.0
			SHC	10.5	14.0	17.6	10.3	14.0	17.8	9.8	13.7	17.6	9.2	13.1	17.1	8.5	12.4	16.0
		24	THC	—	26.4	26.4	—	25.5	25.5	—	24.7	24.7	—	23.1	23.1	—	21.3	21.0
			SHC	—	11.0	14.9	—	10.7	14.6	—	10.5	14.4	—	10.0	13.9	—	9.4	13.0
1416 L/s	EAT (wb)	14	THC	22.6	22.6	25.5	21.4	21.4	24.1	19.9	19.9	22.5	18.4	18.4	20.8	16.8	16.8	19.0
			SHC	19.7	22.6	25.5	18.6	21.4	24.1	17.4	19.9	22.5	16.1	18.4	20.8	14.6	16.8	19.0
		17	THC	22.6	22.6	26.5	21.4	21.4	25.1	20.0	20.0	23.4	18.4	18.4	21.6	16.8	16.8	20.0
			SHC	18.8	22.6	26.5	17.7	21.4	25.1	16.6	20.0	23.4	15.3	18.4	21.6	13.9	16.8	20.0
		19	THC	24.3	24.3	24.3	22.9	22.9	23.4	21.1	21.1	22.8	19.1	19.1	21.9	17.0	17.0	21.0
			SHC	15.2	19.3	23.4	14.8	19.1	23.4	14.2	18.5	22.8	13.3	17.6	21.9	12.5	16.7	21.0
		22	THC	25.6	25.6	25.6	24.9	24.9	24.9	23.6	23.6	23.6	21.8	21.8	21.8	19.7	19.7	20.0
			SHC	10.6	14.4	18.2	10.4	14.5	18.5	10.0	14.2	18.5	9.4	13.7	18.0	8.7	13.1	17.0
		24	THC	—	26.5	26.5	—	25.6	25.6	—	24.8	24.8	—	23.4	23.4	—	21.5	21.0
			SHC	—	11.2	15.4	—	10.9	15.0	—	10.7	14.9	—	10.3	14.5	—	9.7	14.0

LEGEND

—	Do Not Operate
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
L/s	Liters Per Second
SHC	Sensible Heat Capacity (kW) Gross
THC	Total Heat Capacity (kW) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D08 2-STAGE COOLING (ENGLISH)

50TC-D08				AMBIENT TEMPERATURE (°F)														
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
1800 Cfm	EAT (wb)	58	THC	63.6	63.6	71.7	59.8	59.8	67.5	55.7	55.7	62.8	51.4	51.4	57.9	46.8	46.8	52.8
			SHC	55.4	63.6	71.7	52.1	59.8	67.5	48.5	55.7	62.8	44.8	51.4	57.9	40.8	46.8	52.8
		62	THC	67.3	67.3	69.5	62.3	62.3	67.0	56.8	56.8	64.2	51.5	51.5	60.3	46.9	46.9	54.9
			SHC	50.9	60.2	69.5	48.5	57.7	67.0	45.8	55.0	64.2	42.7	51.5	60.3	38.9	46.9	54.9
		67	THC	75.9	75.9	75.9	70.8	70.8	70.8	65.1	65.1	65.1	58.8	58.8	58.8	52.2	52.2	52.2
			SHC	42.9	52.2	61.4	40.7	50.0	59.3	38.3	47.6	56.9	35.7	45.0	54.3	33.1	42.4	51.7
		72	THC	83.6	83.6	83.6	79.6	79.6	79.6	74.2	74.2	74.2	68.0	68.0	68.0	61.3	61.3	61.3
			SHC	33.8	43.1	52.3	32.3	41.6	50.9	30.2	39.5	48.9	27.8	37.2	46.6	25.4	34.7	44.1
		76	THC	—	87.1	87.1	—	84.9	84.9	—	80.6	80.6	—	75.0	75.0	—	68.6	68.6
			SHC	—	34.8	44.7	—	34.0	43.9	—	32.6	42.4	—	30.5	40.2	—	28.3	37.8
2100 Cfm	EAT (wb)	58	THC	67.8	67.8	76.5	63.9	63.9	72.0	59.5	59.5	67.2	54.9	54.9	61.9	50.1	50.1	56.5
			SHC	59.1	67.8	76.5	55.7	63.9	72.0	51.9	59.5	67.2	47.8	54.9	61.9	43.6	50.1	56.5
		62	THC	70.1	70.1	76.4	64.9	64.9	73.6	59.6	59.6	69.8	54.9	54.9	64.4	50.1	50.1	58.7
			SHC	55.1	65.7	76.4	52.5	63.1	73.6	49.4	59.6	69.8	45.5	54.9	64.4	41.6	50.1	58.7
		67	THC	78.8	78.8	78.8	73.4	73.4	73.4	67.5	67.5	67.5	60.9	60.9	60.9	54.1	54.1	57.2
			SHC	45.6	56.3	67.0	43.5	54.2	65.0	41.1	51.8	62.6	38.4	49.2	59.9	35.7	46.5	57.2
		72	THC	84.9	84.9	84.9	81.9	81.9	81.9	76.6	76.6	76.6	70.3	70.3	70.3	63.4	63.4	63.4
			SHC	34.5	44.8	55.1	33.4	44.1	54.7	31.4	42.2	53.0	29.2	39.9	50.7	26.7	37.5	48.3
		76	THC	—	88.5	88.5	—	86.1	86.1	—	82.3	82.3	—	76.9	76.9	—	70.4	70.4
			SHC	—	36.1	47.6	—	35.2	46.7	—	33.8	45.0	—	31.9	43.0	—	29.7	40.7
2400 Cfm	EAT (wb)	58	THC	71.5	71.5	80.7	67.3	67.3	76.0	62.8	62.8	70.8	57.9	57.9	65.3	52.9	52.9	59.6
			SHC	62.3	71.5	80.7	58.7	67.3	76.0	54.7	62.8	70.8	50.5	57.9	65.3	46.1	52.9	59.6
		62	THC	72.6	72.6	82.6	67.4	67.4	79.0	62.9	62.9	73.6	58.0	58.0	67.9	52.9	52.9	62.0
			SHC	58.9	70.8	82.6	55.9	67.4	79.0	52.1	62.9	73.6	48.0	58.0	67.9	43.9	52.9	62.0
		67	THC	80.8	80.8	80.8	75.5	75.5	75.5	69.3	69.3	69.3	62.6	62.6	65.3	55.6	55.6	62.3
			SHC	48.0	59.9	71.9	46.1	58.2	70.3	43.6	55.8	67.9	41.0	53.1	65.3	38.2	50.2	62.3
		72	THC	86.0	86.0	86.0	83.4	83.4	83.4	78.3	78.3	78.3	72.0	72.0	72.0	65.0	65.0	65.0
			SHC	35.1	46.4	57.8	34.3	46.1	58.0	32.5	44.6	56.6	30.3	42.4	54.6	27.9	40.0	52.2
		76	THC	—	89.4	89.4	—	86.8	86.8	—	83.4	83.4	—	78.1	78.1	—	71.7	71.7
			SHC	—	37.0	49.6	—	36.0	48.4	—	34.8	47.2	—	33.1	45.4	—	31.0	43.2
2700 Cfm	EAT (wb)	58	THC	74.6	74.6	84.2	70.3	70.3	79.3	65.6	65.6	74.0	60.5	60.5	68.3	55.3	55.3	62.3
			SHC	65.0	74.6	84.2	61.3	70.3	79.3	57.2	65.6	74.0	52.8	60.5	68.3	48.2	55.3	62.3
		62	THC	74.8	74.8	87.6	70.4	70.4	82.5	65.7	65.7	76.9	60.6	60.6	71.0	55.3	55.3	64.8
			SHC	62.0	74.8	87.6	58.4	70.4	82.5	54.4	65.7	76.9	50.2	60.6	71.0	45.9	55.3	64.8
		67	THC	82.2	82.2	82.2	77.1	77.1	77.1	70.8	70.8	73.0	64.0	64.0	70.2	56.9	56.9	67.1
			SHC	50.0	63.1	76.2	48.4	61.8	75.2	46.0	59.5	73.0	43.3	56.8	70.2	40.4	53.8	67.1
		72	THC	86.8	86.8	86.8	84.4	84.4	84.4	79.6	79.6	79.6	73.3	73.3	73.3	66.3	66.3	66.3
			SHC	35.7	47.9	60.1	35.0	47.9	60.8	33.4	46.7	59.9	31.3	44.7	58.2	28.9	42.4	55.9
		76	THC	—	90.0	90.0	—	87.1	87.1	—	84.2	84.2	—	79.0	79.0	—	72.7	72.7
			SHC	—	37.7	51.0	—	36.6	49.9	—	35.7	49.1	—	34.1	47.5	—	32.1	45.5
3000 Cfm	EAT (wb)	58	THC	77.2	77.2	87.2	72.9	72.9	82.3	68.0	68.0	76.8	62.8	62.8	70.9	57.4	57.4	64.7
			SHC	67.3	77.2	87.2	63.6	72.9	82.3	59.3	68.0	76.8	54.8	62.8	70.9	50.0	57.4	64.7
		62	THC	77.3	77.3	90.6	73.0	73.0	85.5	68.1	68.1	79.8	62.9	62.9	73.7	57.4	57.4	67.3
			SHC	64.1	77.3	90.6	60.5	73.0	85.5	56.5	68.1	79.8	52.1	62.9	73.7	47.6	57.4	67.3
		67	THC	83.1	83.1	83.1	78.3	78.3	79.8	72.1	72.1	77.8	65.2	65.2	74.9	58.1	58.1	71.3
			SHC	51.8	65.9	80.0	50.5	65.2	79.8	48.3	63.0	77.8	45.5	60.2	74.9	42.5	56.9	71.3
		72	THC	87.5	87.5	87.5	85.1	85.1	85.1	80.5	80.5	80.5	74.4	74.4	74.4	67.2	67.2	67.2
			SHC	36.2	49.2	62.2	35.6	49.4	63.2	34.2	48.6	63.0	32.2	46.8	61.5	29.8	44.6	59.4
		76	THC	—	90.6	90.6	—	87.3	87.3	—	84.7	84.7	—	79.7	79.7	—	73.3	73.3
			SHC	—	38.3	52.4	—	37.2	51.2	—	36.5	50.8	—	35.0	49.4	—	33.1	47.6

LEGEND

—	Do Not Operate
CFM	Cubic Feet Per Minute (air supply)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity (1000 btuh) Gross
THC	Total Heat Capacity (1000 btuh) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D09 2-STAGE COOLING (SI)

50TC-D09				AMBIENT TEMPERATURE (°C)														
				29			35			41			46			52		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				24	27	29	24	27	29	24	27	29	24	27	29	24	27	29
991 L/s	EAT (wb)	14	THC	21.6	21.6	24.4	20.3	20.3	22.9	18.9	18.9	21.4	17.4	17.4	19.7	15.9	15.9	18.0
			SHC	18.8	21.6	24.4	17.6	20.3	22.9	16.5	18.9	21.4	15.2	17.4	19.7	13.9	15.9	18.0
		17	THC	22.4	22.4	23.9	20.8	20.8	23.1	19.1	19.1	22.0	17.5	17.5	20.5	15.9	15.9	18.7
			SHC	17.3	20.6	23.9	16.5	19.8	23.1	15.6	18.8	22.0	14.4	17.5	20.5	13.2	15.9	18.7
		19	THC	25.2	25.2	25.2	23.5	23.5	23.5	21.6	21.6	21.6	19.5	19.5	19.5	17.4	17.4	17.8
			SHC	14.4	17.7	21.0	13.7	17.0	20.3	12.9	16.2	19.5	12.0	15.4	18.7	11.2	14.5	17.8
		22	THC	27.8	27.8	27.8	26.4	26.4	26.4	24.5	24.5	24.5	22.5	22.5	22.5	20.3	20.3	20.3
			SHC	11.2	14.5	17.8	10.7	14.0	17.3	10.0	13.3	16.6	9.2	12.5	15.9	8.4	11.7	15.1
		24	THC	—	29.4	29.4	—	28.2	28.2	—	26.8	26.8	—	24.9	24.9	—	22.7	22.7
			SHC	—	11.7	15.1	—	11.3	14.7	—	10.8	14.2	—	10.2	13.5	—	9.5	12.8
1156 L/s	EAT (wb)	14	THC	22.7	22.7	25.8	21.4	21.4	24.3	20.0	20.0	22.6	18.4	18.4	20.9	16.8	16.8	19.1
			SHC	19.7	22.7	25.8	18.5	21.4	24.3	17.3	20.0	22.6	16.0	18.4	20.9	14.6	16.8	19.1
		17	THC	23.2	23.2	26.0	21.6	21.6	25.0	20.0	20.0	23.6	18.5	18.5	21.7	16.8	16.8	19.9
			SHC	18.4	22.2	26.0	17.5	21.2	25.0	16.4	20.0	23.6	15.1	18.5	21.7	13.8	16.8	19.9
		19	THC	25.9	25.9	25.9	24.1	24.1	24.1	22.2	22.2	22.2	20.1	20.1	20.4	17.9	17.9	19.5
			SHC	15.1	18.9	22.8	14.4	18.2	22.1	13.6	17.4	21.3	12.7	16.6	20.4	11.9	15.7	19.5
		22	THC	28.3	28.3	28.3	27.0	27.0	27.0	25.2	25.2	25.2	23.1	23.1	23.1	20.9	20.9	20.9
			SHC	11.4	15.1	18.9	10.9	14.7	18.6	10.2	14.1	18.0	9.5	13.3	17.2	8.7	12.5	16.4
		24	THC	—	29.8	29.8	—	28.6	28.6	—	27.3	27.3	—	25.4	25.4	—	23.3	23.3
			SHC	—	12.1	16.0	—	11.7	15.6	—	11.2	15.1	—	10.6	14.5	—	9.9	13.8
1321 L/s	EAT (wb)	14	THC	23.8	23.8	27.0	22.4	22.4	25.4	20.9	20.9	23.7	19.3	19.3	21.9	17.6	17.6	20.0
			SHC	20.5	23.8	27.0	19.3	22.4	25.4	18.0	20.9	23.7	16.6	19.3	21.9	15.2	17.6	20.0
		17	THC	24.0	24.0	27.8	22.4	22.4	26.5	20.9	20.9	24.7	19.3	19.3	22.8	17.6	17.6	20.9
			SHC	19.3	23.6	27.8	18.3	22.4	26.5	17.1	20.9	24.7	15.8	19.3	22.8	14.4	17.6	20.9
		19	THC	26.5	26.5	26.5	24.7	24.7	24.7	22.7	22.7	23.0	20.6	20.6	22.2	18.3	18.3	21.2
			SHC	15.7	20.1	24.4	15.0	19.4	23.8	14.2	18.6	23.0	13.4	17.8	22.2	12.5	16.9	21.2
		22	THC	28.7	28.7	28.7	27.5	27.5	27.5	25.7	25.7	25.7	23.6	23.6	23.6	21.3	21.3	21.3
			SHC	11.5	15.7	19.9	11.1	15.4	19.7	10.5	14.9	19.2	9.7	14.1	18.5	8.9	13.3	17.7
		24	THC	—	30.1	30.1	—	28.9	28.9	—	27.7	27.7	—	25.8	25.8	—	23.7	23.7
			SHC	—	12.4	16.7	—	12.0	16.3	—	11.6	15.9	—	11.0	15.4	—	10.3	14.7
1487 L/s	EAT (wb)	14	THC	24.7	24.7	28.1	23.2	23.2	26.5	21.7	21.7	24.7	20.0	20.0	22.8	18.3	18.3	20.9
			SHC	21.2	24.7	28.1	20.0	23.2	26.5	18.7	21.7	24.7	17.3	20.0	22.8	15.8	18.3	20.9
		17	THC	24.7	24.7	29.3	23.3	23.3	27.6	21.7	21.7	25.7	20.1	20.1	23.8	18.3	18.3	21.7
			SHC	20.1	24.7	29.3	19.0	23.3	27.6	17.7	21.7	25.7	16.3	20.1	23.8	14.9	18.3	21.7
		19	THC	27.0	27.0	27.0	25.2	25.2	25.4	23.1	23.1	24.7	20.9	20.9	23.8	18.7	18.7	22.8
			SHC	16.3	21.1	26.0	15.6	20.5	25.4	14.9	19.7	24.7	14.0	18.9	23.8	13.1	17.9	22.8
		22	THC	29.0	29.0	29.0	27.8	27.8	27.8	26.1	26.1	26.1	24.0	24.0	24.0	21.7	21.7	21.7
			SHC	11.6	16.3	20.9	11.2	16.0	20.8	10.7	15.5	20.4	9.9	14.8	19.7	9.1	14.1	19.0
		24	THC	—	30.4	30.4	—	29.1	29.1	—	27.9	27.9	—	26.1	26.1	—	24.0	24.0
			SHC	—	12.6	17.4	—	12.2	16.9	—	11.9	16.7	—	11.3	16.2	—	10.7	15.6
1652 L/s	EAT (wb)	14	THC	25.5	25.5	29.0	24.0	24.0	27.4	22.4	22.4	25.5	20.7	20.7	23.6	18.9	18.9	21.6
			SHC	21.9	25.5	29.0	20.6	24.0	27.4	19.2	22.4	25.5	17.8	20.7	23.6	16.3	18.9	21.6
		17	THC	25.5	25.5	30.3	24.0	24.0	28.5	22.4	22.4	26.6	20.7	20.7	24.6	19.0	19.0	22.5
			SHC	20.7	25.5	30.3	19.5	24.0	28.5	18.2	22.4	26.6	16.8	20.7	24.6	15.4	19.0	22.5
		19	THC	27.3	27.3	27.3	25.5	25.5	27.0	23.5	23.5	26.3	21.3	21.3	25.3	19.2	19.2	23.9
			SHC	16.8	22.1	27.3	16.2	21.6	27.0	15.4	20.9	26.3	14.6	20.0	25.3	13.5	18.7	23.9
		22	THC	29.2	29.2	29.2	28.0	28.0	28.0	26.4	26.4	26.4	24.3	24.3	24.3	21.9	21.9	21.9
			SHC	11.7	16.8	21.8	11.3	16.5	21.7	10.8	16.2	21.6	10.1	15.5	20.9	9.3	14.8	20.2
		24	THC	—	30.6	30.6	—	29.3	29.3	—	28.1	28.1	—	26.3	26.3	—	24.2	24.2
			SHC	—	12.9	18.0	—	12.5	17.6	—	12.1	17.3	—	11.6	17.0	—	11.0	16.4

LEGEND

—	Do Not Operate
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
L/s	Liters Per Second
SHC	Sensible Heat Capacity (kW) Gross
THC	Total Heat Capacity (kW) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D09 2-STAGE COOLING (ENGLISH)

50TC-D09				AMBIENT TEMPERATURE (°F)														
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
2100 Cfm	EAT (wb)	58	THC	73.6	73.6	83.2	69.3	69.3	78.3	64.6	64.6	73.0	59.5	59.5	67.3	54.3	54.3	61.4
			SHC	64.0	73.6	83.2	60.2	69.3	78.3	56.2	64.6	73.0	51.8	59.5	67.3	47.3	54.3	61.4
		62	THC	76.6	76.6	81.5	71.0	71.0	78.8	65.2	65.2	75.1	59.6	59.6	70.0	54.4	54.4	63.9
			SHC	58.9	70.2	81.5	56.3	67.6	78.8	53.1	64.1	75.1	49.3	59.6	70.0	45.0	54.4	63.9
		67	THC	86.0	86.0	86.0	80.1	80.1	80.1	73.7	73.7	73.7	66.7	66.7	66.7	59.4	59.4	60.8
			SHC	49.0	60.4	71.7	46.6	57.9	69.2	43.9	55.2	66.6	41.1	52.4	63.7	38.2	49.5	60.8
		72	THC	94.8	94.8	94.8	90.0	90.0	90.0	83.7	83.7	83.7	76.7	76.7	76.7	69.3	69.3	69.3
			SHC	38.2	49.5	60.7	36.4	47.8	59.1	34.0	45.4	56.7	31.4	42.8	54.2	28.8	40.1	51.4
		76	THC	—	100.2	100.2	—	96.3	96.3	—	91.4	91.4	—	84.9	84.9	—	77.6	77.6
			SHC	—	40.1	51.6	—	38.7	50.2	—	37.0	48.5	—	34.8	46.2	—	32.3	43.8
2450 Cfm	EAT (wb)	58	THC	77.6	77.6	88.0	73.0	73.0	82.8	68.1	68.1	77.2	62.9	62.9	71.3	57.4	57.4	65.1
			SHC	67.2	77.6	88.0	63.3	73.0	82.8	59.0	68.1	77.2	54.5	62.9	71.3	49.7	57.4	65.1
		62	THC	79.2	79.2	88.9	73.7	73.7	85.2	68.2	68.2	80.4	63.0	63.0	74.2	57.5	57.5	67.8
			SHC	62.8	75.8	88.9	59.7	72.4	85.2	56.1	68.2	80.4	51.7	63.0	74.2	47.2	57.5	67.8
		67	THC	88.5	88.5	88.5	82.4	82.4	82.4	75.8	75.8	75.8	68.6	68.6	69.7	61.1	61.1	66.7
			SHC	51.4	64.6	77.7	49.0	62.1	75.3	46.3	59.4	72.6	43.4	56.6	69.7	40.5	53.6	66.7
		72	THC	96.6	96.6	96.6	92.2	92.2	92.2	86.0	86.0	86.0	78.8	78.8	78.8	71.2	71.2	71.2
			SHC	38.8	51.6	64.5	37.2	50.3	63.5	34.9	48.1	61.3	32.3	45.5	58.7	29.7	42.8	56.0
		76	THC	—	101.7	101.7	—	97.6	97.6	—	93.1	93.1	—	86.8	86.8	—	79.5	79.5
			SHC	—	41.3	54.7	—	39.8	53.1	—	38.3	51.6	—	36.2	49.5	—	33.8	47.1
2800 Cfm	EAT (wb)	58	THC	81.1	81.1	92.1	76.4	76.4	86.8	71.3	71.3	81.0	65.8	65.8	74.8	60.1	60.1	68.3
			SHC	70.0	81.1	92.1	65.9	76.4	86.8	61.5	71.3	81.0	56.8	65.8	74.8	51.9	60.1	68.3
		62	THC	81.8	81.8	94.8	76.5	76.5	90.4	71.4	71.4	84.4	65.9	65.9	77.9	60.2	60.2	71.2
			SHC	65.9	80.4	94.8	62.6	76.5	90.4	58.4	71.4	84.4	53.9	65.9	77.9	49.2	60.2	71.2
		67	THC	90.5	90.5	90.5	84.3	84.3	84.3	77.4	77.4	78.5	70.2	70.2	75.6	62.5	62.5	72.4
			SHC	53.6	68.5	83.4	51.2	66.2	81.2	48.5	63.5	78.5	45.7	60.6	75.6	42.7	57.6	72.4
		72	THC	97.8	97.8	97.8	93.8	93.8	93.8	87.7	87.7	87.7	80.5	80.5	80.5	72.7	72.7	72.7
			SHC	39.3	53.6	68.0	37.9	52.6	67.4	35.7	50.7	65.6	33.2	48.2	63.2	30.4	45.5	60.5
		76	THC	—	102.9	102.9	—	98.6	98.6	—	94.4	94.4	—	88.1	88.1	—	80.8	80.8
			SHC	—	42.3	57.1	—	40.8	55.6	—	39.5	54.4	—	37.5	52.5	—	35.1	50.2
3150 Cfm	EAT (wb)	58	THC	84.2	84.2	95.9	79.3	79.3	90.3	74.0	74.0	84.3	68.4	68.4	77.9	62.5	62.5	71.2
			SHC	72.5	84.2	95.9	68.3	79.3	90.3	63.8	74.0	84.3	58.9	68.4	77.9	53.8	62.5	71.2
		62	THC	84.3	84.3	100.0	79.4	79.4	94.1	74.1	74.1	87.8	68.5	68.5	81.2	62.6	62.6	74.2
			SHC	68.7	84.3	100.0	64.7	79.4	94.1	60.4	74.1	87.8	55.8	68.5	81.2	51.0	62.6	74.2
		67	THC	92.0	92.0	92.0	85.9	85.9	86.8	78.9	78.9	84.2	71.5	71.5	81.1	63.8	63.8	77.7
			SHC	55.6	72.1	88.6	53.4	70.1	86.8	50.7	67.4	84.2	47.8	64.5	81.1	44.7	61.2	77.7
		72	THC	98.9	98.9	98.9	94.9	94.9	94.9	89.0	89.0	89.0	81.8	81.8	81.8	73.9	73.9	73.9
			SHC	39.7	55.5	71.3	38.3	54.7	71.0	36.4	53.0	69.7	33.9	50.6	67.4	31.2	48.0	64.8
		76	THC	—	103.8	103.8	—	99.4	99.4	—	95.3	95.3	—	89.1	89.1	—	81.9	81.9
			SHC	—	43.1	59.3	—	41.7	57.8	—	40.5	56.9	—	38.6	55.3	—	36.4	53.1
3500 Cfm	EAT (wb)	58	THC	86.9	86.9	99.1	81.9	81.9	93.4	76.4	76.4	87.2	70.7	70.7	80.6	64.6	64.6	73.7
			SHC	74.7	86.9	99.1	70.4	81.9	93.4	65.7	76.4	87.2	60.8	70.7	80.6	55.5	64.6	73.7
		62	THC	87.0	87.0	103.3	82.0	82.0	97.3	76.5	76.5	90.9	70.8	70.8	84.0	64.7	64.7	76.8
			SHC	70.7	87.0	103.3	66.6	82.0	97.3	62.2	76.5	90.9	57.5	70.8	84.0	52.6	64.7	76.8
		67	THC	93.1	93.1	93.3	87.1	87.1	92.3	80.2	80.2	89.7	72.7	72.7	86.5	65.4	65.4	81.6
			SHC	57.3	75.3	93.3	55.4	73.8	92.3	52.7	71.2	89.7	49.8	68.1	86.5	46.2	63.9	81.6
		72	THC	99.7	99.7	99.7	95.6	95.6	95.6	90.1	90.1	90.1	82.9	82.9	82.9	74.9	74.9	74.9
			SHC	40.0	57.2	74.4	38.7	56.4	74.0	36.9	55.3	73.6	34.5	53.0	71.5	31.8	50.4	69.0
		76	THC	—	104.6	104.6	—	100.0	100.0	—	95.9	95.9	—	89.9	89.9	—	82.7	82.7
			SHC	—	44.0	61.4	—	42.5	59.9	—	41.4	59.2	—	39.7	57.9	—	37.5	55.9

LEGEND

—	Do Not Operate
CFM	Cubic Feet Per Minute (air supply)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity (1000 btuh) Gross
THC	Total Heat Capacity (1000 btuh) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D12 2-STAGE COOLING (SI)

50TC-D12				AMBIENT TEMPERATURE (°C)														
				29			35			41			46			52		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				24	27	29	24	27	29	24	27	29	24	27	29	24	27	29
1203 L/s	EAT (wb)	14	THC	27.3	27.3	30.8	25.7	25.7	28.9	23.9	23.9	27.0	22.1	22.1	24.9	20.0	20.0	22.6
			SHC	23.8	27.3	30.8	22.4	25.7	28.9	20.9	23.9	27.0	19.2	22.1	24.9	17.5	20.0	22.6
		17	THC	28.6	28.6	30.0	26.5	26.5	28.9	24.2	24.2	27.6	22.1	22.1	25.9	20.1	20.1	23.5
			SHC	21.9	25.9	30.0	20.8	24.9	28.9	19.7	23.6	27.6	18.3	22.1	25.9	16.6	20.1	23.5
		19	THC	32.3	32.3	32.3	29.9	29.9	29.9	27.5	27.5	27.5	24.9	24.9	24.9	22.1	22.1	22.2
			SHC	18.3	22.4	26.4	17.3	21.4	25.4	16.3	20.4	24.4	15.3	19.3	23.4	14.2	18.2	22.2
		22	THC	35.4	35.4	35.4	33.7	33.7	33.7	31.3	31.3	31.3	28.6	28.6	28.6	25.8	25.8	25.8
			SHC	14.3	18.4	22.4	13.7	17.7	21.8	12.7	16.8	20.9	11.8	15.9	19.9	10.7	14.8	18.8
		24	THC	—	37.7	37.7	—	35.9	35.9	—	34.0	34.0	—	31.6	31.6	—	28.9	28.9
			SHC	—	15.0	19.1	—	14.4	18.5	—	13.7	17.8	—	12.9	17.0	—	12.0	16.1
1404 L/s	EAT (wb)	14	THC	29.2	29.2	32.9	27.4	27.4	30.9	25.6	25.6	28.9	23.6	23.6	26.6	21.5	21.5	24.2
			SHC	25.4	29.2	32.9	23.9	27.4	30.9	22.3	25.6	28.9	20.6	23.6	26.6	18.7	21.5	24.2
		17	THC	29.8	29.8	33.1	27.7	27.7	31.6	25.6	25.6	30.0	23.6	23.6	27.7	21.5	21.5	25.2
			SHC	23.8	28.5	33.1	22.5	27.1	31.6	21.2	25.6	30.0	19.6	23.6	27.7	17.8	21.5	25.2
		19	THC	33.3	33.3	33.3	31.0	31.0	31.0	28.5	28.5	28.5	25.8	25.8	25.9	22.8	22.8	24.7
			SHC	19.5	24.2	28.9	18.6	23.3	28.0	17.6	22.3	27.0	16.5	21.2	25.9	15.4	20.0	24.7
		22	THC	36.3	36.3	36.3	34.5	34.5	34.5	32.3	32.3	32.3	29.6	29.6	29.6	26.6	26.6	26.6
			SHC	14.8	19.4	24.1	14.2	18.8	23.5	13.3	18.0	22.8	12.3	17.1	21.8	11.3	16.0	20.7
		24	THC	—	38.4	38.4	—	36.6	36.6	—	34.7	34.7	—	32.4	32.4	—	29.7	29.7
			SHC	—	15.6	20.3	—	14.9	19.7	—	14.3	19.0	—	13.5	18.3	—	12.6	17.4
1605 L/s	EAT (wb)	14	THC	30.8	30.8	34.7	28.9	28.9	32.6	27.0	27.0	30.4	24.9	24.9	28.1	22.7	22.7	25.6
			SHC	26.9	30.8	34.7	25.2	28.9	32.6	23.5	27.0	30.4	21.7	24.9	28.1	19.8	22.7	25.6
		17	THC	31.1	31.1	35.6	28.9	28.9	33.9	27.0	27.0	31.6	24.9	24.9	29.2	22.7	22.7	26.6
			SHC	25.3	30.5	35.6	24.0	28.9	33.9	22.4	27.0	31.6	20.7	24.9	29.2	18.8	22.7	26.6
		19	THC	34.1	34.1	34.1	31.8	31.8	31.8	29.2	29.2	29.4	26.4	26.4	28.3	23.5	23.5	27.1
			SHC	20.6	25.9	31.2	19.7	25.1	30.5	18.7	24.1	29.4	17.6	23.0	28.3	16.5	21.8	27.1
		22	THC	36.9	36.9	36.9	35.1	35.1	35.1	33.0	33.0	33.0	30.3	30.3	30.3	27.3	27.3	27.3
			SHC	15.2	20.4	25.6	14.5	19.8	25.1	13.8	19.2	24.5	12.9	18.2	23.6	11.8	17.2	22.6
		24	THC	—	39.0	39.0	—	37.1	37.1	—	35.2	35.2	—	33.0	33.0	—	30.2	30.2
			SHC	—	16.0	21.4	—	15.4	20.7	—	14.7	20.0	—	14.1	19.4	—	13.2	18.6
1805 L/s	EAT (wb)	14	THC	32.2	32.2	36.3	30.2	30.2	34.1	28.2	28.2	31.8	26.0	26.0	29.4	23.7	23.7	26.8
			SHC	28.1	32.2	36.3	26.3	30.2	34.1	24.6	28.2	31.8	22.7	26.0	29.4	20.7	23.7	26.8
		17	THC	32.2	32.2	37.7	30.2	30.2	35.4	28.2	28.2	33.0	26.0	26.0	30.5	23.7	23.7	27.8
			SHC	26.7	32.2	37.7	25.1	30.2	35.4	23.4	28.2	33.0	21.6	26.0	30.5	19.7	23.7	27.8
		19	THC	34.6	34.6	34.6	32.6	32.6	32.8	29.9	29.9	31.8	27.0	27.0	30.7	24.1	24.1	29.1
			SHC	21.6	27.5	33.4	20.9	26.8	32.8	19.8	25.8	31.8	18.7	24.7	30.7	17.4	23.3	29.1
		22	THC	37.4	37.4	37.4	35.6	35.6	35.6	33.5	33.5	33.5	30.9	30.9	30.9	27.8	27.8	27.8
			SHC	15.5	21.3	27.0	14.9	20.7	26.5	14.2	20.2	26.1	13.3	19.3	25.3	12.3	18.3	24.3
		24	THC	—	39.4	39.4	—	37.5	37.5	—	35.5	35.5	—	33.3	33.3	—	30.6	30.6
			SHC	—	16.5	22.3	—	15.8	21.6	—	15.2	20.9	—	14.6	20.5	—	13.7	19.7
2006 L/s	EAT (wb)	14	THC	33.2	33.2	37.4	31.3	31.3	35.3	29.2	29.2	33.0	27.0	27.0	30.4	24.6	24.6	27.7
			SHC	28.9	33.2	37.4	27.3	31.3	35.3	25.5	29.2	33.0	23.5	27.0	30.4	21.4	24.6	27.7
		17	THC	33.2	33.2	38.9	31.4	31.4	36.7	29.3	29.3	34.3	27.0	27.0	31.6	24.6	24.6	28.9
			SHC	27.5	33.2	38.9	26.0	31.4	36.7	24.3	29.3	34.3	22.4	27.0	31.6	20.4	24.6	28.9
		19	THC	35.0	35.0	35.5	33.1	33.1	35.0	30.4	30.4	34.1	27.5	27.5	32.8	24.7	24.7	30.9
			SHC	22.5	29.0	35.5	21.9	28.5	35.0	20.9	27.5	34.1	19.7	26.3	32.8	18.3	24.6	30.9
		22	THC	37.8	37.8	37.8	35.9	35.9	35.9	33.9	33.9	33.9	31.3	31.3	31.3	28.2	28.2	28.2
			SHC	15.9	22.1	28.4	15.2	21.5	27.9	14.6	21.1	27.6	13.7	20.4	27.0	12.7	19.4	26.0
		24	THC	—	39.7	39.7	—	37.8	37.8	—	35.7	35.7	—	33.6	33.6	—	30.9	30.9
			SHC	—	16.8	23.1	—	16.2	22.5	—	15.6	21.8	—	15.0	21.4	—	14.2	20.8

LEGEND

—	Do Not Operate
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
L/s	Liters Per Second
SHC	Sensible Heat Capacity (kW) Gross
THC	Total Heat Capacity (kW) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D12 2-STAGE COOLING (ENGLISH)

50TC-D12				AMBIENT TEMPERATURE (°F)														
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
2550 Cfm	EAT (wb)	58	THC	93.2	93.2	105.1	87.6	87.6	98.8	81.7	81.7	92.1	75.3	75.3	84.9	68.4	68.4	77.2
			SHC	81.2	93.2	105.1	76.4	87.6	98.8	71.2	81.7	92.1	65.6	75.3	84.9	59.7	68.4	77.2
		62	THC	97.7	97.7	102.3	90.3	90.3	98.7	82.7	82.7	94.1	75.4	75.4	88.3	68.6	68.6	80.3
			SHC	74.6	88.5	102.3	71.1	84.9	98.7	67.1	80.6	94.1	62.5	75.4	88.3	56.8	68.6	80.3
		67	THC	110.1	110.1	110.1	102.0	102.0	102.0	93.9	93.9	93.9	84.9	84.9	84.9	75.3	75.3	75.9
			SHC	62.5	76.4	90.2	59.1	73.0	86.8	55.7	69.6	83.4	52.1	65.9	79.8	48.3	62.1	75.9
		72	THC	120.9	120.9	120.9	114.9	114.9	114.9	106.7	106.7	106.7	97.7	97.7	97.7	87.9	87.9	87.9
			SHC	48.9	62.7	76.6	46.6	60.5	74.4	43.5	57.4	71.3	40.2	54.1	68.0	36.6	50.5	64.3
		76	THC	—	128.5	128.5	—	122.6	122.6	—	116.2	116.2	—	108.0	108.0	—	98.5	98.5
			SHC	—	51.2	65.2	—	49.1	63.1	—	46.8	60.9	—	44.0	58.0	—	40.8	54.8
2975 Cfm	EAT (wb)	58	THC	99.6	99.6	112.3	93.6	93.6	105.6	87.3	87.3	98.5	80.5	80.5	90.8	73.3	73.3	82.7
			SHC	86.8	99.6	112.3	81.6	93.6	105.6	76.1	87.3	98.5	70.2	80.5	90.8	63.9	73.3	82.7
		62	THC	101.8	101.8	113.1	94.4	94.4	107.9	87.4	87.4	102.4	80.6	80.6	94.4	73.4	73.4	86.0
			SHC	81.2	97.1	113.1	76.8	92.4	107.9	72.5	87.4	102.4	66.8	80.6	94.4	60.8	73.4	86.0
		67	THC	113.8	113.8	113.8	105.8	105.8	105.8	97.1	97.1	97.1	87.9	87.9	88.4	77.9	77.9	84.4
			SHC	66.6	82.7	98.7	63.5	79.5	95.6	59.9	76.0	92.1	56.3	72.3	88.4	52.4	68.4	84.4
		72	THC	123.9	123.9	123.9	117.9	117.9	117.9	110.2	110.2	110.2	101.0	101.0	101.0	90.8	90.8	90.8
			SHC	50.5	66.3	82.2	48.3	64.2	80.2	45.5	61.6	77.7	42.1	58.3	74.4	38.5	54.7	70.8
		76	THC	—	131.1	131.1	—	125.0	125.0	—	118.5	118.5	—	110.7	110.7	—	101.3	101.3
			SHC	—	53.1	69.4	—	51.0	67.2	—	48.7	64.9	—	46.2	62.4	—	43.1	59.3
3400 Cfm	EAT (wb)	58	THC	105.2	105.2	118.6	98.6	98.6	111.3	92.0	92.0	103.8	85.0	85.0	95.8	77.4	77.4	87.3
			SHC	91.7	105.2	118.6	86.0	98.6	111.3	80.2	92.0	103.8	74.1	85.0	95.8	67.5	77.4	87.3
		62	THC	106.1	106.1	121.5	98.8	98.8	115.7	92.2	92.2	107.9	85.1	85.1	99.6	77.5	77.5	90.8
			SHC	86.4	104.0	121.5	81.9	98.8	115.7	76.4	92.2	107.9	70.5	85.1	99.6	64.2	77.5	90.8
		67	THC	116.4	116.4	116.4	108.7	108.7	108.7	99.7	99.7	100.5	90.2	90.2	96.7	80.1	80.1	92.6
			SHC	70.3	88.5	106.6	67.4	85.7	104.0	63.9	82.2	100.5	60.2	78.4	96.7	56.2	74.4	92.6
		72	THC	126.0	126.0	126.0	119.9	119.9	119.9	112.6	112.6	112.6	103.4	103.4	103.4	93.1	93.1	93.1
			SHC	51.8	69.6	87.4	49.6	67.5	85.5	47.1	65.4	83.6	43.9	62.2	80.6	40.3	58.7	77.0
		76	THC	—	133.0	133.0	—	126.7	126.7	—	120.0	120.0	—	112.5	112.5	—	103.2	103.2
			SHC	—	54.7	72.9	—	52.5	70.6	—	50.3	68.3	—	48.0	66.3	—	45.1	63.5
3825 Cfm	EAT (wb)	58	THC	109.8	109.8	123.9	103.1	103.1	116.3	96.1	96.1	108.4	88.8	88.8	100.2	80.9	80.9	91.3
			SHC	95.8	109.8	123.9	89.9	103.1	116.3	83.8	96.1	108.4	77.4	88.8	100.2	70.5	80.9	91.3
		62	THC	110.0	110.0	128.8	103.2	103.2	120.9	96.3	96.3	112.7	88.9	88.9	104.1	81.0	81.0	94.9
			SHC	91.2	110.0	128.8	85.6	103.2	120.9	79.8	96.3	112.7	73.7	88.9	104.1	67.2	81.0	94.9
		67	THC	118.2	118.2	118.2	111.1	111.1	112.0	101.9	101.9	108.6	92.2	92.2	104.7	82.2	82.2	99.3
			SHC	73.7	93.9	114.0	71.2	91.6	112.0	67.7	88.2	108.6	63.9	84.3	104.7	59.4	79.4	99.3
		72	THC	127.6	127.6	127.6	121.4	121.4	121.4	114.4	114.4	114.4	105.3	105.3	105.3	94.8	94.8	94.8
			SHC	53.0	72.7	92.3	50.8	70.6	90.4	48.6	68.8	89.1	45.5	66.0	86.4	41.9	62.5	83.1
		76	THC	—	134.4	134.4	—	128.0	128.0	—	121.1	121.1	—	113.8	113.8	—	104.5	104.5
			SHC	—	56.2	76.0	—	54.0	73.8	—	51.8	71.5	—	49.7	69.8	—	46.9	67.3
4250 Cfm	EAT (wb)	58	THC	113.3	113.3	127.8	106.9	106.9	120.6	99.7	99.7	112.5	92.1	92.1	103.9	84.0	84.0	94.7
			SHC	98.8	113.3	127.8	93.2	106.9	120.6	87.0	99.7	112.5	80.3	92.1	103.9	73.2	84.0	94.7
		62	THC	113.4	113.4	132.8	107.0	107.0	125.3	99.9	99.9	116.9	92.2	92.2	108.0	84.1	84.1	98.5
			SHC	94.0	113.4	132.8	88.7	107.0	125.3	82.8	99.9	116.9	76.4	92.2	108.0	69.7	84.1	98.5
		67	THC	119.6	119.6	121.1	112.9	112.9	119.5	103.8	103.8	116.3	94.0	94.0	112.1	84.4	84.4	105.4
			SHC	76.9	99.0	121.1	74.7	97.1	119.5	71.3	93.8	116.3	67.4	89.8	112.1	62.5	83.9	105.4
		72	THC	128.9	128.9	128.9	122.5	122.5	122.5	115.7	115.7	115.7	106.7	106.7	106.7	96.2	96.2	96.2
			SHC	54.1	75.5	97.0	52.0	73.5	95.1	49.8	72.0	94.1	46.9	69.5	92.1	43.4	66.1	88.9
		76	THC	—	135.5	135.5	—	129.0	129.0	—	122.0	122.0	—	114.7	114.7	—	105.5	105.5
			SHC	—	57.5	78.9	—	55.3	76.7	—	53.1	74.5	—	51.1	73.1	—	48.5	70.9

LEGEND

—	Do Not Operate
CFM	Cubic Feet Per Minute (air supply)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity (1000 btuh) Gross
THC	Total Heat Capacity (1000 btuh) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D14 2-STAGE COOLING (SI)

50TC-D14				AMBIENT TEMPERATURE (°C)														
				29			35			41			46			52		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				24	27	29	24	27	29	24	27	29	24	27	29	24	27	29
1416 L/s	EAT (wb)	14	THC	—	—	—	—	—	—	—	—	—	—	—	—	21.2	21.2	24.6
			SHC	—	—	—	—	—	—	—	—	—	—	—	—	17.8	21.2	24.6
		17	THC	31.9	31.9	31.9	29.4	29.4	29.6	26.7	26.7	28.6	23.9	23.9	27.5	21.2	21.2	25.8
			SHC	20.9	25.7	30.5	19.9	24.8	29.6	19.0	23.8	28.6	17.9	22.7	27.5	16.7	21.2	25.8
		19	THC	36.1	36.1	36.1	33.3	33.3	33.3	30.6	30.6	30.6	27.6	27.6	27.6	24.4	24.4	24.4
			SHC	15.8	20.6	25.4	14.9	19.7	24.5	14.0	18.8	23.6	13.1	17.9	22.8	12.2	17.1	21.9
		22	THC	40.4	40.4	40.4	37.8	37.8	37.8	34.9	34.9	34.9	31.8	31.8	31.8	28.6	28.6	28.6
			SHC	10.4	15.2	20.0	9.6	14.4	19.3	8.8	13.7	18.5	8.1	12.9	17.7	7.3	12.1	17.0
		24	THC	—	43.5	43.5	—	41.3	41.3	—	38.5	38.5	—	35.5	35.5	—	32.2	32.2
			SHC	—	10.5	15.4	—	10.0	14.9	—	9.3	14.2	—	8.7	13.5	—	8.0	12.8
1652 L/s	EAT (wb)	14	THC	31.4	31.4	36.5	29.4	29.4	34.1	27.3	27.3	31.7	25.1	25.1	29.1	22.7	22.7	26.4
			SHC	26.4	31.4	36.5	24.7	29.4	34.1	22.9	27.3	31.7	21.0	25.1	29.1	19.0	22.7	26.4
		17	THC	33.2	33.2	34.0	30.5	30.5	33.1	27.7	27.7	32.1	25.1	25.1	30.5	22.7	22.7	27.7
			SHC	22.8	28.4	34.0	21.8	27.5	33.1	20.9	26.5	32.1	19.7	25.1	30.5	17.8	22.7	27.7
		19	THC	37.4	37.4	37.4	34.5	34.5	34.5	31.6	31.6	31.6	28.5	28.5	28.5	25.1	25.1	25.1
			SHC	16.8	22.4	28.0	15.9	21.5	27.1	15.0	20.7	26.3	14.2	19.8	25.4	13.3	18.9	24.5
		22	THC	41.6	41.6	41.6	39.1	39.1	39.1	36.1	36.1	36.1	32.8	32.8	32.8	29.4	29.4	29.4
			SHC	10.5	16.1	21.7	9.8	15.4	21.1	9.0	14.7	20.3	8.3	13.9	19.5	7.5	13.1	18.7
		24	THC	—	44.4	44.4	—	42.2	42.2	—	39.6	39.6	—	36.5	36.5	—	—	—
			SHC	—	10.7	16.4	—	10.2	15.9	—	9.6	15.3	—	9.0	14.7	—	—	—
1888 L/s	EAT (wb)	14	THC	33.2	33.2	38.5	31.0	31.0	36.0	28.7	28.7	33.4	26.4	26.4	30.7	23.9	23.9	27.8
			SHC	27.8	33.2	38.5	26.0	31.0	36.0	24.1	28.7	33.4	22.1	26.4	30.7	20.0	23.9	27.8
		17	THC	34.2	34.2	37.4	31.4	31.4	36.4	28.8	28.8	34.7	26.4	26.4	32.2	23.9	23.9	29.2
			SHC	24.6	31.0	37.4	23.6	30.0	36.4	22.3	28.5	34.7	20.7	26.4	32.2	18.7	23.9	29.2
		19	THC	38.5	38.5	38.5	35.4	35.4	35.4	32.3	32.3	32.3	29.1	29.1	29.1	25.6	25.6	27.1
			SHC	17.8	24.2	30.6	16.8	23.3	29.7	16.0	22.4	28.8	15.1	21.5	28.0	14.2	20.7	27.1
		22	THC	42.3	42.3	42.3	40.0	40.0	40.0	36.8	36.8	36.8	33.5	33.5	33.5	30.0	30.0	30.0
			SHC	10.5	16.9	23.3	9.9	16.3	22.8	9.2	15.6	22.1	8.4	14.8	21.3	7.6	14.0	20.5
		24	THC	—	45.0	45.0	—	42.6	42.6	—	40.1	40.1	—	—	—	—	—	—
			SHC	—	10.9	17.3	—	10.4	16.8	—	9.9	16.3	—	—	—	—	—	—
2124 L/s	EAT (wb)	14	THC	34.6	34.6	40.2	32.3	32.3	37.5	29.9	29.9	34.8	27.5	27.5	32.0	24.8	24.8	29.0
			SHC	29.0	34.6	40.2	27.0	32.3	37.5	25.0	29.9	34.8	22.9	27.5	32.0	20.7	24.8	29.0
		17	THC	35.0	35.0	40.7	32.4	32.4	38.9	30.0	30.0	36.5	27.5	27.5	33.5	24.9	24.9	30.4
			SHC	26.3	33.5	40.7	25.0	31.9	38.9	23.4	30.0	36.5	21.4	27.5	33.5	19.4	24.9	30.4
		19	THC	39.0	39.0	39.0	35.9	35.9	35.9	32.8	32.8	32.8	29.4	29.4	30.4	26.0	26.0	29.5
			SHC	18.6	25.8	33.0	17.7	24.9	32.1	16.9	24.1	31.3	16.0	23.2	30.4	15.1	22.4	29.5
		22	THC	42.7	42.7	42.7	40.3	40.3	40.3	37.3	37.3	37.3	33.9	33.9	33.9	30.3	30.3	30.3
			SHC	10.5	17.6	24.8	9.9	17.1	24.3	9.2	16.4	23.7	8.5	15.7	22.9	7.7	14.9	22.1
		24	THC	—	45.3	45.3	—	42.8	42.8	—	40.3	40.3	—	—	—	—	—	—
			SHC	—	11.0	18.2	—	10.5	17.7	—	10.0	17.2	—	—	—	—	—	—
2360 L/s	EAT (wb)	14	THC	35.7	35.7	41.6	33.3	33.3	38.8	30.9	30.9	36.0	28.3	28.3	33.0	25.6	25.6	29.9
			SHC	29.9	35.7	41.6	27.8	33.3	38.8	25.8	30.9	36.0	23.6	28.3	33.0	21.3	25.6	29.9
		17	THC	35.9	35.9	43.0	33.3	33.3	40.7	30.9	30.9	37.7	28.3	28.3	34.6	25.6	25.6	31.4
			SHC	27.6	35.3	43.0	26.0	33.3	40.7	24.1	30.9	37.7	22.0	28.3	34.6	19.9	25.6	31.4
		19	THC	39.3	39.3	39.3	36.3	36.3	36.3	33.0	33.0	33.7	29.7	29.7	32.8	26.1	26.1	31.9
			SHC	19.3	27.3	35.2	18.5	26.5	34.5	17.7	25.7	33.7	16.8	24.8	32.8	16.0	24.0	31.9
		22	THC	42.8	42.8	42.8	40.4	40.4	40.4	37.5	37.5	37.5	34.1	34.1	34.1	30.4	30.4	30.4
			SHC	10.4	18.3	26.2	9.8	17.8	25.7	9.2	17.2	25.2	8.4	16.5	24.5	7.7	15.7	23.7
		24	THC	—	45.3	45.3	—	42.8	42.8	—	40.2	40.2	—	—	—	—	—	—
			SHC	—	11.0	19.0	—	10.5	18.4	—	10.0	17.9	—	—	—	—	—	—

LEGEND

—	Do Not Operate
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
L/s	Liters Per Second
SHC	Sensible Heat Capacity (kW) Gross
THC	Total Heat Capacity (kW) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D14 2-STAGE COOLING (ENGLISH)

50TC-D14				AMBIENT TEMPERATURE (°F)														
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
3000 Cfm	EAT (wb)	58	THC	—	—	—	—	—	—	—	—	—	—	—	—	72.3	72.3	84.0
			SHC	—	—	—	—	—	—	—	—	—	—	—	—	60.7	72.3	84.0
		62	THC	108.9	108.9	108.9	100.3	100.3	101.0	91.1	91.1	97.7	81.4	81.4	93.8	72.5	72.5	88.1
			SHC	71.3	87.7	104.2	68.0	84.5	101.0	64.8	81.2	97.7	61.2	77.5	93.8	56.9	72.5	88.1
		67	THC	123.1	123.1	123.1	113.7	113.7	113.7	104.3	104.3	104.3	94.1	94.1	94.1	83.2	83.2	83.2
			SHC	53.8	70.3	86.7	50.7	67.2	83.7	47.8	64.3	80.7	44.8	61.2	77.7	41.7	58.2	74.6
		72	THC	138.0	138.0	138.0	128.9	128.9	128.9	119.0	119.0	119.0	108.5	108.5	108.5	97.5	97.5	97.5
			SHC	35.4	51.9	68.4	32.8	49.3	65.8	30.2	46.7	63.2	27.5	44.0	60.5	24.9	41.4	57.9
		76	THC	—	148.4	148.4	—	141.1	141.1	—	131.5	131.5	—	121.1	121.1	—	109.9	109.9
			SHC	—	36.0	52.5	—	34.2	50.7	—	31.9	48.4	—	29.6	46.1	—	27.2	43.7
3500 Cfm	EAT (wb)	58	THC	107.3	107.3	124.5	100.4	100.4	116.5	93.2	93.2	108.2	85.5	85.5	99.3	77.4	77.4	90.0
			SHC	90.1	107.3	124.5	84.3	100.4	116.5	78.2	93.2	108.2	71.6	85.5	99.3	64.8	77.4	90.0
		62	THC	113.3	113.3	116.1	104.1	104.1	112.8	94.6	94.6	109.5	85.6	85.6	104.1	77.5	77.5	94.4
			SHC	77.8	96.9	116.1	74.5	93.7	112.8	71.3	90.4	109.5	67.1	85.6	104.1	60.7	77.5	94.4
		67	THC	127.8	127.8	127.8	117.8	117.8	117.8	107.8	107.8	107.8	97.1	97.1	97.1	85.8	85.8	85.8
			SHC	57.3	76.5	95.7	54.2	73.4	92.6	51.3	70.5	89.7	48.3	67.5	86.7	45.3	64.4	83.6
		72	THC	142.0	142.0	142.0	133.5	133.5	133.5	123.1	123.1	123.1	112.0	112.0	112.0	100.4	100.4	100.4
			SHC	35.7	55.0	74.2	33.5	52.7	72.0	30.8	50.1	69.3	28.2	47.4	66.6	25.5	44.7	63.9
		76	THC	—	151.7	151.7	—	144.0	144.0	—	135.1	135.1	—	124.6	124.6	—	—	—
			SHC	—	36.6	55.9	—	34.9	54.2	—	32.9	52.2	—	30.7	50.0	—	—	—
4000 Cfm	EAT (wb)	58	THC	113.2	113.2	131.4	105.8	105.8	122.9	98.1	98.1	114.0	90.0	90.0	104.7	81.5	81.5	94.9
			SHC	94.9	113.2	131.4	88.7	105.8	122.9	82.2	98.1	114.0	75.3	90.0	104.7	68.2	81.5	94.9
		62	THC	116.6	116.6	127.7	107.1	107.1	124.3	98.4	98.4	118.3	90.1	90.1	109.8	81.7	81.7	99.5
			SHC	84.0	105.8	127.7	80.7	102.5	124.3	76.2	97.3	118.3	70.5	90.1	109.8	63.8	81.7	99.5
		67	THC	131.3	131.3	131.3	120.7	120.7	120.7	110.2	110.2	110.2	99.2	99.2	99.2	87.5	87.5	92.4
			SHC	60.6	82.5	104.4	57.5	79.4	101.3	54.6	76.5	98.4	51.6	73.5	95.4	48.6	70.5	92.4
		72	THC	144.3	144.3	144.3	136.5	136.5	136.5	125.7	125.7	125.7	114.4	114.4	114.4	102.3	102.3	102.3
			SHC	35.9	57.8	79.6	33.9	55.8	77.7	31.3	53.3	75.3	28.6	50.6	72.6	26.0	47.9	69.9
		76	THC	—	153.6	153.6	—	145.5	145.5	—	136.9	136.9	—	—	—	—	—	—
			SHC	—	37.2	59.2	—	35.5	57.5	—	33.7	55.7	—	—	—	—	—	—
4500 Cfm	EAT (wb)	58	THC	118.1	118.1	137.3	110.1	110.1	128.1	102.1	102.1	118.9	93.7	93.7	109.1	84.8	84.8	98.9
			SHC	98.9	118.1	137.3	92.2	110.1	128.1	85.4	102.1	118.9	78.2	93.7	109.1	70.8	84.8	98.9
		62	THC	119.5	119.5	138.8	110.5	110.5	132.7	102.3	102.3	124.7	93.8	93.8	114.4	84.9	84.9	103.7
			SHC	89.9	114.3	138.8	85.3	109.0	132.7	79.9	102.3	124.7	73.2	93.8	114.4	66.1	84.9	103.7
		67	THC	133.1	133.1	133.1	122.6	122.6	122.6	111.8	111.8	111.8	100.4	100.4	103.8	88.6	88.6	100.8
			SHC	63.4	88.0	112.6	60.5	85.1	109.7	57.6	82.2	106.8	54.7	79.2	103.8	51.7	76.3	100.8
		72	THC	145.6	145.6	145.6	137.7	137.7	137.7	127.3	127.3	127.3	115.7	115.7	115.7	103.4	103.4	103.4
			SHC	35.8	60.1	84.5	33.9	58.4	82.8	31.5	56.1	80.8	28.9	53.6	78.2	26.2	50.9	75.5
		76	THC	—	154.5	154.5	—	146.1	146.1	—	137.5	137.5	—	—	—	—	—	—
			SHC	—	37.5	62.2	—	35.8	60.4	—	34.1	58.7	—	—	—	—	—	—
5000 Cfm	EAT (wb)	58	THC	122.0	122.0	142.0	113.7	113.7	132.4	105.4	105.4	122.8	96.6	96.6	112.7	87.4	87.4	102.1
			SHC	102.0	122.0	142.0	95.0	113.7	132.4	87.9	105.4	122.8	80.5	96.6	112.7	72.7	87.4	102.1
		62	THC	122.5	122.5	146.8	113.8	113.8	138.9	105.5	105.5	128.8	96.7	96.7	118.2	87.5	87.5	107.1
			SHC	94.2	120.5	146.8	88.8	113.8	138.9	82.2	105.5	128.8	75.2	96.7	118.2	67.9	87.5	107.1
		67	THC	134.1	134.1	134.1	123.9	123.9	123.9	112.7	112.7	115.0	101.2	101.2	112.0	89.2	89.2	109.0
			SHC	66.0	93.1	120.3	63.3	90.6	117.9	60.4	87.7	115.0	57.5	84.8	112.0	54.7	81.8	109.0
		72	THC	146.1	146.1	146.1	138.0	138.0	138.0	128.0	128.0	128.0	116.4	116.4	116.4	103.7	103.7	103.7
			SHC	35.5	62.4	89.3	33.6	60.6	87.6	31.4	58.7	86.0	28.8	56.2	83.6	26.2	53.6	80.9
		76	THC	—	154.6	154.6	—	146.1	146.1	—	137.2	137.2	—	—	—	—	—	—
			SHC	—	37.6	64.7	—	35.9	62.8	—	34.2	61.1	—	—	—	—	—	—

LEGEND

—	Do Not Operate
CFM	Cubic Feet Per Minute (air supply)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity (1000 btuh) Gross
THC	Total Heat Capacity (1000 btuh) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D16 2-STAGE COOLING (SI)

50TC-D16				AMBIENT TEMPERATURE (°C)														
				29			35			41			46			52		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				24	27	29	24	27	29	24	27	29	24	27	29	24	27	29
1770 L/s	EAT (wb)	14	THC	37.9	37.9	42.7	36.0	36.0	40.8	33.6	33.6	38.2	28.8	28.8	32.7	28.8	28.8	32.7
			SHC	32.6	37.7	42.7	31.1	36.0	40.8	29.1	33.6	38.2	25.0	28.8	32.7	24.9	28.8	32.7
		17	THC	40.2	40.2	40.7	37.7	37.7	39.5	34.7	34.7	38.0	29.0	29.0	33.7	29.0	29.0	33.7
			SHC	29.6	35.2	40.7	28.5	34.0	39.5	27.1	32.5	38.0	23.5	28.6	33.7	23.5	28.6	33.7
		19	THC	44.5	44.5	44.5	42.3	42.3	42.3	39.3	39.3	39.3	32.6	32.6	32.6	32.6	32.6	32.6
			SHC	24.2	29.7	35.2	23.4	28.9	34.5	22.2	27.8	33.3	19.6	25.1	30.7	19.6	25.1	30.7
		22	THC	48.3	48.3	48.3	46.4	46.4	46.4	44.0	44.0	44.0	37.5	37.5	37.5	37.5	37.5	37.5
			SHC	18.3	23.9	29.4	17.6	23.2	28.8	16.8	22.4	28.0	14.5	20.1	25.7	14.5	20.1	25.7
		24	THC	—	51.1	51.1	—	49.0	49.0	—	46.8	46.8	—	41.1	41.1	—	41.1	41.1
			SHC	—	19.1	25.2	—	18.5	24.5	—	17.7	23.7	—	15.9	21.7	—	15.9	21.7
2065 L/s	EAT (wb)	14	THC	40.1	40.1	45.5	38.2	38.2	43.3	35.8	35.8	40.6	30.7	30.7	34.8	30.7	30.7	34.8
			SHC	34.7	40.1	45.5	33.1	38.2	43.3	31.0	35.8	40.6	26.6	30.7	34.8	26.6	30.7	34.8
		17	THC	41.6	41.6	44.5	39.1	39.1	43.3	36.4	36.4	40.9	30.7	30.7	36.3	30.7	30.7	36.2
			SHC	31.9	38.2	44.5	30.7	37.0	43.3	28.8	34.9	40.9	25.2	30.7	36.3	25.2	30.7	36.2
		19	THC	45.8	45.8	45.8	43.7	43.7	43.7	40.7	40.7	40.7	33.7	33.7	33.9	33.6	33.6	33.9
			SHC	25.6	31.9	38.1	24.9	31.2	37.6	23.8	30.2	36.6	21.1	27.5	33.9	21.1	27.5	33.9
		22	THC	49.5	49.5	49.5	47.5	47.5	47.5	45.1	45.1	45.1	38.6	38.6	38.6	38.6	38.6	38.6
			SHC	18.8	25.1	31.3	18.2	24.5	30.7	17.4	23.8	30.1	15.2	21.7	28.1	15.2	21.7	28.1
		24	THC	—	52.1	52.1	—	49.9	49.9	—	47.5	47.5	—	42.1	42.1	—	42.1	42.1
			SHC	—	19.8	26.7	—	19.1	25.9	—	18.3	25.1	—	16.6	23.2	—	16.6	23.2
2360 L/s	EAT (wb)	14	THC	42.0	42.0	47.6	40.0	40.0	45.4	37.6	37.6	42.6	32.3	32.3	36.6	32.3	32.3	36.6
			SHC	36.3	42.0	47.6	34.7	40.0	45.4	32.6	37.6	42.6	28.0	32.3	36.6	27.9	32.3	36.6
		17	THC	42.8	42.8	47.7	40.6	40.6	45.8	37.9	37.9	43.7	32.3	32.3	38.1	32.3	32.3	38.1
			SHC	33.7	40.7	47.7	32.2	39.0	45.8	30.5	37.1	43.7	26.5	32.3	38.1	26.5	32.3	38.1
		19	THC	46.8	46.8	46.8	44.7	44.7	44.7	41.7	41.7	41.7	34.5	34.5	36.9	34.5	34.5	36.8
			SHC	26.8	33.8	40.8	26.2	33.3	40.4	25.2	32.4	39.6	22.5	29.7	36.9	22.5	29.7	36.8
		22	THC	50.4	50.4	50.4	48.2	48.2	48.2	45.9	45.9	45.9	39.5	39.5	39.5	39.4	39.4	39.4
			SHC	19.3	26.2	33.1	18.6	25.6	32.5	17.9	24.9	32.0	15.8	23.0	30.3	15.8	23.0	30.2
		24	THC	—	52.8	52.8	—	50.5	50.5	—	48.0	48.0	—	42.7	42.7	—	42.7	42.7
			SHC	—	20.4	28.0	—	19.7	27.3	—	18.9	26.3	—	17.3	24.6	—	17.2	24.6
2655 L/s	EAT (wb)	14	THC	43.5	43.5	49.3	41.6	41.6	47.2	39.2	39.2	44.4	33.6	33.6	38.2	33.6	33.6	38.1
			SHC	37.7	43.5	49.3	36.0	41.6	47.2	33.9	39.2	44.4	29.1	33.6	38.2	29.1	33.6	38.1
		17	THC	43.9	43.9	49.8	41.9	41.9	48.3	39.2	39.2	46.2	33.7	33.7	39.7	33.6	33.6	39.7
			SHC	34.9	42.4	49.8	33.7	41.0	48.3	32.1	39.2	46.2	27.6	33.7	39.7	27.6	33.6	39.7
		19	THC	47.5	47.5	47.5	45.4	45.4	45.4	42.5	42.5	42.5	35.2	35.2	39.6	35.2	35.2	39.6
			SHC	27.9	35.6	43.3	27.4	35.2	43.0	26.5	34.4	42.4	23.7	31.7	39.6	23.7	31.7	39.6
		22	THC	51.0	51.0	51.0	48.8	48.8	48.8	46.5	46.5	46.5	40.1	40.1	40.1	40.1	40.1	40.1
			SHC	19.6	27.1	34.6	19.0	26.5	34.1	18.3	26.0	33.6	16.4	24.3	32.3	16.4	24.3	32.3
		24	THC	—	53.4	53.4	—	51.0	51.0	—	48.4	48.4	—	43.1	43.1	—	43.1	43.1
			SHC	—	20.9	29.1	—	20.2	28.3	—	19.3	27.3	—	17.8	25.8	—	17.8	25.8
2950 L/s	EAT (wb)	14	THC	44.7	44.7	50.7	43.0	43.0	48.7	40.5	40.5	46.0	34.8	34.8	39.5	34.8	34.8	39.5
			SHC	38.7	44.7	50.7	37.2	43.0	48.7	35.1	40.5	46.0	30.2	34.8	39.5	30.1	34.8	39.5
		17	THC	44.8	44.8	52.0	43.0	43.0	50.8	40.6	40.6	47.9	34.8	34.8	41.1	34.8	34.8	41.1
			SHC	36.2	44.1	52.0	35.2	43.0	50.8	33.3	40.6	47.9	28.6	34.8	41.1	28.6	34.8	41.1
		19	THC	48.1	48.1	48.1	46.0	46.0	46.0	43.1	43.1	45.0	35.8	35.8	42.0	35.8	35.8	42.0
			SHC	28.9	37.3	45.6	28.4	36.9	45.4	27.7	36.3	45.0	24.8	33.4	42.0	24.8	33.4	42.0
		22	THC	51.5	51.5	51.5	49.3	49.3	49.3	46.8	46.8	46.8	40.6	40.6	40.6	40.6	40.6	40.6
			SHC	20.0	28.1	36.1	19.3	27.4	35.6	18.6	26.9	35.1	16.9	25.5	34.2	16.9	25.5	34.2
		24	THC	—	53.8	53.8	—	51.4	51.4	—	48.7	48.7	—	43.4	43.4	—	43.4	43.4
			SHC	—	21.3	30.0	—	20.6	29.2	—	19.8	28.3	—	18.3	26.9	—	18.3	26.9

LEGEND

—	Do Not Operate
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
L/s	Liters Per Second
SHC	Sensible Heat Capacity (kW) Gross
THC	Total Heat Capacity (kW) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

COOLING CAPACITIES: 50TC-D16 2-STAGE COOLING (ENGLISH)

50TC-D16				AMBIENT TEMPERATURE (°F)														
				85			95			105			115			125		
				EAT (db)			EAT (db)			EAT (db)			EAT (db)			EAT (db)		
				75	80	85	75	80	85	75	80	85	75	80	85	75	80	85
3750 Cfm	EAT (wb)	58	THC	129.3	129.3	145.8	122.7	122.7	139.1	114.8	114.8	130.2	98.4	98.4	111.6	98.4	98.4	111.6
			SHC	111.3	128.6	145.8	106.2	122.7	139.1	99.4	114.8	130.2	85.2	98.4	111.6	85.1	98.4	111.6
		62	THC	137.1	137.1	139.0	128.7	128.7	134.9	118.5	118.5	129.6	99.1	99.1	115.0	99.0	99.0	114.9
			SHC	101.1	120.0	139.0	97.2	116.1	134.9	92.3	111.0	129.6	80.2	97.6	115.0	80.1	97.5	114.9
		67	THC	151.8	151.8	151.8	144.3	144.3	144.3	134.2	134.2	134.2	111.2	111.2	111.2	111.1	111.1	111.1
			SHC	82.5	101.4	120.2	79.7	98.7	117.7	75.7	94.7	113.7	66.8	85.8	104.8	66.8	85.8	104.8
		72	THC	164.9	164.9	164.9	158.4	158.4	158.4	150.1	150.1	150.1	127.9	127.9	127.9	127.8	127.8	127.8
			SHC	62.5	81.4	100.3	60.2	79.2	98.2	57.3	76.4	95.5	49.6	68.7	87.8	49.6	68.7	87.7
		76	THC	—	174.4	174.4	—	167.3	167.3	—	159.7	159.7	—	140.4	140.4	—	140.3	140.3
			SHC	—	65.3	86.0	—	63.0	83.6	—	60.4	80.8	—	54.1	73.9	—	54.1	73.9
4375 Cfm	EAT (wb)	58	THC	136.9	136.9	155.3	130.2	130.2	147.7	122.1	122.1	138.5	104.8	104.8	118.8	104.7	104.7	118.8
			SHC	118.5	136.9	155.3	112.8	130.2	147.7	105.7	122.1	138.5	90.7	104.8	118.8	90.6	104.7	118.8
		62	THC	142.1	142.1	151.8	133.5	133.5	147.7	124.1	124.1	139.7	104.9	104.9	123.7	104.8	104.8	123.6
			SHC	108.7	130.2	151.8	104.8	126.2	147.7	98.3	119.0	139.7	86.1	104.9	123.7	86.0	104.8	123.6
		67	THC	156.3	156.3	156.3	149.0	149.0	149.0	138.9	138.9	138.9	114.9	114.9	115.7	114.8	114.8	115.6
			SHC	87.2	108.7	130.1	84.8	106.6	128.3	81.1	103.0	124.9	72.0	93.8	115.7	72.0	93.8	115.6
		72	THC	168.9	168.9	168.9	162.1	162.1	162.1	154.0	154.0	154.0	131.8	131.8	131.8	131.7	131.7	131.7
			SHC	64.3	85.6	106.9	62.0	83.5	104.9	59.3	81.1	102.8	51.9	73.9	95.8	51.9	73.9	95.8
		76	THC	—	177.9	177.9	—	170.3	170.3	—	162.0	162.0	—	143.6	143.6	—	143.5	143.5
			SHC	—	67.7	91.2	—	65.2	88.5	—	62.6	85.7	—	56.7	79.3	—	56.7	79.2
5000 Cfm	EAT (wb)	58	THC	143.3	143.3	162.5	136.6	136.6	155.0	128.3	128.3	145.5	110.2	110.2	125.0	110.1	110.1	124.9
			SHC	124.0	143.3	162.5	118.3	136.6	155.0	111.1	128.3	145.5	95.4	110.2	125.0	95.3	110.1	124.9
		62	THC	146.0	146.0	162.8	138.6	138.6	156.2	129.2	129.2	149.1	110.3	110.3	130.1	110.2	110.2	130.0
			SHC	115.1	138.9	162.8	109.8	133.0	156.2	104.0	126.5	149.1	90.5	110.3	130.1	90.4	110.2	130.0
		67	THC	159.6	159.6	159.6	152.4	152.4	152.4	142.4	142.4	142.4	117.7	117.7	125.8	117.6	117.6	125.7
			SHC	91.4	115.3	139.2	89.4	113.7	138.0	86.0	110.5	135.1	76.7	101.2	125.8	76.7	101.2	125.7
		72	THC	171.8	171.8	171.8	164.6	164.6	164.6	156.6	156.6	156.6	134.7	134.7	134.7	134.6	134.6	134.6
			SHC	65.7	89.3	112.8	63.5	87.2	110.9	61.0	85.0	109.1	54.0	78.6	103.3	53.9	78.6	103.2
		76	THC	—	180.3	180.3	—	172.4	172.4	—	163.8	163.8	—	145.7	145.7	—	145.6	145.6
			SHC	—	69.7	95.7	—	67.2	93.0	—	64.4	89.8	—	58.9	83.9	—	58.8	83.9
5625 Cfm	EAT (wb)	58	THC	148.4	148.4	168.3	142.0	142.0	161.1	133.6	133.6	151.6	114.8	114.8	130.2	114.7	114.7	130.1
			SHC	128.5	148.4	168.3	123.0	142.0	161.1	115.7	133.6	151.6	99.4	114.8	130.2	99.3	114.7	130.1
		62	THC	149.7	149.7	169.9	143.0	143.0	164.9	133.7	133.7	157.8	114.9	114.9	135.5	114.8	114.8	135.4
			SHC	119.1	144.5	169.9	115.0	140.0	164.9	109.6	133.7	157.8	94.3	114.9	135.5	94.2	114.8	135.4
		67	THC	162.1	162.1	162.1	155.0	155.0	155.0	145.0	145.0	145.0	120.1	120.1	135.0	120.0	120.0	135.0
			SHC	95.2	121.4	147.7	93.4	120.1	146.7	90.4	117.5	144.6	81.0	108.0	135.0	80.9	108.0	135.0
		72	THC	174.0	174.0	174.0	166.6	166.6	166.6	158.5	158.5	158.5	136.9	136.9	136.9	136.8	136.8	136.8
			SHC	67.0	92.6	118.2	64.8	90.5	116.3	62.4	88.6	114.7	55.8	83.0	110.2	55.8	83.0	110.2
		76	THC	—	182.2	182.2	—	174.0	174.0	—	165.2	165.2	—	147.1	147.1	—	147.0	147.0
			SHC	—	71.3	99.2	—	68.8	96.4	—	66.0	93.2	—	60.8	88.1	—	60.8	88.1
6250 Cfm	EAT (wb)	58	THC	152.6	152.6	173.1	146.6	146.6	166.3	138.3	138.3	156.8	118.8	118.8	134.8	118.8	118.8	134.7
			SHC	132.1	152.6	173.1	126.9	146.6	166.3	119.7	138.3	156.8	102.9	118.8	134.8	102.8	118.8	134.7
		62	THC	153.0	153.0	177.4	146.6	146.6	173.2	138.5	138.5	163.3	118.9	118.9	140.3	118.9	118.9	140.2
			SHC	123.5	150.5	177.4	120.1	146.6	173.2	113.6	138.5	163.3	97.6	118.9	140.3	97.5	118.9	140.2
		67	THC	164.1	164.1	164.1	156.9	156.9	156.9	147.1	147.1	153.4	122.3	122.3	143.3	122.2	122.2	143.2
			SHC	98.7	127.2	155.6	97.0	126.0	154.9	94.4	123.9	153.4	84.7	114.0	143.3	84.7	113.9	143.2
		72	THC	175.8	175.8	175.8	168.1	168.1	168.1	159.8	159.8	159.8	138.6	138.6	138.6	138.5	138.5	138.5
			SHC	68.2	95.8	123.3	65.9	93.6	121.3	63.6	91.7	119.8	57.5	87.1	116.8	57.5	87.1	116.8
		76	THC	—	183.7	183.7	—	175.3	175.3	—	166.3	166.3	—	148.2	148.2	—	148.1	148.1
			SHC	—	72.8	102.4	—	70.2	99.5	—	67.4	96.4	—	62.5	91.8	—	62.5	91.8

LEGEND

—	Do Not Operate
CFM	Cubic Feet Per Minute (air supply)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity (1000 btuh) Gross
THC	Total Heat Capacity (1000 btuh) Gross
kW	Compressor Kilowatts

NOTE: See Minimum-Maximum Airflow Ratings table on page 4. Do not operate outside these limits.

Performance data (cont)



Static Pressure Adders (Factory Options and/or Accessories)

Electric Heaters

18.17 kW (5 TONS)

CFM (in. wg)	600	900	1200	1400	1600	1800	2000	2200	2400	2600
1 ELECTRIC HEATER MODULE	0.03	0.05	0.07	0.09	0.09	0.10	0.11	0.11	0.12	0.13
2 ELECTRIC HEATER MODULES	0.13	0.15	0.16	0.16	0.16	0.17	0.17	0.17	0.18	0.18

21.48 kW-34.0 kW (6-10 TONS)

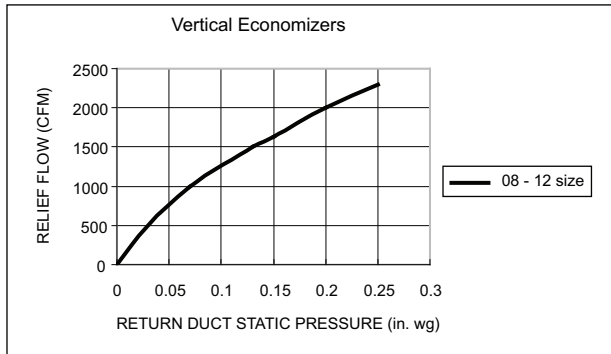
CFM (in. wg)	2250	2500	2750	3000	3250	3500	3750	4000	4250	4500	4750	5000	5250	5500	5750	6000
1 ELECTRIC HEATER MODULE	0.03	0.04	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14	0.15	0.16	0.18
2 ELECTRIC HEATER MODULES	0.04	0.05	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.15	0.16	0.17	0.19	0.20

42.5 kW (12.5 TONS)

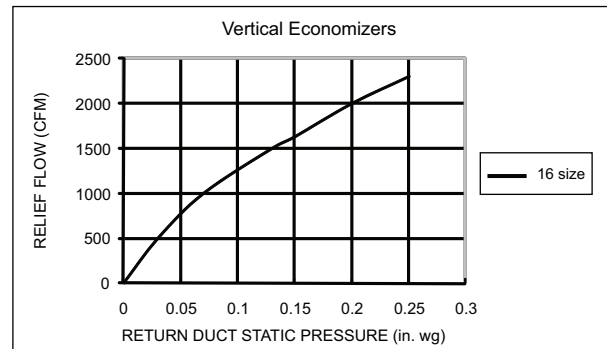
CFM (in. wg)	2813	3125	3438	3750	4063	4375	4688	5000	5313	5625	5938	6250
VERTICAL												
1 ELECTRIC HEATER MODULE	0.01	0.01	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	0.03	0.04
2 ELECTRIC HEATER MODULES	0.02	0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08
HORIZONTAL												
1 ELECTRIC HEATER MODULE	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.07	0.08	0.09
2 ELECTRIC HEATER MODULES	0.02	0.03	0.03	0.04	0.04	0.04	0.05	0.05	0.06	0.06	0.07	0.08

Economizer, Barometric Relief and Power Exhaust Performance

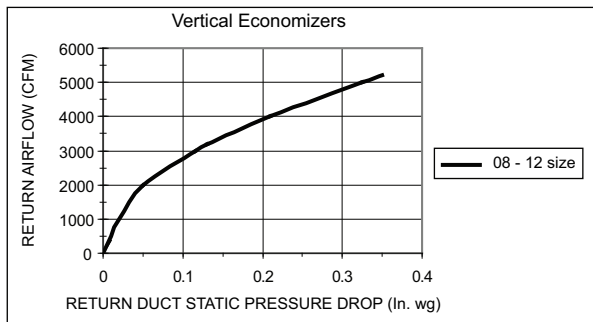
VERTICAL APPLICATION



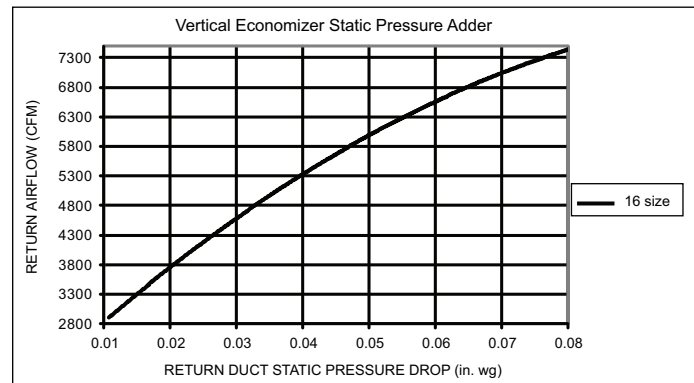
BAROMETRIC RELIEF FLOW SIZES 08-14



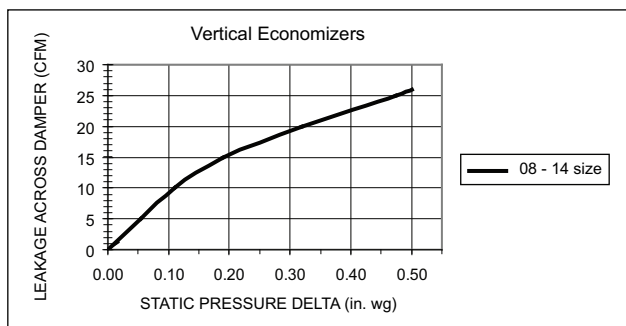
BAROMETRIC RELIEF FLOW SIZE 16



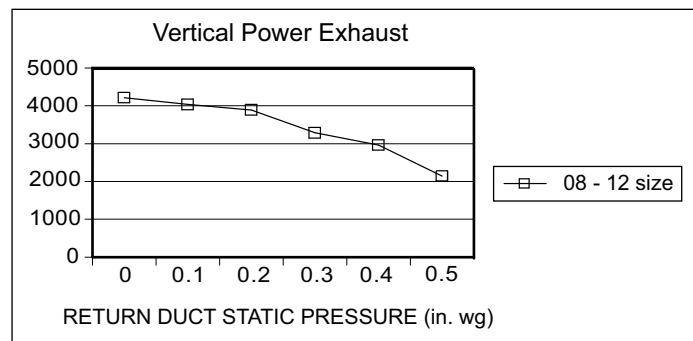
RETURN AIR PRESSURE DROP SIZES 08-14



RETURN AIR PRESSURE DROP SIZE 16

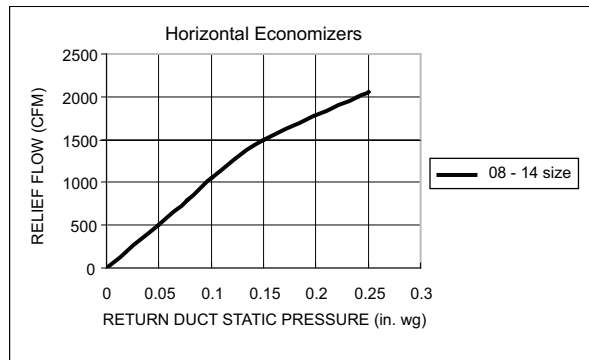


OUTDOOR AIR DAMPER LEAKAGE

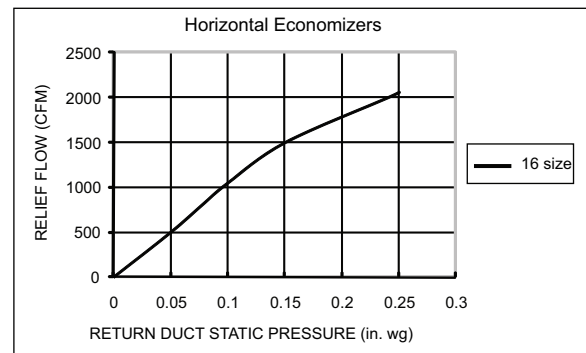


POWER EXHAUST PERFORMANCE

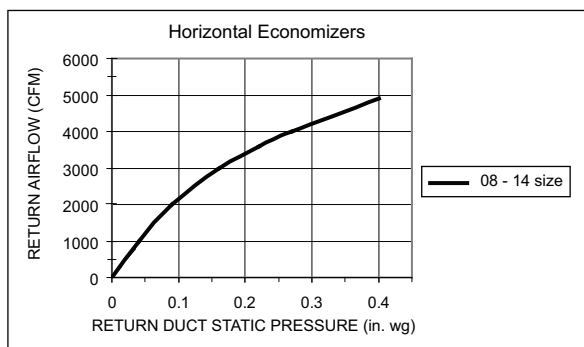
HORIZONTAL APPLICATION



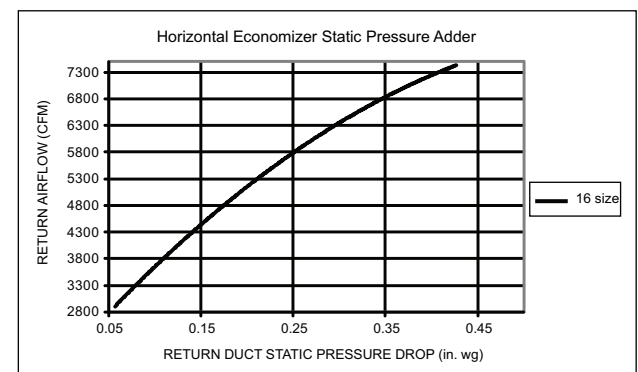
BAROMETRIC RELIEF FLOW SIZES 08-14



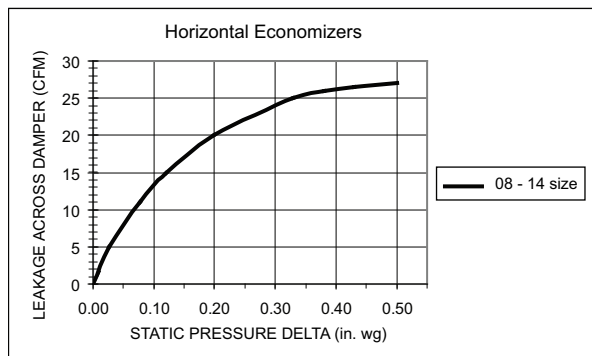
BAROMETRIC RELIEF FLOW SIZE 16



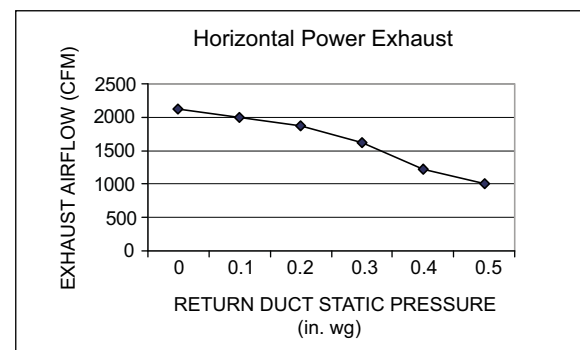
RETURN AIR PRESSURE DROP SIZES 08-14



RETURN AIR PRESSURE DROP SIZE 16



OUTDOOR AIR DAMPER LEAKAGE



POWER EXHAUST PERFORMANCE

GENERAL FAN PERFORMANCE NOTES

1. Interpolation is permissible. Do not extrapolate.
2. External static pressure is the static pressure difference between the return duct and the supply duct plus the static pressure caused by any FIOPs or accessories.
3. Tabular data accounts for pressure loss due to clean filters, unit casing, and wet coils. Factory options and accessories may add static pressure losses, as shown in the Static Pressure Adder tables on page 31. Selection software is available, through your salesperson, to help you select the best motor/drive combination for your application.
4. The Fan Performance tables offer motor/drive recommendations. In cases when two motor/drive combinations would work, Carrier recommends the lower horsepower option.
5. For information on the electrical properties of Carrier motors, please see the Electrical Data section of this book.
6. For more information on the performance limits of Carrier motors, see the Application Data section of this book.

PULLEY ADJUSTMENT

UNIT	MOTOR/DRIVE COMBO	MOTOR PULLEY TURNS OPEN										
		0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
08	Standard Static	689	665	641	618	594	570	546	522	499	475	451
	Medium Static	903	879	855	832	808	784	760	736	713	689	665
	High Static	1140	1114	1088	1062	1036	1011	985	959	933	907	881
09	Standard Static	689	665	641	618	594	570	546	522	499	475	451
	Medium Static	903	879	855	832	808	784	760	736	713	689	665
	High Static	1140	1114	1088	1062	1036	1011	985	959	933	907	881
12	Standard Static	689	665	641	618	594	570	546	522	499	475	451
	Medium Static	903	879	855	832	808	784	760	736	713	689	665
	High Static	1140	1114	1088	1062	1036	1011	985	959	933	907	881
14	Standard Static	838	813	789	764	739	715	690	665	640	616	591
	Medium Static	1084	1059	1035	1010	986	961	936	912	887	863	838
	High Static	1240	1218	1196	1175	1153	1131	1109	1087	1066	1044	1022
16	Standard Static	564	550	536	522	508	494	479	465	451	437	423
	Medium Static	709	690	672	653	635	616	597	579	560	542	523
	High Static	795	780	765	750	735	721	706	691	676	661	646

Factory setting

NOTE: Do not adjust pulley further than 5 turns open.

50TC*08 — HORIZONTAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1062	2250	465	0.43	555	0.64	629	0.86	694	1.10	753	1.34
1151	2438	488	0.51	575	0.73	648	0.97	712	1.21	769	1.47
1239	2625	510	0.60	595	0.84	666	1.09	729	1.34	786	1.62
1328	2813	533	0.70	616	0.95	686	1.22	748	1.49	804	1.77
1416	3000	557	0.82	637	1.08	705	1.36	766	1.64	822	1.94
1505	3188	581	0.94	659	1.23	726	1.51	785	1.81	840	2.12
1593	3375	606	1.08	681	1.38	746	1.68	805	2.00	859	2.32
1682	3563	630	1.24	703	1.55	767	1.87	825	2.20	878	2.53
1770	3750	655	1.41	726	1.74	789	2.07	845	2.41	897	2.76

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1062	2250	806	1.60	856	1.87	903	2.15	947	2.45	988	2.75
1151	2438	822	1.74	872	2.03	918	2.32	961	2.62	1003	2.93
1239	2625	839	1.90	887	2.19	933	2.49	977	2.81	1018	3.13
1328	2813	856	2.06	904	2.37	949	2.68	992	3.01	1033	3.34
1416	3000	873	2.24	921	2.56	966	2.89	1008	3.22	1049	3.56
1505	3188	891	2.44	938	2.77	982	3.10	1025	3.45	1065	3.81
1593	3375	909	2.65	955	2.99	1000	3.34	1041	3.70	1081	4.06
1682	3563	927	2.88	973	3.23	1017	3.59	1059	3.96	1098	4.34
1770	3750	946	3.12	992	3.48	1035	3.86	1076	4.24	1115	4.63

NOTES:

- For more information, see General Fan Performance Notes.
- Bold** indicates field-supplied drive.

	Standard static 489-747 RPM, 1.7 BHP max
	Medium static 733-949 RPM, 2.9 BHP max
	High static 909-1102 RPM, 4.7 BHP max

50TC*08 — VERTICAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1062	2250	511	0.53	591	0.73	660	0.95	722	1.19	779	1.44
1151	2438	540	0.64	616	0.85	683	1.08	743	1.33	799	1.59
1239	2625	569	0.76	642	0.99	706	1.23	765	1.49	819	1.76
1328	2813	599	0.90	669	1.14	731	1.39	788	1.66	841	1.94
1416	3000	630	1.06	696	1.31	756	1.58	811	1.86	863	2.15
1505	3188	661	1.23	724	1.50	782	1.78	836	2.07	886	2.38
1593	3375	692	1.43	753	1.71	809	2.00	861	2.31	910	2.62
1682	3563	723	1.65	782	1.94	836	2.25	887	2.56	934	2.89
1770	3750	755	1.89	811	2.20	864	2.52	913	2.84	959	3.18

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1062	2250	832	1.71	882	1.99	928	2.29	973	2.59	1015	2.92
1151	2438	851	1.87	899	2.16	945	2.46	989	2.78	1031	3.11
1239	2625	870	2.04	918	2.34	963	2.66	1006	2.98	1048	3.32
1328	2813	890	2.24	937	2.55	982	2.87	1024	3.21	1065	3.55
1416	3000	912	2.46	958	2.78	1001	3.11	1043	3.45	1083	3.80
1505	3188	934	2.69	979	3.02	1022	3.36	1063	3.72	1102	4.08
1593	3375	956	2.95	1000	3.29	1042	3.64	1083	4.00	1122	4.38
1682	3563	980	3.23	1023	3.58	1064	3.94	1104	4.32	1142	4.70
1770	3750	1004	3.54	1046	3.90	1086	4.27	1125	4.65	—	—

NOTES:

- For more information, see General Fan Performance Notes.
- Bold** indicates field-supplied drive.

	Standard static 489-747 RPM, 1.7 BHP max
	Medium static 733-949 RPM, 2.9 BHP max
	High static 909-1102 RPM, 4.7 BHP max

FAN PERFORMANCE (cont) 50TC*09 — HORIZONTAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1203	2550	438	0.39	523	0.50	595	0.64	658	0.78	716	0.94
1304	2763	459	0.47	541	0.60	611	0.73	673	0.88	730	1.05
1404	2975	481	0.56	560	0.70	628	0.84	689	1.00	745	1.16
1505	3188	504	0.67	580	0.82	646	0.97	705	1.13	760	1.30
1605	3400	526	0.80	600	0.95	664	1.11	722	1.27	776	1.45
1705	3613	550	0.94	620	1.10	683	1.26	740	1.43	793	1.62
1805	3825	573	1.09	641	1.26	702	1.43	758	1.61	810	1.80
1906	4038	597	1.26	663	1.44	722	1.62	777	1.81	827	2.00
2006	4250	621	1.45	685	1.64	743	1.83	796	2.02	845	2.22

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1203	2550	769	1.11	819	1.30	865	1.49	909	1.70	951	1.92
1304	2763	782	1.22	831	1.41	877	1.60	921	1.81	963	2.04
1404	2975	796	1.34	845	1.53	890	1.73	933	1.94	974	2.16
1505	3188	811	1.48	858	1.67	903	1.88	946	2.09	987	2.31
1605	3400	826	1.63	873	1.83	917	2.04	959	2.25	1000	2.48
1705	3613	842	1.81	888	2.01	932	2.22	973	2.44	1013	2.67
1805	3825	858	2.00	903	2.20	946	2.42	988	2.64	1027	2.87
1906	4038	875	2.20	919	2.41	962	2.63	1002	2.86	1041	3.10
2006	4250	892	2.43	936	2.65	978	2.87	1018	3.10	1056	3.34

NOTE: For more information, see General Fan Performance Notes

Standard static 518-733 RPM, 1.7 BHP max
Medium static 690-936 RPM, 2.4 BHP max
High static 848-1084 RPM, 3.7 BHP max

50TC*09 — VERTICAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1203	2550	477	0.43	556	0.57	624	0.71	685	0.85	742	0.99
1304	2763	503	0.52	578	0.67	644	0.82	704	0.97	759	1.13
1404	2975	529	0.62	601	0.79	665	0.95	724	1.11	777	1.28
1505	3188	556	0.74	625	0.92	687	1.09	744	1.26	796	1.44
1605	3400	583	0.88	650	1.06	710	1.24	765	1.43	816	1.62
1705	3613	611	1.03	675	1.22	733	1.42	787	1.61	836	1.81
1805	3825	639	1.19	701	1.40	757	1.61	809	1.81	857	2.02
1906	4038	668	1.38	727	1.60	781	1.81	832	2.03	879	2.25
2006	4250	696	1.58	753	1.81	806	2.04	855	2.27	901	2.50

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1203	2550	794	1.14	842	1.29	888	1.44	932	1.59	973	1.75
1304	2763	810	1.28	858	1.44	903	1.60	946	1.77	987	1.93
1404	2975	827	1.44	874	1.61	919	1.78	961	1.95	1001	2.13
1505	3188	845	1.62	891	1.79	935	1.98	977	2.16	1017	2.34
1605	3400	864	1.80	909	1.99	952	2.18	993	2.38	1033	2.57
1705	3613	883	2.01	928	2.21	970	2.41	1010	2.61	1049	2.82
1805	3825	903	2.23	947	2.44	988	2.65	1028	2.87	1066	3.08
1906	4038	924	2.47	967	2.70	1008	2.92	1047	3.14	1084	3.37
2006	4250	945	2.73	987	2.97	1027	3.20	1066	3.43	1103	3.67

NOTES:

- For more information, see General Fan Performance Notes.
- Bold** indicates field-supplied drive.

Standard static 518-733 RPM, 1.7 BHP max
Medium static 690-936 RPM, 2.4 BHP max
High static 848-1084 RPM, 3.7 BHP max

FAN PERFORMANCE (cont) 50TC*12 — HORIZONTAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1416	3000	523	0.58	592	0.73	657	0.88	718	1.05	775	1.22
1534	3250	555	0.71	620	0.87	681	1.04	739	1.21	794	1.39
1652	3500	588	0.86	649	1.03	707	1.21	762	1.39	815	1.58
1770	3750	621	1.03	679	1.21	734	1.40	786	1.59	837	1.79
1888	4000	655	1.23	709	1.42	761	1.61	812	1.82	860	2.03
2006	4250	689	1.45	741	1.65	790	1.86	838	2.07	885	2.29
2124	4500	723	1.69	773	1.90	820	2.12	866	2.35	910	2.57
2242	4750	758	1.96	805	2.19	850	2.42	894	2.65	937	2.89
2360	5000	793	2.26	838	2.50	881	2.74	923	2.98	965	3.23

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1416	3000	830	1.39	883	1.57	934	1.76	982	1.95	1029	2.14
1534	3250	847	1.57	897	1.76	946	1.96	993	2.16	1039	2.36
1652	3500	865	1.77	914	1.97	961	2.18	1007	2.38	1051	2.60
1770	3750	885	1.99	932	2.20	978	2.42	1022	2.64	1065	2.86
1888	4000	907	2.24	952	2.46	996	2.68	1038	2.91	1080	3.14
2006	4250	930	2.51	973	2.74	1015	2.97	1057	3.21	1097	3.45
2124	4500	954	2.81	996	3.05	1037	3.29	1076	3.54	1115	3.79
2242	4750	979	3.13	1019	3.38	1059	3.63	1097	3.89	1135	4.15
2360	5000	1005	3.49	1044	3.74	1082	4.01	1119	4.27	1156	4.55

NOTE: For more information, see General Fan Performance Notes

Standard static 591-838 RPM, 2.4 BHP max
Medium static 838-1084 RPM, 3.7 BHP max
High static 1022-1240 RPM, 4.7 BHP max

50TC*12 — VERTICAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1416	3000	556	0.65	623	0.80	684	0.95	738	1.11	789	1.26
1534	3250	590	0.79	655	0.96	713	1.13	766	1.29	815	1.46
1652	3500	625	0.96	687	1.14	742	1.32	794	1.50	841	1.68
1770	3750	661	1.16	719	1.35	773	1.54	822	1.73	869	1.93
1888	4000	697	1.37	753	1.58	804	1.79	852	1.99	897	2.20
2006	4250	733	1.62	787	1.84	836	2.06	883	2.28	926	2.49
2124	4500	770	1.89	821	2.13	869	2.36	914	2.59	956	2.82
2242	4750	807	2.20	856	2.45	902	2.69	945	2.94	986	3.18
2360	5000	844	2.54	891	2.80	936	3.06	978	3.31	1018	3.57

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1416	3000	836	1.42	881	1.57	923	1.73	963	1.89	1001	2.05
1534	3250	861	1.63	904	1.79	945	1.96	985	2.13	1023	2.30
1652	3500	886	1.86	929	2.04	969	2.22	1008	2.40	1045	2.58
1770	3750	912	2.12	954	2.31	994	2.50	1031	2.70	1068	2.89
1888	4000	940	2.40	980	2.61	1019	2.81	1056	3.02	1092	3.22
2006	4250	968	2.71	1007	2.93	1045	3.15	1081	3.36	1117	3.58
2124	4500	996	3.05	1035	3.28	1072	3.51	1108	3.74	1142	3.97
2242	4750	1026	3.42	1063	3.66	1100	3.91	1135	4.15	1168	4.39
2360	5000	1056	3.82	1093	4.08	1128	4.34	1162	4.59	—	—

NOTE: For more information, see General Fan Performance Notes.

Standard static 591-838 RPM, 2.4 BHP max
Medium static 838-1084 RPM, 3.7 BHP max
High static 1022-1240 RPM, 4.7 BHP max

FAN PERFORMANCE (cont) 50TC*14 — HORIZONTAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1622	3438	580	0.82	642	0.99	700	1.16	756	1.34	809	1.53
1770	3750	621	1.03	679	1.21	734	1.40	786	1.59	837	1.79
1917	4063	663	1.28	717	1.47	769	1.67	818	1.88	866	2.09
2065	4375	706	1.56	757	1.77	805	1.98	852	2.20	897	2.43
2212	4688	749	1.89	797	2.11	843	2.34	887	2.57	930	2.81
2360	5000	793	2.26	838	2.50	881	2.74	923	2.98	965	3.23
2507	5313	837	2.69	880	2.93	921	3.19	961	3.44	1000	3.71
2655	5625	882	3.16	922	3.42	961	3.68	999	3.95	1037	4.23
2802	5938	926	3.68	964	3.96	1001	4.23	1038	4.52	—	—
2950	6250	971	4.26	1007	4.55	—	—	—	—	—	—

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1622	3438	860	1.72	910	1.92	957	2.12	1003	2.32	1048	2.54
1770	3750	885	1.99	932	2.20	978	2.42	1022	2.64	1065	2.86
1917	4063	912	2.31	957	2.53	1001	2.75	1043	2.98	1084	3.22
2065	4375	941	2.66	984	2.89	1026	3.13	1066	3.37	1106	3.62
2212	4688	972	3.05	1013	3.29	1053	3.54	1092	3.80	1130	4.06
2360	5000	1005	3.49	1044	3.74	1082	4.01	1119	4.27	1156	4.55
2507	5313	1038	3.97	1076	4.24	1113	4.52	—	—	—	—
2655	5625	1073	4.51	—	—	—	—	—	—	—	—
2802	5938	—	—	—	—	—	—	—	—	—	—
2950	6250	—	—	—	—	—	—	—	—	—	—

NOTES:

- For more information, see General Fan Performance Notes.
- Bold** indicates field-supplied drive

Standard static 652-843 RPM, 2.9 BHP max
Medium static 838-1084 RPM, 3.7 BHP max
High static 1022-1240 RPM, 4.7 BHP max

50TC*14 — VERTICAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1622	3438	616	0.92	679	1.10	735	1.27	786	1.45	835	1.62
1770	3750	661	1.16	719	1.35	773	1.54	822	1.73	869	1.93
1917	4063	706	1.43	761	1.64	812	1.85	860	2.06	904	2.27
2065	4375	752	1.75	804	1.98	852	2.20	898	2.43	941	2.65
2212	4688	798	2.12	847	2.36	894	2.60	937	2.85	979	3.09
2360	5000	844	2.54	891	2.80	936	3.06	978	3.31	1018	3.57
2507	5313	891	3.01	936	3.28	978	3.56	1019	3.83	1057	4.11
2655	5625	938	3.53	981	3.83	1022	4.12	1060	4.41	1097	4.70
2802	5938	986	4.12	1026	4.43	—	—	—	—	—	—
2950	6250	—	—	—	—	—	—	—	—	—	—

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1622	3438	880	1.80	922	1.98	963	2.15	1002	2.33	1039	2.51
1770	3750	912	2.12	954	2.31	994	2.50	1031	2.70	1068	2.89
1917	4063	947	2.48	987	2.68	1025	2.89	1062	3.10	1098	3.31
2065	4375	982	2.88	1021	3.10	1058	3.32	1094	3.55	1129	3.77
2212	4688	1018	3.33	1056	3.57	1093	3.81	1128	4.04	1162	4.29
2360	5000	1056	3.82	1093	4.08	1128	4.34	1162	4.59	—	—
2507	5313	1094	4.38	1130	4.65	—	—	—	—	—	—
2655	5625	—	—	—	—	—	—	—	—	—	—
2802	5938	—	—	—	—	—	—	—	—	—	—
2950	6250	—	—	—	—	—	—	—	—	—	—

NOTES:

- For more information, see General Fan Performance Notes.
- Bold** indicates field-supplied drive.

Standard static 652-843 RPM, 2.9 BHP max
Medium static 838-1084 RPM, 3.7 BHP max
High static 1022-1240 RPM, 4.7 BHP max

FAN PERFORMANCE (cont) 50TC*16 — HORIZONTAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2124	4500	423	0.77	487	0.99	545	1.22	601	1.47	655	1.73
2301	4875	447	0.94	507	1.18	563	1.42	615	1.67	666	1.95
2478	5250	471	1.13	528	1.38	581	1.64	631	1.91	679	2.19
2655	5625	496	1.35	550	1.62	600	1.89	648	2.17	694	2.46
2832	6000	520	1.59	572	1.88	620	2.17	666	2.46	710	2.76
3009	6375	545	1.86	594	2.17	640	2.47	684	2.78	726	3.10
3186	6750	571	2.17	617	2.48	661	2.81	704	3.13	744	3.46
3363	7125	596	2.50	640	2.83	683	3.17	724	3.52	763	3.86
3540	7500	622	2.87	663	3.22	705	3.58	744	3.93	782	4.30

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2124	4500	707	2.02	758	2.33	806	2.66	853	3.01	898	3.37
2301	4875	716	2.24	764	2.55	811	2.89	856	3.24	900	3.61
2478	5250	726	2.49	772	2.81	817	3.14	860	3.50	903	3.87
2655	5625	738	2.77	782	3.09	825	3.43	867	3.79	908	4.17
2832	6000	752	3.08	794	3.41	835	3.76	875	4.12	914	4.50
3009	6375	767	3.42	807	3.76	846	4.12	885	4.49	923	4.87
3186	6750	784	3.80	822	4.15	859	4.51	896	4.89	933	5.28
3363	7125	801	4.22	838	4.58	874	4.95	909	5.33	944	5.73
3540	7500	818	4.66	854	5.04	889	5.42	923	5.81	—	—

NOTES:

- For more information, see General Fan Performance Notes.
- Bold** indicates field-supplied drive.

Standard static 507-676 RPM, 2.9 BHP max
Medium static 627-851 RPM, 3.7 BHP max
High static 776-955 RPM, 208V 6.5 BHP max,
230V 6.9 BHP max, 460V 7.0 BHP max,
575V 8.3 BHP max

50TC*16 — VERTICAL UNIT

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		50 (0.2)		100 (0.4)		150 (0.6)		200 (0.8)		250 (1.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2124	4500	425	0.76	490	1.02	550	1.30	607	1.61	664	1.96
2301	4875	448	0.92	510	1.20	566	1.49	621	1.81	674	2.15
2478	5250	472	1.10	531	1.40	584	1.70	636	2.03	686	2.38
2655	5625	496	1.30	552	1.62	603	1.94	652	2.28	699	2.64
2832	6000	520	1.52	574	1.86	623	2.20	670	2.55	715	2.92
3009	6375	544	1.77	596	2.13	644	2.49	688	2.86	731	3.24
3186	6750	568	2.05	618	2.43	664	2.81	707	3.19	749	3.59
3363	7125	593	2.35	641	2.75	685	3.16	727	3.56	767	3.97
3540	7500	617	2.69	664	3.11	707	3.53	747	3.95	786	4.38

L/s	CFM	AVAILABLE EXTERNAL STATIC PRESSURE — Pa (in. wg)									
		300 (1.2)		350 (1.4)		400 (1.6)		450 (1.8)		500 (2.0)	
		RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
2124	4500	719	2.34	772	2.76	823	3.20	872	3.67	918	4.16
2301	4875	725	2.54	776	2.95	825	3.40	873	3.87	919	4.37
2478	5250	734	2.76	783	3.18	830	3.63	876	4.10	920	4.60
2655	5625	746	3.03	791	3.44	836	3.89	880	4.36	923	4.86
2832	6000	759	3.32	802	3.74	845	4.18	887	4.66	928	5.16
3009	6375	773	3.64	814	4.07	855	4.52	895	4.99	935	5.49
3186	6750	789	4.00	828	4.43	867	4.89	905	5.36	943	5.87
3363	7125	806	4.39	844	4.84	881	5.29	917	5.78	—	—
3540	7500	823	4.82	860	5.27	895	5.74	—	—	—	—

NOTES:

- For more information, see General Fan Performance Notes.
- Bold** indicates field-supplied drive.

Standard static 507-676 RPM, 2.9 BHP max
Medium static 627-851 RPM, 3.7 BHP max
High static 776-955 RPM,
208V 6.5 BHP max
230V 6.9 BHP max
460V 7.0 BHP max
575V 8.3 BHP max

50TC-D08 (2-STAGE COOLING)

UNIT	V-PH-HZ	UNIT VOLTAGE		COMP (CIR 1)		COMP (CIR 2)		OFM (EA)		IFM				
		RANGE		RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	MAX WATTS	MAX AMP DRAW	EFF AT FULL LOAD	FLA
		MIN	MAX											
50TC-D08	400-3-50	360	440	6.0	43	6.0	43	325	0.7	STD	1448	2.7	80%	2.6
										MED	2278	3.6	81%	3.4
										HIGH	4400	7.4	81%	7.4

50TC-D09 (2-STAGE COOLING)

UNIT	V-PH-HZ	UNIT VOLTAGE		COMP (CIR 1)		COMP (CIR 2)		OFM (EA)		IFM				
		RANGE		RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	MAX WATTS	MAX AMP DRAW	EFF AT FULL LOAD	FLA
		MIN	MAX											
50TC-D09	400-3-50	360	440	6.2	52	6.1	43	325	0.7	STD	1448	2.73	80%	2.6
										MED	2120	2.73	80%	2.6
										HIGH	2694	4.62	80%	4.4

50TC-D12 (2-STAGE COOLING)

UNIT	V-PH-HZ	UNIT VOLTAGE		COMP (CIR 1)		COMP (CIR 2)		OFM (EA)		IFM				
		RANGE		RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	MAX WATTS	MAX AMP DRAW	EFF AT FULL LOAD	FLA
		MIN	MAX											
50TC-D12	400-3-50	360	440	7.8	52	7.8	52	325	0.7	STD	2120	3.6	80%	2.6
										MED	3775	4.6	81%	4.4
										HIGH	4400	7.4	81%	7.4

50TC-D14 (2-STAGE COOLING)

UNIT	V-PH-HZ	UNIT VOLTAGE		COMP (CIR 1)		COMP (CIR 2)		OFM (EA)		IFM				
		RANGE		RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	MAX WATTS	MAX AMP DRAW	EFF AT FULL LOAD	FLA
		MIN	MAX											
50TC-D14	400-3-50	360	440	9.7	64	10.6	74	800	3.4	STD	2278	3.6	81%	3.4
										MED	2694	4.6	81%	4.4
										HIGH	4400	7.4	81%	7.4

50TC-D16 (2-STAGE COOLING)

UNIT	V-PH-HZ	UNIT VOLTAGE		COMP (CIR 1)		COMP (CIR 2)		OFM (EA)		IFM				
		RANGE		RLA	LRA	RLA	LRA	WATTS	FLA	TYPE	MAX WATTS	MAX AMP DRAW	EFF AT FULL LOAD	FLA
		MIN	MAX											
50TC-D16	400-3-50	360	440	12.2	101	12.2	100	800	0.7	STD	2278	3.6	81%	3.4
										MED	2694	4.6	81%	4.4
										HIGH	4400	10.2	81%	10.2

MCA/MOCP DETERMINATION (NO C.O. OR UNPWRD C.O.)

UNIT	NOM. V-PH-HZ	IFM TYPE	ELECTRIC HEATER		NO C.O. OR UNPWR C.O.			
			NOM (kW)	FLA	NO P.E.			
					MCA	FUSE OR HACR BRKR	DISC. SIZE	
							FLA	LRA
50TC-D08 (2-STAGE COOLING)	400-3-50	STD	—	—	18	20	18	108
			9.7	13.9	21	25	19	108
			11.5	16.5	24	25	22	108
			19.3	27.9	38	40	35	108
			22.9	33.1	45	45	41	108
			29.0	41.8	56	60	51	108
		MED	—	—	19	20	19	118
			9.7	13.9	22	25	20	118
			11.5	16.5	25	25	23	118
			19.3	27.9	40	40	36	118
			22.9	33.1	46	50	42	118
			29.0	41.8	57	60	52	118
		HIGH	—	—	23	30	24	171
			9.7	13.9	27	30	24	171
			11.5	16.5	30	30	27	171
			19.3	27.9	45	45	41	171
			22.9	33.1	51	60	47	171
			29.0	41.8	62	70	57	171
50TC-D09 (2-STAGE COOLING)	400-3-50	STD	—	—	18	20	19	117
			9.7	13.9	21	25	19	117
			11.5	16.5	24	25	22	117
			19.3	27.9	38	40	35	117
			22.9	33.1	45	45	41	117
			29.0	41.8	56	60	51	117
		MED	—	—	18	20	19	114
			9.7	13.9	21	25	19	114
			11.5	16.5	24	25	22	114
			19.3	27.9	38	40	35	114
			22.9	33.1	45	45	41	114
			29.0	41.8	56	60	51	114
		HIGH	—	—	20	25	21	172
			9.7	13.9	23	25	21	172
			11.5	16.5	27	30	24	172
			19.3	27.9	41	45	37	172
			22.9	33.1	47	50	43	172
			29.0	41.8	58	60	53	172

LEGEND

C.O.	— Convenience Outlet
FLA	— Full Load Amps
IFM	— Indoor Fan Motor
LRA	— Locked Rotor Amps
MCA	— Minimum Circuit Amps
MOCP	— Maximum Overcurrent Protection
P.E.	— Power Exhaust

MCA/MOCP DETERMINATION (NO C.O. OR UNPWRD C.O.) (cont)

UNIT	NOM. V-PH-HZ	IFM TYPE	ELECTRIC HEATER		NO C.O. OR UNPWR C.O.			
			NOM (kW)	FLA	NO P.E.			
					MCA	FUSE OR HACR BRKR	DISC. SIZE	
							FLA	LRA
50TC-D12 (2-STAGE COOLING)	400-3-50	STD	—	—	22	25	23	123
			9.7	13.9	22	25	23	123
			11.5	16.5	24	25	23	123
			22.9	33.1	45	45	41	123
			29.0	41.8	56	60	51	123
			34.7	50.1	66	70	61	123
		MED	—	—	24	30	25	181
			9.7	13.9	24	30	25	181
			11.5	16.5	27	30	25	181
			22.9	33.1	47	50	43	181
			29.0	41.8	58	60	53	181
			34.7	50.1	69	70	63	181
		HIGH	—	—	27	30	28	189
			9.7	13.9	27	30	28	189
			11.5	16.5	30	30	28	189
			22.9	33.1	51	60	47	189
			29.0	41.8	62	70	57	189
			34.7	50.1	72	80	66	189
50TC-D14 (2-STAGE COOLING)	400-3-50	STD	—	—	29	35	29	201
			9.7	13.9	29	35	29	201
			11.5	16.5	29	35	29	201
			22.9	33.1	46	50	42	201
			29.0	41.8	57	60	52	201
			34.7	50.1	67	70	62	201
		MED	—	—	30	35	30	246
			9.7	13.9	30	35	30	246
			11.5	16.5	30	35	30	246
			22.9	33.1	47	50	43	246
			29.0	41.8	58	60	53	246
			34.7	50.1	69	70	63	246
		HIGH	—	—	33	40	34	254
			9.7	13.9	33	40	34	254
			11.5	16.5	33	40	34	254
			22.9	33.1	51	60	47	254
			29.0	41.8	62	70	57	254
			34.7	50.1	72	80	66	254
50TC-D16 (2-STAGE COOLING)	400-3-50	STD	—	—	33	45	34	235
			11.5	16.6	33	45	34	235
			23.3	33.6	47	50	43	235
			30.2	43.6	59	60	54	235
			34.7	50.2	67	70	62	235
			46.5	67.2	89	90	81	235
		MED	—	—	34	45	36	280
			11.5	16.6	34	45	36	280
			23.3	33.6	48	50	44	280
			30.2	43.6	60	60	55	280
			34.7	50.2	69	70	63	280
			46.5	67.2	90	90	82	280
		HIGH	—	—	40	50	42	253
			11.5	16.6	40	50	42	253
			23.3	33.6	55	60	50	253
			30.2	43.6	68	70	62	253
			34.7	50.2	76	80	69	253
			46.5	67.2	97	100	89	253

NOTE: See Legend on page 41.

ELECTRIC HEAT ELECTRICAL DATA

UNIT	NOM. V-PH-HZ	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT	
						kW	MBH
50TC-D08	400-3-50	STD	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER114B00	19.3	19.3	19.3	65.9
			CRHEATER115B00	22.9	22.9	22.9	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
		MED	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER114B00	19.3	19.3	19.3	65.9
			CRHEATER115B00	22.9	22.9	22.9	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
		HIGH	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER114B00	19.3	19.3	19.3	65.9
			CRHEATER115B00	22.9	22.9	22.9	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
50TC-D09	400-3-50	STD	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER114B00	19.3	19.3	19.3	65.9
			CRHEATER115B00	22.9	22.9	22.9	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
		MED	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER114B00	19.3	19.3	19.3	65.9
			CRHEATER115B00	22.9	22.9	22.9	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
		HIGH	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER114B00	19.3	19.3	19.3	65.9
			CRHEATER115B00	22.9	22.9	22.9	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8

ELECTRIC HEAT ELECTRICAL DATA (cont)

UNIT	NOM. V-PH-HZ	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOMINAL (kW)	APPLICATION (kW)	APPLICATION OUTPUT	
						kW	MBH
50TC-D12	400-3-50	STD	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER115B00	22.9	22.9	19.3	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
			CRHEATER129B00	34.7	34.7	34.7	118.5
		MED	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER115B00	22.9	22.9	19.3	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
			CRHEATER129B00	34.7	34.7	34.7	118.5
		HIGH	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER115B00	22.9	22.9	19.3	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
			CRHEATER129B00	34.7	34.7	34.7	118.5
50TC-D14	400-3-50	STD	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER115B00	22.9	22.9	19.3	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
			CRHEATER129B00	34.7	34.7	34.7	118.5
		MED	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER115B00	22.9	22.9	19.3	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
			CRHEATER129B00	34.7	34.7	34.7	118.5
		HIGH	CRHEATER116B00	9.7	9.7	9.6	32.9
			CRHEATER113B00	11.5	11.5	11.5	39.1
			CRHEATER115B00	22.9	22.9	19.3	78.2
			CRHEATER128B00	29.0	29.0	28.9	98.8
			CRHEATER129B00	34.7	34.7	34.7	118.5
50TC-D16	400-3-50	STD	CRHEATER292A00	11.5	11.5	11.5	39.1
			CRHEATER295A00	23.3	23.3	23.3	79.4
			CRHEATER289A00,295A00	30.2	30.2	30.2	103.1
			CRHEATER292A00,295A00	34.7	34.7	34.7	118.5
			CRHEATER295A00,295A00	46.5	46.5	46.5	158.8
		MED	CRHEATER292A00	11.5	11.5	11.5	39.1
			CRHEATER295A00	23.3	23.3	23.3	79.4
			CRHEATER289A00,295A00	30.2	30.2	30.2	103.1
			CRHEATER292A00,295A00	34.7	34.7	34.7	118.5
			CRHEATER295A00,295A00	46.5	46.5	46.5	158.8
		HIGH	CRHEATER292A00	11.5	11.5	11.5	39.1
			CRHEATER295A00	23.3	23.3	23.3	79.4
			CRHEATER289A00,295A00	30.2	30.2	30.2	103.1
			CRHEATER292A00,295A00	34.7	34.7	34.7	118.5
			CRHEATER295A00,295A00	46.5	46.5	46.5	158.8

RELOCATE TO SINGLE POINT BOX WHEN ELECTRIC HEAT OPTION IS USED.

MAXIMUM WIRE SIZE 2 AWG SEE NOTE#5

FIELD

POWER

SUPPLY

EQUIP GND

115V FIELD SUPPLY

FIOF NON-POWERED CONVENIENCE OUTLET

ELECTRIC HEAT OPTION ONLY. FOR ALL 460V, 575V HEATER OPTIONS, FOR ALL 208/230V HEATER OPTIONS UP TO 17.0 KW

MAXIMUM WIRE SIZE 2 AWG SEE NOTE #5

GRN-YEL EQUIP GND

FIELD

POWER

SUPPLY

SINGLE POINT CONNECTION BOX

USED WITH ELECTRIC HEAT OPTION ONLY. FOR ALL 208/230V HEATER OPTIONS OVER 17.0 KW

MAXIMUM WIRE SIZE 2/0 AWG SEE NOTE #4

EQUIP GND

GRN-YEL EQUIP GND

FU2

FU3

ELECTRIC HEATERS 1 & 2

LEGEND

- FIELD SPICE
- MARKED WIRE
- TERMINAL (MARKED)
- TERMINAL (UNMARKED)
- TERMINAL BLOCK
- SPICE
- SPICE (MARKED)
- FACTORY WIRING
- FIELD CONTROL WIRING
- FIELD POWER WIRING
- CIRCUIT BOARD TRACE
- ACCESSORY OR OPTIONAL WIRING
- TO INDICATE COMMON POTENTIAL ONLY: NOT TO REPRESENT WIRING

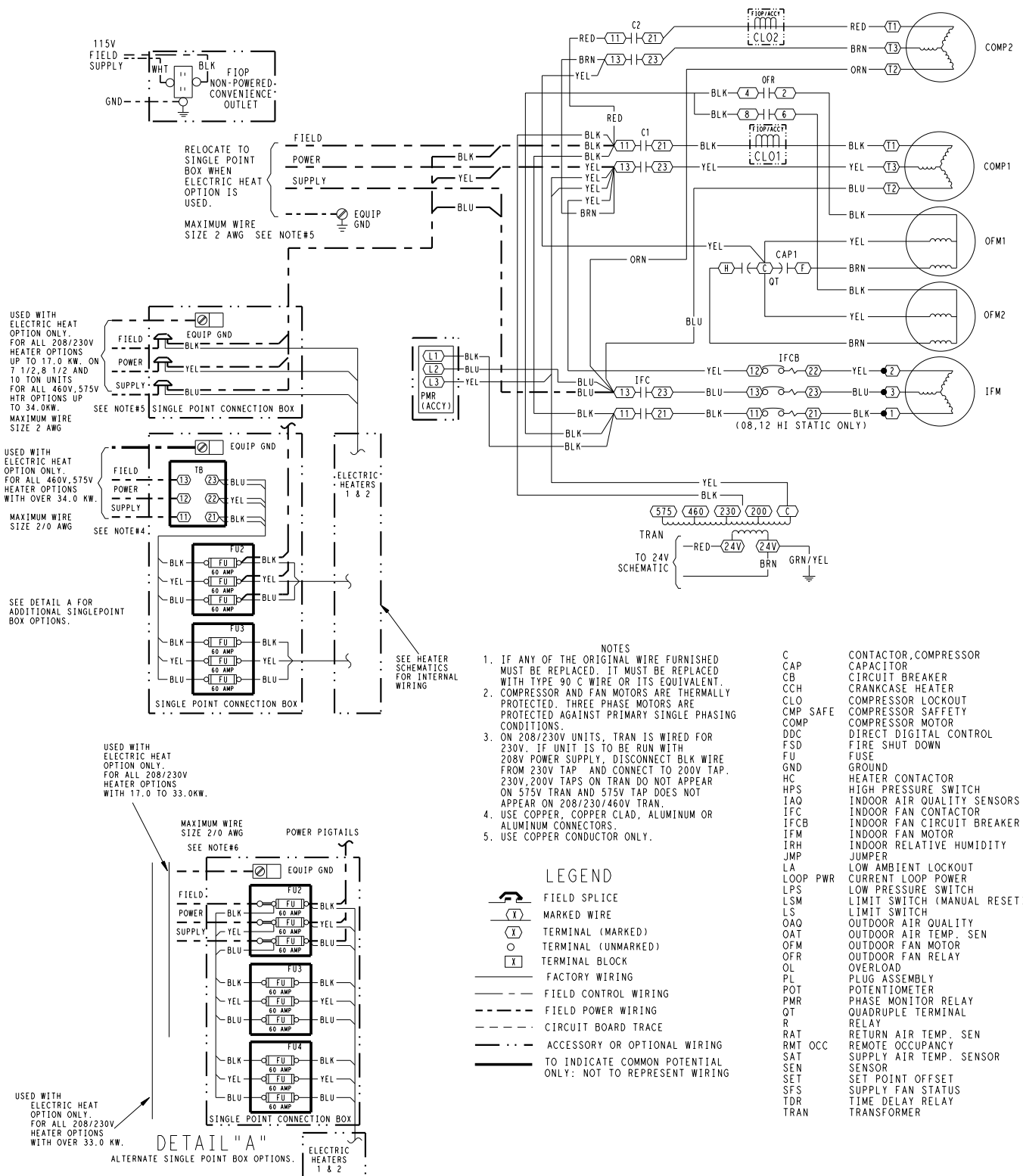
- C** — Contactor, Compressor
- CAP** — Capacitor
- CB** — Circuit Breaker
- COMP** — Compressor Motor
- DDC** — Direct Digital Control
- FU** — Fuse
- GND** — Ground
- HPS** — High Pressure Switch
- IAQ** — Indoor Air Quality Sensors
- IFC** — Indoor Fan Contactor
- IFM** — Indoor Fan Motor
- LA** — Low Ambient Lockout
- LPS** — Low Pressure Switch
- OAT** — Outdoor Air Temp Sensor
- OFM** — Outdoor Fan Motor
- OLR** — Overload Relay
- PL** — Plug Assembly
- POT** — Potentiometer
- PMR** — Phase Monitor Relay
- QT** — Quadruple Terminal
- R** — Relay
- RAT** — Return Air Temp Sensor
- SAT** — Supply Air Temp Sensor
- TDR** — Time Delay Relay
- TRAN** — Transformer

1. If any of the original wire furnished must be replaced, it must be replaced with type 90°C wire or its equivalent.
2. Compressor and fan motors are thermally protected. Three phase motors are protected against primary single phasing conditions.
3. Use copper, copper clad, aluminum or aluminum connectors.
4. Use copper conductor only.

Typical wiring diagrams (cont)



2-STAGE COOLING TYPICAL POWER WIRING DIAGRAM



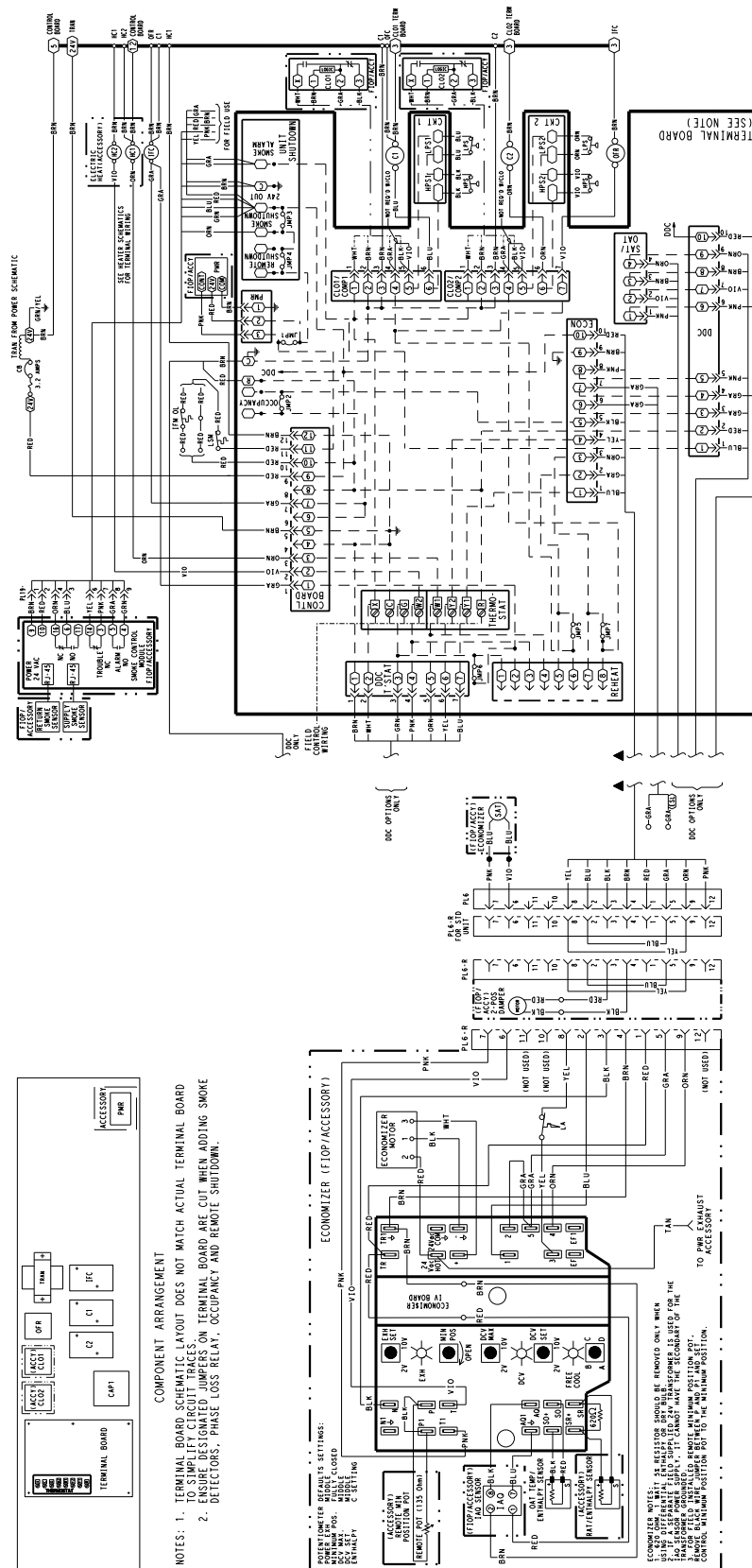
[illegible]

NOTE: Terminal board schematic layout does not match actual terminal board to simplify circuit traces. Ensure designated jumpers on terminal board are cut when adding smoke detectors, phase loss relay and remote shutdown.

ECONOMIZER NOTES:

1. 620 ohm, 1 watt, 5% resistor should be removed only when using differential enthalpy or dry bulb.
2. If a separate field-supplied 24V transformer is used for the IAQ sensor power supply, it cannot have the secondary of the transformer grounded.
3. For field-installed remote minimum position POT, remove black wire jumper between P and P1 and set control minimum position POT to the minimum position.

2-STAGE TYPICAL WIRING DIAGRAM



General

The sequence below describes the sequence of operation for an electro-mechanical unit with and without a factory-installed EconoMi\$er® IV system (called “economizer” in this sequence). For information regarding a direct digital controller, see the start-up, operations, and troubleshooting manual for the applicable controller.

Electro-mechanical units with no economizer

Cooling

When the thermostat calls for cooling, terminals G and Y1 are energized. As a result, the indoor-fan contactor (IFC) and the compressor contactor (C1) are energized, causing the indoor fan motor (IFM), compressor no. 1, and outdoor fan to start. If the unit has 2 stages of cooling, the thermostat will additionally energize Y2. The Y2 signal will energize compressor contactor no. 2 (C2), causing compressor no. 2 to start. Regardless of the number of stages, the outdoor fan motor runs continuously while unit is cooling.

Heating

NOTE: The 50TC unit is sold as cooling only. If electric heaters are required, use only factory-approved electric heaters. They will operate as described below.

Units have either 1 or 2 stages of electric heat. When the thermostat calls for heating, power is applied to the W1 terminal at the unit. The unit control will energize the indoor fan contactor and the first stage of electric heat. On units with two-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.

Electro-mechanical units with an economizer

Cooling

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 EconoMi\$er IV control to provide a 10°C (50°F) to 13°C (55°F) mixed-air temperature into the zone. As the mixed air temperature fluctuates above 13°C (55°F) or below 10°C (50°F) 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 9°C (45°F), 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 9°C (48°F). The power exhaust fans will be energized and de-energized, if installed, as the outdoor-air damper opens and closes.

If field-installed accessory CO₂ sensors are connected to the EconoMi\$er IV control, a demand controlled ventilation strategy will begin to operate. As the CO₂ level in the zone increases above the CO₂ setpoint, the minimum position of the damper will be increased proportionally. As the CO₂ level decreases because of the increase in fresh air, the outdoor-air damper will be proportionally closed. For EconoMi\$er IV 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 EconoMi\$er IV 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 EconoMi\$er IV damper to the minimum position.

On the initial power to the EconoMi\$er IV control, it will take the damper up to 2¹/₂ minutes before it begins to position itself. After the initial power-up, further changes in damper position can take up to 30 seconds to initiate. Damper movement from full closed to full open (or vice versa) will take between 1¹/₂ and 2¹/₂ minutes. If free cooling can be used as determined from the appropriate changeover command (switch, dry bulb, enthalpy curve, differential dry bulb, or differential enthalpy), then the control will modulate the dampers open to maintain the mixed air temperature setpoint at 10°C (50°F) to 13°C (55°F). 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 EconoMi\$er IV damper will be open at maximum position. EconoMi\$er IV operation is limited to a single compressor.

Heating

The sequence of operation for the heating is the same as an electromechanical unit with no economizer. The only difference is that 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.

Note about this specification:

This specification is in the “Master format” 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: 21.48 kW to 42.5 kW (6 to 12.5 Nominal Tons)

Carrier Model Number: 50TC 08-16

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 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 13mm (1/2-in.) thick, minimum 0.68kg (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 2 different 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) PremierLink™ controller

1. Shall be ASHRAE 62-2001 compliant.
2. Shall accept 18 to 32VAC input power.
3. Shall have an operating temperature range from -40°C (-40°F) to 70°C (158°F), 10% to 95% RH (non-condensing).

4. Shall include an integrated economizer controller to support an economizer with 4 to 20 mA actuator input and no microprocessor controller.
 5. Controller shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air quality, indoor relative humidity, compressor lock-out, fire shutdown, enthalpy, fan status, remote time clock/door switch.
 6. Shall accept a CO₂ sensor in the conditioned space, and be Demand Controlled Ventilation (DCV) ready.
 7. Shall provide the following outputs: Economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, heat stage 3/exhaust/reversing valve/dehumidify/occupied.
 8. Unit shall provide surge protection for the controller through a circuit breaker.
 9. Shall be Internet capable, and communicate at a Baud rate of 38.4K or faster.
 10. Shall have an LED display independently showing the status of activity on the communication bus, and processor operation.
 11. Shall include an EIA-485 protocol communication port, an access port for connection of either a computer or a Carrier technician tool, an EIA-485 port for network communication to intelligent space sensors and displays, and a port to connect an optional LonWorks plug-in communications card.
 12. Shall have built-in Carrier Comfort Network® (CCN) protocol, and be compatible with other CCN devices, including *ComfortLink* and *ComfortVIEW™* controllers.
 13. Shall have built-in support for Carrier technician tool.
 14. Software upgrades will be accomplished by local download. Software upgrades through chip replacements are not allowed.
 15. Shall be shock resistant in all planes to 5G peak, 11ms during operation, and 100G peak, 11ms during storage.
 16. Shall be vibration resistant in all planes to 1.5G at 20 to 300 Hz.
 17. Shall support a bus length of 1219m (4000 ft) max, 60 devices per 305m (1000 ft) section, and 1 RS-485 repeater per 305m (1000 ft) sections.
- B. (23 09 23.13.B) Open protocol, direct digital controller:**
1. Shall be ASHRAE 62-2001 compliant.
 2. Shall accept 18 to 30VAC, 50Hz, and consumer 15VA or less power.
 3. Shall have an operating temperature range from -40°C (-40°F) to 54°C (130°F), 10% to 90% RH (non-condensing).

4. Shall include built-in protocol for BACnet¹ (MS/TP and PTP modes), Modbus² (RTU and ASCII), Johnson N2 and LonWorks³. LonWorks Echelon processor required for all Lon applications shall be contained in separate communication board.
5. Shall allow access of up to 62 network variables (SNVT). Shall be compatible with all open controllers.
6. Baud rate controller shall be selectable using a dipswitch.
7. Shall have an LED display independently showing the status of serial communication, running, errors, power, all digital outputs, and all analog inputs.
8. Shall accept the following inputs: space temperature, setpoint adjustment, outdoor air temperature, indoor air quality, outdoor air quality, compressor lock-out, fire shutdown, enthalpy switch, and fan status/filter status/ humidity/ remote occupancy.
9. Shall provide the following outputs: economizer, fan, cooling stage 1, cooling stage 2, heat stage 1, heat stage 2, heat stage 3/ exhaust/ reversing valve.
10. Shall have built-in surge protection circuitry through solid state polyswitches. Polyswitches shall be used on incoming power and network connections. Polyswitches will return to normal when the “trip” condition clears.
11. Shall have a battery back-up capable of a minimum of 10,000 hours of data and time clock retention during power outages.
12. Shall have built-in support for Carrier technician tool.
13. Shall include an EIA-485 protocol communication port, an access port for connection of either a computer or a Carrier technician tool, an EIA-485 port for network communication to intelligent space sensors and displays, and a port to connect an optional LonWorks communications card.
14. Software upgrades will be accomplished by either local or remote download. No software upgrades through chip replacements are allowed.

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 central control terminal 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.

4. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.

B. (23 09 33.23.B) Safeties:

1. Compressor over-temperature, over current.
2. Low-pressure switch:
 - a. Units with 2 compressors shall have different sized connectors for the circuit 1 and circuit 2 low and high pressure switches. They shall physically prevent the cross-wiring of the safety switches between circuits 1 and 2.
 - b. 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. Units with 2 compressors shall have different sized connectors for the circuit 1 and circuit 2 low and high pressure switches. They shall physically prevent the cross-wiring of the safety switches between circuits 1 and 2.
 - b. 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. Automatic reset, motor thermal overload protector.

Part 6 — (23 40 13) Panel Air Filters

6.01 (23 40 13.13) Decentralized, Rooftop Units:

A. (23 40 13.13.A) Standard filter section

1. Shall consist of factory-installed, low velocity, throwaway 51 mm (2-in.) thick fiberglass filters of commercially available sizes.
2. Unit shall use only one filter size. Multiple sizes are not acceptable.
3. Filters shall be accessible through an access panel with “no-tool” removal as described in the unit cabinet section of this specification (23 81 19.13.H).

Part 7 — (23 81 19) Self-Contained Air Conditioners

7.01 (23 81 19.13) Small-Capacity Self-Contained Air Conditioners (50TC-*08-16)

A. (23 81 19.13.A) General:

1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a(n) hermetic scroll compressor(s) 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 environmentally safe, Puron® 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 210/240 and 340/360.
 3. Unit shall be designed to conform to ASHRAE 15, 2001.
 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 casing shall be capable of withstanding Federal Test Method Standard No. 141 (Method 6061) 5000-hour salt spray.
 8. Unit shall be designed in accordance with ISO 9001:2000, and shall be manufactured in a facility registered by ISO 9001:2000.
 9. Roof curb shall be designed to conform to NRCA Standards.
 10. 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.
 11. Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
 12. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
 13. 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. Lifting 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) Project Conditions
1. As specified in the contract.
- F. (23 81 19.13.F) Operating Characteristics
1. Unit shall be capable of starting and running at 52°C (125°F) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 or 340/360 at $\pm 10\%$ voltage.
 2. Compressor with standard controls shall be capable of operation from 4°C (40°F) ambient outdoor temperatures. Accessory winter start kit is necessary if mechanically cooling at ambient temperatures below -4°C (25°F).
 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.
 5. Unit shall be field convertible from vertical to horizontal configuration.
 6. Unit shall be capable of mixed operation: vertical supply with horizontal return or horizontal supply with vertical return.
- G. (23 81 19.13.G) Electrical Requirements
1. Main power supply voltage, phase, and frequency must match those required by the manufacturer.
- H. (23 81 19.13.H) Unit Cabinet
1. Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a pre-painted 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, 16°C/60°F): 60, Hardness: H-2H Pencil hardness.
 3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 or 340/360 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 13mm (1/2-in.) thick, 45kg (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 four 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 unit 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 non-corrosive material.
 - b. Shall comply with ASHRAE Standard 62.
 - c. Shall use a 19mm (3/4-in.), 14 NPT drain connection, possible either through the bottom or end of the drain pan. Connection shall be made per manufacturer's recommendations.
7. Top panel:
 - a. Shall be a single piece top panel on 08 through 14 sizes.
8. Electrical Connections:
 - a. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
 - b. Through-the-base capability
 - 1.) Standard unit shall have a through-the-base electrical location(s) using a raised, embossed portion of the unit basepan.
 - 2.) Optional, factory-approved, water-tight connection method must be used for through-the-base electrical connections.
 - 3.) No basepan penetration, other than that authorized by the manufacturer, is permitted.
9. Component access panels (standard):
 - a. Cabinet panels shall be easily removable for servicing.
 - b. Unit shall have one factory installed, tool-less, removable, filter access panel.
 - c. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
 - d. Handles shall be UV modified, composite, 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.
- I. (23 81 19.13.I) N/A
- J. (23 81 19.13.J) Coils
 1. Standard aluminum/copper 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.
 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.
- K. (23 81 19.13.K) Refrigerant Components
 1. Refrigerant circuit shall include the following control, safety, and maintenance features:
 - a. Fixed orifice metering system shall prevent maldistribution of two-phase refrigerant by including multiple fixed orifice devices in each refrigeration circuit. Each orifice is to be optimized to the coil circuit it serves.

- b. Refrigerant filter drier.
- c. Service gauge connections on suction and discharge lines.
- d. Pressure gauge access through a specially designed access port in the top panel of the unit.
- 2. There shall be gauge line access port in the skin of the rooftop, covered by a black, removable plug.
 - a. The plug shall be easy to remove and replace.
 - b. When the plug is removed, the gauge access port shall enable maintenance personnel to route their pressure gauge lines.
 - c. This gauge access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.
 - d. The plug shall be made of a leak proof, UV-resistant, composite material.
- 3. Compressors:
 - a. Unit shall use fully hermetic scroll compressor for each independent refrigeration circuit.
 - b. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
 - c. Compressors shall be internally protected from high discharge temperature conditions.
 - d. Compressors shall be protected from an over-temperature and over-ampereage conditions by an internal motor overload device.
 - e. Compressor shall be factory mounted on rubber grommets.
 - f. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
 - g. Crankcase heaters shall not be required for normal operating range, unless provided by the factory.
- L. (23 81 19.13.L) 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 51mm (2-in.) thick fiberglass filters.
 - 4. Filters shall be standard, commercially available sizes.
 - 5. Only one size filter per unit is allowed.
- M. (23 81 19.13.M) Evaporator Fan and Motor
 - 1. Evaporator fan motor:
 - a. Shall have permanently lubricated bearings.
 - b. Shall have inherent automatic-reset thermal overload protection or circuit breaker.
 - c. Shall have a maximum continuous bhp rating for continuous duty operation; no safety factors above that rating shall be required.
- 2. Belt-driven evaporator fan:
 - a. Belt drive shall include an adjustable-pitch motor pulley.
 - b. Shall use sealed, permanently lubricated ball-bearing type.
 - c. Blower fan shall be double-inlet type with forward-curved blades.
 - d. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.
- N. (23 81 19.13.N) 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 size 08 to 14 models.
 - 2. Condenser Fans:
 - a. Shall be a direct-driven propeller type fan.
 - b. Shall have aluminum blades riveted to corrosion-resistant steel spiders and shall be dynamically balanced.
- O. (23 81 19.13.O) Special Features, Options and Accessories
 - 1. Integrated Economizers:
 - a. Integrated, gear-driven parallel modulating blade design type capable of simultaneous economizer and compressor operation.
 - b. Independent modules for vertical or horizontal return configurations shall be available. Vertical return modules shall be available as a factory installed option.
 - c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
 - d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below set-points.
 - e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
 - f. Shall be equipped with low-leakage dampers, not to exceed 2% leakage at 1 in. wg pressure differential.
 - g. Shall be capable of introducing up to 100% outdoor air.
 - h. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air.

- i. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.
 - j. Dry bulb outdoor-air temperature sensor shall be provided as standard. Outdoor air sensor setpoint shall be adjustable and shall range from 4 to 38°C (40 to 100°F). Additional sensor options shall be available as accessories.
 - k. 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%.
 - l. The economizer shall maintain minimum air-flow into the building during occupied period and provide design ventilation rate for full occupancy. A remote potentiometer may be used to override the damper setpoint.
 - m. Dampers shall be completely closed when the unit is in the unoccupied mode.
 - n. Economizer controller shall accept a 2 to 10Vdc CO₂ sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor-air damper to provide ventilation based on the sensor input.
 - o. Compressor lockout sensor shall open at 2°C (35°F) and close at 10°C (50°F).
 - p. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.
 - q. Economizer controller shall provide indications when in free cooling mode, in the DCV mode, or the exhaust fan contact is closed.
2. Two-Position Damper:
- 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.
3. Manual Damper:
- a. Manual damper package shall consist of damper, air inlet screen, and rain hood which can be preset to admit up to 50% outdoor air for year-round ventilation.
4. Head Pressure 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 32°C (90°F) and 43°C (110°F) at outdoor ambient temperatures down to -29°C (-20°F).
5. Condenser Coil Hail Guard Assembly
- a. Shall protect against damage from hail.
 - b. Shall be louvered design.
6. 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.
7. Thru-the-Base Connectors:
- a. Kits shall provide connectors to permit electrical connections to be brought to the unit through the unit basepan.
 - b. Minimum of four connection locations per unit.
8. Propeller 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 is 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.
9. 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.

Guide specifications (cont)

10. High-Static Indoor Fan Motor(s) and Drive(s):
 - a. High-static motor(s) and drive(s) shall be factory-installed to provide additional performance range.
11. Condenser Coil Grille:
 - a. The grille protects the condenser coil from damage by large objects without increasing unit clearances.
12. Thru-the-Bottom Utility Connectors:
 - a. Kit shall provide connectors to permit gas and electrical connections to be brought to the unit through the basepan.
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 (CO₂) 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 (factory-installed only):
 - a. Shall be a Four-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 two individual detector modules.
 - 5.) Can be wired to up to 14 other duct smoke detectors for multiple fan shut-down 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 -4°C (25°F).
 - c. Shall not be required to operate on an economizer when below an outdoor ambient of 4°C (40°F).
18. Time Guard:
 - a. Shall prevent compressor short cycling by providing a 5-minute delay (±2 minutes) before restarting a compressor after shut-down for any reason.
 - b. One device shall be required per compressor.
19. Electric Heat:
 - a. Heating Section:
 - 1.) Heater element open coil resistance wire, nickel-chrome alloy, 7.37mm (0.29-in.) 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.