

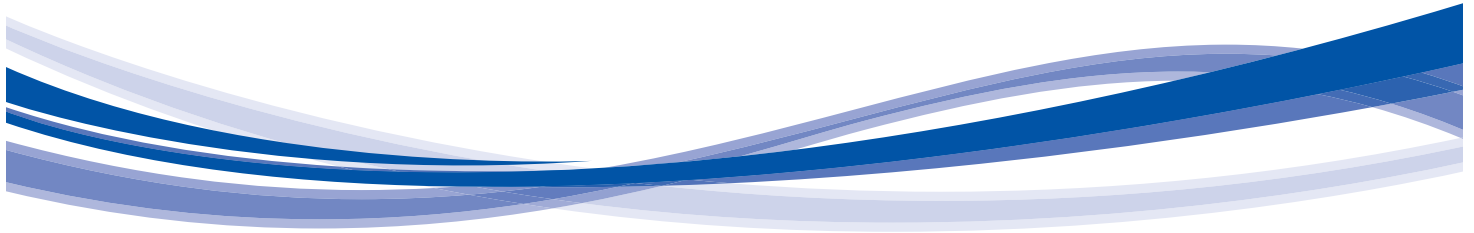


Turn to the experts

Product Data

50LC WeatherExpert® Packaged Rooftop Units

3 to 5 Nominal Tons



WeatherExpert®



Shown with optional Economizer

50LC04-06 WeatherExpert® Ultra High Efficient Packaged
Rooftop Units, Cooling Only with Optional Electric Heat, with
Puron® Refrigerant

Carrier's rooftop units (RTU) are designed by customers for customers. These highly efficient WeatherExpert® models not only help reduce energy cost while providing comfort but they also help lower total cost of ownership.

Ultra high efficiency

With SEERs up to 17.5, these WeatherExpert models well exceed both ASHRAE 90.1 and Energy Star levels for operating efficiencies. The models also meet or exceed the latest Consortium for Energy Efficiency (CEE) Tier 2 levels. All help to reduce energy cost and help qualify for rebates and contribute to obtain LEED credits.

Easy to install

All WeatherExpert units are field-convertible to horizontal air flow, which makes it easy to adjust to unexpected job-site complications. In fact, the 3-5 ton 50LC rooftops fit on the same Carrier curbs dating back to 1989, making them ideal for replacement without replacing existing curbs or utilizing an adapter curb. Many factory and field installed options are also available that are pre-engineered and tested.

Easy to maintain

Easy access handles by Carrier provide quick 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 your gage line(s) through the hole, and connect them to the refrigeration service

valve(s). Take system pressure readings without affecting the condenser airflow.

Easy to use

The newly designed control box puts all your connections and troubleshooting points in one convenient place. Most low voltage connections are made to the same board and make it easy to find what you're looking for and easy to access it. Carrier rooftops have high and low pressure switches, a filter drier, and 2-in. (51 mm) filters standard.

- Two stage cooling capacity control scroll compressors with crankcase heater
- Belt drive indoor fan and pulley system with Variable Frequency Drive (VFD) motor controller and display or direct drive (multi speed/torque) ECM motor.
- SEER up to 17.5 with direct drive ECM indoor fan motor, up to 16.4 SEER with belt drive/VFD indoor fan motor
- Electro-mechanical controls that provide cooling operation down to 10°F (-12°C)
- Optional SystemVu™ controls that provide cooling operation down to 0°F (-18°C) and feature:
 - Large full text multi-line display and intuitive navigation
 - Quick LED: Run, Alert, Fault
 - Conventional stat or sensor capabilities
 - Demand limiting and more
- Exclusive non-corrosive composite condensate pan in accordance with ASHRAE 62 Standard, sloping design; side or center drain
- Single point electrical connection

- Pre-painted exterior panels and primer-coated interior panels tested to 500 hours salt spray protection
- TXV refrigerant metering system on each circuit
- Fully insulated cabinet with foil faced insulation throughout the entire cabinet.
- Cooling operating range up to 125°F (52°C)
- Access panels with easy grip handles
- Innovative, easy starting, no-strip screw feature on unit access panels
- Two-inch disposable return air filters
- Tool-less filter access door
- New terminal board facilitating simple safety circuit troubleshooting and simplified control box arrangement
- Field convertible airflow (3-5 ton). Being able to convert a unit from vertical airflow to horizontal makes it easy to overcome job site complications.
- Provisions for thru-the-bottom power entry capability as standard
- Full perimeter base rail with built-in rigging adapters and fork truck slots
- 24-volt control circuit protected with resettable circuit breaker
- Permanently lubricated evaporator-fan motor
- Totally enclosed high efficient ECM outdoor fan motor with permanently lubricated bearings
- Low pressure switch and high pressure switch protection
- Liquid line filter drier on each circuit
- Factory-installed Humidi-MiZer® Adaptive Dehumidification System on all sizes.
- Standard Limited Warranty: 5 yr. electric heater exchanger, 5 yr. compressor, 3 yr. SystemVu controller, 1 yr. parts

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MODEL NUMBER NOMENCLATURE

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

Unit Heat Type

50 = Electric Cooling/Heating
Packaged Rooftop

Model Series - WeatherExpert®

LC - Ultra High Efficiency

Heat Options

0 = Standard, No Electric Heat
D = Low Electric Heat
E = Medium Electric Heat
F = High Electric Heat

Refrig. Systems Options

0 = Two stage cooling capacity
A = Two stage cooling capacity
with Humidi-MiZer® System

Cooling Tons

04 - 3 ton
05 - 4 ton
06 - 5 ton

Sensor Options

A = None
B = RA Smoke Detector
C = SA Smoke Detector
D = RA + SA Smoke Detector
E = CO₂
F = RA Smoke Detector and CO₂
G = SA Smoke Detector and CO₂
H = RA + SA Smoke Detector and CO₂
J = Condensate Overflow Switch
K = Condensate Overflow Switch and RA Smoke Detectors
L = Condensate Overflow Switch and RA and SA Smoke
Detectors

Indoor Fan Options

0 = Standard Electrical (Direct) Drive x13 ECM Motor
2 = Medium Static Belt Drive with VFD controller
3 = High Static Belt Drive with VFD controller

Coil Options: Fin/Tube (Condenser – Evaporator – Hail Guard)

A = Al/Cu – Al/Cu
B = Precoat Al/Cu – Al/Cu
C = E-coat Al/Cu – Al/Cu
D = E-coat Al/Cu – E-coat Al/Cu
E = Cu/Cu – Al/Cu
F = Cu/Cu – Cu/Cu
M = Al/Cu – Al/Cu – Louvered Hail Guard
N = Precoat Al/Cu – Al/Cu – Louvered Hail Guard
P = E-coat Al/Cu – Al/Cu – Louvered Hail Guard
Q = E-coat Al/Cu – E-coat Al/Cu – Louvered Hail Guard
R = Cu/Cu – Al/Cu – Louvered Hail Guard
S = Cu/Cu – Cu/Cu – Louvered Hail Guard

Packaging

0 = Standard
1 = LTL

Electrical Options

A = None
B = HACR Circuit Breaker
C = Non-Fused Disconnect
D = Thru-The-Base Connections
E = HACR Circuit Breaker
and Thru-The Base Connections
F = Non-Fused Disconnect and
Thru-The-Base Connections

Service Options

0 = None
1 = Unpowered Convenience Outlet
2 = Powered Convenience Outlet
3 = Hinged Panels
4 = Hinged Panels and
Unpowered Convenience Outlet
5 = Hinged Panels and
Powered Convenience Outlet

Air Intake / Exhaust Options

A = None
B = Temperature Economizer with Barometric Relief
E = Enthalpy Economizer with Barometric Relief
N = Ultra Low Leak Temperature Economizer
with Barometric Relief
R = Ultra Low Leak Enthalpy Economizer with
Barometric Relief

Base Unit Controls

0 = Base Electromechanical Controls
1 = RTU Open Multi-Protocol Controller
4 = SystemVu™ Controller

Design Revision

- = Factory Design Revision

Voltage

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

AHRI COOLING RATING — 2-STAGE COOLING WITH DIRECT DRIVE ECM MOTOR (208v)

50LC UNIT	NOMINAL CAPACITY (TONS)	COOLING STAGES	HEATING OPTION	NOM COOLING CAPACITY	TOTAL POWER (kW)	EER	SEER / IEER
04	3.0	2	All	35.6	2.8	12.8	17.1
05	4.0	2	All	47.5	3.6	13.1	17.5
06	5.0	2	All	58.5	4.6	12.7	17.2

AHRI COOLING RATING — 2-STAGE COOLING WITH BELT DRIVE INDOOR MOTOR (208v)

50LC UNIT	NOMINAL CAPACITY (TONS)	COOLING STAGES	HEATING OPTION	NOM COOLING CAPACITY	TOTAL POWER (kW)	EER	SEER / IEER
04	3.0	2	All	34.6	2.9	12.0	15.5
05	4.0	2	All	46.5	3.7	12.6	16.4
06	5.0	2	All	58.0	4.7	12.3	16.2

AHRI COOLING RATING — 2-STAGE COOLING WITH DIRECT DRIVE ECM MOTOR (230v/460v/575v)

50LC UNIT	NOMINAL CAPACITY (TONS)	COOLING STAGES	HEATING OPTION	NOM COOLING CAPACITY	TOTAL POWER (kW)	EER	SEER / IEER
04	3.0	2	All	35.6	2.8	12.8	17.1
05	4.0	2	All	47.5	3.6	13.1	17.5
06	5.0	2	All	58.5	4.6	12.7	17.2

AHRI COOLING RATING — 2-STAGE COOLING WITH BELT DRIVE INDOOR MOTOR (230v/460v/575v)

50LC UNIT	NOMINAL CAPACITY (TONS)	COOLING STAGES	HEATING OPTION	NOM COOLING CAPACITY	TOTAL POWER (kW)	EER	SEER / IEER
04	3.0	2	All	34.6	2.9	12.0	15.5
05	4.0	2	All	46.5	3.7	12.6	16.4
06	5.0	2	All	58.0	4.7	12.3	16.2

LEGEND

- AHRI** — Air Conditioning, Heating and Refrigeration Institute Test Standard
- ASHRAE** — American Society of Heating, Refrigerating and Air Conditioning
- EER** — Energy Efficiency Ratio
- SEER** — Seasonal Energy Efficiency Ratio

NOTES:

1. Rated in accordance with AHRI Standards 210/240.
2. Ratings are based on:
Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temp and 95°F (35°C) db outdoor air temp.
3. All 50LC units comply with ASHRAE 90.1 Energy Standard for minimum SEER and EER requirements.
4. 50LC units comply with US Energy Policy Act. To evaluate code compliance requirements, refer to state and local codes.



MINIMUM-MAXIMUM AIRFLOWS ELECTRIC HEAT

UNIT	COOLING		ELECTRIC HEATERS	
	Minimum	Maximum	Minimum	Maximum
50LC**04	900	1500	900	1500
50LC**05	1200	2000	1200	2000
50LC**06	1500	2500	1500	2500

SOUND PERFORMANCE

50LC UNIT	COOLING STAGES	OUTDOOR SOUND (dB) at 60 Hz								
		A-Weighted	63	125	250	500	1000	2000	4000	8000
004	1	76	78.2	78.0	74.2	73.3	70.6	66.0	62.4	56.9
005	1	78	84.7	83.6	77.1	74.6	72.3	68.3	64.7	60.9
006	1	77	87.5	82.5	76.1	73.6	71.3	67.1	64.1	60.0

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 the "average" human ear. A-weighted measurements for Carrier units are taken in accordance with AHRI.

PHYSICAL DATA (COOLING) 3 TO 5 TONS

50LC UNIT		50LC*004	50LC*A04	50LC*005	50LC*A05	50LC*006	50LC*A06
NOMINAL TONS							
BASE UNIT OPERATING WEIGHT (lb)							
REFRIGERATION SYSTEM							
# Circuits / # Comp. / Type		1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll	1 / 1 / Scroll
R-410A charge (lbs -oz)		9 -2	—	9 -0	—	11 -0	—
Humidi-MiZer® R-410A charge (lbs -oz)		—	11 -8	—	15 -10	—	16 -5
Oil (oz)		25	25	42	42	42	42
Metering device		TXV	TXV	TXV	TXV	TXV	TXV
High-press. Trip / Reset (psig)		630 / 505	630 / 505	630 / 505	630 / 505	630 / 505	630 / 505
Low-press. Trip / Reset (psig)		27 / 44	27 / 44	27 / 44	27 / 44	27 / 44	27 / 44
EVAP. COIL							
Material		Cu / Al	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	3/8-in. RTPF
Rows / FPI		3 / 15	3 / 15	3 / 15	3 / 15	4 / 15	4 / 15
Total face area (ft²)		5.5	5.5	7.3	7.3	7.3	7.3
Condensate drain conn. size		3/4-in.	3/4-in.	3/4-in.	3/4-in.	3/4-in.	3/4-in.
HUMIDI-MIZER COIL							
Material		—	Cu/Al	—	Cu/Al	—	Cu/Al
Coil type		—	3/8-in. RTPF	—	3/8-in. RTPF	—	3/8-in. RTPF
Rows / FPI		—	1 / 17	—	2/17	—	2/17
Total face area (ft²)		—	3.9	—	5.2	—	5.2
EVAP. FAN AND MOTOR							
Standard Static 3 phase	Motor qty / Drive type	1 / Direct	1 / Direct	1 / Direct	1 / Direct	1 / Direct	1 / Direct
	Max BHP	1	1	1	1	1	1
	RPM range	600-1200	600-1200	600-1200	600-1200	600-1200	600-1200
	Motor frame size	48	48	48	48	48	48
	Fan qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
Medium Static 3 phase	Fan diameter (in.)	10 x 10	10 x 10	10 x 10	10 x 10	11 x 10	11 x 10
	Motor qty / Drive type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	1.7	1.7	1.7	1.7	2.4	2.4
	RPM range	770-1175	770-1175	920-1303	920-1303	1035-1466	1035-1466
	Motor frame size	56	56	56	56	56	56
High Static 3 phase	Fan qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan diameter (in.)	10 x 10	10 x 10	10 x 10	10 x 10	10 x 10	10 x 10
	Motor qty / Drive type	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt	1 / Belt
	Max BHP	2.4	2.4	2.9	2.9	2.9	2.9
	RPM range	1035-1466	1035-1466	1208-1550	1208-1550	1303-1550	1303-1550
	Motor frame size	56	56	56	56	56	56
	Fan qty / Type	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal	1 / Centrifugal
	Fan diameter (in.)	10 x 10	10 x 10	10 x 10	10 x 10	10 x 10	10 x 10
COND. COIL							
Material		Cu / Al	Cu / Al	Cu / Al	Cu / Al	Cu / Al	Cu / Al
Coil type		7mm RTPF	7mm RTPF	7mm RTPF	7mm RTPF	7mm RTPF	7mm RTPF
Rows / FPI		2 / 20	2 / 20	2 / 20	2 / 20	2 / 20	2 / 20
Total face area (ft²)		16.4	16.4	21.4	21.4	21.4	21.4
COND. FAN / MOTOR							
Qty / Motor drive type		1 / direct	1 / direct	1 / direct	1 / direct	1 / direct	1 / direct
Motor HP / RPM		1/3 / 1001	1/3 / 1001	1/3 / 1082	1/3 / 1001	1/3 / 1082	1/3 / 1082
Fan diameter (in.)		22	22	22	22	22	22
FILTERS							
RA filter # / Size (in.)		2 / 16 x 25 x 2	2 / 16 x 25 x 2	4 / 16 x 16 x 2	4 / 16 x 16 x 2	4 / 16 x 16 x 2	4 / 16 x 16 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	1 / 20 x 24 x 1	1 / 20 x 24 x 1

FACTORY-INSTALLED OPTIONS AND FIELD-INSTALLED ACCESSORIES

CATEGORY	ITEM	FACTORY-INSTALLED OPTION	FIELD-INSTALLED ACCESSORY
Cabinet	Thru-the-base electrical connections	X	X
	Hinged access panels	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
Humidity Control	Humidi-MiZer® Adaptive Dehumidification System	X	
Controls	Thermostats, temperature sensors, and subbases		X
	Smoke detector (supply and/or return air)	X	
	Horn/Strobe Annunciator ¹		X
	Time Guard II compressor delay control circuit		X
	Phase Monitor		X
	SystemVu™ Controller ²	X	
	RTU Open multi-protocol controller	X	X
Economizers and Outdoor Air Dampers	EconoMi\$er X for electromechanical controls, complies with FDD. (Low and Ultra Low Leak air damper models)	X	X
	EconoMi\$er2 for DDC controls, complies with FDD. (Low and Ultra Low Leak air damper models) ³	X	X
	Barometric relief ⁴	X	X
	Power exhaust		X
Economizer Sensors and IAQ Devices	Single dry bulb temperature sensors ⁵	X	X
	Differential dry bulb temperature sensors ⁵		X
	Single enthalpy sensors ⁵	X	X
	Differential enthalpy sensors ⁵		X
	CO ₂ sensor (wall, duct, or unit mounted) ⁵	X	X
Electric Heat	Electric Resistance Heaters	X	X
	Single Point Kit	X	X
Indoor Motor and Drive	Multiple motor and drive packages	X	
Power Options	Convenience outlet (powered)	X	
	Convenience outlet (unpowered)	X	
	HACR Circuit Breaker ^{6,7}	X	
	Non-fused disconnect ⁸	X	
Roof Curbs	Roof curb 14-in. (356 mm)		X
	Roof curb 24-In. (610 mm)		X

NOTES:

- Requires a field-supplied 24V transformer for each application. See price pages for details.
- SystemVu controller is not available on units with factory-installed Standard Leak Economizers (field-installed only).
- FDD (Fault Detection and Diagnostic) capability per California Title 24 section 120.2.
- Included with economizer.
- Sensors used to optimize economizer performance.
- On 575V applications, HACR breaker can only be used with WYE power distribution systems. Using on Delta power distribution systems is prohibited.
- When selecting a factory-installed HACR breaker or non-fused disconnect, note they are sized for the unit as ordered from the factory. The sizing of these do not accommodate any field items such as power exhaust devices etc.
- On 208/230-460 units with FIOP Non-Fused Disconnect, a Single Point Box accessory may be required. Refer to Electric Heat-Electrical Data Table for more information.

Factory-installed options

Economizer

Economizers save energy and money and improve comfort levels in the conditioned space. They bring in fresh, outside air for ventilation; and provide cool outside air to cool your building. This also 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 based on space occupancy.

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 controllers. 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. Economizers are available in ultra low leak and low leak versions.

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. They are available, installed by the factory, 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.

Convenience Outlet (powered or un-powered)

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

NOTE: Powered convenience outlets are not available on 460 and 575 volt units.

Non-fused Disconnect

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

Hinged Access Panels

Allows access to unit's major components with specifically designed hinged access panels. Panels are: filter, control box, fan motor and compressor. Comes with quarter turn latches and lift tabs.

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, as well as control power.

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.

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. Besides the 4 protocols, it also communicates with a Carrier Open system (i-Vu[®] and VVT[®]).

HACR Breaker

These manual reset devices provide overload and short circuit protection for the unit. Factory wired and mounted with the units with access cover to help provide environment protection.

On 575V applications, HACR breaker can only be used with WYE power distribution systems. Use on Delta power distribution systems is prohibited.

SystemVu™ Controller

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

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

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

Key features include:

- Easy to read back lit four line text screen for superior visibility.
- Quick operational condition LEDs of: Run, Alert, and Fault.
- Simple navigation with large keypad buttons of: Navigation arrows, Test, Back, Enter and Menu.
- Capable of being controlled with a conventional thermostat, space sensor or build automation system.
- Service capabilities include:
 - Auto run test
 - Manual run test
 - Component run hours and starts
 - Commissioning reports
 - Data logging

1. BACnet is a registered trademark of ASHRE (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.

- Full range of diagnostics:
 - Read refrigerant pressures without the need of gages
 - Sensor faults
 - Compressor reverse rotation
 - Economizer diagnostics that meet California Title 24 requirements
- Quick data transfer via USB port:
 - Unit configuration uploading/downloading
 - Data logging
 - Software upgrades
- Built in capacity for:
 - i-Vu® open systems
 - BACnet systems
 - CCN systems
- Configuration and alarm point capability:
 - Contain over 100 alarm codes
 - Contain over 260 status, troubleshooting, diagnostic and maintenance points
 - Contain over 270 control configuration setpoints

Optional Humidi-MiZer® Adaptive Dehumidification System

Carrier's Humidi-MiZer adaptive dehumidification system is an all-inclusive factory installed option that can be ordered with any 50LC WeatherExpert rooftop unit.

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

The Humidi-MiZer adaptive dehumidification system has the industry's only dual dehumidification mode setting. The Humidi-MiZer system includes two new modes of operation.

The 50LC WeatherExpert rooftop coupled with the Humidi-MiZer system is capable of operating in normal design cooling mode, subcooling mode, and hot gas reheat

mode. Normal design cooling mode is when the unit will operate under its normal sequence of operation by cycling compressors to maintain comfort conditions.

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

Field-installed accessories

Power Exhaust with Barometric Relief

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

Time Guard II Control Circuit

This accessory protects your compressor by preventing short-cycling in the event of some other failure, and prevents the compressor from restarting for 30 seconds after stopping.

Manual OA Damper and Two Position Dampers

Both manual and two position dampers are not recommended due to the control logic required for the 2-speed indoor fan system for maintaining proper ventilation requirements. Contact application engineering for more details.

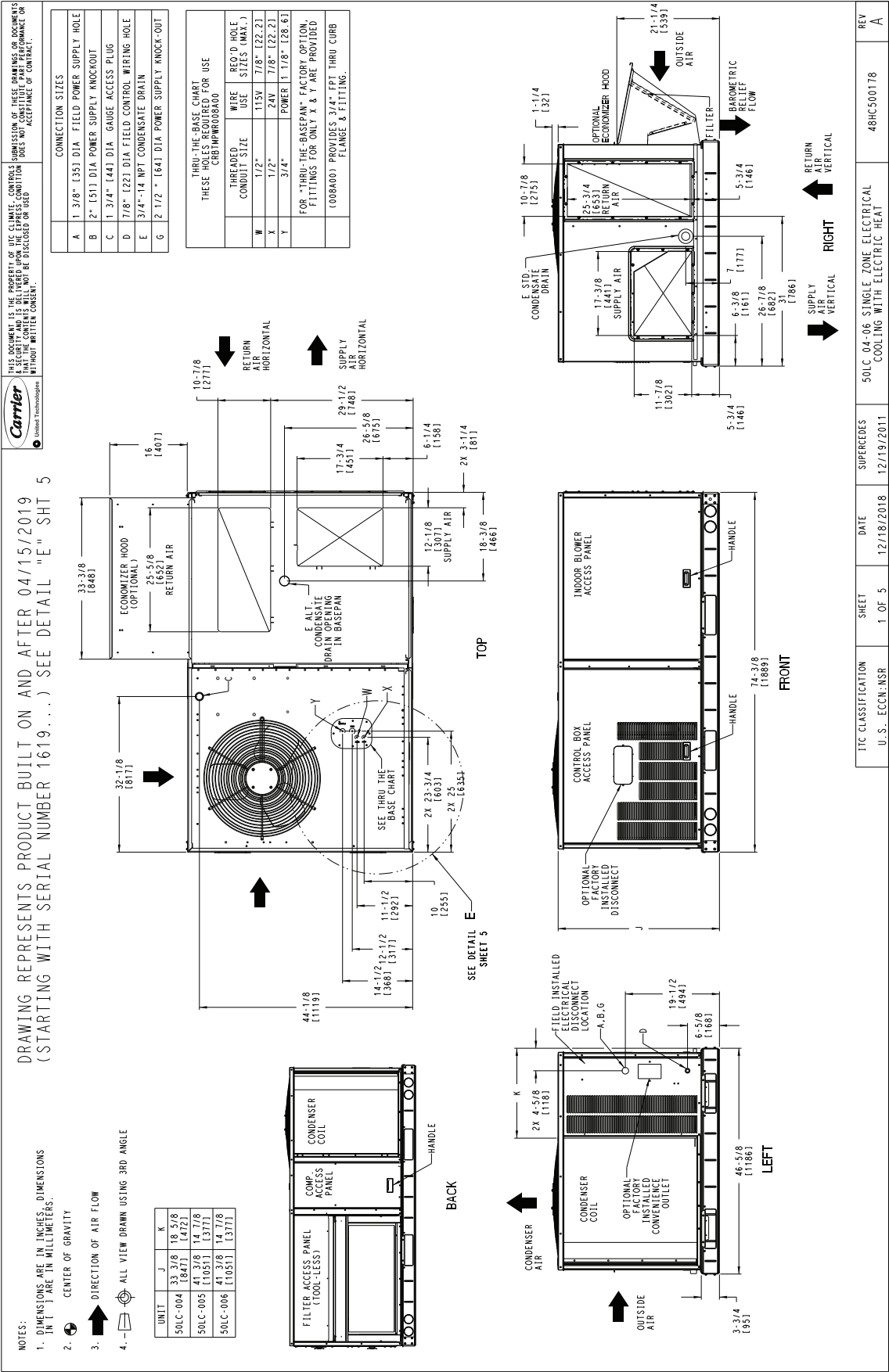
Electric Heaters

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

OPTIONS AND ACCESSORY WEIGHTS

OPTION/ACCESSORY	OPTION/ACCESSORY WEIGHTS					
	04		05		06	
	lb	kg	lb	kg	lb	kg
Humidi-MiZer® System	50	23	55	25	55	25
Power Exhaust - Vertical	50	23	50	23	50	23
Power Exhaust - Horizontal	30	14	30	14	30	14
EconoMi\$er (X or 2)	50	23	50	23	50	23
Hail Guard (Louvered)	16	7	16	7	16	7
Cu/Cu Condenser Coil	35	16	35	16	35	16
Cu/Cu Condenser and Evaporator Coils	60	27	60	27	90	41
Roof Curb (14-in. curb)	115	43	115	43	115	43
Roof Curb (24-in. curb)	197	74	197	74	197	74
CO ₂ Sensor	5	2	5	2	5	2
Optional Indoor Motor/Drive	10	5	10	5	10	5
Motormaster Controller	35	16	35	16	35	16
Return Smoke Detector	5	2	5	2	5	2
Supply Smoke Detector	5	2	5	2	5	2
Fan/Filter Status Switch	2	1	2	1	2	1
Non-fused Disconnect	15	7	15	7	15	7
Powered Convenience Outlet	35	16	35	16	35	16
Non-powered Convenience Outlet	5	2	5	2	5	2
Enthalpy Sensor	2	1	2	1	2	1
Differential Enthalpy Sensor	3	1	3	1	3	1
HACR Breaker	15	7	15	7	15	7

DIMENSIONAL DRAWING FOR 50LC**04-06 UNITS BUILT ON AND AFTER 4/15/2019



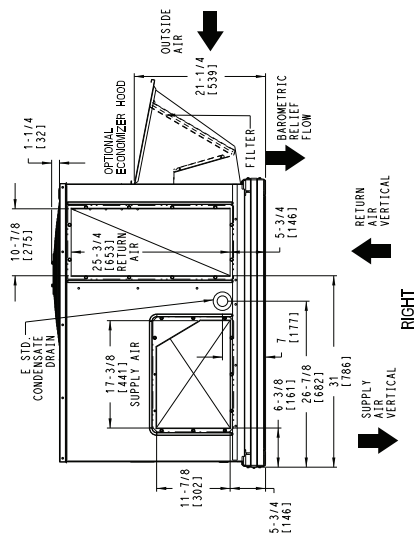
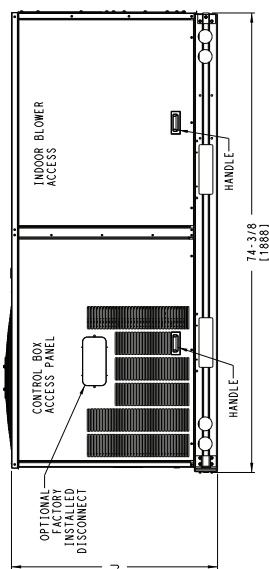
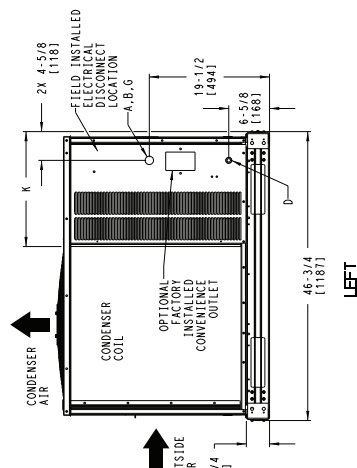
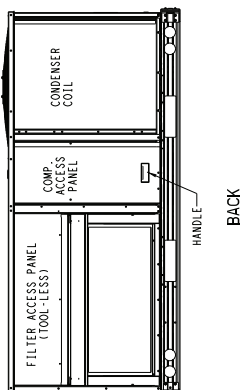
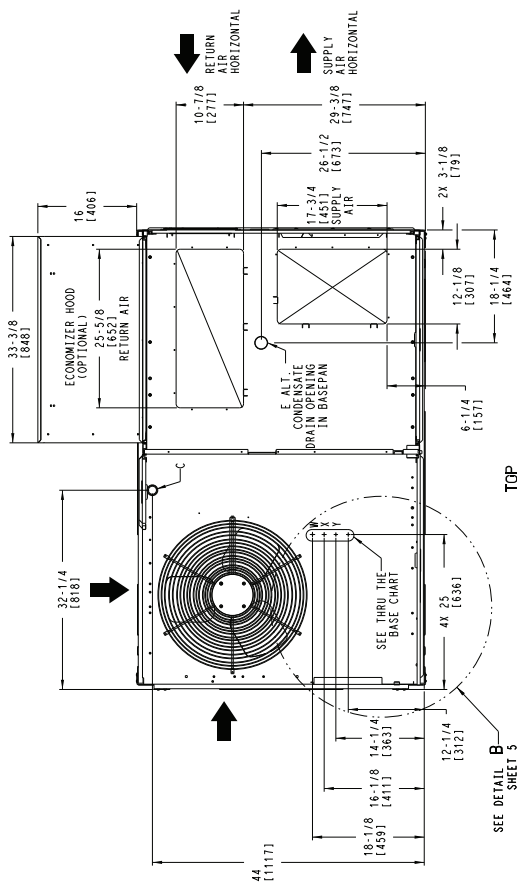
 United Technologies	THIS DOCUMENT IS THE PROPERTY OF UTC CLIMATE, CONTROLS & SECURITY, AND IS DELIVERED UPON THE EXPRESS CONDITION THAT THE CONTENTS WILL NOT BE DISCLOSED OR USED WITHOUT WRITTEN CONSENT.	SUBMISSION OF THESE DRAWINGS OR DOCUMENTS DOES NOT CONSTITUTE PART PERFORMANCE OR ACCEPTANCE OF CONTRACT.	CONNECTION SIZES
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	CONNECTION SIZES
A	1 3/8" [35] DIA. FIELD POWER SUPPLY HOLE
B	2" [51] DIA. POWER SUPPLY KNOCKOUT
C	1 3/4" [44] DIA. GAUGE ACCESS PLUG
D	7/8" [22] DIA. FIELD CONTROL WIRING HOLE
E	3/4"-14 NPT CONDENSATE DRAIN
G	2 1/2" [64] DIA. POWER SUPPLY KNOCK-OUT

THRU-10™ BASE CHART THESE HOLES REQUIRE FOR USE CBB1000010A01			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC	7/8" [122.2]
X	1/2"	24V	7/8" [122.2]
Y*	3/4" (001A01)	POWER	1 1/8" [28.4]

FOR "THRU-THE-BASEPAN" FACTORY OPTION,
FITTINGS FOR ONLY X & Y ARE PROVIDED

* SELECT EITHER 3/4" OR 1/2"
FOR POWER, DEPENDING ON WIRE SIZE



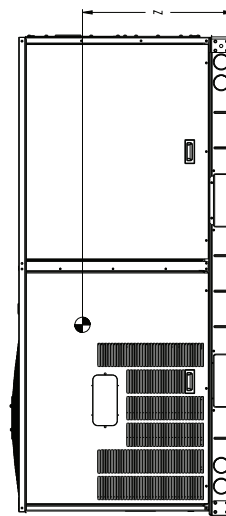
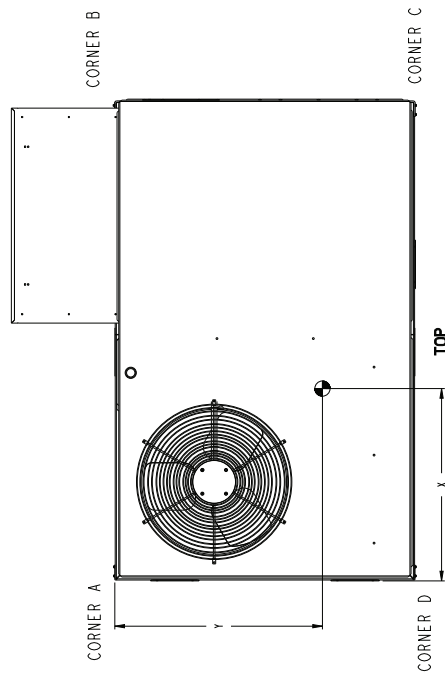
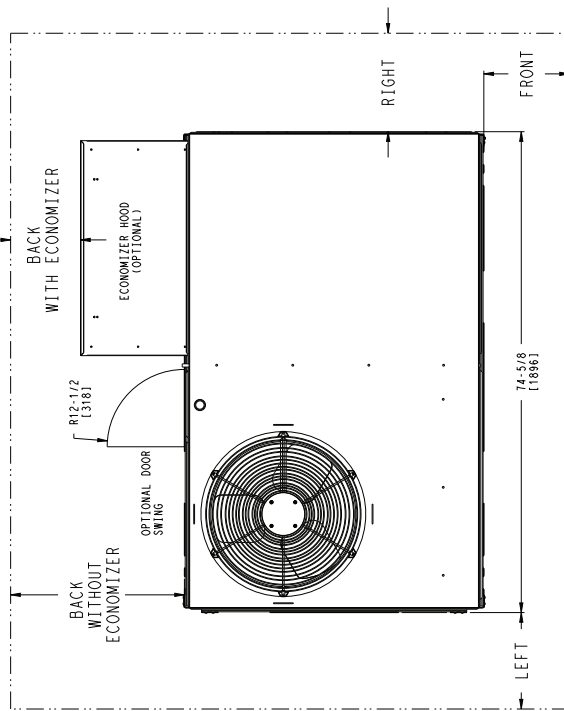
ITC CLASSIFICATION	SHEET	DATE	SUPERCEDES	REV
			501C 04-06 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	48HC500178 Δ

50LC**04-06 CORNER WEIGHTS AND CLEARANCES

UNITED TECHNOLOGIES
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UNIT	STD. UNIT WEIGHT (LBS.)		CORNER WEIGHT (LBS.)		CORNER WEIGHT (KG.)		CORNER WEIGHT (LBS.)		CORNER WEIGHT (KG.)		C.G.		HEIGHT
	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	LBS.	KG.	X	Y	
50LC-004	458	208	128	58	109	49	101	46	120	54	34 1/8 (867)	22 1/2 (572)	19 3/4 (502)
50LC-005	545	247	156	71	135	61	118	54	136	62	34 5/8 (879)	21 3/4 (552)	20 7/8 (530)
50LC-006	550	249	160	73	136	62	117	53	138	63	34 1/8 (867)	21 5/8 (549)	20 1/4 (514)

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



NOTE:

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

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

ITC CLASSIFICATION	SHEET	DATE	REV
U.S. - ECCN-NSR	3 OF 5	12/18/2018	A
SUPERCEDES		50LC 04-06 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT	48HC500178

[illegible]

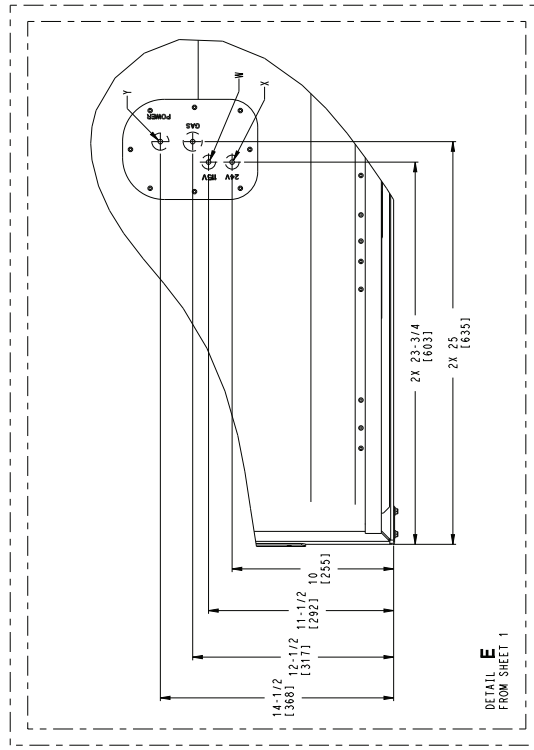
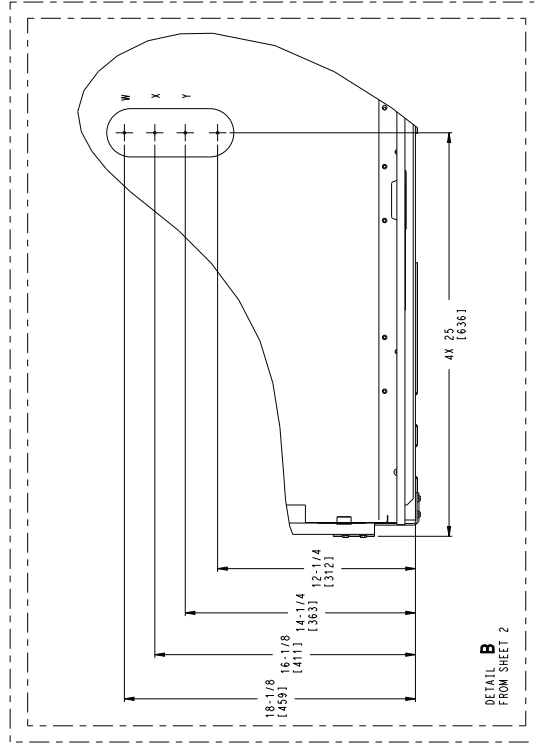
50LC**04-06 THRU-THE-BASE CHARTS

Carrier
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THRU-THE-BASE CHART THESE HOLES ARE REQUIRED FOR USE C8BTMPW000A00			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	ACC	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	3/4" (001A01)	POWER 11	1 1/8" [28.4]
	FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X & Y ARE PROVIDED		
*	SELECT EITHER 3/4" OR 1 1/2" FOR POWER, DEPENDING ON WIRE SIZE		

THRU-THE-BASE CHART THESE HOLES ARE REQUIRED FOR USE C8BTMPW000A00			
	THREADED CONDUIT SIZE	WIRE USE	REQ'D HOLE SIZES (MAX.)
W	1/2"	115V	7/8" [22.2]
X	1/2"	24V	7/8" [22.2]
Y	3/4"	POWER	1 1/8" [28.6]
	FOR "THRU-THE-BASEPAN" FACTORY OPTION, FITTINGS FOR ONLY X & Y ARE PROVIDED		
	(008A00) PROVIDES 3/4" FPT THRU CURB FLANGE & FITTING.		



THIS VIEW REPRESENTS PRODUCT BUILT ON AND PRIOR TO 04/14/2019

THIS VIEW REPRESENTS PRODUCT BUILT ON AND AFTER 04/15/2019

TTC CLASSIFICATION	SHEET	DATE	SUPERCEDES	REV
U.S. ECCN-NSR	5 OF 5	12/18/2018	12/19/2011	A
50LC 04-06 SINGLE ZONE ELECTRICAL COOLING WITH ELECTRIC HEAT				48HC500178

50LC**04 COOLING CAPACITIES - FIRST STAGE (PART LOAD)

				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
750 Cfm	EAT (wb)	58	THC	24.1	24.1	27.3	22.8	22.8	25.9	21.4	21.4	24.3	19.9	19.9	22.6	18.2	18.2	20.7
			SHC	20.9	24.1	27.3	19.7	22.8	25.9	18.5	21.4	24.3	17.1	19.9	22.6	15.6	18.2	20.7
		62	THC	24.8	24.8	27.2	23.2	23.2	26.3	21.5	21.5	25.2	19.9	19.9	23.6	18.2	18.2	21.6
			SHC	19.4	23.3	27.2	18.5	22.4	26.3	17.5	21.3	25.2	16.2	19.9	23.6	14.7	18.2	21.6
		67	THC	27.5	27.5	27.5	25.7	25.7	25.7	23.9	23.9	23.9	21.9	21.9	21.9	19.7	19.7	19.8
			SHC	15.7	19.7	23.7	14.9	18.8	22.8	13.9	17.9	21.8	13.0	16.9	20.9	11.9	15.9	19.8
		72	THC	30.5	30.5	30.5	28.6	28.6	28.6	26.6	26.6	26.6	24.5	24.5	24.5	22.2	22.2	22.2
			SHC	12.0	16.0	20.0	11.1	15.1	19.1	10.2	14.2	18.2	9.2	13.2	17.2	8.2	12.2	16.2
900 Cfm	EAT (wb)	58	THC	—	33.0	33.0	—	31.0	31.0	—	28.9	28.9	—	26.7	26.7	—	24.2	24.2
			SHC	—	12.9	17.0	—	12.1	16.1	—	11.2	15.2	—	10.2	14.2	—	9.2	13.2
		62	THC	25.8	25.8	29.2	24.4	24.4	27.6	22.8	22.8	25.9	21.2	21.2	24.1	19.4	19.4	22.1
			SHC	22.4	25.8	29.2	21.1	24.4	27.6	19.7	22.8	25.9	18.3	21.2	24.1	16.7	19.4	22.1
		67	THC	25.8	25.8	30.4	24.4	24.4	28.7	22.9	22.9	27.0	21.2	21.2	25.1	19.4	19.4	23.0
			SHC	21.3	25.8	30.4	20.0	24.4	28.7	18.7	22.9	27.0	17.3	21.2	25.1	15.8	19.4	23.0
		72	THC	28.4	28.4	28.4	26.6	26.6	26.6	24.6	24.6	24.6	22.5	22.5	23.6	20.3	20.3	22.5
			SHC	17.1	21.8	26.5	16.2	20.9	25.6	15.2	19.9	24.6	14.2	18.9	23.6	13.2	17.8	22.5
1050 Cfm	EAT (wb)	58	THC	31.4	31.4	31.4	29.4	29.4	29.4	27.4	27.4	27.4	25.2	25.2	25.2	22.7	22.7	22.7
			SHC	12.6	17.3	22.1	11.7	16.4	21.2	10.8	15.5	20.2	9.8	14.5	19.2	8.8	13.5	18.2
		62	THC	—	34.0	34.0	—	31.9	31.9	—	29.7	29.7	—	27.4	27.4	—	24.8	24.8
			SHC	—	13.7	18.5	—	12.8	17.6	—	11.9	16.7	—	10.9	15.7	—	9.9	14.6
		67	THC	27.1	27.1	30.7	25.6	25.6	29.0	24.0	24.0	27.2	22.2	22.2	25.3	20.3	20.3	23.2
			SHC	23.6	27.1	30.7	22.2	25.6	29.0	20.8	24.0	27.2	19.2	22.2	25.3	17.5	20.3	23.2
		72	THC	27.1	27.1	31.9	25.6	25.6	30.2	24.0	24.0	28.3	22.3	22.3	26.3	20.3	20.3	24.1
			SHC	22.4	27.1	31.9	21.1	25.6	30.2	19.7	24.0	28.3	18.2	22.3	26.3	16.6	20.3	24.1
1200 Cfm	EAT (wb)	58	THC	29.1	29.1	29.2	27.2	27.2	28.3	25.2	25.2	27.2	23.0	23.0	26.2	20.7	20.7	25.0
			SHC	18.4	23.8	29.2	17.4	22.9	28.3	16.5	21.9	27.2	15.4	20.8	26.2	14.3	19.6	25.0
		62	THC	32.1	32.1	32.1	30.1	30.1	30.1	27.9	27.9	27.9	25.6	25.6	25.6	23.2	23.2	23.2
			SHC	13.2	18.6	24.1	12.3	17.7	23.1	11.3	16.8	22.2	10.3	15.8	21.2	9.3	14.7	20.1
		72	THC	—	34.7	34.7	—	32.6	32.6	—	30.3	30.3	—	—	—	—	—	—
			SHC	—	14.4	19.9	—	13.5	19.0	—	12.6	18.1	—	—	—	—	—	—
		76	THC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1350 Cfm	EAT (wb)	58	THC	28.2	28.2	31.9	26.6	26.6	30.2	24.9	24.9	28.3	23.1	23.1	26.2	21.1	21.1	24.0
			SHC	24.5	28.2	31.9	23.1	26.6	30.2	21.6	24.9	28.3	20.0	23.1	26.2	18.2	21.1	24.0
		62	THC	28.2	28.2	33.2	26.7	26.7	31.4	24.9	24.9	29.4	23.1	23.1	27.3	21.1	21.1	25.0
			SHC	23.3	28.2	33.2	22.0	26.7	31.4	20.5	24.9	29.4	18.9	23.1	27.3	17.2	21.1	25.0
		67	THC	29.6	29.6	31.8	27.7	27.7	30.8	25.6	25.6	29.7	23.5	23.5	28.5	21.2	21.2	27.0
			SHC	19.6	25.7	31.8	18.6	24.7	30.8	17.6	23.7	29.7	16.5	22.5	28.5	15.3	21.2	27.0
		72	THC	32.6	32.6	32.6	30.6	30.6	30.6	28.4	28.4	28.4	26.0	26.0	26.0	23.5	23.5	23.5
			SHC	13.7	19.8	26.0	12.8	18.9	25.1	11.8	18.0	24.1	10.8	16.9	23.1	9.8	15.9	22.0
1350 Cfm	EAT (wb)	58	THC	—	35.2	35.2	—	33.1	33.1	—	—	—	—	—	—	—	—	—
			SHC	—	15.1	21.3	—	14.1	20.3	—	—	—	—	—	—	—	—	—
		62	THC	29.1	29.1	32.9	27.5	27.5	31.1	25.7	25.7	29.2	23.8	23.8	27.0	21.7	21.7	24.7
			SHC	25.3	29.1	32.9	23.9	27.5	31.1	22.3	25.7	29.2	20.6	23.8	27.0	18.7	21.7	24.7
		67	THC	29.2	29.2	34.2	27.5	27.5	32.4	25.8	25.8	30.3	23.8	23.8	28.1	21.8	21.8	25.8
			SHC	24.1	29.2	34.2	22.7	27.5	32.4	21.2	25.8	30.3	19.5	23.8	28.1	17.8	21.8	25.8
		72	THC	30.0	30.0	34.2	28.1	28.1	33.1	26.0	26.0	31.9	23.9	23.9	30.3	21.8	21.8	27.8
			SHC	20.7	27.4	34.2	19.7	26.4	33.1	18.6	25.3	31.9	17.4	23.9	30.3	15.8	21.8	27.8
1350 Cfm	EAT (wb)	58	THC	33.0	33.0	33.0	30.9	30.9	30.9	28.7	28.7	28.7	26.3	26.3	26.3	23.7	23.7	23.8
			SHC	14.2	21.0	27.9	13.2	20.1	26.9	12.3	19.1	26.0	11.3	18.1	24.9	10.2	17.0	23.8
		62	THC	—	35.7	35.7	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	15.7	22.6	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

—	Do not operate
Cfm	Cubic Feet per Minute (supply air)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity
THC	Total Capacity

50LC**04 COOLING CAPACITIES - SECOND STAGE (FULL LOAD)

				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
900 Cfm	EAT (wb)	58	THC	31.5	31.5	35.8	29.8	29.8	33.9	27.9	27.9	31.9	25.9	25.9	29.7	23.9	23.9	27.4
			SHC	27.2	31.5	35.8	25.6	29.8	33.9	24.0	27.9	31.9	22.2	25.9	29.7	20.3	23.9	27.4
		62	THC	33.4	33.4	34.0	31.3	31.3	32.7	29.0	29.0	31.3	26.6	26.6	29.8	24.1	24.1	28.2
			SHC	24.6	29.3	34.0	23.3	28.0	32.7	21.9	26.6	31.3	20.5	25.1	29.8	19.0	23.6	28.2
		67	THC	37.3	37.3	37.3	35.0	35.0	35.0	32.5	32.5	32.5	29.9	29.9	29.9	27.2	27.2	27.2
			SHC	20.3	25.0	29.8	19.0	23.7	28.5	17.7	22.4	27.1	16.3	21.0	25.7	14.8	19.6	24.3
		72	THC	41.5	41.5	41.5	39.0	39.0	39.0	36.3	36.3	36.3	33.6	33.6	33.6	30.6	30.6	30.6
			SHC	15.9	20.7	25.5	14.6	19.4	24.2	13.3	18.1	22.8	11.9	16.7	21.4	10.5	15.2	20.0
1050 Cfm	EAT (wb)	58	THC	—	45.0	45.0	—	42.4	42.4	—	39.6	39.6	—	36.7	36.7	—	33.5	33.5
			SHC	—	17.1	22.1	—	15.8	20.8	—	14.5	19.5	—	13.2	18.1	—	11.7	16.6
		62	THC	33.6	33.6	38.1	31.7	31.7	36.0	29.7	29.7	33.9	27.6	27.6	31.6	25.4	25.4	29.1
			SHC	29.0	33.6	38.1	27.4	31.7	36.0	25.6	29.7	33.9	23.7	27.6	31.6	21.7	25.4	29.1
		67	THC	34.7	34.7	37.5	32.5	32.5	36.1	30.1	30.1	34.6	27.7	27.7	33.0	25.4	25.4	30.4
			SHC	26.7	32.1	37.5	25.4	30.7	36.1	23.9	29.3	34.6	22.4	27.7	33.0	20.4	25.4	30.4
		72	THC	38.6	38.6	38.6	36.1	36.1	36.1	33.6	33.6	33.6	30.9	30.9	30.9	28.0	28.0	28.0
			SHC	21.8	27.2	32.7	20.4	25.9	31.4	19.1	24.5	30.0	17.7	23.1	28.6	16.2	21.6	27.1
1200 Cfm	EAT (wb)	58	THC	42.8	42.8	42.8	40.2	40.2	40.2	37.5	37.5	37.5	34.6	34.6	34.6	31.5	31.5	31.5
			SHC	16.6	22.1	27.6	15.3	20.8	26.3	14.0	19.5	24.9	12.6	18.0	23.5	11.1	16.6	22.1
		62	THC	—	46.4	46.4	—	43.6	43.6	—	40.7	40.7	—	37.7	37.7	—	34.4	34.4
			SHC	—	18.0	23.7	—	16.7	22.3	—	15.3	21.0	—	13.9	19.5	—	12.5	18.1
		67	THC	35.3	35.3	40.0	33.3	33.3	37.9	31.3	31.3	35.6	29.0	29.0	33.2	26.7	26.7	30.6
			SHC	30.6	35.3	40.0	28.8	33.3	37.9	26.9	31.3	35.6	24.9	29.0	33.2	22.8	26.7	30.6
		72	THC	35.8	35.8	40.8	33.6	33.6	39.1	31.3	31.3	37.1	29.1	29.1	34.6	26.7	26.7	31.9
			SHC	28.7	34.7	40.8	27.2	33.2	39.1	25.5	31.3	37.1	23.6	29.1	34.6	21.5	26.7	31.9
1350 Cfm	EAT (wb)	58	THC	39.6	39.6	39.6	37.0	37.0	37.0	34.4	34.4	34.4	31.6	31.6	31.6	28.6	28.6	29.7
			SHC	23.1	29.3	35.5	21.8	27.9	34.1	20.4	26.6	32.7	18.9	25.1	31.3	17.4	23.6	29.7
		62	THC	43.9	43.9	43.9	41.2	41.2	41.2	38.3	38.3	38.3	35.3	35.3	35.3	32.1	32.1	32.1
			SHC	17.3	23.5	29.7	15.9	22.2	28.4	14.6	20.8	27.0	13.1	19.3	25.5	11.7	17.9	24.0
		72	THC	—	47.5	47.5	—	44.6	44.6	—	41.6	41.6	—	38.4	38.4	—	35.1	35.1
			SHC	—	18.8	25.2	—	17.4	23.8	—	16.1	22.4	—	14.7	21.0	—	13.2	19.5
		76	THC	36.8	36.8	41.7	34.7	34.7	39.4	32.5	32.5	37.0	30.2	30.2	34.5	27.8	27.8	31.8
			SHC	31.9	36.8	41.7	30.0	34.7	39.4	28.1	32.5	37.0	26.0	30.2	34.5	23.8	27.8	31.8
1500 Cfm	EAT (wb)	58	THC	36.8	36.8	43.4	34.8	34.8	41.0	32.6	32.6	38.6	30.3	30.3	36.0	27.8	27.8	33.2
			SHC	30.3	36.8	43.4	28.5	34.8	41.0	26.6	32.6	38.6	24.6	30.3	36.0	22.5	27.8	33.2
		62	THC	40.4	40.4	40.4	37.8	37.8	37.8	35.0	35.0	35.4	32.2	32.2	33.9	29.2	29.2	32.3
			SHC	24.4	31.3	38.2	23.0	29.9	36.8	21.6	28.5	35.4	20.2	27.0	33.9	18.6	25.4	32.3
		72	THC	44.7	44.7	44.7	41.9	41.9	41.9	39.0	39.0	39.0	35.9	35.9	35.9	32.7	32.7	32.7
			SHC	17.9	24.8	31.7	16.5	23.4	30.3	15.1	22.0	28.9	13.7	20.6	27.5	12.2	19.1	26.0
		76	THC	—	48.3	48.3	—	45.4	45.4	—	42.3	42.3	—	39.1	39.1	—	35.6	35.6
			SHC	—	19.5	26.6	—	18.1	25.2	—	16.8	23.8	—	15.3	22.3	—	13.8	20.8
1500 Cfm	EAT (wb)	58	THC	38.1	38.1	43.1	35.9	35.9	40.8	33.7	33.7	38.3	31.3	31.3	35.6	28.7	28.7	32.8
			SHC	33.0	38.1	43.1	31.1	35.9	40.8	29.0	33.7	38.3	26.9	31.3	35.6	24.6	28.7	32.8
		62	THC	38.1	38.1	44.8	36.0	36.0	42.4	33.7	33.7	39.9	31.3	31.3	37.1	28.7	28.7	34.2
			SHC	31.4	38.1	44.8	29.5	36.0	42.4	27.5	33.7	39.9	25.5	31.3	37.1	23.2	28.7	34.2
		67	THC	41.0	41.0	41.0	38.4	38.4	39.3	35.6	35.6	37.9	32.7	32.7	36.3	29.6	29.6	34.6
			SHC	25.6	33.2	40.8	24.2	31.8	39.3	22.8	30.3	37.9	21.3	28.8	36.3	19.7	27.2	34.6
		72	THC	45.4	45.4	45.4	42.5	42.5	42.5	39.5	39.5	39.5	36.4	36.4	36.4	33.1	33.1	33.1
			SHC	18.4	26.0	33.6	17.0	24.6	32.2	15.6	23.2	30.8	14.2	21.8	29.3	12.7	20.2	27.8
1500 Cfm	EAT (wb)	76	THC	—	49.0	49.0	—	46.0	46.0	—	42.9	42.9	—	39.6	39.6	—	36.0	36.0
			SHC	—	20.2	27.9	—	18.8	26.5	—	17.4	25.1	—	16.0	23.6	—	14.5	22.1

LEGEND

—	Do not operate
Cfm	Cubic Feet per Minute (supply air)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity
THC	Total Capacity

50LC*A04 COOLING CAPACITIES, SUBCOOLING MODE

TEMP (F) AIR ENT CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		900			1,200			1,500		
		Air Entering Evaporator – Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	41.20	37.00	32.80	45.50	40.80	36.10	49.30	44.10	39.00
	SHC	19.50	22.60	25.60	23.30	26.80	30.20	26.60	30.50	33.70
	kW	1.90	1.88	1.84	1.94	1.90	1.87	1.96	1.90	1.89
85	TC	38.30	34.10	30.00	42.00	37.30	32.60	45.20	40.10	35.00
	SHC	16.10	20.00	23.90	19.40	23.90	28.20	22.40	27.30	31.50
	kW	2.19	2.15	2.11	2.22	2.18	2.14	2.24	2.20	2.16
95	TC	35.40	31.20	27.00	38.40	33.80	29.20	41.10	36.10	31.00
	SHC	12.70	17.40	22.10	15.60	21.0	26.30	18.20	24.20	29.00
	kW	2.47	2.42	2.38	2.50	2.46	2.41	2.53	2.48	2.43
105	TC	32.40	28.30	24.10	34.90	30.30	25.70	37.00	32.00	27.00
	SHC	9.30	14.80	20.40	11.80	18.10	24.10	14.00	21.10	26.50
	kW	2.75	2.70	2.65	2.79	2.73	2.68	2.82	2.76	2.71
115	TC	29.50	25.40	21.20	31.30	26.70	22.20	32.90	28.00	23.00
	SHC	5.90	12.30	18.60	8.00	15.30	21.80	9.80	17.90	22.70
	kW	3.03	2.97	2.91	3.07	3.01	2.95	3.10	3.04	2.98
125	TC	26.50	22.40	18.30	27.70	23.20	18.70	28.80	23.90	19.00
	SHC	2.50	9.70	16.90	4.20	12.40	18.30	5.60	14.80	18.90
	kW	3.31	3.25	3.18	3.36	3.29	3.22	3.39	3.32	3.25

50LC*A04 COOLING CAPACITIES, HOT GAS REHEAT MODE

TEMP (F) AIR ENT CONDENSER (Edb)		AIR ENTERING EVAPORATOR - Ewb (F)								
		75 Dry Bulb			75 Dry Bulb			75 Dry Bulb		
		62.5 Wet Bulb			64 Wet Bulb			65.3 Wet Bulb		
		(50% Relative)			(56% Relative)			(60% Relative)		
		Air Entering Evaporator - Cfm								
		900	1,200	1,500	900	1,200	1,500	900	1,200	1,500
80	TC	7.24	7.73	8.15	8.06	8.64	9.13	8.77	9.43	9.98
	SHC	1.47	1.90	2.27	1.65	2.10	2.50	1.80	2.23	2.70
	kW	2.44	2.47	2.49	2.45	2.49	2.52	2.48	2.52	2.54
75	TC	8.82	9.50	10.09	9.64	10.41	11.06	10.35	11.19	11.91
	SHC	2.24	2.76	3.20	2.43	2.97	3.44	2.58	3.16	3.65
	kW	2.33	2.36	2.39	2.34	2.38	2.41	2.37	2.40	2.43
70	TC	10.39	11.27	12.02	11.21	12.17	13.00	11.92	12.95	13.84
	SHC	3.01	3.61	4.14	3.21	3.84	4.39	3.37	4.03	4.60
	kW	2.22	2.25	2.28	2.23	2.27	2.29	2.26	2.29	2.32
60	TC	13.55	14.81	15.88	14.36	15.71	16.85	15.06	16.48	17.69
	SHC	4.55	5.33	5.99	4.77	5.57	6.27	4.95	5.79	6.51
	kW	2.00	2.03	2.05	2.01	2.05	2.07	2.04	2.07	2.09
50	TC	16.70	18.35	19.75	17.51	19.24	20.71	18.21	20.01	21.55
	SHC	6.10	7.04	7.86	6.33	7.31	8.16	6.53	7.54	8.41
	kW	1.79	1.81	1.83	1.80	1.83	1.85	1.82	1.85	1.87
40	TC	19.86	21.88	23.61	20.66	22.77	24.57	21.35	23.54	25.40
	SHC	7.64	8.75	9.72	7.90	9.04	10.00	8.11	9.29	10.30
	kW	1.57	1.59	1.61	1.58	1.61	1.63	1.61	1.63	1.64

LEGEND

kW — Compressor Power Input
SHC — Sensible Capacity (1000 Btuh) Gross
TC — Total Capacity(1000 Btuh) Gross
Requires SystemVu™ Controls

50LC**05 COOLING CAPACITIES - FIRST STAGE (PART LOAD)

				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
1000 Cfm	EAT (wb)	58	THC	32.0	32.0	36.3	30.5	30.5	34.6	28.8	28.8	32.7	26.9	26.9	30.6	24.8	24.8	28.3
			SHC	27.8	32.0	36.3	26.4	30.5	34.6	24.9	28.8	32.7	23.2	26.9	30.6	21.4	24.8	28.3
		62	THC	33.2	33.2	35.6	31.3	31.3	34.5	29.3	29.3	33.2	27.1	27.1	31.7	24.9	24.9	29.5
			SHC	25.6	30.6	35.6	24.5	29.5	34.5	23.3	28.2	33.2	21.9	26.8	31.7	20.3	24.9	29.5
		67	THC	36.9	36.9	36.9	34.8	34.8	34.8	32.6	32.6	32.6	30.1	30.1	30.1	27.4	27.4	27.4
			SHC	21.0	26.0	31.1	19.9	25.0	30.0	18.8	23.8	28.9	17.6	22.6	27.6	16.3	21.3	26.3
		72	THC	41.0	41.0	41.0	38.7	38.7	38.7	36.3	36.3	36.3	33.7	33.7	33.7	30.8	30.8	30.8
			SHC	16.2	21.3	26.4	15.1	20.2	25.3	14.0	19.1	24.2	12.9	17.9	23.0	11.6	16.6	21.7
		76	THC	—	44.4	44.4	—	42.1	42.1	—	39.5	39.5	—	36.7	36.7	—	33.6	33.6
			SHC	—	17.4	22.8	—	16.4	21.7	—	15.3	20.6	—	14.1	19.3	—	12.9	18.0
1200 Cfm	EAT (wb)	58	THC	34.2	34.2	38.7	32.6	32.6	36.9	30.7	30.7	34.8	28.7	28.7	32.6	26.5	26.5	30.1
			SHC	29.7	34.2	38.7	28.2	32.6	36.9	26.6	30.7	34.8	24.8	28.7	32.6	22.8	26.5	30.1
		62	THC	34.6	34.6	39.6	32.6	32.6	38.4	30.8	30.8	36.3	28.7	28.7	33.9	26.5	26.5	31.4
			SHC	28.0	33.8	39.6	26.9	32.6	38.4	25.3	30.8	36.3	23.5	28.7	33.9	21.6	26.5	31.4
		67	THC	38.2	38.2	38.2	36.0	36.0	36.0	33.7	33.7	33.7	31.1	31.1	31.1	28.2	28.2	29.6
			SHC	22.7	28.6	34.6	21.6	27.5	33.5	20.4	26.4	32.3	19.2	25.1	31.0	17.8	23.7	29.6
		72	THC	42.3	42.3	42.3	40.0	40.0	40.0	37.5	37.5	37.5	34.7	34.7	34.7	31.7	31.7	31.7
			SHC	17.0	23.0	29.0	15.9	21.9	27.9	14.8	20.7	26.7	13.6	19.5	25.5	12.3	18.2	24.1
		76	THC	—	45.8	45.8	—	43.4	43.4	—	40.7	40.7	—	37.7	37.7	—	34.5	34.5
			SHC	—	18.4	24.6	—	17.3	23.5	—	16.2	22.3	—	15.0	21.1	—	13.7	19.7
1400 Cfm	EAT (wb)	58	THC	36.0	36.0	40.7	34.2	34.2	38.7	32.3	32.3	36.6	30.1	30.1	34.2	27.8	27.8	31.6
			SHC	31.3	36.0	40.7	29.7	34.2	38.7	28.0	32.3	36.6	26.1	30.1	34.2	24.0	27.8	31.6
		62	THC	36.0	36.0	42.3	34.3	34.3	40.3	32.3	32.3	38.1	30.2	30.2	35.6	27.8	27.8	32.9
			SHC	29.8	36.0	42.3	28.2	34.3	40.3	26.6	32.3	38.1	24.7	30.2	35.6	22.7	27.8	32.9
		67	THC	39.1	39.1	39.1	36.9	36.9	36.9	34.5	34.5	35.5	31.8	31.8	34.2	28.9	28.9	32.7
			SHC	24.2	31.1	37.9	23.1	29.9	36.8	21.9	28.7	35.5	20.7	27.4	34.2	19.3	26.0	32.7
		72	THC	43.3	43.3	43.3	40.9	40.9	40.9	38.3	38.3	38.3	35.5	35.5	35.5	32.3	32.3	32.3
			SHC	17.7	24.5	31.4	16.6	23.4	30.3	15.5	22.3	29.1	14.2	21.0	27.8	12.9	19.7	26.4
		76	THC	—	46.9	46.9	—	44.3	44.3	—	41.5	41.5	—	38.5	38.5	—	35.2	35.2
			SHC	—	19.3	26.3	—	18.2	25.2	—	17.0	24.0	—	15.8	22.7	—	14.5	21.3
1600 Cfm	EAT (wb)	58	THC	37.5	37.5	42.3	35.6	35.6	40.3	33.6	33.6	38.0	31.3	31.3	35.5	28.9	28.9	32.8
			SHC	32.6	37.5	42.3	30.9	35.6	40.3	29.1	33.6	38.0	27.1	31.3	35.5	24.9	28.9	32.8
		62	THC	37.5	37.5	44.0	35.6	35.6	41.9	33.6	33.6	39.6	31.4	31.4	37.0	28.9	28.9	34.2
			SHC	31.0	37.5	44.0	29.4	35.6	41.9	27.6	33.6	39.6	25.7	31.4	37.0	23.6	28.9	34.2
		67	THC	39.9	39.9	41.0	37.6	37.6	39.8	35.1	35.1	38.5	32.4	32.4	37.1	29.4	29.4	35.4
			SHC	25.7	33.4	41.0	24.6	32.2	39.8	23.3	30.9	38.5	22.0	29.5	37.1	20.5	28.0	35.4
		72	THC	44.1	44.1	44.1	41.6	41.6	41.6	39.0	39.0	39.0	36.0	36.0	36.0	32.8	32.8	32.8
			SHC	18.3	26.0	33.7	17.2	24.9	32.5	16.1	23.7	31.3	14.8	22.4	30.0	13.5	21.1	28.6
		76	THC	—	47.7	47.7	—	45.1	45.1	—	42.2	42.2	—	39.1	39.1	—	35.7	35.7
			SHC	—	20.1	27.9	—	19.0	26.7	—	17.8	25.5	—	16.5	24.2	—	15.2	22.8
1800 Cfm	EAT (wb)	58	THC	38.7	38.7	43.7	36.8	36.8	41.6	34.7	34.7	39.2	32.3	32.3	36.7	29.8	29.8	33.8
			SHC	33.7	38.7	43.7	31.9	36.8	41.6	30.1	34.7	39.2	28.0	32.3	36.7	25.7	29.8	33.8
		62	THC	38.7	38.7	45.4	36.8	36.8	43.2	34.7	34.7	40.8	32.4	32.4	38.2	29.8	29.8	35.2
			SHC	32.0	38.7	45.4	30.4	36.8	43.2	28.5	34.7	40.8	26.6	32.4	38.2	24.4	29.8	35.2
		67	THC	40.5	40.5	44.0	38.1	38.1	42.7	35.6	35.6	41.3	32.9	32.9	39.7	30.0	30.0	37.6
			SHC	27.1	35.5	44.0	25.9	34.3	42.7	24.6	33.0	41.3	23.2	31.5	39.7	21.6	29.6	37.6
		72	THC	44.7	44.7	44.7	42.2	42.2	42.2	39.5	39.5	39.5	36.5	36.5	36.5	33.2	33.2	33.2
			SHC	18.9	27.4	35.9	17.8	26.3	34.8	16.6	25.1	33.5	15.4	23.8	32.2	14.0	22.4	30.8
		76	THC	—	48.4	48.4	—	45.6	45.6	—	42.7	42.7	—	39.5	39.5	—	36.1	36.1
			SHC	—	20.8	29.4	—	19.7	28.2	—	18.5	27.0	—	17.2	25.6	—	15.8	24.1

LEGEND

—	Do not operate
Cfm	Cubic Feet per Minute (supply air)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity
THC	Total Capacity

50LC**05 COOLING CAPACITIES - SECOND STAGE (FULL LOAD)

				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
1200 Cfm	EAT (wb)	58	THC	42.0	42.0	47.6	39.8	39.8	45.2	37.5	37.5	42.6	35.0	35.0	39.9	32.5	32.5	37.1
			SHC	36.4	42.0	47.6	34.4	39.8	45.2	32.3	37.5	42.6	30.1	35.0	39.9	27.8	32.5	37.1
		62	THC	44.7	44.7	44.7	42.0	42.0	43.1	39.1	39.1	41.4	36.1	36.1	39.6	33.0	33.0	37.7
			SHC	32.7	38.7	44.7	31.1	37.1	43.1	29.4	35.4	41.4	27.7	33.7	39.6	25.9	31.8	37.7
		67	THC	49.4	49.4	49.4	46.5	46.5	46.5	43.4	43.4	43.4	40.2	40.2	40.2	36.8	36.8	36.8
			SHC	27.0	33.1	39.1	25.5	31.5	37.5	23.8	29.9	35.9	22.2	28.2	34.2	20.4	26.5	32.5
		72	THC	54.5	54.5	54.5	51.4	51.4	51.4	48.1	48.1	48.1	44.6	44.6	44.6	41.0	41.0	41.0
			SHC	21.2	27.4	33.5	19.7	25.8	31.9	18.1	24.2	30.3	16.4	22.5	28.6	14.7	20.8	26.9
1400 Cfm	EAT (wb)	58	THC	—	58.8	58.8	—	55.4	55.4	—	51.9	51.9	—	48.2	48.2	—	44.4	44.4
			SHC	—	22.7	29.3	—	21.1	27.7	—	19.6	26.1	—	17.9	24.4	—	16.2	22.6
		62	THC	44.5	44.5	50.4	42.1	42.1	47.8	39.7	39.7	45.1	37.1	37.1	42.2	34.3	34.3	39.2
			SHC	38.6	44.5	50.4	36.5	42.1	47.8	34.3	39.7	45.1	31.9	37.1	42.2	29.5	34.3	39.2
		67	THC	46.3	46.3	49.1	43.4	43.4	47.3	40.5	40.5	45.5	37.4	37.4	43.4	34.4	34.4	40.9
			SHC	35.3	42.2	49.1	33.6	40.5	47.3	31.9	38.7	45.5	30.0	36.7	43.4	27.9	34.4	40.9
		72	THC	51.0	51.0	51.0	48.0	48.0	48.0	44.7	44.7	44.7	41.4	41.4	41.4	37.8	37.8	37.8
			SHC	28.8	35.7	42.7	27.2	34.1	41.1	25.5	32.5	39.4	23.8	30.7	37.7	22.1	29.0	35.9
1600 Cfm	EAT (wb)	58	THC	56.2	56.2	56.2	52.9	52.9	52.9	49.4	49.4	49.4	45.8	45.8	45.8	42.0	42.0	42.0
			SHC	22.1	29.1	36.1	20.5	27.5	34.5	18.9	25.8	32.8	17.2	24.1	31.1	15.5	22.4	29.3
		62	THC	—	60.4	60.4	—	56.9	56.9	—	53.3	53.3	—	49.4	49.4	—	45.4	45.4
			SHC	—	23.7	31.2	—	22.1	29.5	—	20.5	27.8	—	18.8	26.1	—	17.1	24.3
		67	THC	46.6	46.6	52.7	44.1	44.1	50.0	41.5	41.5	47.2	38.8	38.8	44.1	35.9	35.9	40.9
			SHC	40.4	46.6	52.7	38.2	44.1	50.0	35.9	41.5	47.2	33.4	38.8	44.1	30.8	35.9	40.9
		72	THC	47.6	47.6	53.0	44.7	44.7	51.1	41.6	41.6	49.2	38.8	38.8	46.0	35.9	35.9	42.7
			SHC	37.7	45.3	53.0	35.9	43.5	51.1	34.1	41.6	49.2	31.7	38.8	46.0	29.2	35.9	42.7
1800 Cfm	EAT (wb)	58	THC	52.3	52.3	52.3	49.1	49.1	49.1	45.8	45.8	45.8	42.3	42.3	42.3	38.6	38.6	39.1
			SHC	30.4	38.3	46.1	28.8	36.6	44.4	27.1	34.9	42.7	25.4	33.2	40.9	23.6	31.3	39.1
		62	THC	57.4	57.4	57.4	54.0	54.0	54.0	50.5	50.5	50.5	46.7	46.7	46.7	42.8	42.8	42.8
			SHC	22.8	30.7	38.6	21.2	29.1	36.9	19.6	27.4	35.2	17.9	25.7	33.5	16.1	23.9	31.7
		72	THC	—	61.7	61.7	—	58.1	58.1	—	54.3	54.3	—	50.3	50.3	—	46.2	46.2
			SHC	—	24.6	32.9	—	23.0	31.2	—	21.4	29.5	—	19.7	27.7	—	17.9	25.9
		76	THC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
2000 Cfm	EAT (wb)	58	THC	48.4	48.4	54.7	45.8	45.8	51.9	43.1	43.1	48.9	40.2	40.2	45.7	37.2	37.2	42.4
			SHC	42.0	48.4	54.7	39.7	45.8	51.9	37.3	43.1	48.9	34.7	40.2	45.7	32.0	37.2	42.4
		62	THC	48.8	48.8	56.4	45.9	45.9	54.0	43.1	43.1	50.9	40.2	40.2	47.6	37.2	37.2	44.2
			SHC	39.7	48.1	56.4	37.7	45.9	54.0	35.4	43.1	50.9	32.9	40.2	47.6	30.3	37.2	44.2
		67	THC	53.3	53.3	53.3	50.0	50.0	50.0	46.6	46.6	46.6	43.0	43.0	44.1	39.2	39.2	42.1
			SHC	32.0	40.7	49.3	30.3	39.0	47.7	28.6	37.3	45.9	26.8	35.5	44.1	25.0	33.6	42.1
		72	THC	58.5	58.5	58.5	55.0	55.0	55.0	51.3	51.3	51.3	47.5	47.5	47.5	43.4	43.4	43.4
			SHC	23.5	32.2	41.0	21.9	30.6	39.3	20.2	28.9	37.6	18.5	27.1	35.8	16.7	25.3	33.9
2000 Cfm	EAT (wb)	58	THC	—	62.8	62.8	—	59.0	59.0	—	55.1	55.1	—	51.1	51.1	—	46.9	46.9
			SHC	—	25.5	34.5	—	23.8	32.8	—	22.2	31.1	—	20.4	29.3	—	18.6	27.4
		62	THC	49.9	49.9	56.5	47.2	47.2	53.5	44.4	44.4	50.4	41.4	41.4	47.1	38.3	38.3	43.6
			SHC	43.4	49.9	56.5	41.0	47.2	53.5	38.4	44.4	50.4	35.8	41.4	47.1	33.0	38.3	43.6
		67	THC	50.0	50.0	58.7	47.3	47.3	55.7	44.5	44.5	52.4	41.5	41.5	49.0	38.3	38.3	45.5
			SHC	41.2	50.0	58.7	38.9	47.3	55.7	36.5	44.5	52.4	33.9	41.5	49.0	31.2	38.3	45.5
		72	THC	54.1	54.1	54.1	50.7	50.7	50.7	47.2	47.2	48.9	43.5	43.5	47.0	39.7	39.7	45.0
			SHC	33.4	42.9	52.4	31.8	41.2	50.7	30.0	39.5	48.9	28.2	37.6	47.0	26.3	35.6	45.0

LEGEND

—	Do not operate
Cfm	Cubic Feet per Minute (supply air)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity
THC	Total Capacity

50LC*A05 COOLING CAPACITIES, SUBCOOLING MODE

TEMP (F) AIR ENT CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		1,200			1,600			2,000		
		Air Entering Evaporator – Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	54.60	49.40	44.30	59.40	53.60	47.9	63.50	57.30	51.20
	SHC	23.60	28.30	33.00	28.00	33.50	40.1	31.80	38.10	44.30
	kW	2.39	2.36	2.32	2.41	2.38	2.34	2.43	2.39	2.36
85	TC	50.70	45.60	40.50	54.50	48.90	43.3	57.80	51.80	45.80
	SHC	19.20	25.10	30.90	22.90	29.70	37.5	26.20	33.90	41.20
	kW	2.75	2.71	2.67	2.77	2.73	2.69	2.79	2.75	2.71
95	TC	46.80	41.70	36.70	49.60	44.20	38.7	52.10	46.30	40.40
	SHC	14.80	21.80	28.80	17.80	25.90	34.8	20.50	29.70	37.90
	kW	3.11	3.06	3.01	3.14	3.09	3.04	3.16	3.11	3.07
105	TC	42.80	37.90	32.90	44.70	39.40	34.1	46.40	40.80	35.10
	SHC	10.40	18.60	26.70	12.70	22.20	31.9	14.80	25.50	34.50
	kW	3.47	3.42	3.36	3.50	3.45	3.39	3.53	3.47	3.77
115	TC	38.9	34.00	29.20	39.90	34.70	29.5	40.80	35.20	29.70
	SHC	6.00	15.30	24.60	7.60	18.50	29.0	9.00	21.30	29.30
	kW	3.83	3.77	3.70	3.87	3.80	3.74	3.89	3.83	3.77
125	TC	34.90	30.20	25.50	35.00	29.90	24.9	35.10	29.70	24.30
	SHC	1.60	12.10	22.50	2.50	14.70	24.5	3.30	17.10	24.20
	kW	4.19	4.12	4.05	4.23	4.16	4.09	4.26	4.19	4.12

50LC*A05 COOLING CAPACITIES, HOT GAS REHEAT MODE

TEMP (F) AIR ENT CONDENSER (Edb)		AIR ENTERING EVAPORATOR - Ewb (F)								
		75 Dry Bulb			75 Dry Bulb			75 Dry Bulb		
		62.5 Wet Bulb			64 Wet Bulb			65.3 Wet Bulb		
		(50% Relative)			(56% Relative)			(60% Relative)		
		Air Entering Evaporator - Cfm								
		1,200	1,600	2,000	1,200	1,600	2,000	1,200	1,600	2,000
80	TC	9.51	10.01	10.48	9.94	10.56	11.13	10.32	11.04	11.69
	SHC	2.61	3.30	3.92	2.45	3.11	3.71	2.30	2.95	3.52
	kW	1.92	1.90	1.89	1.93	1.91	1.90	1.94	1.92	1.91
75	TC	10.86	11.70	12.45	11.31	12.27	13.13	11.71	12.76	13.71
	SHC	2.96	3.69	4.36	2.82	3.52	4.15	2.69	3.38	3.99
	kW	1.86	1.84	1.83	1.87	1.85	1.84	1.88	1.86	1.85
70	TC	12.22	13.38	14.43	12.69	13.97	15.13	13.10	14.48	15.73
	SHC	3.31	4.07	4.75	3.18	3.93	4.60	3.08	3.81	4.47
	kW	1.79	1.78	1.76	1.80	1.79	1.77	1.81	1.80	1.78
60	TC	14.93	16.74	18.38	15.45	17.38	19.12	15.89	17.93	19.77
	SHC	3.99	4.84	5.59	3.92	4.75	5.49	3.85	4.68	5.41
	kW	1.66	16.50	1.64	1.68	1.66	1.65	1.69	1.67	1.66
50	TC	17.64	20.11	22.33	18.20	20.78	23.12	18.68	21.37	23.80
	SHC	4.69	5.61	6.43	4.66	5.57	6.39	4.63	5.54	6.36
	kW	1.53	1.52	1.51	1.54	1.53	1.52	1.56	1.55	1.54
40	TC	20.36	23.47	26.29	20.95	24.19	27.12	21.46	24.81	27.84
	SHC	5.38	6.38	7.26	5.40	6.39	7.28	5.41	6.41	7.30
	kW	1.40	1.39	1.38	1.42	1.41	1.40	1.43	1.42	1.41

LEGEND

kW — Compressor Power Input
SHC — Sensible Capacity (1000 Btuh) Gross
TC — Total Capacity(1000 Btuh) Gross
Requires SystemVu™ Controls

50LC**06 COOLING CAPACITIES - FIRST STAGE (PART LOAD)

				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
1250 Cfm	EAT (wb)	58	THC	40.1	40.1	45.4	38.0	38.0	43.1	35.7	35.7	40.6	33.1	33.1	37.8	30.3	30.3	34.7
			SHC	34.8	40.1	45.4	32.8	38.0	43.1	30.8	35.7	40.6	28.5	33.1	37.8	26.0	30.3	34.7
		62	THC	40.9	40.9	45.8	38.4	38.4	44.2	35.8	35.8	42.2	33.2	33.2	39.4	30.4	30.4	36.2
			SHC	32.4	39.1	45.8	30.9	37.5	44.2	29.1	35.6	42.2	27.0	33.2	39.4	24.6	30.4	36.2
		67	THC	45.4	45.4	45.4	42.6	42.6	42.6	39.6	39.6	39.6	36.3	36.3	36.3	32.8	32.8	33.3
			SHC	26.2	32.9	39.7	24.8	31.5	38.3	23.2	30.0	36.7	21.6	28.3	35.1	19.9	26.6	33.3
		72	THC	50.4	50.4	50.4	47.5	47.5	47.5	44.3	44.3	44.3	40.8	40.8	40.8	37.0	37.0	37.0
			SHC	19.8	26.6	33.4	18.4	25.2	32.0	16.9	23.7	30.5	15.3	22.1	28.9	13.6	20.4	27.2
		76	THC	—	54.8	54.8	—	51.7	51.7	—	48.3	48.3	—	44.6	44.6	—	40.6	40.6
			SHC	—	21.5	28.4	—	20.1	27.0	—	18.6	25.4	—	17.0	23.8	—	15.3	22.1
1500 Cfm	EAT (wb)	58	THC	42.9	42.9	48.6	40.6	40.6	46.1	38.1	38.1	43.3	35.4	35.4	40.3	32.4	32.4	37.0
			SHC	37.2	42.9	48.6	35.2	40.6	46.1	32.9	38.1	43.3	30.5	35.4	40.3	27.8	32.4	37.0
		62	THC	43.0	43.0	50.5	40.7	40.7	48.0	38.2	38.2	45.1	35.4	35.4	42.0	32.5	32.5	38.6
			SHC	35.4	43.0	50.5	33.4	40.7	48.0	31.2	38.2	45.1	28.9	35.4	42.0	26.3	32.5	38.6
		67	THC	46.9	46.9	46.9	44.0	44.0	44.0	40.9	40.9	41.6	37.5	37.5	39.9	33.8	33.8	38.0
			SHC	28.5	36.6	44.6	27.1	35.1	43.1	25.5	33.5	41.6	23.8	31.9	39.9	22.1	30.1	38.0
		72	THC	52.0	52.0	52.0	48.9	48.9	48.9	45.6	45.6	45.6	41.9	41.9	41.9	38.0	38.0	38.0
			SHC	20.9	29.0	37.1	19.5	27.5	35.6	17.9	26.0	34.1	16.3	24.4	32.4	14.6	22.6	30.7
		76	THC	—	56.5	56.5	—	53.2	53.2	—	49.7	49.7	—	45.8	45.8	—	—	—
			SHC	—	22.8	31.0	—	21.4	29.5	—	19.9	28.0	—	18.2	26.3	—	—	—
1750 Cfm	EAT (wb)	58	THC	45.2	45.2	51.1	42.7	42.7	48.4	40.1	40.1	45.5	37.2	37.2	42.3	34.1	34.1	38.9
			SHC	39.2	45.2	51.1	37.0	42.7	48.4	34.7	40.1	45.5	32.1	37.2	42.3	29.3	34.1	38.9
		62	THC	45.2	45.2	53.1	42.8	42.8	50.4	40.1	40.1	47.4	37.3	37.3	44.1	34.1	34.1	40.5
			SHC	37.3	45.2	53.1	35.2	42.8	50.4	32.9	40.1	47.4	30.4	37.3	44.1	27.7	34.1	40.5
		67	THC	48.0	48.0	49.4	45.0	45.0	47.8	41.8	41.8	46.2	38.3	38.3	44.4	34.6	34.6	42.4
			SHC	30.8	40.1	49.4	29.3	38.5	47.8	27.7	36.9	46.2	26.0	35.2	44.4	24.1	33.2	42.4
		72	THC	53.1	53.1	53.1	50.0	50.0	50.0	46.5	46.5	46.5	42.8	42.8	42.8	38.7	38.7	38.7
			SHC	21.9	31.2	40.6	20.4	29.7	39.1	18.8	28.2	37.5	17.2	26.5	35.8	15.5	24.8	34.1
		76	THC	—	57.7	57.7	—	54.3	54.3	—	50.7	50.7	—	—	—	—	—	—
			SHC	—	24.0	33.4	—	22.6	32.0	—	21.0	30.4	—	—	—	—	—	—
2000 Cfm	EAT (wb)	58	THC	47.0	47.0	53.2	44.5	44.5	50.4	41.7	41.7	47.3	38.7	38.7	44.0	35.4	35.4	40.3
			SHC	40.8	47.0	53.2	38.6	44.5	50.4	36.1	41.7	47.3	33.4	38.7	44.0	30.5	35.4	40.3
		62	THC	47.0	47.0	55.3	44.5	44.5	52.4	41.7	41.7	49.2	38.7	38.7	45.8	35.4	35.4	42.0
			SHC	38.8	47.0	55.3	36.6	44.5	52.4	34.2	41.7	49.2	31.6	38.7	45.8	28.8	35.4	42.0
		67	THC	48.9	48.9	53.8	45.8	45.8	52.2	42.6	42.6	50.4	39.1	39.1	48.4	35.5	35.5	45.4
			SHC	32.8	43.3	53.8	31.3	41.8	52.2	29.6	40.0	50.4	27.8	38.1	48.4	25.6	35.5	45.4
		72	THC	54.0	54.0	54.0	50.7	50.7	50.7	47.2	47.2	47.2	43.4	43.4	43.4	39.2	39.2	39.2
			SHC	22.8	33.4	43.9	21.3	31.9	42.4	19.7	30.3	40.8	18.0	28.6	39.1	16.3	26.8	37.3
		76	THC	—	58.6	58.6	—	55.2	55.2	—	—	—	—	—	—	—	—	—
			SHC	—	25.2	35.8	—	23.7	34.3	—	—	—	—	—	—	—	—	—
2250 Cfm	EAT (wb)	58	THC	48.5	48.5	54.9	45.9	45.9	52.0	43.0	43.0	48.8	39.9	39.9	45.3	36.5	36.5	41.6
			SHC	42.2	48.5	54.9	39.8	45.9	52.0	37.2	43.0	48.8	34.4	39.9	45.3	31.4	36.5	41.6
		62	THC	48.6	48.6	57.0	45.9	45.9	54.0	43.0	43.0	50.8	39.9	39.9	47.2	36.5	36.5	43.3
			SHC	40.1	48.6	57.0	37.8	45.9	54.0	35.3	43.0	50.8	32.7	39.9	47.2	29.8	36.5	43.3
		67	THC	49.6	49.6	58.0	46.5	46.5	56.3	43.3	43.3	54.1	40.0	40.0	50.9	36.6	36.6	46.7
			SHC	34.8	46.4	58.0	33.2	44.7	56.3	31.4	42.8	54.1	29.1	40.0	50.9	26.4	36.6	46.7
		72	THC	54.6	54.6	54.6	51.3	51.3	51.3	47.7	47.7	47.7	43.8	43.8	43.8	39.6	39.6	40.5
			SHC	23.6	35.4	47.2	22.1	33.9	45.7	20.5	32.3	44.1	18.8	30.6	42.3	17.1	28.8	40.5
		76	THC	—	59.3	59.3	—	—	—	—	—	—	—	—	—	—	—	—
			SHC	—	26.2	38.0	—	—	—	—	—	—	—	—	—	—	—	—

LEGEND

—	Do not operate
Cfm	Cubic Feet per Minute (supply air)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity
THC	Total Capacity

50LC**06 COOLING CAPACITIES - SECOND STAGE (FULL LOAD)

				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
1500 Cfm	EAT (wb)	58	THC	54.0	54.0	61.2	51.3	51.3	58.3	48.6	48.6	55.2	47.0	47.0	53.4	44.5	44.5	50.6
			SHC	46.8	54.0	61.2	44.4	51.3	58.3	41.9	48.6	55.2	40.6	47.0	53.4	38.5	44.5	50.6
		62	THC	56.5	56.5	58.4	53.3	53.3	56.5	49.9	49.9	54.6	47.8	47.8	53.8	44.8	44.8	52.3
			SHC	42.3	50.3	58.4	40.4	48.5	56.5	38.5	46.5	54.6	37.8	45.8	53.8	36.4	44.3	52.3
		67	THC	62.1	62.1	62.1	58.6	58.6	58.6	55.0	55.0	55.0	52.5	52.5	52.5	49.1	49.1	49.1
			SHC	34.6	42.7	50.8	32.7	40.8	48.9	30.8	38.9	47.0	30.2	38.3	46.4	28.9	37.0	45.0
		72	THC	68.3	68.3	68.3	64.5	64.5	64.5	60.5	60.5	60.5	57.8	57.8	57.8	54.1	54.1	54.1
			SHC	26.7	34.8	43.0	24.8	33.0	41.1	22.9	31.1	39.2	22.4	30.5	38.6	21.1	29.2	37.3
		76	THC	—	73.5	73.5	—	69.5	69.5	—	65.3	65.3	—	62.3	62.3	—	58.4	58.4
			SHC	—	28.4	36.6	—	26.6	34.8	—	24.7	33.0	—	24.2	32.4	—	22.9	31.1
1750 Cfm	EAT (wb)	58	THC	57.1	57.1	64.7	54.3	54.3	61.6	51.3	51.3	58.3	49.5	49.5	56.2	46.9	46.9	53.2
			SHC	49.6	57.1	64.7	47.0	54.3	61.6	44.3	51.3	58.3	42.9	49.5	56.2	40.6	46.9	53.2
		62	THC	58.4	58.4	64.5	55.0	55.0	62.5	51.6	51.6	60.2	49.7	49.7	58.3	46.9	46.9	55.4
			SHC	45.9	55.2	64.5	43.9	53.2	62.5	41.9	51.1	60.2	40.6	49.4	58.3	38.5	46.9	55.4
		67	THC	63.9	63.9	63.9	60.2	60.2	60.2	56.4	56.4	56.4	53.8	53.8	53.8	50.3	50.3	50.3
			SHC	37.0	46.4	55.8	35.1	44.5	53.9	33.1	42.5	51.9	32.5	41.9	51.3	31.1	40.5	49.8
		72	THC	70.2	70.2	70.2	66.2	66.2	66.2	62.0	62.0	62.0	59.1	59.1	59.1	55.3	55.3	55.3
			SHC	27.8	37.2	46.7	25.9	35.3	44.8	23.9	33.4	42.8	23.4	32.8	42.2	22.0	31.4	40.8
		76	THC	—	75.4	75.4	—	71.2	71.2	—	66.9	66.9	—	63.7	63.7	—	59.6	59.6
			SHC	—	29.8	39.4	—	27.9	37.5	—	26.0	35.6	—	25.4	35.0	—	24.1	33.6
2000 Cfm	EAT (wb)	58	THC	59.8	59.8	67.6	56.7	56.7	64.3	53.6	53.6	60.8	51.6	51.6	58.5	48.8	48.8	55.3
			SHC	51.9	59.8	67.6	49.2	56.7	64.3	46.4	53.6	60.8	44.7	51.6	58.5	42.3	48.8	55.3
		62	THC	60.0	60.0	69.9	56.8	56.8	66.9	53.7	53.7	63.3	51.7	51.7	60.9	48.8	48.8	57.6
			SHC	49.1	59.5	69.9	46.7	56.8	66.9	44.0	53.7	63.3	42.5	51.7	60.9	40.1	48.8	57.6
		67	THC	65.3	65.3	65.3	61.5	61.5	61.5	57.5	57.5	57.5	54.8	54.8	55.9	51.1	51.1	54.4
			SHC	39.2	49.9	60.6	37.3	48.0	58.6	35.3	45.9	56.6	34.6	45.3	55.9	33.2	43.8	54.4
		72	THC	71.6	71.6	71.6	67.5	67.5	67.5	63.2	63.2	63.2	60.1	60.1	60.1	56.2	56.2	56.2
			SHC	28.8	39.5	50.2	26.9	37.6	48.3	24.9	35.6	46.3	24.3	35.0	45.7	22.9	33.6	44.3
		76	THC	—	76.9	76.9	—	72.6	72.6	—	68.1	68.1	—	64.8	64.8	—	60.5	60.5
			SHC	—	31.0	41.9	—	29.1	40.0	—	27.2	38.0	—	26.6	37.3	—	25.2	35.9
2250 Cfm	EAT (wb)	58	THC	62.0	62.0	70.1	58.8	58.8	66.6	55.5	55.5	62.9	53.4	53.4	60.5	50.4	50.4	57.1
			SHC	53.8	62.0	70.1	51.0	58.8	66.6	48.0	55.5	62.9	46.3	53.4	60.5	43.7	50.4	57.1
		62	THC	62.0	62.0	72.9	58.9	58.9	69.3	55.5	55.5	65.5	53.4	53.4	62.9	50.4	50.4	59.4
			SHC	51.2	62.0	72.9	48.4	58.9	69.3	45.6	55.5	65.5	43.9	53.4	62.9	41.5	50.4	59.4
		67	THC	66.4	66.4	66.4	62.5	62.5	63.2	58.4	58.4	61.1	55.6	55.6	60.4	51.9	51.9	58.8
			SHC	41.4	53.3	65.2	39.4	51.3	63.2	37.4	49.3	61.1	36.7	48.5	60.4	35.2	47.0	58.8
		72	THC	72.6	72.6	72.6	68.4	68.4	68.4	64.1	64.1	64.1	60.9	60.9	60.9	56.8	56.8	56.8
			SHC	29.6	41.6	53.6	27.7	39.7	51.7	25.8	37.7	49.7	25.1	37.1	49.0	23.8	35.7	47.6
		76	THC	—	78.0	78.0	—	73.6	73.6	—	69.0	69.0	—	65.6	65.6	—	61.2	61.2
			SHC	—	32.2	44.3	—	30.3	42.3	—	28.3	40.3	—	27.7	39.6	—	26.3	38.1
2500 Cfm	EAT (wb)	58	THC	63.8	63.8	72.2	60.5	60.5	68.6	57.1	57.1	64.7	54.8	54.8	62.1	51.7	51.7	58.6
			SHC	55.5	63.8	72.2	52.5	60.5	68.6	49.4	57.1	64.7	47.6	54.8	62.1	44.8	51.7	58.6
		62	THC	63.9	63.9	75.1	60.6	60.6	71.3	57.1	57.1	67.4	54.9	54.9	64.6	51.8	51.8	60.9
			SHC	52.7	63.9	75.1	49.9	60.6	71.3	46.9	57.1	67.4	45.2	54.9	64.6	42.6	51.8	60.9
		67	THC	67.2	67.2	69.7	63.3	63.3	67.7	59.1	59.1	65.5	56.2	56.2	64.6	52.5	52.5	62.9
			SHC	43.4	56.6	69.7	41.4	54.6	67.7	39.4	52.4	65.5	38.6	51.6	64.6	37.1	50.0	62.9
		72	THC	73.5	73.5	73.5	69.2	69.2	69.2	64.7	64.7	64.7	61.5	61.5	61.5	57.4	57.4	57.4
			SHC	30.5	43.7	56.9	28.6	41.8	55.0	26.6	39.8	53.0	26.0	39.1	52.3	24.6	37.7	50.8
		76	THC	—	78.9	78.9	—	74.4	74.4	—	69.7	69.7	—	66.2	66.2	—	61.8	61.8
			SHC	—	33.3	46.6	—	31.3	44.6	—	29.4	42.6	—	28.7	41.8	—	27.3	40.3

LEGEND

—	Do not operate
Cfm	Cubic Feet per Minute (supply air)
EAT (db)	Entering Air Temperature (dry bulb)
EAT (wb)	Entering Air Temperature (wet bulb)
SHC	Sensible Heat Capacity
THC	Total Capacity

50LC*A06 COOLING CAPACITIES, SUBCOOLING MODE

TEMP (F) AIR ENT CONDENSER (Edb)		AIR ENTERING EVAPORATOR - CFM								
		1,500			2,000			2,500		
		Air Entering Evaporator – Ewb (F)								
		72	67	62	72	67	62	72	67	62
75	TC	61.30	54.70	48.00	66.80	59.40	52.00	71.50	63.50	55.50
	SHC	27.60	29.20	34.40	32.70	35.70	43.50	37.90	41.60	48.00
	kW	2.98	2.91	2.84	3.02	2.96	2.89	3.06	2.99	2.92
85	TC	56.00	49.40	42.80	60.40	53.10	45.80	64.20	56.30	48.40
	SHC	22.4 0	24.20	30.80	27.20	30.10	39.6 0	31.50	35.40	43.50
	kW	3.36	3.28	3.21	3.40	3.33	3.26	3.45	3.37	3.30
95	TC	50.80	44.20	37.60	54.00	46.80	39.60	56.90	49.10	41.30
	SHC	17.3 0	19.30	27.20	21.60	24.60	35.60	25.60	29.30	38.70
	kW	3.74	3.65	3.57	3.80	3.71	3.63	3.84	3.76	3.67
105	TC	45.50	39.00	32.40	47.70	40.50	33.4 0	49.60	41.90	34.20
	SHC	12.30	14.30	23.60	16.70	18.90	31.30	20.30	23.10	33.60
	kW	4.11	4.02	3.93	4.18	4.09	3.99	4.23	4.14	4.05
115	TC	40.20	33.70	27.20	41.30	34.20	27.20	42.30	34.70	27.10
	SHC	7.20	9.4 0	20.10	11.60	13.40	26.80	14.80	16.90	26.70
	kW	4.49	4.39	4.29	4.57	4.50	4.37	4.62	4.50	4.42
125	TC	34.90	28.50	22.00	35.00	28.00	20.90	35.00	27.50	19.90
	SHC	3.10	4.50	16.50	7.40	7.80	20.50	10.20	10.80	19.80
	kW	4.87	4.77	4.66	4.95	4.84	4.73	5.01	4.90	4.79

50LC*A06 COOLING CAPACITIES, HOT GAS REHEAT MODE

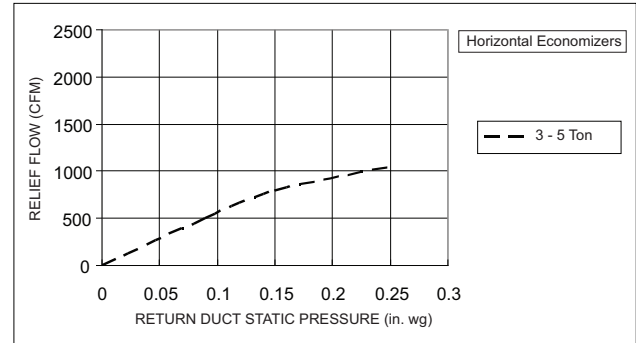
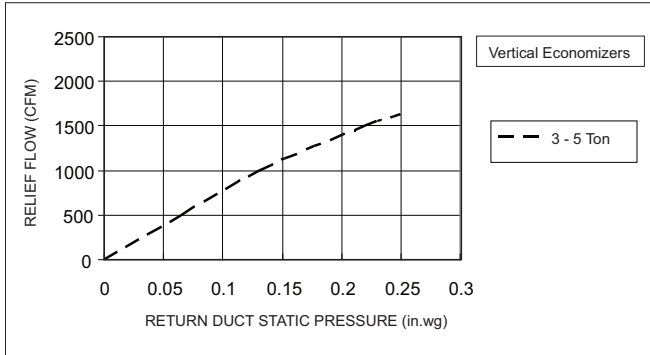
TEMP (F) AIR ENT CONDENSER (Edb)		AIR ENTERING EVAPORATOR - Ewb (F)								
		75 Dry Bulb			75 Dry Bulb			75 Dry Bulb		
		62.5 Wet Bulb			64 Wet Bulb			65.3 Wet Bulb		
		(50% Relative)			(56% Relative)			(60% Relative)		
		Air Entering Evaporator - Cfm								
		1,500	2,000	2,500	1,500	2,000	2,500	1,500	2,000	2,500
80	TC	15.77	17.98	19.86	15.63	17.83	19.71	15.51	17.70	19.58
	SHC	8.08	11.03	13.66	5.59	8.16	10.45	3.43	5.67	7.66
	kW	1.89	1.84	1.81	1.89	1.88	1.84	1.95	1.90	1.87
75	TC	16.71	18.99	20.94	16.62	18.90	20.85	16.55	18.82	20.77
	SHC	8.55	11.47	14.08	6.23	8.81	11.10	4.23	6.50	8.52
	kW	1.77	1.73	1.70	1.77	1.76	1.73	1.83	1.79	1.76
70	TC	17.64	20.00	22.02	17.61	19.98	21.99	17.58	19.95	21.97
	SHC	9.01	11.91	14.49	6.88	9.45	11.75	5.02	7.32	9.36
	kW	1.66	1.62	1.59	1.66	1.65	1.62	1.71	1.67	1.65
60	TC	19.51	22.02	24.17	19.59	22.12	24.28	19.66	22.20	24.37
	SHC	9.94	12.79	15.33	8.16	10.74	13.04	6.62	8.97	11.06
	kW	1.43	1.39	1.37	1.43	1.42	1.40	1.48	1.45	1.42
50	TC	21.38	24.05	26.33	21.57	24.26	26.56	21.73	24.45	26.77
	SHC	10.86	13.67	16.16	9.45	12.03	14.34	8.22	10.62	12.75
	kW	1.20	1.18	1.16	1.21	1.20	1.18	1.24	1.22	1.20
40	TC	23.25	26.07	28.48	23.55	26.41	28.85	23.81	26.70	29.17
	SHC	11.79	14.54	16.99	10.73	13.32	15.63	9.81	12.27	14.45
	kW	0.98	0.96	0.94	0.98	0.97	0.96	1.01	0.99	0.97

LEGEND

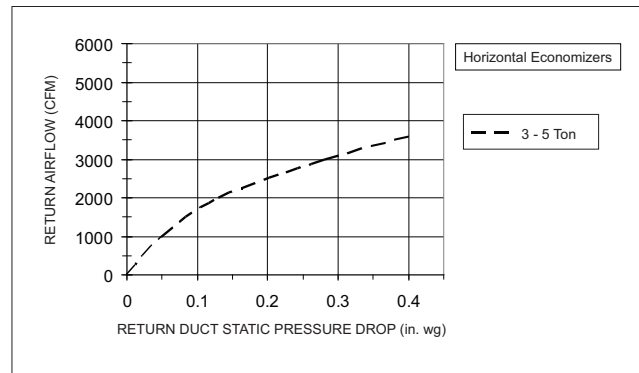
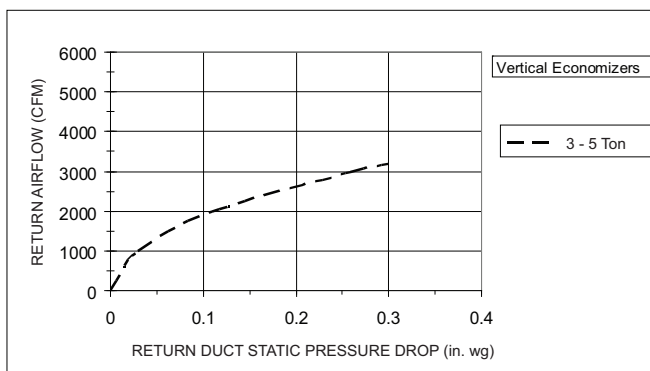
kW — Compressor Power Input
SHC — Sensible Capacity (1000 Btuh) Gross
TC — Total Capacity(1000 Btuh) Gross
Requires SystemVu™ Controls

ECONOMIZER, BAROMETRIC RELIEF, AND POWER EXHAUST PERFORMANCE

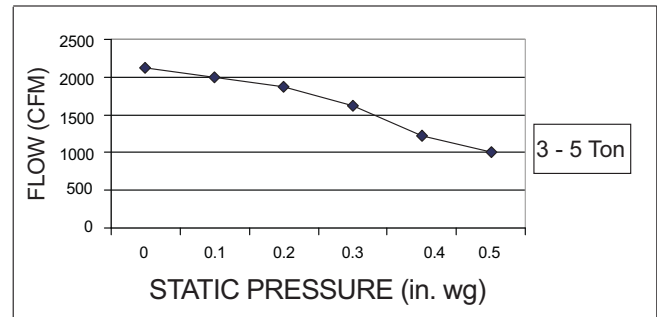
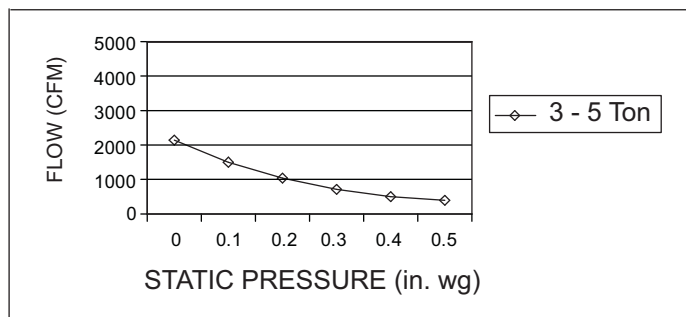
BAROMETRIC RELIEF



RETURN AIR PRESSURE DROP



POWER EXHAUST PERFORMANCE

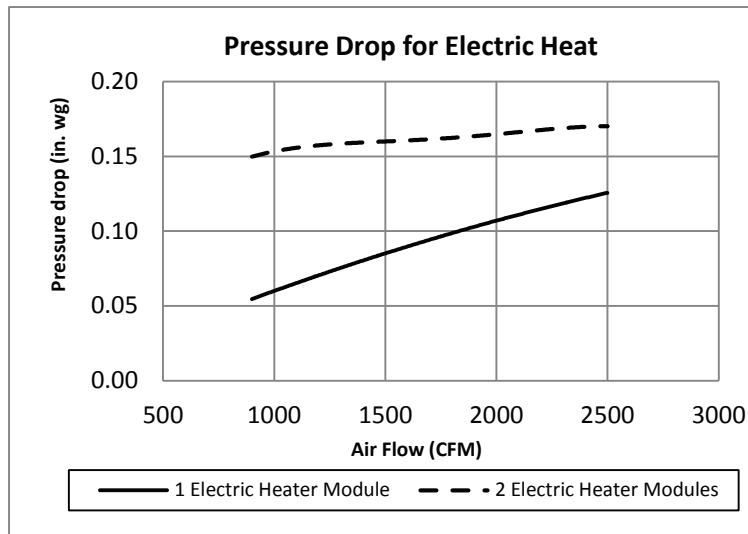


STATIC PRESSURE ADDERS (in. wg) – FACTORY OPTIONS AND/OR FIELD ACCESSORIES

PRESSURE DROP FOR ELECTRIC HEAT

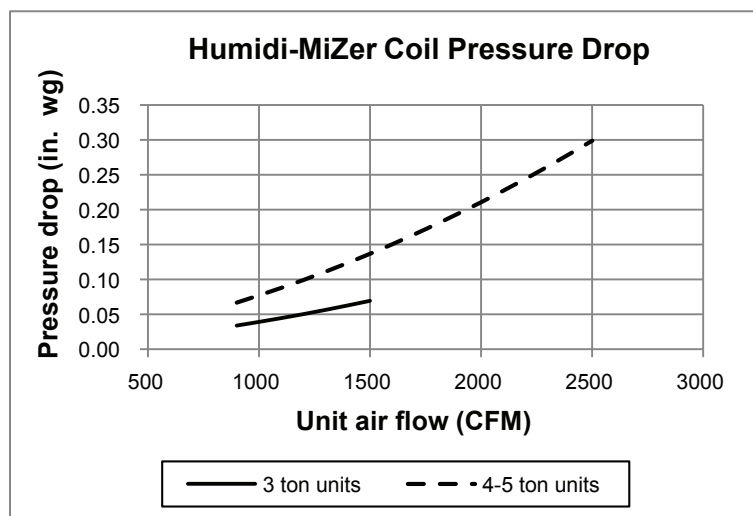
CFM	900	1100	1300	1500	1700	1900	2100	2300	2500
1 Electric Heater Module*	0.05	0.07	0.08	0.09	0.09	0.10	0.11	0.12	0.13
2 Electric Heater Modules*	0.15	0.16	0.16	0.16	0.16	0.16	0.17	0.17	0.17

*Use 2 heater module pressure drop for CRHEATER360A00-362A00, 371A00-373A00, 378A00, 379A00. Prior to the release of the CRHEATER360A00-362A00, 371A00-373A00, 378A00, 379A00, the necessary kW's were achieved with 2 separate heater modules. Now the heat capacity is achieved with a single module.



HUMIDI-MIZER COIL PRESSURE DROP

Air flow (CFM)	900	1100	1300	1500	1700	1900	2100	2300	2500
Pressure drop (in. wg) 3 ton units	0.03	0.04	0.06	0.07	—	—	—	—	—
Pressure drop (in. wg) 4 to 5 ton units	0.07	0.09	0.11	0.14	0.16	0.20	0.23	0.26	0.30



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. 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 information section of this book.
6. For more information on the performance limits of Carrier motors, see the application data section of this book.
7. The EPACT (Energy Policy Act) regulates energy requirements for specific types of indoor fan motors. Motors regulated by EPACT include any general purpose, T-frame (three-digit, 143 and larger), single-speed, foot mounted, polyphase, squirrel cage induction motors of NEMA (National Electrical Manufacturers Association) design A and B, manufactured for use in the United States. Ranging from 1 to 200 Hp, these continuous-duty motors operate on 230 and 460 volt, 60 Hz power. If a motor does not fit into these specifications, the motor does not have to be replaced by an EPACT compliant energy-efficient motor. Variable-speed motors are exempt from EPACT compliance requirements.

50LC*004 HORIZONTAL UNIT - DIRECT DRIVE

Speed (Torque) tap	CFM	ESP	BHP
1	750	0.40	0.15
	900	0.23	0.14
	1050	—	—
	1125	—	—
	1200	—	—
	1275	—	—
	1350	—	—
	1425	—	—
2	1500	—	—
	750	0.67	0.23
	900	0.47	0.21
	1050	0.29	0.19
	1125	0.21	0.18
	1200	0.13	0.18
	1275	0.06	0.20
	1350	—	—
3	1425	—	—
	1500	—	—
	750	1.28	0.44
	900	1.11	0.44
	1050	0.91	0.43
	1125	0.80	0.42
	1200	0.68	0.40
	1275	0.56	0.39
4	1350	0.44	0.37
	1425	0.32	0.36
	1500	0.21	0.34
	750	1.39	0.48
	900	1.32	0.51
	1050	1.23	0.55
	1125	1.18	0.57
	1200	1.11	0.59
5	1275	1.03	0.60
	1350	0.94	0.62
	1425	0.84	0.61
	1500	0.73	0.59
	750	1.40	0.48
	900	1.32	0.51
	1050	1.24	0.56
	1125	1.19	0.58
	1200	1.14	0.61
	1275	1.10	0.63
	1350	1.05	0.66
	1425	0.99	0.68
	1500	0.94	0.71

To convert BHP to watts, use 84% motor efficiency.

50LC*004 VERTICAL UNIT - DIRECT DRIVE

Speed (Torque) tap	CFM	ESP	BHP
1	750	0.34	0.11
	900	0.18	0.11
	1050	—	—
	1125	—	—
	1200	—	—
	1275	—	—
	1350	—	—
	1425	—	—
2	1500	—	—
	750	0.55	0.18
	900	0.36	0.16
	1050	0.18	0.15
	1125	0.10	0.15
	1200	0.03	0.16
	1275	—	—
	1350	—	—
3	1425	—	—
	1500	—	—
	750	1.20	0.31
	900	1.00	0.39
	1050	0.79	0.38
	1125	0.67	0.37
	1200	0.56	0.35
	1275	0.44	0.34
4	1350	0.32	0.32
	1425	0.21	0.31
	1500	—	—
	750	1.35	0.45
	900	1.21	0.48
	1050	1.09	0.51
	1125	1.03	0.53
	1200	0.96	0.55
5	1275	0.88	0.57
	1350	0.78	0.58
	1425	0.68	0.57
	1500	0.56	0.53
	750	1.34	0.45
	900	1.21	0.48
	1050	1.09	0.53
	1125	1.04	0.55
	1200	1.00	0.57
	1275	0.95	0.60
	1350	0.90	0.62
	1425	0.84	0.65
	1500	0.78	0.68

To convert BHP to watts, use 84% motor efficiency.

50LC*005 HORIZONTAL UNIT - DIRECT DRIVE

Speed (Torque) tap	CFM	ESP	BHP
1	1000	0.23	0.15
	1200	0.15	0.15
	1400	0.08	0.17
	1500	0.02	0.18
	1600	—	—
	1700	—	—
	1800	—	—
	1900	—	—
	2000	—	—
2	1000	1.02	0.42
	1200	0.74	0.39
	1400	0.46	0.35
	1500	0.32	0.32
	1600	0.19	0.30
	1700	0.07	0.27
	1800	—	—
	1900	—	—
	2000	—	—
3	1000	1.33	0.54
	1200	1.23	0.59
	1400	1.05	0.63
	1500	0.94	0.65
	1600	0.81	0.62
	1700	0.67	0.59
	1800	0.52	0.56
	1900	0.37	0.53
	2000	0.22	0.50
4	1000	1.32	0.54
	1200	1.22	0.60
	1400	1.12	0.67
	1500	1.07	0.77
	1600	1.02	0.74
	1700	0.97	0.77
	1800	0.91	0.81
	1900	0.84	0.83
	2000	0.76	0.86
5	1000	1.35	0.55
	1200	1.25	0.61
	1400	1.15	0.68
	1500	1.10	0.68
	1600	1.05	0.76
	1700	1.01	0.76
	1800	0.96	0.84
	1900	0.91	0.89
	2000	0.87	0.93

To convert BHP to watts, use 84% motor efficiency.

50LC*005 VERTICAL UNIT - DIRECT DRIVE

Speed (Torque) tap	CFM	ESP	BHP
1	1000	0.21	0.15
	1200	0.11	0.10
	1400	—	—
	1500	—	—
	1600	—	—
	1700	—	—
	1800	—	—
	1900	—	—
	2000	—	—
2	1000	0.94	0.38
	1200	0.68	0.35
	1400	0.40	0.31
	1500	0.24	0.28
	1600	0.10	0.26
	1700	—	—
	1800	—	—
	1900	—	—
	2000	—	—
3	1000	1.24	0.51
	1200	1.18	0.55
	1400	1.08	0.57
	1500	1.01	0.61
	1600	0.91	0.60
	1700	0.78	0.58
	1800	0.63	0.56
	1900	0.46	0.53
	2000	0.28	0.51
4	1000	1.23	0.51
	1200	1.13	0.57
	1400	1.04	0.64
	1500	1.00	0.74
	1600	0.95	0.71
	1700	0.89	0.74
	1800	0.82	0.77
	1900	0.73	0.79
	2000	0.63	0.82
5	1000	1.27	0.52
	1200	1.16	0.59
	1400	1.06	0.67
	1500	1.01	0.67
	1600	0.96	0.75
	1700	0.91	0.75
	1800	0.86	0.83
	1900	0.80	0.87
	2000	0.74	0.92

To convert BHP to watts, use 84% motor efficiency.

50LC*006 HORIZONTAL UNIT - DIRECT DRIVE

Speed (Torque) tap	CFM	ESP	BHP
1	1250	0.23	0.20
	1500	0.10	0.22
	1750	—	—
	1875	—	—
	2000	—	—
	2125	—	—
	2250	—	—
	2375	—	—
2	2500	—	—
	1250	1.19	0.62
	1500	0.80	0.57
	1750	0.42	0.51
	1875	0.24	0.48
	2000	0.06	0.44
	2125	—	—
	2250	—	—
3	2375	—	—
	2500	—	—
	1250	1.50	0.78
	1500	1.17	0.77
	1750	0.78	0.71
	1875	0.57	0.67
	2000	0.36	0.63
	2125	0.17	0.59
4	2250	—	—
	2375	—	—
	2500	—	—
	1250	1.64	0.85
	1500	1.42	0.92
	1750	1.09	0.92
	1875	0.90	0.90
	2000	0.69	0.86
5	2125	0.47	0.81
	2250	0.28	0.77
	2375	0.11	0.73
	2500	0.00	0.67
	1250	1.69	0.87
	1500	1.52	0.97
	1750	1.30	1.05
	1875	1.16	1.09
	2000	1.00	1.09
	2125	0.82	1.06
	2250	0.62	1.02
	2375	0.40	0.98
	2500	0.16	0.93

To convert BHP to watts, use 84% motor efficiency.

50LC*006 VERTICAL UNIT - DIRECT DRIVE

Speed (Torque) tap	CFM	ESP	BHP
1	1250	0.19	0.18
	1500	0.03	0.19
	1750	—	—
	1875	—	—
	2000	—	—
	2125	—	—
	2250	—	—
	2375	—	—
2	2500	—	—
	1250	1.06	0.57
	1500	0.65	0.52
	1750	0.27	0.47
	1875	0.11	0.44
	2000	—	—
	2125	—	—
	2250	—	—
3	2375	—	—
	2500	—	—
	1250	1.38	0.73
	1500	1.00	0.72
	1750	0.60	0.67
	1875	0.41	0.63
	2000	0.22	0.60
	2125	0.04	0.57
4	2250	—	—
	2375	—	—
	2500	—	—
	1250	1.50	0.82
	1500	1.25	0.88
	1750	0.89	0.87
	1875	0.68	0.84
	2000	0.46	0.80
5	2125	0.26	0.76
	2250	0.08	0.73
	2375	—	—
	2500	—	—
	1250	1.55	0.85
	1500	1.36	0.94
	1750	1.10	1.02
	1875	0.93	1.05
	2000	0.74	1.03
	2125	0.53	0.99
	2250	0.31	0.94
	2375	0.08	0.90
	2500	—	—

To convert BHP to watts, use 84% motor efficiency.

50LC**04 BELT DRIVE WITH VFD CONTROLLER AND DISPLAY (HORIZONTAL SUPPLY)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	574	0.13	707	0.23	817	0.34	913	0.47	999	0.61
975	597	0.15	727	0.25	835	0.37	929	0.50	1015	0.64
1050	621	0.18	747	0.28	853	0.40	946	0.53	1030	0.68
1125	646	0.20	768	0.31	872	0.43	964	0.57	1047	0.72
1200	671	0.23	790	0.34	892	0.47	982	0.61	1064	0.76
1275	696	0.26	812	0.38	912	0.51	1001	0.65	1082	0.81
1350	723	0.30	835	0.42	933	0.55	1020	0.70	1100	0.86
1425	749	0.34	859	0.46	955	0.60	1040	0.75	1119	0.91
1500	776	0.38	883	0.51	977	0.65	1061	0.80	1138	0.97

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1078	0.77	1151	0.93	1220	1.11	1284	1.30	1346	1.49
975	1093	0.80	1165	0.97	1233	1.15	1297	1.33	1358	1.53
1050	1108	0.84	1180	1.01	1247	1.19	1311	1.38	1371	1.58
1125	1123	0.88	1195	1.05	1261	1.23	1325	1.42	1385	1.62
1200	1140	0.92	1210	1.10	1276	1.28	1339	1.47	1399	1.68
1275	1157	0.97	1226	1.15	1292	1.33	1354	1.53	1414	1.73
1350	1174	1.02	1243	1.20	1308	1.39	1370	1.59	1429	1.80
1425	1192	1.08	1260	1.26	1325	1.45	1386	1.65	1444	1.86
1500	1210	1.14	1278	1.33	1342	1.52	1403	1.72	1461	1.93

Medium static: 770-1175 rpm, 1.7 max BHP
 High static: 1035-1466 rpm, 2.4 max BHP

Boldface indicates field-supplied drive is required.

50LC**04 BELT DRIVE WITH VFD CONTROLLER AND DISPLAY (VERTICAL SUPPLY)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	594	0.15	740	0.25	867	0.37	981	0.52	1084	0.68
975	618	0.17	758	0.28	881	0.40	991	0.55	1092	0.71
1050	642	0.19	777	0.30	896	0.43	1003	0.58	1102	0.75
1125	668	0.22	797	0.34	912	0.47	1017	0.62	1113	0.79
1200	695	0.25	818	0.37	930	0.51	1032	0.66	1126	0.83
1275	722	0.29	841	0.41	949	0.55	1048	0.71	1140	0.88
1350	750	0.33	864	0.46	968	0.60	1065	0.76	1155	0.93
1425	778	0.37	888	0.50	989	0.65	1083	0.81	1171	0.99
1500	807	0.42	913	0.56	1011	0.71	1103	0.87	1188	1.05

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
900	1180	0.86	1269	1.05	1354	1.25	1434	1.47	1511	1.70
975	1186	0.89	1275	1.08	1358	1.29	1437	1.51	1513	1.74
1050	1194	0.92	1281	1.12	1363	1.32	1441	1.54	1516	1.78
1125	1204	0.97	1289	1.16	1370	1.37	1447	1.59	1520	1.82
1200	1215	1.01	1298	1.21	1378	1.42	1454	1.64	1526	1.87
1275	1227	1.06	1309	1.26	1387	1.47	1462	1.69	1533	1.92
1350	1240	1.12	1321	1.32	1397	1.53	1471	1.75	1541	1.99
1425	1254	1.18	1333	1.38	1409	1.59	1481	1.82	—	—
1500	1270	1.24	1347	1.45	1421	1.66	1492	1.89	—	—

Medium static: 770-1175 rpm, 1.7 max BHP
 High static: 1035-1466 rpm, 2.4 max BHP

Boldface indicates field-supplied drive is required.

50LC**05 BELT DRIVE WITH VFD CONTROLLER AND DISPLAY (HORIZONTAL SUPPLY)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	671	0.23	790	0.34	892	0.47	982	0.61	1064	0.76
1300	705	0.28	820	0.39	919	0.52	1007	0.67	1088	0.82
1400	740	0.33	851	0.45	947	0.58	1034	0.73	1113	0.89
1500	776	0.38	883	0.51	977	0.65	1061	0.80	1138	0.97
1600	813	0.45	916	0.58	1007	0.73	1089	0.89	1165	1.05
1700	851	0.52	949	0.66	1038	0.81	1118	0.97	1192	1.15
1800	888	0.60	984	0.75	1069	0.90	1148	1.07	1221	1.25
1900	927	0.69	1019	0.84	1102	1.00	1179	1.18	1250	1.36
2000	965	0.78	1054	0.94	1135	1.11	1210	1.29	1280	1.48

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1140	0.92	1210	1.10	1276	1.28	1339	1.47	1399	1.68
1300	1162	0.99	1232	1.16	1297	1.35	1360	1.55	1419	1.75
1400	1186	1.06	1254	1.24	1319	1.43	1381	1.63	1439	1.84
1500	1210	1.14	1278	1.33	1342	1.52	1403	1.72	1461	1.93
1600	1236	1.23	1302	1.42	1365	1.62	1425	1.82	1483	2.04
1700	1262	1.33	1328	1.52	1390	1.72	1449	1.93	1505	2.15
1800	1289	1.44	1354	1.63	1415	1.84	1473	2.05	1529	2.27
1900	1317	1.55	1380	1.75	1441	1.96	1498	2.18	—	—
2000	1345	1.68	1408	1.88	1467	2.10	1524	2.32	—	—

Medium static: 920-1303 rpm, 1.7 max BHP
 High static: 1208-1550 rpm, 2.9 max BHP

Boldface indicates field-supplied drive is required.

50LC**05 BELT DRIVE WITH VFD CONTROLLER AND DISPLAY (VERTICAL SUPPLY)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	695	0.25	818	0.37	930	0.51	1032	0.66	1126	0.83
1300	731	0.30	849	0.43	955	0.57	1053	0.72	1145	0.89
1400	769	0.36	880	0.49	982	0.63	1077	0.79	1166	0.97
1500	807	0.42	913	0.56	1011	0.71	1103	0.87	1188	1.05
1600	847	0.49	948	0.63	1042	0.79	1130	0.96	1213	1.14
1700	887	0.57	983	0.72	1073	0.88	1158	1.06	1239	1.24
1800	928	0.66	1020	0.82	1106	0.98	1188	1.16	1266	1.35
1900	969	0.76	1057	0.92	1140	1.09	1219	1.28	1295	1.48
2000	1010	0.87	1095	1.04	1175	1.21	1251	1.41	1325	1.61

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1200	1215	1.01	1298	1.21	1378	1.42	1454	1.64	1526	1.87
1300	1231	1.08	1313	1.28	1390	1.49	1465	1.71	1536	1.94
1400	1249	1.16	1329	1.36	1405	1.57	1478	1.79	1547	2.03
1500	1270	1.24	1347	1.45	1421	1.66	1492	1.89	—	—
1600	1292	1.34	1367	1.54	1440	1.76	1509	1.99	—	—
1700	1315	1.44	1389	1.65	1459	1.88	1527	2.11	—	—
1800	1341	1.56	1412	1.77	1481	2.00	1547	2.23	—	—
1900	1367	1.68	1437	1.90	1504	2.13	—	—	—	—
2000	1395	1.82	1463	2.04	1528	2.28	—	—	—	—

Medium static: 920-1303 rpm, 1.7 max BHP
 High static: 1208-1550 rpm, 2.9 max BHP

Boldface indicates field-supplied drive is required.

50LC**06 BELT DRIVE WITH VFD CONTROLLER AND DISPLAY (HORIZONTAL SUPPLY)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	725	0.33	840	0.46	937	0.60	1023	0.75	1101	0.90
1625	765	0.40	876	0.54	970	0.68	1054	0.84	1131	1.00
1750	806	0.48	912	0.63	1004	0.78	1087	0.94	1162	1.11
1875	847	0.57	950	0.72	1039	0.88	1120	1.05	1194	1.23
2000	889	0.66	988	0.83	1075	1.00	1154	1.18	1226	1.36
2125	931	0.78	1027	0.95	1112	1.13	1189	1.31	1260	1.50
2250	974	0.90	1067	1.08	1149	1.27	1224	1.46	1294	1.66
2375	1018	1.03	1107	1.23	1187	1.43	1261	1.63	1329	1.84
2500	1061	1.19	1148	1.39	1226	1.59	1297	1.81	1364	2.02

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1172	1.06	1239	1.23	1302	1.40	1361	1.58	1418	1.77
1625	1201	1.16	1267	1.34	1329	1.52	1388	1.71	1444	1.90
1750	1231	1.28	1296	1.46	1358	1.65	1416	1.84	1472	2.04
1875	1262	1.41	1326	1.60	1387	1.79	1445	1.99	1499	2.20
2000	1294	1.55	1357	1.74	1417	1.95	1474	2.15	1528	2.36
2125	1326	1.70	1388	1.90	1447	2.11	1504	2.33	—	—
2250	1359	1.87	1420	2.08	1479	2.29	1534	2.51	—	—
2375	1393	2.05	1453	2.27	1511	2.49	—	—	—	—
2500	1427	2.24	1487	2.47	1543	2.70	—	—	—	—

Medium static: 1035-1466 rpm, 2.4 max BHP
 High static: 1303-1550 rpm, 2.9 max BHP

Boldface indicates field-supplied drive is required.

50LC**06 BELT DRIVE WITH VFD CONTROLLER AND DISPLAY (VERTICAL SUPPLY)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	0.2		0.4		0.6		0.8		1.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	794	0.41	902	0.55	993	0.69	1074	0.85	1147	1.00
1625	840	0.49	945	0.64	1034	0.80	1113	0.96	1185	1.13
1750	888	0.59	988	0.75	1075	0.92	1153	1.09	1223	1.26
1875	936	0.70	1033	0.87	1117	1.05	1193	1.23	1263	1.41
2000	984	0.82	1078	1.00	1160	1.19	1235	1.39	1303	1.58
2125	1033	0.96	1124	1.15	1204	1.35	1277	1.56	1343	1.76
2250	1083	1.11	1170	1.32	1248	1.53	1319	1.74	1385	1.96
2375	1133	1.28	1217	1.50	1293	1.72	1363	1.95	1427	2.17
2500	1183	1.47	1265	1.70	1339	1.93	1406	2.17	1470	2.41

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)									
	1.2		1.4		1.6		1.8		2.0	
	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP	RPM	BHP
1500	1214	1.16	1277	1.33	1336	1.50	1392	1.67	1445	1.85
1625	1251	1.30	1313	1.47	1371	1.65	1427	1.83	1479	2.02
1750	1289	1.44	1350	1.63	1407	1.81	1462	2.01	1514	2.20
1875	1327	1.60	1387	1.80	1444	1.99	1498	2.19	1550	2.40
2000	1366	1.78	1426	1.98	1482	2.19	1535	2.40	—	—
2125	1406	1.97	1464	2.18	1520	2.40	—	—	—	—
2250	1446	2.18	1504	2.40	—	—	—	—	—	—
2375	1487	2.40	1544	2.63	—	—	—	—	—	—
2500	1529	2.64	—	—	—	—	—	—	—	—

Medium static: 1035-1466 rpm, 2.4 max BHP
 High static: 1303-1550 rpm, 2.9 max BHP

Boldface indicates field-supplied drive is required.

PULLEY ADJUSTMENT

UNIT 50LC		MOTOR/DRIVE COMBO	MOTOR PULLEY TURNS OPEN										
			0	0.5	1	1.5	2	2.5	3	3.5	4	4.5	5
04	3 phase	Standard Static*	—	—	—	—	—	—	—	—	—	—	—
		Medium Static	1175	1135	1094	1054	1013	973	932	892	851	811	770
		High Static	1466	1423	1380	1337	1294	1251	1207	1164	1121	1078	1035
05	3 phase	Standard Static*	—	—	—	—	—	—	—	—	—	—	—
		Medium Static	1303	1265	1226	1188	1150	1112	1073	1035	997	958	920
		High Static	1550	1516	1482	1447	1413	1379	1345	1311	1276	1242	1208
06	3 phase	Standard Static*	—	—	—	—	—	—	—	—	—	—	—
		Medium Static	1466	1423	1380	1337	1294	1251	1207	1164	1121	1078	1035
		High Static	1550	1525	1501	1476	1451	1427	1402	1377	1352	1328	1303

LEGEND

*Standard static units use direct drive motor.

 Factory setting

Legend and notes for electrical data tables on pages 36-37

LEGEND

BRKR	— Circuit Breaker
C.O.	— Convenience Outlet
DISC	— Disconnect
FLA	— Full Load Amps
IFM	— Indoor Fan Motor
LRA	— Locked Rotor Amps
MCA	— Minimum Circuit Amps
P.E.	— Power Exhaust
pwrdr fr/ unit	— Powered from Unit
PWRD C.O.	— Powered Convenience Outlet
UNPWR C.O.	— Unpowered Convenience Outlet

NOTES:

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

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

Example: Supply voltage is 230-3-60



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

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

Determine maximum deviation from average voltage.

(AB) 227-224 = 3 v

(BC) 231-227 = 4 v

(AC) 227-226 = 1 v

Maximum deviation is 4 v.

Determine percent of voltage imbalance.

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

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

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

COOLING ELECTRICAL DATA

50LC UNIT	V-Ph-Hz	VOLTAGE RANGE		COMP. 1		OFM (ea)		IFM		
		MIN	MAX	RLA	LRA	WATTS	FLA	TYPE	EFF at Full Load	FLA
04	208-3-60	187	253	11.6	73	190	3.5	DD-STD	84.0%	5.8
						190	3.5	STD	81.5%	5.8
						190	3.5	MED	81.5%	5.8
						190	3.5	HIGH	80.0%	7.1
	230-3-60	187	253	11.6	73	190	3.5	DD-STD	84.0%	5.8
						190	3.5	STD	81.5%	5.6
						190	3.5	MED	81.5%	5.6
						190	3.5	HIGH	80.0%	6.8
	460-3-60	414	506	5.7	38	190	1.4	DD-STD	84.0%	3.2
						190	1.4	STD	81.5%	2.9
						190	1.4	MED	81.5%	2.9
						190	1.4	HIGH	80.0%	3.4
	575-3-60	518	633	4.0	26	190	1.4	DD-STD	84.0%	3.2
						190	1.4	STD	81.5%	2.8
						190	1.4	MED	81.5%	2.8
						190	1.4	HIGH	80.0%	3.5
05	208-3-60	187	253	14.0	83	240	3.5	DD-STD	78.0%	7.4
						240	3.5	STD	81.5%	5.8
						240	3.5	MED	81.5%	5.8
						240	3.5	HIGH	84.5%	8.6
	230-3-60	187	253	14.0	83	240	3.5	DD-STD	78.0%	7.4
						240	3.5	STD	81.5%	5.6
						240	3.5	MED	81.5%	5.6
						240	3.5	HIGH	84.5%	7.8
	460-3-60	414	506	6.4	41	220	1.4	DD-STD	78.0%	4.0
						220	1.4	STD	81.5%	2.9
						220	1.4	MED	81.5%	2.9
						220	1.4	HIGH	84.5%	3.8
	575-3-60	518	633	4.6	33	220	1.4	DD-STD	78.0%	4.0
						220	1.4	STD	81.5%	2.8
						220	1.4	MED	81.5%	2.8
						220	1.4	HIGH	84.5%	4.5
06	208-3-60	187	253	16.2	110	240	3.5	DD-STD	78.0%	7.4
						240	3.5	STD	80.0%	7.1
						240	3.5	MED	80.0%	7.1
						240	3.5	HIGH	84.5%	8.6
	230-3-60	187	253	16.2	110	240	3.5	DD-STD	78.0%	7.4
						240	3.5	STD	80.0%	6.8
						240	3.5	MED	80.0%	6.8
						240	3.5	HIGH	84.5%	7.8
	460-3-60	414	506	7.6	52	220	1.4	DD-STD	78.0%	4.0
						220	1.4	STD	80.0%	3.4
						220	1.4	MED	80.0%	3.4
						220	1.4	HIGH	84.5%	3.8
	575-3-60	518	633	5.3	39	220	1.4	DD-STD	78.0%	4.0
						220	1.4	STD	80.0%	3.5
						220	1.4	MED	80.0%	3.5
						220	1.4	HIGH	84.5%	4.5

50LC**04 ELECTRIC HEAT DATA

NOM V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM. PWR (kW)	APP PWR (kW)	APP OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER			
						NO C.O. or Unpowered C.O.		w/PWRD C.O.	
						NO P.E.	w/ P.E. (pwr fr/unit)	NO P.E.	w/ P.E. (pwr fr/unit)
208/230-3-60	DD-STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
		CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
	STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
		CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
	MED	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
		CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
	HIGH	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	—	—	—	—
		CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
	STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
	MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
	HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
575-3-60	DD-STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER378A00	15.0	13.8	47.0	—	—	—	—
	STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER378A00	15.0	13.8	47.0	—	—	—	—
	MED	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER378A00	15.0	13.8	47.0	—	—	—	—
	HIGH	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER378A00	15.0	13.8	47.0	—	—	—	—

NOTE: Units without Humidi-MiZer System use indoor fan options DD-STD, MED, and HIGH. Units with Humidi-MiZer System use indoor fan options DD-STD, STD, MED, and HIGH.

50LC**05 ELECTRIC HEAT DATA

NOM V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM. PWR (kW)	APP PWR (kW)	APP OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER			
						NO C.O. or Unpowered C.O.		w/PWRD C.O.	
						NO P.E.	w/ P.E. (pwr fr/unit)	NO P.E.	w/ P.E. (pwr fr/unit)
208/230-3-60	DD-STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
	STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
	MED	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
	HIGH	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER371A00	23.0	21.1	72.1	037	037	037	037
	STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER371A00	23.0	21.1	72.1	037	037	037	037
	MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER371A00	23.0	21.1	72.1	037	037	037	037
	HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER371A00	23.0	21.1	72.1	037	037	037	037
575-3-60	DD-STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
	STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
	MED	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
	HIGH	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER379A00	15.0	13.8	47.0	—	—	—	—

NOTE: Units without Humidi-MiZer System use indoor fan options DD-STD, MED, and HIGH. Units with Humidi-MiZer System use indoor fan options DD-STD, STD, MED, and HIGH.

50LC**06 ELECTRIC HEAT DATA

NOM V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM. PWR (kW)	APP PWR (kW)	APP OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER			
						NO C.O. or Unpowered C.O.		w/PWRD C.O.	
						NO P.E.	w/ P.E. (pwrd fr/unit)	NO P.E.	w/ P.E. (pwrd fr/unit)
208/230-3-60	DD-STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		CRHEATER362A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
	STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		CRHEATER362A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
	MED	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		CRHEATER362A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
	HIGH	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	—	—	—	—
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	—	—	—	—
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		CRHEATER362A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER372A00	23.0	21.1	72.1	037	037	037	037
		CRHEATER373A00	25.5	23.4	79.9	037	037	037	037
	STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER372A00	23.0	21.1	72.1	037	037	037	037
		CRHEATER373A00	25.5	23.4	79.9	037	037	037	037
	MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER372A00	23.0	21.1	72.1	037	037	037	037
		CRHEATER373A00	25.5	23.4	79.9	037	037	037	037
	HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER372A00	23.0	21.1	72.1	037	037	037	037
		CRHEATER373A00	25.5	23.4	79.9	037	037	037	037
575-3-60	DD-STD	CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
		CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
	STD	CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
		CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
	MED	CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
		CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
	HIGH	CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
		CRHEATER301A00	25.0	23.0	78.3	037	037	037	037

NOTE: Units without Humidi-MiZer System use indoor fan options DD-STD, MED, and HIGH. Units with Humidi-MiZer System use indoor fan options DD-STD, STD, MED, and HIGH.

50LC**04 ELECTRIC HEAT DATA — UNITS WITH NON-FUSED DISCONNECT

NOM V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM. PWR (kW)	APP PWR (kW)	APP OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER			
						NO C.O. or Unpowered C.O.		w/PWRD C.O.	
						NO P.E.	w/ P.E. (pwrd fr/unit)	NO P.E.	w/ P.E. (pwrd fr/unit)
208/230-3-60	DD-STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	037	037	037	037
		CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
	STD	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	037	037	037	037
		CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
	MED	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	037	037	037	037
		CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
	HIGH	CRHEATER101A00	4.4	3.3/4.0	11.3/13.8	037	037	037	037
		CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
	STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
	MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
	HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER107A00	8.8	8.1	27.6	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
575-3-60	DD-STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER378A00	15.0	13.8	47.0	—	—	—	—
	STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER378A00	15.0	13.8	47.0	—	—	—	—
	MED	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER378A00	15.0	13.8	47.0	—	—	—	—
	HIGH	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER378A00	15.0	13.8	47.0	—	—	—	—

NOTE: Units without Humidi-MiZer System use indoor fan options DD-STD, MED, and HIGH. Units with Humidi-MiZer System use indoor fan options DD-STD, STD, MED, and HIGH.

50LC**05 ELECTRIC HEAT DATA — UNITS WITH NON-FUSED DISCONNECT

NOM V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM. PWR (kW)	APP PWR (kW)	APP OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER			
						NO C.O. or Unpowered C.O.		w/PWRD C.O.	
						NO P.E.	w/ P.E. (pwr fr/unit)	NO P.E.	w/ P.E. (pwr fr/unit)
208/230-3-60	DD-STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
	STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
	MED	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
	HIGH	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER103B00	8.7	6.5/8.0	22.3/27.3	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER371A00	23.0	21.1	72.1	037	037	037	037
	STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER371A00	23.0	21.1	72.1	037	037	037	037
	MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER371A00	23.0	21.1	72.1	037	037	037	037
	HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER371A00	23.0	21.1	72.1	037	037	037	037
575-3-60	DD-STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
	STD	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
	MED	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
	HIGH	CRHEATER297A00	10.0	9.2	31.3	—	—	—	—
		CRHEATER379A00	15.0	13.8	47.0	—	—	—	—

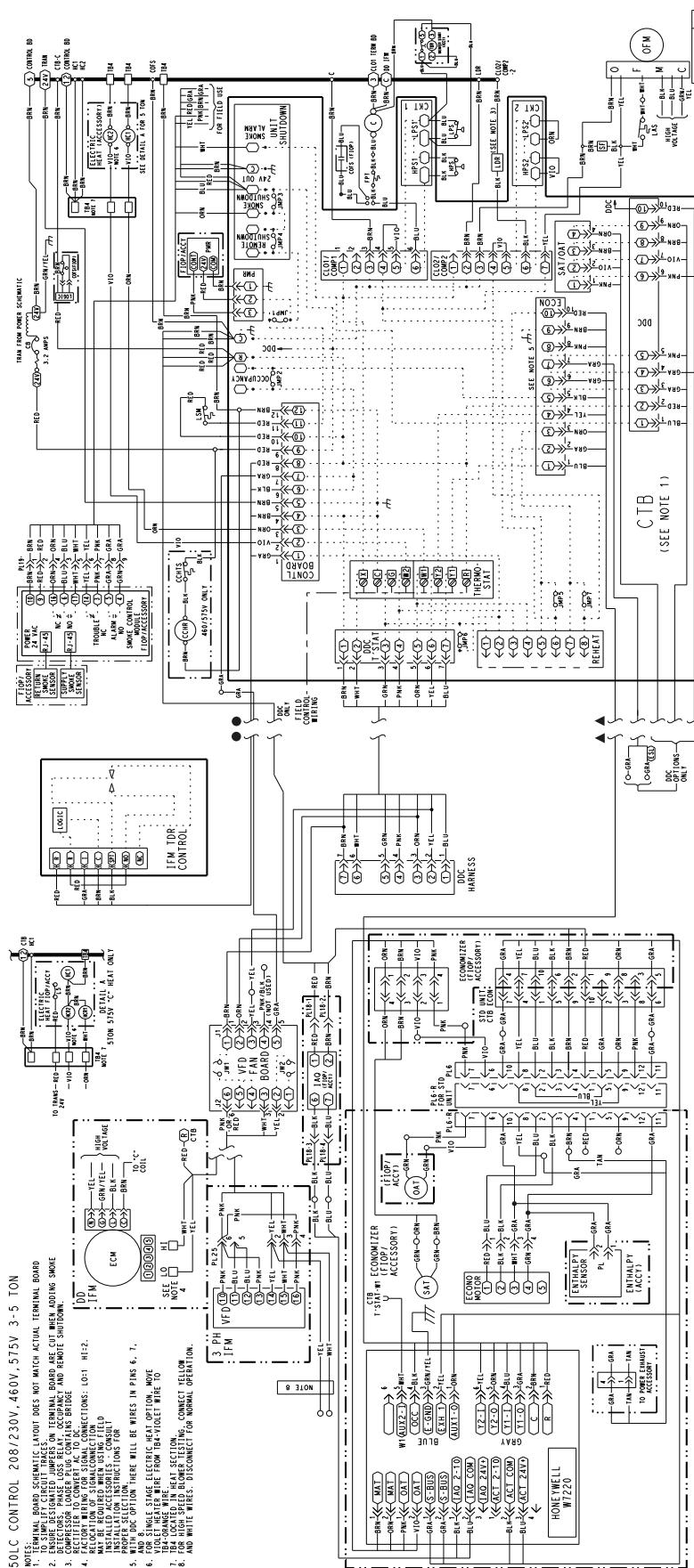
NOTE: Units without Humidi-MiZer System use indoor fan options DD-STD, MED, and HIGH. Units with Humidi-MiZer System use indoor fan options DD-STD, STD, MED, and HIGH.

50LC**06 ELECTRIC HEAT DATA — UNITS WITH NON-FUSED DISCONNECT

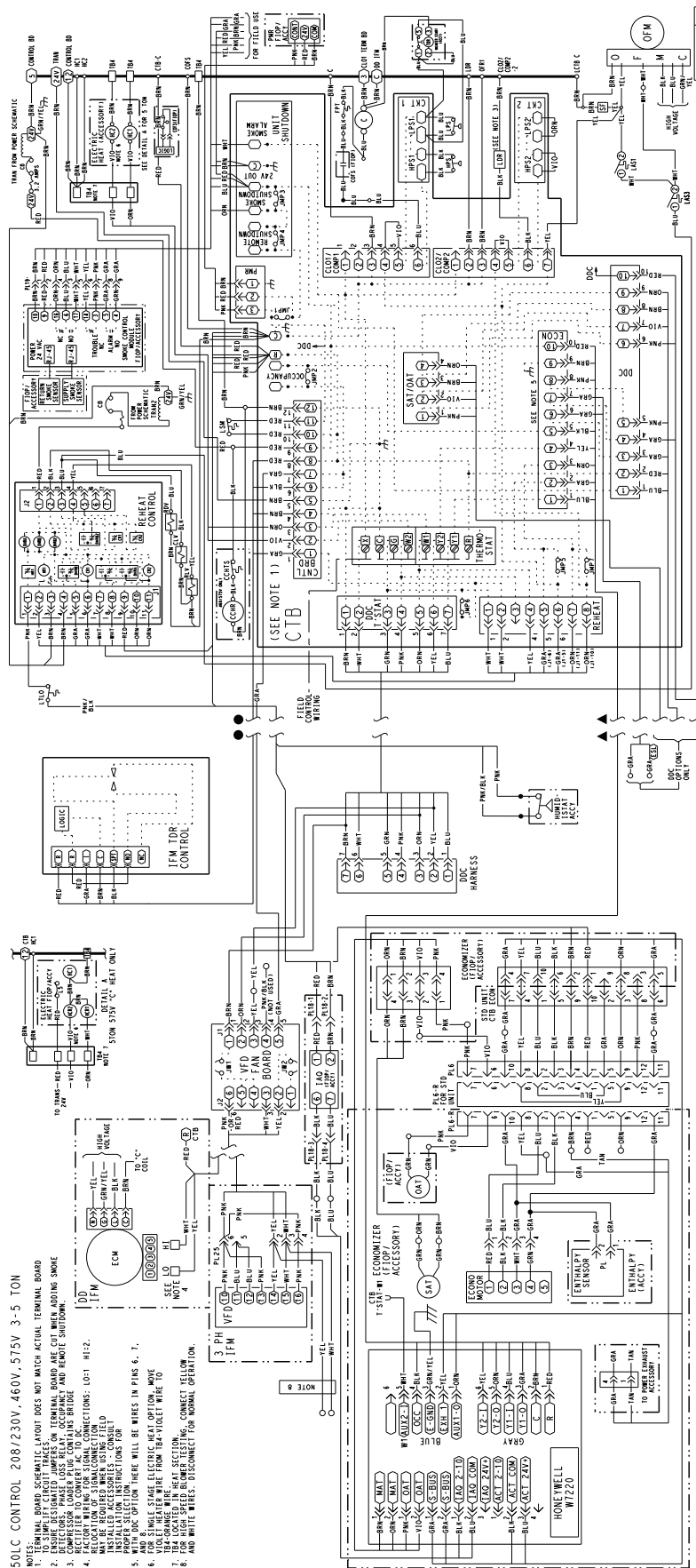
NOM V-Ph-Hz	IFM TYPE	ELECTRIC HEATER PART NUMBER	NOM. PWR (kW)	APP PWR (kW)	APP OUTPUT (MBH)	SINGLE POINT OR JUNCTION KIT PART NUMBER			
						NO C.O. or Unpowered C.O.		w/PWRD C.O.	
						NO P.E.	w/ P.E. (pwrd fr/unit)	NO P.E.	w/ P.E. (pwrd fr/unit)
208/230-3-60	DD-STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		CRHEATER362A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
	STD	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		CRHEATER362A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
	MED	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		CRHEATER362A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
	HIGH	CRHEATER102A00	6.5	4.9/6.0	16.7/20.4	037	037	037	037
		CRHEATER104B00	10.5	7.9/9.6	26.9/32.9	037	037	037	037
		CRHEATER105A00	16.0	12.0/14.7	41.0/50.1	037	037	038	038
		CRHEATER361A00	21.0	15.8/19.3	53.8/65.8	038	038	038	038
		CRHEATER362A00	26.5	19.9/24.3	67.9/83.0	038	038	038	038
460-3-60	DD-STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER372A00	23.0	21.1	72.1	037	037	037	037
		CRHEATER373A00	25.5	23.4	79.9	037	037	037	037
	STD	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER372A00	23.0	21.1	72.1	037	037	037	037
		CRHEATER373A00	25.5	23.4	79.9	037	037	037	037
	MED	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER372A00	23.0	21.1	72.1	037	037	037	037
		CRHEATER373A00	25.5	23.4	79.9	037	037	037	037
	HIGH	CRHEATER106A00	6.0	5.5	18.8	—	—	—	—
		CRHEATER108A00	11.5	10.6	36.0	—	—	—	—
		CRHEATER109A00	14.0	12.9	43.9	—	—	—	—
		CRHEATER372A00	23.0	21.1	72.1	037	037	037	037
		CRHEATER373A00	25.5	23.4	79.9	037	037	037	037
575-3-60	DD-STD	CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
		CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
	STD	CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
		CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
	MED	CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
		CRHEATER301A00	25.0	23.0	78.3	037	037	037	037
	HIGH	CRHEATER379A00	15.0	13.8	47.0	—	—	—	—
		CRHEATER301A00	25.0	23.0	78.3	037	037	037	037

NOTE: Units without Humidi-MiZer System use indoor fan options DD-STD, MED, and HIGH. Units with Humidi-MiZer System use indoor fan options DD-STD, STD, MED, and HIGH.

TYPICAL 50LC**04-06 CONTROL WIRING DIAGRAM



TYPICAL 50LC04-06 CONTROL WIRING DIAGRAM WITH HUMIDI-MIZER SYSTEM**





General

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

Electromechanical Units

- Without economizer
- With 2-Speed Indoor Fan Motor (Direct Drive Electronically Commutated Motor [ECM] or Belt Drive Motor with Variable Frequency Drive [VFD] Controller)

Cooling

When Central Terminal Board (CTB) terminal G is energized a 24VAC low speed run signal is sent to the ECM motor or VFD controlled motor through the unit fan board. The indoor fan will operate in low speed setting. High and low speed fan RPMs are set by CFM and static pressure requirements for the unit installation. (The ECM and VFD are always energized and only require a 24V low speed or high speed run signal to operate.)

When Central Terminal Board (CTB) terminal Y1 is energized (thermostat call for first stage of cooling), 24VAC power is supplied to compressor contactor C and compressor A1 is energized and runs at part load capacity.

When Central Terminal Board (CTB) terminal Y2 is energized (thermostat call for second stage of cooling), 24VAC power is supplied to the compressor loader (LDR) and the compressor operates at full load capacity. When Y2 is energized a 24VAC signal is also sent to the fan board and the indoor fan operates at high speed.

Regardless of the number of stages, the outdoor fan motor runs continuously while the unit is cooling.

At the factory settings during the first stage of cooling operation the ECM indoor motor or VFD controlled indoor motor will adjust the fan motor to provide the CFM required. When a call for the second stage of cooling is required, the ECM indoor motor or VFD controlled indoor motor will run at 100% of the total CFM required for the unit installation.

There is a 75 second indoor fan delay OFF (45 second on the Time Delay Relay [TDR] board and 30 second on the Integrated Gas Controller [IGC]) after the Central Terminal Board (CTB) terminal G is de-energized.

When the outside air temperature falls below 40°F (4°C) the outdoor fan operates at a lower RPM and will allow cooling operation to an outside air temperature of 10°F (-12°C).

Heating

Units have either 1 or 2 stages of electric heat. When the thermostat calls for heating, power is applied to the G and 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. When power is applied to the G and W1 and or W2 terminals the indoor fan will run at the high speed setting.

Electromechanical Units

- With economizer
- With 2-Speed Indoor Fan Motor (Direct Drive Electronically Commutated Motor [ECM] or Belt Drive Motor with Variable Frequency Drive [VFD] Controller)

Cooling

When free cooling is not available, the compressors will be controlled by the zone thermostat as described in previous cooling section without economizer.

When free cooling is available, the outdoor air damper is modulated by the EconoMi\$er X control to provide a 50°F (10°C) to 55°F (13°C) mixed air temperature into the zone. As the mixed air temperature fluctuates above 55°F (13°C) or below 50°F (10°C) dampers will be modulated (open or close) to bring the mixed air temperature back within control. If mechanical cooling is utilized with free cooling, the outdoor air damper will maintain its current position at the time the compressor is started. If the increase in cooling capacity causes the mixed air temperature to drop below 45°F (7°C), then the outdoor air damper position will be decreased to the minimum position. If the mixed air temperature continues to fall, the outdoor air damper will close. Control returns to normal once the mixed air temperature rises above 48°F (9°C). The power exhaust fans will be energized and de-energized, if installed, as the outdoor air damper opens and closes.

If field installed accessory CO₂ sensors are connected to the EconoMi\$er X control, a demand controlled ventilation strategy will begin to operate. As the CO₂ level in the zone increases above the CO₂ set point, 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 X 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 X 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 X damper to the minimum position.

On the initial power to the EconoMi\$er X control, it will take the damper up to 2½ 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 1½ and 2½ 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 set point at 50°F (10°C) to 55°F (13°C). If there is a further demand for cooling (cooling second stage — Y2 is energized), then the control will bring on compressor stage 1 to maintain the mixed air temperature set point. The EconoMi\$er X damper will be open at maximum position. EconoMi\$er X operation is limited to a single compressor.

2-Speed Note: When operating in ventilation mode only, the indoor fan motor will automatically adjust to part load fan speed set point.

Heating

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

Optional Humidi-MiZer Dehumidification System

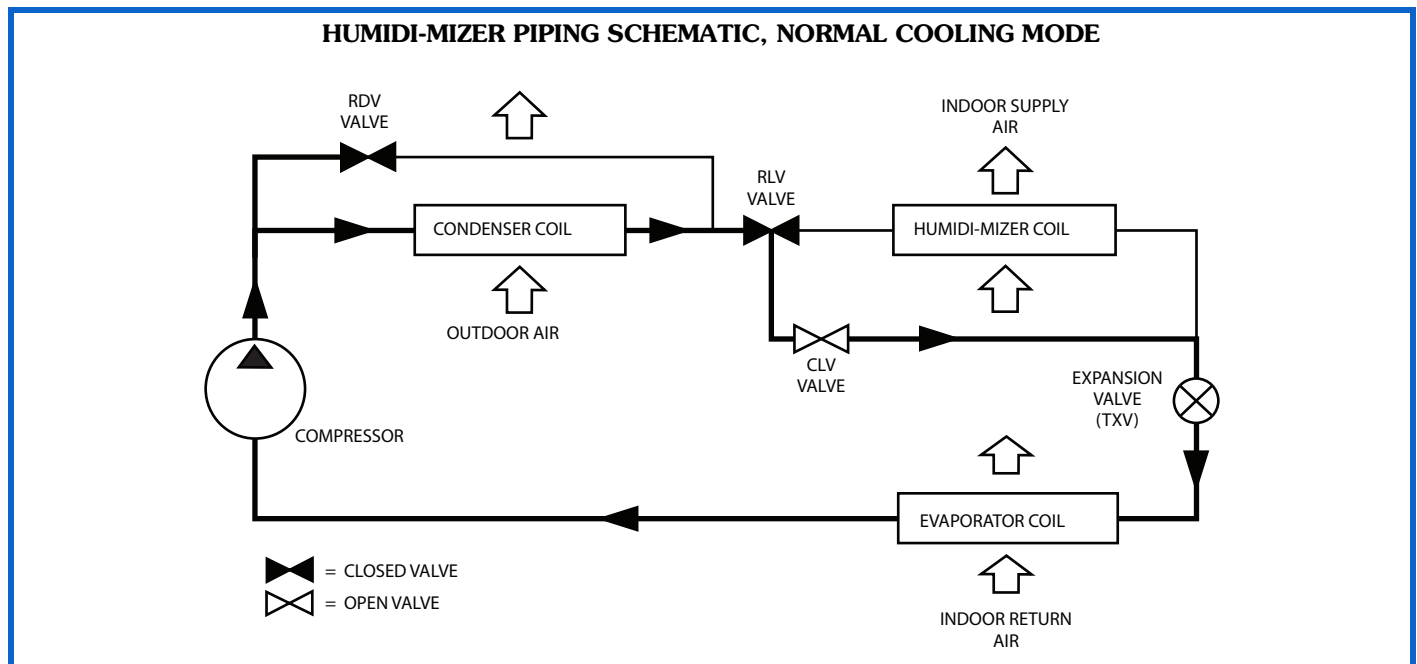
Units with the factory equipped Humidi-MiZer option are capable of providing multiple modes of improved dehumidification as a variation of the normal cooling cycle. The Humidi-MiZer option includes additional valves in the liquid line and discharge line of each refrigerant circuit and a small reheat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

The Humidi-MiZer system provides three sub-modes of operation: Cooling Mode, Subcooling Mode (Reheat1), and Hot Gas Reheat Mode (Reheat2).

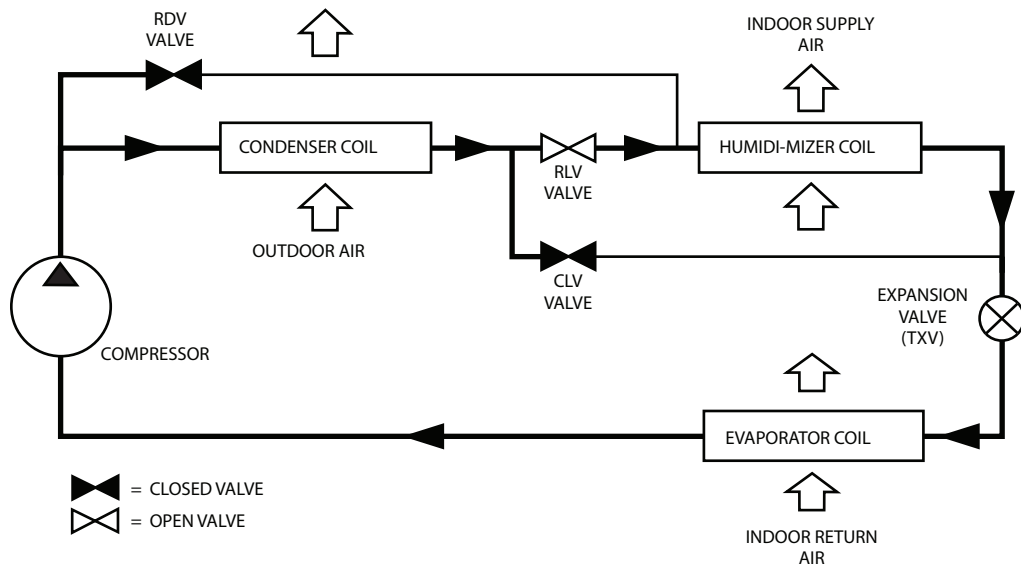
- Normal Cooling Mode provides normal ratio of Sensible and Latent Cooling effect from the evaporator coil.
- Subcooling Mode (Reheat1) provides increased Latent Cooling while slightly reducing the Sensible Cooling effect.
- Hot Gas Reheat Mode (Reheat2) provides normal Latent Cooling but with null or minimum Sensible Cooling effect delivered to the space.

The Subcooling and Hot Gas Reheat modes are available when the unit is not in a Heating mode and when the Low Ambient Lockout switch is closed.

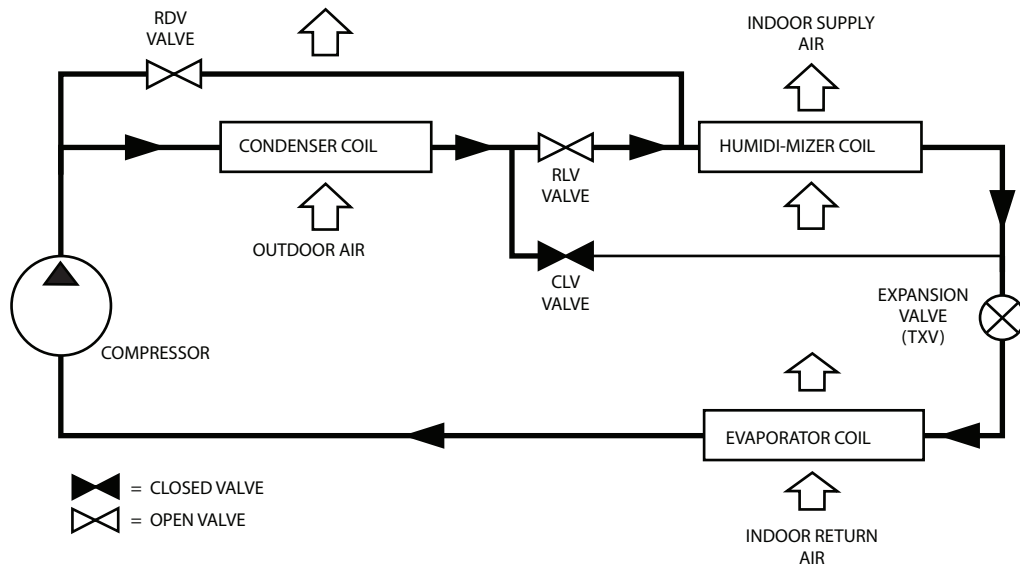
The following figures depict piping diagrams for single stage cooling units.



HUMIDI-MIZER PIPING SCHEMATIC, SUBCOOLING MODE (REHEAT 1)



HUMIDI-MIZER PIPING SCHEMATIC, HOT GAS REHEAT MODE (REHEAT 2)



Minimum operating ambient temp (cooling)

In mechanical cooling mode, your Carrier rooftop can safely operate down to an outdoor ambient temperature of 10°F (-12°C) and down to 0°F (-18°C) with SystemVu™ controls. 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 125°F (52°C). While cooling operation above 125°F (52°C) may be possible, it could cause a reduction in performance or reliability, or a protective action by the unit's internal safety devices.

Minimum and maximum 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.

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, break horsepower (BHP)

Due to Carrier's internal unit design, air path, and specially designed motors, the full horsepower (maximum

continuous BHP) band 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 load, it doesn't need excess capacity. In fact, having 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 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, wise contractors and engineers "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.

Low ambient applications

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 10°F (-12°C) with electrical mechanical controls and down to 0°F (-18°C) with SystemVu controls.

Note about this specification:

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

Cooling Only/Electric Heat Packaged Rooftop HVAC Guide Specifications

Size Range: 3 to 5 Nominal Tons

Carrier Model Number: 50LC 04-06

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

Schedule is per the project specification requirements.

Part 2 — 23 07 16 HVAC Equipment Insulation

2.01 23 07 16.13 Decentralized, Rooftop Units:

A. 23 07 16.13.A. Evaporator fan compartment:

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

B. 23 07 16.13.B. Electric heat compartment:

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

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

3.01 23 09 13.23 Sensors and Transmitters

A. 23 09 13.23.A. Thermostats

1. Thermostat must:
 - a. energize both “W” and “G” when calling for heat.
 - b. have capability to energize 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. SystemVu™ intelligent integrated Direct Digital Control (DDC) shall provide:

1. Integrated unit operation for comfort cooling, heating ventilation as well as all monitoring, recording and reporting capabilities. Controller shall also provide diagnostics and alarms of abnormal unit operation through the controller. Controller shall have an intuitive user display and be able to be used in a standalone operation or via building automation system (BAS).

2. Quick Unit Status LEDs of: Run – meaning all systems are go, ALERT - that indicates there is currently a non-critical issue with the unit, such as filters need to be replaced, and FAULT – indicates the unit has a critical issue and will possibly shut down.
3. Six large navigation keys for easy access. Navigation keys shall consist of: TEST, BACK, ENTER, and MENU along with UP and DOWN arrows.
4. Full back lit user display with 4 line by 30 character text capabilities. Display menu shall be designed to provide guided major menus and sub menus main menus provided below:
 - a. Shutdown Unit
 - b. Run Status
 - c. Settings
 - d. Alerts/Faults
 - e. Service
 - f. Inputs
 - g. Outputs
 - h. USB
5. The capability for standalone operation with conventional thermostat/sensor or use with building automation systems (BAS) of Carrier i-Vu®, BACnet¹ and Carrier Comfort Network® (CCN) systems. No special modules or boards are required for these capabilities.
6. The ability to read refrigerant pressures at display or via BAS network of Discharge Pressure and Suction Pressure. The need for traditional refrigerant gages is not required.
7. USB Data Port for flash drive interaction. This will allow the transfer of data for uploads, downloads, perform software upgrades, back-up and restore data and file transfer data such as component number of starts and run hours.
8. Reverse Rotation Protection of compressors if field three phase wiring is misapplied.
9. Provide Service Capabilities of:
 - a. Auto run test
 - b. Manual run test
 - c. Component run hours and starts
 - d. Commissioning reports
 - e. Data logging
 - f. Alarm history
10. Economizer control and diagnostics. Set up economizer operation, receive feedback from actuator. Also meets the most recent California Title 24 Fault Detection and Diagnostic (FDD) requirements.
11. Unit cooling operation down to 0°F (–18°C).

1. BACnet is a registered trademark of ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers).

12. Controller shall have easy access connections around the controller perimeter area and consist of Mate-N-Lok¹, terminal block and RJ style modular jack connections.
 13. 365 day real time clock, 20 holiday schedules along with occupied and unoccupied scheduling.
 14. Auto-Recognition for easy installation and commissioning of devices like economizers, space sensors etc.
 15. A 5°F temperature difference between cooling and heating setpoints to meet the latest ASHRAE 90.1-2013 Energy Standard.
 16. Contain return air sensor, supply air sensor and outdoor air sensor to help monitor and provide data for the unit comfort operation, diagnostic and alarms.
 17. Use of Carrier's field accessory hand-held Navigator™ display.
 18. Control of the operation of unit VFD (Variable Frequency Drive) to work in conjunction with the cooling, heating and ventilation modes.
 19. 3-year limited part warranty
- B. 23 09 23.13.B. RTU Open multi-protocol, direct digital controller:
1. Shall be ASHRAE 62-2001 compliant.
 2. Shall accept 18-30VAC, 50-60Hz, and consumer 15VA or less power.
 3. Shall have an operating temperature range from -40°F (-40°C) to 130°F (54°C), 10%-90% RH (non-condensing).
 4. Shall include built-in protocol for BACNET (MS/TP and PTP modes), Modbus (RTU and ASCII), Johnson N2 and LonWorks. 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 33.13.B. Safeties:

1. Compressor overtemperature, overcurrent.
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.
 - 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

1. Mate-N-Lok is a registered trademark of the Whitaker Corporation.

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 trouble-shoot the rooftop unit.
4. Automatic reset, motor thermal overload protector.

Part 6 — 23 09 93 Sequence of Operations for HVAC Controls

- 6.01 23 09 93.13 Decentralized, Rooftop Units:
23 09 93.13 INSERT SEQUENCE OF OPERATION

Part 7 — 23 40 13 Panel Air Filters

- 7.01 23 40 13.13 Decentralized, Rooftop Units:

- A. 23 40 13.13.A. Standard filter section:
 1. Shall consist of factory-installed, low velocity, throwaway 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 8 — 23 81 19 Self-Contained Air Conditioners

- 8.01 23 81 19.13 Small-Capacity Self-Contained Air Conditioners (50LC*004-06)

- A. 23 81 19.13.A. General:
 1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a two stage fully hermetic scroll compressor 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. Units shall be Energy Star qualified.
 3. Unit shall be rated in accordance with AHRI Standards 210/240.
 4. Unit shall be designed to conform to ASHRAE 15.
 5. 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.

6. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
7. Unit casing shall be capable of withstanding 500 hour salt spray exposure per ASTM B117 (scribed specimen).
8. Unit shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001: 2015.
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. Lifted by crane requires either shipping top panel or spreader bars.
 3. Unit shall only be stored or positioned in the upright position.
- D. 23 81 19.13.D. Project Conditions:

As specified in the contract.
- E. 23 81 19.13.E. Project Conditions:

As specified in the contract.
- F. 23 81 19.13.F. Operating Characteristics:
 1. Unit shall be capable of starting and running at 125°F (52°C) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 at ± 10% voltage.
 2. Compressor with standard controls electrical mechanical shall be capable of operation down to 10°F (–12°C), ambient outdoor temperatures. Units with SystemVu™ controls shall be available if operation below 0°F (–18°C), is required.
 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 airflow on all models. No special kit required.

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:

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, 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 1/2-in. thick, 1 lb density, flexible aluminum foil faced insulation on all interior air stream panels.
 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 by fork truck.
 - d. Base rail shall be a minimum of 16 gage thickness.
 6. Condensate pan and connections:
 - a. Shall be an internally sloped condensate drain pan made of a non-corrosive material.
 - b. Shall comply with ASHRAE Standard 62.
 - c. Shall use a 3/4-in. -14 NPT drain connection, possible either through the bottom or end of the drain pan. Connection shall be made per manufacturer's recommendations.
 7. Top panel:

Shall be a single piece top panel on all models.
 8. Electrical Connections:
 - a. All unit power wiring shall enter unit cabinet at a single, factory-prepared, knockout location.
 - b. Thru-the-base capability:
 - 1) Standard unit shall have a thru-the-base electrical location(s) using a raised, embossed portion of the unit basepan.
 - 2) Optional, factory-approved, water-tight connection method must be used for thru-the-base electrical connections.
 - 3) No basepan penetration, other than those authorized by the manufacturer, is permitted.
 9. Component access panels (standard):
 - a. Cabinet panels shall be easily removable for servicing.
 - b. Unit shall have one factory installed, tool-less, removable, filter access panel.
 - c. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
 - d. Handles shall be UV modified, composite, 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. Coils:
 1. Standard Aluminum Fin/Copper Tube Coils:
 - a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
 - b. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
 - c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.
 2. Optional Pre-coated aluminum-fin condenser coils:
 - a. Shall have a durable epoxy-phenolic coating to provide protection in mildly corrosive coastal environments.
 - b. Coating shall be applied to the aluminum fin stock prior to the fin stamping process to create an inert barrier between the aluminum fin and copper tube.
 - c. Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.
 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.

5. Optional E-coated aluminum-fin, aluminum tube condenser coils:

- a. Shall have a flexible epoxy polymer coating uniformly applied to all coil external surface areas without material bridging between fins or louvers.
- b. Coating process shall ensure complete coil encapsulation, including all exposed fin edges.
- c. E-coat thickness of 0.8 to 1.2 mil with top coat having a uniform dry film thickness from 1.0 to 2.0 mil on all external coil surface areas, including fin edges, shall be provided.
- d. Shall have superior hardness characteristics of 2H per ASTM D3363-00 and cross-hatch adhesion of 4B-5B per ASTM D3359-02.
- e. Shall have superior impact resistance with no cracking, chipping or peeling per NSF/ANSI 51-2002 Method 10.2.

J. 23 81 19.13.J. Refrigerant Components:

1. Refrigerant circuit shall include the following control, safety, and maintenance features:
 - a. Thermostatic Expansion Valve (TXV) shall help provide optimum performance across the entire operating range. Shall contain removable power element to allow change out of power element and bulb without removing the valve body.
 - b. Refrigerant filter drier.

c. Service gage connections on suction and discharge lines.

d. Pressure gage access through a specially designed access port in the top panel of the unit.

2. There shall be gage 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 gage access port shall enable maintenance personnel to route their pressure gage lines.
- c. This gage 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 one fully hermetic, scroll compressor for each independent refrigeration circuit.
- b. Models shall be available with two stage capacity control.
- c. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
- d. Compressors shall be internally protected from high discharge temperature conditions.
- e. Compressors shall be protected from an over-temperature and over-ampereage conditions by an internal, motor overload device.
- f. Compressor shall be factory mounted on rubber grommets.
- g. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
- h. Crankcase heaters shall be standard on each compressor.

K. 23 81 19.13.K. Filter Section:

1. Filters access is specified in the unit cabinet section of this specification.
2. Filters shall be held in place by a pivoting filter tray, facilitating easy removal and installation.
3. Shall consist of factory-installed, low velocity, throw-away 2-in. thick fiberglass filters.
4. Filters shall be standard, commercially available sizes.
5. Only one size filter per unit is allowed.

L. 23 81 19.13.L. Evaporator Fan and Motor:

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. ECM Direct Drive (Multi-Speed) Evaporator Fan Motor:
 - a. Multi-speed motor with easy quick adjustment settings.
 - b. Blower fan shall be double-inlet type with forward-curved blades.
 - c. Shall be constructed from steel with a corrosion resistant finish and dynamically balanced.
 - d. Standard on all models.
- 3. Optional Belt-driven Evaporator Fan with VFD controller and display:
 - 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.
 - e. Shall come with factory installed Variable Frequency Drive (VFD):
 - 1) Shall be installed inside the unit cabinet, mounted, wired and tested.
 - 2) Shall contain Electromagnetic Interference (EMI) suppression (also called radio frequency interference or RFI) that may interrupt, obstruct, or otherwise degrade the effective performance of the internal circuit.
 - 3) Insulated Gate Bi-Polar Transistors (IGBT) used to produce the output pulse width modulated (PWM) waveform, allowing for quiet motor operation.
 - 4) Be self diagnostic.
 - 5) RS485 capability standard.
 - 6) Electronic thermal overload protection.
 - 7) 5% swinging chokes for harmonic reduction and improved power factor.
 - 8) All printed circuit boards shall be conformal coated.

M. 23 81 19.13.M. Condenser Fans and Motors:

- 1. Condenser fan motors:
 - a. Shall be a totally enclosed motor.
 - b. Shall use permanently lubricated bearings.
 - c. Shall have inherent thermal overload protection with an automatic reset feature.
 - d. Shall use a shaft-down design.
 - e. Shall be ECM design.
- 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.

N. 23 81 19.13.N. Special Features, Options and Accessories:

- 1. Integrated EconoMi\$er2, and EconoMi\$er X low leak rate models:
 - a. Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.
 - b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory installed option.
 - c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
 - d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below set-points.
 - e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
 - f. Low leak rate models shall be equipped with leakage dampers, not to exceed 2% leakage at 1 in. wg pressure differential.
 - g. Economizer controller on EconoMi\$er X models shall be the Honeywell W7220 that provides:
 - 1) 2-line LCD interface screen for setup, configuration and troubleshooting
 - 2) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24.
 - 3) Sensor failure loss of communication identification.
 - 4) Automatic sensor detection.
 - 5) Capabilities for use with multiple-speed indoor fan systems.
 - 6) Utilize digital sensors: Dry bulb and Enthalpy.
 - h. Economizer controller on EconoMi\$er2 models with RTU Open models shall be a 4 to 20mA design controlled directly by the RTU Open controller. RTU Open meets California Title 24 Fault Detection and Diagnostic (FDD) requirements.
 - i. Economizer controller on EconoMi\$er2 models with SystemVu™ models shall be controlled directly by the SystemVu controller. SystemVu meets California Title 24 Fault Detection and Diagnostic (FDD) requirements.
 - j. Shall be capable of introducing up to 100% outdoor air.

- k. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air and contain seals that meet ASHRAE 90.1 requirements.
 - l. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.
 - m. Dry bulb outdoor air temperature sensor shall be provided as standard. Enthalpy sensor is also available on factory installed only. Outdoor air sensor setpoint shall be adjustable and shall range from 40°F to 100°F (4°C to 38°C). Additional sensor options shall be available as accessories.
 - n. 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%.
 - o. The economizer shall maintain minimum air-flow into the building during occupied period and provide design ventilation rate for full occupancy.
 - p. Dampers shall be completely closed when the unit is in the unoccupied mode
 - q. Economizer controller shall accept a 2 to 10 Vdc 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.
 - r. Compressor lockout temperature on W7220 is adjustable from -45°F to 80°F (-43°C to 27°C), set at a factory default of 32°F (0°C). Others shall open at 35°F (2°C) and close at 50°F (10°C).
 - s. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.
 - t. Economizer controller shall provide indications when in free cooling mode, in the DCV mode, or the exhaust fan contact is closed.
2. Integrated EconoMi\$er2, and EconoMi\$er X ultra low leak rate models:
- a. Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.
 - b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory installed option.
 - c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
 - d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below set-points.
 - e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
 - f. Ultra Low Leak design meets California Title 24 section 140.4 and ASHRAE 90.1 requirements of 4 cfm per sq. ft. on the outside dampers and 10 cfm per sq. ft. on the return dampers.
 - g. Economizer controller on EconoMi\$er X models shall be the Honeywell W7220 that provides:
 - 1) 2-line LCD interface screen for setup, configuration and troubleshooting
 - 2) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24.
 - 3) Sensor failure loss of communication identification
 - 4) Automatic sensor detection
 - 5) Capabilities for use with multiple-speed indoor fan systems
 - 6) Utilize digital sensors: Dry bulb and Enthalpy
 - h. Economizer controller on EconoMi\$er2 models with RTU Open models shall be a 4 to 20mA design controlled directly by the RTU Open controller. RTU Open meets California Title 24 Fault Detection and Diagnostic (FDD) requirements.
 - i. Economizer controller on EconoMi\$er2 models with SystemVu™ models shall be controlled directly by the SystemVu controller. SystemVu meets California Title 24 Fault Detection and Diagnostic (FDD) requirements.
 - j. Shall be capable of introducing up to 100% outdoor air.
 - k. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air and contain seals that meet ASHRAE 90.1 requirements.
 - l. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.
 - m. Dry bulb outdoor air temperature sensor is also available on factory installed only. Outdoor air sensor setpoint shall be adjustable and shall range from 40°F to 100°F (4°C to 38°C). Additional sensor options shall be available as accessories.
 - n. 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%.
 - o. The economizer shall maintain minimum air-flow into the building during occupied period and provide design ventilation rate for full occupancy.

- p. Dampers shall be completely closed when the unit is in the unoccupied mode.
- q. Economizer controller shall accept a 2 to 10 Vdc 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.
- r. Compressor lockout temperature on W7220 is adjustable from -45°F to 80°F (-43°C to 27°C), set at a factory default of 32°F (0°C). Others shall open at 35°F (2°C) and closes at 50°F (10°C).
- s. Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.
- t. Economizer controller shall provide indications when in free cooling mode, in the DCV mode, or the exhaust fan contact is closed.
- 3. Condenser Coil Hail Guard Assembly (Factory installed option on 3 phase models. Field installed on all 3 and 1 phase models):
 - a. Shall protect against damage from hail.
 - b. Shall be louvered design.
- 4. 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.
- 5. Convenience Outlet:
 - a. Powered convenience outlet (not available on 575 volt models):
 - 1) Outlet shall be powered from main line power to the rooftop unit.
 - 2) Outlet shall be powered from line side or load side of disconnect by installing contractor, as required by code. If outlet is powered from load side of disconnect, unit electrical ratings shall be UL certified and rated for additional outlet amperage.
 - 3) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
 - 4) Outlet shall include 15 amp GFI receptacles with independent fuse protection.
 - 5) Voltage required to operate convenience outlet shall be provided by a factory-installed step-down transformer.
 - 6) Outlet shall be accessible from outside the unit.
 - 7) Outlet shall include a field-installed "Wet in Use" cover.
 - b. Non-powered convenience outlet:
 - 1) Outlet shall be powered from a separate 115/120v power source.
 - 2) A transformer shall not be included.
 - 3) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
 - 4) Outlet shall include 15 amp GFI receptacles with independent fuse protection.
 - 5) Outlet shall be accessible from outside the unit.
 - 6) Outlet shall include a field-installed "Wet in Use" cover.
- 6. 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.
- 7. 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.
- 8. 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.
- 9. High-Static Indoor Fan Motor(s) and Drive(s):

High-static motor(s) and drive(s) shall be factory-installed to provide additional performance range.
- 10. Condenser Coil Grille:
 - a. Shall protect against damage from hail.
 - b. Shall be of louvered style.
- 11. Thru-the-Bottom Utility Connectors:

Kit shall provide connectors to permit electrical connections to be brought to the unit through the basepan.
- 12. Outdoor Air Enthalpy Sensor:

The outdoor air enthalpy sensor shall be used to provide single enthalpy control. When used

in conjunction with a return air enthalpy sensor, the unit will provide differential enthalpy control. The sensor allows the unit to determine if outside air is suitable for free cooling.

13. Return Air Enthalpy Sensor:

The return air enthalpy sensor shall be used in conjunction with an outdoor air enthalpy sensor to provide differential enthalpy control.

14. 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.

15. 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.

16. 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.

17. Electric Heat:

a. Heating Section:

- 1) Heater element open coil resistance wire, nickel-chrome alloy, 0.29 inches inside diameter, strung through ceramic insulators mounted on metal frame. Coil ends are staked and welded to terminal screw slots.
- 2) Heater assemblies are provided with integral fusing for protection of internal heater circuits not exceeding 48 amps each. Auto reset thermo limit controls, magnetic heater contactors (24 v coil) and terminal block all mounted in electric heater control box (minimum 18 ga galvanized steel) attached to end of heater assembly.

18. Hinged access panels:

- a. Shall provide easy access through integrated quarter turn latches and lift tabs.
- b. Shall be on major panels of filter, control box, fan motor and compressor.

19. Humidi-MiZer® Adaptive Dehumidification System (Not available with SystemVu Controls):

- a. The Humidi-MiZer Adaptive Dehumidification System shall be factory installed, certified and tested to provide greater dehumidification of the occupied space by providing two distinct modes of dehumidification operation in addition to its normal design cooling mode:
 - 1) Subcooling mode further sub cools the hot liquid refrigerant leaving the condenser coil as well as reheat leaving air stream. It can provide both better cooling capacity as well as dehumidification process when both temperature and humidity in the space are not satisfied.
 - 2) Hot gas reheat mode shall mix a portion of hot gas from the discharge of compressor with the hot liquid refrigerant leaving the condenser coil to create a two-phase warm refrigerant in the reheat coil which results in a neutral leaving air temperature when only humidity in the space is not satisfied.

