

Product Data

WeatherMaster® Single Packaged Rooftop Ultra Low NOx (14 ng/j) Emissions Gas Heat/Electric Cooling

3 to 5 Nominal Tons





48GC(G/H)*04, 05, 06

48GC(G/H): Single-Package Ultra Low NOx Gas Heating/Electric Cooling Rooftop Units with Puron® Refrigerant (R-410A)

© 2025 Carrier Form 48GCG-4-6-05PD

Features/Benefits



The New Carrier
WeatherMaster® rooftop
units (RTU) with EcoBlue™
Technology and Ultra Low
NOx Gas heating were
designed by customers for
customers and integrate new
technology to provide value
added benefits.

New major design features include:

- Patented, industry's first efficient indoor fan system using Vane Axial fan technology with electronically commutated variable speed motor
- Carrier exclusive Ultra Low NOx gas heat emissions burner box and heat exchanger design that provides 14 nanograms/joule (ng/j) operation.
- Reliable 2 stage scroll compressor on all sizes
- Upgraded unit control board with intuitive indoor fan adjustment
- Reliable copper tube/aluminum fin condenser coil with 5/16 in. tubing to help reduce refrigerant charge versus prior designs
- New outdoor fan system with rugged — lightweight high impact composite fan blade

These 48GC(G/H) WeatherMaster units up to 5 tons are specifically designed to fit on Carrier roof curbs that were installed back to 1989, which makes replacement easy and eliminates the need for curb adapters or changing utility connections.

Two-stage cooling capacity control delivers efficiencies of up to 17.4 SEER and 16.5 SEER2. All models are

capable of either vertical or horizontal airflow.

The Carrier rooftop unit (RTU) was designed by customers for customers. With "no-strip" screw collars, handled access panels, and more, the unit is easy to install, easy to maintain, and easy to use. Your new 3 to 5 ton Carrier WeatherMaster rooftop unit (RTU) provides optimum comfort and control from a packaged rooftop.

Value-added features include:

- optional Humidi-MiZer® adaptive dehumidification system for improved part load humidity performance
- Puron® refrigerant (R-410A)
- single point gas and electrical connections
- optional fully integrated SystemVu[™] controls
- RTU Open controller for BACnet^{™1}, LonWorks^{®1}, Modbus^{®1} and Johnson Controls N2
- TXV refrigerant metering devices
- 2 Stage Scroll compressors with internal line-break overload protection
- Units come with an easy access tool-less filter door. Filter track tilts out for filter removal and replacement. All filters are the same size in each unit.

Installation ease

All WeatherMaster units are field-convertible to horizontal airflow, which makes it easy to adjust to unexpected jobsite complications. Lighter units make for easy replacement. Simple, fast plug-in connections to the standard

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integrated unit control board (UCB). Clearly labeled connections points to reduce installation time. Also, a large control box provides room to work and room to mount Carrier accessory controls.

Easy to maintain

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

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

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

Easy to use

The newly re-designed Unit Control Board by Carrier puts all connections and troubleshooting points in one convenient place. Most low voltage connections are made to the same board and make it easy to access it. Setting up the fan is simple by an intuitive switch and rotary dial arrangement. Carrier rooftops have high and low pressure switches, a filter drier, and 2-in. filters standard. The new integrated gas control board operates an intelligent multi-speed gas heat inducer motor to help reduce the ultra-low NOx emissions.

NOTE: Units cannot operate with Liquid Propane (LP) gas.

NOTE: Units can operate from 0 to 2000 feet altitude only.

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Features/Benefits (cont)



EcoBlue™ Technology

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

This new Vane Axial design over past belt drive systems has 75% fewer moving parts, uses up to 40% less energy and has no fan belts, blower bearings and shaft.

Streamlined control and integration

Carrier controllers make connecting WeatherMaster® rooftops into existing building automation systems easy. The

units are compatible with conventional thermostat controls, SystemVu[™] controls and Carrier RTU Open multiprotocol controller.

Operating efficiency and flexibility

The 48GC(G/H) rooftops meet ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) 90.1-2016, IECC^{®1} (International Energy Conservation Code) IECC-2018 minimum efficiency requirements.

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Field convertible airflow

All WeatherMaster 3 to 5 ton units are field-convertible to horizontal airflow, which makes it easy to adjust to unexpected jobsite complications.

Comfort control

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



Model number nomenclature



48GC(G/H) Model Number Nomenclature

3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 Position: 2 G C G H 0 6 A 2 A Example: 4 8 3 8 A 0 A

Unit Heat Type

48 = Gas Heat Packaged Rooftop

Model Series - WeatherMaster®

GC = 17.4 SEER and 16.5 SEER2 High Efficiency

Heat Options

G = ULTRA Low NOx - Low Gas Heat (14 ng/J)

H = ULTRA Low NOx - Medium Gas Heat (14 ng/J)

(All Ultra Low NOx models include Stainless Steel HX)

Refrig. Systems Options

H = Two Stage Cooling with Low Ambient Control (1-phase only)

J = Two Stage Cooling

K = Two Stage Cooling with Humidi-MiZer system (includes Low Ambient control)

Two Stage Cooling with Low Ambient control

T = Two Stage Cooling (1-phase only)

Nominal Cooling Tons

04 = 3 tons

05 = 4 tons

06 = 5 tons

Sensor Options

A = None

B = Return Air (RA) Smoke Detector

C = Supply Air (SA) Smoke Detector

D = RA and SA Smoke Detectors

E = CO₂ Sensor

F = RA Smoke Detector and CO₂ Sensor

G = SA Smoke Detector and CO₂ Sensor

H = RA and SA Smoke Detectors plus CO₂ Sensor

J = Condensate Overflow Switch

K = Condensate Overflow Switch plus RA Smoke Detector

L = Condensate Overflow Switch plus RA and SA Smoke Detectors

M = Condensate Overflow Switch plus SA Smoke Detector

Indoor Fan Options

1 = Direct Drive — EcoBlue™ — Standard Static 2 = Direct Drive — EcoBlue — Medium Static 3 = Direct Drive — EcoBlue — High Static

Coil Options (Outdoor - Indoor - Hail Guard)

A = AI/Cu - AI/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 and Seismic Compliance

1 = LTL

Electrical Options

A = None

B = HACR Breaker²

C = Non-Fused Disconnect (NFD)3

D = Thru-The-Base Connections

F = NFD and Thru-The-Base Connections³

N = Phase Monitor/Protection

P = Phase Monitor/Protection and HACR Breaker²

Q = Phase Monitor/Protection and NFD3

R = Phase Monitor/Protection and Thru-The-Base Connections

S = Phase Monitor/Protection, HACR Breaker, and Thru-The-Base Connections²

T = Phase Monitor/Protection, NFD, and

Thru-The-Base Connections³

Service Options

0 = None

1 = Unpowered Convenience Outlet (CO)

2 = Powered Convenience Outlet

3 = Hinged Panels

4 = Hinged Panels and Unpowered CO

5 = Hinged Panels and Powered CO

6 = MERV-13 High Efficiency Filters

C = Foil-Faced Insulation

Air Intake / Exhaust Options

A = None

B = Temperature Economizer with Barometric Relief

F = Enthalpy Economizer with Barometric Relief

U = Temperature Ultra Low Leak Economizer with Barometric Relief

W= Enthalpy Ultra Low Leak Economizer

with Barometric Relief

Base Unit Controls

0 = Electromechanical Controls (allows for use of fieldinstalled economizers)

2 = RTU Open Multi-Protocol Controller

3 = SystemVu[™] Controls with Display

8 = Electromechanical Controls with POL224 EconomizerONE (with Fault Detection and Diagnostic)

Design Revision

= Factory Design Revision

Voltage

 $3 = 208/230 - 1 - 60^{\circ}$

5 = 208/230-3-60

6 = 460-3-60

¹ The following are not available as factory-installed options for models with this voltage code: Humidi-MiZer System, Coated Coils or Cu Fin Coils, Louvered Hail Guards, Economizer, Two-Position, Damper, or Powered 115 Volt Convenience Outlet. ² HACR Breaker is not available for 460-3-60 voltage units.

³ Non-Fused Disconnect is not available for 460-3-60 voltage units.

Capacity ratings



48GC(G/H)T 1-Phase AHRI Ratinga,b,c,d

48GC(G/H) UNIT	VOLTAGE	COOLING STAGES	NOMINAL CAPACITY (tons)	NET COOLING CAPACITY 2 (MBtuh)	TOTAL POWER (kW)	SEER2	EER2
*04	208/230-1-60	2	3	35.0	2.9	16.0	12.0
*05	208/230-1-60	2	4	46.5	3.9	16.0	12.0
*06	208/230-1-60	2	5	59.0	4.9	16.5	12.0

NOTE(S):

- a. Rated in accordance with AHRI Standards 210/240.
- Rating are based on:
- Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temperature and 95°F (35°C) db outdoor air temperature.
- Units comply with ASHRAE 90.1-2016 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) and DOE-2023 (Department of Energy) Energy Standard for minimum SEER2 and EER2 requirements.
- 48GC(G/H) units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.

48GC(G/H)J 3-Phase AHRI Rating^{a,b,c,d}

48GC(G/H) UNIT	VOLTAGE	COOLING STAGES	NOMINAL CAPACITY (TONS)	NET COOLING CAPACITY (MBtuh)	TOTAL POWER (kW)	SEER	EER
*04	208/230,460-3-60	2	3	36.0	2.8	17.4	12.8
*05	208/230,460-3-60	2	4	48.0	3.8	17.4	12.8
*06	208/230,460-3-60	2	5	59.5	4.6	17.4	12.8

48GC(G/H) UNIT	NET COOLING CAPACITY 2 (MBtuh)	TOTAL POWER 2 (kW)	SEER 2	EER2
*04	35.0	2.9	16.0	12.0
*05	46.5	3.9	16.0	12.0
*06	59.0	4.9	16.5	12.0

NOTE(S):

- a. Rated in accordance with AHRI Standards 210/240.
- Rating are based on:
- Cooling Standard: 80°F (27°C) db, 67°F (19°C) wb indoor air temperature and 95°F (35°C) db outdoor air temperature.
- Units comply with ASHRAE 90.1-2016 (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) requirements, as well as DOE-2018 (Department of Energy) Energy Standard for minimum SEER and EER requirements or DOE-2023 Energy Standards for minimum SEER2 and EER2 requirements.
- d. 48GC(G/H) units comply with US Energy Policy Act (2005). To evaluate code compliance requirements, refer to state and local codes.

LEGEND

AHRI — Air-Conditioning, Heating and Refrigeration Institute
EER — Energy Efficiency Ratio
MBtuh — Btuh in thousands
SEER — Seasonal Energy Efficiency Ratio







Capacity ratings (cont)



Sound Ratings Table

48GC(G/H)	COOLING	OUTDOOR SOUND (dB) AT 60 Hza,b								
UNIT STAGES	A-WEIGHTED°	63	125	250	500	1000	2000	4000	8000	
*04	2	75.4	81.8	81.8	77.0	72.6	69.9	64.6	59.3	55.6
*05	2	79.0	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3
*06	2	79.0	85.6	84.7	80.5	76.0	72.4	68.0	62.8	59.3

NOTE(S):

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

LEGEND

dB - Decibel

Minimum - Maximum Airflow Ratings (cfm) — Natural Gas

				COOLING ULTRA LOW NOX HI			NOx HEATING	
48GC(G/H) VOLTAGE	HEAT LEVEL	Minimum Airflow (cfm)	Minimum 2-Speed Airflow (low speed)	Minimum 2-Speed Airflow (high speed)	Maximum Airflow (cfm)	Minimum Cooling Airflow at 300 cfm/ton	Maximum Cooling Airflow at 500 cfm/ton	
	1 phase	LOW	900	675	900	1500	900	1500
*04	i pilase	MED	900	073	300	1300	1030	1500
04	3 phase	LOW	900	675	900	1500	900	1500
	5 priase	MED	900	073	900		1030	1500
	1 phase	LOW	1200	900	1200	2000	1200	2000
*05	i pilase	MED	1200	900	1200	2000	1200	2000
05	3 phase	LOW	1200	900	1200	2000	1200	2000
	3 priase	MED	1200	900	1200	2000	1200	2000
	1 55000	LOW	1500	1105	1500	2500	1500	2500
*06	1 phase	MED	1500	1125	1500	2500	1500	2500
*06	LOW	1500	1125	1500	2500	1500	2500	
	3 phase	MED	1500	1120	1500	2300	1500	2500

Heat Rating Table — Ultra Low NOx Natural Gas

	48GC(G/H) UNIT HEAT LEVE		SS HEAT EXCHANGER	TEMPERATURE RISE	THERMAL EFFICIENCY	
48GC(G/F			INPUT/OUTPUT STAGE 1 (MBtuh)	(°F)	(%)	AFUE EFFICIENCY (%)
	*04	LOW	60/49	20-50	81	82
	04	MED	82/66	20-60	81	81
Single	*05	LOW	60/49	20-50	81	82
Phase	"05	MED	82/66	20-60	81	81
	*06	LOW	60/49	15-45	81	82
	06	MED	82/66	20-60	81	81
	*04	LOW	60/49	20-50	81	_
	"04	MED	82/66	20-60	81	81
Three	*05	LOW	60/49	20-50	81	_
Phase	"05	MED	82/66	20-60	81	81
	*06	LOW	60/49	15-45	81	_
	06	MED	82/66	20-60	81	81

LEGEND

AFUE — Annual Fuel Utilization Efficiency

MBtuh — Btuh in thousands

Physical data



48GC(G/H) 3 Ton Physical Data

UNIT	48GC(G/H)J04	48GC(G/H)T04	48GC(G/H)K04
NOMINAL TONS	3	3	3
BASE UNIT OPERATING WT (lb) ^a	513	513	513
REFRIGERATION SYSTEM			
Number of Circuits / Number of Comp. / Type	1 / 1 / 2-Stage Scroll	1 / 1 / 2-Stage Scroll	1 / 1 / 2-Stage Scroll
R-410A Charge A/B (lb-oz)	8-4	_	_
Humidi-MiZer R-410A Charge A/B (lb-oz)	_	_	11-3
Metering Device	TXV	TXV	_
Humidi-MiZer Metering Device	_	_	TXV
High-Pressure Trip / Reset (psig)	630 / 505	630 / 505	630 / 505
Low-Pressure Trip / Reset (psig)	54 / 117	54 / 117	27 / 44
Loss of Charge Trip / Reset (psig)	_	_	_
EVAPORATOR COIL			
Material (Tube / Fin)	Cu / Al	Cu / Al	Cu / Al
Coil Type (in. RTPF)	3/8	3/8	3/8
Rows / FPI	2 / 15	2 / 15	2 / 15
Total Face Area (ft²)	5.5	5.5	5.5
Condensate Drain Connection Size (in.)	3/4	3/4	3/4
CONDENSER COIL			
Material (Tube / Fin)	Cu / Al	Cu / Al	Cu / Al
Coil Type (in. RTPF)	5/16	5/16	5/16
Rows / FPI	2 / 18	2 / 18	2 / 18
Total Face Area (ft²)	11.7	11.7	11.7
HUMIDI-MIZER COIL			
Material (Tube / Fin)	_	_	Cu/Al
Coil Type (in. RTPF)	_	_	3/8
Rows / FPI	_	_	1 / 17
Total Face Area (ft²)	_	_	4.1
EVAPORATOR FAN / MOTOR			
Standard Static 1 Phase			
Motor Qty / Drive type	_	1 / Direct	_
Max Cont bhp	_	0.44	_
Rpm Range	_	189-1890	_
Fan Qty / Type	_	1 / Vane Axial	_
Fan Diameter (in.)	_	16.6	_
Medium Static 1 Phase			
Motor Qty / Drive type	_	1 / Direct	_
Max Cont bhp	_	0.71	_
Rpm Range	_	219-2190	_
Fan Qty / Type	_	1 / Vane Axial	_
Fan Diameter (in.)	<u> </u>	16.6	_
High Static 1 Phase			
Motor Qty / Drive type	_	1 / Direct	_
Max Cont bhp	_	1.07	_
Rpm Range	_	249-2490	_
Fan Qty / Type	_	1 / Vane Axial	_
Fan Diameter (in.)	_	16.6	_
Standard Static 3 Phase		1	I
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	0.44	_	0.44
Rpm Range	189-1890	_	189-1890
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6
Medium Static 3 Phase		1	ı
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	0.71	_	0.71
Rpm Range	219-2190	_	219-2190
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6



48GC(G/H) 3 Ton Physical Data (cont)

UNIT	48GC(G/H)J04	48GC(G/H)T04	48GC(G/H)K04
High Static 3 Phase			
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	1.07	_	1.07
Rpm Range	249-2490	_	249-2490
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6
CONDENSER FAN / MOTOR			
Qty / Motor drive type	1 / Direct	1 / Direct	1 / Direct
Motor hp / rpm	1/3 / 1000/800	1/3 / 1000/800	1/3 / 1000/800
Low Ambient rpm (<35°F)	250	250	250
Humidi-MiZer rpm (>55°F/ <50°F)	_	_	1000 / 250
Fan Diameter (in.)	23.0	23.0	23.0
FILTERS			
Return Air Filter Number / size (in.)	2 / 16 x 25 x 2	2 / 16 x 25 x 2	2 / 16 x 25 x 2
Outside Air Inlet Screen Number / size (in.)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1

NOTE(S):

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



48GC(G/H) 4 Ton Physical Data

UNIT	48GC(G/H)J05	48GC(G/H)T05	48GC(G/H)K05
NOMINAL TONS	4	4	4
BASE UNIT OPERATING WT (lb) ^a	555	555	555
REFRIGERATION SYSTEM		1	1
Number of Circuits / Number of Comp. / Type	1 / 1 / 2-Stage Scroll	1 / 1 / 2-Stage Scroll	1 / 1 / 2-Stage Scroll
R-410A Charge A/B (lb-oz)	9		_
Humidi-MiZer R-410A Charge A/B (lb-oz)	_	_	12-12
Metering Device	TXV	TXV	_
Humidi-MiZer Metering Device	_	_	TXV
High-Pressure Trip / Reset (psig)	630 / 505	630 / 505	630 / 505
Low-Pressure Trip / Reset (psig)	54 / 117	54 / 117	27 / 44
Loss of Charge Trip / Reset (psig)	_	_	_
EVAPORATOR COIL			•
Material	Cu / Al	Cu / Al	Cu / Al
Coil Type (in. RTPF)	3/8	3/8	3/8
Rows / FPI	4 / 15	4 / 15	4 / 15
Total Face Area (ft²)	5.5	5.5	5.5
Condensate Drain Connection Size (in.)	3/4	3/4	3/4
CONDENSER COIL			
Material	Cu / Al	Cu / Al	Cu / Al
Coil Type (in. RTPF)	5/16	5/16	5/16
Rows / FPI	2 / 18	2 / 18	2 / 18
Total Face Area (ft²)	15.9	15.9	15.9
HUMIDI-MIZER COIL			•
Material	_	_	Cu / Al
Coil Type (in. RTPF)	_	_	3/8
Rows / FPI	_	_	2 / 17
Total Face Area (ft²)	_	_	4.1
EVAPORATOR FAN / MOTOR			
Standard Static 1 Phase			
Motor Qty / Drive type	_	1 / Direct	_
Max Cont bhp	_	0.72	_
Rpm Range	_	190-1900	_
Fan Qty / Type	_	1 / Vane Axial	_
Fan Diameter (in.)	_	16.6	_
Medium Static 1 Phase			
Motor Qty / Drive type	_	1 / Direct	_
Max Cont bhp	_	1.06	_
Rpm Range	_	217-2170	_
Fan Qty / Type	_	1 / Vane Axial	_
Fan Diameter (in.)	_	16.6	_
High Static 1 Phase		1	1
Motor Qty / Drive type	_	1 / Direct	_
Max Cont bhp	_	1.53	_
Rpm Range	_	246-2460	_
Fan Qty / Type	-	1 / Vane Axial	_
Fan Diameter (in.)	_	16.6	_
Standard Static 3 Phase		1	1
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	0.72	_	0.72
Rpm Range	190-1900	_	190-1900
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6
Medium Static 3 Phase		1	1
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	1.06	_	1.06
Rpm Range	217-2170	_	217-2170
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6



48GC(G/H) 4 Ton Physical Data (cont)

UNIT	48GC(G/H)J05	48GC(G/H)T05	48GC(G/H)K05
High Static 3 Phase			
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	1.96	_	1.96
Rpm Range	266-2660	_	266-2660
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6
CONDENSER FAN / MOTOR			
Qty / Motor drive type	1 / Direct	1 / Direct	1 / Direct
Motor hp / rpm	1/3 / 1000/800	1/3 / 1000/800	1/3 / 1000/800
Low Ambient rpm (<35°F)	250	250	250
Humidi-MiZer rpm (>55°F/ <50°F)	_	_	1000 / 250
Fan Diameter (in.)	23.0	23.0	23.0
FILTERS			•
Return Air Filter Number / size (in.)	2 / 16 x 25 x 2	2 / 16 x 25 x 2	2 / 16 x 25 x 2
Outside Air Inlet Screen Number / size (in.)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1

NOTE(S):

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



48GC(G/H) 5 Ton Physical Data

UNIT	48GC(G/H)J06	48GC(G/H)T06	48GC(G/H)K06
NOMINAL TONS	5	5	5
BASE UNIT OPERATING WT (lb) ^a	600	600	600
REFRIGERATION SYSTEM			1
Number of Circuits / Number of Comp. / Type	1 / 1 / 2-Stage Scroll	1 / 1 / 2-Stage Scroll	1 / 1 / 2-Stage Scroll
R-410A Charge A/B (lb-oz)	11-0		
Humidi-MiZer R-410A Charge A/B (lb-oz)	_	_	18-0
Metering Device	TXV	TXV	_
Humidi-MiZer Metering Device	_	_	TXV
High-Pressure Trip / Reset (psig)	630 / 505	630 / 505	630 / 505
Low-Pressure Trip / Reset (psig)	54 / 117	54 / 117	27 / 44
Loss of Charge Trip / Reset (psig)		_	
EVAPORATOR COIL		1	l
Material	Cu / Al	Cu / Al	Cu / Al
Coil Type (in. RTPF)	3/8	3/8	3/8
Rows / FPI	4 / 15	4 / 15	4 / 15
Total Face Area (ft²)	7.3	7.3	7.3
Condensate Drain Connection Size (in.)	3/4	3/4	3/4
CONDENSER COIL		1	
Material	Cu / Al	Cu / Al	Cu / Al
Coil Type (in. RTPF)	5/16	5/16	5/16
Rows / FPI	2 / 18	2 / 18	2 / 18
Total Face Area (ft²)	18.8	18.8	18.8
HUMIDI-MIZER COIL			1
Material	_	_	Cu / Al
Coil Type (in. RTPF)	_	_	3/8
Rows / FPI	_	_	2 / 17
Total Face Area (ft²)	_	_	5.5
EVAPORATOR FAN / MOTOR			
Standard Static 1 Phase			
Motor Qty / Drive type	_	1 / Direct	_
Max Cont bhp	_	1.06	_
Rpm Range	_	215-2150	_
Fan Qty / Type	_	1 / Vane Axial	_
Fan Diameter (in.)	_	16.6	_
Medium Static 1 Phase			
Motor Qty / Drive type	_	1 / Direct	_
Max Cont bhp	_	1.44	_
Rpm Range	_	239-2390	_
Fan Qty / Type	_	1 / Vane Axial	_
Fan Diameter (in.)	_	16.6	_
Standard Static 3 Phase			
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	1.06	_	1.06
Rpm Range	215-2150	_	215-2150
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6
Medium Static 3 Phase		<u> </u>	
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	1.44	_	1.44
Rpm Range	239-2390	_	239-2390
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6
High Static 3 Phase			
Motor Qty / Drive type	1 / Direct	_	1 / Direct
Max Cont bhp	2.43	_	2.43
Rpm Range	284-2836	_	284-2836
Fan Qty / Type	1 / Vane Axial	_	1 / Vane Axial
Fan Diameter (in.)	16.6	_	16.6



48GC(G/H) 5 Ton Physical Data (cont)

UNIT	48GC(G/H)J06	48GC(G/H)T06	48GC(G/H)K06
CONDENSER FAN / MOTOR		•	•
Qty / Motor drive type	1 / Direct	1 / Direct	1 / Direct
Motor hp / rpm	1/3 / 1000/1000	1/3 / 1000/1000	1/3 / 1000/1000
Low Ambient rpm (<35°F)	250	250	250
Humidi-MiZer rpm (>55°F/ <50°F)	_	_	1000 / 250
Fan Diameter (in.)	23.0	23.0	23.0
FILTERS			
Return Air Filter Number / size (in.)	4 / 16 x 16 x 2	4 / 16 x 16 x 2	4 / 16 x 16 x 2
Outside Air Inlet Screen Number / size (in.)	1 / 20 x 24 x 1	1 / 20 x 24 x 1	1 / 20 x 24 x 1

NOTE(S):

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

LEGEND

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



48GC(G/H) 3 to 5 Ton Gas Heat Data — 1-Phase Units

48GC(G/H) UNIT	48GC(G/H)*04	48GC(G/H)*05	48GC(G/H)*06
GAS CONNECTION			
No. of Gas Valves	1	1	1
Natural Gas Supply Line Pressure (in. wg [psig])	5-13 [0.18-0.47]	5-13 [0.18-0.47]	5-13 [0.18-0.47]
HEAT ANTICIPATOR SETTING (AMPS)	0.14	0.14	0.14
NATURAL GAS HEAT			
LOW			
No. of Stages / No. of Burners (total)	1 / 1	1 / 1	1 / 1
Connection Size	1/2-in. NPT	1/2-in. NPT	1/2-in. NPT
Burner Thermal Switch Opens / Closes (°F)	350 / 301	350 / 301	350 / 301
Temperature Rise (°F)	20-50	20-50	15-45
MEDIUM			
No. of Stages / No. of Burners (total)	1 / 1	1 / 1	1 / 1
Connection Size	1/2-in. NPT	1/2-in. NPT	1/2-in. NPT
Burner Thermal Switch Opens / Closes (°F)	350 / 301	350 / 301	350 / 301
Temperature Rise (°F)	20-60	20-60	20-60

48GC(G/H) 3 to 5 Ton Gas Heat Data — 3-Phase Units

48GC(G/H) UNIT	48GC(G/H)*04	48GC(G/H)*05	48GC(G/H)*06
GAS CONNECTION			
No. of Gas Valves	1	1	1
Natural Gas Supply Line Pressure (in. wg [psig])	5-13 [0.18-0.47]	5-13 [0.18-0.47]	5-13 [0.18-0.47]
HEAT ANTICIPATOR SETTING (AMPS)	0.14	0.14	0.14
NATURAL GAS HEAT			
LOW			
No. of Stages / No. of Burners (total)	1 / 1	1 / 1	1/1
Connection Size	1/2-in. NPT	1/2-in. NPT	1/2-in. NPT
Burner Thermal Switch Opens / Closes (°F)	350 / 301	350 / 301	350 / 301
Temperature Rise (°F)	20-50	20-50	15-45
MEDIUM			
No. of Stages / No. of Burners (total)	1 / 1	1 / 1	1/1
Connection Size	1/2-in. NPT	1/2-in. NPT	1/2-in. NPT
Burner Thermal Switch Opens / Closes (°F)	350 / 301	350 / 301	350 / 301
Temperature Rise (°F)	20-60	20-60	20-60

Options and accessories



ITEM	FACTORY- INSTALLED OPTION	FIELD- INSTALLED ACCESSORY
GAS HEAT — ULTRA LOW NOX WITH STAINLESS STEEL HEAT EXCHANGER		
Flue Discharge Deflector		Х
CABINET		
Thru-the-Base Electrical or Gas- Line Connections	Х	Х
Hinged Access Panels	X	
COIL OPTIONS		
Cu/Cu Indoor and/or Outdoor Coils ^a	Х	
Pre-Coated Outdoor Coils ^a	X	
Premium, E-coated Outdoor Coils ^a	Х	
HUMIDITY CONTROL		
Humidi-MiZer® Adaptive Dehumidification System ^a	Х	
CONDENSER PROTECTION		
Condenser Coil Hail Guard (louvered design) ^a	Х	Х
CONTROLS		
Thermostats, Temperature Sensors, and Subbases		Х
SystemVu™ DDC Communicating Controller	Х	
RTU Open Multi-Protocol Controller	Х	
Smoke Detector (supply and/or return air)	X	
Horn Strobe Annunciatorb		X
Time Guard II Compressor Delay Control Circuit		Х
Phase Monitor	X	X
Condensate Overflow switch	X	X
FILTERS		
MERV-13 Return Air Filters	Χ	X
ECONOMIZERS AND OUTDOOR AIR DAMPERS		
EconomizerONE for Electromechanical Controls, complies with FDD (Standard and Ultra Low Leak damper models) ^{a, c}	X	х
Wi-Fi Stick for EconomizerONE (optional)		Х
EconoMi\$er® 2 for DDC Controls (Standard and Ultra Low Leak air damper models) ^{a, d}	Х	Х
Motorized Two-Position Outdoor- Air Damper ^a		Х
Manual Outdoor-Air Damper (25% and 50%)		Х
Barometric Reliefe	Х	Х
Power Exhaust — Prop Design		Х

ITEM	FACTORY- INSTALLED OPTION	FIELD- INSTALLED ACCESSORY
ECONOMIZER SENSORS AND IAQ DEVICES		
Single Dry Bulb Temperature Sensors ^f	Х	Х
Differential Dry Bulb Temperature Sensors ^f		Х
Single Enthalpy Sensorsf	X	Х
Differential Enthalpy Sensorsf		X
CO ₂ Sensor (wall, duct, or unit mounted) ^f	Х	Х
INDOOR MOTOR AND DRIVE		
Multiple Motor and Drive Packages	Х	
LOW AMBIENT CONTROL		
Winter Start Kitg		X
Low Ambient Controller to -20°F (-29°C) ⁹		Х
POWER OPTIONS		
Convenience Outlet (powered) ^a	Х	
Convenience Outlet (unpowered)	Х	Х
HACR Circuit Breakerh, i	Х	
Non-Fused Disconnect ^{j, k}	Х	
ROOF CURBS		
Roof Curb 14 in. (356 mm)		Х
Roof Curb 24 in. (610 mm)		Х

NOTE(S):

- a. Not available as a factory-installed option on single phase (-3 voltage code) models. Use field-installed accessory where available.
- b. Requires a field-supplied 24-v transformer for each application. See price pag-
- c. FDD (Fault Detection and Diagnostic) capability per California Title 24
- d. Models with SystemVu and RTU Open DDC controls comply with California Title 24 Fault Detection and Diagnostic (FDD).
- Included with economizer.
- Sensors used to optimize economizer performance.
- See application data for assistance.
- HACR circuit breaker cannot be used when unit electrical rating exceeds: 208-230/1/60 and 208-230/3/60 = 100 amps (FLA).
 HACR circuit breaker is not available on 460/3/60 voltage models.Carrier
- RTUBuilder automatically selects the amp limitations.
- Non-fused disconnect switch cannot be used when unit electrical rating exceeds: 208-230/1/60 and 208-230/3/60 = 80 amps (FLA). Carrier RTUBuilder automatically selects the amp limitations.
- k. Non-fused disconnect is not available on 460/3/60 voltage models.



Factory-installed options

Economizer (dry-bulb or enthalpy)

Economizers save money. They bring in fresh, outside air for ventilation; and provide cool, outside air to cool your building. This is the preferred method of low-ambient cooling. When coupled to CO_2 sensors, economizers can provide even more savings by coupling the ventilation air to only that amount required.

Economizers are available, installed and tested by the factory, with either enthalpy or dry-bulb temperature inputs. Additional sensors are available as accessories to optimize the economizers. Economizers include a powered exhaust system to help equalize building pressures.

Economizers 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 standard low leak versions. Economizers can be factory-installed or easily field-installed.

Unit mounted CO₂ sensor

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

Smoke detector (supply and/or return air)

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

Optional Humidi-MiZer® adaptive dehumidification system

Carrier's Humidi-MiZer adaptive dehumidification system is an all-inclusive factory-installed option that can be ordered with any WeatherMaker $^{\circledR}$ 48GC(G/H) 04-06 rooftop unit, with the exception of single phase voltage (208/230-1-60) units.

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

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

The WeatherMaker 48GC(G/H) 04-06 rooftop coupled with the Humidi-MiZer system is capable of operating in normal design cooling mode, sub-cooling mode, and hot gas reheat mode.

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

Sub-cooling mode will operate to satisfy part load type conditions when the space requires combined sensible and a higher proportion of latent load control.

Hot Gas Reheat mode will operate when outdoor temperatures diminish and the need for latent capacity is required for sole humidity control. Hot Gas Reheat mode will provide neutral air for maximum dehumidification operation.

NOTE: Humidi-MiZer system includes Low Ambient controller.

Thru-the-base connections

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

Hinged access panels

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

Cu/Cu (indoor) coils

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

E-coated (outdoor and indoor) coils

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

Pre-coated outdoor coils

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

Condenser coil hail guard

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

Single enthalpy sensor

Prevents the wheel from rotating if the outside air conditions are acceptable for free cooling. Both exhaust and supply blowers will remain on.

Stainless steel heat exchanger (standard on all models)

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

Convenience outlet (powered or unpowered)

Reduce service and/or installation costs by including a convenience outlet in your specification. Carrier will install this service feature at our factory. Provides a convenient, 15 amp, 115-v GFCI receptacle with "Wet in Use" cover. The



"powered" option allows the installer to power the outlet from the line side of the disconnect or load side as required by code. The "unpowered" option is to be powered from a separate 115/120-v power source.

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

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 provide protection from the environment.

NOTE: HACR breaker is not available for 460/3/60 voltage models.

Non-fused disconnect

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

NOTE: Non-fused disconnect is not available for 460/3/60 voltage models.

SystemVu[™] controller

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

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

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

Key features include:

- Easy to read back lit 4 line text screen for superior visibility.
- Quick operational condition LEDs of: Run, Alert, and Fault.
- Simple navigation with large keypad buttons of: Navigation arrows, Test, Back, Enter and Menu.
- Capable of being controlled with a conventional thermostat, space sensor or build automation system.
- Service capabilities include:
 - Auto run test
 - Manual run test
 - Component run hours and starts
 - Commissioning reports
 - Data logging
- Full range of diagnosis:
 - Read refrigerant pressures without the need of gauges
 - Sensor faults
 - Compressor reverse rotation
 - Economizer diagnostics that meet California Title 24 requirements

- Quick data transfer via USB port:
 - Unit configuration uploading/downloading
 - Data logging
 - Software upgrades
- Built in capacity for:
 - i-Vu® open systems
 - BACnet systems
 - CCN systems
- Configuration and alarm point capability:
 - Contain over 100 alarm codes
 - Contain over 260 status, troubleshooting, diagnostic and maintenance points
 - Contain over 270 control configuration setpoints

RTU Open, multi-protocol controller

Connect the rooftop to an existing BAS (building automation system) without needing complicated translators or adapter modules using the RTU Open controller. The RTU Open controller speaks the 4 most common building automation system languages (BACnet, Modbus, Johnson Controls N2, and LonWorks). 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®).

Condensate overflow switch

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

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

MERV-13 return air filters

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

Low ambient controller

The low ambient controller is a head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling when economizer usage is either not appropriate or desired. The low ambient controller will either cycle the outdoor fan motors or operate them at reduced speed to maintain the unit operation, depending on the model. This controller allows cooling operation down to $-20^{\circ}F$ ($-29^{\circ}C$) ambient conditions.

Power exhaust with barometric relief

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



Field-installed accessories

Filter maintenance indicator

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

Condenser coil hail guard

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

Differential enthalpy sensor

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

Wall or duct mounted CO₂ sensor

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

Flue discharge deflector

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

MERV-13 return air filters

This field-installed accessory upgrades the return air filters from standard unit filters to high efficiency MERV-13 filters. Non-woven MERV-13 filter media with high strength, moisture-resistant frame. Filter media is securely fastened inside the filter frame on all 4 sides.

Phase monitor protection

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

Winter start kit

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

Low ambient controller

The low ambient controller is a head pressure controller kit that is designed to maintain the unit's condenser head pressure during periods of low ambient cooling operation. This device should be used as an alternative to economizer free cooling when economizer usage is either not appropriate or desired. The low ambient controller will either cycle the outdoor fan motors or operate them at reduced speed to maintain the unit operation, depending on the model. This controller allows cooling operation down to $-20^{\circ}F$ ($-29^{\circ}C$) ambient conditions.

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

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

Filter status indicator accessory

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

Power exhaust

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

Manual OA damper

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

Motorized two-position damper

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

Time Guard II control circuit

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

Wi-Fi Stick for EconomizerONE (optional)

The accessory Wi-Fi/WLAN stick can be connected to the EconomizerONE POL224 economizer controller via the USB host interface. The Wi-Fi stick enables a wireless connection to be made between a smartphone and the economizer controller via the Climatix™ mobile application for commissioning, troubleshooting, and maintenance operations. The Wi-Fi stick is required to utilize the mobile application.

Climatix[™] mobile application

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

The application is available on Android^{m1} and Apple $iOS^{\otimes 1}$ platforms. The Wi-Fi stick for the EconomizerONE is required to join the Siemens-WiFi-Stick network and setup the controller on a smartphone.

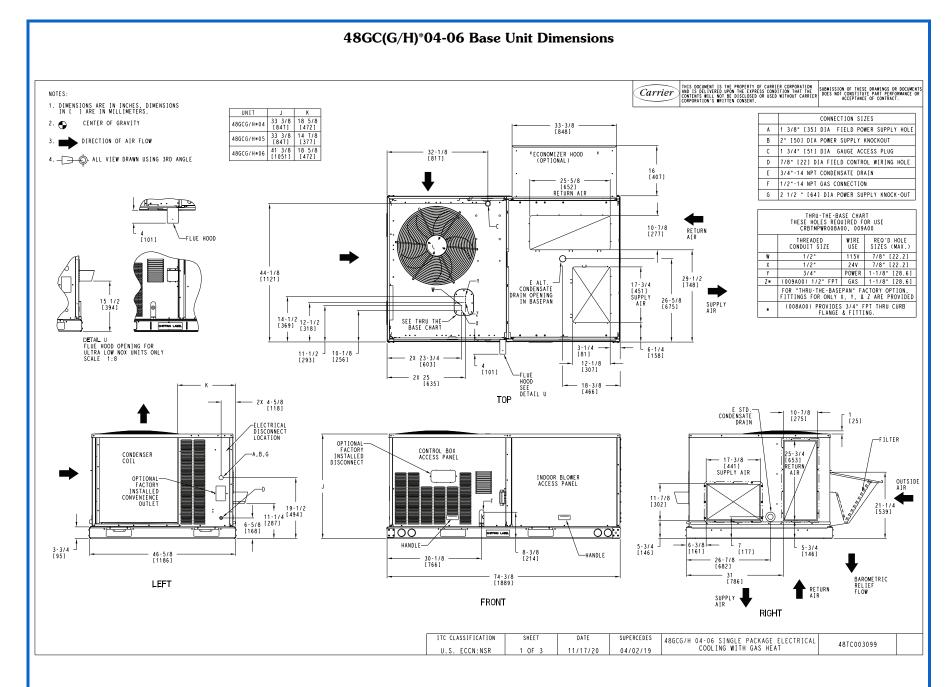
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Options and Accessory Weights^a

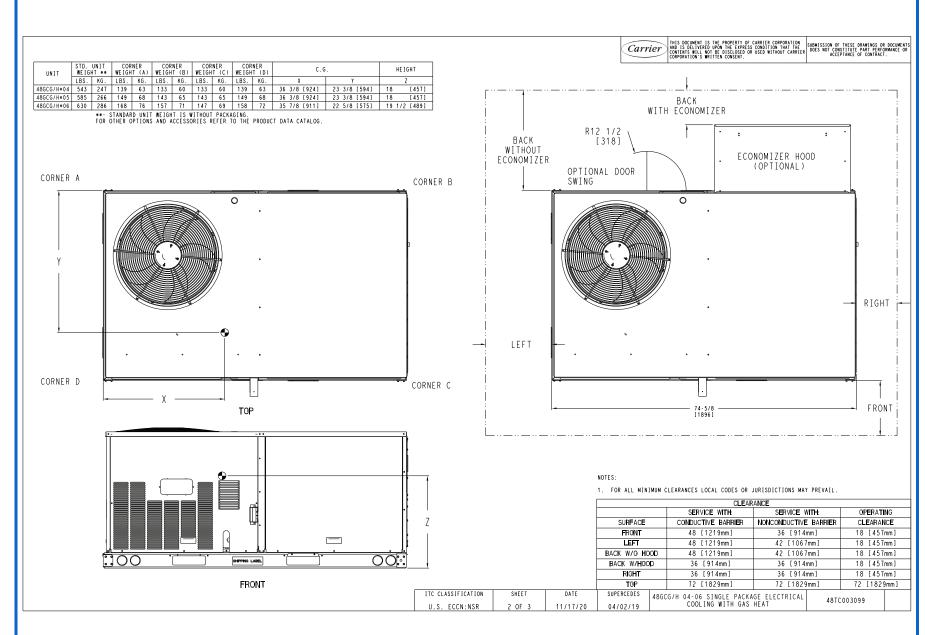
		48GC(G/H) UNIT WEIGHT									
OPTION / ACCESSORY NAME		04	()5	0	6					
	lb	kg	lb	kg	lb	kg					
Humidi-MiZer® Systemb	15	7	15	7	15	7					
Power Exhaust — Vertical	51	23	51	23	51	23					
Power Exhaust — Horizontal	39	18	39	18	39	18					
EconomizerONE or EconoMi\$er® 2	51	23	51	23	51	23					
Two-Position Damper	39	18	39	18	39	18					
Manual Damper	12	5	12	5	12	5					
Hail Guard (louvered)	13	6	13	6	13	6					
Cu/Cu Condenser Coil	37	17	74	34	74	34					
Cu/Cu Condenser and Evaporator Coils	75	34 43	112	51	112	51					
Roof Curb (14 in. curb)	95	43	95 150	43	95	43					
Roof Curb (24 in. curb)	150	68	150	68	150	68					
CO ₂ Sensor	2	1	2	1	2	1					
Flue Discharge Deflector	7	3	7	3	7	3					
Optional Indoor Motor/Drive	10	5	10	5	10	5					
Low Ambient Controller	9	4	9	4	9	4					
Winter Start Kit	5	2	5	2	5	2					
Return Air Smoke Detector	7	3	7	3	7	3					
Supply Air Smoke Detector	7	3	7	3	7	3					
Fan Filter Switch	2	1	2	1	2	1					
Non-Fused Disconnect	15	7	15	7	15	7					
HACR Breaker	15	7	15	7	15	7					
Powered Convenience Outlet	36	16	36	16	36	16					
Unpowered Convenience Outlet	4	2	4	2	4	2					
Enthalpy Sensor	2	1	2	1	2	1					
Differential Enthalpy Sensor	3	1	3	1	3	1					

a. Where multiple variations are available, the heaviest combination is listed.b. For Humidi-MiZer system, add Low Ambient controller weight.



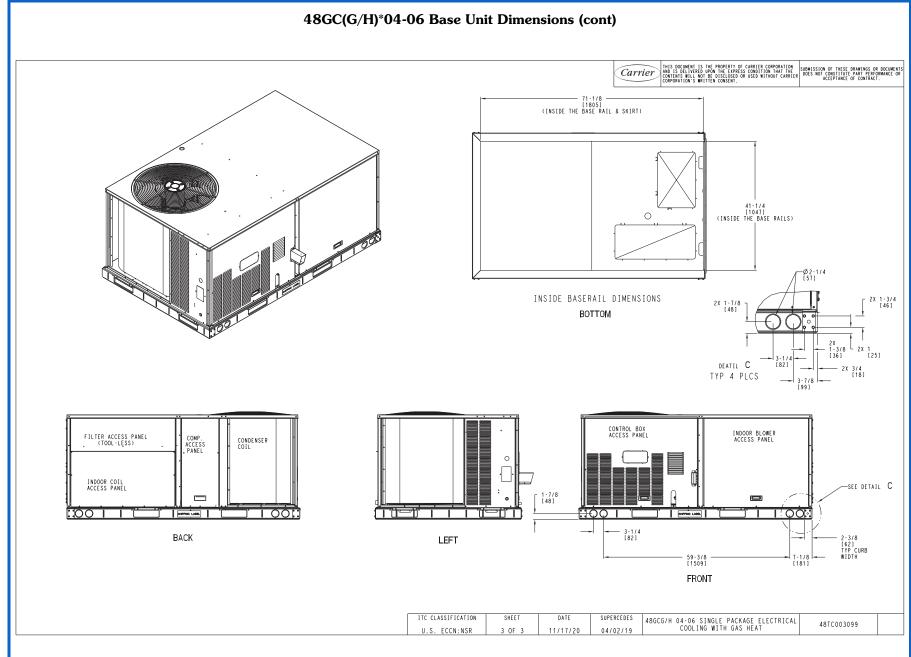


48GC(G/H)*04-06 Base Unit Dimensions (cont)

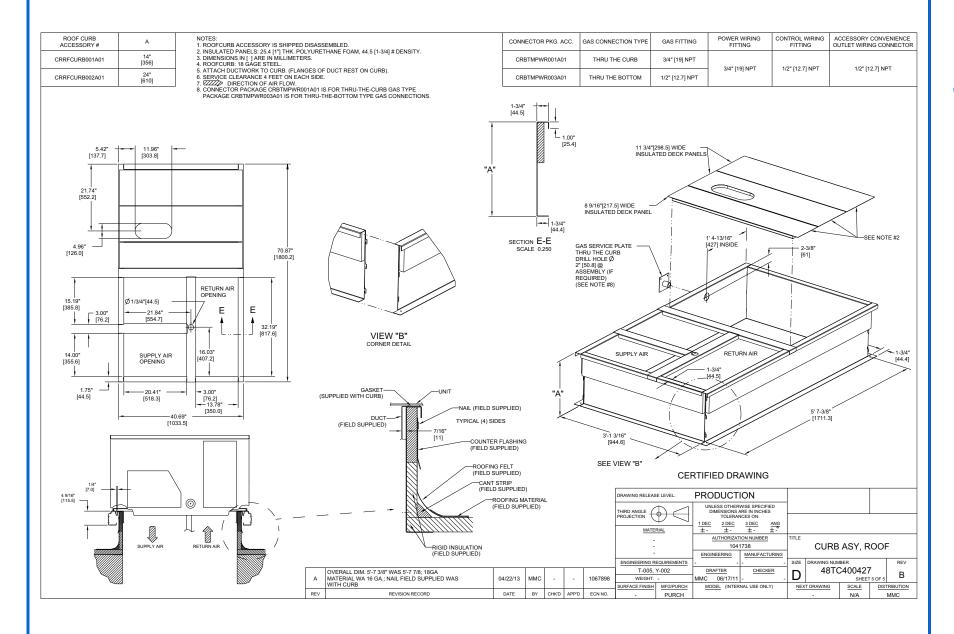








Roof Curb Dimensions — 48GC(G/H)*04-06





Performance data



48GC(G/H)*04 High Stage Cooling Capacities^a

								AMB	IENT TEM	PERATURI	E (°F)				
	49000	\/LI*04			85			95			105		115		
	48GC(0	5/H)^U4			EA (db)			EA (db)			EA (db)			EA (db)	
				75	80	85	75	80	85	75	80	85	75	80	85
		58	TC	29.8	29.8	33.0	27.7	27.7	31.7	25.8	25.8	29.7	23.8	23.8	27.5
		30	SHC	25.1	29.0	33.0	23.7	27.7	31.7	22.0	25.8	29.7	20.2	23.8	27.5
		62	TC	31.8	31.8	31.8	29.6	29.6	29.9	27.2	27.2	28.5	24.7	24.7	27.2
		62	SHC	22.5	26.8	31.1	21.2	25.5	29.9	19.8	24.1	28.5	18.3	22.8	27.2
900	EA	67	TC	35.7	35.7	35.7	33.4	33.4	33.4	30.8	30.8	30.8	28.2	28.2	28.2
cfm	(wb)	07	SHC	18.7	22.9	27.1	17.3	21.5	25.8	15.8	20.1	24.5	14.3	18.7	23.1
		72	TC	40.0	40.0	40.0	37.5	37.5	37.5	34.8	34.8	34.8	31.9	31.9	31.9
			SHC	14.9	18.9	22.9	13.4	17.5	21.7	11.9	16.1	20.4	10.3	14.7	19.0
		76	TC	_	43.7	43.7	_	41.1	41.1	_	38.2	38.2	_	35.2	35.2
		, 0	SHC	_	15.5	20.5		14.1	19.1	_	12.8	17.7	_	11.3	15.1
		58	TC	31.6	31.6	35.9	29.7	29.7	33.9	27.7	27.7	31.8	25.6	25.6	29.5
		- 00	SHC	27.2	31.6	35.9	25.5	29.7	33.9	23.7	27.7	31.8	21.7	25.6	29.5
		62	TC	33.1	33.1	34.2	30.8	30.8	33.1	28.3	28.3	31.7	25.8	25.8	30.1
		02	SHC	24.5	29.4	34.2	23.2	28.2	33.1	21.7	26.7	31.7	20.1	25.1	30.1
1050	EA	67	TC	37.1	37.1	37.1	34.7	34.7	34.7	32.0	32.0	32.0	29.2	29.2	29.2
cfm	(wb)		SHC	20.1	25.0	29.9	18.6	23.6	28.6	17.2	22.2	27.2	15.7	20.8	25.9
		72	TC	41.5	41.5	41.5	38.8	38.8	38.8	36.0	36.0	36.0	33.0	33.0	33.0
			SHC	15.5	20.3	25.0	14.0	18.9	23.7	12.5	17.4	22.4	10.9	15.9	21.0
		76	TC	_	45.3	45.3	_	42.4	42.4	_	39.5	39.5	_	36.3	36.3
-			SHC	_	16.4	22.2	_	15.0	20.8	_	13.6	18.1	_	12.1	16.8
		58	TC	33.4	33.4	38.0	31.4	31.4	35.8	29.3	29.3	33.6	27.1	27.1	31.1
			SHC	28.8	33.4	38.0	27.0	31.4	35.8	25.1	29.3	33.6	23.0	27.1	31.1
		62	TC	34.2	34.2	37.4	31.8	31.8	35.9	29.5	29.5	34.6	27.1	27.1	32.5
			SHC	26.4	31.9	37.4	24.9	30.4	35.9	23.5	29.1	34.6	21.7	27.1	32.5
1200	EA (wb)	67	TC	38.3	38.3	38.3	35.7	35.7	35.7	32.9	32.9	32.9	30.0	30.0	30.0
cfm			SHC	21.3	26.9	32.5	19.9	25.6	31.2	18.5	24.2	29.9	17.0	22.7	28.5
		72	TC	42.7	42.7	42.7	39.9	39.9	39.9	37.0	37.0	37.0	33.9	33.9	33.9
			SHC	16.1	21.5	27.0	14.6	20.1	25.7	13.0	18.7	24.3	11.4	17.1	22.8
		76	TC	_	46.5	46.5	_	43.6	43.6	_	40.5	40.5	_	37.2	37.2
			SHC	_	17.1	21.9	_	15.7	20.8	-	14.2	19.6	_	12.7	18.2
		58	TC	34.9	34.9	39.7	32.9	32.9	37.4	30.7	30.7	35.1	28.3	28.3	32.5
			SHC	30.2	34.9	39.7	28.3	32.9	37.4	26.3	30.7	35.1	24.2	28.3	32.5
		62	TC	36.2	36.2	38.4	34.0	34.0	36.4	30.6	30.6	36.5	28.4	28.4	34.0
			SHC	27.4 39.2	32.9 39.2	38.4 39.2	25.7	31.0	36.4 36.5	24.7 33.7	30.6 33.7	36.5 33.7	22.8 30.7	28.4 30.7	34.0 31.1
1350 cfm	EA (wb)	67					36.5	36.5							
Cilli	(4415)		SHC	22.6 43.6	28.8 43.6	35.1 43.6	21.1 40.8	27.4 40.8	33.7 40.8	19.7 37.7	26.1 37.7	32.5 37.7	18.2 34.6	24.6 34.6	31.1 34.6
		72	SHC	16.6	22.7	28.8	15.1	21.3	27.5	13.5	19.8	26.1	11.9	18.3	24.6
			TC	10.0	47.5	47.5	15.1	44.5	44.5	13.5	41.3	41.3	11.8	37.9	37.9
		76	SHC	_	17.8	23.5		16.3	22.2		14.8	20.9		13.2	19.4
			TC	36.2	36.2	41.1	34.2	34.2	38.9	31.9	31.9	36.4	29.4	29.4	33.7
		58	SHC	31.3	36.2	41.1	29.4	34.2	38.9	27.4	31.9	36.4	25.1	29.4	33.7
		-	TC	36.7	36.7	41.9	34.2	34.2	40.5	31.9	31.9	37.9	29.4	29.4	35.2
		62	SHC	29.3	35.6	41.9	27.9	34.2	40.5	25.9	31.9	37.9	23.7	29.4	35.2
1500	EA		TC	39.9	39.9	39.9	37.1	37.1	37.1	34.2	34.2	34.9	31.1	31.1	33.3
cfm	(wb)	67	SHC	23.8	30.7	37.6	22.3	29.3	36.2	20.8	27.9	34.9	19.2	26.3	33.3
	`,		TC	44.4	44.4	44.4	41.5	41.5	41.5	38.4	38.4	38.4	35.1	35.1	35.1
		72	SHC	17.0	23.8	30.6	15.5	22.4	29.2	13.9	20.9	27.8	12.3	19.3	26.4
			TC	-	48.3	48.3	-	45.2	45.2	-	41.9	41.9	- IZ.3	38.5	38.5
		76	SHC	_	18.3	24.8	_	16.8	23.5	_	15.3	22.1	_	13.7	20.6
		/6		<u> </u>	. 5.5		I	. 5.5	_5.5	<u> </u>			<u> </u>		

a. See minimum-maximum airflow ratings on page 6.

LEGEND

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

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48GC(G/H)*04 Low Stage Cooling Capacities^a

								AMB	IENT TEM	PERATURI	E (°F)				
	48GC(0	2/⊔*∩⊿			85			95			105		115		
	4000(0	3/11) 04			EA (db)			EA (db)			EA (db)			EA (db)	
				75	80	85	75	80	85	75	80	85	75	80	85
		58	TC	23.6	23.6	26.6	22.6	22.6	25.5	21.5	21.5	24.3	20.3	20.3	22.9
			SHC	20.5	23.6	26.6	19.7	22.6	25.5	18.8	21.5	24.3	17.7	20.3	22.9
		62	TC	24.4	24.4	25.8	23.1	23.1	25.3	21.7	21.7	24.7	20.5	20.5	23.5
		_	SHC	18.8	22.3	25.8	18.2	21.8	25.3	17.6	21.2	24.7	16.6	20.0	23.5
750	EA	67	TC	27.1	27.1	27.1	25.7	25.7	25.7	24.1	24.1	24.1	22.4	22.4	22.4
cfm	(wb)		SHC	15.4	19.0	22.5	14.9	18.4	22.0	14.2	17.9	21.5	13.6	17.2	20.9
		72	TC	30.0	30.0	30.0	28.4	28.4	28.4	26.7	26.7	26.7	24.9	24.9	24.9
			SHC	12.0	15.5 32.5	18.9 32.5	11.4	14.9 30.8	18.4 30.8	10.7	14.3 29.0	17.8 29.0	10.0	13.6 27.0	17.2 27.0
		76	SHC	_	12.5	16.6	_	11.9	14.9		11.3	14.6		10.7	14.1
			TC	<u> </u>	25.1	28.4	<u> </u>	24.1	27.2	22.9	22.9	25.8	21.5	21.5	24.3
		58	SHC	21.9	25.1	28.4	21.0	24.1	27.2	19.9	22.9	25.8	18.8	21.5	24.3
			TC	25.4	25.1	28.7	24.8	24.1	26.5	22.9	22.9	26.9	21.6	21.6	25.3
		62	SHC	20.5	24.6	28.7	19.2	22.8	26.5	19.0	22.9	26.9	17.8	21.6	25.3
900	EA		TC	28.0	28.0	28.0	26.5	26.5	26.5	24.9	24.9	24.9	23.0	23.0	23.5
cfm	(wb)	67	SHC	16.6	20.8	25.0	16.1	20.3	24.6	15.4	19.7	24.9	14.8	19.1	23.5
	(,		TC	31.0	31.0	31.0	29.3	29.3	29.3	27.5	27.5	27.5	25.6	25.6	25.6
		72	SHC	12.5	16.6	20.7	11.9	16.0	20.2	11.2	15.4	19.6	10.5	14.7	19.0
			TC	_	33.5	33.5	_	31.8	31.8	_	29.9	29.9	_	27.8	27.8
		76	SHC	_	13.2	16.9	_	12.6	16.5		12.0	16.0		11.3	15.4
			TC	26.4	26.4	29.8	25.3	25.3	28.5	24.0	24.0	27.1	22.6	22.6	25.5
		58	SHC	23.0	26.4	29.8	22.1	25.3	28.5	20.9	24.0	27.1	19.6	22.6	25.5
			TC	26.6	26.6	30.6	25.3	25.3	29.7	24.0	24.0	28.2	22.6	22.6	26.5
		62	SHC	21.8	26.2	30.6	21.0	25.3	29.7	19.9	24.0	28.2	18.7	22.6	26.5
1050	EA		TC	28.7	28.7	28.7	27.2	27.2	27.2	25.4	25.4	26.5	23.5	23.5	25.8
cfm	(wb)	67	SHC	17.8	22.6	27.5	17.2	22.1	27.0	16.6	21.5	26.5	15.8	20.8	25.8
		70	TC	31.7	31.7	31.7	30.0	30.0	30.0	28.1	28.1	28.1	26.1	26.1	26.1
		72	SHC	12.9	17.7	22.5	12.3	17.1	22.0	11.6	16.5	21.4	10.9	15.8	20.8
		76	TC		34.3	34.3	_	32.5	32.5	_	30.5	30.5	_	28.3	28.3
		70	SHC	_	13.7	18.3	_	13.1	17.8	_	12.5	17.3	_	11.8	16.6
		58	TC	27.5	27.5	31.0	26.3	26.3	29.7	24.9	24.9	28.1	23.4	23.4	26.4
		36	SHC	24.0	27.5	31.0	22.9	26.3	29.7	21.7	24.9	28.1	20.4	23.4	26.4
		62	TC	27.5	27.5	32.2	26.3	26.3	30.8	25.0	25.0	29.2	23.4	23.4	27.4
			SHC	22.8	27.5	32.2	21.8	26.3	30.8	20.7	25.0	29.2	19.4	23.4	27.4
1200	EA	67	TC	29.3	29.3	29.8	27.6	27.6	29.3	25.8	25.8	28.7	23.9	23.9	27.9
cfm	(wb)		SHC	18.9	24.3	29.8	18.2	23.7	29.3	17.6	23.1	28.7	16.8	22.3	27.9
		72	TC	32.3	32.3	32.3	30.5	30.5	30.5	28.6	28.6	28.6	26.5	26.5	26.5
			SHC	13.3	18.8	24.2	12.7	18.2	23.6	12.0	17.6	23.1	11.3	16.9	22.5
		76	TC	_	34.9	34.9		33.0	33.0	_	30.9	30.9		28.7	28.7
			SHC	- 20.4	14.2	19.5	- 27.4	13.6	19.0	— 25.7	13.0	18.4	- 24.4	12.3	17.8
		58	TC	28.4	28.4	32.0	27.1	27.1	30.6	25.7	25.7	29.0	24.1	24.1	27.2
			SHC	24.8	28.4	32.0	23.7	27.1	30.6	22.4	25.7	29.0	21.0	24.1	27.2
		62	SHC	28.4	28.4 28.4	33.3	27.2 22.5	27.2	31.8	25.7	25.7	30.1 30.1	24.1	24.1	28.3
4250	F.4			23.6		33.3		27.2	31.8	21.3	25.7		20.0	24.1	28.3
1350 cfm	EA (wb)	67	SHC	29.6 19.7	29.6 25.8	31.8 31.8	28.0 19.2	28.0 25.3	31.5 31.5	26.2 18.5	26.2 24.6	30.6 30.6	24.2 17.7	24.2	29.8 29.8
Cilli	(441)	-	TC	32.8	32.8	31.8	30.9	30.9	30.9	28.9	28.9	28.9	26.8	26.8	29.8
		72	SHC	13.7	19.8	25.8	13.1	19.2	25.3	12.4	18.6	24.8	11.7	17.9	24.2
			TC	-	35.4	35.4	-	33.4	33.4	12.4	31.3	31.3	—	29.0	29.0
		76	SHC		14.7	20.6	_	14.1	20.1	-	13.4	19.5	_	12.7	18.9
		<u> </u>	0.10		17.7	20.0		17.1	۷.۱		13.4	13.0		12.7	10.9

a. See minimum-maximum airflow ratings on page 6.

LEGEND

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



48GC(G/H)K04 — Unit with Humidi-MiZer® System in Subcooling Mode — Cooling Capacities

					AIR ENTERING	G EVAPORATO	OR — SCFM/BF	=		
	IP (°F) ITERING		900 / 0.01			1200 / 0.02		1500 / 0.04		
	ISER (Edb)				Air Enterir	g Evaporator	— Ewb (°F)			
CONDEN	iozit (zab)	72	67	62	72	67	62	72	67	62
	TC	47.30	43.05	38.87	49.91	45.81	41.56	51.88	47.22	42.95
75	SHC	25.33	28.76	32.11	27.32	32.24	37.10	28.89	34.79	40.92
	kW	2.60	2.51	2.44	2.92	2.83	2.72	3.38	3.27	3.15
	TC	45.69	41.31	37.34	48.23	43.89	39.85	50.28	45.50	41.3
85	SHC	23.99	27.23	30.77	25.85	30.55	35.58	27.51	33.28	39.5
	kW	2.88	2.78	2.70	3.19	3.10	3.02	3.66	3.54	3.42
	TC	43.85	39.75	35.86	45.50	42.54	38.21	47.91	43.71	39.7
95	SHC	22.42	25.91	29.51	23.37	26.59	34.15	25.33	31.70	37.82
	kW	3.17	3.08	2.99	3.45	3.41	3.31	3.96	3.85	3.71
	TC	42.23	38.38	34.72	45.17	41.25	37.46	46.14	42.41	38.6
105	SHC	21.08	24.79	28.60	23.29	28.36	33.64	23.76	30.62	37.3
	kW	3.49	3.40	3.32	3.83	3.73	3.62	4.29	4.17	4.03
	TC	40.68	36.72	33.10	43.04	39.20	35.41	44.36	40.27	36.6
115	SHC	19.79	23.35	27.21	21.37	26.52	31.81	22.11	28.66	35.48
	kW	3.82	3.73	3.65	4.16	4.05	3.94	4.61	4.49	4.35
	TC	39.09	35.21	31.71	41.32	37.42	34.19	42.32	38.51	35.19
125	SHC	18.46	22.08	26.05	19.82	24.95	30.82	20.17	27.06	32.9
	kW	4.16	4.07	3.99	4.51	4.39	4.28	4.95	4.83	4.69

48GC(G/H)K04 — Unit with Humidi-MiZer System in Hot Gas Reheat Mode — Cooling Capacities

					AIR ENTERIN	G EVAPORATO	OR — Ewb (°F)			
AIR EN	IP (°F) ITERING ISER (Edb)		75 Dry Bulb 62.5 Wet Bulb (50% Relative)			75 Dry Bulb 64 Wet Bulb (56% Relative)			75 Dry Bulb 65.3 Wet Bulb (60% Relative)	
CONDEN	iozit (zab)				Air Ent	ering Evaporat	or (cfm)			
		900	1200	1500	900	1200	1500	900	1200	1500
	TC	18.16	18.94	19.54	18.55	15.73	19.80	18.92	19.79	20.23
80	SHC	10.03	11.42	12.58	9.04	1.14	10.56	8.28	9.04	9.05
	kW	2.50	2.84	3.26	2.63	3.23	3.42	2.74	3.02	3.48
	TC	15.90	16.31	16.77	16.18	16.94	17.39	16.69	17.33	17.89
75	SHC	6.65	7.39	8.13	5.45	6.06	6.14	4.71	4.85	4.53
	kW	2.68	3.05	3.50	2.79	3.09	3.53	2.84	3.14	3.57
	TC	14.07	14.69	15.08	14.54	15.00	15.61	15.05	15.62	16.30
70	SHC	4.05	4.84	5.37	2.81	2.90	2.96	1.94	1.69	1.22
	kW	2.80	3.11	3.56	2.87	3.21	3.59	2.87	3.19	3.58
	TC	21.22	22.32	23.08	22.09	20.29	21.73	21.70	20.81	23.54
60	SHC	15.97	18.60	20.93	15.62	16.49	3.03	14.54	3.30	17.7
	kW	2.30	2.56	2.94	2.32	2.72	2.88	2.52	2.66	3.15
	TC	19.14	20.17	21.37	19.74	21.24	21.99	20.27	21.83	21.73
50	SHC	8.45	9.72	11.19	7.04	4.44	8.63	5.82	6.60	5.71
	kW	2.69	3.01	3.35	2.74	2.99	3.39	2.78	2.99	3.54
	TC	21.96	23.29	23.84	22.89	24.34	23.61	23.53	24.99	24.59
40	SHC	11.94	13.47	15.84	10.97	12.06	11.16	9.92	10.62	9.49
	kW	2.48	2.70	3.14	2.44	2.68	3.33	2.47	2.71	3.30

LEGEND

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



48GC(G/H)*05 High Stage Cooling Capacities^a

								AMB	IENT TEM	PERATURI	E (°F)				
	48GC(0	2/∐*∩5			85			95			105		115		
	4000(0	3/H) US			EA (db)			EA (db)			EA (db)			EA (db)	
				75	80	85	75	80	85	75	80	85	75	80	85
		58	TC	42.9	42.9	48.6	40.8	40.8	46.3	38.6	38.6	43.8	36.2	36.2	41.2
			SHC	37.3	42.9	48.6	35.3	40.8	46.3	33.3	38.6	43.8	31.2	36.2	41.2
		62	TC	45.0	45.0	45.2	42.7	42.7	44.8	39.9	39.9	43.2	36.9	36.9	41.6
			SHC	33.0	39.1	45.2	32.2	38.5	44.8	30.6	36.9	43.2	29.0	35.3	41.6
1200 cfm	EA (wb)	67	TC	49.9	49.9	49.9	47.2	47.2	47.2	44.3	44.3	44.3	41.1	41.1	41.1
CIIII	(WD)		SHC	27.2 55.0	33.2 55.0	39.3	25.8 52.2	32.0	38.2 52.2	24.5 49.1	30.7	37.0	22.9	29.2 45.7	35.5 45.7
		72	SHC		27.0	55.0	19.7	52.2	31.8		49.1 24.4	49.1 30.6	45.7	22.8	29.1
			TC	21.1 —	59.6	32.8 59.6	19.7	25.8 56.5	56.5	18.2	53.1	53.1	16.6 —	49.4	49.4
		76	SHC	_	21.9	28.5	_	20.7	27.3		19.2	24.6		17.7	23.5
			TC	45.6	45.6	51.6	43.3	43.3	49.1	40.9	40.9	46.4	38.3	38.3	43.6
		58	SHC	39.6	45.6	51.6	37.5	43.3	49.1	35.4	40.9	46.4	33.1	38.3	43.6
			TC	46.9	46.9	51.2	44.1	44.1	49.6	42.0	42.0	45.1	38.6	38.6	44.8
		62	SHC	36.6	43.9	51.2	35.0	42.3	49.6	32.1	38.6	45.1	31.1	37.9	44.8
1400	EA		TC	51.7	51.7	51.7	48.8	48.8	48.8	45.6	45.6	45.6	42.3	42.3	42.3
cfm	(wb)	67	SHC	29.1	36.2	43.3	27.8	35.1	42.4	26.3	33.6	40.9	24.7	32.0	39.3
			TC	56.9	56.9	56.9	53.8	53.8	53.8	50.5	50.5	50.5	46.9	46.9	46.9
		72	SHC	21.9	28.8	35.7	20.5	27.5	34.6	19.0	26.1	33.3	17.3	24.5	31.8
			TC	_	61.4	61.4	_	58.1	58.1	_	54.5	54.5	_	50.7	50.7
		76	SHC	_	23.0	29.0	_	21.6	28.1	_	20.1	26.9	_	18.5	25.5
			TC	47.8	47.8	54.0	45.4	45.4	51.4	42.8	42.8	48.6	40.1	40.1	45.6
		58	SHC	41.5	47.8	54.0	39.4	45.4	51.4	37.1	42.8	48.6	34.7	40.1	45.6
		62	TC	48.2	48.2	55.5	46.4	46.4	50.2	42.9	42.9	50.6	40.2	40.2	47.5
		02	SHC	39.2	47.3	55.5	35.9	43.0	50.2	35.2	42.9	50.6	32.9	40.2	47.5
1600	EA	67	TC	53.0	53.0	53.0	49.9	49.9	49.9	46.6	46.6	46.6	43.2	43.2	43.2
cfm	(wb)		SHC	30.9	39.1	47.2	29.6	37.8	46.1	28.0	36.3	44.6	26.4	34.7	43.0
		72	TC	58.3	58.3	58.3	55.0	55.0	55.0	51.5	51.5	51.5	47.8	47.8	47.8
			SHC	22.6	30.5	38.5	21.1	29.3	37.4	19.6	27.7	35.9	17.9	26.1	34.3
		76	TC		62.8	62.8		59.3	59.3	_	55.6	55.6	_	51.7	51.7
			SHC	- 40.7	23.8	31.2	— 47.4	22.3	30.0	-	20.8	28.7	_	19.2	27.2
		58	TC	49.7	49.7	56.1	47.1	47.1	53.4	44.5	44.5	50.4	41.6	41.6	47.3
			SHC	43.2	49.7	56.1	40.9	47.1	53.4	38.5	44.5	50.4	36.0	41.6	47.3
		62	TC SHC	50.5 39.5	50.5 47.3	55.2 55.2	47.2 38.9	47.2 47.2	55.5 55.5	44.5 36.6	44.5 44.5	52.5 52.5	41.7 34.2	41.7 41.7	49.2 49.2
1000	E 4	-	TC	54.0	54.0	54.0	50.8	50.8	50.8	47.4	44.5	48.2	43.9	43.9	46.6
1800 cfm	EA (wb)	67	SHC	32.7	42.0	51.2	31.3	40.5	49.8	29.7	38.9	48.2	28.1	37.3	46.6
	(13.4)		TC	59.3	59.3	59.3	55.9	55.9	55.9	52.3	52.3	52.3	48.5	48.5	48.5
		72	SHC	23.1	32.1	41.0	21.7	30.8	39.9	20.1	29.2	38.4	18.4	27.6	36.8
			TC	_	63.9	63.9	_	60.3	60.3	_	56.5	56.5	_	52.5	52.5
		76	SHC	_	24.4	33.0	_	23.0	31.7	_	21.5	30.3	_	19.8	28.8
			TC	51.3	51.3	57.9	48.7	48.7	55.1	45.9	45.9	52.0	42.9	42.9	48.7
		58	SHC	44.6	51.3	57.9	42.3	48.7	55.1	39.8	45.9	52.0	37.1	42.9	48.7
			TC	51.3	51.3	60.2	48.7	48.7	57.3	45.9	45.9	54.1	43.0	43.0	50.7
		62	SHC	42.4	51.3	60.2	40.2	48.7	57.3	37.8	45.9	54.1	35.2	43.0	50.7
2000	EA	67	TC	54.8	54.8	54.8	51.5	51.5	53.3	48.1	48.1	51.7	44.4	44.4	50.1
cfm	(wb)	01	SHC	34.4	44.6	54.8	32.9	43.1	53.3	31.3	41.5	51.7	29.7	39.9	50.1
		72	TC	60.2	60.2	60.2	56.7	56.7	56.7	53.0	53.0	53.0	49.1	49.1	49.1
			SHC	23.7	33.6	43.6	22.2	32.2	42.3	20.6	30.7	40.8	18.9	29.0	39.2
		76	TC	_	64.8	64.8	_	61.1	61.1	_	57.2	57.2	_	53.1	53.1
		,,,	SHC	_	25.0	34.6	_	23.5	33.3	_	22.0	31.8	_	20.3	30.2

a. See minimum-maximum airflow ratings on page 6.

LEGEND

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



48GC(G/H)*05 Low Stage Cooling Capacities^a

								AMB	IENT TEM	PERATURI	E (°F)				
	48GC(0	2/ L I*05			85			95			105		115		
	4000(0	3/H) US			EA (db)			EA (db)			EA (db)			EA (db)	
				75	80	85	75	80	85	75	80	85	75	80	85
		58	TC	27.0	27.0	30.4	25.7	25.7	29.0	24.3	24.3	27.4	22.8	22.8	25.7
			SHC	23.5	27.0	30.4	22.4	25.7	29.0	21.2	24.3	27.4	19.8	22.8	25.7
		62	TC	27.0	27.0	31.6	25.7	25.7	30.1	24.3	24.3	28.5	22.8	22.8	26.7
			SHC	22.4	27.0	31.6	21.3	25.7	30.1	20.2	24.3	28.5	18.9	22.8	26.7
1000	EA	67	TC	29.2	29.2	29.2	27.5	27.5	27.8	25.7	25.7	27.0	23.7	23.7	26.2
cfm	(wb)		SHC	18.3	23.4	28.5	17.6	22.7	27.8	16.9	22.0	27.0	16.1	21.1	26.2
		72	TC	32.4	32.4	32.4	30.5	30.5	30.5	28.6	28.6	28.6	26.4	26.4	26.4
			SHC	13.3	18.4	23.5	12.6	17.7	22.9	11.9	17.0	22.1	11.1	16.2	21.3
		76	TC	_	35.0	35.0	_	33.1	33.1	_	31.0	31.0	_	28.7	28.7
			SHC	_	14.4	19.5		13.7	18.9	_	12.9	18.1		12.2	17.3
		58	TC	28.5	28.5	32.1	27.1	27.1	30.6	25.6	25.6	28.9	23.9	23.9	27.0
			SHC	24.8	28.5	32.1	23.6	27.1	30.6	22.3	25.6	28.9	20.9	23.9	27.0
		62	TC	28.5	28.5	33.4	27.1	27.1	31.8	25.6	25.6	30.0	24.0	24.0	28.1
			SHC	23.6	28.5	33.4	22.5	27.1	31.8	21.2	25.6	30.0	19.8	24.0	28.1
1200 cfm	EA (wb)	67	SHC	30.0 19.9	30.0 25.9	31.9 31.9	28.2 19.2	28.2	31.1 31.1	26.3 18.4	26.3	30.3 30.3	24.6	24.6 21.8	27.0 27.0
Ciiii	(WD)		1					25.1			24.3		16.6		
		72	TC SHC	33.1 13.9	33.1 19.9	33.1 26.0	31.2 13.2	31.2 19.2	31.2 25.3	29.2 12.5	29.2 18.5	29.2 24.6	26.9 11.7	26.9 17.7	26.9 23.8
			TC	13.9	35.8	35.8	13.2		33.8	12.5	31.6	31.6	-	29.3	29.3
		76	SHC	_	15.1	21.2	_	33.8	20.5		13.7	19.8		12.9	19.0
			TC	29.7	29.7	33.5	28.2	14.4 28.2	31.8	26.6	26.6	30.0	24.9	24.9	28.1
		58	SHC	25.9	29.7	33.5	24.6	28.2	31.8	23.2	26.6	30.0	21.7	24.9	28.1
			TC	29.7	29.7	34.8	28.2	28.2	33.1	26.6	26.6	31.2	24.9	24.9	29.1
		62	SHC	24.6	29.7	34.8	23.4	28.2	33.1	20.0	26.6	31.2	20.6	24.9	29.1
4400			TC	30.5	30.5	35.0	28.7	28.7	34.2	27.1	27.1	30.6	25.3	25.3	28.3
1400 cfm	EA (wb)	67	SHC	21.3	28.1	35.0	20.6	27.4	34.2	18.7	24.6	30.6	17.3	22.8	28.3
•	()		TC	33.7	33.7	33.7	31.7	31.7	31.7	29.6	29.6	29.6	27.3	27.3	27.3
		72	SHC	14.4	21.4	28.3	13.7	20.7	27.6	13.0	19.9	26.9	12.2	19.1	26.1
			TC	-	36.4	36.4	-	34.3	34.3	10.0	32.1	32.1		29.7	29.7
		76	SHC	_	15.7	22.8		15.0	22.1	_	14.3	21.3		13.5	20.5
			TC	30.7	30.7	34.6	29.1	29.1	32.8	27.4	27.4	31.0	25.6	25.6	28.9
		58	SHC	26.7	30.7	34.6	25.4	29.1	32.8	23.9	27.4	31.0	22.3	25.6	28.9
			TC	30.7	30.7	35.9	29.1	29.1	34.1	27.5	27.5	32.2	25.6	25.6	30.0
		62	SHC	25.5	30.7	35.9	24.2	29.1	34.1	22.8	27.5	32.2	21.2	25.6	30.0
1600	EA		TC	31.0	31.0	37.8	29.6	29.6	33.0	27.6	27.6	33.6	25.6	25.6	32.2
cfm	(wb)	67	SHC	22.6	30.2	37.8	20.2	26.6	33.0	20.1	26.9	33.6	19.1	25.6	32.2
	` ′		TC	34.1	34.1	34.1	32.1	32.1	32.1	29.9	29.9	29.9	27.6	27.6	28.3
		72	SHC	14.9	22.7	30.6	14.2	22.0	29.9	13.5	21.3	29.1	12.7	20.5	28.3
			TC	_	36.9	36.9	_	34.7	34.7	_	32.4	32.4	_	30.0	30.0
		76	SHC	_	16.3	24.2	_	15.6	23.5	_	14.8	22.7	_	14.0	21.9
			TC	31.5	31.5	35.5	29.9	29.9	33.7	28.1	28.1	31.7	26.2	26.2	29.6
		58	SHC	27.5	31.5	35.5	26.1	29.9	33.7	24.5	28.1	31.7	22.9	26.2	29.6
			TC	31.5	31.5	36.9	29.9	29.9	35.0	28.1	28.1	33.0	26.2	26.2	30.7
		62	SHC	26.1	31.5	36.9	24.8	29.9	35.0	23.3	28.1	33.0	21.7	26.2	30.7
1800	EA		TC	31.9	31.9	37.1	30.1	30.1	35.9	28.2	28.2	35.4	26.3	26.3	33.0
cfm	(wb)	67	SHC	22.5	29.8	37.1	21.6	28.8	35.9	21.0	28.2	35.4	19.5	26.3	33.0
		70	TC	34.4	34.4	34.4	32.4	32.4	32.4	30.2	30.2	31.3	27.8	27.8	30.5
		72	SHC	15.3	24.0	32.7	14.6	23.3	32.0	13.9	22.6	31.3	13.2	21.8	30.5
		70	TC	_	37.2	37.2	_	35.0	35.0	_	32.7	32.7	_	30.2	30.2
		76	SHC	_	16.7	25.5	_	16.0	24.8	_	15.3	24.0	<u> </u>	14.5	23.2
		10			L		·		L			L			

a. See minimum-maximum airflow ratings on page 6.

LEGEND

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



48GC(G/H)K05 — Unit with Humidi-MiZer System in Subcooling Mode — Cooling Capacities

					AIR ENTERING	S EVAPORATO	OR — SCFM/BF			
	IP (°F) ITERING		1200 / 0.04			1600 / 0.07			2000 / 0.10	
	ISER (Edb)				Air Enterin	g Evaporator	— Ewb (°F)	•		
CONDEN	oen (Eas)	72	67	62	72	67	62	72	67	62
	TC	38.00	39.70	43.31	43.37	45.88	43.25	47.20	44.91	37.63
75	SHC	21.82	25.72	34.19	35.87	27.32	18.69	19.45	24.12	27.37
	kW	3.64	3.61	3.57	4.40	4.25	4.09	5.14	5.07	4.89
	TC	46.72	39.86	32.37	26.43	33.39	40.66	35.15	26.67	18.42
85	SHC	19.44	22.28	24.79	20.96	15.48	10.27	6.71	8.33	10.65
	kW	4.87	4.75	4.56	5.74	5.40	5.12	6.50	6.26	5.99
	TC	38.67	38.73	38.97	46.27	44.72	41.32	46.89	47.97	42.62
95	SHC	23.41	26.38	31.56	41.94	25.83	19.32	21.43	29.30	36.07
	kW	3.86	3.81	3.76	4.58	4.50	4.32	5.38	5.31	5.19
	TC	49.17	45.18	37.85	32.39	39.47	46.16	40.02	31.96	23.66
105	SHC	23.37	29.52	33.96	30.59	23.42	15.98	11.38	15.48	19.56
	kW	5.10	5.04	4.84	6.00	5.73	5.40	6.85	6.57	6.29
	TC	39.82	39.51	43.61	46.81	43.87	41.25	47.48	48.48	46.81
115	SHC	25.15	27.86	37.02	43.47	29.26	20.60	23.38	31.58	43.95
	kW	4.12	4.05	3.96	4.88	4.73	4.55	5.65	5.57	5.41
	TC	50.70	48.95	42.25	37.19	43.24	48.91	44.27	35.61	28.16
125	SHC	26.40	35.57	41.60	38.25	29.59	19.81	16.07	21.45	25.87
	kW	5.32	5.24	5.08	6.22	6.02	5.64	7.12	6.84	6.51

48GC(G/H)K05 — Unit with Humidi-MiZer System in Hot Gas Reheat Mode — Cooling Capacities

					AIR ENTERIN	G EVAPORATO	DR — Ewb (°F)			
AIR EN			75 Dry Bulb 62.5 Wet Bulb (50% Relative)			75 Dry Bulb 64 Wet Bulb (56% Relative)	ı		75 Dry Bulb 65.3 Wet Bulb (60% Relative)	
CONDEN	AIR ENTÉRING CONDENSER (Edb) TC 80 SHC kW TC 75 SHC kW TC 70 SHC				Air Ent	ering Evaporat	or (cfm)			
		1200	1600	2000	1200	1600	2000	1200	1600	2000
	TC	19.74	21.01	21.80	20.54	18.34	22.60	21.27	22.52	23.27
80	SHC	6.52	9.56	12.58	4.88	-1.55	9.44	3.53	5.28	6.74
	kW	3.23	3.51	3.93	3.26	3.79	3.97	3.29	3.57	4.00
	TC	17.95	19.09	19.84	18.64	19.86	20.60	19.28	20.48	21.26
75	SHC	3.59	6.18	8.85	1.71	3.63	5.37	0.16	1.46	2.49
	kW	3.32	3.60	4.02	3.36	3.64	4.06	3.40	3.67	4.09
	TC	16.24	17.37	18.10	16.93	18.06	18.78	17.50	18.66	19.43
70	SHC	1.11	3.54	6.06	-0.98	0.61	2.14	-2.74	-1.82	-1.08
	kW	3.45	3.72	4.15	3.48	3.75	4.18	3.50	3.78	4.20
	TC	23.03	24.36	25.17	23.97	23.12	24.31	24.58	24.02	26.61
60	SHC	12.73	16.77	20.82	11.40	13.99	1.73	10.30	0.02	15.43
	kW	3.06	3.34	3.75	3.09	3.38	3.62	3.11	3.26	3.82
	TC	21.96	23.26	24.08	22.66	23.92	24.79	23.28	24.58	25.25
50	SHC	6.15	8.87	11.66	3.79	1.86	7.56	1.73	2.91	3.89
	kW	3.28	3.61	4.07	3.33	3.71	4.12	3.38	3.71	4.17
	TC	24.95	26.18	26.99	25.63	26.96	27.58	26.33	27.65	28.27
40	SHC	9.83	12.44	15.51	7.56	9.43	11.17	5.65	6.86	7.83
	kW	3.06	3.38	3.84	3.11	3.44	3.89	3.15	3.48	3.94

LEGEND

 Edb
 —
 Entering Dry Bulb

 Ewb
 —
 Entering Wet Bulb

 kW
 —
 Compressor Power Input

 SCFM/BF
 —
 Standard Cubic Feet per Minute/Bypass Factor

 SHC
 —
 Sensible Heat Capacity (1000 Btuh) Gross

 TC
 —
 Total Capacity (1000 Btuh) Gross



48GC(G/H)*06 High Stage Cooling Capacities^a

								AMB	IENT TEM	PERATURI	E (°F)				
	49000	\/LI*06			85			95			105			115	
	48GC(G	5/H)^U6			EA (db)			EA (db)			EA (db)			EA (db)	
				75	80	85	75	80	85	75	80	85	75	80	85
		58	TC	53.3	53.3	60.3	50.7	50.7	57.5	48.0	48.0	54.5	45.2	45.2	51.3
		56	SHC	46.3	53.3	60.3	44.0	50.7	57.5	41.5	48.0	54.5	39.0	45.2	51.3
		62	TC	56.4	56.4	57.3	53.1	53.1	55.4	49.7	49.7	53.5	46.2	46.2	51.5
		62	SHC	41.8	49.6	57.3	40.0	47.7	55.4	38.1	45.8	53.5	36.1	43.8	51.5
1500	EA	67	TC	62.2	62.2	62.2	58.7	58.7	58.7	55.0	55.0	55.0	51.2	51.2	51.2
cfm	(wb)	07	SHC	34.3	42.1	49.8	32.5	40.2	48.0	30.6	38.4	46.1	28.7	36.4	44.2
		72	TC	68.5	68.5	68.5	64.7	64.7	64.7	60.7	60.7	60.7	56.6	56.6	56.6
		' -	SHC	26.6	34.5	42.3	24.8	32.6	40.5	22.9	30.7	38.5	21.0	28.8	36.6
		76	TC	_	73.8	73.8	_	69.8	69.8	_	65.5	65.5	_	61.1	61.1
		76	SHC	_	28.3	36.5	_	26.5	34.7	_	24.6	32.7	_	22.7	30.7
		58	TC	56.5	56.5	63.9	53.7	53.7	60.8	50.8	50.8	57.6	47.7	47.7	54.2
		30	SHC	49.1	56.5	63.9	46.6	53.7	60.8	44.0	50.8	57.6	41.2	47.7	54.2
		62	TC	58.3	58.3	63.0	54.9	54.9	61.0	51.4	51.4	58.9	48.1	48.1	55.5
		02	SHC	45.3	54.1	63.0	43.3	52.2	61.0	41.3	50.1	58.9	38.7	47.1	55.5
1750	EA	67	TC	64.1	64.1	64.1	60.5	60.5	60.5	56.6	56.6	56.6	52.6	52.6	52.6
cfm	(wb)	67	SHC	36.5	45.5	54.4	34.7	43.6	52.6	32.8	41.7	50.6	30.8	39.7	48.6
		72	TC	70.5	70.5	70.5	66.5	66.5	66.5	62.4	62.4	62.4	58.0	58.0	58.0
		12	SHC	27.6	36.6	45.6	25.7	34.7	43.7	23.8	32.8	41.7	21.9	30.8	39.7
		76	TC	_	75.9	75.9	_	71.6	71.6	_	67.2	67.2	_	62.6	62.6
		70	SHC	_	29.4	38.8	_	27.5	36.8	_	25.6	34.8	_	23.6	32.8
		58	TC	59.1	59.1	66.8	56.2	56.2	63.5	53.1	53.1	60.1	49.8	49.8	56.5
		30	SHC	51.4	59.1	66.8	48.8	56.2	63.5	46.0	53.1	60.1	43.1	49.8	56.5
		62	TC	59.9	59.9	68.2	56.9	56.9	63.8	54.0	54.0	59.1	49.9	49.9	58.8
		02	SHC	48.4	58.3	68.2	45.3	54.5	63.8	42.0	50.5	59.1	40.9	49.9	58.8
2000	EA	67	TC	65.6	65.6	65.6	61.8	61.8	61.8	57.8	57.8	57.8	53.7	53.7	53.7
cfm	(wb)	0,	SHC	38.6	48.7	58.8	36.7	46.8	56.9	34.8	44.9	54.9	32.8	42.9	52.9
		72	TC	72.1	72.1	72.1	67.9	67.9	67.9	63.6	63.6	63.6	59.2	59.2	59.2
			SHC	28.4	38.5	48.6	26.5	36.6	46.7	24.5	34.6	44.7	22.6	32.6	42.7
		76	TC	_	77.5	77.5	_	73.1	73.1	_	68.5	68.5	_	63.7	63.7
			SHC	_	30.3	40.7		28.4	38.8	_	26.4	36.7	_	24.4	34.6
		58	TC	61.4	61.4	69.3	58.3	58.3	65.9	55.0	55.0	62.3	51.6	51.6	58.5
			SHC	53.4	61.4	69.3	50.6	58.3	65.9	47.7	55.0	62.3	44.7	51.6	58.5
		62	TC	61.4	61.4	72.0	58.3	58.3	68.5	55.1	55.1	64.8	51.6	51.6	60.9
			SHC	50.8	61.4	72.0	48.1	58.3	68.5	45.3	55.1	64.8	42.4	51.6	60.9
2250	EA	67	TC	66.8	66.8	66.8	62.9	62.9	62.9	58.8	58.8	59.1	54.5	54.5	57.0
cfm	(wb)		SHC	40.6	51.8	63.0	38.7	49.9	61.1	36.7	47.9	59.1	34.7	45.9	57.0
		72	TC	73.3	73.3	73.3	69.1	69.1	69.1	64.6	64.6	64.6	60.0	60.0	60.0
			SHC	29.0	40.2	51.5	27.1	38.3	49.5	25.1	36.3	47.5	23.1	34.3	45.4
		76	TC	_	78.7	78.7	_	74.2	74.2	_	69.5	69.5		64.6	64.6
			SHC	_	31.0	42.5	_	29.1	40.5		27.1	38.4		25.0	36.3
		58	TC	63.3	63.3	71.5	60.1	60.1	67.9	56.7	56.7	64.1	53.1	53.1	60.2
			SHC	55.1	63.3	71.5	52.2	60.1	67.9	49.2	56.7	64.1	46.0	53.1	60.2
		62	TC	63.3	63.3	74.3	60.1	60.1	70.6	56.7	56.7	66.7	53.1	53.1	62.6
			SHC	52.4	63.3	74.3	49.6	60.1	70.6	46.7	56.7	66.7	43.7	53.1	62.6
2500	EA (wb)	67	TC	67.8	67.8	67.8	63.7	63.7	65.1	59.5	59.5	63.0	55.2	55.2	60.9
cfm	(wb)		SHC	42.4	54.7	67.0	40.5	52.8	65.1	38.5	50.8	63.0	36.5	48.7	60.9
		72	TC	74.3	74.3	74.3	70.0	70.0	70.0	65.4	65.4	65.4	60.7	60.7	60.7
			SHC	29.5	41.8	54.1	27.6	39.9	52.2	25.6	37.9	50.1	23.6	35.8	48.0
		76	TC	_	79.7	79.7	_	75.1	75.1	_	70.3	70.3	_	65.3	65.3
			SHC	_	31.5	44.0	_	29.6	42.0	_	27.6	39.9	_	25.5	37.7

a. See minimum-maximum airflow ratings on page 6.

LEGEND

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



48GC(G/H)*06 Low Stage Cooling Capacities^a

								AMB	IENT TEM	PERATURI	E (°F)				
	49000	2/LI*06			85			95			105			115	
	48GC(0	3/H)"UO			EA (db)			EA (db)			EA (db)			EA (db)	
				75	80	85	75	80	85	75	80	85	75	80	85
		58	TC	41.4	41.4	46.5	39.9	39.9	44.7	38.1	38.1	42.7	36.1	36.1	40.4
			SHC	36.3	41.4	46.5	35.0	39.9	44.7	33.5	38.1	42.7	31.8	36.1	40.4
		62	TC	42.3	42.3	46.5	40.3	40.3	45.6	38.2	38.2	44.4	36.1	36.1	41.9
			SHC	33.8	40.2	46.5	33.1	39.3	45.6	32.0	38.2	44.4	30.4	36.1	41.9
1250	EA	67	TC	46.2	46.2	46.2	44.1	44.1	44.1	41.6	41.6	41.6	38.9	38.9	38.9
cfm	(wb)		SHC	27.5	33.9	40.3	26.8	33.2	39.6	26.0	32.4	38.8	25.1	31.5	37.9
		72	TC	50.5	50.5	50.5	48.2	48.2	48.2	45.6	45.6	45.6	42.7	42.7	42.7
			SHC	20.9	27.4 54.2	33.8 54.2	20.3	26.7 51.8	33.1 51.8	19.5	25.9 49.1	32.3 49.1	18.7	25.1 46.0	31.5 46.0
		76	SHC		22.1	28.7		21.4	28.0		20.7	27.3		19.9	26.4
			TC	43.6	43.6	49.0	— 42.0	42.0	47.1	<u>-</u> 40.1	40.1	45.0	— 37.9	37.9	42.5
		58	SHC	38.2	43.6	49.0	36.8	42.0	47.1	35.2	40.1	45.0	33.3	37.9	42.5
			TC	43.7	43.7	50.9	42.0	42.0	48.9	40.1	40.1	46.6	37.9	37.9	44.0
		62	SHC	36.5	43.7	50.9	35.1	42.0	48.9	33.6	40.1	46.6	31.8	37.9	44.0
1500	EA		TC	47.4	47.4	47.4	45.2	45.2	45.2	42.6	42.6	43.0	39.8	39.8	42.0
cfm	(wb)	67	SHC	29.4	36.9	44.5	28.7	36.2	43.8	27.9	35.4	43.0	27.0	34.5	42.0
			TC	51.8	51.8	51.8	49.4	49.4	49.4	46.7	46.7	46.7	43.7	43.7	43.7
		72	SHC	21.6	29.2	36.7	21.0	28.5	36.1	20.2	27.7	35.3	19.4	26.9	34.4
			TC	_	55.6	55.6	_	53.0	53.0	_	50.2	50.2	_	47.0	47.0
		76	SHC	_	22.9	30.6	_	22.3	30.0	_	21.5	29.2	_	20.7	28.3
		5 0	TC	45.5	45.5	51.1	43.7	43.7	49.1	41.7	41.7	46.7	39.3	39.3	44.1
		58	SHC	39.8	45.5	51.1	38.3	43.7	49.1	36.6	41.7	46.7	34.6	39.3	44.1
		62	TC	45.5	45.5	53.0	43.7	43.7	50.9	41.7	41.7	48.5	39.4	39.4	45.7
		02	SHC	38.0	45.5	53.0	36.5	43.7	50.9	34.9	41.7	48.5	33.0	39.4	45.7
1750	EA	67	TC	48.3	48.3	48.5	46.0	46.0	47.8	43.4	43.4	46.9	40.4	40.4	45.8
cfm	(wb)		SHC	31.2	39.9	48.5	30.5	39.2	47.8	29.7	38.3	46.9	28.7	37.3	45.8
		72	TC	52.8	52.8	52.8	50.3	50.3	50.3	47.5	47.5	47.5	44.3	44.3	44.3
			SHC	22.2	30.9	39.5	21.5	30.2	38.8	20.8	29.4	38.1	19.9	28.5	37.2
		76	TC	_	56.6	56.6	_	54.0	54.0	_	51.0	51.0	_	47.7	47.7
			SHC	46.9	23.6 46.9	32.4 52.8	— 45.1	23.0 45.1	31.7 50.6	43.0	22.2 43.0	30.9 48.2	40.5	21.4 40.5	30.0 45.4
		58	SHC	41.1	46.9	52.8	39.5	45.1	50.6	37.7	43.0	48.2	35.6	40.5	45.4
			TC	47.0	47.0	54.8	45.1	45.1	52.5	43.0	43.0	50.0	40.6	40.5	47.1
		62	SHC	39.2	47.0	54.8	37.7	45.1	52.5	36.0	43.0	50.0	34.0	40.6	47.1
2000	EA		TC	49.0	49.0	52.4	46.6	46.6	51.5	43.9	43.9	50.5	41.0	41.0	49.3
cfm	(wb)	67	SHC	32.9	42.6	52.4	32.2	41.9	51.5	31.3	40.9	50.5	30.3	39.8	49.3
			TC	53.5	53.5	53.5	50.9	50.9	50.9	48.1	48.1	48.1	44.9	44.9	44.9
		72	SHC	22.7	32.4	42.2	22.0	31.8	41.5	21.3	31.0	40.7	20.4	30.1	39.8
		70	TC	_	57.4	57.4	_	54.7	54.7	_	51.7	51.7	_	48.3	48.3
		76	SHC	_	24.2	34.0	_	23.5	33.3	_	22.8	32.5	_	21.9	31.6
		58	TC	48.2	48.2	54.2	46.2	46.2	52.0	44.0	44.0	49.4	41.5	41.5	46.5
		30	SHC	42.2	48.2	54.2	40.5	46.2	52.0	38.6	44.0	49.4	36.4	41.5	46.5
		62	TC	48.2	48.2	56.3	46.3	46.3	53.9	44.0	44.0	51.3	41.5	41.5	48.3
		32	SHC	40.2	48.2	56.3	38.6	46.3	53.9	36.8	44.0	51.3	34.8	41.5	48.3
2250	EA	67	TC	49.6	49.6	55.9	47.1	47.1	55.0	44.5	44.5	53.8	41.8	41.8	49.8
cfm	(wb)		SHC	34.5	45.2	55.9	33.8	44.4	55.0	32.8	43.3	53.8	30.7	40.2	49.8
		72	TC	54.1	54.1	54.1	51.5	51.5	51.5	48.5	48.5	48.5	45.2	45.2	45.2
			SHC	23.1	33.9	44.7	22.5	33.2	44.0	21.7	32.5	43.2	20.9	31.6	42.3
		76	TC	_	58.0	58.0	_	55.2	55.2	_	52.1	52.1	_	48.7	48.7
			SHC	_	24.6	35.5	_	24.0	34.8	_	23.2	33.9	_	22.3	32.9

a. See minimum-maximum airflow ratings on page 6.

LEGEND

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



48GC(G/H)K06 — Unit with Humidi-MiZer System in Subcooling Mode — Cooling Capacities

					AIR ENTERING	G EVAPORATO	R — SCFM/BF			
	IP (°F) ITERING		1500 / 0.01			2000 / 0.02			2500 / 0.03	
	ISER (Edb)				Air Enterin	ng Evaporator	— Ewb (°F)	•		
CONDEN	ozit (zab)	72	67	62	72	67	62	72	67	62
	TC	70.53	63.82	57.93	74.82	68.11	61.86	77.52	70.71	64.57
75	SHC	31.69	38.87	46.41	35.70	45.42	55.15	38.93	51.09	62.60
	kW	3.69	3.60	3.53	4.01	3.92	3.83	4.46	4.37	4.24
	TC	66.76	60.52	54.81	70.78	64.32	58.47	73.28	66.66	61.04
85	SHC	28.23	35.82	43.51	31.98	41.90	52.01	34.99	47.32	59.27
	kW	4.07	3.99	3.91	4.40	4.30	4.21	4.85	4.74	4.62
	TC	62.90	56.96	51.51	65.79	60.87	54.99	69.01	62.83	57.39
95	SHC	24.70	32.54	40.45	27.31	35.91	48.77	31.01	43.78	55.84
	kW	4.50	4.41	4.32	4.79	4.75	4.64	5.29	5.18	5.05
	TC	58.97	53.30	48.18	62.37	56.65	51.38	64.74	58.79	53.63
105	SHC	21.09	29.16	37.39	24.21	34.81	45.42	27.02	40.02	52.29
	kW	4.97	4.88	4.79	5.30	5.20	5.10	5.77	5.65	5.51
	TC	54.84	49.52	44.71	58.03	52.59	47.64	59.95	54.52	49.72
115	SHC	17.27	25.65	34.16	20.15	31.02	41.94	22.46	36.02	48.59
	kW	5.47	5.37	5.28	5.80	5.69	5.59	6.26	6.15	6.00
	TC	50.51	45.56	41.08	53.44	48.35	43.92	55.25	50.08	45.85
125	SHC	13.25	21.95	30.77	15.81	27.04	38.49	17.95	31.80	43.60
	kW	5.98	5.87	5.78	6.31	6.20	6.10	6.78	6.66	6.50

48GC(G/H)K06 — Unit with Humidi-MiZer System in Hot Gas Reheat Mode — Cooling Capacities

					AIR ENTERIN	G EVAPORATO	DR — Ewb (°F)			
AIR EN	MP (°F) NTERING		75 Dry Bulb 62.5 Wet Bulb (50% Relative)			75 Dry Bulb 64 Wet Bulb (56% Relative)	• • • • • • • • • • • • • • • • • • •		75 Dry Bulb 65.3 Wet Bulb (60% Relative)	
CONDEN	ISER (Edb)				Air Ent	ering Evaporat	or (cfm)	•		
		1500	2000	2500	1500	2000	2500	1500	2000	2500
	TC	23.46	25.00	25.95	22.48	22.48	26.91	25.27	26.79	27.74
80	SHC	6.67	10.43	14.23	-1.35	-1.35	10.30	2.67	4.90	6.94
	kW	3.23	3.51	3.93	3.79	3.79	3.97	3.29	3.57	4.00
	TC	21.82	23.33	24.27	22.73	24.25	25.19	23.51	25.04	25.99
75	SHC	3.89	7.28	10.74	1.53	4.07	6.48	-0.49	1.33	2.93
	kW	3.32	3.60	4.02	3.36	3.64	4.06	3.40	3.67	4.09
	TC	20.22	21.70	22.63	21.08	22.57	23.50	21.85	23.33	24.28
70	SHC	1.51	4.73	8.05	-1.10	1.16	3.38	-3.29	-1.82	-0.53
	kW	3.45	3.72	4.15	3.48	3.75	4.18	3.50	3.78	4.20
	TC	27.06	28.61	29.62	27.75	27.75	29.00	28.77	28.77	31.52
60	SHC	13.18	17.91	22.76	14.66	14.66	2.96	0.10	0.10	16.05
	kW	3.06	3.34	3.75	3.38	3.38	3.62	3.26	3.26	3.82
	TC	26.27	27.80	28.76	27.09	28.59	29.59	27.83	29.36	30.33
50	SHC	6.87	10.27	13.81	3.94	2.57	8.90	1.39	3.02	4.68
	kW	3.28	3.61	4.07	3.33	3.71	4.12	3.38	3.71	4.17
	TC	29.29	30.82	31.80	30.18	31.72	32.69	30.98	32.52	33.50
40	SHC	10.58	13.95	17.49	7.83	10.24	12.81	5.42	7.07	8.76
	kW	3.06	3.38	3.84	3.11	3.44	3.89	3.15	3.48	3.94

LEGEND

Edb Entering Dry BulbEntering Wet BulbCompressor Power Input Ewb

SCFM/BF — Standard Cubic Feet per Minute/Bypass Factor
SHC — Sensible Heat Capacity (1000 Btuh) Gross
TC — Total Capacity (1000 Btuh) Gross

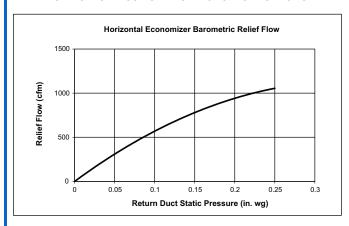


Gas Heat Stages

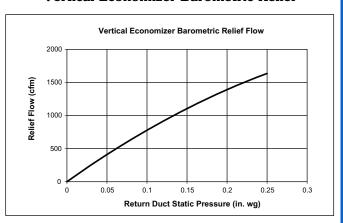
48GC(G/H) UNIT SIZE	HEAT SIZE
1 Phase or 3 Phase	Low or Medium
04	1
05	1
06	1

Economizer Barometric Relief and Static Pressure

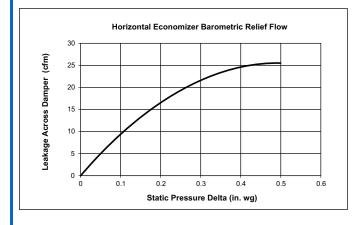
Horizontal Economizer Barometric Relief



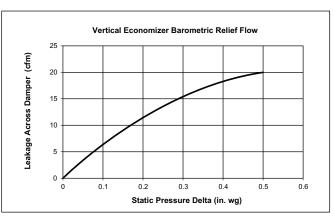
Vertical Economizer Barometric Relief



Horizontal Economizer Damper Leakage

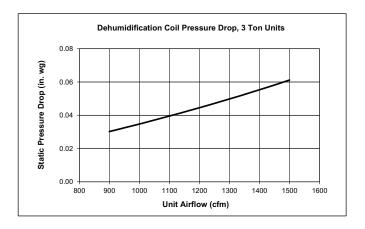


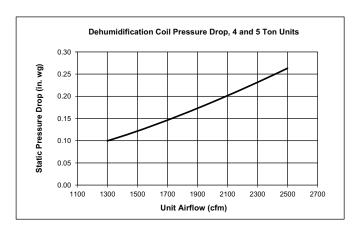
Vertical Economizer Damper Leakage





Humidi-Mizer Coil Pressure Drops





MERV-13 filters pressure drop

NOTE: For factory-installed MERV-13 filters, no additional pressure drop adjustments are necessary. The standard fan tables accommodate usage.

Fan data



GENERAL FAN PERFORMANCE NOTES

- 1. Interpolation is permissible. Do not extrapolate.
- External static pressure is the static pressure difference between the return duct and the supply duct plus the static pressure caused by any FIOPs or accessories.
- 3. Tabular data accounts for pressure loss due to clean filters, unit casing, wet coils, and highest gas heat exchanger (when gas heat unit).
- 4. Factory options and accessories may effect static pressure losses. Gas heat unit fan tables assume highest gas heat models; for fan selections with low or medium heat models, the user must deduct low and medium heat static pressures. Selection software is available, through your salesperson, to help you select the best motor/drive combination for your application.
- 5. The fan performance tables offer motor/drive recommendations. In cases when 2 motor/drive combinations would work, Carrier recommends the lower horsepower option.

- 6. For information on the electrical properties of Carrier motors, please see the Electrical information section of the Product Data book for this model and size.
- 7. For more information on the performance limits of Carrier motors, see the application data section of the Product Data book for this model and size.
- 8. The EPACT (Energy Policy Act of 1992) regulates energy requirements for specific types of indoor fan motors. Motors regulated by EPACT include any general purpose, T-frame (3-digit, 143 and larger), single speed, foot mounted, polyphase, squirrel cage induction motors of NEMA (National Electrical Manufacturers Association) design A and B, manufactured for use in the United States. Ranging from 1 to 200 Hp, these continuous-duty motors operate on 230 and 460 volt, 60 Hz power. If a motor does not fit into these specifications, the motor does not have to be replaced by an EPACT compliant energy-efficient motor. Variable speed motors are exempt from EPACT compliance requirements.

Fan data (cont)



48GCGT04 - Single Phase Ultra Low NOx - 3 Ton Vertical Supply (rpm - bhp)

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
900	1129	0.10	1356	0.17	1544	0.26	1708	0.35	1857	0.45
975	1182	0.11	1402	0.19	1586	0.28	1748	0.37	1894	0.47
1050	1236	0.13	1449	0.21	1630	0.30	1789	0.40	1933	0.50
1125	1290	0.15	1498	0.23	1675	0.33	1831	0.43	1973	0.53
1200	1346	0.17	1547	0.26	1721	0.35	1874	0.46	2014	0.57
1275	1403	0.19	1598	0.28	1768	0.38	1919	0.49	2057	0.61
1350	1460	0.22	1651	0.31	1816	0.42	1965	0.53	2100	0.64
1425	1519	0.24	1703	0.34	1865	0.45	2012	0.57	2145	0.69
1500	1579	0.27	1757	0.38	1916	0.49	2059	0.61	2191	0.73

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
900	1994	0.55	2121	0.66	2241	0.78	2354	0.91	2461	1.04
975	2029	0.58	2155	0.70	2274	0.82	2386	0.95	_	_
1050	2066	0.61	2190	0.73	2307	0.86	2419	0.99	_	_
1125	2104	0.65	2227	0.77	2343	0.90	2453	1.03	_	_
1200	2144	0.69	2265	0.81	2379	0.94	2488	1.07	_	_
1275	2184	0.73	2304	0.85	2417	0.98	_	_	_	_
1350	2226	0.77	2345	0.90	2456	1.03	_	_	_	_
1425	2269	0.81	2386	0.95	_	_	_	_	_	_
1500	2313	0.86	2429	1.00	_	_	_	_	_	_

Standard Static 1129-1890 rpm, 0.44 Max bhp

Medium Static 1129-2190 rpm, 0.71 Max bhp

High Static 1129-2490 rpm, 1.07 Max bhp

48GCGT04 - Single Phase Ultra Low NOx - Standard Static - 3 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1129	6.0	1356	7.2	1544	8.2	1708	9.0	_	_
975	1182	6.3	1402	7.4	1586	8.4	1748	9.2	_	_
1050	1236	6.5	1449	7.7	1630	8.6	1789	9.5	_	_
1125	1290	6.8	1498	7.9	1675	8.9	1831	9.7	_	_
1200	1346	7.1	1547	8.2	1721	9.1	_	_	_	_
1275	1403	7.4	1598	8.5	1768	9.4	_	_	_	_
1350	1460	7.7	1651	8.7	1816	9.6	_	_	_	_
1425	1519	8.0	1703	9.0	_	_	_	_	_	_
1500	1579	8.4	1757	9.3	_	_	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	_	_	_	_	_	_	_	_	_	_
975	_	_	_	_	_	_	_	_	_	_
1050	_	_	_	_	_	_	_	_	_	_
1125	_	_	_	_	_	_	_	_	_	_
1200	_	_	_	_	_	_	_	_	_	_
1275	_	_	_	_	_	_	_	_	_	_
1350	_	_	_	_	_	_	_	_	_	_
1425	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_		_	_	_

Standard Static 1129-1890 rpm

Fan data (cont)



48GCGT04 - Single Phase Ultra Low NOx - Medium Static - 3 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1129	5.2	1356	6.2	1544	7.1	1708	7.8	1857	8.5
975	1182	5.4	1402	6.4	1586	7.2	1748	8.0	1894	8.6
1050	1236	5.6	1449	6.6	1630	7.4	1789	8.2	1933	8.8
1125	1290	5.9	1498	6.8	1675	7.6	1831	8.4	1973	9.0
1200	1346	6.1	1547	7.1	1721	7.9	1874	8.6	2014	9.2
1275	1403	6.4	1598	7.3	1768	8.1	1919	8.8	2057	9.4
1350	1460	6.7	1651	7.5	1816	8.3	1965	9.0	2100	9.6
1425	1519	6.9	1703	7.8	1865	8.5	2012	9.2	2145	9.8
1500	1579	7.2	1757	8.0	1916	8.7	2059	9.4	_	_

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)										
	1.2		1.4		1.6		1.8		2.0		
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	
900	1994	9.1	2121	9.7	_	_	_	_	_	_	
975	2029	9.3	2155	9.8	_	_	_	_	_	_	
1050	2066	9.4	_	_	_	_	_	_	_	_	
1125	2104	9.6	_	_	_	_	_	_	_	_	
1200	2144	9.8	_	_	_	_	_	_	_	_	
1275	_	_	_	_	_	_	_	_	_	_	
1350	_	_	_	_	_	_	_	_	_	_	
1425	_	_	_	_	_	_	_	_	_	_	
1500	_	_	_	_	_	_	_	_	_	_	

Medium Static 1129-2190 rpm

48GCGT04 - Single Phase Ultra Low NOx - High Static - 3 Ton Vertical Supply (rpm - vdc)

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)										
	0.2		0.4		0.6		0.8		1.0		
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	
900	1129	4.5	1356	5.4	1544	6.2	1708	6.9	1857	7.5	
975	1182	4.7	1402	5.6	1586	6.4	1748	7.0	1894	7.6	
1050	1236	5.0	1449	5.8	1630	6.5	1789	7.2	1933	7.8	
1125	1290	5.2	1498	6.0	1675	6.7	1831	7.4	1973	7.9	
1200	1346	5.4	1547	6.2	1721	6.9	1874	7.5	2014	8.1	
1275	1403	5.6	1598	6.4	1768	7.1	1919	7.7	2057	8.3	
1350	1460	5.9	1651	6.6	1816	7.3	1965	7.9	2100	8.4	
1425	1519	6.1	1703	6.8	1865	7.5	2012	8.1	2145	8.6	
1500	1579	6.3	1757	7.1	1916	7.7	2059	8.3	2191	8.8	

CFM	AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)										
	1.2		1.4		1.6		1.8		2.0		
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	
900	1994	8.0	2121	8.5	2241	9.0	2354	9.5	2461	9.9	
975	2029	8.1	2155	8.7	2274	9.1	2386	9.6	_	_	
1050	2066	8.3	2190	8.8	2307	9.3	2419	9.7	_	_	
1125	2104	8.4	2227	8.9	2343	9.4	2453	9.9	_	_	
1200	2144	8.6	2265	9.1	2379	9.6	2488	10.0	_	_	
1275	2184	8.8	2304	9.3	2417	9.7	_	_	_	_	
1350	2226	8.9	2345	9.4	2456	9.9	_	_	_	_	
1425	2269	9.1	2386	9.6	_	_	_	_	_	_	
1500	2313	9.3	2429	9.8	_	_	_	_	_	_	

High Static 1129-2490 rpm



48GCGJ04 — Three Phase Ultra Low NOx — 3 Ton Vertical Supply (rpm - bhp)

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
900	1129	0.10	1356	0.17	1544	0.26	1708	0.35	1857	0.45
975	1182	0.11	1402	0.19	1586	0.28	1748	0.37	1894	0.47
1050	1236	0.13	1449	0.21	1630	0.30	1789	0.40	1933	0.50
1125	1290	0.15	1498	0.23	1675	0.33	1831	0.43	1973	0.53
1200	1346	0.17	1547	0.26	1721	0.35	1874	0.46	2014	0.57
1275	1403	0.19	1598	0.28	1768	0.38	1919	0.49	2057	0.61
1350	1460	0.22	1651	0.31	1816	0.42	1965	0.53	2100	0.64
1425	1519	0.24	1703	0.34	1865	0.45	2012	0.57	2145	0.69
1500	1579	0.27	1757	0.38	1916	0.49	2059	0.61	2191	0.73

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
900	1994	0.55	2121	0.66	2241	0.78	2354	0.91	2461	1.04
975	2029	0.58	2155	0.70	2274	0.82	2386	0.95	_	_
1050	2066	0.61	2190	0.73	2307	0.86	2419	0.99	_	_
1125	2104	0.65	2227	0.77	2343	0.90	2453	1.03	_	_
1200	2144	0.69	2265	0.81	2379	0.94	2488	1.07	_	_
1275	2184	0.73	2304	0.85	2417	0.98	_	_	_	_
1350	2226	0.77	2345	0.90	2456	1.03	_	_	_	_
1425	2269	0.81	2386	0.95	_	_	_	_	_	_
1500	2313	0.86	2429	1.00	_	_	_	_	_	_

Standard Static 1129-1890 rpm, 0.44 Max bhp

Medium Static 1129-2190 rpm, 0.71 Max bhp

High Static 1129-2490 rpm, 1.07 Max bhp

48GCGJ04 — Three Phase Ultra Low NOx — Standard Static — 3 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1129	6.0	1356	7.2	1544	8.2	1708	9.0	_	_
975	1182	6.3	1402	7.4	1586	8.4	1748	9.2	_	_
1050	1236	6.5	1449	7.7	1630	8.6	1789	9.5	_	_
1125	1290	6.8	1498	7.9	1675	8.9	1831	9.7	_	_
1200	1346	7.1	1547	8.2	1721	9.1	_	_	_	_
1275	1403	7.4	1598	8.5	1768	9.4	_	_	_	_
1350	1460	7.7	1651	8.7	1816	9.6	_	_	_	_
1425	1519	8.0	1703	9.0	_	_	_	_	_	_
1500	1579	8.4	1757	9.3	_	_	_	_	_	_

			, and a	AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900		_	_	_	-	_	_	_	_	_
975		_	_	_		_	_	_	_	
1050	_	_	_	_	_	_	_	_	_	_
1125	_	_	_	_	_	_	_	_	_	_
1200		_	_	_	-	_	_	_	_	_
1275	_	_	_	_	_	_	_	_	_	_
1350		_	_	_	-	_	_	_	_	_
1425		_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_

Standard Static 1129-1890 rpm



48GCGJ04 — Three Phase Ultra Low NOx — Medium Static — 3 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1129	5.2	1356	6.2	1544	7.1	1708	7.8	1857	8.5
975	1182	5.4	1402	6.4	1586	7.2	1748	8.0	1894	8.6
1050	1236	5.6	1449	6.6	1630	7.4	1789	8.2	1933	8.8
1125	1290	5.9	1498	6.8	1675	7.6	1831	8.4	1973	9.0
1200	1346	6.1	1547	7.1	1721	7.9	1874	8.6	2014	9.2
1275	1403	6.4	1598	7.3	1768	8.1	1919	8.8	2057	9.4
1350	1460	6.7	1651	7.5	1816	8.3	1965	9.0	2100	9.6
1425	1519	6.9	1703	7.8	1865	8.5	2012	9.2	2145	9.8
1500	1579	7.2	1757	8.0	1916	8.7	2059	9.4	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	ı)	_	
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1994	9.1	2121	9.7	_	_	_	_	_	_
975	2029	9.3	2155	9.8	_	_	_	_	_	_
1050	2066	9.4	_	_	_	_	_	_	_	_
1125	2104	9.6	_	_	_	_	_	_	_	_
1200	2144	9.8	_	_	_	_	_	_	_	_
1275	_	_	_	_	_	_	_	_	_	_
1350	_	_	_	_	_	_	_	_	_	_
1425	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_

Medium Static 1129-2190 rpm

48GCGJ04 — Three Phase Ultra Low NOx — High Static — 3 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.	4	0	.6	0	.8	1.	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1129	4.5	1356	5.4	1544	6.2	1708	6.9	1857	7.5
975	1182	4.7	1402	5.6	1586	6.4	1748	7.0	1894	7.6
1050	1236	5.0	1449	5.8	1630	6.5	1789	7.2	1933	7.8
1125	1290	5.2	1498	6.0	1675	6.7	1831	7.4	1973	7.9
1200	1346	5.4	1547	6.2	1721	6.9	1874	7.5	2014	8.1
1275	1403	5.6	1598	6.4	1768	7.1	1919	7.7	2057	8.3
1350	1460	5.9	1651	6.6	1816	7.3	1965	7.9	2100	8.4
1425	1519	6.1	1703	6.8	1865	7.5	2012	8.1	2145	8.6
1500	1579	6.3	1757	7.1	1916	7.7	2059	8.3	2191	8.8

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wo	1)		
CFM	1	.2	1.	.4	1	.6	1	.8	2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1994	8.0	2121	8.5	2241	9.0	2354	9.5	2461	9.9
975	2029	8.1	2155	8.7	2274	9.1	2386	9.6	_	_
1050	2066	8.3	2190	8.8	2307	9.3	2419	9.7	_	_
1125	2104	8.4	2227	8.9	2343	9.4	2453	9.9	_	_
1200	2144	8.6	2265	9.1	2379	9.6	2488	10.0	_	_
1275	2184	8.8	2304	9.3	2417	9.7	_	_	_	_
1350	2226	8.9	2345	9.4	2456	9.9	_	_	_	_
1425	2269	9.1	2386	9.6	_	_	_	_	_	_
1500	2313	9.3	2429	9.8	_	_	_	_	_	_

High Static 1129-2490 rpm



48GCGT05 — Single Phase Ultra Low NOx — 4 Ton Vertical Supply (rpm - bhp)

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1200	1262	0.21	1453	0.33	1614	0.45	1757	0.58	1888	0.72
1300	1333	0.25	1517	0.37	1674	0.50	1813	0.63	1942	0.78
1400	1405	0.29	1583	0.42	1735	0.55	1872	0.70	1997	0.84
1500	1478	0.34	1650	0.48	1799	0.62	1932	0.76	2055	0.92
1600	1552	0.40	1718	0.54	1863	0.68	1994	0.84	2114	1.00
1700	1627	0.46	1787	0.60	1929	0.76	2057	0.92	2174	1.09
1800	1704	0.52	1857	0.68	1995	0.84	2121	1.01	2236	1.18
1900	1781	0.60	1929	0.76	2063	0.93	2186	1.10	2299	1.28
2000	1859	0.68	2001	0.85	2132	1.02	2252	1.21	2363	1.39

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1200	2011	0.87	2126	1.02	2236	1.19	2341	1.37	2442	1.56
1300	2061	0.93	2174	1.09	2281	1.26	2383	1.44	_	_
1400	2114	1.00	2224	1.17	2329	1.34	2429	1.52	_	_
1500	2169	1.08	2277	1.25	2379	1.43	_	_	_	_
1600	2226	1.17	2331	1.34	2432	1.52	_	_	_	_
1700	2284	1.26	2388	1.44	_	_	_	_	_	_
1800	2344	1.36	2446	1.55	_	_	_	_	_	_
1900	2405	1.47	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_

Standard Static 1262-1900 rpm, 0.72 Max bhp

Medium Static 1262-2170 rpm, 1.06 Max bhp

High Static 1262-2460 rpm, 1.53 Max bhp

48GCGT05 — Single Phase Ultra Low NOx — Standard Static — 4 Ton Vertical Supply (rpm - vdc)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1262	6.6	1453	7.6	1614	8.5	1757	9.2	1888	9.9
1300	1333	7.0	1517	8.0	1674	8.8	1813	9.5	_	_
1400	1405	7.4	1583	8.3	1735	9.1	1872	9.9	_	_
1500	1478	7.8	1650	8.7	1799	9.5	_	_	_	_
1600	1552	8.2	1718	9.0	1863	9.8	_	_	_	_
1700	1627	8.6	1787	9.4	_	_	_	_	_	_
1800	1704	9.0	1857	9.8	_	_	_	_	_	_
1900	1781	9.4	_	_	_	_	_	_	_	_
2000	1859	9.8	_	_	_	_	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200		_		_	_	_	_	_	_	_
1300		_		_	_	_	_	_	_	_
1400	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_
1600	_	_	_	_	_	_	_	_	_	_
1700	_	_	_	_	_	_	_	_	_	_
1800	_	_	_	_	_	_	_	_	_	_
1900	_	_	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_

Standard Static 1262-1900 rpm



48GCGT05 — Single Phase Ultra Low NOx — Medium Static — 4 Ton Vertical Supply (rpm - vdc)

			-	AVAILABLE I	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1262	5.8	1453	6.7	1614	7.4	1757	8.1	1888	8.7
1300	1333	6.1	1517	7.0	1674	7.7	1813	8.4	1942	8.9
1400	1405	6.5	1583	7.3	1735	8.0	1872	8.6	1997	9.2
1500	1478	6.8	1650	7.6	1799	8.3	1932	8.9	2055	9.5
1600	1552	7.2	1718	7.9	1863	8.6	1994	9.2	2114	9.7
1700	1627	7.5	1787	8.2	1929	8.9	2057	9.5	_	_
1800	1704	7.9	1857	8.6	1995	9.2	2121	9.8	_	_
1900	1781	8.2	1929	8.9	2063	9.5		_	_	_
2000	1859	8.6	2001	9.2	2132	9.8	_			_

			/	AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)	_	
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	2011	9.3	2126	9.8	_	_	_	_	_	_
1300	2061	9.5	_	_	_	_	_	_	_	_
1400	2114	9.7	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_
1600	_	_	_	_	_	_	_	_	_	_
1700	_	_	_	_	_	_	_	_	_	_
1800	_	_	_	_	_	_	_	_	_	_
1900	_	_	_	_	_	_	_	_	_	_
2000					_	_	_	_	_	_

Medium Static 1262-2170 rpm

48GCGT05 — Single Phase Ultra Low NOx — High Static — 4 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1262	5.1	1453	5.9	1614	6.6	1757	7.1	1888	7.7
1300	1333	5.4	1517	6.2	1674	6.8	1813	7.4	1942	7.9
1400	1405	5.7	1583	6.4	1735	7.1	1872	7.6	1997	8.1
1500	1478	6.0	1650	6.7	1799	7.3	1932	7.9	2055	8.4
1600	1552	6.3	1718	7.0	1863	7.6	1994	8.1	2114	8.6
1700	1627	6.6	1787	7.3	1929	7.8	2057	8.4	2174	8.8
1800	1704	6.9	1857	7.5	1995	8.1	2121	8.6	2236	9.1
1900	1781	7.2	1929	7.8	2063	8.4	2186	8.9	2299	9.3
2000	1859	7.6	2001	8.1	2132	8.7	2252	9.2	2363	9.6

			Į.	AVAILABLE I	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1.	.2	1.	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	2011	8.2	2126	8.6	2236	9.1	2341	9.5	2442	9.9
1300	2061	8.4	2174	8.8	2281	9.3	2383	9.7	_	_
1400	2114	8.6	2224	9.0	2329	9.5	2429	9.9	_	_
1500	2169	8.8	2277	9.3	2379	9.7	_	_	_	_
1600	2226	9.0	2331	9.5	2432	9.9	_	_	_	_
1700	2284	9.3	2388	9.7	_	_	_	_	_	_
1800	2344	9.5	2446	9.9	_	_	_	_	_	_
1900	2405	9.8	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_

High Static 1262-2460 rpm



48GCGJ05 — Three Phase Ultra Low NOx — 4 Ton Vertical Supply (rpm - bhp)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1200	1262	0.21	1452	0.33	1614	0.45	1757	0.58	1888	0.72
1300	1333	0.25	1516	0.37	1674	0.50	1813	0.63	1942	0.78
1400	1405	0.29	1583	0.42	1735	0.55	1872	0.70	1997	0.84
1500	1478	0.34	1650	0.48	1798	0.62	1932	0.76	2054	0.92
1600	1552	0.40	1718	0.54	1863	0.68	1993	0.84	2114	1.00
1700	1627	0.46	1787	0.60	1928	0.76	2057	0.92	2174	1.09
1800	1704	0.52	1857	0.68	1995	0.84	2121	1.01	2236	1.18
1900	1781	0.60	1929	0.76	2063	0.93	2185	1.10	2299	1.28
2000	1859	0.68	2001	0.85	2132	1.02	2252	1.21	2363	1.39

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1200	2011	0.87	2126	1.02	2236	1.19	2341	1.37	2442	1.55
1300	2061	0.93	2174	1.09	2281	1.26	2384	1.44	2482	1.62
1400	2114	1.00	2224	1.17	2329	1.34	2429	1.52	2526	1.71
1500	2169	1.08	2277	1.25	2379	1.43	2477	1.61	2572	1.80
1600	2226	1.17	2331	1.34	2432	1.52	2528	1.71	2621	1.91
1700	2284	1.26	2388	1.44	2486	1.63	2581	1.82	_	_
1800	2344	1.36	2446	1.55	2543	1.74	2636	1.94	_	_
1900	2405	1.47	2505	1.66	2600	1.86	_	_	_	_
2000	2467	1.59	2565	1.78	2659	1.99	_	_	_	

Standard Static 1262-1900 rpm, 0.72 Max bhp

Medium Static 1262-2170 rpm, 1.06 Max bhp

High Static 1262-2660 rpm, 1.96 Max bhp

48GCGJ05 — Three Phase Ultra Low NOx — Standard Static — 4 Ton Vertical Supply (rpm - vdc)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1262	6.6	1453	7.6	1614	8.5	1757	9.2	1888	9.9
1300	1333	7.0	1517	8.0	1674	8.8	1813	9.5	_	_
1400	1405	7.4	1583	8.3	1735	9.1	1872	9.9	_	_
1500	1478	7.8	1650	8.7	1799	9.5	_	_	_	_
1600	1552	8.2	1718	9.0	1863	9.8	_	_	_	_
1700	1627	8.6	1787	9.4	_	_	_	_	_	_
1800	1704	9.0	1857	9.8	_	_	_	_	_	_
1900	1781	9.4	_	_	_	_	_	_	_	_
2000	1859	9.8	_	_	_	_	_	_	_	_

			-	AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200		_	_	_		_	_	_	_	_
1300		_		_		_	_	_	_	
1400		_		_		_	_	_	_	_
1500		_		_		_	_	_	_	
1600		_		_		_	_	_	_	
1700	_	_	_	_	_	_	_	_	_	_
1800		_	_	_		_	_	_	_	_
1900		_	_	_		_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_

Standard Static 1262-1900 rpm



48GCGJ05 — Three Phase Ultra Low NOx — Medium Static — 4 Ton Vertical Supply (rpm - vdc)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1262	5.8	1453	6.7	1614	7.4	1757	8.1	1888	8.7
1300	1333	6.1	1517	7.0	1674	7.7	1813	8.4	1942	8.9
1400	1405	6.5	1583	7.3	1735	8.0	1872	8.6	1997	9.2
1500	1478	6.8	1650	7.6	1799	8.3	1932	8.9	2055	9.5
1600	1552	7.2	1718	7.9	1863	8.6	1994	9.2	2114	9.7
1700	1627	7.5	1787	8.2	1929	8.9	2057	9.5	_	_
1800	1704	7.9	1857	8.6	1995	9.2	2121	9.8	_	_
1900	1781	8.2	1929	8.9	2063	9.5	_	_	_	_
2000	1859	8.6	2001	9.2	2132	9.8	_	_	_	_

			/	AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)	_	
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	2011	9.3	2126	9.8	_	_	_	_	_	_
1300	2061	9.5	_	_	_	_	_	_	_	_
1400	2114	9.7	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_
1600	_	_	_	_	_	_	_	_	_	_
1700	_	_	_	_	_	_	_	_	_	_
1800	_	_	_	_	_	_	_	_	_	_
1900	_	_	_	_	_	_	_	_	_	_
2000					_	_	_	_	_	_

Medium Static 1262-2170 rpm

48GCGJ05 — Three Phase Ultra Low NOx — High Static — 4 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1262	4.7	1452	5.5	1614	6.1	1757	6.6	1888	71
1300	1333	5.0	1516	5.7	1674	6.3	1813	6.8	1942	7.3
1400	1405	5.3	1583	6.0	1735	6.5	1872	7.0	1997	7.5
1500	1478	5.6	1650	6.2	1798	6.8	1932	7.3	2054	7.7
1600	1552	5.8	1718	6.5	1863	7.0	1993	7.5	2114	7.9
1700	1627	6.1	1787	6.7	1928	7.2	2057	7.7	2174	8.2
1800	1704	6.4	1857	7.0	1995	7.5	2121	8.0	2236	8.4
1900	1781	6.7	1929	7.3	2063	7.8	2185	8.2	2299	8.6
2000	1859	7.0	2001	7.5	2132	8.0	2252	8.5	2363	8.9

				VAILABLE	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1.	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	2011	7.6	2126	8.0	2236	8.4	2341	8.8	2442	9.2
1300	2061	7.7	2174	8.2	2281	8.6	2384	9.0	2482	9.3
1400	2114	7.9	2224	8.4	2329	8.8	2429	9.1	2526	9.5
1500	2169	8.2	2277	8.6	2379	8.9	2477	9.3	2572	9.7
1600	2226	8.4	2331	8.8	2432	9.1	2528	9.5	2621	9.9
1700	2284	8.6	2388	9.0	2486	9.3	2581	9.7	_	_
1800	2344	8.8	2446	9.2	2543	9.6	2623	9.9	_	_
1900	2405	9.0	2505	9.4	2600	9.8	_	_	_	_
2000	2467	9.3	2565	9.6	2659	10.0	_	_	_	

High Static 1262-2660 rpm



48GCGT06 — Single Phase Ultra Low NOx — 5 Ton Vertical Supply (rpm - bhp)

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	1388	0.28	1561	0.40	1712	0.53	1845	0.66	1967	0.80
1625	1473	0.34	1638	0.46	1785	0.60	1915	0.74	2034	0.89
1750	1561	0.40	1717	0.53	1859	0.68	1987	0.83	2104	0.98
1875	1650	0.47	1798	0.61	1935	0.77	2060	0.92	2174	1.08
2000	1741	0.56	1881	0.70	2013	0.86	2134	1.03	2247	1.20
2125	1832	0.65	1965	0.80	2092	0.97	2210	1.14	2320	1.32
2250	1925	0.75	2050	0.91	2172	1.08	2287	1.26	2394	1.45
2375	2018	0.87	2137	1.03	2254	1.21	2365	1.40	2470	1.59
2500	2112	1.00	2225	1.16	2337	1.35	2445	1.55	2547	1.75

				AVAILABLE I	EXTERNAL S	TATIC PRES	SURE (in. wo	J)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	2079	0.95	2185	1.10	2286	1.26	2381	1.43	2473	1.60
1625	2145	1.04	2249	1.20	2347	1.37	2441	1.54	2531	1.71
1750	2212	1.14	2314	1.31	2410	1.48	2502	1.65	2591	1.84
1875	2281	1.25	2381	1.43	2476	1.60	2566	1.78	2653	1.97
2000	2351	1.37	2450	1.55	2543	1.74	2632	1.93	_	_
2125	2423	1.50	2520	1.69	2612	1.88	_	_	_	_
2250	2495	1.64	2591	1.84	_	_	_	_	_	_
2375	2569	1.79	_	_	_	_	_	_	_	_
2500	2644	1.95	_	_	_		_	_	_	_

Standard Static 1388-2150 rpm, 1.06 Max bhp

Medium Static 1388-2390 rpm, 1.44 Max bhp

High Static 1388-2660 rpm, 1.96 Max bhp

48GCGT06 — Single Phase Ultra Low NOx — Standard Static — 5 Ton Vertical Supply (rpm - vdc)

			, ,	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1387	6.5	1561	7.3	1711	8.0	1845	8.6	1966	9.1
1625	1473	6.9	1638	7.6	1784	8.3	1914	8.9	2034	9.5
1750	1560	7.3	1717	8.0	1859	8.6	1986	9.2	2103	9.8
1875	1650	7.7	1798	8.4	1935	9.0	2059	9.6	_	_
2000	1741	8.1	1881	8.7	2012	9.4	2134	9.9	_	_
2125	1832	8.5	1965	9.1	2091	9.7	_	_	_	_
2250	1925	9.0	2050	9.5	_	_	_	_	_	_
2375	2018	9.4	2137	9.9	_	_	_	_	_	_
2500	2113	9.8	_	_	_	_	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2079	9.7	_	_	_	_	_	_	_	_
1625	2144	10.0	_	_	_	_	_	_	_	_
1750	_	_	_	_	_	_	_	_	_	_
1875	_	_	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_
2125	_	_	_	_	_	_	_	_	_	_
2250	_	_	_	_	_	_	_	_	_	_
2375	_	_	_	_	_	_	_	_	_	_
2500	_	_	_	_	_	_	_	_	_	_

Standard Static 1388-2150 rpm, 1.06 Max bhp



48GCGT06 — Single Phase Ultra Low NOx — Medium Static — 5 Ton Vertical Supply (rpm - vdc)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0	.4	0	.6	0	.8	1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1387	5.8	1561	6.5	1711	7.2	1845	7.7	1966	8.2
1625	1473	6.2	1638	6.9	1784	7.5	1914	8.0	2034	8.5
1750	1560	6.5	1717	7.2	1859	7.8	1986	8.3	2103	8.8
1875	1650	6.9	1798	7.5	1935	8.1	2059	8.6	2174	9.1
2000	1741	7.3	1881	7.9	2012	8.4	2134	8.9	2246	9.4
2125	1832	7.7	1965	8.2	2091	8.7	2209	9.2	2320	9.7
2250	1925	8.1	2050	8.6	2172	9.1	2286	9.6	_	_
2375	2018	8.4	2137	8.9	2254	9.4	2365	9.9	_	_
2500	2113	8.8	2225	9.3	2337	9.8	_	_	_	_

			/	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)	_	
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2079	8.7	2185	9.1	2285	9.6	2381	10.0	_	_
1625	2144	9.0	2248	9.4	2346	9.8	_	_	_	_
1750	2211	9.3	2313	9.7	_	_	_	_	_	_
1875	2281	9.5	2380	10.0	_	_	_	_	_	_
2000	2351	9.8	_	_	_	_	_	_	_	_
2125	_	_	_	_	_	_	_	_	_	_
2250	_	_	_	_	_	_	_	_	_	_
2375	_	_	_	_	_	_	_	_	_	_
2500	_	_	_	_	_	_	_	_	_	_

Medium Static 1388-2390 rpm, 1.44 Max bhp

48GCGT06 — Single Phase Ultra Low NOx — High Static — 5 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.4		0	.6	0	.8	1.	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1388	5.2	1561	5.9	1712	6.4	1845	6.9	1967	7.4
1625	1473	5.5	1638	6.2	1785	6.7	1915	7.2	2034	7.6
1750	1561	5.9	1717	6.5	1859	7.0	1987	7.5	2104	7.9
1875	1650	6.2	1798	6.8	1935	7.3	2060	7.7	2174	8.2
2000	1741	6.5	1881	7.1	2013	7.6	2134	8.0	2247	8.4
2125	1832	6.9	1965	7.4	2092	7.9	2210	8.3	2320	8.7
2250	1925	7.2	2050	7.7	2172	8.2	2287	8.6	2394	9.0
2375	2018	7.6	2137	8.0	2254	8.5	2365	8.9	2470	9.3
2500	2112	7.9	2225	8.4	2337	8.8	2445	9.2	2547	9.6

			-	VAILABLE	EXTERNAL S	TATIC PRES	SURE (in. wg	1)			
CFM	1.	.2	1	.4	1	.6	1	.8	2	2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	
1500	2079	7.8	2185	8.2	2286	8.6	2381	9.0	2473	9.3	
1625	2145	8.1	2249	8.5	2347	8.8	2441	9.2	2531	9.5	
1750	2212	8.3	2314	8.7	2410	9.1	2502	9.4	2591	9.7	
1875	2281	8.6	2381	9.0	2476	9.3	2566	9.6	2653	10.0	
2000	2351	8.8	2450	9.2	2543	9.6	2632	9.9	_	_	
2125	2423	9.1	2520	9.5	2612	9.8	_	_	_	_	
2250	2495	9.4	2591	9.7	_	_	_	_	_	_	
2375	2569	9.7	_	_	_	_	_	_	_	_	
2500	2644	9.9	_	_	_	_	_	_	_	_	

High Static 1388-2660 rpm, 1.96 Max bhp



48GCGJ06 — Three Phase Ultra Low NOx — 5 Ton Vertical Supply (rpm - bhp)

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	1387	0.28	1560	0.40	1711	0.53	1845	0.66	1966	0.80
1625	1473	0.34	1638	0.46	1784	0.60	1915	0.74	2034	0.89
1750	1561	0.40	1717	0.53	1858	0.68	1986	0.83	2103	0.98
1875	1650	0.47	1798	0.61	1934	0.76	2059	0.92	2174	1.08
2000	1741	0.56	1881	0.70	2012	0.86	2133	1.02	2246	1.20
2125	1832	0.65	1965	0.80	2091	0.97	2209	1.14	2319	1.32
2250	1925	0.75	2050	0.91	2172	1.08	2286	1.26	2394	1.45
2375	2018	0.87	2137	1.03	2254	1.21	2364	1.40	2469	1.59
2500	2113	1.00	2225	1.16	2337	1.35	2444	1.54	2547	1.75

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	2079	0.95	2185	1.10	2285	1.26	2381	1.43	2473	1.60
1625	2144	1.04	2248	1.20	2346	1.36	2440	1.53	2530	1.71
1750	2212	1.14	2313	1.31	2410	1.48	2502	1.65	2590	1.83
1875	2281	1.25	2381	1.43	2475	1.60	2566	1.78	2653	1.97
2000	2351	1.37	2449	1.55	2543	1.74	2632	1.93	2717	2.12
2125	2422	1.50	2519	1.69	2611	1.88	2699	2.08	2783	2.28
2250	2495	1.64	2590	1.84	2681	2.04	2767	2.24	_	_
2375	2569	1.79	2663	2.00	2752	2.20	_	_	_	_
2500	2643	1.95	2736	2.17	2824	2.38	_	_	_	_

Standard Static 1387-2150 rpm, 1.06 Max bhp

Medium Static 1387-2390 rpm, 1.44 Max bhp

High Static 1387-2836 rpm, 2.43 Max bhp

48GCGJ06 — Three Phase Ultra Low NOx — Standard Static — 5 Ton Vertical Supply (rpm - vdc)

			, ,	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1387	6.5	1560	7.3	1711	8.0	1845	8.6	1966	9.1
1625	1473	6.9	1638	7.6	1784	8.3	1915	8.9	2034	9.5
1750	1561	7.3	1717	8.0	1858	8.6	1986	9.2	2103	9.8
1875	1650	7.7	1798	8.4	1934	9.0	2059	9.6	_	_
2000	1741	8.1	1881	8.7	2012	9.4	2133	9.9	_	_
2125	1832	8.5	1965	9.1	2091	9.7	_	_	_	_
2250	1925	9.0	2050	9.5	_	_	_	_	_	_
2375	2018	9.4	2137	9.9	_	_	_	_	_	_
2500	2113	9.8	_	_	_	_	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2079	9.7	_	_	_	_	_	_	_	_
1625	2144	10.0	_	_	_	_	_	_	_	_
1750	_	_	_	_	_	_	_	_	_	_
1875	_	_	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_
2125	_	_	_	_	_	_	_	_	_	_
2250	_	_	_	_	_	_	_	_	_	_
2375	_	_	_	_	_	_	_	_	_	_
2500	_	_	_	_	_	_	_	_	_	_

Standard Static 1387-2150 rpm



48GCGJ06 — Three Phase Ultra Low NOx — Medium Static — 5 Ton Vertical Supply (rpm - vdc)

			-	AVAILABLE I	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1387	5.8	1560	6.5	1711	7.2	1845	7.7	1966	8.2
1625	1473	6.2	1638	6.9	1784	7.5	1915	8.0	2034	8.5
1750	1561	6.5	1717	7.2	1858	7.8	1986	8.3	2103	8.8
1875	1650	6.9	1798	7.5	1934	8.1	2059	8.6	2174	9.1
2000	1741	7.3	1881	7.9	2012	8.4	2133	8.9	2246	9.4
2125	1832	7.7	1965	8.2	2091	8.7	2209	9.2	2319	9.7
2250	1925	8.1	2050	8.6	2172	9.1	2286	9.6	_	_
2375	2018	8.4	2137	8.9	2254	9.4	2364	9.9	_	_
2500	2113	8.8	2225	9.3	2337	9.8	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)	_	
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2079	8.7	2185	9.1	2285	9.6	2381	10.0	_	_
1625	2144	9.0	2248	9.4	2346	9.8	_	_	_	_
1750	2212	9.3	2313	9.7	_	_	_	_	_	_
1875	2281	9.5	2381	10.0	_	_	_	_	_	_
2000	2351	9.8	_	_	_	_	_	_	_	_
2125	_	_	_	_	_	_	_	_	_	_
2250	_	_	_	_	_	_	_	_	_	_
2375	_	_	_	_	_	_	_	_	_	_
2500	_	_	_	_	_	_	_	_	_	_

Medium Static 1387-2390 rpm

48GCGJ06 — Three Phase Ultra Low NOx — High Static — 5 Ton Vertical Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1387	4.9	1560	5.5	1711	6.0	1845	6.5	1966	6.9
1625	1473	5.2	1638	5.8	1784	6.3	1915	6.8	2034	7.2
1750	1561	5.5	1717	6.1	1858	6.6	1986	7.0	2103	7.4
1875	1650	5.8	1798	6.3	1934	6.8	2059	7.3	2174	7.7
2000	1741	6.1	1881	6.6	2012	7.1	2133	7.5	2246	7.9
2125	1832	6.5	1965	6.9	2091	7.4	2209	7.8	2319	8.2
2250	1925	6.8	2050	7.2	2172	7.7	2286	8.1	2394	8.4
2375	2018	7.1	2137	7.5	2254	7.9	2364	8.3	2469	8.7
2500	2113	7.5	2225	7.8	2337	8.2	2444	8.6	2547	9.0

				VAILABLE	EXTERNAL S	TATIC PRES	SURE (in. wo	1)		
CFM	1.	.2	1.4		1	.6	1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2079	7.3	2185	7.7	2285	8.1	2381	8.4	2473	8.7
1625	2144	7.6	2248	7.9	2346	8.3	2440	8.6	2530	8.9
1750	2212	7.8	2313	8.2	2410	8.5	2502	8.8	2590	9.1
1875	2281	8.0	2381	8.4	2475	8.7	2566	9.0	2653	9.4
2000	2351	8.3	2449	8.6	2543	9.0	2632	9.3	2717	9.6
2125	2422	8.5	2519	8.9	2611	9.2	2699	9.5	2783	9.8
2250	2495	8.8	2590	9.1	2681	9.5	2767	9.8	_	_
2375	2569	9.1	2663	9.4	2752	9.7	_	_	_	_
2500	2643	9.3	2736	9.6	2824	10.0	_	_	_	_

High Static 1387-2836 rpm



48GCGT04 — Single Phase Ultra Low NOx — 3 Ton Horizontal Supply (rpm - bhp)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
900	1097	0.09	1331	0.16	1524	0.25	1692	0.34	1842	0.44
975	1146	0.10	1373	0.18	1562	0.27	1728	0.36	1877	0.46
1050	1197	0.12	1416	0.20	1601	0.29	1765	0.38	1912	0.49
1125	1249	0.14	1460	0.22	1642	0.31	1803	0.41	1949	0.52
1200	1303	0.15	1506	0.24	1684	0.33	1842	0.44	1986	0.55
1275	1359	0.17	1553	0.26	1727	0.36	1883	0.46	2025	0.58
1350	1415	0.20	1602	0.29	1771	0.39	1925	0.50	2064	0.61
1425	1472	0.22	1652	0.31	1817	0.42	1967	0.53	2105	0.65
1500	1530	0.25	1703	0.34	1863	0.45	2010	0.57	2147	0.69

			-	AVAILABLE I	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
900	1980	0.54	2107	0.65	2225	0.77	2337	0.89	2443	1.02
975	2013	0.57	2139	0.68	2258	0.80	2369	0.93	2475	1.06
1050	2048	0.60	2173	0.71	2291	0.84	2401	0.96	_	_
1125	2083	0.63	2207	0.75	2324	0.87	2435	1.01	_	_
1200	2119	0.66	2242	0.78	2359	0.91	2468	1.05	_	_
1275	2156	0.70	2278	0.82	2394	0.96	_	_	_	_
1350	2194	0.74	2315	0.86	2429	1.00	_	_	_	_
1425	2233	0.78	2353	0.91	2466	1.04	_	_	_	_
1500	2273	0.82	2391	0.95	_	_	_	_	_	_

Standard Static 1097-1890 rpm, 0.44 Max bhp

Medium Static 1097-2190 rpm, 0.71 Max bhp

High Static 1097-2490 rpm, 1.07 Max bhp

48GCGT04 — Single Phase Ultra Low NOx — Standard Static — 3 Ton Horizontal Supply (rpm - vdc)

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1097	5.8	1331	7.0	1524	8.1	1692	9.0	1842	9.7
975	1146	6.1	1373	7.3	1562	8.3	1728	9.1	_	_
1050	1197	6.3	1416	7.5	1601	8.5	1765	9.3	_	_
1125	1249	6.6	1460	7.7	1642	8.7	1803	9.5	_	_
1200	1303	6.9	1506	8.0	1684	8.9	1842	9.7	_	_
1275	1359	7.2	1553	8.2	1727	9.1	_	_	_	_
1350	1415	7.5	1602	8.5	1771	9.4	_	_	_	_
1425	1472	7.8	1652	8.7	1817	9.6	_	_	_	_
1500	1530	8.1	1703	9.0	_	_	_	_	_	_

				AVAILABLE	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	_	_	_	_	_	_	_	_	_	_
975	_	_	_	_	_	_	_	_	_	_
1050	_	_	_	_	_	_	_	_	_	_
1125	_	_	_	_	_	_	_	_	_	_
1200	_	_	_	_	_	_	_	_	_	_
1275	_	_	_	_	_	_	_	_	_	_
1350	_	_	_	_	_	_	_	_	_	_
1425	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_

Standard Static 1097-1890 rpm



48GCGT04 — Single Phase Ultra Low NOx — Medium Static — 3 Ton Horizontal Supply (rpm - vdc)

			-	AVAILABLE	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1097	5.0	1331	6.1	1524	7.0	1692	7.7	1842	8.4
975	1146	5.2	1373	6.3	1562	7.1	1728	7.9	1877	8.6
1050	1197	5.5	1416	6.5	1601	7.3	1765	8.1	1912	8.7
1125	1249	5.7	1460	6.7	1642	7.5	1803	8.2	1949	8.9
1200	1303	5.9	1506	6.9	1684	7.7	1842	8.4	1986	9.1
1275	1359	6.2	1553	7.1	1727	7.9	1883	8.6	2025	9.2
1350	1415	6.5	1602	7.3	1771	8.1	1925	8.8	2064	9.4
1425	1472	6.7	1652	7.5	1817	8.3	1967	9.0	2105	9.6
1500	1530	7.0	1703	7.8	1863	8.5	2010	9.2	2147	9.8

			/	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1980	9.0	2107	9.6	_	_	_	_	_	_
975	2013	9.2	2139	9.8	_	_	_	_	_	_
1050	2048	9.4	2173	9.9	_	_	_	_	_	_
1125	2083	9.5	_	_	_	_	_	_	_	_
1200	2119	9.7	_	_	_	_	_	_	_	_
1275	2156	9.8	_	_	_	_	_	_	_	_
1350	_	_	_	_	_	_	_	_	_	_
1425	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_

Medium Static 1097-2190 rpm

48GCGT04 — Single Phase Ultra Low NOx — High Static — 3 Ton Horizontal Supply (rpm - vdc)

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0.	.4	0	.6	0	.8	1.	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1097	4.4	1331	5.3	1524	6.1	1692	6.8	1842	7.4
975	1146	4.6	1373	5.5	1562	6.3	1728	6.9	1877	7.5
1050	1197	4.8	1416	5.7	1601	6.4	1765	7.1	1912	7.7
1125	1249	5.0	1460	5.9	1642	6.6	1803	7.2	1949	7.8
1200	1303	5.2	1506	6.0	1684	6.8	1842	7.4	1986	8.0
1275	1359	5.5	1553	6.2	1727	6.9	1883	7.6	2025	8.1
1350	1415	5.7	1602	6.4	1771	7.1	1925	7.7	2064	8.3
1425	1472	5.9	1652	6.6	1817	7.3	1967	7.9	2105	8.5
1500	1530	6.1	1703	6.8	1863	7.5	2010	8.1	2147	8.6

			-	VAILABLE	EXTERNAL S	TATIC PRES	SURE (in. wg	ı)		
CFM	1.	.2	1	.4	1	.6	1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1980	8.0	2107	8.5	2225	8.9	2337	9.4	2443	9.8
975	2013	8.1	2139	8.6	2258	9.1	2369	9.5	2475	9.9
1050	2048	8.2	2173	8.7	2291	9.2	2401	9.6	_	_
1125	2083	8.4	2207	8.9	2324	9.3	2435	9.8	_	_
1200	2119	8.5	2242	9.0	2359	9.5	2468	9.9	_	_
1275	2156	8.7	2278	9.1	2394	9.6	_	_	_	_
1350	2194	8.8	2315	9.3	2429	9.8	_	_	_	_
1425	2233	9.0	2353	9.4	2466	9.9	_	_	_	_
1500	2273	9.1	2391	9.6	_	_	_	_	_	_

High Static 1097-2490 rpm



48GCGJ04 — Three Phase Ultra Low NOx — 3 Ton Horizontal Supply (rpm - bhp)

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
900	1097	0.09	1331	0.16	1524	0.25	1692	0.34	1842	0.44
975	1146	0.10	1373	0.18	1562	0.27	1728	0.36	1877	0.46
1050	1197	0.12	1416	0.20	1601	0.29	1765	0.38	1912	0.49
1125	1249	0.14	1460	0.22	1642	0.31	1803	0.41	1949	0.52
1200	1303	0.15	1506	0.24	1684	0.33	1842	0.44	1986	0.55
1275	1359	0.17	1553	0.26	1727	0.36	1883	0.46	2025	0.58
1350	1415	0.20	1602	0.29	1771	0.39	1925	0.50	2064	0.61
1425	1472	0.22	1652	0.31	1817	0.42	1967	0.53	2105	0.65
1500	1530	0.25	1703	0.34	1863	0.45	2010	0.57	2147	0.69

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
900	1980	0.54	2107	0.65	2225	0.77	2337	0.89	2443	1.02
975	2013	0.57	2139	0.68	2258	0.80	2369	0.93	2475	1.06
1050	2048	0.60	2173	0.71	2291	0.84	2401	0.96	_	_
1125	2083	0.63	2207	0.75	2324	0.87	2435	1.01	_	_
1200	2119	0.66	2242	0.78	2359	0.91	2468	1.05	_	_
1275	2156	0.70	2278	0.82	2394	0.96	_	_	_	_
1350	2194	0.74	2315	0.86	2429	1.00	_	_	_	_
1425	2233	0.78	2353	0.91	2466	1.04	_	_	_	_
1500	2273	0.82	2391	0.95	_	_	_	_	_	_

Standard Static 1097-1890 rpm, 0.44 Max bhp

Medium Static 1097-2190 rpm, 0.71 Max bhp

High Static 1097-2490 rpm, 1.07 Max bhp

48GCGJ04 — Three Phase Ultra Low NOx — Standard Static — 3 Ton Horizontal Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1097	5.8	1331	7.0	1524	8.1	1692	9.0	1842	9.7
975	1146	6.1	1373	7.3	1562	8.3	1728	9.1	_	_
1050	1197	6.3	1416	7.5	1601	8.5	1765	9.3	_	_
1125	1249	6.6	1460	7.7	1642	8.7	1803	9.5	_	_
1200	1303	6.9	1506	8.0	1684	8.9	1842	9.7	_	_
1275	1359	7.2	1553	8.2	1727	9.1	_	_	_	_
1350	1415	7.5	1602	8.5	1771	9.4	_	_	_	_
1425	1472	7.8	1652	8.7	1817	9.6	_	_	_	_
1500	1530	8.1	1703	9.0	_	_	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wo	3)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	_	_	_	_	_	_	_	_	_	_
975	_	_	_	_	_	_	_	_	_	_
1050	_	_	_	_	_	_	_	_	_	_
1125	_	_	_	_	_	_	_	_	_	_
1200	_	_	_	_	_	_	_	_	_	_
1275	_	_	_	_	_	_	_	_	_	_
1350	_	_	_	_	_	_	_	_	_	_
1425	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_

Standard Static 1097-1890 rpm



48GCGJ04 — Three Phase Ultra Low NOx — Medium Static — 3 Ton Horizontal Supply (rpm - vdc)

			-	AVAILABLE	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1097	5.0	1331	6.1	1524	7.0	1692	7.7	1842	8.4
975	1146	5.2	1373	6.3	1562	7.1	1728	7.9	1877	8.6
1050	1197	5.5	1416	6.5	1601	7.3	1765	8.1	1912	8.7
1125	1249	5.7	1460	6.7	1642	7.5	1803	8.2	1949	8.9
1200	1303	5.9	1506	6.9	1684	7.7	1842	8.4	1986	9.1
1275	1359	6.2	1553	7.1	1727	7.9	1883	8.6	2025	9.2
1350	1415	6.5	1602	7.3	1771	8.1	1925	8.8	2064	9.4
1425	1472	6.7	1652	7.5	1817	8.3	1967	9.0	2105	9.6
1500	1530	7.0	1703	7.8	1863	8.5	2010	9.2	2147	9.8

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1980	9.0	2107	9.6	_	_	_	_	_	_
975	2013	9.2	2139	9.8	_	_	_	_	_	_
1050	2048	9.4	2173	9.9	_	_	_	_	_	_
1125	2083	9.5	_	_	_	_	_	_	_	_
1200	2119	9.7	_	_	_	_	_	_	_	_
1275	2156	9.8	_	_	_	_	_	_	_	_
1350	_	_	_	_	_	_	_	_	_	_
1425	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_

48GCGJ04 — Three Phase Ultra Low NOx — High Static — 3 Ton Horizontal Supply (rpm - vdc)

			A	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)			
CFM	0	.2	0.	.4	0	.6	0	.8	1.	1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	
900	1097	4.4	1331	5.3	1524	6.1	1692	6.8	1842	7.4	
975	1146	4.6	1373	5.5	1562	6.3	1728	6.9	1877	7.5	
1050	1197	4.8	1416	5.7	1601	6.4	1765	7.1	1912	7.7	
1125	1249	5.0	1460	5.9	1642	6.6	1803	7.2	1949	7.8	
1200	1303	5.2	1506	6.0	1684	6.8	1842	7.4	1986	8.0	
1275	1359	5.5	1553	6.2	1727	6.9	1883	7.6	2025	8.1	
1350	1415	5.7	1602	6.4	1771	7.1	1925	7.7	2064	8.3	
1425	1472	5.9	1652	6.6	1817	7.3	1967	7.9	2105	8.5	
1500	1530	6.1	1703	6.8	1863	7.5	2010	8.1	2147	8.6	

			Į.	VAILABLE I	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1.	.2	1.	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
900	1980	8.0	2107	8.5	2225	8.9	2337	9.4	2443	9.8
975	2013	8.1	2139	8.6	2258	9.1	2369	9.5	2475	9.9
1050	2048	8.2	2173	8.7	2291	9.2	2401	9.6	_	_
1125	2083	8.4	2207	8.9	2324	9.3	2435	9.8	_	_
1200	2119	8.5	2242	9.0	2359	9.5	2468	9.9	_	_
1275	2156	8.7	2278	9.1	2394	9.6	_	_	_	_
1350	2194	8.8	2315	9.3	2429	9.8	_	_	_	_
1425	2233	9.0	2353	9.4	2466	9.9	_	_	_	_
1500	2273	9.1	2391	9.6	_	_	_	_	_	_

High Static 1097-2490 rpm

Medium Static 1097-2190 rpm



48GCGT05 — Single Phase Ultra Low NOx — 4 Ton Horizontal Supply (rpm - bhp)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1200	1217	0.19	1411	0.30	1576	0.42	1722	0.55	1855	0.68
1300	1283	0.23	1470	0.34	1631	0.46	1774	0.60	1904	0.74
1400	1351	0.26	1531	0.38	1688	0.51	1827	0.65	1955	0.80
1500	1420	0.31	1593	0.43	1746	0.57	1883	0.71	2008	0.86
1600	1491	0.35	1657	0.48	1805	0.63	1939	0.78	2062	0.93
1700	1563	0.41	1722	0.54	1866	0.69	1997	0.85	2118	1.01
1800	1635	0.46	1789	0.61	1928	0.76	2056	0.92	2174	1.09
1900	1709	0.53	1856	0.68	1991	0.84	2116	1.01	2232	1.18
2000	1784	0.60	1925	0.76	2056	0.92	2178	1.10	2291	1.28

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)	_	
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1200	1978	0.83	2094	0.98	2204	1.15	2308	1.32	2409	1.50
1300	2025	0.89	2138	1.05	2246	1.21	2349	1.39	2447	1.57
1400	2074	0.95	2185	1.11	2291	1.28	2391	1.46	_	_
1500	2124	1.02	2234	1.19	2338	1.36	2436	1.54	_	_
1600	2176	1.10	2284	1.27	2386	1.45	_	_	_	_
1700	2230	1.18	2336	1.36	2436	1.54	_	_	_	_
1800	2285	1.27	2389	1.45	_	_	_	_	_	_
1900	2341	1.36	2444	1.55	_	_	_	_	_	_
2000	2398	1.46	_	_	_	_	_	_	_	_

Standard Static 1217-1900 rpm, 0.72 Max bhp

Medium Static 1217-2170 rpm, 1.06 Max bhp

High Static 1217-2460 rpm, 1.53, Max bhp

48GCGT05 — Single Phase Ultra Low NOx — Standard Static — 4 Ton Horizontal Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1217	6.4	1411	7.4	1576	8.3	1722	9.1	1855	9.8
1300	1283	6.8	1470	7.7	1631	8.6	1774	9.3	_	_
1400	1351	7.1	1531	8.1	1688	8.9	1827	9.6	_	_
1500	1420	7.5	1593	8.4	1746	9.2	1883	9.9	_	_
1600	1491	7.8	1657	8.7	1805	9.5	_	_	_	_
1700	1563	8.2	1722	9.1	1866	9.8	_	_	_	_
1800	1635	8.6	1789	9.4	_	_	_	_	_	_
1900	1709	9.0	1856	9.8	_	_	_	_	_	_
2000	1784	9.4	_	_	_	_	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wo	1)		
CFM	1	.2		.4		.6		.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	_	_	_	_	_	_	_	_	_	_
1300	_		_	_	_	_	_	_	_	_
1400	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_
1600	_	_	_	_	_	_	_	_	_	_
1700	_	_	_	_	_	_	_	_	_	_
1800	_	_	_	_	_	_	_	_	_	_
1900	_	_	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_

Standard Static 1217-1990 rpm



48GCGT05 — Single Phase Ultra Low NOx — Medium Static — 4 Ton Horizontal Supply (rpm - vdc)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.4		0	.6	0	.8	1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1217	5.6	1411	6.5	1576	7.3	1722	7.9	1855	8.5
1300	1283	5.9	1470	6.8	1631	7.5	1774	8.2	1904	8.8
1400	1351	6.2	1531	7.1	1688	7.8	1827	8.4	1955	9.0
1500	1420	6.5	1593	7.3	1746	8.0	1883	8.7	2008	9.3
1600	1491	6.9	1657	7.6	1805	8.3	1939	8.9	2062	9.5
1700	1563	7.2	1722	7.9	1866	8.6	1997	9.2	2118	9.8
1800	1635	7.5	1789	8.2	1928	8.9	2056	9.5	_	_
1900	1709	7.9	1856	8.6	1991	9.2	2116	9.8	_	_
2000	1784	8.2	1925	8.9	2056	9.5	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1978	9.1	2094	9.6	_	_	_	_	_	_
1300	2025	9.3	2138	9.9	_	_	_	_	_	_
1400	2074	9.6	_	_	_	_	_	_	_	_
1500	2124	9.8	_	_	_	_	_	_	_	_
1600	_	_	_	_	_	_	_	_	_	_
1700	_	_	_	_	_	_	_	_	_	_
1800	_	_	_	_	_	_	_	_	_	_
1900	_	_	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_

Medium Static 1217-2170 rpm, 1.06 Max bhp

48GCGT05 — Single Phase Ultra Low NOx — High Static — 4 Ton Horizontal Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.4		0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1217	4.9	1411	5.7	1576	6.4	1722	7.0	1855	7.5
1300	1283	5.2	1470	6.0	1631	6.6	1774	7.2	1904	7.7
1400	1351	5.5	1531	6.2	1688	6.9	1827	7.4	1955	7.9
1500	1420	5.8	1593	6.5	1746	7.1	1883	7.7	2008	8.2
1600	1491	6.1	1657	6.7	1805	7.3	1939	7.9	2062	8.4
1700	1563	6.4	1722	7.0	1866	7.6	1997	8.1	2118	8.6
1800	1635	6.6	1789	7.3	1928	7.8	2056	8.4	2174	8.8
1900	1709	6.9	1856	7.5	1991	8.1	2116	8.6	2232	9.1
2000	1784	7.3	1925	7.8	2056	8.4	2178	8.9	2291	9.3

			A	VAILABLE	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1.	.2	1.4		1	.6	1	.8	2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1978	8.0	2094	8.5	2204	9.0	2308	9.4	2409	9.8
1300	2025	8.2	2138	8.7	2246	9.1	2349	9.5	2447	9.9
1400	2074	8.4	2185	8.9	2291	9.3	2391	9.7	_	_
1500	2124	8.6	2234	9.1	2338	9.5	2436	9.9	_	_
1600	2176	8.8	2284	9.3	2386	9.7	_	_		_
1700	2230	9.1	2336	9.5	2436	9.9	_	_	_	_
1800	2285	9.3	2389	9.7	_	_	_	_	_	_
1900	2341	9.5	2444	9.9	_	_	_	_	_	_
2000	2398	9.7	_	_	_	_	_	_	_	_

High Static 1217-2460 rpm1.53, Max bhp



48GCGJ05 — Three Phase Ultra Low NOx — 4 Ton Horizontal Supply (rpm - bhp)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1200	1216	0.19	1411	0.30	1576	0.42	1722	0.55	1855	0.68
1300	1283	0.23	1470	0.34	1631	0.46	1774	0.60	1904	0.74
1400	1351	0.26	1531	0.38	1687	0.51	1827	0.65	1955	0.80
1500	1420	0.31	1593	0.43	1746	0.57	1882	0.71	2008	0.86
1600	1491	0.35	1657	0.48	1806	0.63	1939	0.78	2062	0.93
1700	1562	0.41	1722	0.54	1866	0.69	1998	0.85	2117	1.01
1800	1636	0.47	1788	0.61	1928	0.76	2056	0.92	2175	1.09
1900	1710	0.53	1856	0.68	1991	0.84	2117	1.01	2233	1.18
2000	1784	0.60	1924	0.76	2055	0.92	2178	1.10	2292	1.28

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1200	1978	0.83	2094	0.98	2204	1.15	2308	1.32	2409	1.50
1300	2025	0.89	2138	1.05	2246	1.21	2349	1.39	2447	1.57
1400	2073	0.95	2185	1.11	2291	1.28	2392	1.46	2488	1.64
1500	2124	1.02	2233	1.19	2338	1.36	2437	1.54	2532	1.73
1600	2176	1.10	2284	1.27	2386	1.45	2483	1.63	2577	1.82
1700	2230	1.18	2336	1.36	2436	1.54	2532	1.73	2624	1.92
1800	2285	1.27	2389	1.45	2488	1.64	2582	1.83	_	_
1900	2341	1.36	2443	1.55	2541	1.74	2634	1.94	_	_
2000	2399	1.46	2499	1.66	2595	1.85	_		_	_

Standard Static 1216-1900 rpm, 0.72 Max bhp

Medium Static 1216-2170 rpm, 1.06 Max bhp

High Static 1216-2660 rpm, 1.96 Max bhp

48GCGJ05 — Three Phase Ultra Low NOx — Standard Static — 4 Ton Horizontal Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.	.2	0.4		0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1216	6.4	1411	7.4	1576	8.3	1722	9.1	1855	9.8
1300	1283	6.8	1470	7.7	1631	8.6	1774	9.3	_	_
1400	1351	7.1	1531	8.1	1687	8.9	1827	9.6	_	_
1500	1420	7.5	1593	8.4	1746	9.2	1882	9.9	_	_
1600	1491	7.8	1657	8.7	1806	9.5	_	_	_	_
1700	1562	8.2	1722	9.1	1866	9.8	_	_	_	_
1800	1636	8.6	1788	9.4	_	_	_	_	_	_
1900	1710	9.0	1856	9.8	_	_	_	_	_	_
2000	1784	9.4	_	_	_	_	_	_	_	_

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	1	.2		.4		.6		.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200		_	_	_	_	_	_		_	_
1300		_	_	_	_	_	_		_	_
1400	_	_	_	_	_	_	_	_	_	_
1500	_	_	_	_	_	_	_	_	_	_
1600	_	_	_	_	_	_	_	_	_	_
1700	_	_	_	_	_	_	_	_	_	_
1800	_	_	_	_	_	_	_	_	_	_
1900		_	_	_	_	_	_		_	_
2000	_	_	_	_	_	_	_	_	_	_

Standard Static 1216-1900 rpm



48GCGJ05 — Three Phase Ultra Low NOx — Medium Static — 4 Ton Horizontal Supply (rpm - vdc)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.4		0	.6	0	.8	1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1216	5.6	1411	6.5	1576	7.3	1722	7.9	1855	8.5
1300	1283	5.9	1470	6.8	1631	7.5	1774	8.2	1904	8.8
1400	1351	6.2	1531	7.1	1687	7.8	1827	8.4	1955	9.0
1500	1420	6.5	1593	7.3	1746	8.0	1882	8.7	2008	9.3
1600	1491	6.9	1657	7.6	1806	8.3	1939	8.9	2062	9.5
1700	1562	7.2	1722	7.9	1866	8.6	1998	9.2	2117	9.8
1800	1636	7.5	1788	8.2	1928	8.9	2056	9.5	_	_
1900	1710	7.9	1856	8.6	1991	9.2	2117	9.8	_	_
2000	1784	8.2	1924	8.9	2055	9.5	_	_	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1978	9.1	2094	9.6	_	_	_	_	_	_
1300	2025	9.3	2138	9.9	_	_	_	_	_	_
1400	2073	9.6	_	_	_	_	_	_	_	_
1500	2124	9.8	_	_	_	_	_	_	_	_
1600	_	_	_	_	_	_	_	_	_	_
1700	_	_	_	_	_	_	_	_	_	_
1800	_	_	_	_	_	_	_	_	_	_
1900	_	_	_	_	_	_	_	_	_	_
2000	_	_		_	_	_	_	_	_	_

Medium Static 1216-2170 rpm

48GCGJ05 — Three Phase Ultra Low NOx — High Static — 4 Ton Horizontal Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1216	4.6	1411	5.3	1576	5.9	1722	6.5	1855	7.0
1300	1283	4.8	1470	5.5	1631	6.1	1774	6.7	1904	7.2
1400	1351	5.1	1531	5.8	1687	6.3	1827	6.9	1955	7.3
1500	1420	5.3	1593	6.0	1746	6.6	1882	7.1	2008	7.5
1600	1491	5.6	1657	6.2	1806	6.8	1939	7.3	2062	7.8
1700	1562	5.9	1722	6.5	1866	7.0	1998	7.5	2117	8.0
1800	1636	6.2	1788	6.7	1928	7.2	2056	7.7	2175	8.2
1900	1710	6.4	1856	7.0	1991	7.5	2117	8.0	2233	8.4
2000	1784	6.7	1924	7.2	2055	7.7	2178	8.2	2292	8.6

			-	VAILABLE	EXTERNAL S					
CFM	1	.2	1.4		1	.6	1.8		2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1200	1978	7.4	2094	7.9	2204	8.3	2308	8.7	2409	9.1
1300	2025	7.6	2138	8.0	2246	8.4	2349	8.8	2447	9.2
1400	2073	7.8	2185	8.2	2291	8.6	2392	9.0	2488	9.4
1500	2124	8.0	2233	8.4	2338	8.8	2437	9.2	2532	9.5
1600	2176	8.2	2284	8.6	2386	9.0	2483	9.3	2577	9.7
1700	2230	8.4	2336	8.8	2436	9.2	2532	9.5	2624	9.9
1800	2285	8.6	2389	9.0	2488	9.4	2582	9.7	_	_
1900	2341	8.8	2443	9.2	2541	9.6	2634	9.9	_	_
2000	2399	9.0	2499	9.4	2595	9.8	_	_	_	_

High Static 1216-2660 rpm



48GCGT06 — Single Phase Ultra Low NOx — 5 Ton Horizontal Supply (rpm - bhp)

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0.	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	1335	0.25	1508	0.36	1661	0.49	1797	0.62	1921	0.75
1625	1418	0.30	1580	0.42	1727	0.55	1861	0.68	1983	0.83
1750	1502	0.36	1654	0.48	1797	0.61	1927	0.76	2046	0.91
1875	1589	0.42	1731	0.55	1867	0.69	1994	0.84	2111	0.99
2000	1676	0.50	1810	0.63	1940	0.77	2063	0.93	2177	1.09
2125	1765	0.58	1891	0.71	2015	0.86	2133	1.02	2245	1.19
2250	1855	0.67	1973	0.81	2091	0.96	2206	1.13	2314	1.31
2375	1946	0.78	2057	0.92	2169	1.07	2279	1.25	2385	1.43
2500	2038	0.89	2142	1.03	2249	1.20	2355	1.37	2457	1.56

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	2036	0.89	2143	1.04	2245	1.20	2342	1.36	2435	1.53
1625	2096	0.97	2201	1.13	2301	1.29	2396	1.46	2487	1.63
1750	2157	1.06	2261	1.22	2359	1.39	2453	1.56	2542	1.74
1875	2220	1.16	2322	1.32	2419	1.49	2511	1.67	2600	1.85
2000	2284	1.26	2385	1.43	2480	1.61	2571	1.79	2658	1.98
2125	2350	1.37	2449	1.55	2543	1.73	2632	1.92	_	_
2250	2417	1.49	2514	1.67	2607	1.87	_	_	_	_
2375	2485	1.62	2581	1.81	_	_	_	_	_	_
2500	2555	1.76	2648	1.95	_	_	_	_	_	_

Standard Static 1335-2150 rpm

Medium Static 1335-2390 rpm

High Static 1335-2660 rpm

48GCGT06 — Single Phase Ultra Low NOx — Standard Static — 5 Ton Horizontal Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1335	6.2	1507	7.0	1660	7.7	1796	8.4	1921	8.9
1625	1417	6.6	1580	7.3	1727	8.0	1860	8.7	1982	9.2
1750	1502	7.0	1654	7.7	1796	8.4	1926	9.0	2046	9.5
1875	1589	7.4	1731	8.1	1867	8.7	1993	9.3	2110	9.8
2000	1677	7.8	1810	8.4	1940	9.0	2062	9.6	_	_
2125	1765	8.2	1890	8.8	2015	9.4	2133	9.9	_	_
2250	1855	8.6	1972	9.2	2091	9.7	_	_	_	_
2375	1946	9.1	2057	9.6	_	_	_	_	_	_
2500	2038	9.5	2142	10.0	_	_	_	_	_	_

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2036	9.5	2143	10.0	_	_	_	_	_	_
1625	2095	9.7	_	_	_	_	_	_	_	_
1750	_	_	_	_	_	_	_	_	_	_
1875	_	_	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_
2125	_	_	_	_	_	_	_	_	_	_
2250	_	_	_	_	_	_	_	_	_	_
2375	_	_	_	_	_	_	_	_	_	_
2500	_	_	_	_	_	_	_	_	_	_

Standard Static 1335-2150 rpm



48GCGT06 — Single Phase Ultra Low NOx — Medium Static — 5 Ton Horizontal Supply (rpm - vdc)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.	.2	0	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1335	5.6	1507	6.3	1660	6.9	1796	7.5	1921	8.0
1625	1417	5.9	1580	6.6	1727	7.2	1860	7.8	1982	8.3
1750	1502	6.3	1654	6.9	1796	7.5	1926	8.1	2046	8.6
1875	1589	6.6	1731	7.2	1867	7.8	1993	8.3	2110	8.8
2000	1677	7.0	1810	7.6	1940	8.1	2062	8.6	2177	9.1
2125	1765	7.4	1890	7.9	2015	8.4	2133	8.9	2244	9.4
2250	1855	7.8	1972	8.3	2091	8.7	2206	9.2	2314	9.7
2375	1946	8.1	2057	8.6	2169	9.1	2279	9.5	2385	10.0
2500	2038	8.5	2142	9.0	2249	9.4	2355	9.9	_	_

				AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2036	8.5	2143	9.0	2245	9.4	2342	9.8	_	_
1625	2095	8.8	2201	9.2	2301	9.6	_	_	_	_
1750	2157	9.0	2261	9.5	2359	9.9	_	_	_	_
1875	2219	9.3	2322	9.7	_	_	_	_	_	_
2000	2284	9.6	2384	10.0	_	_	_	_	_	_
2125	2349	9.8	_	_	_	_	_	_	_	_
2250	_	_	_	_	_	_	_	_	_	_
2375	_	_	_	_	_	_	_	_	_	_
2500	_	_	_	_	_	_	_	_	_	_

Medium Static 1335-2390 rpm

48GCGT06 — Single Phase Ultra Low NOx — High Static — 5 Ton Horizontal Supply (rpm - vdc)

			-	VAILABLE I	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1335	5.0	1508	5.7	1661	6.2	1797	6.8	1921	7.2
1625	1418	5.3	1580	5.9	1727	6.5	1861	7.0	1983	7.5
1750	1502	5.6	1654	6.2	1797	6.8	1927	7.2	2046	7.7
1875	1589	6.0	1731	6.5	1867	7.0	1994	7.5	2111	7.9
2000	1676	6.3	1810	6.8	1940	7.3	2063	7.8	2177	8.2
2125	1765	6.6	1891	7.1	2015	7.6	2133	8.0	2245	8.4
2250	1855	7.0	1973	7.4	2091	7.9	2206	8.3	2314	8.7
2375	1946	7.3	2057	7.7	2169	8.2	2279	8.6	2385	9.0
2500	2038	7.7	2142	8.1	2249	8.5	2355	8.9	2457	9.2

			A	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wo	1)		
CFM	1.	.2	1.4		1	.6	1	.8	2.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2036	7.7	2143	8.1	2245	8.4	2342	8.8	2435	9.2
1625	2096	7.9	2201	8.3	2301	8.7	2396	9.0	2487	9.3
1750	2157	8.1	2261	8.5	2359	8.9	2453	9.2	2542	9.6
1875	2220	8.3	2322	8.7	2419	9.1	2511	9.4	2600	9.8
2000	2284	8.6	2385	9.0	2480	9.3	2571	9.7	2658	10.0
2125	2350	8.8	2449	9.2	2543	9.6	2632	9.9	_	_
2250	2417	9.1	2514	9.5	2607	9.8	_	_		_
2375	2485	9.3	2581	9.7	_	_	_	_	_	_
2500	2555	9.6	2648	10.0	_	_	_	_	_	_

High Static 1335-2660 rpm



48GCGJ06 — Three Phase Ultra Low NOx — 5 Ton Horizontal Supply (rpm - bhp)

			A	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	1335	0.25	1507	0.36	1660	0.49	1796	0.61	1921	0.75
1625	1418	0.30	1579	0.42	1727	0.55	1860	0.68	1982	0.82
1750	1502	0.36	1654	0.48	1797	0.61	1927	0.76	2046	0.91
1875	1589	0.42	1731	0.55	1867	0.69	1994	0.84	2111	0.99
2000	1676	0.50	1810	0.63	1940	0.77	2063	0.93	2177	1.09
2125	1765	0.58	1890	0.71	2015	0.86	2133	1.02	2245	1.19
2250	1855	0.67	1973	0.81	2091	0.96	2206	1.13	2314	1.31
2375	1946	0.78	2057	0.92	2169	1.07	2279	1.25	2385	1.43
2500	2038	0.89	2142	1.03	2249	1.20	2355	1.37	2457	1.56

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg)		
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp	rpm	bhp
1500	2036	0.89	2144	1.05	2245	1.20	2342	1.36	2435	1.53
1625	2095	0.97	2201	1.13	2301	1.29	2396	1.46	2487	1.63
1750	2157	1.06	2261	1.22	2359	1.39	2453	1.56	2543	1.74
1875	2219	1.15	2322	1.32	2419	1.49	2511	1.67	2599	1.85
2000	2284	1.26	2384	1.43	2480	1.61	2571	1.79	2658	1.98
2125	2350	1.37	2449	1.55	2542	1.73	2632	1.92	2718	2.12
2250	2417	1.49	2514	1.67	2607	1.87	2695	2.06	2779	2.26
2375	2485	1.62	2581	1.81	2672	2.01	2759	2.21	_	_
2500	2555	1.76	2648	1.95	2738	2.16	2824	2.37	_	

Standard Static 1335-2150 rpm, 1.06 Max bhp

Medium Static 1335-2390 rpm, 1.44 Max bhp

High Static 1335-2836 rpm, 2.43 Max bhp

48GCGJ06 — Three Phase Ultra Low NOx — Standard Static — 5 Ton Horizontal Supply (rpm - vdc)

			-	VAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0	.2	0.	.4	0	.6	0	.8	1	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1335	6.2	1507	7.0	1660	7.7	1796	8.4	1921	8.9
1625	1418	6.6	1579	7.3	1727	8.0	1860	8.7	1982	9.2
1750	1502	7.0	1654	7.7	1797	8.4	1927	9.0	2046	9.5
1875	1589	7.4	1731	8.1	1867	8.7	1994	9.3	2111	9.8
2000	1676	7.8	1810	8.4	1940	9.0	2063	9.6	_	_
2125	1765	8.2	1890	8.8	2015	9.4	2133	9.9	_	_
2250	1855	8.6	1973	9.2	2091	9.7	_	_	_	_
2375	1946	9.1	2057	9.6	_	_	_	_	_	_
2500	2038	9.5	2142	10.0	_	_	_	_	_	_

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	1.	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2036	9.5	2144	10.0	_	_	_	_	_	_
1625	2095	9.7	_	_	_	_	_	_	_	_
1750	_	_	_	_	_	_	_	_	_	_
1875	_	_	_	_	_	_	_	_	_	_
2000	_	_	_	_	_	_	_	_	_	_
2125	_	_	_	_	_	_	_	_	_	_
2250	_	_	_	_	_	_	_	_	_	_
2375	_	_	_	_	_	_	_	_	_	_
2500	_	_	_	_	_	_	_	_	_	_

Standard Static 1335-2150 rpm



48GCGJ06 — Three Phase Ultra Low NOx — Medium Static — 5 Ton Horizontal Supply (rpm - vdc)

			-	AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.2		0	0.4		0.6		.8	1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1335	5.6	1507	6.3	1660	6.9	1796	7.5	1921	8.0
1625	1418	5.9	1579	6.6	1727	7.2	1860	7.8	1982	8.3
1750	1502	6.3	1654	6.9	1797	7.5	1927	8.1	2046	8.6
1875	1589	6.6	1731	7.2	1867	7.8	1994	8.3	2111	8.8
2000	1676	7.0	1810	7.6	1940	8.1	2063	8.6	2177	9.1
2125	1765	7.4	1890	7.9	2015	8.4	2133	8.9	2245	9.4
2250	1855	7.8	1973	8.3	2091	8.7	2206	9.2	2314	9.7
2375	1946	8.1	2057	8.6	2169	9.1	2279	9.5	2385	10.0
2500	2038	8.5	2142	9.0	2249	9.4	2355	9.9	_	_

				AVAILABLE E	XTERNAL S	TATIC PRES	SURE (in. wg	1)		_
CFM	1	.2	1	.4	1	.6	1	.8	2	.0
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	2036	8.5	2144	9.0	2245	9.4	2342	9.8	_	_
1625	2095	8.8	2201	9.2	2301	9.6	_	_	_	_
1750	2157	9.0	2261	9.5	2359	9.9	_	_	_	_
1875	2219	9.3	2322	9.7	_	_	_	_	_	_
2000	2284	9.6	2384	10.0	_	_	_	_	_	_
2125	2350	9.8	_	_	_	_	_	_	_	_
2250	_	_	_	_	_	_	_	_	_	_
2375			_	_	_	_	_	_		_
2500	_	_	_	_	_	_	_	_	_	_

Medium Static 1335-2390 rpm

48GCGJ06 — Three Phase Ultra Low NOx — High Static — 5 Ton Horizontal Supply (rpm - vdc)

			-	AVAILABLE E	EXTERNAL S	TATIC PRES	SURE (in. wg	1)		
CFM	0.2		0	0.4		0.6		.8	1.0	
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc
1500	1335	4.7	1507	5.3	1660	5.9	1796	6.3	1921	6.8
1625	1418	5.0	1579	5.6	1727	6.1	1860	6.6	1982	7.0
1750	1502	5.3	1654	5.8	1797	6.3	1927	6.8	2046	7.2
1875	1589	5.6	1731	6.1	1867	6.6	1994	7.0	2111	7.4
2000	1676	5.9	1810	6.4	1940	6.8	2063	7.3	2177	7.7
2125	1765	6.2	1890	6.7	2015	7.1	2133	7.5	2245	7.9
2250	1855	6.5	1973	7.0	2091	7.4	2206	7.8	2314	8.2
2375	1946	6.9	2057	7.3	2169	7.6	2279	8.0	2385	8.4
2500	2038	7.2	2142	7.6	2249	7.9	2355	8.3	2457	8.7

		AVAILABLE EXTERNAL STATIC PRESSURE (in. wg)													
CFM	1.2		1.4		1.6		1.8		2.0						
	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc	rpm	vdc					
1500	2036	7.2	2144	7.6	2245	7.9	2342	8.3	2435	8.6					
1625	2095	7.4	2201	7.8	2301	8.1	2396	8.4	2487	8.8					
1750	2157	7.6	2261	8.0	2359	8.3	2453	8.6	2543	9.0					
1875	2219	7.8	2322	8.2	2419	8.5	2511	8.9	2599	9.2					
2000	2284	8.1	2384	8.4	2480	8.7	2571	9.1	2658	9.4					
2125	2350	8.3	2449	8.6	2542	9.0	2632	9.3	2718	9.6					
2250	2417	8.5	2514	8.9	2607	9.2	2695	9.5	2779	9.8					
2375	2485	8.8	2581	9.1	2672	9.4	2759	9.7	_	_					
2500	2555	9.0	2648	9.3	2738	9.7	2824	10.0	_	_					

High Static 1335-2836 rpm

Electrical data



Legend and Notes

Applicable for Electrical Data Tables on pages 60 to 63

LEGEND

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

PWRD C.O. — Powered Convenience Outlet

RLA — Rated Load Amps

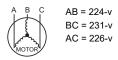
UNPWR C.O. — Unpowered Convenience Outlet

NOTE(S):

- In compliance with NEC requirements for multi-motor and combination load equipment (refer to NEC Articles 430 and 440), the overcurrent protective device for the unit shall be fuse or HACR breaker. Canadian units may be fuse or circuit breaker.
- 2. For 208/230 volt 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.

% Voltage = 100 x max voltage deviation from average voltage average voltage

Example: Supply voltage is 230-3-60



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.

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

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

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



48GC(G/H)*04-06 Cooling Electrical Data

49CC(C/U)			NIT FAGE	COMPR	RESSOR	OFM	(ea)		IFM		COMBUSTION FAN MOTOR	POWER EXHAUST	
UNIT	V-Ph-Hz	Ra	nge					_	Effcy at				FLA
*04 2 *05 2		Min	Max	RLA	LRA	Watts	FLA	Type	Full Load	FLA	FLA	Kit Qty	(ea kit)
						275	2.6	STD	84%	3.4			
	208/230-1-60	187	253	15.4	92	275	2.6	MED	84%	5.1	0.48	1	1.9
						275	2.6	HIGH	85%	7.3			
						275	2.6	STD	84%	3.4			
*04	208/230-3-60	187	253	10.1	88	275	2.6	MED	84%	5.1	0.48	1	1.9
						275	2.6	HIGH	85%	7.3			
						275	1.4	STD	85%	0.9			
	460-3-60	414	506	4.7	44	275	1.4	MED	85%	1.2	0.25	1	1.0
						275	1.4	HIGH	84%	1.5			
						275	2.6	STD	87%	5.0			
	208/230-1-60	187	7 253	19.9	127	275	2.6	MED	86%	7.1	0.48	1	1.9
						275	2.6	HIGH	84%	8.8			
		3-60 187	87 253	12.9	105	275	2.6	STD	87%	5.0	0.48	1	
*05	208/230-3-60					275	2.6	MED	86%	7.1			1.9
						275	2.6	HIGH	85%	5.1			
						275	1.4	STD	85%	1.2			
	460-3-60	414	506	7.1	62	275	1.4	MED	86%	1.5	0.25	1	1.0
						275	1.4	HIGH	88%	2.4			
	200/220 4 60	407	252	25.0	450	275	2.6	STD	86%	7.2	0.40	4	4.0
	208/230-1-60	187	253	25.6	158	275	2.6	MED	84%	8.6	0.48	1	1.9
						275	2.6	STD	86%	7.2			
*00	208/230-3-60	187	253	16.4	110	275	2.6	MED	84%	8.6	0.48	1	1.9
"06						275	2.6	HIGH	84%	6.4			
						275	1.4	STD	86%	1.5			
	460-3-60	414 506	506	6.9	55	275	1.4	MED	86%	1.9		1	1.0
			414 506			275	1.4	HIGH	88%	2.9			



48GC(G/H)*04-06 MCA MOCP Electrical Data

				NO CONVE	NIENCE OL	JTLET OR UI	NPOWERE	CONVENIEN	CE OUTLET			
48GC(G/H)	NOM.			NO POWER	EXHAUST		w/ POV	w/ POWER EXHAUST (powered from unit)				
UNIT SIZE	V-Ph-Hz	IFM TYPE		FUSE OR DISCONNECT SIZE			FUSE OR		ECT SIZE			
			MCA	HACR BREAKER	FLA	LRA	MCA	HACR BREAKER	FLA	LRA		
		STD	26	30	25	101	28	40	27	103		
	208/230-1-60	MED	27	40	27	103	29	40	29	105		
		HIGH	30	40	29	106	32	45	31	108		
		STD	19	25	19	97	21	30	21	99		
*04	208/230-3-60	MED	21	30	20	99	23	30	23	101		
		HIGH	23	30	23	102	25	30	25	104		
	460-3-60	STD	9	15	8	47	10	15	9	48		
		MED	9	15	8	48	10	15	10	49		
		HIGH	9	15	9	48	10	15	10	49		
		STD	33	50	32	138	35	50	34	140		
	208/230-1-60	MED	35	50	34	141	37	50	36	143		
		HIGH	37	50	36	143	39	50	38	145		
	208/230-3-60	STD	24	30	24	116	26	30	26	118		
*05		MED	26	30	26	119	28	40	28	121		
		HIGH	24	30	24	116	26	30	26	118		
		STD	12	15	11	66	13	15	12	67		
	460-3-60	MED	12	15	12	66	13	15	13	67		
		HIGH	13	15	13	67	14	20	14	68		
	208/230-1-60	STD	42	60	41	172	44	60	43	174		
	200/230-1-00	MED	44	60	42	174	46	60	45	176		
		STD	31	45	30	124	33	45	32	126		
*06	208/230-3-60	MED	32	45	32	126	34	50	34	128		
00		HIGH	30	45	29	123	32	45	31	125		
		STD	12	15	11	59	13	15	12	60		
	460-3-60	MED	12	15	12	60	13	15	13	61		
		HIGH	13	15	13	61	14	20	14	62		



48GC(G/H)*04-06 MCA MOCP Electrical Data (cont)

	NOM.		WITH POWERED CONVENIENCE OUTLET										
48GC(G/H)				NO POWER	EXHAUST		w/ POWER EXHAUST (powered from unit)						
UNIT SIZE	V-Ph-Hza	IFM TYPE		FUSE OR	DISCONNECT SIZE			FUSE OR	DISCONNECT SIZE				
			MCA	HACR BREAKER	FLA	LRA	MCA	HACR BREAKER	FLA	LRA			
		STD	24	30	24	102	26	30	26	104			
	208/230-3-60	MED	26	30	26	104	27	30	28	106			
*04	·	HIGH	28	30	29	107	30	35	31	109			
		STD	11	15	11	49	12	15	12	50			
	460-3-60	MED	11	15	11	50	12	15	12	51			
		HIGH	11	15	11	50	12	15	12	51			
	208/230-3-60	STD	29	40	29	121	31	40	31	123			
		MED	31	40	32	124	33	45	34	126			
*05		HIGH	29	40	29	121	31	40	31	123			
"05		STD	14	20	14	68	15	20	15	69			
	460-3-60	MED	14	20	14	68	15	20	15	69			
		HIGH	15	20	15	69	16	20	16	70			
		STD	36	50	36	129	37	50	38	131			
	208/230-3-60	MED	37	50	37	131	39	50	39	133			
*06		HIGH	35	50	35	128	37	50	37	130			
*06		STD	14	20	14	61	15	20	15	62			
	460-3-60	MED	15	20	14	62	16	20	15	63			
		HIGH	16	20	15	63	17	20	17	64			

NOTE(S):

a. Powered convenience outlet is not available for 208/230-1-60 (single phase) units.



48GC(G/H)*04-06 MCA MOCP Electrical Data with Factory-Installed HACR Breaker

				NO CONVE	ENIENCE OL	ITLET OR U	NPOWERED	CONVENIEN	CE OUTLET		
48GC(G/H)	NOM.	IFM TYPE		NO POWER	EXHAUST		w/ POWER EXHAUST (powered from unit)				
UNIT ŠIZÉ	V-Ph-Hz ^a	IFW ITPE	MCA	HACR	DISCONNECT SIZE		MCA	HACR	DISCONNECT SIZE		
			WICK	BREAKER	FLA	LRA	IVICA	BREAKER	FLA	LRA	
		STD	26	30	25	101	28	40	27	103	
	208/230-1-60	MED	27	40	27	103	29	40	29	105	
*04		HIGH	30	40	29	106	32	45	31	108	
04		STD	19	25	19	97	21	30	21	99	
	208/230-3-60	MED	21	30	20	99	23	30	23	101	
		HIGH	23	30	23	102	25	30	25	104	
	208/230-1-60	STD	33	50	32	138	35	50	34	140	
		MED	35	50	34	141	37	50	36	143	
*05		HIGH	37	50	36	143	39	50	38	145	
03		STD	24	30	24	116	26	30	26	118	
	208/230-3-60	MED	26	30	26	119	28	40	28	121	
		HIGH	24	30	24	116	26	30	26	118	
	208/230-1-60	STD	42	60	41	172	44	60	43	174	
	200/230-1-00	MED	44	60	42	174	46	60	45	176	
*06		STD	31	45	30	124	33	45	32	126	
	208/230-3-60	MED	32	45	32	126	34	50	34	128	
		HIGH	30	45	29	123	32	45	31	125	

NOTE(S):

a. HACR Breaker is not available for 460/3/60 units.

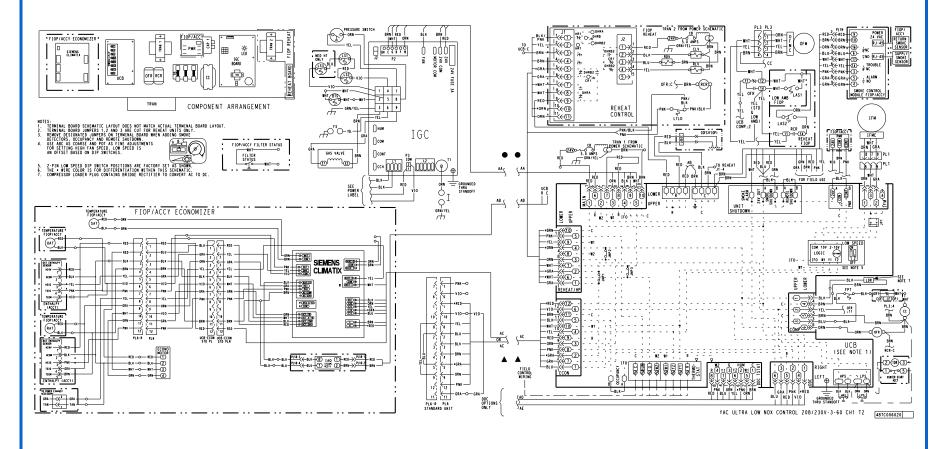
48GC(G/H)*04-06 MCA MOCP Electrical Data with Factory-Installed HACR Breaker (cont)

		IEM TYPE			WITH P	OWERED CO	ONVENIENC	E OUTLET		
48GC(G/H)	NOM.			NO POWER	EXHAUST		WITH POWER EXHAUST (powered from unit)			
UNIT SIZÉ	V-Ph-Hz ^{a,b}	IFM TYPE	MCA	HACR	DISCONN	ECT SIZE	MCA	HACR	DISCONNECT SIZE	
			MCA	BREAKER	FLA	LRA	MCA	BREAKER	FLA	LRA
		STD	24	30	24	102	26	30	26	104
*04	208/230-3-60	MED	26	30	26	104	27	30	28	106
		HIGH	28	30	29	107	30	35	31	109
		STD	29	40	29	121	31	40	31	123
*05	208/230-3-60	MED	31	40	32	124	33	45	34	126
		HIGH	29	40	29	121	31	40	31	123
		STD	36	50	36	129	37	50	38	131
*06	208/230-3-60	MED	37	50	37	131	39	50	39	133
		HIGH	35	50	35	128	37	50	37	130

NOTE(S):

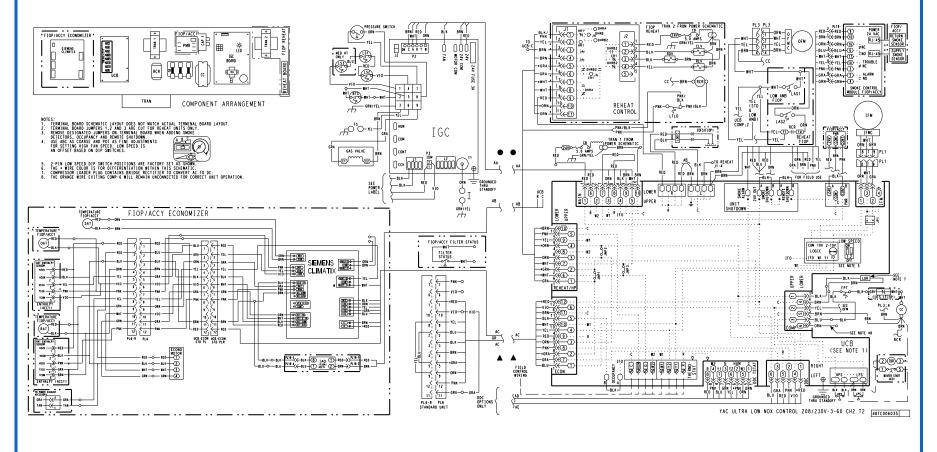
- a. Powered convenience outlet is not available for 208/230-1-60 (single phase) units.
- b. HACR Breaker is not available for 460-3-60 units.

Typical Control Wiring Diagram — 48GC(G/H)*04-05 208/230-3-60 Unit with Electromechanical Control and POL224 Economizer



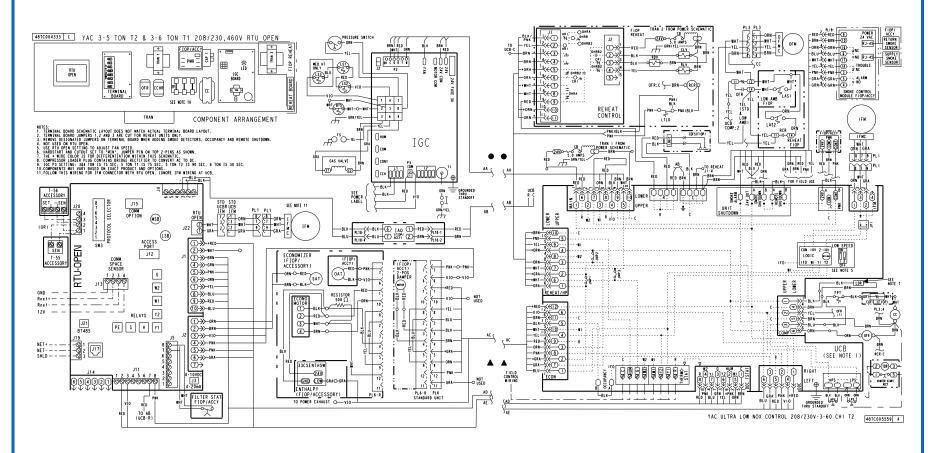


Typical Control Wiring Diagram — 48GC(G/H)*06 208/230-3-60 Unit with Electromechanical Control and POL224 Economizer





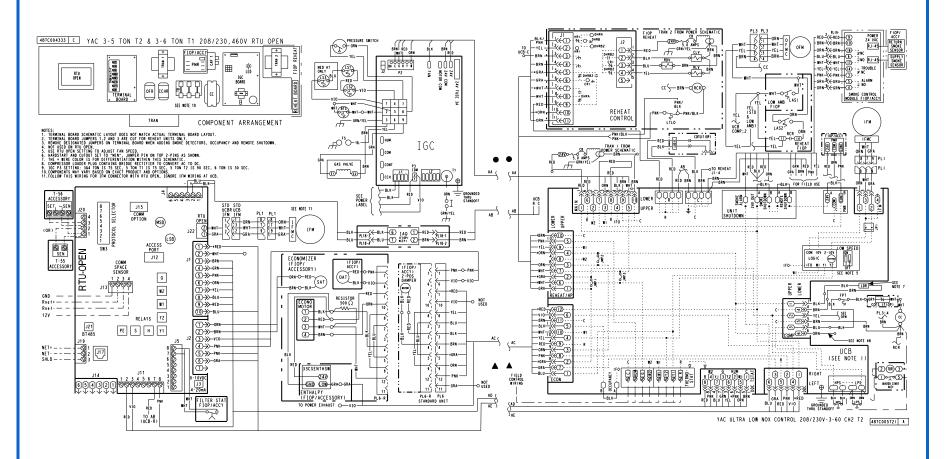
Typical Control Wiring Diagram — 48GC(G/H)*04-05 208/230-3-60 Unit with RTU Open Controller



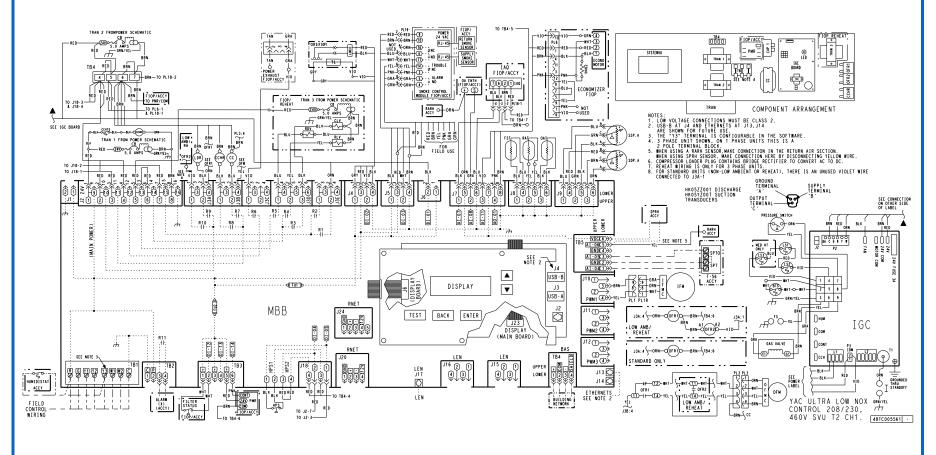


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Typical Control Wiring Diagram — 48GC(G/H)*06~208/230-3-60~Unit with RTU Open Controller

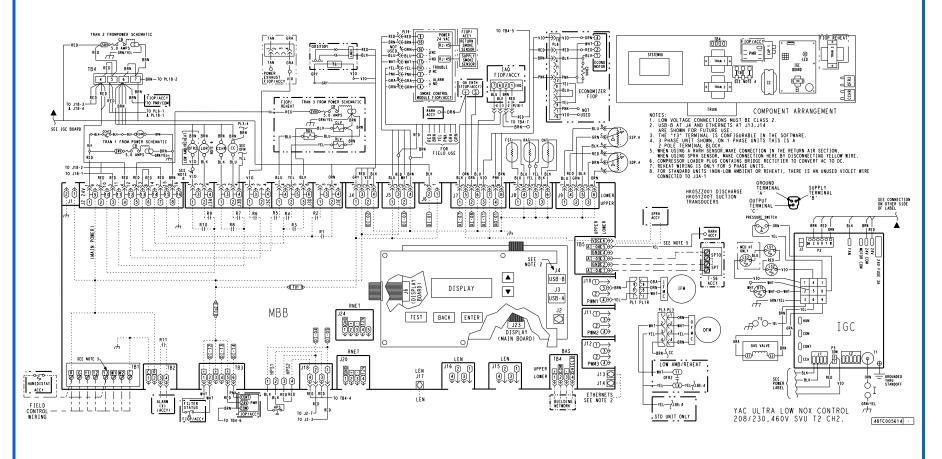


Typical Control Wiring Diagram — 48GC(G/H)*04-05 208/230, 460-3-60 Units with SystemVu™ Controller



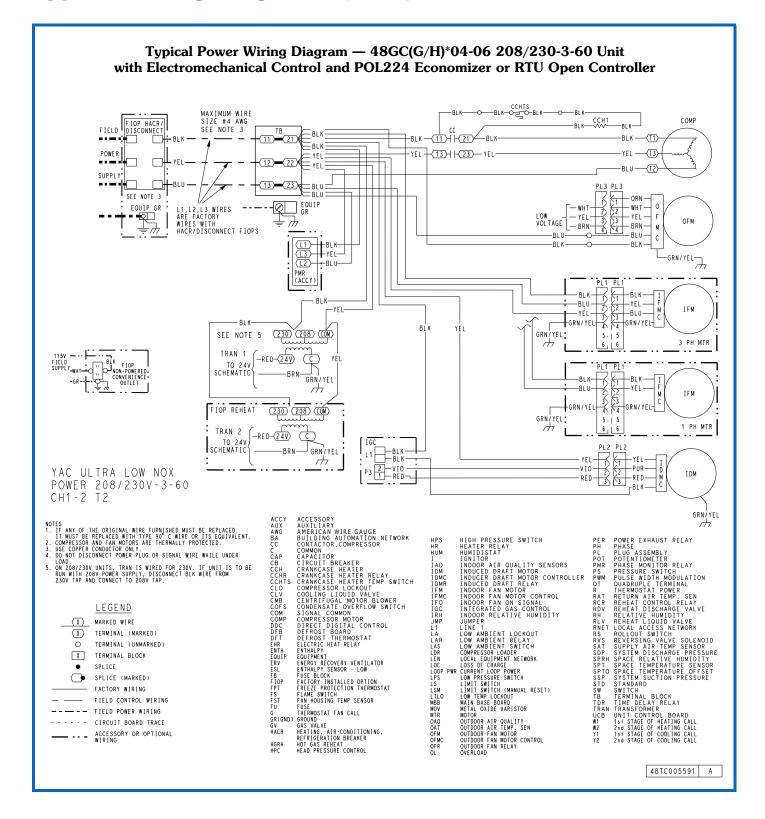
Carrier

Typical Control Wiring Diagram — 48GC(G/H)*06 208/230, 460-3-60 Unit with SystemVu™ Controller



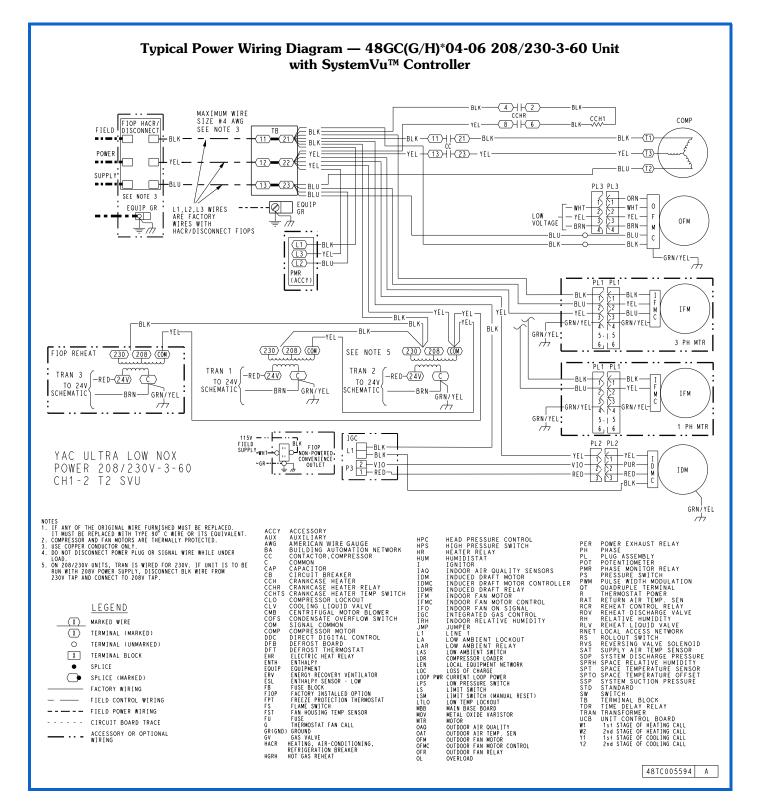
Typical wiring diagrams (cont)





Typical wiring diagram (cont)





Sequence of operation



General

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

Electromechanical units with no economizer

Cooling (2-stage units)

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

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

When the thermostat removes the call for Y2 but leaves the Y1, the indoor fan will reduce speed to 66% of the user set fan speed, the compressor loader will turn off, and the outdoor fan will remain on. When the thermostat removes the call for Y1 the compressor contactor will de-energize shutting down the compressor and the outdoor fan. When the thermostat removes the call for G, the indoor fan will turn off after the specific unit fan off delay.

NOTE: Per ASHRAE 90.1-2016 and IECC-2018 standards, during the first stage of cooling operation the Unit Control Board (UCB) will adjust the fan motor speed to provide 66% of the total cfm established for the unit.

Gas heating

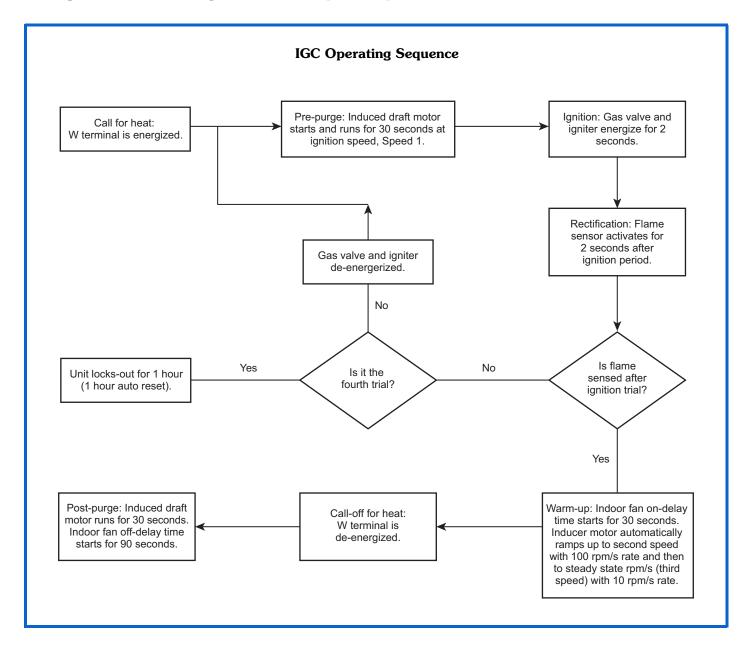
When the thermostat calls for heating, power is sent to W on the Integrated Gas Controller (IGC) board. An LED (light-emitting diode) on the IGC board turns on and remains on during normal operation. A check is made to ensure that the burner thermal switch and limit switch are closed. If the check was successful, the induced-draft motor is energized, and when its speed is satisfactory, as proven by the flue gas pressure switch, the ignition activation period begins. The burners will ignite within 2 seconds. If the burners do not light, there is a 30 second post purge period before another 2 second attempt. This sequence is repeated 4 times or until the burner lights. If, after the fourth trial the burners still have not lit, heating is locked out. The lock out period is for one hour after which the unit will auto reset.

When ignition occurs, the IGC board will continue to monitor the condition of the burner thermal switch, the limit switches, the flue gas pressure switch, as well as the flame sensor. 30 seconds after ignition occurs, assuming the unit is controlled through a room thermostat set for fan auto, the indoor-fan motor will energize (and the outdoor-air dampers will open to their minimum position). If, for some reason, the over-temperature limit opens prior to the start of the indoor fan blower, the unit will shorten the 30 second delay to 5 seconds less than the time from initiation of heat to when the limit tripped. Gas will not be interrupted to the burners and heating will continue. Once the fan-on delay has been modified, it will not change back to 30 seconds until power is reset to the control. When the thermostat is satisfied, W opens and the gas valve closes, interrupting the flow of gas to the main burners. If the unit is controlled through a room thermostat set for fan auto, the indoor-fan motor will continue to operate for an additional 90 seconds then stop. A LED indicator shows if the unit is operational with no fault when the light is solid. In case of unit failure the number of flashes on the LED indicates the type of failure mode in the gas heat sub-system.

The following figure is a flow chart detailing the operating sequence for the IGC.

Sequence of operation (cont)





Sequence of operation (cont)



Electromechanical units with factory-installed EconomizerONE

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

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

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

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

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

Heating

The sequence of operation for the heating is the same as an electromechanical unit with no economizer. The only difference is how the economizer acts. The economizer will stay at the Economizer Minimum Position while the evaporator fan is operating. The outdoor-air damper is closed when the indoor fan is not operating. Refer to Service and Maintenance Manual for further details.

Sequence of operation (cont)



Optional Humidi-MiZer® dehumidification system

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

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

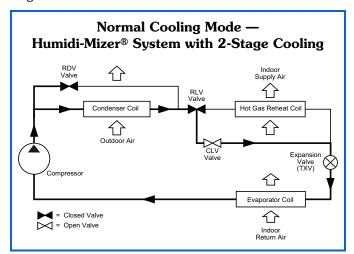
<u>Cool mode</u> — Provides a normal ratio of Sensible and Latent Cooling effect from the evaporator coil.

<u>Reheat1</u> — Provides increased Latent Cooling while slightly reducing the Sensible Cooling effect.

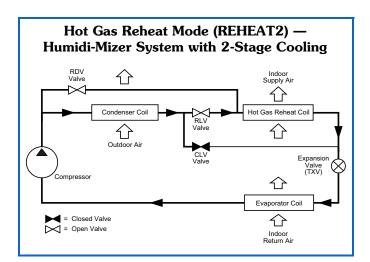
Reheat2 — Provides normal Latent Cooling but with null or minimum Sensible Cooling effect delivered to the space.

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

Refer to the following figures for 2 stage piping flow diagrams.



Subcooling Mode (REHEAT 1) — Humidi-Mizer System with 2-Stage Cooling Indoor Supply Air 分 Condenser Coil Hot Gas Reheat Coil 仚 介 Outdoor Air Expansion Valve (TXV) 仚 Evaporator Coil = Closed Valve ⇧ = Open Valve Indoor Return Air



RTU Open controller (factory option)

For details on operating 48GC(G/H) units equipped with the factory-installed RTU Open controller option, refer to Factory-Installed RTU Open Multi-Protocol Controller Controls, Start-Up, Operation and Troubleshooting

SystemVu[™] controller (factory option)

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

Application data



Minimum operating ambient temperature (cooling)

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

Maximum operating ambient temperature (cooling)

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

Multiple motor and drive packages

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

Standard stainless steel heat exchanger

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

Minimum mixed air temperature (heating)

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

Minimum Temperature for Mixed Air Temperature

STAINLESS STEEL
40°F (4°C) Continuous
35°F (2°C) Intermittent

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

Minimum and maximum airflow (heating and cooling)

To maintain safe and reliable operation of your rooftop, operate within the heating airflow limits during heating mode and cooling airflow limits during cooling mode. Operating above the 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 and unsafe heating operation. Heating and cooling limitations differ when evaluating operating cfm, the minimum value is the HIGHER of the cooling and heating minimum cfm values published on page 6 and the maximum value is the LOWER of the cooling and heating minimum values published on page 6.

Heating-to-cooling changeover

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

Airflow

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

Outdoor air application strategies

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

Motor limits, break horsepower (bhp)

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

Propane heating

Operation with propane gas is not allowed.

High altitude heating

Unit can operate from 0 to 2,000 feet in altitude as standard, operation above 2,000 feet is in not allowed.

Sizing a rooftop

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

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

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

Low ambient applications

The optional Carrier economizer can adequately cool your space by bringing in fresh, cool outside air. In fact, when so equipped, accessory low-ambient kit may not be necessary. In low ambient conditions, unless the outdoor air is excessively humid or contaminated, economizer-based "free cooling" is the preferred less costly and energy conscious method. In low ambient applications where outside air might not be desired (such as contaminated or excessively humid outdoor environments), your Carrier rooftop can operate to ambient temperatures down to -20°F (-29°C) using the recommended accessory low ambient controller.

Guide specifications



Note about this specification:

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



Ultra Low NOx Gas Heat/Electric Cooling Packaged Rooftop

HVAC Guide Specifications

Size Range: 3 to 5 Nominal Tons

Carrier Model Number: 48GC(G/H)*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 (RTU) Schedule:
 - 1. Schedule is per the project specification requirements.

Part 2 — (23 07 16) HVAC Equipment Insulation

2.01 (23 07 16.13) Decentralized, Rooftop Units:

- A. (23 07 16.13.A.) Evaporator Fan Compartment:
 - 1. Interior cabinet surfaces shall be insulated with a minimum 1/2 in. thick, minimum 1-1/2-lb density, flexible fiberglass insulation bonded with a phenolic binder, neoprene coated on the air side.
 - 2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
- B. (23 07 16.13.B.) Gas Heat Compartment:
 - Aluminum foil-faced fiberglass insulation shall be used.
 - 2. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.

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

- 3.01 (23 09 13.23) Sensors and Transmitters:
 - A. (23 09 13.23.A.) Thermostats:
 - 1. Thermostat must:
 - a. energize both "W" and "G" when calling for heat.
 - b. have capability to energize 1 or 2 stages of cooling, and 2 different stages of heating.
 - c. include capability for occupancy scheduling.

Part $4 - (23\ 09\ 23)$ Direct Digital Control System for HVAC

- 4.01 (23 09 23.13) Decentralized, Rooftop Units:
 - A. (23 09 23.13.A.) SystemVu[™] intelligent integrated Direct Digital Control (DDC) shall provide:
 - 1. Integrated unit operation for comfort cooling, heating ventilation as well as all monitoring,

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

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- 10. Economizer control and diagnostics. Set up economizer operation, receive feedback from actuator. Also meets the most recent California Title 24, ASHRAE 90.1 and IECC Fault Detection and Diagnostic (FDD) requirements.
- 11. Unit cooling operation down to 40°F (4°C).
- 12. Controller shall have easy access connections around the controller perimeter area and consist of Mate-N-Lok 1 , terminal block and RJ style modular jack connections.
- 13. 365 day real time clock, 20 holiday schedules along with occupied and unoccupied scheduling.
- Auto-recognition for easy installation and commissioning of devices like economizers, space sensors, etc.
- 15. A 5°F temperature difference between cooling and heating set points to meet the latest ASHRAE 90.1 Energy Standard.
- 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, Equipment Touch and System Touch devices.
- 18. Units with the factory-installed Humidi-MiZer® system option are capable of providing multiple modes of improved dehumidification as a variation of the normal cooling cycle.
- 19. Supply Air Tempering control operates the gas heat to maintain a minimum supply air temperature during conditions where very cold outdoor air causes the supply air temperature to fall below the configured Supply Air Tempering Setpoint. This occurs during periods where DCV is active and increasing the amount of outdoor air or in cases where the system is operating at very low airflow and the calculated economizer position has increased to maintain a constant ventilation rate.
- 20. Demand limiting in SystemVu[™] is achieved through set point expansion. The systems heating and cooling set points are expanded in steps or levels. The degree to which the set points may be expanded is defined by the 6 demand level offsets and the 2 commanded demand limit levels.
- 21. 3-year limited part warranty.
- B. (23 09 23.13.B.) RTU Open Protocol, Direct Digital Controller:
 - 1. Shall be ASHRAE 62 compliant.
 - 2. Shall accept 18-30 vac, 50-60 Hz, and consumer 15 va or less power.
- Third-party trademarks and logos are the property of their respective owners

- 3. Shall have an operating temperature range from -40°F (-40°C) to 130°F (54°C), 10% to 90% RH (non-condensing).
- 4. Shall include built-in protocol for BACnet™1 (MS/TP and PTP modes), Modbus®1 (RTU and ASCII), Johnson N2 and LonWorks®1. LonWorks Echelon processor required for all Lon applications shall be contained in separate communication board.
- Shall allow access of up to 62 network variables (SNVT). Shall be compatible with all open controllers.
- Baud rate controller shall be selectable using a dip switch.
- Shall have an LED display independently showing the status of serial communication, running, errors, power, all digital outputs, and all analog inputs.
- 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, exhaust, reversing valve/high fan speed.
- 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 RS-485 protocol communication port, an access port for connection of either a computer or a Carrier technician tool, an RS-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 75-va capability.
 - 2. Shall utilize color-coded wiring.



- 3. Shall include a Unit Control Board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, gas controller, economizer, thermostat, DDC control options, and low and high pressure switches. Controller shall also provide an intuitive means to adjust the indoor fan speed through a simple switch and pot adjustment design.
- 4. The heat exchanger shall be controlled by an integrated gas controller (IGC) microprocessor. See heat exchanger section of this specification.
- 5. Unit shall include a minimum of one 8-pin screw terminal connection board for connection of control wiring.

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

- Compressor over-temperature, over-current. High internal pressure differential.
- 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.
- High pressure switch shall use different color wire than the low pressure switch. The purpose is to assist the installer and service technician to correctly wire and or troubleshoot the rooftop unit.
- 4. Automatic reset, motor thermal overload protector.
- 5. Heating section shall be provided with the following minimum protections:
 - a. High temperature limit switches.
 - b. Induced draft motor speed sensor.
 - c. Flame rollout switch.
 - d. Flame proving controls.

Part $6 - (23\ 09\ 93)$ Sequence of Operations for HVAC Controls

- 6.01 (23 09 93.13) Decentralized, Rooftop Units:
 - A. (23 09 93.13.A.) INSERT SEQUENCE OF OPERATION

Part 7 — (23 40 13) Panel Air Filters

- 7.01 (23 40 13.13) Decentralized, Rooftop Units:
 - A. (23 40 13.13.A.) Standard Filter Section:
 - Shall consist of factory-installed, low velocity, disposable 2 in. thick fiberglass filters of commercially available sizes.
 - 2. Unit shall use only one filter size. Multiple sizes are not acceptable.
 - 3. Filters shall be accessible through an access panel with "no-tool" removal as described in the unit cabinet section of this specification (23 81 19.13.G).

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

- 8.01 (23 81 19.13) Small-Capacity Self-Contained Air Conditioners:
 - A. (23 81 19.13.A.) General:
 - 1. Outdoor, rooftop mounted, electrically controlled, heating and cooling unit utilizing a fully hermetic scroll compressor(s) for cooling duty and gas combustion for heating duty.
 - 2. Factory assembled, single-piece heating and cooling rooftop unit. Contained within the unit enclosure shall be all factory wiring, piping, controls, and special features required prior to field start-up.
 - 3. Unit shall use Puron® (R-410A) refrigerant.
 - 4. Unit shall be installed in accordance with the manufacturer's instructions.
 - 5. Unit must be selected and installed in compliance with local, state, and federal codes.
 - B. (23 81 19.13.B.) Quality Assurance:
 - 1. Unit meets ASHRAE 90.1 minimum efficiency requirements.
 - 2. Unit shall be rated in accordance with AHRI Standards 210/240.
 - 3. Unit shall be designed to conform to ASHRAE 15.
 - 4. Unit shall be UL-tested and certified in accordance with ANSI Z21.47 Standards and UL-listed and certified under Canadian standards as a total package for safety requirements.
 - 5. Insulation and adhesive shall meet NFPA 90A requirements for flame spread and smoke generation.
 - 6. Unit casing shall be capable of withstanding 500 hour salt spray exposure per ASTM B117 (scribed specimen).
 - Unit shall be designed in accordance with ISO 9001, and shall be manufactured in a facility registered by ISO 9001:2015.
 - 8. Roof curb shall be designed to conform to NRCA Standards.
 - 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.
 - Unit shall be designed in accordance with UL Standard 1995, including tested to withstand rain.
 - 11. Unit shall be constructed to prevent intrusion of snow and tested to prevent snow intrusion into the control box up to 40 mph.
 - 12. Unit shake tested to assurance level 1, ASTM D4169 to ensure shipping reliability.



- C. (23 81 19.13.C.) Delivery, Storage, and Handling:
 - 1. Unit shall be stored and handled per manufacturer's recommendations.
 - 2. Lifted by crane requires either shipping top panel or spreader bars.
 - 3. Unit shall only be stored or positioned in the upright position.
- D. (23 81 19.13.D.) Project Conditions:
 - 1. As specified in the contract.
- E. (23 81 19.13.E.) Operating Characteristics:
 - 1. Unit shall be capable of starting and running at $125^{\circ}F$ ($52^{\circ}C$) ambient outdoor temperature, meeting maximum load criteria of AHRI Standard 210/240 at $\pm 10\%$ voltage.
 - Compressor with standard controls shall be capable of operation down to 40°F (4°C), ambient outdoor temperatures. Accessory winter start kit is necessary if mechanically cooling at ambient temperatures down to 25°F (-4°C).
 - 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.
 - 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.
- F. (23 81 19.13.F.) Electrical Requirements:
 - Main power supply voltage, phase, and frequency must match those required by the manufacturer.
- G. (23 81 19.13.G.) Unit Cabinet:
 - Unit cabinet shall be constructed of galvanized steel, and shall be bonderized and coated with a prepainted baked enamel finish on all externally exposed surfaces.
 - 2. Unit cabinet exterior paint shall be:
 - a. Film thickness, (dry) 0.003 inches minimum
 - b. Gloss (per ASTM D523, 60°F/16°C): 60
 - c. Hardness: H-2H Pencil hardness
 - 3. Evaporator fan compartment interior cabinet insulation shall conform to AHRI Standards 210/240 minimum exterior sweat criteria. Interior surfaces shall be insulated with a minimum 1/2 in. thick, 1 lb density, flexible fiberglass insulation, neoprene coated on the air side. Aluminum foil-faced fiberglass insulation shall be used in the gas heat compartment.
 - 4. Base of unit shall have a minimum of 4 locations for thru-the-base gas and electrical connections (factory-installed or field-installed), standard.

5. Base Rail:

- a. Unit shall have base rails on a minimum of 2 sides.
- Holes shall be provided in the base rails for rigging shackles to facilitate maneuvering and overhead rigging.
- Holes shall be provided in the base rail for moving the rooftop by fork truck.
- d. Base rail shall be a minimum of 16 gauge thickness.

6. Condensate Pan and Connections:

- a. Shall be a sloped condensate drain pan made of a corrosion resistant material.
- b. Shall comply with ASHRAE Standard 62.
- c. Shall use a 3/4 in. 14 NPT drain connection, possible either through the bottom or side of the drain pan. Connection shall be made per manufacturer's recommendations.

7. Top Panel:

a. Shall be a single piece top panel on all sizes.

8. Gas Connections:

- a. All gas piping connecting to unit gas valve shall enter the unit cabinet at a single location on side of unit (horizontal plane).
- b. Thru-the-Base Capability:
 - 1) Standard unit shall have a thru-the-base gas-line location using a raised, embossed portion of the unit basepan.
 - 2) Optional, factory approved, water-tight connection method must be used for thru-the-base gas connections.
 - 3) No basepan penetration, other than those authorized by the manufacturer, is permitted.

9. Electrical Connections:

- a. All unit power wiring shall enter unit cabinet at a single, factory prepared, knockout location.
- b. Thru-the-Base Capability:
 - 1) 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.

10. Component Access Panels (standard):

- Cabinet panels shall be easily removable for servicing.
- b. Unit shall have one factory-installed, toolless, removable, filter access panel.

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- c. Panels covering control box, indoor fan, indoor fan motor, gas components (where applicable), and compressors shall have molded composite handles.
- d. Handles shall be UV modified, composite. They shall be permanently attached, and recessed into the panel.
- e. Screws on the vertical portion of all removable access panel shall engage into heat resistant, molded composite collars.
- f. Collars shall be removable and easily replaceable using manufacturer recommended parts.

H. (23 81 19.13.H.) Gas Heat:

1. General:

- a. Heat exchanger shall be an induced draft design. Positive pressure heat exchanger designs shall not be allowed.
- b. Shall incorporate a direct-spark ignition system and redundant main gas valve.
- c. Gas supply pressure at the inlet to the rooftop unit gas valve must match that required by the manufacturer.
- The heat exchanger shall be controlled by an integrated gas controller (IGC) microprocessor:
 - a. IGC board shall notify users of fault using an LED (light-emitting diode).
 - b. The LED shall be visible without removing the control box access panel.
 - IGC board shall contain algorithms that modify evaporator fan operation to prevent future cycling on high temperature limit switch
 - d. Unit shall be equipped with anti-cycle protection with one short cycle on unit flame rollout switch or 4 continuous short cycles on the high temperature limit switch. Fault indication shall be made using an LED.
- 3. Standard Stainless Steel Heat Exchanger Construction Ultra Low NOx Burner Box:
 - a. Burners shall be of premixed type constructed of stainless steel.
 - b. Use a redundant main gas valve.
 - c. Burners shall be of the in-shot type constructed of aluminum-coated steel.
 - d. All gas piping shall enter the unit cabinet at a single location on side of unit (horizontal plane).
 - e. The stainless steel heat exchanger shall be of the tubular-section type, constructed of a minimum of 20-gauge type 409 stainless steel
 - f. Type 409 stainless steel shall be used in heat exchanger tubes and vestibule plate.

- g. Stainless Steel natural gas burner box and heat exchanger assembly shall provide Ultra Low NOx gas emissions of 14 nanograms/joule (ng/j).
- 4. Induced Draft Combustion Motor and Blower:
 - a. Shall be a multi speed direct-drive, single inlet, forward-curved centrifugal type.
 - b. Shall be made from steel with a corrosion resistant finish.
 - c. Shall have permanently lubricated sealed bearings.
 - d. Shall have inherent thermal overload protection.
 - e. Shall have an automatic reset feature.

I. (23 81 19.13.I.) Coils:

- 1. Standard Aluminum Fin-Copper Tube Coils:
 - a. Standard evaporator and condenser coils shall have aluminum lanced plate fins mechanically bonded to seamless internally grooved copper tubes with all joints brazed.
 - b. Evaporator coils shall be leak tested to 150 psig, pressure tested to 450 psig, and qualified to UL 1995 burst test at 1775 psig.
 - c. Condenser coils shall be leak tested to 150 psig, pressure tested to 650 psig, and qualified to UL 1995 burst test at 1980 psig.
- 2. Optional Pre-coated Aluminum-Fin Condenser Coils (3 Phase Models Only):
 - 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.
 - Epoxy-phenolic barrier shall minimize galvanic action between dissimilar metals.
 - d. Corrosion durability of fin stock shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117-90.
 - e. Corrosion durability of fin stock shall be confirmed through testing to have no visible corrosion after 48 hour immersion in a room temperature solution of 5% salt, 1% acetic acid.
 - f. Fin stock coating shall pass 2000 hours of the following: one week exposure in the prohesion chamber followed by one week of accelerated ultraviolet light testing. Prohesion chamber: the solution shall contain 3.5% sodium chloride and 0.35% ammonium sulfate. The exposure cycle is one hour of salt fog application at ambient followed by one hour drying at 95°F (35°C).

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- 3. Optional Copper-Fin Evaporator and Condenser Coils (3 Phase Models Only):
 - 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 (3 Phase Models Only):
 - 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.
 - Color shall be high gloss black with gloss per ASTM D523-89.
 - d. Uniform dry film thickness from 0.8 to 1.2 mil on all surface areas including fin edges.
 - e. Superior hardness characteristics of 2H per ASTM D3363-92A and cross-hatch adhesion of 4B-5B per ASTM D3359-93.
 - f. Impact resistance shall be up to 160 in. lb (ASTM D2794-93).
 - g. Humidity and water immersion resistance shall be up to minimum 1000 and 250 hours respectively (ASTM D2247-92 and ASTM D870-92).
 - h. Corrosion durability shall be confirmed through testing to be no less than 1000 hours salt spray per ASTM B117-90.
- J. (23 81 19.13.J.) Refrigerant Components:
 - 1. Refrigerant circuit shall include the following control, safety, and maintenance features:
 - Fixed orifice metering system shall include a multiple feed distribution system that optimizes coil performance.
 - b. Refrigerant filter drier Solid core design.
 - c. Service gauge connections on suction and discharge lines.
 - d. Pressure gauge access through a specially designed access port in the top panel of the unit.
 - 2. There shall be gauge line access port in the skin of the rooftop, covered by a black, removable plug:
 - a. The plug shall be easy to remove and replace.
 - b. When the plug is removed, the gauge access port shall enable maintenance personnel to route their pressure gauge lines.

- c. This gauge access port shall facilitate correct and accurate condenser pressure readings by enabling the reading with the compressor access panel on.
- d. The plug shall be made of a leak proof, UV-resistant, composite material.

3. Compressors:

- Unit shall use fully hermetic, scroll compressor for each independent refrigeration circuit
- b. Compressor motors shall be cooled by refrigerant gas passing through motor windings.
- Compressors shall be internally protected from high discharge temperature conditions.
- d. Compressors shall be protected from an over-temperature and over-amperage conditions by an internal, motor overload device.
- e. Compressor shall be factory mounted on rubber grommets.
- f. Compressor motors shall have internal line break thermal, current overload and high pressure differential protection.
- g. Crankcase heaters shall not be required for normal operating range, unless required by compressor manufacturer due to refrigerant charge limits.
- h. Compressor shall be of a 2-stage cooling capacity design.

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 with EcoBlue™ Technology:
 - 1. Direct Drive Evaporator Fan Motor:
 - a. Shall be a ECM motor design.
 - b. Shall have permanently lubricated bearings.
 - Shall have inherent automatic-reset thermal overload protection.
 - d. Shall have slow ramp up to speed capabilities.
 - e. Shall require no fan/motor belts for operation, adjustments and or initial fan speed set up.
 - f. Fan DC voltage set up on Unit Control Board can eliminate the need of removal of blower access door, required on conventional belt drive systems.
 - g. Shall be internally protected from electrical phase reversal and loss.



- a. Shall be easily set with dedicated selection switch and adjustment pot on unit control board or through SystemVu™ controller.
- b. Size 04-06 units provide multi speed indoor fan operation.
- c. Blower fan shall be a Vane Axial fan design with 75% less moving parts than a conventional belt drive system.
- d. Shall be constructed of an aluminum stator or high impact composite material on stator, rotor and air inlet casing.
- e. Shall be a patented/pending design with a corrosion resistant material and dynamically balanced.
- f. Shall have slow ramp up to speed capabilities to help reduce sound and comfort issues typically associated with single speed belt drive systems.
- g. Shall be a slide out design with 2 screw removal.
- h. Shall provide up to 2 inches static pressure to the unit cabinet.
- 3. Shall include an easily accessible unit Control Board to conveniently and safely provide connection points for vital control functions such as: smoke detectors, phase monitor, gas controller, economizer, thermostat, DDC control options, and low and high pressure switches. Controller shall also provide an intuitive means to adjust the indoor fan speed through a simple switch and pot adjustment design.

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

- 1. Condenser Fan Motors:
 - a. Shall be a totally enclosed motor.
 - b. Shall use permanently lubricated bearings.
 - c. Shall have inherent thermal overload protection with an automatic reset feature.
 - d. Shall use a shaft-down design on all sizes.
- 2. Condenser Fans:
 - a. Shall be a direct-driven propeller type fan constructed of high impact composite material.
 - Shall have high impact composite blades completely formed into one piece without blade fasteners or connectors and shall be dynamically balanced.
- N. (23 81 19.13.N.) Special Features Options and Accessories:
 - 1. Integrated EconomizerONE and EconoMi\$er® 2 Low Leak Rate Models. (On single-phase models, EconomizerONE and EconoMi\$er 2 are only available as field-installed accessories.):
 - a. Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.



- b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory-installed option.
- c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
- d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.
- e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
- f. Standard leak rate shall be equipped with dampers not to exceed 2% leakage at 1 in. wg pressure differential.
- g. Economizer controller on EconomizerONE models shall be the Siemens POL224 that provides:
 - 1) Combined minimum and DCV maximum damper position potentiometers with compressor staging relay.
 - 2) Functions with solid-state analog enthalpy or dry bulb changeover control sensing.
 - 3) LED indication for free cooling, sensor, and damper operation.
 - 4) One-line LCD interface screen for setup, configuration and troubleshooting.
 - 5) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24, ASHRAE 90.1 and IECC1.
 - 6) Sensor failure loss of communication identification.
 - 7) Capabilities for use with multiple-speed or single speed indoor fan systems.
 - 8) Digital sensors: Dry bulb and Enthalpy.
- h. Economizer controller on EconoMi\$er 2 models with RTU Open or SystemVu™ controls shall be a 4 to 20mA design controlled directly by the controller. RTU Open and SystemVu meet California Title 24, ASHRAE 90.1 and IECC Fault Detection and Diagnostic (FDD) requirements.
- Shall be capable of introducing up to 100% outdoor air.
- j. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air and contain seals that meet ASHRAE 90.1 requirements.

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- k. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.
- Dry bulb outdoor air temperature sensor shall be provided as standard. Enthalpy sensor is also available on factory-installed economizers only. Outdoor air sensor setpoint shall be adjustable and shall range from 40°F to 100°F (4°C to 38°C). Additional sensor options shall be available as accessories.
- m. The economizer controller shall also provide control of an accessory power exhaust unit function. Factory set at 100%, with a range of 0% to 100%.
- The economizer shall maintain minimum airflow into the building during occupied period and provide design ventilation rate for full occupancy.
- o. Dampers shall be completely closed when the unit is in the unoccupied mode.
- p. Economizer controller shall accept a 0 to $10~{\rm Vdc}~{\rm CO}_2$ sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor air damper to provide ventilation based on the sensor input.
- q. Compressor lockout temperature on POL224 control is adjustable from -45°F to 80°F (-42°C to 26°C), set at a factory default of 32°F (0°C).
- Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.
- s. Contains LED indication for free cooling, sensor, and damper operation.
- 2. Integrated EconomizerONE and EconoMi\$er® 2 Ultra Low Leak Rate Models. (Factory-installed on 3 phase models only. Field-installed on all 3 and 1 phase models.):
 - Integrated, gear driven opposing modulating blade design type capable of simultaneous economizer and compressor operation.
 - b. Independent modules for vertical or horizontal return configuration shall be available. Vertical return modules shall be available as a factory-installed option.
 - c. Damper blades shall be galvanized steel with composite gears. Plastic or composite blades on intake or return shall not be acceptable.
 - d. Shall include all hardware and controls to provide free cooling with outdoor air when temperature and/or humidity are below setpoints.
 - e. Shall be equipped with gear driven dampers for both the outdoor ventilation air and the return air for positive air stream control.
 - f. Ultra Low Leak design meets California Title 24 section 140.4 and ASHRAE 90.1 requirements for 4 cfm per sq ft on the out-

- side air dampers and 10 cfm per sq ft on the return dampers.
- g. Economizer controller on EconomizerONE models shall be the Siemens POL224 that provides:
 - 1) One-line LCD interface screen for setup, configuration and troubleshooting.
 - 2) On-board Fault Detection and Diagnostics (FDD) that senses and alerts when the economizer is not operating properly, per California Title 24, ASHRAE 90.1 and IECC.
 - 3) Sensor failure loss of communication identification.
 - Capabilities for use with multiple-speed indoor fan systems.
 - 5) Digital sensors: Dry bulb and Enthalpy.
- h. Economizer controller on EconoMi\$er 2 models with RTU Open or SystemVu™ controls shall be a 4-20mA design controlled directly by the controller. RTU Open and SystemVu meet California Title 24, ASHRAE 90.1 and IECC Fault Detection and Diagnostic (FDD) requirements.
- i. Shall be capable of introducing up to 100% outdoor air.
- j. Shall be equipped with a barometric relief damper capable of relieving up to 100% return air and contain seals that meet ASHRAE 90.1 requirements.
- k. Shall be designed to close damper(s) during loss-of-power situations with spring return built into motor.
- Dry bulb outdoor air temperature sensor shall be provided as standard. Enthalpy sensor is also available on factory-installed economizers only. Outdoor air sensor setpoint shall be adjustable and shall range from 40°F to 100°F (4°C to 38°C). Additional sensor options shall be available as accessories.
- m. The economizer controller shall also provide control of an accessory power exhaust unit function. Factory set at 100%, with a range of 0% to 100%.
- n. The economizer shall maintain minimum airflow into the building during occupied period and provide design ventilation rate for full occupancy.
- Dampers shall be completely closed when the unit is in the unoccupied mode.
- p. Economizer controller shall accept a 0 to $10~{\rm vdc}~{\rm CO}_2$ sensor input for IAQ/DCV control. In this mode, dampers shall modulate the outdoor air damper to provide ventilation based on the sensor input.
- q. Compressor lockout temperature on POL224 control is adjustable from -45°F to



- $80^{\circ}F$ ($-42^{\circ}C$ to $26^{\circ}C$), set at a factory default of $32^{\circ}F$ ($0^{\circ}C$).
- Actuator shall be direct coupled to economizer gear. No linkage arms or control rods shall be acceptable.
- s. Contains LED indication for free cooling, sensor, and damper operation.
- Wi-Fi/WLAN Stick for EconomizerONE POL224 (field-installed):
 - This item allows use of the Siemens Climatix TM mobile application.
- 4. Two-Position Damper (field-installed only):
 - a. Damper shall be a Two-Position Damper. Damper travel shall be from the full closed position to the field adjustable %-open setpoint.
 - b. Damper shall include adjustable damper travel from 25% to 100% (full open).
 - Damper shall include single or dual blade, gear driven dampers and actuator motor.
 - d. Actuator shall be direct coupled to damper gear. No linkage arms or control rods shall be acceptable.
 - e. Damper will admit up to 100% outdoor air for applicable rooftop units.
 - f. Damper shall close upon indoor (evaporator) fan shutoff and/or loss of power.
 - g. The damper actuator shall plug into the rooftop unit's wiring harness plug. No hard wiring shall be required.
 - h. Outside air hood shall include aluminum water entrainment filter.
- 5. Manual Damper (Field-installed only) package shall consist of damper, air inlet screen, and rain hood which can be preset to admit up to 25 or 50% outdoor air for year round ventilation.
- 6. Humidi-MiZer® Adaptive Dehumidification System (3-Phase Models Only) shall be factory-installed and shall provide greater dehumidification of the occupied space by 2 modes of dehumidification operations in addition to its normal design cooling mode:
 - a. Subcooling mode further sub cools the hot liquid refrigerant leaving the condenser coil when both temperature and humidity in the space are not satisfied.
 - b. Hot gas reheat mode shall mix a portion of the hot gas from the discharge of the compressor with the hot liquid refrigerant leaving the condenser coil to create a 2-phase heat transfer in the system, resulting in a neutral leaving air temperature when only humidity in the space is not satisfied.

- c. Includes low ambient controller.
- 7. Low Ambient Control Package:
 - a. Controller shall control coil head pressure by condenser fan speed modulation or condenser fan cycling and wind baffles.
 - Shall consist of solid-state control and condenser coil temperature sensor to maintain condensing temperature between 90°F (32°C) and 110°F (43°C) at outdoor ambient temperatures down to -20°F (-29°C).
- 8. Condenser Coil Hail Guard Assembly (Factory-installed on 3 Phase Models Only. Field-installed on all 3 and 1 Phase Models.):
 - a. Shall protect against damage from hail.
 - b. Shall be either hood style or louvered.
- Unit-Mounted, Non-Fused Disconnect Switch (Available on units with MOCPs of 80 amps or less. Not available on 460/3/60 volt models.):
 - a. Switch shall be factory-installed, internally mounted.
 - National Electric Code (NEC) and UL approved non-fused switch shall provide unit power shutoff.
 - c. Shall be accessible from outside the unit.
 - d. Shall provide local shutdown and lockout capability.
 - e. Sized only for the unit as ordered from the factory. Does not accommodate field-installed devices.

10. Convenience Outlet:

- a. Powered Convenience Outlet. (3-phase models only):
 - 1) Outlet shall be powered from main line power to the rooftop unit.
 - 2) Outlet shall be powered from line side or load side of disconnect by installing contractor, as required by code. If outlet is powered from load side of disconnect, unit electrical ratings shall be UL certified and rated for additional outlet amperage.
 - 3) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
 - 4) Outlet shall include 15 amp GFI receptacles with independent fuse protection.
 - 5) Voltage required to operate convenience outlet shall be provided by a factory-installed step-down transformer.
 - 6) Outlet shall be accessible from outside the unit.
 - 7) Outlet shall include a field-installed "Wet in Use" cover.



- b. Factory-Installed Non-Powered Convenience Outlet:
 - 1) Outlet shall be powered from a separate 115/120-v power source.
 - 2) A transformer shall not be included.
 - 3) Outlet shall be factory-installed and internally mounted with easily accessible 115-v female receptacle.
 - 4) Outlet shall include 15 amp GFI receptacles with independent fuse protection.
 - 5) Outlet shall be accessible from outside the unit.
 - 6) Outlet shall include a field-installed "Wet in Use" cover.
- c. Field-Installed Non-Powered Convenience Outlet:
 - 1) Outlet shall be powered from a separate 115/120-v power source.
 - 2) A transformer shall not be included.
 - Outlet shall be field-installed and internally mounted with easily accessible 115-v female receptacle.
 - 4) Outlet shall include 20 amp GFI receptacles. This kit provides a flexible installation method which allows code compliance for height requirements of the GFCI outlet from the finished roof surface as well as the capability to relocate the outlet to a more convenient location.
 - 5) Outlet shall be accessible from outside the unit.
 - 6) Outlet shall include a field-installed "Wet in Use" cover.

11. Flue Discharge Deflector:

- a. Flue discharge deflector shall direct unit exhaust vertically instead of horizontally.
- Deflector shall be defined as a "natural draft" device by the National Fuel and Gas (NFG) code.

12. Thru-the-Base Connectors:

- a. Kits shall provide connectors to permit gas and electrical connections to be brought to the unit through the unit basepan.
- b. Minimum of 4 connection locations per unit.

13. 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 shall be mounted in return ductwork.
- d. Power exhaust shall be controlled by economizer controller operation. Exhaust fans shall be energized when dampers open past

the 0 to 100% adjustable setpoint on the economizer control.

14. Roof Curbs (Vertical):

- Full perimeter roof curb with exhaust capability providing separate air streams for energy recovery from the exhaust air without supply air contamination.
- Formed galvanized steel with wood nailer strip and shall be capable of supporting entire unit weight.
- c. Permits installation and securing of ductwork to curb prior to mounting unit on the curb.
- 15. 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.
- 16. Return Air Enthalpy Sensor shall be used in conjunction with an outdoor air enthalpy sensor to provide differential enthalpy control.

17. Indoor Air Quality (CO₂) Sensor:

- a. Shall be able to provide demand ventilation indoor air quality (IAQ) control.
- The IAQ sensor shall be available in duct mount, wall mount, or wall mount with LED display. The setpoint shall have adjustment capability.

18. Smoke Detectors (factory-installed only):

- a. Shall be a 4-wire controller and detector.
- Shall be environmental compensated with differential sensing for reliable, stable, and drift-free sensitivity.
- 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:

- One set of normally open alarm initiation contacts for connection to an initiating device circuit on a fire alarm control panel.
- 2) Two Form-C auxiliary alarm relays for interface with rooftop unit or other equipment.
- 3) One Form-C supervision (trouble) relay to control the operation of the Trouble LED on a remote test/reset station.
- 4) Capable of direct connection to 2 individual detector modules.
- 5) Can be wired to up to 14 other duct smoke detectors for multiple fan shutdown applications.



- 19. Winter Start Kit:
 - Shall contain a bypass device around the low pressure switch.
 - b. Shall be required when mechanical cooling is required down to 25°F (-4°C).
 - Shall not be required to operate on an economizer when below an outdoor ambient of 40°F (4°C).

20. Time Guard:

- a. Shall prevent compressor short-cycling by providing a 5-minute delay (±2 minutes) before restarting a compressor after shutdown for any reason.
- b. One device shall be required per compressor.
- 21. Hinged Access Panels:
 - a. Shall provide easy access through integrated guarter turn latches.
 - b. Shall be on major panels of: filter, control box, fan motor, and compressor.
- 22. Condensate Overflow Switch: This sensor and related controller monitors the condensate level in the drain pan and shuts down compression operation when overflow conditions occur. It includes:
 - a. Indicator light solid red (more than 10 seconds on water contact — compressors disabled), blinking red (sensor disconnected).
 - b. 10 second delay to break eliminates nuisance trips from splashing or waves in pan

- (sensor needs 10 seconds of constant water contact before tripping).
- Disables the compressor(s) operation when condensate plug is detected, but still allows fans to run for economizer.
- 23. MERV-13 return air filters are a factory option to upgrade standard unit filters to MERV-13 filters.

24. Phase Monitor Control:

- a. Shall monitor the sequence of 3-phase electrical system to provide a phase reversal protection.
- b. Shall monitor the 3-phase voltage inputs to provide a phase loss protection for the 3-phase device.
- c. Will work on either a Delta or Wye power connection.
- 25. Horn/strobe annunciator provides an audible/ visual signaling device for use with factoryinstalled option or field-installed accessory smoke detectors:
 - a. Requires installation of a field-supplied 24-v transformer suitable for 4.2 VA (AC) or 3.0 VA (DC) per horn/strobe accessory.
 - b. Requires field-supplied electrical box, North American 1-gang box, 2 in. x 4 in. (51 mm x 102 mm).
 - c. Shall have a clear colored lens.

