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Refrigerated Heating Circulator with air-cooled cooling machine and optical level indicator. Circulation pump made of stainless steel with cooled shaft seal with free shaft, without bearing in the liquid. Automatical switch-over and capacity adaption for heating and cooling machine. Copper soldered evaporator, moistened parts and housing made of stainless steel. As well as for externally closed and also externally open applications. With adjustable overtemperature protection according to DIN 12876. Powerful variable speed pump (soft start) with integrated pressure control with optional external pressure sensor.

Pilot ONE:

The new Pilot ONE controller with pioneering technology and advanced control functions brings numerous advantages to routine work. The extensive features list includes a brilliant 5,7" TFT touchscreen display, USB and network connections, an integrated technical glossary and language support in 13 languages (EN, DE, FR, IT, ES, RU, CN, PT, JP, CZ, PL, KO, TR). The Pilot ONE has a convenient navigation system with easily remembered icons and menu categories which are colour sorted to make routine work simpler. Thanks to a favourites menu and One-Click operator guidance all important information is always just a few keystrokes away. Software wizards also help you to set up, ensuring correct settings. The USB port allows connection of the system to a PC or notebook. Together with the Spy software, requirements such as remote control or data transmission are easily achieved in a cost-effective manner. Network integration is easy with the internet port.

further functions:

E-grade Professional installed as standard, TAC (True Adaptive Control) - self optimising internal and cascade control, selectable temperature control mode (Internal/Process), programmer with 10 programs (max. 100 steps), ramp function (linear and non-linear), 5 point calibration, scalable graphic display, favourites menu, display resolution 0,01 K, integrated technical glossary, 2nd set point, user menus (Administrator level), calendar start, wallpaper selection.

3-2-2 warranty - registration required.

Technical data according to DIN 12876

Operating temperature range	-85...250 °C
Temperature stability at -10°C	0,01 K
temperature set point / display	5,7" colour Touchscreen
Resolution of display	0,01 K
Internal temperature sensor	Pt100
Sensor external connection	Pt100
Interface digital	Ethernet, USB (Host u. Device), RS232
digital input	ECS ONE
digital output	POKO ONE
Alarm message	optic, acoustic, relay
Safety classification	Class III / FL
Heating power	2 kW
Cooling power with	Thermooil
at 250°C	1,3 kW
at 200°C	1,3 kW
at 100°C	1,3 kW
Cooling power with	Ethanol
at 0°C	1,5 kW
at -20°C	1,5 kW
at -40°C	1,4 kW
at -60°C	1,2 kW
at -80°C	0,2 kW
Refrigeration machine	air-cooled, CFC- and HCFC-free
Refrigerant	R507
Refrigerant quantity	1,8 kg
Refrigerant 2nd stage	R23
Refrigerant quantity 2nd stage	0,39 kg
Circulation pump:	
max. delivery	40 l/min
max. delivery pressure	0.9 bar
Delivery at 0,3 bar	27 l/min
Delivery at 0,5 bar	20 l/min
Delivery at 0,8 bar	5 l/min



Order-No.: 1014.0049.01

Technical data according to DIN 12876

Pump connection	M30x1,5 male
max. permissible kin. viscosity	50 mm ² /s
min. filling capacity	3,8 l
Filling capacity expansion tank	3,3 l
Overall dimensions WxDxH **	460x604x1465 mm
Net weight	214 kg
sound pressure level +/- 4 dB(A)	64 dB(A)
Power supply factory configured (3 Phase)	400V 3~ 50Hz *
max. current (3 Phase)	10 A
Fuse (3 phase)	3x16 A
power supply convertible (3 phase)	440V 3~ 60Hz
max. current convertible (3 phase)	10 A
fuse convertible (3 phase)	3x16 A
Degree of Protection	IP20
min. ambient temperature	5 °C
max. ambient temperature	40 °C

from Serial-No.:

163497

1.0/12

Technical details and dimensions are subject to change. No liability is accepted for errors or omissions. Illustrations can deviate from the original.

Accessories and periphery: mini-USB cable #54949*, E-grade "Professional" #9496*, E-grade "Explore" #10495, SpyLight-Software, Com.G@te Namur, PC-Com.G@te-cabel, Holder for Com.G@te #10018, Com.G@te-extension cable: upon request, RS232 adapter cable #55018, Thermofluid, external pressure sensor, metal hoses, external sensor, connecting cable, isolation sleeve for external open applications, float switch in sight glass for extended security.

Note: Pump connections: Bore shape Y (60°) according to DIN 3863, pipework/flexible tempering hoses: Ball socket according to DIN 3863, sleeve nut according to DIN 3870.

* standard equipment

Output data valid for: Room temperature 20°C

in accordance with EN60034-1 the following voltage and frequency tolerances are valid:

Voltage + / - 5% with a simultaneous frequency tolerance of + / - 2%

Example -5% voltage and +2% frequency -> not allowed!

-5% voltage and -2% frequency -> allowed

Information to Electromagnetic compatibility:

Classification (disturbance) to EN55011: Class A, Group 1

Alternative (factory set) power supply - please quote configuration at time of ordering.

** Please respect space requirements. See operating conditions at www.huber-online.com

OIL-INJECTED ROTARY SCREW COMPRESSORS

GX 2-7 EP
G 7-15 EL

Sustainable Productivity

Atlas Copco





THE IDEAL SMALL BUSINESS COMPRESSOR

Atlas Copco compressors are legendary for their reliability and efficiency. That is why our G-series has long been the preferred air solution for small and medium sized businesses. The GX 2-7 EP and the G 7-15 EL simply check all the boxes:

- ☒ Quiet
- ☒ Efficient
- ☒ Powerful
- ☒ Reliable

ATLAS COPCO, PREMIUM QUALITY SINCE 1873

Atlas Copco was founded in 1873 and is based in Stockholm, Sweden. We have been a global leader in high-quality compressed air technology for more than a century and continue to raise the bar with innovative products.



ADVANCED MONITORING

The G 7-15 EL's new BASE controller offers advanced monitoring and control:

- Icon-based display, pressure settings, temperature reading.
- Running hours/hours working @ load.
- Service warnings.
- Outlet pressure setting directly on the controller.
- Pressure and element outlet temperature reading.

ROBUST AND EFFICIENT COMPRESSION ELEMENT

Atlas Copco's trusted rotary screw element offers an increased free air delivery by up to 3% compared to the previous models.

THE NEW G-SERIES

The latest-generation G-series comes with Atlas Copco's powerful rotary screw element and an advanced electronic controller on the G 7-15 EL to go above and beyond the call of duty.

BUILT-IN RELIABILITY

- Atlas Copco's patented rotary screw element allows for a 100% duty cycle.
- The complete unit is designed to operate at ambient temperatures of up to 46 °C/115 °F.

EASY INSTALLATION

- Available in multiple configurations – including floor or tank mounted and with or without integrated dryer.
- Extremely small footprint and cooling air discharge from the top allow for placement against a wall or even in a corner.





ZERO HASSLE, ZERO WORRIES COMPRESSORS



HIGH RELIABILITY

- 100% continuous duty cycle.
- Up to 46 °C/115 °F ambient temperatures.



LOW MAINTENANCE

- Easy access for maintenance.
- Quality components.



SILENT OPERATION

- Belt-driven element.
- Reduced noise levels and low vibration.



FULL FEATURE (FF)

- Integrated refrigerant air dryer.
- In-line PD/DD air filters.



ENVIRONMENTALLY FRIENDLY

- Reduced energy consumption.
- Low CO₂ emissions.

ATLAS COPCO
G-SERIES
—
A TRUSTED
PARTNER

G 7-15 EL

INDUSTRY-LEADING PERFORMANCE

- Thanks to load/no load control, the compressor controller switches automatically to the optimum control mode for high, low and intermittent air consumption.
- Best-in-class performance, total reliability and low power consumption.



GX 2-7 EP

COMPACT AND EFFICIENT

- Compared to piston compressors, the GX offers reduced energy consumption and high efficiency.
- The rotary screw technology minimizes vibrations for silent operation at the lowest initial investment.
- The standard start/stop control on the GX 2-5 EP ensures the compressor only consumes power when compressed air is needed. The GX 7 EP is equipped with energy efficient load/no load control.

QUALITY AIR PERFORMANCE

Untreated compressed air contains moisture, aerosols and dirt particles that can damage your system and contaminate your end product. Atlas Copco's G-series compressors provide the clean, dry air that improves reliability, avoids costly downtime and safeguards your products.

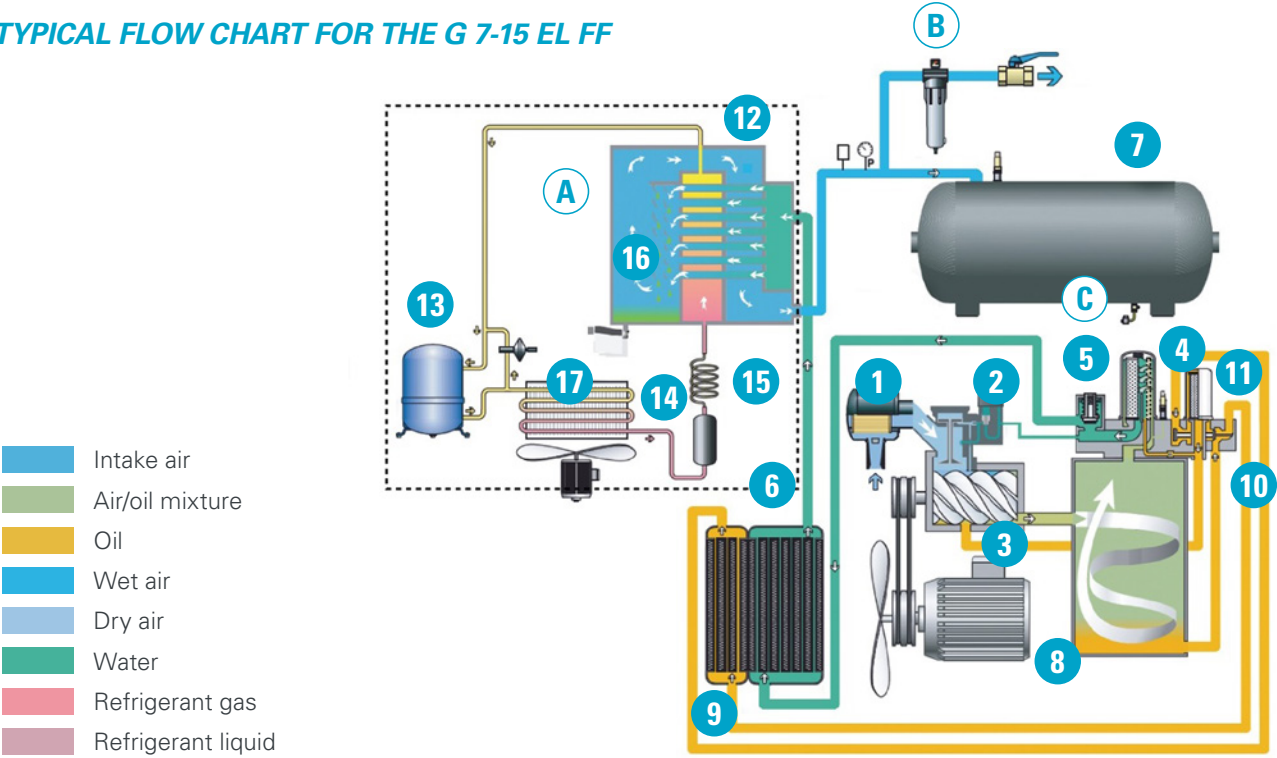
FULL FEATURE WITH BUILT-IN DRYER

The Full Feature version comes with a built-in refrigerant air dryer. It cools the compressed air and removes any moisture before it can enter your compressed air network. This prevents rust in your compressed air piping and avoids damage to your air tools.

A CHOICE OF FILTERS

To ensure your compressed air meets the quality air needs of a wide range of applications, different grade PD/DD air filters can be selected.

TYPICAL FLOW CHART FOR THE G 7-15 EL FF



AIR FLOW

- 1 Inlet air filter
- 2 Inlet valve
- 3 Compression element
- 4 Oil separator element
- 5 Minimum pressure valve
- 6 Aftercooler
- 7 Air receiver

OIL FLOW

- 8 Oil reservoir
- 9 Oil cooler
- 10 Thermostatic valve block
- 11 Oil filter

REFRIGERANT FLOW

- 12 Evaporator
- 13 Refrigerant compressor
- 14 Condenser
- 15 Capillary tube
- 16 Water separator
- 17 Electronic automatic drain

OPTIONS

- A Full Feature
- B PD high efficiency air filter
- C Electronic receiver drain

TECHNICAL SPECIFICATIONS

Compressor type	Maximum working pressure		Capacity FAD			Installed motor power		Noise level	Weight (kg/lbs)*	
	bar(e)	psi	l/s	m³/h	cfm	kW	hp	dB(A)	Pack	Full Feature
50 Hz VERSION										
GX 2 EP	10	145	4.0	14.4	8.5	2.2	3	61	165/364	200/441
GX 3 EP	10	145	5.3	19.1	11.2	3	4	61	165/364	200/441
GX 4 EP	10	145	7.8	28.1	16.5	4	5	62	165/364	200/441
GX 5 EP	10	145	10.0	36.0	21.2	5.5	7.5	64	165/364	200/441
GX 7 EP	10	145	14.0	50.4	29.7	7.5	10	66	214/472	264/582
G 7 EL	7.5	109	20.7	74.6	43.9	7.5	10	65	245/540	314/692
	10	145	18.0	64.9	38.2	7.5	10	65	245/540	314/692
	13	189	13.9	50.1	29.5	7.5	10	65	245/540	314/692
G 11 EL	7.5	109	28.7	103.3	60.8	11	15	67	257/567	326/719
	10	145	24.0	86.5	50.9	11	15	67	257/567	326/719
	13	189	19.2	69.1	40.7	11	15	67	257/567	326/719
G 15 EL	7.5	109	32.4	116.7	68.7	15	20	67	276/594	338/746
	10	145	29.1	104.8	61.7	15	20	67	276/594	338/746
	13	189	22.8	82.1	48.3	15	20	67	276/594	338/746
60 Hz VERSION										
GX 2 EP	10.3	150	4.0	14.4	8.5	2.2	3	61	165/364	200/441
GX 4 EP	10.3	150	7.8	28.1	16.5	4	5	62	165/364	200/441
GX 5 EP	10.3	150	10.0	36.0	21.2	5.5	7.5	64	165/364	200/441
GX 7 EP	10.3	150	13.8	49.6	29.2	7.5	10	66	214/472	264/582
G 7 EL	7.4	107	21.2	76.3	44.9	7.5	10	67	245/540	314/692
	9.1	132	18.7	67.3	39.6	7.5	10	67	245/540	314/692
	10.8	157	16.4	59.1	34.8	7.5	10	67	245/540	314/692
	12.5	181	13.8	49.8	29.3	7.5	10	67	245/540	314/692
G 11 EL	7.4	107	28.1	101.3	59.6	11	15	68	257/567	326/719
	9.1	132	25.4	91.4	53.8	11	15	68	257/567	326/719
	10.8	157	23.0	82.9	48.8	11	15	68	257/567	326/719
	12.5	181	11.7	42.1	24.8	11	15	68	257/567	326/719
G 15 EL	7.4	107	33.1	119.3	70.2	15	20	68	276/594	338/746
	9.1	132	29.6	106.7	62.8	15	20	68	276/594	338/746
	10.8	157	27.3	98.4	57.9	15	20	68	276/594	338/746
	12.5	181	23.1	83.3	49.0	15	20	68	276/594	338/746

*Tank mounted variant.
EP: Electropneumatic, EL: BASE controller.
Standard air receiver size, GX 2-7 EP: 200 l/60 gal, G 7-15 EL: 270 l/80 gal.
Unit performance measured according to ISO 1217, latest edition.
Mean noise level (pack variant) measured according to Pneurop/Cagi PN8NTC2 test code; tolerance 3 dB(A).

OPTIONS

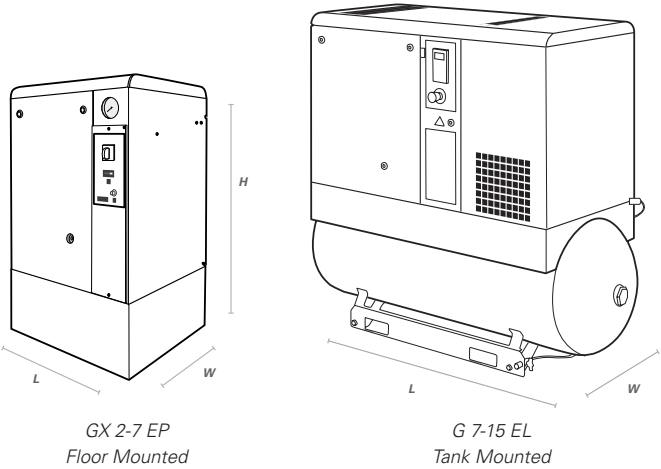
Available options	GX 2-7 EP	GX 2-7 EP FF	G 7-15 EL	G 7-15 EL FF
Integrated aftercooler	-	-	O	✓
Water separator (shipped loose)	-	✓	O	✓
Timer water drain on water separator (shipped loose)	-	-	O	-
Timer drain on air receiver (tank mounted only)	O	O	O	O
Electronic no loss water drain on water separator (shipped loose)	-	✓	O	✓
Electronic no loss water drain on air receiver (500 l/120 gal tank mounted only)	O	O	O	O
Integrated DD filter kit	-	-	-	O
Integrated high performance PD filter kit	-	O	-	O
500 l/120 gal air receiver (tank mounted only)	-	-	O	O
Tropical thermostat	-	-	O	O

✓ Standard O Optional - Not available

DIMENSIONS

	L (mm)	W (mm)	H (mm)
PACK FLOOR MOUNTED			
GX 2-7 EP	620	575/605*	975
G 7-15 EL	810/840*	590	1085
FULL FEATURE FLOOR MOUNTED			
GX 2-7 EP	-	-	-
G 7-15 EL	1205/1235*	590	1085
PACK TANK MOUNTED			
GX 2-7 EP	1420	575	1280
G 7-15 EL	1533	590	1332
FULL FEATURE TANK MOUNTED			
GX 2-7 EP	1420	575	1280
G 7-15 EL	1533	590	1332

* Length with inlet grating.
** Dimensions of G 7-15 EL tank mounted are 1935 x 590 x 1463 mm (L x W x H) with a 500 l vessel and 1880 x 590 x 1463 mm (L x W x H) with a 120 gal vessel.



COMMITTED TO SUSTAINABLE PRODUCTIVITY

We stand by our responsibilities towards our customers, towards the environment and the people around us.
We make performance stand the test of time. This is what we call – Sustainable Productivity.



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Designs and specifications are subject to change without notice or obligation.
Read all safety instructions in the manual before usage.

Atlas Copco

SPECIFICATIONS

AGILENT IDP15

Agilent Part Number

X3815-64000

Pump Type:

Oil-Free, Scroll

Pumping Speed:

9 CFM

Ultimate Pressure:

10×10^{-3} Torr

Power:

120V / 1ph (220V available)

Intake Connection:

KF-25

Dimensions:

L 19.08" x W 9.22" x H 14.3"

Weight:

75 lbs

- Cascade Sciences - <https://cascadesciences.com> -

TVO-5 Vacuum Purge Oven



TVO-5 Vacuum Purge Oven

\$8,500.00

Specifications

Model TVO-5 (CVO-5)

CAPACITY

Volume:

4.5 Cubic Ft.

Interior:

18"W x 24"D x 18"H

457mm x 609mm x 457mm

Exterior:

26.5" W x 34.5" D x 32.3"H

673mm x 876mm x 819mm

TEMPERATURE RANGE

Low-Temp Processing Range: 26°F to 250°F (121°C)

Temperature Uniformity: +/- 1.5°F @ 105°F (40.5°C)

Temperature Stability: +/- 0.4°F @ 105°F(40.5°C)

Heat Up / Stabilization Time to 250°F: 120 minutes (to minimize overshoot)

High-Temp Processing Range: to 428°F / 220°C available

Temperature Uniformity: +/- 6.5% of setpoint

Note that ambient laboratory conditions can affect temp performance.

The TVO-5 (CVO-5) comes in both low temp and high temp versions. The low temp version has excellent temperature uniformity for temperature sensitive material. The higher temp version, 220°C has a uniformity about 6.5% of setpoint. At time of order we will verify the high / low temp version you require.

VACUUM PUMP

[Sold Separately by Cascade](#)

[Complete Oven + Pump Packages Available from Cascade](#)

VACUUM VALVE

¼ Turn Lever

VENT VALVE

¼ Turn Lever

INTERIOR LIGHTING

LED Strips (Rated to 150C)

GLASS WINDOW

Tempered NGI-US to ANSI Z97.1.2007

VACUUM GAUGE

Reads in inches mercury or torr
(Selectable)

TEMP CONTROLLER

Touch Screen

Accurate Within 1°F

Independent Overtemp Failsafe

PORTS (Rear)

Vacuum = 3/8th Barb

Vent = ¼" Barb

Auxiliary KF-25 Port

Data: Log temp & vacuum levels

INERT GAS INTRODUCTION

Yes. Via ¼" Vent Barb

15 psi max inlet pressure

POWER OPTIONS

110V – 120V / 1ph / 14A 50/60Hz

Cord Included

NEMA 5-15 Power Outlet

1105 BTU/hr

Rating at max power

220V – 240V / 1ph / 7A 50/60Hz

Cord Included

NEMA 6-15R Power Outlet

1228 BTU/hr

Rating at max power

SHELVING

5 in a flexible configuration

[Fits 8 max – buy more here](#)

Surface Area: 18"W x 24"D

Weight Capacity: 50 lbs

INCLUDED ACCESSORIES

5 Shelves

20 Clips

4 Leveling Feet

Power Cord

DOOR GASKET

18" x 18"

Comes with [Solvent Resistant BUNA Standard](#) rated to 221°F to 105°C

Compatible With:

[High Temp Silicone](#) rated to 446°F to 230°C

Viton rated to 401°F to 205°C

WEIGHT

360 lbs / 163.3 Kg

Shipping Weight: 449 lbs / 207.3 Kg

SHIPPING DIMENSIONS

41"L x 41"W x 45"H

Class 85

CERTIFICATIONS

ISO 9001

NRTL TUV #U8 170464972 077

CAN/CSA-C22.2 No. 61010-1:2012

+ UPD No. 1:2015-07 + UPD No. 2:2016-04

CAN/CSA-C22.2 No. 61010-2-010:2015

UL 61010-1:2012/R:2016-04

UL 61010-2-010:2015

EN 61010-1:2010

EN 61010-2-010:2014

WARRANTY

1 Year (gaskets not included)

COMMENTS

Questions? Call 503-847-9075 x1.

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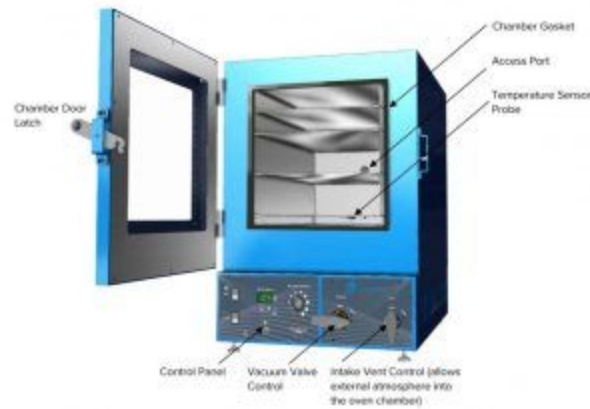
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TVO-2 Vacuum Purge Oven



TVO-2 Vacuum Purge Oven

\$4,000.00

Specifications

Model TVO-2 (CVO-2)

CAPACITY

Volume:

1.67 Cubic Ft. / 47.2 Liters

Interior:

12"W x 20"D x 12"H

305mm x 508mm x 305mm

Exterior:

18.8" W x 24.5" D x 24.5"H

478mm x 622mm x 622mm

TEMPERATURE RANGE

Low-Temp Processing Range: 26°F to 250°F (121°C)

Temperature Uniformity: +/- 1.5°F @ 105°F (40.5°C)

Temperature Stability: +/- 0.4°F @ 105°F (40.5°C)

High-Temp Processing Range: Up to 428°F / 220°C

Temperature Uniformity: +/- 6.5% of setpoint

Note that ambient laboratory conditions can affect temp performance.

The TVO-2 (CVO-2) comes in both low temp and high temp versions. The low temp version has excellent temperature uniformity for temperature sensitive

material. The higher temp version, 220°C has a uniformity about 6.5% of setpoint. At time of order we will verify the high / low temp version you require.

VACUUM PUMP

[Sold Separately by Cascade](#)

[Complete Oven + Pump Packages Available from Cascade](#)

VACUUM VALVE

¼ Turn Lever

VENT VALVE

¼ Turn Lever

INTERIOR LIGHTING

LED Strips (Rated to 150C)

GLASS WINDOW

Tempered NGI-US to ANSI Z97.1.2007

VACUUM GAUGE

Digital. 0 to 29.9"Hg

Reads in mmHg, bar psi, kPa, cm2, mmH2O

TEMP CONTROLLER

Digital Set Point

Accurate Within 1°F

Independent Overtemp Failsafe

PORTS (Rear)

Vacuum = 3/8th Barb

Vent = ¼" Barb

Auxiliary KF-25 Port

Data: Log temp & vacuum levels

INERT GAS INTRODUCTION

Yes. Via ¼" Vent Barb

15 psi max inlet pressure

POWER OPTIONS

110V – 120V / 1ph / 6A 50/60Hz

Cord Included

NEMA 5-15 Power Outlet

Full Power 2456 BTU/hr

220V – 240V / 1ph / 4A 50/60Hz

Cord Included

NEMA 6-15R Power Outlet

Full Power 3275 BTU/hr

SHELVING

Comes with 5 in a flexible configuration

[1" High = 1 each](#)

[2" High = 2 each](#)

[3" high = 2 each](#)

Surface Area: 12"W x 19.5"D

Weight Capacity: 50 lbs

DOOR GASKET

12" x 12"

Comes with [Solvent Resistant BUNA Standard](#) rated to 221°F to 105°C

Compatible With:

[High Temp Silicone](#) rated to 446°F to 230°C

Viton rated to 401°F to 205°C

WEIGHT

148 lbs / 67.1 Kg

Shipping Weight: 183 lbs / 83 Kg

SHIPPING DIMENSIONS

33"L x 33"W x 47"H

Class 85

CERTIFICATIONS

ISO 9001

NRTL TUV #U8 170464972 077

CAN/CSA-C22.2 No. 61010-1:2012

+ UPD No. 1:2015-07 + UPD No. 2:2016-04

CAN/CSA-C22.2 No. 61010-2-010:2015

UL 61010-1:2012/R:2016-04

UL 61010-2-010:2015

EN 61010-1:2010

EN 61010-2-010:2014

WARRANTY

1 Year (gaskets not included)

COMMENTS

Questions? Call 503-847-9075 x1

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URL to article:

<https://cascadesciences.com/shop/vacuum-purge-equipment/vacuum-ovens/tvo-2b/>

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Pump Type:
Oil-Free, Diaphragm

Pumping Speed:
2.3 CFM

Ultimate Pressure:
1.5 Torr

Power:
120V / 1ph

Intake Connection:
KF-16 with 3/8th hose barb on filter

Dimensions:
L 12.08" x W 9.05" x H 6"

Weight:
40.34 lbs

UL Certification:
CSCI #6700062

ROOT SCIENCES

SHORT PATH DISTILLATION PLANT VKL 70-5

KEY FEATURES

- Rate of throughput:
1500-2000ml per hour
- True continuous feed: equipment design allows for uninterrupted operation, continuously feed cannabis oil into the feed tank and pump finished product out into vessels of your choosing without breaking vacuum
- Fully jacketed system: The VKL70-5RS is Heated from start to finish, negating the use of Heating Tape or Heat guns to keep product moving through the system
- Fully pumped system: Through our integrated pumps the operator has full control over the feed and discharge rates. No relying on gravity type drip feed or receiving flasks that need to be harvested from. True continuous operation from front to back
- Training on operation of equipment and parameters for producing distillate included with purchase
- Analytic results up to 99.85% total cannabinoids
- 4-8 week lead time



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WWW.ROOTSCIENCES.COM

Item 1.	Feed: 1) Feed Tank in jacketed design with flanged lid with spare nozzles. 2) Gear pump in jacketed design (design temperature 300°C), the speed of the pump is adjustable by frequency inverter. 3) Feed line to evaporator is jacketed.
Item 2.	Short-Path Evaporator: 1) Max evaporator temperature: 300 °C 2) Borosilicate glass 3) Internal condenser (coil) 4) 3 wiper strands 5) Digital display of wiper speed at motor drive 6) Operating pressure (depending on product): 0.001 mbar 7) Feed nozzle in jacketed design 8) Residue nozzle in jacketed design 9) Distillate nozzle in jacketed design
Item 3.	Distillate & Residue discharge pumps (2 pumps): 1) Gear pump in jacketed design (design temperature 300°C), the speed of the pump is adjustable by frequency inverter. 2) Discharge siphon after gear pump is jacketed, which is used as a pressure lock against the atmosphere.
Item 4.	Vacuum System: 1) Vacuum pump equipped with vacuum pump oil 2) Diffusion vacuum pump for achieving stable vacuum conditions at low pressures. (oil included) 3) Flanged cold trap & collection vessel for cold trap condensate. 4) Dosing valve for pressure adjustment & for venting 5) Digital gauge display measuring vacuum pressure. 6) All necessary connection pipes & hoses for vacuum system
Item 5.	Heating & Cooling 1) 1 independent heating unit for the evaporator 2) 1 independent heating unit for the residue & distillate line 3) 1 independent heating unit for the feed tank 4) 1 independent cooling unit for the cold trap 5) 1 independent heating unit for the internal condenser
Item 6.	Rack/Frame: 1) Frame made of stainless steel with connection clamps for variable use. The frame is equipped with 4 wheels and is movable.
Item 7.	Power supply & power distribution system: 1) Voltage: 240V 2) Frequency: 60 Hz 3) Number of Phases: 1 (two hot wires) 4) Power distribution panel. 5) Control panel for pumps.
Item 8.	Included spare parts: 1) 1 set of tools 2) 1 set of wiper blades 3) 1 set of static gaskets 4) 1 set of shaft sealing for rotary transmission 5) 1 set of bearings for rotary transmission 6) 1 set of O-rings
Item 9.	Documentation 1) Operating instructions

Storage Density and the Total Cost of Ownership

VIP® Plus Cabinet Design, Floor Space Efficiency and Load Optimization are Ideal for Biobanks, Biorepositories and High Volume Applications



Ideal for Biorepositories

Performance and reliability are the most important consideration when evaluating the total cost of ownership for an ultra-low temperature freezer. The Panasonic Healthcare model MDF-DU900VC-PA ultra-low temperature -86°C freezer is engineered from the inside out for performance, reliability and maximum storage within a compact footprint.



The freezer cabinet features the Panasonic Healthcare VIP Plus insulation profile, a thin-wall composite of vacuum insulated panels layered with high performance, CFC-free foam, creating maximum internal volume per sq.ft. ratios.

Capacity is 672 2" boxes or 448 3" boxes in a compact 10.79 sq.ft. footprint.

Exponential Increase in Biological Storage Demand

Recent market data shows an increased demand for long-term storage of biological samples due to the rising importance for clinical and pharmaceutical trials. Scientific studies are also increasing demand for more storage of patient specimens and samples.



One report estimates the number of samples stored within U.S. biobanking facilities is 300 million, increasing by 20 million samples each year.¹⁾

Biobanks and Biorepositories

With the rising demand for additional -80°C storage, more preservation equipment within new and existing biorepository facilities will be required. When outfitting a facility, careful consideration of -80°C ultra-low temperature freezers, including the peripheral tools and maintenance should be considered.



Estimates have shown that the annual operating cost for each ULT freezer in a biorepository is approximately \$20, total cost, per square foot.²⁾

1) "Biobanking Operations: Contingency Planning and Disaster Recovery of Research Samples" BioProcess Journal SPRING 2014 • Volume 13/ Issue 1 • ISSN 1538-8786

2) "Repository Planning, Design, and Engineering: Part II—Equipment and Costing", Phillip M. Baird and Elaine W. Gunter

Return on Investment by Comparison

The overview below illustrates the competitive advantages of the model MDF-DU900VC-PA for a Biobank/Biorepository, based on the recommendation of general storage capacity of 30,000 2" boxes in a 2,400 square feet space.

		Panasonic Healthcare*	Brand T	Brand T	Brand S	Brand T	Brand N	Brand H	Brand H	The Panasonic Healthcare Advantage
Freezer volume	cu.ft.	29.8	28.0	28.8	30.0	33.5	27.5	26.0	26.0	
Storage	2" boxes	672	600	600	560	700	480	480	528	
Freezer footprint	ft²	10.79	12.77	11.39	15.00	12.92	12.08	11.44	11.44	Panasonic Healthcare has the smallest footprint
Boxes per ft²	2" boxes	62.28	46.99	52.68	37.33	54.18	39.74	41.96	46.15	Panasonic Healthcare stores more 2" boxes per ft²
Floor cost per freezer (at \$20 per ft² per year)	\$	215.80	255.40	227.80	300.00	258.40	241.60	228.80	228.80	Panasonic Healthcare has the lowest cost per ft² footprint
Floor cost per 2" box	\$	0.32	0.43	0.38	0.54	0.37	0.50	0.48	0.43	Panasonic Healthcare has the lowest cost per ft² for 2" box
Number of freezers required to store 30,000 2" boxes	freezers	45	50	50	54	43	63	63	57	Panasonic Healthcare only requires 45 ULT freezers to store 30,000 2" boxes **
Floor cost for the number of freezers required to store 30,000 2" boxes	\$	9,711.00	12,770.00	11,390.00	16,200.00	11,111.20	15,220.80	14,414.40	13,041.60	Panasonic Healthcare offers less total cost per ft² for the number of ULT freezers required when considering 29.0 cu. ft. or larger capacity ULT freezer
Total floor space required for 30,000 2" boxes	ft²	485.55	638.50	569.50	810.00	555.56	761.04	720.72	652.08	Panasonic Healthcare requires less ft² to store 30,000 2" boxes
Floor space % required to store 30,000 2" boxes	%	20	27	24	34	23	32	30	27	Panasonic Healthcare provides an ideal efficient use of floor space

* Panasonic Healthcare Model MDF-DU900VC-PA
** Only the 33.5 cu. ft. freezer requires fewer freezers to achieve the storage capacity of 30,000 2" boxes. However, total cost per ft² floor space for the number of 33.5 cu. ft. freezers increases by a total of \$1,400.20.

Reliability and Performance

Panasonic Healthcare engineered refrigeration compressors are specifically designed for ultra-low temperature applications. The MDF-DU900VC-PA employs a time-proven refrigeration system which has demonstrated better than 99% uptime since introducing the VIP Series MDF-U76VC-PA.³⁾

Unique system cooling functions within the Panasonic Healthcare cascade refrigeration circuit essentially use the same energy twice, once to cool the preserved product and again to cool the compressors and lubricating oil essential for proper operation. This process minimizes compressor stress and extends the compressor life. All functions are strategically balanced by the microprocessor-based controller which responds according to heat load, door openings and ambient conditions.

Panasonic Healthcare has engineered the most robust refrigeration system for ultimate performance and reliability in our ultra-low temperature freezers.



Panasonic Healthcare Corporation of North America
1300 Michael Drive, Suite A, Wood Dale, IL 60191
Toll Free USA (800) 858-8442, Fax (630) 238-0074
www.panasonic-healthcare.com/us/biomedical

3) "This calculation is based on Panasonic Healthcare service data for the MDF-U76VC-PA ultra-low temperature freezer."

6100 Series 1 HP Chiller, Turbine Pump



6100T

Key Specifications

Description	6100 Series 1 HP Chiller, Turbine Pump; 100 psi; 13.2 l/min
Display	LED
Connectivity	Optional: RS232, RS485, Remote On/Off
Working Temperature Range °C	-10° to 40°
Temperature Stability °C	±0.1°
Temperature Calibration Capability	1-point
Pump Type	Turbine
External Temperature Control Capability	Optional

Key Features

Features

- Large, dual displays present temperature and pressure or flow rate simultaneously
- Compact, portable design takes up less floor space
- Cooling at ambient temperatures as high as 30°C
- Powerful turbine pump

- Choice of compressor sizes
- User-adjustable temperature, pressure, and flow rate alarms
- External temperature tracking and communications capability (optional)
- Cool Command™, WhisperCool® (3/4 and 1 HP models)

Common Specifications

Working Temperature Range °F	14° to 104°
Working Temperature Range °C	-10° to 40°
Reservoir Capacity (gallons)	1.11
Reservoir Capacity (liters)	4.2
Reservoir Cover	Screw-on Cap
Cleanable Air Filter	Yes
Cleanable Fluid Filter	Yes
Temperature Stability °F	±0.2°
Temperature Stability °C	±0.1°
Display	LED
Pump Type	Turbine
Pump Speed	Constant, Single Speed
Process Connections	1/2" (F) NPT
External Temperature Control Capability	Optional
Over-Temperature Protection / Failsafe Heater Control	Yes
Reservoir Liquid Level Indicator	Yes
WhisperCool Environmental Control Technology	Yes
Cool Command Refrigeration Technology	Yes
Reservoir Drain	Yes
Heater Option	Yes
Maximum Ambient Temperature °F	95°
Maximum Ambient Temperature °C	35°
Overall Dimensions (L x W x H) (inches)	27.6 x 14.5 x 22.6 in
Overall Dimensions (L x W x H) (cm)	70.2 x 36.8 x 57.5 cm
Compressor Size (HP)	1

Refrigerant	R134a
Shipping Weight (pounds)	199.0
Shipping Weight (kilograms)	90.0
Catalog Page Number	102-103

60 Hz Only

Part Number	6160T21A130D
Maximum Pressure (psi)	100.0
Maximum Pressure (bar)	6.90
Maximum Pressure Flow Rate (gpm)	3.50
Maximum Pressure Flow Rate (l/min)	13.2
Cooling Capacity @ -10°C (W)	450
Cooling Capacity @ -5°C (W)	725
Cooling Capacity @ 0°C (W)	1000
Cooling Capacity @ +10°C (W)	1925
Cooling Capacity @ +20°C (W)	2900
Cooling Capacity @ +30°C (W)	3103
Cooling Capacity @ +40°C (W)	3196
Included Hardware	Two sets of Inlet/Outlet Adapters: ½ inch male NPT, 5/8 inch male NPT
Electrical Requirements (VAC/Hz/Ph/A)	230/60/1/12.2
Regulatory Approvals	TUV

50 Hz Only

Part Number	6150T21A130E
Maximum Pressure (psi)	83.0
Maximum Pressure (bar)	5.72
Maximum Pressure Flow Rate (gpm)	2.90
Maximum Pressure Flow Rate (l/min)	11.0
Cooling Capacity @ -10°C (W)	600
Cooling Capacity @ -5°C (W)	900
Cooling Capacity @ 0°C (W)	1200
Cooling Capacity @ +10°C (W)	1900
Cooling Capacity @ +20°C (W)	2650

Cooling Capacity @ +30°C (W)	2836
Cooling Capacity @ +40°C (W)	2921
Included Hardware	Two sets of Inlet/Outlet Adapters: ½ inch male NPT, 5/8 inch male NPT
Electrical Requirements (VAC/Hz/Ph/A)	240/50/1/12.2
Regulatory Approvals	CE

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Source URL (modified on 01/27/2018 - 10:51): <https://www.polyscience.com/chillers/6100-series-1-hp-chiller-turbine-pump>

15 Liter Refrigerated Circulator, -40°C



AD15R-40

Key Specifications

Description	-40, 15 L Ref. Circulator
Controller Type	Advanced Digital
Display	3.75" Touch-Pad LCD
Connectivity	Ethernet, USB A & B, RS232/addressable RS485, External Temperature Probe
Languages Supported	4: French, German, Spanish, English
Swivel 180 Rotating Controller	Yes
Working Temperature Range °C	-40° to 200°
Temperature Stability °C	±0.01°
Fluid Optimization/Specific Heat Tuning	Automatic and/or user-adjustable
Temperature Calibration Capability	1-point
Working Access (L x W x D) (cm)	21.2 x 27.6 x 14 cm
Pump Type	Pressure/Suction
External Temperature Control Capability	Yes

Flammability Class (DIN 12876-1)	III (FL)
Electrical Plug Options	Part numbers listed are Standard U.S. and European types. Country specific plug types available . Contact your regional distributor to order .

Key Features

Advanced Digital Controller

Key Features

- Intuitive 3.75" (9.5 cm) display with touch-pad control
- 4 languages: French, German, Spanish, English
- Swivel 180™ Rotating Controller
- On-board connectivity: USB-A & B, Ethernet, RS-232/RS-485, and external temperature probe
- On-screen prompts
- Automatic performance optimization and specific heat tuning
- Single-point calibration capability

Common Specifications

Working Temperature Range °F	-40° to 392°
Working Temperature Range °C	-40° to 200°
Nominal Cooling Capacity @ +20C (W)	1000
Reservoir Capacity (gallons)	3.96
Reservoir Capacity (liters)	15
Reservoir/Tank Material	Stainless Steel
Reservoir Cover	Included
DuraTop	Yes
LidDock	Yes
Cleanable Air Filter	Yes
Working Access (L x W x D) (inches)	8.35 x 10.88 x 5.5 in
Working Access (L x W x D) (cm)	21.2 x 27.6 x 14 cm
Temperature Stability °F	±0.02°
Temperature Stability °C	±0.01°
Display	3.75" Touch-Pad LCD
Display Resolution (Set)	0.01
Display Resolution (Read)	0.01

Pump Type	Pressure/Suction
Pump Speed	Variable
Process Connections	1/4" (F) NPT
External Temperature Control Capability	Yes
Flammability Class (DIN 12876-1)	III (FL)
Over-Temperature Protection / Failsafe Heater Control	Yes
Low Liquid Level Protection	Yes
WhisperCool Environmental Control Technology	Yes
Cool Command Refrigeration Technology	Yes
Reservoir Drain	Yes
Included Software	PolyTemp Viewer, USB driver
Maximum Ambient Temperature °F	95°
Maximum Ambient Temperature °C	35°
Overall Dimensions (L x W x H) (inches)	22.4 x 14.5 x 26.9 in
Overall Dimensions (L x W x H) (cm)	56.9 x 36.8 x 68.3 cm
Refrigerant	R404A
Environmental Compliance	RoHS, WEEE
Shipping Weight (pounds)	118.0
Shipping Weight (kilograms)	53.5
Catalog Page Number	40-41

60 Hz Only

Part Number	AD15R-40-A11B
Maximum Pressure (psi)	4.3
Maximum Pressure (bar)	0.30
Maximum Pressure Flow Rate (gpm)	5.30
Maximum Pressure Flow Rate (l/min)	20.1
Maximum Suction Flow Rate (gpm)	3.9
Maximum Suction Flow Rate (l/min)	14.7
Cooling Capacity @ -20°C (W)	265
Cooling Capacity @ 0°C (W)	650

Cooling Capacity @ +20°C (W)	1000
Cooling Capacity @ +100°C (W)	1000
Included Hardware	Nylon hose adapters for 3/8", 1/4", and 3/16"
Heater Wattage	1100
Electrical Requirements (VAC/Hz/Ph/A)	120/60/1/13
Regulatory Approvals	ETL

50 Hz Only

Part Number	AD15R-40-A12E
Maximum Pressure (psi)	3.6
Maximum Pressure (bar)	0.25
Maximum Pressure Flow Rate (gpm)	4.40
Maximum Pressure Flow Rate (l/min)	16.7
Maximum Suction Flow Rate (gpm)	3.2
Maximum Suction Flow Rate (l/min)	12.2
Cooling Capacity @ -20°C (W)	265
Cooling Capacity @ 0°C (W)	650
Cooling Capacity @ +20°C (W)	1000
Cooling Capacity @ +100°C (W)	1000
Included Hardware	Nylon hose adapters for 3/8", 1/4", and 3/16", and 1/4" NPT to M16 adapter
Heater Wattage	2200
Electrical Requirements (VAC/Hz/Ph/A)	240/50/1/13
Regulatory Approvals	CE

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7 Liter Refrigerated Circulator, -20°C



MX07R-20

Key Specifications

Description	-20, 7 L Ref. Circulator
Controller Type	MX
Display	3.25" LCD
Working Temperature Range °C	-20° to 135°
Temperature Stability °C	±0.07°
Temperature Calibration Capability	1-point
Working Access (L x W x D) (cm)	15.7 x 14.2 x 12.7 cm
Pump Type	Pressure
Flammability Class (DIN 12876-1)	I (NFL)
Electrical Plug Options	Part numbers listed are Standard U.S. and European types. Country specific plug types available . Contact your regional distributor to order.

Key Features

MX Controller

Key Features

- Large, universal icon and English display
- On-screen prompts
- Single-point calibration capability

Common Specifications

Working Temperature Range °F	-4° to 275°
Working Temperature Range °C	-20° to 135°
Nominal Cooling Capacity @ +20C (W)	200
Reservoir Capacity (gallons)	1.85
Reservoir Capacity (liters)	7
Reservoir/Tank Material	Stainless Steel
Reservoir Cover	Included
DuraTop	Yes
LidDock	Yes
Cleanable Air Filter	Yes
Working Access (L x W x D) (inches)	6.18 x 5.59 x 5 in
Working Access (L x W x D) (cm)	15.7 x 14.2 x 12.7 cm
Temperature Stability °F	±0.13°
Temperature Stability °C	±0.07°
Display	3.25" LCD
Display Resolution (Set)	0.1
Display Resolution (Read)	0.1
Pump Type	Pressure
Pump Speed	One
Process Connections	1/2" O.D. Barbed Tubes
Flammability Class (DIN 12876-1)	I (NFL)
Over-Temperature Protection / Failsafe Heater Control	Yes
Low Liquid Level Protection	Yes
Reservoir Drain	Yes
Maximum Ambient Temperature °F	95°
Maximum Ambient Temperature °C	35°

Overall Dimensions (L x W x H) (inches)	21.3 x 8.7 x 25.4 in
Overall Dimensions (L x W x H) (cm)	54.1 x 22.1 x 64.5 cm
Refrigerant	R134a
Environmental Compliance	RoHS, WEEE
Shipping Weight (pounds)	84.0
Shipping Weight (kilograms)	38.1
Catalog Page Number	44-45

60 Hz Only

Part Number	MX07R-20-A11B
Maximum Pressure (psi)	2.3
Maximum Pressure (bar)	0.16
Maximum Pressure Flow Rate (gpm)	3.60
Maximum Pressure Flow Rate (l/min)	13.5
Cooling Capacity @ -20°C (W)	30
Cooling Capacity @ 0°C (W)	120
Cooling Capacity @ +20°C (W)	200
Cooling Capacity @ +100°C (W)	200
Included Hardware	Fitting Kit for External Applications
Heater Wattage	1100
Electrical Requirements (VAC/Hz/Ph/A)	120/60/1/12
Regulatory Approvals	ETL

50 Hz Only

Part Number	MX07R-20-A12E
Maximum Pressure (psi)	1.8
Maximum Pressure (bar)	0.12
Maximum Pressure Flow Rate (gpm)	3.10
Maximum Pressure Flow Rate (l/min)	11.9
Cooling Capacity @ -20°C (W)	30
Cooling Capacity @ 0°C (W)	120
Cooling Capacity @ +20°C (W)	200

Cooling Capacity @ +100°C (W)	200
Included Hardware	Fitting Kit for External Applications
Heater Wattage	1100
Electrical Requirements (VAC/Hz/Ph/A)	240/50/1/8
Regulatory Approvals	CE

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SHORT PATH DISTILLATION PLANT VKL 70-5

KEY FEATURES

- Rate of throughput:
1500-2000ml per hour
- True continuous feed: equipment design allows for uninterrupted operation, continuously feed cannabis oil into the feed tank and pump finished product out into vessels of your choosing without breaking vacuum
- Fully jacketed system: The VKL70-5RS is Heated from start to finish, negating the use of Heating Tape or Heat guns to keep product moving through the system
- Fully pumped system: Through our integrated pumps the operator has full control over the feed and discharge rates. No relying on gravity type drip feed or receiving flasks that need to be harvested from. True continuous operation from front to back
- Training on operation of equipment and parameters for producing distillate included with purchase
- Analytic results up to 99.85% total cannabinoids
- 4-8 week lead time



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Item 1.	Feed: 1) Feed Tank in jacketed design with flanged lid with spare nozzles. 2) Gear pump in jacketed design (design temperature 300°C), the speed of the pump is adjustable by frequency inverter. 3) Feed line to evaporator is jacketed.
Item 2.	Short-Path Evaporator: 1) Max evaporator temperature: 300 °C 2) Borosilicate glass 3) Internal condenser (coil) 4) 3 wiper strands 5) Digital display of wiper speed at motor drive 6) Operating pressure (depending on product): 0.001 mbar 7) Feed nozzle in jacketed design 8) Residue nozzle in jacketed design 9) Distillate nozzle in jacketed design
Item 3.	Distillate & Residue discharge pumps (2 pumps): 1) Gear pump in jacketed design (design temperature 300°C), the speed of the pump is adjustable by frequency inverter. 2) Discharge siphon after gear pump is jacketed, which is used as a pressure lock against the atmosphere.
Item 4.	Vacuum System: 1) Vacuum pump equipped with vacuum pump oil 2) Diffusion vacuum pump for achieving stable vacuum conditions at low pressures. (oil included) 3) Flanged cold trap & collection vessel for cold trap condensate. 4) Dosing valve for pressure adjustment & for venting 5) Digital gauge display measuring vacuum pressure. 6) All necessary connection pipes & hoses for vacuum system
Item 5.	Heating & Cooling 1) 1 independent heating unit for the evaporator 2) 1 independent heating unit for the residue & distillate line 3) 1 independent heating unit for the feed tank 4) 1 independent cooling unit for the cold trap 5) 1 independent heating unit for the internal condenser
Item 6.	Rack/Frame: 1) Frame made of stainless steel with connection clamps for variable use. The frame is equipped with 4 wheels and is movable.
Item 7.	Power supply & power distribution system: 1) Voltage: 240V 2) Frequency: 60 Hz 3) Number of Phases: 1 (two hot wires) 4) Power distribution panel. 5) Control panel for pumps.
Item 8.	Included spare parts: 1) 1 set of tools 2) 1 set of wiper blades 3) 1 set of static gaskets 4) 1 set of shaft sealing for rotary transmission 5) 1 set of bearings for rotary transmission 6) 1 set of O-rings
Item 9.	Documentation 1) Operating instructions

Medium Freeze Dryer

Size:

Height 30"

Width 20"

Depth 25"

Power Usage*:

Condenser- 523 watts

Vacuum pump- 936 watts

Heating pads- 820 watts

Total Peak Watts: 2279 watts

19 Amp Spike

9-11 Amp Average

***Disclaimer:** This data is as collected in a freeze dryer running for ~24 Hours. Actual times and electricity usage may vary depending on content inside the freeze dryer.

Pikes Peak and Longs Peak Technical Specifications

Specification	Pikes Peak V2	Longs Peak
Weight	120 LB	130 LB
Overall Dimensions Depth x Width x Height	Horizontal: 29.2"x19.7"x13.5" Vertical: 15.5"x19.7"x33.3"	Horizontal: 32.6"x19.7"x13.5" Vertical: 15.5"x19.7"x36.8"
Input Voltage†	120/240VAC	120/240VAC
Fuses (2x)	Type: Fast Acting 250V Current: 10A Dimensions: 5mm x 20mm	Type: Fast Acting 250V Current: 10A Dimensions: 5mm x 20mm
Compressed Air Requirements	PSI: 10 – 120 CFM: 1.7 or greater Dry clean air	PSI: 20 – 140 CFM: 2.2 or greater Dry clean air
Pneumatic Cylinder Maximum Force Output	9,876 lb @ 120 PSI	15,300 lb @ 140 PSI
Frame & Enclosure Metal	A36 Steel	A36 Steel
Heat Plates	Sizes: 10" x 3" or 10" x 2" Material: 6061 Aluminum Maximum Temperature: 300 °F	Sizes: 10" x 3" or 10" x 2" Material: 6061 Aluminum Maximum Temperature: 300 °F

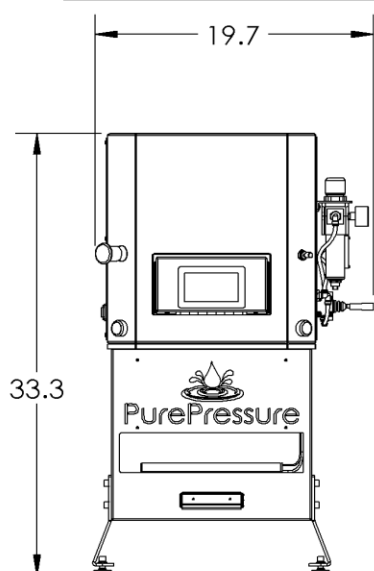
†Not all models are rated for 240VAC. See serial label on the side of your product for input voltage capabilities.

What's Included

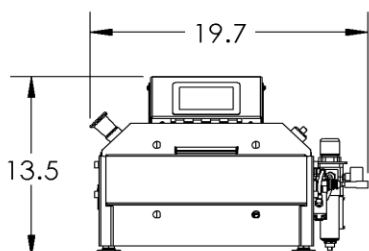
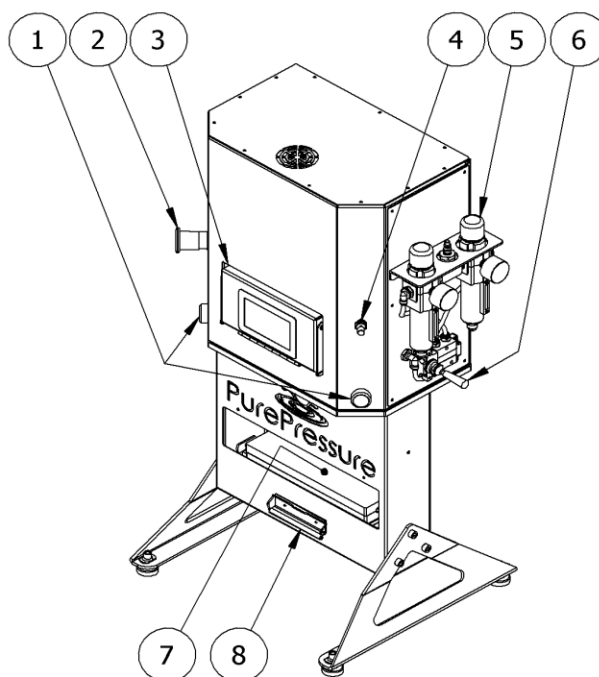
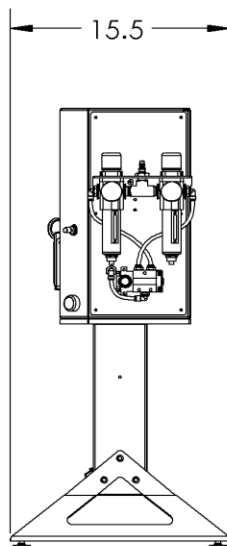
(items may differ depending on kit or model)

- a) LED capacitive touchscreen
- b) Two button safety start
- c) Emergency stop
- d) Plate speed actuation dial
- e) Compressed air filter / regulator(s)
- f) Pressure toggle for ramping control (Dual Pressure Kit)
- g) Parchment Clips
- h) Vertical orientation legs (2x)
- i) Horizontal orientation legs (2x)
- j) Leveling feet (4x)
- k) Industrial male air fitting (1/4")
- l) Power cable

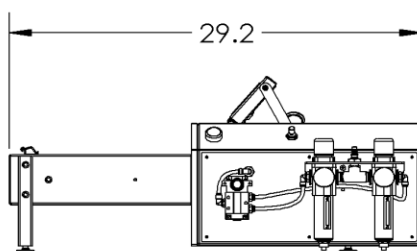
PIKES PEAK PRESS



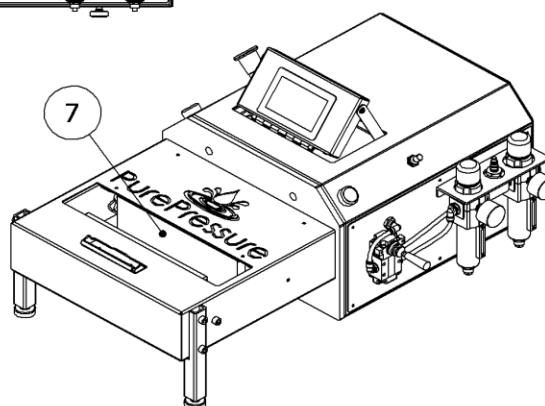
VERTICAL ORIENTATION



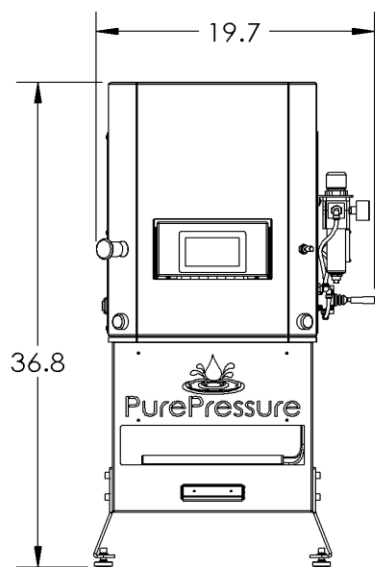
HORIZONTAL ORIENTATION



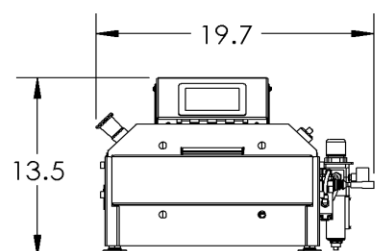
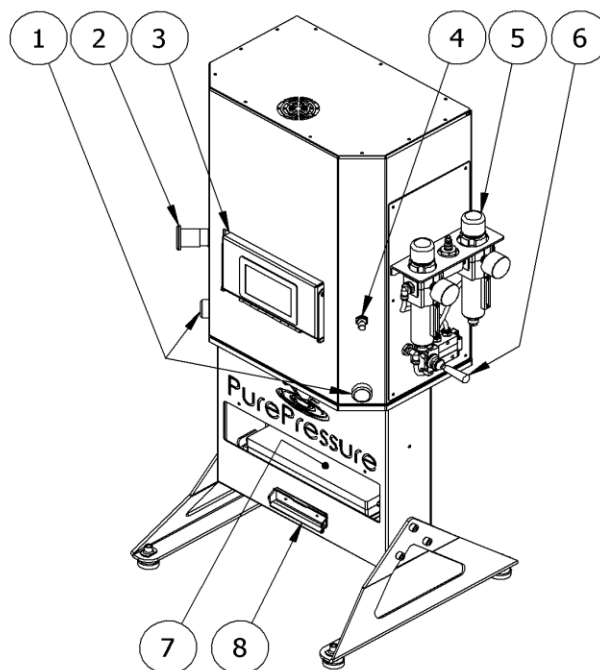
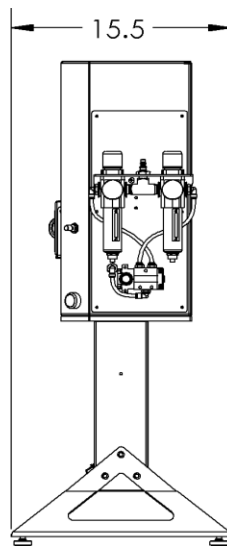
ITEM#	DESCRIPTION
1	START BUTTONS
2	ESTOP
3	TOUCHSCREEN DISPLAY
4	SPEED CONTROLER
5	REGULATOR ASSEMBLY
6	PRESSURE TOGGLE
7	HEAT PLATES
8	PARCHMENT CLIPS



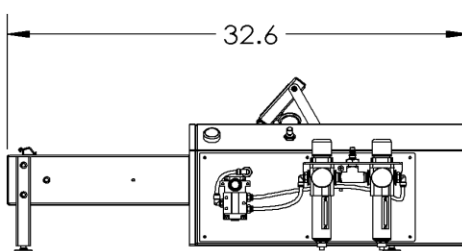
LONGS PEAK PRESS



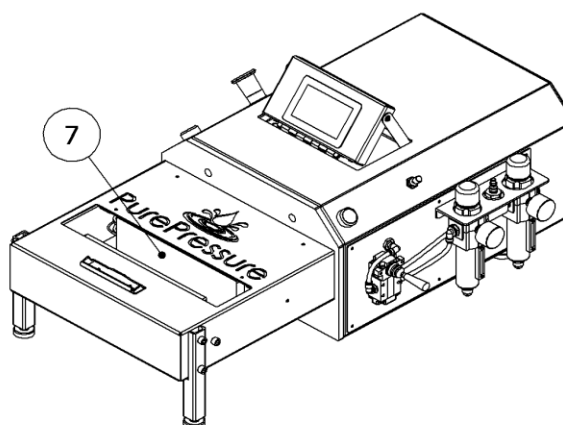
VERTICAL ORIENTATION



HORIZONTAL ORIENTATION



ITEM#	DESCRIPTION
1	START BUTTONS
2	ESTOP
3	TOUCHSCREEN DISPLAY
4	SPEED CONTROLER
5	REGULATOR ASSEMBLY
6	PRESSURE TOGGLE
7	HEAT PLATES
8	PARCHMENT CLIPS



SCOTSMAN C0330SW-1E SPECS	
Width	30 Inches
Depth	24 Inches
Height	23 Inches
Amps	13.5 Amps
Hertz	60 Hertz
Phase	1
Voltage	115
24 Hour Ice Yield	420 Pounds
Condenser Type	Water Cooled
Ice Type	Half Size Cubes
Installation Type	Modular
Made in America	Yes
NSF Listed	Yes
Power Usage	5.2 kWh per 100 lbs.
Type	Ice Machines
Water Usage	18.5 Gallons per 100 lbs.

ICED! CHILLERS

Air-cooled and water-cooled condensing units



Product Information

Horsepower: 3/4 -10

Refrigerants: R-22, R-134a, R-404A, R-407A,
R-407C, R-448A, R-449A

Nomenclature • Welded Condensing Units

Refrigerant	Code
Multiple	F
R-134a HT	
R-404A LT	P

Temperature Application	Code
High Temperature	H
Medium Temperature	M
Low Temperature	L
Extended Medium Temp.	F
Extra Low Temperature	E
Medium/High Temp	R/K
Multiple	S/N/P

Compressor Motor Types		
Phase	Description	Code
1	Capacitor Run - Capacitor Start	C
1	Induction Run - Capacitor Start	I
1	Induction Run - Split Phase	S
1	Capacitor Run - Permanent Split	P
3	General - 3 Lead Single Voltage	T

Bill Of Material (BOM)	
001 thru 099	Intended for UL Listing and CUL Certified
100 thru 299	Intended for UL Recognition and CUL Certified
300 thru 399	Not eligible for either UL Listing, UL Recognition or CUL Certified

Model Variation	
Scroll	Z
Digital Scroll	D

Condensing Unit Family Series	
Scroll	

Standard	
Standard	-
Evac and Charge	C

Nominal HP	
HP	Code
3/4	0075
1	0100
1-1/2	0150
2	0200
3	0300
4	0400
5	0500
6	0600
7-1/2	0750
9	0900
10	1000

Compressor Motor Protection	
Type Protection	Code
External Inherent Protection - One Protector (Line Break)	A
Internal Inherent Protection - One Protector (Line Break)	F
Internal Thermal Protection - Electronic Sensors; and Control Module External	S

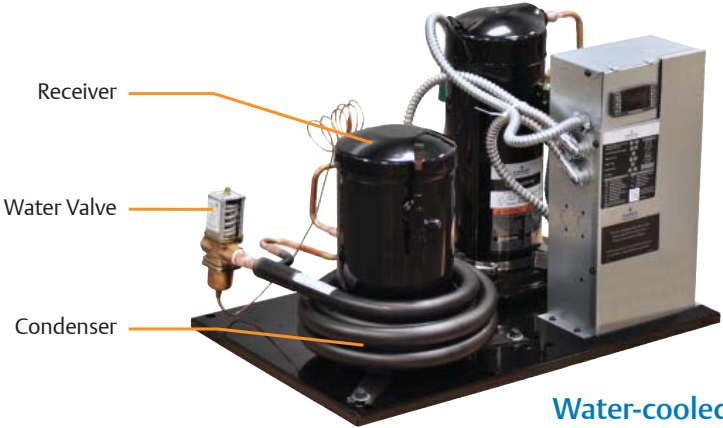
Electrical Codes		
60 Hz.	50 Hz.	Code
115-1	100-1	A
230-1	-	B
208/230-3	200/220-3	C
460-3	-	D
575-3	-	E
-	230-1	G
-	380/420-3	M
208/230-1	200-1	V
-	220-3	W
-	220/240-1	Z

Note: When applicable, specific 50 Hz ratings (not necessarily identical to typical shown above) will be shown as alternate on 60 Hz rated models.

F X X X - X X X X - X X X - X X X



Air-cooled



Water-cooled

Bill of Materials Matrix

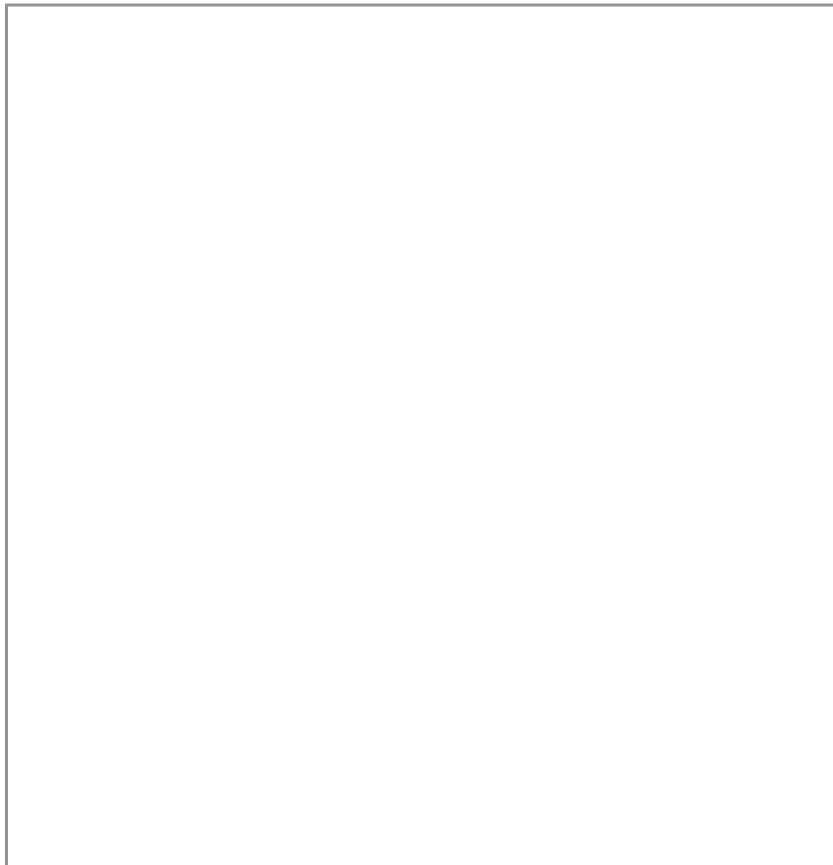
BOM	Options																	UL	
Sweat	Receiver W/ Valve	Suction Valve	Liquid Base Valve	Fan Guard	End Covers	Conduit	Power Cord	Accumulator	Fan Cycling	Pressure Controls	Filter Drier	Moisture Indicator	Solenoid Valve	Crankcase Heater	Head Pressure Control Valve	Water Valve	CoreSense	Listed	Recognized
Air Cooled																			
017		X	X	X	X	X				X								X	
020	X	X		X	X	X				X								X	
070	X	X		X	X	X		X		X	X	X						X	
071	X	X		X	X	X		X	X	X	X	X		X				X	
072	X	X		X	X	X				X	X	X						X	
075	X	X		X	X	X		X		X	X	X		X	X			X	
078	X	X		X	X	X					X	X						X	
212	X	X		X	X	X													X
Water Cooled																			
020	X	X				X				X				X		X		X	

Application Engineering Bulletins

4-1273	Factors to Consider in Converting Compressor Rated Capacity to Actual Capacity
4-1295	HFC-134A Refrigerant Guidelines
4-1298	Extended Medium Temperature R-404A/507 Hermetic Compressors and Condensing Units
4-1299	Application Guidelines for Copeland Scroll Compressors 2 - 6 Horsepower
4-1302	Application Guidelines for Copeland Scroll Compressors 7.5 - 15 Horsepower
4-1317	Application Guidelines for ZBKC / ZBKCE Refrigeration Scroll Compressors 1.3 to 6 HP
4-1318	Application Guidelines for ZBKC / ZBKCE Refrigeration Scroll Compressors 7 to 15 HP
4-1387	Application Guidelines for ZS**KAE Copeland Scroll™ Refrigeration Compressors 1.3-4.5 HP
4-1425	Application Guidelines for Low Temperature ZF**KAE 1-2.5HP Copeland Scroll™ Refrigeration Compressors
4-1426	Application Guidelines for ZB**KAE Copeland Scroll™ Refrigeration Compressors
8-1376	Electronic Unit Controller
11-1147	Suction Accumulators
11-1297	Liquid Line Filter-Driers
17-1260	Compressor Overheating
17-1268	Compression Ratio as it Affects Compressor Reliability
22-1182	Liquid Refrigerant Control in Refrigeration and Air Conditioning Systems

Copeland Scroll™ air-cooled and water-cooled condensing units

Features	Benefits
	Reliability
Copeland Scroll Compressor	High Energy Efficiency
	Low Sound & Vibration
Advance Diagnostics and Protection Features	Faster Trouble Shooting Warranty Reduction
Factory Installed EK Filter Drier & HMI Moisture Indicator	Less Leaks, Reduce Callbacks, Lower Installation Cost, Increase Equipment Reliability, Lower Warranty
Aluminum/Copper Condenser Design	Durability
Multi Refrigerant Approval for High/Med Models	Application Flexibility Inventory Consolidation



Iced Chiller

Base Model	MT Indoor AWEF							MT Outdoor AWEF						
	R-134a	R-22	R-404A	R-407A	R-407C	R-448A	R-449A	R-134a	R-22	R-404A	R-407A	R-407C	R-448A	R-449A
FFAM-008Z		N/A							N/A					
FFAM-010Z		N/A							N/A					
FFAM-012Z		N/A							N/A					
FFAM-071Z														
FFAM-081Z														
FFAM-091Z														
FFAM-101Z														
FFAP-015Z	6.40	6.68	6.04	6.34	5.80	5.68	5.68	8.45	9.01	8.83	9.02	8.62	8.23	8.24
FFAP-017Z	6.52	6.48	6.00	6.20	5.86	5.81	5.76	8.72	8.96	8.91	9.00	8.77	8.49	8.49
FFAP-018Z														
FFAP-020Z	5.75	6.07	5.72	5.74	5.39	5.31	5.31	7.59	8.23	8.25	8.16	7.91	7.63	7.63
FFAP-022Z	6.17	6.18	5.92	5.89	5.68	5.57	5.57	8.18	8.47	8.69	8.55	8.40	8.08	8.08
FFAP-030Z	6.65	6.64	6.47	6.47	6.07	5.96	5.98	8.69	8.97	9.32	9.14	8.92	8.54	8.54
FFAP-032Z	7.11	6.93	6.18	6.35	6.42	6.05	6.05	9.54	9.63	9.31	9.34	9.59	9.06	9.05
FFAP-035Z	7.14	6.87	6.03	6.21	6.40	5.92	5.93	9.71	9.68	9.21	9.33	9.63	8.87	8.87
FFAP-040Z	7.24	7.54	6.82	6.90	6.84	6.44	6.44	9.19	9.74	9.48	9.52	9.73	9.07	9.06
FFAP-042Z	7.27	7.37	6.74	6.66	6.76	6.67	6.66	9.40	9.77	9.61	9.31	9.76	9.52	9.52
FFAP-050Z	6.92		5.94	6.25	6.27			8.03		8.04	8.27	8.35		
FFAP-060Z	7.02	6.60	6.09	6.37	6.30	6.21	6.20	8.90	8.65	8.51	8.69	8.57	8.65	8.64
FPAK-010Z								N/A	N/A	N/A	N/A	N/A	N/A	N/A
FPAK-012Z								N/A	N/A	N/A	N/A	N/A	N/A	N/A
FPAK-013Z								N/A	N/A	N/A	N/A	N/A	N/A	N/A
FPAK-015Z								N/A	N/A	N/A	N/A	N/A	N/A	N/A
FPAK-020Z								N/A	N/A	N/A	N/A	N/A	N/A	N/A
FPAK-039Z								N/A	N/A	N/A	N/A	N/A	N/A	N/A

This refrigeration system is designed and certified for use in walk-in cooler applications.
Not all data available at time of printing.

Physical and Electrical Data

Copeland Scroll air-cooled condensing units

Model	Compressor	Voltage	Dimensions			Refrigerant Connections		Receiver Capacity (Lbs @ 90% Volume)							MCA	Max Fuse	Ship Weight
			L	W	H	Liquid	Suction	134a	22	404A	407A	407C	448A 449A				
FFAL-010Z-CFV-072	ZF03KAE-PFV	208/230	24.1	19.0	17.7	3/8				4.9			5.1	9	15	0	
FFAL-010Z-CFV-075	ZF03KAE-PFV	208/230	24.1	19.0	17.7	3/8								9	15	0	
FFAL-010Z-TFC-072	ZF03KAE-TF5	208/230	24.1	19.0	17.7	3/8				4.9			5.1	6.5	15	0	
FFAL-010Z-TFC-075	ZF03KAE-TF5	208/230	24.1	19.0	17.7	3/8								6.5	15	0	
FFAL-013Z-CFV-072	ZF04KAE-PFV	208/230	24.1	19.0	17.7	3/8				4.9			5.1	10.7	15	0	
FFAL-013Z-TFC-072	ZF04KAE-TF5	208/230	24.1	19.0	17.7	3/8				4.9			5.1	9.7	15	0	
FFAL-013Z-TFC-075	ZF04KAE-TF5	208/230	24.1	19.0	17.7	3/8								9.7	15	0	
FFAL-014Z-CFV-072	ZF05KAE-PFV	208/230	24.1	19.0	17.7	3/8				4.9			5.1	12.3	15	0	
FFAL-014Z-CFV-075	ZF05KAE-PFV	208/230	24.1	19.0	17.7	3/8								12.3	15	0	
FFAL-014Z-TFC-072	ZF05KAE-TF5	208/230	24.1	19.0	17.7	3/8				4.9			5.1	10.8	15	0	
FFAL-014Z-TFC-075	ZF05KAE-TF5	208/230	24.1	19.0	17.7	3/8								10.8	15	0	
FFAL-015Z-CFV-072	ZF06K4E-PFV	208/230	24.1	19.0	17.7	3/8				4.9			5.1	18.4	30	0	
FFAL-015Z-CFV-075	ZF06K4E-PFV	208/230	24.1	19.0	17.7	3/8								18.4	30	0	
FFAL-015Z-TFC-072	ZF06K4E-TF5	208/230	24.1	19.0	17.7	3/8				4.9			5.1	13	20	0	
FFAL-015Z-TFC-075	ZF06K4E-TF5	208/230	24.1	19.0	17.7	3/8								13	20	0	
FFAL-015Z-TFD-072	ZF06K4E-TFD	460	24.1	19.0	17.7	3/8				4.9			5.1	6.3	15	0	
FFAL-015Z-TFD-075	ZF06K4E-TFD	460	24.1	19.0	17.7	3/8								6.3	15	0	
FFAL-017Z-CFV-072	ZF07KAE-PFV	208/230	24.1	19.0	17.7	3/8				4.9			5.1	18.8	30	0	
FFAL-017Z-CFV-075	ZF07KAE-PFV	208/230	24.1	19.0	17.7	3/8								18.8	30	0	
FFAL-017Z-TFC-072	ZF07KAE-TF5	208/230	24.1	19.0	17.7	3/8				4.9			5.1	12.2	15	0	
FFAL-017Z-TFC-075	ZF07KAE-TF5	208/230	24.1	19.0	17.7	3/8								12.2	15	0	
FFAL-020Z-CFV-071	ZF08K4E-PFV	208/230	25	34.1	20.1	3/8	7/8							23.3	35	0	
FFAL-020Z-TFC-071	ZF08K4E-TF5	208/230	25	34.1	20.1	3/8	7/8							14.9	20	0	
FFAL-020Z-TFD-071	ZF08K4E-TFD	460	25	34.1	20.1	3/8	7/8							8	15	0	
FFAL-022Z-CFV-071	ZF09K4E-PFV	208/230	25	34.1	20.1	3/8	7/8							24.2	35	0	
FFAL-022Z-TFC-071	ZF09K4E-TF5	208/230	25	34.1	20.1	3/8	7/8							16.7	20	0	
FFAL-022Z-TFD-071	ZF09K4E-TFD	460	25	34.1	20.1	3/8	7/8							8.9	15	0	
FFAL-026Z-CFV-071	ZF11K4E-PFV	208/230	25	34.1	20.1	3/8	7/8							28.7	45	0	
FFAL-026Z-TFC-071	ZF11K4E-TF5	208/230	25	34.1	20.1	3/8	7/8							20.6	30	0	
FFAL-026Z-TFD-071	ZF11K4E-TFD	460	25	34.1	20.1	3/8	7/8							10.7	15	0	
FFAL-030Z-CFV-071	ZF13K4E-PFV	208/230	25	34.1	20.1	3/8	7/8							36.3	60	0	
FFAL-030Z-TFC-071	ZF13K4E-TF5	208/230	25	34.1	20.1	3/8	7/8							21.6	30	0	
FFAL-030Z-TFD-071	ZF13K4E-TFD	460	25	34.1	20.1	3/8	7/8							12.1	15	0	
FFAL-040Z-CFV-071	ZF15K4E-PFV	208/230	25	34.1	20.1	3/8	7/8							43	70	0	
FFAL-040Z-TFC-071	ZF15K4E-TF5	208/230	25	34.1	20.1	3/8	7/8							30	45	0	
FFAL-040Z-TFD-071	ZF15K4E-TFD	460	25	34.1	20.1	3/8	7/8							13.8	20	0	
FFAL-050Z-TFC-071	ZF18K4E-TF5	208/230	25	34.1	20.1	3/8	7/8							32.7	50	0	
FFAL-050Z-TFD-071	ZF18K4E-TFD	460	25	34.1	20.1	3/8	7/8							13.4	20	0	
FFAM-008Z-CFV-072	ZB06KAE-PFV	208/230	24.1	18.5	16.3	3/8				4.9			5.1	8.9	15	0	
FFAM-008Z-TFC-072	ZB06KAE-TF5	208/230	24.1	18.5	16.3	3/8				4.9			5.1	7.4	15	0	
FFAM-010Z-CFV-072	ZB07KAE-PFV	208/230	24.1	18.5	16.3	3/8				4.9			5.1	9.7	15	0	
FFAM-010Z-TFC-072	ZB07KAE-TF5	208/230	24.1	18.5	16.3	3/8				4.9			5.1	8	15	0	
FFAM-012Z-CFV-072	ZB08KAE-PFV	208/230	24.1	18.5	16.3	3/8				4.9			5.1	11.4	15	0	
FFAM-012Z-TFC-072	ZB08KAE-TF5	208/230	24.1	18.5	16.3	3/8				4.9			5.1	8.4	15	0	
FFAM-071Z-TFC-071	ZB48KCE-TF5	208/230	27.8	44	36.7	5/8								40.8	50	0	
FFAM-071Z-TFD-071	ZB48KCE-TFD	460	27.8	44	36.7	5/8								21.4	30	0	
FFAM-081Z-TFC-071	ZB57KCE-TF5	208/230	27.8	44	36.7	5/8								53.4	70	0	
FFAM-081Z-TFD-071	ZB57KCE-TFD	460	27.8	44	36.7	5/8								23.4	30	0	
FFAM-091Z-TFC-071	ZB66K5E-TFC	208/230	27.8	44	36.7	5/8								58.1	80	0	
FFAM-091Z-TFD-071	ZB66K5E-TFD	460	27.8	44	36.7	5/8								26	35	0	
FFAM-101Z-TFC-071	ZB76K5E-TFC	208/230	27.8	44	36.7	5/8								62.8	90	0	
FFAM-101Z-TFD-071	ZB76K5E-TFD	460	27.8	44	36.7	5/8								30.3	45	0	
FFAP-015Z-CFV-072	ZS09KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	7.5	7.4	6.4	7.1	7.0	6.8	13.9	20	110	
FFAP-015Z-CFV-075	ZS09KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	13.9	20	117	
FFAP-015Z-TFC-072	ZS09KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	7.5	7.4	6.4	7.1	7.0	6.8	11.4	15	110	

Physical and Electrical Data

Copeland Scroll air-cooled condensing units

Model	Compressor	Voltage	Dimensions			Refrigerant Connections		Receiver Capacity (Lbs @ 90% Volume)							MCA	Max Fuse	Ship Weight
			L	W	H	Liquid	Suction	134a	22	404A	407A	407C	448A 449A				
FFAP-015Z-TFC-075	ZS09KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	11.4	15	119	
FFAP-015Z-TFD-072	ZS09KAE-TFD	460	24.1	18.3	16.6	3/8	7/8	7.5	7.4	6.4	7.1	7.0	6.8	6.4	15	117	
FFAP-015Z-TFD-075	ZS09KAE-TFD	460	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	6.4	15	117	
FFAP-017Z-CFV-072	ZS11KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	17.2	25	114	
FFAP-017Z-CFV-075	ZS11KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	17.2	25	117	
FFAP-017Z-TFC-072	ZS11KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	14.4	20	114	
FFAP-017Z-TFC-075	ZS11KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	14.4	20	105	
FFAP-017Z-TFD-072	ZS11KAE-TFD	460	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	7	15	75	
FFAP-017Z-TFD-075	ZS11KAE-TFD	460	24.1	18.3	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	7	15	119	
FFAP-018Z-CFV-072	ZS13KAE-PFV	208/230	24.07	18.33	16.62	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	16.4	25	112	
FFAP-020Z-CFV-071	ZS13KAE-PFV	208/230	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	16.8	25	220	
FFAP-020Z-CFV-072	ZS13KAE-PFV	208/230	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	16.8	25	186	
FFAP-020Z-TFC-071	ZS13KAE-TF5	208/230	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	13.9	20	220	
FFAP-020Z-TFC-072	ZS13KAE-TF5	208/230	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	13.9	20	180	
FFAP-020Z-TFD-071	ZS13KAE-TFD	460	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	7.1	5	198	
FFAP-020Z-TFD-072	ZS13KAE-TFD	460	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	7.1	15	193	
FFAP-022Z-CFV-071	ZS15KAE-PFV	208/230	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	22.4	35	194	
FFAP-022Z-CFV-072	ZS15KAE-PFV	208/230	25	34	19.02	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	22.4	35	183	
FFAP-022Z-TFC-071	ZS15KAE-TF5	208/230	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	16.1	20	220	
FFAP-022Z-TFC-072	ZS15KAE-TF5	208/230	25	34.06	19.02	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	16.1	20	186	
FFAP-022Z-TFD-071	ZS15KAE-TFD	460	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	10	15	200	
FFAP-030Z-CFV-071	ZS19KAE-PFV	208/230	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	25.3	40	219	
FFAP-030Z-CFV-072	ZS19KAE-PFV	208/230	25	34.06	19.03	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	25.3	40	183	
FFAP-030Z-TFC-071	ZS19KAE-TF5	208/230	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	19.9	30	202	
FFAP-030Z-TFC-072	ZS19KAE-TF5	208/230	25	34.06	19.03	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	19.9	30	192	
FFAP-030Z-TFD-071	ZS19KAE-TFD	460	25.2	34.1	19	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	11.3	15	220	
FFAP-032Z-CFV-071	ZS21KAE-PFV	208/230	25.2	34.1	19	3/8	1 1/8	13	12.9	11.2	12.3	12.2	11.8	31.8	50	219	
FFAP-032Z-CFV-072	ZS21KAE-PFV	208/230	34.06	25.05	18.86	3/8	1 1/8	13	12.9	11.2	12.3	12.2	11.8	31.8	50	120	
FFAP-032Z-TFC-071	ZS21KAE-TF5	208/230	25.2	34.1	19	3/8	1 1/8	13	12.9	11.2	12.3	12.2	11.8	21.8	30	219	
FFAP-032Z-TFC-072	ZS21KAE-TF5	208/230	19.5	28.08	12.23	3/8	1/2	13	12.9	11.2	12.3	12.2	11.8	21.8	30	201	
FFAP-032Z-TFD-071	ZS21KAE-TFD	460	25.2	34.1	19	3/8	1 1/8	13	12.9	11.2	12.3	12.2	11.8	11.8	15	225	
FFAP-035Z-CFV-071	ZS26KAE-PFV	208/230	25.26	34.06	19.04	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	32.3	50	223	
FFAP-035Z-TFC-071	ZS26KAE-TF5	208/230	25.26	34.06	19.04	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	22.2	30	210	
FFAP-040Z-CFV-071	ZS26KAE-PFV	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		33.1	50	322	
FFAP-040Z-CFV-072	ZS26KAE-PFV	208/230	28.19	44.07	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		33.1	50	297	
FFAP-040Z-TFC-071	ZS26KAE-TF5	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		23	30	325	
FFAP-040Z-TFC-072	ZS26KAE-TF5	208/230	28.19	44.07	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		23	30	296	
FFAP-040Z-TFD-071	ZS26KAE-TFD	460	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		11	15	305	
FFAP-042Z-CFV-071	ZS33KAE-PFV	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		38.9	60	325	
FFAP-042Z-CFV-072	ZS33KAE-PFV	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		38.9	60	321	
FFAP-042Z-TFC-071	ZS33KAE-TF5	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		31.5	50	317	
FFAP-042Z-TFC-072	ZS33KAE-TF5	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		31.5	50	308	
FFAP-042Z-TFD-071	ZS33KAE-TFD	460	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		14.9	20	320	
FFAP-050Z-CFV-071	ZS38K4E-PFV	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		43.4	70	320	
FFAP-050Z-CFV-072	ZS38K4E-PFV	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		43.4	70	332	
FFAP-050Z-TFC-071	ZS38K4E-TF5	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		30.4	45	362	
FFAP-050Z-TFC-072	ZS38K4E-TF5	208/230	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		30.4	45	317	
FFAP-050Z-TFD-071	ZS38K4E-TFD	460	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		14.4	20	331	
FFAP-050Z-TFE-070	ZS38K4E-TFE	575	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		11.9	15	318	
FFAP-050Z-TFE-075	ZS38K4E-TFE	575	28.2	44.1	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		11.9	15	324	
FFAP-060Z-TFC-071	ZS45K4E-TF5	208/230	28.19	44.06	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		33.5	50	320	
FFAP-060Z-TFD-071	ZS45K4E-TFD	460	28.19	44.06	26.8	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		14	20	342	
FPAK-010Z-CFV-072	ZS09KAE-PFV	208/230	24	17.06	16.62	3/8	3/4	7.5		6.4				13.7	20	101	
FPAK-010Z-TFC-072	ZS09KAE-TF5	208/230	24	17.06	16.62	3/8	3/4	7.5		6.4				11.2	15	100	
FPAK-010Z-TFD-072	ZS09KAE-TFD	460	24	17.06	16.62	3/8	3/4	7.5		6.4				5.5	15	104	

Physical and Electrical Data

Copeland Scroll air-cooled condensing units

Model	Compressor	Voltage	Dimensions			Refrigerant Connections		Receiver Capacity (Lbs @ 90% Volume)						MCA	Max Fuse	Ship Weight
			L	W	H	Liquid	Suction	134a	22	404A	407A	407C	448A 449A			
FPAK-012Z-CFV-072	ZS11KAE-PFV	208/230	24	17.06	16.62	3/8	3/4	7.5	6.4					16.9	25	103
FPAK-012Z-CFV-212	ZS11KAE-PFV	208/230	24	17.06	16.62	3/8	5/8	7.5	6.4					16.9	25	0
FPAK-012Z-TFC-072	ZS11KAE-TF5	208/230	24	17.06	16.62	3/8	3/4	7.5	6.4					14.2	20	104
FPAK-012Z-TFD-072	ZS11KAE-TFD	460	24	17.06	16.62	3/8	3/4	7.5	6.4					6.2	15	104
FPAK-013Z-CFV-017	ZS15KAE-PFV	208/230	24.07	18.33	16.62	3/8	7/8							21	35	110
FPAK-013Z-CFV-072	ZS15KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	7.5	6.4					21	35	114
FPAK-013Z-CFV-075	ZS15KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	13	11.2					21	35	75
FPAK-013Z-TFC-017	ZS15KAE-TF5	208/230	24.07	18.33	16.62	3/8	7/8							14.7	20	0
FPAK-013Z-TFC-072	ZS15KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	7.5	6.4					14.7	20	112
FPAK-013Z-TFC-075	ZS15KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	13	11.2					14.7	20	113
FPAK-013Z-TFD-072	ZS15KAE-TFD	460	24.1	18.3	16.6	3/8	7/8	7.5	6.4					8.4	15	150
FPAK-013Z-TFD-075	ZS15KAE-TFD	460	24.1	18.3	16.6	3/8	7/8	13	11.2					8.4	15	122
FPAK-015Z-CFV-072	ZS19KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	7.5	6.4					23.9	40	112
FPAK-015Z-CFV-075	ZS19KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	13	11.2					23.9	40	116
FPAK-015Z-CFV-078	ZS19KAE-PFV	208/230	24.1	18.3	16.6	3/8	7/8	13	11.2					23.9	40	0
FPAK-015Z-TFC-072	ZS19KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	7.5	6.4					18.5	30	117
FPAK-015Z-TFC-075	ZS19KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	13	11.2					18.5	30	114
FPAK-015Z-TFC-078	ZS19KAE-TF5	208/230	24.1	18.3	16.6	3/8	7/8	13	11.2					18.5	30	0
FPAK-015Z-TFD-072	ZS19KAE-TFD	460	24.1	18.3	16.6	3/8	7/8	7.5	6.4					9.7	15	119
FPAK-015Z-TFD-075	ZS19KAE-TFD	460	24.1	18.3	16.6	3/8	7/8	13	11.2					9.7	15	0
FPAK-020Z-CFV-071	ZS21KAE-PFV	208/230	25	34.1	19	3/8	7/8	13	11.2					31.8	50	0
FPAK-020Z-CFV-072	ZS21KAE-PFV	208/230	25	34.1	19	3/8	7/8	13	11.2					31.8	50	204
FPAK-020Z-TFC-071	ZS21KAE-TF5	208/230	25	34.1	19	3/8	7/8	13	11.2					21.8	30	207
FPAK-020Z-TFC-072	ZS21KAE-TF5	208/230	25	34.1	19	3/8	7/8	13	11.2					21.8	30	220
FPAK-020Z-TFD-071	ZS21KAE-TFD	460	25	34.1	19	3/8	7/8	13	11.2					11.8	15	210
FPAK-020Z-TFD-072	ZS21KAE-TFD	460	25	34.1	19	3/8	7/8	13	11.2					11.8	15	201
FPAK-039Z-CFV-071	ZS29KAE-PFV	208/230	25.2	34.1	19	3/8	7/8	13	11.2					35.4	50	220
FPAK-039Z-TFC-071	ZS29KAE-TF5	208/230	25.2	34.1	19	3/8	7/8	13	11.2					28.4	45	220
FPAK-039Z-TFD-071	ZS29KAE-TFD	460	25.2	34.1	19	3/8	7/8	13	11.2					15	20	219
FPAK-E10Z-CFV-072	ZS09KAE-PFV	208/230	24	17.06	16.62	3/8	3/4	7.5	6.4					13.6	20	101

R-134a Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25
90° Ambient															
FFAL-010Z-CFV	ZF03KAE-PFV														
FFAL-010Z-TFC	ZF03KAE-TF5														
FFAL-013Z-CFV	ZF04KAE-PFV														
FFAL-013Z-TFC	ZF04KAE-TF5														
FFAL-014Z-CFV	ZF05KAE-PFV														
FFAL-014Z-TFC	ZF05KAE-TF5														
FFAL-015Z-CFV	ZF06K4E-PFV	2,400	2,760	3,170	3,620	4,130	4,700	5,330	6,020	6,780	7,610	8,510	9,480	10,500	11,600
FFAL-015Z-TFC	ZF06K4E-TF5	2,380	2,740	3,140	3,590	4,100	4,660	5,280	5,970	6,730	7,550	8,450	9,410	10,400	11,600
FFAL-015Z-TFD	ZF06K4E-TFD	2,380	2,740	3,140	3,590	4,100	4,660	5,280	5,970	6,730	7,550	8,450	9,410	10,400	11,600
FFAL-017Z-CFV	ZF07KAE-PFV														
FFAL-017Z-TFC	ZF07KAE-TF5														
FFAL-020Z-CFV	ZF08K4E-PFV	3,020	3,470	3,980	4,560	5,200	5,920	6,730	7,610	8,590	9,660	10,800	12,100	13,500	15,000
FFAL-020Z-TFC	ZF08K4E-TF5	3,000	3,450	3,950	4,520	5,170	5,880	6,680	7,560	8,530	9,600	10,800	12,000	13,400	14,900
FFAL-020Z-TFD	ZF08K4E-TFD	3,000	3,450	3,950	4,520	5,170	5,880	6,680	7,560	8,530	9,600	10,800	12,000	13,400	14,900
FFAL-022Z-CFV	ZF09K4E-PFV														
FFAL-022Z-TFC	ZF09K4E-TF5														
FFAL-022Z-TFD	ZF09K4E-TFD														
FFAL-026Z-CFV	ZF11K4E-PFV	4,100	4,720	5,420	6,200	7,070	8,040	9,120	10,300	11,600	13,000	14,600	16,200	18,000	19,900
FFAL-026Z-TFC	ZF11K4E-TF5	4,100	4,720	5,420	6,200	7,070	8,040	9,120	10,300	11,600	13,000	14,600	16,200	18,000	19,900
FFAL-026Z-TFD	ZF11K4E-TFD	4,100	4,720	5,420	6,200	7,070	8,040	9,120	10,300	11,600	13,000	14,600	16,200	18,000	19,900
FFAL-030Z-CFV	ZF13K4E-PFV	4,740	5,450	6,250	7,160	8,180	9,300	10,500	11,900	13,400	15,000	16,800	18,700	20,700	22,800
FFAL-030Z-TFC	ZF13K4E-TF5	4,850	5,610	6,440	7,370	8,400	9,520	10,800	12,100	13,600	15,200	16,900	18,700	20,700	22,800
FFAL-030Z-TFD	ZF13K4E-TFD	4,850	5,610	6,440	7,370	8,400	9,520	10,800	12,100	13,600	15,200	16,900	18,700	20,700	22,800
FFAL-040Z-CFV	ZF15K4E-PFV	5,750	6,610	7,590	8,680	9,910	11,300	12,800	14,400	16,200	18,100	20,100	22,300	24,700	27,200
FFAL-040Z-TFC	ZF15K4E-TF5	5,950	6,860	7,860	8,980	10,200	11,600	13,100	14,700	16,400	18,300	20,300	22,500	24,800	27,300
FFAL-040Z-TFD	ZF15K4E-TFD	5,950	6,860	7,860	8,980	10,200	11,600	13,100	14,700	16,400	18,300	20,300	22,500	24,800	27,300
FFAL-050Z-TFC	ZF18K4E-TF5	6,900	7,990	9,200	10,500	12,000	13,600	15,300	17,200	19,200	21,400	23,700	26,200	28,900	31,700
FFAL-050Z-TFD	ZF18K4E-TFD	6,900	7,990	9,200	10,500	12,000	13,600	15,300	17,200	19,200	21,400	23,700	26,200	28,900	31,700
100° Ambient															
FFAL-010Z-CFV	ZF03KAE-PFV														
FFAL-010Z-TFC	ZF03KAE-TF5														
FFAL-013Z-CFV	ZF04KAE-PFV														
FFAL-013Z-TFC	ZF04KAE-TF5														
FFAL-014Z-CFV	ZF05KAE-PFV														
FFAL-014Z-TFC	ZF05KAE-TF5														
FFAL-015Z-CFV	ZF06K4E-PFV	2,230	2,590	2,990	3,440	3,930	4,470	5,060	5,710	6,430	7,200	8,040	8,940	9,910	10,900
FFAL-015Z-TFC	ZF06K4E-TF5	2,210	2,570	2,970	3,410	3,890	4,430	5,020	5,670	6,380	7,150	7,980	8,880	9,840	10,900
FFAL-015Z-TFD	ZF06K4E-TFD	2,210	2,570	2,970	3,410	3,890	4,430	5,020	5,670	6,380	7,150	7,980	8,880	9,840	10,900
FFAL-017Z-CFV	ZF07KAE-PFV														
FFAL-017Z-TFC	ZF07KAE-TF5														
FFAL-020Z-CFV	ZF08K4E-PFV	2,810	3,270	3,770	4,330	4,950	5,640	6,400	7,230	8,150	9,150	10,200	11,400	12,700	14,100
FFAL-020Z-TFC	ZF08K4E-TF5	2,790	3,250	3,750	4,300	4,920	5,600	6,350	7,180	8,090	9,090	10,200	11,400	12,600	14,000
FFAL-020Z-TFD	ZF08K4E-TFD	2,790	3,250	3,750	4,300	4,920	5,600	6,350	7,180	8,090	9,090	10,200	11,400	12,600	14,000
FFAL-022Z-CFV	ZF09K4E-PFV														
FFAL-022Z-TFC	ZF09K4E-TF5														
FFAL-022Z-TFD	ZF09K4E-TFD														
FFAL-026Z-CFV	ZF11K4E-PFV	3,820	4,450	5,130	5,890	6,720	7,640	8,660	9,770	11,000	12,300	13,700	15,300	16,900	18,700
FFAL-026Z-TFC	ZF11K4E-TF5	3,820	4,450	5,130	5,890	6,720	7,640	8,660	9,770	11,000	12,300	13,700	15,300	16,900	18,700
FFAL-026Z-TFD	ZF11K4E-TFD	3,820	4,450	5,130	5,890	6,720	7,640	8,660	9,770	11,000	12,300	13,700	15,300	16,900	18,700
FFAL-030Z-CFV	ZF13K4E-PFV	4,280	4,970	5,740	6,600	7,570	8,630	9,800	11,100	12,500	14,000	15,600	17,400	19,300	21,300
FFAL-030Z-TFC	ZF13K4E-TF5	4,580	5,290	6,090	6,960	7,920	8,980	10,100	11,400	12,800	14,300	15,900	17,600	19,400	21,400
FFAL-030Z-TFD	ZF13K4E-TFD	4,580	5,290	6,090	6,960	7,920	8,980	10,100	11,400	12,800	14,300	15,900	17,600	19,400	21,400
FFAL-040Z-CFV	ZF15K4E-PFV	5,200	6,030	6,960	8,000	9,160	10,400	11,800	13,400	15,000	16,800	18,700	20,800	23,000	25,400
FFAL-040Z-TFC	ZF15K4E-TF5	5,590	6,460	7,420	8,470	9,630	10,900	12,300	13,800	15,400	17,200	19,100	21,100	23,200	25,500
FFAL-040Z-TFD	ZF15K4E-TFD	5,590	6,460	7,420	8,470	9,630	10,900	12,300	13,800	15,400	17,200	19,100	21,100	23,200	25,500
FFAL-050Z-TFC	ZF18K4E-TF5	6,530	7,570	8,710	9,950	11,300	12,800	14,400	16,100	18,000	20,000	22,200	24,500	26,900	29,500
FFAL-050Z-TFD	ZF18K4E-TFD	6,530	7,570	8,710	9,950	11,300	12,800	14,400	16,100	18,000	20,000	22,200	24,500	26,900	29,500

Capacities rated at 40°F return gas, 5°F subcooling

R-134a Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25
110° Ambient															
FFAL-010Z-CFV	ZF03KAE-PFV	Data not available at time of printing.													
FFAL-010Z-TFC	ZF03KAE-TF5														
FFAL-013Z-CFV	ZF04KAE-PFV														
FFAL-013Z-TFC	ZF04KAE-TF5														
FFAL-014Z-CFV	ZF05KAE-PFV														
FFAL-014Z-TFC	ZF05KAE-TF5	Data not available at time of printing.													
FFAL-015Z-CFV	ZF06K4E-PFV	2,070	2,430	2,830	3,250	3,720	4,230	4,790	5,400	6,060	6,780	7,550	8,390	9,280	10,200
FFAL-015Z-TFC	ZF06K4E-TF5	2,050	2,410	2,800	3,230	3,690	4,200	4,750	5,360	6,020	6,730	7,500	8,330	9,220	10,200
FFAL-015Z-TFD	ZF06K4E-TFD	2,050	2,410	2,800	3,230	3,690	4,200	4,750	5,360	6,020	6,730	7,500	8,330	9,220	10,200
FFAL-017Z-CFV	ZF07KAE-PFV	Data not available at time of printing.													
FFAL-017Z-TFC	ZF07KAE-TF5														
FFAL-020Z-CFV	ZF08K4E-PFV	2,630	3,090	3,580	4,120	4,710	5,360	6,070	6,850	7,700	8,620	9,630	10,700	11,900	13,200
FFAL-020Z-TFC	ZF08K4E-TF5	2,620	3,070	3,560	4,090	4,680	5,320	6,030	6,810	7,650	8,570	9,580	10,700	11,800	13,100
FFAL-020Z-TFD	ZF08K4E-TFD	2,620	3,070	3,560	4,090	4,680	5,320	6,030	6,810	7,650	8,570	9,580	10,700	11,800	13,100
FFAL-022Z-CFV	ZF09K4E-PFV	Data not available at time of printing.													
FFAL-022Z-TFC	ZF09K4E-TF5														
FFAL-022Z-TFD	ZF09K4E-TFD														
FFAL-026Z-CFV	ZF11K4E-PFV	3,570	4,190	4,860	5,590	6,380	7,250	8,200	9,230	10,400	11,600	12,900	14,300	15,800	17,400
FFAL-026Z-TFC	ZF11K4E-TF5	3,570	4,190	4,860	5,590	6,380	7,250	8,200	9,230	10,400	11,600	12,900	14,300	15,800	17,400
FFAL-026Z-TFD	ZF11K4E-TFD	3,570	4,190	4,860	5,590	6,380	7,250	8,200	9,230	10,400	11,600	12,900	14,300	15,800	17,400
FFAL-030Z-CFV	ZF13K4E-PFV	3,960	4,610	5,330	6,140	7,030	8,020	9,110	10,300	11,600	13,000	14,500	16,200	17,900	19,800
FFAL-030Z-TFC	ZF13K4E-TF5	4,330	5,000	5,740	6,550	7,440	8,420	9,480	10,600	11,900	13,300	14,800	16,300	18,100	19,900
FFAL-030Z-TFD	ZF13K4E-TFD	4,330	5,000	5,740	6,550	7,440	8,420	9,480	10,600	11,900	13,300	14,800	16,300	18,100	19,900
FFAL-040Z-CFV	ZF15K4E-PFV	4,840	5,620	6,490	7,460	8,540	9,720	11,000	12,400	14,000	15,600	17,400	19,400	21,400	23,600
FFAL-040Z-TFC	ZF15K4E-TF5	5,240	6,060	6,960	7,950	9,030	10,200	11,500	12,900	14,400	16,000	17,700	19,600	21,600	23,700
FFAL-040Z-TFD	ZF15K4E-TFD	5,240	6,060	6,960	7,950	9,030	10,200	11,500	12,900	14,400	16,000	17,700	19,600	21,600	23,700
FFAL-050Z-TFC	ZF18K4E-TF5	6,160	7,140	8,200	9,350	10,600	12,000	13,400	15,000	16,700	18,600	20,500	22,700	24,900	
FFAL-050Z-TFD	ZF18K4E-TFD	6,160	7,140	8,200	9,350	10,600	12,000	13,400	15,000	16,700	18,600	20,500	22,700	24,900	

Capacities rated at 40°F return gas, 5°F subcooling

R-134a Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
90° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV											
FFAM-008Z-TFC	ZB06KAE-TF5											
FFAM-010Z-CFV	ZB07KAE-PFV											
FFAM-010Z-TFC	ZB07KAE-TF5											
FFAM-012Z-CFV	ZB08KAE-PFV											
FFAM-012Z-TFC	ZB08KAE-TF5											
FPAK-010Z-CFV	ZS09KAE-PFV	4020	4520	5060	5620	6230	6870	7100	7810	8570	9370	10200
FPAK-010Z-TFC	ZS09KAE-TF5	4020	4520	5060	5620	6230	6870	7100	7810	8570	9370	10200
FPAK-010Z-TFD	ZS09KAE-TFD	4020	4520	5060	5620	6230	6870	7100	7810	8570	9370	10200
FFAP-015Z-CFV	ZS09KAE-PFV	4220	4770	5360	6000	6680	7420	7540	8340	9200	10100	11100
FFAP-015Z-TFC	ZS09KAE-TF5	4220	4770	5360	6000	6680	7420	7540	8340	9200	10100	11100
FFAP-015Z-TFD	ZS09KAE-TFD	4220	4770	5360	6000	6680	7420	7540	8340	9200	10100	11100
FPAK-012Z-CFV	ZS11KAE-PFV	4730	5300	5920	6560	7250	7980	8250	9060	9910	10800	11700
FPAK-012Z-TFC	ZS11KAE-TF5	4730	5300	5920	6560	7250	7980	8250	9060	9910	10800	11700
FPAK-012Z-TFD	ZS11KAE-TFD	4730	5300	5920	6560	7250	7980	8250	9060	9910	10800	11700
FFAP-017Z-CFV	ZS11KAE-PFV	5000	5640	6340	7080	7880	8750	8900	9840	10800	11900	13100
FFAP-017Z-TFC	ZS11KAE-TF5	5000	5640	6340	7080	7880	8750	8900	9840	10800	11900	13100
FFAP-017Z-TFD	ZS11KAE-TFD	5000	5640	6340	7080	7880	8750	8900	9840	10800	11900	13100
FFAP-018Z-CFV	ZS13KAE-PFV	5640	6350	7120	7940	8810	9750	9930	10900	12000	13200	14400
FFAP-020Z-CFV	ZS13KAE-PFV	5760	6500	7300	8160	9090	10100	10300	11400	12500	13800	15100
FFAP-020Z-TFC	ZS13KAE-TF5	5760	6500	7300	8160	9090	10100	10300	11400	12500	13800	15100
FFAP-020Z-TFD	ZS13KAE-TFD	5760	6500	7300	8160	9090	10100	10300	11400	12500	13800	15100
FPAK-013Z-CFV	ZS15KAE-PFV	6640	7470	8360	9300	10300	11400	11800	13000	14200	15600	17000
FPAK-013Z-TFC	ZS15KAE-TF5	6640	7470	8360	9300	10300	11400	11800	13000	14200	15600	17000
FPAK-013Z-TFD	ZS15KAE-TFD	6640	7470	8360	9300	10300	11400	11800	13000	14200	15600	17000
FFAP-022Z-CFV	ZS15KAE-PFV	6850	7730	8680	9690	10800	12000	12200	13400	14800	16300	17800
FFAP-022Z-TFC	ZS15KAE-TF5	6850	7730	8680	9690	10800	12000	12200	13400	14800	16300	17800
FFAP-022Z-TFD	ZS15KAE-TFD	6850	7730	8680	9690	10800	12000	12200	13400	14800	16300	17800
FPAK-015Z-CFV	ZS19KAE-PFV	7410	8330	9310	10300	11500	12600	13100	14300	15700	17200	18700
FPAK-015Z-TFC	ZS19KAE-TF5	7410	8330	9310	10300	11500	12600	13100	14300	15700	17200	18700
FPAK-015Z-TFD	ZS19KAE-TFD	7410	8330	9310	10300	11500	12600	13100	14300	15700	17200	18700
FFAP-030Z-CFV	ZS19KAE-PFV	8190	9250	10400	11600	13000	14400	14700	16200	17900	19700	21600
FFAP-030Z-TFC	ZS19KAE-TF5	8190	9250	10400	11600	13000	14400	14700	16200	17900	19700	21600
FFAP-030Z-TFD	ZS19KAE-TFD	8190	9250	10400	11600	13000	14400	14700	16200	17900	19700	21600
FPAK-020Z-CFV	ZS21KAE-PFV	10000	11300	12600	14000	15500	17200	17700	19500	21400	23400	25600
FPAK-020Z-TFC	ZS21KAE-TF5	10000	11300	12600	14000	15500	17200	17700	19500	21400	23400	25600
FPAK-020Z-TFD	ZS21KAE-TFD	10000	11300	12600	14000	15500	17200	17700	19500	21400	23400	25600
FFAP-032Z-CFV	ZS21KAE-PFV	10400	11800	13200	14700	16400	18200	18500	20400	22500	24700	27100
FFAP-032Z-TFC	ZS21KAE-TF5	10400	11800	13200	14700	16400	18200	18500	20400	22500	24700	27100
FFAP-032Z-TFD	ZS21KAE-TFD	10400	11800	13200	14700	16400	18200	18500	20400	22500	24700	27100
FFAP-035Z-CFV	ZS26KAE-PFV	11500	13000	14500	16200	18000	20000	20300	22500	24700	27200	29700
FFAP-035Z-TFC	ZS26KAE-TF5	11800	13400	15100	16900	18900	21000	21300	23700	26200	28900	31800
FFAP-040Z-CFV	ZS26KAE-PFV	11800	13400	15100	16900	18900	21000	21300	23700	26200	28900	31800
FFAP-040Z-TFC	ZS26KAE-TF5	11800	13400	15100	16900	18900	21000	21300	23700	26200	28900	31800
FFAP-040Z-TFD	ZS26KAE-TFD	11800	13400	15100	16900	18900	21000	21300	23700	26200	28900	31800
FPAK-039Z-CFV	ZS29KAE-PFV	11300	12800	14300	16000	17800	19700	22500	24800	27200	29800	32600
FPAK-039Z-TFC	ZS29KAE-TF5	11300	12800	14300	16000	17800	19700	22500	24800	27200	29800	32600
FPAK-039Z-TFD	ZS29KAE-TFD	11300	12800	14300	16000	17800	19700	22500	24800	27200	29800	32600
FFAP-042Z-CFV	ZS33KAE-PFV	14600	16500	18500	20700	23100	25700	26100	29000	32000	35200	38700
FFAP-042Z-TFC	ZS33KAE-TF5	14600	16500	18500	20700	23100	25700	26100	29000	32000	35200	38700
FFAP-042Z-TFD	ZS33KAE-TFD	14600	16500	18500	20700	23100	25700	26100	29000	32000	35200	38700
FFAP-060Z-TFC	ZS45KAE-TF5	16300	18400	20600	23000	25600	28300	28900	31900	35200	38600	42100
FFAP-050Z-CFV	ZS38KAE-PFV	16600	18700	20900	23400	26000	28900	29400	32500	35800	39300	43000
FFAP-050Z-TFC	ZS38KAE-TF5	16600	18700	20900	23400	26000	28900	29400	32500	35800	39300	43000
FFAP-050Z-TFD	ZS38KAE-TFD	16600	18700	20900	23400	26000	28900	29400	32500	35800	39300	43000
FFAP-050Z-TFE	ZS38KAE-TFE	16600	18700	20900	23400	26000	28900	29400	32500	35800	39300	43000
FFAP-060Z-TFD	ZS45KAE-TFD	19600	22100	24700	27600	30700	34000	34700	38300	42200	46300	50500
FFAM-071Z-TFC	ZB48KCE-TF5		25200	28200	31500	35000	38700	39500	43500	47900	52500	57500
FFAM-071Z-TFD	ZB48KCE-TFD		25200	28200	31500	35000	38700	39500	43500	47900	52500	57500
FFAM-081Z-TFC	ZB57KCE-TF5		26800	30400	34300	38700	43300	44200	49200	54500	60000	66000
FFAM-081Z-TFD	ZB57KCE-TFD		26800	30400	34300	38700	43300	44200	49200	54500	60000	66000
FFAM-091Z-TFC	ZB66K5E-TFC		30900	34600	38800	43300	48100	49100	54500	60000	65500	71500
FFAM-091Z-TFD	ZB66K5E-TFD		30900	34600	38800	43300	48100	49100	54500	60000	65500	71500
FFAM-101Z-TFC	ZB76K5E-TFC		35100	39400	44000	49000	54500	55500	61500	67500	73500	80000
FFAM-101Z-TFD	ZB76K5E-TFD		35100	39400	44000	49000	54500	55500	61500	67500	73500	80000

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-134a Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
100° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV											
FFAM-008Z-TFC	ZB06KAE-TF5											
FFAM-010Z-CFV	ZB07KAE-PFV											
FFAM-010Z-TFC	ZB07KAE-TF5											
FFAM-012Z-CFV	ZB08KAE-PFV											
FFAM-012Z-TFC	ZB08KAE-TF5											
FPAK-010Z-CFV	ZS09KAE-PFV		4260	4750	5280	5840	6440	6670	7340	8040	8790	9580
FPAK-010Z-TFC	ZS09KAE-TF5		4260	4750	5280	5840	6440	6670	7340	8040	8790	9580
FPAK-010Z-TFD	ZS09KAE-TFD		4260	4750	5280	5840	6440	6670	7340	8040	8790	9580
FFAP-015Z-CFV	ZS09KAE-PFV	4000	4510	5060	5660	6300	6990	7130	7890	8690	9560	10500
FFAP-015Z-TFC	ZS09KAE-TF5	4000	4510	5060	5660	6300	6990	7130	7890	8690	9560	10500
FFAP-015Z-TFD	ZS09KAE-TFD	4000	4510	5060	5660	6300	6990	7130	7890	8690	9560	10500
FPAK-012Z-CFV	ZS11KAE-PFV		4980	5550	6140	6780	7450	7740	8480	9270	10100	11000
FPAK-012Z-TFC	ZS11KAE-TF5		4980	5550	6140	6780	7450	7740	8480	9270	10100	11000
FPAK-012Z-TFD	ZS11KAE-TFD		4980	5550	6140	6780	7450	7740	8480	9270	10100	11000
FFAP-017Z-CFV	ZS11KAE-PFV	4730	5330	5980	6670	7420	8220	8400	9280	10200	11200	12300
FFAP-017Z-TFC	ZS11KAE-TF5	4730	5330	5980	6670	7420	8220	8400	9280	10200	11200	12300
FFAP-017Z-TFD	ZS11KAE-TFD	4730	5330	5980	6670	7420	8220	8400	9280	10200	11200	12300
FFAP-018Z-CFV	ZS13KAE-PFV	5330	6000	6710	7470	8290	9160	9370	10300	11300	12400	13600
FFAP-020Z-CFV	ZS13KAE-PFV	5440	6140	6890	7690	8560	9490	9700	10700	11800	13000	14200
FFAP-020Z-TFC	ZS13KAE-TF5	5440	6140	6890	7690	8560	9490	9700	10700	11800	13000	14200
FFAP-020Z-TFD	ZS13KAE-TFD	5440	6140	6890	7690	8560	9490	9700	10700	11800	13000	14200
FPAK-013Z-CFV	ZS15KAE-PFV		7040	7870	8750	9690	10700	11100	12200	13400	14600	16000
FPAK-013Z-TFC	ZS15KAE-TF5		7040	7870	8750	9690	10700	11100	12200	13400	14600	16000
FPAK-013Z-TFD	ZS15KAE-TFD		7040	7870	8750	9690	10700	11100	12200	13400	14600	16000
FFAP-022Z-CFV	ZS19KAE-TF5	6480	7310	8190	9140	10200	11300	11500	12700	14000	15400	16800
FFAP-022Z-TFC	ZS15KAE-TF5	6480	7310	8190	9140	10200	11300	11500	12700	14000	15400	16800
FFAP-022Z-TFD	ZS15KAE-PFV	6480	7310	8190	9140	10200	11300	11500	12700	14000	15400	16800
FPAK-015Z-CFV	ZS19KAE-PFV		7840	8750	9710	10700	11800	12300	13500	14800	16100	17600
FPAK-015Z-TFC	ZS19KAE-TF5		7840	8750	9710	10700	11800	12300	13500	14800	16100	17600
FPAK-015Z-TFD	ZS19KAE-TFD		7840	8750	9710	10700	11800	12300	13500	14800	16100	17600
FFAP-030Z-CFV	ZS19KAE-PFV	7810	8810	9890	11000	12300	13600	13900	15400	17000	18700	20500
FFAP-030Z-TFC	ZS15KAE-TFD	7810	8810	9890	11000	12300	13600	13900	15400	17000	18700	20500
FFAP-030Z-TFD	ZS19KAE-TFD	7810	8810	9890	11000	12300	13600	13900	15400	17000	18700	20500
FPAK-020Z-CFV	ZS21KAE-PFV		10600	11900	13200	14600	16100	16700	18400	20200	22100	24100
FPAK-020Z-TFC	ZS21KAE-TF5		10600	11900	13200	14600	16100	16700	18400	20200	22100	24100
FPAK-020Z-TFD	ZS21KAE-TFD		10600	11900	13200	14600	16100	16700	18400	20200	22100	24100
FFAP-032Z-CFV	ZS21KAE-PFV	9860	11100	12400	13900	15400	17100	17400	19300	21200	23300	25500
FFAP-032Z-TFC	ZS21KAE-TF5	9860	11100	12400	13900	15400	17100	17400	19300	21200	23300	25500
FFAP-032Z-TFD	ZS21KAE-TFD	9860	11100	12400	13900	15400	17100	17400	19300	21200	23300	25500
FFAP-035Z-CFV	ZS26KAE-PFV	10900	12200	13700	15300	17000	18800	19200	21200	23300	25600	28000
FFAP-035Z-TFC	ZS26KAE-TF5	10900	12200	13700	15300	17000	18800	19200	21200	23300	25600	28000
FFAP-040Z-CFV	ZS26KAE-PFV	11200	12700	14300	16000	17800	19900	20200	22400	24800	27400	30100
FFAP-040Z-TFC	ZS26KAE-TF5	11200	12700	14300	16000	17800	19900	20200	22400	24800	27400	30100
FFAP-040Z-TFD	ZS26KAE-TFD	11200	12700	14300	16000	17800	19900	20200	22400	24800	27400	30100
FPAK-039Z-CFV	ZS29KAE-PFV	10700	12100	13500	15000	16700	18500	21100	23300	25600	28000	30700
FPAK-039Z-TFC	ZS29KAE-TF5	10700	12100	13500	15000	16700	18500	21100	23300	25600	28000	30700
FPAK-039Z-TFD	ZS29KAE-TFD	10700	12100	13500	15000	16700	18500	21100	23300	25600	28000	30700
FFAP-042Z-CFV	ZS33KAE-PFV	13800	15600	17500	19600	21800	24300	24700	27400	30300	33300	36600
FFAP-042Z-TFC	ZS33KAE-TF5	13800	15600	17500	19600	21800	24300	24700	27400	30300	33300	36600
FFAP-042Z-TFD	ZS33KAE-TFD	13800	15600	17500	19600	21800	24300	24700	27400	30300	33300	36600
FFAP-050Z-CFV	ZS38KAE-PFV	15600	17600	19700	22000	24500	27200	27800	30800	33900	37200	40700
FFAP-050Z-TFC	ZS38KAE-TF5	15600	17600	19700	22000	24500	27200	27800	30800	33900	37200	40700
FFAP-050Z-TFD	ZS38KAE-TFD	15600	17600	19700	22000	24500	27200	27800	30800	33900	37200	40700
FFAP-050Z-TFE	ZS38KAE-TFE	15600	17600	19700	22000	24500	27200	27800	30800	33900	37200	40700
FFAP-060Z-TFC	ZS45KAE-TF5	18500	20900	23400	26100	29000	32100	32900	36300	39900	43800	48000
FFAP-060Z-TFD	ZS45KAE-TFD	18500	20900	23400	26100	29000	32100	32900	36300	39900	43800	48000
FFAM-071Z-TFC	ZB48KCE-TF5		23700	26500	29600	32900	36400	37200	41000	45100	49400	54000
FFAM-071Z-TFD	ZB48KCE-TFD		23700	26500	29600	32900	36400	37200	41000	45100	49400	54000
FFAM-081Z-TFC	ZB57KCE-TF5		24900	28300	32100	36200	40600	41500	46400	51500	57000	62500
FFAM-081Z-TFD	ZB57KCE-TFD		24900	28300	32100	36200	40600	41500	46400	51500	57000	62500
FFAM-091Z-TFC	ZB66K5E-TFC		28700	32200	36100	40300	44800	45900	51000	56000	61500	67000
FFAM-091Z-TFD	ZB66K5E-TFD		28700	32200	36100	40300	44800	45900	51000	56000	61500	67000
FFAM-101Z-TFC	ZB76K5E-TFC		32600	36600	41000	45700	51000	52000	57500	63000	69000	75500
FFAM-101Z-TFD	ZB76K5E-TFD		32600	36600	41000	45700	51000	52000	57500	63000	69000	75500

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-134a Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
110° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV											
FFAM-008Z-TFC	ZB06KAE-TF5											
FFAM-010Z-CFV	ZB07KAE-PFV											
FFAM-010Z-TFC	ZB07KAE-TF5											
FFAM-012Z-CFV	ZB08KAE-PFV											
FFAM-012Z-TFC	ZB08KAE-TF5											
FFAP-015Z-TFC	ZS09KAE-TF5	3750	3420	3840	4290	4780	5300	5500	6090	6720	7390	8120
FPAK-010Z-CFV	ZS09KAE-PFV			4410	4900	5410	5960	6210	6820	7470	8160	8900
FPAK-010Z-TFC	ZS09KAE-TF5			4410	4900	5410	5960	6210	6820	7470	8160	8900
FPAK-010Z-TFD	ZS09KAE-TFD			4410	4900	5410	5960	6210	6820	7470	8160	8900
FFAP-017Z-TFC	ZS11KAE-TF5	4430	4150	4650	5180	5750	6370	6460	7140	7860	8640	9470
FFAP-015Z-CFV	ZS09KAE-PFV	3750	4230	4740	5290	5880	6520	6690	7390	8150	8970	9840
FFAP-015Z-TFD	ZS09KAE-TFD	3750	4230	4740	5290	5880	6520	6690	7390	8150	8970	9840
FPAK-012Z-CFV	ZS11KAE-PFV				5680	6260	6880	7160	7850	8570	9350	10200
FPAK-012Z-TFC	ZS11KAE-TF5				5680	6260	6880	7160	7850	8570	9350	10200
FPAK-012Z-TFD	ZS11KAE-TFD				5680	6260	6880	7160	7850	8570	9350	10200
FFAP-017Z-CFV	ZS11KAE-PFV	4430	4990	5590	6230	6920	7660	7860	8680	9560	10500	11500
FFAP-017Z-TFD	ZS11KAE-TFD	4430	4990	5590	6230	6920	7660	7860	8680	9560	10500	11500
FFAP-018Z-CFV	ZS13KAE-PFV			6250	6950	7700	8510	8740	9630	10600	11600	12700
FFAP-020Z-CFV	ZS13KAE-PFV		5750	6440	7180	7980	8840	9080	10000	11000	12100	13300
FFAP-020Z-TFC	ZS13KAE-TF5		5750	6440	7180	7980	8840	9080	10000	11000	12100	13300
FFAP-020Z-TFD	ZS13KAE-TFD		5750	6440	7180	7980	8840	9080	10000	11000	12100	13300
FPAK-013Z-CFV	ZS15KAE-PFV			7320	8130	9000	9920	10300	11400	12500	13600	14900
FPAK-013Z-TFC	ZS15KAE-TF5			7320	8130	9000	9920	10300	11400	12500	13600	14900
FPAK-013Z-TFD	ZS15KAE-TFD			7320	8130	9000	9920	10300	11400	12500	13600	14900
FFAP-022Z-CFV	ZS19KAE-TF5		6840	7660	8540	9490	10500	10800	11900	13100	14400	15800
FFAP-022Z-TFC	ZS15KAE-TF5		6840	7660	8540	9490	10500	10800	11900	13100	14400	15800
FFAP-022Z-TFD	ZS15KAE-PFV		6840	7660	8540	9490	10500	10800	11900	13100	14400	15800
FPAK-015Z-CFV	ZS19KAE-PFV			8120	9010	9950	11000	11400	12500	13700	15000	16300
FPAK-015Z-TFC	ZS19KAE-TF5			8120	9010	9950	11000	11400	12500	13700	15000	16300
FPAK-015Z-TFD	ZS19KAE-TFD			8120	9010	9950	11000	11400	12500	13700	15000	16300
FFAP-030Z-CFV	ZS19KAE-PFV		8340	9340	10400	11600	12800	13200	14500	16000	17600	19300
FFAP-030Z-TFC	ZS15KAE-TFD		8340	9340	10400	11600	12800	13200	14500	16000	17600	19300
FFAP-030Z-TFD	ZS19KAE-TFD		8340	9340	10400	11600	12800	13200	14500	16000	17600	19300
FFAP-032Z-TFC	ZS21KAE-TF5	9230	8670	9670	10800	12000	13300	13600	15000	16500	18200	19900
FPAK-020Z-CFV	ZS21KAE-PFV			11100	12300	13600	15000	15600	17200	18800	20600	22500
FPAK-020Z-TFC	ZS21KAE-TF5			11100	12300	13600	15000	15600	17200	18800	20600	22500
FPAK-020Z-TFD	ZS21KAE-TFD			11100	12300	13600	15000	15600	17200	18800	20600	22500
FFAP-032Z-CFV	ZS21KAE-PFV	9230	10400	11600	13000	14400	15900	16300	18000	19800	21800	23800
FFAP-032Z-TFD	ZS21KAE-TFD	9230	10400	11600	13000	14400	15900	16300	18000	19800	21800	23800
FFAP-035Z-CFV	ZS26KAE-PFV		11400	12800	14200	15800	17500	17900	19800	21800	23900	26200
FFAP-035Z-TFC	ZS26KAE-TF5		11400	12800	14200	15800	17500	17900	19800	21800	23900	26200
FFAP-040Z-CFV	ZS26KAE-PFV	10500	11900	13400	15000	16700	18600	19000	21100	23300	25700	28300
FFAP-040Z-TFC	ZS26KAE-TF5	10500	11900	13400	15000	16700	18600	19000	21100	23300	25700	28300
FFAP-040Z-TFD	ZS26KAE-TFD	10500	11900	13400	15000	16700	18600	19000	21100	23300	25700	28300
FPAK-039Z-CFV	ZS29KAE-PFV			12600	14000	15600	17200	19700	21700	23900	26200	28600
FPAK-039Z-TFC	ZS29KAE-TF5			12600	14000	15600	17200	19700	21700	23900	26200	28600
FPAK-039Z-TFD	ZS29KAE-TFD			12600	14000	15600	17200	19700	21700	23900	26200	28600
FFAP-042Z-CFV	ZS33KAE-PFV	12900	14600	16400	18400	20400	22700	23300	25800	28500	31300	34400
FFAP-042Z-TFC	ZS33KAE-TF5	12900	14600	16400	18400	20400	22700	23300	25800	28500	31300	34400
FFAP-042Z-TFD	ZS33KAE-TFD	12900	14600	16400	18400	20400	22700	23300	25800	28500	31300	34400
FFAP-050Z-CFV	ZS38K4E-PFV	14700	16500	18500	20700	23000	25500	26200	29000	31900	35100	38400
FFAP-050Z-TFC	ZS38K4E-TF5	14700	16500	18500	20700	23000	25500	26200	29000	31900	35100	38400
FFAP-050Z-TFD	ZS38K4E-TFD	14700	16500	18500	20700	23000	25500	26200	29000	31900	35100	38400
FFAP-050Z-TFE	ZS38K4E-TFE	14700	16500	18500	20700	23000	25500	26200	29000	31900	35100	38400
FFAP-060Z-TFC	ZS45K4E-TF5	17400	19600	21900	24500	27200	30100	31000	34200	37600	41300	45200
FFAP-060Z-TFD	ZS45K4E-TFD	17400	19600	21900	24500	27200	30100	31000	34200	37600	41300	45200
FFAM-071Z-TFC	ZB48KCE-TF5			24800	27700	30700	34000	34900	38400	42200	46100	50500
FFAM-071Z-TFD	ZB48KCE-TFD			24800	27700	30700	34000	34900	38400	42200	46100	50500
FFAM-081Z-TFC	ZB57KCE-TF5			26100	29700	33500	37600	38700	43200	48000	53000	58500
FFAM-081Z-TFD	ZB57KCE-TFD			26100	29700	33500	37600	38700	43200	48000	53000	58500
FFAM-091Z-TFC	ZB66K5E-TFC			29700	33300	37200	41400	42600	47200	52000	57000	62500
FFAM-091Z-TFD	ZB66K5E-TFD			29700	33300	37200	41400	42600	47200	52000	57000	62500
FFAM-101Z-TFC	ZB76K5E-TFC				37700	42100	46800	48300	53500	58500	64500	70000
FFAM-101Z-TFD	ZB76K5E-TFD				37700	42100	46800	48300	53500	58500	64500	70000

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-22 Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25
90° Ambient															
FFAL-020Z-CFV	ZF08K4E-PFV	5,560	6,300	7,140	8,080	9,120	10,300	11,500	12,800	14,200	15,800	17,400	19,100	20,900	22,800
FFAL-020Z-TFC	ZF08K4E-TF5	5,560	6,300	7,140	8,080	9,120	10,300	11,500	12,800	14,200	15,800	17,400	19,100	20,900	22,800
FFAL-020Z-TFD	ZF08K4E-TFD	5,560	6,300	7,140	8,080	9,120	10,300	11,500	12,800	14,200	15,800	17,400	19,100	20,900	22,800
FFAL-022Z-CFV	ZF09K4E-PFV	6,280	7,170	8,120	9,150	10,300	11,500	12,800	14,200	15,700	17,300	19,000	20,800	22,800	24,900
FFAL-022Z-TFC	ZF09K4E-TF5	6,280	7,170	8,120	9,150	10,300	11,500	12,800	14,200	15,700	17,300	19,000	20,800	22,800	24,900
FFAL-022Z-TFD	ZF09K4E-TFD	6,280	7,170	8,120	9,150	10,300	11,500	12,800	14,200	15,700	17,300	19,000	20,800	22,800	24,900
FFAL-026Z-CFV	ZF11K4E-PFV	7,720	8,780	9,940	11,200	12,500	14,000	15,500	17,200	19,000	20,900	22,900	25,100	27,400	29,800
FFAL-026Z-TFC	ZF11K4E-TF5	7,720	8,780	9,940	11,200	12,500	14,000	15,500	17,200	19,000	20,900	22,900	25,100	27,400	29,800
FFAL-026Z-TFD	ZF11K4E-TFD	7,720	8,780	9,940	11,200	12,500	14,000	15,500	17,200	19,000	20,900	22,900	25,100	27,400	29,800
FFAL-030Z-CFV	ZF13K4E-PFV	8,910	10,100	11,400	12,800	14,400	16,000	17,800	19,700	21,800	24,000	26,300	28,700	31,300	34,000
FFAL-030Z-TFC	ZF13K4E-TF5	8,910	10,100	11,400	12,800	14,400	16,000	17,800	19,700	21,800	24,000	26,300	28,700	31,300	34,000
FFAL-030Z-TFD	ZF13K4E-TFD	8,910	10,100	11,400	12,800	14,400	16,000	17,800	19,700	21,800	24,000	26,300	28,700	31,300	34,000
FFAL-040Z-CFV	ZF15K4E-PFV	10,800	12,300	13,800	15,500	17,300	19,300	21,400	23,600	26,000	28,500	31,200	34,000	36,900	40,000
FFAL-040Z-TFC	ZF15K4E-TF5	10,800	12,300	13,800	15,500	17,300	19,300	21,400	23,600	26,000	28,500	31,200	34,000	36,900	40,000
FFAL-040Z-TFD	ZF15K4E-TFD	10,800	12,300	13,800	15,500	17,300	19,300	21,400	23,600	26,000	28,500	31,200	34,000	36,900	40,000
FFAL-050Z-TFC	ZF18K4E-TF5	12,500	14,200	16,000	17,900	20,100	22,300	24,800	27,300	30,100	32,900	36,000	39,200	42,500	45,900
FFAL-050Z-TFD	ZF18K4E-TFD	12,500	14,200	16,000	17,900	20,100	22,300	24,800	27,300	30,100	32,900	36,000	39,200	42,500	45,900
100° Ambient															
FFAL-020Z-CFV	ZF08K4E-PFV	5,370	6,080	6,880	7,770	8,750	9,830	11,000	12,200	13,600	15,000	16,500	18,200	19,800	21,600
FFAL-020Z-TFC	ZF08K4E-TF5	5,370	6,080	6,880	7,770	8,750	9,830	11,000	12,200	13,600	15,000	16,500	18,200	19,800	21,600
FFAL-020Z-TFD	ZF08K4E-TFD	5,370	6,080	6,880	7,770	8,750	9,830	11,000	12,200	13,600	15,000	16,500	18,200	19,800	21,600
FFAL-022Z-CFV	ZF09K4E-PFV	5,980	6,820	7,730	8,710	9,760	10,900	12,100	13,400	14,800	16,300	18,000	19,700	21,500	23,500
FFAL-022Z-TFC	ZF09K4E-TF5	5,980	6,820	7,730	8,710	9,760	10,900	12,100	13,400	14,800	16,300	18,000	19,700	21,500	23,500
FFAL-022Z-TFD	ZF09K4E-TFD	5,980	6,820	7,730	8,710	9,760	10,900	12,100	13,400	14,800	16,300	18,000	19,700	21,500	23,500
FFAL-026Z-CFV	ZF11K4E-PFV	7,310	8,320	9,400	10,600	11,800	13,200	14,700	16,200	17,900	19,700	21,600	23,600	25,800	28,000
FFAL-026Z-TFC	ZF11K4E-TF5	7,310	8,320	9,400	10,600	11,800	13,200	14,700	16,200	17,900	19,700	21,600	23,600	25,800	28,000
FFAL-026Z-TFD	ZF11K4E-TFD	7,310	8,320	9,400	10,600	11,800	13,200	14,700	16,200	17,900	19,700	21,600	23,600	25,800	28,000
FFAL-030Z-CFV	ZF13K4E-PFV	8,460	9,580	10,800	12,100	13,600	15,100	16,800	18,600	20,500	22,600	24,800	27,100	29,500	32,000
FFAL-030Z-TFC	ZF13K4E-TF5	8,460	9,580	10,800	12,100	13,600	15,100	16,800	18,600	20,500	22,600	24,800	27,100	29,500	32,000
FFAL-030Z-TFD	ZF13K4E-TFD	8,460	9,580	10,800	12,100	13,600	15,100	16,800	18,600	20,500	22,600	24,800	27,100	29,500	32,000
FFAL-040Z-CFV	ZF15K4E-PFV	10,300	11,600	13,100	14,600	16,400	18,200	20,200	22,200	24,500					
FFAL-040Z-TFC	ZF15K4E-TF5	10,300	11,600	13,100	14,600	16,400	18,200	20,200	22,200	24,500					
FFAL-040Z-TFD	ZF15K4E-TFD	10,300	11,600	13,100	14,600	16,400	18,200	20,200	22,200	24,500					
FFAL-050Z-TFC	ZF18K4E-TF5	11,800	13,400	15,100	16,900	18,900	21,000	23,300							
FFAL-050Z-TFD	ZF18K4E-TFD	11,800	13,400	15,100	16,900	18,900	21,000	23,300							
110° Ambient															
FFAL-020Z-CFV	ZF08K4E-PFV	5,160	5,830	6,580	7,410	8,330	9,330	10,400	11,600	12,800	14,100	15,500	17,000	18,600	20,200
FFAL-020Z-TFC	ZF08K4E-TF5	5,160	5,830	6,580	7,410	8,330	9,330	10,400	11,600	12,800	14,100	15,500	17,000	18,600	20,200
FFAL-020Z-TFD	ZF08K4E-TFD	5,160	5,830	6,580	7,410	8,330	9,330	10,400	11,600	12,800	14,100	15,500	17,000	18,600	20,200
FFAL-022Z-CFV	ZF09K4E-PFV	5,700	6,500	7,360	8,270	9,260	10,300	11,500	12,700	14,000	15,400	16,900	18,500	20,200	22,000
FFAL-022Z-TFC	ZF09K4E-TF5	5,700	6,500	7,360	8,270	9,260	10,300	11,500	12,700	14,000	15,400	16,900	18,500	20,200	22,000
FFAL-022Z-TFD	ZF09K4E-TFD	5,700	6,500	7,360	8,270	9,260	10,300	11,500	12,700	14,000	15,400	16,900	18,500	20,200	22,000
FFAL-026Z-CFV	ZF11K4E-PFV	6,930	7,870	8,870	9,960	11,100	12,400	13,700	15,200						
FFAL-026Z-TFC	ZF11K4E-TF5	6,930	7,870	8,870	9,960	11,100	12,400	13,700	15,200						
FFAL-026Z-TFD	ZF11K4E-TFD	6,930	7,870	8,870	9,960	11,100	12,400	13,700	15,200						
FFAL-030Z-CFV	ZF13K4E-PFV	7,960	9,010	10,100	11,400	12,700	14,200								
FFAL-030Z-TFC	ZF13K4E-TF5	7,960	9,010	10,100	11,400	12,700	14,200								
FFAL-030Z-TFD	ZF13K4E-TFD	7,960	9,010	10,100	11,400	12,700	14,200								
FFAL-040Z-CFV	ZF15K4E-PFV	9,640	10,900	12,200	13,700										
FFAL-040Z-TFC	ZF15K4E-TF5	9,640	10,900	12,200	13,700										
FFAL-040Z-TFD	ZF15K4E-TFD	9,640	10,900	12,200	13,700										
FFAL-050Z-TFC	ZF18K4E-TF5	11,000	12,500												
FFAL-050Z-TFD	ZF18K4E-TFD	11,000	12,500												

Capacities rated at 40°F return gas, 5°F subcooling

R-22 Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
90° Ambient												
FFAP-015Z-CFV	ZS09KAE-PFV	6730	7630	8530	9450	10400	11400	11400	12400	13600	14800	16100
FFAP-015Z-TFC	ZS09KAE-TF5	6730	7630	8530	9450	10400	11400	11400	12400	13600	14800	16100
FFAP-015Z-TFD	ZS09KAE-TFD	6730	7630	8530	9450	10400	11400	11400	12400	13600	14800	16100
FFAP-017Z-CFV	ZS11KAE-PFV		8830	9860	10900	12000	13100	13100	14300	15600	17000	18400
FFAP-017Z-TFC	ZS11KAE-TF5		8830	9860	10900	12000	13100	13100	14300	15600	17000	18400
FFAP-017Z-TFD	ZS11KAE-TFD		8830	9860	10900	12000	13100	13100	14300	15600	17000	18400
FFAP-018Z-CFV	ZS13KAE-PFV		9860	11000	12200	13500	14700	14700	16000	17400	18900	20700
FFAP-020Z-CFV	ZS13KAE-PFV	8900	10100	11300	12500	13800	15200	15200	16600	18100	19700	21400
FFAP-020Z-TFC	ZS13KAE-TF5	8900	10100	11300	12500	13800	15200	15200	16600	18100	19700	21400
FFAP-020Z-TFD	ZS13KAE-TFD	8900	10100	11300	12500	13800	15200	15200	16600	18100	19700	21400
FFAP-022Z-CFV	ZS15KAE-PFV	10400	11900	13300	14700	16200	17800	17800	19400	21100	23000	25200
FFAP-022Z-TFC	ZS15KAE-TF5	10400	11900	13300	14700	16200	17800	17800	19400	21100	23000	25200
FFAP-022Z-TFD	ZS15KAE-TFD	10400	11900	13300	14700	16200	17800	17800	19400	21100	23000	25200
FFAP-030Z-CFV	ZS19KAE-PFV	12300	13900	15500	17200	19000	20800	20800	22700	24800	27000	29400
FFAP-030Z-TFD	ZS19KAE-TFD	12300	13900	15500	17200	19000	20800	20800	22700	24800	27000	29400
FFAP-030Z-TFC	ZS19KAE-TF5	12200	13900	15500	17200	19000	20900	20900	22900	25000	27300	29700
FFAP-032Z-CFV	ZS21KAE-PFV	15900	18100	20200	22400	24700	27100	27000	29500	32200	34900	38400
FFAP-032Z-TFD	ZS21KAE-TFD	15900	18100	20200	22400	24700	27100	27000	29500	32200	34900	38400
FFAP-032Z-TFC	ZS21KAE-TF5	16000	18100	20300	22500	24800	27200	27200	29800	32400	35200	38200
FFAP-035Z-CFV	ZS26KAE-PFV	17400	19800	22200	24600	27100	29600	29600	32300	35100	38100	41800
FFAP-035Z-TFC	ZS26KAE-TF5	17500	19900	22200	24600	27100	29700	29800	32500	35400	38400	41700
FFAP-040Z-CFV	ZS26KAE-PFV	18600	21100	23700	26300	29000	31900	31700	34800	38100	41600	45400
FFAP-040Z-TFD	ZS26KAE-TFD	18600	21100	23700	26300	29000	31900	31700	34800	38100	41600	45400
FFAP-040Z-TFC	ZS26KAE-TF5	18600	21100	23600	26300	29000	32000	32000	35100	38400	41900	45600
FFAP-042Z-CFV	ZS33KAE-PFV	22800	25900	28900	32100	35400	38800	38700	42400	46400	50500	55000
FFAP-042Z-TFD	ZS33KAE-TFD	22800	25900	28900	32100	35400	38800	38700	42400	46400	50500	55000
FFAP-042Z-TFC	ZS33KAE-TF5	22800	25800	28900	32100	35400	38900	39000	42700	46600	51000	55000
FFAP-050Z-CFV	ZS38K4E-PFV			32400	35700	39300	43100	43100	47100	51500	55500	60500
FFAP-050Z-TFC	ZS38K4E-TF5			32400	35700	39300	43100	43100	47100	51500	55500	60500
FFAP-050Z-TFD	ZS38K4E-TFD			32400	35700	39300	43100	43100	47100	51500	55500	60500
FFAP-050Z-TFE	ZS38K4E-TFE			32400	35700	39300	43100	43100	47100	51500	55500	60500
FFAP-060Z-TFC	ZS45K4E-TF5				42200	46300	50500	51000	55500	60000	65500	70500
FFAP-060Z-TFD	ZS45K4E-TFD							51000	55500	60500	66000	71500
FFAM-071Z-TFC	ZB48KCE-TF5			41600	46300	51500	56500	56500	62000	68000	74500	81000
FFAM-071Z-TFD	ZB48KCE-TFD			41600	46300	51500	56500	56500	62000	68000	74500	81000
FFAM-081Z-TFC	ZB57KCE-TF5				53000	58500	64500	64500	70500	77000	83500	90500
FFAM-081Z-TFD	ZB57KCE-TFD				53000	58500	64500	64500	70500	77000	83500	90500
FFAM-091Z-TFC	ZB66K5E-TFC					66000	72500	73000	80000	87000	94500	102000
FFAM-091Z-TFD	ZB66K5E-TFD					66000	72500	73000	80000	87000	94500	102000
FFAM-101Z-TFC	ZB76K5E-TFC						83500	84000	91500	99500	107000	116000
FFAM-101Z-TFD	ZB76K5E-TFD						83500	84000	91500	99500	107000	116000

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

R-22 Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
100° Ambient												
FFAP-015Z-CFV	ZS09KAE-PFV	7140	8010	8900	9800	10700	10800	11800	12900	14000	15200	
FFAP-015Z-TFC	ZS09KAE-TF5	7140	8010	8900	9800	10700	10800	11800	12900	14000	15200	
FFAP-015Z-TFD	ZS09KAE-TFD	7140	8010	8900	9800	10700	10800	11800	12900	14000	15200	
FFAP-017Z-CFV	ZS11KAE-PFV		9250	10300	11300	12400	12400	13600	14800	16100	17500	
FFAP-017Z-TFD	ZS11KAE-TFD		9250	10300	11300	12400	12400	13600	14800	16100	17500	
FFAP-017Z-TFC	ZS11KAE-TF5		9300	10300	11400	12500	12600	13800	15000	16300	17700	
FFAP-018Z-CFV	ZS13KAE-PFV			11500	12600	13900	13900	15100	16500	17900	19600	
FFAP-020Z-CFV	ZS13KAE-PFV		10600	11800	13000	14300	14400	15800	17200	18700	20300	
FFAP-020Z-TFC	ZS13KAE-TF5		10600	11800	13000	14300	14400	15800	17200	18700	20300	
FFAP-020Z-TFD	ZS13KAE-TFD		10600	11800	13000	14300	14400	15800	17200	18700	20300	
FFAP-022Z-CFV	ZS15KAE-PFV		12500	13900	15300	16800	16800	18400	20000	21800	23900	
FFAP-022Z-TFC	ZS15KAE-TF5		12500	13900	15300	16800	16800	18400	20000	21800	23900	
FFAP-022Z-TFD	ZS15KAE-TFD		12500	13900	15300	16800	16800	18400	20000	21800	23900	
FFAP-030Z-CFV	ZS19KAE-PFV	13000	14600	16200	17900	19600	19700	21500	23500	25600	27900	
FFAP-030Z-TFD	ZS19KAE-TFD	13000	14600	16200	17900	19600	19700	21500	23500	25600	27900	
FFAP-030Z-TFC	ZS19KAE-TF5	13000	14600	16200	18000	19700	19800	21700	23700	25800	28100	
FFAP-032Z-CFV	ZS21KAE-PFV		18900	21100	23300	25500	25500	27900	30400	33000	36300	
FFAP-032Z-TFD	ZS21KAE-TFD		18900	21100	23300	25500	25500	27900	30400	33000	36300	
FFAP-032Z-TFC	ZS21KAE-TF5		19000	21100	23300	25600	25700	28100	30700	33300	36200	
FFAP-035Z-CFV	ZS26KAE-PFV		20700	23100	25400	27900	27900	30500	33200	36100	39600	
FFAP-035Z-TFC	ZS26KAE-TF5		20800	23100	25500	28000	28200	30700	33500	36400	39400	
FFAP-040Z-CFV	ZS26KAE-PFV	19900	22300	24800	27400	30100	30100	33100	36200	39600	43200	
FFAP-040Z-TFD	ZS26KAE-TFD	19900	22300	24800	27400	30100	30100	33100	36200	39600	43200	
FFAP-040Z-TFC	ZS26KAE-TF5	19800	22300	24900	27500	30300	30400	33300	36400	39800	43400	
FFAP-042Z-CFV	ZS33KAE-PFV	24300	27300	30300	33400	36700	36800	40300	44000	48000	52500	
FFAP-042Z-TFD	ZS33KAE-TFD	24300	27300	30300	33400	36700	36800	40300	44000	48000	52500	
FFAP-042Z-TFC	ZS33KAE-TF5	24200	27200	30300	33500	36900	37000	40500	44300	48200	52500	
FFAP-050Z-CFV	ZS38K4E-PFV		30800	33900	37200	40800	40900	44700	48700	53000	57500	
FFAP-050Z-TFC	ZS38K4E-TF5		30800	33900	37200	40800	40900	44700	48700	53000	57500	
FFAP-050Z-TFD	ZS38K4E-TFD		30800	33900	37200	40800	40900	44700	48700	53000	57500	
FFAP-050Z-TFE	ZS38K4E-TFE		30800	33900	37200	40800	40900	44700	48700	53000	57500	
FFAP-060Z-TFC	ZS45K4E-TF5					47900	48100	52500	57000	62000	67000	
FFAP-060Z-TFD	ZS45K4E-TFD					47900	48100	52500	57000	62000	67000	
FFAM-071Z-TFC	ZB48KCE-TF5					48000	53000	53000	58500	64000	70000	76500
FFAM-071Z-TFD	ZB48KCE-TFD					48000	53000	53000	58500	64000	70000	76500
FFAM-081Z-TFC	ZB57KCE-TF5						60500	60500	66500	72500	79000	85500
FFAM-081Z-TFD	ZB57KCE-TFD						60500	60500	66500	72500	79000	85500
FFAM-091Z-TFC	ZB66K5E-TFC								75000	82000	89000	96500
FFAM-091Z-TFD	ZB66K5E-TFD								75000	82000	89000	96500
FFAM-101Z-TFC	ZB76K5E-TFC									93000	101000	109000
FFAM-101Z-TFD	ZB76K5E-TFD									93000	101000	109000

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

R-22 Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
110° Ambient												
FFAP-015Z-CFV	ZS09KAE-PFV				8330	9190	10100	10300	11300	12300	13400	14600
FFAP-015Z-TFC	ZS09KAE-TF5				8330	9190	10100	10300	11300	12300	13400	14600
FFAP-015Z-TFD	ZS09KAE-TFD				8330	9190	10100	10300	11300	12300	13400	14600
FFAP-017Z-CFV	ZS11KAE-PFV					10700	11700	11900	13000	14100	15400	16700
FFAP-017Z-TFC	ZS11KAE-TF5					10700	11700	11900	13000	14100	15400	16700
FFAP-017Z-TFD	ZS11KAE-TFD					10700	11700	11900	13000	14100	15400	16700
FFAP-018Z-CFV	ZS13KAE-PFV						13000	13000	14300	15500	16900	18500
FFAP-020Z-CFV	ZS13KAE-PFV					12200	13400	13600	14900	16300	17700	19200
FFAP-020Z-TFC	ZS13KAE-TF5					12200	13400	13600	14900	16300	17700	19200
FFAP-020Z-TFD	ZS13KAE-TFD					12200	13400	13600	14900	16300	17700	19200
FFAP-022Z-CFV	ZS15KAE-PFV					14400	15800	15800	17300	18900	20600	22600
FFAP-022Z-TFC	ZS15KAE-TF5					14400	15800	15800	17300	18900	20600	22600
FFAP-022Z-TFD	ZS15KAE-TFD					14400	15800	15800	17300	18900	20600	22600
FFAP-030Z-CFV	ZS19KAE-PFV				15200	16800	18500	18700	20400	22300	24300	26500
FFAP-030Z-TFC	ZS19KAE-TF5				15200	16800	18500	18700	20400	22300	24300	26500
FFAP-030Z-TFD	ZS19KAE-TFD				15200	16800	18500	18700	20400	22300	24300	26500
FFAP-032Z-TFC	ZS21KAE-TF5					21800	24000	20000	21900	23900	26000	28600
FFAP-032Z-TFD	ZS21KAE-TFD					21800	24000	24000	26300	28700	31200	34300
FFAP-032Z-CFV	ZS21KAE-PFV					21800	24000	24200	26500	28900	31400	34100
FFAP-035Z-CFV	ZS26KAE-PFV					23800	26200	26300	28700	31300	34000	37400
FFAP-035Z-TFC	ZS26KAE-TF5						26200	26500	28900	31600	34300	37300
FFAP-040Z-CFV	ZS26KAE-PFV			20900	23300	25800	28400	28500	31300	34300	37500	40900
FFAP-040Z-TFD	ZS26KAE-TFD			20900	23300	25800	28400	28500	31300	34300	37500	40900
FFAP-040Z-TFC	ZS26KAE-TF5			20900	23300	25900	28500	28700	31500	34500	37600	41000
FFAP-042Z-CFV	ZS33KAE-PFV				28400	31500	34700	34900	38300	41800	45600	49600
FFAP-042Z-TFC	ZS33KAE-TF5				28400	31500	34700	34900	38300	41800	45600	49600
FFAP-042Z-TFD	ZS33KAE-TFD				28400	31500	34700	34900	38300	41800	45600	49600
FFAP-050Z-CFV	ZS38K4E-PFV					35100	38400	38600	42200	45900	49900	54000
FFAP-050Z-TFC	ZS38K4E-TF5					35100	38400	38600	42200	45900	49900	54000
FFAP-050Z-TFD	ZS38K4E-TFD					35100	38400	38600	42200	45900	49900	54000
FFAP-050Z-TFE	ZS38K4E-TFE					35100	38400	38600	42200	45900	49900	54000
FFAP-060Z-TFC	ZS45K4E-TF5							45400	49900	53500	58500	63000
FFAP-060Z-TFD	ZS45K4E-TFD							45400	49900	53500	58500	63000
FFAM-071Z-TFC	ZB48KCE-TF5								54500	60000	65500	71500
FFAM-071Z-TFD	ZB48KCE-TFD								54500	60000	65500	71500
FFAM-081Z-TFC	ZB57KCE-TF5									68000	74000	80500
FFAM-081Z-TFD	ZB57KCE-TFD									68000	74000	80500
FFAM-091Z-TFC	ZB66K5E-TFC										83500	91000
FFAM-091Z-TFD	ZB66K5E-TFD										83500	91000

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

R-404A EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25
90° Ambient															
FFAL-010Z-CFV	ZF03KAE-PFV	2060	2300	2570	2890	3250	3650	4110	4630	5210	5850	6570			
FFAL-010Z-TFC	ZF03KAE-TF5	2060	2300	2580	2890	3250	3650	4110	4630	5210	5860	6570			
FPAK-010Z-CFV	ZS09KAE-PFV			3410	3830	4290	4770	5290	5840	6410					
FPAK-010Z-TFC	ZS09KAE-TF5			3410	3830	4290	4770	5290	5840	6410					
FPAK-010Z-TFD	ZS09KAE-TFD			3410	3830	4290	4770	5290	5840	6410					
FFAL-013Z-CFV	ZF04KAE-PFV	2650	2970	3360	3810	4330	4910	5560	6260	7010	7830	8690			
FFAL-013Z-TFC	ZF04KAE-TF5	2650	2970	3360	3810	4330	4910	5560	6260	7020	7830	8690			
FFAP-015Z-CFV	ZS09KAE-PFV			3520	3980	4470	5010	5600	6230	6900	7660	8460	9320	10200	11200
FFAP-015Z-TFC	ZS09KAE-TF5			3520	3980	4470	5010	5600	6230	6900	7660	8460	9320	10200	11200
FFAP-015Z-TFD	ZS09KAE-TFD			3520	3980	4470	5010	5600	6230	6900	7660	8460	9320	10200	11200
FPAK-012Z-CFV	ZS11KAE-PFV			3950	4430	4940	5490	6060	6670	7290					
FPAK-012Z-TFC	ZS11KAE-TF5			3950	4430	4940	5490	6060	6670	7290					
FPAK-012Z-TFD	ZS11KAE-TFD			3950	4430	4940	5490	6060	6670	7290					
FFAP-017Z-CFV	ZS11KAE-PFV			4100	4630	5200	5820	6490	7210	7970	8830	9730	10700	11700	12800
FFAP-017Z-TFC	ZS11KAE-TF5			4100	4630	5200	5820	6490	7210	7970	8830	9730	10700	11700	12800
FFAP-017Z-TFD	ZS11KAE-TFD			4100	4630	5200	5820	6490	7210	7970	8830	9730	10700	11700	12800
FFAL-014Z-TFC	ZF05KAE-TF5	3170	3600	4090	4650	5260	5930	6650	7430	8250	9120	10000			
FFAL-014Z-CFV	ZF05KAE-PFV	3170	3600	4090	4650	5270	5930	6660	7430	8250	9110	10000			
FFAP-018Z-CFV	ZS13KAE-PFV			4720	5310	5960	6650	7400	8200	9040	9980	11000	12000	13100	14300
FFAP-020Z-CFV	ZS13KAE-PFV			4790	5400	6070	6800	7590	8440	9340	10400	11400	12600	13800	15100
FFAP-020Z-TFC	ZS13KAE-TF5			4790	5400	6070	6800	7590	8440	9340	10400	11400	12600	13800	15100
FFAP-020Z-TFD	ZS13KAE-TFD			4790	5400	6070	6800	7590	8440	9340	10400	11400	12600	13800	15100
FPAK-013Z-CFV	ZS15KAE-PFV			5680	6390	7150	7970	8850	9780	10800					
FPAK-013Z-TFC	ZS15KAE-TF5			5680	6390	7150	7970	8850	9780	10800					
FPAK-013Z-TFD	ZS15KAE-TFD			5680	6390	7150	7970	8850	9780	10800					
FFAP-022Z-CFV	ZS15KAE-PFV			6470	7270	8140	9080	10100	11200	12300	13600	15000	16400	17900	
FFAP-022Z-TFC	ZS15KAE-TF5			6470	7270	8140	9080	10100	11200	12300	13600	15000	16400	17900	
FFAP-022Z-TFD	ZS15KAE-TFD			6470	7270	8140	9080	10100	11200	12300	13600	15000	16400	17900	
FFAL-015Z-TFC	ZF06K4E-TF5	4570	5240	5930	6660	7440	8250	9100	10000	11000	11900	13000	14100	15200	16400
FFAL-015Z-TFD	ZF06K4E-TFD	4570	5240	5930	6660	7440	8250	9100	10000	11000	11900	13000	14100	15200	16400
FFAL-015Z-CFV	ZF06K4E-PFV	4640	5320	6030	6770	7550	8370	9240	10100	11100	12100	13200	14200	15400	16500
FPAK-015Z-CFV	ZS19KAE-PFV			6310	7090	7930	8810	9760	10800	11800					
FPAK-015Z-TFC	ZS19KAE-TF5			6310	7090	7930	8810	9760	10800	11800					
FPAK-015Z-TFD	ZS19KAE-TFD			6310	7090	7930	8810	9760	10800	11800					
FFAL-017Z-CFV	ZF07KAE-PFV	4750	5530	6330	7160	8020	8930	9900	10900	12100	13300	14600			
FFAL-017Z-TFC	ZF07KAE-TF5	4750	5540	6340	7160	8030	8940	9910	11000	12100	13300	14600			
FFAP-030Z-CFV	ZS19KAE-PFV				7370	8300	9310	10400	11600	12900	14300	15900	17500	19300	21200
FFAP-030Z-TFC	ZS19KAE-TF5				7370	8300	9310	10400	11600	12900	14300	15900	17500	19300	21200
FFAP-030Z-TFD	ZS19KAE-TFD				7370	8300	9310	10400	11600	12900	14300	15900	17500	19300	21200
FFAL-020Z-TFC	ZF08K4E-TF5	5890	6690	7560	8500	9510	10600	11800	13000	14400	15800	17300	18900	20600	22400
FFAL-020Z-TFD	ZF08K4E-TFD	5890	6690	7560	8500	9510	10600	11800	13000	14400	15800	17300	18900	20600	22400
FFAL-020Z-CFV	ZF08K4E-PFV	5990	6810	7690	8640	9670	10800	12000	13200	14600	16000	17600	19200	20900	22700
FFAL-022Z-TFC	ZF09K4E-TF5	6530	7440	8400	9430	10500	11700	13000	14300	15800	17300	18900	20700	22500	24400
FFAL-022Z-TFD	ZF09K4E-TFD	6530	7440	8400	9430	10500	11700	13000	14300	15800	17300	18900	20700	22500	24400
FFAL-022Z-CFV	ZF09K4E-PFV	6650	7570	8540	9590	10700	11900	13200	14500	16000	17600	19200	21000	22800	24700
FPAK-020Z-CFV	ZS21KAE-PFV			8520	9580	10700	12000	13300	14700	16100					
FPAK-020Z-TFC	ZS21KAE-TF5			8520	9580	10700	12000	13300	14700	16100					
FPAK-020Z-TFD	ZS21KAE-TFD			8520	9580	10700	12000	13300	14700	16100					
FFAP-032Z-CFV	ZS21KAE-PFV			8610	9720	10900	12200	13600	15100	16700	18500	20400	22400	24600	26900
FFAP-032Z-TFC	ZS21KAE-TF5			8610	9720	10900	12200	13600	15100	16700	18500	20400	22400	24600	26900
FFAP-032Z-TFD	ZS21KAE-TFD			8610	9720	10900	12200	13600	15100	16700	18500	20400	22400	24600	26900
FFAP-035Z-CFV	ZS26KAE-PFV			9550	10800	12000	13400	14900	16500	18200	20100	22000	24100	26300	28700
FFAP-035Z-TFC	ZS26KAE-TF5			9550	10800	12000	13400	14900	16500	18200	20100	22000	24100	26300	28700
FFAP-040Z-CFV	ZS26KAE-PFV			9810	11100	12500	14100	15700	17600	19600	21800	24200	26700	29500	32500
FFAP-040Z-TFC	ZS26KAE-TF5			9810	11100	12500	14100	15700	17600	19600	21800	24200	26700	29500	32500
FFAP-040Z-TFD	ZS26KAE-TFD			9810	11100	12500	14100	15700	17600	19600	21800	24200	26700	29500	32500
FFAL-026Z-TFC	ZF11K4E-TF5	8040	9130	10300	11500	12900	14300	15800	17500	19200	21000	22900	24900	27000	29200
FFAL-026Z-TFD	ZF11K4E-TFD	8040	9130	10300	11500	12900	14300	15800	17500	19200	21000	22900	24900	27000	29200
FFAL-026Z-CFV	ZF11K4E-PFV	8180	9290	10500	11700	13100	14500	16100	17700	19500	21300	23200	25200	27300	29500
FPAK-039Z-CFV	ZS29KAE-PFV			10800	12100	13600	15200	16900	18700	20500					
FPAK-039Z-TFC	ZS29KAE-TF5			10800	12100	13600	15200	16900	18700	20500					
FPAK-039Z-TFD	ZS29KAE-TFD			10800	12100	13600	15200	16900	18700	20500					

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-404A EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25
FFAL-030Z-TFC	ZF13K4E-TF5	8860	10100	11500	12900	14400	16100	17800	19600	21500	23600	25700	27900	30100	32500
FFAL-030Z-TFD	ZF13K4E-TFD	8860	10100	11500	12900	14400	16100	17800	19600	21500	23600	25700	27900	30100	32500
FFAL-030Z-CFV	ZF13K4E-PFV	8880	10200	11500	13000	14600	16300	18100	20000	22000	24100	26200	28400	30600	32900
FFAP-042Z-CFV	ZS33KAE-PFV			12200	13800	15500	17400	19500	21700	24200	26800	29700	32800	36100	39600
FFAP-042Z-TFC	ZS33KAE-TF5			12200	13800	15500	17400	19500	21700	24200	26800	29700	32800	36100	39600
FFAP-042Z-TFD	ZS33KAE-TFD			12200	13800	15500	17400	19500	21700	24200	26800	29700	32800	36100	39600
FFAL-040Z-TFC	ZF15K4E-TF5	11100	12600	14100	15700	17500	19300	21300	23300	25400	27700	29900	32300	34700	37200
FFAL-040Z-TFD	ZF15K4E-TFD	11100	12600	14100	15700	17500	19300	21300	23300	25400	27700	29900	32300	34700	37200
FFAL-040Z-CFV	ZF15K4E-PFV	11300	12800	14300	16000	17700	19600	21500	23600	25700	27900	30200	32600	35000	37400
FFAP-050Z-CFV	ZS38K4E-PFV			14600	16400	18400	20500	22700	25100	27700	30500	33400	36500	39800	43200
FFAP-050Z-TFC	ZS38K4E-TF5			14600	16400	18400	20500	22700	25100	27700	30500	33400	36500	39800	43200
FFAP-050Z-TFD	ZS38K4E-TFD			14600	16400	18400	20500	22700	25100	27700	30500	33400	36500	39800	43200
FFAP-050Z-TFE	ZS38K4E-TFE			14600	16400	18400	20500	22700	25100	27700	30500	33400	36500	39800	43200
FFAL-050Z-TFC	ZF18K4E-TF5	13200	15000	16800	18700	20700	22700	24900	27100	29400	31700	34200	36600	39100	41700
FFAL-050Z-TFD	ZF18K4E-TFD	13200	15000	16800	18700	20700	22700	24900	27100	29400	31700	34200	36600	39100	41700
FFAP-060Z-TFC	ZS45K4E-TF5				20000	22300	24700	27400	30100	33100	36200	39500	43000	46700	50500
FFAP-060Z-TFD	ZS45K4E-TFD				20000	22300	24700	27400	30100	33100	36200	39500	43000	46700	50500
100° Ambient															
FFAL-010Z-CFV	ZF03KAE-PFV	1920	2130	2370	2650	2970	3330	3750	4210	4740	5330	5980			
FFAL-010Z-TFC	ZF03KAE-TF5	1920	2130	2370	2650	2970	3330	3750	4220	4740	5330	5990			
FPAK-010Z-CFV	ZS09KAE-PFV				3560	3960	4390	4850	5340	5830					
FPAK-010Z-TFC	ZS09KAE-TF5				3560	3960	4390	4850	5340	5830					
FPAK-010Z-TFD	ZS09KAE-TFD				3560	3960	4390	4850	5340	5830					
FFAL-013Z-CFV	ZF04KAE-PFV	2440	2710	3060	3470	3940	4470	5060	5710	6420	7170	7980			
FFAL-013Z-TFC	ZF04KAE-TF5	2440	2720	3060	3470	3940	4470	5060	5710	6420	7180	7980			
FFAP-015Z-CFV	ZS09KAE-PFV				3710	4160	4650	5180	5750	6350	7040	7760	8530	9370	10300
FFAP-015Z-TFC	ZS09KAE-TF5				3710	4160	4650	5180	5750	6350	7040	7760	8530	9370	10300
FFAP-015Z-TFD	ZS09KAE-TFD				3710	4160	4650	5180	5750	6350	7040	7760	8530	9370	10300
FPAK-012Z-CFV	ZS11KAE-PFV				4100	4560	5030	5540	6070	6600					
FPAK-012Z-TFC	ZS11KAE-TF5				4100	4560	5030	5540	6070	6600					
FPAK-012Z-TFD	ZS11KAE-TFD				4100	4560	5030	5540	6070	6600					
FFAP-017Z-CFV	ZS11KAE-PFV				4310	4830	5390	5990	6640	7320	8090	8900	9770	10700	11700
FFAP-017Z-TFC	ZS11KAE-TF5				4310	4830	5390	5990	6640	7320	8090	8900	9770	10700	11700
FFAP-017Z-TFD	ZS11KAE-TFD				4310	4830	5390	5990	6640	7320	8090	8900	9770	10700	11700
FFAL-014Z-CFV	ZF05KAE-PFV	2900	3290	3740	4250	4810	5430	6090	6810	7570	8370	9210			
FFAL-014Z-TFC	ZF05KAE-TF5	2890	3280	3730	4240	4810	5420	6090	6810	7570	8370	9210			
FFAP-018Z-CFV	ZS13KAE-PFV				4950	5530	6150	6820	7540	8270	9120	10000	10900	11900	13000
FFAP-020Z-CFV	ZS13KAE-PFV				5040	5650	6300	7010	7780	8590	9500	10500	11500	12600	13800
FFAP-020Z-TFC	ZS13KAE-TF5				5040	5650	6300	7010	7780	8590	9500	10500	11500	12600	13800
FFAP-020Z-TFD	ZS13KAE-TFD				5040	5650	6300	7010	7780	8590	9500	10500	11500	12600	13800
FPAK-013Z-CFV	ZS15KAE-PFV				5940	6630	7360	8140	8970	9820					
FPAK-013Z-TFC	ZS15KAE-TF5				5940	6630	7360	8140	8970	9820					
FPAK-013Z-TFD	ZS15KAE-TFD				5940	6630	7360	8140	8970	9820					
FFAL-015Z-TFC	ZF06K4E-TF5	4160	4800	5460	6140	6850	7600	8380	9200	10100	11000	11900	12800	13800	14800
FFAL-015Z-TFD	ZF06K4E-TFD	4160	4800	5460	6140	6850	7600	8380	9200	10100	11000	11900	12800	13800	14800
FFAP-022Z-CFV	ZS15KAE-PFV				6040	6760	7540	8390	9300	10300	11300	12500	13700	15000	16400
FFAP-022Z-TFC	ZS15KAE-TF5				6040	6760	7540	8390	9300	10300	11300	12500	13700	15000	16400
FFAP-022Z-TFD	ZS15KAE-TFD				6040	6760	7540	8390	9300	10300	11300	12500	13700	15000	16400
FFAL-015Z-CFV	ZF06K4E-PFV	4230	4880	5550	6240	6960	7710	8500	9330	10200	11100	12000	13000	13900	14900
FPAK-015Z-CFV	ZS19KAE-PFV				6580	7330	8120	8960	9850	10800					
FPAK-015Z-TFC	ZS19KAE-TF5				6580	7330	8120	8960	9850	10800					
FPAK-015Z-TFD	ZS19KAE-TFD				6580	7330	8120	8960	9850	10800					
FFAL-017Z-CFV	ZF07KAE-PFV	4320	5060	5800	6560	7350	8170	9050	9990	11000	12100	13200			
FFAL-017Z-TFC	ZF07KAE-TF5	4320	5060	5800	6560	7350	8180	9060	10000	11000	12100	13200			
FFAP-030Z-CFV	ZS19KAE-PFV				6890	7730	8640	9630	10700	11900	13100	14500	15900	17500	19200
FFAP-030Z-TFC	ZS19KAE-TF5				6890	7730	8640	9630	10700	11900	13100	14500	15900	17500	19200
FFAP-030Z-TFD	ZS19KAE-TFD				6890	7730	8640	9630	10700	11900	13100	14500	15900	17500	19200
FFAL-020Z-TFC	ZF08K4E-TF5	5440	6180	6980	7830	8750	9730	10800	11900	13100	14400	15700	17100	18600	20200
FFAL-020Z-TFD	ZF08K4E-TFD	5440	6180	6980	7830	8750	9730	10800	11900	13100	14400	15700	17100	18600	20200
FFAL-020Z-CFV	ZF08K4E-PFV	5530	6290	7100	7960	8890	9890	10900	12100	13300	14600	15900	17400	18900	20500
FFAL-022Z-TFC	ZF09K4E-TF5	6050	6880	7760	8690	9690	10700	11900	13100	14400	15700	17200	18700	20300	22000
FFAL-022Z-TFD	ZF09K4E-TFD	6050	6880	7760	8690	9690	10700	11900	13100	14400	15700	17200	18700	20300	22000

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-404A EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25
FFAL-022Z-CFV	ZF09K4E-PFV	6150	7000	7890	8830	9840	10900	12100	13300	14600	15900	17400	18900	20600	22300
FPAK-020Z-CFV	ZS21KAE-PFV				8910	9940	11000	12200	13400	14700					
FPAK-020Z-TFC	ZS21KAE-TF5				8910	9940	11000	12200	13400	14700					
FPAK-020Z-TFD	ZS21KAE-TFD				8910	9940	11000	12200	13400	14700					
FFAP-032Z-CFV	ZS21KAE-PFV				9050	10100	11300	12600	13900	15300	17000	18700	20500	22400	24500
FFAP-032Z-TFC	ZS21KAE-TF5				9050	10100	11300	12600	13900	15300	17000	18700	20500	22400	24500
FFAP-032Z-TFD	ZS21KAE-TFD				9050	10100	11300	12600	13900	15300	17000	18700	20500	22400	24500
FFAP-035Z-CFV	ZS26KAE-PFV				10000	11200	12400	13700	15200	16600	18300	20000	21900	23800	25900
FFAP-035Z-TFC	ZS26KAE-TF5				10000	11200	12400	13700	15200	16600	18300	20000	21900	23800	25900
FFAL-026Z-TFC	ZF11K4E-TF5	7450	8440	9490	10600	11800	13100	14400	15900	17400	19000	20700	22400	24300	26200
FFAL-026Z-TFD	ZF11K4E-TFD	7450	8440	9490	10600	11800	13100	14400	15900	17400	19000	20700	22400	24300	26200
FFAL-026Z-CFV	ZF11K4E-PFV	7570	8570	9640	10800	12000	13300	14600	16100	17600	19200	20900	22700	24500	26500
FFAP-040Z-CFV	ZS26KAE-PFV				9190	10400	11700	13100	14600	16300	18100	20100	22300	24600	27100
FFAP-040Z-TFC	ZS26KAE-TF5				9190	10400	11700	13100	14600	16300	18100	20100	22300	24600	27100
FFAP-040Z-TFD	ZS26KAE-TFD				9190	10400	11700	13100	14600	16300	18100	20100	22300	24600	27100
FPAK-039Z-CFV	ZS29KAE-PFV				11300	12600	14000	15500	17200	18800					
FPAK-039Z-TFC	ZS29KAE-TF5				11300	12600	14000	15500	17200	18800					
FPAK-039Z-TFD	ZS29KAE-TFD				11300	12600	14000	15500	17200	18800					
FFAL-030Z-TFC	ZF13K4E-TF5	8220	9300	10500	11700	13100	14500	16000	17600	19300	21100	23000	25000	27000	29100
FFAL-030Z-TFD	ZF13K4E-TFD	8220	9300	10500	11700	13100	14500	16000	17600	19300	21100	23000	25000	27000	29100
FFAL-030Z-CFV	ZF13K4E-PFV	8080	9250	10500	11800	13300	14800	16400	18100	19800	21600	23500	25400	27400	29400
FFAP-042Z-CFV	ZS33KAE-PFV				11400	12900	14500	16200	18100	20100	22300	24700	27300	30100	33100
FFAP-042Z-TFC	ZS33KAE-TF5				11400	12900	14500	16200	18100	20100	22300	24700	27300	30100	33100
FFAP-042Z-TFD	ZS33KAE-TFD				11400	12900	14500	16200	18100	20100	22300	24700	27300	30100	33100
FFAL-040Z-TFC	ZF15K4E-TF5	10200	11500	12800	14300	15800	17400	19100	20900	22700	24700	26700	28700	30900	33100
FFAL-040Z-TFD	ZF15K4E-TFD	10200	11500	12800	14300	15800	17400	19100	20900	22700	24700	26700	28700	30900	33100
FFAL-040Z-CFV	ZF15K4E-PFV	10300	11600	13000	14500	16000	17600	19300	21100	23000	24900	26900	28900	31100	33300
FFAP-050Z-CFV	ZS38KAE-PFV				15200	16900	18800	20900	23000	25300	27900	30500	33300	36300	39400
FFAP-050Z-TFC	ZS38KAE-TF5				15200	16900	18800	20900	23000	25300	27900	30500	33300	36300	39400
FFAP-050Z-TFD	ZS38KAE-TFD				15200	16900	18800	20900	23000	25300	27900	30500	33300	36300	39400
FFAP-050Z-TFE	ZS38KAE-TFE				15200	16900	18800	20900	23000	25300	27900	30500	33300	36300	39400
FFAL-050Z-TFC	ZF18K4E-TF5	12200	13800	15400	17100	18800	20600	22400	24300	26300	28400	30500	32700	35000	37300
FFAL-050Z-TFD	ZF18K4E-TFD	12200	13800	15400	17100	18800	20600	22400	24300	26300	28400	30500	32700	35000	37300
FFAP-060Z-TFC	ZS45K4E-TF5				18500	20600	22800	25100	27600	30300	33100	36000	39200	42400	45900
FFAP-060Z-TFD	ZS45K4E-TFD				18500	20600	22800	25100	27600	30300	33100	36000	39200	42400	45900
110° Ambient															
FFAL-010Z-CFV	ZF03KAE-PFV	1850	2050	2280	2530	2820	3140	3510	3930	4390	4910	5480			
FFAL-010Z-TFC	ZF03KAE-TF5	1850	2050	2280	2530	2820	3150	3520	3930	4400	4910	5480			
FPAK-010Z-CFV	ZS09KAE-PFV						3960	4350	4760	5180					
FPAK-010Z-TFC	ZS09KAE-TF5						3960	4350	4760	5180					
FPAK-010Z-TFD	ZS09KAE-TFD						3960	4350	4760	5180					
FFAL-013Z-CFV	ZF04KAE-PFV	2330	2580	2880	3250	3670	4140	4660	5230	5840	6500	7190			
FFAL-013Z-TFC	ZF04KAE-TF5	2330	2580	2880	3250	3670	4140	4670	5240	5850	6500	7200			
FFAP-015Z-CFV	ZS09KAE-PFV				3410	3820	4250	4720	5220	5750	6360	7000	7680	8430	9220
FFAP-015Z-TFC	ZS09KAE-TF5				3410	3820	4250	4720	5220	5750	6360	7000	7680	8430	9220
FFAP-015Z-TFD	ZS09KAE-TFD				3410	3820	4250	4720	5220	5750	6360	7000	7680	8430	9220
FPAK-012Z-CFV	ZS11KAE-PFV							4930	5380	5820					
FPAK-012Z-TFC	ZS11KAE-TF5							4930	5380	5820					
FPAK-012Z-TFD	ZS11KAE-TFD							4930	5380	5820					
FFAP-017Z-CFV	ZS11KAE-PFV					4420	4910	5440	6010	6600	7290	8000	8770	9590	10500
FFAP-017Z-TFC	ZS11KAE-TF5					4420	4910	5440	6010	6600	7290	8000	8770	9590	10500
FFAP-017Z-TFD	ZS11KAE-TFD					4420	4910	5440	6010	6600	7290	8000	8770	9590	10500
FFAL-014Z-TFC	ZF05KAE-TF5	2730	3080	3480	3930	4430	4970	5550	6160	6810	7490	8190			
FFAL-014Z-CFV	ZF05KAE-PFV	2740	3090	3490	3940	4440	4980	5560	6170	6810	7490	8180			
FFAP-018Z-CFV	ZS13KAE-PFV					5040	5580	6170	6790	7420	8170	8930	9740	10600	11600
FFAP-020Z-CFV	ZS13KAE-PFV					5170	5750	6380	7050	7760	8570	9420	10300	11300	12400
FFAP-020Z-TFC	ZS13KAE-TF5					5170	5750	6380	7050	7760	8570	9420	10300	11300	12400
FFAP-020Z-TFD	ZS13KAE-TFD					5170	5750	6380	7050	7760	8570	9420	10300	11300	12400
FPAK-013Z-CFV	ZS15KAE-PFV					6020	6650	7330	8040	8770					
FPAK-013Z-TFC	ZS15KAE-TF5					6020	6650	7330	8040	8770					
FPAK-013Z-TFD	ZS15KAE-TFD					6020	6650	7330	8040	8770					
FFAL-015Z-TFC	ZF06K4E-TF5	3870	4460	5050	5650	6260	6890	7530	8190	8860	9560	10300	11000	11800	12500

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-404A EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	15	20	25
FFAL-015Z-TFD	ZF06K4E-TFD	3870	4460	5050	5650	6260	6890	7530	8190	8860	9560	10300	11000	11800	12500
FFAL-015Z-CFV	ZF06K4E-PFV	3930	4520	5120	5720	6340	6970	7610	8270	8950	9640	10400	11100	11800	
FFAP-022Z-CFV	ZS15KAE-PFV					6190	6880	7630	8430	9260	10200	11200	12300	13400	14700
FFAP-022Z-TFC	ZS15KAE-TF5					6190	6880	7630	8430	9260	10200	11200	12300	13400	14700
FFAP-022Z-TFD	ZS15KAE-TFD					6190	6880	7630	8430	9260	10200	11200	12300	13400	14700
FFAL-017Z-CFV	ZF07KAE-PFV	3970	4630	5270	5910	6560	7220	7910	8630	9410	10200	11100			
FFAL-017Z-TFC	ZF07KAE-TF5	3980	4640	5280	5910	6570	7230	7920	8650	9430	10300	11200			
FPAK-015Z-CFV	ZS19KAE-PFV						7310	8030	8790	9560					
FPAK-015Z-TFC	ZS19KAE-TF5						7310	8030	8790	9560					
FPAK-015Z-TFD	ZS19KAE-TFD						7310	8030	8790	9560					
FFAP-030Z-TFC	ZS19KAE-TF5					7040	7850	8730	9690	10700	11900	13100	14400	15900	17400
FFAP-030Z-CFV	ZS19KAE-PFV					7110	7930	8810	9770	10800	11900	13200	14500	15900	17400
FFAP-030Z-TFD	ZS19KAE-TFD					7110	7930	8810	9770	10800	11900	13200	14500	15900	17400
FFAL-020Z-TFC	ZF08K4E-TF5	4870	5560	6290	7070	7900	8790	9740	10800	11800	13000	14200	15500	16800	18300
FFAL-020Z-TFD	ZF08K4E-TFD	4870	5560	6290	7070	7900	8790	9740	10800	11800	13000	14200	15500	16800	18300
FFAL-020Z-CFV	ZF08K4E-PFV	4960	5660	6400	7190	8030	8930	9890	10900	12000	13200	14400	15700	17100	18500
FFAL-022Z-TFC	ZF09K4E-TF5	5460	6230	7030	7880	8780	9730	10700	11800	13000	14200	15600	16900	18400	20000
FFAL-022Z-TFD	ZF09K4E-TFD	5460	6230	7030	7880	8780	9730	10700	11800	13000	14200	15600	16900	18400	20000
FFAL-022Z-CFV	ZF09K4E-PFV	5550	6330	7150	8000	8920	9880	10900	12000	13200	14400	15800	17200	18600	20200
FPAK-020Z-CFV	ZS26KAE-TF5					9040	10000	11000	12100	13200					
FPAK-020Z-TFC	ZS21KAE-TF5					9040	10000	11000	12100	13200					
FPAK-020Z-TFD	ZS21KAE-PFV					9040	10000	11000	12100	13200					
FFAP-032Z-CFV	ZS21KAE-PFV					9270	10300	11400	12600	13800	15300	16800	18400	20100	22000
FFAP-032Z-TFC	ZS21KAE-TF5					9270	10300	11400	12600	13800	15300	16800	18400	20100	22000
FFAP-032Z-TFD	ZS21KAE-TFD					9270	10300	11400	12600	13800	15300	16800	18400	20100	22000
FFAP-035Z-CFV	ZS26KAE-PFV					10200	11300	12400	13600	14900	16300	17800	19400	21100	23000
FFAP-035Z-TFC	ZS26KAE-TF5					10200	11300	12400	13600	14900	16300	17800	19400	21100	23000
FFAL-026Z-TFC	ZF11K4E-TF5	6740	7640	8590	9600	10700	11800	13000	14300	15700	17100	18700	20200	21900	23500
FFAL-026Z-TFD	ZF11K4E-TFD	6740	7640	8590	9600	10700	11800	13000	14300	15700	17100	18700	20200	21900	23500
FFAL-026Z-CFV	ZF11K4E-PFV	6850	7760	8730	9750	10800	12000	13200	14500	15900	17300	18900	20400	22000	23700
FFAP-040Z-CFV	ZS26KAE-PFV				9600	10800	12000	13400	14900	16500	18300	20200	22300	24600	27100
FFAP-040Z-TFC	ZS21KAE-TFD				9600	10800	12000	13400	14900	16500	18300	20200	22300	24600	27100
FFAP-040Z-TFD	ZS26KAE-TFD				9600	10800	12000	13400	14900	16500	18300	20200	22300	24600	27100
FPAK-039Z-CFV	ZS29KAE-PFV					11500	12700	14000	15400	16900					
FPAK-039Z-TFC	ZS29KAE-TF5					11500	12700	14000	15400	16900					
FPAK-039Z-TFD	ZS29KAE-TFD					11500	12700	14000	15400	16900					
FFAL-030Z-TFC	ZF13K4E-TF5	7600	8510	9500	10600	11800	13000	14400	15800	17400	19000	20600	22400	24100	25900
FFAL-030Z-TFD	ZF13K4E-TFD	7600	8510	9500	10600	11800	13000	14400	15800	17400	19000	20600	22400	24100	25900
FFAL-030Z-CFV	ZF13K4E-PFV	7380	8440	9570	10800	12100	13400	14900	16400	17900	19500	21100	22700	24300	25900
FFAP-042Z-CFV	ZS33KAE-PFV				11900	13300	14900	16500	18400	20300	22500	24800	27300	30000	32900
FFAP-042Z-TFC	ZS33KAE-TF5				11900	13300	14900	16500	18400	20300	22500	24800	27300	30000	32900
FFAP-042Z-TFD	ZS33KAE-TFD				11900	13300	14900	16500	18400	20300	22500	24800	27300	30000	32900
FFAL-040Z-TFC	ZF15K4E-TF5	9200	10400	11600	12900	14300	15700	17200	18700	20300	21900	23500			
FFAL-040Z-TFD	ZF15K4E-TFD	9200	10400	11600	12900	14300	15700	17200	18700	20300	21900	23500			
FFAL-040Z-CFV	ZF15K4E-PFV	9340	10500	11800	13100	14500	15900	17300	18900	20400	22000	23600			
FFAP-050Z-CFV	ZS38K4E-PFV				13800	15400	17100	18900	20800	22800	25100	27500	30000	32700	35500
FFAP-050Z-TFC	ZS38K4E-TF5				13800	15400	17100	18900	20800	22800	25100	27500	30000	32700	35500
FFAP-050Z-TFD	ZS38K4E-TFD				13800	15400	17100	18900	20800	22800	25100	27500	30000	32700	35500
FFAP-050Z-TFE	ZS38K4E-TFE				13800	15400	17100	18900	20800	22800	25100	27500	30000	32700	35500
FFAL-050Z-TFC	ZF18K4E-TF5	11200	12700	14100	15600	21800				23400					
FFAL-050Z-TFD	ZF18K4E-TFD	11200	12700	14100	15600	21800				23400					
FFAP-060Z-TFC	ZS45K4E-TF5					18800	20700	22800	25000	27200	29600	32200	34800	37500	40200
FFAP-060Z-TFD	ZS45K4E-TFD					18800	20700	22800	25000	27200	29600	32200	34800	37500	40200

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-404A Medium Temp/High Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
90° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	4460	5000	5590	6240	6950	7700	7970	8790	9650	10500	11500
FFAM-008Z-TFC	ZB06KAE-TF5	4470	5000	5600	6250	6950	7700	7970	8790	9650	10500	11500
FFAM-010Z-CFV	ZB07KAE-PFV	5310	5980	6700	7470	8300	9190	9510	10500	11600	12700	13900
FFAM-010Z-TFC	ZB07KAE-TF5	5320	5990	6700	7470	8310	9200	9520	10500	11600	12700	13900
FFAM-012Z-CFV	ZB08KAE-PFV	6240	6950	7700	8500	9370	10300	10700	11800	13000	14300	15700
FFAM-012Z-TFC	ZB08KAE-TF5	6240	6950	7700	8500	9370	10300	10700	11800	13000	14300	15700
FFAP-015Z-CFV	ZS09KAE-PFV	6900	7660	8460	9320	10200	11200	11500	12400	13400	14500	15600
FFAP-015Z-TFC	ZS09KAE-TF5	6900	7660	8460	9320	10200	11200	11500	12400	13400	14500	15600
FFAP-015Z-TFD	ZS09KAE-TFD	6900	7660	8460	9320	10200	11200	11500	12400	13400	14500	15600
FFAP-017Z-CFV	ZS11KAE-PFV	7970	8830	9730	10700	11700	12800	13100	14300	15500	16900	18500
FFAP-017Z-TFC	ZS11KAE-TF5	7970	8830	9730	10700	11700	12800	13100	14300	15500	16900	18500
FFAP-017Z-TFD	ZS11KAE-TFD	7970	8830	9730	10700	11700	12800	13100	14300	15500	16900	18500
FFAP-018Z-CFV	ZS13KAE-PFV	9040	9980	11000	12000	13100	14300	14600	15800	17000	18200	19500
FFAP-020Z-CFV	ZS13KAE-PFV	9340	10400	11400	12600	13800	15100	15300	16600	17900	19300	20800
FFAP-020Z-TFC	ZS13KAE-TF5	9340	10400	11400	12600	13800	15100	15300	16600	17900	19300	20800
FFAP-020Z-TFD	ZS13KAE-TFD	9340	10400	11400	12600	13800	15100	15300	16600	17900	19300	20800
FFAP-022Z-CFV	ZS15KAE-PFV	11200	12300	13600	15000	16400	17900	18300	19800	21400	23000	24600
FFAP-022Z-TFC	ZS15KAE-TF5	11200	12300	13600	15000	16400	17900	18300	19800	21400	23000	24600
FFAP-022Z-TFD	ZS15KAE-TFD	11200	12300	13600	15000	16400	17900	18300	19800	21400	23000	24600
FFAP-030Z-CFV	ZS19KAE-PFV	12900	14300	15900	17500	19300	21100	21600	23500	25400	27500	29600
FFAP-030Z-TFC	ZS19KAE-TF5	12900	14300	15900	17500	19300	21200	21600	23500	25400	27500	29600
FFAP-030Z-TFD	ZS19KAE-TFD	12900	14300	15900	17500	19300	21100	21600	23500	25400	27500	29600
FFAP-032Z-CFV	ZS21KAE-PFV	16700	18500	20400	22400	24600	26900	27900	30500	33300	36400	39700
FFAP-032Z-TFC	ZS21KAE-TF5	16700	18500	20400	22400	24600	26900	27900	30500	33300	36400	39700
FFAP-032Z-TFD	ZS21KAE-TFD	16700	18500	20400	22400	24600	26900	27900	30500	33300	36400	39700
FFAP-035Z-CFV	ZS26KAE-PFV	18200	20100	22000	24100	26300	28700	29500	31800	34200	36600	39200
FFAP-035Z-TFC	ZS26KAE-TF5	18200	20100	22000	24100	26300	28700	29500	31800	34200	36600	39200
FFAP-040Z-CFV	ZS26KAE-PFV	19600	21800	24200	26700	29500	32500	34200	37500	41000	44800	49500
FFAP-040Z-TFC	ZS26KAE-TF5	19600	21800	24200	26700	29500	32500	34200	37500	41000	44800	49500
FFAP-040Z-TFD	ZS26KAE-TFD	19600	21800	24200	26700	29500	32500	34200	37500	41000	44800	49500
FFAP-042Z-CFV	ZS33KAE-PFV	24200	26800	29700	32800	36100	39600	40800	44800	49100	54000	59000
FFAP-042Z-TFC	ZS33KAE-TF5	24200	26800	29700	32800	36100	39600	40800	44800	49100	54000	59000
FFAP-042Z-TFD	ZS33KAE-TFD	24200	26800	29700	32800	36100	39600	40800	44800	49100	54000	59000
FFAP-050Z-CFV	ZS38KAE-PFV	27700	30500	33400	36500	39800	43200	45400	49300	53500	57500	62000
FFAP-050Z-TFC	ZS38KAE-TF5	27700	30500	33400	36500	39800	43200	45400	49300	53500	57500	62000
FFAP-050Z-TFD	ZS38KAE-TFD	27700	30500	33400	36500	39800	43200	45400	49300	53500	57500	62000
FFAP-050Z-TFE	ZS38KAE-TFE	27700	30500	33400	36500	39800	43200	45400	49300	53500	57500	62000
FFAP-060Z-TFC	ZS45KAE-TF5	33100	36200	39500	43000	46700	50500	52500	57000	61000	65500	70500
FFAP-060Z-TFD	ZS45KAE-TFD	33100	36200	39500	43000	46700	50500	52500	57000	61000	65500	70500
FFAM-071Z-TFC	ZB48KCE-TF5	36700	40500	44600	48900	53500	58000	60500	65500	71000	76500	82000
FFAM-071Z-TFD	ZB48KCE-TFD	36700	40500	44600	48900	53500	58000	60500	65500	71000	76500	82000
FFAM-081Z-TFC	ZB57KCE-TF5	41400	45500	49900	54500	59500	64500	67000	72500	78000	83500	89500
FFAM-081Z-TFD	ZB57KCE-TFD	41400	45500	49900	54500	59500	64500	67000	72500	78000	83500	89500
FFAM-091Z-TFC	ZB66K5E-TFC	47600	52500	57500	62500	67500	73000	76500	82000	88000	94500	100000
FFAM-091Z-TFD	ZB66K5E-TFD	47600	52500	57500	62500	67500	73000	76500	82000	88000	94500	100000
FFAM-101Z-TFC	ZB76K5E-TFC	54000	59500	64500	70000	75500	81000	91000	97500	104000	110000	
FFAM-101Z-TFD	ZB76K5E-TFD	54000	59500	64500	70000	75500	81000	91000	97500	104000	110000	

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-404A Medium Temp/High Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
100° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	4070	4580	5130	5730	6370	7050	7360	8100	8880	9690	10500
FFAM-008Z-TFC	ZB06KAE-TF5	4080	4580	5130	5730	6370	7060	7360	8110	8890	9690	10500
FFAM-010Z-CFV	ZB07KAE-PFV	4910	5530	6180	6880	7620	8420	8790	9680	10600	11700	12700
FFAM-010Z-TFC	ZB07KAE-TF5	4910	5530	6190	6890	7630	8430	8810	9700	10700	11700	12700
FFAM-012Z-CFV	ZB08KAE-PFV	5760	6420	7090	7820	8600	9450	9890	10900	11900	13100	14400
FFAM-012Z-TFC	ZB08KAE-TF5	5770	6420	7090	7820	8600	9460	9890	10900	12000	13100	14400
FFAP-015Z-CFV	ZS09KAE-PFV	6350	7040	7760	8530	9370	10300	10600	11500	12400	13300	14300
FFAP-015Z-TFC	ZS09KAE-TF5	6350	7040	7760	8530	9370	10300	10600	11500	12400	13300	14300
FFAP-015Z-TFD	ZS09KAE-TFD	6350	7040	7760	8530	9370	10300	10600	11500	12400	13300	14300
FFAP-017Z-CFV	ZS11KAE-PFV	7320	8090	8900	9770	10700	11700	12000	13100	14200	15500	17000
FFAP-017Z-TFC	ZS11KAE-TF5	7320	8090	8900	9770	10700	11700	12000	13100	14200	15500	17000
FFAP-017Z-TFD	ZS11KAE-TFD	7320	8090	8900	9770	10700	11700	12000	13100	14200	15500	17000
FFAP-018Z-CFV	ZS13KAE-PFV	8270	9120	10000	10900	11900	13000	13700	14700	15800	16900	18100
FFAP-020Z-CFV	ZS13KAE-PFV	8590	9500	10500	11500	12600	13800	14200	15400	16600	17800	19100
FFAP-020Z-TFC	ZS13KAE-TF5	8590	9500	10500	11500	12600	13800	14200	15400	16600	17800	19100
FFAP-020Z-TFD	ZS13KAE-TFD	8590	9500	10500	11500	12600	13800	14200	15400	16600	17800	19100
FFAP-022Z-CFV	ZS15KAE-PFV	10300	11300	12500	13700	15000	16400	17000	18400	19800	21200	22800
FFAP-022Z-TFC	ZS15KAE-TF5	10300	11300	12500	13700	15000	16400	17000	18400	19800	21200	22800
FFAP-022Z-TFD	ZS15KAE-TFD	10300	11300	12500	13700	15000	16400	17000	18400	19800	21200	22800
FFAP-030Z-TFC	ZS19KAE-TF5	11900	13100	14500	15900	17500	19200	19800	21500	23200	25000	26900
FFAP-030Z-CFV	ZS19KAE-PFV	11900	13200	14600	16000	17600	19400	20000	21700	23400	25300	27200
FFAP-030Z-TFD	ZS19KAE-TFD	11900	13200	14600	16000	17600	19400	20000	21700	23400	25300	27200
FFAP-032Z-CFV	ZS21KAE-PFV	15300	17000	18700	20500	22400	24500	25700	28100	30700	33500	36600
FFAP-032Z-TFC	ZS21KAE-TF5	15300	17000	18700	20500	22400	24500	25700	28100	30700	33500	36600
FFAP-032Z-TFD	ZS21KAE-TFD	15300	17000	18700	20500	22400	24500	25700	28100	30700	33500	36600
FFAP-035Z-CFV	ZS26KAE-PFV	16600	18300	20000	21900	23800	25900	27600	29700	31800	34000	36300
FFAP-035Z-TFC	ZS26KAE-TF5	16600	18300	20000	21900	23800	25900	27600	29700	31800	34000	36300
FFAP-040Z-CFV	ZS26KAE-PFV	18100	20100	22300	24600	27100	29900	31600	34600	37900	41400	45800
FFAP-040Z-TFC	ZS26KAE-TF5	18100	20100	22300	24600	27100	29900	31600	34600	37900	41400	45800
FFAP-040Z-TFD	ZS26KAE-TFD	18100	20100	22300	24600	27100	29900	31600	34600	37900	41400	45800
FFAP-042Z-CFV	ZS33KAE-PFV	22300	24700	27300	30100	33100	36400	37800	41400	45400	49900	54500
FFAP-042Z-TFC	ZS33KAE-TF5	22300	24700	27300	30100	33100	36400	37800	41400	45400	49900	54500
FFAP-042Z-TFD	ZS33KAE-TFD	22300	24700	27300	30100	33100	36400	37800	41400	45400	49900	54500
FFAP-050Z-CFV	ZS38K4E-PFV	25300	27900	30500	33300	36300	39400	41800	45300	49000	53000	57000
FFAP-050Z-TFC	ZS38K4E-TF5	25300	27900	30500	33300	36300	39400	41800	45300	49000	53000	57000
FFAP-050Z-TFD	ZS38K4E-TFD	25300	27900	30500	33300	36300	39400	41800	45300	49000	53000	57000
FFAP-050Z-TFE	ZS38K4E-TFE	25300	27900	30500	33300	36300	39400	41800	45300	49000	53000	57000
FFAP-060Z-TFC	ZS45K4E-TF5	30300	33100	36000	39200	42400	45900	48100	52000	56000	60000	64000
FFAP-060Z-TFD	ZS45K4E-TFD	30300	33100	36000	39200	42400	45900	48100	52000	56000	60000	64000
FFAM-071Z-TFC	ZB48KCE-TF5	33300	36800	40400	44300	48400	52500	55500	60000	65000	70000	75000
FFAM-071Z-TFD	ZB48KCE-TFD	33300	36800	40400	44300	48400	52500	55500	60000	65000	70000	75000
FFAM-081Z-TFC	ZB57KCE-TF5	37900	41700	45700	49800	54000	58500	61500	66000	71000	76000	81000
FFAM-081Z-TFD	ZB57KCE-TFD	37900	41700	45700	49800	54000	58500	61500	66000	71000	76000	81000
FFAM-091Z-TFC	ZB66K5E-TFC	43100	47500	52000	56500	61500	66000	69500	75000	80000	85500	91000
FFAM-091Z-TFD	ZB66K5E-TFD	43100	47500	52000	56500	61500	66000	69500	75000	80000	85500	91000
FFAM-101Z-TFC	ZB76K5E-TFC	49600	54000	59000	63500	68500	73500	83000	88000			
FFAM-101Z-TFD	ZB76K5E-TFD	49600	54000	59000	63500	68500	73500	83000	88000			

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-404A Medium Temp/High Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
110° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	3800	4260	4760	5290	5840	6430	6750	7380	8030	8690	9360
FFAM-008Z-TFC	ZB06KAE-TF5	3810	4270	4760	5290	5850	6440	6760	7390	8040	8700	9360
FFAM-010Z-CFV	ZB07KAE-PFV	4600	5150	5720	6310	6920	7570	7970	8690	9450	10200	11100
FFAM-010Z-TFC	ZB07KAE-TF5	4610	5160	5730	6320	6940	7590	7990	8710	9480	10300	11100
FFAM-012Z-CFV	ZB08KAE-PFV	5350	5920	6490	7080	7720	8400	8860	9650	10500	11500	12500
FFAM-012Z-TFC	ZB08KAE-TF5	5360	5920	6490	7090	7730	8420	8880	9670	10500	11500	12500
FFAP-015Z-CFV	ZS09KAE-TFD	5750	6360	7000	7680	8430	9220	9910	10700	11500	12300	13200
FFAP-015Z-TFC	ZS09KAE-TF5	5750	6360	7000	7680	8430	9220	9910	10700	11500	12300	13200
FFAP-015Z-TFD	ZS11KAE-TF5	5750	6360	7000	7680	8430	9220	9910	10700	11500	12300	13200
FFAP-017Z-CFV	ZS13KAE-TF5	6600	7290	8000	8770	9590	10500	10800	11800	12900		
FFAP-017Z-TFC	ZS09KAE-PFV	6600	7290	8000	8770	9590	10500	10800	11800	12900		
FFAP-017Z-TFD	ZS11KAE-PFV	6600	7290	8000	8770	9590	10500	10800	11800	12900		
FFAP-018Z-CFV	ZS13KAE-PFV	7420	8170	8930	9740	10600	11600	13000	14000			
FFAP-020Z-CFV	ZS13KAE-PFV	7760	8570	9420	10300	11300	12400	13400	14400	15500	16600	17800
FFAP-020Z-TFC	ZS11KAE-TFD	7760	8570	9420	10300	11300	12400	13400	14400	15500	16600	17800
FFAP-020Z-TFD	ZS13KAE-TFD	7760	8570	9420	10300	11300	12400	13400	14400	15500	16600	17800
FFAP-022Z-CFV	ZS15KAE-PFV	9260	10200	11200	12300	13400	14700	16100	17300	18500	19800	21200
FFAP-022Z-TFC	ZS15KAE-TF5	9260	10200	11200	12300	13400	14700	16100	17300	18500	19800	21200
FFAP-022Z-TFD	ZS15KAE-TFD	9260	10200	11200	12300	13400	14700	16100	17300	18500	19800	21200
FFAP-030Z-CFV	ZS19KAE-PFV	10800	11900	13200	14500	15900	17400	18600	20100	21700	23300	25000
FFAP-030Z-TFC	ZS19KAE-TF5	10700	11900	13100	14400	15900	17400	18600	20000	21600	23200	24900
FFAP-030Z-TFD	ZS19KAE-TFD	10800	11900	13200	14500	15900	17400	18600	20100	21700	23300	25000
FFAP-032Z-CFV	ZS21KAE-PFV	13800	15300	16800	18400	20100	22000	23300	25500	27900	30500	
FFAP-032Z-TFC	ZS21KAE-TF5	13800	15300	16800	18400	20100	22000	23300	25500	27900	30500	
FFAP-032Z-TFD	ZS21KAE-TFD	13800	15300	16800	18400	20100	22000	23300	25500	27900	30500	
FFAP-035Z-CFV	ZS26KAE-PFV	14900	16300	17800	19400	21100	23000	26300				
FFAP-035Z-TFC	ZS26KAE-TF5	14900	16300	17800	19400	21100	23000	26300				
FFAP-040Z-CFV	ZS33KAE-TF5	16500	18300	20200	22300	24600	27100	28800	31600	34700	38000	42100
FFAP-040Z-TFC	ZS26KAE-TF5	16500	18300	20200	22300	24600	27100	28800	31600	34700	38000	42100
FFAP-040Z-TFD	ZS26KAE-PFV	16500	18300	20200	22300	24600	27100	28800	31600	34700	38000	42100
FFAP-042Z-CFV	ZS33KAE-PFV	20300	22500	24800	27300	30000	32900	34500	37900	41600	45700	50000
FFAP-042Z-TFC	ZS26KAE-TFD	20300	22500	24800	27300	30000	32900	34500	37900	41600	45700	50000
FFAP-042Z-TFD	ZS33KAE-TFD	20300	22500	24800	27300	30000	32900	34500	37900	41600	45700	50000
FFAP-050Z-CFV	ZS38K4E-PFV	22800	25100	27500	30000	32700	35500	37900	41100	44500	48100	52000
FFAP-050Z-TFC	ZS38K4E-TF5	22800	25100	27500	30000	32700	35500	37900	41100	44500	48100	52000
FFAP-050Z-TFD	ZS38K4E-TFD	22800	25100	27500	30000	32700	35500	37900	41100	44500	48100	52000
FFAP-050Z-TFE	ZS38K4E-TFE	22800	25100	27500	30000	32700	35500	37900	41100	44500	48100	52000
FFAP-060Z-TFC	ZS45K4E-TF5	27200	29600	32200	34800	37500	40200	42600	45500			
FFAP-060Z-TFD	ZS45K4E-TFD	27200	29600	32200	34800	37500	40200	42600	45500			
FFAM-071Z-TFC	ZB48KCE-TF5			35800	39300	42800	46600	49400	53500	58000	62500	67000
FFAM-071Z-TFD	ZB48KCE-TFD			35800	39300	42800	46600	49400	53500	58000	62500	67000
FFAM-081Z-TFC	ZB57KCE-TF5			40600	44100	47700	51500	54500	58500	62500		
FFAM-081Z-TFD	ZB57KCE-TFD			40600	44100	47700	51500	54500	58500	62500		
FFAM-091Z-TFC	ZB66K5E-TFC		41900	45900	49900	54000	58000	61500				
FFAM-091Z-TFD	ZB66K5E-TFD		41900	45900	49900	54000	58000	61500				
FFAM-101Z-TFC	ZB76K5E-TFC			52500	56500							
FFAM-101Z-TFD	ZB76K5E-TFD			52500	56500							

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-407A EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0
90° Ambient										
FFAL-010Z-CFV	ZF03KAE-PFV	1780	1990	2230	2500	2810	3150	3550	3990	4490
FFAL-010Z-TFC	ZF03KAE-TF5	1780	1990	2230	2500	2800	3150	3550	3990	4490
FFAL-013Z-TFC	ZF04KAE-TF5	2210	2470	2800	3210	3680	4210	4810	5480	6200
FFAL-013Z-CFV	ZF04KAE-PFV	2210	2470	2810	3210	3680	4220	4820	5480	6200
FFAP-015Z-CFV	ZS09KAE-PFV				3400	4000	4610	5220	5860	6510
FFAP-015Z-TFC	ZS09KAE-TF5				3400	4000	4610	5220	5860	6510
FFAP-015Z-TFD	ZS09KAE-TFD				3400	4000	4610	5220	5860	6510
FFAL-014Z-CFV	ZF05KAE-PFV	2500	2850	3270	3770	4330	4970	5670	6430	7260
FFAL-014Z-TFC	ZF05KAE-TF5	2500	2850	3270	3770	4330	4970	5670	6430	7260
FFAP-017Z-CFV	ZS11KAE-PFV				4010	4730	5440	6150	6890	7650
FFAP-017Z-TFC	ZS11KAE-TF5				4010	4730	5440	6150	6890	7650
FFAP-017Z-TFD	ZS11KAE-TFD				4010	4730	5440	6150	6890	7650
FFAP-018Z-CFV	ZS13KAE-PFV					5320	6110	6910	7730	8560
FFAP-020Z-CFV	ZS13KAE-PFV				4640	5470	6290	7130	7990	8890
FFAP-020Z-TFC	ZS13KAE-TF5				4640	5470	6290	7130	7990	8890
FFAP-020Z-TFD	ZS13KAE-TFD				4640	5470	6290	7130	7990	8890
FFAL-015Z-CFV	ZF06K4E-PFV	3180	3730	4340	5030	5790	6630	7570	8610	9750
FFAL-015Z-TFC	ZF06K4E-TF5	3760	4340	4990	5700	6480	7310	8210	9160	10200
FFAL-015Z-TFD	ZF06K4E-TFD	3760	4340	4990	5700	6480	7310	8210	9160	10200
FFAP-022Z-CFV	ZS15KAE-PFV					6510	7500	8500	9530	10600
FFAP-022Z-TFC	ZS15KAE-TF5					6510	7500	8500	9530	10600
FFAP-022Z-TFD	ZS15KAE-TFD					6510	7500	8500	9530	10600
FFAL-017Z-CFV	ZF07KAE-PFV	3990	4670	5370	6110	6900	7750	8670	9680	10800
FFAL-017Z-TFC	ZF07KAE-TF5	3990	4670	5370	6110	6910	7760	8680	9680	10800
FFAP-030Z-CFV	ZS19KAE-PFV				6330	7460	8590	9740	10900	12200
FFAP-030Z-TFD	ZS19KAE-TFD				6330	7460	8590	9740	10900	12200
FFAP-030Z-TFC	ZS19KAE-TF5				6350	7490	8630	9780	11000	12200
FFAL-020Z-CFV	ZF08K4E-PFV	4670	5390	6200	7100	8080	9140	10300	11500	12800
FFAL-020Z-TFC	ZF08K4E-TF5	4670	5390	6200	7100	8080	9140	10300	11500	12800
FFAL-020Z-TFD	ZF08K4E-TFD	4670	5390	6200	7100	8080	9140	10300	11500	12800
FFAL-022Z-CFV	ZF09K4E-PFV	4650	5460	6340	7310	8380	9590	10900	12500	14200
FFAL-022Z-TFC	ZF09K4E-TF5	5390	6020	6860	7870	9000	10200	11500	12800	14000
FFAL-022Z-TFD	ZF09K4E-TFD	5390	6020	6860	7870	9000	10200	11500	12800	14000
FFAP-032Z-CFV	ZS21KAE-PFV				7130	8530	9990	11500	13100	14800
FFAP-032Z-TFC	ZS21KAE-TF5				7130	8530	9990	11500	13100	14800
FFAP-032Z-TFD	ZS21KAE-TFD				7130	8530	9990	11500	13100	14800
FFAP-035Z-CFV	ZS26KAE-PFV				8030	9520	11100	12800	14500	16400
FFAP-035Z-TFC	ZS26KAE-TF5				8030	9520	11100	12800	14500	16400
FFAL-026Z-CFV	ZF11K4E-PFV	5760	6740	7800	8990	10300	11800	13400	15300	17400
FFAL-026Z-TFC	ZF11K4E-TF5	6620	7390	8420	9660	11100	12600	14100	15700	17200
FFAL-026Z-TFD	ZF11K4E-TFD	6620	7390	8420	9660	11100	12600	14100	15700	17200
FFAP-040Z-CFV	ZS26KAE-PFV				9410	11100	12800	14500	16300	18200
FFAP-040Z-TFC	ZS26KAE-TF5				9410	11100	12800	14500	16300	18200
FFAP-040Z-TFD	ZS26KAE-TFD				9410	11100	12800	14500	16300	18200
FFAL-030Z-TFC	ZF13K4E-TF5	7580	8390	9470	10800	12300	14000	15800	17800	19800
FFAL-030Z-TFD	ZF13K4E-TFD	7580	8390	9470	10800	12300	14000	15800	17800	19800
FFAL-030Z-CFV	ZF13K4E-PFV	7530	8420	9600	11000	12700	14400	16400	18300	20400
FFAP-042Z-CFV	ZS33KAE-PFV				11900	14000	16100	18200	20500	22800
FFAP-042Z-TFC	ZS33KAE-TF5				11900	14000	16100	18200	20500	22800
FFAP-042Z-TFD	ZS33KAE-TFD				11900	14000	16100	18200	20500	22800
FFAL-040Z-TFC	ZF15K4E-TF5	9510	10500	11700	13200	14900	16800	19000	21200	23700
FFAL-040Z-TFD	ZF15K4E-TFD	9510	10500	11700	13200	14900	16800	19000	21200	23700
FFAL-040Z-CFV	ZF15K4E-PFV	9660	10700	12000	13600	15400	17400	19600	21800	24100
FFAP-050Z-CFV	ZS38K4E-PFV				13500	15900	18400	21000	23800	26700
FFAP-050Z-TFC	ZS38K4E-TF5				13500	15900	18400	21000	23800	26700
FFAP-050Z-TFD	ZS38K4E-TFD				13500	15900	18400	21000	23800	26700
FFAP-050Z-TFE	ZS38K4E-TFE				13500	15900	18400	21000	23800	26700
FFAL-050Z-TFC	ZF18K4E-TF5	11300	12500	14000	15700	17800	20000	22400	25000	27700
FFAL-050Z-TFD	ZF18K4E-TFD	11300	12500	14000	15700	17800	20000	22400	25000	27700
FFAP-060Z-TFC	ZS45K4E-TF5				16200	18400	21000	23800	26900	30300
FFAP-060Z-TFD	ZS45K4E-TFD				16200	18400	21000	23800	26900	30300

Capacities rated at 40°F return gas, 5°F subcooling

R-407A EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0
100° Ambient										
FFAL-010Z-CFV	ZF03KAE-PFV	1660	1870	2090	2340	2630	2950	3310	3710	4160
FFAL-010Z-TFC	ZF03KAE-TF5	1660	1870	2090	2340	2630	2950	3310	3710	4160
FFAL-013Z-CFV	ZF04KAE-PFV	2080	2320	2620	2990	3420	3910	4470	5080	5750
FFAL-013Z-TFC	ZF04KAE-TF5	2080	2320	2620	2990	3420	3910	4470	5080	5750
FFAP-015Z-CFV	ZS09KAE-PFV							4850	5440	6050
FFAP-015Z-TFC	ZS09KAE-TF5							4850	5440	6050
FFAP-015Z-TFD	ZS09KAE-TFD							4850	5440	6050
FFAL-014Z-CFV	ZF05KAE-PFV	2360	2670	3050	3500	4020	4610	5250	5970	6740
FFAL-014Z-TFC	ZF05KAE-TF5	2360	2670	3050	3500	4020	4600	5250	5970	6740
FFAP-017Z-CFV	ZS13KAE-TF5							5710	6400	7100
FFAP-017Z-TFC	ZS11KAE-PFV							5710	6400	7100
FFAP-017Z-TFD	ZS11KAE-TF5							5710	6400	7100
FFAP-020Z-CFV	ZS13KAE-PFV							6600	7410	8240
FFAP-020Z-TFC	ZS11KAE-TFD							6600	7410	8240
FFAP-020Z-TFD	ZS13KAE-TFD							6600	7410	8240
FFAL-015Z-CFV	ZF06K4E-PFV	2990	3500	4070	4700	5420	6210	7100	8080	9160
FFAL-015Z-TFC	ZF06K4E-TF5	3500	4050	4650	5310	6030	6810	7640	8510	9440
FFAL-015Z-TFD	ZF06K4E-TFD	3500	4050	4650	5310	6030	6810	7640	8510	9440
FFAL-017Z-CFV	ZF07KAE-PFV	3710	4350	5010	5690	6420	7200	8040	8950	9940
FFAL-017Z-TFC	ZF07KAE-TF5	3710	4350	5010	5700	6430	7200	8040	8950	9950
FFAP-030Z-CFV	ZS19KAE-PFV						7970	9050	10200	11300
FFAP-030Z-TFD	ZS19KAE-TFD						7970	9050	10200	11300
FFAP-030Z-TFC	ZS19KAE-TF5						7980	9060	10200	11300
FFAL-020Z-CFV	ZF08K4E-PFV	4350	5030	5790	6620	7530	8510	9570	10700	11900
FFAL-020Z-TFC	ZF08K4E-TF5	4350	5030	5790	6620	7530	8510	9570	10700	11900
FFAL-020Z-TFD	ZF08K4E-TFD	4350	5030	5790	6620	7530	8510	9570	10700	11900
FFAL-022Z-CFV	ZF09K4E-PFV	4440	5160	5950	6830	7820	8950	10200	11700	13300
FFAP-032Z-CFV	ZS21KAE-PFV							10500	12100	13700
FFAP-032Z-TFC	ZS21KAE-TF5							10500	12100	13700
FFAP-032Z-TFD	ZS21KAE-TFD							10500	12100	13700
FFAL-022Z-TFC	ZF09K4E-TF5	5020	5630	6430	7390	8460	9590	10800	11900	13100
FFAL-022Z-TFD	ZF09K4E-TFD	5020	5630	6430	7390	8460	9590	10800	11900	13100
FFAP-035Z-CFV	ZS26KAE-PFV							11500	13200	15000
FFAP-035Z-TFC	ZS26KAE-TF5							11500	13200	15000
FFAL-026Z-CFV	ZF11K4E-PFV	5500	6360	7310	8370	9580	10900	12500	14200	16200
FFAL-026Z-TFC	ZF11K4E-TF5	6170	6910	7880	9050	10400	11700	13200	14600	15900
FFAL-026Z-TFD	ZF11K4E-TFD	6170	6910	7880	9050	10400	11700	13200	14600	15900
FFAP-040Z-CFV	ZS26KAE-PFV							11900	13500	15200
FFAP-040Z-TFC	ZS26KAE-TF5							11900	13500	15200
FFAP-040Z-TFD	ZS26KAE-TFD							11900	13500	15200
FFAL-030Z-TFC	ZF13K4E-TF5	7130	7780	8700	9870	11300	12800	14500	16400	18300
FFAL-030Z-TFD	ZF13K4E-TFD	7130	7780	8700	9870	11300	12800	14500	16400	18300
FFAL-030Z-CFV	ZF13K4E-PFV	7020	7810	8880	10200	11700	13400	15200	17000	18900
FFAP-042Z-CFV	ZS33KAE-PFV							17000	19100	21200
FFAP-042Z-TFC	ZS33KAE-TF5							17000	19100	21200
FFAP-042Z-TFD	ZS33KAE-TFD							17000	19100	21200
FFAL-040Z-TFC	ZF15K4E-TF5	8760	9580	10700	12000	13600	15400	17400	19500	21800
FFAL-040Z-TFD	ZF15K4E-TFD	8760	9580	10700	12000	13600	15400	17400	19500	21800
FFAL-040Z-CFV	ZF15K4E-PFV	9040	9910	11100	12500	14200	16100	18000	20100	22300
FFAP-050Z-CFV	ZS38K4E-PFV							17000	19800	22600
FFAP-050Z-TFC	ZS38K4E-TF5							17000	19800	22600
FFAP-050Z-TFD	ZS38K4E-TFD							17000	19800	22600
FFAP-050Z-TFE	ZS38K4E-TFE							17000	19800	22600
FFAL-050Z-TFC	ZF18K4E-TF5	10500	11500	12900	14500	16300	18400	20700	23000	25500
FFAL-050Z-TFD	ZF18K4E-TFD	10500	11500	12900	14500	16300	18400	20700	23000	25500
FFAP-060Z-TFC	ZS45K4E-TF5							22100	25000	28100
FFAP-060Z-TFD	ZS45K4E-TFD							22100	25000	28100

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-407A EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0
110° Ambient										
FFAL-010Z-CFV	ZF03KAE-PFV	1550	1750	1970	2210	2470	2760	3080	3450	3850
FFAL-010Z-TFC	ZF03KAE-TF5	1550	1750	1970	2210	2470	2760	3080	3450	3850
FFAL-013Z-CFV	ZF04KAE-PFV	1950	2160	2430	2760	3150	3600	4110	4670	5290
FFAL-013Z-TFC	ZF04KAE-TF5	1950	2160	2430	2760	3150	3600	4110	4670	5280
FFAL-014Z-CFV	ZF05KAE-PFV	2210	2480	2820	3230	3700	4230	4830	5490	6200
FFAL-014Z-TFC	ZF05KAE-TF5	2210	2480	2820	3230	3700	4230	4830	5490	6200
FFAL-015Z-CFV	ZF06KAE-PFV	2840	3300	3810	4390	5040	5780	6610	7530	8540
FFAL-015Z-TFC	ZF06KAE-TF5	3220	3730	4290	4900	5560	6260	7020	7820	8660
FFAL-015Z-TFD	ZF06KAE-TFD	3220	3730	4290	4900	5560	6260	7020	7820	8660
FFAL-017Z-CFV	ZF07KAE-PFV	3370	3980	4590	5220	5880	6580	7340	8160	9050
FFAL-017Z-TFC	ZF07KAE-TF5	3380	3980	4590	5220	5890	6590	7340	8160	9050
FFAL-020Z-CFV	ZF08KAE-PFV	4010	4640	5340	6100	6930	7810	8770	9780	10900
FFAL-020Z-TFC	ZF08KAE-TF5	4010	4640	5340	6100	6930	7810	8770	9780	10900
FFAL-020Z-TFD	ZF08KAE-TFD	4010	4640	5340	6100	6930	7810	8770	9780	10900
FFAL-022Z-CFV	ZF09KAE-PFV	4180	4800	5480	6260	7150	8170	9340	10700	12200
FFAL-022Z-TFC	ZF09KAE-TF5	4670	5260	6020	6920	7910	8960	10000	11100	12100
FFAL-022Z-TFD	ZF09KAE-TFD	4670	5260	6020	6920	7910	8960	10000	11100	12100
FFAL-026Z-CFV	ZF11KAE-PFV	5160	5870	6660	7580	8640	9860	11300	12900	14700
FFAL-026Z-TFC	ZF11KAE-TF5	5740	6440	7350	8430	9630	10900	12200	13400	14600
FFAL-026Z-TFD	ZF11KAE-TFD	5740	6440	7350	8430	9630	10900	12200	13400	14600
FFAL-030Z-TFC	ZF13KAE-TF5	6590	7060	7820	8820	10100	13000	14700	16600	
FFAL-030Z-TFD	ZF13KAE-TFD	6590	7060	7820	8820	10100	13000	14700	16600	
FFAL-030Z-CFV	ZF13KAE-PFV	6740	7390	8330	9510	14100	15800	17600		

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-407A Medium Temp/High Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
90° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	4010	4490	5040	5660	6340	7090	7200	8020	8890	9830	10800
FFAM-008Z-TFC	ZB06KAE-TF5	4010	4490	5040	5660	6340	7090	7200	8020	8900	9830	10800
FFAM-010Z-CFV	ZB07KAE-PFV	4820	5480	6180	6930	7730	8560	8690	9570	10500	11400	12400
FFAM-010Z-TFC	ZB07KAE-TF5	4820	5480	6180	6940	7730	8560	8700	9570	10500	11400	12400
FFAM-012Z-CFV	ZB08KAE-PFV	5730	6520	7330	8160	9010	9870	10000	10900	11900	12800	13700
FFAM-012Z-TFC	ZB08KAE-TF5	5730	6520	7330	8160	9010	9880	10000	10900	11900	12800	13700
FFAP-015Z-CFV	ZS09KAE-PFV	6510	7220	7970	8780	9650	10600	10700	11800	12900	14100	15400
FFAP-015Z-TFC	ZS09KAE-TF5	6510	7220	7970	8780	9650	10600	10700	11800	12900	14100	15400
FFAP-015Z-TFD	ZS09KAE-TFD	6510	7220	7970	8780	9650	10600	10700	11800	12900	14100	15400
FFAP-017Z-CFV	ZS11KAE-PFV	7650	8470	9340	10300	11300	12300	12500	13700	15000	16300	17800
FFAP-017Z-TFC	ZS11KAE-TF5	7650	8470	9340	10300	11300	12300	12500	13700	15000	16300	17800
FFAP-017Z-TFD	ZS11KAE-TFD	7650	8470	9340	10300	11300	12300	12500	13700	15000	16300	17800
FFAP-018Z-CFV	ZS13KAE-PFV	8560	9460	10400	11400	12500	13600	13900	15100	16500	18000	19500
FFAP-020Z-CFV	ZS13KAE-PFV	8890	9840	10900	11900	13100	14400	14600	16000	17500	19200	20900
FFAP-020Z-TFC	ZS13KAE-TF5	8890	9840	10900	11900	13100	14400	14600	16000	17500	19200	20900
FFAP-020Z-TFD	ZS13KAE-TFD	8890	9840	10900	11900	13100	14400	14600	16000	17500	19200	20900
FFAP-022Z-TFC	ZS15KAE-TF5	10600	11800	13000	14300	15700	17200	17500	19100	20900	22800	24800
FFAP-022Z-CFV	ZS15KAE-PFV	10600	11800	13000	14300	15800	17300	17600	19400	21300	23400	25700
FFAP-022Z-TFD	ZS15KAE-TFD	10600	11800	13000	14300	15800	17300	17600	19400	21300	23400	25700
FFAP-030Z-CFV	ZS19KAE-PFV	12200	13500	14900	16400	18100	19900	20200	22100	24200	26500	29000
FFAP-030Z-TFD	ZS19KAE-TFD	12200	13500	14900	16400	18100	19900	20200	22100	24200	26500	29000
FFAP-030Z-TFC	ZS19KAE-TF5	12200	13600	15000	16500	18200	20000	20300	22300	24400	26700	29200
FFAP-032Z-CFV	ZS21KAE-PFV	14800	16700	18600	20600	22700	25000	25700	28200	30700	33400	36300
FFAP-032Z-TFC	ZS21KAE-TF5	14800	16700	18600	20600	22700	25000	25700	28200	30700	33400	36300
FFAP-032Z-TFD	ZS21KAE-TFD	14800	16700	18600	20600	22700	25000	25700	28200	30700	33400	36300
FFAP-035Z-CFV	ZS26KAE-PFV	16400	18500	20600	23000	25400	28100	28500	31400	34400	37600	41000
FFAP-035Z-TFC	ZS26KAE-TF5	16400	18500	20600	23000	25400	28100	28500	31400	34400	37600	41000
FFAP-040Z-CFV	ZS26KAE-PFV	18200	20200	22400	24800	27300	30100	30600	33700	37000	40600	44300
FFAP-040Z-TFC	ZS26KAE-TF5	18200	20200	22400	24800	27300	30100	30600	33700	37000	40600	44300
FFAP-040Z-TFD	ZS26KAE-TFD	18200	20200	22400	24800	27300	30100	30600	33700	37000	40600	44300
FFAP-042Z-CFV	ZS33KAE-PFV	22800	25300	28000	30900	34000	37300	39200	43100	47200	51500	57000
FFAP-042Z-TFC	ZS33KAE-TF5	22800	25300	28000	30900	34000	37300	39200	43100	47200	51500	57000
FFAP-042Z-TFD	ZS33KAE-TFD	22800	25300	28000	30900	34000	37300	39200	43100	47200	51500	57000
FFAP-050Z-CFV	ZS38K4E-PFV	26700	29700	32800	35900	39000	42100	44200	48700	53500	58000	62500
FFAP-050Z-TFC	ZS38K4E-TF5	26700	29700	32800	35900	39000	42100	44200	48700	53500	58000	62500
FFAP-050Z-TFD	ZS38K4E-TFD	26700	29700	32800	35900	39000	42100	44200	48700	53500	58000	62500
FFAP-050Z-TFE	ZS38K4E-TFE	26700	29700	32800	35900	39000	42100	44200	48700	53500	58000	62500
FFAP-060Z-TFC	ZS45K4E-TF5	30300	33900	37700	41700	45900	50000	51000	56000	60500	65500	70000
FFAP-060Z-TFD	ZS45K4E-TFD	30300	33900	37700	41700	45900	50000	51000	56000	60500	65500	70000
FFAM-071Z-TFC	ZB48KCE-TF5	31800	35900	40300	45100	50000	55500	56500	62000	68000	74000	80500
FFAM-071Z-TFD	ZB48KCE-TFD	31800	35900	40300	45100	50000	55500	56500	62000	68000	74000	80500
FFAM-081Z-TFC	ZB57KCE-TF5	36900	41300	45900	51000	56000	61500	62500	68500	74500	81000	87500
FFAM-081Z-TFD	ZB57KCE-TFD	36900	41300	45900	51000	56000	61500	62500	68500	74500	81000	87500
FFAM-091Z-TFC	ZB66K5E-TFC	39700	44800	50000	56000	62000	68500	70000	77000	84000	91000	98500
FFAM-091Z-TFD	ZB66K5E-TFD	39700	44800	50000	56000	62000	68500	70000	77000	84000	91000	98500
FFAM-101Z-TFC	ZB76K5E-TFC	47800	54000	60000	66500	72500	79000	81000	87500	94500	102000	110000
FFAM-101Z-TFD	ZB76K5E-TFD	47800	54000	60000	66500	72500	79000	81000	87500	94500	102000	110000

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-407A Medium Temp/High Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
100° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	3740	4190	4700	5270	5900	6600	6740	7500	8310	9180	10100
FFAM-008Z-TFC	ZB06KAE-TF5	3750	4190	4700	5270	5910	6600	6740	7500	8310	9180	10100
FFAM-010Z-CFV	ZB07KAE-PFV	4390	5040	5730	6460	7210	8000	8160	8990	9840	10700	11600
FFAM-010Z-TFC	ZB07KAE-TF5	4390	5040	5730	6460	7210	8000	8160	8990	9840	10700	11600
FFAM-012Z-CFV	ZB08KAE-PFV	5320	6060	6820	7600	8400	9210	9410	10300	11100	12000	12900
FFAM-012Z-TFC	ZB08KAE-TF5	5330	6070	6820	7600	8400	9210	9410	10300	11100	12000	12900
FFAP-015Z-CFV	ZS09KAE-PFV	6050	6710	7400	8150	8950	9820	10000	11000	12000	13100	14400
FFAP-015Z-TFC	ZS09KAE-TF5	6050	6710	7400	8150	8950	9820	10000	11000	12000	13100	14400
FFAP-015Z-TFD	ZS09KAE-TFD	6050	6710	7400	8150	8950	9820	10000	11000	12000	13100	14400
FFAP-017Z-CFV	ZS13KAE-TF5	7100	7870	8660	9510	10400	11400	11600	12700	13900	15200	16600
FFAP-017Z-TFC	ZS11KAE-PFV	7100	7870	8660	9510	10400	11400	11600	12700	13900	15200	16600
FFAP-017Z-TFD	ZS11KAE-TF5	7100	7870	8660	9510	10400	11400	11600	12700	13900	15200	16600
FFAP-018Z-CFV	ZS13KAE-PFV	7940	8780	9650	10600	11600	12600	12900	14100	15300	16700	18200
FFAP-020Z-CFV	ZS13KAE-PFV	8240	9120	10100	11100	12100	13300	13600	14900	16300	17800	19400
FFAP-020Z-TFC	ZS11KAE-TFD	8240	9120	10100	11100	12100	13300	13600	14900	16300	17800	19400
FFAP-020Z-TFD	ZS13KAE-TFD	8240	9120	10100	11100	12100	13300	13600	14900	16300	17800	19400
FFAP-022Z-TFC	ZS15KAE-TF5	9870	10900	12000	13200	14500	15900	16200	17700	19400	21200	23100
FFAP-022Z-CFV	ZS15KAE-PFV	9970	11100	12200	13500	14900	16400	16700	18400	20300	22300	24600
FFAP-022Z-TFD	ZS15KAE-TFD	9970	11100	12200	13500	14900	16400	16700	18400	20300	22300	24600
FFAP-030Z-CFV	ZS19KAE-PFV	11300	12600	13900	15300	16800	18400	18800	20600	22600	24700	27100
FFAP-030Z-TFC	ZS19KAE-TF5	11300	12500	13800	15200	16700	18400	18800	20600	22600	24700	27000
FFAP-030Z-TFD	ZS19KAE-TFD	11300	12600	13900	15300	16800	18400	18800	20600	22600	24700	27100
FFAP-032Z-CFV	ZS21KAE-PFV	13700	15500	17300	19200	21200	23300	24100	26400	28800	31300	33900
FFAP-032Z-TFC	ZS21KAE-TF5	13700	15500	17300	19200	21200	23300	24100	26400	28800	31300	33900
FFAP-032Z-TFD	ZS21KAE-TFD	13700	15500	17300	19200	21200	23300	24100	26400	28800	31300	33900
FFAP-035Z-CFV	ZS26KAE-PFV	15000	16900	19000	21200	23500	26000	26600	29300	32100	35200	38400
FFAP-035Z-TFC	ZS26KAE-TF5	15000	16900	19000	21200	23500	26000	26600	29300	32100	35200	38400
FFAP-040Z-CFV	ZS26KAE-PFV	17000	18800	20900	23000	25400	28000	28600	31500	34600	37800	41300
FFAP-040Z-TFC	ZS26KAE-TF5	17000	18800	20900	23000	25400	28000	28600	31500	34600	37800	41300
FFAP-040Z-TFD	ZS26KAE-TFD	17000	18800	20900	23000	25400	28000	28600	31500	34600	37800	41300
FFAP-042Z-CFV	ZS33KAE-PFV	21200	23600	26000	28700	31600	34700	36900	40500	44400	48500	53500
FFAP-042Z-TFC	ZS33KAE-TF5	21200	23600	26000	28700	31600	34700	36900	40500	44400	48500	53500
FFAP-042Z-TFD	ZS33KAE-TFD	21200	23600	26000	28700	31600	34700	36900	40500	44400	48500	53500
FFAP-050Z-CFV	ZS38K4E-PFV	25500	28400	31400	34400	37400	40300	41300	45600	50000	54500	59000
FFAP-050Z-TFC	ZS38K4E-TF5	25500	28400	31400	34400	37400	40300	41300	45600	50000	54500	59000
FFAP-050Z-TFD	ZS38K4E-TFD	25500	28400	31400	34400	37400	40300	41300	45600	50000	54500	59000
FFAP-050Z-TFE	ZS38K4E-TFE	25500	28400	31400	34400	37400	40300	41300	45600	50000	54500	59000
FFAP-060Z-TFC	ZS45K4E-TF5	28100	31500	35000	38800	42700	46800	47900	52000	56500	61000	66000
FFAP-060Z-TFD	ZS45K4E-TFD	28100	31500	35000	38800	42700	46800	47900	52000	56500	61000	66000
FFAM-071Z-TFC	ZB48KCE-TF5	29100	32900	36900	41300	46000	51000	52000	57500	63000	68500	74500
FFAM-071Z-TFD	ZB48KCE-TFD	29100	32900	36900	41300	46000	51000	52000	57500	63000	68500	74500
FFAM-081Z-TFC	ZB57KCE-TF5	34100	38200	42500	47000	52000	57000	58000	63500	69000	75000	81500
FFAM-081Z-TFD	ZB57KCE-TFD	34100	38200	42500	47000	52000	57000	58000	63500	69000	75000	81500
FFAM-091Z-TFC	ZB66K5E-TFC	36700	41100	46000	51000	57000	62500	64500	70500	77500	84000	
FFAM-091Z-TFD	ZB66K5E-TFD	36700	41100	46000	51000	57000	62500	64500	70500	77500	84000	
FFAM-101Z-TFC	ZB76K5E-TFC	43500	49700	55500	61500	67500	73000	75000	81000			
FFAM-101Z-TFD	ZB76K5E-TFD	43500	49700	55500	61500	67500	73000	75000	81000			

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-407A Medium Temp/High Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
110° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	3480	3890	4360	4880	5470	6100	6270	6970	7720	8530	9380
FFAM-008Z-TFC	ZB06KAE-TF5	3490	3890	4360	4890	5470	6100	6270	6970	7720	8530	9380
FFAM-010Z-CFV	ZB07KAE-PFV	3920	4570	5250	5960	6690	7430	7630	8410	9210	10000	10800
FFAM-010Z-TFC	ZB07KAE-TF5	3920	4570	5250	5960	6680	7430	7630	8410	9210	10000	10800
FFAM-012Z-CFV	ZB08KAE-PFV	4920	5600	6310	7030	7770	8520	8750	9550	10400	11200	12000
FFAM-012Z-TFC	ZB08KAE-TF5	4920	5600	6310	7030	7770	8520	8750	9540	10400	11200	12000
FFAP-015Z-CFV	ZS09KAE-PFV			6840	7520	8250	9050	9270	10200	11100	12200	13300
FFAP-015Z-TFC	ZS09KAE-TF5			6840	7520	8250	9050	9270	10200	11100	12200	13300
FFAP-015Z-TFD	ZS09KAE-TFD			6840	7520	8250	9050	9270	10200	11100	12200	13300
FFAP-017Z-CFV	ZS13KAE-TF5		7270	8000	8770	9610	10500	10800	11800	12900	14100	15400
FFAP-017Z-TFC	ZS11KAE-PFV		7270	8000	8770	9610	10500	10800	11800	12900	14100	15400
FFAP-017Z-TFD	ZS11KAE-TF5		7270	8000	8770	9610	10500	10800	11800	12900	14100	15400
FFAP-018Z-CFV	ZS13KAE-PFV		8110	8900	9740	10600	11600	11900	13000	14200	15500	16800
FFAP-020Z-CFV	ZS13KAE-PFV	7580	8370	9210	10100	11100	12100	12500	13700	15000	16400	17900
FFAP-020Z-TFC	ZS11KAE-TFD	7580	8370	9210	10100	11100	12100	12500	13700	15000	16400	17900
FFAP-020Z-TFD	ZS13KAE-TFD	7580	8370	9210	10100	11100	12100	12500	13700	15000	16400	17900
FFAP-022Z-CFV	ZS15KAE-PFV		10400	11500	12700	14100	15500	15900	17500	19300	21300	23500
FFAP-022Z-TFC	ZS15KAE-TF5		10400	11500	12700	14100	15500	15900	17500	19300	21300	23500
FFAP-022Z-TFD	ZS15KAE-TFD		10400	11500	12700	14100	15500	15900	17500	19300	21300	23500
FFAP-030Z-TFC	ZS19KAE-TF5	10400	11500	12700	13900	15300	16700	17200	18900	20700	22700	24800
FFAP-030Z-CFV	ZS19KAE-PFV	10500	11600	12800	14100	15500	17000	17400	19100	20900	22900	25100
FFAP-030Z-TFD	ZS19KAE-TFD	10500	11600	12800	14100	15500	17000	17400	19100	20900	22900	25100
FFAP-032Z-CFV	ZS21KAE-PFV		14700	16400	18100	20000	21900	22900	25000	27200	29500	32000
FFAP-032Z-TFC	ZS21KAE-TF5		14700	16400	18100	20000	21900	22900	25000	27200	29500	32000
FFAP-032Z-TFD	ZS21KAE-TFD		14700	16400	18100	20000	21900	22900	25000	27200	29500	32000
FFAP-035Z-CFV	ZS26KAE-PFV		15400	17300	19400	21600	23900	24600				
FFAP-035Z-TFC	ZS26KAE-TF5		15400	17300	19400	21600	23900	24600				
FFAP-040Z-CFV	ZS26KAE-PFV	15700	17400	19300	21300	23500	25800	26800	29400	32300	35300	38500
FFAP-040Z-TFC	ZS26KAE-TF5	15700	17400	19300	21300	23500	25800	26800	29400	32300	35300	38500
FFAP-040Z-TFD	ZS26KAE-TFD	15700	17400	19300	21300	23500	25800	26800	29400	32300	35300	38500
FFAP-042Z-CFV	ZS33KAE-PFV	19600	21800	24100	26500	29100	32000	34900	38300	41900	45700	50000
FFAP-042Z-TFC	ZS33KAE-TF5	19600	21800	24100	26500	29100	32000	34900	38300	41900	45700	50000
FFAP-042Z-TFD	ZS33KAE-TFD	19600	21800	24100	26500	29100	32000	34900	38300	41900	45700	50000
FFAP-050Z-CFV	ZS38K4E-PFV	23800	26800	29700	32700	35600	38400	38300	42400	46600	51000	55000
FFAP-050Z-TFC	ZS38K4E-TF5	23800	26800	29700	32700	35600	38400	38300	42400	46600	51000	55000
FFAP-050Z-TFD	ZS38K4E-TFD	23800	26800	29700	32700	35600	38400	38300	42400	46600	51000	55000
FFAP-050Z-TFE	ZS38K4E-TFE	23800	26800	29700	32700	35600	38400	38300	42400	46600	51000	55000
FFAP-060Z-TFC	ZS45K4E-TF5	25900	29000	32300	35700	39300	43100	44400	48400			
FFAP-060Z-TFD	ZS45K4E-TFD	25900	29000	32300	35700	39300	43100	44400	48400			
FFAM-071Z-TFC	ZB48KCE-TF5	26300	29800	33500	37400	41700	46200	47600	52500	57500		
FFAM-071Z-TFD	ZB48KCE-TFD	26300	29800	33500	37400	41700	46200	47600	52500	57500		
FFAM-081Z-TFC	ZB57KCE-TF5		34900	38800	43000	47400	52000	53500				
FFAM-081Z-TFD	ZB57KCE-TFD		34900	38800	43000	47400	52000	53500				
FFAM-091Z-TFC	ZB66K5E-TFC		37900	42100	46700	51500						
FFAM-091Z-TFD	ZB66K5E-TFD		37900	42100	46700	51500						
FFAM-101Z-TFC	ZB76K5E-TFC			51000								
FFAM-101Z-TFD	ZB76K5E-TFD			51000								

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-407C EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0
90° Ambient										
FFAL-010Z-CFV	ZF03KAE-PFV	1700	1890	2110	2350	2640	2960	3330	3750	4230
FFAL-010Z-TFC	ZF03KAE-TF5	1700	1890	2110	2350	2640	2960	3330	3750	4230
FFAL-013Z-CFV	ZF04KAE-PFV	2050	2300	2610	2980	3420	3920	4480	5100	5780
FFAL-013Z-TFC	ZF04KAE-TF5	2050	2300	2610	2980	3420	3920	4480	5100	5780
FFAL-014Z-CFV	ZF05KAE-PFV	2330	2660	3050	3520	4050	4650	5310	6030	6810
FFAL-014Z-TFC	ZF05KAE-TF5	2330	2660	3050	3520	4050	4650	5310	6030	6810
FFAL-015Z-CFV	ZF06KAE-PFV	3030	3560	4150	4810	5550	6370	7290	8300	9410
FFAL-015Z-TFC	ZF06KAE-TF5	3480	4050	4660	5320	6040	6820	7680	8620	9650
FFAL-015Z-TFD	ZF06KAE-TFD	3480	4050	4660	5320	6040	6820	7680	8620	9650
FFAL-017Z-CFV	ZF07KAE-PFV	3590	4310	4990	5660	6360	7100	7930	8870	9950
FFAL-017Z-TFC	ZF07KAE-TF5	3590	4310	4990	5660	6360	7110	7930	8870	9950
FFAL-020Z-CFV	ZF08KAE-PFV	Data not available at time of printing.								
FFAL-020Z-TFC	ZF08KAE-TF5									
FFAL-020Z-TFD	ZF08KAE-TFD									
FFAL-022Z-CFV	ZF09KAE-PFV	4320	5070	5890	6800	7820	8970	10300	11700	13400
FFAL-022Z-TFC	ZF09KAE-TF5	4940	5600	6410	7360	8420	9580	10800	12000	13300
FFAL-022Z-TFD	ZF09KAE-TFD	4940	5600	6410	7360	8420	9580	10800	12000	13300
FFAL-026Z-CFV	ZF11KAE-PFV	5350	6260	7260	8380	9640	11100	12600	14500	16500
FFAL-026Z-TFC	ZF11KAE-TF5	5350	6260	7260	8380	9640	11100	12600	14500	16500
FFAL-026Z-TFD	ZF11KAE-TFD	5350	6260	7260	8380	9640	11100	12600	14500	16500
FFAL-030Z-CFV	ZF13KAE-PFV	6990	7810	8920	10300	11800	13600	15400	17400	19400
FFAL-030Z-TFC	ZF13KAE-TF5	6950	7640	8630	9850	11300	12900	14700	16600	18500
FFAL-030Z-TFD	ZF13KAE-TFD	6950	7640	8630	9850	11300	12900	14700	16600	18500
FFAL-040Z-CFV	ZF15KAE-PFV	8990	9920	11200	12700	14500	16400	18500	20700	23000
FFAL-040Z-TFC	ZF15KAE-TF5	8720	9550	10700	12100	13800	15700	17800	20000	22300
FFAL-040Z-TFD	ZF15KAE-TFD	8720	9550	10700	12100	13800	15700	17800	20000	22300
FFAL-050Z-TFC	ZF18KAE-TF5	10500	11500	12900	14600	16600	18700	21100	23600	26200
FFAL-050Z-TFD	ZF18KAE-TFD	10500	11500	12900	14600	16600	18700	21100	23600	26200
100° Ambient										
FFAL-010Z-CFV	ZF03KAE-PFV	1610	1790	1990	2220	2480	2780	3120	3510	3940
FFAL-010Z-TFC	ZF03KAE-TF5	1610	1790	1990	2220	2480	2780	3120	3510	3950
FFAL-013Z-CFV	ZF04KAE-PFV	1960	2180	2460	2800	3200	3660	4180	4760	5390
FFAL-013Z-TFC	ZF04KAE-TF5	1960	2170	2450	2800	3200	3660	4180	4760	5390
FFAL-014Z-CFV	ZF05KAE-PFV	2210	2500	2870	3290	3790	4340	4950	5630	6350
FFAL-014Z-TFC	ZF05KAE-TF5	2210	2500	2870	3290	3780	4340	4950	5630	6350
FFAL-015Z-CFV	ZF06KAE-PFV	2860	3350	3900	4510	5210	5990	6860	7820	8890
FFAL-015Z-TFC	ZF06KAE-TF5	3260	3810	4390	5020	5690	6420	7210	8080	9030
FFAL-015Z-TFD	ZF06KAE-TFD	3260	3810	4390	5020	5690	6420	7210	8080	9030
FFAL-017Z-CFV	ZF07KAE-PFV	3350	4050	4700	5330	5970	6650	7410	8270	9270
FFAL-017Z-TFC	ZF07KAE-TF5	3350	4060	4700	5330	5970	6660	7410	8270	9270
FFAL-020Z-CFV	ZF08KAE-PFV	Data not available at time of printing.								
FFAL-020Z-TFC	ZF08KAE-TF5									
FFAL-020Z-TFD	ZF08KAE-TFD									
FFAL-022Z-CFV	ZF09KAE-PFV	4120	4790	5530	6370	7310	8390	9620	11000	12600
FFAL-022Z-TFC	ZF09KAE-TF5	4640	5270	6050	6950	7950	9020	10100	11300	12400
FFAL-022Z-TFD	ZF09KAE-TFD	4640	5270	6050	6950	7950	9020	10100	11300	12400
FFAL-026Z-CFV	ZF11KAE-PFV	5120	5920	6810	7820	8980	10300	11800	13500	15400
FFAL-026Z-TFC	ZF11KAE-TF5	5120	5920	6810	7820	8980	10300	11800	13500	15400
FFAL-026Z-TFD	ZF11KAE-TFD	5120	5920	6810	7820	8980	10300	11800	13500	15400
FFAL-030Z-CFV	ZF13KAE-PFV	6570	7290	8300	9560	11000	12700	14400	16300	18200
FFAL-030Z-TFC	ZF13KAE-TF5	6550	7110	7950	9060	10400	11900	13600	15400	17300
FFAL-030Z-TFD	ZF13KAE-TFD	6550	7110	7950	9060	10400	11900	13600	15400	17300
FFAL-040Z-CFV	ZF15KAE-PFV	8450	9260	10400	11800	13400	15300	17200	19300	21500
FFAL-040Z-TFC	ZF15KAE-TF5	8080	8790	9820	11100	12700	14500	16400	18500	20700
FFAL-040Z-TFD	ZF15KAE-TFD	8080	8790	9820	11100	12700	14500	16400	18500	20700
FFAL-050Z-TFC	ZF18KAE-TF5	9780	10700	11900	13500	15300	17400	19600	22000	24400
FFAL-050Z-TFD	ZF18KAE-TFD	9780	10700	11900	13500	15300	17400	19600	22000	24400

Capacities rated at 40°F return gas, 5°F subcooling

R-407C EMT/Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0
110° Ambient										
FFAL-013Z-CFV	ZF04KAE-PFV	1870	2060	2310	2620	2990	3410	3890	4420	5000
FFAL-013Z-TFC	ZF04KAE-TF5	1870	2060	2310	2620	2980	3410	3890	4420	5000
FFAL-014Z-CFV	ZF05KAE-PFV	2090	2360	2680	3070	3530	4040	4600	5220	5900
FFAL-014Z-TFC	ZF05KAE-TF5	2090	2360	2680	3070	3520	4030	4600	5220	5900
FFAL-015Z-CFV	ZF06K4E-PFV	2730	3170	3670	4240	4890	5610	6430	7340	8360
FFAL-015Z-TFC	ZF06K4E-TF5	3020	3540	4090	4670	5300	5960	6690	7480	8340
FFAL-015Z-TFD	ZF06K4E-TFD	3020	3540	4090	4670	5300	5960	6690	7480	8340
FFAL-017Z-CFV	ZF07KAE-PFV	3110	3790	4410	4990	5580	6200	6890	7670	8570
FFAL-017Z-TFC	ZF07KAE-TF5	3110	3790	4410	4990	5580	6200	6890	7670	8570
FFAL-020Z-CFV	ZF08K4E-PFV	Data not available at time of printing.								
FFAL-020Z-TFC	ZF08K4E-TF5									
FFAL-020Z-TFD	ZF08K4E-TFD									
FFAL-022Z-CFV	ZF09K4E-PFV	3880	4460	5110	5850	6720	7710	8860	10200	11700
FFAL-022Z-TFC	ZF09K4E-TF5	4380	4980	5720	6560	7490	8480	9510	10500	11600
FFAL-022Z-TFD	ZF09K4E-TFD	4380	4980	5720	6560	7490	8480	9510	10500	11600
FFAL-026Z-CFV	ZF11K4E-PFV	4800	5470	6230	7120	8150	9350	10700	12300	14100
FFAL-026Z-TFC	ZF11K4E-TF5	4800	5470	6230	7120	8150	9350	10700	12300	14100
FFAL-026Z-TFD	ZF11K4E-TFD	4800	5470	6230	7120	8150	9350	10700	12300	14100
FFAL-030Z-CFV	ZF13K4E-PFV	6370	6970	7860	9000	13500	15200	17000		
FFAL-030Z-TFC	ZF13K4E-TF5	6120	6520	7220	8190	12300	14000	15800		
FFAL-030Z-TFD	ZF13K4E-TFD	6120	6520	7220	8190	12300	14000	15800		
FFAL-040Z-CFV	ZF15K4E-PFV	7960	8650							19900
FFAL-040Z-TFC	ZF15K4E-TF5	7270	7860							18900
FFAL-040Z-TFD	ZF15K4E-TFD	7270	7860							18900
FFAL-050Z-TFC	ZF18K4E-TF5									
FFAL-050Z-TFD	ZF18K4E-TFD									

Capacities rated at 40°F return gas, 5°F subcooling

R-407C Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
90° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	3630	4160	4730	5330	5980	6680	6760	7510	8300	9150	10100
FFAM-008Z-TFC	ZB06KAE-TF5	3630	4160	4730	5330	5980	6680	6760	7510	8310	9160	10100
FFAM-010Z-CFV	ZB07KAE-PFV	4360	4970	5620	6330	7090	7910	8010	8870	9790	10700	11700
FFAM-010Z-TFC	ZB07KAE-TF5	4360	4970	5630	6340	7100	7910	8010	8870	9780	10700	11700
FFAM-012Z-CFV	ZB08KAE-PFV	5190	5860	6580	7360	8190	9090	9210	10200	11200	12300	13500
FFAM-012Z-TFC	ZB08KAE-TF5	5190	5860	6580	7360	8190	9090	9210	10200	11200	12300	13500
FFAP-015Z-CFV	ZS09KAE-PFV	5770	6630	7520	8440	9390	10400	10400	11400	12500	13600	14800
FFAP-015Z-TFC	ZS09KAE-TF5	5770	6630	7520	8440	9390	10400	10400	11400	12500	13600	14800
FFAP-015Z-TFD	ZS09KAE-TFD	5770	6630	7520	8440	9390	10400	10400	11400	12500	13600	14800
FFAP-017Z-CFV	ZS11KAE-PFV		7560	8590	9640	10700	11800	12500	13700	14900	16200	17500
FFAP-017Z-TFC	ZS11KAE-TF5		7560	8590	9640	10700	11800	12500	13700	14900	16200	17500
FFAP-017Z-TFD	ZS11KAE-TFD		7560	8590	9640	10700	11800	12500	13700	14900	16200	17500
FFAP-018Z-CFV	ZS13KAE-PFV	7460	8610	9770	11000	12200	13400	13600	14900	16200	17600	18900
FFAP-020Z-CFV	ZS13KAE-PFV	7660	8840	10100	11300	12600	13900	14100	15500	17000	18500	20000
FFAP-020Z-TFC	ZS13KAE-TF5	7660	8840	10100	11300	12600	13900	14100	15500	17000	18500	20000
FFAP-020Z-TFD	ZS13KAE-TFD	7660	8840	10100	11300	12600	13900	14100	15500	17000	18500	20000
FFAP-022Z-CFV	ZS15KAE-PFV	9160	10600	12000	13500	15000	16600	16800	18400	20100	21800	23600
FFAP-022Z-TFC	ZS15KAE-TF5	9160	10600	12000	13500	15000	16600	16800	18400	20100	21800	23600
FFAP-022Z-TFD	ZS15KAE-TFD	9160	10600	12000	13500	15000	16600	16800	18400	20100	21800	23600
FFAP-030Z-TFC	ZS19KAE-TF5	10500	12100	13800	15600	17400	19200	19500	21500	23500	25600	27900
FFAP-030Z-CFV	ZS19KAE-PFV	10800	12400	14000	15800	17600	19400	19700	21700	23700	26100	28700
FFAP-030Z-TFD	ZS19KAE-TFD	10800	12400	14000	15800	17600	19400	19700	21700	23700	26100	28700
FFAP-032Z-CFV	ZS21KAE-PFV	14200	16300	18400	20600	22900	25300	25400	27900	30400	33000	35800
FFAP-032Z-TFC	ZS21KAE-TF5	14200	16300	18400	20600	22900	25300	25400	27900	30400	33000	35800
FFAP-032Z-TFD	ZS21KAE-TFD	14200	16300	18400	20600	22900	25300	25400	27900	30400	33000	35800
FFAP-035Z-TFC	ZS26KAE-TF5	15200	17600	20000	22400	25000	27500	28000	30700	33400	36300	39200
FFAP-035Z-CFV	ZS26KAE-PFV	15800	18100	20500	23000	25500	28100	28400	31100	33900	36800	39700
FFAP-040Z-TFC	ZS26KAE-TF5	16000	18500	21000	23700	26500	29400	29700	32800	36000	39300	42800
FFAP-040Z-CFV	ZS26KAE-PFV	16300	18800	21300	24000	26800	29700	30700	33800	37100	41000	45200
FFAP-040Z-TFD	ZS26KAE-TFD	16300	18800	21300	24000	26800	29700	30700	33800	37100	41000	45200
FFAP-042Z-CFV	ZS33KAE-PFV	19400	22300	25400	28600	31900	35300	36300	39900	43800	47700	51900
FFAP-042Z-TFC	ZS33KAE-TF5	19600	22600	25800	29000	32400	35900	36300	40000	43800	47800	52000
FFAP-042Z-TFD	ZS33KAE-TFD	19400	22300	25400	28600	31900	35300	36300	39900	43800	47700	51900
FFAP-050Z-CFV	ZS38K4E-PFV	25000	28100	31300	34800	38400	42100	42700	46600	50500	54500	59000
FFAP-050Z-TFC	ZS38K4E-TF5	25000	28100	31300	34800	38400	42100	42700	46600	50500	54500	59000
FFAP-050Z-TFD	ZS38K4E-TFD	25000	28100	31300	34800	38400	42100	42700	46600	50500	54500	59000
FFAP-050Z-TFE	ZS38K4E-TFE	25000	28100	31300	34800	38400	42100	42700	46600	50500	54500	59000
FFAM-071Z-TFC	ZB48KCE-TF5							49900	56000	62000	68500	75500
FFAM-071Z-TFD	ZB48KCE-TFD							49900	56000	62000	68500	75500
FFAP-060Z-TFC	ZS45K4E-TF5	30300	33900	37700	41700	45900	50000	50500	55000	59500	64500	69000
FFAP-060Z-TFD	ZS45K4E-TFD	30300	33900	37700	41700	45900	50000	50500	55000	59500	64500	69000
FFAM-081Z-TFC	ZB57KCE-TF5							60000	66000	72500	79500	87000
FFAM-081Z-TFD	ZB57KCE-TFD							60000	66000	72500	79500	87000
FFAM-091Z-TFC	ZB66K5E-TFC							69500	76500	84000	92500	101000
FFAM-091Z-TFD	ZB66K5E-TFD							69500	76500	84000	92500	101000
FFAM-101Z-TFC	ZB76K5E-TFC		52500	58500	65000	71500	79000	80000	87500	96000	104000	113000
FFAM-101Z-TFD	ZB76K5E-TFD		52500	58500	65000	71500	79000	80000	87500	96000	104000	113000

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-407C Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
100° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	3370	3880	4410	4980	5590	6230	6340	7030	7770	8560	9400
FFAM-008Z-TFC	ZB06KAE-TF5	3370	3880	4410	4980	5590	6230	6340	7030	7780	8570	9410
FFAM-010Z-CFV	ZB07KAE-PFV	4050	4630	5250	5910	6620	7370	7490	8290	9130	10000	10900
FFAM-010Z-TFC	ZB07KAE-TF5	4050	4640	5260	5920	6620	7370	7500	8290	9130	10000	10900
FFAM-012Z-TFC	ZB08KAE-TF5	4870	5500	6160	6880	7640	8450	8600	9490	10400	11400	12500
FFAM-012Z-CFV	ZB08KAE-PFV	4870	5500	6160	6880	7640	8450	8610	9490	10400	11400	12500
FFAP-015Z-CFV	ZS09KAE-PFV		6230	7080	7950	8850	9780	9830	10800	11800	12800	13900
FFAP-015Z-TFC	ZS09KAE-TF5		6230	7080	7950	8850	9780	9830	10800	11800	12800	13900
FFAP-015Z-TFD	ZS09KAE-TFD		6230	7080	7950	8850	9780	9830	10800	11800	12800	13900
FFAP-017Z-CFV	ZS11KAE-PFV			8050	9060	10100	11100	11800	12900	14100	15300	16500
FFAP-017Z-TFC	ZS11KAE-TF5			8050	9060	10100	11100	11800	12900	14100	15300	16500
FFAP-017Z-TFD	ZS11KAE-TFD			8050	9060	10100	11100	11800	12900	14100	15300	16500
FFAP-018Z-CFV	ZS13KAE-PFV	6890	8010	9130	10300	11400	12600	12800	14000	15300	16500	17800
FFAP-020Z-CFV	ZS13KAE-PFV	7080	8240	9420	10600	11800	13100	13300	14700	16000	17400	18800
FFAP-020Z-TFC	ZS13KAE-TF5	7080	8240	9420	10600	11800	13100	13300	14700	16000	17400	18800
FFAP-020Z-TFD	ZS13KAE-TFD	7080	8240	9420	10600	11800	13100	13300	14700	16000	17400	18800
FFAP-022Z-CFV	ZS15KAE-PFV	8500	9870	11300	12700	14100	15600	15800	17400	19000	20600	22300
FFAP-022Z-TFC	ZS15KAE-TF5	8500	9870	11300	12700	14100	15600	15800	17400	19000	20600	22300
FFAP-022Z-TFD	ZS15KAE-TFD	8500	9870	11300	12700	14100	15600	15800	17400	19000	20600	22300
FFAP-030Z-CFV	ZS19KAE-PFV	9720	11300	12900	14600	16300	18100	18400	20200	22100	24100	26200
FFAP-030Z-TFC	ZS19KAE-TF5	9720	11300	12900	14600	16300	18100	18400	20200	22100	24100	26200
FFAP-030Z-TFD	ZS19KAE-TFD	9720	11300	12900	14600	16300	18100	18400	20200	22100	24100	26200
FFAP-032Z-CFV	ZS21KAE-PFV			17300	19400	21600	23800	24000	26300	28700	31200	33700
FFAP-032Z-TFC	ZS21KAE-TF5			17300	19400	21600	23800	24000	26300	28700	31200	33700
FFAP-032Z-TFD	ZS21KAE-TFD			17300	19400	21600	23800	24000	26300	28700	31200	33700
FFAP-035Z-TFC	ZS26KAE-TF5	14000	16300	18600	21000	23400	25800	26300	28800	31400	34000	36700
FFAP-035Z-CFV	ZS26KAE-PFV	14700	16900	19200	21600	24000	26400	26800	29300	32000	34600	37400
FFAP-040Z-CFV	ZS26KAE-PFV	14800	17300	19800	22300	25000	27700	28100	31000	34000	37100	40400
FFAP-040Z-TFC	ZS26KAE-TF5	14800	17300	19800	22300	25000	27700	28100	31000	34000	37100	40400
FFAP-040Z-TFD	ZS26KAE-TFD	14800	17300	19800	22300	25000	27700	28100	31000	34000	37100	40400
FFAP-042Z-CFV	ZS33KAE-PFV	18200	21100	24200	27300	30500	33800	34300	37800	41400	45100	48900
FFAP-042Z-TFC	ZS33KAE-TF5	18200	21100	24200	27300	30500	33800	34300	37800	41400	45100	48900
FFAP-042Z-TFD	ZS33KAE-TFD	18200	21100	24200	27300	30500	33800	34300	37800	41400	45100	48900
FFAP-050Z-CFV	ZS38KAE-PFV	23100	26000	29100	32300	35700	39200	39900	43600	47400	51500	55000
FFAP-050Z-TFC	ZS38KAE-TF5	23100	26000	29100	32300	35700	39200	39900	43600	47400	51500	55000
FFAP-050Z-TFD	ZS45KAE-TF5	23100	26000	29100	32300	35700	39200	39900	43600	47400	51500	55000
FFAP-050Z-TFE	ZS38KAE-TFD	23100	26000	29100	32300	35700	39200	39900	43600	47400	51500	55000
FFAM-071Z-TFC	ZB48KCE-TF5							46200	52000	57500	64000	70500
FFAM-071Z-TFD	ZB48KCE-TFD							46200	52000	57500	64000	70500
FFAP-060Z-TFC	ZS38K4E-TFE	28100	31500	35000	38800	42700	46800	47100	51500	56000	60500	65000
FFAP-060Z-TFD	ZS45K4E-TFD	28100	31500	35000	38800	42700	46800	47100	51500	56000	60500	65000
FFAM-081Z-TFC	ZB57KCE-TF5							56000	62000	68500	75000	82000
FFAM-081Z-TFD	ZB57KCE-TFD							56000	62000	68500	75000	82000
FFAM-091Z-TFC	ZB66K5E-TFC							65000	72000	79000	87000	
FFAM-091Z-TFD	ZB66K5E-TFD							65000	72000	79000	87000	
FFAM-101Z-TFC	ZB76K5E-TFC			55000	60500	67000	73500	75000	82500			
FFAM-101Z-TFD	ZB76K5E-TFD			55000	60500	67000	73500	75000	82500			

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-407C Medium Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
110° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	3120	3610	4110	4650	5210	5800	5930	6570	7260	7980	8750
FFAM-008Z-TFC	ZB06KAE-TF5	3120	3610	4110	4640	5210	5800	5930	6570	7260	7980	8750
FFAM-010Z-CFV	ZB07KAE-PFV	3760	4310	4890	5510	6160	6840	7000	7730	8490	9290	10100
FFAM-010Z-TFC	ZB07KAE-TF5	3760	4320	4900	5520	6170	6850	7000	7730	8490	9280	10100
FFAM-012Z-CFV	ZB08KAE-PFV	4590	5180	5790	6440	7130	7860	8040	8840	9680	10600	11500
FFAM-012Z-TFC	ZB08KAE-TF5	4590	5180	5790	6440	7130	7860	8040	8830	9680	10600	11500
FFAP-015Z-CFV	ZS09KAE-PFV				7430	8290	9160	9290	10200	11200	12200	13200
FFAP-015Z-TFC	ZS09KAE-TF5				7430	8290	9160	9290	10200	11200	12200	13200
FFAP-015Z-TFD	ZS09KAE-TFD				7430	8290	9160	9290	10200	11200	12200	13200
FFAP-017Z-CFV	ZS11KAE-PFV					9420	10400	10900	11900	13000	14200	15300
FFAP-017Z-TFC	ZS11KAE-TF5					9420	10400	10900	11900	13000	14200	15300
FFAP-017Z-TFD	ZS11KAE-TFD					9420	10400	10900	11900	13000	14200	15300
FFAP-018Z-CFV	ZS13KAE-PFV		7340	8430	9520	10600	11700	12000	13100	14300	15500	16700
FFAP-020Z-CFV	ZS13KAE-PFV			8710	9870	11000	12200	12500	13800	15000	16300	17600
FFAP-020Z-TFC	ZS13KAE-TF5			8710	9870	11000	12200	12500	13800	15000	16300	17600
FFAP-020Z-TFD	ZS13KAE-TFD			8710	9870	11000	12200	12500	13800	15000	16300	17600
FFAP-022Z-CFV	ZS15KAE-PFV	7740	9090	10400	11800	13200	14600	14900	16300	17800	19300	20900
FFAP-022Z-TFC	ZS15KAE-TF5	7740	9090	10400	11800	13200	14600	14900	16300	17800	19300	20900
FFAP-022Z-TFD	ZS15KAE-TFD	7740	9090	10400	11800	13200	14600	14900	16300	17800	19300	20900
FFAP-030Z-CFV	ZS19KAE-PFV		10400	12000	13500	15200	16800	17200	18900	20700	22500	24400
FFAP-030Z-TFC	ZS19KAE-TF5		10400	12000	13500	15200	16800	17200	18900	20700	22500	24400
FFAP-030Z-TFD	ZS19KAE-TFD		10400	12000	13500	15200	16800	17200	18900	20700	22500	24400
FFAP-032Z-CFV	ZS21KAE-PFV				18100	20100	22200	22500	24700	27000	29300	31700
FFAP-032Z-TFC	ZS21KAE-TF5				18100	20100	22200	22500	24700	27000	29300	31700
FFAP-032Z-TFD	ZS21KAE-TFD				18100	20100	22200	22500	24700	27000	29300	31700
FFAP-035Z-CFV	ZS26KAE-PFV			17100	19300	21600	23900	24400	26800	29200	31700	34200
FFAP-035Z-TFC	ZS26KAE-TF5			17100	19300	21600	23900	24400	26800	29200	31700	34200
FFAP-040Z-CFV	ZS26KAE-PFV		16000	18400	20900	23400	26000	26500	29200	32100	35000	38000
FFAP-040Z-TFC	ZS26KAE-TF5		16000	18400	20900	23400	26000	26500	29200	32100	35000	38000
FFAP-040Z-TFD	ZS26KAE-TFD		16000	18400	20900	23400	26000	26500	29200	32100	35000	38000
FFAP-042Z-CFV	ZS33KAE-PFV		19500	22500	25500	28600	31700	32300	35600	39000	42500	46000
FFAP-042Z-TFC	ZS33KAE-TF5		19500	22500	25500	28600	31700	32300	35600	39000	42500	46000
FFAP-042Z-TFD	ZS33KAE-TFD		19500	22500	25500	28600	31700	32300	35600	39000	42500	46000
FFAP-050Z-CFV	ZS38KAE-PFV	21400	24000	26800	29900	33000	36300	37100	40600	44200	47800	51500
FFAP-050Z-TFC	ZS38KAE-TF5	21400	24000	26800	29900	33000	36300	37100	40600	44200	47800	51500
FFAP-050Z-TFD	ZS38KAE-TFD	21400	24000	26800	29900	33000	36300	37100	40600	44200	47800	51500
FFAP-050Z-TFE	ZS38KAE-TFE	21400	24000	26800	29900	33000	36300	37100	40600	44200	47800	51500
FFAP-060Z-TFC	ZS45KAE-TF5	25900	29000	32300	35700	39300	43100	43800	47800	52000	56000	60500
FFAP-060Z-TFD	ZS45KAE-TFD	25900	29000	32300	35700	39300	43100	43800	47800	52000	56000	60500
FFAM-071Z-TFC	ZB48KCE-TF5								53000	59000	65000	
FFAM-071Z-TFD	ZB48KCE-TFD								53000	59000	65000	
FFAM-081Z-TFC	ZB57KCE-TF5								63500	70000	76500	
FFAM-081Z-TFD	ZB57KCE-TFD								63500	70000	76500	

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-4448A/449A Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0
90° Ambient										
FFAL-010Z-CFV	ZF03KAE-PFV	1840	2080	2330	2620	2930	3290	3690	4140	4650
FFAL-010Z-TFC	ZF03KAE-TF5	1840	2080	2330	2620	2930	3290	3690	4140	4650
FFAP-015Z-CFV	ZS09KAE-PFV				3220	3720	4250	4800	5390	6030
FFAP-015Z-TFC	ZS09KAE-TF5				3220	3720	4250	4800	5390	6030
FFAP-015Z-TFD	ZS09KAE-TFD				3220	3720	4250	4800	5390	6030
FFAL-013Z-CFV	ZF04KAE-PFV	2280	2580	2940	3360	3850	4390	4990	5650	6360
FFAL-013Z-TFC	ZF04KAE-TF5	2280	2580	2940	3360	3850	4390	4990	5650	6360
FFAP-017Z-CFV	ZS11KAE-PFV					4500	5110	5750	6440	7190
FFAP-017Z-TFC	ZS11KAE-TF5					4500	5110	5750	6440	7190
FFAP-017Z-TFD	ZS11KAE-TFD					4500	5110	5750	6440	7190
FFAL-014Z-CFV	ZF05KAE-PFV	2630	3020	3470	3980	4560	5200	5890	6640	7440
FFAL-014Z-TFC	ZF05KAE-TF5	2630	3020	3470	3980	4560	5190	5890	6640	7440
FFAP-020Z-CFV	ZS13KAE-PFV				3680	4770	5740	6640	7500	8360
FFAP-020Z-TFC	ZS13KAE-TF5				3680	4770	5740	6640	7500	8360
FFAP-020Z-TFD	ZS13KAE-TFD				3680	4770	5740	6640	7500	8360
FFAP-022Z-CFV	ZS15KAE-PFV					6160	7020	7920	8870	9900
FFAP-022Z-TFC	ZS15KAE-TF5					6160	7020	7920	8870	9900
FFAP-022Z-TFD	ZS15KAE-TFD					6160	7020	7920	8870	9900
FFAL-015Z-CFV	ZF06KAE-PFV	3800	4430	5100	5810	6580	7410	8290	9240	10200
FFAL-015Z-TFC	ZF06KAE-TF5	3800	4430	5100	5810	6580	7410	8290	9240	10200
FFAL-015Z-TFD	ZF06KAE-TFD	3800	4430	5100	5810	6580	7410	8290	9240	10200
FFAL-017Z-CFV	ZF07KAE-PFV	4130	4800	5480	6190	6960	7790	8690	9700	10800
FFAL-017Z-TFC	ZF07KAE-TF5	4130	4800	5480	6200	6960	7790	8700	9700	10800
FFAP-030Z-CFV	ZS19KAE-PFV				4800	6310	7670	8930	10100	11400
FFAP-030Z-TFC	ZS19KAE-TF5				4800	6310	7670	8930	10100	11400
FFAP-030Z-TFD	ZS19KAE-TFD				4800	6310	7670	8930	10100	11400
FFAL-020Z-CFV	ZF08KAE-PFV	4860	5820	6750	7670	8600	9560	10600	11600	12800
FFAL-020Z-TFC	ZF08KAE-TF5	4920	5650	6470	7360	8350	9420	10600	11900	13200
FFAL-020Z-TFD	ZF08KAE-TFD	4920	5650	6470	7360	8350	9420	10600	11900	13200
FFAL-022Z-CFV	ZF09KAE-PFV	5420	6320	7240	8200	9220	10300	11500	12700	14100
FFAL-022Z-TFC	ZF09KAE-TF5	5510	6320	7220	8200	9260	10400	11700	13100	14500
FFAL-022Z-TFD	ZF09KAE-TFD	5510	6320	7220	8200	9260	10400	11700	13100	14500
FFAP-032Z-CFV	ZS21KAE-PFV					8680	10200	11900	13600	15400
FFAP-032Z-TFC	ZS21KAE-TF5					8680	10200	11900	13600	15400
FFAP-032Z-TFD	ZS21KAE-TFD					8680	10200	11900	13600	15400
FFAP-035Z-CFV	ZS26KAE-PFV					10800	11900	13200	14700	16400
FFAP-035Z-TFC	ZS26KAE-TF5					10800	11900	13200	14700	16400
FFAP-040Z-CFV	ZS26KAE-PFV				10100	11200	12400	13900	15500	17400
FFAP-040Z-TFC	ZS26KAE-TF5				10100	11200	12400	13900	15500	17400
FFAP-040Z-TFD	ZS26KAE-TFD				10100	11200	12400	13900	15500	17400
FFAL-026Z-CFV	ZF11KAE-PFV	6850	7770	8800	9930	11200	12600	14100	15700	17400
FFAL-026Z-TFC	ZF11KAE-TF5	6820	7810	8900	10100	11400	12800	14400	16000	17800
FFAL-026Z-TFD	ZF11KAE-TFD	6820	7810	8900	10100	11400	12800	14400	16000	17800
FFAL-030Z-CFV	ZF13KAE-PFV	7770	8820	10000	11400	12900	14600	16300	18300	20300
FFAL-030Z-TFC	ZF13KAE-TF5	7770	8820	10000	11400	12900	14600	16300	18300	20300
FFAL-030Z-TFD	ZF13KAE-TFD	7770	8820	10000	11400	12900	14600	16300	18300	20300
FFAP-050Z-CFV	ZS38KAE-PFV					12300	14300	16400	18700	21100
FFAP-050Z-TFC	ZS38KAE-TF5					12300	14300	16400	18700	21100
FFAP-042Z-CFV	ZS33KAE-PFV				10600	12700	14900	17300	19700	22400
FFAP-042Z-TFC	ZS33KAE-TF5				10600	12700	14900	17300	19700	22400
FFAP-042Z-TFD	ZS33KAE-TFD				10600	12700	14900	17300	19700	22400
FFAL-040Z-CFV	ZF15KAE-PFV	9470	10700	12100	13700	15500	17400	19500	21700	24000
FFAP-050Z-TFD	ZS38KAE-TFD					15000	17100	19500	22300	25300
FFAP-050Z-TFE	ZS38KAE-TFE					15000	17100	19500	22300	25300
FFAL-040Z-TFC	ZF15KAE-TF5	9760	11000	12400	14000	15800	17600	19700	21800	24100
FFAL-040Z-TFD	ZF15KAE-TFD	9760	11000	12400	14000	15800	17600	19700	21800	24100
FFAL-050Z-TFC	ZF18KAE-TF5	11800	13300	15000	16800	18800	20900	23200	25600	28100
FFAL-050Z-TFD	ZF18KAE-TFD	11800	13300	15000	16800	18800	20900	23200	25600	28100
FFAP-060Z-TFC	ZS45KAE-TF5					18100	20400	23200	26300	29800
FFAP-060Z-TFD	ZS45KAE-TFD					18100	20400	23200	26300	29800

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-4448A/449A Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0
100° Ambient										
FFAL-010Z-CFV	ZF03KAE-PFV	1720	1950	2200	2470	2760	3090	3460	3870	4340
FFAL-010Z-TFC	ZF03KAE-TF5	1720	1950	2200	2470	2760	3090	3460	3870	4340
FFAL-013Z-CFV	ZF04KAE-PFV	2160	2430	2760	3150	3600	4100	4660	5270	5930
FFAL-013Z-TFC	ZF04KAE-TF5	2160	2430	2760	3150	3600	4100	4660	5270	5930
FFAP-015Z-CFV	ZS09KAE-PFV							4660	5170	5720
FFAP-015Z-TFC	ZS09KAE-TF5							4660	5170	5720
FFAP-015Z-TFD	ZS09KAE-TFD							4660	5170	5720
FFAL-014Z-CFV	ZF05KAE-PFV	2480	2830	3240	3720	4250	4840	5490	6180	6930
FFAL-014Z-TFC	ZF05KAE-TF5	2470	2830	3240	3720	4250	4840	5490	6180	6930
FFAP-017Z-CFV	ZS11KAE-PFV							5570	6150	6790
FFAP-017Z-TFC	ZS11KAE-TF5							5570	6150	6790
FFAP-017Z-TFD	ZS11KAE-TFD							5570	6150	6790
FFAP-020Z-CFV	ZS13KAE-PFV							6320	7030	7750
FFAP-020Z-TFC	ZS13KAE-TF5							6320	7030	7750
FFAP-020Z-TFD	ZS13KAE-TFD							6320	7030	7750
FFAP-022Z-CFV	ZS15KAE-PFV							7660	8470	9350
FFAP-022Z-TFC	ZS15KAE-TF5							7660	8470	9350
FFAP-022Z-TFD	ZS15KAE-TFD							7660	8470	9350
FFAL-015Z-CFV	ZF06K4E-PFV	3570	4180	4830	5510	6240	7010	7830	8700	9630
FFAL-015Z-TFC	ZF06K4E-TF5	3570	4180	4830	5510	6240	7010	7830	8700	9630
FFAL-015Z-TFD	ZF06K4E-TFD	3570	4180	4830	5510	6240	7010	7830	8700	9630
FFAL-017Z-CFV	ZF07KAE-PFV	3880	4520	5150	5810	6510	7260	8090	9010	10000
FFAL-017Z-TFC	ZF07KAE-TF5	3880	4520	5150	5810	6510	7260	8090	9010	10000
FFAP-030Z-CFV	ZS19KAE-PFV							8460	9560	10700
FFAP-030Z-TFC	ZS19KAE-TF5							8460	9560	10700
FFAP-030Z-TFD	ZS19KAE-TFD							8460	9560	10700
FFAL-020Z-TFC	ZF08K4E-TF5	4600	5300	6070	6920	7840	8840	9920	11100	12400
FFAL-020Z-TFD	ZF08K4E-TFD	4600	5300	6070	6920	7840	8840	9920	11100	12400
FFAL-020Z-CFV	ZF08K4E-PFV	4540	5490	6390	7270	8150	9050	9980	11000	12000
FFAP-032Z-CFV	ZS26KAE-TF5							10400	12100	13800
FFAP-032Z-TFC	ZS21KAE-TF5							10400	12100	13800
FFAP-032Z-TFD	ZS21KAE-PFV							10400	12100	13800
FFAL-022Z-CFV	ZF09K4E-PFV	5070	5960	6860	7790	8750	9770	10800	12000	13200
FFAL-022Z-TFC	ZF09K4E-TF5	5200	5970	6810	7730	8720	9800	11000	12200	13600
FFAL-022Z-TFD	ZF09K4E-TFD	5200	5970	6810	7730	8720	9800	11000	12200	13600
FFAP-035Z-CFV	ZS26KAE-PFV							11800	13100	14500
FFAP-035Z-TFC	ZS26KAE-TF5							11800	13100	14500
FFAP-040Z-CFV	ZS26KAE-PFV						11400	12600	14100	15800
FFAP-040Z-TFC	ZS21KAE-TFD						11400	12600	14100	15800
FFAP-040Z-TFD	ZS26KAE-TFD						11400	12600	14100	15800
FFAL-026Z-CFV	ZF11K4E-PFV	6430	7290	8250	9300	10500	11700	13100	14600	16200
FFAL-026Z-TFC	ZF11K4E-TF5	6440	7370	8380	9490	10700	12000	13500	15000	16600
FFAL-026Z-TFD	ZF11K4E-TFD	6440	7370	8380	9490	10700	12000	13500	15000	16600
FFAL-030Z-CFV	ZF13K4E-PFV	7560	8400	9390	10500	11900	13300	14900	16600	18400
FFAL-030Z-TFC	ZF13K4E-TF5	7560	8400	9390	10500	11900	13300	14900	16600	18400
FFAL-030Z-TFD	ZF13K4E-TFD	7560	8400	9390	10500	11900	13300	14900	16600	18400
FFAP-042Z-CFV	ZS33KAE-PFV							15300	17800	20300
FFAP-042Z-TFC	ZS33KAE-TF5							15300	17800	20300
FFAP-042Z-TFD	ZS33KAE-TFD							15300	17800	20300
FFAL-040Z-TFC	ZF15K4E-TF5	9340	10400	11600	13000	14500	16100	17900	19800	21800
FFAL-040Z-TFD	ZF15K4E-TFD	9340	10400	11600	13000	14500	16100	17900	19800	21800
FFAL-040Z-CFV	ZF15K4E-PFV	9110	10200	11500	12900	14500	16200	18100	20100	22200
FFAP-050Z-CFV	ZS38K4E-PFV							18100	20500	23200
FFAP-050Z-TFC	ZS38K4E-TF5							18100	20500	23200
FFAP-050Z-TFD	ZS38K4E-TFD							18100	20500	23200
FFAP-050Z-TFE	ZS38K4E-TFE							18100	20500	23200
FFAL-050Z-TFC	ZF18K4E-TF5	11500	12800	14200	15800	17500	19300	21200	23300	25500
FFAL-050Z-TFD	ZF18K4E-TFD	11500	12800	14200	15800	17500	19300	21200	23300	25500
FFAP-060Z-TFC	ZS45K4E-TF5								24500	27500
FFAP-060Z-TFD	ZS45K4E-TFD								24500	27500

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-4448A/449A Low Temp

Copeland Scroll air-cooled condensing units

Model	Compressor	-40	-35	-30	-25	-20	-15	-10	-5	0
100° Ambient										
FFAL-010Z-CFV	ZF03KAE-PFV	1840	2080	2330	2620	2930	3290	3690	4650	
FFAL-010Z-CFV	ZF03KAE-PFV	1560	1800	2040	2290	2560	2850	3190	3980	
FFAL-010Z-TFC	ZF03KAE-TF5	1560	1800	2040	2290	2560	2850	3190	3980	
FFAL-013Z-CFV	ZF04KAE-PFV	2010	2250	2540	2890	3290	3750	4260	5420	
FFAL-013Z-TFC	ZF04KAE-TF5	2010	2250	2540	2890	3290	3750	4260	5430	
FFAL-014Z-CFV	ZF05KAE-PFV	2280	2590	2970	3400	3890	4430	5020	6360	
FFAL-014Z-TFC	ZF05KAE-TF5	2280	2590	2970	3400	3890	4430	5020	6360	
FFAL-015Z-CFV	ZF06K4E-PFV	3430	3870	4380	4950	5600	6310	7080	8820	
FFAL-015Z-TFC	ZF06K4E-TF5	3400	3990	4600	5250	5930	6650	7410	9070	
FFAL-015Z-TFD	ZF06K4E-TFD	3400	3990	4600	5250	5930	6650	7410	9070	
FFAL-017Z-CFV	ZF07KAE-PFV	3590	4190	4770	5380	6010	6700	7450	9230	
FFAL-017Z-TFC	ZF07KAE-TF5	3590	4190	4780	5380	6010	6700	7460	9230	
FFAL-020Z-TFC	ZF08K4E-TF5	4280	4940	5660	6440	7290	8210	9200	11400	
FFAL-020Z-TFD	ZF08K4E-TFD	4280	4940	5660	6440	7290	8210	9200	11400	
FFAL-020Z-CFV	ZF08K4E-PFV	4190	5130	6000	6840	7670	8500	9350	11200	
FFAL-022Z-CFV	ZF09K4E-PFV	4590	5480	6360	7250	8170	9120	10100	12300	
FFAL-022Z-TFC	ZF09K4E-TF5	4880	5610	6390	7230	8150	9140	10200	12600	
FFAL-022Z-TFD	ZF09K4E-TFD	4880	5610	6390	7230	8150	9140	10200	12600	
FFAL-026Z-CFV	ZF11K4E-PFV	5970	6770	7640	8600	12000	13400	14800	14800	
FFAL-026Z-TFC	ZF11K4E-TF5	6040	6890	7810	8830	12400	13800	15300		
FFAL-026Z-TFD	ZF11K4E-TFD	6040	6890	7810	8830	12400	13800	15300		

Capacities rated at 40°F return gas, 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-448A/449A Medium Temp/High Temp Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
90° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	4150	4680	5250	5870	6530	7240	7360	8110	8920	9760	10600
FFAM-008Z-TFC	ZB06KAE-TF5	4160	4680	5250	5870	6530	7240	7360	8120	8910	9750	10600
FFAM-010Z-CFV	ZB07KAE-PFV	4890	5500	6170	6900	7690	8530	8670	9570	10500	11500	12500
FFAM-010Z-TFC	ZB07KAE-TF5	4890	5500	6170	6910	7690	8530	8680	9570	10500	11500	12500
FFAM-012Z-CFV	ZB08KAE-PFV	5720	6420	7190	8030	8930	9900	10100	11100	12200	13300	14400
FFAM-012Z-TFC	ZB08KAE-TF5	5720	6420	7190	8030	8930	9900	10100	11100	12200	13300	14400
FFAP-015Z-CFV	ZS09KAE-PFV	6030	6720	7490	8330	9250	10300	10500	11600	12800	14100	15500
FFAP-015Z-TFC	ZS09KAE-TF5	6030	6720	7490	8330	9250	10300	10500	11600	12800	14100	15500
FFAP-015Z-TFD	ZS09KAE-TFD	6030	6720	7490	8330	9250	10300	10500	11600	12800	14100	15500
FFAP-017Z-CFV	ZS11KAE-PFV	7190	8000	8890	9870	10900	12100	12300	13600	15000	16500	18100
FFAP-017Z-TFC	ZS11KAE-TF5	7190	8000	8890	9870	10900	12100	12300	13600	15000	16500	18100
FFAP-017Z-TFD	ZS11KAE-TFD	7190	8000	8890	9870	10900	12100	12300	13600	15000	16500	18100
FFAP-020Z-CFV	ZS13KAE-PFV	8360	9250	10200	11200	12300	13600	13800	15200	16800	18600	20500
FFAP-020Z-TFC	ZS13KAE-TF5	8360	9250	10200	11200	12300	13600	13800	15200	16800	18600	20500
FFAP-020Z-TFD	ZS13KAE-TFD	8360	9250	10200	11200	12300	13600	13800	15200	16800	18600	20500
FFAP-022Z-CFV	ZS15KAE-PFV	9900	11000	12200	13600	15000	16600	16900	18600	20500	22500	24700
FFAP-022Z-TFC	ZS15KAE-TF5	9900	11000	12200	13600	15000	16600	16900	18600	20500	22500	24700
FFAP-022Z-TFD	ZS15KAE-TFD	9900	11000	12200	13600	15000	16600	16900	18600	20500	22500	24700
FFAP-030Z-CFV	ZS19KAE-PFV	11400	12600	13900	15400	17000	18800	19100	21200	23400	26000	28800
FFAP-030Z-TFC	ZS19KAE-TF5	11400	12600	13900	15400	17000	18800	19100	21200	23400	26000	28800
FFAP-030Z-TFD	ZS19KAE-TFD	11400	12600	13900	15400	17000	18800	19100	21200	23400	26000	28800
FFAP-032Z-CFV	ZS21KAE-PFV	15400	17300	19400	21500	23700	26100	26600	29100	31800	34500	37400
FFAP-032Z-TFC	ZS21KAE-TF5	15400	17300	19400	21500	23700	26100	26600	29100	31800	34500	37400
FFAP-032Z-TFD	ZS21KAE-TFD	15400	17300	19400	21500	23700	26100	26600	29100	31800	34500	37400
FFAP-035Z-CFV	ZS26KAE-PFV	16400	18300	20400	22600	25100	27700	28100	30900	33900	37100	40400
FFAP-035Z-TFC	ZS26KAE-TF5	16400	18300	20400	22600	25100	27700	28100	30900	33900	37100	40400
FFAP-040Z-CFV	ZS26KAE-PFV	17400	19500	21900	24400	27200	30300	30800	34100	37600	41400	45500
FFAP-040Z-TFC	ZS26KAE-TF5	17400	19500	21900	24400	27200	30300	30800	34100	37700	41500	45600
FFAP-040Z-TFD	ZS26KAE-TFD	17400	19500	21900	24400	27200	30300	30800	34100	37600	41400	45500
FFAP-042Z-CFV	ZS33KAE-PFV	22400	25200	28200	31400	34700	38300	38900	42700	46700	51000	55500
FFAP-042Z-TFC	ZS33KAE-TF5	22400	25200	28200	31400	34700	38300	38900	42700	46700	51000	55500
FFAP-042Z-TFD	ZS33KAE-TFD	22400	25200	28200	31400	34700	38300	38900	42700	46700	51000	55500
FFAP-050Z-CFV	ZS38K4E-PFV	25300	28600	32100	35800	39700	43700	44600	48700	53000	57500	62000
FFAP-050Z-TFC	ZS38K4E-TF5	25300	28600	32100	35800	39700	43700	44600	48700	53000	57500	62000
FFAP-050Z-TFD	ZS38K4E-TFD	25300	28600	32100	35800	39700	43700	44600	48700	53000	57500	62000
FFAP-050Z-TFE	ZS38K4E-TFE	25300	28600	32100	35800	39700	43700	44600	48700	53000	57500	62000
FFAP-060Z-TFC	ZS45K4E-TF5	29800	33500	37500	41700	46100	50500	52000	56500	61500	66500	71500
FFAP-060Z-TFD	ZS45K4E-TFD	29800	33500	37500	41700	46100	50500	52000	56500	61500	66500	71500
FFAM-071Z-TFC	ZB48KCE-TF5	32300	36600	41100	45800	50500	56000	57000	62500	68500	75000	81500
FFAM-071Z-TFD	ZB48KCE-TFD	32300	36600	41100	45800	50500	56000	57000	62500	68500	75000	81500
FFAM-081Z-TFC	ZB57KCE-TF5	36800	41500	46400	51500	57000	62500	63500	69500	76000	82500	89000
FFAM-081Z-TFD	ZB57KCE-TFD	36800	41500	46400	51500	57000	62500	63500	69500	76000	82500	89000
FFAM-091Z-TFC	ZB66K5E-TFC	41200	47000	53000	59000	65500	72000	73500	80000	86500	93500	100000
FFAM-091Z-TFD	ZB66K5E-TFD	41200	47000	53000	59000	65500	72000	73500	80000	86500	93500	100000
FFAM-101Z-TFC	ZB76K5E-TFC	47400	54000	60500	67000	74000	81000	82500	89500	96500	104000	110000
FFAM-101Z-TFD	ZB76K5E-TFD	47400	54000	60500	67000	74000	81000	82500	89500	96500	104000	110000

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-4448A/449A Medium Temp/High Temp Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
100° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	3850	4340	4870	5450	6070	6730	6870	7590	8340	9140	9970
FFAM-008Z-TFC	ZB06KAE-TF5	3850	4340	4870	5450	6070	6730	6880	7590	8340	9130	9960
FFAM-010Z-CFV	ZB07KAE-PFV	4550	5130	5750	6430	7160	7930	8110	8940	9820	10700	11700
FFAM-010Z-TFC	ZB07KAE-TF5	4550	5120	5750	6430	7160	7930	8110	8940	9820	10700	11700
FFAM-012Z-CFV	ZB08KAE-PFV	5350	5990	6700	7470	8300	9180	9380	10300	11300	12300	13400
FFAM-012Z-TFC	ZB08KAE-TF5	5350	5990	6710	7480	8300	9180	9390	10300	11300	12300	13400
FFAP-015Z-CFV	ZS09KAE-PFV	5720	6330	7010	7760	8590	9510	9700	10700	11800	13000	14300
FFAP-015Z-TFC	ZS09KAE-TF5	5720	6330	7010	7760	8590	9510	9700	10700	11800	13000	14300
FFAP-015Z-TFD	ZS09KAE-TFD	5720	6330	7010	7760	8590	9510	9700	10700	11800	13000	14300
FFAP-017Z-CFV	ZS11KAE-PFV	6790	7500	8280	9140	10100	11100	11300	12500	13700	15000	16400
FFAP-017Z-TFC	ZS11KAE-TF5	6790	7500	8280	9140	10100	11100	11300	12500	13700	15000	16400
FFAP-017Z-TFD	ZS11KAE-TFD	6790	7500	8280	9140	10100	11100	11300	12500	13700	15000	16400
FFAP-020Z-CFV	ZS13KAE-PFV	7750	8500	9310	10200	11200	12400	12700	14000	15500	17200	19100
FFAP-020Z-TFC	ZS13KAE-TF5	7750	8500	9310	10200	11200	12400	12700	14000	15500	17200	19100
FFAP-020Z-TFD	ZS13KAE-TFD	7750	8500	9310	10200	11200	12400	12700	14000	15500	17200	19100
FFAP-022Z-CFV	ZS15KAE-PFV	9350	10300	11400	12600	13900	15300	15500	17100	18800	20500	22400
FFAP-022Z-TFC	ZS15KAE-TF5	9350	10300	11400	12600	13900	15300	15500	17100	18800	20500	22400
FFAP-022Z-TFD	ZS15KAE-TFD	9350	10300	11400	12600	13900	15300	15500	17100	18800	20500	22400
FFAP-030Z-CFV	ZS19KAE-PFV	10700	11800	13000	14300	15700	17300	17700	19500	21600	23900	26500
FFAP-030Z-TFC	ZS19KAE-TF5	10700	11800	13000	14300	15700	17300	17700	19500	21600	23900	26500
FFAP-030Z-TFD	ZS19KAE-TFD	10700	11800	13000	14300	15700	17300	17700	19500	21600	23900	26500
FFAP-032Z-CFV	ZS26KAE-TF5	13800	15700	17600	19600	21700	23900	24500	26900	29300	31900	34600
FFAP-032Z-TFC	ZS21KAE-TF5	13800	15700	17600	19600	21700	23900	24500	26900	29300	31900	34600
FFAP-032Z-TFD	ZS21KAE-PFV	13800	15700	17600	19600	21700	23900	24500	26900	29300	31900	34600
FFAP-035Z-CFV	ZS26KAE-PFV	14500	16200	18100	20100	22300	24700	25000	27500	30200	33000	35900
FFAP-035Z-TFC	ZS26KAE-TF5	14500	16200	18100	20100	22300	24700	25000	27500	30200	33000	35900
FFAP-040Z-CFV	ZS26KAE-PFV	15800	17800	19900	22400	25000	27900	28400	31500	34900	38600	42500
FFAP-040Z-TFC	ZS21KAE-TFD	15800	17800	19900	22400	25000	27900	28400	31600	35000	38700	42600
FFAP-040Z-TFD	ZS26KAE-TFD	15800	17800	19900	22400	25000	27900	28400	31500	34900	38600	42500
FFAP-042Z-CFV	ZS33KAE-PFV	20300	23100	25900	28900	32100	35500	36200	39800	43600	47600	51500
FFAP-042Z-TFC	ZS33KAE-TF5	20300	23100	25900	28900	32100	35500	36200	39800	43600	47600	51500
FFAP-042Z-TFD	ZS33KAE-TFD	20300	23100	25900	28900	32100	35500	36200	39800	43600	47600	51500
FFAP-050Z-CFV	ZS38K4E-PFV	23200	26100	29400	32800	36400	40200	41100	45100	49200	53500	57500
FFAP-050Z-TFC	ZS38K4E-TF5	23200	26100	29400	32800	36400	40200	41100	45100	49200	53500	57500
FFAP-050Z-TFD	ZS38K4E-TFD	23200	26100	29400	32800	36400	40200	41100	45100	49200	53500	57500
FFAP-050Z-TFE	ZS38K4E-TFE	23200	26100	29400	32800	36400	40200	41100	45100	49200	53500	57500
FFAP-060Z-TFC	ZS45K4E-TF5	27500	30800	34500	38400	42500	46700	47900	52500	57000	62000	67000
FFAP-060Z-TFD	ZS45K4E-TFD	27500	30800	34500	38400	42500	46700	47900	52500	57000	62000	67000
FFAM-071Z-TFC	ZB48KCE-TF5	29400	33500	37700	42100	46800	51500	53000	58000	63500	69500	76000
FFAM-071Z-TFD	ZB48KCE-TFD	29400	33500	37700	42100	46800	51500	53000	58000	63500	69500	76000
FFAM-081Z-TFC	ZB57KCE-TF5	33900	38400	43000	47700	52500	57500	59000	64500	70000	76000	82500
FFAM-081Z-TFD	ZB57KCE-TFD	33900	38400	43000	47700	52500	57500	59000	64500	70000	76000	82500
FFAM-091Z-TFC	ZB66K5E-TFC	36800	42600	48300	54000	60000	65500	67000	73000	79000		
FFAM-091Z-TFD	ZB66K5E-TFD	36800	42600	48300	54000	60000	65500	67000	73000	79000		
FFAM-101Z-TFC	ZB76K5E-TFC		49000	55000	61500	67500	73500	75000				
FFAM-101Z-TFD	ZB76K5E-TFD		49000	55000	61500	67500	73500	75000				

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

R-4448A/449A Medium Temp/High Temp Copeland Scroll air-cooled condensing units

Model	Compressor	0	5	10	15	20	25@40	25@65	30	35	40	45
100° Ambient												
FFAM-008Z-CFV	ZB06KAE-PFV	3460	3910	4410	4950	5530	6160	6330	7000	7720	8470	9260
FFAM-008Z-TFC	ZB06KAE-TF5	3460	3910	4410	4950	5540	6160	6330	7010	7720	8470	9260
FFAM-010Z-CFV	ZB07KAE-PFV	4170	4700	5270	5900	6570	7290	7500	8280	9100	9950	10800
FFAM-010Z-TFC	ZB07KAE-TF5	4170	4690	5270	5900	6570	7290	7500	8280	9100	9950	10800
FFAP-015Z-CFV	ZS09KAE-PFV	5140	5650	6230	6880	7620	8450	8620	9540	10500	11600	12700
FFAP-015Z-TFC	ZS09KAE-TF5	5140	5650	6230	6880	7620	8450	8620	9540	10500	11600	12700
FFAP-015Z-TFD	ZS09KAE-TFD	5140	5650	6230	6880	7620	8450	8620	9540	10500	11600	12700
FFAM-012Z-CFV	ZB08KAE-PFV	4920	5520	6170	6880	7630	8430	8680	9540	10400	11400	12300
FFAM-012Z-TFC	ZB08KAE-TF5	4920	5520	6170	6880	7630	8440	8680	9540	10400	11400	12300
FFAP-017Z-CFV	ZS11KAE-PFV	6070	6650	7320	8060	8900	9830	9970	11000	12000	13100	14200
FFAP-017Z-TFC	ZS11KAE-TF5	6070	6650	7320	8060	8900	9830	9970	11000	12000	13100	14200
FFAP-017Z-TFD	ZS11KAE-TFD	6070	6650	7320	8060	8900	9830	9970	11000	12000	13100	14200
FFAP-020Z-CFV	ZS13KAE-PFV	7040	7650	8320	9090	9960	11000	11300	12500	13800	15300	17000
FFAP-020Z-TFC	ZS13KAE-TF5	7040	7650	8320	9090	9960	11000	11300	12500	13800	15300	17000
FFAP-020Z-TFD	ZS13KAE-TFD	7040	7650	8320	9090	9960	11000	11300	12500	13800	15300	17000
FFAP-022Z-CFV	ZS15KAE-PFV	8460	9260	10200	11200	12300	13500	13600	14900	16300	17800	19300
FFAP-022Z-TFC	ZS15KAE-TF5	8460	9260	10200	11200	12300	13500	13600	14900	16300	17800	19300
FFAP-022Z-TFD	ZS15KAE-TFD	8460	9260	10200	11200	12300	13500	13600	14900	16300	17800	19300
FFAP-030Z-CFV	ZS19KAE-PFV	9590	10600	11600	12700	14000	15400	15700	17300	19200	21200	23500
FFAP-030Z-TFC	ZS19KAE-TF5	9590	10600	11600	12700	14000	15400	15700	17300	19200	21200	23500
FFAP-030Z-TFD	ZS19KAE-TFD	9590	10600	11600	12700	14000	15400	15700	17300	19200	21200	23500
FFAP-035Z-CFV	ZS26KAE-TF5		13300	14900	16700	18600	20800	20700	22900	25200	27700	30200
FFAP-035Z-TFC	ZS21KAE-PFV		13300	14900	16700	18600	20800	20700	22900	25200	27700	30200
FFAP-032Z-CFV	ZS21KAE-TFD		13800	15600	17500	19500	21500	22100	24400	26700	29100	31600
FFAP-032Z-TFC	ZS21KAE-TF5		13800	15600	17500	19500	21500	22100	24400	26700	29100	31600
FFAP-032Z-TFD	ZS26KAE-PFV		13800	15600	17500	19500	21500	22100	24400	26700	29100	31600
FFAP-040Z-CFV	ZS26KAE-PFV	13600	15400	17400	19600	22100	24800	25300	28300	31500	35000	38700
FFAP-040Z-TFD	ZS26KAE-TFD	13600	15400	17400	19600	22100	24800	25300	28300	31500	35000	38700
FFAP-040Z-TFC	ZS26KAE-TF5	13600	15400	17400	19600	22100	24800	25500	28500	31700	35200	39000
FFAP-042Z-CFV	ZS33KAE-PFV	18000	20600	23400	26300	29300	32500	33300	36700	40300	44100	48000
FFAP-042Z-TFC	ZS33KAE-TF5	18000	20600	23400	26300	29300	32500	33300	36700	40300	44100	48000
FFAP-042Z-TFD	ZS33KAE-TFD	18000	20600	23400	26300	29300	32500	33300	36700	40300	44100	48000
FFAP-050Z-CFV	ZS38K4E-PFV	21500	24100	26900	30000	33300	36800	37900	41600	45500	49400	53500
FFAP-050Z-TFC	ZS38K4E-TF5	21500	24100	26900	30000	33300	36800	37900	41600	45500	49400	53500
FFAP-050Z-TFD	ZS38K4E-TFD	21500	24100	26900	30000	33300	36800	37900	41600	45500	49400	53500
FFAP-050Z-TFE	ZS38K4E-TFE	21500	24100	26900	30000	33300	36800	37900	41600	45500	49400	53500
FFAP-060Z-TFC	ZS45K4E-TF5		28800	31900	35400	39200	43100	44400	48600	53000	57500	62000
FFAP-060Z-TFD	ZS45K4E-TFD		28800	31900	35400	39200	43100	44400	48600	53000	57500	62000
FFAM-071Z-TFC	ZB48KCE-TF5		30400	34400	38600	42900	47500	48900	54000	59000		
FFAM-071Z-TFD	ZB48KCE-TFD		30400	34400	38600	42900	47500	48900	54000	59000		
FFAM-081Z-TFC	ZB57KCE-TF5		35100	39400	43700	48200	53000	54500				
FFAM-081Z-TFD	ZB57KCE-TFD		35100	39400	43700	48200	53000	54500				
FFAM-091Z-TFC	ZB66K5E-TFC			42100	47400							
FFAM-091Z-TFD	ZB66K5E-TFD			42100	47400							
FFAM-101Z-TFC	ZB76K5E-TFC			48100								
FFAM-101Z-TFD	ZB76K5E-TFD			48100								

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope.

Physical and Electrical Data

Copeland Scroll water-cooled condensing units

Model	Compressor	Voltage	Dimensions			Refrigerant Connections		Receiver Capacity (Lbs @ 90% Volume)							MCA	Max Fuse	Ship Weight
			L	W	H	Liquid	Suction	134a	22	404A	407A	407C	448A 449A				
FFWP-015Z-CFV-020	ZS09KAE-PFV	208/230	24	16.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	12.5	20	107	
FFWP-015Z-TFC-020	ZS09KAE-TF5	208/230	24	16.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	10	15	107	
FFWP-015Z-TFD-020	ZS09KAE-TFD	460	24	16.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	4.8	15	107	
FFWP-017Z-CFV-020	ZS11KAE-PFV	208/230	24	16.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	15.8	25	105	
FFWP-017Z-TFC-020	ZS11KAE-TF5	208/230	17	24	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	13	20	105	
FFWP-017Z-TFD-020	ZS11KAE-TFD	460	17	24	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	5.4	15	105	
FFWP-020Z-CFV-020	ZS13KAE-PFV	208/230	17	24	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	15	25	101	
FFWP-020Z-TFC-020	ZS13KAE-TF5	208/230	17	24	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	12.1	20	107	
FFWP-020Z-TFD-020	ZS13KAE-TFD	460	17	24	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	6	15	107	
FFWP-021Z-TFC-020	ZS15KAE-TF5	208/230	24	16.1	16.8	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	11.6	20	140	
FFWP-021Z-TFD-020	ZS15KAE-TFD	460	24	16.1	16.8	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	5.4	15	114	
FFWP-022Z-CFV-020	ZS15KAE-PFV	208/230	17	24	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	19.6	35	105	
FFWP-022Z-TFC-020	ZS15KAE-TF5	208/230	24	16.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	13.3	20	106	
FFWP-022Z-TFD-020	ZS15KAE-TFD	460	24	16.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	6.8	15	106	
FFWP-030Z-CFV-020	ZS19KAE-PFV	208/230	16	24.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	22.5	40	105	
FFWP-030Z-TFC-020	ZS19KAE-TF5	208/230	16	24.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	17.1	30	75	
FFWP-030Z-TFD-020	ZS19KAE-TFD	460	16	24.1	16.6	3/8	7/8	13	12.9	11.2	12.3	12.2	11.8	8.1	15	106	
FFWP-032Z-CFV-020	ZS21KAE-PFV	208/230	27	21.5	18.2	3/8	1 1/8	13	12.9	11.2	12.3	12.2	11.8	29	50	171	
FFWP-032Z-TFC-020	ZS21KAE-TF5	208/230	27	21.5	18.2	3/8	1 1/8	13	12.9	11.2	12.3	12.2	11.8	19	30	168	
FFWP-032Z-TFD-020	ZS21KAE-TFD	460	27	21.5	18.2	3/8	1 1/8	13	12.9	11.2	12.3	12.2	11.8	8.6	15	168	
FFWP-040Z-CFV-020	ZS26KAE-PFV	208/230	21	27.5	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		29.5	50	191	
FFWP-040Z-TFC-020	ZS26KAE-TF5	208/230	21	27.5	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		19.4	30	191	
FFWP-040Z-TFD-020	ZS26KAE-TFD	460	21	27.5	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		8.6	15	195	
FFWP-042Z-CFV-020	ZS33KAE-PFV	208/230	27	21.6	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		35.3	60	197	
FFWP-042Z-TFC-020	ZS33KAE-TF5	208/230	27	21.6	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		27.9	50	198	
FFWP-042Z-TFD-020	ZS33KAE-TFD	460	27	21.6	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		12.5	20	220	
FFWP-050Z-CFV-020	ZS38K4E-PFV	208/230	27.5	21.7	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		39.8	70	220	
FFWP-050Z-TFC-020	ZS38K4E-TF5	208/230	27.5	21.7	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		26.8	45	209	
FFWP-050Z-TFD-020	ZS38K4E-TFD	460	27.5	21.7	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		12	20	209	
FFWP-050Z-TFE-020	ZS38K4E-TFE	575	27.5	21.7	21.1	1/2	1 1/8	21.5	21.2	18.4	20.3	20.2		9.9	15	0	

R-134a Med/High Temp

Copeland Scroll™ water-cooled condensing units

Model	Compressor	0	5	10	15	20	20@40	25@65	30	35	40	45	0	25	45
BTU/H at 105° condensing, 75° water inlet - evaporator temp (°F)													Water flow (GPM) @ evap temp (°F)		
FFWP-015Z-CFV	ZS09KAE-PFV	4070	4620	5220	5870	6590	7380	7620	8500	9460	10500	11600	0.6	1.0	1.4
FFWP-015Z-TFC	ZS09KAE-TF5	4070	4620	5220	5870	6590	7380	7620	8500	9460	10500	11600	0.6	1.0	1.4
FFWP-015Z-TFD	ZS09KAE-TFD	4070	4620	5220	5870	6590	7380	7620	8500	9460	10500	11600	0.6	1.0	1.4
FFWP-017Z-CFV	ZS11KAE-PFV	4850	5510	6230	7010	7870	8810	9090	10100	11300	12500	13900	0.7	1.1	1.4
FFWP-017Z-TFC	ZS11KAE-TF5	4850	5510	6230	7010	7870	8810	9090	10100	11300	12500	13900	0.7	1.1	1.7
FFWP-017Z-TFD	ZS11KAE-TFD	4850	5510	6230	7010	7870	8810	9090	10100	11300	12500	13900	0.7	1.1	1.7
FFWP-020Z-CFV	ZS13KAE-PFV	5540	6290	7110	8010	8990	10100	10400	11600	12900	14300	15900	0.8	1.3	1.97
FFWP-020Z-TFC	ZS13KAE-TF5	5540	6290	7110	8010	8990	10100	10400	11600	12900	14300	15900	0.8	1.3	1.97
FFWP-020Z-TFD	ZS13KAE-TFD	5540	6290	7110	8010	8990	10100	10400	11600	12900	14300	15900	0.8	1.3	1.97
FFWP-021Z-TFC	ZS15K4E-TF5	6570	7440	8400	9450	10600	11900	12100	13500	15000	16700	18500	0.9	1.5	2.3
FFWP-021Z-TFD	ZS15K4E-TFD	6570	7440	8400	9450	10600	11900	12100	13500	15000	16700	18500	0.9	1.5	2.3
FFWP-022Z-CFV	ZS15KAE-PFV	6680	7590	8570	9650	10800	12100	12500	14000	15600	17300	19100	0.9	1.6	2.3
FFWP-022Z-TFC	ZS15KAE-TF5	6680	7590	8570	9650	10800	12100	12500	14000	15600	17300	19100	0.9	1.6	2.3
FFWP-022Z-TFD	ZS15KAE-TFD	6680	7590	8570	9650	10800	12100	12500	14000	15600	17300	19100	0.9	1.6	2.3
FFWP-030Z-CFV	ZS19KAE-PFV	7540	8560	9680	10900	12200	13700	14100	15800	17500	19500	21600	1.0	1.8	2.5
FFWP-030Z-TFC	ZS19KAE-TF5	7540	8560	9680	10900	12200	13700	14100	15800	17500	19500	21600	1.0	1.8	2.5
FFWP-030Z-TFD	ZS19KAE-TFD	7540	8560	9680	10900	12200	13700	14100	15800	17500	19500	21600	1.0	1.8	2.5
FFWP-032Z-CFV	ZS21KAE-PFV	10100	11500	13000	14600	16400	18400	19000	21200	23600	26200	29000	1.4	2.3	3.4
FFWP-032Z-TFC	ZS21KAE-TF5	10100	11500	13000	14600	16400	18400	19000	21200	23600	26200	29000	1.4	2.3	3.4
FFWP-032Z-TFD	ZS21KAE-TFD	10100	11500	13000	14600	16400	18400	19000	21200	23600	26200	29000	1.4	2.3	3.4
FFWP-040Z-CFV	ZS26KAE-PFV	11600	13200	14900	16800	18900	21100	21000	23500	26100	29000	32200	1.5	2.6	3.8
FFWP-040Z-TFC	ZS26KAE-TF5	11600	13200	14900	16800	18900	21100	21000	23500	26100	29000	32200	1.5	2.6	3.8
FFWP-040Z-TFD	ZS26KAE-TFD	11600	13200	14900	16800	18900	21100	21000	23500	26100	29000	32200	1.5	2.6	3.8
FFWP-042Z-CFV	ZS33KAE-PFV	14000	15800	17900	20200	22600	25300	26100	29200	32500	36100	40000	1.9	3.2	4.7
FFWP-042Z-TFC	ZS33KAE-TF5	14000	15800	17900	20200	22600	25300	26100	29200	32500	36100	40000	1.9	3.2	4.7
FFWP-042Z-TFD	ZS33KAE-TFD	14000	15800	17900	20200	22600	25300	26100	29200	32500	36100	40000	1.9	3.2	4.7
FFWP-050Z-CFV	ZS38K4E-PFV	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7
FFWP-050Z-TFC	ZS38K4E-TF5	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7
FFWP-050Z-TFD	ZS38K4E-TFD	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7
FFWP-050Z-TFE	ZS38K4E-TFE	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

R-22 High Temp

Copeland Scroll™ water-cooled condensing units

Model	Compressor	0	5	10	15	20	20@40	25@65	30	35	40	45	0	25	45
BTU/H at 105° condensing, 75° water inlet - evaporator temp (°F)													Water flow (GPM) @ evap temp (°F)		
FFWP-015Z-CFV	ZS09KAE-PFV	6770	7740	8720	9750	10800	12000	12100	13300	14700	16100	17700	0.92	1.51	2.14
FFWP-015Z-TFC	ZS09KAE-TF5	6770	7740	8720	9750	10800	12000	12100	13300	14700	16100	17700	0.92	1.51	2.14
FFWP-015Z-TFD	ZS09KAE-TFD	6770	7740	8720	9750	10800	12000	12100	13300	14700	16100	17700	0.92	1.51	2.14
FFWP-017Z-CFV	ZS11KAE-PFV	7890	9040	10200	11400	12700	14100	14000	15500	17100	18800	21000	1.07	1.75	2.49
FFWP-017Z-TFC	ZS11KAE-TF5	7890	9040	10200	11400	12700	14100	14000	15500	17100	18800	21000	1.07	1.75	2.49
FFWP-017Z-TFD	ZS11KAE-TFD	7890	9040	10200	11400	12700	14100	14000	15500	17100	18800	21000	1.07	1.75	2.49
FFWP-020Z-CFV	ZS13KAE-PFV	9160	10500	11800	13200	14600	16200	16400	18000	19900	21800	24000	1.24	2.03	2.94
FFWP-020Z-TFC	ZS13KAE-TF5	9160	10500	11800	13200	14600	16200	16400	18000	19900	21800	24000	1.24	2.03	2.94
FFWP-020Z-TFD	ZS13KAE-TFD	9160	10500	11800	13200	14600	16200	16400	18000	19900	21800	24000	1.24	2.03	2.94
FFWP-021Z-TFC	ZS15K4E-TF5			13400	14900	16600	18300	18300	20200	22300	24500	26800		2.30	3.30
FFWP-021Z-TFD	ZS15K4E-TFD			13400	14900	16600	18300	18300	20200	22300	24500	26800		2.30	3.30
FFWP-022Z-CFV	ZS15KAE-PFV	10800	12300	13900	15500	17200	19100	19200	21200	23400	25700	28200	1.49	2.40	3.41
FFWP-022Z-TFC	ZS15KAE-TF5	10800	12300	13900	15500	17200	19100	19200	21200	23400	25700	28200	1.49	2.40	3.41
FFWP-022Z-TFD	ZS15KAE-TFD	10800	12300	13900	15500	17200	19100	19200	21200	23400	25700	28200	1.49	2.40	3.41
FFWP-030Z-CFV	ZS19KAE-PFV	12200	14000	15800	17600	19600	21600	21900	24100	26500	29200	32000	1.65	2.69	3.82
FFWP-030Z-TFC	ZS19KAE-TF5	12200	14000	15800	17600	19600	21600	21900	24100	26500	29200	32000	1.65	2.69	3.82
FFWP-030Z-TFD	ZS19KAE-TFD	12200	14000	15800	17600	19600	21600	21900	24100	26500	29200	32000	1.65	2.69	3.82
FFWP-032Z-CFV	ZS21KAE-PFV	16300	18600	21100	23600	26200	29100	29100	32100	35400	39000	42900	2.20	3.60	5.10
FFWP-032Z-TFC	ZS21KAE-TF5	16300	18600	21100	23600	26200	29100	29100	32100	35400	39000	42900	2.20	3.60	5.10
FFWP-032Z-TFD	ZS21KAE-TFD	16300	18600	21100	23600	26200	29100	29100	32100	35400	39000	42900	2.20	3.60	5.10
FFWP-040Z-CFV	ZS26KAE-PFV	18200	20800	23500	26200	29100	32200	32600	35900	39500	43400	47700	2.43	3.96	5.69
FFWP-040Z-TFC	ZS26KAE-TF5	18200	20800	23500	26200	29100	32200	32600	35900	39500	43400	47700	2.43	3.96	5.69
FFWP-040Z-TFD	ZS26KAE-TFD	18200	20800	23500	26200	29100	32200	32600	35900	39500	43400	47700	2.43	3.96	5.69
FFWP-042Z-CFV	ZS33KAE-PFV	22500	25700	29000	32500	36200	40100	40100	44300	48800	53500	59000	3.00	5.00	7.00
FFWP-042Z-TFC	ZS33KAE-TF5	22500	25700	29000	32500	36200	40100	40100	44300	48800	53500	59000	3.00	5.00	7.00
FFWP-042Z-TFD	ZS33KAE-TFD	22500	25700	29000	32500	36200	40100	40100	44300	48800	53500	59000	3.00	5.00	7.00
FFWP-050Z-CFV	ZS38K4E-PFV	26200	29300	32600	36300	40200	44400	44800	49400	54300	59500	65100	3.46	5.62	8.03
FFWP-050Z-TFC	ZS38K4E-TF5	26200	29300	32600	36300	40200	44400	44800	49400	54300	59500	65100	3.46	5.62	8.03
FFWP-050Z-TFD	ZS38K4E-TFD	26200	29300	32600	36300	40200	44400	44800	49400	54300	59500	65100	3.46	5.62	8.03
FFWP-050Z-TFE	ZS38K4E-TFE	26200	29300	32600	36300	40200	44400	44800	49400	54300	59500	65100	3.46	5.62	8.03

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

R-404A Low Temp

Copeland Scroll™ water-cooled condensing units

Model	Compressor	-30	-25	-20	-15	-10	-5	0	-30	-15	0
BTU/H at 105° condensing, 75° water inlet - evaporator temp (°F)									Water flow (GPM) @ evap temp (°F)		
FFWP-015Z-CFV	ZS09KAE-PFV	3230	3670	4140	4670	5240	5890	6590	0.5	0.7	1.0
FFWP-015Z-TFC	ZS09KAE-TF5	3230	3670	4140	4670	5240	5890	6590	0.5	0.7	1.0
FFWP-015Z-TFD	ZS09KAE-TFD	3230	3670	4140	4670	5240	5890	6590	0.5	0.7	1.0
FFWP-017Z-CFV	ZS11KAE-PFV	4010	4540	5130	5790	6500	7300	8180	0.6	0.8	1.1
FFWP-017Z-TFC	ZS11KAE-TF5	4010	4540	5130	5790	6500	7300	8180	0.6	0.8	1.1
FFWP-017Z-TFD	ZS11KAE-TFD	4010	4540	5130	5790	6500	7300	8180	0.6	0.8	1.1
FFWP-020Z-CFV	ZS13KAE-PFV	4400	4990	5640	6350	7140	8010	8980	0.7	0.9	1.3
FFWP-020Z-TFC	ZS13KAE-TF5	4400	4990	5640	6350	7140	8010	8980	0.7	0.9	1.3
FFWP-020Z-TFD	ZS13KAE-TFD	4400	4990	5640	6350	7140	8010	8980	0.7	0.9	1.3
FFWP-021Z-TFC	ZS15K4E-TF5		6520	7370	8300	9310		11600		1.2	1.6
FFWP-021Z-TFD	ZS15K4E-TFD		6520	7370	8300	9310		11600		1.2	1.6
FFWP-022Z-CFV	ZS15KAE-PFV	5350	6070	6860	7720	8680	9740	10900	0.8	1.1	1.5
FFWP-022Z-TFC	ZS15KAE-TF5	5350	6070	6860	7720	8680	9740	10900	0.8	1.1	1.5
FFWP-022Z-TFD	ZS15KAE-TFD	5350	6070	6860	7720	8680	9740	10900	0.8	1.1	1.5
FFWP-030Z-CFV	ZS19KAE-PFV	6340	7190	8120	9150	10300	11500	12900	1.0	1.3	1.7
FFWP-030Z-TFC	ZS19KAE-TF5	6340	7190	8120	9150	10300	11500	12900	1.0	1.3	1.7
FFWP-030Z-TFD	ZS19KAE-TFD	6340	7190	8120	9150	10300	11500	12900	1.0	1.3	1.7
FFWP-032Z-CFV	ZS21KAE-PFV	8030	9100	10300	11600	13000	14600	16400	1.2	1.7	2.3
FFWP-032Z-TFC	ZS21KAE-TF5	8030	9100	10300	11600	13000	14600	16400	1.2	1.7	2.3
FFWP-032Z-TFD	ZS21KAE-TFD	8030	9100	10300	11600	13000	14600	16400	1.2	1.7	2.3
FFWP-040Z-CFV	ZS26KAE-PFV	9390	10600	12000	13600	15200	17100	19200	1.5	2.0	2.6
FFWP-040Z-TFC	ZS26KAE-TF5	9390	10600	12000	13600	15200	17100	19200	1.5	2.0	2.6
FFWP-040Z-TFD	ZS26KAE-TFD	9390	10600	12000	13600	15200	17100	19200	1.5	2.0	2.6
FFWP-042Z-CFV	ZS33KAE-PFV	11200	12700	14400	16200	18200	20400	22900	1.7	2.3	3.1
FFWP-042Z-TFC	ZS33KAE-TF5	11200	12700	14400	16200	18200	20400	22900	1.7	2.3	3.1
FFWP-042Z-TFD	ZS33KAE-TFD	11200	12700	14400	16200	18200	20400	22900	1.7	2.3	3.1
FFWP-050Z-CFV	ZS38K4E-PFV	14000	15800	17700	19900	22200	24800	27600	2.1	2.8	3.8
FFWP-050Z-TFC	ZS38K4E-TF5	14000	15800	17700	19900	22200	24800	27600	2.1	2.8	3.8
FFWP-050Z-TFD	ZS38K4E-TFD	14000	15800	17700	19900	22200	24800	27600	2.1	2.8	3.8
FFWP-050Z-TFE	ZS38K4E-TFE	14000	15800	17700	19900	22200	24800	27600	2.1	2.8	3.8

Capacities rated at 40°F return gas, 5°F subcooling

R-404A Med/High Temp

Copeland Scroll™ water-cooled condensing units

Model	Compressor	0	5	10	15	20	20@40	25@65	30	35	40	45	0	25	45
BTU/H at 105° condensing, 75° water inlet - evaporator temp (°F)													Water flow (GPM) @ evap temp (°F)		
FFWP-015Z-CFV	ZS09KAE-PFV	6590	7370	8230	9180	10200	11400	12300	13600	14900	16400	18000	1.0	1.6	2.2
FFWP-015Z-TFC	ZS09KAE-TF5	6590	7370	8230	9180	10200	11400	12300	13600	14900	16400	18000	1.0	1.6	2.2
FFWP-015Z-TFD	ZS09KAE-TFD	6590	7370	8230	9180	10200	11400	12300	13600	14900	16400	18000	1.0	1.6	2.2
FFWP-017Z-CFV	ZS11KAE-PFV	8180	9150	10200	11400	12700	14100	14400	15900	17500	19300	21100	1.1	1.8	2.5
FFWP-017Z-TFC	ZS11KAE-TF5	8180	9150	10200	11400	12700	14100	14400	15900	17500	19300	21100	1.1	1.8	2.5
FFWP-017Z-TFD	ZS11KAE-TFD	8180	9150	10200	11400	12700	14100	14400	15900	17500	19300	21100	1.1	1.8	2.5
FFWP-020Z-CFV	ZS13KAE-PFV	8980	10000	11200	12500	13900	15500	16800	18500	20400	22400	24600	1.3	2.1	2.9
FFWP-020Z-TFC	ZS13KAE-TF5	8980	10000	11200	12500	13900	15500	16800	18500	20400	22400	24600	1.3	2.1	2.9
FFWP-020Z-TFD	ZS13KAE-TFD	8980	10000	11200	12500	13900	15500	16800	18500	20400	22400	24600	1.3	2.1	2.9
FFWP-021Z-TFC	ZS15K4E-TF5	11600	10400	14300	15900	17600	19400	20100	22100	24300	26600	29100	1.6	1.6	2.5
FFWP-021Z-TFD	ZS15K4E-TFD	11600	10400	14300	15900	17600	19400	20100	22100	24300	26600	29100	1.6	1.6	2.5
FFWP-022Z-CFV	ZS15KAE-PFV	10900	12200	13600	15200	16900	18800	20400	22500	24700	27200	29900	1.5	2.6	3.5
FFWP-022Z-TFC	ZS15KAE-TF5	10900	12200	13600	15200	16900	18800	20400	22500	24700	27200	29900	1.5	2.6	3.5
FFWP-022Z-TFD	ZS15KAE-TFD	10900	12200	13600	15200	16900	18800	20400	22500	24700	27200	29900	1.5	2.6	3.5
FFWP-030Z-CFV	ZS19KAE-PFV	12900	14500	16200	18000	20100	22300	22900	25200	27700	30500	33400	1.7	2.8	4.0
FFWP-030Z-TFC	ZS19KAE-TF5	12900	14500	16200	18000	20100	22300	22900	25200	27700	30500	33400	1.7	2.8	4.0
FFWP-030Z-TFD	ZS19KAE-TFD	12900	14500	16200	18000	20100	22300	22900	25200	27700	30500	33400	1.7	2.8	4.0
FFWP-032Z-CFV	ZS21KAE-PFV	16400	18300	20500	22800	25400	28200	30700	34100	37900	42100	46700	2.3	3.8	5.5
FFWP-032Z-TFC	ZS21KAE-TF5	16400	18300	20500	22800	25400	28200	30700	34100	37900	42100	46700	2.3	3.8	5.5
FFWP-032Z-TFD	ZS21KAE-TFD	16400	18300	20500	22800	25400	28200	30700	34100	37900	42100	46700	2.3	3.8	5.5
FFWP-040Z-CFV	ZS26KAE-PFV	19200	21400	23900	26700	29700	33000	32900	36500	40400	44700	49300	2.6	4.1	5.8
FFWP-040Z-TFC	ZS26KAE-TF5	19200	21400	23900	26700	29700	33000	32900	36500	40400	44700	49300	2.6	4.1	5.8
FFWP-040Z-TFD	ZS26KAE-TFD	19200	21400	23900	26700	29700	33000	32900	36500	40400	44700	49300	2.6	4.1	5.8
FFWP-042Z-CFV	ZS33KAE-PFV	22900	25600	28600	31900	35500	39400	43000	47700	53000	58800	65300	3.1	5.3	7.6
FFWP-042Z-TFC	ZS33KAE-TF5	22900	25600	28600	31900	35500	39400	43000	47700	53000	58800	65300	3.1	5.3	7.6
FFWP-042Z-TFD	ZS33KAE-TFD	22900	25600	28600	31900	35500	39400	43000	47700	53000	58800	65300	3.1	5.3	7.6
FFWP-050Z-CFV	ZS38K4E-PFV	27600	30600	33900	37500	41400	45600	51600	56800	62300	68300	75700	3.8	6.5	9.3
FFWP-050Z-TFC	ZS38K4E-TF5	27600	30600	33900	37500	41400	45600	51600	56800	62300	68300	75700	3.8	6.5	9.3
FFWP-050Z-TFD	ZS38K4E-TFD	27600	30600	33900	37500	41400	45600	51600	56800	62300	68300	75700	3.8	6.5	9.3
FFWP-050Z-TFE	ZS38K4E-TFE	27600	30600	33900	37500	41400	45600	51600	56800	62300	68300	75700	3.8	6.5	9.3

Capacities rated at 40°F return gas, 5°F subcooling

R-407A Low Temp

Copeland Scroll™ water-cooled condensing units

Model	Compressor	-25	-20	-15	-10	-5	0	5	-25	-10	5
BTU/H at 105° condensing, 75° water inlet - evaporator temp (°F)									Water flow (GPM) @ evap temp (°F)		
FFWP-015Z-CFV	ZS09KAE-PFV	3330	3960	4590	5240	5910	6630	7410	0.5	0.8	1.0
FFWP-015Z-TFC	ZS09KAE-TF5	3330	3960	4590	5240	5910	6630	7410	0.5	0.8	1.0
FFWP-015Z-TFD	ZS09KAE-TFD	3330	3960	4590	5240	5910	6630	7410	0.5	0.8	1.0
FFWP-017Z-CFV	ZS11KAE-PFV	3980	4720	5480	6250	7060	7920	8850	0.6	0.9	1.2
FFWP-017Z-TFC	ZS11KAE-TF5	3980	4720	5480	6250	7060	7920	8850	0.6	0.9	1.2
FFWP-017Z-TFD	ZS11KAE-TFD	3980	4720	5480	6250	7060	7920	8850	0.6	0.9	1.2
FFWP-020Z-CFV	ZS13KAE-PFV	4540	5390	6250	7140	8060	9050	10100	0.7	1.0	1.4
FFWP-020Z-TFC	ZS13KAE-TF5	4540	5390	6250	7140	8060	9050	10100	0.7	1.0	1.4
FFWP-020Z-TFD	ZS13KAE-TFD	4540	5390	6250	7140	8060	9050	10100	0.7	1.0	1.4
FFWP-022Z-CFV	ZS15KAE-PFV	5470	6500	7540	8610	9720	10900	12200	0.8	1.2	1.6
FFWP-022Z-TFC	ZS15KAE-TF5	5470	6500	7540	8610	9720	10900	12200	0.8	1.2	1.6
FFWP-022Z-TFD	ZS15KAE-TFD	5470	6500	7540	8610	9720	10900	12200	0.8	1.2	1.6
FFWP-030Z-CFV	ZS19KAE-PFV	6180	7340	8510	9710	11000	12300	13700	1.0	1.4	1.8
FFWP-030Z-TFC	ZS19KAE-TF5	6180	7340	8510	9710	11000	12300	13700	1.0	1.4	1.8
FFWP-030Z-TFD	ZS19KAE-TFD	6180	7340	8510	9710	11000	12300	13700	1.0	1.4	1.8
FFWP-032Z-CFV	ZS21KAE-PFV	7160	8680	10300	11900	13700	15600	17700	1.2	1.7	2.4
FFWP-032Z-TFC	ZS21KAE-TF5	7160	8680	10300	11900	13700	15600	17700	1.2	1.7	2.4
FFWP-032Z-TFD	ZS21KAE-TFD	7160	8680	10300	11900	13700	15600	17700	1.2	1.7	2.4
FFWP-040Z-CFV	ZS26KAE-PFV	7940	9640	11400	13300	15200	17400	19600	1.3	1.9	2.6
FFWP-040Z-TFC	ZS26KAE-TF5	7940	9640	11400	13300	15200	17400	19600	1.3	1.9	2.6
FFWP-040Z-TFD	ZS26KAE-TFD	7940	9640	11400	13300	15200	17400	19600	1.3	1.9	2.6
FFWP-042Z-CFV	ZS33KAE-PFV	10400	12700	15000	17400	20000	22800	25800	1.7	2.4	3.4
FFWP-042Z-TFC	ZS33KAE-TF5	10400	12700	15000	17400	20000	22800	25800	1.7	2.4	3.4
FFWP-042Z-TFD	ZS33KAE-TFD	10400	12700	15000	17400	20000	22800	25800	1.7	2.4	3.4

R-407A Med/High Temp

Copeland Scroll™ water-cooled condensing units

Model	Compressor	0	5	10	15	20	20@40	25@65	30	35	40	45	0	25	45
BTU/H at 105° condensing, 75° water inlet - evaporator temp (°F)													Water flow (GPM) @ evap temp (°F)		
FFWP-015Z-CFV	ZS09KAE-PFV	7620	8630	9700	10800	11100	12300	13600	15000	16500	1.1	1.4	2.0	1.0	1.4
FFWP-015Z-TFC	ZS09KAE-TF5	7620	8630	9700	10800	11100	12300	13600	15000	16500	1.1	1.4	2.0	1.0	1.4
FFWP-015Z-TFD	ZS09KAE-TFD	7620	8630	9700	10800	11100	12300	13600	15000	16500	1.1	1.4	2.0	1.0	1.4
FFWP-017Z-CFV	ZS11KAE-PFV	9100	10300	11600	12900	13300	14700	16300	18000	19700	1.2	1.7	2.3	1.1	1.4
FFWP-017Z-TFC	ZS11KAE-TF5	9100	10300	11600	12900	13300	14700	16300	18000	19700	1.2	1.7	2.3	1.1	1.7
FFWP-017Z-TFD	ZS11KAE-TFD	9100	10300	11600	12900	13300	14700	16300	18000	19700	1.2	1.7	2.3	1.1	1.7
FFWP-020Z-CFV	ZS13KAE-PFV	10400	11800	13200	14800	15100	16800	18600	20500	22500	1.4	1.9	2.7	1.3	1.97
FFWP-020Z-TFC	ZS13KAE-TF5	10400	11800	13200	14800	15100	16800	18600	20500	22500	1.4	1.9	2.7	1.3	1.97
FFWP-020Z-TFD	ZS13KAE-TFD	10400	11800	13200	14800	15100	16800	18600	20500	22500	1.4	1.9	2.7	1.3	1.97
FFWP-022Z-CFV	ZS15KAE-PFV	12500	14200	15900	17800	18300	20300	22400	24700	27200	1.7	2.3	3.2	1.5	2.3
FFWP-022Z-TFC	ZS15KAE-TF5	12500	14200	15900	17800	18300	20300	22400	24700	27200	1.7	2.3	3.2	1.5	2.3
FFWP-022Z-TFD	ZS15KAE-TFD	12500	14200	15900	17800	18300	20300	22400	24700	27200	1.7	2.3	3.2	1.6	2.3
FFWP-030Z-CFV	ZS19KAE-PFV	14500	16400	18500	20600	20600	22800	25300	27800	30600	1.9	2.6	3.6	1.6	2.3
FFWP-030Z-TFC	ZS19KAE-TF5	14500	16400	18500	20600	20600	22800	25300	27800	30600	1.9	2.6	3.6	1.6	2.3
FFWP-030Z-TFD	ZS19KAE-TFD	14500	16400	18500	20600	20600	22800	25300	27800	30600	1.9	2.6	3.6	1.8	2.5
FFWP-032Z-CFV	ZS21KAE-PFV	19000	21500	24200	27000	27700	30700	34000	37500	41200	2.5	3.4	4.8	1.8	2.5
FFWP-032Z-TFC	ZS21KAE-TF5	19000	21500	24200	27000	27700	30700	34000	37500	41200	2.5	3.4	4.8	1.8	2.5
FFWP-032Z-TFD	ZS21KAE-TFD	19000	21500	24200	27000	27700	30700	34000	37500	41200	2.5	3.4	4.8	2.3	3.4
FFWP-040Z-CFV	ZS26KAE-PFV	21600	24500	27500	30700	30600	34000	37600	41500	45600	2.8	3.8	5.3	2.3	3.4
FFWP-040Z-TFC	ZS26KAE-TF5	21600	24500	27500	30700	30600	34000	37600	41500	45600	2.8	3.8	5.3	2.3	3.4
FFWP-040Z-TFD	ZS26KAE-TFD	21600	24500	27500	30700	30600	34000	37600	41500	45600	2.8	3.8	5.3	2.6	3.8
FFWP-042Z-CFV	ZS33KAE-PFV	26200	29600	33300	37200	38100	42300	46800	51600	56800	3.4	4.7	6.6	2.6	3.8
FFWP-042Z-TFC	ZS33KAE-TF5	26200	29600	33300	37200	38100	42300	46800	51600	56800	3.4	4.7	6.6	2.6	3.8
FFWP-042Z-TFD	ZS33KAE-TFD	26200	29600	33300	37200	38100	42300	46800	51600	56800	3.4	4.7	6.6	3.2	4.7
FFWP-050Z-CFV	ZS38K4E-PFV	30400	35000	39900	45100	45000	50400	55900	61500	67200	3.7	5.3	7.8	3.2	4.7
FFWP-050Z-TFC	ZS38K4E-TF5	30400	35000	39900	45100	45000	50400	55900	61500	67200	3.7	5.3	7.8	3.2	4.7
FFWP-050Z-TFD	ZS38K4E-TFD	30400	35000	39900	45100	45000	50400	55900	61500	67200	3.7	5.3	7.8	3.8	5.7
FFWP-050Z-TFE	ZS38K4E-TFE	30400	35000	39900	45100	45000	50400	55900	61500	67200	3.7	5.3	7.8	3.8	5.7
FFWP-050Z-TFD	ZS38K4E-TFD	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7
FFWP-050Z-TFE	ZS38K4E-TFE	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

R-407C Med/High Temp

Copeland Scroll™ water-cooled condensing units

Model	Compressor	0	5	10	15	20	20@40	25@65	30	35	40	45	0	25	45
BTU/H at 105° condensing, 75° water inlet - evaporator temp (°F)													Water flow (GPM) @ evap temp (°F)		
FFWP-042Z-CFV	ZS33KAE-PFV	19700	22900	26200	29600	33300	37200	38100	42300	46800	51600	56800	2.7	4.7	6.6
FFWP-042Z-TFC	ZS33KAE-TF5	19700	22900	26200	29600	33300	37200	38100	42300	46800	51600	56800	2.7	4.7	6.6
FFWP-042Z-TFD	ZS33KAE-TFD	19700	22900	26200	29600	33300	37200	38100	42300	46800	51600	56800	2.7	4.7	6.6
FFWP-050Z-CFV	ZS38K4E-PFV	22500	26200	30400	35000	39900	45100	45000	50400	55900	61500	67200	2.9	5.3	7.8
FFWP-050Z-TFC	ZS38K4E-TF5	22500	26200	30400	35000	39900	45100	45000	50400	55900	61500	67200	2.9	5.3	7.8
FFWP-050Z-TFD	ZS38K4E-TFD	22500	26200	30400	35000	39900	45100	45000	50400	55900	61500	67200	2.9	5.3	7.8
FFWP-050Z-TFE	ZS38K4E-TFE	22500	26200	30400	35000	39900	45100	45000	50400	55900	61500	67200	2.9	5.3	7.8

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope

R-448A/R-449A Med/High Temp

Copeland Scroll™ water-cooled condensing units

Model	Compressor	0	5	10	15	20	20@40	25@65	30	35	40	45	0	25	45
BTU/H at 105° condensing, 75° water inlet - evaporator temp (°F)													Water flow (GPM) @ evap temp (°F)		
FFWP-015Z-CFV	ZS09KAE-PFV	4070	4620	5220	5870	6590	7380	7620	8500	9460	10500	11600	0.6	1.0	1.4
FFWP-015Z-TFC	ZS09KAE-TF5	4070	4620	5220	5870	6590	7380	7620	8500	9460	10500	11600	0.6	1.0	1.4
FFWP-015Z-TFD	ZS09KAE-TFD	4070	4620	5220	5870	6590	7380	7620	8500	9460	10500	11600	0.6	1.0	1.4
FFWP-017Z-CFV	ZS11KAE-PFV	4850	5510	6230	7010	7870	8810	9090	10100	11300	12500	13900	0.7	1.1	1.4
FFWP-017Z-TFC	ZS11KAE-TF5	4850	5510	6230	7010	7870	8810	9090	10100	11300	12500	13900	0.7	1.1	1.7
FFWP-017Z-TFD	ZS11KAE-TFD	4850	5510	6230	7010	7870	8810	9090	10100	11300	12500	13900	0.7	1.1	1.7
FFWP-020Z-CFV	ZS13KAE-PFV	5540	6290	7110	8010	8990	10100	10400	11600	12900	14300	15900	0.8	1.3	1.97
FFWP-020Z-TFC	ZS13KAE-TF5	5540	6290	7110	8010	8990	10100	10400	11600	12900	14300	15900	0.8	1.3	1.97
FFWP-020Z-TFD	ZS13KAE-TFD	5540	6290	7110	8010	8990	10100	10400	11600	12900	14300	15900	0.8	1.3	1.97
FFWP-021Z-TFC	ZS15K4E-TF5	6570	7440	8400	9450	10600	11900	12100	13500	15000	16700	18500	0.9	1.5	2.3
FFWP-021Z-TFD	ZS15K4E-TFD	6570	7440	8400	9450	10600	11900	12100	13500	15000	16700	18500	0.9	1.5	2.3
FFWP-022Z-CFV	ZS15KAE-PFV	6680	7590	8570	9650	10800	12100	12500	14000	15600	17300	19100	0.9	1.6	2.3
FFWP-022Z-TFC	ZS15KAE-TF5	6680	7590	8570	9650	10800	12100	12500	14000	15600	17300	19100	0.9	1.6	2.3
FFWP-022Z-TFD	ZS15KAE-TFD	6680	7590	8570	9650	10800	12100	12500	14000	15600	17300	19100	0.9	1.6	2.3
FFWP-030Z-CFV	ZS19KAE-PFV	7540	8560	9680	10900	12200	13700	14100	15800	17500	19500	21600	1.0	1.8	2.5
FFWP-030Z-TFC	ZS19KAE-TF5	7540	8560	9680	10900	12200	13700	14100	15800	17500	19500	21600	1.0	1.8	2.5
FFWP-030Z-TFD	ZS19KAE-TFD	7540	8560	9680	10900	12200	13700	14100	15800	17500	19500	21600	1.0	1.8	2.5
FFWP-032Z-CFV	ZS21KAE-PFV	10100	11500	13000	14600	16400	18400	19000	21200	23600	26200	29000	1.4	2.3	3.4
FFWP-032Z-TFC	ZS21KAE-TF5	10100	11500	13000	14600	16400	18400	19000	21200	23600	26200	29000	1.4	2.3	3.4
FFWP-032Z-TFD	ZS21KAE-TFD	10100	11500	13000	14600	16400	18400	19000	21200	23600	26200	29000	1.4	2.3	3.4
FFWP-040Z-CFV	ZS26KAE-PFV	11600	13200	14900	16800	18900	21100	21000	23500	26100	29000	32200	1.5	2.6	3.8
FFWP-040Z-TFC	ZS26KAE-TF5	11600	13200	14900	16800	18900	21100	21000	23500	26100	29000	32200	1.5	2.6	3.8
FFWP-040Z-TFD	ZS26KAE-TFD	11600	13200	14900	16800	18900	21100	21000	23500	26100	29000	32200	1.5	2.6	3.8
FFWP-042Z-CFV	ZS33KAE-PFV	14000	15800	17900	20200	22600	25300	26100	29200	32500	36100	40000	1.9	3.2	4.7
FFWP-042Z-TFC	ZS33KAE-TF5	14000	15800	17900	20200	22600	25300	26100	29200	32500	36100	40000	1.9	3.2	4.7
FFWP-042Z-TFD	ZS33KAE-TFD	14000	15800	17900	20200	22600	25300	26100	29200	32500	36100	40000	1.9	3.2	4.7
FFWP-050Z-CFV	ZS38K4E-PFV	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7
FFWP-050Z-TFC	ZS38K4E-TF5	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7
FFWP-050Z-TFD	ZS38K4E-TFD	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7
FFWP-050Z-TFE	ZS38K4E-TFE	16000	18100	20400	23000	25800	28800	30800	34300	38100	42300	47200	2.1	3.8	5.7

Capacities rated at 40°F return gas (65°F return gas for capacities in **bold**), 5°F subcooling

Superheat restrictions apply. See AE bulletin 4-1387 for full compressor operating envelope

Copeland to Copeland Cross Reference

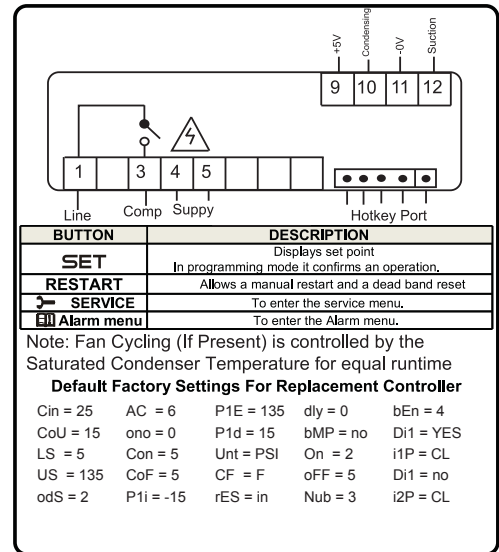
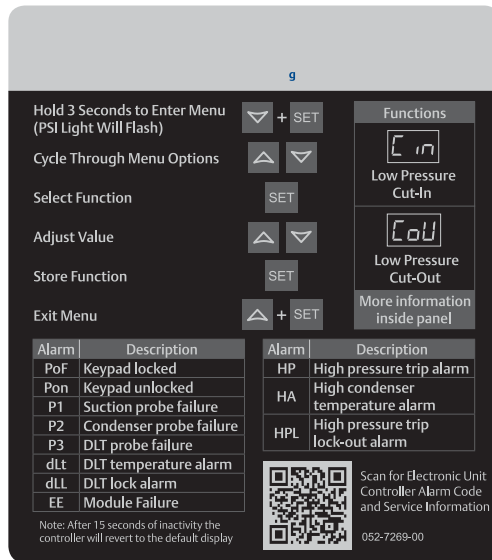
Old Model	New Model	Old Model	New Model	Old Model	New Model
DJAL-015Z-CFV-015	FFAL-015Z-CFV-072	DJAL-050Z-TFC-001	FFAL-050Z-TFC-071	FJAF-0108-CFV-052	M6KP-0106-CFV-072
DJAL-015Z-CFV-081	FFAL-015Z-CFV-072	DJAL-050Z-TFD-001	FFAL-050Z-TFD-071	FJAF-0108-CFV-072	M6KP-0106-CFV-072
DJAL-015Z-TFC-015	FFAL-015Z-TFC-072	DJAL-051Z-TFC-015	Contact AE	FJAF-0108-CFV-075	M6KP-0106-CFV-072
DJAL-015Z-TFC-072	FFAL-015Z-TFC-072	DJAL-051Z-TFC-020	Contact AE	FJAF-0108-CFV-076	M6KP-0106-CFV-072
DJAL-015Z-TFC-073	FFAL-015Z-TFC-072	DJAL-051Z-TFC-071	Contact AE	FJAF-0108-CFV-121	M6KP-0106-CFV-177
DJAL-015Z-TFC-081	FFAL-015Z-TFC-072	DJAL-051Z-TFC-072	Contact AE	FJAF-0108-CFV-160	M6KP-0106-CFV-177
DJAL-015Z-TFD-015	FFAL-015Z-TFD-072	DJAL-051Z-TFC-073	Contact AE	FJAF-0108-CFV-212	M6KP-0106-CFV-177
DJAL-015Z-TFD-073	FFAL-015Z-TFD-072	DJAL-051Z-TFC-081	Contact AE	FJAF-0108-TAC-020	M6KP-0106-TAC-072
DJAL-020Z-CFV-015	FFAL-020Z-CFV-071	DJAL-051Z-TFD-072	Contact AE	FJAF-0108-TAC-052	M6KP-0106-TAC-072
DJAL-020Z-CFV-081	FFAL-020Z-CFV-071	DJAL-051Z-TFD-081	Contact AE	FJAF-0110-CFV-021	M6KP-0116-CFV-072
DJAL-020Z-TFC-015	FFAL-020Z-TFC-071	DJAL-A60Z-TFC-071	Contact AE	FJAF-0125-CFV-020	M6KP-0112-CFV-072
DJAL-020Z-TFC-072	FFAL-020Z-TFC-071	DJAL-A60Z-TFD-071	Contact AE	FJAF-0125-CFV-072	M6KP-0112-CFV-072
DJAL-020Z-TFC-081	FFAL-020Z-TFC-071	F3AH-B100-CAV-072	Obsolete R22 Unit	FJAF-0125-CFV-075	M6KP-0112-CFV-072
DJAL-020Z-TFD-020	FFAL-020Z-TFD-071	F3AH-B100-CFA-020	Obsolete R22 Unit	FJAF-0125-CFV-077	M6KP-0112-CFV-072
DJAL-022Z-CFV-001	FFAL-022Z-CFV-071	F3AH-B105-CFV-020	Obsolete R22 Unit	FJAF-0125-TAC-020	M6KP-0112-TAC-072
DJAL-022Z-CFV-081	FFAL-022Z-CFV-071	F3AH-B105-TAC-020	Obsolete R22 Unit	FJAF-0125-TAC-060	M6KP-0112-TAC-072
DJAL-022Z-TFC-020	FFAL-022Z-TFC-071	F3AH-N100-CAV-199	Obsolete R22 Unit	FJAF-0125-TAC-061	M6KP-0112-TAC-072
DJAL-022Z-TFC-072	FFAL-022Z-TFC-071	F3AH-N100-CFA-199	Obsolete R22 Unit	FJAF-0125-TAC-072	M6KP-0112-TAC-072
DJAL-022Z-TFC-073	FFAL-022Z-TFC-071	F3AH-N110-CFV-199	Obsolete R22 Unit	FJAF-0125-TAC-075	M6KP-0112-TAC-072
DJAL-022Z-TFC-081	FFAL-022Z-TFC-071	F3AH-N120-CFV-199	Obsolete R22 Unit	FJAF-0125-TAC-076	M6KP-0112-TAC-072
DJAL-022Z-TFD-020	FFAL-022Z-TFD-071	F3AH-N125-CFV-199	Obsolete R22 Unit	FJAF-0125-TAC-077	M6KP-0112-TAC-072
DJAL-025Z-CFV-001	Contact AE	F3AH-N125-TAC-199	Obsolete R22 Unit	FJAF-0126-CFV-020	M6KP-0127-CFV-072
DJAL-025Z-TFC-001	Contact AE	F3WH-B105-CFV-020	Obsolete R22 Unit	FJAF-0126-TAC-020	M6KP-0127-TAC-072
DJAL-025Z-TFD-001	Contact AE	F3WH-B105-TAC-020	Obsolete R22 Unit	FJAF-0126-TAC-060	M6KP-0127-TAC-072
DJAL-026Z-CFV-081	FFAL-026Z-CFV-071	FBAH-C100-CFV-020	Obsolete R22 Unit	FJAF-0126-TAC-061	M6KP-0127-TAC-072
DJAL-026Z-TFC-015	FFAL-026Z-TFC-071	FEAF-0103-CAV-060	M6RP-H098-CAV-072	FJAF-0130-CFV-072	M6KP-0142-CFV-072
DJAL-026Z-TFC-072	FFAL-026Z-TFC-071	FEAF-0103-CAV-140	M6RP-H098-CAV-072	FJAF-0130-CFV-075	M6KP-0142-CFV-072
DJAL-026Z-TFC-073	FFAL-026Z-TFC-071	FEAF-A100-CFV-140	M6RP-H114-CFV-072	FJAF-0130-CFV-076	M6KP-0142-CFV-072
DJAL-026Z-TFC-081	FFAL-026Z-TFC-071	FEAM-0108-CFA-160	Obsolete	FJAF-0130-CFV-077	M6KP-0142-CFV-072
DJAL-026Z-TFD-020	FFAL-026Z-TFD-071	FEAM-0108-CFV-160	M6RP-H114-CFV-072	FJAF-0130-CFV-0H2	M6KP-0142-CFV-072
DJAL-030Z-CFV-001	FFAL-030Z-CFV-071	FEAM-0108-CFV-161	M6RP-H114-CFV-072	FJAF-0130-CFV-212	M6KP-0142-CFV-177
DJAL-030Z-CFV-015	FFAL-030Z-CFV-071	FEAM-A100-IAV-160	M6RP-H098-CAV-072	FJAF-0130-CFV-272	M6KP-0142-CFV-177
DJAL-030Z-CFV-081	FFAL-030Z-CFV-071	FEAM-A130-CFV-160	M6RP-H126-CFV-072	FJAF-0130-TAC-076	M6KP-0142-TAC-072
DJAL-030Z-TFC-001	FFAL-030Z-TFC-071	FJAF-0100-CAV-020	M6KP-0095-CFV-072	FJAF-0130-TAC-077	M6KP-0142-TAC-072
DJAL-030Z-TFC-015	FFAL-030Z-TFC-071	FJAF-0100-CAV-040	M6KP-0095-CFV-072	FJAF-0130-TAC-0H2	M6KP-0142-TAC-072
DJAL-030Z-TFC-073	FFAL-030Z-TFC-071	FJAF-0100-CAV-060	M6KP-0095-CFV-072	FJAF-B100-CFV-021	M6KP-0106-CFV-072
DJAL-030Z-TFC-081	FFAL-030Z-TFC-071	FJAF-0100-CAV-061	M6KP-0095-CFV-072	FJAF-B100-CFV-115	M6KP-0106-CFV-072
DJAL-030Z-TFD-001	FFAL-030Z-TFD-071	FJAF-0100-CAV-272	M6KP-0095-CFV-272	FJAF-B100-CFV-121	M6KP-0106-CFV-177
DJAL-030Z-TFD-020	FFAL-030Z-TFD-071	FJAF-0100-IAV-140	M6KP-0092-CAV-272	FJAF-B100-CFV-210	M6KP-0106-CFV-272
DJAL-030Z-TFD-073	FFAL-030Z-TFD-071	FJAF-0100-IAV-212	M6KP-0092-CAV-177	FJAF-B100-CFV-212	M6KP-0106-CFV-177
DJAL-040Z-CFV-001	FFAL-040Z-CFV-071	FJAF-0106-CAV-017	M6KP-0102-CAV-072	FJAF-B100-CFV-221	M6KP-0106-CFV-177
DJAL-040Z-TFC-001	FFAL-040Z-TFC-071	FJAF-0106-CAV-020	M6KP-0102-CAV-072	FJAF-B100-CFV-240	M6KP-0106-CFV-177
DJAL-041Z-CFV-020	Contact AE	FJAF-0106-CAV-022	M6KP-0102-CAV-072	FJAF-B100-CFV-245	M6KP-0106-CFV-272
DJAL-041Z-CFV-072	Contact AE	FJAF-0106-CAV-0H2	M6KP-0102-CAV-072	FJAF-E100-CAV-020	M6KP-0095-CFV-072
DJAL-041Z-CFV-081	Contact AE	FJAF-0106-CAV-0H3	M6KP-0102-CAV-072	FJAF-E100-CAV-040	M6KP-0095-CFV-072
DJAL-041Z-TFC-020	Contact AE	FJAF-0106-CAV-160	M6KP-0102-CAV-177	FJAF-E100-CAV-041	M6KP-0095-CFV-072
DJAL-041Z-TFC-072	Contact AE	FJAF-0106-CAV-208	M6KP-0102-CAV-179	FJAF-E108-CFV-020	M6KP-0106-CFV-177
DJAL-041Z-TFC-081	Contact AE	FJAF-0108-CFV-020	M6KP-0106-CFV-072	FJAF-E108-CFV-160	M6KP-0106-CFV-177
DJAL-041Z-TFD-020	Contact AE	FJAF-0108-CFV-021	M6KP-0106-CFV-072	FJAF-E110-CFV-021	M6KP-0106-CFV-072
DJAL-041Z-TFD-081	Contact AE	FJAF-0108-CFV-040	M6KP-0106-CFV-072	FJAF-E110-CFV-022	M6KP-0106-CFV-072

Copeland to Copeland Cross Reference

Old Model	New Model	Old Model	New Model	Old Model	New Model
FJAF-E110-CFV-040	M6KP-0106-CFV-072	FJAM-A60Z-TFC-020	Contact AE	FTAH-A15Z-CFV-020	Contact AE
FJAF-E110-CFV-121	M6KP-0106-CFV-072	FJAM-A60Z-TFC-072	Contact AE	FTAH-A15Z-CFV-072	Contact AE
FJAF-E110-CFV-212	M6KP-0106-CFV-177	FJAM-A60Z-TFC-073	Contact AE	FTAH-A15Z-TFC-020	Contact AE
FJAL-0105-CFV-020	M6KL-0123-CFV-072	FJAM-A60Z-TFD-015	Contact AE	FTAH-A15Z-TFD-020	Contact AE
FJAL-0105-CFV-040	M6KL-0123-CFV-072	FJCL-B100-CFV-212	Contact AE	FTAH-A15Z-TFD-072	Contact AE
FJAL-0105-CFV-044	M6KL-0123-CFV-072	FJCL-B100-CFV-215	Contact AE	FTAH-A20Z-CFV-020	Contact AE
FJAL-0105-CFV-072	M6KL-0123-CFV-072	FJEF-0100-CAV-160	M6BP-0096-CFV-177	FTAH-A20Z-CFV-071	Contact AE
FJAL-0105-CFV-075	M6KL-0123-CFV-072	FJEF-0100-CAV-260	M6BP-0096-CFV-177	FTAH-A20Z-CFV-072	Contact AE
FJAL-0105-CFV-077	M6KL-0123-CFV-072	FJEF-0100-CFA-121	M6BP-0092-CFA-177	FTAH-A20Z-CFV-073	Contact AE
FJAM-A20Z-CFV-072	Contact AE	FJEF-0108-CFV-060	M6BP-0106-CFV-272	FTAH-A20Z-TFC-020	Contact AE
FJAM-A20Z-CFV-073	Contact AE	FJEF-0108-CFV-121	M6BP-0106-CFV-177	FTAH-A20Z-TFC-071	Contact AE
FJAM-A20Z-TFC-015	Contact AE	FJEF-0108-CFV-212	M6BP-0106-CFV-177	FTAH-A20Z-TFD-015	Contact AE
FJAM-A20Z-TFC-073	Contact AE	FJEL-0105-CFV-060	M6BL-0123-CFV-072	FTAH-A20Z-TFD-020	Contact AE
FJAM-A20Z-TFD-015	Contact AE	FJEL-0105-CFV-160	M6BL-0123-CFV-177	FTAH-A25Z-CFV-015	Contact AE
FJAM-A25Z-CFV-020	Contact AE	FJWF-C106-CAV-020	M6WF-0106-CAV-020	FTAH-A25Z-CFV-072	Contact AE
FJAM-A25Z-CFV-071	Contact AE	FJWF-C125-CFV-020	M6WF-0125-CFV-020	FTAH-A25Z-CFV-078	Contact AE
FJAM-A25Z-CFV-072	Contact AE	FJWF-C125-TAC-020	M6WF-0125-TAC-020	FTAH-A25Z-TFC-020	Contact AE
FJAM-A25Z-CFV-073	Contact AE	FJWF-C125-TAC-060	M6WF-0125-TAC-020	FTAH-A25Z-TFC-071	Contact AE
FJAM-A25Z-TFC-015	Contact AE	FJWF-C126-CFV-020	M6WF-0126-CFV-020	FTAH-A25Z-TFC-072	Contact AE
FJAM-A25Z-TFC-020	Contact AE	FJWF-C126-CFV-276	M6WF-0126-CFV-020	FTAH-A30Z-CFV-015	Contact AE
FJAM-A25Z-TFC-071	Contact AE	FJWF-C126-TAC-020	M6WF-0126-TAC-020	FTAH-A30Z-CFV-073	Contact AE
FJAM-A25Z-TFC-073	Contact AE	FJWF-C126-TAC-060	M6WF-0126-TAC-020	FTAH-A30Z-TFC-015	Contact AE
FJAM-A25Z-TFD-015	Contact AE	FJWL-C105-CFV-020	M6WL-0105-CFV-020	FTAH-A30Z-TFC-020	Contact AE
FJAM-A30Z-CFV-020	Contact AE	FJWL-C105-TAC-020	M6WL-0105-TAC-020	FTAH-A30Z-TFD-015	Contact AE
FJAM-A30Z-CFV-071	Contact AE	FNAR-070Z-TFC-001	Contact AE	FTAH-A30Z-TFD-020	Contact AE
FJAM-A30Z-CFV-072	Contact AE	FNAR-070Z-TFD-001	Contact AE	FTAH-A35Z-CFV-015	Contact AE
FJAM-A30Z-TFC-020	Contact AE	FNAR-070Z-TFE-001	Contact AE	FTAH-A35Z-CFV-020	Contact AE
FJAM-A30Z-TFC-071	Contact AE	FNAR-080Z-TFC-001	Contact AE	FTAH-A35Z-CFV-073	Contact AE
FJAM-A30Z-TFC-072	Contact AE	FNAR-080Z-TFD-001	Contact AE	FTAH-A35Z-TFC-015	Contact AE
FJAM-A30Z-TFC-073	Contact AE	FNAR-080Z-TFE-001	Contact AE	FTAH-A35Z-TFC-020	Contact AE
FJAM-A35Z-TFC-072	Contact AE	FNAR-091Z-TFC-001	Contact AE	FTAH-A35Z-TFD-015	Contact AE
FJAM-A40Z-CFV-015	Contact AE	FNAR-091Z-TFD-001	Contact AE	FTAH-A35Z-TFD-020	Contact AE
FJAM-A40Z-CFV-072	Contact AE	FNAR-101Z-TFC-001	Contact AE	FTAH-A45Z-TFC-015	Contact AE
FJAM-A40Z-TFC-015	Contact AE	FNAR-101Z-TFD-001	Contact AE	FTAH-A45Z-TFC-020	Contact AE
FJAM-A40Z-TFC-072	Contact AE	FNAR-101Z-TFE-001	Contact AE	FTAH-A45Z-TFC-071	Contact AE
FJAM-A40Z-TFC-073	Contact AE	FPAN-070Z-TFC-071	FFAM-071Z-TFC-071	FTAH-A45Z-TFC-073	Contact AE
FJAM-A40Z-TFD-015	Contact AE	FPAN-070Z-TFD-071	FFAM-071Z-TFD-071	FTAH-A45Z-TFD-020	Contact AE
FJAM-A50Z-CFV-015	Contact AE	FPAN-070Z-TFD-073	FFAM-071Z-TFD-071	FTAH-A45Z-TFD-073	Contact AE
FJAM-A50Z-CFV-020	Contact AE	FPAN-080Z-TFC-071	FFAM-081Z-TFC-071	FTAH-A50Z-TFC-073	Contact AE
FJAM-A50Z-CFV-072	Contact AE	FPAN-080Z-TFD-071	FFAM-081Z-TFD-071	FTAH-A50Z-TFD-015	Contact AE
FJAM-A50Z-CFV-073	Contact AE	FPAN-080Z-TFD-073	FFAM-081Z-TFD-071	FTAH-C100-CFA-121	M7KH-0086-CFA-177
FJAM-A50Z-TFC-015	Contact AE	FPAN-091Z-TFC-071	FFAM-091Z-TFC-071	FTAH-C100-CFV-020	M7KH-0086-CFV-072
FJAM-A50Z-TFC-020	Contact AE	FPAN-091Z-TFD-071	FFAM-091Z-TFD-071	FTAH-C100-CFV-117	M7KH-0086-CFV-179
FJAM-A50Z-TFC-072	Contact AE	FPAN-101Z-TFC-071	FFAM-101Z-TFC-071	FTAH-C100-CFV-212	M7KH-0086-CFV-177
FJAM-A50Z-TFC-073	Contact AE	FPAN-101Z-TFD-071	FFAM-101Z-TFD-071	FTAH-C100-CFV-240	M7KH-0086-CFV-272
FJAM-A50Z-TFD-015	Contact AE	FPAN-101Z-TFD-073	FFAM-101Z-TFD-071		
FJAM-A50Z-TFD-020	Contact AE	FTAH-A13Z-CFV-020	Contact AE		
FJAM-A50Z-TFD-073	Contact AE	FTAH-A13Z-TFC-020	Contact AE		
FJAM-A50Z-TFE-015	Contact AE	FTAH-A13Z-TFC-072	Contact AE		
FJAM-A60Z-TFC-015	Contact AE	FTAH-A13Z-TFD-072	Contact AE		

Electronic Unit Controller (EUC)

Part #	Description
943-0152-00	115V Electronic Unit Controller
943-0153-00	230V Electronic Unit Controller
943-0154-00	115V Electronic Unit Controller with Fan Cycling
943-0155-00	230V Electronic Unit Controller with Fan Cycling
929-0114-00	Electronic Unit Controller Suction Pressure Transducer (150 PSIA)
929-0113-00	DLT Sensor Kit



Hood Selection

Copeland™ Model	Flex-Line Hood
FFAP-015Z	505-7066-01
FFAP-017Z	505-7066-01
FFAP-020Z	505-7066-02
FFAP-022Z	505-7066-02
FFAP-030Z	505-7066-02
FFAP-032Z	505-7066-02
FFAP-040Z	505-7066-03
FFAP-042Z	505-7066-03
FFAP-050Z	505-7066-03
FPAK-010Z	505-7066-01
FPAK-012Z	505-7066-01
FPAK-013Z	505-7066-01
FPAK-015Z	505-7066-01
FPAK-020Z	505-7066-02
FPAK-039Z	505-7066-02



