

*Copeland*<sup>®</sup>

---

COPELAND SCROLL<sup>™</sup> COMPRESSORS 60HZ

# THE INDUSTRY BREAKTHROUGH



**EMERSON**<sup>™</sup>  
Climate Technologies



**PRODUCT DESCRIPTION**

Until a few years ago, the problems of complex part geometries and precise tolerance requirements made scroll technology impossible to manufacture in high volumes at low costs. But after a ten-year effort, Copeland Corporation developed design and manufacturing technologies that solved these problems.

Copeland achieved two major breakthroughs: the Copeland Scroll™ and the exclusive manufacturing process required to produce this compliant scroll compressor.

Compliance refers to the method in which the two scroll members interact to achieve high efficiency and durability simultaneously. Copeland's unique and patented approach, achieving both radial and axial compliance, has several advantages:

- Continuous flank contact, maintained by centrifugal force, minimizes gas leakage and maximizes efficiency.
- Radial compliance allows the scroll members to separate in the presence of liquid refrigerant or debris, eliminating high stress in the members and substantially improving durability of the compressor.
- Axial compliance allows the scroll tips to remain in continuous contact in all normal operating conditions, ensuring minimal leakage . . . without the use of tip seals. Copeland Scroll performance will not degrade over time because there are no seals to wear and cause gas leakage. In fact, over time, the compressor's performance improves as the scrolls wear-in.

Because of its compliant feature, Copeland's scroll has unprecedented liquid-handling capability. No accumulator or crankcase heater is required in most system applications. In addition, it is designed to start under any system load. This feature eliminates the need for start kits.

Combined, these characteristics simplify system design and increase system reliability.

Model selections, electrical choices and operating conditions can be found in the pages that follow. This 60 hertz book should better assist you with your final product selection.

Copeland Corporation has a reputation for quality and technology leadership that has been earned through years of performance. Copeland has more than 5,000 employees around the world working to ensure the reliability of its products. At 20 manufacturing facilities in eleven countries, Copeland goes about its only business – making compressors. These efforts assure our customers they are purchasing the most advanced compressor products that are backed by Copeland quality.

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**Copeland is the recognized leader in the development of advanced compressor technology.**

## FEATURES

- Ultra High Efficiency
- High Heat Pump Capacity Due to Nearly 100% Volumetric Efficiency
- Wide Selection Range
  - 60 Hertz 18100 to 81500 BTUH
  - 4560 to 20500 KCALH
  - 5300 to 23900 WATTS
- R22 and R407C Refrigerants
- Fewer Moving Parts
- Rugged Design and Proven Durability
- Compliance Feature Offers Unprecedented Liquid Handling Capability
- Crankcase Heater or Accumulator Not Required in Most Applications
- Performance Improves as Scroll Sets Wear-In
- Five Decibels Quieter than Piston Compressors
- Very Low Gas Pulsation
- Straight Suction Tube Allows For Low Profile Application
- Molded Plug Terminal Connector Option
- Unloaded Start Feature Requires No Start Capacitors
- Internal Motor Protection with Start Winding Protection on Single Phase Models
- Full Maximum Load Rundown Capability
- High Volume Production with Over Thirteen Years of Scroll Manufacturing Experience
- Nomenclature Reflects Nominal 60 Hertz Capacity
- Third Generation ZR3 Scrolls Break 20.0 Cheer Barrier
- Award Winning Design
- Tandem Availability

## ZR COPELAND SCROLL™ STORY

In 1987 Copeland responded to the needs of manufacturers and consumers with the introduction of the ZR1 Copeland Scroll compressor. Today, worldwide installations total nearly ten million systems. And the reliability and performance standards which have been established by the Copeland Scroll compressor have yet to be matched by any other manufacturer of compressor technology in production today.

In 1991 Copeland launched the ZR2 compressor – offering a higher EER and expanding scroll to 4-5 horsepower. The ZR2 compressor raised performance levels to 11.5 EER at ARI and 19.5 EER at CHEER while offering even higher levels of reliability. Very rapidly the ZR2 had become the compressor of choice by virtually every manufacturer of high efficiency systems.

Now, Copeland has introduced the next generation of scroll technology – the ZR3 compressor. This model incorporates the latest engineering developments in scroll form optimization and porting. As a result the ZR3 becomes the first compressor to break through the 20.0 CHEER rating barrier, offering up to twelve percent higher efficiency than advanced reciprocating compressors on the market today. This new performance plateau was established while maintaining the high standards of durability and liquid handling inherent in Copeland Scroll technology. The ZR3 product line includes 1½ to 4 ton models designed for both residential air conditioning and heat pump applications.

The ZRKC is a new family of 3¾ to 6¾ ton Copeland Scroll compressors, designed specifically for 10.0 SEER unitary applications and 9.0 EER commercial applications.

Scroll technology can be adapted easily and modified to fit any desired operating condition. By redesigning motors and making patented changes in the performance characteristics of the scroll sets, Copeland can adapt the revolutionary Copeland Scroll compressor to meet any market need.

By broadening the scroll product offering, Copeland now brings the advantages of scroll technology – higher efficiency, superior sound performance and unmatched reliability potential to more models.

Each model employs the axial and radial compliance for which Copeland Scroll is famous, making it the most efficient hermetic compressor in its class.

Copeland's scroll technology has proven to be the ultimate technology for today's compressor designs, as well as those of the future. As the world leader in scroll technology, you can expect Copeland to continue to advance state-of-the-art products to meet the industry's ongoing requirements for higher efficiency systems.

60 HERTZ

PERFORMANCE NOMINALS

R22

SINGLE PHASE					230-1-60 TEST VOLTAGE				
MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZR18K3-PFV	A	18200	4590	5330	1730	7.7	10.5	2.7	3.1
	B	18100	4560	5300	1730	7.7	10.5	2.6	3.1
	C	21100	5320	6180	1160	5.3	18.2	4.6	5.3
ZR22K3-PFV	A	22600	5700	6620	2090	9.0	10.8	2.7	3.2
	B	22400	5640	6560	2090	9.0	10.7	2.7	3.1
	C	26500	6680	7760	1430	6.3	18.5	4.7	5.4
ZR24K3-PFV	A	24700	6220	7240	2230	10.0	11.1	2.8	3.2
	B	24500	6170	7180	2230	10.0	11.0	2.8	3.2
	C	28900	7280	8470	1540	7.0	18.8	4.7	5.5
ZR26K3-PFV	A	26800	6750	7850	2440	11.1	11.0	2.8	3.2
	B	26600	6700	7790	2440	11.1	10.9	2.7	3.2
	C	31300	7890	9170	1690	8.0	18.5	4.7	5.4
ZR28K3-PFV	A	28700	7230	8410	2550	11.5	11.3	2.8	3.3
	B	28500	7180	8350	2560	11.5	11.1	2.8	3.3
	C	33700	8490	9870	1780	8.1	18.9	4.8	5.5
ZR30K3-PFV	A	31300	7890	9170	2790	12.6	11.2	2.8	3.3
	B	31100	7840	9110	2800	12.6	11.1	2.8	3.3
	C	36800	9270	10800	1920	8.8	19.2	4.8	5.6
ZR32K3-PFV	A	32900	8290	9640	2950	13.6	11.2	2.8	3.3
	B	32600	8220	9550	2960	13.6	11.0	2.8	3.2
	C	38400	9680	11300	2040	9.7	18.8	4.7	5.5
ZR34K3-PFV	A	34300	8640	10000	3020	13.7	11.4	2.9	3.3
	B	34000	8570	9960	3030	13.7	11.2	2.8	3.3
	C	40100	10100	11700	2090	9.7	19.2	4.8	5.6
ZR36K3-PFV	A	37200	9370	10900	3280	14.9	11.3	2.9	3.3
	B	36900	9300	10800	3290	14.9	11.2	2.8	3.3
	C	43400	10900	12700	2260	10.5	19.2	4.8	5.6
ZR40K3-PFV	A	40900	10300	12000	3620	16.5	11.3	2.8	3.3
	B	40600	10200	11900	3630	16.5	11.2	2.8	3.3
	C	47800	12000	14000	2490	11.9	19.2	4.8	5.6
ZR42K3-PFV	A	43100	10900	12600	3780	17.2	11.4	2.9	3.3
	B	42800	10800	12500	3790	17.2	11.3	2.8	3.3
	C	50500	12700	14800	2630	12.4	19.2	4.8	5.6

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See expanded performance data on pages 28 to 62.

See full operating range on page 64.

Production compressors to meet above nominal performance values within ±5 percent.

60 HERTZ

PERFORMANCE NOMINALS

R407C

SINGLE PHASE					230-1-60 TEST VOLTAGE				
MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZR18K3E-PFV	A	18300	4610	5360	1800	8.1	10.2	2.6	3.0
	B	18200	4590	5330	1800	8.1	10.1	2.6	3.0
	C	22500	5670	6590	1200	5.4	18.8	4.7	5.5
ZR22K3E-PFV	A	22400	5640	6560	2140	9.6	10.5	2.6	3.1
	B	22200	5590	6500	2140	9.6	10.4	2.6	3.0
	C	27400	6900	8030	1430	6.5	19.2	4.8	5.6
ZR24K3E-PFV	A	24800	6250	7270	2370	10.7	10.5	2.6	3.1
	B	24600	6200	7210	2370	10.7	10.4	2.6	3.0
	C	30400	7660	8910	1580	7.2	19.2	4.8	5.6
ZR26K3E-PFV	A	26700	6730	7820	2490	11.2	10.7	2.7	3.1
	B	26500	6680	7760	2490	11.2	10.6	2.7	3.1
	C	32800	8270	9610	1690	7.7	19.4	4.9	5.7
ZR28K3E-PFV	A	28900	7280	8470	2720	12.2	10.6	2.7	3.1
	B	28700	7230	8410	2730	12.2	10.5	2.6	3.1
	C	35500	8950	10400	1830	8.4	19.4	4.9	5.7
ZR30K3E-PFV	A	31000	7810	9080	2880	13.0	10.8	2.7	3.2
	B	30800	7760	9020	2890	13.0	10.7	2.7	3.1
	C	38100	9600	11200	1960	9.0	19.4	4.9	5.7
ZR32K3E-PFV	A	32600	8220	9550	3020	13.6	10.8	2.7	3.2
	B	32300	8140	9460	3030	13.6	10.7	2.7	3.1
	C	39500	9950	11600	2030	9.4	19.5	4.9	5.7
ZR34K3E-PFV	A	34600	8720	10100	3200	14.4	10.8	2.7	3.2
	B	34300	8640	10000	3210	14.4	10.7	2.7	3.1
	C	41900	10600	12300	2150	9.9	19.5	4.9	5.7
ZR36K3E-PFV	A	37200	9370	10900	3410	15.6	10.9	2.7	3.2
	B	36900	9300	10800	3420	15.6	10.8	2.7	3.2
	C	45500	11500	13300	2320	10.8	19.6	5.0	5.7
ZR40K3E-PFV	A	40800	10300	12000	3730	17.2	10.9	2.8	3.2
	B	40500	10200	11900	3740	17.2	10.8	2.7	3.2
	C	49700	12500	14600	2540	12.2	19.6	4.9	5.7
ZR42K3E-PFV	A	42800	10800	12500	3930	18.4	10.9	2.7	3.2
	B	42500	10700	12500	3940	18.4	10.8	2.7	3.2
	C	52200	13200	15300	2660	13.1	19.6	5.0	5.8

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See expanded performance data on pages 28 to 62.

See full operating range on page 64.

Production compressors to meet above nominal performance values within ±5 percent.

60 HERTZ

PERFORMANCE NOMINALS

R22

SINGLE PHASE					230-1-60 TEST VOLTAGE				
MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZR45KC-PFV	A	46400	11700	13600	4130	20.9	11.2	2.8	3.3
	B	46000	11600	13500	4140	20.9	11.1	2.8	3.3
	C	54000	13600	15800	2960	16.4	18.2	4.6	5.3
ZR47KC-PFV	A	47900	12100	14000	4260	21.1	11.2	2.8	3.3
	B	47500	12000	13900	4270	21.1	11.1	2.8	3.3
	C	55600	14000	16300	3090	16.5	18.0	4.5	5.3
ZR48KC-PFV	A	49900	12600	14600	4390	21.5	11.4	2.9	3.3
	B	49500	12500	14500	4400	21.5	11.3	2.8	3.3
	C	58000	14600	17000	3220	18.0	18.0	4.5	5.3
ZR54KC-PFV	A	55400	14000	16200	4990	25.0	11.1	2.8	3.2
	B	55000	13900	16100	5000	25.0	11.0	2.8	3.2
	C	64500	16300	18900	3700	20.5	17.4	4.4	5.1
ZR57KC-PFV	A	58000	14600	17000	5190	27.0	11.2	2.8	3.3
	B	57500	14500	16800	5200	27.0	11.1	2.8	3.2
	C	67500	17000	19800	3840	22.1	17.6	4.4	5.2
ZR61KC-PFV	A	62500	15800	18300	5500	26.8	11.4	2.9	3.3
	B	62000	15600	18200	5510	26.8	11.3	2.8	3.3
	C	72500	18300	21200	4100	21.2	17.7	4.5	5.2

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See expanded performance data on pages 28 to 62.

See full operating range on page 64.

Production compressors to meet above nominal performance values within ±5 percent.



60 HERTZ

PERFORMANCE NOMINALS

R407C

SINGLE PHASE				230-1-60 TEST VOLTAGE					
MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZR48KCE-PFV	A	50400	12700	14800	4690	23.0	10.7	2.7	3.2
	B	50000	12600	14700	4700	23.0	10.6	2.7	3.1
	C	61200	15400	17900	3320	18.6	18.4	4.6	5.4

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See expanded performance data on pages 28 to 62.

See full operating range on page 64.

Production compressors to meet above nominal performance values within ±5 percent.

60 HERTZ

PERFORMANCE NOMINALS

R22

THREE PHASE					230-3-60 (TF5) 460-3-60 (TFD) TEST VOLTAGE 575-3-60 (TFE)				
MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES*	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZR22K3-TF5/D	A	22300	5620	6530	2090	6.4/3.2/-	10.7	2.7	3.1
	B	22100	5570	6480	2090	6.4/3.2/-	10.6	2.7	3.1
	C	26200	6600	7680	1390	5.0/2.5/-	18.8	4.7	5.5
ZR24K3-TF5/D	A	25000	6300	7330	2310	7.0/3.5/-	10.8	2.7	3.2
	B	24800	6250	7270	2310	7.0/3.5/-	10.7	2.7	3.1
	C	29400	7410	8610	1540	5.4/2.7/-	19.1	4.8	5.6
ZR26K3-TF5/D	A	26400	6650	7740	2430	7.6/3.8/-	10.9	2.7	3.2
	B	26200	6600	7680	2430	7.6/3.8/-	10.8	2.7	3.2
	C	31300	7890	9170	1630	5.8/2.9/-	19.2	4.8	5.6
ZR28K3-TF5/D	A	29100	7330	8530	2620	7.9/4.0/-	11.1	2.8	3.3
	B	28900	7280	8470	2630	7.9/4.0/-	11.0	2.8	3.2
	C	34200	8620	10000	1780	6.3/3.2/-	19.2	4.8	5.6
ZR30K3-TF5/D	A	31300	7890	9170	2820	8.3/4.2/-	11.1	2.8	3.3
	B	31100	7840	9110	2830	8.3/4.2/-	11.0	2.8	3.2
	C	36800	9270	10800	1920	6.5/3.3/-	19.2	4.8	5.6
ZR32K3-TF5/D/E	A	32900	8290	9640	2900	8.7/4.4/3.5	11.3	2.9	3.3
	B	32600	8220	9550	2910	8.7/4.4/3.5	11.2	2.8	3.3
	C	38400	9680	11300	2000	6.9/3.5/2.8	19.2	4.8	5.7
ZR34K3-TF5/D/E	A	34300	8640	10000	2960	9.1/4.6/3.6	11.6	2.9	3.4
	B	34000	8570	9960	2970	9.1/4.6/3.6	11.4	2.9	3.4
	C	40100	10100	11700	2050	7.2/3.6/2.9	19.6	4.9	5.7
ZR36K3-TF5/D/E	A	37200	9370	10900	3240	9.7/4.9/3.9	11.5	2.9	3.4
	B	36900	9300	10800	3250	9.7/4.9/3.9	11.4	2.9	3.3
	C	43400	10900	12700	2210	7.6/3.8/3.0	19.6	4.9	5.7
ZR40K3-TF5/D/E	A	40900	10300	12000	3550	10.7/5.4/4.3	11.5	2.9	3.4
	B	40600	10200	11900	3560	10.7/5.4/4.3	11.4	2.9	3.3
	C	47800	12000	14000	2440	8.4/4.2/3.4	19.6	4.9	5.7
ZR42K3-TF5/D/E	A	43100	10900	12600	3740	11.1/5.6/4.4	11.5	2.9	3.4
	B	42800	10800	12500	3750	11.1/5.6/4.4	11.4	2.9	3.3
	C	50500	12700	14800	2550	8.6/4.3/3.4	19.8	5.0	5.8

\* Ampere values shown are at 230 volts/460 volts/575 volts.

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See expanded performance data on pages 28 to 62.

See full operating range on page 64.

Production compressors to meet above nominal performance values within ±5 percent.

60 HERTZ

PERFORMANCE NOMINALS

R407C

THREE PHASE					230-3-60 (TF5) 460-3-60 (TFD) TEST VOLTAGE 575-3-60 (TFE)				
MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES*	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZR22K3E-TF5/D	A	22500	5670	6590	2220	6.8/3.4/-	10.1	2.6	3.0
	B	22300	5620	6530	2220	6.8/3.4/-	10.0	2.5	2.9
	C	27600	6960	8090	1440	5.2/2.6/-	19.2	4.8	5.6
ZR24K3E-TF5/D	A	24900	6270	7300	2310	7.2/3.6/-	10.8	2.7	3.2
	B	24700	6220	7240	2310	7.2/3.6/-	10.7	2.7	3.1
	C	30400	7660	8910	1550	5.4/2.7/-	19.6	4.9	5.7
ZR26K3E-TF5/D	A	26600	6700	7790	2470	7.3/3.7/-	10.8	2.7	3.2
	B	26400	6650	7740	2470	7.3/3.7/-	10.7	2.7	3.1
	C	32400	8160	9490	1650	5.6/2.8/-	19.6	4.9	5.8
ZR28K3E-TF5/D	A	29100	7330	8530	2640	8.1/4.1/-	11.0	2.8	3.2
	B	28900	7280	8470	2650	8.1/4.1/-	10.9	2.7	3.2
	C	35200	8870	10300	1760	6.2/3.1/-	20.0	5.0	5.9
ZR30K3E-TF5/D	A	31000	7810	9080	2870	8.8/4.4/-	10.8	2.7	3.2
	B	30800	7760	9020	2880	8.8/4.4/-	10.7	2.7	3.1
	C	37500	9450	11000	1900	6.7/3.4/-	19.7	5.0	5.8
ZR32K3E-TF5/D/E	A	32600	8220	9550	2980	9.1/4.6/3.6	10.9	2.8	3.2
	B	32300	8140	9460	2990	9.1/4.6/3.6	10.8	2.7	3.2
	C	39800	10000	11700	2000	7.0/3.5/2.8	19.9	5.0	5.9
ZR34K3E-TF5/D/E	A	35100	8850	10300	3150	9.6/4.8/3.8	11.1	2.8	3.3
	B	34800	8770	10200	3160	9.6/4.8/3.8	11.0	2.8	3.2
	C	42800	10800	12500	2120	7.4/3.7/3.0	20.2	5.1	5.9
ZR36K3E-TF5/D/E	A	37100	9350	10900	3330	10.0/5.0/4.0	11.1	2.8	3.3
	B	36800	9270	10800	3340	10.0/5.0/4.0	11.0	2.8	3.2
	C	45300	11400	13300	2240	7.6/3.8/3.0	20.2	5.1	5.9
ZR40K3E-TF5/D/E	A	40800	10300	12000	3660	11.1/5.6/4.4	11.1	2.8	3.3
	B	40500	10200	11900	3670	11.1/5.6/4.4	11.0	2.8	3.2
	C	49400	12400	14500	2480	8.5/4.3/3.4	19.9	5.0	5.8
ZR42K3E-TF5/D/E	A	42700	10800	12500	3850	11.4/5.7/4.6	11.1	2.8	3.2
	B	42400	10700	12400	3860	11.4/5.7/4.6	11.0	2.8	3.2
	C	52300	13200	15300	2590	8.6/4.3/3.4	20.2	5.1	5.9

\* Ampere values shown are at 230 volts/460 volts/575 volts.

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See expanded performance data on pages 28 to 62.

See full operating range on page 64.

Production compressors to meet above nominal performance values within ±5 percent.

60 HERTZ

PERFORMANCE NOMINALS

R22

THREE PHASE

230-3-60 (TF5)  
 380-3-60 (TF7)  
 460-3-60 (TFD) TEST VOLTAGE  
 575-3-60 (TFE)

MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES*	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZR45KC-TF5/D/E	A	46400	11700	13600	3990	12.1/-/6.1/4.8	11.6	2.9	3.4
	B	46000	11600	13500	4000	12.1/-/6.1/4.8	11.5	2.9	3.4
	C	54000	13600	15800	2850	9.6/-/4.8/3.8	18.9	4.8	5.5
ZR47KC-TF5/7/D/E	A	47900	12100	14000	4120	12.2/7.3/6.1/4.9	11.6	2.9	3.4
	B	47500	12000	13900	4130	12.2/7.3/6.1/4.9	11.5	2.9	3.4
	C	55800	14100	16300	2940	9.6/5.8/4.8/3.8	19.0	4.8	5.5
ZR48KC-TF5/7/D/E	A	49500	12500	14500	4260	12.6/7.6/6.3/5.0	11.6	2.9	3.4
	B	49100	12400	14400	4270	12.6/7.6/6.3/5.0	11.5	2.9	3.4
	C	58000	14600	17000	3080	10.0/6.0/5.0/4.0	18.8	4.7	5.5
ZR54KC-TF5/7/D/E	A	55400	14000	16200	4770	14.8/8.9/7.4/5.9	11.6	2.9	3.4
	B	55000	13900	16100	4780	14.8/8.9/7.4/5.9	11.5	2.9	3.4
	C	64500	16300	18900	3490	12.2/7.3/6.1/4.9	18.5	4.7	5.4
ZR57KC-TF5/7/D/E	A	58000	14600	17000	5000	15.4/9.2/7.7/6.2	11.6	2.9	3.4
	B	57500	14500	16800	5010	15.4/9.2/7.7/6.2	11.5	2.9	3.4
	C	68000	17100	19900	3660	12.6/7.6/6.3/5.0	18.6	4.7	5.4
ZR61KC-TF5/7/D/E	A	62500	15800	18300	5390	16.7/10.0/8.4/6.7	11.6	2.9	3.4
	B	62000	15600	18200	5400	16.7/10.0/8.4/6.7	11.5	2.9	3.4
	C	72500	18300	21200	3920	13.5/8.1/6.8/5.4	18.5	4.7	5.4
ZR68KC-TF5/7/D/E	A	70600	17800	20700	5950	17.5/10.5/8.8/7.0	11.9	3.0	3.5
	B	70000	17600	20500	5960	17.5/10.5/8.8/7.0	11.7	3.0	3.4
	C	82000	20700	24000	4250	13.6/8.2/6.8/5.4	19.3	4.9	5.6
ZR72KC-TF5/7/D/E	A	74100	18700	21700	6240	18.4/11.0/9.2/7.4	11.9	3.0	3.5
	B	73500	18500	21500	6250	18.4/11.0/9.2/7.4	11.8	3.0	3.4
	C	86000	21700	25200	4450	14.0/8.4/7.0/5.6	19.3	4.9	5.7
ZR81KC-TF5/7/D/E	A	82200	20700	24100	7030	22.0/13.2/11.0/8.8	11.7	2.9	3.4
	B	81500	20500	23900	7040	22.0/13.2/11.0/8.8	11.6	2.9	3.4
	C	96000	24200	28100	5060	18.2/10.9/9.1/7.3	19.0	4.8	5.6

\* Ampere values shown are at 230 volts/380 volts/460 volts/575 volts.

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See expanded performance data on pages 28 to 62.

See full operating range on page 64.

Production compressors to meet above nominal performance values within ±5 percent.

60 HERTZ

PERFORMANCE NOMINALS

R407C

THREE PHASE

230-3-60 (TF5)  
 380-3-60 (TF7)  
 460-3-60 (TFD) TEST VOLTAGE  
 575-3-60 (TFE)

MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES*	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZR47KCE-TF5/7/D/E	A	48400	12200	14200	4380	13.0/7.8/6.5/5.2	11.1	2.8	3.2
	B	48000	12100	14100	4390	13.0/7.8/6.5/5.2	10.9	2.8	3.2
	C	58900	14800	17300	3030	9.9/5.9/5.0/4.0	19.4	4.9	5.7
ZR48KCE-TF5/7/D/E	A	50000	12600	14700	4530	13.4/8.0/6.7/5.4	11.0	2.8	3.2
	B	49600	12500	14500	4540	13.4/8.0/6.7/5.4	10.9	2.8	3.2
	C	61200	15400	17900	3180	10.3/6.2/5.2/4.1	19.2	4.8	5.6
ZR54KCE-TF5/D	A	54400	13700	15900	5040	15.8/-/7.9/-	10.8	2.7	3.2
	B	54000	13600	15800	5050	15.8/-/7.9/-	10.7	2.7	3.1
	C	66500	16800	19500	3580	12.6/-/6.3/-	18.6	4.7	5.4
ZR57KCE-TF5/D	A	58500	14700	17100	5320	16.4/-/8.2/-	11.0	2.8	3.2
	B	58000	14600	17000	5330	16.4/-/8.2/-	10.9	2.7	3.2
	C	68700	17300	20100	3880	13.4/-/6.7/-	17.7	4.5	5.2
ZR61KCE-TF5/7/D/E	A	62500	15800	18300	5600	16.2/9.7/8.1/6.5	11.2	2.8	3.3
	B	62000	15600	18200	5610	16.2/9.7/8.1/6.5	11.1	2.8	3.2
	C	76000	19200	22300	3940	12.5/7.5/6.3/5.0	19.3	4.9	5.7
ZR68KCE-TF5/7/D	A	71100	17900	20800	6300	19.2/11.5/9.6/-	11.3	2.8	3.3
	B	70500	17800	20700	6310	19.2/11.5/9.6/-	11.2	2.8	3.3
	C	86600	21800	25400	4380	15.0/9.0/7.5/-	19.8	5.0	5.8
ZR72KCE-TF5/7/D/E	A	73700	18600	21600	6520	14.5/8.7/7.3/5.8	11.3	2.9	3.3
	B	73100	18400	21400	6530	14.5/8.7/7.3/5.8	11.2	2.8	3.3
	C	89400	22500	26200	4550	11.2/6.7/5.6/4.5	19.6	4.9	5.8
ZR81KCE-TF5/7/D	A	82000	20700	24000	7530	23.0/13.8/11.5/-	10.9	2.7	3.2
	B	81300	20500	23800	7550	23.0/13.8/11.5/-	10.8	2.7	3.2
	C	101000	25500	29600	5230	18.2/10.9/9.1/-	19.3	4.9	5.7

\* Ampere values shown are at 230 volts/380 volts/460 volts/575 volts.

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See expanded performance data on pages 28 to 62.

See full operating range on page 64.

Production compressors to meet above nominal performance values within ±5 percent.

**MECHANICAL SPECIFICATIONS**

MODEL	NOMINAL HP KW	IN <sup>3</sup> CM <sup>3</sup> CUBIC INCHES PER REVOLUTION CUBIC CENTIMETERS PER REVOLUTION	CFH M <sup>3</sup> /HR CUBIC FEET PER HOUR CUBIC METERS PER HOUR	COMPRESSOR NET WEIGHT POUNDS KILOGRAMS	
			60 HERTZ 3500 RPM	SINGLE PHASE	THREE PHASE
ZR18	1.50	1.535	186.5	55	–
	1.12	25.15	5.28	24.9	–
ZR22	1.83	1.873	227.6	56	54
	1.37	30.69	6.44	25.4	24.5
ZR24	2.00	2.076	252.3	58	55
	1.49	34.02	7.14	26.3	24.9
ZR26	2.17	2.202	267.6	58	56
	1.62	36.08	7.58	26.3	25.4
ZR28	2.33	2.395	291.1	58	56
	1.74	39.24	8.24	26.3	25.4
ZR30	2.50	2.563	311.5	61	56
	1.87	42.00	8.82	27.7	25.4
ZR32	2.67	2.650	322.0	61	57
	1.99	43.42	9.12	27.7	25.9
ZR34	2.83	2.816	342.2	63	61
	2.11	46.14	9.69	28.6	27.7
ZR36	3.00	3.020	367.0	63	61
	2.24	49.49	10.39	28.6	27.7
ZR40	3.33	3.309	402.1	66	61
	2.48	54.22	11.38	29.9	27.7
ZR42	3.50	3.488	423.9	66	61
	2.61	57.15	12.00	29.9	27.7
ZR45	3.75	3.726	452.8	65	62
	2.80	61.05	12.82	29.5	28.1
ZR47	3.92	3.915	475.8	71	66
	2.92	64.15	13.47	32.2	29.9
ZR48	4.00	3.997	485.7	71	62
	2.98	65.49	13.75	32.2	28.1
ZR54	4.50	4.468	543.0	87	80
	3.36	73.21	15.37	39.5	36.3
ZR57	4.75	4.710	572.4	86	79
	3.54	77.18	16.20	39.0	35.8
ZR61	5.08	5.040	612.5	91	82
	3.79	82.59	17.34	41.3	37.2
ZR68	5.67	5.676	689.8	–	85
	4.23	93.01	19.53	–	38.6
ZR72	6.00	5.983	727.1	–	85
	4.48	98.04	20.58	–	38.6
ZR81	6.75	6.748	820.1	–	88
	5.04	110.57	23.22	–	39.9

**R22 ELECTRICAL SPECIFICATIONS**

VOLTAGE CODE	PFV		TF5		TF7		TFD		TFE	
NOMINAL VOLTAGE-PHASE-HERTZ	208/230-1-60		200/220-3-50 200/230-3-60		380-3-60		380/420-3-50 460-3-60		575-3-60	
VOLTAGE RANGE 50 HERTZ 60 HERTZ	– 197-253		180-242 180-253		– 342-418		342-462 414-506		– 518-633	
MODEL	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA
ZR18K3	9.3	47.0								
ZR22K3	11.4	56.0	7.9	45.0			3.9	22.4		
ZR24K3	13.6	61.0	8.6	55.0			4.3	27.0		
ZR26K3	13.6	67.0	8.6	55.0			4.3	27.0		
ZR28K3	15.0	72.5	10.0	63.0			5.0	31.0		
ZR30K3	15.0	73.0	10.7	63.0			5.0	31.0		
ZR32K3	16.4	83.0	10.7	77.0			5.4	35.0	3.9	28.0
ZR34K3	17.9	88.0	11.4	77.0			5.7	39.0	4.7	31.0
ZR36K3	18.4	95.0	11.4	77.0			5.7	39.0	4.7	31.0
ZR40K3	20.0	104.0	13.9	88.0			6.4	44.0	5.4	34.0
ZR42K3	20.4	109.0	13.9	88.0			7.1	44.0	5.4	34.0
ZR45KC	24.3	131.0	14.3	91.0			7.2	46.0	5.7	37.0
ZR47KC	24.3	131.0	14.3	91.0	9.3	54.0	7.2	46.0	5.7	37.0
ZR48KC	23.6	132.0	16.4	91.0	9.3	54.0	7.9	50.0	6.4	37.0
ZR54KC	28.6	170.0	16.4	124.0	9.3	65.8	8.2	59.6	6.6	49.4
ZR57KC	28.0	150.0	17.2	124.0	9.4	75.0	8.2	59.6	6.6	49.4
ZR61KC	30.1	144.0	20.7	128.0	10.7	64.0	10.0	63.0	7.4	49.0
ZR68KC			20.7	156.0	10.7	70.0	10.0	75.0	8.2	54.0
ZR72KC			20.7	156.0	10.7	70.0	10.0	75.0	8.2	54.0
ZR81KC			25.0	164.0	12.0	100.0	12.0	100.0	9.3	78.0

**R407C ELECTRICAL SPECIFICATIONS**

VOLTAGE CODE	PFV		TF5		TF7		TFD		TFE	
NOMINAL VOLTAGE-PHASE-HERTZ	208/230-1-60		200/220-3-50 200/230-3-60		380-3-60		380/420-3-50 460-3-60		575-3-60	
VOLTAGE RANGE 50 HERTZ 60 HERTZ	- 197-253		180-242 180-253		- 342-418		342-462 414-506		- 518-633	
MODEL	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA	RATED LOAD AMPS RLA	LOCKED ROTOR AMPS LRA
ZR18K3E	9.3	47.0								
ZR22K3E	11.4	56.0	7.9	45.0			3.9	22.4		
ZR24K3E	13.6	61.0	8.6	55.0			4.3	27.0		
ZR26K3E	13.6	67.0	8.6	55.0			4.3	27.0		
ZR28K3E	15.0	72.5	10.0	63.0			5.0	31.0		
ZR30K3E	15.0	73.0	10.7	63.0			5.0	31.0		
ZR32K3E	16.4	83.0	10.7	77.0			5.4	35.0	3.9	28.0
ZR34K3E	17.9	88.0	11.4	77.0			5.7	39.0	4.7	31.0
ZR36K3E	18.4	95.0	11.4	77.0			5.7	39.0	4.7	31.0
ZR40K3E	20.0	104.0	13.9	88.0			6.4	44.0	5.4	34.0
ZR42K3E	20.4	109.0	13.9	88.0			7.1	44.0	5.4	34.0
ZR47KCE			14.3	91.0	9.3	54.0	7.2	46.0	5.7	37.0
ZR48KCE	23.6	132.0	16.4	91.0	9.3	54.0	7.9	50.0	6.4	37.0
ZR54KCE			16.4	124.0			8.2	59.6		
ZR57KCE			17.2	124.0			8.2	59.6		
ZR61KCE			20.7	128.0	10.7	64.0	10.0	63.0	7.4	49.0
ZR68KCE			20.7	156.0	10.7	70.0	10.0	75.0		
ZR72KCE			20.7	156.0	10.7	70.0	10.0	75.0	8.2	54.0
ZR81KCE			25.0	164.0	12.0	100.0	12.0	100.0		



**60 HERTZ  
R22**

**ELECTRICAL COMPONENTS FOR AIR CONDITIONING AND  
HEAT PUMP SINGLE PHASE COMPRESSORS  
(PFV)**

PFV MODEL	RUN CAPACITOR		
	MFD	VOLTS	PART NUMBER
ZR18K3-PFV	30	370	014-0048-10
ZR22K3-PFV	45	370	014-0048-36
ZR24K3-PFV	40	370	014-0048-12
ZR26K3-PFV	40	370	014-0048-12
ZR28K3-PFV	45	370	014-0048-36
ZR30K3-PFV	45	370	014-0048-36
ZR32K3-PFV	45	370	014-0048-36
ZR34K3-PFV	50	370	014-0048-40
ZR36K3-PFV	50	370	014-0048-40
ZR40K3-PFV	55	370	014-0048-39
ZR42K3-PFV	60	370	014-0048-37
ZR45KC-PFV	40	370	014-0048-12
ZR47KC-PFV	45	370	014-0048-36
ZR48KC-PFV	40	440	014-0048-18
ZR54KC-PFV	60	370	014-0048-37
ZR57KC-PFV	60	370	014-0048-37
ZR61KC-PFV	70	370	014-0048-51

**60 HERTZ  
R407C**

**ELECTRICAL COMPONENTS FOR AIR CONDITIONING AND  
HEAT PUMP SINGLE PHASE COMPRESSORS  
(PFV)**

PFV MODEL	RUN CAPACITOR		
	MFD	VOLTS	PART NUMBER
ZR18K3E-PFV	30	370	014-0048-10
ZR22K3E-PFV	45	370	014-0048-36
ZR24K3E-PFV	40	370	014-0048-12
ZR26K3E-PFV	40	370	014-0048-12
ZR28K3E-PFV	45	370	014-0048-36
ZR30K3E-PFV	45	370	014-0048-36
ZR32K3E-PFV	45	370	014-0048-36
ZR34K3E-PFV	50	370	014-0048-40
ZR36K3E-PFV	50	370	014-0048-40
ZR40K3E-PFV	55	370	014-0048-39
ZR42K3E-PFV	60	370	014-0048-37
ZR48KCE-PFV	40	440	014-0048-18

*Copeland*

# ZR COPELAND BILLS OF MATERIAL FOR

## “STANDARD” BILLS

The bill of material includes features as shown by the X.

MODEL	BILL OF MATERIAL NUMBER	STUB TUBE CONNECTIONS	ROTALOCK CONNECTIONS	FOUR FOOT MOUNTING PATTERN 7 1/2 x 7 1/2 INCH (190.5 x 190.5 mm)	
ZR18 TO ZR47	501	X		X	
	512	X			
	522	X		X	
	523		X	X	
	562	X			
	601	X		X	
	612	X			
ZR48	622	X		X	
	501	X		X	
	522	X		X	
	523		X	X	
	601	X		X	
ZR54 TO ZR81	622	X		X	
	501	X		X	
	522	X		X	
	523		X	X	
	601	X		X	
	622	X		X	

## “SPECIAL” BILLS

The bill of material includes features as shown by the X.

MODEL	BILL OF MATERIAL NUMBER	STUB TUBE CONNECTIONS	ROTALOCK CONNECTIONS	FOUR FOOT MOUNTING PATTERN 7 1/2 x 7 1/2 INCH (190.5 x 190.5 mm)	
ZR18 TO ZR48	511	X		X	
	515		X	X	
	611	X		X	
ZR54 TO ZR61	511	X		X	
	515		X	X	
	611	X		X	

# SCROLL COMPRESSORS

## THE INTERNATIONAL MARKET

*Copeland*

### OF MATERIAL

	THREE FOOT MOUNTING PATTERN 6.2 x 7.2 INCH (158.1 x 182.6 mm)	GROUNDING TAB, SCREW, AND WASHER	TERMINAL BOX, COVER AND PUSH-ON ELECTRICAL TERMINAL CONNECTIONS	MOLDED PLUG READY TERMINALS	TERMINAL BOX, COVER AND TERMINAL CONNECTOR BLOCK WITH SCREWS
			X		
	X		X		
		X	X		
		X	X		
	X	X	X		
				X	
	X			X	
		X		X	
			X		
		X	X		
		X	X		
				X	
		X		X	
					X
		X			X
		X			X
				X	
		X		X	

### OF MATERIAL

	RUN CAPACITOR	GROUNDING TAB, SCREW, AND WASHER	TERMINAL BOX, COVER AND PUSH-ON ELECTRICAL TERMINAL CONNECTIONS	MOLDED PLUG READY TERMINALS	TERMINAL BOX, COVER AND TERMINAL CONNECTOR BLOCK WITH SCREWS
	X		X		
	X	X	X		
	X			X	
	X				X
	X	X			X
	X			X	

BILL OF MATERIAL PROVISIONS	ACCESSORY INFORMATION
<p>Copeland is pleased to offer the bills of material shown on the previous pages that offer a complete and versatile choice to your compressor selection.</p> <p>In addition to the marked features, each compressor will include the following:</p> <ul style="list-style-type: none"> <li>• Wiring diagram.</li> <li>• Internal line break protector.</li> <li>• Rubber grommet mounting parts with sleeves (kit 527-0116-00).</li> <li>• Grounding tab located in the compressor terminal box.</li> </ul> <p>See outline drawing pages 20 to 25 for stub tube and rotalock connection sizes.</p>	<p>Crankcase Heater - 240 volt - 70 watt (ZR22 to ZR81)      018-0057-00</p> <p>Crankcase Heater - 480 volt - 70 watt (ZR22 to ZR81)      018-0057-01</p> <p>Crankcase Heater - 575 volt - 70 watt (ZR32 to ZR81)      018-0057-02</p>

COMPRESSOR OIL CHARGES						
WHITE OIL			MMMA POE OIL			
MODEL	INITIAL OIL CHARGE OUNCES/LITERS	REFILL OIL CHARGE OUNCES/LITERS	MODEL	INITIAL OIL CHARGE OUNCES/LITERS	REFILL OIL CHARGE OUNCES/LITERS	
ZR18K3	38 1.12	34 1.01	ZR18K3E	38 1.12	34 1.01	
ZR22K3			ZR22K3E			
ZR24K3			ZR24K3E			
ZR26K3			ZR26K3E			
ZR28K3			ZR28K3E			
ZR30K3	42 1.24	38 1.12	ZR30K3E	42 1.24	38 1.12	
ZR32K3			ZR32K3E			
ZR34K3			ZR34K3E			
ZR36K3			ZR36K3E			
ZR40K3			ZR40K3E			
ZR42K3			ZR42K3E			
ZR45KC-PFV	46 1.36	42 1.24	ZR47KCE-TF5/7/D	46 1.36	42 1.24	
ZR45KC-TF5/D/E			ZR48K3E-PFV			
ZR47KC-PFV	42 1.24	38 1.12	ZR48KCE-TF5/7/D/E	46 1.36	42 1.24	
ZR47KC-TF5/7/D/E			ZR54KCE			
ZR48KC-PFV	42 1.24	38 1.12	ZR57KCE	66 1.95	62 1.83	
ZR48KC-TF5/7/D/E			ZR61KCE			
ZR54KC-PFV			ZR68KCE			
ZR54KC-TF5/7/D/E	56 1.66	52 1.54	ZR72KCE	60 1.77	56 1.66	
ZR57KC-PFV			ZR81KCE			
ZR57KC-TF5/7/D/E	64 1.89	60 1.77				
ZR61KC-PFV						
ZR61KC-TF5/7/D/E						
ZR68KC	60 1.77	56 1.66				
ZR72KC						
ZR81KC						

## ROTALOCK SERVICE VALVES

For your ZR rotalock connection compressor, please order the valves separately by choosing them from the tables below.

### Valve Style

Table A illustrates the style for each valve listed in Tables B and C. The drawings in this table will show gage port quantity and location. The gage ports are 1/4 inch flare fittings and include brass caps.

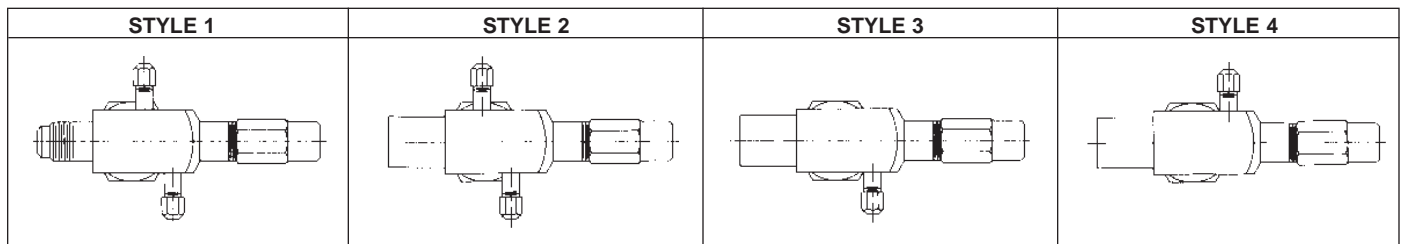
### Valve Kits

The kits listed in Table B below, include rotalock suction and discharge service valves and seals for the ZR models shown. Use of these with your ZR rotalock connection compressors will simplify your order and inventory process.

### Special Kits

If the kits are not ordered, special valves and seals should be selected from Table C below to fit the rotalock connections supplied on the ZR compressor. A suggestion is to select valves having the same line sizes as the connections supplied on compressors with stub tubes. Be sure to match rotalock connection sizes.

**TABLE A**



**TABLE B**

KIT PART NUMBER	SUCTION VALVE			DISCHARGE VALVE			ROTALOCK CONNECTION SIZE IN INCHES AND SEAL PART NUMBER		SUGGESTED USAGE
	SIZE IN INCHES	TYPE AND VALVE PART NUMBER	STYLE	SIZE IN INCHES	TYPE AND VALVE PART NUMBER	STYLE	SUCTION	DISCHARGE	
510-0247-15	3/4	Solder 510-0080-04	3	3/4	Solder 510-0133-01	2	1 1/4-12 020-0028-02	1-14 020-0028-00	ZR22 to ZR42
510-0247-06	7/8	Solder 510-0105-00	4	1/2	Solder 510-0133-01	2			ZR45 to ZR72
510-0247-07	7/8	Solder 510-0105-00	4	1/2	Flare 510-0132-00	1			ZR45 to ZR72
510-0247-13	7/8	Solder 510-0105-00	4	3/4	Solder 510-0080-04	3	1 1/4-12 020-0028-02	1 1/4-12 020-0028-02	ZR81

**TABLE C**

ROTALOCK CONNECTION SIZE IN INCHES	VALVE PART NUMBER	SIZE IN INCHES	TYPE	STYLE	SEAL PART NUMBER (ONE PER VALVE REQUIRED)
1-14	510-0132-02	3/8	Flare	1	020-0028-00
	510-0133-00	3/8	Solder	2	
	510-0132-00	1/2	Flare	1	
	510-0133-01	1/2	Solder	2	
	510-0132-01	5/8	Flare	1	
	510-0133-02	5/8	Solder	2	
1 1/4-12	510-0133-06	7/8	Solder	2	020-0028-02
	510-0105-03	5/8	Solder	4	
	510-0080-04	3/4	Solder	3	
	510-0080-07	7/8	Solder	3	
	510-0105-00	7/8	Solder	4	
	510-0133-04	7/8	Solder	2	
1 1/8	510-0080-06	1 1/8	Solder	3	020-0028-02
	510-0133-05	1 1/8	Solder	2	

**NOTES:**

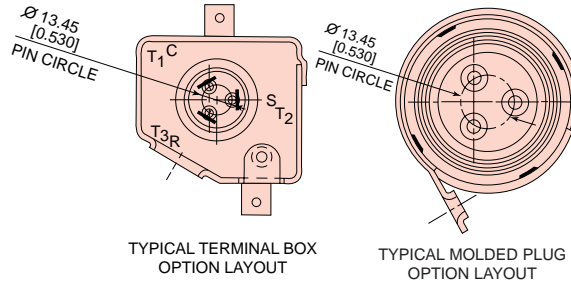
1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE  $\pm 1.50$  [0.060] UNLESS OTHERWISE SPECIFIED.
2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE TOP OF THE COMPRESSOR, TERMINAL BOX, SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING FEET BY  $\pm 3.0$  [0.12].
3. TERMINAL BOX AND MOLDED PLUG OPTIONS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH OPTION.
4. THIS ZR COMPRESSOR IS AVAILABLE WITH STUB TUBE CONNECTIONS ONLY. ROTALOCKS ARE NOT AVAILABLE ON THIS MODEL.
5. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.

THIRD ANGLE PROJECTION



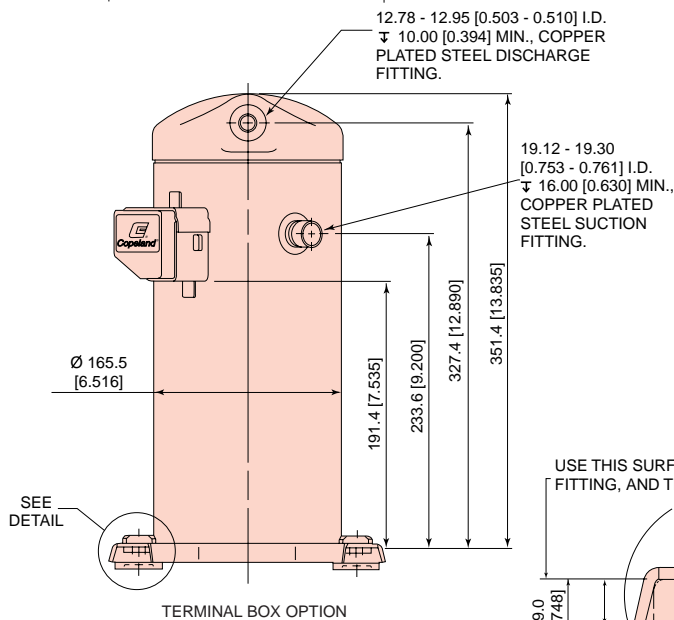
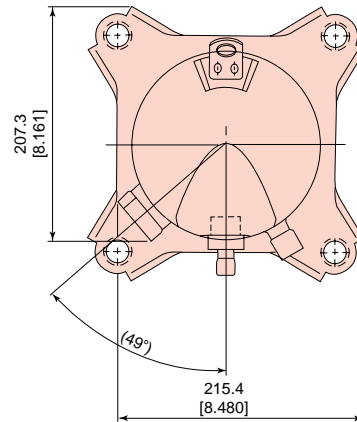
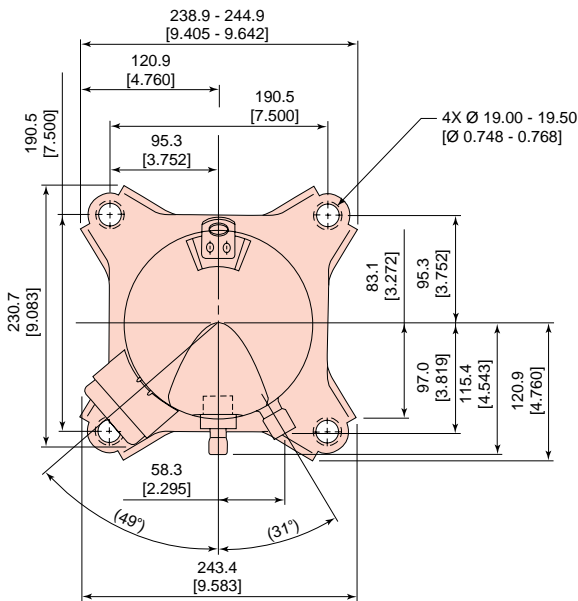
## DIMENSIONAL INFORMATION

MODEL NUMBER	INTERNAL FREE VOLUME CM <sup>3</sup> [IN. <sup>3</sup> ] EXCLUDING OIL CHARGE
ZR18-PFV	2671 [163]



TYPICAL TERMINAL BOX  
OPTION LAYOUT

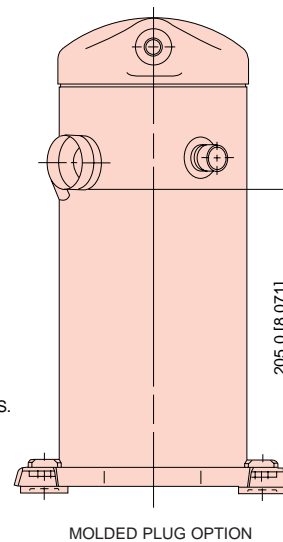
TYPICAL MOLDED PLUG  
OPTION LAYOUT



TERMINAL BOX OPTION

USE THIS SURFACE FOR OVERALL,  
FITTING, AND TERMINAL BOX HEIGHTS.

19.0 [0.748]  
13.1 [0.516]



MOLDED PLUG OPTION

FOR THE INTERNATIONAL MARKET  
**ZR18**  
HEAT PUMP AND  
AIR CONDITIONING MODELS

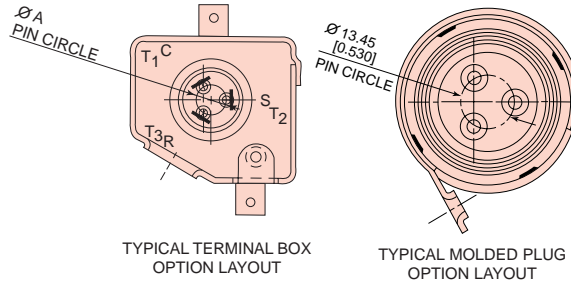
**NOTES:**

1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE ± 1.50 [0.060] UNLESS OTHERWISE SPECIFIED.
2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE TOP OF THE COMPRESSOR, TERMINAL BOX, SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING FEET BY ± 3.0 [0.12].
3. TERMINAL BOX AND MOLDED PLUG OPTIONS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH OPTION.
4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
5. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.

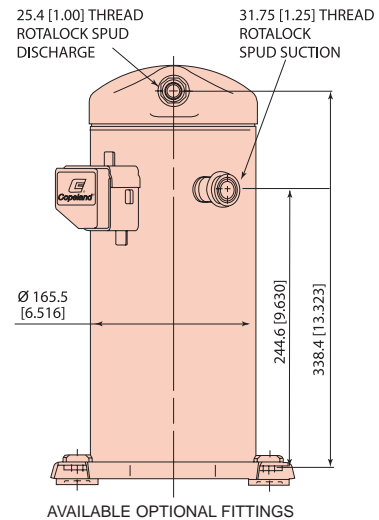
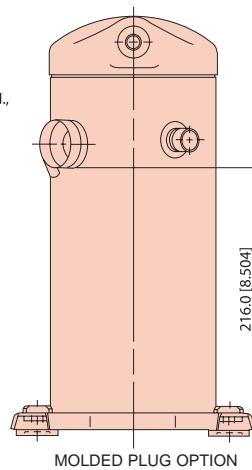
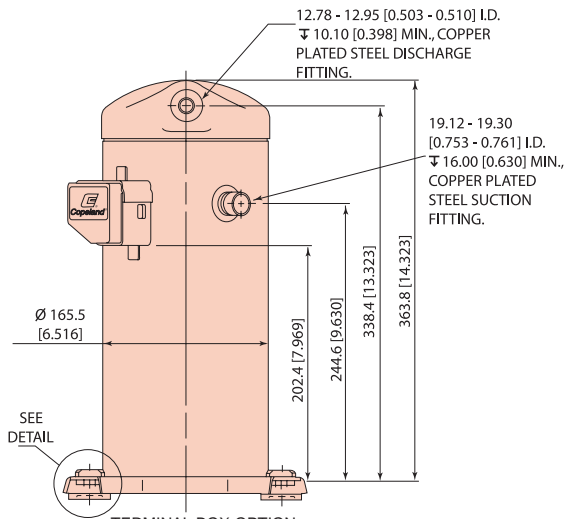
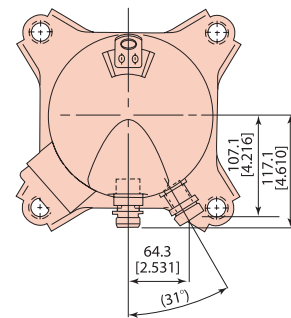
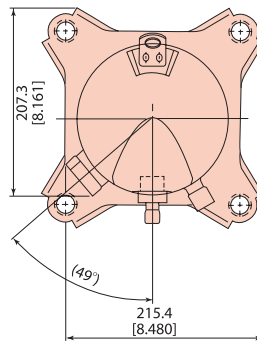
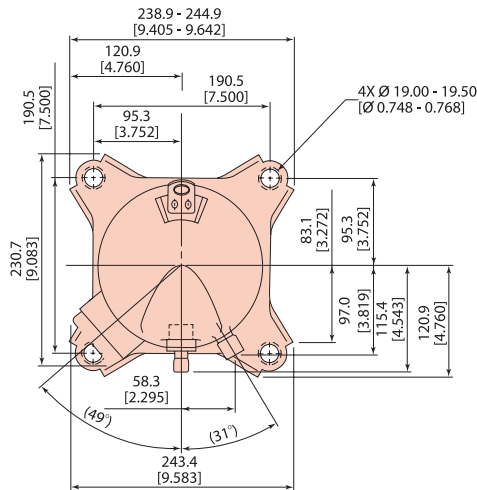
THIRD ANGLE PROJECTION



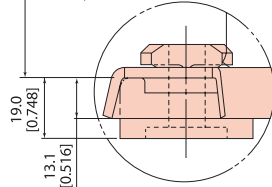
## DIMENSIONAL INFORMATION



MODEL NUMBER	ØA	INTERNAL FREE VOLUME CM <sup>3</sup> [IN. <sup>3</sup> ] EXCLUDING OIL CHARGE
ZR22-PFV	13.45 [0.530]	2861 [175]
ZR22-TF5	13.45 [0.530]	2861 [175]
ZR22-TFD	17.45 [0.687]	2928 [179]
ZR24-PFV	13.45 [0.530]	2861 [175]
ZR24-TF5	13.45 [0.530]	2861 [175]
ZR24-TFD	17.45 [0.687]	2928 [179]
ZR26-PFV	13.45 [0.530]	2861 [175]
ZR26-TF5	13.45 [0.530]	2861 [175]
ZR26-TFD	17.45 [0.687]	2928 [179]
ZR28-PFV	13.45 [0.530]	2861 [175]
ZR28-TF5	13.45 [0.530]	2861 [175]
ZR28-TFD	17.45 [0.687]	2928 [179]



USE THIS SURFACE FOR OVERALL FITTING, AND TERMINAL BOX HEIGHTS.



FOR THE INTERNATIONAL MARKET  
**ZR22 to ZR28**  
 HEAT PUMP AND  
 AIR CONDITIONING MODELS

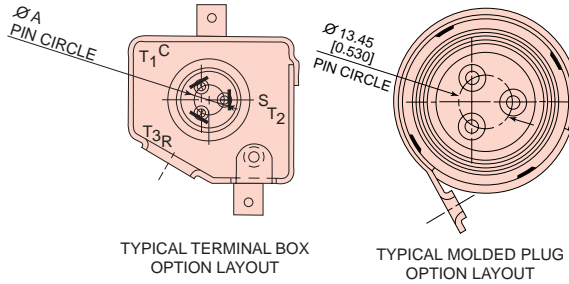
### NOTES:

1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE  $\pm 1.50$  [0.060] UNLESS OTHERWISE SPECIFIED.
2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE TOP OF THE COMPRESSOR, TERMINAL BOX, SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING FEET BY  $\pm 3.0$  [0.12].
3. TERMINAL BOX AND MOLDED PLUG OPTIONS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH OPTION.
4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
5. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.

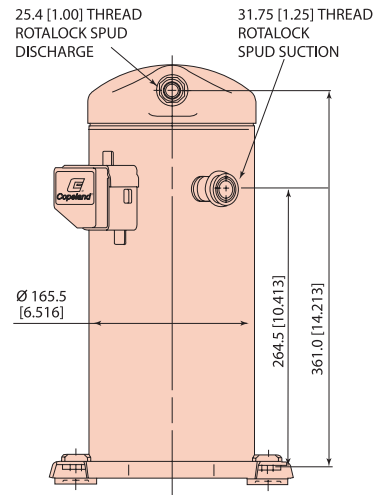
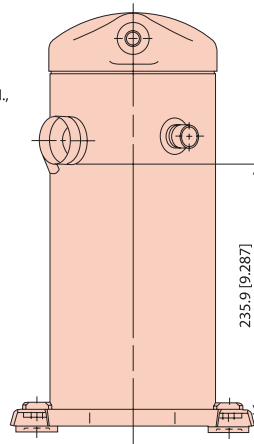
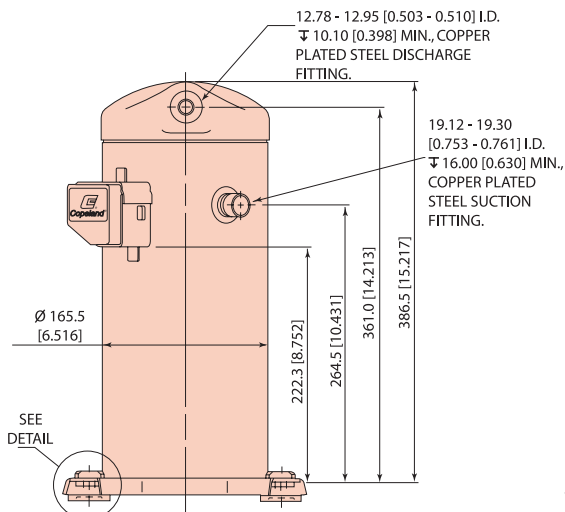
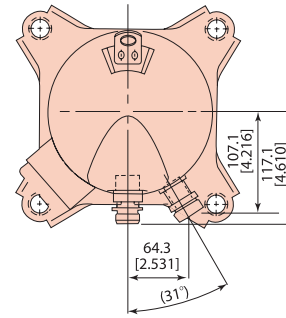
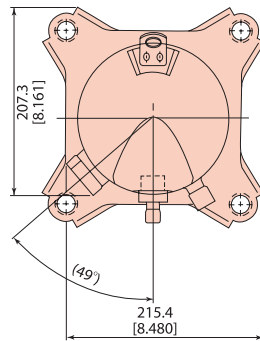
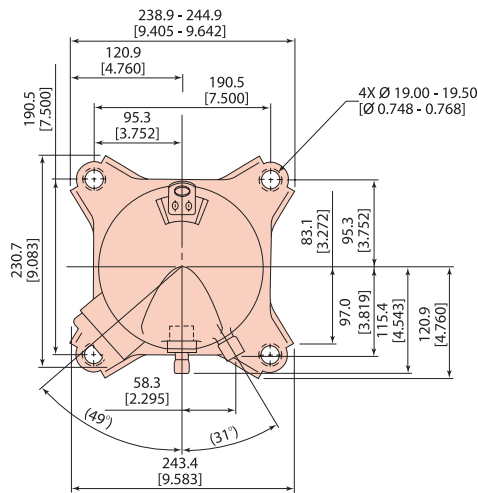
THIRD ANGLE PROJECTION



## DIMENSIONAL INFORMATION



MODEL NUMBER	ØA	INTERNAL FREE VOLUME CM <sup>3</sup> [IN. <sup>3</sup> ] EXCLUDING OIL CHARGE
ZR30-PFV	13.45 [0.530]	2842 [173]
ZR30-TF5	13.45 [0.530]	2842 [173]
ZR30-TFD	17.45 [0.687]	3077 [188]
ZR32-PFV	13.45 [0.530]	2842 [173]
ZR32-TF5	13.45 [0.530]	2842 [173]
ZR32-TFD/E	17.45 [0.687]	3077 [188]
ZR34-PFV	13.45 [0.530]	2842 [173]
ZR34-TF5	13.45 [0.530]	2842 [173]
ZR34-TFD/E	17.45 [0.687]	3077 [188]
ZR36-PFV	13.45 [0.530]	2842 [173]
ZR36-TF5	13.45 [0.530]	2842 [173]
ZR36-TFD/E	17.45 [0.687]	3077 [188]

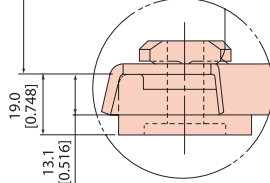


TERMINAL BOX OPTION

MOLDED PLUG OPTION

AVAILABLE OPTIONAL FITTINGS

USE THIS SURFACE FOR OVERALL, FITTING, AND TERMINAL BOX HEIGHTS.



FOR THE INTERNATIONAL MARKET  
**ZR30 to ZR36**  
 HEAT PUMP AND  
 AIR CONDITIONING MODELS



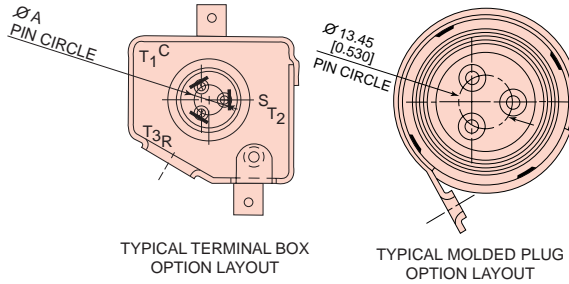
**NOTES:**

1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE  $\pm 1.50$  [0.060] UNLESS OTHERWISE SPECIFIED.
2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE TOP OF THE COMPRESSOR, TERMINAL BOX, SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING FEET BY  $\pm 3.0$  [0.12].
3. TERMINAL BOX AND MOLDED PLUG OPTIONS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH OPTION.
4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
5. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.

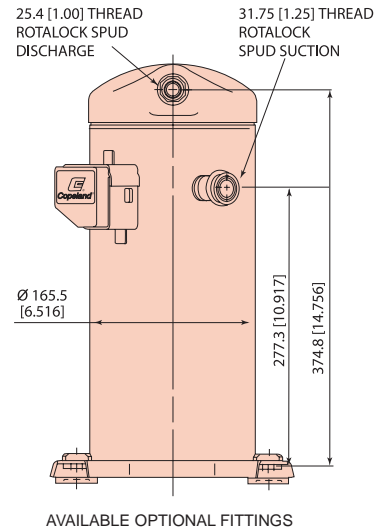
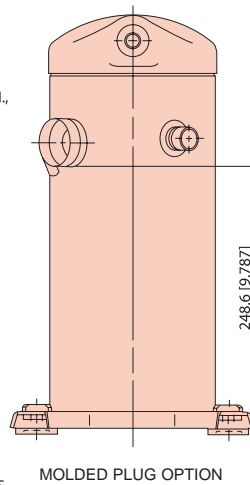
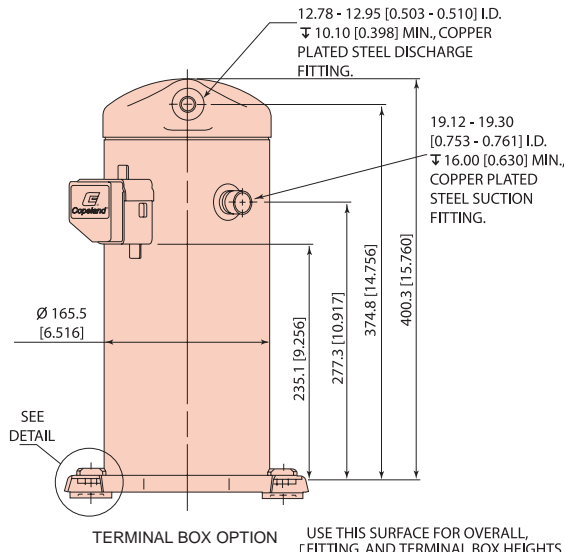
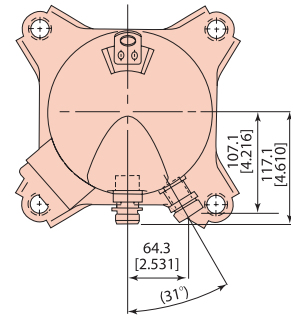
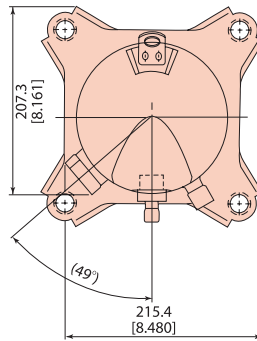
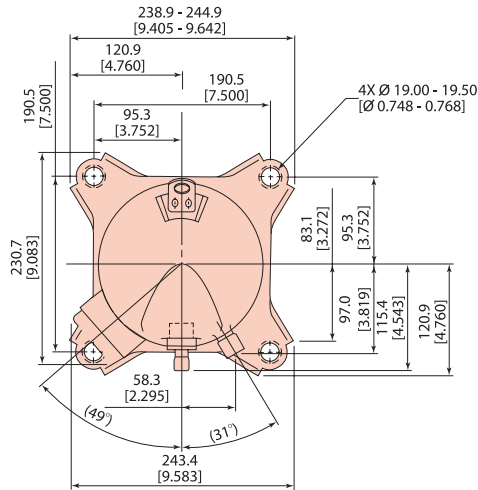
THIRD ANGLE PROJECTION



## DIMENSIONAL INFORMATION



MODEL NUMBER	ØA	INTERNAL FREE VOLUME CM <sup>3</sup> [IN. <sup>3</sup> ] EXCLUDING OIL CHARGE
ZR40-PFV	13.45 [0.530]	2987 [182]
ZR40-TF5	13.45 [0.530]	2987 [182]
ZR40-TFD/E	17.45 [0.687]	3130 [191]
ZR42-PFV	13.45 [0.530]	2987 [182]
ZR42-TF5	13.45 [0.530]	2987 [182]
ZR42-TFD/E	17.45 [0.687]	3130 [191]

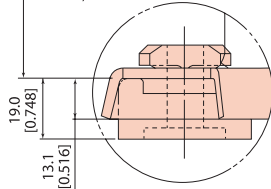


TERMINAL BOX OPTION

MOLDED PLUG OPTION

AVAILABLE OPTIONAL FITTINGS

USE THIS SURFACE FOR OVERALL FITTING, AND TERMINAL BOX HEIGHTS.



FOR THE INTERNATIONAL MARKET  
**ZR40, ZR42**  
 HEAT PUMP AND  
 AIR CONDITIONING MODELS

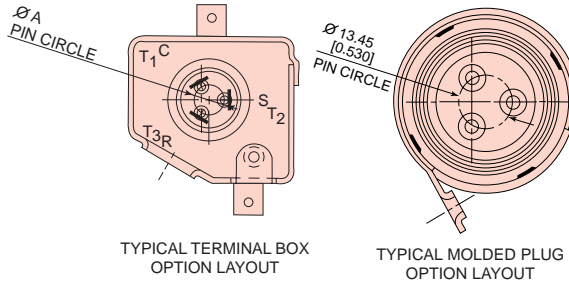
### NOTES:

1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE  $\pm 1.50$  [0.060] UNLESS OTHERWISE SPECIFIED.
2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE TOP OF THE COMPRESSOR, TERMINAL BOX, SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING FEET BY  $\pm 3.0$  [0.12].
3. TERMINAL BOX AND MOLDED PLUG OPTIONS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH OPTION.
4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
5. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.

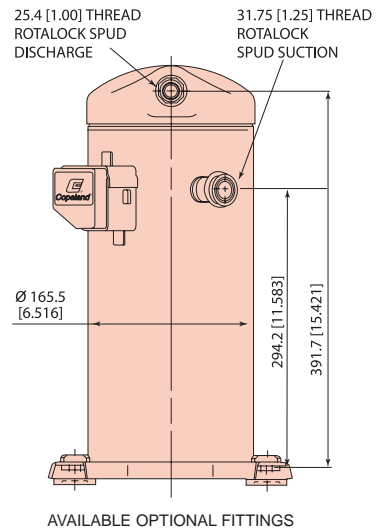
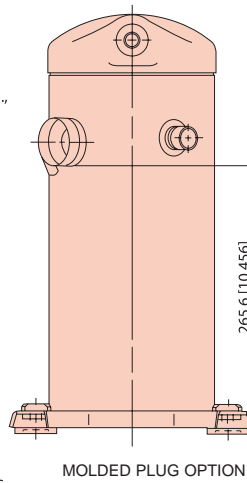
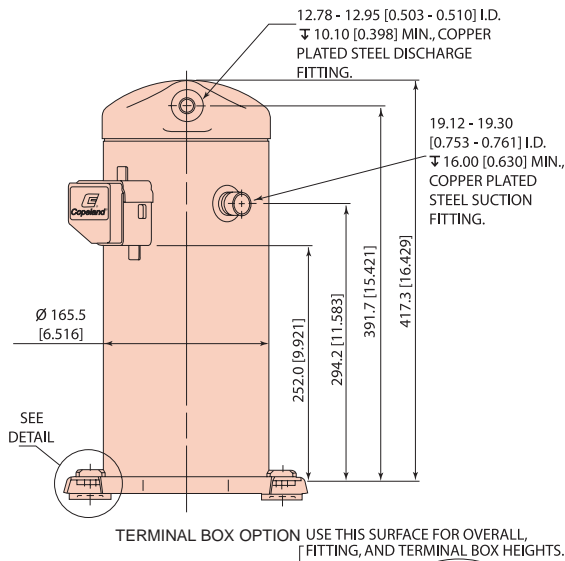
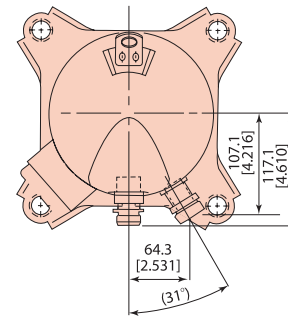
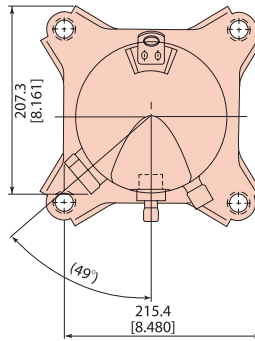
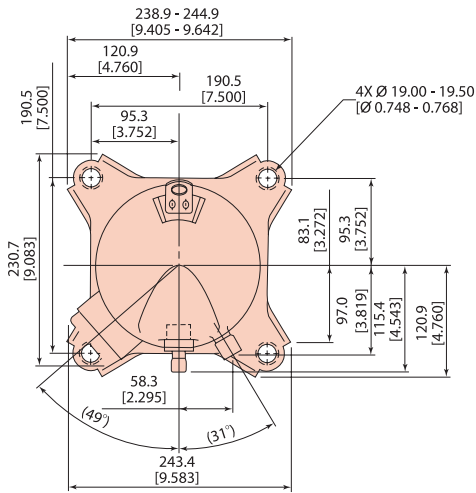
THIRD ANGLE PROJECTION




## DIMENSIONAL INFORMATION



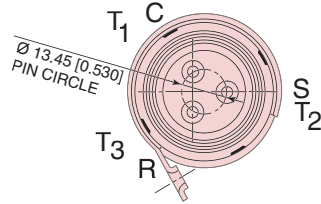
MODEL NUMBER	ØA	INTERNAL FREE VOLUME CM <sup>3</sup> [IN. <sup>3</sup> ] EXCLUDING OIL CHARGE
ZR45-PFV	13.45 [0.530]	3360 [205]
ZR45-TF5	13.45 [0.530]	3360 [205]
ZR45-TFD/E	17.45 [0.687]	3360 [205]
ZR47-PFV	13.45 [0.530]	3360 [205]
ZR47-TF5	13.45 [0.530]	3360 [205]
ZR47-TF7/D/E	17.45 [0.687]	3360 [205]
ZR48-PFV	13.45 [0.530]	3360 [205]
ZR48-TF5	13.45 [0.530]	3360 [205]
ZR48-TF7/D/E	17.45 [0.687]	3360 [205]



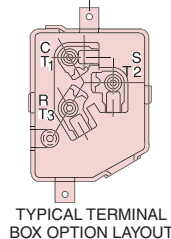
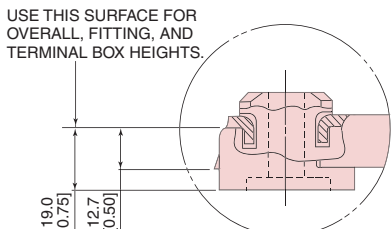
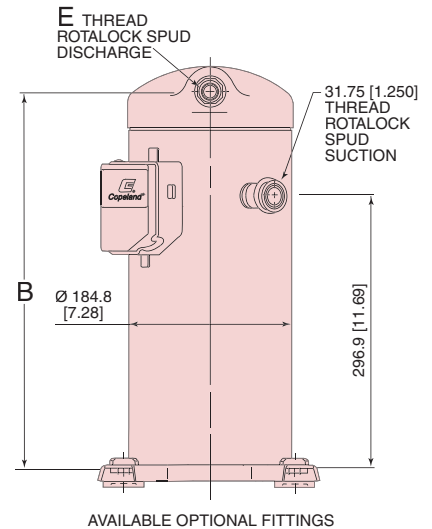
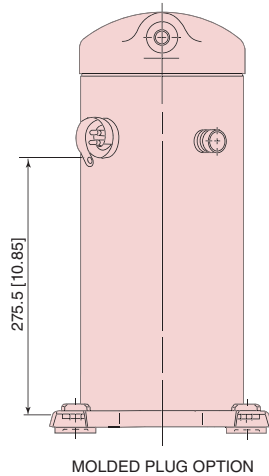
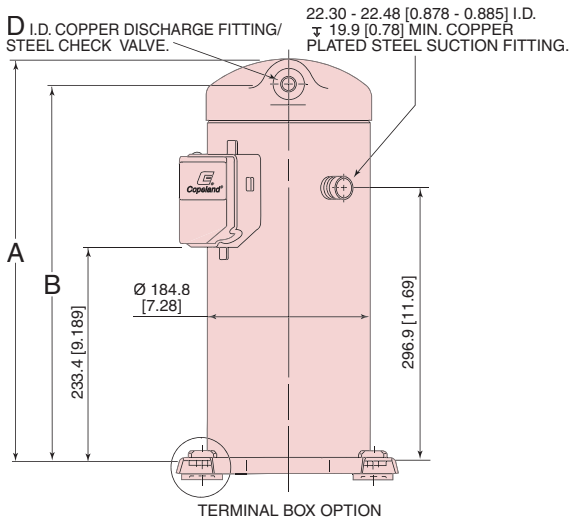
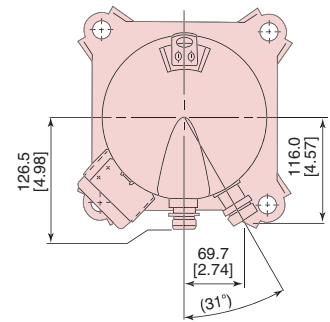
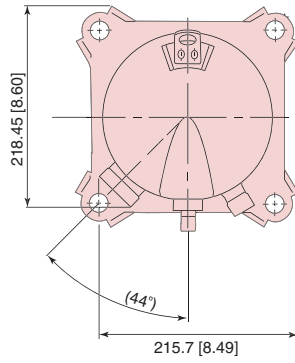
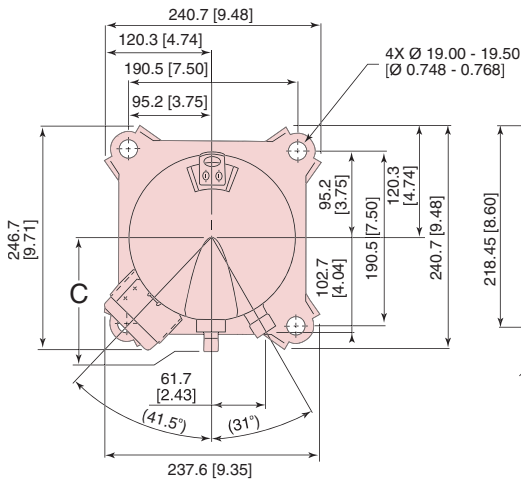
FOR THE INTERNATIONAL MARKET  
**ZR45, ZR47, ZR48**  
 HEAT PUMP AND  
 AIR CONDITIONING MODELS

- NOTES:**
1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE  $\pm 1.50$  [0.060] UNLESS OTHERWISE SPECIFIED.
  2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE SUCTION AND DISCHARGE FITTINGS VARY FROM THE MOUNTING HOLES BY  $\pm 3.0$  [0.12].
  3. TERMINAL BOX AND MOLDED PLUG OPTIONS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH OPTION.
  4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 16 AND 17 SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
  5. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.  
THIRD ANGLE PROJECTION
- 

## DIMENSIONAL INFORMATION



MODEL NUMBER	A	B	C	D	E	INTERNAL FREE VOLUME CM <sup>3</sup> [IN. <sup>3</sup> ] EXCLUDING OIL CHARGE
ZR54-PFV	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	4195 [256]
ZR54-TF5/7/D/E	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	4195 [256]
ZR57-PFV	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	4195 [256]
ZR57-TF5/7/D/E	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	4195 [256]
ZR61-PFV	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	4113 [251]
ZR61-TF5/7/D/E	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	4195 [256]
ZR68-TF5/7/D/E	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	5932 [362]
ZR72-TF5/7/D/E	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	5932 [362]
ZR81-TF5/7/D/E	443.4 [17.457]	413.9 [16.30]	128.7 [5.07]	19.18 [0.755]	31.75 [1.25]	6060 [370]



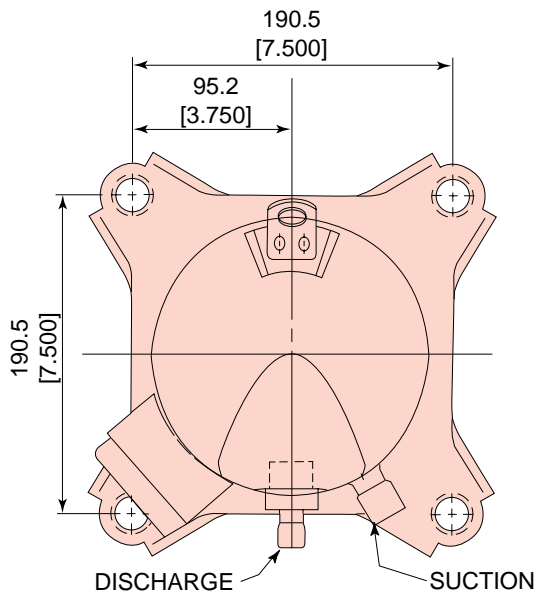
FOR THE INTERNATIONAL MARKET  
**ZR54 to ZR81**  
 HEAT PUMP AND  
 AIR CONDITIONING MODELS

**NOTES:**

- 1. ALL TOLERANCES ± 1.25 [3.18] UNLESS OTHERWISE SPECIFIED.
- 2. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.

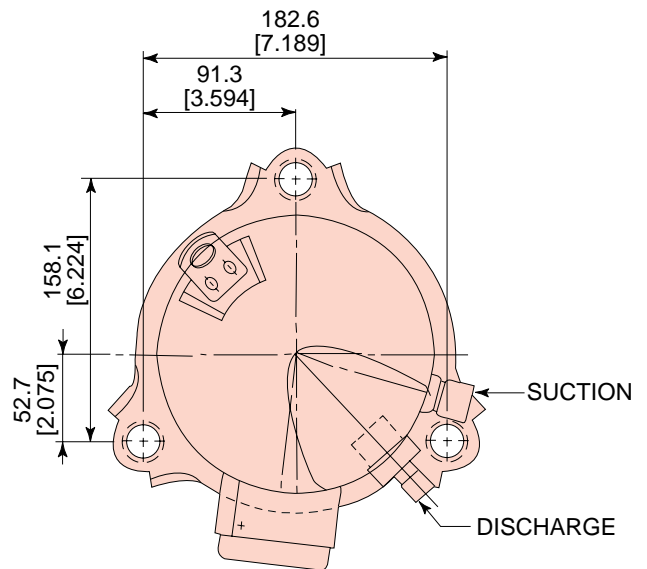
**MOUNTING INFORMATION**

**ZR18 TO ZR81**



4 FOOT MOUNTING  
ARRANGEMENT  
ALL BILLS OF MATERIAL  
EXCEPT 512, 562, 612

**ZR18 TO ZR47**

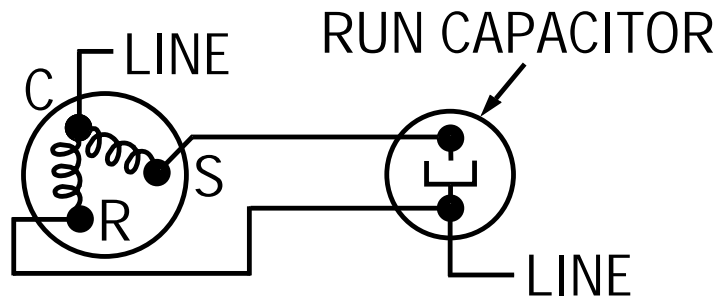


3 FOOT MOUNTING  
ARRANGEMENT  
BILLS OF MATERIAL  
512, 562, 612

FOR THE INTERNATIONAL MARKET  
**ZR18 to ZR81**  
COMPRESSOR  
MOUNTING OPTIONS

**COMPRESSOR WIRING DIAGRAMS**

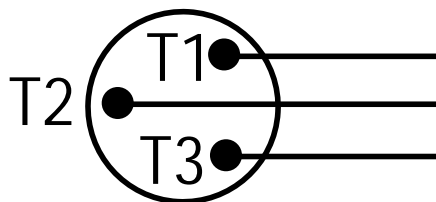
**SINGLE PHASE MOTOR**



**ZR18 TO ZR61**

USE MINIMUM 75° C WIRE FOR AMPACITY DETERMINATION  
 USE THIS EQUIPMENT ON A GROUNDED SYSTEM ONLY  
 INTERNAL MOTOR PROTECTION. ALLOW TIME FOR RESET  
 USE COPPER CONDUCTORS ONLY

**THREE PHASE MOTOR**



**ZR22 TO ZR81**

CRANKCASE HEATER, WHEN PROVIDED, MUST BE FIELD CONNECTED TO SEPARATE VOLTAGE SOURCE  
 USE MINIMUM 75° C WIRE FOR AMPACITY DETERMINATION  
 USE THIS EQUIPMENT ON A GROUNDED SYSTEM ONLY  
 INTERNAL MOTOR PROTECTION. ALLOW TIME FOR RESET  
 PRIMARY SINGLE PHASE FAILURE PROTECTION IS PROVIDED  
 TO CORRECT IMPROPER MOTOR ROTATION, SWITCH ANY TWO SUPPLY LINES  
 USE COPPER CONDUCTORS ONLY

**60 HERTZ**

**PERFORMANCE DATA**

**R22**

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

**ZR18K3-PFV**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	5980	7730	9900	12500	15600	19100	21100	23100	25300
120 (48.9)			8910	11300	14200	17400	19200	21100	23100
140 (60.0)					12100	15100	16700	18400	20200

**CAPACITY (KCAL/HOUR)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1510	1950	2490	3150	3930	4810	5320	5820	6380
120 (48.9)			2250	2850	3580	4380	4840	5320	5820
140 (60.0)					3050	3810	4210	4640	5090

**CAPACITY (WATTS)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1750	2260	2900	3660	4570	5600	6180	6770	7410
120 (48.9)			2610	3310	4160	5100	5630	6180	6770
140 (60.0)					3550	4420	4890	5390	5920

**POWER (MOTOR WATTS)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1190	1190	1190	1180	1180	1170	1160	1150	1140
120 (48.9)			1530	1530	1520	1520	1510	1500	1490
140 (60.0)					2010	2000	1990	1980	1970

**ZR18K3E-PFV**

R407C

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	5590	7730	10200	13000	16300	20300	22500	24900	27600
120 (48.9)			8650	11200	14100	17700	19700	21900	24300
140 (60.0)					11800	14900	16600	18600	20700

**CAPACITY (KCAL/HOUR)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1410	1950	2570	3280	4110	5120	5670	6270	6960
120 (48.9)			2180	2820	3550	4460	4960	5520	6120
140 (60.0)					2970	3750	4180	4690	5220

**CAPACITY (WATTS)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1640	2260	2990	3810	4780	5950	6590	7300	8090
120 (48.9)			2530	3280	4130	5190	5770	6420	7120
140 (60.0)					3460	4370	4860	5450	6070

**POWER (MOTOR WATTS)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1220	1230	1230	1230	1220	1210	1200	1190	1180
120 (48.9)			1600	1600	1600	1590	1580	1570	1550
140 (60.0)					2070	2060	2060	2050	2030

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR22K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	7380	9620	12400	15800	19600	24100	26500	29000	31700
120 (48.9)			10700	13800	17500	21600	23900	26200	28700
140 (60.0)				14700	18600	20800	23000	25300	

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1860	2420	3120	3980	4940	6070	6680	7310	7990
120 (48.9)			2700	3480	4410	5440	6020	6600	7230
140 (60.0)				3700	4690	5240	5800	6380	

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2160	2820	3630	4630	5740	7060	7760	8500	9290
120 (48.9)			3140	4040	5130	6330	7000	7680	8410
140 (60.0)				4310	5450	6090	6740	7410	

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1500	1500	1490	1480	1450	1440	1430	1430	1430
120 (48.9)			1950	1920	1880	1850	1830	1820	1810
140 (60.0)				2490	2430	2400	2380	2350	

### ZR22K3-TF5/TFD

#### CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	6730	9090	11900	15300	19200	23700	26200	28800	31600
120 (48.9)			10300	13400	17000	21200	23500	26000	28700
140 (60.0)				14600	18400	20600	22800	25300	

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1700	2290	3000	3860	4840	5970	6600	7260	7960
120 (48.9)			2600	3380	4280	5340	5920	6550	7230
140 (60.0)				3680	4640	5190	5750	6380	

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1970	2660	3490	4480	5630	6940	7680	8440	9260
120 (48.9)			3020	3930	4980	6210	6890	7620	8410
140 (60.0)				4280	5390	6040	6680	7410	

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1460	1440	1440	1430	1420	1400	1390	1380	1360
120 (48.9)			1880	1870	1860	1840	1820	1810	1790
140 (60.0)				2410	2390	2380	2360	2340	

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR22K3E-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	6810	9430	12400	15800	19900	24700	27400	30400	33700
120 (48.9)			10500	13600	17300	21600	24000	26700	29600
140 (60.0)					14400	18100	20300	22700	25200

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1720	2380	3120	3980	5010	6220	6900	7660	8490
120 (48.9)			2650	3430	4360	5440	6050	6730	7460
140 (60.0)					3630	4560	5120	5720	6350

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2000	2760	3630	4630	5830	7240	8030	8910	9870
120 (48.9)			3080	3980	5070	6330	7030	7820	8670
140 (60.0)					4220	5300	5950	6650	7380

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1460	1460	1470	1470	1460	1440	1430	1420	1400
120 (48.9)			1900	1900	1900	1880	1870	1860	1840
140 (60.0)					2450	2440	2430	2420	2400

### ZR22K3E-TF5/TFD

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2430	5480	9140	13500	18500	24300	27600	31000	34600
120 (48.9)			7100	11100	15700	21200	24200	27400	30800
140 (60.0)					12600	17500	20300	23300	26400

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	610	1380	2300	3400	4660	6120	6960	7810	8720
120 (48.9)			1790	2800	3960	5340	6100	6900	7760
140 (60.0)					3180	4410	5120	5870	6650

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	710	1610	2680	3960	5420	7120	8090	9080	10100
120 (48.9)			2080	3250	4600	6210	7090	8030	9020
140 (60.0)					3690	5130	5950	6830	7740

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1510	1500	1490	1480	1470	1450	1440	1420	1410
120 (48.9)			1980	1970	1960	1940	1920	1910	1890
140 (60.0)					2580	2560	2540	2520	2500

Production compressors to meet above nominal performance values within ± 5%.



## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR24K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	8040	10600	13700	17400	21500	26300	28900	31600	34600
120 (48.9)			11700	15200	19200	23700	26100	28600	31300
140 (60.0)				16000	20300	22700	25100	27700	

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2030	2670	3450	4380	5420	6630	7280	7960	8720
120 (48.9)			2950	3830	4840	5970	6580	7210	7890
140 (60.0)				4030	5120	5720	6330	6980	

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2360	3110	4010	5100	6300	7710	8470	9260	10100
120 (48.9)			3430	4450	5630	6940	7650	8380	9170
140 (60.0)				4690	5950	6650	7350	8120	

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1610	1600	1590	1570	1560	1550	1540	1530	1520
120 (48.9)			2040	2020	2000	1980	1960	1950	1940
140 (60.0)				2590	2550	2540	2520	2500	

### ZR24K3-TF5/TFD

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	7410	10200	13500	17300	21600	26600	29400	32300	35400
120 (48.9)			11600	15200	19200	23900	26400	29100	32000
140 (60.0)				16300	20700	23000	25600	28200	

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1870	2570	3400	4360	5440	6700	7410	8140	8920
120 (48.9)			2920	3830	4840	6020	6650	7330	8060
140 (60.0)				4110	5220	5800	6450	7110	

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2170	2990	3960	5070	6330	7790	8610	9460	10400
120 (48.9)			3400	4450	5630	7000	7740	8530	9380
140 (60.0)				4780	6070	6740	7500	8260	

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1760	1690	1640	1600	1570	1550	1540	1530	1510
120 (48.9)			2210	2130	2080	2040	2020	2000	1990
140 (60.0)				2770	2770	2690	2660	2630	2610

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR24K3E-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	7620	10400	13700	17600	22100	27400	30400	33600	37100
120 (48.9)			11500	15000	19100	23900	26600	29500	32700
140 (60.0)				15900	19900	20200	22600	25200	28000

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1920	2620	3450	4440	5570	6900	7660	8470	9350
120 (48.9)			2900	3780	4810	6020	6700	7430	8240
140 (60.0)				4010	5090	5090	5700	6350	7060

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2230	3050	4010	5160	6480	8030	8910	9840	10900
120 (48.9)			3370	4400	5600	7000	7790	8640	9580
140 (60.0)				4660	5920	5920	6620	7380	8200

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1680	1670	1660	1650	1630	1600	1580	1560	1540
120 (48.9)			2160	2140	2120	2090	2070	2050	2030
140 (60.0)				2760	2760	2730	2710	2690	2670

### ZR24K3E-TF5/TFD

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	7850	10600	13800	17700	22200	27500	30400	33600	37000
120 (48.9)			11600	15200	19300	24100	26700	29600	32600
140 (60.0)				15900	19900	20200	22600	25200	27900

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1980	2670	3480	4460	5590	6930	7660	8470	9320
120 (48.9)			2920	3830	4860	6070	6730	7460	8220
140 (60.0)				4010	5090	5090	5700	6350	7030

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2300	3110	4040	5190	6500	8060	8910	9840	10800
120 (48.9)			3400	4450	5650	7060	7820	8670	9550
140 (60.0)				4660	5920	5920	6620	7380	8170

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1660	1630	1610	1590	1580	1560	1550	1540	1530
120 (48.9)			2110	2080	2050	2030	2020	2010	2000
140 (60.0)				2680	2680	2650	2640	2620	2610

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR26K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	8550	11500	14800	18700	23200	28400	31300	34400	37800
120 (48.9)			13000	16600	20700	25500	28200	31100	34200
140 (60.0)					18100	22400	24900	27500	30400

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2150	2900	3730	4710	5850	7160	7890	8670	9530
120 (48.9)			3280	4180	5220	6430	7110	7840	8620
140 (60.0)					4560	5640	6270	6930	7660

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2510	3370	4340	5480	6800	8320	9170	10100	11100
120 (48.9)			3810	4860	6070	7470	8260	9110	10000
140 (60.0)					5300	6560	7300	8060	8910

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1760	1750	1740	1730	1720	1700	1690	1670	1650
120 (48.9)			2220	2200	2190	2170	2160	2150	2130
140 (60.0)					2790	2770	2760	2740	2730

### ZR26K3-TF5/TFD

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	6840	10000	13600	17800	22600	28200	31300	34600	38200
120 (48.9)			11600	15500	20000	25100	28000	31000	34300
140 (60.0)					16900	21700	24300	27200	30200

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1720	2520	3430	4490	5700	7110	7890	8720	9630
120 (48.9)			2920	3910	5040	6330	7060	7810	8640
140 (60.0)					4260	5470	6120	6850	7610

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2000	2930	3980	5220	6620	8260	9170	10100	11200
120 (48.9)			3400	4540	5860	7350	8200	9080	10000
140 (60.0)					4950	6360	7120	7970	8850

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1940	1870	1800	1740	1690	1640	1630	1610	1590
120 (48.9)			2410	2300	2220	2150	2120	2090	2070
140 (60.0)					2960	2840	2790	2750	2710

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR26K3E-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	8790	11700	15000	19000	23800	29500	32800	36300	40100
120 (48.9)			12500	16200	20500	25700	28600	31800	35300
140 (60.0)					17000	21700	24300	27200	30300

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2220	2950	3780	4790	6000	7430	8270	9150	10100
120 (48.9)			3150	4080	5170	6480	7210	8010	8900
140 (60.0)				4280	5470	6120	6850	7640	

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2580	3430	4400	5570	6970	8640	9610	10600	11700
120 (48.9)			3660	4750	6010	7530	8380	9320	10300
140 (60.0)				4980	6360	7120	7970	8880	

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1760	1760	1750	1740	1720	1700	1690	1670	1650
120 (48.9)			2250	2240	2220	2200	2180	2170	2150
140 (60.0)				2870	2840	2830	2810	2790	

### ZR26K3E-TF5/TFD

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	8710	11600	15000	19000	23800	29300	32400	35800	39500
120 (48.9)			12800	16400	20700	25700	28500	31600	34900
140 (60.0)					17300	21800	24300	27000	30000

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2190	2920	3780	4790	6000	7380	8160	9020	10000
120 (48.9)			3230	4130	5220	6480	7180	7960	8790
140 (60.0)				4360	5490	6120	6800	7560	

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2550	3400	4400	5570	6970	8580	9490	10500	11600
120 (48.9)			3750	4810	6070	7530	8350	9260	10200
140 (60.0)				5070	6390	7120	7910	8790	

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1740	1740	1730	1710	1690	1670	1650	1640	1630
120 (48.9)			2240	2220	2200	2170	2160	2150	2130
140 (60.0)				2870	2840	2820	2810	2790	

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR28K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	8840	12300	16000	20100	24900	30500	33700	37200	41000
120 (48.9)			13600	17800	22300	27400	30200	33300	36500
140 (60.0)				19000	24000	26700	29500	32500	

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2230	3100	4030	5070	6270	7690	8490	9370	10300
120 (48.9)			3430	4490	5620	6900	7610	8390	9200
140 (60.0)				4790	6050	6730	7430	8190	

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2590	3600	4690	5890	7300	8940	9870	10900	12000
120 (48.9)			3980	5220	6530	8030	8850	9760	10700
140 (60.0)				5570	7030	7820	8640	9520	

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2020	1960	1900	1840	1800	1780	1780	1780	1800
120 (48.9)			2550	2440	2340	2270	2250	2240	2240
140 (60.0)				3160	3010	2950	2900	2870	

### ZR28K3-TF5/TFD

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	8960	12400	16200	20500	25400	31000	34200	37500	41100
120 (48.9)			13900	18000	22600	27800	30700	33800	37200
140 (60.0)				19500	24400	27100	30000	33100	

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2260	3120	4080	5170	6400	7810	8620	9450	10400
120 (48.9)			3500	4540	5700	7010	7740	8520	9370
140 (60.0)				4910	6150	6830	7560	8340	

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2630	3630	4750	6010	7440	9080	10000	11000	12000
120 (48.9)			4070	5270	6620	8150	9000	9900	10900
140 (60.0)				5710	7150	7940	8790	9700	

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1890	1880	1860	1850	1820	1800	1780	1770	1760
120 (48.9)			2420	2390	2360	2330	2310	2300	2280
140 (60.0)				3050	3000	2980	2960	2940	

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR28K3E-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	9530	12600	16300	20600	25800	32000	35500	39300	43500
120 (48.9)			13500	17500	22300	27900	31000	34500	38200
140 (60.0)					18400	23500	26400	29500	32800

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2400	3180	4110	5190	6500	8060	8950	9900	11000
120 (48.9)			3400	4410	5620	7030	7810	8690	9630
140 (60.0)				4640	5920	7350	8050	8850	9720

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2790	3690	4780	6040	7560	9380	10400	11500	12700
120 (48.9)			3960	5130	6530	8170	9080	10100	11200
140 (60.0)				5390	6890	8690	9740	10800	11900

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1920	1910	1900	1890	1870	1850	1830	1810	1790
120 (48.9)			2470	2450	2430	2400	2390	2370	2350
140 (60.0)				3160	3130	3110	3110	3090	3070

### ZR28K3E-TF5/TFD

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	8460	11600	15300	19800	25200	31600	35200	39100	43400
120 (48.9)			13200	17200	22000	27900	31300	35000	39000
140 (60.0)					18000	23200	26200	29500	33200

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2130	2920	3860	4990	6350	7960	8870	9850	10900
120 (48.9)			3330	4330	5540	7030	7890	8820	9830
140 (60.0)				4540	5850	7350	8050	8850	9720

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2480	3400	4480	5800	7380	9260	10300	11500	12700
120 (48.9)			3870	5040	6450	8170	9170	10300	11400
140 (60.0)				5270	6800	8600	9680	10800	11900

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	1880	1870	1860	1840	1810	1780	1760	1740	1710
120 (48.9)			2410	2400	2370	2340	2320	2290	2270
140 (60.0)				3080	3050	3050	3030	3010	2980

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR30K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	9790	13200	17300	21900	27300	33400	36800	40400	44200
120 (48.9)			14700	19200	24200	30000	33100	36400	40000
140 (60.0)				20600	26100	29000	32200	35500	

#### CAPACITY (KCAL/HOUR)

°F/°C	-10	0	10	20	30	40	45	50	55
	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8
100 (37.8)	2470	3330	4360	5520	6880	8420	9270	10200	11100
120 (48.9)			3700	4840	6100	7560	8340	9170	10100
140 (60.0)				5190	6580	7310	8110	8950	

#### CAPACITY (WATTS)

°F/°C	-10	0	10	20	30	40	45	50	55
	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8
100 (37.8)	2870	3870	5070	6420	8000	9790	10800	11800	13000
120 (48.9)			4310	5630	7090	8790	9700	10700	11700
140 (60.0)				6040	7650	8500	9430	10400	

#### POWER (MOTOR WATTS)

°F/°C	-10	0	10	20	30	40	45	50	55
	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8
100 (37.8)	1970	1980	1970	1950	1940	1920	1920	1910	1910
120 (48.9)			2570	2540	2510	2470	2460	2450	2440
140 (60.0)				3290	3230	3200	3170	3150	

### ZR30K3-TF5/TFD

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	9990	13400	17300	21900	27200	33300	36800	40500	44500
120 (48.9)			15100	19300	24200	29900	33100	36500	40300
140 (60.0)				20800	26000	29000	32100	35600	

#### CAPACITY (KCAL/HOUR)

°F/°C	-10	0	10	20	30	40	45	50	55
	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8
100 (37.8)	2520	3380	4360	5520	6850	8390	9270	10200	11200
120 (48.9)			3810	4860	6100	7530	8340	9200	10200
140 (60.0)				5240	6550	7310	8090	8970	

#### CAPACITY (WATTS)

°F/°C	-10	0	10	20	30	40	45	50	55
	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8
100 (37.8)	2930	3930	5070	6420	7970	9760	10800	11900	13000
120 (48.9)			4420	5650	7090	8760	9700	10700	11800
140 (60.0)				6090	7620	8500	9410	10400	

#### POWER (MOTOR WATTS)

°F/°C	-10	0	10	20	30	40	45	50	55
	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8
100 (37.8)	1970	1960	1950	1950	1940	1930	1920	1900	1880
120 (48.9)			2550	2540	2520	2500	2490	2470	2450
140 (60.0)				3290	3260	3230	3210	3180	

Production compressors to meet above nominal performance values within ± 5%.

**60 HERTZ**

**PERFORMANCE DATA**

**R407C**

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

**ZR30K3E-PFV**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C									
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8	
100 (37.8)	10200	13500	17500	22100	27700	34300	38100	42200	46700	
120 (48.9)			14500	18800	23900	29900	33300	37000	41000	
140 (60.0)				19800	25200	28300	31600	35200		

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C									
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8	
100 (37.8)	2570	3400	4410	5570	6980	8640	9600	10600	11800	
120 (48.9)			3650	4740	6020	7530	8390	9320	10300	
140 (60.0)				4990	6350	7130	7960	8870		

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C									
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8	
100 (37.8)	2990	3960	5130	6480	8120	10000	11200	12400	13700	
120 (48.9)			4250	5510	7000	8760	9760	10800	12000	
140 (60.0)				5800	7380	8290	9260	10300		

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C									
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8	
100 (37.8)	2050	2040	2030	2020	2000	1980	1960	1940	1920	
120 (48.9)			2620	2600	2580	2560	2540	2520	2500	
140 (60.0)				3340	3310	3290	3270	3250		

**ZR30K3E-TF5/TFD**

**CAPACITY (BTU/HOUR)**

200/230-3-60 (TF5) 460-3-60 (TFD) Rated Voltage	230-3-60 (TF5) 460-3-60 (TFD) Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C									
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8	
100 (37.8)	9020	12400	16300	21100	26900	33700	37500	41700	46300	
120 (48.9)			14100	18300	23400	29700	33300	37300	41600	
140 (60.0)				19200	24700	27900	31500	35400		

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C									
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8	
100 (37.8)	2270	3120	4110	5320	6780	8490	9450	10500	11700	
120 (48.9)			3550	4610	5900	7480	8390	9400	10500	
140 (60.0)				4840	6220	7030	7940	8920		

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C									
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8	
100 (37.8)	2640	3630	4780	6180	7880	9870	11000	12200	13600	
120 (48.9)			4130	5360	6860	8700	9760	10900	12200	
140 (60.0)				5630	7240	8170	9230	10400		

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C									
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8	
100 (37.8)	2030	2020	2010	1990	1960	1920	1900	1870	1850	
120 (48.9)			2620	2600	2570	2530	2510	2480	2450	
140 (60.0)				3360	3320	3300	3280	3250		

Production compressors to meet above nominal performance values within ± 5%.



## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR32K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	10600	14400	18500	23200	28600	34900	38400	42300	46400
120 (48.9)			16200	20600	25600	31300	34600	38100	41900
140 (60.0)					22500	27700	30600	33800	37200

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2670	3630	4660	5850	7210	8790	9680	10700	11700
120 (48.9)			4080	5190	6450	7890	8720	9600	10600
140 (60.0)				5670	6980	7710	8520	9370	

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3110	4220	5420	6800	8380	10200	11300	12400	13600
120 (48.9)			4750	6040	7500	9170	10100	11200	12300
140 (60.0)					6590	8120	8970	9900	10900

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2070	2100	2100	2090	2070	2050	2040	2030	2030
120 (48.9)			2680	2680	2660	2630	2620	2600	2590
140 (60.0)					3390	3360	3350	3330	3310

### ZR32K3-TF5/TFD/TFE

#### CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) Rated Voltage

230-3-60 (TF5) Test Voltage

460-3-60 (TFD) Rated Voltage  
575-3-60 (TFE) & Test Voltage

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	11300	14700	18700	23300	28700	34900	38400	42100	46200
120 (48.9)			16600	20800	25700	31400	34600	38000	41700
140 (60.0)					22600	27700	30600	33700	37100

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2850	3700	4710	5870	7230	8790	9680	10600	11600
120 (48.9)			4180	5240	6480	7910	8720	9580	10500
140 (60.0)				5700	6980	7710	8490	9350	

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3310	4310	5480	6830	8410	10200	11300	12300	13500
120 (48.9)			4860	6090	7530	9200	10100	11100	12200
140 (60.0)					6620	8120	8970	9870	10900

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2070	2070	2070	2060	2040	2010	2000	1980	1970
120 (48.9)			2640	2630	2610	2580	2570	2550	2540
140 (60.0)					3330	3300	3280	3270	3250

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR32K3E-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	9340	13200	17700	22900	29000	35800	39500	43500	47600
120 (48.9)			14600	19600	25200	31400	34800	38300	42000
140 (60.0)					20700	26600	29700	33000	36300

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2350	3330	4460	5770	7310	9020	9950	11000	12000
120 (48.9)			3680	4940	6350	7910	8770	9650	10600
140 (60.0)				5220	6700	7480	8320	9150	

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2740	3870	5190	6710	8500	10500	11600	12700	13900
120 (48.9)			4280	5740	7380	9200	10200	11200	12300
140 (60.0)					6070	7790	8700	9670	10600

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2110	2120	2120	2100	2080	2040	2030	2010	1990
120 (48.9)			2740	2730	2710	2670	2650	2630	2610
140 (60.0)					3490	3470	3450	3430	3410

### ZR32K3E-TF5/TFD/TFE

#### CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	10300	13500	17600	22800	28800	35900	39800	43900	48300
120 (48.9)			15000	19500	25000	31400	35000	38800	42800
140 (60.0)					20800	26400	29500	32800	36400

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2600	3400	4440	5750	7260	9050	10000	11100	12200
120 (48.9)			3780	4910	6300	7910	8820	9780	10800
140 (60.0)				5240	6650	7430	8270	9170	

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3020	3960	5160	6680	8440	10500	11700	12900	14200
120 (48.9)			4400	5710	7330	9200	10300	11400	12500
140 (60.0)					6090	7740	8640	9610	10700

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2070	2080	2070	2060	2040	2010	2000	1990	1970
120 (48.9)			2690	2680	2660	2630	2620	2600	2580
140 (60.0)					3460	3430	3410	3390	3370

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR34K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	10900	14700	19000	24000	29700	36400	40100	44100	48400
120 (48.9)			16700	21300	26500	32600	36100	39700	43700
140 (60.0)					23200	28700	31800	35200	38800

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2750	3700	4790	6050	7480	9170	10100	11100	12200
120 (48.9)			4210	5370	6680	8220	9100	10000	11000
140 (60.0)					5850	7230	8010	8870	9780

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3190	4310	5570	7030	8700	10700	11700	12900	14200
120 (48.9)			4890	6240	7760	9550	10600	11600	12800
140 (60.0)					6800	8410	9320	10300	11400

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2170	2170	2170	2150	2130	2110	2090	2080	2070
120 (48.9)			2760	2740	2720	2690	2670	2650	2640
140 (60.0)					3500	3460	3440	3420	3400

### ZR34K3-TF5/TFD/TFE

#### CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) Rated Voltage

230-3-60 (TF5) Test Voltage

460-3-60 (TFD) Rated Voltage  
575-3-60 (TFE) & Test Voltage

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	11200	15000	19200	24100	29800	36400	40100	44100	48400
120 (48.9)			17000	21500	26600	32700	36100	39800	43700
140 (60.0)					23600	28900	32000	35300	38800

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2820	3780	4840	6070	7510	9170	10100	11100	12200
120 (48.9)			4280	5420	6700	8240	9100	10000	11000
140 (60.0)					5950	7280	8060	8900	9780

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3280	4400	5630	7060	8730	10700	11700	12900	14200
120 (48.9)			4980	6300	7790	9580	10600	11700	12800
140 (60.0)					6910	8470	9380	10300	11400

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2100	2110	2110	2100	2090	2060	2050	2030	2020
120 (48.9)			2680	2680	2670	2640	2630	2620	2600
140 (60.0)					3380	3370	3350	3340	3330

Production compressors to meet above nominal performance values within ± 5%.

<b>60 HERTZ</b>		<b>PERFORMANCE DATA</b>			<b>R407C</b>	
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling			95° F (35° C) Ambient (Air Over)	
208/230-1-60 (PFV) Rated Voltage			230-1-60 (PFV) Test Voltage			

**ZR34K3E-PFV**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	9910	13900	18700	24300	30700	38000	41900	46100	50500
120 (48.9)			15400	20800	26700	33300	36900	40700	44600
140 (60.0)					22000	28200	31500	35000	38500

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2500	3500	4710	6120	7740	9580	10600	11600	12700
120 (48.9)			3880	5240	6730	8390	9300	10300	11200
140 (60.0)				5540	7110	7940	8820	9700	

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2900	4070	5480	7120	9000	11100	12300	13500	14800
120 (48.9)			4510	6090	7820	9760	10800	11900	13100
140 (60.0)					6450	8260	9230	10300	11300

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2230	2250	2250	2230	2200	2160	2150	2120	2100
120 (48.9)			2900	2890	2870	2830	2810	2790	2770
140 (60.0)					3710	3680	3660	3640	3620

**ZR34K3E-TF5/TFD/TFE**

**CAPACITY (BTU/HOUR)**

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	11000	14500	19000	24500	31000	38600	42800	47200	51900
120 (48.9)			16100	21000	26900	33800	37600	41700	46100
140 (60.0)					22300	28300	31700	35300	39200

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2770	3650	4790	6170	7810	9730	10800	11900	13100
120 (48.9)			4060	5290	6780	8520	9480	10500	11600
140 (60.0)				5620	7130	7990	8900	9880	

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3220	4250	5570	7180	9080	11300	12500	13800	15200
120 (48.9)			4720	6150	7880	9900	11000	12200	13500
140 (60.0)					6530	8290	9290	10300	11500

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2200	2200	2190	2180	2160	2130	2120	2100	2090
120 (48.9)			2850	2830	2810	2780	2770	2750	2730
140 (60.0)					3650	3620	3600	3580	3560

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR36K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	12500	16400	20900	26200	32400	39500	43400	47600	52000
120 (48.9)			18400	23300	28900	35500	39200	43100	47200
140 (60.0)					25200	31200	34600	38200	42000

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3150	4130	5270	6600	8160	9950	10900	12000	13100
120 (48.9)			4640	5870	7280	8950	9880	10900	11900
140 (60.0)					6350	7860	8720	9630	10600

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3660	4810	6120	7680	9490	11600	12700	13900	15200
120 (48.9)			5390	6830	8470	10400	11500	12600	13800
140 (60.0)					7380	9140	10100	11200	12300

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2300	2340	2340	2320	2290	2260	2260	2260	2270
120 (48.9)			3020	3000	2960	2920	2900	2880	2870
140 (60.0)					3820	3760	3730	3700	3670

### ZR36K3-TF5/TFD/TFE

#### CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	11900	16000	20700	26200	32400	39500	43400	47600	52000
120 (48.9)			18000	23100	28900	35500	39100	43000	47100
140 (60.0)					25000	31200	34600	38200	42000

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3000	4030	5220	6600	8160	9950	10900	12000	13100
120 (48.9)			4540	5820	7280	8950	9850	10800	11900
140 (60.0)					6300	7860	8720	9630	10600

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3490	4690	6070	7680	9490	11600	12700	13900	15200
120 (48.9)			5270	6770	8470	10400	11500	12600	13800
140 (60.0)					7330	9140	10100	11200	12300

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2260	2270	2270	2250	2240	2220	2210	2210	2210
120 (48.9)			2960	2930	2900	2880	2860	2860	2850
140 (60.0)					3770	3720	3700	3680	3660

Production compressors to meet above nominal performance values within ± 5%.

**60 HERTZ**

**PERFORMANCE DATA**

**R407C**

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

**ZR36K3E-PFV**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	12100	16000	20700	26400	33100	41000	45500	50300	55500
120 (48.9)			17800	22800	28700	35800	39900	44200	48900
140 (60.0)					24300	30400	33900	37700	41900

**CAPACITY (KCAL/HOUR)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3050	4030	5220	6650	8340	10300	11500	12700	14000
120 (48.9)			4490	5750	7230	9020	10100	11100	12300
140 (60.0)					6120	7660	8540	9500	10600

**CAPACITY (WATTS)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3550	4690	6070	7740	9700	12000	13300	14700	16300
120 (48.9)			5220	6680	8410	10500	11700	13000	14300
140 (60.0)					7120	8910	9930	11000	12300

**POWER (MOTOR WATTS)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2430	2430	2430	2410	2380	2350	2320	2300	2270
120 (48.9)			3080	3080	3060	3020	2990	2960	2930
140 (60.0)					3970	3940	3920	3890	3850

**ZR36K3E-TF5/TFD/TFE**

**CAPACITY (BTU/HOUR)**

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	10400	15000	20200	26100	32900	40800	45300	50100	55300
120 (48.9)			16800	22300	28500	35700	39700	44100	48700
140 (60.0)					23700	30100	33700	37600	41700

**CAPACITY (KCAL/HOUR)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2620	3780	5090	6580	8290	10300	11400	12600	13900
120 (48.9)			4230	5620	7180	9000	10000	11100	12300
140 (60.0)					5970	7590	8490	9480	10500

**CAPACITY (WATTS)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3050	4400	5920	7650	9640	12000	13300	14700	16200
120 (48.9)			4920	6530	8350	10500	11600	12900	14300
140 (60.0)					6940	8820	9870	11000	12200

**POWER (MOTOR WATTS)**

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2320	2330	2330	2320	2290	2260	2240	2230	2210
120 (48.9)			3020	3010	2980	2950	2930	2910	2890
140 (60.0)					3870	3830	3810	3790	3760

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR40K3-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	13000	17700	22900	28900	35700	43500	47800	52500	57500
120 (48.9)			20100	25600	31900	39100	43100	47400	52000
140 (60.0)					27800	34400	38100	42000	46200

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3280	4460	5770	7280	9000	11000	12000	13200	14500
120 (48.9)			5070	6450	8040	9850	10900	11900	13100
140 (60.0)					7010	8670	9600	10600	11600

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3810	5190	6710	8470	10500	12700	14000	15400	16800
120 (48.9)			5890	7500	9350	11500	12600	13900	15200
140 (60.0)					8150	10100	11200	12300	13500

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2550	2550	2550	2540	2530	2500	2490	2480	2460
120 (48.9)			3270	3260	3250	3220	3200	3180	3160
140 (60.0)					4160	4140	4120	4090	4070

### ZR40K3-TF5/TFD/TFE

#### CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	13100	17600	22700	28600	35400	43400	47800	52600	57700
120 (48.9)			19900	25400	31700	39100	43100	47500	52200
140 (60.0)					27700	34300	38000	42000	46200

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3300	4440	5720	7210	8920	10900	12000	13300	14500
120 (48.9)			5010	6400	7990	9850	10900	12000	13200
140 (60.0)					6980	8640	9580	10600	11600

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3840	5160	6650	8380	10400	12700	14000	15400	16900
120 (48.9)			5830	7440	9290	11500	12600	13900	15300
140 (60.0)					8120	10000	11100	12300	13500

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2490	2510	2510	2500	2480	2450	2440	2420	2410
120 (48.9)			3220	3210	3180	3150	3140	3120	3100
140 (60.0)					4120	4080	4060	4040	4010

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR40K3E-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	12500	17300	22800	29000	36300	44900	49700	54900	60600
120 (48.9)			19300	25100	31700	39400	43700	48400	53500
140 (60.0)					26500	33300	37200	41300	45800

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3150	4360	5750	7310	9150	11300	12500	13800	15300
120 (48.9)			4860	6330	7990	9930	11000	12200	13500
140 (60.0)					6680	8390	9370	10400	11500

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3660	5070	6680	8500	10600	13200	14600	16100	17800
120 (48.9)			5650	7350	9290	11500	12800	14200	15700
140 (60.0)					7760	9760	10900	12100	13400

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2620	2620	2610	2590	2570	2550	2540	2520	2510
120 (48.9)			3370	3350	3330	3300	3280	3260	3240
140 (60.0)					4340	4300	4280	4250	4230

### ZR40K3E-TF5/TFD/TFE

#### CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	13200	17500	22700	28700	36000	44600	49400	54700	60300
120 (48.9)			19300	24800	31300	39100	43500	48300	53600
140 (60.0)					26500	33500	37500	41900	46700

#### CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3330	4410	5720	7230	9070	11200	12400	13800	15200
120 (48.9)			4860	6250	7890	9850	11000	12200	13500
140 (60.0)					6680	8440	9450	10600	11800

#### CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3870	5130	6650	8410	10500	13100	14500	16000	17700
120 (48.9)			5650	7270	9170	11500	12700	14200	15700
140 (60.0)					7760	9820	11000	12300	13700

#### POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2530	2540	2530	2520	2500	2490	2480	2470	2460
120 (48.9)			3290	3280	3260	3240	3230	3210	3200
140 (60.0)					4220	4180	4160	4140	4120

Production compressors to meet above nominal performance values within ± 5%.



**60 HERTZ**

**PERFORMANCE DATA**

**R22**

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

**ZR42K3-PFV**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	12800	18100	23900	30300	37600	45900	50500	55500	60900
120 (48.9)			20100	26400	33400	41200	45500	50000	54900
140 (60.0)					28600	36000	40000	44200	48700

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3230	4560	6020	7640	9480	11600	12700	14000	15300
120 (48.9)			5070	6650	8420	10400	11500	12600	13800
140 (60.0)					7210	9070	10100	11100	12300

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3750	5300	7000	8880	11000	13400	14800	16300	17800
120 (48.9)			5890	7740	9790	12100	13300	14700	16100
140 (60.0)					8380	10500	11700	13000	14300

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2730	2720	2710	2690	2670	2640	2630	2620	2610
120 (48.9)			3470	3440	3400	3360	3340	3330	3310
140 (60.0)					4380	4330	4300	4270	4250

**ZR42K3-TF5/TFD/TFE**

**CAPACITY (BTU/HOUR)**

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	14000	18300	23700	30000	37400	45900	50500	55400	60600
120 (48.9)			20300	26300	33200	41200	45500	50100	55000
140 (60.0)					28500	35900	40000	44300	48900

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3530	4610	5970	7560	9420	11600	12700	14000	15300
120 (48.9)			5120	6630	8370	10400	11500	12600	13900
140 (60.0)					7180	9050	10100	11200	12300

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4100	5360	6940	8790	11000	13400	14800	16200	17800
120 (48.9)			5950	7710	9730	12100	13300	14700	16100
140 (60.0)					8350	10500	11700	13000	14300

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2640	2630	2620	2610	2590	2560	2550	2530	2520
120 (48.9)			3400	3380	3350	3320	3300	3270	3250
140 (60.0)					4330	4290	4270	4240	4200

Production compressors to meet above nominal performance values within ± 5%.

60 HERTZ

PERFORMANCE DATA

R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

ZR42K3E-PFV

CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	13100	18200	23900	30500	38100	47100	52200	57600	63500
120 (48.9)			20300	26300	33200	41300	45900	50800	56100
140 (60.0)					27800	34900	39000	43300	48000

CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3300	4590	6020	7690	9600	11900	13200	14500	16000
120 (48.9)			5120	6630	8370	10400	11600	12800	14100
140 (60.0)					7010	6270	9830	10900	12100

CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3840	5330	7000	8940	11200	13800	15300	16900	18600
120 (48.9)			5950	7710	9730	12100	13400	14900	16400
140 (60.0)					8150	7300	11400	12700	14100

POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2750	2750	2740	2720	2700	2670	2660	2650	2630
120 (48.9)			3550	3530	3500	3470	3450	3430	3410
140 (60.0)					4570	4520	4500	4470	4440

ZR42K3E-TF5/TFD/TFE

CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	13600	18300	23800	30300	38000	47100	52300	57900	63900
120 (48.9)			20300	26100	33000	41200	45800	50900	56300
140 (60.0)					27700	34900	39000	43500	48400

CAPACITY (KCAL/HOUR)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3430	4610	6000	7640	9580	11900	13200	14600	16100
120 (48.9)			5120	6580	8320	10400	11500	12800	14200
140 (60.0)					6980	8790	9830	11000	12200

CAPACITY (WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3980	5360	6970	8880	11100	13800	15300	17000	18700
120 (48.9)			5950	7650	9670	12100	13400	14900	16500
140 (60.0)					8120	10200	11400	12700	14200

POWER (MOTOR WATTS)

°F/°C	°F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2680	2690	2690	2670	2640	2610	2590	2570	2550
120 (48.9)			3470	3470	3440	3410	3390	3360	3340
140 (60.0)					4440	4410	4390	4370	4340

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR45KC-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	15600	20300	25900	32500	40200	49100	54000	59300	64900
120 (48.9)			23000	29000	36100	44200	48800	53600	58800
140 (60.0)					31400	38800	43000	47400	52200

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3930	5120	6530	8190	10100	12400	13600	14900	16400
120 (48.9)			5800	7310	9100	11100	12300	13500	14800
140 (60.0)					7910	9780	10800	11900	13200

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4570	5950	7590	9520	11800	14400	15800	17400	19000
120 (48.9)			6740	8500	10600	13000	14300	15700	17200
140 (60.0)					9200	11400	12600	13900	15300

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2830	2840	2870	2900	2930	2950	2960	2970	2960
120 (48.9)			3600	3620	3650	3680	3700	3710	3730
140 (60.0)					4610	4630	4650	4660	4680

### ZR45KC-TF5/TFD/TFE

#### CAPACITY (BTU/HOUR)

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage
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CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	16300	21100	26800	33200	40700	49300	54000	59100	64500
120 (48.9)			23700	29700	36500	44400	48800	53400	58400
140 (60.0)					32000	39200	43100	47400	51900

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4110	5320	6750	8370	10300	12400	13600	14900	16300
120 (48.9)			5970	7480	9200	11200	12300	13500	14700
140 (60.0)					8060	9880	10900	11900	13100

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4780	6180	7850	9730	11900	14400	15800	17300	18900
120 (48.9)			6940	8700	10700	13000	14300	15600	17100
140 (60.0)					9380	11500	12600	13900	15200

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	2680	2710	2730	2750	2780	2820	2850	2890	2940
120 (48.9)			3490	3500	3510	3540	3560	3590	3630
140 (60.0)					4490	4500	4520	4530	4560

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR47KC-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	18700	23300	28700	35000	42300	50800	55600	60700	66100
120 (48.9)			25800	31500	38200	46000	50300	55000	60000
140 (60.0)					33600	40600	44500	48800	53300

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4710	5870	7230	8820	10700	12800	14000	15300
120 (48.9)			6500	7940	9630	11600	12700	13900	15100
140 (60.0)					8470	10200	11200	12300	13400

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	5480	6830	8410	10300	12400	14900	16300	17800
120 (48.9)			7560	9230	11200	13500	14700	16100	17600
140 (60.0)					9840	11900	13000	14300	15600

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2880	2940	2980	3010	3040	3070	3090	3110
120 (48.9)			3710	3750	3780	3800	3820	3830	3850
140 (60.0)					4780	4800	4810	4810	4820

### ZR47KC-TF5/TF7/TFD/TFE

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) 460-3-60 (TFD) 575-3-60 (TFE) Rated Voltage & Test Voltage
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	15400	20000	25900	32800	41100	50600	55800	61400	67300
120 (48.9)			22800	29200	36700	45500	50400	55600	61200
140 (60.0)					31900	39900	44400	49200	54400

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3880	5040	6530	8270	10400	12800	14100	15500
120 (48.9)			5750	7360	9250	11500	12700	14000	15400
140 (60.0)					8040	10100	11200	12400	13700

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4510	5860	7590	9610	12000	14800	16300	18000
120 (48.9)			6680	8560	10800	13300	14800	16300	17900
140 (60.0)					9350	11700	13000	14400	15900

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2760	2790	2810	2830	2870	2910	2940	2980
120 (48.9)			3610	3610	3630	3660	3680	3700	3730
140 (60.0)					4650	4650	4660	4670	4690

Production compressors to meet above nominal performance values within ± 5%.

<b>60 HERTZ</b>	<b>PERFORMANCE DATA</b>	<b>R407C</b>
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) Rated Voltage 460-3-60 (TFD) & Test Voltage 575-3-60 (TFE)

**ZR47KCE-TF5/TF7/TFD/TFE**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	5820	11900	19600	28800	39500	52000	58900	66200	74000
120 (48.9)			15600	23900	33800	45400	51800	58700	65900
140 (60.0)					27600	38100	44000	50300	57000

**CAPACITY (KCAL/HOUR)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	1470	3000	4940	7260	9950	13100	14800	16700
120 (48.9)			3930	6020	8520	11400	13100	14800	16600
140 (60.0)					6960	9600	11100	12700	14400

**CAPACITY (WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	1710	3490	5740	8440	11600	15200	17300	19400
120 (48.9)			4570	7000	9900	13300	15200	17200	19300
140 (60.0)					8090	11200	12900	14700	16700

**POWER (MOTOR WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2830	2850	2880	2910	2950	3000	3030	3070
120 (48.9)			3790	3800	3820	3850	3870	3900	3940
140 (60.0)					4980	4980	4990	5010	5030

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR48KC-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	19300	23900	29600	36200	44000	53000	58000	63300	69000
120 (48.9)			26500	32500	39600	47900	52400	57300	62600
140 (60.0)					34900	42300	46400	50900	55600

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4860	6020	7460	9120	11100	13400	14600	16000
120 (48.9)			6680	8190	9980	12100	13200	14400	15800
140 (60.0)				8790	10700	11700	12800	14000	

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	5650	7000	8670	10600	12900	15500	17000	18500
120 (48.9)			7760	9520	11600	14000	15400	16800	18300
140 (60.0)					10200	12400	13600	14900	16300

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3070	3090	3110	3130	3160	3200	3220	3260
120 (48.9)			3880	3900	3910	3930	3950	3970	3990
140 (60.0)					4920	4930	4940	4950	4960

### ZR48KC-TF5/TF7/TFD/TFE

200/230-3-60 (TF5) Rated Voltage

230-3-60 (TF5) Test Voltage

380-3-60 (TF7)  
460-3-60 (TFD)  
575-3-60 (TFE)  
Rated Voltage & Test Voltage

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	17100	21800	27700	34700	43100	52700	58000	63700	69700
120 (48.9)			24400	30800	38400	47300	52200	57500	63100
140 (60.0)					33300	41300	45800	50700	55800

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4310	5490	6980	8740	10900	13300	14600	16100
120 (48.9)			6150	7760	9680	11900	13200	14500	15900
140 (60.0)					8390	10400	11500	12800	14100

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	5010	6390	8120	10200	12600	15400	17000	18700
120 (48.9)			7150	9020	11300	13900	15300	16800	18500
140 (60.0)					9760	12100	13400	14900	16300

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2900	2920	2940	2970	3010	3050	3080	3120
120 (48.9)			3750	3760	3770	3800	3820	3850	3880
140 (60.0)					4790	4790	4800	4810	4830

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR48KCE-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	10200	16300	23700	32500	42800	54600	61200	68200	75700
120 (48.9)			19700	27600	37000	47800	53900	60300	67200
140 (60.0)					30700	40500	46000	51800	58100

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2570	4110	5970	8190	10800	13800	15400	17200
120 (48.9)			4960	6960	9320	12000	13600	15200	16900
140 (60.0)					7740	10200	11600	13100	14600

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2990	4780	6940	9520	12500	16000	17900	20000
120 (48.9)			5770	8090	10800	14000	15800	17700	19700
140 (60.0)					9000	11900	13500	15200	17000

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3140	3170	3200	3220	3250	3290	3320	3360
120 (48.9)			4090	4110	4130	4150	4170	4190	4220
140 (60.0)					5310	5320	5330	5340	5350

### ZR48KCE-TF5/TF7/TFD/TFE

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) 460-3-60 (TFD) 575-3-60 (TFE)	Rated Voltage & Test
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	7860	14000	21700	30900	41700	54300	61200	68600	76400
120 (48.9)			17400	25700	35600	47200	53600	60500	67800
140 (60.0)					29000	39500	45400	51700	58400

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	1980	3530	5470	7790	10500	13700	15400	17300
120 (48.9)			4380	6480	8970	11900	13500	15200	17100
140 (60.0)					7310	9950	11400	13000	14700

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2300	4100	6360	9050	12200	15900	17900	20100
120 (48.9)			5100	7530	10400	13800	15700	17700	19900
140 (60.0)					8500	11600	13300	15100	17100

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2970	3000	3020	3050	3090	3150	3180	3220
120 (48.9)			3950	3950	3970	4000	4030	4060	4090
140 (60.0)					5130	5130	5140	5160	5180

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR54KC-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	18500	24200	31200	39300	48500	58900	64500	70300	76500
120 (48.9)			26800	34200	42900	52900	58300	64100	70100
140 (60.0)					37600	46800	51900	57400	63100

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4660	6100	7860	9900	12200	14800	16300	17700
120 (48.9)			6750	8620	10800	13300	14700	16200	17700
140 (60.0)				9480	11800	13100	14500	15900	

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	5420	7090	9140	11500	14200	17300	18900	20600
120 (48.9)			7850	10000	12600	15500	17100	18800	20500
140 (60.0)					11000	13700	15200	16800	18500

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3330	3420	3490	3540	3600	3660	3700	3740
120 (48.9)			4280	4360	4420	4480	4510	4540	4570
140 (60.0)					5460	5530	5560	5590	5620

### ZR54KC-TF5/TF7/TFD/TFE

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) 460-3-60 (TFD) 575-3-60 (TFE)	Rated Voltage & Test
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#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	16800	23300	30400	38600	47900	58600	64500	70900	77800
120 (48.9)			26700	34300	42900	52800	58300	64300	70600
140 (60.0)					38000	46700	51600	56900	62600

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4230	5870	7660	9730	12100	14800	16300	17900
120 (48.9)			6730	8640	10800	13300	14700	16200	17800
140 (60.0)					9580	11800	13000	14300	15800

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4920	6830	8910	11300	14000	17200	18900	20800
120 (48.9)			7820	10000	12600	15500	17100	18800	20700
140 (60.0)					11100	13700	15100	16700	18300

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3120	3210	3280	3340	3400	3460	3490	3530
120 (48.9)			4040	4140	4210	4270	4300	4320	4350
140 (60.0)					5180	5270	5310	5340	5360

Production compressors to meet above nominal performance values within ± 5%.



60 HERTZ		PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
200/230-3-60 (TF5) Rated Voltage		230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage & Test Voltage

**ZR54KCE-TF5/TFD**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3700	12200	21700	32400	44600	58700	66500	74900	83900
120 (48.9)			16800	26800	38100	51200	58400	66200	74500
140 (60.0)					31600	43100	49600	56500	63900

**CAPACITY (KCAL/HOUR)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	930	3070	5470	8160	11200	14800	16800	18900
120 (48.9)			4230	6750	9600	12900	14700	16700	18800
140 (60.0)					7960	10900	12500	14200	16100

**CAPACITY (WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	1080	3570	6360	9490	13100	17200	19500	21900
120 (48.9)			4920	7850	11200	15000	17100	19400	21800
140 (60.0)					9260	12600	14500	16600	18700

**POWER (MOTOR WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3160	3260	3340	3410	3480	3540	3580	3620
120 (48.9)			4210	4320	4400	4470	4500	4530	4560
140 (60.0)					5500	5610	5650	5680	5720

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR57KC-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	18000	23700	31100	40000	50300	61600	67500	73700	80100
120 (48.9)			27400	35100	44400	55200	61100	67300	73700
140 (60.0)					39100	48600	53900	59600	65700

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4540	5970	7840	10100	12700	15500	17000	18600
120 (48.9)			6900	8850	11200	13900	15400	17000	18600
140 (60.0)					9850	12200	13600	15000	16600

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	5270	6940	9110	11700	14700	18000	19800	21600
120 (48.9)			8030	10300	13000	16200	17900	19700	21600
140 (60.0)					11500	14200	15800	17500	19300

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3370	3460	3520	3580	3650	3760	3840	3930
120 (48.9)			4400	4470	4530	4620	4670	4740	4820
140 (60.0)					5690	5770	5820	5870	5940

### ZR57KC-TF5/TF7/TFD/TFE

200/230-3-60 (TF5) Rated Voltage

230-3-60 (TF5) Test Voltage

380-3-60 (TF7)  
460-3-60 (TFD)  
575-3-60 (TFE)  
Rated Voltage  
& Test Voltage

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	17500	23000	30400	39500	50000	61700	68000	74600	81300
120 (48.9)			26700	34400	43900	55100	61300	67800	74600
140 (60.0)					38600	48300	53800	59800	66200

#### CAPACITY (KCAL/HOUR)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4410	5800	7660	9950	12600	15500	17100	18800
120 (48.9)			6730	8670	11100	13900	15400	17100	18800
140 (60.0)					9730	12200	13600	15100	16700

#### CAPACITY (WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	5130	6740	8910	11600	14700	18100	19900	21900
120 (48.9)			7820	10100	12900	16100	18000	19900	21900
140 (60.0)					11300	14200	15800	17500	19400

#### POWER (MOTOR WATTS)

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3290	3360	3430	3490	3550	3620	3660	3710
120 (48.9)			4260	4340	4400	4460	4490	4520	4550
140 (60.0)					5470	5550	5590	5620	5640

Production compressors to meet above nominal performance values within ± 5%.

<b>60 HERTZ</b>	<b>PERFORMANCE DATA</b>	<b>R407C</b>
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	460-3-60 (TFD) Rated Voltage & Test Voltage

**ZR57KCE-TF5/TFD**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	17200	22800	30400	39600	50300	62300	68700	75400	82300
120 (48.9)			26600	34500	44200	55600	61900	68500	75400
140 (60.0)					38800	48600	54300	60400	66900

**CAPACITY (KCAL/HOUR)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	4330	5750	7660	9980	12700	15700	17300	19000
120 (48.9)			6700	8690	11100	14000	15600	17300	19000
140 (60.0)					9780	12200	13700	15200	16900

**CAPACITY (WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	5040	6680	8910	11600	14700	18300	20100	22100
120 (48.9)			7790	10100	13000	16300	18100	20100	22100
140 (60.0)					11400	14200	15900	17700	19600

**POWER (MOTOR WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3480	3560	3630	3690	3760	3840	3880	3930
120 (48.9)			4520	4610	4680	4740	4770	4810	4840
140 (60.0)					5830	5910	5950	5980	6010

Production compressors to meet above nominal performance values within ± 5%.

## 60 HERTZ

## PERFORMANCE DATA

## R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

208/230-1-60 (PFV) Rated Voltage

230-1-60 (PFV) Test Voltage

### ZR61KC-PFV

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	17100	23700	31900	41700	52900	65600	72500	79700	87300
120 (48.9)			28100	36800	47300	59400	66100	73200	80700
140 (60.0)				40000	50900	57000	63600	70700	

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4310	5970	8040	10500	13300	16500	18300	20100	22000
120 (48.9)			7080	9270	11900	15000	16700	18400	20300
140 (60.0)				10100	12800	14400	16000	17800	

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	5010	6940	9350	12200	15500	19200	21200	23400	25600
120 (48.9)			8230	10800	13900	17400	19400	21400	23600
140 (60.0)				11700	14900	16700	18600	20700	

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3670	3760	3830	3890	3960	4050	4100	4150	4220
120 (48.9)			4700	4790	4860	4920	4960	5000	5050
140 (60.0)				6020	6100	6130	6170	6200	

### ZR61KC-TF5/TF7/TFD/TFE

200/230-3-60 (TF5) Rated Voltage

230-3-60 (TF5) Test Voltage

380-3-60 (TF7)  
460-3-60 (TFD)  
575-3-60 (TFE)  
Rated Voltage  
& Test Voltage

#### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	21300	26700	34300	43800	54600	66400	72500	78800	85000
120 (48.9)			30400	38400	48300	59800	65900	72200	78700
140 (60.0)				42600	52500	58100	64000	70200	

#### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	5370	6730	8640	11000	13800	16700	18300	19900	21400
120 (48.9)			7660	9680	12200	15100	16600	18200	19800
140 (60.0)				10700	13200	14600	16100	17700	

#### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	6240	7820	10000	12800	16000	19500	21200	23100	24900
120 (48.9)			8910	11300	14200	17500	19300	21200	23100
140 (60.0)				12500	15400	17000	18800	20600	

#### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3590	3600	3640	3700	3780	3870	3920	3970	4010
120 (48.9)			4570	4650	4730	4810	4840	4870	4900
140 (60.0)				5900	5900	5990	6030	6060	6090

Production compressors to meet above nominal performance values within ± 5%.

60 HERTZ		PERFORMANCE DATA		R407C	
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling		95° F (35° C) Ambient (Air Over)	
200/230-3-60 (TF5) Rated Voltage		230-3-60 (TF5) Test Voltage		380-3-60 (TF7) Rated Voltage 460-3-60 (TFD) & Test Voltage 575-3-60 (TFE)	

**ZR61KCE-TF5/TF7/TFD/TFE**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	15800	22800	31700	42400	54700	68600	76000	83700	91700
120 (48.9)			26600	35900	47100	60100	67300	74800	82700
140 (60.0)					38300	49700	56200	63100	70400

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3980	5750	7990	10700	13800	17300	19200	21100	23100
120 (48.9)			6700	9050	11900	15100	17000	18800	20800
140 (60.0)					9650	12500	14200	15900	17700

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4630	6680	9290	12400	16000	20100	22300	24500	26900
120 (48.9)			7790	10500	13800	17600	19700	21900	24200
140 (60.0)					11200	14600	16500	18500	20600

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	3480	3570	3640	3690	3760	3860	3940	4020	4130
120 (48.9)			4730	4770	4830	4900	4960	5020	5110
140 (60.0)					6330	6370	6400	6450	6510

Production compressors to meet above nominal performance values within ± 5%.

<b>60 HERTZ</b>	<b>PERFORMANCE DATA</b>	<b>R22</b>
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) Rated Voltage 460-3-60 (TFD) & Test Voltage 575-3-60 (TFE)

**ZR68KC-TF5/TF7/TFD/TFE**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	22400	29600	38400	48700	60700	74500	82000	90100	98600
120 (48.9)			33700	43300	54500	67200	74200	81700	89600
140 (60.0)				47000	58900	65500	72400	79700	

**CAPACITY (KCAL/HOUR)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	5640	7460	9680	12300	15300	18800	20700	22700
120 (48.9)			8490	10900	13700	16900	18700	20600	22600
140 (60.0)				11800	14800	16500	18200	20100	

**CAPACITY (WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	6560	8670	11300	14300	17800	21800	24000	26400
120 (48.9)			9870	12700	16000	19700	21700	23900	26300
140 (60.0)				13800	17300	19200	21200	23400	

**POWER (MOTOR WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3900	3980	4040	4080	4130	4200	4250	4310
120 (48.9)			5160	5200	5240	5270	5300	5330	5380
140 (60.0)				6710	6730	6730	6730	6740	6760

**ZR68KCE-TF5/TF7/TFD**

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) Rated Voltage 460-3-60 (TFD) & Test Voltage	R407C
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**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	7020	16700	28400	42200	58200	76500	86600	97300	109000
120 (48.9)			22000	34900	49800	66800	76200	86100	96600
140 (60.0)				39900	55700	64400	73700	83500	

**CAPACITY (KCAL/HOUR)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	1770	4210	7160	10600	14700	19300	21800	24500
120 (48.9)			5540	8790	12500	16800	19200	21700	24300
140 (60.0)				10100	14000	16200	18600	21000	

**CAPACITY (WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	2060	4890	8320	12400	17100	22400	25400	28500
120 (48.9)			6450	10200	14600	19600	22300	25200	28300
140 (60.0)				11700	16300	18900	21600	24500	

**POWER (MOTOR WATTS)**

°F/°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
	100 (37.8)	3980	4080	4140	4190	4240	4320	4380	4450
120 (48.9)			5410	5460	5490	5530	5560	5600	5650
140 (60.0)				7160	7180	7180	7180	7190	7210

Production compressors to meet above nominal performance values within ± 5%.

<b>60 HERTZ</b>	<b>PERFORMANCE DATA</b>	<b>R22</b>
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) 460-3-60 (TFD) Rated Voltage 575-3-60 (TFE) & Test Voltage

**ZR72KC-TF5/TF7/TFD/TFE**

**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	27500	34400	43100	53500	65500	78800	86000	93400	101000
120 (48.9)			38000	47400	58400	71100	78000	85300	92900
140 (60.0)				50700	62300	68700	75500	82700	

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	6930	8670	10900	13500	16500	19900	21700	23500	25500
120 (48.9)			9580	11900	14700	17900	19700	21500	23400
140 (60.0)				12800	15700	17300	19000	20800	

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	8060	10100	12600	15700	19200	23100	25200	27400	29600
120 (48.9)			11100	13900	17100	20800	22900	25000	27200
140 (60.0)				14900	18300	20100	22100	24200	

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4120	4220	4270	4310	4340	4410	4450	4510	4580
120 (48.9)			5440	5480	5500	5530	5560	5600	5640
140 (60.0)				7030	7040	7050	7070	7090	

**ZR72KCE-TF5/TF7/TFD/TFE**

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) 460-3-60 (TFD) 575-3-60 (TFE) Rated Voltage & Test Voltage	R407C
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**CAPACITY (BTU/HOUR)**

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	22800	31400	41100	52300	65300	80700	89400	98800	109000
120 (48.9)			34900	45100	57000	70900	78800	87400	96600
140 (60.0)				47700	60000	67000	74600	82800	

**CAPACITY (KCAL/HOUR)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	5750	7910	10400	13200	16500	20300	22500	24900	27500
120 (48.9)			8790	11400	14400	17900	19900	22000	24300
140 (60.0)				12000	15100	16900	18800	20900	

**CAPACITY (WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	6680	9200	12000	15300	19100	23600	26200	28900	31900
120 (48.9)			10200	13200	16700	20800	23100	25600	28300
140 (60.0)				14000	17600	19600	21900	24300	

**POWER (MOTOR WATTS)**

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4220	4280	4330	4400	4460	4520	4550	4580	4600
120 (48.9)			5550	5630	5700	5760	5780	5800	5820
140 (60.0)				7230	7320	7350	7390	7410	

Production compressors to meet above nominal performance values within ± 5%.

60 HERTZ		PERFORMANCE DATA			R22	
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling			95° F (35° C) Ambient (Air Over)	
200/230-3-60 (TF5) Rated Voltage		230-3-60 (TF5) Test Voltage			380-3-60 (TF7) Rated Voltage 460-3-60 (TFD) & Test Voltage 575-3-60 (TFE)	

## ZR81KC-TF5/TF7/TFD/TFE

### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	26200	35800	46100	57800	71300	87000	96000	106000	116000
120 (48.9)			40100	51200	63800	78400	86700	95600	105000
140 (60.0)				55600	68800	76200	84300	93000	

### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	6600	9020	11600	14600	18000	21900	24200	26700	29200
120 (48.9)			10100	12900	16100	19800	21800	24100	26500
140 (60.0)				14000	17300	19200	21200	23400	

### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	7680	10500	13500	16900	20900	25500	28100	31100	34000
120 (48.9)			11700	15000	18700	23000	25400	28000	30800
140 (60.0)				16300	20200	22300	24700	27200	

### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4570	4650	4720	4790	4870	4990	5060	5140	5240
120 (48.9)			6020	6080	6150	6230	6290	6350	6430
140 (60.0)				7780	7850	7890	7940	7990	

## ZR81KCE-TF5/TF7/TFD

200/230-3-60 (TF5) Rated Voltage	230-3-60 (TF5) Test Voltage	380-3-60 (TF7) Rated Voltage 460-3-60 (TFD) & Test Voltage	R407C
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### CAPACITY (BTU/HOUR)

CONDENSING TEMPERATURE °F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	21100	31100	42600	56100	71900	90400	101000	112000	124000
120 (48.9)			35200	47600	62000	78700	88100	98200	109000
140 (60.0)				51100	66000	74300	83300	93000	

### CAPACITY (KCAL/HOUR)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	5320	7840	10700	14100	18100	22800	25500	28200	31200
120 (48.9)			8870	12000	15600	19800	22200	24700	27500
140 (60.0)				12900	16600	18700	21000	23400	

### CAPACITY (WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	6180	9110	12500	16400	21100	26500	29600	32800	36300
120 (48.9)			10300	13900	18200	23100	25800	28800	31900
140 (60.0)				15000	19300	21800	24400	27200	

### POWER (MOTOR WATTS)

°F/°C	EVAPORATING TEMPERATURE °F/°C								
	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
100 (37.8)	4780	4800	4840	4910	5010	5150	5230	5320	5420
120 (48.9)			6420	6430	6490	6590	6660	6740	6830
140 (60.0)				8570	8580	8610	8650	8710	

Production compressors to meet above nominal performance values within ± 5%.



## HOW A SCROLL WORKS



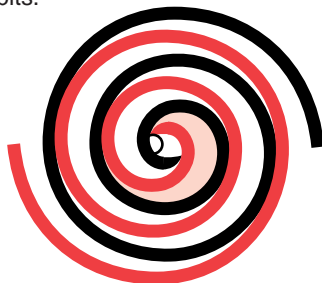
Compression in the scroll is created by the interaction of an orbiting spiral and a stationary spiral. Gas enters the outer openings as one of the spirals orbits.



The open passages are sealed off as gas is drawn into the spiral.



As the spiral continues to orbit, the gas is compressed into two increasingly smaller pockets.



By the time the gas arrives at the center port, discharge pressure has been reached.



Actually, during operation, all six gas passages are in various stages of compression at all times, resulting in nearly continuous suction and discharge.

The scroll is a simple compression concept first patented in 1905. A scroll is an involute spiral which, when matched with a mating scroll form as shown above, generates a series of crescent-shaped gas pockets between the two members. During compression, one scroll remains stationary (fixed scroll) while the other form (orbiting scroll) is allowed to orbit (but not rotate) around the first form. As this motion occurs, the pockets between the two forms are slowly

pushed to the center of the two scrolls while simultaneously being reduced in volume. When the pocket reaches the center of the scroll form, the gas, which is now at a high pressure, is discharged out of a port located at the center. During compression, several pockets are being compressed simultaneously, resulting in a very smooth process. Both the suction process (outer portion of the scroll members) and the discharge process (inner portion) are continuous.

**50  
60 HERTZ**

**APPROVED COMPRESSOR  
OPERATING RANGE**

**R22  
R407C**

**AN OKAY INDICATES AN APPROVED POINT FOR COMPRESSOR OPERATION  
AN \*\*\*\* INDICATES A NON-APPROVED POINT FOR COMPRESSOR OPERATION**

CONDENSING TEMPERATURE		EVAPORATING TEMPERATURE °F/°C								
°F	°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
80	26.7	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
90	32.2	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
100	37.8	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
110	43.3	****	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
120	48.9	****	****	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
130	54.4	****	****	****	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
140	60.0	****	****	****	****	OKAY	OKAY	OKAY	OKAY	OKAY
150	65.6	****	****	****	****	****	OKAY	OKAY	OKAY	OKAY

Approved range is based on 20F° (11.1C°) of superheat.

**APPLICATION NOTES**

- The Copeland Scroll Compressor has been under development at Copeland since 1979 and is the most efficient and durable compressor we have ever developed for residential air conditioning and heat pump applications. Scroll compressors have fewer moving parts and no dynamic suction or discharge valves. In addition, they offer very low vibration and sound levels and are very tolerant to stresses caused by liquid slugging, flooded starts, and debris commonly found in residential split air conditioning and heat pump systems.
- These Copeland Scrolls include a higher range of capacities and more electrical options than the earlier ZR1 models. In addition, there are several operating characteristics and design features which are different from the ZR1 models.
- The Copeland Scroll is a new type of compressor and there are a number of application characteristics which are different from the traditional reciprocating compressor. These are fully detailed in Application Bulletin AE 4-1312.
- The motor protector used in these ZR compressors is mounted internally and its proven design is the result of extensive laboratory research and field testing. It protects the motor from maximum operating overload, both high and low voltage, and loss of refrigerant charge. It is both current and heat sensing. The single phase protector protects both the run and start windings. The three phase protector is wired at the connection point of the motor's three legs. Therefore, the protector protects all three legs and if a problem occurs with one or more of them, the protector breaks all three phases.
- The rotational speeds of the compressor are:
  - 50 Hertz 2900 RPM
  - 60 Hertz 3500 RPM
- No crankcase heater is required for single phase compressors.
- A crankcase heater is required for three phase compressors when the system charge exceeds the compressor refrigerant charge limit shown below, and no accumulator is used or when the charge exceeds this limit and an accumulator cannot be piped to provide free liquid drainage into the accumulator during the off cycle.
  - ZR18 to ZR48 8 pounds (3.6 Kg)
  - ZR54 to ZR81 10 pounds (4.5 Kg)
- Since Copeland Scroll Compressors have very high volumetric efficiency, their displacements are lower than for comparable capacity reciprocating compressors. As a result, Copeland recommends that the capacity rating on reversing valves be no more than 1.5 to 2 times the nominal capacity of the compressor with which it will be used in order to ensure proper operation of the reversing valve under all operating conditions.
- The compressor has the approval to operate as a heat pump within the operating range. Its increased bearing surfaces and improved lubrication system provide excellent reliability even when operated at the heat pump's higher compression ratios.
- Low ambient cut-outs are not required to limit heat pump operation.
- These scroll Compressors have internal pressure relief valves which open at a discharge to suction differential pressure of 375 to 450 psi.
- No start assist devices are required. Due to the inherent design of the scroll, the internal compression components always start unloaded even if system pressures are not balanced.
- Rated load amps is the value used for contactor and other electrical component selection. It is calculated by dividing the maximum continuous current that the compressor draws under the condition of maximum load operation and the lowest operating voltage by 1.4. See Application Bulletin AE 9-1154 for a detailed explanation.
- Complete 60 Hertz performance curves are available in the units as follows for all models:
  - Capacity BTU/Hr
  - Power Input Watts
  - Current Amps
  - Efficiency BTUH/Watt
- Copeland has compiled a book of compressor Application Bulletins. Please see the following bulletins, from the book, for more ZR compressor application information as entitled below:
  - Mounting Parts ..... AE 4-1111
  - Application Guidelines ..... AE 4-1312
  - Nameplate Amperage Rating ..... AE 9-1154
  - Nameplate Voltages ..... AE 9-1228
  - Maximum Continuous
    - Current Rating..... AE 9-1250
    - Run Capacitors ..... AE10-1272

**COMPRESSOR SPECIFICATION**

The compressor shall be a Copeland Scroll type, with an internal start winding overload motor protector on all single phase models. For maximum compressor life the compressor should include a minimum of 38 ounces (1.12 liters) of oil. The compressor shall be capable of operating within the evaporating range of -10°F to 55°F (-23.3°C to 12.8°C). The compressor

must also be capable of operating at condensing temperatures up to 150°F (65.6°C). The compressor shall operate at an ARI point minimum efficiency of 10.1 BTU/WATT. Efficiencies of better than 10.1 BTU/WATT are acceptable, but efficiencies below 10.1 BTU/WATT are not acceptable. The compressor shall be of the Copeland ZR type or approved equal.

**UNITS CONVERSION CHART**

- BTUH × 0.252 = KCALH
- BTUH × 0.293 = WATTS
- (°F - 32) × 5/9 = °C
- POUNDS × 0.454 = KILOGRAMS
- INCHES × 25.4 = MILLIMETERS
- CUBIC INCHES × 16.386 = CUBIC CENTIMETERS
- FLUID OUNCES × 0.02957 = LITERS
- CUBIC FEET × 0.02831 = CUBIC METERS
- HORSEPOWER × 0.746 = KILOWATTS

**MULTIPACK PACKAGING AND SHIPPING INFORMATION**

Compressors are placed on a heavy-duty skid, overpacked with a protective shroud, and banded.

MODEL	NUMBER OF COMPRESSORS PER MULTIPACK	MULTIPACK WEIGHT POUNDS KILOGRAMS	MULTIPACK DIMENSIONS LENGTH x WIDTH x HEIGHT INCHES CENTIMETERS	MULTIPACK CUBE CUBIC FEET CUBIC METERS	NUMBER OF MULTIPACKS PER 20 FOOT STEEL CONTAINER	NUMBER OF COMPRESSORS PER 20 FOOT STEEL CONTAINER*	TOTAL WEIGHT INSIDE 20 FOOT STEEL CONTAINER POUNDS KILOGRAMS
ZR18	32	1890 857	43.75 x 43.75 x 36.5 111.1 x 111.1 x 92.7	40.4 1.14	20	640	37800 17100
ZR22	32	1920 871	43.75 x 43.75 x 37.5 111.1 x 111.1 x 95.3	41.5 1.18	20	640	38400 17400
ZR24	32	1985 900	43.75 x 43.75 x 37.5 111.1 x 111.1 x 95.3	41.5 1.18	19.5	624	38700 17600
ZR26	32	1985 900	43.75 x 43.75 x 37.5 111.1 x 111.1 x 95.3	41.5 1.18	19.5	624	38700 17600
ZR28	32	1985 900	43.75 x 43.75 x 37.5 111.1 x 111.1 x 95.3	41.5 1.18	19.5	624	38700 17600
ZR30 Single Phase	32	2080 943	43.75 x 43.75 x 39.25 111.1 x 111.1 x 99.7	43.5 1.23	18.5	592	38500 17500
ZR30 Three Phase	32	1920 871	43.75 x 43.75 x 39.25 111.1 x 111.1 x 99.7	43.5 1.23	20	640	38400 17400
ZR32 Single Phase	32	2080 943	43.75 x 43.75 x 39.25 111.1 x 111.1 x 99.7	43.5 1.23	18.5	592	38500 17500
ZR32 Three Phase	32	1950 885	43.75 x 43.75 x 39.25 111.1 x 111.1 x 99.7	43.5 1.23	20	640	39000 17700
ZR34	32	2145 973	43.75 x 43.75 x 39.25 111.1 x 111.1 x 99.7	43.5 1.23	18	576	38600 17500
ZR36	32	2145 973	43.75 x 43.75 x 39.25 111.1 x 111.1 x 99.7	43.5 1.23	18	576	38600 17500
ZR40 Single Phase	32	2240 1015	43.75 x 43.75 x 40.5 111.1 x 111.1 x 103	44.9 1.27	17	544	38100 17300
ZR40 Three Phase	32	2080 943	43.75 x 43.75 x 40.5 111.1 x 111.1 x 103	44.9 1.27	18.5	592	38500 17500
ZR42 Single Phase	32	2240 1015	43.75 x 43.75 x 40.5 111.1 x 111.1 x 103	44.9 1.27	17	544	38100 17300
ZR42 Three Phase	32	2080 943	43.75 x 43.75 x 40.5 111.1 x 111.1 x 103	44.9 1.27	18.5	592	38500 17500
ZR45 Single Phase	32	2210 1000	43.75 x 43.75 x 41.75 111.1 x 111.1 x 106	46.2 1.31	17.5	560	38700 17600
ZR45 Three Phase	32	2110 957	43.75 x 43.75 x 41.75 111.1 x 111.1 x 106	46.2 1.31	18	576	38000 17200
ZR47 Single Phase	32	2400 1089	43.75 x 43.75 x 41.75 111.1 x 111.1 x 106	46.2 1.31	16	512	38400 17400
ZR47 Three Phase	32	2240 1015	43.75 x 43.75 x 41.75 111.1 x 111.1 x 106	46.2 1.31	17	544	38100 17300
ZR48 Single Phase	32	2400 1089	43.75 x 43.75 x 41.75 111.1 x 111.1 x 106	46.2 1.31	16	512	38400 17400
ZR48 Three Phase	32	2110 957	43.75 x 43.75 x 41.75 111.1 x 111.1 x 106	46.2 1.31	18	576	38000 17200
ZR54 Single Phase	32	2910 1320	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	13	416	37800 17100
ZR54 Three Phase	32	2690 1220	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	14	448	37700 17100
ZR57 Single Phase	32	2880 1306	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	13.5	432	38900 17600
ZR57 Three Phase	32	2655 1204	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	14.5	464	38500 17500
ZR61 Single Phase	32	3040 1379	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	12.5	400	38000 17200
ZR61 Three Phase	32	2750 1247	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	14	448	38500 17500
ZR68	32	2850 1293	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	13.5	432	38500 17500
ZR72	32	2850 1293	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	13.5	432	38500 17500
ZR81	32	2945 1336	43.75 x 43.75 x 43.75 111.1 x 111.1 x 111	48.5 1.37	13	416	38300 17400

\*Minimum quantities are shown. Quantities can be increased through special arrangements if certain equipment and services are available.

**MULTIPLE SINGLE PACKS PACKAGING AND SHIPPING INFORMATION**

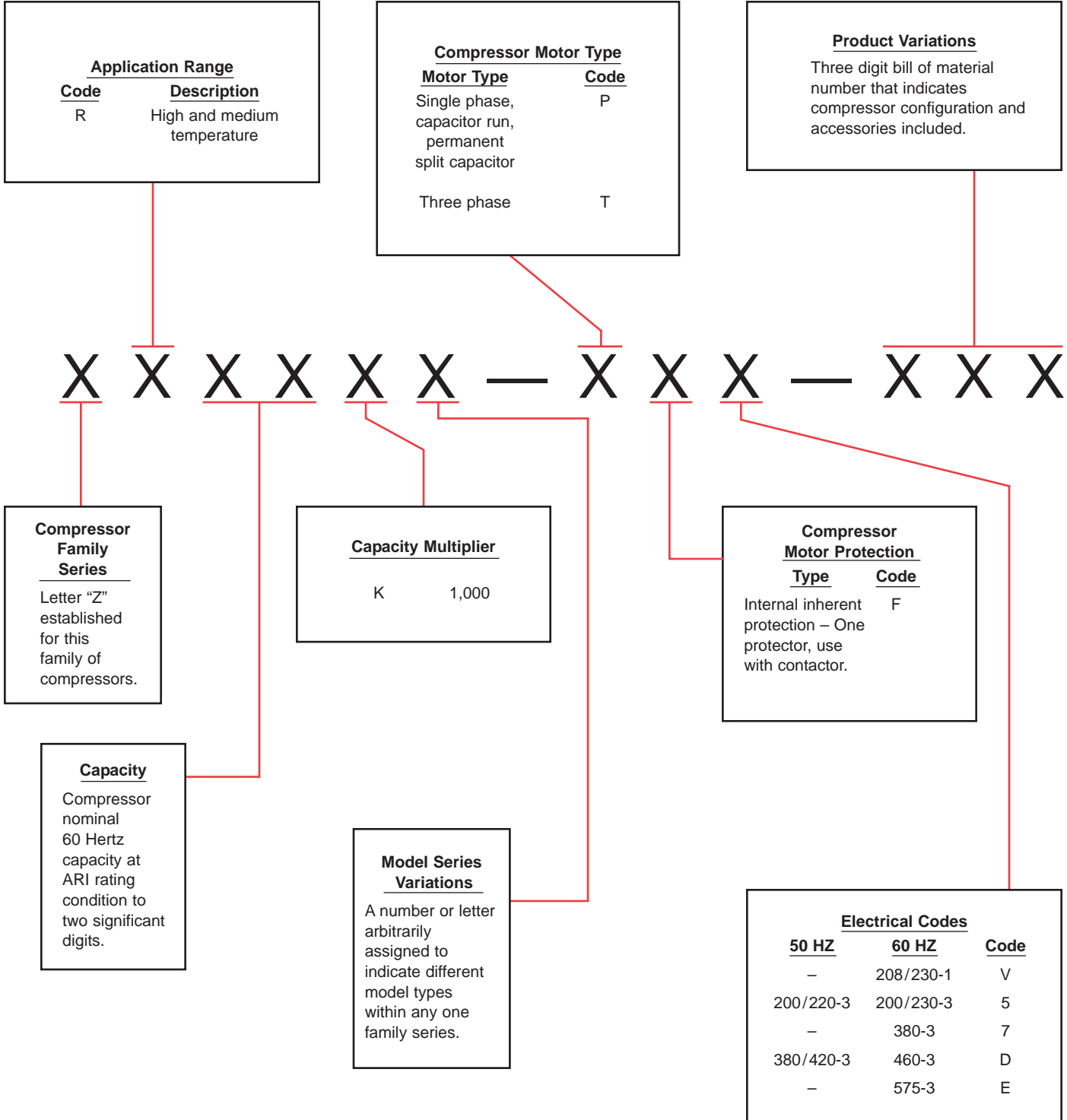
MODEL	Weight (pounds/kilograms) of a pallet of 12 single pack cartons placed on a wooden skid, overpacked with a protective shroud, and banded. Multipack dimensions (cube) are 45 x 33 x 46 inches (39.5 FT <sup>3</sup> ), 114.3 x 83.8 x 116.8 centimeters (1.12 m <sup>3</sup> ).		Weight (pounds/kilograms) of a pallet of 18 single pack cartons placed on a wooden skid, overpacked with a protective shroud, and banded. Multipack dimensions (cube) are 48.5 x 44 x 46 inches (58.8 FT <sup>3</sup> ), 123.2 x 111.8 x 116.8 centimeters (1.61 m <sup>3</sup> ).	
	NO CAPACITOR	RUN CAPACITOR	NO CAPACITOR	RUN CAPACITOR
	BILLS OF MATERIAL 501, 512, 522, 523, 562, 601, 612, 622	BILLS OF MATERIAL 511, 515, 611	BILLS OF MATERIAL 501, 512, 522, 523, 562, 601, 612, 622	BILLS OF MATERIAL 511, 515, 611
ZR18	779 353	785 356	1159 526	1168 530
ZR22	779 353	785 356	1159 526	1168 530
ZR24	797 362	803 364	1186 538	1195 542
ZR26	803 364	809 367	1195 542	1204 546
ZR28	803 364	809 367	1195 542	1204 546
ZR30 Single Phase	851 386	857 389	1267 575	1276 579
ZR30 Three Phase	791 359	– –	1177 534	– –
ZR32 Single Phase	851 386	857 389	1267 575	1276 579
ZR32 Three Phase	803 364	– –	1195 542	– –
ZR34	863 391	869 394	1285 583	1294 587
ZR36 Single Phase	875 397	881 400	1303 591	1312 595
ZR36 Three Phase	851 386	– –	1267 575	– –
ZR40 Single Phase	911 413	917 416	1357 616	1366 620
ZR40 Three Phase	851 386	– –	1267 575	– –
ZR42 Single Phase	911 413	917 416	1357 616	1366 620
ZR42 Three Phase	851 386	– –	1267 575	– –
ZR45 Single Phase	899 408	905 411	1339 607	1348 611
ZR45 Three Phase	863 391	– –	1285 583	– –
ZR47 Single Phase	971 440	977 443	1447 656	1456 660
ZR47 Three Phase	911 413	– –	1357 616	– –
ZR48 Single Phase	971 440	977 443	1447 656	1456 660
ZR48 Three Phase	863 391	– –	1285 583	– –
ZR54 Single Phase	1163 528	1169 530	1735 787	1744 791
ZR54 Three Phase	1079 489	– –	1609 730	– –
ZR57 Single Phase	1151 522	1157 525	1717 779	1726 783
ZR57 Three Phase	1067 484	– –	1591 722	– –
ZR61 Single Phase	1211 549	1217 552	1807 820	1816 824
ZR61 Three Phase	1103 500	– –	1645 746	– –
ZR68	1139 517	– –	1699 771	– –
ZR72	1139 517	– –	1699 771	– –
ZR81	1175 533	– –	1753 795	– –

**SINGLE PACK PACKAGING AND SHIPPING INFORMATION**

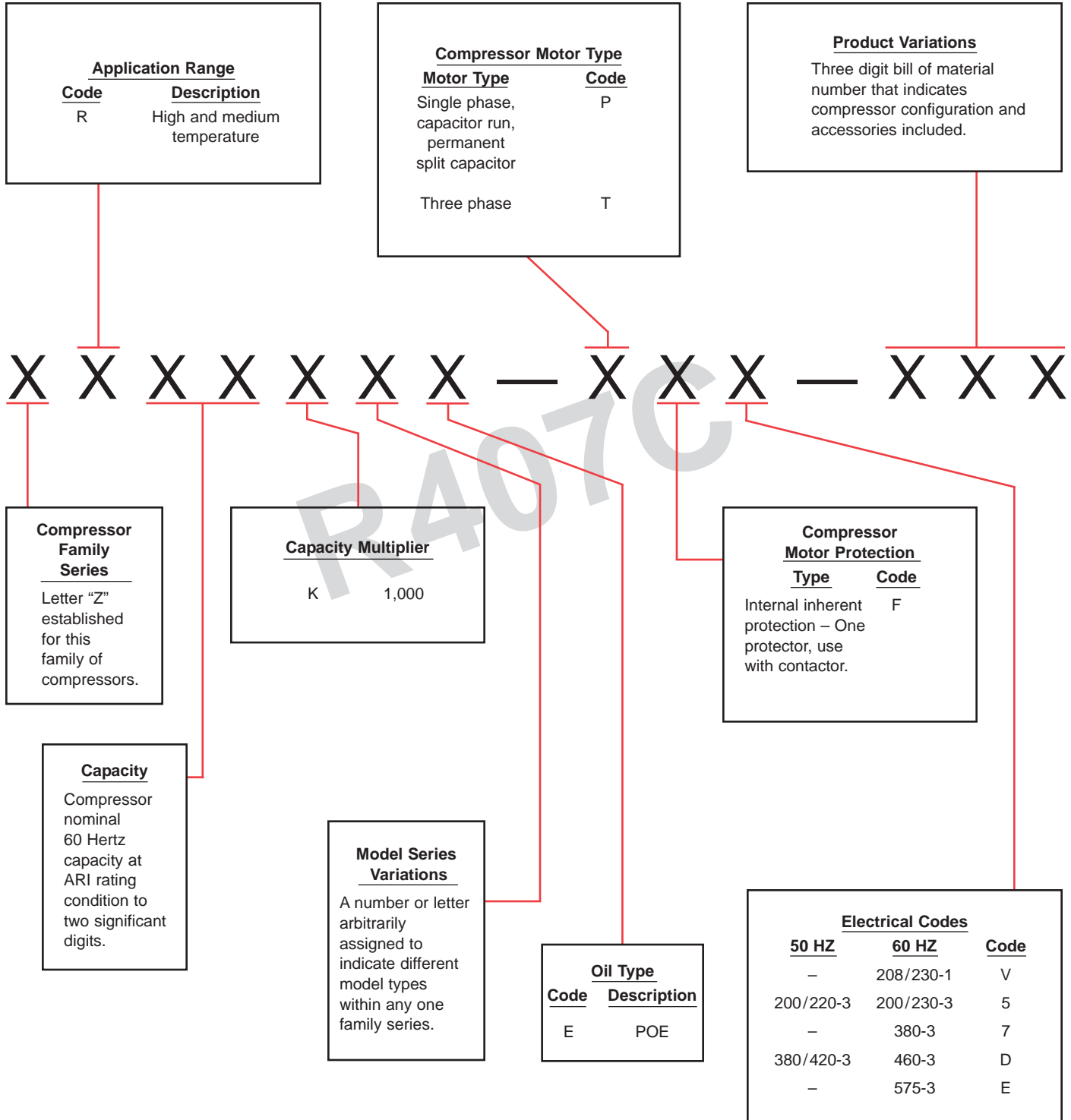
For your domestic shipments of 1 single pack, the box dimensions (cube) are 14.5 x 14.5 x 20.5 inches (2.5 FT<sup>3</sup>), 36.8 x 36.8 x 52.1 centimeters (.07 m<sup>3</sup>), and the weights (pounds/kilograms), with accessories noted, are shown below.

MODEL	NO CAPACITOR	RUN CAPACITOR
	BILLS OF MATERIAL 501, 512, 522, 523, 562, 601, 612, 622	BILLS OF MATERIAL 511, 515, 611
ZR18	61 27.7	61.5 27.9
ZR22	61 27.7	61.5 27.9
ZR24	62.5 28.3	63 28.6
ZR26	63 28.6	63.5 28.8
ZR28	63 28.6	63.5 28.8
ZR30 Single Phase	67 30.4	67.5 30.6
ZR30 Three Phase	62 28.1	– –
ZR32 Single Phase	67 30.4	67.5 30.6
ZR32 Three Phase	63 28.6	– –
ZR34	68 30.8	68.5 31.1
ZR36 Single Phase	69 31.3	69.5 31.5
ZR36 Three Phase	67 30.4	– –
ZR40 Single Phase	72 32.7	72.5 32.9
ZR40 Three Phase	67 30.4	– –
ZR42 Single Phase	72 32.7	72.5 32.9
ZR42 Three Phase	67 30.4	– –
ZR45 Single Phase	71 32.2	71.5 32.4
ZR45 Three Phase	68 30.8	– –
ZR47 Single Phase	77 34.9	77.5 35.2
ZR47 Three Phase	72 32.7	– –
ZR48 Single Phase	77 34.9	77.5 35.2
ZR48 Three Phase	68 30.8	– –
ZR54 Single Phase	93 42.2	93.5 42.4
ZR54 Three Phase	86 39.0	– –
ZR57 Single Phase	92 41.7	92.5 42.0
ZR57 Three Phase	85 38.6	– –
ZR61 Single Phase	97 44.0	97.5 44.2
ZR61 Three Phase	88 39.9	– –
ZR68	91 41.3	– –
ZR72	91 41.3	– –
ZR81	94 42.6	– –

**R22 MODEL NUMBER NOMENCLATURE**



**R407C MODEL NUMBER NOMENCLATURE**





**60 HERTZ**

**PERFORMANCE NOMINALS**

**R22**

SINGLE PHASE					230-1-60 TEST VOLTAGE				
MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZRT92K3-PFV	A	93200	23500	27300	8280	38.1	11.3	2.8	3.3
	B	92500	23300	27100	8300	38.1	11.1	2.8	3.3
	C	110000	27700	32200	5840	26.2	18.8	4.7	5.5
ZRT98K3-PFV	A	99200	25000	29100	8840	40.3	11.2	2.8	3.3
	B	98400	24800	28800	8860	40.3	11.1	2.8	3.3
	C	117000	29500	34300	6160	29.4	19.0	4.8	5.6
ZRT108K3-PFV	A	110000	27700	32200	9730	44.2	11.3	2.8	3.3
	B	109000	27500	31900	9750	44.2	11.2	2.8	3.3
	C	127000	32000	37200	6790	30.9	18.7	4.7	5.5
ZRT114K3-PFV	A	117000	29500	34300	10300	45.7	11.4	2.9	3.3
	B	116000	29200	34000	10300	45.7	11.3	2.8	3.3
	C	135000	34000	39600	7130	31.9	18.9	4.8	5.6
ZRT122K3-PFV	A	122000	30700	35700	10800	50.6	11.3	2.8	3.3
	B	121000	30500	35500	10800	50.6	11.2	2.8	3.3
	C	143000	36000	41900	7470	35.6	19.1	4.8	5.6

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See full operating range on page 76.

Production compressors to meet above nominal performance values within ±5 percent.

60 HERTZ

PERFORMANCE NOMINALS

R22

THREE PHASE					TEST VOLTAGE				
MODEL	RATING CONDITION	CAPACITY			MOTOR WATTS	AMPERES*	ENERGY EFFICIENCY RATING		
		BTU HOUR	KCAL HOUR	WATTS			BTUH MOTOR WATTS	KCALH MOTOR WATTS	WATTS MOTOR WATTS
ZRT92K3-TF5/D/E	A	93400	23500	27400	8220	23.9/-/12.0/9.6	11.4	2.9	3.3
	B	92700	23400	27200	8240	23.9/-/12.0/9.6	11.3	2.8	3.3
	C	110000	27700	32200	5690	17.9/-/9.0/7.2	19.3	4.9	5.7
ZRT98K3-TF5/D/E	A	99400	25000	29100	8700	25.3/-/12.7/10.1	11.4	2.9	3.3
	B	98600	24800	28900	8720	25.3/-/12.7/10.1	11.3	2.8	3.3
	C	117000	29500	34300	6020	18.9/-/9.5/7.6	19.4	4.9	5.7
ZRU103K3-TF5/D/E	A	104000	26200	30500	9340	27.0/-/13.5/10.8	11.1	2.8	3.3
	B	103000	26000	30200	9360	27.0/-/13.5/10.8	11.0	2.8	3.2
	C	123000	31000	36000	6460	20.3/-/10.2/8.1	19.0	4.8	5.6
ZRT108K3-TF5/D/E	A	109000	27500	31900	9490	27.8/-/13.9/11.1	11.5	2.9	3.4
	B	108000	27200	31600	9510	27.8/-/13.9/11.1	11.4	2.9	3.3
	C	127000	32000	37200	6580	21.2/-/10.6/8.5	19.3	4.9	5.7
ZRT114K3-TF5/D/E	A	116000	29200	34000	9980	29.2/-/14.6/11.7	11.6	2.9	3.4
	B	115000	29000	33700	10000	29.2/-/14.6/11.7	11.5	2.9	3.4
	C	135000	34000	39600	6880	21.8/-/10.9/8.7	19.6	4.9	5.8
ZRT122K3-TF5/D/E	A	122000	30700	35700	10600	30.8/-/15.4/12.3	11.5	2.9	3.4
	B	121000	30500	35500	10600	30.8/-/15.4/12.3	11.4	2.9	3.3
	C	143000	36000	41900	7290	22.9/-/11.5/9.2	19.6	4.9	5.7
ZRT136KC-TF5/7/D/E	A	138000	34800	40400	11900	36.1/21.7/18.1/14.4	11.6	2.9	3.4
	B	137000	34500	40100	11900	36.1/21.7/18.1/14.4	11.5	2.9	3.4
	C	160000	40300	46900	8520	28.7/17.2/14.4/11.5	18.8	4.7	5.5
ZRU140KC-TF5/7/D/E	A	142000	35800	41600	12200	36.2/21.7/18.1/14.5	11.6	2.9	3.4
	B	141000	35500	41300	12200	36.2/21.7/18.1/14.5	11.6	2.9	3.4
	C	164000	41300	48100	8740	28.6/17.2/14.3/11.4	18.8	4.7	5.5
ZRT144KC-TF5/7/D/E	A	145000	36500	42500	12600	36.6/22.0/18.3/14.6	11.5	2.9	3.4
	B	144000	36300	42200	12600	36.6/22.0/18.3/14.6	11.4	2.9	3.3
	C	169000	42600	49500	9100	28.3/17.0/14.2/11.3	18.6	4.7	5.4
ZRT162KC-TF5/7/D/E	A	164000	41300	48100	14200	41.6/25.0/20.8/16.6	11.5	2.9	3.4
	B	163000	41100	47800	14200	41.6/25.0/20.8/16.6	11.5	2.9	3.4
	C	192000	48400	56300	10200	32.8/19.7/16.4/13.1	18.8	4.7	5.5

\* Ampere values shown are at 230 volts/380 volts/460 volts/575 volts.

RATING CONDITION	RATING STANDARD	EVAPORATING TEMPERATURE °F/°C	CONDENSING TEMPERATURE °F/°C	AMBIENT TEMPERATURE °F/°C	LIQUID TEMPERATURE °F/°C	RETURN GAS TEMPERATURE °F/°C
A	ASRE/T	45	130	95	115	95
		7.2	54.4	35.0	46.1	35.0
B	ARI	45	130	95	115	65
		7.2	54.4	35.0	46.1	18.3
C	CHEER ★	45	100	95	85	65
		7.2	37.8	35.0	29.4	18.3

See full operating range on page 76.

Production compressors to meet above nominal performance values within ±5 percent.

## “STANDARD” BILL OF MATERIAL

The bill of material includes features as shown by the X.

BILL OF MATERIAL NUMBER	STUB TUBE CONNECTIONS	GROUNDING TAB, SCREW AND WASHER	TERMINAL BOX, COVER AND TERMINAL CONNECTOR BLOCK WITH SCREWS
522	X	X	X

<b>BILL OF MATERIAL PROVISIONS</b>	<b>ACCESSORY INFORMATION</b>
<p>Copeland is pleased to offer the bill of material shown above.</p> <p>In addition to the marked features, each compressor will include the following:</p> <ul style="list-style-type: none"> <li>● Wiring diagram.</li> <li>● Internal line break protector.</li> <li>● 57 Ounces (1.69 liters) of white oil per compressor.</li> <li>● Rubber grommet mounting parts with sleeves. Kit 527-0150-00 for under rails. Compressor to rail mounting parts are also included.                             <ul style="list-style-type: none"> <li>● ZR 92 to 122      527-0180-00</li> <li>● ZR 136 to 162    527-0181-00</li> </ul> </li> <li>● Grounding tab located in the compressor terminal box.</li> </ul> <p>See outline drawing pages 74 and 76 for stub tube sizes.</p>	<p>Crankcase Heater - 240 volt - 70 watt    018-0057-00</p> <p>Crankcase Heater - 480 volt - 70 watt    018-0057-01</p> <p>Note: Use two heaters per tandem.</p>

**NOTES:**

1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE  $\pm 1.50$  [0.060] UNLESS OTHERWISE SPECIFIED.
2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING HOLES BY  $\pm 4.6$  [0.18].
3. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.

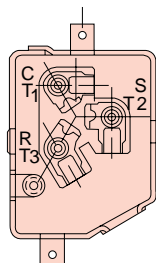
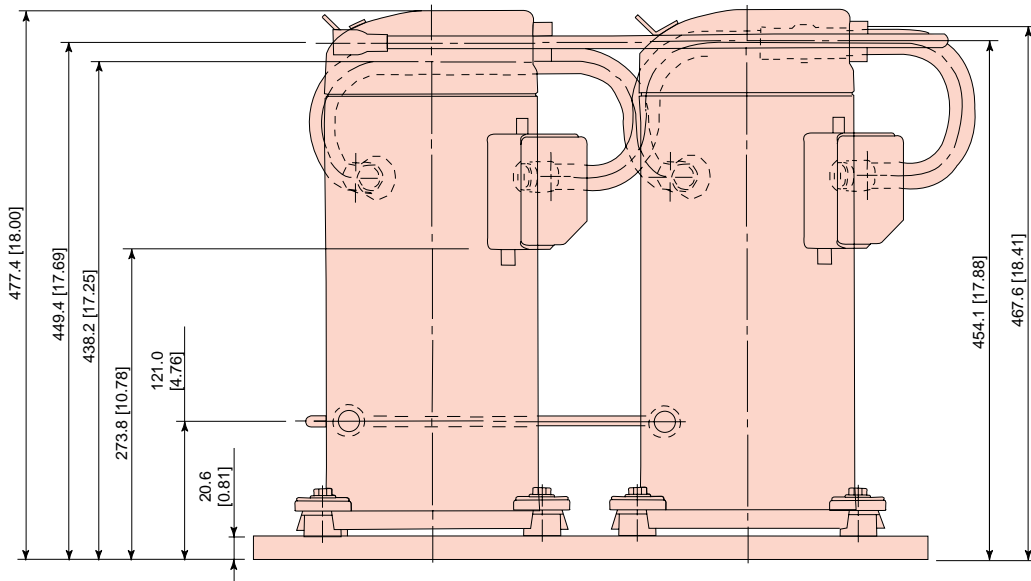
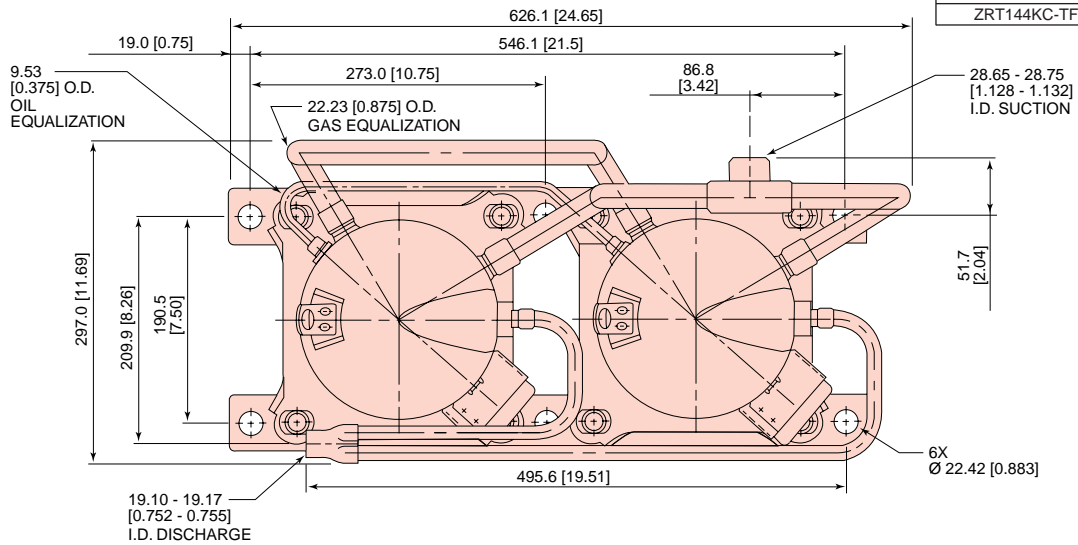
THIRD ANGLE PROJECTION



## DIMENSIONAL INFORMATION


**MODEL NUMBER**

ZRT92K3-PFV
ZRT92K3-TF5/D/E
ZRT98K3-PFV
ZRT98K3-TF5/D/E
ZRU103K3-TF5/D/E
ZRT108K3-PFV
ZRT108K3-TF5/D/E
ZRT114K3-PFV
ZRT114K3-TF5/D/E
ZRT122K3-PFV
ZRT122K3-TF5/D/E
ZRT136KC-TF5/7/D/E
ZRU140KC-TF5/7/D/E
ZRT144KC-TF5/7/D/E



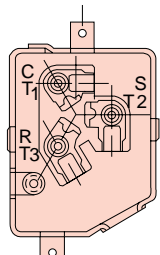
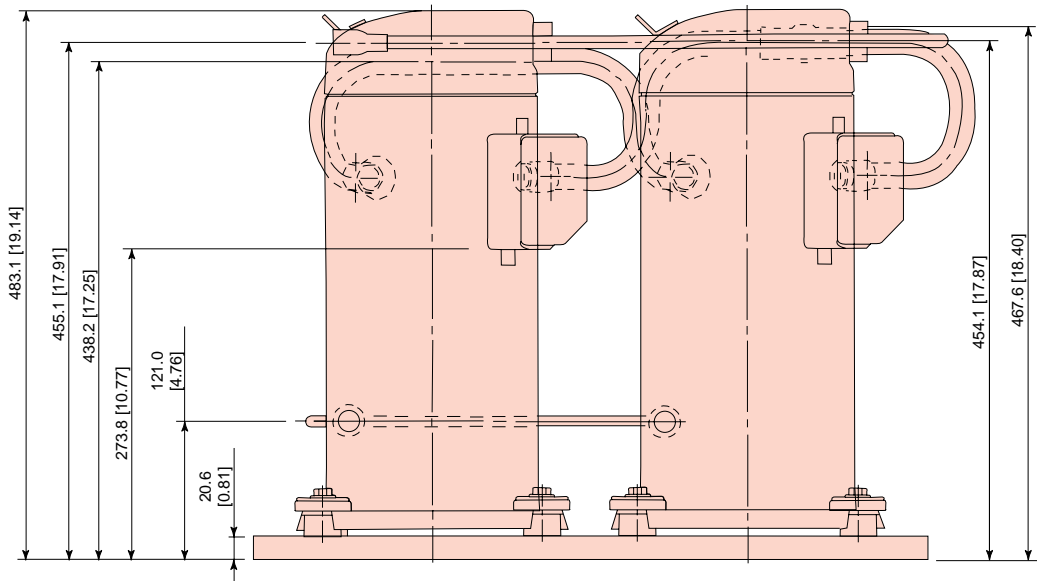
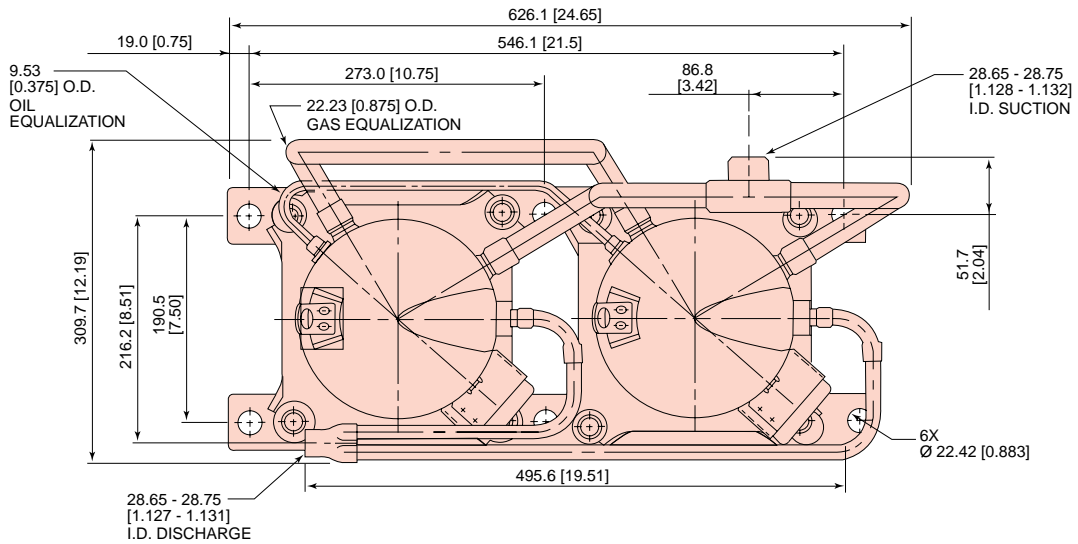
TYPICAL TERMINAL BOX LAYOUT

FOR THE INTERNATIONAL MARKET  
**ZRT92 to ZRT144**  
 TANDEM HEAT PUMP AND  
 AIR CONDITIONING MODELS

- NOTES:**
1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE  $\pm 1.50$  [0.060] UNLESS OTHERWISE SPECIFIED.
  2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING HOLES BY  $\pm 4.6$  [0.18].
  3. LINEAR MEASUREMENTS IN [ ] ARE INCH CONVERSIONS.
- THIRD ANGLE PROJECTION
- 

## DIMENSIONAL INFORMATION

<b>MODEL NUMBER</b>
ZRT162KC-TF5/7/D/E



TYPICAL TERMINAL BOX LAYOUT

FOR THE INTERNATIONAL MARKET  
**ZRT162**  
 TANDEM HEAT PUMP AND  
 AIR CONDITIONING MODELS

**50  
60 HERTZ**

**APPROVED TANDEM  
OPERATING RANGE**

**R22**

**AN OKAY INDICATES AN APPROVED POINT FOR TANDEM OPERATION**

**AN \*\*\*\* INDICATES A NON-APPROVED POINT FOR TANDEM OPERATION**

CONDENSING TEMPERATURE		EVAPORATING TEMPERATURE °F/°C								
°F	°C	-10 -23.3	0 -17.8	10 -12.2	20 -6.7	30 -1.1	40 4.4	45 7.2	50 10.0	55 12.8
80	26.7	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
90	32.2	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
100	37.8	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
110	43.3	****	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
120	48.9	****	****	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
130	54.4	****	****	****	OKAY	OKAY	OKAY	OKAY	OKAY	OKAY
140	60.0	****	****	****	****	OKAY	OKAY	OKAY	OKAY	OKAY
150	65.6	****	****	****	****	****	OKAY	OKAY	OKAY	OKAY

Approved range is based on 20F° (11.1C°) of superheat.

## APPLICATION NOTES

Use of the Copeland Scroll Compressor in a tandem configuration follows the guidelines of the single compressor with the following exceptions:

- The refrigerant charge limit for the tandem compressor is 12 pounds (5.4 kg). A three-phase unit with a charge over twelve pounds must have crankcase heaters added to both compressors. The crankcase heater must be located close to the mounting feet for maximum effectiveness. The initial start in the field is a very critical period for any compressor because all load bearing surfaces are new and require a short break in period to carry high loads under adverse conditions. The crankcase heater must be turned on 12 to 24 hours prior to starting the compressor. This will prevent oil dilution and bearing stress on initial start up.
- The ZRT92 - ZRT122 compressors are mounted on rails using rubber mounting parts. The ZRT136 - ZRT162 compressors are rigidly mounted on rails using solid steel mounting parts. These mounts are installed at the factory and should not be loosened. Tighten to 125 inch pounds (14 NM) if it becomes necessary to tighten these mounts. Holes in the mounting rails may be used to mount isolation grommets under the entire tandem.
- A discharge check valve must be placed in the common discharge line when pump down is used.
- Both compressors must be at the same level to prevent oil from migrating to the lowest compressor through the oil equalization line.
- Compressors may be individually cycled.
- Individual compressors should not be replaced in the field. The entire tandem compressor unit must be replaced if it becomes necessary to replace one compressor. Individual compressors configured for tandem usage will not be available for replacement.
- In the case of a motor burn, the majority of contaminated oil will be removed with the compressor. The rest of the oil is cleaned through use of suction and liquid line filter driers. A 100% activated alumina suction filter drier is recommended but must be removed after 72 hours. See Application Engineering Bulletin 24-1105 for clean up procedures and AE Bulletin 11-1297 for liquid line filter-drier recommendations. **It is highly recommended that the suction accumulator be replaced if the system contains one.** This is because the accumulator oil return orifice or screen may be plugged with debris or may become plugged shortly after a compressor failure. This will result in starvation of oil to the replacement compressor and a second failure.
- Complete 60 Hertz R22 performance curves are available in the units as follows for all models:
  - Capacity BTU/Hr
  - Power Input Watts
  - Current Amps
  - Efficiency BTUH/Watt

**TANDEM SPECIFICATION**

The tandem shall be Copeland Scroll type, with two internal overload motor protectors. For maximum compressor life the tandem should include a minimum of 114 ounces (3.37 liters) of oil. The tandem shall be capable of operating on R22 within the evaporating range of -10°F to 55°F (-23.3°C to 12.8°C). The tandem must also be capable of

operating at condensing temperatures up to 150°F (65.6°C). The tandem shall operate at an ARI point minimum efficiency of 11.0 BTU/WATT. Efficiencies of better than 11.0 BTU/WATT are acceptable, but efficiencies below 11.0 BTU/WATT are not acceptable. The tandem shall be of the Copeland ZR type or approved equal.

**UNITS CONVERSION CHART**

$$\text{BTUH} \times 0.252 = \text{KCALH}$$

$$\text{BTUH} \times 0.293 = \text{WATTS}$$

$$(^{\circ}\text{F} - 32) \times \frac{5}{9} = ^{\circ}\text{C}$$

$$\text{POUNDS} \times 0.454 = \text{KILOGRAMS}$$

$$\text{INCHES} \times 25.4 = \text{MILLIMETERS}$$

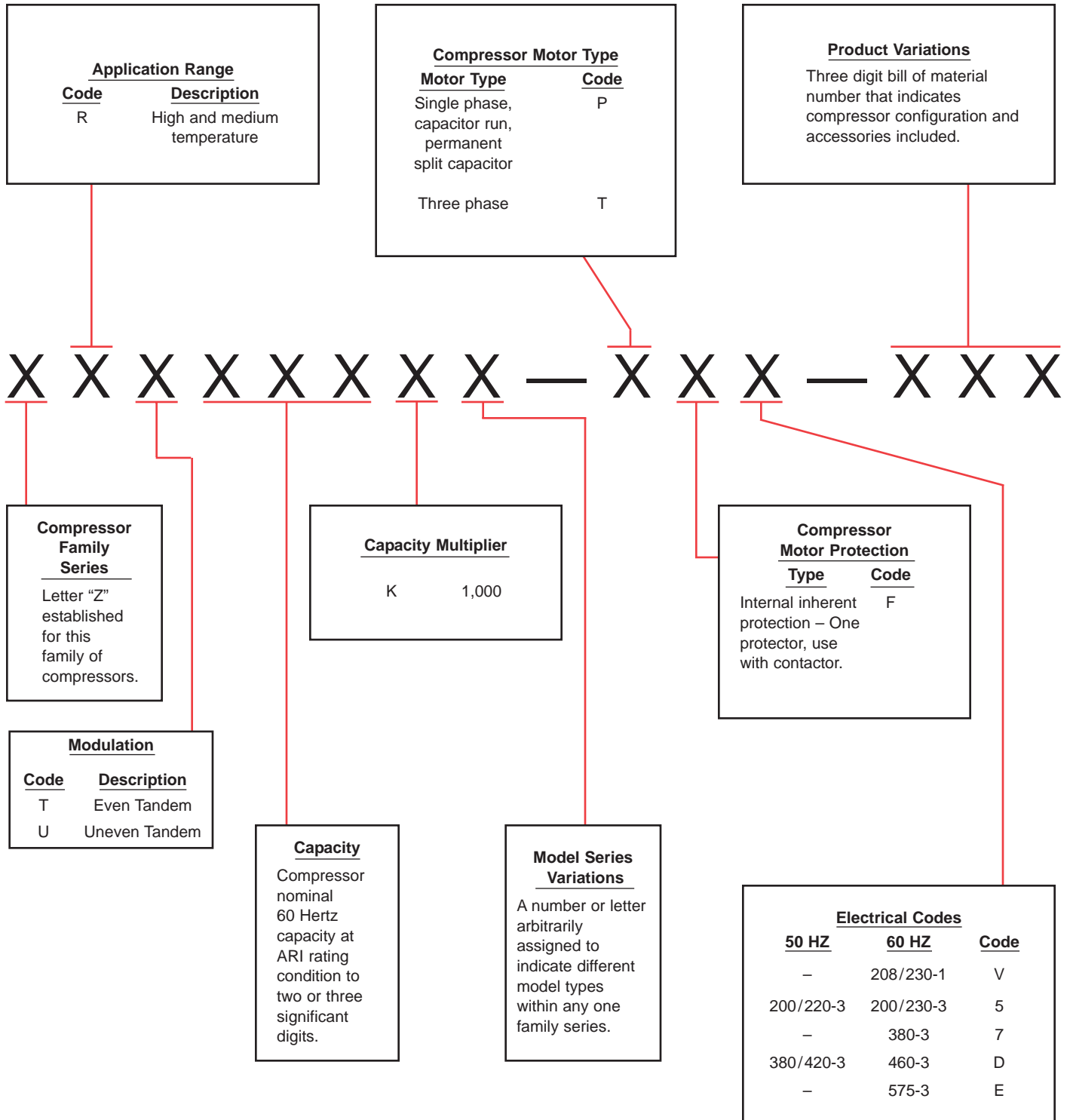
$$\text{CUBIC INCHES} \times 16.386 = \text{CUBIC CENTIMETERS}$$

$$\text{FLUID OUNCES} \times 0.02957 = \text{LITERS}$$

$$\text{CUBIC FEET} \times 0.02831 = \text{CUBIC METERS}$$

$$\text{HORSEPOWER} \times 0.746 = \text{KILOWATTS}$$

**R22 TANDEM MODEL NUMBER NOMENCLATURE**





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### LOCATIONS

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Form 99-106 R1

Revised 06-02

Printed in U.S.A.

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**PRODUCT DESCRIPTION**

Until a few years ago, the problems of complex part geometries and precise tolerance requirements made scroll technology impossible to manufacture in high volumes at low costs. But after a ten-year effort, Copeland Corporation developed design and manufacturing technologies that solved these problems.

Copeland achieved two major breakthroughs: the Copeland Scroll™ and the exclusive manufacturing process required to produce this compliant scroll compressor.

Compliance refers to the method in which the two scroll members interact to achieve high efficiency and durability simultaneously. Copeland's unique and patented approach, achieving both radial and axial compliance, has several advantages:

- Continuous flank contact, maintained by centrifugal force, minimizes gas leakage and maximizes efficiency.
- Radial compliance allows the scroll members to separate in the presence of liquid refrigerant or debris, eliminating high stress in the members and substantially improving durability of the compressor.
- Axial compliance allows the scroll tips to remain in continuous contact in all normal operating conditions, ensuring minimal leakage . . . without the use of tip seals. Copeland Scroll performance will not degrade over time because there are no seals to wear and cause gas leakage. In fact, over time, the compressor's performance improves as the scrolls wear-in.

Because of its compliant feature, Copeland's scroll has unprecedented liquid-handling capability. No accumulator or crankcase heater is required in most system applications. In addition, it is designed to start under any system load. This feature eliminates the need for start kits.

Combined, these characteristics simplify system design and increase system reliability.

Model selections, electrical choices and operating conditions can be found in the pages that follow. This 60 hertz book should better assist you with your final product selection.

Copeland Corporation has a reputation for quality and technology leadership that has been earned through years of performance. Copeland has more than 5,000 employees around the world working to ensure the reliability of its products. At 20 manufacturing facilities in eleven countries, Copeland goes about its only business – making compressors. These efforts assure our customers they are purchasing the most advanced compressor products that are backed by Copeland quality.

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