

THE INDUSTRY BREAKTHROUGH





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 the 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 50 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
 - 50 Hertz 18200 to 68000 BTUH
 - 4590 to 17100 KCALH
 - 5330 to 19900 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.



50 HERTZ

PERFORMANCE NOMINALS

R22

SINGLE PHASE					220-1-50 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
ZR22K3-PFJ	A	18300	4610	5360	1730	8.0	10.6	2.7	3.1
	B	18200	4590	5330	1730	8.0	10.5	2.7	3.1
	C	21500	5420	6300	1190	5.7	18.1	4.6	5.3
ZR24K3-PFJ	A	20400	5140	5980	1920	9.2	10.6	2.7	3.1
	B	20200	5090	5920	1920	9.2	10.5	2.7	3.1
	C	24200	6100	7090	1310	6.3	18.5	4.7	5.4
ZR26K3-PFJ	A	21900	5520	6420	2010	9.5	10.9	2.7	3.2
	B	21700	5470	6360	2010	9.5	10.8	2.7	3.2
	C	25800	6500	7560	1400	6.8	18.4	4.6	5.4
ZR28K3-PFJ	A	23800	6000	6970	2190	10.4	10.9	2.7	3.2
	B	23600	5950	6910	2190	10.4	10.8	2.7	3.2
	C	28200	7110	8260	1510	7.4	18.7	4.7	5.5
ZR30K3-PFJ	A	25400	6400	7440	2330	11.1	10.9	2.7	3.2
	B	25200	6350	7380	2330	11.1	10.8	2.7	3.2
	C	30200	7610	8850	1630	7.9	18.5	4.7	5.4
ZR32K3-PFJ	A	26700	6730	7820	2430	11.8	11.0	2.8	3.2
	B	26500	6680	7760	2430	11.8	10.9	2.7	3.2
	C	31500	7940	9230	1700	8.7	18.5	4.7	5.4
ZR34K3-PFJ	A	28300	7130	8290	2540	12.1	11.1	2.8	3.3
	B	28100	7080	8230	2550	12.1	11.0	2.8	3.2
	C	33300	8390	9760	1730	8.5	19.2	4.8	5.6
ZR36K3-PFJ	A	30400	7660	8910	2710	13.1	11.2	2.8	3.3
	B	30200	7610	8850	2720	13.1	11.1	2.8	3.3
	C	36000	9070	10500	1870	9.4	19.3	4.9	5.6
ZR40K3-PFJ	A	33600	8470	9840	2990	14.7	11.2	2.8	3.3
	B	33300	8390	9760	3000	14.7	11.1	2.8	3.2
	C	39400	9930	11500	2070	10.8	19.0	4.8	5.6
ZR42K3-PFJ	A	35300	8900	10300	3140	15.2	11.2	2.8	3.3
	B	35000	8820	10300	3150	15.2	11.1	2.8	3.3
	C	41500	10500	12200	2160	10.9	19.2	4.9	5.6
ZR45K3-PFJ	A	38500	9700	11300	3370	16.4	11.4	2.9	3.4
	B	38200	9630	11200	3380	16.4	11.3	2.8	3.3
	C	45000	11300	13200	2370	12.1	19.0	4.8	5.6
ZR47K3-PFJ	A	39700	10000	11600	3450	16.8	11.5	2.9	3.4
	B	39400	9930	11500	3460	16.8	11.4	2.9	3.3
	C	46500	11700	13600	2420	12.6	19.2	4.8	5.6
ZR48K3-PFJ	A	40800	10300	12000	3620	17.6	11.3	2.8	3.3
	B	40500	10200	11900	3630	17.6	11.2	2.8	3.3
	C	47800	12000	14000	2520	13.5	19.0	4.8	5.6
ZR68KC-PFJ	A	57500	14500	16800	5120	24.5	11.2	2.8	3.3
	B	57000	14400	16700	5130	24.5	11.1	2.8	3.3
	C	67300	17000	19700	3670	18.2	18.3	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 13A to 28B.

See full operating range on page 29B.

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE NOMINALS

R407C

SINGLE PHASE					220-1-50 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
ZR22K3E-PFJ	A	18500	4660	5420	1830	8.4	10.1	2.5	3.0
	B	18400	4640	5390	1830	8.4	10.1	2.5	2.9
	C	22600	5700	6620	1230	5.8	18.4	4.6	5.4
ZR24K3E-PFJ	A	20600	5190	6040	2030	9.7	10.1	2.6	3.0
	B	20400	5140	5980	2030	9.7	10.0	2.5	2.9
	C	25300	6380	7410	1380	6.5	18.3	4.6	5.4
ZR26K3E-PFJ	A	22000	5540	6450	2110	10.0	10.4	2.6	3.1
	B	21800	5490	6390	2110	10.0	10.3	2.6	3.0
	C	26800	6750	7850	1420	7.0	18.9	4.8	5.5
ZR28K3E-PFJ	A	24000	6050	7030	2310	10.9	10.4	2.6	3.0
	B	23800	6000	6970	2310	10.9	10.3	2.6	3.0
	C	29700	7480	8700	1530	7.4	19.4	4.9	5.7
ZR32K3E-PFJ	A	26900	6780	7880	2530	12.4	10.6	2.7	3.1
	B	26700	6730	7820	2540	12.4	10.5	2.6	3.1
	C	33000	8320	9670	1710	8.9	19.3	4.9	5.7
ZR34K3E-PFJ	A	28600	7210	8380	2700	12.8	10.6	2.7	3.1
	B	28400	7160	8320	2710	12.8	10.5	2.6	3.1
	C	35400	8920	10400	1790	8.7	19.8	5.0	5.8
ZR36K3E-PFJ	A	30500	7690	8940	2870	13.7	10.6	2.7	3.1
	B	30300	7640	8880	2880	13.7	10.5	2.7	3.1
	C	37400	9420	11000	1940	9.7	19.3	4.9	5.7
ZR40K3E-PFJ	A	33700	8490	9870	3180	15.1	10.6	2.7	3.1
	B	33400	8420	9790	3190	15.1	10.5	2.6	3.1
	C	41600	10500	12200	2110	10.2	19.7	5.0	5.8
ZR42K3E-PFJ	A	35200	8870	10300	3310	15.9	10.6	2.7	3.1
	B	34900	8790	10200	3320	15.9	10.5	2.6	3.1
	C	43000	10800	12600	2220	11.2	19.4	4.9	5.7
ZR47K3E-PFJ	A	39700	10000	11600	3690	17.5	10.8	2.7	3.1
	B	39400	9930	11500	3700	17.5	10.6	2.7	3.1
	C	48000	12100	14100	2500	12.9	19.2	4.8	5.6
ZR48K3E-PFJ	A	41200	10400	12100	3890	18.7	10.6	2.7	3.1
	B	40900	10300	12000	3900	18.7	10.5	2.6	3.1
	C	50300	12700	14700	2620	13.3	19.2	4.8	5.6
ZR68KCE-PFJ	A	57500	14500	16800	5490	21.0	10.5	2.6	3.1
	B	57000	14400	16700	5500	21.0	10.4	2.6	3.0
	C	70000	17600	20500	3830	15.0	18.3	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 13A to 28B.

See full operating range on page 29B.

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE NOMINALS

R22

THREE PHASE					220-3-50 (TF5) 380-3-50 (TFD) 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
ZR22K3-TF5/D	A	18300	4610	5360	1770	5.5/3.2	10.3	2.6	3.0
	B	18200	4590	5330	1770	5.5/3.2	10.3	2.6	3.0
	C	21500	5420	6300	1170	4.3/2.5	18.4	4.6	5.4
ZR24K3-TF5/D	A	20400	5140	5980	1920	6.0/3.5	10.6	2.7	3.1
	B	20200	5090	5920	1920	6.0/3.5	10.5	2.7	3.1
	C	24200	6100	7090	1250	4.7/2.7	19.4	4.9	5.7
ZR26K3-TF5/D	A	21900	5520	6420	2010	6.6/3.8	10.9	2.7	3.2
	B	21700	5470	6360	2010	6.6/3.8	10.8	2.7	3.2
	C	25800	6500	7560	1360	5.0/2.9	19.0	4.8	5.6
ZR28K3-TF5/D	A	23800	6000	6970	2150	6.9/4.0	11.1	2.8	3.2
	B	23600	5950	6910	2150	6.9/4.0	11.0	2.8	3.2
	C	28200	7110	8260	1450	5.4/3.1	19.4	4.9	5.7
ZR30K3-TF5/D	A	25400	6400	7440	2290	7.3/4.2	11.1	2.8	3.2
	B	25200	6350	7380	2290	7.3/4.2	11.0	2.8	3.2
	C	30200	7610	8850	1540	5.5/3.2	19.6	4.9	5.7
ZR32K3-TF5/D	A	26700	6730	7820	2430	7.6/4.4	11.0	2.8	3.2
	B	26500	6680	7760	2430	7.6/4.4	10.9	2.7	3.2
	C	31500	7940	9230	1640	5.9/3.4	19.2	4.8	5.6
ZR34K3-TF5/D	A	28300	7130	8290	2500	7.9/4.6	11.3	2.9	3.3
	B	28100	7080	8230	2500	7.9/4.6	11.2	2.8	3.3
	C	33400	8420	9790	1700	6.2/3.6	19.6	5.0	5.8
ZR36K3-TF5/D	A	30400	7660	8910	2690	8.3/4.8	11.3	2.8	3.3
	B	30200	7610	8850	2700	8.3/4.8	11.2	2.8	3.3
	C	36000	9070	10500	1810	6.4/3.7	19.9	5.0	5.8
ZR40K3-TF5/D	A	33600	8470	9840	2960	9.2/5.3	11.4	2.9	3.3
	B	33300	8390	9760	2970	9.2/5.3	11.2	2.8	3.3
	C	39400	9930	11500	1990	7.1/4.1	19.8	5.0	5.8
ZR42K3-TF5/D	A	35300	8900	10300	3100	9.5/5.5	11.4	2.9	3.3
	B	35000	8820	10300	3110	9.5/5.5	11.3	2.8	3.3
	C	41500	10500	12200	2080	7.4/4.3	20.0	5.0	5.9

* Ampere values shown are at 220 volts/380 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 13A to 28B.

See full operating range on page 29B.

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE NOMINALS

R407C

THREE PHASE					220-3-50 (TF5) 380-3-50 (TFD) 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
ZR22K3E-TF5/D	A	18500	4660	5420	1750	5.5/3.2	10.6	2.7	3.1
	B	18400	4640	5390	1750	5.5/3.2	10.5	2.7	3.1
	C	22700	5720	6650	1160	4.1/2.4	19.6	4.9	5.7
ZR24K3E-TF5/D	A	20600	5190	6040	2030	6.6/3.8	10.1	2.6	3.0
	B	20400	5140	5980	2030	6.6/3.8	10.0	2.5	2.9
	C	25300	6380	7410	1320	5.0/2.9	19.2	4.8	5.6
ZR26K3E-TF5/D	A	22000	5540	6450	2190	7.1/4.1	10.0	2.5	2.9
	B	21800	5490	6390	2190	7.1/4.1	10.0	2.5	2.9
	C	26800	6750	7850	1380	5.0/2.9	19.4	4.9	5.7
ZR28K3E-TF5/D	A	24000	6050	7030	2250	7.1/4.1	10.7	2.7	3.1
	B	23800	6000	6970	2250	7.1/4.1	10.6	2.7	3.1
	C	29400	7410	8610	1490	5.4/3.1	19.7	5.0	5.8
ZR30K3E-TF5/D	A	25600	6450	7500	2420	7.6/4.4	10.6	2.7	3.1
	B	25400	6400	7440	2420	7.6/4.4	10.5	2.6	3.1
	C	31400	7910	9200	1620	5.7/3.3	19.4	4.9	5.7
ZR32K3E-TF5/D	A	27000	6800	7910	2530	7.9/4.6	10.7	2.7	3.1
	B	26800	6750	7850	2540	7.9/4.6	10.6	2.7	3.1
	C	33000	8320	9670	1700	6.0/3.5	19.4	4.9	5.7
ZR34K3E-TF5/D	A	28600	7210	8380	2650	8.5/4.9	10.8	2.7	3.2
	B	28400	7160	8320	2660	8.5/4.9	10.7	2.7	3.1
	C	34900	8790	10200	1750	6.4/3.7	19.9	5.0	5.8
ZR36K3E-TF5/D	A	30500	7690	8940	2820	8.6/5.0	10.8	2.7	3.2
	B	30300	7640	8880	2830	8.6/5.0	10.7	2.7	3.1
	C	37400	9420	11000	1900	6.6/3.8	19.7	5.0	5.8
ZR40K3E-TF5/D	A	33600	8470	9840	3100	9.7/5.6	10.8	2.7	3.2
	B	33300	8390	9760	3110	9.7/5.6	10.7	2.7	3.1
	C	41000	10300	12000	2050	7.4/4.3	20.0	5.0	5.9
ZR42K3E-TF5/D	A	35200	8870	10300	3240	9.8/5.7	10.9	2.7	3.2
	B	34900	8790	10200	3250	9.8/5.7	10.7	2.7	3.1
	C	43000	10800	12600	2190	7.6/4.4	19.6	4.9	5.8

* Ampere values shown are at 220 volts/380 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 13A to 28B.

See full operating range on page 29B.

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE NOMINALS

R22

THREE PHASE					220-3-50 (TF5) 380-3-50 (TFD) 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-TF5/D	A	38200	9630	11200	3310	10.5/6.1	11.5	2.9	3.4
	B	37900	9550	11100	3320	10.5/6.1	11.4	2.9	3.3
	C	44500	11200	13000	2290	8.3/4.8	19.4	4.9	5.7
ZR47KC-TF5/D	A	39700	10000	11600	3420	10.9/6.3	11.6	2.9	3.4
	B	39400	9930	11500	3430	10.9/6.3	11.5	2.9	3.4
	C	46300	11700	13600	2340	8.8/5.1	19.8	5.0	5.8
ZR48KC-TF5/D	A	40800	10300	12000	3600	11.2/6.5	11.3	2.9	3.3
	B	40500	10200	11900	3610	11.2/6.5	11.2	2.8	3.3
	C	47800	12000	14000	2490	8.6/5.0	19.2	4.8	5.6
ZR54KC-TF5/D	A	45400	11400	13300	3970	12.6/7.3	11.4	2.9	3.4
	B	45000	11300	13200	3980	12.6/7.3	11.3	2.8	3.3
	C	53000	13400	15500	2820	10.0/5.8	18.8	4.8	5.5
ZR57KC-TF5/D	A	47900	12100	14000	4160	13.5/7.8	11.5	2.9	3.4
	B	47500	12000	13900	4170	13.5/7.8	11.4	2.9	3.3
	C	56000	14100	16400	2950	10.4/6.0	19.0	4.8	5.6
ZR61KC-TF5/D	A	51400	13000	15100	4420	14.0/8.1	11.6	2.9	3.4
	B	51000	12900	14900	4430	14.0/8.1	11.5	2.9	3.4
	C	60000	15100	17600	3170	11.1/6.4	18.9	4.8	5.6
ZR68KC-TF5/D	A	58000	14600	17000	4950	14.9/8.6	11.7	2.9	3.4
	B	57500	14500	16800	4960	14.9/8.6	11.6	2.9	3.4
	C	68000	17100	19900	3430	11.4/6.6	19.8	5.0	5.8
ZR72KC-TF5/D	A	61000	15400	17900	5170	15.4/8.9	11.8	3.0	3.5
	B	60500	15200	17700	5180	15.4/8.9	11.7	2.9	3.4
	C	71500	18000	20900	3610	11.6/6.7	19.8	5.0	5.8
ZR81KC-TF5/D	A	68500	17300	20100	5800	18.1/10.5	11.8	3.0	3.5
	B	68000	17100	19900	5810	18.1/10.5	11.7	2.9	3.4
	C	79500	20000	23300	4140	15.2/8.8	19.2	4.8	5.6

* Ampere values shown are at 220 volts/380 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 13A to 28B.

See full operating range on page 29B.

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE NOMINALS

R407C

THREE PHASE					220-3-50 (TF5) 380-3-50 (TFD) 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
ZR47KCE-TF5/D	A	40100	10100	11700	3630	11.6/6.7	11.0	2.8	3.2
	B	39800	10000	11700	3640	11.6/6.7	10.9	2.7	3.2
	C	48800	12300	14300	2410	9.2/5.3	20.2	5.1	5.9
ZR48KCE-TF5/D	A	41200	10400	12100	3820	11.9/6.9	10.8	2.7	3.2
	B	40900	10300	12000	3830	11.9/6.9	10.7	2.7	3.1
	C	50400	12700	14800	2570	9.0/5.2	19.6	4.9	5.8
ZR54KCE-TF5/D	A	44800	11300	13100	4390	16.3/9.4	10.2	2.6	3.0
	B	44400	11200	13000	4400	16.3/9.4	10.1	2.5	3.0
	C	54900	13800	16100	2970	12.9/7.5	18.5	4.6	5.4
ZR57KCE-TF5/D	A	48400	12200	14200	4610	13.8/8.0	10.5	2.6	3.1
	B	48000	12100	14100	4620	13.8/8.0	10.4	2.6	3.1
	C	56600	14300	16600	3130	13.0/7.5	18.1	4.6	5.3
ZR61KCE-TF5/D	A	51000	12900	14900	4680	19.3/11.2	10.9	2.8	3.2
	B	50600	12800	14800	4690	19.3/11.2	10.8	2.7	3.2
	C	62400	15700	18300	3260	17.0/9.8	19.1	4.8	5.6
ZR68KCE-TF5/D	A	58600	14800	17200	5380	16.1/9.3	10.9	2.8	3.2
	B	58100	14600	17000	5390	16.1/9.3	10.8	2.7	3.2
	C	71900	18100	21100	3550	11.7/6.8	20.3	5.1	5.9
ZR72KCE-TF5/D	A	60000	15100	17600	5410	15.6/9.0	11.1	2.8	3.3
	B	59500	15000	17400	5420	15.6/9.0	11.0	2.8	3.2
	C	73700	18600	21600	3740	12.2/7.1	19.7	5.0	5.8
ZR81KCE-TF5/D	A	67600	17000	19800	6190	19.7/11.4	10.9	2.7	3.2
	B	67100	16900	19700	6200	19.7/11.4	10.8	2.7	3.2
	C	82900	20900	24300	4260	15.4/8.9	19.5	4.9	5.7

* Ampere values shown are at 220 volts/380 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 13A to 28B.

See full operating range on page 29B.

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



ZR COPELAND SCROLL™ COMPRESSORS

MECHANICAL SPECIFICATIONS

MODEL	NOMINAL HP KW	IN ³ CM ³ CUBIC INCHES PER REVOLUTION CUBIC CENTIMETERS PER REVOLUTION	CFH M ³ /HR CUBIC FEET PER HOUR CUBIC METERS PER HOUR	COMPRESSOR NET WEIGHT POUNDS KILOGRAMS	
			50 HERTZ 2900 RPM	SINGLE PHASE	THREE PHASE
ZR22	1.83	1.873	188.6	56	54
	1.37	30.69	5.34	25.4	24.5
ZR24	2.00	2.076	209.0	58	55
	1.49	34.02	5.92	26.3	24.9
ZR26	2.17	2.202	221.7	58	56
	1.62	36.08	6.28	26.3	25.4
ZR28	2.33	2.395	241.2	58	56
	1.74	39.24	6.83	26.3	25.4
ZR30	2.50	2.563	258.1	61	56
	1.87	42.00	7.31	27.7	25.4
ZR32	2.67	2.650	266.8	61	57
	1.99	43.42	7.55	27.7	25.9
ZR34	2.83	2.816	283.6	63	61
	2.11	46.14	8.03	28.6	27.7
ZR36	3.00	3.020	304.1	63	61
	2.24	49.49	8.61	28.6	27.7
ZR40	3.33	3.309	333.2	66	61
	2.48	54.22	9.43	29.9	27.7
ZR42	3.50	3.488	351.2	66	61
	2.61	57.15	9.94	29.9	27.7
ZR45	3.75	3.726	375.2	65	62
	2.80	61.05	10.62	29.5	28.1
ZR47K3	3.92	3.864	389.1	71	–
	2.92	63.31	11.02	32.2	–
ZR47KC	3.92	3.915	394.2	–	66
	2.92	64.15	11.16	–	29.9
ZR48	4.00	3.997	402.5	71	62
	2.98	65.49	11.39	32.2	28.1
ZR54	4.50	4.468	449.9	–	80
	3.36	73.21	12.74	–	36.3
ZR57	4.75	4.710	474.3	–	79
	3.54	77.18	13.43	–	35.8
ZR61	5.08	5.040	507.5	–	82
	3.79	82.59	14.37	–	37.2
ZR68	5.67	5.676	571.5	94	85
	4.23	93.01	16.18	42.6	38.6
ZR72	6.00	5.983	602.5	–	85
	4.48	98.04	17.06	–	38.6
ZR81	6.75	6.748	679.5	–	88
	5.04	110.57	19.24	–	39.9



ZR COPELAND SCROLL™ COMPRESSORS

R22 ELECTRICAL SPECIFICATIONS

VOLTAGE CODE	PFJ		TF5		TFD	
NOMINAL VOLTAGE- PHASE-HERTZ	220/240-1-50		200/220-3-50 200/230-3-60		380/420-3-50 460-3-60	
VOLTAGE RANGE 50 HERTZ 60 HERTZ	198-264 —		180-242 180-253		342-462 414-506	
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
ZR22K3	9.6	47.0	7.9	48.0	3.9	24.0
ZR24K3	11.4	58.0	8.6	56.0	4.3	26.0
ZR26K3	11.4	60.0	8.6	56.0	4.3	26.0
ZR28K3	12.9	61.0	10.0	70.0	5.0	32.0
ZR30K3	14.3	74.0	10.7	70.0	5.0	32.0
ZR32K3	14.3	74.0	10.7	83.0	5.4	35.0
ZR34K3	13.6	76.0	10.7	83.0	5.7	40.0
ZR36K3	16.4	82.0	10.7	83.0	5.7	40.0
ZR40K3	17.1	100.0	13.9	95.0	6.4	46.0
ZR42K3	17.1	97.0	13.9	95.0	7.1	46.0
ZR45K3	19.3	114.0				
ZR45KC			14.3	98.0	7.2	48.0
ZR47K3	19.3	114.0				
ZR47KC			14.3	98.0	7.2	48.0
ZR48K3	19.3	114.0				
ZR48KC			16.4	98.0	7.9	50.0
ZR54KC			16.4	135.0	8.2	61.8
ZR57KC			17.2	135.0	8.2	61.8
ZR61KC			20.7	139.0	10.0	65.5
ZR68KC	30.7	150.0	20.7	172.0	10.0	74.0
ZR72KC			20.7	172.0	10.0	74.0
ZR81KC			25.0	179.0	12.0	101.0



ZR COPELAND SCROLL™ COMPRESSORS

R407C ELECTRICAL SPECIFICATIONS

VOLTAGE CODE	PFJ		TF5		TFD	
NOMINAL VOLTAGE- PHASE-HERTZ	220/240-1-50		200/220-3-50 200/230-3-60		380/420-3-50 460-3-60	
VOLTAGE RANGE 50 HERTZ 60 HERTZ	198-264 —		180-242 180-253		342-462 414-506	
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
ZR22K3E	9.6	47.0	7.9	48.0	3.9	24.0
ZR24K3E	11.4	58.0	8.6	56.0	4.3	26.0
ZR26K3E	11.4	60.0	8.6	56.0	4.3	26.0
ZR28K3E	12.9	61.0	10.0	70.0	5.0	32.0
ZR30K3E			10.7	70.0	5.0	32.0
ZR32K3E	14.3	74.0	10.7	83.0	5.4	35.0
ZR34K3E	13.6	76.0	10.7	83.0	5.7	40.0
ZR36K3E	16.4	82.0	10.7	83.0	5.7	40.0
ZR40K3E	17.1	100.0	13.9	95.0	6.4	46.0
ZR42K3E	17.1	97.0	13.9	95.0	7.1	46.0
ZR47K3E	19.3	114.0				
ZR47KCE			14.3	98.0	7.2	48.0
ZR48K3E	19.3	114.0				
ZR48KCE			16.4	98.0	7.9	50.0
ZR54KCE			16.4	135.0	8.2	61.8
ZR57KCE			17.2	135.0	8.2	61.8
ZR61KCE			20.7	139.0	10.0	65.5
ZR68KCE	30.7	150.0	20.7	172.0	10.0	74.0
ZR72KCE			20.7	172.0	10.0	74.0
ZR81KCE			25.0	179.0	12.0	101.0



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ R22

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

PFJ MODEL	RUN CAPACITOR		
	MFD	VOLTS	PART NUMBER
ZR22K3-PFJ	40	370	014-0048-12
ZR24K3-PFJ	40	370	014-0048-12
ZR26K3-PFJ	40	370	014-0048-12
ZR28K3-PFJ	45	370	014-0048-36
ZR30K3-PFJ	45	370	014-0048-36
ZR32K3-PFJ	45	370	014-0048-36
ZR34K3-PFJ	50	370	014-0048-40
ZR36K3-PFJ	50	370	014-0048-40
ZR40K3-PFJ	55	370	014-0048-39
ZR42K3-PFJ	60	370	014-0048-37
ZR45K3-PFJ	60	370	014-0048-37
ZR47K3-PFJ	60	370	014-0048-37
ZR48K3-PFJ	60	370	014-0048-37
ZR68KC-PFJ	50	440	014-0048-20

50 HERTZ R407C

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

PFJ MODEL	RUN CAPACITOR		
	MFD	VOLTS	PART NUMBER
ZR22K3E-PFJ	40	370	014-0048-12
ZR24K3E-PFJ	40	370	014-0048-12
ZR26K3E-PFJ	40	370	014-0048-12
ZR28K3E-PFJ	45	370	014-0048-36
ZR32K3E-PFJ	45	370	014-0048-36
ZR34K3E-PFJ	50	370	014-0048-40
ZR36K3E-PFJ	50	370	014-0048-40
ZR40K3E-PFJ	55	370	014-0048-39
ZR42K3E-PFJ	60	370	014-0048-37
ZR47K3E-PFJ	60	370	014-0048-37
ZR48K3E-PFJ	60	370	014-0048-37
ZR68KCE-PFJ	50	440	014-0048-20



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 7½ x 7½ INCH (190.5 x 190.5 mm)	
ZR22 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 7½ x 7½ INCH (190.5 x 190.5 mm)	
ZR22 TO ZR48	511	X		X	
	515		X	X	
	611	X		X	
ZR68	511	X		X	
	515		X	X	
	611	X		X	

SCROLL COMPRESSORS

THE INTERNATIONAL MARKET



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"> ● Wiring diagram. ● Internal line break protector. ● Rubber grommet mounting parts with sleeves (kit 527-0116-00). ● Grounding tab located in the compressor terminal box. <p>See outline drawing pages 9B to 11B for stub tube and rotalock connection sizes.</p>	<p>Crankcase Heater - 240 volt - 70 watt 018-0057-00 (ZR22 to ZR81)</p> <p>Crankcase Heater - 480 volt - 70 watt 018-0057-01 (ZR22 to ZR81)</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
ZR22K3	38 1.12	34 1.01	ZR22K3E	38 1.12	34 1.01
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		
ZR45K3	46 1.36	42 1.24	ZR45K3E	42 1.36	38 1.12
ZR47K3			ZR47K3E-PFJ		
ZR47KC	46 1.36	42 1.24	ZR47KCE-TF5/TFD	46 1.36	42 1.24
ZR48K3	42 1.24	38 1.12	ZR48K3E-PFJ	42 1.24	38 1.12
ZR48KC	46 1.36	42 1.24	ZR48KCE-TF5/TFD	46 1.36	42 1.24
ZR54KC	66 1.95	62 1.83	ZR54KCE	66 1.95	62 1.83
ZR57KC			ZR57KCE		
ZR61KC			ZR61KCE		
ZR68KC-PFJ	62 1.83	58 1.72	ZR68KCE	60 1.77	56 1.66
ZR68KC-TF5/TFD	60 1.77	56 1.66	ZR72KCE		
ZR72KC	60 1.77	56 1.66	ZR81KCE		
ZR81KC	60 1.77	56 1.66			

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

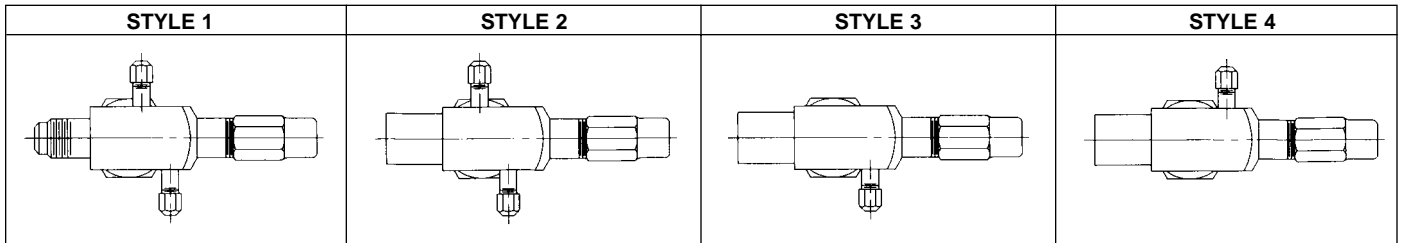


TABLE B

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	
	510-0080-06	1 1/8	Solder	3	
510-0133-05	1 1/8	Solder	2		

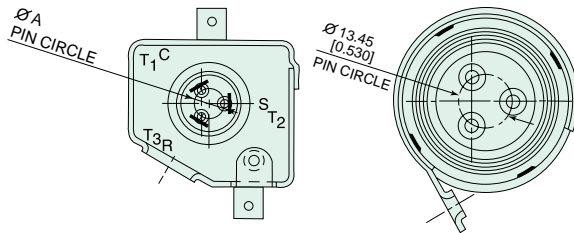
NOTES:

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 7B AND 8A SHOW B/M NUMBERS FOR EACH OPTION.
4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 7B AND 8A SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
5. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.

THIRD ANGLE PROJECTION



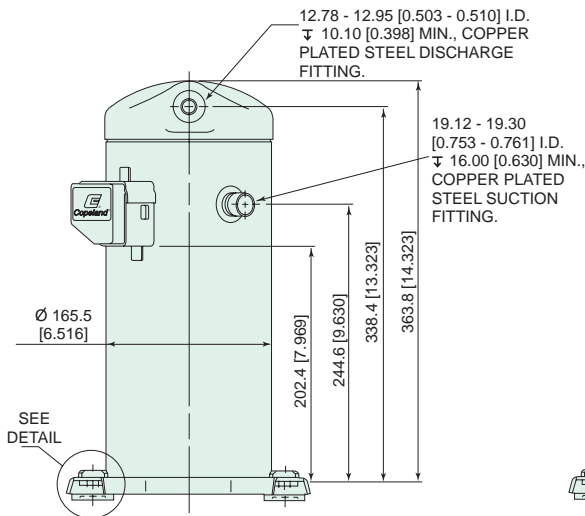
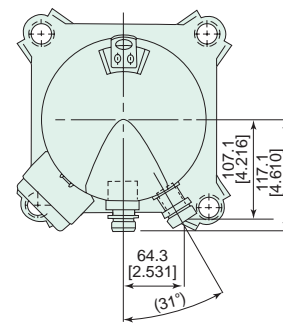
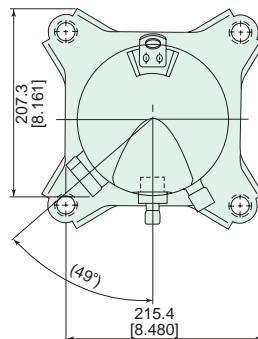
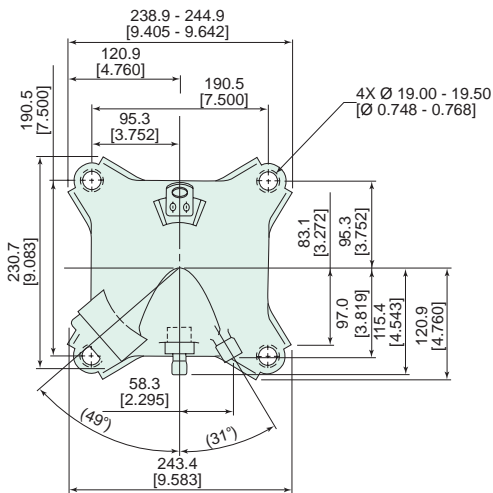
DIMENSIONAL INFORMATION



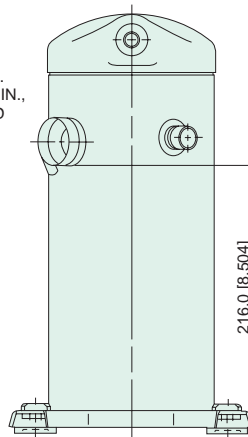
TYPICAL TERMINAL BOX OPTION LAYOUT

TYPICAL MOLDED PLUG OPTION LAYOUT

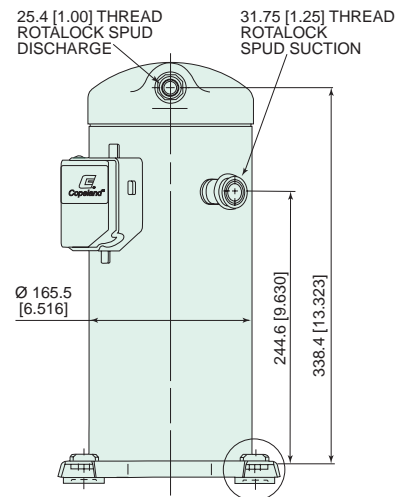
MODEL NUMBER	ØA	INTERNAL FREE VOLUME CM ³ [IN. ³] EXCLUDING OIL CHARGE
ZR22-PFJ	13.45 [0.530]	2861 [175]
ZR22-TF5	13.45 [0.530]	2861 [175]
ZR22-TFD	17.45 [0.687]	2928 [179]
ZR24-PFJ	13.45 [0.530]	2861 [175]
ZR24-TF5	13.45 [0.530]	2861 [175]
ZR24-TFD	17.45 [0.687]	2928 [179]
ZR26-PFJ	13.45 [0.530]	2861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



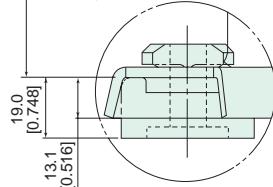
TERMINAL BOX OPTION



MOLDED PLUG OPTION



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



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

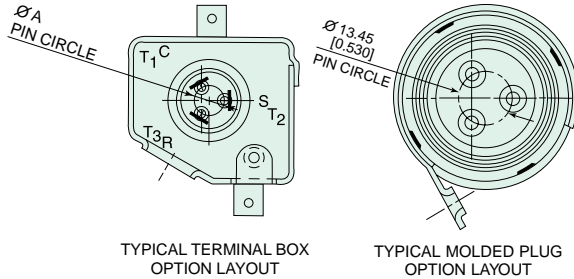
NOTES:

1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE ± 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 7B AND 8A SHOW B/M NUMBERS FOR EACH OPTION.
4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 7B AND 8A SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
5. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.

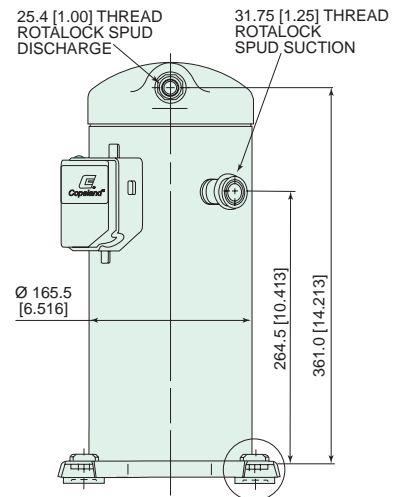
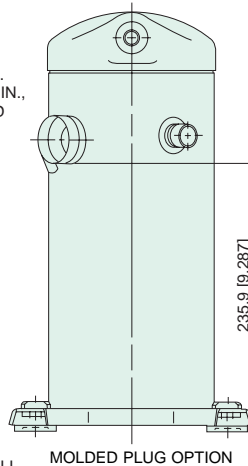
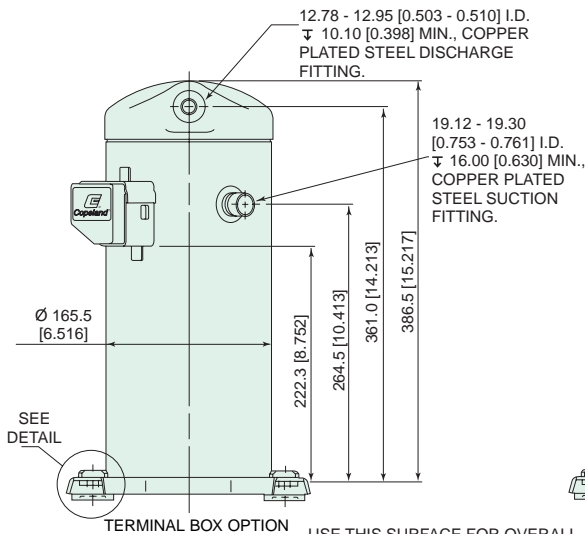
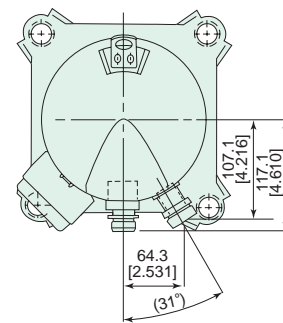
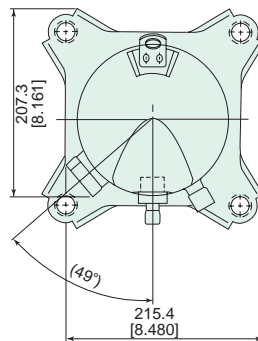
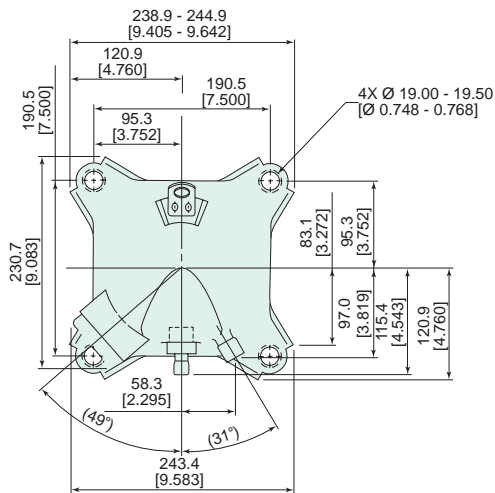
THIRD ANGLE PROJECTION



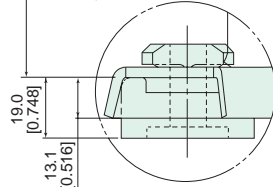
DIMENSIONAL INFORMATION



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



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



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

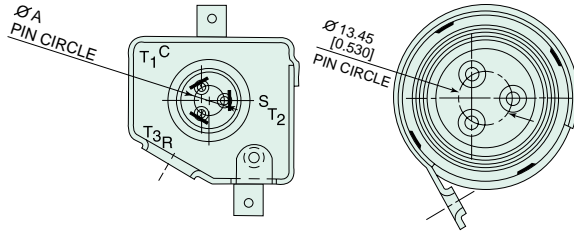
NOTES:

1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE ± 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 7B AND 8A SHOW B/M NUMBERS FOR EACH OPTION.
4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 7B AND 8A SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
5. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.

THIRD ANGLE PROJECTION



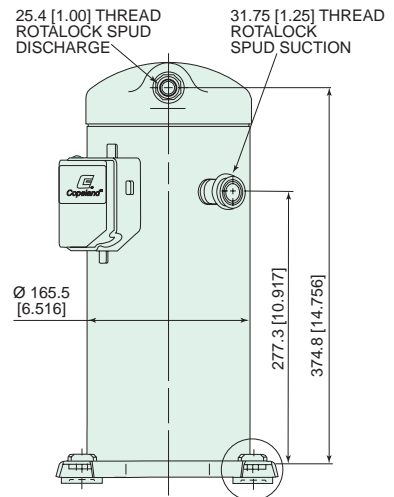
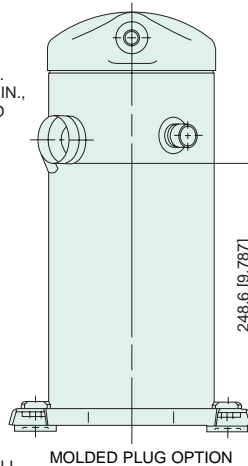
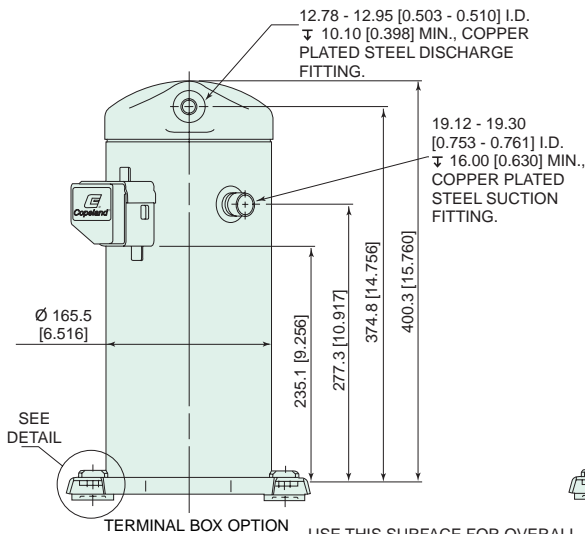
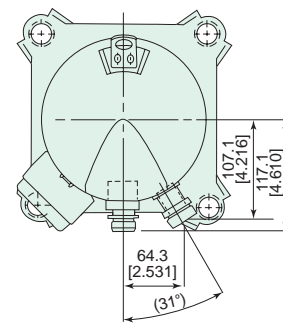
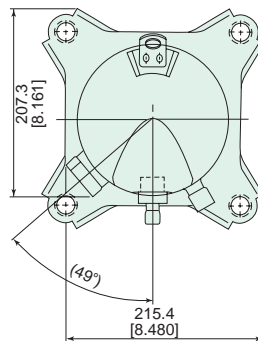
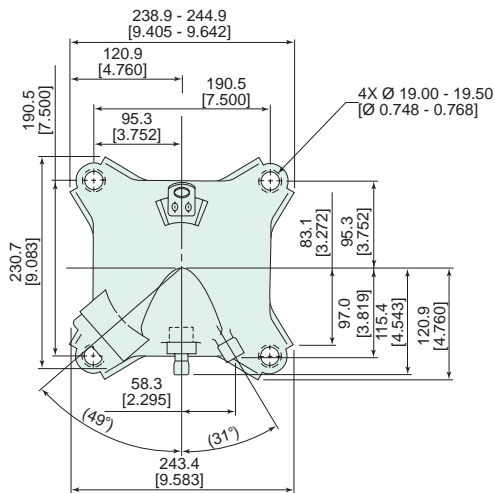
DIMENSIONAL INFORMATION



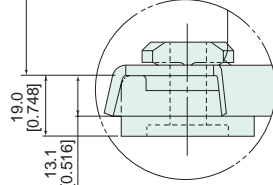
TYPICAL TERMINAL BOX OPTION LAYOUT

TYPICAL MOLDED PLUG OPTION LAYOUT

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



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



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

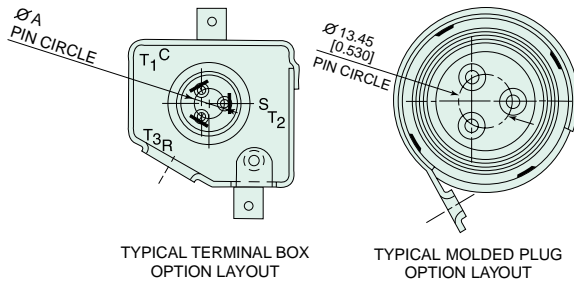
NOTES:

1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE ± 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 7B AND 8A SHOW B/M NUMBERS FOR EACH OPTION.
4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 7B AND 8A SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
5. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.

THIRD ANGLE PROJECTION



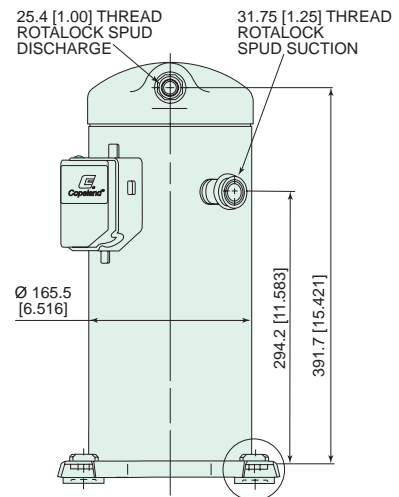
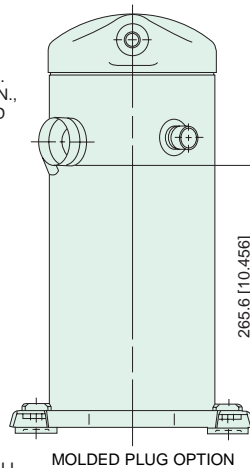
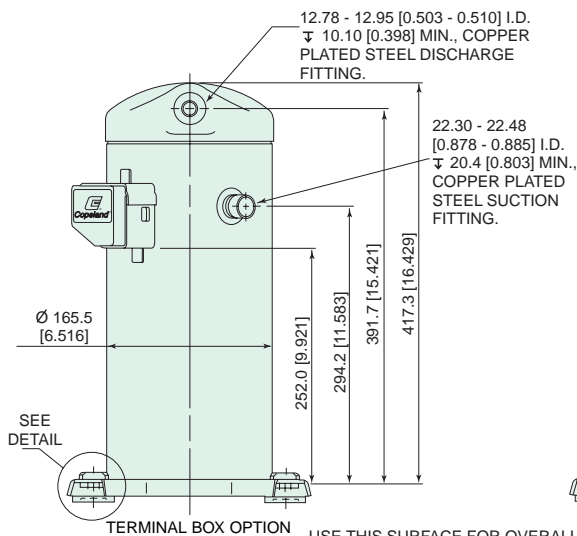
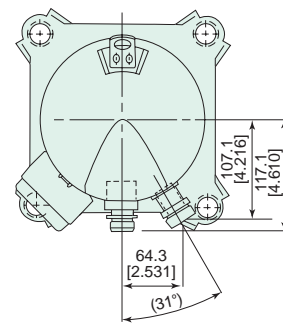
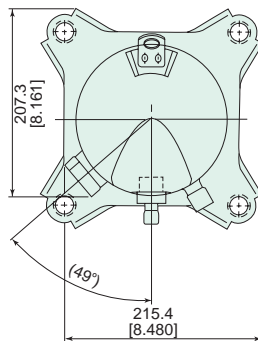
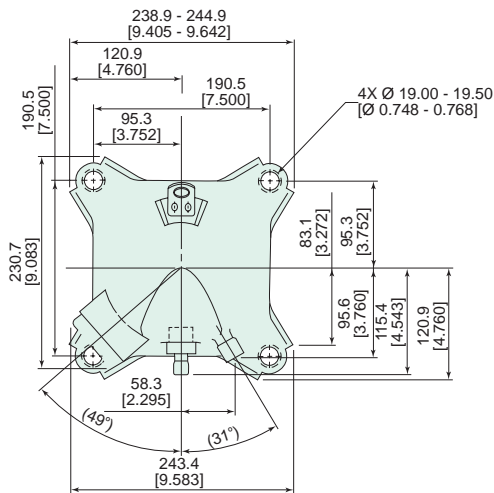
DIMENSIONAL INFORMATION



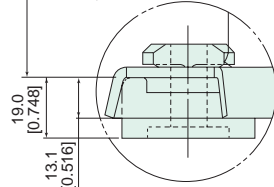
TYPICAL TERMINAL BOX OPTION LAYOUT

TYPICAL MOLDED PLUG OPTION LAYOUT

MODEL NUMBER	ØA	INTERNAL FREE VOLUME CM ³ [IN. ³] EXCLUDING OIL CHARGE
ZR45-PFJ	13.45 [0.530]	3360 [205]
ZR45-TF5	13.45 [0.530]	3360 [205]
ZR45-TFD	17.45 [0.687]	3360 [205]
ZR47-PFJ	13.45 [0.530]	3360 [205]
ZR47-TF5	13.45 [0.530]	3360 [205]
ZR47-TFD	17.45 [0.687]	3360 [205]
ZR48-PFJ	13.45 [0.530]	3360 [205]
ZR48-TF5	13.45 [0.530]	3360 [205]
ZR48-TFD	17.45 [0.687]	3360 [205]



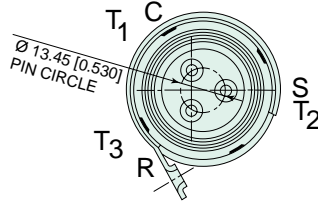
USE THIS SURFACE FOR OVERALL, FITTING, AND TERMINAL BOX HEIGHTS.



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

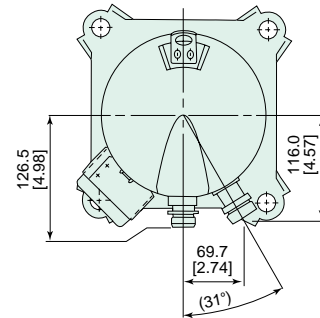
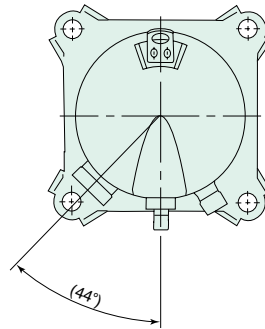
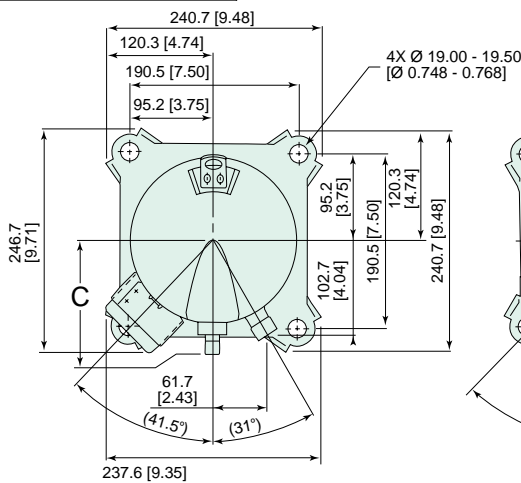
- NOTES:**
1. NOMINAL DIMENSIONS ARE SHOWN. ALL TOLERANCES ARE ± 1.50 [0.060] UNLESS OTHERWISE SPECIFIED.
 2. DUE TO THE ACCUMULATED ASSEMBLY TOLERANCES, THE SUCTION AND DISCHARGE FITTINGS VARY FROM THE MOUNTING HOLES BY ± 3.0 [0.12].
 3. TERMINAL BOX AND MOLDED PLUG OPTIONS ARE SHOWN. BILLS OF MATERIAL PAGES 7B AND 8A SHOW B/M NUMBERS FOR EACH OPTION.
 4. STUB TUBE AND ROTALOCK FITTINGS ARE SHOWN. BILLS OF MATERIAL PAGES 7B AND 8A SHOW B/M NUMBERS FOR EACH TYPE OF FITTING.
 5. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.
THIRD ANGLE PROJECTION
-

DIMENSIONAL INFORMATION

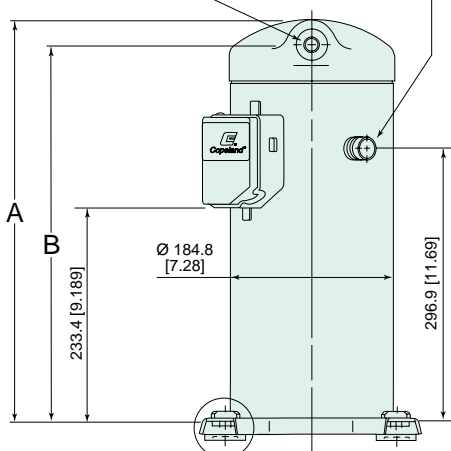


TYPICAL MOLDED PLUG OPTION LAYOUT

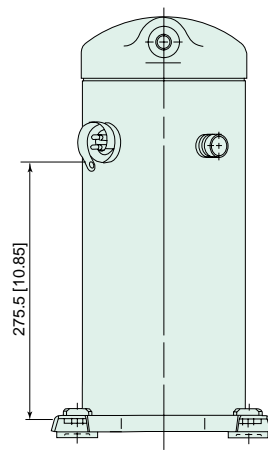
MODEL NUMBER	A	B	C	D	E	INTERNAL FREE VOLUME CM ³ [IN. ³] EXCLUDING OIL CHARGE
ZR54-TF5/D	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	4195 [256]
ZR57-TF5/D	437.9 [17.240]	409.8 [16.134]	124.7 [4.91]	12.84 [0.506]	25.4 [1.00]	4195 [256]
ZR61-TF5/D	437.9 [17.240]	409.8 [16.134]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



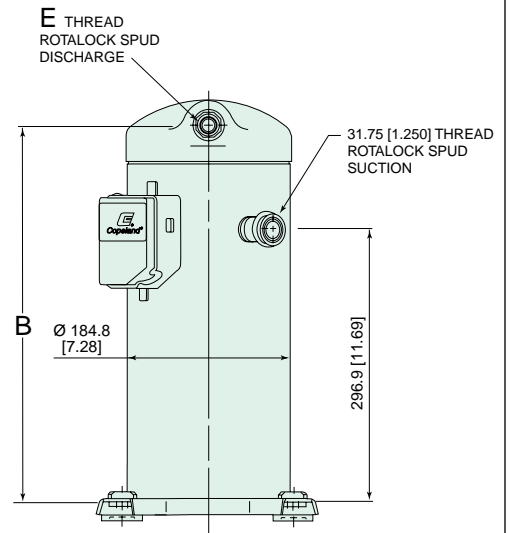
D I.D. COPPER DISCHARGE FITTING/
STEEL CHECK VALVE. 22.30 - 22.48 [0.878 - 0.885] I.D.
± 19.9 [0.78] MIN. COPPER
PLATED STEEL SUCTION FITTING.



TERMINAL BOX OPTION

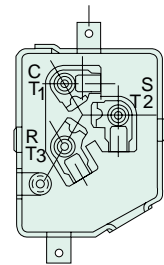
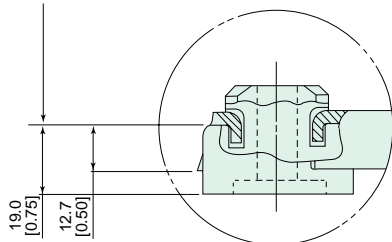


MOLDED PLUG OPTION



AVAILABLE OPTIONAL FITTINGS

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



TYPICAL TERMINAL BOX OPTION LAYOUT

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

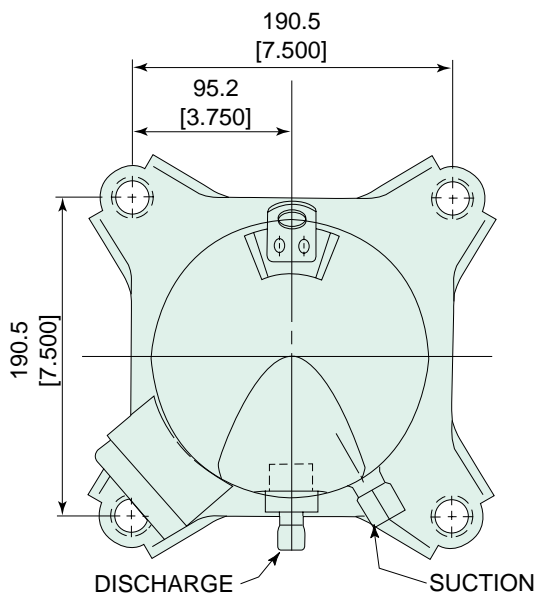
NOTES:

1. ALL TOLERANCES ± 1.25 [3.18] UNLESS OTHERWISE SPECIFIED.

2. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.

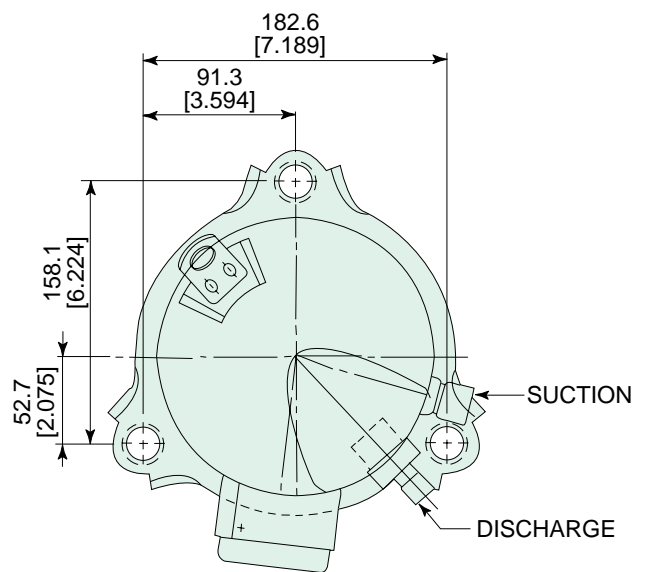
MOUNTING INFORMATION

ZR22 TO ZR81



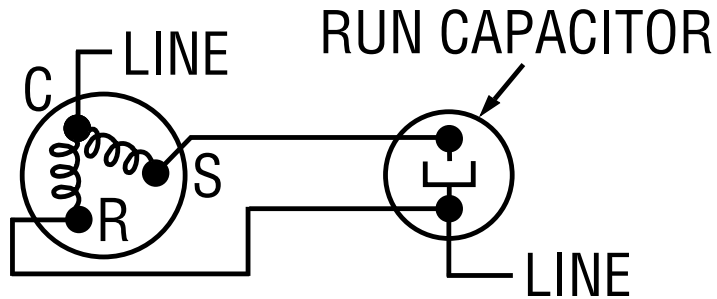
**4 FOOT MOUNTING
ARRANGEMENT**
ALL BILLS OF MATERIAL
EXCEPT 512, 562, 612

ZR22 TO ZR47

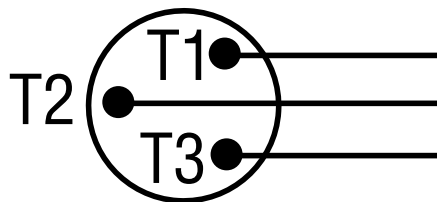


**3 FOOT MOUNTING
ARRANGEMENT**
BILLS OF MATERIAL
512, 562, 612

FOR THE INTERNATIONAL MARKET
ZR22 to ZR81
COMPRESSOR
MOUNTING OPTIONS

COMPRESSOR WIRING DIAGRAMS**SINGLE PHASE MOTOR****ZR22 TO ZR68**

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ		PERFORMANCE DATA		R22	
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling		95° F (35° C) Ambient (Air Over)	
220/240-1-50 (PFJ) Rated Voltage			220-1-50 (PFJ) Test Voltage		

ZR22K3-PFJ

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)	5640	7570	9900	12700	15800	19500	21500	23600	25900
120 (48.9)			8530	11100	14100	17500	19400	21400	23500
140 (60.0)					12000	15200	17000	18800	20800

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)	1420	1910	2490	3200	3980	4910	5420	5950	6530
120 (48.9)			2150	2800	3550	4410	4890	5390	5920
140 (60.0)					3020	3830	4280	4740	5240

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)	1650	2220	2900	3720	4630	5710	6300	6910	7590
120 (48.9)			2500	3250	4130	5130	5680	6270	6890
140 (60.0)					3520	4450	4980	5510	6090

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)	1250	1240	1220	1220	1210	1190	1190	1180	1160
120 (48.9)			1590	1570	1550	1530	1520	1510	1500
140 (60.0)					2030	1990	1980	1960	1940

ZR22K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	5810	7780	10100	12800	15900	19500	21500	23600	25900
120 (48.9)			8800	11300	14200	17500	19400	21300	23400
140 (60.0)					12000	15100	16800	18700	20600

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)	1460	1960	2550	3230	4010	4910	5420	5950	6530
120 (48.9)			2220	2850	3580	4410	4890	5370	5900
140 (60.0)					3020	3810	4230	4710	5190

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)	1700	2280	2960	3750	4660	5710	6300	6910	7590
120 (48.9)			2580	3310	4160	5130	5680	6240	6860
140 (60.0)					3520	4420	4920	5480	6040

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)	1200	1200	1190	1180	1170	1170	1170	1170	1170
120 (48.9)			1610	1580	1550	1530	1530	1530	1530
140 (60.0)					2150	2090	2070	2050	2040

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ		PERFORMANCE DATA		R407C	
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling		95° F (35° C) Ambient (Air Over)	
220/240-1-50 (PFJ) Rated Voltage			220-1-50 (PFJ) Test Voltage		

ZR22K3E-PFJ

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)	5630	7580	10000	12900	16400	20400	22600	25000	27600
120 (48.9)			8360	11000	14200	17800	19900	22100	24400
140 (60.0)					11700	15000	16800	18800	20900

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)	1420	1910	2520	3250	4130	5140	5700	6300	6960
120 (48.9)			2110	2770	3580	4490	5010	5570	6150
140 (60.0)				2950	3780	4230	4740	5270	

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)	1650	2220	2930	3780	4810	5980	6620	7330	8090
120 (48.9)			2450	3220	4160	5220	5830	6480	7150
140 (60.0)				3430	4400	4920	5510	6120	

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)	1310	1290	1280	1270	1260	1240	1230	1220	1200
120 (48.9)			1660	1650	1630	1610	1600	1590	1570
140 (60.0)				2130	2110	2090	2080	2060	

ZR22K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	5840	7670	10000	13000	16400	20400	22700	25000	27500
120 (48.9)			8520	11100	14200	17900	19900	22100	24400
140 (60.0)					11800	15000	16800	18700	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)	1470	1930	2520	3280	4130	5140	5720	6300	6930
120 (48.9)			2150	2800	3580	4510	5010	5570	6150
140 (60.0)				2970	3780	4230	4710	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)	1710	2250	2930	3810	4810	5980	6650	7330	8060
120 (48.9)			2500	3250	4160	5240	5830	6480	7150
140 (60.0)				3460	4400	4920	5480	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)	1200	1200	1200	1190	1180	1160	1160	1150	1140
120 (48.9)			1570	1560	1550	1540	1530	1520	1500
140 (60.0)				2030	2030	2010	2000	1990	1980

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR24K3-PFJ

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)	5730	8110	10800	14000	17600	21900	24200	26700	29400
120 (48.9)			9200	12200	15600	19500	21600	23900	26400
140 (60.0)					13000	16700	18700	20800	23100

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)	1440	2040	2720	3530	4440	5520	6100	6730	7410
120 (48.9)			2320	3070	3930	4910	5440	6020	6650
140 (60.0)					3280	4210	4710	5240	5820

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)	1680	2380	3160	4100	5160	6420	7090	7820	8610
120 (48.9)			2700	3570	4570	5710	6330	7000	7740
140 (60.0)					3810	4890	5480	6090	6770

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)	1380	1370	1360	1340	1330	1310	1310	1300	1290
120 (48.9)			1780	1750	1720	1690	1680	1670	1660
140 (60.0)					2300	2240	2220	2190	2170

ZR24K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	6170	8210	10800	14000	17700	21900	24200	26600	29100
120 (48.9)			9100	12100	15500	19500	21600	23900	26300
140 (60.0)					12700	16500	18600	20800	23000

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)	1550	2070	2720	3530	4460	5520	6100	6700	7330
120 (48.9)			2290	3050	3910	4910	5440	6020	6630
140 (60.0)					3200	4160	4690	5240	5800

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)	1810	2410	3160	4100	5190	6420	7090	7790	8530
120 (48.9)			2670	3550	4540	5710	6330	7000	7710
140 (60.0)					3720	4830	5450	6090	6740

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)	1290	1310	1300	1290	1270	1260	1250	1250	1250
120 (48.9)			1780	1750	1710	1670	1660	1640	1630
140 (60.0)					2370	2290	2250	2210	2180

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR24K3E-PFJ

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)	6430	8720	11400	14600	18400	22800	25300	27900	30800
120 (48.9)			9570	12500	15900	19900	22100	24500	27100
140 (60.0)					13000	16500	18600	20700	23100

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)	1620	2200	2870	3680	4640	5750	6380	7030	7760
120 (48.9)			2410	3150	4010	5010	5570	6170	6830
140 (60.0)					3280	4160	4690	5220	5820

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)	1880	2550	3340	4280	5390	6680	7410	8170	9020
120 (48.9)			2800	3660	4660	5830	6480	7180	7940
140 (60.0)					3810	4830	5450	6070	6770

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)	1450	1450	1440	1420	1410	1390	1380	1370	1360
120 (48.9)			1860	1840	1810	1790	1770	1760	1750
140 (60.0)					2400	2360	2340	2310	2290

ZR24K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	6850	8820	11400	14600	18400	22900	25300	27800	30600
120 (48.9)			9460	12400	15900	19900	22100	24500	27000
140 (60.0)					12700	16400	18500	20700	23000

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)	1730	2220	2870	3680	4640	5770	6380	7010	7710
120 (48.9)			2380	3120	4010	5010	5570	6170	6800
140 (60.0)					3200	4130	4660	5220	5800

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)	2010	2580	3340	4280	5390	6710	7410	8150	8970
120 (48.9)			2770	3630	4660	5830	6480	7180	7910
140 (60.0)					3720	4810	5420	6070	6740

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)	1360	1380	1380	1370	1350	1330	1320	1310	1310
120 (48.9)			1860	1840	1800	1770	1750	1730	1720
140 (60.0)					2480	2410	2370	2340	2300

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

220/240-1-50 (PFJ) Rated Voltage

220-1-50 (PFJ) Test Voltage

ZR26K3-PFJ

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)	5670	8280	11300	14700	18700	23300	25800	28600	31500
120 (48.9)			9720	12900	16600	20800	23200	25700	28400
140 (60.0)					14000	17900	20000	22400	24800

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)	1430	2090	2850	3700	4710	5870	6500	7210	7940
120 (48.9)			2450	3250	4180	5240	5850	6480	7160
140 (60.0)					3530	4510	5040	5640	6250

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)	1660	2430	3310	4310	5480	6830	7560	8380	9230
120 (48.9)			2850	3780	4860	6090	6800	7530	8320
140 (60.0)					4100	5240	5860	6560	7270

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)	1470	1460	1450	1440	1430	1410	1400	1380	1370
120 (48.9)			1850	1830	1810	1780	1770	1760	1740
140 (60.0)					2340	2310	2290	2270	2260

ZR26K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	6120	8330	11200	14600	18700	23300	25800	28500	31300
120 (48.9)			9560	12800	16500	20800	23100	25600	28200
140 (60.0)					14000	18000	20200	22400	24800

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)	1540	2100	2820	3680	4710	5870	6500	7180	7890
120 (48.9)			2410	3230	4160	5240	5820	6450	7110
140 (60.0)					3530	4540	5090	5640	6250

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)	1790	2440	3280	4280	5480	6830	7560	8350	9170
120 (48.9)			2800	3750	4830	6090	6770	7500	8260
140 (60.0)					4100	5270	5920	6560	7270

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)	1480	1440	1420	1400	1380	1370	1360	1350	1330
120 (48.9)			1870	1820	1790	1770	1760	1750	1740
140 (60.0)					2370	2320	2300	2290	2270

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR26K3E-PFJ

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)	6720	9170	12100	15500	19500	24200	26800	29600	32700
120 (48.9)			10300	13300	16900	21200	23600	26100	28900
140 (60.0)					14000	17700	19900	22200	24700

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)	1690	2310	3050	3910	4910	6100	6750	7460	8240
120 (48.9)			2600	3350	4260	5340	5950	6580	7280
140 (60.0)					3530	4460	5010	5590	6220

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)	1970	2690	3550	4540	5710	7090	7850	8670	9580
120 (48.9)			3020	3900	4950	6210	6910	7650	8470
140 (60.0)					4100	5190	5830	6500	7240

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)	1500	1500	1490	1480	1460	1430	1420	1400	1380
120 (48.9)			1910	1890	1880	1850	1840	1820	1800
140 (60.0)					2460	2440	2430	2410	2390

ZR26K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	7140	9220	12000	15400	19400	24200	26800	29500	32400
120 (48.9)			10100	13200	16900	21200	23500	26000	28700
140 (60.0)					14100	17900	20000	22300	24600

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)	1800	2320	3020	3880	4890	6100	6750	7430	8160
120 (48.9)			2550	3330	4260	5340	5920	6550	7230
140 (60.0)					3550	4510	5040	5620	6200

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)	2090	2700	3520	4510	5680	7090	7850	8640	9490
120 (48.9)			2960	3870	4950	6210	6890	7620	8410
140 (60.0)					4130	5240	5860	6530	7210

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)	1530	1490	1460	1440	1420	1390	1380	1360	1340
120 (48.9)			1990	1950	1920	1890	1880	1860	1850
140 (60.0)					2620	2580	2560	2540	2530

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

220/240-1-50 (PFJ) Rated Voltage

220-1-50 (PFJ) Test Voltage

ZR28K3-PFJ

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)	6500	9420	12700	16400	20600	25500	28200	31100	34200
120 (48.9)			11000	14400	18300	22700	25200	27900	30700
140 (60.0)					15700	19800	22000	24400	27000

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)	1640	2370	3200	4130	5190	6430	7110	7840
120 (48.9)			2770	3630	4610	5720	6350	7030	7740
140 (60.0)					3960	4990	5540	6150	6800

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)	1900	2760	3720	4810	6040	7470	8260	9110
120 (48.9)			3220	4220	5360	6650	7380	8170	9000
140 (60.0)					4600	5800	6450	7150	7910

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)	1590	1600	1590	1570	1540	1520	1510	1500
120 (48.9)			2030	2000	1970	1940	1930	1910	1910
140 (60.0)					2570	2520	2500	2480	2470

ZR28K3-TF5/TFD

200/220-3-50 (TF5)
380/420-3-50 (TFD) Rated Voltage

220-3-50 (TF5)
380-3-50 (TFD) 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)	7300	9710	12700	16300	20600	25500	28200	31100	34100
120 (48.9)			11000	14300	18200	22700	25200	27900	30700
140 (60.0)					15500	19600	21900	24300	26900

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)	1840	2450	3200	4110	5190	6430	7110	7840
120 (48.9)			2770	3600	4590	5720	6350	7030	7740
140 (60.0)					3910	4940	5520	6120	6780

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)	2140	2850	3720	4780	6040	7470	8260	9110
120 (48.9)			3220	4190	5330	6650	7380	8170	9000
140 (60.0)					4540	5740	6420	7120	7880

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)	1510	1520	1510	1500	1480	1450	1450	1440
120 (48.9)			1990	1960	1930	1890	1880	1870	1860
140 (60.0)					2550	2480	2460	2430	2410

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

220/240-1-50 (PFJ) Rated Voltage

220-1-50 (PFJ) Test Voltage

ZR28K3E-PFJ

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)	7660	10300	13400	17100	21600	26800	29700	32900	36300
120 (48.9)			11300	14600	18600	23200	25900	28700	31800
140 (60.0)					15300	19400	21700	24200	26900

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)	1930	2600	3380	4310	5440	6750	7480	8290	9150
120 (48.9)			2850	3680	4690	5850	6530	7230	8010
140 (60.0)					3860	4890	5470	6100	6780

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)	2240	3020	3930	5010	6330	7850	8700	9640	10600
120 (48.9)			3310	4280	5450	6800	7590	8410	9320
140 (60.0)					4480	5680	6360	7090	7880

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)	1630	1620	1610	1590	1570	1550	1530	1510	1500
120 (48.9)			2100	2080	2050	2020	2010	1990	1970
140 (60.0)					2740	2700	2670	2650	2630

ZR28K3E-TF5/TFD

200/220-3-50 (TF5)
380/420-3-50 (TFD) Rated Voltage

220-3-50 (TF5)
380-3-50 (TFD) 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)	7560	9940	13000	16800	21300	26500	29400	32400	35600
120 (48.9)			11000	14400	18500	23200	25800	28600	31600
140 (60.0)					15300	19400	21800	24200	26900

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)	1910	2500	3280	4230	5370	6680	7410	8160	8970
120 (48.9)			2770	3630	4660	5850	6500	7210	7960
140 (60.0)					3860	4890	5490	6100	6780

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)	2220	2910	3810	4920	6240	7760	8610	9490	10400
120 (48.9)			3220	4220	5420	6800	7560	8380	9260
140 (60.0)					4480	5680	6390	7090	7880

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)	1540	1540	1540	1530	1520	1500	1490	1470	1460
120 (48.9)			2020	2010	2000	1970	1960	1950	1930
140 (60.0)					2610	2590	2580	2560	2540

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

220/240-1-50 (PFJ) Rated Voltage

220-1-50 (PFJ) Test Voltage

ZR30K3-PFJ

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)	6200	9440	13000	17100	21800	27200	30200	33500	36900
120 (48.9)			11100	14900	19200	24200	26900	29900	33100
140 (60.0)					16400	20900	23400	26100	29000

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)	1560	2380	3280	4310	5490	6850	7610	8440	9300
120 (48.9)			2800	3750	4840	6100	6780	7530	8340
140 (60.0)					4130	5270	5900	6580	7310

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)	1820	2770	3810	5010	6390	7970	8850	9820	10800
120 (48.9)			3250	4370	5630	7090	7880	8760	9700
140 (60.0)					4810	6120	6860	7650	8500

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)	1720	1720	1710	1690	1670	1640	1630	1620	1620
120 (48.9)			2170	2140	2110	2080	2060	2050	2040
140 (60.0)					2730	2680	2660	2640	2620

ZR30K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	6500	9500	13000	17100	21900	27200	30200	33300	36600
120 (48.9)			10800	14800	19200	24200	27000	29800	32800
140 (60.0)					15900	20700	23200	25900	28700

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)	1640	2390	3280	4310	5520	6850	7610	8390	9220
120 (48.9)			2720	3730	4840	6100	6800	7510	8270
140 (60.0)					4010	5220	5850	6530	7230

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)	1900	2780	3810	5010	6420	7970	8850	9760	10700
120 (48.9)			3160	4340	5630	7090	7910	8730	9610
140 (60.0)					4660	6070	6800	7590	8410

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)	1640	1610	1590	1570	1560	1540	1540	1540	1530
120 (48.9)			2130	2070	2040	2010	2000	2000	2000
140 (60.0)					2730	2660	2630	2610	2600

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR30K3E-PFJ

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)									
120 (48.9)									
140 (60.0)									

CAPACITY (KCAL/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)									
120 (48.9)									
140 (60.0)									

CAPACITY (WATTS)

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)									
120 (48.9)									
140 (60.0)									

POWER (MOTOR WATTS)

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)									
120 (48.9)									
140 (60.0)									

ZR30K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	7980	10800	14200	18200	22900	28400	31400	34600	38100
120 (48.9)			11700	15500	19800	24800	27500	30400	33500
140 (60.0)					16100	20700	23200	25800	28600

CAPACITY (KCAL/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)	2010	2720	3580	4590	5770	7160	7910	8720	9600
120 (48.9)			2950	3910	4990	6250	6930	7660	8440
140 (60.0)				4060	5220	6250	6930	7660	8440

CAPACITY (WATTS)

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)	2340	3160	4160	5330	6710	8320	9200	10100	11200
120 (48.9)			3430	4540	5800	7270	8060	8910	9820
140 (60.0)				4720	6070	7680	8560	9410	10320

POWER (MOTOR WATTS)

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)	1730	1700	1680	1660	1640	1630	1620	1610	1600
120 (48.9)			2220	2180	2140	2120	2110	2100	2090
140 (60.0)					2850	2800	2780	2760	2740

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR32K3-PFJ

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)	7680	10700	14300	18500	23200	28600	31500	34600	37900
120 (48.9)			12300	16200	20600	25600	28300	31100	34200
140 (60.0)				17400	22000	24500	27100	29900	

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)	1940	2700	3600	4660	5850	7210	7940	8720	9550
120 (48.9)			3100	4080	5190	6450	7130	7840	8620
140 (60.0)				4380	5540	6170	6830	7530	

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)	2250	3140	4190	5420	6800	8380	9230	10100	11100
120 (48.9)			3600	4750	6040	7500	8290	9110	10000
140 (60.0)				4750	5100	6450	7180	7940	8760

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)	1780	1770	1760	1740	1730	1710	1700	1690	1680
120 (48.9)			2230	2200	2180	2150	2140	2130	2120
140 (60.0)				2820	2790	2770	2750	2740	

ZR32K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	7280	10200	13800	18000	22900	28500	31500	34700	38100
120 (48.9)			12000	15800	20300	25400	28300	31300	34500
140 (60.0)				17300	22000	24600	27400	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)	1830	2570	3480	4540	5770	7180	7940	8740	9600
120 (48.9)			3020	3980	5120	6400	7130	7890	8690
140 (60.0)				4360	5540	6200	6900	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)	2130	2990	4040	5270	6710	8350	9230	10200	11200
120 (48.9)			3520	4630	5950	7440	8290	9170	10100
140 (60.0)				5070	6450	7210	8030	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)	1770	1740	1710	1690	1670	1650	1640	1630	1610
120 (48.9)			2270	2210	2170	2140	2130	2120	2100
140 (60.0)				2890	2820	2790	2770	2750	

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR32K3E-PFJ

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)	8410	11400	15000	19200	24200	29900	33000	36400	39900
120 (48.9)			12600	16500	20900	26100	29000	32000	35200
140 (60.0)				17200	21800	24300	27100	30000	

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)	2120	2870	3780	4840	6100	7530	8320	9170	10100
120 (48.9)			3180	4160	5270	6580	7310	8060	8870
140 (60.0)				4330	5490	6120	6830	7560	

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)	2460	3340	4400	5630	7090	8760	9670	10700	11700
120 (48.9)			3690	4830	6120	7650	8500	9380	10300
140 (60.0)				5040	6390	7120	7940	8790	

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)	1800	1800	1790	1770	1750	1720	1710	1690	1680
120 (48.9)			2290	2270	2250	2230	2210	2200	2180
140 (60.0)				2970	2940	2930	2910	2890	

ZR32K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	8030	10900	14400	18800	23800	29700	33000	36400	40100
120 (48.9)			12400	16100	20700	26000	29000	32100	35500
140 (60.0)				17100	21800	24800	27300	30300	

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)	2020	2750	3630	4740	6000	7480	8320	9170	10100
120 (48.9)			3120	4060	5220	6550	7310	8090	8950
140 (60.0)				4310	5490	6150	6880	7640	

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)	2350	3190	4220	5510	6970	8700	9670	10700	11700
120 (48.9)			3630	4720	6070	7620	8500	9410	10400
140 (60.0)				5010	6390	7150	8000	8880	

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)	1840	1810	1780	1760	1740	1720	1700	1680	1660
120 (48.9)			2350	2300	2270	2230	2220	2200	2190
140 (60.0)				3000	2950	2930	2900	2880	

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR34K3-PFJ

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)	9010	11900	15500	19700	24600	30300	33300	36600	40000
120 (48.9)			13500	17400	21900	27100	29900	32900	36100
140 (60.0)				18700	23400	26000	28800	31600	

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	3000	3910	4960	6200	7640	8390	9220	10100
120 (48.9)			3400	4380	5520	6830	7530	8290	9100
140 (60.0)				4710	5900	6550	7260	7960	

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	3490	4540	5770	7210	8880	9760	10700	11700
120 (48.9)			3960	5100	6420	7940	8760	9640	10600
140 (60.0)				5480	6860	7620	8440	9260	

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)	1810	1800	1790	1770	1750	1740	1730	1730	1740
120 (48.9)			2300	2280	2260	2250	2240	2240	2250
140 (60.0)				2920	2910	2900	2900	2900	2910

ZR34K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	8790	11800	15500	19700	24600	30200	33400	36700	40200
120 (48.9)			13400	17300	21800	27100	29900	33000	36300
140 (60.0)				18700	23500	26200	29100	32100	

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)	2220	2970	3910	4960	6200	7610	8420	9250	10100
120 (48.9)			3380	4360	5490	6830	7530	8320	9150
140 (60.0)				4710	5920	6600	7330	8090	

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)	2580	3460	4540	5770	7210	8850	9790	10800	11800
120 (48.9)			3930	5070	6390	7940	8760	9670	10600
140 (60.0)				5480	6890	7680	8530	9410	

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)	1780	1790	1780	1760	1740	1710	1700	1690	1680
120 (48.9)			2290	2270	2250	2220	2210	2190	2180
140 (60.0)				2890	2860	2840	2820	2820	2800

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR34K3E-PFJ

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)	9120	12200	16000	20400	25700	31900	35400	39200	43200
120 (48.9)			13500	17400	22100	27700	30800	34200	37900
140 (60.0)					18200	23100	25800	28800	32100

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)	2300	3070	4030	5140	6480	8040	8920	9880	10900
120 (48.9)			3400	4380	5570	6980	7760	8620	9550
140 (60.0)				4590	5820	6500	7260	8090	

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)	2670	3570	4690	5980	7530	9350	10400	11500	12700
120 (48.9)			3960	5100	6480	8120	9020	10000	11100
140 (60.0)					5330	6770	7560	8440	9410

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)	1910	1900	1890	1870	1840	1810	1790	1770	1750
120 (48.9)			2460	2440	2410	2370	2350	2330	2310
140 (60.0)					3220	3170	3140	3120	3090

ZR34K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	8990	11800	15500	20000	25300	31500	34900	38500	42400
120 (48.9)			13100	17100	21900	27600	30700	34000	37600
140 (60.0)					18200	23100	25900	28800	31900

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)	2270	2970	3910	5040	6380	7940	8790	9700	10700
120 (48.9)			3300	4310	5520	6960	7740	8570	9480
140 (60.0)					4590	5820	6530	7260	8040

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	3460	4540	5860	7410	9230	10200	11300	12400
120 (48.9)			3840	5010	6420	8090	9000	10000	11000
140 (60.0)					5330	6770	7590	8440	9350

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)	1810	1820	1810	1800	1780	1760	1750	1730	1720
120 (48.9)			2380	2370	2360	2330	2320	2300	2280
140 (60.0)					3090	3070	3050	3030	3010

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR36K3-PFJ

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)	8810	12400	16500	21100	26500	32600	36000	39700	43700
120 (48.9)			14100	18400	23400	29100	32200	35600	39200
140 (60.0)					19900	25100	28000	31200	34500

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	3120	4160	5320	6680	8220	9070	10000	11000
120 (48.9)			3550	4640	5900	7330	8110	8970	9880
140 (60.0)					5010	6330	7060	7860	8690

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	3630	4830	6180	7760	9550	10500	11600	12800
120 (48.9)			4130	5390	6860	8530	9430	10400	11500
140 (60.0)					5830	7350	8200	9140	10100

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)	1940	1940	1940	1920	1900	1880	1870	1860	1850
120 (48.9)			2470	2450	2430	2410	2390	2380	2370
140 (60.0)					3140	3100	3090	3070	3050

ZR36K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	9030	12500	16400	21000	26300	32500	36000	39700	43700
120 (48.9)			14300	18500	23400	29000	32200	35600	39300
140 (60.0)					20000	25200	28100	31200	34500

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)	2280	3150	4130	5290	6630	8190	9070	10000	11000
120 (48.9)			3600	4660	5900	7310	8110	8970	9900
140 (60.0)					5040	6350	7080	7860	8690

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)	2650	3660	4810	6150	7710	9520	10500	11600	12800
120 (48.9)			4190	5420	6860	8500	9430	10400	11500
140 (60.0)					5860	7380	8230	9140	10100

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)	1880	1890	1890	1880	1850	1820	1810	1790	1770
120 (48.9)			2450	2430	2410	2380	2370	2350	2330
140 (60.0)					3130	3090	3080	3060	3040

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR36K3E-PFJ

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)	9690	13200	17200	21900	27400	33800	37400	41300	45600
120 (48.9)			14500	18700	23700	29500	32800	36300	40100
140 (60.0)				19600	24800	27700	30900	34300	

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)	2440	3330	4330	5520	6900	8520	9420	10400	11500
120 (48.9)			3650	4710	5970	7430	8270	9150	10100
140 (60.0)				4940	6250	6980	7790	8640	

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)	2840	3870	5040	6420	8030	9900	11000	12100	13400
120 (48.9)			4250	5480	6940	8640	9610	10600	11700
140 (60.0)				5740	7270	8120	9050	10000	

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	2030	2020	2010	1980	1950	1940	1920	1900
120 (48.9)			2580	2580	2560	2530	2520	2500	2480
140 (60.0)				3310	3300	3290	3270	3250	

ZR36K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	9900	13200	17100	21800	27300	33700	37400	41300	45500
120 (48.9)			14600	18700	23600	29500	32700	36300	40100
140 (60.0)				19700	24800	27700	30900	34300	

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)	2490	3330	4310	5490	6880	8490	9420	10400	11500
120 (48.9)			3680	4710	5950	7430	8240	9150	10100
140 (60.0)				4960	6250	6980	7790	8640	

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)	2900	3870	5010	6390	8000	9870	11000	12100	13300
120 (48.9)			4280	5480	6910	8640	9580	10600	11700
140 (60.0)				5770	7270	8120	9050	10000	

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)	1980	2000	2000	1980	1960	1920	1900	1880	1860
120 (48.9)			2540	2540	2530	2500	2480	2460	2430
140 (60.0)				3240	3240	3230	3220	3200	3180

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR40K3-PFJ

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)	9880	13500	17800	22900	28800	35600	39400	43400	47600
120 (48.9)			15400	20100	25600	32000	35500	39200	43200
140 (60.0)					21800	27700	31000	34400	38100

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)	2490	3400	4490	5770	7260	8970	9930	10900	12000
120 (48.9)			3880	5070	6450	8060	8950	9880	10900
140 (60.0)				5490	6980	8690	9670	10670	11700

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)	2890	3960	5220	6710	8440	10400	11500	12700	13900
120 (48.9)			4510	5890	7500	9380	10400	11500	12700
140 (60.0)				6390	8120	9880	10800	11900	13000

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)	2160	2150	2140	2120	2100	2080	2070	2070	2060
120 (48.9)			2770	2730	2690	2660	2640	2630	2620
140 (60.0)				3530	3460	3430	3400	3400	3380

ZR40K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	9960	13600	18000	23100	29000	35700	39400	43400	47600
120 (48.9)			15500	20200	25700	32000	35400	39000	42900
140 (60.0)					22100	27900	31000	34400	37900

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)	2510	3430	4540	5820	7310	9000	9930	10900	12000
120 (48.9)			3910	5090	6480	8060	8920	9830	10800
140 (60.0)				5570	7030	8690	9670	10670	11700

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)	2920	3980	5270	6770	8500	10500	11500	12700	13900
120 (48.9)			4540	5920	7530	9380	10400	11400	12600
140 (60.0)				6480	8170	9880	10800	11900	13000

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)	2090	2090	2080	2060	2040	2010	1990	1980	1970
120 (48.9)			2730	2700	2660	2620	2600	2590	2580
140 (60.0)				3470	3420	3390	3370	3370	3360

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ		PERFORMANCE DATA		R407C	
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling		95° F (35° C) Ambient (Air Over)	
220/240-1-50 (PFJ) Rated Voltage			220-1-50 (PFJ) Test Voltage		

ZR40K3E-PFJ

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)	10700	14400	18800	24000	30200	37500	41600	46100	50800
120 (48.9)			15900	20500	26000	32600	36300	40300	44600
140 (60.0)					21400	27100	30400	33900	37700

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)	2700	3630	4740	6050	7610	9450	10500	11600	12800
120 (48.9)			4010	5170	6550	8220	9150	10200	11200
140 (60.0)				5390	6830	7660	8540	9500	

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)	3140	4220	5510	7030	8850	11000	12200	13500	14900
120 (48.9)			4660	6010	7620	9550	10600	11800	13100
140 (60.0)					6270	7940	8910	9930	11000

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)	2250	2240	2220	2200	2170	2130	2110	2090	2060
120 (48.9)			2900	2870	2830	2790	2770	2740	2720
140 (60.0)					3780	3730	3700	3670	3630

ZR40K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	10600	13900	18200	23500	29700	37000	41000	45300	49800
120 (48.9)			15400	20100	25800	32400	36100	40000	44100
140 (60.0)					21400	27200	30400	33800	37500

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)	2670	3500	4590	5920	7480	9320	10300	11400	12500
120 (48.9)			3880	5070	6500	8160	9100	10100	11100
140 (60.0)				5390	6850	7660	8520	9450	

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)	3110	4070	5330	6890	8700	10800	12000	13300	14600
120 (48.9)			4510	5890	7560	9490	10600	11700	12900
140 (60.0)					6270	7970	8910	9900	11000

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)	2130	2130	2130	2110	2090	2070	2050	2040	2020
120 (48.9)			2790	2780	2750	2720	2710	2690	2670
140 (60.0)					3600	3570	3560	3530	3510

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

220/240-1-50 (PFJ) Rated Voltage

220-1-50 (PFJ) Test Voltage

ZR42K3-PFJ

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)	10800	14600	19200	24400	30600	37600	41500	45600	50000
120 (48.9)			16400	21400	27100	33700	37300	41100	45200
140 (60.0)					23100	29200	32500	36100	39900

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)	2720	3680	4840	6150	7710	9480	10500	11500	12600
120 (48.9)			4130	5390	6830	8490	9400	10400	11400
140 (60.0)				5820	7360	8190	9100	10100	

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)	3160	4280	5630	7150	8970	11000	12200	13400	14700
120 (48.9)			4810	6270	7940	9870	10900	12000	13200
140 (60.0)				6770	8560	9520	10600	11700	

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)	2270	2250	2230	2210	2190	2170	2160	2140	2130
120 (48.9)			2880	2850	2820	2780	2760	2740	2720
140 (60.0)				3690	3630	3600	3570	3540	

ZR42K3-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	10800	14400	19000	24500	30800	37800	41500	45400	49400
120 (48.9)			16600	21300	27000	33800	37500	41300	45400
140 (60.0)					23300	29100	32400	35900	39700

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)	2720	3630	4790	6170	7760	9530	10500	11400	12400
120 (48.9)			4180	5370	6800	8520	9450	10400	11400
140 (60.0)				5870	7330	8160	9050	10000	

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)	3160	4220	5570	7180	9020	11100	12200	13300	14500
120 (48.9)			4860	6240	7910	9900	11000	12100	13300
140 (60.0)				6830	8530	9490	10500	11600	

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)	2160	2180	2170	2160	2130	2100	2080	2060	2030
120 (48.9)			2820	2800	2770	2730	2710	2690	2660
140 (60.0)				3640	3590	3570	3540	3510	

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR42K3E-PFJ

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)	11500	15200	19700	25100	31400	38800	43000	47400	52100
120 (48.9)			16600	21500	27200	34000	37800	41800	46100
140 (60.0)				22500	28600	31900	35600	39500	

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)	2900	3830	4960	6330	7910	9780	10800	11900	13100
120 (48.9)			4180	5420	6850	8570	9530	10500	11600
140 (60.0)				5670	7210	8040	8970	9950	

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)	3370	4450	5770	7350	9200	11400	12600	13900	15300
120 (48.9)			4860	6300	7970	9960	11100	12200	13500
140 (60.0)				6590	8380	9350	10400	11600	

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)	2340	2330	2310	2300	2270	2240	2220	2200	2180
120 (48.9)			3000	2980	2950	2910	2890	2860	2830
140 (60.0)				3890	3850	3820	3790	3760	

ZR42K3E-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	11500	14900	19500	25100	31700	39100	43000	47200	51400
120 (48.9)			16700	21300	27200	34100	37900	42000	46300
140 (60.0)				22700	28400	31800	35400	39300	

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)	2900	3750	4910	6330	7990	9850	10800	11900	13000
120 (48.9)			4210	5370	6850	8590	9550	10600	11700
140 (60.0)				5720	7160	8010	8920	9900	

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)	3370	4370	5710	7350	9290	11500	12600	13800	15100
120 (48.9)			4890	6240	7970	9990	11100	12300	13600
140 (60.0)				6650	8320	9320	10400	11500	

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)	2280	2300	2300	2290	2260	2220	2190	2160	2130
120 (48.9)			2930	2930	2910	2870	2850	2820	2780
140 (60.0)				3780	3750	3750	3730	3700	3670

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR45K3-PFJ

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)	12900	17100	21800	27300	33600	40900	45000	49300	53900
120 (48.9)			19100	24200	30100	36900	40600	44700	48900
140 (60.0)					25800	32000	35500	39200	43200

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)	3250	4310	5490	6880	8470	10300	11300	12400	13600
120 (48.9)			4810	6100	7590	9300	10200	11300	12300
140 (60.0)					6500	8060	8950	9880	10900

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)	3780	5010	6390	8000	9840	12000	13200	14400	15800
120 (48.9)			5600	7090	8820	10800	11900	13100	14300
140 (60.0)					7560	9380	10400	11500	12700

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)	2270	2290	2300	2300	2310	2340	2370	2400	2440
120 (48.9)			2990	2970	2960	2970	2980	3000	3030
140 (60.0)					3920	3880	3870	3870	3870

ZR45KC-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	10900	15700	20800	26400	32800	40300	44500	49100	54000
120 (48.9)			18000	23400	29400	36300	40200	44400	49000
140 (60.0)					25500	31900	35400	39300	43500

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	3960	5240	6650	8270	10200	11200	12400	13600
120 (48.9)			4540	5900	7410	9150	10100	11200	12300
140 (60.0)					6430	8040	8920	9900	11000

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	4600	6090	7740	9610	11800	13000	14400	15800
120 (48.9)			5270	6860	8610	10600	11800	13000	14400
140 (60.0)					7470	9350	10400	11500	12700

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)	2270	2280	2270	2260	2260	2280	2290	2320	2350
120 (48.9)			3010	2970	2940	2930	2930	2940	2960
140 (60.0)					3840	3790	3780	3770	3770

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR47K3-PFJ

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)	13300	17500	22500	28100	34700	42300	46500	51000	55800
120 (48.9)			19600	24900	31000	38100	41900	46100	50500
140 (60.0)					26500	33000	36600	40400	44500

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)	3350	4410	5670	7080	8740	10700	11700	12900	14100
120 (48.9)			4940	6270	7810	9600	10600	11600	12700
140 (60.0)				6680	8320	9220	10200	11200	

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)	3900	5130	6590	8230	10200	12400	13600	14900	16300
120 (48.9)			5740	7300	9080	11200	12300	13500	14800
140 (60.0)					7760	9670	10700	11800	13000

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)	2330	2340	2350	2350	2360	2390	2420	2450	2490
120 (48.9)			3060	3040	3030	3040	3050	3060	3090
140 (60.0)					4020	3980	3970	3970	3980

ZR47KC-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	15300	19100	23700	29000	35200	42300	46300	50600	55100
120 (48.9)			20900	25900	31600	38200	41800	45700	49900
140 (60.0)					27500	33500	36800	40400	44200

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)	3860	4810	5970	7310	8870	10700	11700	12800	13900
120 (48.9)			5270	6530	7960	9630	10500	11500	12600
140 (60.0)				6930	8440	9270	10200	11100	

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)	4480	5600	6940	8500	10300	12400	13600	14800	16100
120 (48.9)			6120	7590	9260	11200	12200	13400	14600
140 (60.0)					8060	9820	10800	11800	13000

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)	2270	2280	2280	2280	2290	2310	2340	2370	2400
120 (48.9)			3060	3030	3000	3000	3010	3030	3060
140 (60.0)					3990	3940	3930	3920	3930

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

220/240-1-50 (PFJ) Rated Voltage

220-1-50 (PFJ) Test Voltage

ZR47K3E-PFJ

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	17500	22500	28400	35300	43400	48000	53000	58400
120 (48.9)			19400	24700	31000	38400	42500	47000	51900
140 (60.0)					25400	32100	35900	39900	44300

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)	3300	4410	5670	7160	8900	10900	12100	13400
120 (48.9)			4890	6220	7810	9680	10700	11800	13100
140 (60.0)				6400	8090	9050	10100	11200	

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)	3840	5130	6590	8320	10300	12700	14100	15500
120 (48.9)			5680	7240	9080	11300	12500	13800	15200
140 (60.0)					7440	9410	10500	11700	13000

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)	2410	2440	2450	2450	2460	2480	2500	2520
120 (48.9)			3220	3210	3210	3220	3220	3240	3260
140 (60.0)					4310	4290	4290	4290	4300

ZR47KCE-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	8320	13400	19300	26200	34300	43600	48800	54400	60300
120 (48.9)			15700	22200	29600	38200	42900	48000	53500
140 (60.0)					24200	32100	36500	41100	46100

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)	2100	3380	4860	6600	8640	11000	12300	13700
120 (48.9)			3960	5590	7460	9630	10800	12100	13500
140 (60.0)					6100	8090	9200	10400	11600

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)	2440	3930	5650	7680	10000	12800	14300	15900
120 (48.9)			4600	6500	8670	11200	12600	14100	15700
140 (60.0)					7090	9410	10700	12000	13500

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)	2330	2340	2340	2340	2350	2380	2410	2440
120 (48.9)			3220	3180	3160	3160	3170	3190	3220
140 (60.0)					4270	4210	4200	4190	4200

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR48K3-PFJ

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)	13400	17700	22800	28700	35600	43400	47800	52400	57400
120 (48.9)			20100	25500	31900	39100	43100	47400	52000
140 (60.0)					27300	33900	37600	41500	45700

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)	3380	4460	5750	7230	8970	10900	12000	13200	14500
120 (48.9)			5070	6430	8040	9850	10900	11900	13100
140 (60.0)				6880	8540	9480	10500	11500	

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)	3930	5190	6680	8410	10400	12700	14000	15400	16800
120 (48.9)			5890	7470	9350	11500	12600	13900	15200
140 (60.0)					8000	9930	11000	12200	13400

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)	2390	2420	2440	2450	2460	2490	2520	2550	2580
120 (48.9)			3180	3170	3170	3170	3180	3200	3230
140 (60.0)					4240	4210	4200	4190	4190

ZR48KC-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	13700	18000	23000	28900	35700	43500	47800	52400	57300
120 (48.9)			20200	25600	31900	39100	43000	47300	51800
140 (60.0)					27600	34200	37800	41700	45800

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)	3450	4540	5800	7280	9000	11000	12000	13200	14400
120 (48.9)			5090	6450	8040	9850	10800	11900	13100
140 (60.0)				6960	8620	9530	10500	11500	

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)	4010	5270	6740	8470	10500	12700	14000	15400	16800
120 (48.9)			5920	7500	9350	11500	12600	13900	15200
140 (60.0)					8090	10000	11100	12200	13400

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)	2330	2340	2350	2370	2410	2460	2490	2530	2570
120 (48.9)			3120	3110	3120	3150	3170	3200	3230
140 (60.0)					4120	4120	4120	4130	4150

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R407C

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

220/240-1-50 (PFJ) Rated Voltage

220-1-50 (PFJ) Test Voltage

ZR48K3E-PFJ

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)	13500	17800	23100	29400	36800	45500	50300	55500	61000
120 (48.9)			19400	25100	31900	39800	44200	49000	54000
140 (60.0)					26400	33500	37400	41700	46300

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)	3400	4490	5820	7410	9270	11500	12700	14000	15400
120 (48.9)			4890	6330	8040	10000	11100	12300	13600
140 (60.0)					6650	8440	9420	10500	11700

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)	3960	5220	6770	8610	10800	13300	14700	16300	17900
120 (48.9)			5680	7350	9350	11700	13000	14400	15800
140 (60.0)					7740	9800	11000	12200	13600

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)	2760	2740	2730	2710	2680	2640	2620	2600	2570
120 (48.9)			3520	3500	3470	3430	3400	3370	3340
140 (60.0)					4560	4510	4480	4450	4410

ZR48KCE-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	6010	11600	18200	25800	34600	44800	50400	56400	62800
120 (48.9)			14500	21600	29700	39000	44200	49700	55600
140 (60.0)					24100	32700	37400	42400	47800

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	2920	4590	6500	8720	11300	12700	14200	15800
120 (48.9)			3650	5440	7480	9830	11100	12500	14000
140 (60.0)					6070	8240	9420	10700	12000

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)	1760	3400	5330	7560	10100	13100	14800	16500	18400
120 (48.9)			4250	6330	8700	11400	13000	14600	16300
140 (60.0)					7060	9580	11000	12400	14000

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)	2390	2400	2410	2440	2480	2530	2570	2610	2660
120 (48.9)			3280	3280	3290	3320	3340	3370	3410
140 (60.0)					4420	4410	4420	4430	4450

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

200/220-3-50 (TF5)
380/420-3-50 (TFD) Rated Voltage

220-3-50 (TF5)
380-3-50 (TFD) Test Voltage

ZR54KC-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)	14300	19700	25600	32200	39700	48300	53000	58200	63600
120 (48.9)			22100	28400	35400	43300	47700	52400	57400
140 (60.0)					31000	38300	42200	46500	51000

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)	3600	4960	6450	8110	10000	12200	13400	14700	16000
120 (48.9)			5570	7160	8920	10900	12000	13200	14500
140 (60.0)					7810	9650	10600	11700	12900

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)	4190	5770	7500	9430	11600	14200	15500	17100	18600
120 (48.9)			6480	8320	10400	12700	14000	15400	16800
140 (60.0)					9080	11200	12400	13600	14900

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)	2590	2660	2710	2740	2770	2800	2820	2840	2860
120 (48.9)			3390	3460	3500	3530	3550	3560	3580
140 (60.0)					4390	4440	4470	4480	4500

ZR54KCE-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	4070	11100	18900	27500	37400	48700	54900	61700	68900
120 (48.9)			14400	22600	31800	42200	48000	54100	60700
140 (60.0)					26000	35600	40800	46300	52300

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)	1030	2800	4760	6930	9420	12300	13800	15500	17400
120 (48.9)			3630	5700	8010	10600	12100	13600	15300
140 (60.0)					6550	8970	10300	11700	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)	1190	3250	5540	8060	11000	14300	16100	18100	20200
120 (48.9)			4220	6620	9320	12400	14100	15900	17800
140 (60.0)					7620	10400	12000	13600	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)	2680	2770	2830	2880	2910	2950	2970	2990	3020
120 (48.9)			3680	3750	3810	3850	3870	3890	3900
140 (60.0)					4900	4970	5000	5020	5040

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ		PERFORMANCE DATA		R22	
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling		95° F (35° C) Ambient (Air Over)	
200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage				220-3-50 (TF5) 380-3-50 (TFD) Test Voltage	

ZR57KC-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)	15400	20900	27000	34100	42100	51100	56000	61300	66800
120 (48.9)			22800	29600	37200	45800	50500	55500	60800
140 (60.0)					32100	40200	44500	49200	54100

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)	3880	5270	6800	8590	10600	12900	14100	15400	16800
120 (48.9)			5750	7460	9370	11500	12700	14000	15300
140 (60.0)					8090	10100	11200	12400	13600

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)	4510	6120	7910	9990	12300	15000	16400	18000	19600
120 (48.9)			6680	8670	10900	13400	14800	16300	17800
140 (60.0)					9410	11800	13000	14400	15900

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	2790	2840	2870	2900	2930	2950	2980	3010
120 (48.9)			3590	3640	3670	3700	3710	3730	3750
140 (60.0)					4620	4670	4680	4700	4710

ZR57KCE-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	15500	21000	27300	34400	42500	51600	56600	61900	67500
120 (48.9)			23000	29900	37600	46300	51100	56100	61400
140 (60.0)					32500	40600	45000	49700	54600

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)	3910	5290	6880	8670	10700	13000	14300	15600	17000
120 (48.9)			5800	7530	9480	11700	12900	14100	15500
140 (60.0)					8190	10200	11300	12500	13800

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)	4540	6150	8000	10100	12500	15100	16600	18100	19800
120 (48.9)			6740	8760	11000	13600	15000	16400	18000
140 (60.0)					9520	11900	13200	14600	16000

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)	2860	2940	2990	3030	3060	3100	3130	3160	3200
120 (48.9)			3910	3970	4010	4040	4060	4080	4100
140 (60.0)					5170	5220	5240	5260	5280

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

200/220-3-50 (TF5)
380/420-3-50 (TFD) Rated Voltage

220-3-50 (TF5)
380-3-50 (TFD) Test Voltage

ZR61KC-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)	17800	22700	28900	36400	45100	54800	60000	65400	71000
120 (48.9)			25300	32100	40100	49200	54100	59200	64500
140 (60.0)					35300	43500	48000	52700	57700

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)	4490	5720	7280	9170	11400	13800	15100	16500	17900
120 (48.9)			6380	8090	10100	12400	13600	14900	16300
140 (60.0)				8900	11000	12100	13300	14500	

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)	5220	6650	8470	10700	13200	16100	17600	19200	20800
120 (48.9)			7410	9410	11700	14400	15900	17300	18900
140 (60.0)					10300	12700	14100	15400	16900

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)	2770	2860	2910	2950	3010	3100	3170	3250	3360
120 (48.9)			3750	3780	3820	3890	3950	4030	4130
140 (60.0)					4940	4970	5010	5070	5150

ZR61KCE-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	14900	20300	27000	35200	44900	56100	62400	69200	76300
120 (48.9)			23000	30100	38700	48900	54700	60900	67600
140 (60.0)					32600	41400	46500	52000	57900

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)	3750	5120	6800	8870	11300	14100	15700	17400	19200
120 (48.9)			5800	7590	9750	12300	13800	15300	17000
140 (60.0)					8220	10400	11700	13100	14600

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)	4370	5950	7910	10300	13200	16400	18300	20300	22400
120 (48.9)			6740	8820	11300	14300	16000	17800	19800
140 (60.0)					9550	12100	13600	15200	17000

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)	3030	3110	3160	3190	3220	3250	3260	3280	3300
120 (48.9)			3980	4070	4120	4140	4150	4150	4150
140 (60.0)					5190	5270	5290	5300	5300

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ	PERFORMANCE DATA	R22
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR68KC-PFJ

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)	19800	25700	32600	40800	50300	61200	67300	73700	80600
120 (48.9)			28600	36200	45000	55100	60600	66500	72800
140 (60.0)					38500	47800	52900	58400	64100

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)	4990	6480	8220	10300	12700	15400	17000	18600
120 (48.9)			7210	9120	11300	13900	15300	16800	18300
140 (60.0)				9700	12000	13300	14700	16200	

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)	5800	7530	9550	12000	14700	17900	19700	21600
120 (48.9)			8380	10600	13200	16100	17800	19500	21300
140 (60.0)					11300	14000	15500	17100	18800

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)	3490	3510	3520	3540	3580	3630	3670	3720
120 (48.9)			4550	4510	4500	4530	4550	4590	4640
140 (60.0)					5920	5860	5850	5850	5870

ZR68KC-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	16900	23600	31100	39800	49900	61600	68000	75000	82500
120 (48.9)			26900	35100	44500	55300	61300	67700	74600
140 (60.0)					37800	47800	53400	59400	65800

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)	4260	5950	7840	10000	12600	15500	17100	18900
120 (48.9)			6780	8850	11200	13900	15400	17100	18800
140 (60.0)					9530	12000	13500	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)	4950	6910	9110	11700	14600	18000	19900	22000
120 (48.9)			7880	10300	13000	16200	18000	19800	21900
140 (60.0)					11100	14000	15600	17400	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)	3430	3400	3380	3380	3390	3420	3430	3460
120 (48.9)			4420	4390	4370	4370	4380	4390	4410
140 (60.0)					5630	5610	5610	5610	5620

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



50 HERTZ	PERFORMANCE DATA	R407C
20° F (11.1° C) Superheat	15° F (8.3° C) Subcooling	95° F (35° C) Ambient (Air Over)
220/240-1-50 (PFJ) Rated Voltage		220-1-50 (PFJ) Test Voltage

ZR68KCE-PFJ

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)	10100	17400	26200	36600	48500	62400	70000	78100	86700
120 (48.9)			21200	30800	41900	54600	61600	69000	77000
140 (60.0)					33700	45400	51900	58700	66000

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)	2550	4380	6600	9220	12200	15700	17600	19700	21800
120 (48.9)			5340	7760	10600	13800	15500	17400	19400
140 (60.0)				8490	11400	13100	14800	16600	

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)	2960	5100	7680	10700	14200	18300	20500	22900	25400
120 (48.9)			6210	9020	12300	16000	18000	20200	22600
140 (60.0)					9870	13300	15200	17200	19300

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)	3630	3640	3660	3680	3720	3790	3830	3880	3950
120 (48.9)			4840	4800	4780	4810	4840	4880	4940
140 (60.0)					6410	6340	6320	6330	6350

ZR68KCE-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	4430	13200	23200	34700	48000	63400	71900	81100	91000
120 (48.9)			17600	28400	40800	55100	63000	71500	80600
140 (60.0)					32000	45300	52600	60500	68900

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)	1120	3330	5850	8740	12100	16000	18100	20400	22900
120 (48.9)			4440	7160	10300	13900	15900	18000	20300
140 (60.0)					8060	11400	13300	15200	17400

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)	1300	3870	6800	10200	14100	18600	21100	23800	26700
120 (48.9)			5160	8320	12000	16100	18500	20900	23600
140 (60.0)					9380	13300	15400	17700	20200

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)	3540	3500	3480	3480	3490	3520	3550	3570	3600
120 (48.9)			4740	4700	4680	4680	4690	4710	4730
140 (60.0)					6210	6190	6190	6190	6200

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



ZR COPELAND SCROLL™ COMPRESSORS

50 HERTZ

PERFORMANCE DATA

R22

20° F (11.1° C) Superheat

15° F (8.3° C) Subcooling

95° F (35° C) Ambient (Air Over)

200/220-3-50 (TF5)
380/420-3-50 (TFD) Rated Voltage

220-3-50 (TF5)
380-3-50 (TFD) Test Voltage

ZR72KC-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)	19800	26400	34100	43100	53400	65100	71500	78400	85600
120 (48.9)			29400	37800	47400	58400	64500	70900	77700
140 (60.0)				40100	50300	56000	62000	68400	

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)	4990	6650	8590	10900	13500	16400	18000	19800	21600
120 (48.9)			7410	9530	11900	14700	16300	17900	19600
140 (60.0)				10100	12700	14100	15600	17200	

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)	5800	7740	9990	12600	15600	19100	20900	23000	25100
120 (48.9)			8610	11100	13900	17100	18900	20800	22800
140 (60.0)				11700	14700	16400	18200	20000	

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)	3440	3470	3490	3510	3540	3580	3610	3650	3690
120 (48.9)			4560	4550	4540	4550	4570	4590	4620
140 (60.0)				5990	5940	5920	5910	5910	5910

ZR72KCE-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	18600	25700	33600	42800	53600	66400	73700	81600	90100
120 (48.9)			28100	36600	46300	57700	64200	71100	78700
140 (60.0)				39300	49400	55100	61100	67700	

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)	4690	6480	8470	10800	13500	16700	18600	20600	22700
120 (48.9)			7080	9220	11700	14500	16200	17900	19800
140 (60.0)				9900	12400	13900	15400	17100	

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)	5450	7530	9840	12500	15700	19500	21600	23900	26400
120 (48.9)			8230	10700	13600	16900	18800	20800	23100
140 (60.0)				11500	14500	16100	17900	19800	

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)	3560	3630	3670	3690	3710	3730	3740	3760	3780
120 (48.9)			4700	4740	4770	4780	4780	4790	4800
140 (60.0)				6100	6130	6140	6140	6140	6150

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



50 HERTZ		PERFORMANCE DATA		R22	
20° F (11.1° C) Superheat		15° F (8.3° C) Subcooling		95° F (35° C) Ambient (Air Over)	
200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage				220-3-50 (TF5) 380-3-50 (TFD) Test Voltage	

ZR81KC-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)	22200	28900	37500	47800	59500	72600	79500	86800	94200
120 (48.9)			32700	41900	52900	65500	72300	79500	86900
140 (60.0)					45300	56800	63200	70000	77200

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)	5590	7280	9450	12000	15000	18300	20000	21900	23700
120 (48.9)			8240	10600	13300	16500	18200	20000	21900
140 (60.0)					11400	14300	15900	17600	19500

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)	6500	8470	11000	14000	17400	21300	23300	25400	27600
120 (48.9)			9580	12300	15500	19200	21200	23300	25500
140 (60.0)					13300	16600	18500	20500	22600

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)	3850	3910	3950	4000	4050	4110	4140	4180	4230
120 (48.9)			5010	5060	5100	5150	5180	5210	5250
140 (60.0)					6460	6510	6530	6550	6580

ZR81KCE-TF5/TFD

200/220-3-50 (TF5) 380/420-3-50 (TFD) Rated Voltage	220-3-50 (TF5) 380-3-50 (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)	18100	26400	35800	46600	59300	74300	82900	92200	102000
120 (48.9)			29800	39700	51200	64900	72600	81100	90300
140 (60.0)					42400	54400	61300	68800	77000

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)	4560	6650	9020	11700	14900	18700	20900	23200	25700
120 (48.9)			7510	10000	12900	16400	18300	20400	22800
140 (60.0)					10700	13700	15400	17300	19400

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)	5300	7740	10500	13700	17400	21800	24300	27000	29900
120 (48.9)			8730	11600	15000	19000	21300	23800	26500
140 (60.0)					12400	15900	18000	20200	22600

POWER (MOTOR WATTS)

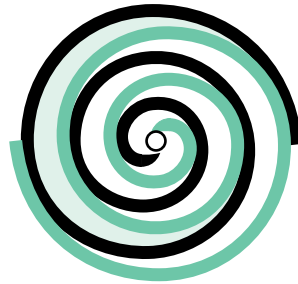
°F/°C	-10	0	10	20	30	40	45	50	55
	-23.3	-17.8	-12.2	-6.7	-1.1	4.4	7.2	10.0	12.8
100 (37.8)	4030	4080	4110	4130	4160	4220	4260	4310	4380
120 (48.9)			5410	5410	5410	5440	5460	5500	5550
140 (60.0)					7080	7050	7050	7060	7090

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

HOW A SCROLL WORKS



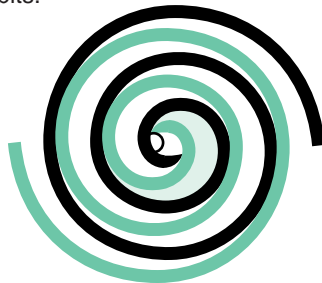
Compression in the scroll is created by the interaction of an orbiting spiral and a stationary spiral. Gas enters the outer openings as one of the spirals orbits.



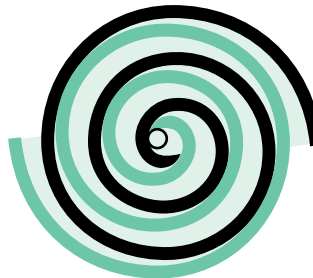
The open passages are sealed off as gas is drawn into the spiral.



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. Copeland 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 the Application Bulletin AE4-1312.
- 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 speed of the compressor is:
 - 50 Hertz 2900 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.
 - ZR22 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 mends 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 50 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 10.0 BTU/WATT. Efficiencies of better than 10.0 BTU/WATT are acceptable, but efficiencies below 10.0 BTU/WATT are not acceptable. The compressor shall be of the Copeland ZR type or approved equal.

UNITS CONVERSION CHART

BTUH \times 0.252 = KCALH

BTUH \times 0.293 = WATTS

(°F - 32) \times $\frac{5}{9}$ = °C

POUNDS \times 0.454 = KILOGRAMS

INCHES \times 25.4 = MILLIMETERS

CUBIC INCHES \times 16.386 = CUBIC CENTIMETERS

FLUID OUNCES \times 0.02957 = LITERS

CUBIC FEET \times 0.02831 = CUBIC METERS

HORSEPOWER \times 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
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	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	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	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 Single Phase	32	3135 1422	43.75 x 43.75 x 43.25 111.1 x 111.1 x 110	47.9 1.36	12	384	37600 17100
ZR68 Three Phase	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 ³), 114.3 x 83.8 x 116.8 centimeters (1.12 m ³).		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 ³), 123.2 x 111.8 x 116.8 centimeters (1.61 m ³).	
	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
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	1079 489	— —	1609 730	— —
ZR57	1067 484	— —	1591 722	— —
ZR61	1103 500	— —	1645 746	— —
ZR68 Single Phase	1247 566	1253 568	1861 844	1870 848
ZR68 Three Phase	1139 517	— —	1699 771	— —
ZR72	1139 517	— —	1699 771	— —
ZR81	1175 533	— —	1753 795	— —

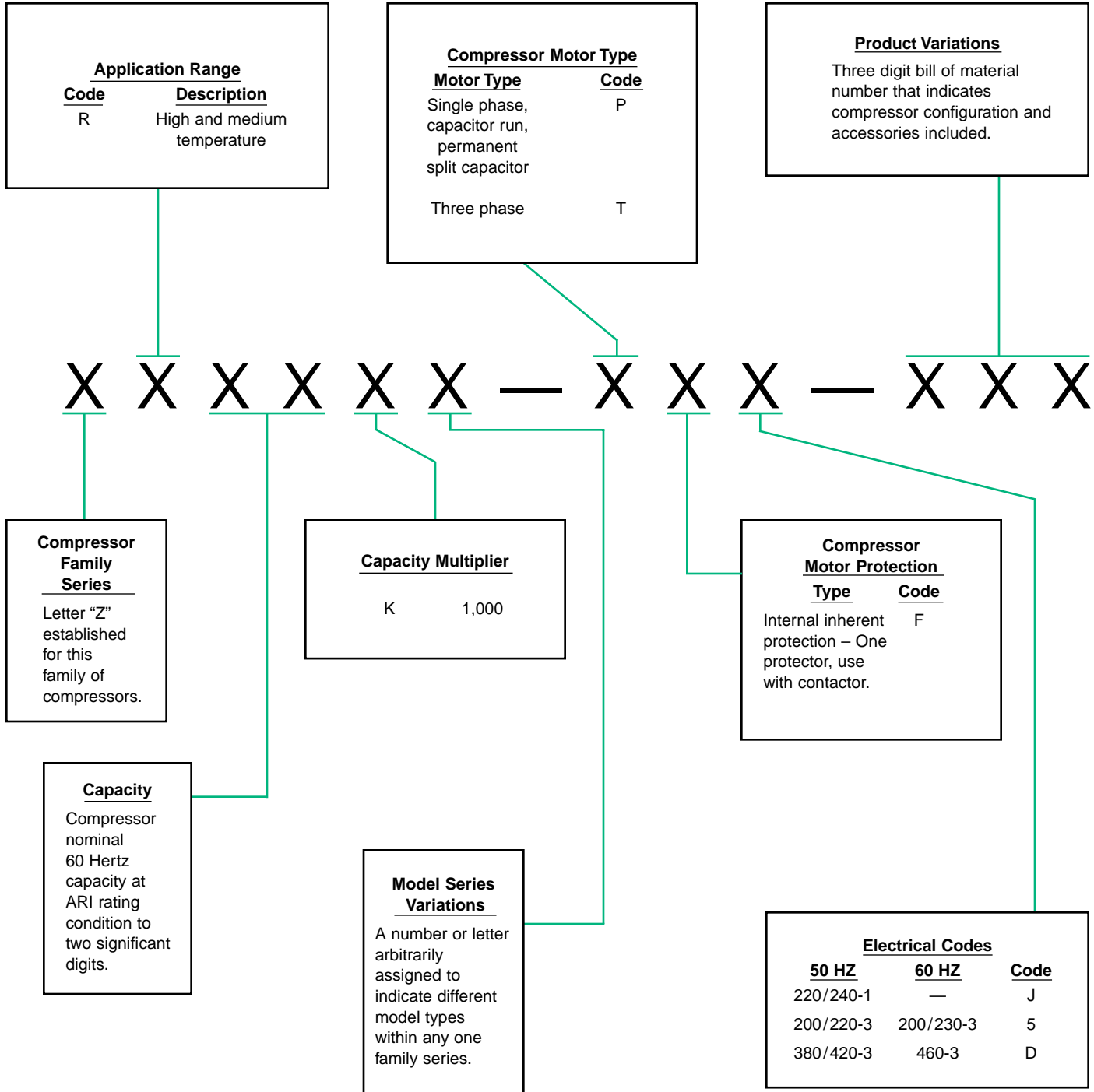


SINGLE PACK PACKAGING AND SHIPPING INFORMATION

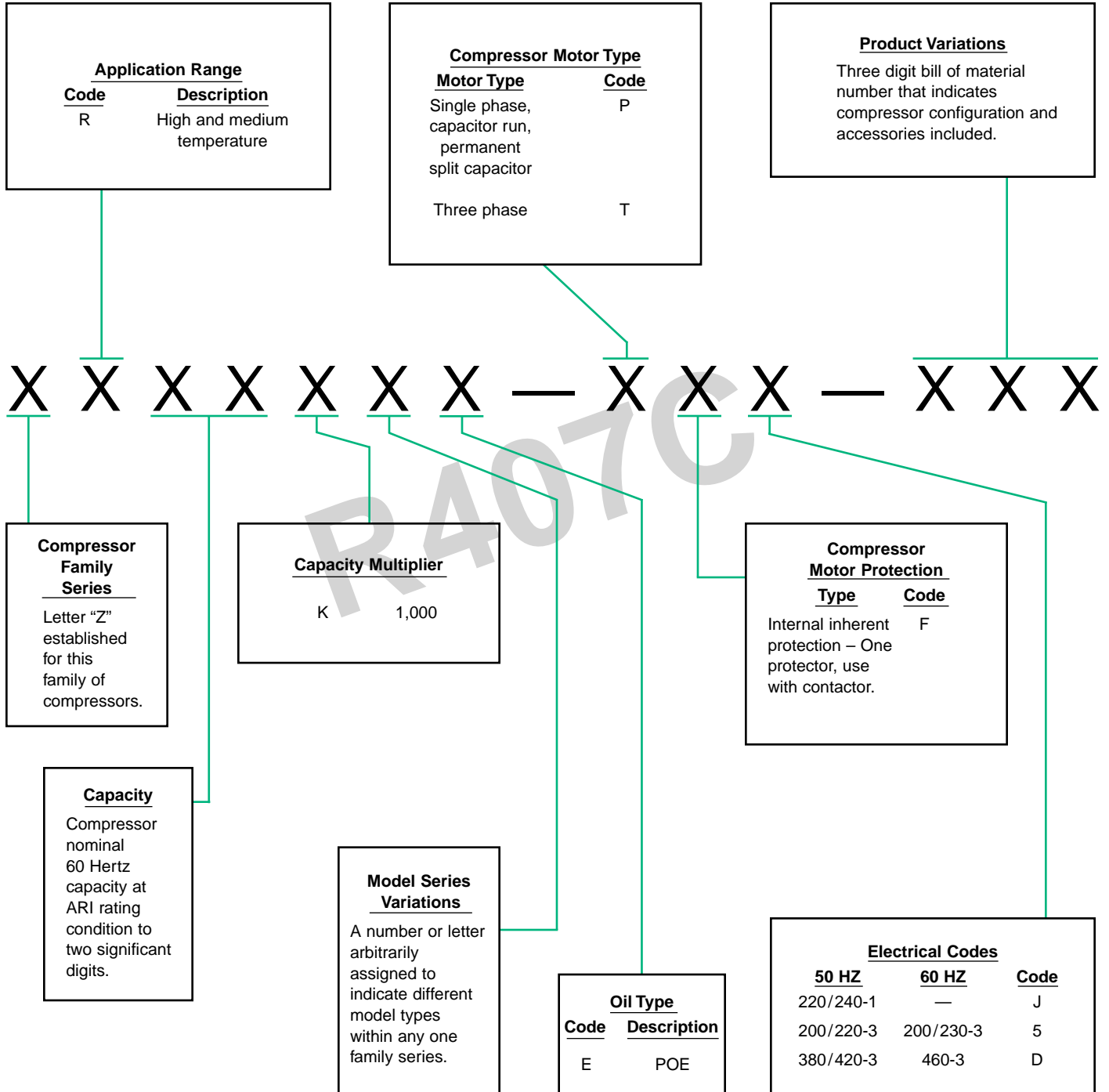
For your domestic shipments of 1 single pack, the box dimensions (cube) are 14.5 x 14.5 x 20.5 inches (2.5 FT³), 36.8 x 36.8 x 52.1 centimeters (.07 m³), and the weights (pounds/kilograms), with accessories noted, are shown below.

MODEL	NO CAPACITOR	RUN CAPACITOR
	BILLS OF MATERIAL 501, 512, 522, 523, 562, 601, 612, 622	BILLS OF MATERIAL 511, 515, 611
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	86 39.0	- -
ZR57	85 38.6	- -
ZR61	88 39.9	- -
ZR68 Single Phase	100 45.4	100.5 45.6
ZR68 Three Phase	91 41.3	- -
ZR72	91 41.3	- -
ZR81	94 42.6	- -

R22 MODEL NUMBER NOMENCLATURE



R407C MODEL NUMBER NOMENCLATURE



50 HERTZ

PERFORMANCE NOMINALS

R22

THREE PHASE					220-3-50 (TF5) 380-3-50 (TFD) 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	A	77000	19400	22600	6890	23.2/13.4	11.2	2.8	3.3
	B	76400	19300	22400	6900	23.2/13.4	11.1	2.8	3.2
	C	90600	22800	26500	4710	18.6/10.8	19.2	4.8	5.6
ZRT98K3-TF5/D	A	83000	20900	24300	7310	24.0/13.9	11.4	2.9	3.3
	B	82300	20700	24100	7320	24.0/13.9	11.2	2.8	3.3
	C	97200	24500	28500	5040	19.2/11.1	19.3	4.9	5.7
ZRU103K3-TF5/D	A	85800	21600	25100	7780	26.3/15.2	11.0	2.8	3.2
	B	85100	21400	24900	7800	26.3/15.2	10.9	2.7	3.2
	C	102000	25700	29900	5400	21.3/12.3	18.9	4.8	5.5
ZRT108K3-TF5/D	A	90100	22700	26400	8010	27.8/16.1	11.2	2.8	3.3
	B	89400	22500	26200	8030	27.8/16.1	11.1	2.8	3.3
	C	105000	26500	30800	5500	23.2/13.4	19.1	4.8	5.6
ZRT114K3-TF5/D	A	96200	24200	28200	8350	28.8/16.7	11.5	2.9	3.4
	B	95400	24000	28000	8370	28.8/16.7	11.4	2.9	3.3
	C	112000	28200	32800	5720	23.6/13.7	19.6	4.9	5.7
ZRT122K3-TF5/D	A	102000	25700	29900	8870	30.1/17.4	11.5	2.9	3.4
	B	101000	25500	29600	8890	30.1/17.4	11.4	2.9	3.3
	C	119000	30000	34900	6080	24.7/14.3	19.6	4.9	5.7
ZRT136KC-TF5/D	A	115000	29000	33700	10100	40.0/23.2	11.4	2.9	3.3
	B	114000	28700	33400	10100	40.0/23.2	11.3	2.8	3.3
	C	134000	33800	39300	7100	31.6/18.3	18.9	4.8	5.5
ZRU140KC-TF5/D	A	118000	29700	34600	10300	40.8/23.6	11.5	2.9	3.4
	B	117000	29500	34300	10300	40.8/23.6	11.4	2.9	3.3
	C	136000	34300	39800	7250	31.6/18.3	18.8	4.7	5.5
ZRT144KC-TF5/D	A	119000	30000	34900	10500	42.0/24.3	11.3	2.9	3.3
	B	118000	29700	34600	10500	42.0/24.3	11.2	2.8	3.3
	C	139000	35000	40700	7380	32.0/18.5	18.8	4.7	5.5
ZRT162KC-TF5/D	A	136000	34300	39800	12000	44.0/25.5	11.3	2.9	3.3
	B	135000	34000	39600	12000	44.0/25.5	11.3	2.8	3.3
	C	159000	40100	46600	8680	38.0/22.0	18.3	4.6	5.4

* Ampere values shown are at 220 volts/380 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 35B.

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

“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

BILL OF MATERIAL PROVISIONS	ACCESSORY INFORMATION
<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"> ● Wiring diagram. ● Internal line break protector. ● 57 Ounces (1.69 liters) of white oil per compressor. ● 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"> ● ZR 92 to 122 527-0180-00 ● ZR 136 to 162 527-0181-00 ● Grounding tab located in the compressor terminal box. <p>See outline drawing pages 34A to 35A 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 ± 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 ± 4.6 [0.18].
3. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.

THIRD ANGLE PROJECTION



DIMENSIONAL INFORMATION

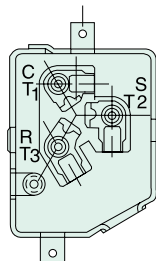
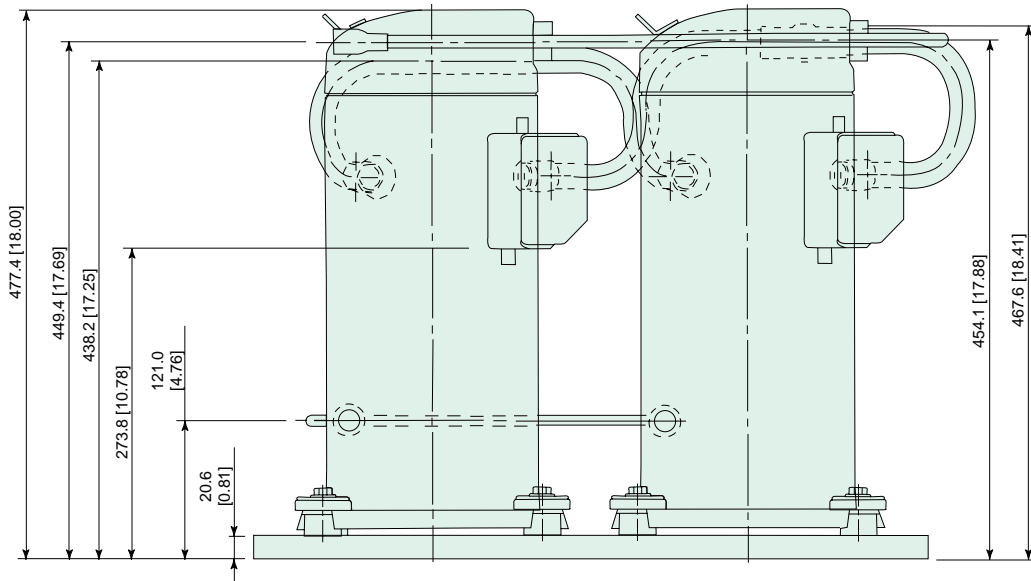
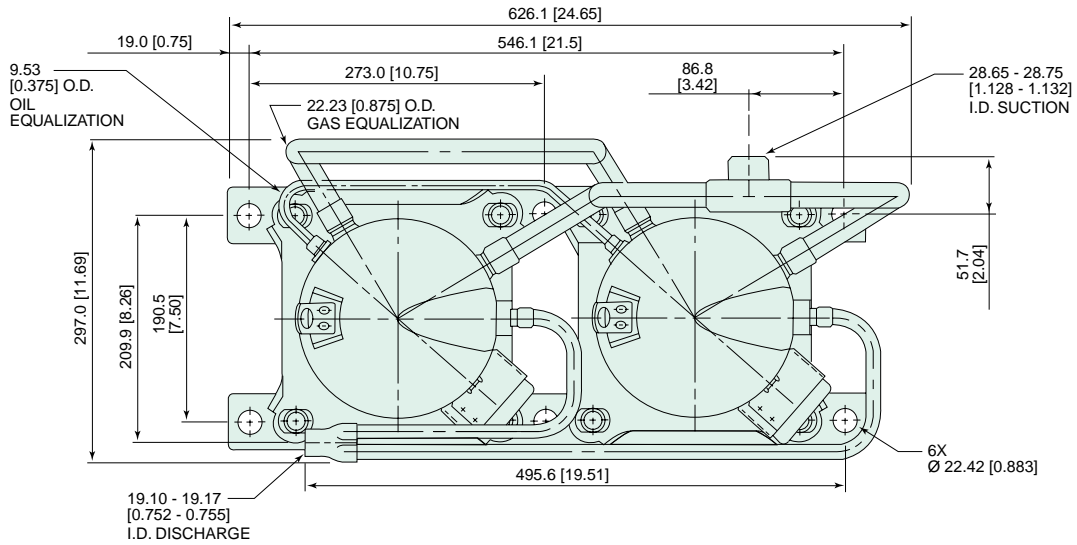
MODEL NUMBER

ZRT92K3-TF5/D

ZRT98K3-TF5/D

ZRU103K3-TF5/D


ZRT108K3-TF5/D



TYPICAL TERMINAL BOX LAYOUT

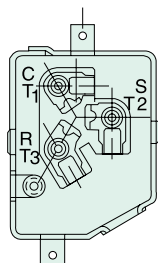
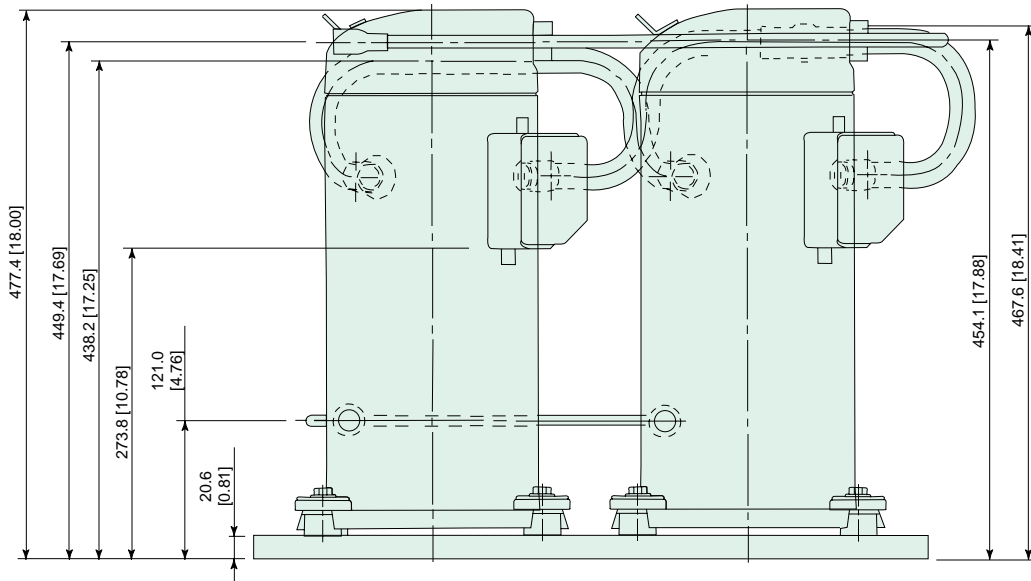
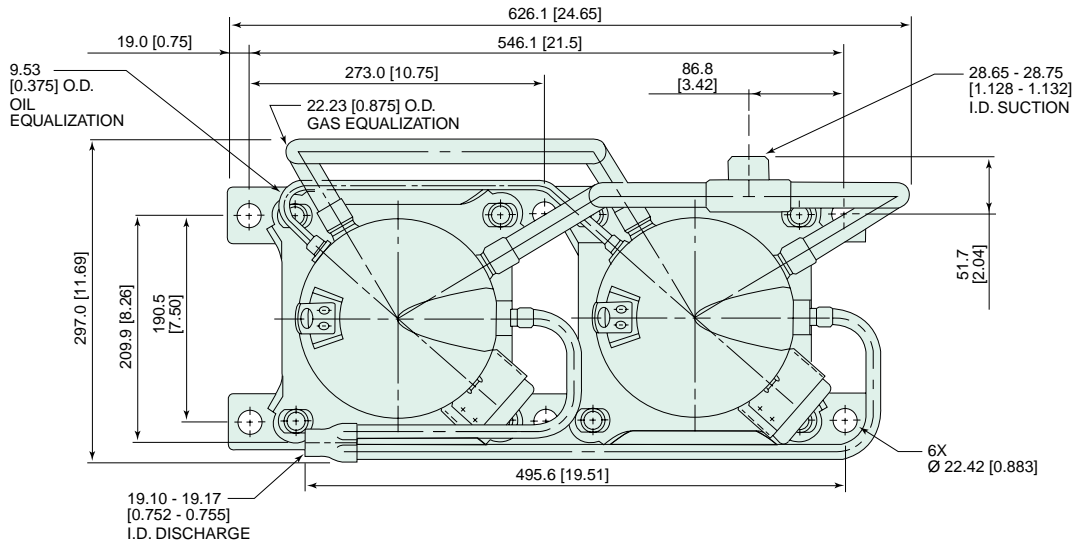
FOR THE INTERNATIONAL MARKET

ZRT92 to ZRT108
TANDEM 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 SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING HOLES BY ± 4.6 [0.18].
 3. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.
- THIRD ANGLE PROJECTION
- 

DIMENSIONAL INFORMATION

MODEL NUMBER
ZRT114K3-TF5/D
ZRT122K3-TF5/D
ZRT136K3-TF5/D
ZRU140KC-TF5/D
ZRT144KC-TF5/D



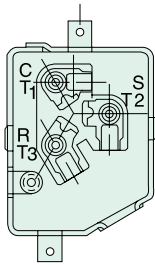
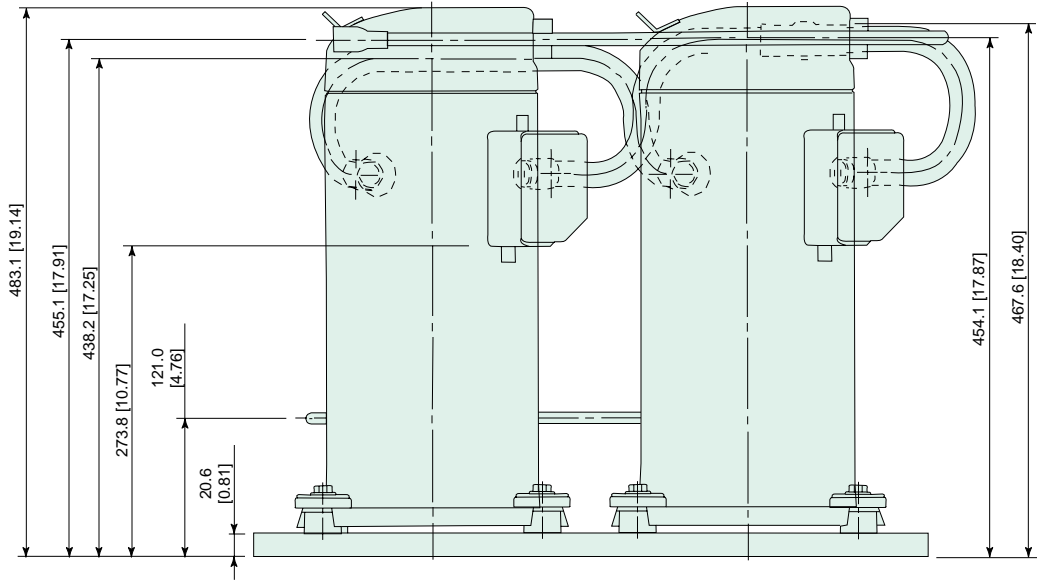
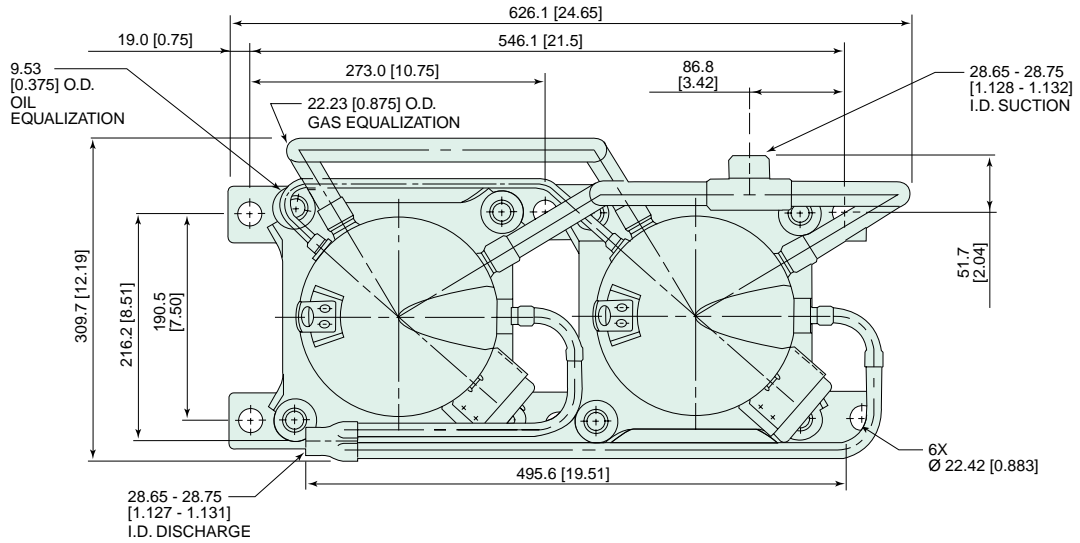
TYPICAL TERMINAL BOX LAYOUT

FOR THE INTERNATIONAL MARKET
ZRT114 to ZRT144
 TANDEM 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 SUCTION AND DISCHARGE FITTING VARY FROM THE MOUNTING HOLES BY ± 4.6 [0.18].
 3. LINEAR MEASUREMENTS IN [] ARE INCH CONVERSIONS.
- THIRD ANGLE PROJECTION
-

DIMENSIONAL INFORMATION

MODEL NUMBER
ZRT162KC-TF5/D



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 50 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 a 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 10.9 BTU/WATT. Efficiencies of better than 10.9 BTU/WATT are acceptable, but efficiencies below 10.9 BTU/WATT are not acceptable. The tandem shall be of the Copeland ZR type or approved equal.

UNITS CONVERSION CHART

BTUH × 0.252 = KCALH

BTUH × 0.293 = WATTS

(°F - 32) × $\frac{5}{9}$ = °C

POUNDS × 0.454 = KILOGRAMS

INCHES × 25.4 = MILLIMETERS

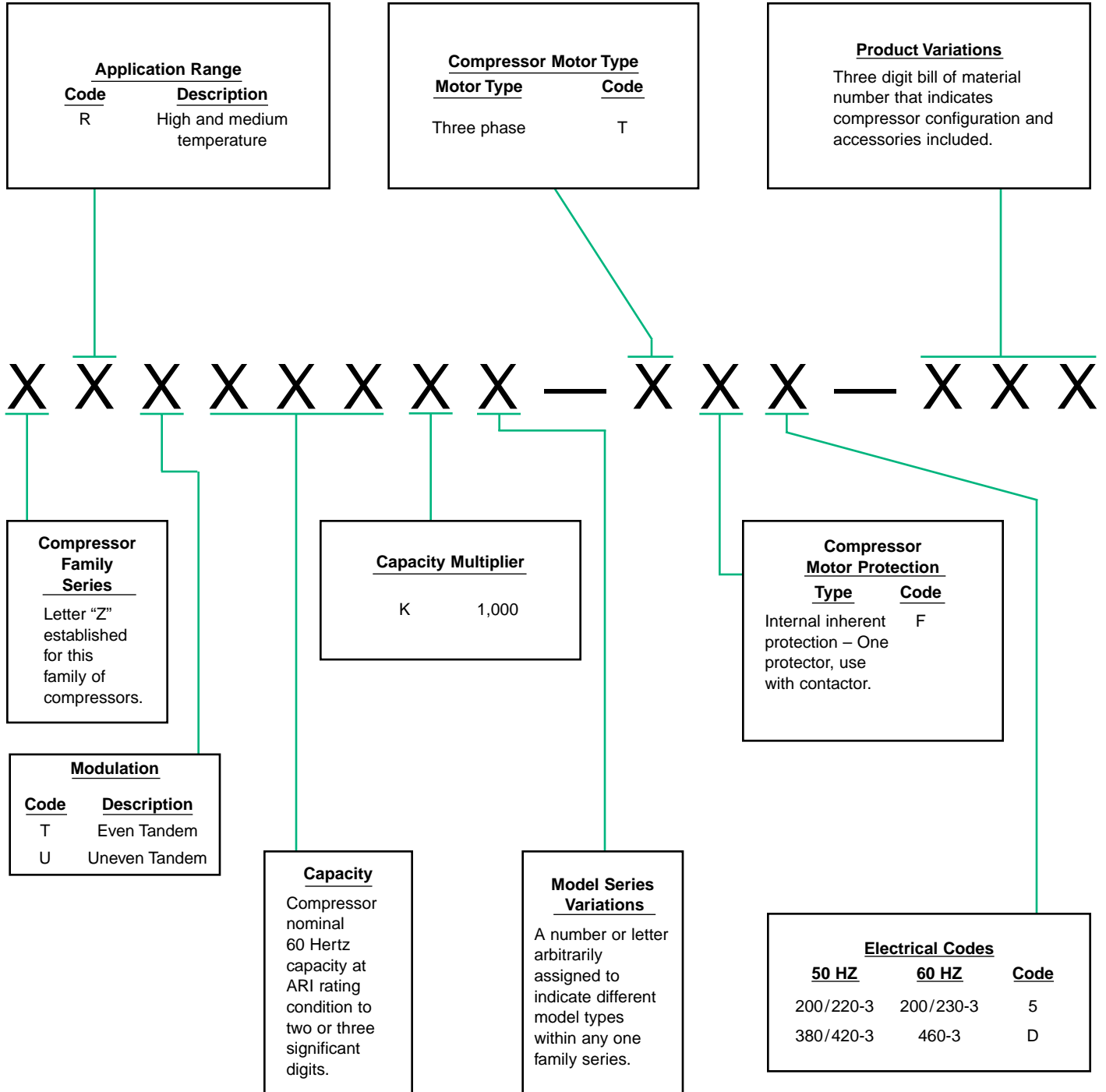
CUBIC INCHES × 16.386 = CUBIC CENTIMETERS

FLUID OUNCES × 0.02957 = LITERS

CUBIC FEET × 0.02831 = CUBIC METERS

HORSEPOWER × 0.746 = KILOWATTS

R22 TANDEM MODEL NUMBER NOMENCLATURE



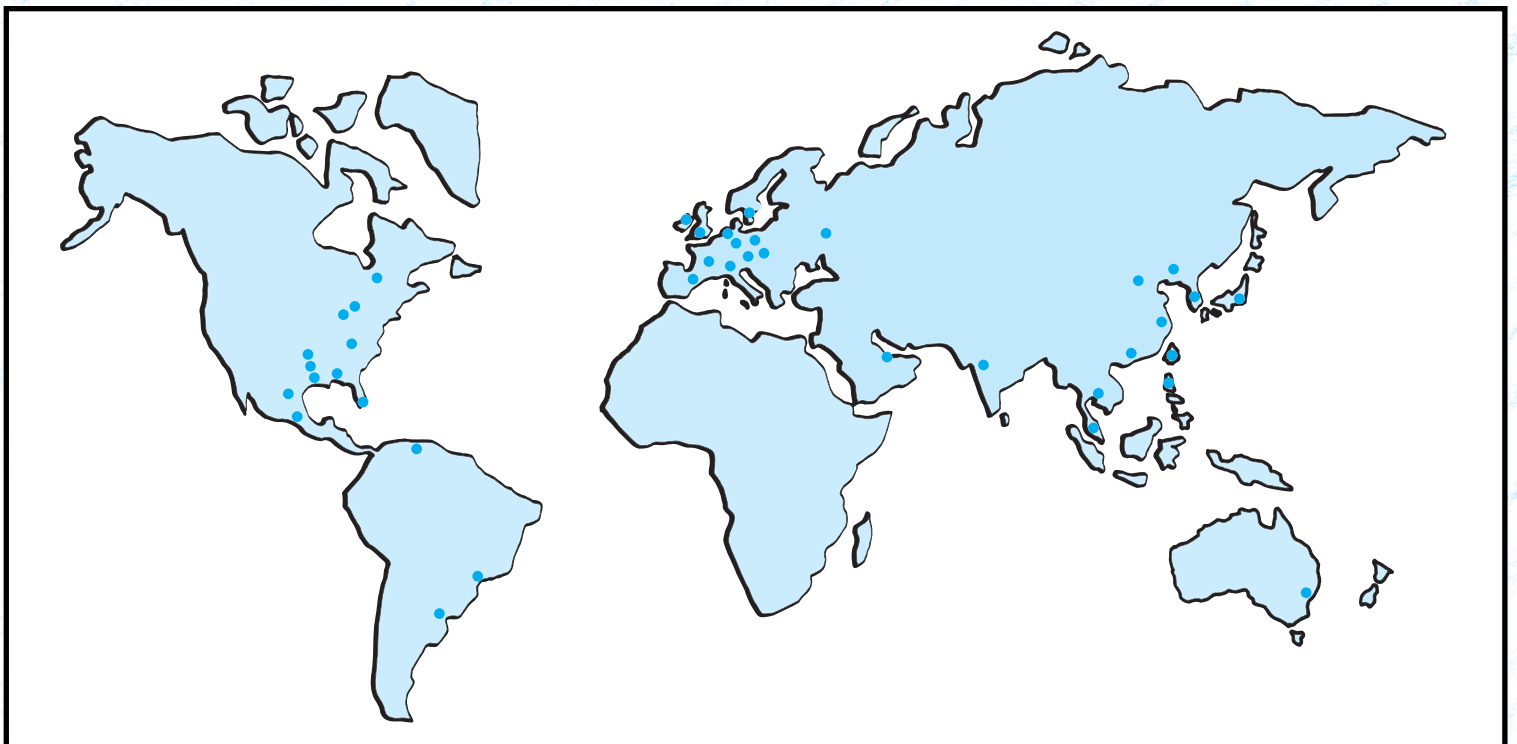
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PRODUCT DESCRIPTION

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 the 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 50 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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