



Minimum evaporating temp. with:

———— 25°C Suction Gas Return

- - - 10K Suction Superheat

Suction Superheat 10.0K

Evaporating Temperature °C

Liquid subcooling 0.0K

Cond °C	Capacity kW											
	-25	-20	-15	-10	-5	0	5	7	10	12.5	15	20
25	15.10	19.80	24.90	30.60	37.00	44.20	52.40	56.00	61.80			
30	13.50	18.30	23.40	29.00	35.30	42.40	50.40	53.80	59.40	64.40	69.80	
35	11.80	16.65	21.80	27.40	33.60	40.50	48.30	51.60	57.10	61.90	67.10	78.40
40		14.85	20.00	25.60	31.70	38.50	46.10	49.40	54.60	59.30	64.30	75.30
45			18.05	23.60	29.60	36.30	43.70	46.90	52.00	56.60	61.40	72.00
50				21.30	27.30	33.90	41.10	44.20	49.20	53.60	58.30	68.60
55					24.70	31.20	38.20	41.30	46.10	50.40	55.00	64.90
60						28.10	35.00	38.00	42.70	46.90	51.30	60.90
65							31.40	34.30	38.90	43.00	47.20	56.50
	Power Input kW											
	-25	-20	-15	-10	-5	0	5	7	10	12.5	15	20
25	6.72	6.86	7.01	7.16	7.31	7.47	7.63	7.69	7.79			
30	7.52	7.65	7.79	7.92	8.07	8.22	8.37	8.43	8.52	8.59	8.67	
35	8.43	8.55	8.66	8.79	8.92	9.05	9.19	9.25	9.33	9.40	9.47	9.62
40		9.56	9.66	9.77	9.88	10.00	10.10	10.15	10.25	10.30	10.40	10.50
45			10.80	10.90	10.95	11.05	11.20	11.20	11.30	11.35	11.40	11.50
50				12.15	12.20	12.30	12.40	12.40	12.45	12.50	12.55	12.65
55					13.60	13.65	13.75	13.75	13.80	13.85	13.90	13.95
60						15.25	15.25	15.30	15.30	15.35	15.35	15.40
65							17.00	17.00	17.00	17.05	17.05	17.05
	Current 400V, A											
	-25	-20	-15	-10	-5	0	5	7	10	12.5	15	20
25	17.14	17.30	17.44	17.58	17.73	17.91	18.13	18.24	18.42			
30	17.94	18.13	18.29	18.43	18.57	18.72	18.90	18.98	19.12	19.25	19.40	
35	18.85	19.08	19.27	19.42	19.56	19.69	19.84	19.90	20.01	20.11	20.22	20.49
40		20.18	20.40	20.58	20.73	20.86	20.98	21.03	21.11	21.18	21.27	21.46
45			21.72	21.93	22.09	22.22	22.33	22.38	22.44	22.49	22.55	22.68
50				23.48	23.67	23.82	23.93	23.96	24.01	24.05	24.09	24.18
55					25.49	25.66	25.77	25.81	25.85	25.88	25.91	25.95
60						27.76	27.90	27.94	27.98	28.00	28.02	28.04
65							30.32	30.36	30.41	30.44	30.45	30.45
	Mass Flow g/s											
	-25	-20	-15	-10	-5	0	5	7	10	12.5	15	20
25	88.00	114.00	141.50	171.00	205.00	242.00	284.00	302.00	331.00			
30	82.00	109.00	138.00	169.00	203.00	240.00	283.00	301.00	330.00	356.00	383.00	
35	74.30	103.50	133.50	165.00	200.00	238.00	281.00	299.00	329.00	355.00	382.00	442.00
40		96.00	127.50	161.00	197.00	236.00	279.00	297.00	327.00	353.00	381.00	441.00
45			120.00	155.00	192.00	232.00	276.00	294.00	324.00	351.00	378.00	439.00
50				146.50	185.00	226.00	271.00	290.00	320.00	347.00	375.00	436.00
55					176.00	218.00	264.00	284.00	315.00	342.00	370.00	432.00
60						207.00	255.00	275.00	307.00	334.00	363.00	426.00
65							242.00	263.00	295.00	324.00	353.00	417.00

Copeland Scroll - Compressor - Air Conditioning - Standard
COMPRESSOR MECHANICAL AND PHYSICAL DATA

Displacement @ 50 Hz, cu.m/h	43.3
Length/Width, mm	264/285
Height, mm	552
Net Weight, kg	66.2
Stub Suction, inch	1 3/8
Stub Discharge, inch	7/8
Oil Quantity, l	3.4
Base mounting (hole dia), mm	190 x 190 (8.5)
Sound Pressure @ 1m, dBA	71
Sound Power, dBA	82
PED Category	2
High Side PS, bar(g)	32
Low Side PS, bar(g)	20
Low Side TS Max., °C	52
Low Side TS Min., °C	-35
Internal Free Volume, l	14

COMPRESSOR ELECTRICAL DATA (380/420V - 3~ - 50Hz)

Maximum Operating Current, A	34
Locked Rotor Current, A	174
Winding Resistance, ohm	0.8
Default Enclosure Class	IP 21 (IEC 34)

ACCESSORIES INCLUDED

Discharge Temperature Protection	ASTP Therm-O-Disc In Scroll
Enclosure Class	IP21
Mounting Grommets	Rubber Grommet For Single
Oil Service Valve	Schraeder Valve
Check Valve (NRV)	Discharge Low Leak Check Valve

ACCESSORIES OPTIONAL

Crankcase Heater	90W External
Enclosure Class	IP66 With Molded Plug
Mounting Grommets	Hard Mounts for Paralleling
Adapter Kit	R1"1/4 -B 1"1/8 For TPTL for Parallel Operation
Sound Attenuation	Sound Shell (12dBA)

MOTOR OPTIONS

Power Supply	Nominal Voltage	Motor Code	Start Connection	DOL Connection	Amps Factor
380-420 V/3~/50H	400	TFD		Y	1.00
200-220 V/3~/50H	200	TW5		Y	2.30
460 V/3~/60Hz	460	TFD		Y	1.04
575 V/3~/60Hz	575	TWE		Y	0.80
380 V/3~/60Hz	380	TW7		Y	1.26
200-230 V/3~/60H	230	TW5		Y	2.30

Copeland Selection Software

REFRIGERANT R22

Operating Conditions:

Evaporating Temperature: -10.0°C
 Condensing Temperature: 45.0°C
 Liquid subcooling: 0.0K
 Suction Return Temperature: 20.0°C

Required Capacity: 20.0 kW
 Compressor Selected: ZR190KCE-TFD

PERFORMANCE AT SPECIFIED OPERATING POINT **ZR190KCE-TFD Data at 50 Hz**

Capacity kW	23.80
Power Input kW	10.90
COP	2.18
Current 400V, A	21.93
Mass Flow g/s	143.00
Heating Capacity kW	34.10

COMPRESSOR MECHANICAL AND PHYSICAL DATA

Length/Width, mm 264/285	Height, mm 552
Net Weight, kg 66.2	Stub Suction, inch 1 3/8
Stub Discharge, inch 7/8	Oil Quantity, l 3.4
Sound Power, dBA 82	PED Category 2
High Side PS, bar(g) 32	Low Side PS, bar(g) 20
Low Side TS Max., °C 52	Low Side TS Min., °C -35
Internal Free Volume, l 14	
Displacement @ 50 Hz, cu.m/h 43.3	
Base mounting (hole dia), mm 190 x 190 (8.5)	
Sound Pressure @ 1m, dBA 71	

COMPRESSOR ELECTRICAL DATA (380/420V - 3~ - 50Hz)

Locked Rotor Current, A 174	Winding Resistance, ohm 0.8
Maximum Operating Current, A 34	
Default Enclosure Class IP 21 (IEC 34)	

ACCESSORIES INCLUDED

Discharge Temperature Protection
Enclosure Class
Mounting Grommets
Oil Service Valve
Check Valve (NRV)

ASTP Therm-O-Disc In Scroll
IP21
Rubber Grommet For Single
Schraeder Valve
Discharge Low Leak Check Valve

ACCESSORIES OPTIONAL

Crankcase Heater
Enclosure Class
Mounting Grommets
Adapter Kit
Sound Attenuation

90W External
IP66 With Molded Plug
Hard Mounts for Paralleling
R1"1/4 -B 1"1/8 For TPTL for Parallel Operation
Sound Shell (12dBA)

Model: ZR190KCE-TFD

Refrigerant: R22

S.I.

Suction Return Temperature 20.0°C

Liquid subcooling 0.0K

50Hz

	Evaporating Temperature °C											
	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5	15.0	20.0
	Capacity kW											
25.0	15.05	19.65	24.70	30.30	36.70	43.90	52.20	55.90	61.80			
30.0		18.25	23.30	28.80	35.10	42.10	50.20	53.70	59.40	64.60	70.10	
35.0		16.80	21.80	27.30	33.40	40.30	48.10	51.60	57.10	62.00	67.30	
40.0			20.20	25.60	31.70	38.40	46.00	49.30	54.60	59.40	64.50	
45.0				23.80	29.70	36.30	43.70	46.90	52.00	56.60	61.50	
50.0					27.50	34.00	41.10	44.30	49.20	53.60	58.30	
55.0						31.30	38.30	41.30	46.10	50.40	54.90	
60.0						28.40	35.20	38.10	42.70	46.80	51.20	
65.0							31.60	34.40	38.90	42.90	47.00	

	Power Input kW											
	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5	15.0	20.0
25.0	6.72	6.86	7.01	7.16	7.31	7.47	7.63	7.69	7.79			
30.0		7.65	7.79	7.92	8.07	8.22	8.37	8.43	8.52	8.59	8.67	
35.0		8.55	8.66	8.79	8.92	9.05	9.19	9.25	9.33	9.40	9.47	
40.0			9.66	9.77	9.88	10.00	10.10	10.15	10.25	10.30	10.40	
45.0				10.90	10.95	11.05	11.20	11.20	11.30	11.35	11.40	
50.0					12.20	12.30	12.40	12.40	12.45	12.50	12.55	
55.0						13.65	13.75	13.75	13.80	13.85	13.90	
60.0						15.25	15.25	15.30	15.30	15.35	15.35	
65.0							17.00	17.00	17.00	17.05	17.05	

	COP											
	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5	15.0	20.0
25.0	2.24	2.86	3.52	4.23	5.01	5.88	6.85	7.26	7.93			
30.0		2.39	2.99	3.64	4.35	5.13	6.00	6.38	6.98	7.51	8.08	
35.0		1.97	2.52	3.11	3.75	4.45	5.24	5.58	6.12	6.60	7.10	
40.0			2.09	2.62	3.20	3.84	4.54	4.85	5.33	5.76	6.21	
45.0				2.18	2.71	3.28	3.91	4.18	4.61	4.99	5.39	
50.0					2.25	2.76	3.32	3.57	3.95	4.29	4.64	
55.0						2.29	2.79	3.00	3.34	3.64	3.96	
60.0						1.86	2.30	2.49	2.79	3.05	3.33	
65.0							1.86	2.03	2.29	2.52	2.76	

	Current 400V, A											
	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5	15.0	20.0
25.0	17.14	17.30	17.44	17.58	17.73	17.91	18.13	18.24	18.42			
30.0		18.13	18.29	18.43	18.57	18.72	18.90	18.98	19.12	19.25	19.40	
35.0		19.08	19.27	19.42	19.56	19.69	19.84	19.90	20.01	20.11	20.22	
40.0			20.40	20.58	20.73	20.86	20.98	21.03	21.11	21.18	21.27	
45.0				21.93	22.09	22.22	22.33	22.38	22.44	22.49	22.55	
50.0					23.67	23.82	23.93	23.96	24.01	24.05	24.09	
55.0						25.66	25.77	25.81	25.85	25.88	25.91	
60.0						27.76	27.90	27.94	27.98	28.00	28.02	
65.0							30.32	30.36	30.41	30.44	30.45	

Model: ZR190KCE-TFD

Refrigerant: R22

	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5	15.0	20.0
	Mass Flow g/s											
25.0	77.50	101.00	127.50	158.00	192.00	231.00	277.00	298.00	331.00			
30.0		97.50	124.50	155.00	190.00	230.00	276.00	297.00	330.00	360.00	394.00	
35.0		92.50	121.00	152.00	188.00	228.00	274.00	295.00	329.00	359.00	392.00	
40.0			116.00	148.50	184.00	225.00	272.00	293.00	327.00	357.00	391.00	
45.0				143.00	180.00	222.00	269.00	290.00	324.00	355.00	388.00	
50.0					174.00	216.00	265.00	286.00	320.00	351.00	385.00	
55.0						209.00	258.00	280.00	315.00	346.00	380.00	
60.0						199.00	249.00	271.00	307.00	338.00	373.00	
65.0							237.00	259.00	295.00	328.00	363.00	

	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0	12.5	15.0	20.0
	Heating Capacity kW											
25.0	21.50	26.10	31.30	37.10	43.60	51.00	59.50	63.20	69.20			
30.0		25.50	30.70	36.40	42.70	50.00	58.20	61.80	67.50	72.70	78.30	
35.0		24.90	30.00	35.70	41.90	48.90	56.90	60.40	65.90	70.90	76.30	
40.0			29.40	34.90	41.00	47.90	55.60	59.00	64.40	69.20	74.30	
45.0				34.10	40.10	46.80	54.30	57.60	62.70	67.40	72.30	
50.0					39.10	45.60	52.90	56.10	61.10	65.50	70.30	
55.0						44.30	51.40	54.40	59.30	63.50	68.10	
60.0						42.80	49.70	52.60	57.30	61.40	65.80	
65.0							47.80	50.60	55.10	59.00	63.20	