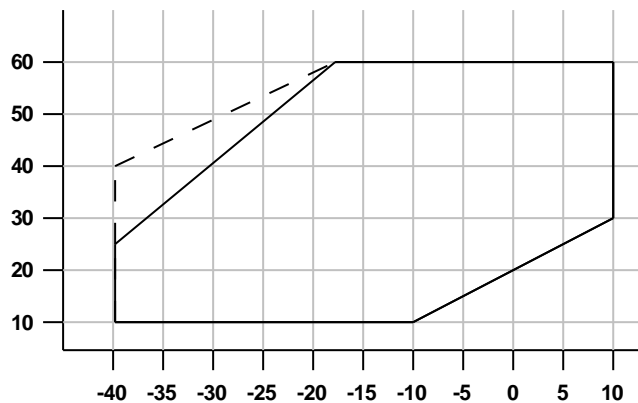


50Hz

ZB45KCE-TFD

R404A



Minimum evaporating temp. with:
 ——— 25°C Suction Gas Return
 - - - 10K Suction Superheat

Suction Return Temperature 20.0°C

Evaporating Temperature °C

Liquid subcooling 0.0K

Cond °C	Capacity kW											
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	10
10	4.35	5.55	7.02	8.79	10.90	13.35	16.15	17.40	20.70			
20	3.88	4.98	6.31	7.90	9.77	11.95	14.50	15.30	18.25	21.50	23.00	25.30
30		4.38	5.56	6.96	8.60	10.55	12.75	13.30	16.25	19.50	21.00	23.60
35			5.17	6.47	8.00	9.79	11.85	14.25	17.00	20.10	21.40	23.60
40			4.77	5.98	7.39	9.05	10.95	13.15	15.70	18.60	19.85	21.80
45				5.48	6.77	8.29	10.05	12.10	14.40	17.10	18.25	20.10
50					6.14	7.52	9.12	10.95	13.10	15.55	16.65	18.35
55					5.50	6.74	8.18	9.85	11.80	14.00	15.00	16.55
60						5.94	7.22	8.72	10.45	12.45	13.35	14.75
	Power Input kW											
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	10
10	2.10	2.11	2.10	2.09	2.08	2.06	2.04					
20	2.68	2.70	2.71	2.70	2.69	2.68	2.65	2.63	2.60			
30		3.40	3.42	3.44	3.43	3.42	3.40	3.38	3.34	3.31	3.30	3.28
35			3.83	3.85	3.86	3.85	3.83	3.81	3.77	3.74	3.72	3.70
40			4.28	4.30	4.31	4.31	4.30	4.28	4.24	4.21	4.19	4.16
45				4.79	4.81	4.82	4.81	4.79	4.76	4.72	4.70	4.67
50					5.35	5.36	5.36	5.34	5.31	5.28	5.26	5.23
55					5.93	5.95	5.95	5.94	5.92	5.88	5.86	5.83
60						6.58	6.59	6.59	6.57	6.53	6.52	6.49
	Current 400V, A											
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	10
10	6.49	6.48	6.48	6.48	6.47	6.47	6.47					
20	6.93	6.96	6.98	7.00	7.01	7.01	7.01	7.01	7.01			
30		7.67	7.71	7.74	7.76	7.76	7.76	7.76	7.75	7.73	7.73	7.72
35			8.19	8.22	8.25	8.25	8.25	8.24	8.22	8.20	8.19	8.17
40			8.76	8.80	8.83	8.84	8.84	8.82	8.79	8.76	8.74	8.72
45				9.49	9.52	9.53	9.53	9.51	9.47	9.42	9.40	9.36
50					10.34	10.35	10.34	10.31	10.27	10.21	10.18	10.13
55					11.29	11.30	11.28	11.25	11.19	11.12	11.09	11.03
60						12.40	12.38	12.33	12.27	12.18	12.14	12.08
	Mass Flow g/s											
	-40	-35	-30	-25	-20	-15	-10	-5	0	5	7	10
10	24.30	31.10	39.50	49.70	61.80	76.00	93.00					
20	23.60	30.40	38.70	48.60	60.50	74.50	91.00	110.00	132.50			
30		29.50	37.60	47.30	58.80	72.40	88.50	107.50	129.50	155.00	166.00	185.00
35			36.90	46.50	57.80	71.30	87.00	106.00	127.50	153.00	165.00	183.00
40			36.20	45.60	56.80	70.00	85.50	104.00	126.00	151.00	163.00	181.00
45				44.70	55.60	68.60	84.00	102.50	124.00	149.50	161.00	179.00
50					54.40	67.20	82.50	100.50	122.00	147.50	159.00	178.00
55					53.20	65.70	81.00	98.50	120.00	146.00	157.00	177.00
60						64.40	79.50	97.50	119.00	145.00	157.00	177.00

Copeland Scroll - Compressor - Refrigeration - Standard
COMPRESSOR MECHANICAL AND PHYSICAL DATA

Displacement @ 50 Hz, cu.m/h	17.1
Length/Width, mm	242/242
Height, mm	458
Net Weight, kg	39.5
Rotalock Suction, inch	1 1/4
Rotalock Discharge, inch	1
Oil Quantity, l	1.9
Base mounting (hole dia), mm	190 x 190 (8.5)
Sound Pressure @ 1m, dBA	61
Sound Power, dBA	72
Sound Power with Sound Shell, dBA	62
PED Category	1
High Side PS, bar(g)	28.8
Low Side PS, bar(g)	21
Low Side TS Max., °C	50
Low Side TS Min., °C	-35
Internal Free Volume, l	5.9

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

Maximum Operating Current, A	13.1
Locked Rotor Current, A	74
Winding Resistance, ohm	2.3
Default Enclosure Class	IP 21 (IEC 34)

ACCESSORIES INCLUDED

Discharge Temperature Protection	Internal Thermodisk
Mounting Grommets	Standard

ACCESSORIES OPTIONAL

Crankcase Heater	70W External
Sound Attenuation	Sound Shell (10dBA)
Rotalock valves	suction and discharge

MOTOR OPTIONS

<i>Power Supply</i>	<i>Nominal Voltage</i>	<i>Motor Code</i>	<i>Start Connection</i>	<i>DOL Connection</i>	<i>Amps Factor</i>
380-420 V/3~/50H	400	TFD		Y	1.00
200-220 V/3~/50H	200	TF5		Y	2.09
200-230 V/3~/60H	230	TF5		Y	2.09
460 V/3~/60Hz	460	TFD		Y	1.04

Model: ZB45KCE-TFD

Refrigerant: R404A

S.I.

Suction Return Temperature 20.0°C

Liquid subcooling 0.0K

50Hz

	Evaporating Temperature °C											
	-40.0	-35.0	-30.0	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0
	Capacity kW											
10.0	4.35	5.55	7.02	8.79	10.90	13.35	16.15					
15.0	4.12	5.27	6.67	8.35	10.35	12.65	15.35	18.40				
20.0	3.88	4.98	6.31	7.90	9.77	11.95	14.50	17.40	20.70			
25.0	3.64	4.68	5.94	7.43	9.19	11.25	13.65	16.35	19.45	23.00		
30.0		4.38	5.56	6.96	8.60	10.55	12.75	15.30	18.25	21.50	23.00	25.30
35.0			5.17	6.47	8.00	9.79	11.85	14.25	17.00	20.10	21.40	23.60
40.0			4.77	5.98	7.39	9.05	10.95	13.15	15.70	18.60	19.85	21.80
45.0				5.48	6.77	8.29	10.05	12.10	14.40	17.10	18.25	20.10
50.0					6.14	7.52	9.12	10.95	13.10	15.55	16.65	18.35
55.0					5.50	6.74	8.18	9.85	11.80	14.00	15.00	16.55
60.0						5.94	7.22	8.72	10.45	12.45	13.35	14.75

	Power Input kW											
	-40.0	-35.0	-30.0	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0
10.0	2.10	2.11	2.10	2.09	2.08	2.06	2.04					
15.0	2.38	2.39	2.39	2.39	2.37	2.35	2.33	2.31				
20.0	2.68	2.70	2.71	2.70	2.69	2.68	2.65	2.63	2.60			
25.0	3.00	3.03	3.05	3.05	3.05	3.03	3.01	2.98	2.96	2.93		
30.0		3.40	3.42	3.44	3.43	3.42	3.40	3.38	3.34	3.31	3.30	3.28
35.0			3.83	3.85	3.86	3.85	3.83	3.81	3.77	3.74	3.72	3.70
40.0			4.28	4.30	4.31	4.31	4.30	4.28	4.24	4.21	4.19	4.16
45.0				4.79	4.81	4.82	4.81	4.79	4.76	4.72	4.70	4.67
50.0					5.35	5.36	5.36	5.34	5.31	5.28	5.26	5.23
55.0					5.93	5.95	5.95	5.94	5.92	5.88	5.86	5.83
60.0						6.58	6.59	6.59	6.57	6.53	6.52	6.49

	COP											
	-40.0	-35.0	-30.0	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0
10.0	2.07	2.64	3.34	4.20	5.24	6.47	7.92					
15.0	1.73	2.21	2.79	3.50	4.36	5.38	6.58	7.97				
20.0	1.45	1.85	2.33	2.92	3.63	4.47	5.46	6.61	7.95			
25.0	1.21	1.54	1.95	2.43	3.02	3.71	4.53	5.48	6.59	7.86		
30.0		1.29	1.62	2.02	2.51	3.08	3.75	4.54	5.45	6.51	6.97	7.71
35.0			1.35	1.68	2.08	2.54	3.10	3.75	4.50	5.37	5.76	6.37
40.0			1.12	1.39	1.71	2.10	2.55	3.08	3.70	4.42	4.74	5.25
45.0				1.14	1.41	1.72	2.09	2.52	3.03	3.62	3.88	4.30
50.0					1.15	1.40	1.70	2.05	2.47	2.95	3.16	3.51
55.0					0.93	1.13	1.37	1.66	1.99	2.38	2.56	2.84
60.0						0.90	1.10	1.32	1.59	1.91	2.05	2.28

Model: ZB45KCE-TFD

Refrigerant: R404A

	-40.0	-35.0	-30.0	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0
	Current 400V, A											
10.0	6.49	6.48	6.48	6.48	6.47	6.47	6.47					
15.0	6.69	6.70	6.71	6.72	6.72	6.72	6.72	6.72				
20.0	6.93	6.96	6.98	7.00	7.01	7.01	7.01	7.01	7.01			
25.0	7.24	7.28	7.31	7.33	7.35	7.35	7.35	7.35	7.35	7.34		
30.0		7.67	7.71	7.74	7.76	7.76	7.76	7.76	7.75	7.73	7.73	7.72
35.0			8.19	8.22	8.25	8.25	8.25	8.24	8.22	8.20	8.19	8.17
40.0			8.76	8.80	8.83	8.84	8.84	8.82	8.79	8.76	8.74	8.72
45.0				9.49	9.52	9.53	9.53	9.51	9.47	9.42	9.40	9.36
50.0					10.34	10.35	10.34	10.31	10.27	10.21	10.18	10.13
55.0					11.29	11.30	11.28	11.25	11.19	11.12	11.09	11.03
60.0						12.40	12.38	12.33	12.27	12.18	12.14	12.08

	-40.0	-35.0	-30.0	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0
	Mass Flow g/s											
10.0	24.30	31.10	39.50	49.70	61.80	76.00	93.00					
15.0	24.00	30.80	39.10	49.20	61.20	75.50	92.00	111.50				
20.0	23.60	30.40	38.70	48.60	60.50	74.50	91.00	110.00	132.50			
25.0	23.20	30.00	38.10	48.00	59.70	73.50	90.00	109.00	131.00	157.00		
30.0		29.50	37.60	47.30	58.80	72.40	88.50	107.50	129.50	155.00	166.00	185.00
35.0			36.90	46.50	57.80	71.30	87.00	106.00	127.50	153.00	165.00	183.00
40.0			36.20	45.60	56.80	70.00	85.50	104.00	126.00	151.00	163.00	181.00
45.0				44.70	55.60	68.60	84.00	102.50	124.00	149.50	161.00	179.00
50.0					54.40	67.20	82.50	100.50	122.00	147.50	159.00	178.00
55.0					53.20	65.70	81.00	98.50	120.00	146.00	157.00	177.00
60.0						64.40	79.50	97.50	119.00	145.00	157.00	177.00

	-40.0	-35.0	-30.0	-25.0	-20.0	-15.0	-10.0	-5.0	0.0	5.0	7.0	10.0
	Heat Rejection kW											
10.0	6.35	7.56	9.02	10.80	12.85	15.30	18.10					
15.0	6.38	7.54	8.94	10.60	12.60	14.90	17.55	20.60				
20.0	6.42	7.54	8.88	10.45	12.35	14.50	17.00	19.90	23.20			
25.0	6.49	7.56	8.83	10.35	12.10	14.15	16.50	19.20	22.30	25.80		
30.0		7.61	8.81	10.20	11.85	13.80	16.00	18.50	21.40	24.70	26.10	28.40
35.0			8.81	10.15	11.65	13.45	15.50	17.85	20.60	23.60	25.00	27.10
40.0			8.84	10.05	11.50	13.15	15.05	17.25	19.75	22.60	23.80	25.80
45.0				10.05	11.35	12.85	14.60	16.65	18.95	21.60	22.70	24.50
50.0					11.25	12.60	14.20	16.05	18.15	20.60	21.60	23.30
55.0					11.15	12.40	13.85	15.50	17.40	19.60	20.60	22.10
60.0						12.20	13.50	15.00	16.70	18.65	19.55	20.90

Copeland Selection Software

REFRIGERANT R404A

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: ZB45KCE-TFD

PERFORMANCE AT SPECIFIED OPERATING POINT **ZB45KCE-TFD Data at 50 Hz**

Capacity kW	10.05
Power Input kW	4.81
COP	2.09
Current 400V, A	9.53
Mass Flow g/s	84.00
Heat Rejection kW	14.60

COMPRESSOR MECHANICAL AND PHYSICAL DATA

Length/Width, mm 242/242	Height, mm 458
Net Weight, kg 39.5	Rotalock Suction, inch 1 1/4
Rotalock Discharge, inch 1	Oil Quantity, l 1.9
Sound Power, dBA 72	PED Category 1
High Side PS, bar(g) 28.8	Low Side PS, bar(g) 21
Low Side TS Max., °C 50	Low Side TS Min., °C -35
Internal Free Volume, l 5.9	
Displacement @ 50 Hz, cu.m/h 17.1	
Base mounting (hole dia), mm 190 x 190 (8.5)	
Sound Pressure @ 1m, dBA 61	
Sound Power with Sound Shell, dBA 62	

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

Locked Rotor Current, A 74	Winding Resistance, ohm 2.3
Maximum Operating Current, A 13.1	
Default Enclosure Class IP 21 (IEC 34)	

ACCESSORIES INCLUDED

Discharge Temperature Protection	Internal Thermodisk
Mounting Grommets	Standard

ACCESSORIES OPTIONAL

Crankcase Heater
Sound Attenuation
Rotalock valves

70W External
Sound Shell (10dBA)
suction and discharge