

COMPRESSOR DEFINITION

Designation	EK 6160CD
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	516400004

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-744		
3 Nominal voltage and frequency	100 / 50-60	[V / Hz]	
4 Application type	Medium/High Back Perssure (Comercial Compressor R744)		
4.1 Evaporating temperature range	-20°C to 10°C	(-4°F to 50°F)	
5 Motor type	CSCR		
6 Starting torque	HST - Hight starting torque		
7 Expantion device	Capillary tube or Expansion valve		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	-	-	-
8.2 LBP (43°C Ambient temperature)	-	-	-
8.3 HBP (32°C Ambient temperature)	Fan	85 to 110 V	85 to 110 V
8.4 HBP (43°C Ambient temperature)	Fan	85 to 110 V	85 to 110 V
9 Maximum discharge pressure			
9.1 Operating (gauge)	122.4	[kgf/cm ²] (1741 psig)	(120.0 bar)
9.2 Peak (gauge)	122.4	[kgf/cm ²] (1741 psig)	(120.0 bar)
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation		[hp]
2 Displacement	1.00	[cm ³] (0.061 cu.in)
2.1 Bore [mm]	13.000	
2.2 Stroke [mm]	7.540	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO68	
4 Weight (with oil charge)	13.88	[kg] (30.60 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm ²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	100 V 50-60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA14D7	
3 Start capacitor	270-324(165)	[µF(VAC minimum)]
4 Run capacitor	20(180)	[µF(VAC minimum)]
5 Motor protection	5TM 771RFBZZ-53	
6 Start winding resistance	3.80	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	1.25	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	32.00/29.00	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	5.20/4.20	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	6.50/5.50	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32/R744			(Discharge Pressure 80 bar (81 kgf/cm ²))					
@100V50Hz		Fan								
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	938	236	275	236	3.32	5.00	3.97	1.00	1.16
-15	(+ 5)	1128	284	331	243	3.38	6.13	4.64	1.17	1.36
-10	(+14)	1341	338	393	247	3.42	7.43	5.42	1.37	1.59
-5	(+23)	1580	398	463	249	3.44	8.97	6.36	1.60	1.86
0	(+32)	1848	466	541	248	3.42	10.81	7.49	1.89	2.19
+5	(+41)	2148	541	629	244	3.37	13.02	8.85	2.23	2.59
+10	(+50)	2482	626	727	236	3.28	15.67	10.49	2.64	3.07

TEST CONDITIONS:		ASHRAE32/R744			(Discharge Pressure 90 bar (91 kgf/cm ²))					
@100V50Hz		Fan								
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	887	224	260	246	3.39	4.44	3.61	0.91	1.06
-15	(+ 5)	1073	270	315	254	3.47	5.47	4.21	1.06	1.23
-10	(+14)	1283	323	376	261	3.53	6.66	4.90	1.24	1.44
-5	(+23)	1520	383	445	265	3.57	8.08	5.73	1.44	1.68
0	(+32)	1787	450	524	265	3.58	9.80	6.73	1.70	1.97
+5	(+41)	2086	526	611	263	3.55	11.87	7.95	2.00	2.33
+10	(+50)	2421	610	709	257	3.49	14.37	9.42	2.37	2.76

TEST CONDITIONS:		ASHRAE32/R744			(Discharge Pressure 105 bar (107 kgf/cm ²))					
@100V50Hz		Fan								
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	823	207	241	259	3.50	4.03	3.19	0.80	0.93
-15	(+ 5)	1004	253	294	271	3.61	4.97	3.72	0.94	1.09
-10	(+14)	1210	305	355	280	3.70	6.07	4.32	1.09	1.27
-5	(+23)	1444	364	423	286	3.77	7.38	5.02	1.27	1.47
0	(+32)	1709	431	501	290	3.81	8.97	5.87	1.48	1.72
+5	(+41)	2007	506	588	290	3.82	10.90	6.91	1.74	2.02
+10	(+50)	2343	590	687	287	3.80	13.23	8.17	2.06	2.39

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		ASHRAE32/R744 Fan					(Discharge Pressure 120 bar (122 kgf/cm ²))			
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	773	195	227	271	3.61	3.64	2.83	0.71	0.83
-15	(+ 5)	949	239	278	286	3.75	4.58	3.35	0.84	0.98
-10	(+14)	1152	290	338	297	3.87	5.66	3.90	0.98	1.14
-5	(+23)	1383	349	405	306	3.97	6.93	4.52	1.14	1.33
0	(+32)	1647	415	483	312	4.04	8.47	5.27	1.33	1.54
+5	(+41)	1945	490	570	315	4.09	10.33	6.17	1.55	1.81
+10	(+50)	2282	575	669	314	4.11	12.58	7.27	1.83	2.13

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan					(Discharge Pressure 80 bar (81 kgf/cm ²))			
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	1104	278	324	269	3.04	5.89	4.10	1.03	1.20
-15	(+ 5)	1332	336	390	277	3.14	7.24	4.79	1.21	1.40
-10	(+14)	1589	400	466	282	3.20	8.80	5.63	1.42	1.65
-5	(+23)	1881	474	551	284	3.22	10.67	6.65	1.68	1.95
0	(+32)	2211	557	648	281	3.20	12.94	7.92	1.99	2.32
+5	(+41)	2584	651	757	275	3.13	15.67	9.45	2.38	2.77
+10	(+50)	3005	757	881	265	3.02	18.97	11.31	2.85	3.31

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan					(Discharge Pressure 90 bar (91 kgf/cm ²))			
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	1081	272	317	281	3.13	5.41	3.85	0.97	1.13
-15	(+ 5)	1307	329	383	293	3.25	6.66	4.45	1.12	1.30
-10	(+14)	1562	394	458	301	3.34	8.11	5.15	1.30	1.51
-5	(+23)	1852	467	543	307	3.40	9.85	6.01	1.51	1.76
0	(+32)	2181	550	639	308	3.42	11.96	7.06	1.78	2.07
+5	(+41)	2554	643	748	307	3.40	14.53	8.35	2.11	2.45
+10	(+50)	2974	749	871	301	3.33	17.65	9.93	2.50	2.91

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan			(Discharge Pressure 105 bar (107 kgf/cm²))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	1050	265	308	297	3.26	5.13	3.57	0.90	1.05
-15	(+ 5)	1272	320	373	313	3.43	6.30	4.08	1.03	1.20
-10	(+14)	1524	384	447	327	3.57	7.65	4.66	1.17	1.36
-5	(+23)	1811	456	531	338	3.68	9.26	5.33	1.34	1.56
0	(+32)	2138	539	627	346	3.76	11.22	6.14	1.55	1.80
+5	(+41)	2509	632	735	350	3.80	13.62	7.13	1.80	2.09
+10	(+50)	2927	738	858	351	3.81	16.53	8.35	2.10	2.45

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan			(Discharge Pressure 120 bar (122 kgf/cm²))					
Evaporating temperature		Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-20	(- 4)	1021	257	299	310	3.39	4.81	3.26	0.82	0.95
-15	(+ 5)	1239	312	363	331	3.61	5.98	3.78	0.95	1.11
-10	(+14)	1488	375	436	350	3.80	7.31	4.30	1.08	1.26
-5	(+23)	1772	447	519	366	3.97	8.88	4.87	1.23	1.43
0	(+32)	2096	528	614	379	4.11	10.77	5.52	1.39	1.62
+5	(+41)	2464	621	722	390	4.22	13.08	6.30	1.59	1.85
+10	(+50)	2880	726	844	397	4.30	15.88	7.25	1.83	2.12

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.1.1 Material	Copper plated steel		
3.1.2 Shape	Straight		
3.2 DISCHARGE	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.2.1 Material	Copper plated steel		
3.2.2 Shape	Straight		
3.3 PROCESS	6.5 +0.12/-0.08	[mm]	(0.256" +0.005"/-0.003")
3.3.1 Material	Copper plated steel		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		