

### COMPRESSOR DEFINITION

Designation	<b>EK 6175CD</b>
Nominal Voltage/Frequency	<b>100 V 50-60 Hz</b>
Engineering Number	<b>516400012</b>

### 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 Pressure ( Commercial Compressors EK - 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 Expansion device	Capillary tube or Expansion valve		
8 Compressor cooling	Operating voltage range		
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Fan	85 to 110 V	85 to 110 V
8.2 LBP (43°C Ambient temperature)	Fan	85 to 110 V	85 to 110 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum discharge pressure			
9.1 Operating (gauge)	122.4	[kgf/cm <sup>2</sup> ] (1741 psig)	(120.0 bar)
9.2 Peak (gauge)	122.4	[kgf/cm <sup>2</sup> ] (1741 psig)	(120.0 bar)
10 Maximum winding temperature	130	[ °C ]	

### B - MECHANICAL DATA

1 Commercial designation		[hp]
2 Displacement	1.30	[cm <sup>3</sup> ] (0.079 cu.in)
2.1 Bore [mm]	13.000	
2.2 Stroke [mm]	9.800	
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 <sup>2</sup> ] (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	7M4R7MB3/8EA14D7	
3 Start capacitor	100-120(180)	[μF(VAC minimum)]
4 Run capacitor	20(180)	[μF(VAC minimum)]
5 Motor protection	5TM795NFBZZ-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

TEST CONDITIONS: @100V50Hz			ASHRAE32/HBP/R744 Fan		Evaporating temperature (Discharge Pressure)		7.2°C (44.96°F) 85 bar (86.68 kgf/cm <sup>2</sup> )		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
2997	755	878	316	4.00	15.25	9.48	2.39	2.78	

TEST CONDITIONS: @100V60Hz			ASHRAE32/HBP/R744 Fan		Evaporating temperature (Discharge Pressure)		7.2°C (44.96°F) 85 bar (86.68 kgf/cm <sup>2</sup> )		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
3565	898	1045	382	4.14	18.14	9.32	2.35	2.73	

TEST CONDITIONS: @100V50Hz			ASHRAE32/MBP/R744 Fan		Evaporating temperature (Discharge Pressure)		-10°C (14°F) 85 bar (86.68 kgf/cm <sup>2</sup> )		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
1757	443	515	325	4.06	9.37	5.41	1.36	1.59	

TEST CONDITIONS: @100V60Hz			ASHRAE32/MBP/R744 Fan		Evaporating temperature (Discharge Pressure)		-10°C (14°F) 85 bar (86.68 kgf/cm <sup>2</sup> )		
Cooling capacity +/- 5%			Power consumption +/- 5%	Current consumption +/- 5%	Gas flow rate +/- 5%	EFFICIENCY RATE +/- 7%			
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]	
2049	516	600	377	4.08	10.92	5.43	1.37	1.59	

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		ASHRAE32/R744 Fan					(Discharge Pressure 80 bar (81 kgf/cm <sup>2</sup> ))			
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]
-20	(- 4)	1030	260	302	292	3.78	5.50	3.52	0.89	1.03
-15	(+ 5)	1286	324	377	306	3.90	6.81	4.09	1.03	1.20
-10	(+14)	1592	401	467	314	3.97	8.63	4.95	1.25	1.45
-5	(+23)	1949	491	571	317	3.99	10.95	6.08	1.53	1.78
0	(+32)	2355	593	690	315	3.97	13.78	7.51	1.89	2.20
+5	(+41)	2811	708	824	308	3.90	17.11	9.21	2.32	2.70
+10	(+50)	3318	836	972	295	3.79	20.95	11.20	2.82	3.28

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		ASHRAE32/R744 Fan				(Discharge Pressure 90 bar (91 kgf/cm <sup>2</sup> ))				
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)	1091	275	320	309	3.91	5.44	3.53	0.89	1.03
-15	(+ 5)	1331	335	390	325	4.05	6.57	3.99	1.00	1.17
-10	(+14)	1623	409	475	336	4.15	8.20	4.69	1.18	1.37
-5	(+23)	1967	496	576	343	4.21	10.33	5.64	1.42	1.65
0	(+32)	2363	595	692	345	4.22	12.94	6.83	1.72	2.00
+5	(+41)	2811	708	824	342	4.20	16.05	8.27	2.08	2.42
+10	(+50)	3312	835	971	334	4.13	19.66	9.95	2.51	2.92

TEST CONDITIONS: @100V50Hz		ASHRAE32/R744 Fan				(Discharge Pressure 105 bar (107 kgf/cm <sup>2</sup> ))				
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)	1097	276	321	330	4.08	5.37	3.35	0.84	0.98
-15	(+ 5)	1321	333	387	350	4.26	6.37	3.73	0.94	1.09
-10	(+14)	1600	403	469	366	4.40	7.84	4.30	1.08	1.26
-5	(+23)	1934	487	567	378	4.51	9.78	5.05	1.27	1.48
0	(+32)	2324	586	681	386	4.58	12.20	5.99	1.51	1.76
+5	(+41)	2769	698	811	389	4.62	15.10	7.11	1.79	2.08
+10	(+50)	3269	824	958	389	4.62	18.47	8.42	2.12	2.47

TEST CONDITIONS: @100V50Hz		ASHRAE32/R744 Fan				(Discharge Pressure 120 bar (122 kgf/cm <sup>2</sup> ))				
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)	1002	252	294	346	4.23	4.72	2.88	0.73	0.84
-15	(+ 5)	1220	307	357	371	4.44	5.72	3.29	0.83	0.96
-10	(+14)	1496	377	438	392	4.63	7.17	3.83	0.96	1.12
-5	(+23)	1831	461	537	410	4.78	9.08	4.49	1.13	1.32
0	(+32)	2224	560	652	424	4.91	11.45	5.28	1.33	1.55
+5	(+41)	2675	674	784	434	5.01	14.27	6.19	1.56	1.81
+10	(+50)	3185	803	933	440	5.08	17.55	7.22	1.82	2.12

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan					(Discharge Pressure 80 bar (81 kgf/cm <sup>2</sup> ))			
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)	1262	318	370	342	3.74	6.74	3.68	0.93	1.08
-15	(+ 5)	1626	410	476	358	3.89	8.65	4.44	1.12	1.30
-10	(+14)	2012	507	590	367	3.99	10.94	5.37	1.35	1.57
-5	(+23)	2422	610	710	371	4.03	13.62	6.48	1.63	1.90
0	(+32)	2855	719	837	370	4.01	16.68	7.75	1.95	2.27
+5	(+41)	3311	834	970	362	3.93	20.12	9.20	2.32	2.70
+10	(+50)	3790	955	1111	350	3.80	23.95	10.82	2.73	3.17

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan					(Discharge Pressure 90 bar (91 kgf/cm <sup>2</sup> ))			
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)	1247	314	365	363	3.95	6.22	3.44	0.87	1.01
-15	(+ 5)	1622	409	475	383	4.15	8.08	4.13	1.04	1.21
-10	(+14)	2023	510	593	397	4.30	10.31	4.96	1.25	1.45
-5	(+23)	2451	618	718	406	4.39	12.93	5.94	1.50	1.74
0	(+32)	2905	732	851	410	4.42	15.93	7.07	1.78	2.07
+5	(+41)	3386	853	992	408	4.40	19.31	8.33	2.10	2.44
+10	(+50)	3893	981	1141	400	4.32	23.08	9.74	2.46	2.86

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan					(Discharge Pressure 105 bar (107 kgf/cm <sup>2</sup> ))			
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)	1249	315	366	388	4.20	6.10	3.23	0.81	0.95
-15	(+ 5)	1611	406	472	415	4.49	7.80	3.81	0.96	1.12
-10	(+14)	2004	505	587	437	4.71	9.88	4.50	1.13	1.32
-5	(+23)	2429	612	712	453	4.88	12.34	5.29	1.33	1.55
0	(+32)	2885	727	845	464	4.99	15.17	6.18	1.56	1.81
+5	(+41)	3373	850	988	470	5.04	18.39	7.18	1.81	2.10
+10	(+50)	3892	981	1140	471	5.03	21.98	8.29	2.09	2.43

### E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan			(Discharge Pressure 120 bar (122 kgf/cm <sup>2</sup> ))					
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)	1279	322	375	408	4.39	6.04	3.12	0.79	0.91
-15	(+ 5)	1592	401	467	442	4.75	7.51	3.59	0.91	1.05
-10	(+14)	1942	489	569	470	5.05	9.34	4.13	1.04	1.21
-5	(+23)	2328	587	682	494	5.30	11.55	4.73	1.19	1.39
0	(+32)	2751	693	806	512	5.48	14.14	5.40	1.36	1.58
+5	(+41)	3210	809	941	525	5.60	17.10	6.13	1.55	1.80
+10	(+50)	3706	934	1086	533	5.67	20.43	6.93	1.75	2.03

### 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		