

COMPRESSOR DEFINITION

Designation	EK 6175CD
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	516400011

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	Low/Medium/High Back Pressure (Comercial Compressor R744)		
4.1 Evaporating temperature range	-40°C to 10°C	(-40°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	122.4	[kgf/cm ²] (1741 psig)	(120.0 bar)
9.2 Peak	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	1.30	[cm ³] (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 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/QPS2-A4R7MB4	
3 Start capacitor	270-324(165)	[µF(VAC minimum)]
4 Run capacitor	20(250)	[µF(VAC minimum)]
5 Motor protection	5TM795NFBZZ-53	
6 Start winding resistance	4.10	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	0.98	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	35.50/32.60	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	8.80/6.70	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	9.50/7.50	[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 ²)		
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]	
3064	772	898	346	5.30	15.59	8.87	2.24	2.60	

TEST CONDITIONS: @100V60Hz			ASHRAE32/HBP/R744 Fan		Evaporating temperature (Discharge Pressure)		7.2°C (44.96°F) 85 bar (86.68 kgf/cm ²)		
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]	
3650	920	1070	394	4.68	18.58	9.26	2.33	2.71	

TEST CONDITIONS: @100V50Hz			ASHRAE32/MBP/R744 Fan		Evaporating temperature (Discharge Pressure)		-10°C (14°F) 85 bar (86.68 kgf/cm ²)		
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]	
1763	444	517	347	5.36	9.40	5.08	1.28	1.49	

TEST CONDITIONS: @100V60Hz			ASHRAE32/MBP/R744 Fan		Evaporating temperature (Discharge Pressure)		-10°C (14°F) 85 bar (86.68 kgf/cm ²)		
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]	
2082	525	610	388	4.63	11.10	5.37	1.35	1.57	

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		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]
-40	(-40)	539	136	158	254	4.34	2.74	2.13	0.54	0.62
-35	(-31)	685	173	201	272	4.40	3.56	2.50	0.63	0.73
-30	(-22)	846	213	248	289	4.47	4.42	2.90	0.73	0.85
-25	(-13)	1028	259	301	305	4.55	5.40	3.34	0.84	0.98
-20	(- 4)	1234	311	362	318	4.62	6.56	3.85	0.97	1.13
-15	(+ 5)	1470	371	431	329	4.68	7.94	4.47	1.13	1.31
-10	(+14)	1741	439	510	336	4.73	9.63	5.22	1.32	1.53
-5	(+23)	2052	517	601	340	4.76	11.67	6.12	1.54	1.79
0	(+32)	2407	606	705	339	4.77	14.14	7.21	1.82	2.11
+5	(+41)	2811	708	824	334	4.74	17.09	8.50	2.14	2.49
+10	(+50)	3269	824	958	323	4.68	20.59	10.03	2.53	2.94

E - PERFORMANCE - CURVES

TEST CONDITIONS:		ASHRAE32/R744					(Discharge Pressure 90 bar (91 kgf/cm ²))			
@100V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	516	130	151	260	4.35	2.45	2.01	0.51	0.59
-35	(-31)	668	168	196	281	4.43	3.26	2.39	0.60	0.70
-30	(-22)	837	211	245	300	4.51	4.11	2.78	0.70	0.82
-25	(-13)	1028	259	301	318	4.61	5.07	3.20	0.81	0.94
-20	(- 4)	1245	314	365	334	4.70	6.20	3.69	0.93	1.08
-15	(+ 5)	1494	376	438	347	4.78	7.56	4.26	1.07	1.25
-10	(+14)	1779	448	521	358	4.86	9.22	4.94	1.25	1.45
-5	(+23)	2104	530	617	365	4.91	11.23	5.77	1.45	1.69
0	(+32)	2476	624	726	368	4.94	13.67	6.76	1.70	1.98
+5	(+41)	2899	730	849	367	4.94	16.58	7.95	2.00	2.33
+10	(+50)	3377	851	989	361	4.91	20.03	9.36	2.36	2.74

TEST CONDITIONS:		ASHRAE32/R744					(Discharge Pressure 105 bar (107 kgf/cm ²))			
@100V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	492	124	144	268	4.38	2.31	1.85	0.47	0.54
-35	(-31)	641	161	188	291	4.47	3.09	2.24	0.56	0.66
-30	(-22)	809	204	237	313	4.58	3.90	2.62	0.66	0.77
-25	(-13)	1001	252	293	334	4.70	4.82	3.00	0.76	0.88
-20	(- 4)	1221	308	358	354	4.82	5.90	3.43	0.86	1.01
-15	(+ 5)	1475	372	432	372	4.93	7.20	3.93	0.99	1.15
-10	(+14)	1768	446	518	387	5.04	8.80	4.51	1.14	1.32
-5	(+23)	2104	530	617	399	5.13	10.75	5.22	1.32	1.53
0	(+32)	2489	627	729	408	5.20	13.11	6.08	1.53	1.78
+5	(+41)	2926	737	857	413	5.24	15.95	7.10	1.79	2.08
+10	(+50)	3421	862	1003	413	5.25	19.32	8.33	2.10	2.44

TEST CONDITIONS:		ASHRAE32/R744					(Discharge Pressure 120 bar (122 kgf/cm ²))			
@100V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
		+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-40	(-40)	481	121	141	273	4.40	2.12	1.69	0.42	0.49
-35	(-31)	611	154	179	298	4.51	2.84	2.08	0.52	0.61
-30	(-22)	762	192	223	323	4.64	3.59	2.43	0.61	0.71
-25	(-13)	940	237	275	348	4.78	4.44	2.78	0.70	0.82
-20	(- 4)	1149	289	337	371	4.93	5.44	3.15	0.79	0.92
-15	(+ 5)	1393	351	408	393	5.07	6.67	3.56	0.90	1.04
-10	(+14)	1679	423	492	413	5.21	8.19	4.05	1.02	1.19
-5	(+23)	2010	506	589	430	5.34	10.05	4.63	1.17	1.36
0	(+32)	2392	603	701	444	5.44	12.32	5.34	1.35	1.56
+5	(+41)	2828	713	829	454	5.53	15.06	6.20	1.56	1.82
+10	(+50)	3326	838	975	460	5.58	18.33	7.24	1.83	2.12

E - PERFORMANCE - CURVES

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]
-40	(-40)	680	171	199	267	2.99	0.00	2.56	0.64	0.75
-35	(-31)	837	211	245	291	3.19	0.00	2.86	0.72	0.84
-30	(-22)	1019	257	299	314	3.38	0.00	3.21	0.81	0.94
-25	(-13)	1230	310	360	334	3.56	0.00	3.64	0.92	1.07
-20	(- 4)	1475	372	432	351	3.72	0.00	4.17	1.05	1.22
-15	(+ 5)	1757	443	515	365	3.86	0.00	4.81	1.21	1.41
-10	(+14)	2081	524	610	375	3.96	0.00	5.59	1.41	1.64
-5	(+23)	2452	618	718	380	4.01	0.00	6.53	1.65	1.91
0	(+32)	2873	724	842	381	4.02	0.00	7.66	1.93	2.24
+5	(+41)	3349	844	981	376	3.97	0.00	8.99	2.26	2.63
+10	(+50)	3884	979	1138	365	3.86	0.00	10.54	2.66	3.09

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]
-40	(-40)	675	170	198	273	3.05	0.00	2.50	0.63	0.73
-35	(-31)	833	210	244	300	3.26	0.00	2.79	0.70	0.82
-30	(-22)	1017	256	298	325	3.48	0.00	3.12	0.79	0.91
-25	(-13)	1231	310	361	348	3.69	0.00	3.50	0.88	1.03
-20	(- 4)	1479	373	433	369	3.88	0.00	3.96	1.00	1.16
-15	(+ 5)	1766	445	518	386	4.06	0.00	4.53	1.14	1.33
-10	(+14)	2096	528	614	400	4.20	0.00	5.21	1.31	1.53
-5	(+23)	2472	623	724	410	4.30	0.00	6.03	1.52	1.77
0	(+32)	2900	731	850	416	4.36	0.00	7.02	1.77	2.06
+5	(+41)	3384	853	992	416	4.37	0.00	8.19	2.06	2.40
+10	(+50)	3927	990	1151	411	4.31	0.00	9.57	2.41	2.80

TEST CONDITIONS: @100V60Hz		ASHRAE32/R744 Fan			(Discharge Pressure 105 bar (107 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]
-40	(-40)	655	165	192	280	3.10	0.00	2.35	0.59	0.69
-35	(-31)	811	204	238	310	3.35	0.00	2.66	0.67	0.78
-30	(-22)	993	250	291	339	3.60	0.00	2.97	0.75	0.87
-25	(-13)	1206	304	354	366	3.85	0.00	3.31	0.83	0.97
-20	(- 4)	1455	367	426	392	4.10	0.00	3.70	0.93	1.08
-15	(+ 5)	1744	439	511	415	4.32	0.00	4.16	1.05	1.22
-10	(+14)	2076	523	608	435	4.53	0.00	4.71	1.19	1.38
-5	(+23)	2457	619	720	452	4.70	0.00	5.38	1.36	1.58
0	(+32)	2890	728	847	465	4.83	0.00	6.19	1.56	1.81
+5	(+41)	3380	852	990	473	4.91	0.00	7.15	1.80	2.09
+10	(+50)	3931	991	1152	477	4.94	0.00	8.29	2.09	2.43

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V60Hz		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]
-40	(-40)	622	157	182	285	3.14	0.00	2.10	0.53	0.62
-35	(-31)	769	194	225	318	3.41	0.00	2.45	0.62	0.72
-30	(-22)	944	238	277	350	3.70	0.00	2.77	0.70	0.81
-25	(-13)	1151	290	337	382	3.99	0.00	3.09	0.78	0.91
-20	(- 4)	1394	351	409	412	4.28	0.00	3.44	0.87	1.01
-15	(+ 5)	1678	423	492	441	4.56	0.00	3.83	0.96	1.12
-10	(+14)	2008	506	588	467	4.82	0.00	4.28	1.08	1.26
-5	(+23)	2387	601	699	490	5.06	0.00	4.83	1.22	1.41
0	(+32)	2819	710	826	510	5.26	0.00	5.47	1.38	1.60
+5	(+41)	3309	834	970	527	5.42	0.00	6.25	1.58	1.83
+10	(+50)	3861	973	1131	539	5.53	0.00	7.18	1.81	2.10

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		