

COMPRESSOR DEFINITION

Designation	EG U70HLC
Nominal Voltage/Frequency	100 V 50-60 Hz
Engineering Number	513700012

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	100 / 50-60	[V / Hz]	
4 Application type	Low Back Pressure		
4.1 Evaporating temperature range	-35°C to -10°C	(-31°F to 14°F)	
5 Motor type	RSCR		
6 Starting torque	LST - Low Starting Torque		
7 Expansion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32°C Ambient temperature)	Static	85 to 110 V	85 to 110 V
8.2 LBP (43°C Ambient temperature)	Static	85 to 110 V	85 to 110 V
8.3 HBP (32°C Ambient temperature)	-	-	-
8.4 HBP (43°C Ambient temperature)	-	-	-
9 Maximum condensing pressures/temperature			
9.1 Operating (gauge)	16.2	[kgf/cm ²] (230 psig)	/ °C - °F
9.2 Peak (gauge)	20.6	[kgf/cm ²] (293 psig)	/ °C - °F
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/4	[hp]
2 Displacement	6.36	[cm ³] (0.388 cu.in)
2.1 Bore [mm]	22.500	
2.2 Stroke [mm]	16.000	
3 Lubricant charge	350	[ml] (11.84 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO7	
4 Weight (with oil charge)	11.23	[kg] (24.76 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	490B814R7/7M4R7MB3/8M4R7MB3	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	20(180)	[µF(VAC minimum)]
5 Motor protection	4TM427NFBYY-53	
6 Start winding resistance	3.50	[Ω at 25°C (77°F)] +/- 8%
7 Run winding resistance	3.80	[Ω at 25°C (77°F)] +/- 8%
8 LRA - Locked rotor amperage (50/60 Hz)	-	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50/60 Hz)	-	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50/60 Hz)	-	[A] - Measured according to UL 984
11 Approval boards certification		

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: @100V50Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
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]
600	151	176	107	1.12	3.41	5.59	1.41	1.64

TEST CONDITIONS: @100V60Hz			ASHRAELBP32 Static		Evaporating temperature (Condensing temperature		-23.3°C (-9.94°F) 54.4°C (129.92°F)	
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]
700	176	205	125	1.26	3.98	5.60	1.41	1.64

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
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]
-35	(-31)	307	77	90	69	0.76	1.74	4.44	1.12	1.30
-30	(-22)	448	113	131	83	0.91	2.54	5.39	1.36	1.58
-25	(-13)	615	155	180	98	1.05	3.49	6.30	1.59	1.85
-20	(- 4)	814	205	239	113	1.20	4.63	7.23	1.82	2.12
-15	(+ 5)	1050	265	308	128	1.34	5.99	8.21	2.07	2.41
-10	(+14)	1327	334	389	143	1.49	7.60	9.30	2.34	2.73

TEST CONDITIONS: @100V50Hz		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
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]
-35	(-31)	239	60	70	65	0.74	1.35	3.69	0.93	1.08
-30	(-22)	375	94	110	81	0.90	2.12	4.62	1.17	1.36
-25	(-13)	537	135	157	99	1.07	3.05	5.46	1.38	1.60
-20	(- 4)	732	184	214	117	1.24	4.16	6.25	1.57	1.83
-15	(+ 5)	963	243	282	137	1.43	5.50	7.03	1.77	2.06
-10	(+14)	1237	312	362	157	1.63	7.08	7.85	1.98	2.30

E - PERFORMANCE - CURVES

TEST CONDITIONS: @100V50Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F))					
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]
-35 (-31)	170	43	50	59	0.66	0.96	2.87	0.72	0.84	
-30 (-22)	301	76	88	76	0.84	1.70	3.90	0.98	1.14	
-25 (-13)	459	116	134	96	1.03	2.60	4.77	1.20	1.40	
-20 (- 4)	649	164	190	118	1.24	3.69	5.54	1.39	1.62	
-15 (+ 5)	877	221	257	141	1.47	5.01	6.23	1.57	1.83	
-10 (+14)	1147	289	336	166	1.72	6.57	6.91	1.74	2.02	

TEST CONDITIONS: @100V60Hz		ASHRAE32 Static			(Condensing temperature 45°C (+113°F))					
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]
-35 (-31)	366	92	107	80	0.84	2.07	4.57	1.15	1.34	
-30 (-22)	530	133	155	96	0.99	3.00	5.50	1.39	1.61	
-25 (-13)	722	182	212	114	1.16	4.10	6.34	1.60	1.86	
-20 (- 4)	954	240	280	133	1.35	5.43	7.16	1.80	2.10	
-15 (+ 5)	1238	312	363	153	1.56	7.07	8.02	2.02	2.35	
-10 (+14)	1585	399	464	175	1.78	9.08	8.99	2.27	2.63	

TEST CONDITIONS: @100V60Hz		ASHRAE32 Static			(Condensing temperature 55°C (+131°F))					
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]
-35 (-31)	286	72	84	77	0.81	1.62	3.71	0.94	1.09	
-30 (-22)	446	112	131	96	0.99	2.53	4.64	1.17	1.36	
-25 (-13)	628	158	184	117	1.19	3.56	5.41	1.36	1.59	
-20 (- 4)	844	213	247	140	1.41	4.80	6.08	1.53	1.78	
-15 (+ 5)	1105	279	324	164	1.66	6.31	6.73	1.70	1.97	
-10 (+14)	1424	359	417	191	1.93	8.16	7.42	1.87	2.17	

TEST CONDITIONS: @100V60Hz		ASHRAE32 Static			(Condensing temperature 65°C (+149°F))					
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]
-35 (-31)	185	47	54	66	0.71	1.05	2.79	0.70	0.82	
-30 (-22)	349	88	102	88	0.91	1.98	3.85	0.97	1.13	
-25 (-13)	529	133	155	112	1.15	3.01	4.68	1.18	1.37	
-20 (- 4)	738	186	216	139	1.41	4.20	5.34	1.35	1.57	
-15 (+ 5)	987	249	289	168	1.70	5.63	5.90	1.49	1.73	
-10 (+14)	1287	324	377	200	2.02	7.37	6.44	1.62	1.89	

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal EG/F/AMEM version 2		
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		
3.1.2 Shape	Straight		
3.2 DISCHARGE	4.94 +0.08/-0.08	[mm]	(0.194" +0.003"/-0.003")
3.2.1 Material	Copper		
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		
3.3.2 Shape	Straight		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		