embraco

COMPRESSOR TECHNICAL DATA

COMPRESSOR DEFINITION

Designation	**EM Y4125U**
Nominal Voltage/Frequency	**220-240 V 50 Hz**
Engineering Number	**513300878**

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type		Hermetic reciprocating compressor		
2 Refrigerant		R-290		
2.1 Max Refrigerant Charge		150 [g]		
3 Nominal voltage and frequency		220-240 / 50	[V / Hz]	
4 Application type		Low-Medium (Plus) Back Pressure		
4.1 Evaporating temperature range		-35°C to 5°C	(-31°F to 41°F)	
5 Motor type		CSIR		
6 Starting torque		HST - Hight starting torque		
7 Expantion device		Capillary tube or Expansion valve		
8 Compressor cooling			Operating voltage range	
Aplication	Ambient Temp.	Cooling	50 Hz	60 Hz
9 Maximum condensing temperature				
9.1 Operating		[60]	[°C]	
9.2 Peak		[70]	[°C]	
10 Maximum winding temperature		130	[°C]	

B - MECHANICAL DATA

1 Commercial designation		[hp]
2 Displacement	6.09	[cm³] (0.372 cu.in)
2.1 Bore [mm]	21.000	
2.2 Stroke [mm]	17.600	
3 Lubricant charge	150	[ml] (5.07 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ALQUILB / ISO22	
4 Weight (with oil charge)	7.1	[kg] (15.65 lb.)
5 Nitrogen charge	-	[kgf/cm²]

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	220-240 V 50 Hz 1 ~ (Single phase)	
2 Starting device type	Current Relay	
2.1 Starting device	QL2-3.76 **	
3 Start capacitor	88-108(215)	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	BT74-120A61D3	
6 Start winding resistance		[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance		[Ω at 25ºC (77ºF)] +/- 8%
8 LRA - Locked rotor amperage (50 Hz)	10.70	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (50 Hz)	2.90	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (50 Hz)	3.00	[A] - Measured according to UL 984
11 Approval boards certification	EAC	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS:			ASHRAELBP32		Evaporating temperature		-23.3°C (-9.94°F)	
@220V50Hz			Fan		(Condensing temperature		54.4°C (129.92°F))	
Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
+/- 5%			+/- 5%	+/- 5%	+/- 5%	+/- 7%		
[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
1000.0	252.0	293.0	187.0	1.20	2.98	5.35	1.35	1.57

E - PERFORMANCE - CURVES

Please note that the following set of data is intended for reference purposes only. While reasonable efforts were made to ensure its accuracy, the data may be subject to a higher degree of uncertainty, particularly under conditions of low cooling capacity and high pressure ratios. In addition, the compressor's actual speed may deviate from the set speed in certain circumstances, such as when there are power or torque constraints, or protection routines are activated. The data presented hereafter already reflect the compressor's performance operating with its related control unit under such constraints, when applicable.

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 35°C (+95°F))					
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	**(-31)**	651.7	164.2	191.0	122.1	0.59	1.92	5.31	1.34	1.56
-30	**(-22)**	835.5	210.5	244.8	135.5	0.65	2.47	6.12	1.54	1.79
-25	**(-13)**	1052.7	265.3	308.5	148.4	0.71	3.13	7.06	1.78	2.07
-20	**(- 4)**	1308.2	329.7	383.3	160.5	0.76	3.90	8.14	2.05	2.39
-15	**(+ 5)**	1606.6	404.9	470.8	171.5	0.81	4.81	9.40	2.37	2.75
-10	**(+14)**	1952.7	492.1	572.2	181.0	0.86	5.87	10.86	2.74	3.18
-5	**(+23)**	2351.2	592.5	689.0	188.7	0.89	7.11	12.56	3.17	3.68
0	**(+32)**	2807.0	707.4	822.5	194.3	0.92	8.54	14.52	3.66	4.25
+5	**(+41)**	3324.8	837.9	974.2	197.3	0.93	10.18	16.77	4.23	4.91

TEST CONDITIONS:		ASHRAE32			(Condensing temperature 45°C (+113°F))					
@220V50Hz		Fan								
Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	**(-31)**	595.9	150.2	174.6	129.0	0.63	1.76	4.67	1.18	1.37
-30	**(-22)**	774.0	195.0	226.8	144.7	0.70	2.29	5.35	1.35	1.57
-25	**(-13)**	984.7	248.1	288.5	160.4	0.76	2.92	6.09	1.53	1.78
-20	**(- 4)**	1232.9	310.7	361.3	175.8	0.83	3.67	6.94	1.75	2.03
-15	**(+ 5)**	1523.4	383.9	446.4	190.4	0.90	4.56	7.92	2.00	2.32
-10	**(+14)**	1860.7	468.9	545.2	204.1	0.96	5.59	9.05	2.28	2.65
-5	**(+23)**	2249.8	567.0	659.2	216.3	1.02	6.80	10.37	2.61	3.04
0	**(+32)**	2695.4	679.2	789.8	226.8	1.07	8.20	11.90	3.00	3.49
+5	**(+41)**	3202.2	807.0	938.3	235.2	1.11	9.80	13.68	3.45	4.01

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TEST CONDITIONS: **ASHRAE32** (Condensing temperature **55°C (+131°F)**)
@220V50Hz **Fan**

Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	**(-31)**	549.2	138.4	160.9	131.9	0.64	1.62	4.22	1.06	1.24
-30	**(-22)**	716.0	180.4	209.8	150.2	0.72	2.12	4.82	1.21	1.41
-25	**(-13)**	914.8	230.5	268.1	169.0	0.80	2.72	5.44	1.37	1.59
-20	**(- 4)**	1150.2	289.9	337.0	187.9	0.89	3.43	6.11	1.54	1.79
-15	**(+ 5)**	1427.2	359.6	418.2	206.5	0.97	4.27	6.86	1.73	2.01
-10	**(+14)**	1750.3	441.1	512.9	224.5	1.06	5.26	7.72	1.95	2.26
-5	**(+23)**	2124.4	535.3	622.5	241.5	1.13	6.42	8.72	2.20	2.56
0	**(+32)**	2554.2	643.7	748.4	257.3	1.21	7.77	9.89	2.49	2.90
+5	**(+41)**	3044.5	767.2	892.1	271.4	1.27	9.32	11.26	2.84	3.30

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **65°C (+149°F)**)
@220V50Hz **Fan**

Evaporating temperature		Cooling capacity			Power consumption	Current consumption	Gas flow rate	EFFICIENCY RATE		
°C	(°F)	[Btu/h]	[kcal/h]	[W]	[W]	[A]	[kg/h]	[Btu/Wh]	[kcal/Wh]	[W/W]
-35	**(-31)**	500.3	126.1	146.6	132.4	0.64	1.47	3.68	0.93	1.08
-30	**(-22)**	650.3	163.9	190.6	153.7	0.74	1.93	4.25	1.07	1.25
-25	**(-13)**	831.5	209.5	243.7	175.8	0.84	2.47	4.80	1.21	1.41
-20	**(- 4)**	1048.7	264.3	307.3	198.5	0.94	3.12	5.36	1.35	1.57
-15	**(+ 5)**	1306.6	329.3	382.9	221.3	1.04	3.91	5.95	1.50	1.74
-10	**(+14)**	1609.9	405.7	471.7	244.0	1.15	4.84	6.60	1.66	1.93
-5	**(+23)**	1963.4	494.8	575.3	266.1	1.25	5.93	7.34	1.85	2.15
0	**(+32)**	2371.9	597.7	695.0	287.3	1.35	7.21	8.21	2.07	2.41
+5	**(+41)**	2840.2	715.7	832.2	307.4	1.44	8.69	9.22	2.32	2.70

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal		
2 Tray holder	Yes		
3 Connectors			
3.1 SUCTION	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 40° up + 45° to Back		
3.2 DISCHARGE	4.9 +0.10/-0.05	[mm]	(0.193" +0.004"/-0.002")
3.2.1 Material	Copper		
3.2.2 Shape	Slanted 0° up + 24° to Back		
3.3 PROCESS	6.1 +0.10/+0.00	[mm]	(0.240" +0.004"/+0.000")
3.3.1 Material	Copper		
3.3.2 Shape	Slanted 40° up + 45° to Back		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		