COMPRESSOR DEFINITION

Designation	**ES I20HLP**
Nominal Voltage/Frequency	**115-127 V 60 Hz**
Engineering Number	**518100023**

A - APPLICATION / LIMIT WORKING CONDITIONS

1 Type	Hermetic reciprocating compressor		
2 Refrigerant	R-134a		
3 Nominal voltage and frequency	115-127 / 60	[V / Hz]	
4 Application type	Low-Medium Back Pressure		
4.1 Evaporating temperature range	-35°C to -5°C	(-31°F to 23°F)	
5 Motor type	RSIR		
6 Starting torque	LST - Low Starting Torque		
7 Expantion device	Capillary tube		
8 Compressor cooling		Operating voltage range	
		50 Hz	60 Hz
8.1 LBP (32ºC Ambient temperature)	-	-	-
8.2 LBP (43ºC Ambient temperature)	Static	-	103 to 140 V
8.3 HBP (32ºC Ambient temperature)	-	-	-
8.4 HBP (43ºC Ambient temperature)	-	-	-
9 Maximum condensing temperature			
9.1 Operating	14.2	[kgf/cm²] (202 psig)	/ ºC - ºF
9.2 Peak	15.9	[kgf/cm²] (226 psig)	/ ºC - ºF
10 Maximum winding temperature	130	[°C]	

B - MECHANICAL DATA

1 Commercial designation	1/12	[hp]
2 Displacement	2.30	[cm³] (0.140 cu.in)
2.1 Bore [mm]	15.500	
2.2 Stroke [mm]	12.200	
3 Lubricant charge	115	[ml] (3.89 fl.oz.)
3.1 Lubricants approved		
3.2 Lubricants type/viscosity	ESTER / ISO10	
4 Weight (with oil charge)	4.69	[kg] (10.34 lb.)
5 Nitrogen charge	0.2 to 0.3	[kgf/cm²] (2.84 to 4.27 psig)

C - ELETRICAL DATA

1 Nominal Voltage/Frequency/Number of Phases	115-127 V 60 Hz 1 ~ (Single phase)	
2 Starting device type	PTC	
2.1 Starting device	8EA14C1/8EA14E62/8EA14E63/8EA14E64	
3 Start capacitor	-	[µF(VAC minimum)]
4 Run capacitor	-	[µF(VAC minimum)]
5 Motor protection	OLP 5TM213VLBYY-53	
6 Start winding resistance	11.90	[Ω at 25ºC (77ºF)] +/- 8%
7 Run winding resistance	11.62	[Ω at 25ºC (77ºF)] +/- 8%
8 LRA - Locked rotor amperage (60 Hz)	5.31	[A] - Measured according to UL 984
9 FLA - Full load amperage L/MBP (60 Hz)	0.89	[A] - Measured according to UL 984
10 FLA - Full Load Amperage HBP (60 Hz)	1.00	[A] - Measured according to UL 984
11 Approval boards certification	TUV	

D - PERFORMANCE - CHECK POINT DATA

TEST CONDITIONS: **@115V60Hz**			**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]
233	59	68	54	0.73	1.32	4.32	1.09	1.27

E - PERFORMANCE - CURVES

TEST CONDITIONS: **@115V60Hz** — **ASHRAE32** **Static** — (Condensing temperature **35ºC (+95ºF))**

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)**	145	36	42	39	0.64	0.82	3.81	0.96	1.12
-30	**(-22)**	201	51	59	44	0.67	1.14	4.62	1.16	1.35
-25	**(-13)**	269	68	79	49	0.69	1.53	5.42	1.37	1.59
-20	**(- 4)**	353	89	103	54	0.70	2.01	6.31	1.59	1.85
-15	**(+ 5)**	455	115	133	59	0.73	2.60	7.36	1.85	2.16
-10	**(+14)**	581	146	170	65	0.79	3.33	8.67	2.19	2.54
-5	**(+23)**	733	185	215	74	0.91	4.22	10.34	2.60	3.03

TEST CONDITIONS: **@115V60Hz** — **ASHRAE32** **Static** — (Condensing temperature **45ºC (+113ºF))**

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)**	120	30	35	37	0.64	0.68	3.29	0.83	0.97
-30	**(-22)**	180	45	53	46	0.72	1.02	4.20	1.06	1.23
-25	**(-13)**	249	63	73	53	0.76	1.42	4.97	1.25	1.46
-20	**(- 4)**	331	83	97	59	0.78	1.88	5.69	1.43	1.67
-15	**(+ 5)**	429	108	126	65	0.79	2.45	6.44	1.62	1.89
-10	**(+14)**	546	138	160	71	0.82	3.13	7.32	1.85	2.15
-5	**(+23)**	687	173	201	79	0.89	3.95	8.43	2.12	2.47

TEST CONDITIONS: **@115V60Hz** — **ASHRAE32** **Static** — (Condensing temperature **55ºC (+131ºF))**

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)**	74	19	22	28	0.50	0.42	2.20	0.56	0.65
-30	**(-22)**	142	36	41	42	0.67	0.80	3.41	0.86	1.00
-25	**(-13)**	215	54	63	54	0.77	1.22	4.34	1.09	1.27
-20	**(- 4)**	298	75	87	63	0.84	1.69	5.09	1.28	1.49
-15	**(+ 5)**	393	99	115	72	0.89	2.25	5.75	1.45	1.69
-10	**(+14)**	506	127	148	80	0.93	2.90	6.41	1.61	1.88
-5	**(+23)**	638	161	187	88	0.99	3.67	7.15	1.80	2.10

E - PERFORMANCE - CURVES

TEST CONDITIONS: **ASHRAE32** (Condensing temperature **65ºC (+149ºF))**
@115V60Hz **Static**

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)**	6	2	2	4	0.08	0.03	0.23	0.06	0.07
-30	**(-22)**	84	21	25	25	0.37	0.48	1.94	0.49	0.57
-25	**(-13)**	165	42	48	44	0.59	0.94	3.24	0.82	0.95
-20	**(- 4)**	252	64	74	59	0.75	1.43	4.23	1.07	1.24
-15	**(+ 5)**	349	88	102	72	0.87	1.99	4.99	1.26	1.46
-10	**(+14)**	459	116	135	84	0.96	2.63	5.63	1.42	1.65
-5	**(+23)**	586	148	172	95	1.05	3.37	6.21	1.57	1.82

F - EXTERNAL CHARACTERISTICS

1 Base plate	Universal ES/FMS		
2 Tray holder	No		
3 Connectors			
3.1 SUCTION	8.2 +0.12/-0.08	[mm]	(0.323" +0.005"/-0.003")
3.1.1 Material	Copper		
3.1.2 Shape	Slanted 45° up		
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	Slanted 59° up		
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	Slanted 55° up		
3.4 Oil cooler (Copper)	No	[mm]	
3.5 Connector sealing	Rubber Plugs		