SCROLL COMPRESSOR
TECHNICAL DATASHEET: YS11E3G-100

Basic Specification	
Model	YS11E3G-100
Type	Low Side Scroll Compressor
Application	Medium Temp. Refrigeration
Power	1.5 HP
Refrigerant	R404
Displacement (CC/Rev)	25
Compressor Weight With Oil (Kg)	22
Oil Type	POE
Oil Kinematic Viscosity (cSt,40°F)	32
Oil Primary Charge (L)	0.85
Oil Recharge (L)	0.75
Rated Speed (r/min)	3530
IP Class Of Terminal Box	IP21
Compressor Colour	Black

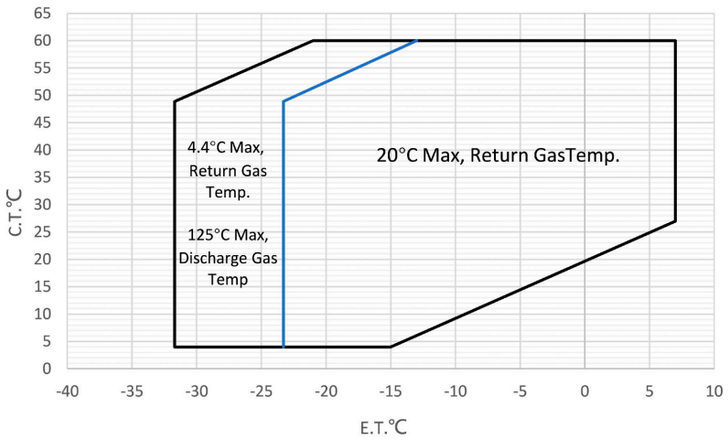
Performance Specifications	
Cooling Capacity (W)	3220±5%
Cooling Capacity (Btu/h)	10989±5%
Input Power (W)	1660±5%
Cooling COP (W/W)	1.94±5%
Cooling EER (BTU/Wh)	6.62±5%
Rated Operating Current (A)	7.3
Oil Circulation Rate(%)	≤1%
Rated Sound Power (dBA)	68
Max. Sound Power (dBA)	70
Max. Vibration Displacement (mm)	0.09

Test Condition	Rated Cooling	Oil Cirulation	Sound & Vibration
Evaporating Temp. (°C)	-6.7	-6.7	-6.7
Condensing Temp. (°C)	48.9	48.9	48.9
Suction Superheat (K)	25	25	25
Liquid Subcooling (K)	0	0	0
Ambient Temp. (°C)	35	35	35
Voltage (V)	230	230	230

Electric Parameters	
Motor Type	Single Phase Motor
Motor Poles	2
Power Supply	208~230V/1~/60Hz
Starting capacitor (μ F/V)	NO
Run capacitor (μ F/V)	40/450
Locked Rotor Current (A)	53.8
Max. Operating Current (A)	12
Motor Insulation Class	B
Line to Line Resistance (Ω,25°C)	main winding 1.125±7% secondary winding 1.751±7%
Lowest Starting Voltage (V)	187
Dielectric Strength	2000VAC / 1s / 50Hz or 60Hz leakage current≤2.5mA
Insulation Resistance (MΩ)	≥20
Ground Resistance (Ω)	≤0.1

Safety Operating Limitation	
Tightness Test Pressure (MPa)	3.8-4.0
High Side Max Running Pressure (MPa)	3.2
Low Side Max Running Pressure (MPa)	2.0
Discharge Temp. Limit (°C)	≤125 120mm to Compressor Discharge Connection And Well Insulated

Operating Envelope



Performance Data Sheet

- The performance parameters are based on the suction superheat of 11.1K and the condensation superheat of 0K within the operating range.
- The performance parameters for polynomial coefficient calculation are only applicable within the operating range.
- The heating capacity, cooling capacity, and power of the compressor can be calculated using polynomials.

Performance Table									
Item	E.T.(°C) / C.T.(°C)	-30	-25	-20	-15	-10	-5	0	5
Refrigeration capacity (W)	60			1159	1476	1866	2332	2881	3517
	55		1073	1371	1737	2178	2698	3303	3998
	50	956	1231	1572	1984	2473	3044	3702	4453
	45	1069	1382	1764	2219	2753	3371	4079	4882
	40	1181	1529	1947	2441	3017	3680	4435	5287
	35	1292	1671	2123	2654	3269	3973	4771	5670
	30	1403	1810	2293	2857	3508	4250	5089	6031
	25	1516	1949	2459	3053	3736	4513	5390	6371
	20	1633	2087	2622	3243	3955	4764	5675	
	15	1753	2226	2782	3427	4165	5003		
	10	1879	2368	2942	3607	4369			
	5	2012	2513	3103	3785				
Power (W)	60			1619	1698	1777	1853	1924	1987
	55		1412	1483	1553	1622	1686	1745	1794
	50	1239	1301	1364	1426	1485	1538	1584	1620
	45	1149	1205	1261	1314	1363	1405	1439	1460
	40	1070	1120	1169	1214	1253	1284	1305	1313
	35	1000	1044	1086	1123	1152	1172	1180	1175
	30	934	973	1008	1036	1056	1065	1061	1042
	25	871	904	932	952	962	961	944	911
	20	806	834	855	867	868	855	826	
	15	737	759	773	777	768	745		
	10	660	676	684	680	661			
	5	571	583	584	571				

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Ten term coefficient			
Expressio Polynomial expression	z = p0 + p1*x + p2*y + p3*x^2 + p4*x*y + p5*y^2 + p6*x^3 + p7*x^2*y + p8*x*y^2 + p9*y^3		
Explanation of physical quantities	z: Cooling capacity (W) or Power (W); W = W + W Special note: Heating capacity =Cooling capacity +Power x: Evaporating Temp. °C y: Condensing Temp. °C p0~p9: Polynomial coefficients		
Cooling	Value	Power	Value
p0	6681.613	p0	280.1491
p1	214.8596	p1	-17.5681
p2	-45.8716	p2	32.4411
p3	2.343237	p3	-0.46528
p4	-0.85429	p4	0.503098
p5	-0.18945	p5	-0.34282
p6	0.007091	p6	-0.00298
p7	-0.00985	p7	0.005317
p8	-0.01259	p8	0.000242
p9	-0.0017	p9	0.004311

» Explanation: The coefficients of the polynomial are based on the fitting results of a certain sample data, which can be used as a reference for compressor selection, but cannot completely replace user testing.
» Performance Data Sheet Is Based On Limited Compressor Tests and Data Treatment, It Is Only a Reference for Compressor Selection.
» Superheating of return gas temperature within Envelope is 11.1 K, and Liquid Subcooling is 0 K;

Compressor Protection
Motor Protector

Internal Protector For Motor Protection	
Open Temp.(°C)	90
Close Temp.(°C)	60
Short Time Trip (A)	45

High Pressure Relieve

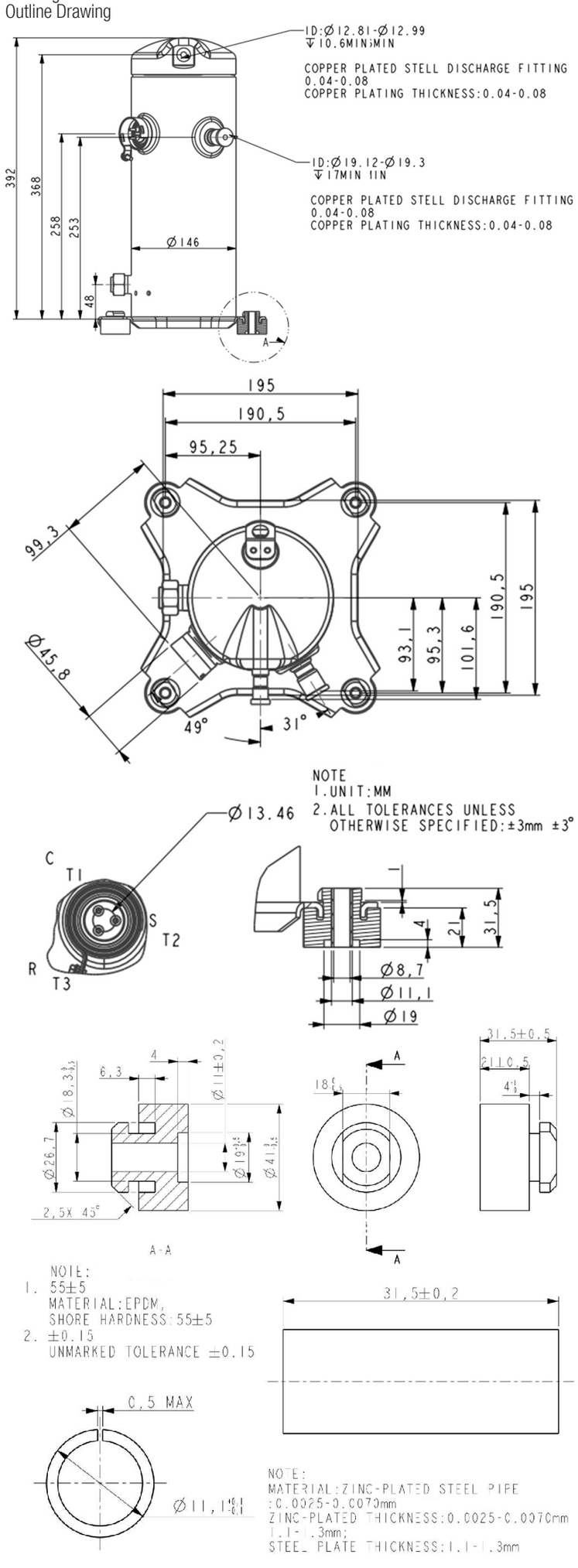
Internal Pressure Protection	
Open Pressure Of Relieve Valve (MPa)	NO

Accessory

Item	Drawing/Standard No.	Quantity
Grommet	070-0003-00	4
Sleeve	010-0014-00	4

Attentions
» It is not allowed to perform vacuum in the system by using the refrigeration compressor. The compressor can start only after the refrigerant is charged;
» It is not allowed to charge the refrigerant from the suction or discharge line closes to the compressor. The charge port should be arranged on the connection pipe of suction line accumulator or receiver, which is far away from the compressor, to avoid the liquid refrigerant flooding back;
» The refrigerant charge amount complies with local regulations;
» It is not allowed to run compressor in vacuum, not allowed to run compressor without refrigerant, and not allowed to run compressor in the reversed direction for long duration;
» The compressor can only work with approved refrigerants;
» The compressor is not allowed to work outside its envelope. System design should guarantee the suction line superheat and avoid the liquid refrigerant flooding back;
» When the suction and discharge plugs are removed, the assembly and brazing should be done in 15 minutes;
» The frequently start/stop compressor should be avoided. The suggested minimum continuous running time is 10 minutes to guarantee the safe oil level (>=50% initial charge volume), the suggested minimum interval between start and stop is 3 minutes.
» A 70W crankcase heater is recommended to avoid the refrigerant migration during the off circle and flooded start. The crankcase heater should be powered on 12 hours earlier before the first start or restart after long duration off;
» The system should be equipped with necessary protection devices for pressure, temperature, oil return, overcurrent and phase fault, etc.
» The compressor is not allowed to lay down or place upside down during transportation, stock and installation. The maximum inclination is 15° when the compressor is running.

Drawings
Outline Drawing



Application Guideline
» See Details in the YM serial MBP refrigerant scroll compressor application manual