
 INVOTECH	Invotech Scroll Compressor Specification
Comp Model	Water Heater Used Comp YW38J1-V100

\*1 Compressor Basic Performance Specification

Model	YW38J1-V100
Refrigerant	R134a
Cap(W) <sup>(a)</sup>	5238
Power Input (W) <sup>(a)</sup>	1247
Running Current (A) <sup>(a)</sup>	2.4
Coefficient Of Performance (COP) <sup>(a)</sup>	4.20
Rated Voltage (V)	380V
Phase/Hertz	3 P - 50 HZ
Lowest Running Voltage (V)	342
Highest Running Voltage (V)	418
Lock Rotor Current (A)	22
Highest Running Current <sup>(b)</sup>	5.0
Motor Speed (R/Min) <sup>(c)</sup>	2900
Comp Weight With Oil (kg)	29
Oil	POE (Coefficient Of Viscosity 32)
Oil Charge (First Charge, L)	1.40
(Recharge, L)	1.25
Lowest Voltage Start (V) <sup>(d)</sup>	323
MOV (V) <sup>(e)</sup>	342
Motor Insulation Temperature	130°C
Resistance (Ω) (25 °c)	6.7( ± 10%)
Insulation And Voltage Resistance (V)	2000
Leakage Current (mA)	<5
Insulation Resistance(MΩ)	>20
Ground Resistance(Ω)	<0.1
Oil Circulation (%) <sup>(f)</sup>	Less Than 1%
Sound (Sound Power) <sup>(g)</sup>	71
Maximal Vib (mm, Peak-Peak) <sup>(h)</sup>	<0.09
Maximal Moisture (mg)	< 500
Maximal Impurity (mg)	< 100
Highest Running Pressure	
High Side (Mpa)	3.0
Low Side (Mpa)	2.0

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NOTES:

- a) Test Condition: First Rated Running Point, EVI open
- b) Test Condition: ET:25°C, CT:85°C, Running Voltage @ 90% Rated Voltage, EVI close.
- c) Test Condition: 380V, 50HZ, First Rated Running Point
- d) Discharge Pressure / Suction Pressure = Refrigerant Saturation Pressure @40°C (Absolute Pressure) .
- e) Test Condition: Suction Pressure / Discharge Pressure = Refrigerant Saturation Pressure @25°C / Refrigerant Saturation Pressure @85°C, Superheat 11.9°C, Sub cooling 8.3°C
- f) Mass Flow Under First Rated Point
- g) Running @ First Rated Running Point, Average Of Sound Power , Maximal Sound Power Is Less Than 5dba Added.
- h) Running @ First Rated Running Point, Maximal Displacement Under Normal Direction When Compressor Running.

\*2 Standard Configuration:

- Ground Screw
- Welding Suction Fitting And Discharge Fitting
- Square Terminal Box Cover
- With gas Injection
- Without Oil Sight Glass
- Mount Kits(4 Sets)

\*3 Test Condition (380V, 50 HZ), Capacity And COP Is No Less Than 95% Normal Specification, Power And Current Is No More Than 105% Normal Specification (Performance And Sound Test Need 24hrs Break In Running At Max Load Running Condition <sup>(e)</sup>)

Seq	Parameter	First Rated Running Point
1	Evaporating T	7.2
2	Condensing T	54.4
3	Ambient T	35.0
4	Return Gas T	18.3
5	Superheat K	11.1
6	Sub cooling K	8.3

\*4 Internal Protection Parts

- Internal Motor Protector
- Internal Pressure Release Valve Protection  
Pressure Release Valve Open Range: 2.76--3.10Mpa

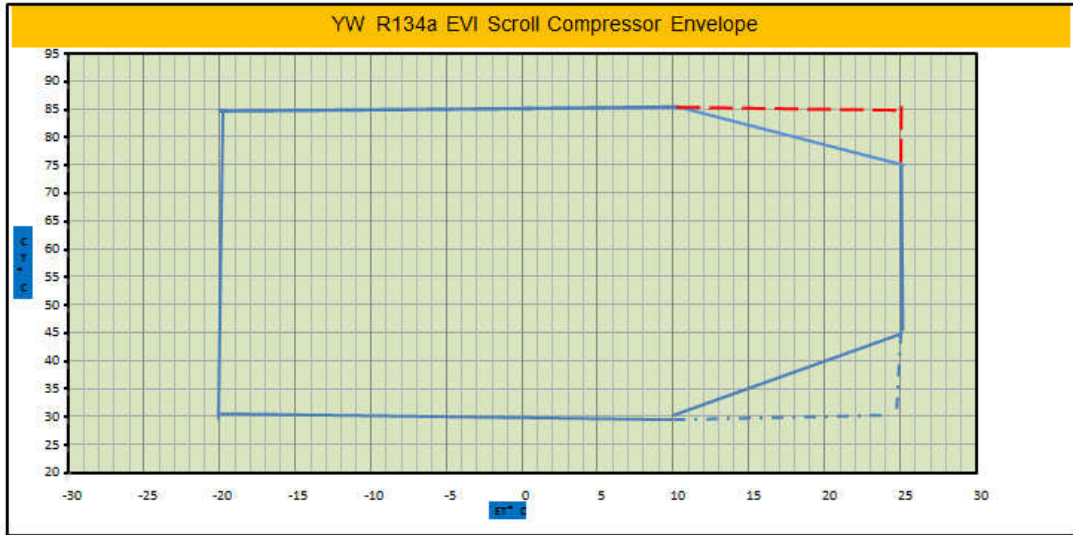


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## \*5 Compressor Running Envelop

In This Envelop, All Of The Test Condition Under The 11.1°C Superheat, 8.3°C Sub cooling.



## \*6 EVI Control Logic

1. System Superheat recommended 8K
2. EVI Control rule:

Discharge temperature  $\leq 112^\circ\text{C}$ , control injecting superheat=6K;

Discharge temperature  $> 112^\circ\text{C}$ , control injecting making Discharge temperature=112°C.

## \*7 Compressor Performance Sheet

Invotech YW38J1-V100 Scroll Compressor Performance Sheet											
		-20	-15	-10	-5	0	5	10	15	20	25
Heating Cap (Cooling Cap+Power)	80	2587	2751	3300	3830	4426	5148	5867	6673	6551	7453
	70	2703	2939	3389	3940	4528	5310	6082	6957	7939	9037
	60	2790	3068	3464	4016	4676	5392	6164	7048	8034	9127
	50	2760	3032	3514	4126	4786	5518	6344	7295	8350	9517
	40	2676	3004	3580	4218	4938	5733	6716	7752	8895	
	30	2590	3013	3642	4361	5166	6113	7163			
Power	80	1876	1895	2073	2078	2107	2190	2213	2251	2148	2272
	70	1398	1493	1573	1648	1697	1763	1809	1872	1959	2077
	60	1095	1234	1253	1322	1380	1429	1487	1563	1666	1803
	50	888	968	1027	1076	1122	1172	1231	1310	1418	1562
	40	765	808	858	899	936	975	1022	1091	1191	
	30	703	723	755	776	793	809	833			

Cap And Power Is Under 11.1°C Superheat, 8.3°C Sub cooling

X-axis Ordinate Is Evaporating T (°C), Y-axis Ordinates Is Condensing T (°C)

Blue area is transition only, pink area EVI close.