RIGID HVAC CO., LTD

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SPECIFICATION

Product：Free Piston Stirling Cooler (FPSC)

Model No.：RS80 (80W)

Spec No.：RJT001403

Specification		File No.	
Model No	RS80 FPSC	Version	A/1
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1. Applications
1-1：This specification applies to all Rigid's RS80 Free Piston Stirling Cooler (FPSC)
1-2：RIGID reserves all the rights for amendment and the final explanation.

2.Major Specifications	
Item	Specs
2-1:Cooling type	Free Piston Stirling Cooler (FPSC)
2-2:Refrigerant	Helium 3.0g
2-3:Cooler Size	ODφ86mm×Length270mm
2-4:N.W.	3.5 kgs
2-5:Pressure for refrigerant injection	3.0Mpa (@20°)
2-6:Power Supply	80.0HZ AC 2.0～16.0V 9A(RMS)
2-7:Low Temp Range	-120℃～-20℃
2-8:High Temp Range	0℃～60℃
2-9:Installation	Any direction is workable
2-10:Working Life	≧10000 hours
2-11:Working Ambient Temp	0℃～45℃

3.Electrical Specifications

Item	Specs
3-1:Drive Frequency	80.0HZ
3-2:Motor Type	Linearly Motor
3-3:Insulation Grade	E
3-4:Insulation Resistance	DC500V ＞10MΩ
3-5: Withstand Voltage	1250V/3S ≤0.5mA
3-6:Power Input	DC24V 6A(RMS)

4. Cooling Capacity

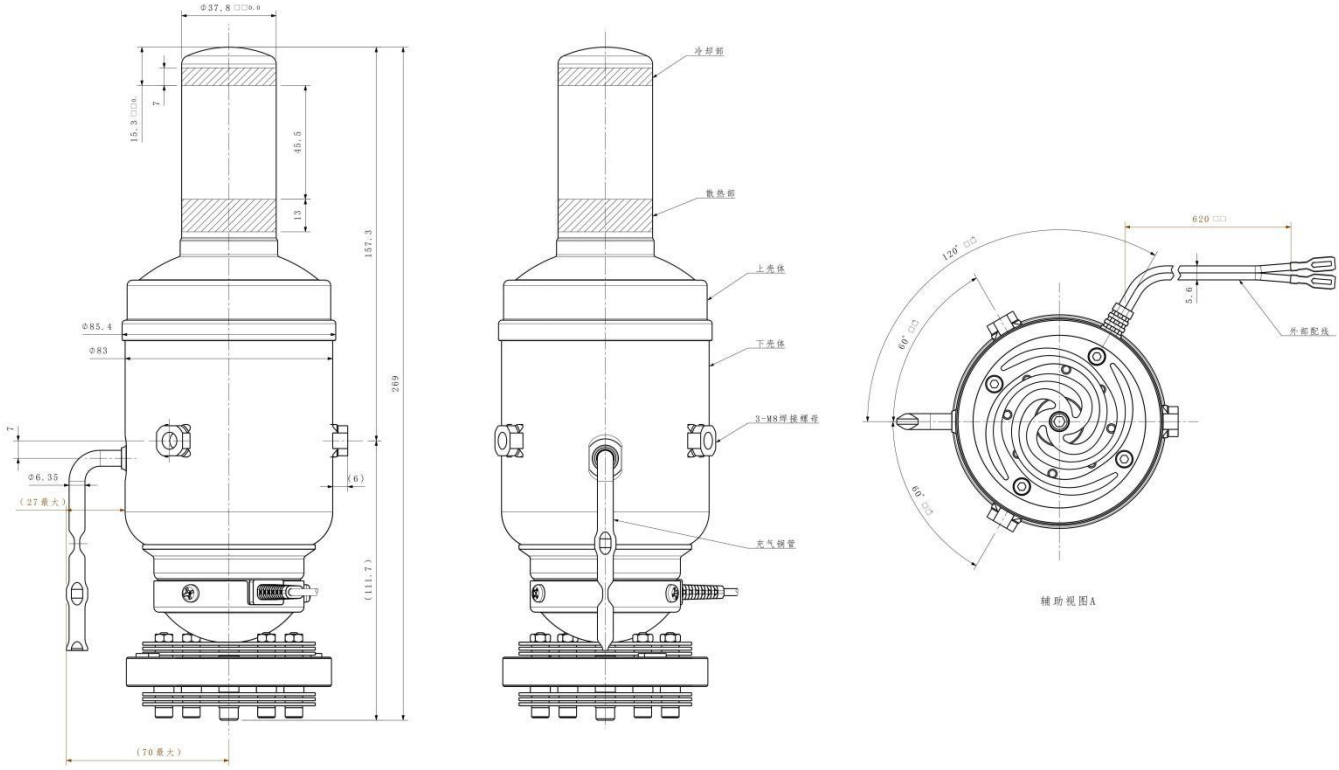
Item	Max	Rated	Min	Note
4-1: Cooling Capacity	80W	55W	5W	/
4-2: Power Input	80W	80W	8W	/
4-3: COP	COP≥0.9 W/W Test Condition Cold Part Temp LBP：-23.3℃ (Evaporator) Heat Sink Temp HBP：35.0℃ (Condenser)			
4-4: Notes	COP data is subject to change according to different test condition.			

5. Mechanical Characteristics	
Item	Specs
5-1:Noise	≤48dB
5-2:Vibration	≤10um
5-3:Shock Resistance	10G
5-4:Shell Compressive Strength	Under 15MPa, No Leaks
5-5:Protection Device	Impedance Protection

6. **Environmental Specification**	
Item	Spec
6-1:Allowance of Operation Temp Range	（1）LBP Cooling: -120℃～-20℃
	（2）HBP Heating: 0℃～60℃
	（3）Ambient Temp: 0℃～35℃
	（4）Humidity: 5～90%RH
6-2: Storage Temperature Range	（1）Temp: -10℃～+50℃
	（2）Humidity: 5～90%RH

7. **Packing**	
Item	**Spec**
7-1:Individual Carton	Foamed Polystyrene
7-2:Size	Pending
7-3:Qty per Carton	8pcs

8. External Dimension



9.Attentions

(1)Disassemble this product is forbidden.

(2)Prevent burns and scratches when taking the heat sink, it tempts to be prone to accidents and injuries. Be aware to avoid heat sink deformation and damage at the same time.

(3）When the Stirling cooler has abnormal sound, adjust the rated voltage to reduce the output power of the cooler. Second, check bolts if they are loose; If problem can not be solved, it is faulty cooler and should be replaced.

(4)Do avoid strong impact on Stirling cooler, which will cause motor failure; It also causes coolant helium leakage if cooler falling to floor, especially cause copper tube leaks.

(5)Do not spray water on the electric circuit board of Stirling refrigerator.

(6)Close to the furnace or any fire source is forbidden, which may cause trouble.

(7)Do not put the Stirling cooler in the fire. It may explode due to the expansion of the internal gas.

(8)Do not pull hard on the power cord, or it may cause short circuit.

(9)The heating parts and the circuit board are at state of a high temperature during or after the operation. Do not touch these parts with your hands, it may burn.

(10)The cooling parts/evaporator is at state of a ultra low temperature during or after the operation. Do not touch these parts with your hands, it may cause frostbite.

(11)Please make sure better insulation for cooling part, as the evaporator of Stirling cooler is easy to get frozen. If evaporator get frozen, please turn the cooler off and wipe evaporator with a soft cloth. Frosting or dewing will reduce cooler's cooling performance.Moreover, condensate flows into power lines may cause a short circuit, or lead to rust.

(12)The cooling part (evaporator) of the Stirling refrigerator is made of light steel. It has precise internal structure. Therefore, do not take the cooling part by force.

(13)The high-pressure gas is sealed inside Stirling cooler, please take good care of waste gas or returned to the supplier.