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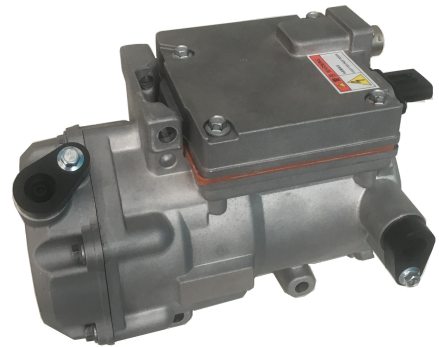
上海本菱涡旋压缩机有限公司 (BLSC)
SHANGHAI BENLING SCROLL COMPRESSOR LTD.,

技术规格书 Technical specification

型号 Type: DM27A1-*****

客户 Customer: _____
审核 Approved: _____

生产商 Manufacturer: <u>BLSC</u>
审核 Drafter: _____
审核 Approved: _____



文件编号 No. WRDT27101

Dec-31-2017		A0	
初发日期 Release date	更新日期 Update date	版本 Version	附注 Note

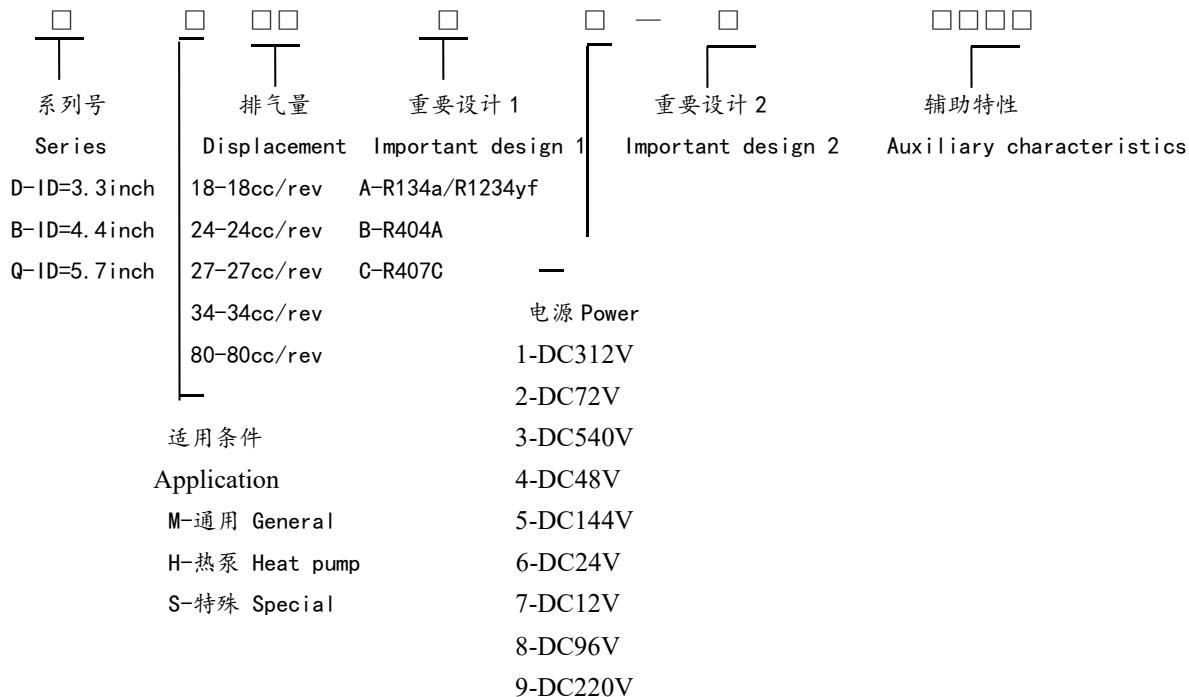


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1. 压缩机机型代号 Compressor type code



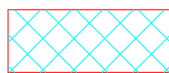
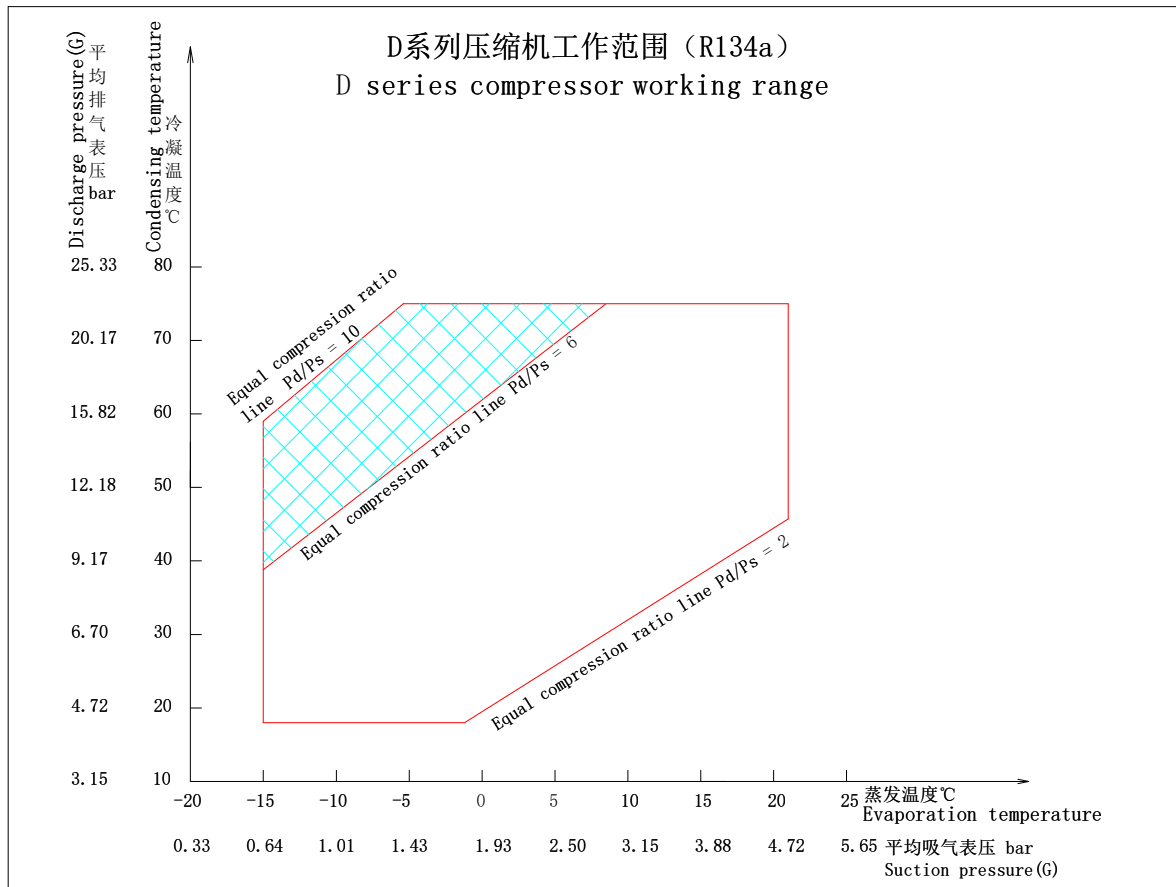
2. 压缩机的制冷测试工况如下： Compressor test conditions are listed below：

压缩机转速 Compressor rotated speed (RPM)	电压 Voltage DC (V)	排气压力 Discharge pressure (MPa) (G)	吸气压力 Suction pressure (MPa) (G)	过热度 Super heating (°C)	过冷度 Super cooling (°C)
n× (1±1%)	Un× (1±5%)	1.47±0.02	0.196±0.005	10±1	5±0.5

3. 压缩机的基本性能： Compressor basic performance

项目 Issue	3000RPM	4000RPM	6000RPM
制冷量 (W) R134a Refrigerating capacity	2150	2900	4600
输入功率 Input power (W)	1100	1490	2300
制冷系数 COP	1.95	1.95	2.00
噪声 dB (A) R134a Sound power level	67	70	76
适用冷媒 Refrigerate	R134a/R1234yf		
额定电压 DC (V) Rated voltage	312		
绝缘电阻 (MΩ) Insulated resistance	20		
耐电压与泄漏电流 Hi-pot and Leakage current	<20 mA (2.0 KV)		
密封性 tightness	<14 g / year		

4. 压缩机的工作压力范围：Compressor running pressure range

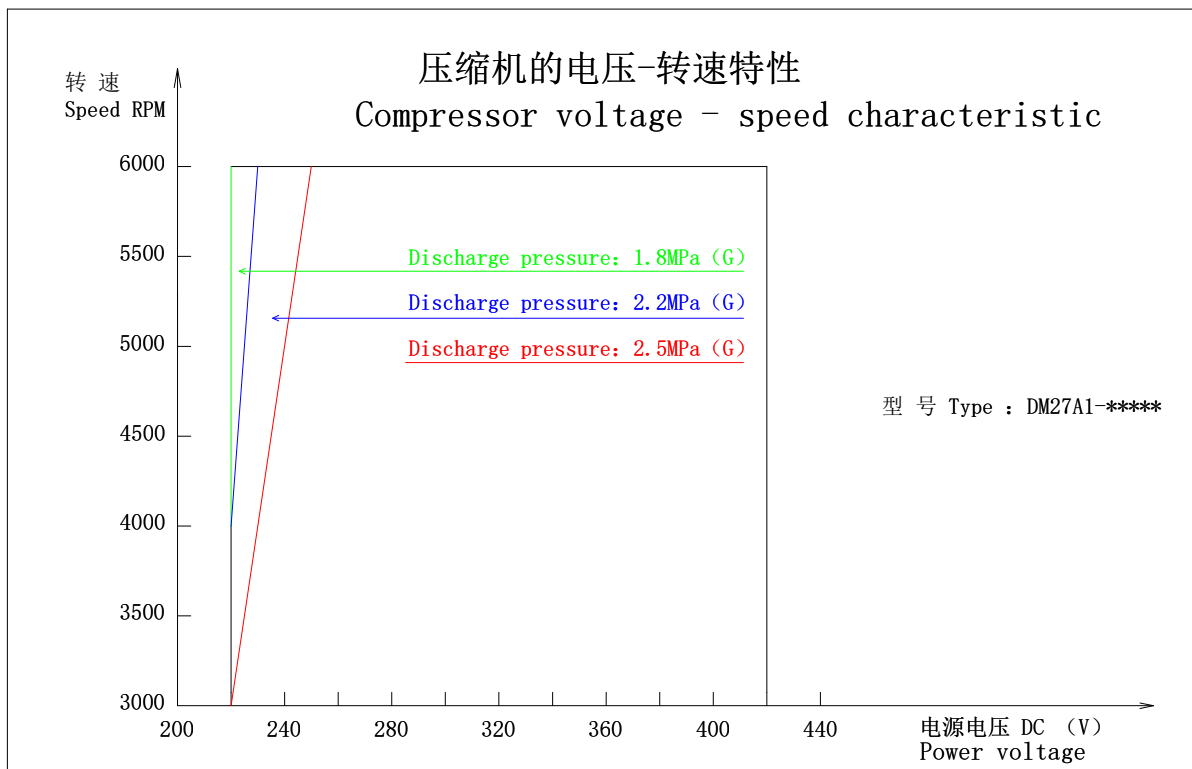


过热度 Sh: 3-8°C



过热度 Sh: 3-12°C

5. 压缩机的电压-转速特性：Compressor voltage - speed characteristic



6. 压缩机参数表: Compressor parameter

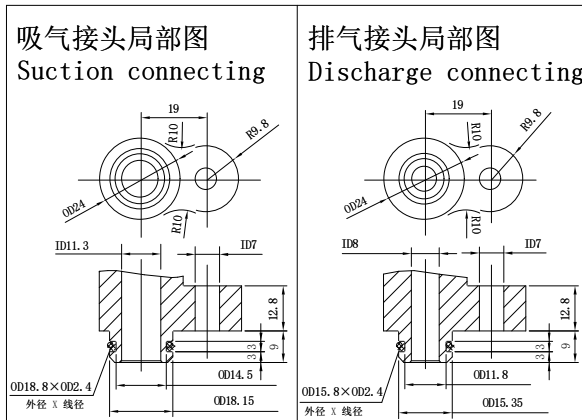
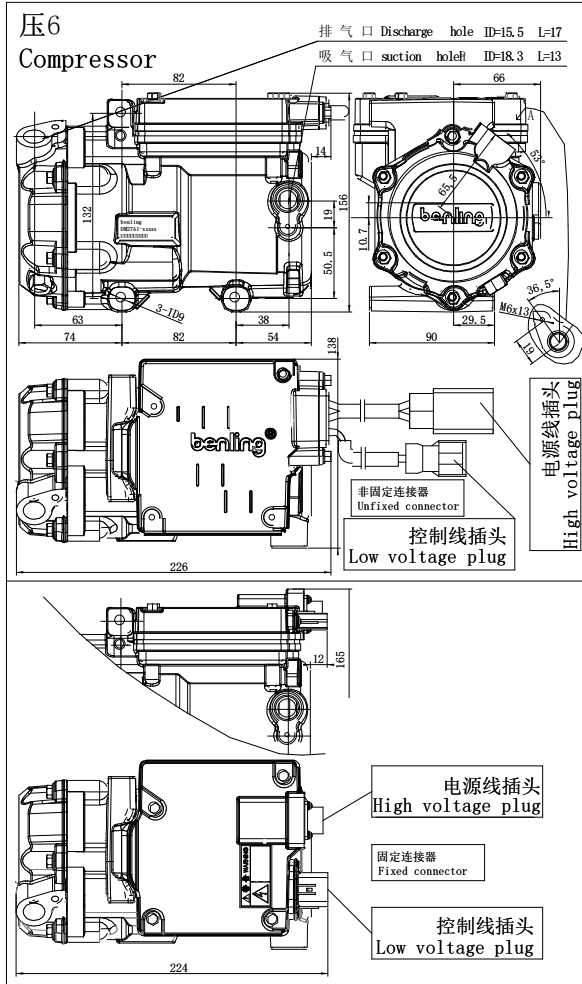


压缩机单体电源 Power: DC 312V

电动涡旋汽车空调压缩机参数表

Compressor parameter table

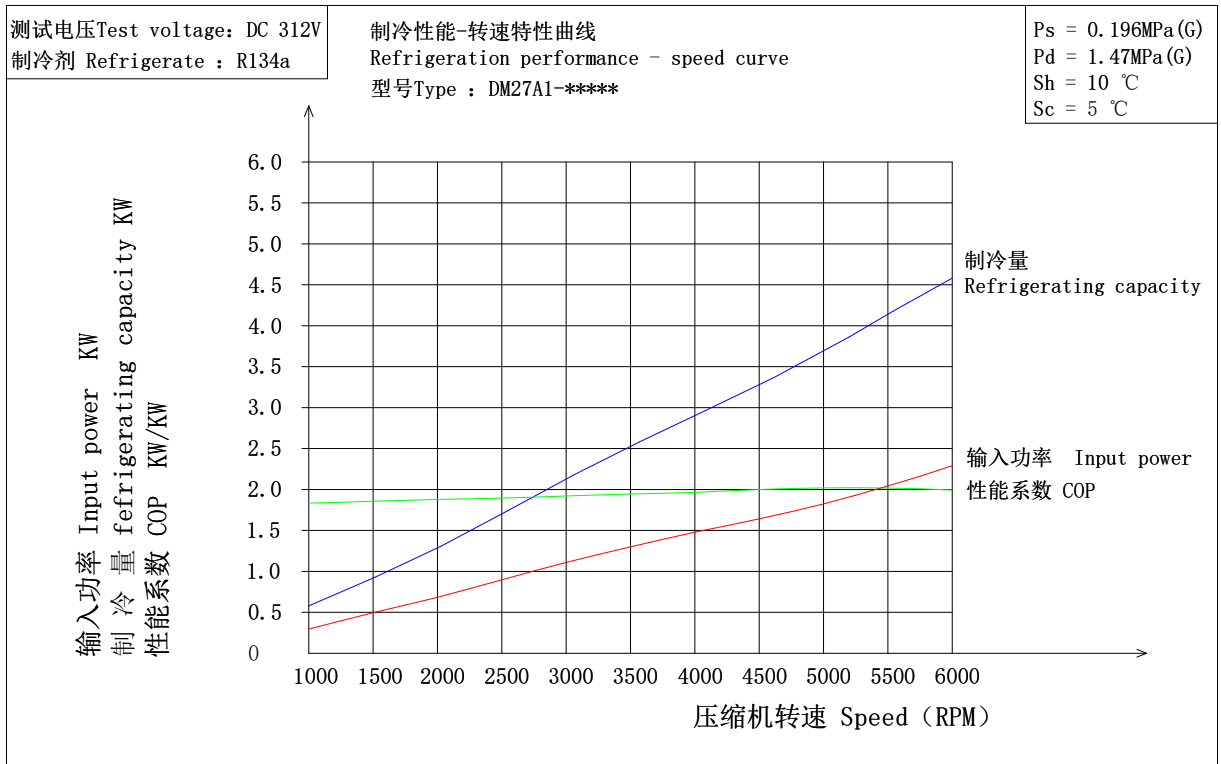
型 Type : DM27A1-*****



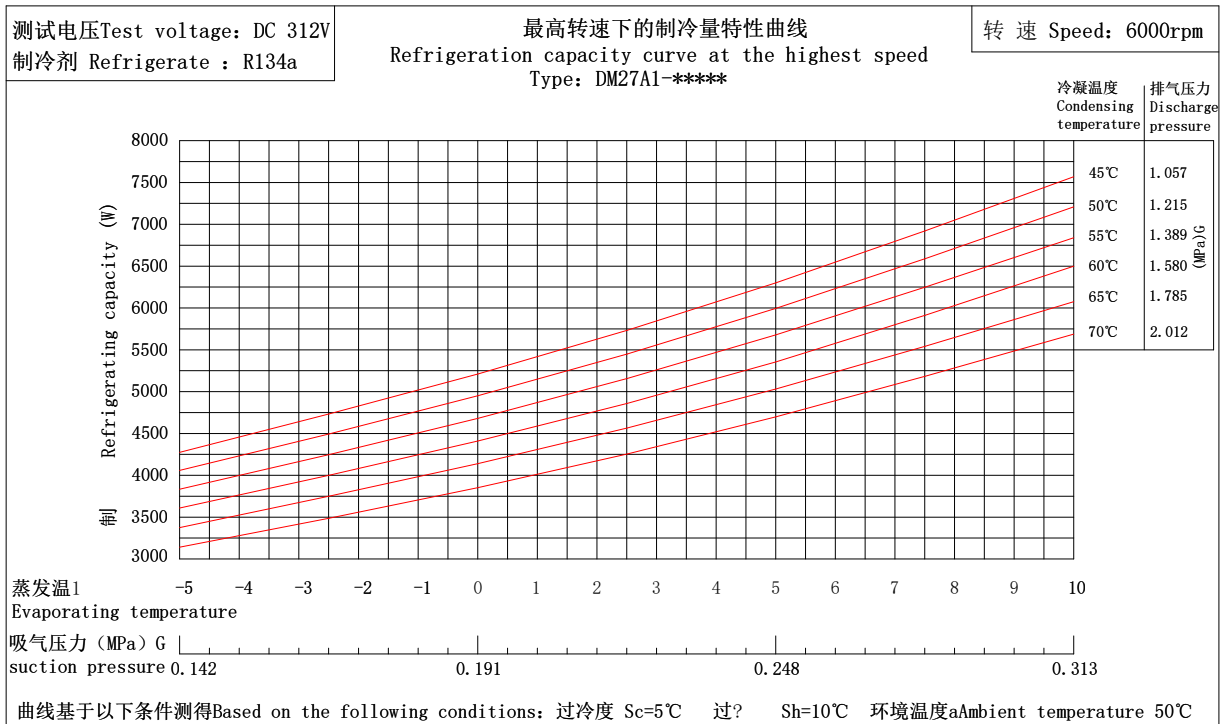
设计压力 Design pressure	
High pressure side 3.5MPa	Low pressure side 1.6MPa

基本性能 performance	
最大制冷量 Refrigerating capacity (Max)	4.6 KW 15700 BTU/hr
输入功率 Input power	2.30 KW
电流 Current	7.4 A
测试条件 Test conditions	Pd/Ps=1.47/0.196MPa(G) SC=5°C SH=10°C n=6000rpm
应用范围 Application range	
蒸发温度 Evaporating temperature	- 15 °C ~ + 21 °C
冷凝温度 Condensing temperature	+ 18 °C ~ + 75 °C
压缩比 Compression ratio	10.0 MAX
压缩机启动环境温度 Starting ambient temperature	- 40 °C ~ + 70 °C
压缩机工作环境温度 Running ambient temperature	- 40 °C ~ + 100 °C
参数 Parameter	
排气量 Displacement	27.0 cc/rev
重量 Net weight	6.3 Kg
注油量 Oil charge	120 cc
转速范围 Speed range	1000rpm~6000rpm
安全阀泄压压力 Relief pressure	4.0 MPa(G)
外壳防护等级 Protection grade	IP 67
电机参数 Motor parameter	
电机类型 Motor type	永磁同步 PMSM
额定转矩 Rated torque	3.5 Nm
最大转矩 Maximum torque	6.0 Nm
驱动器参数 Driver parameter	
最大功率 Maximum input power	3700 W
工作频率 frequency	15Hz ~ 120Hz
过温保护 Overtemperature protection	100 °C
欠压保护 Undervoltage protection	220 V
过压保护 Overvoltage protection	420 V
软硬件过载保护 Overload protection	有 Yes
通讯方式 Communication	
1. PWM 2. CAN	

7. 压缩机的制冷量-转速特性: Compressor refriterating capacity - speed curve



8. 最高转速下的制冷量曲线: Refrigeration capacity curve at the highest speed



9. 制冷量表：Refrigerating capacity table (R134a)

型号 Type : DM27A1		冷媒 Refrigerant : R134a												
本菱压缩机参数表 BENLING COMPRESSOR PARAMETER														
制冷量 Cooling Capacity								BTU/hr (K watt)						
蒸发温度 Evaporator Temperature														
RPM	-10° F (-23° C)	10° F (-12° C)	20° F	30° F	40° F	45° F	55° F	(-1° C)	4° C	7° C	13° C	13° C	13° C	
2000	1870	0.55	3043	0.89	3758	1.10	4823	1.41	5858	1.72	6593	1.93	7971	2.34
3000	2865	0.84	4662	1.37	5757	1.69	7389	2.17	8975	2.63	10101	2.96	12213	3.58
4000	3958	1.16	6441	1.89	7954	2.33	10208	2.99	12399	3.64	13955	4.09	16872	4.95
5000	5062	1.48	8238	2.42	10173	2.98	13056	3.83	15859	4.65	17850	5.23	21581	6.33
6000	6144	1.80	9998	2.93	12347	3.62	15846	4.65	19247	5.64	21663	6.35	26191	7.68
输入功率 Power Consumption (312V) - K watt								电流 Current (312V) - Amp						
蒸发温度 Evaporator Temperature														
RPM	-10° F	10° F	20° F	30° F	40° F	45° F	55° F	-10° F	10° F	20° F	30° F	40° F	45° F	55° F
2000	0.48	0.68	0.76	0.81	0.84	0.85	0.88	1.5	2.2	2.4	2.6	2.7	2.7	2.8
3000	0.71	1.00	1.12	1.20	1.24	1.25	1.30	2.3	3.2	3.6	3.8	4.0	4.0	4.2
4000	0.91	1.28	1.43	1.54	1.58	1.60	1.66	2.9	4.1	4.6	4.9	5.1	5.1	5.3
5000	1.12	1.58	1.76	1.89	1.95	1.97	2.05	3.6	5.1	5.7	6.1	6.2	6.3	6.6
6000	1.30	1.84	2.06	2.21	2.28	2.30	2.39	4.2	5.9	6.6	7.1	7.3	7.4	7.7
制冷系数 COP (BTU/hr)/W (W/W)														
蒸发温度 Evaporator Temperature														
RPM	-10° F (-23° C)	10° F (-12° C)	20° F	30° F	40° F	45° F	55° F	(-1° C)	4° C	7° C	13° C	13° C	13° C	
2000	3.90	1.14	4.49	1.32	4.96	1.45	5.94	1.74	7.00	2.05	7.78	2.28	9.07	2.66
3000	4.05	1.19	4.66	1.37	5.15	1.51	6.16	1.81	7.26	2.13	8.08	2.37	9.41	2.76
4000	4.37	1.28	5.03	1.48	5.55	1.63	6.65	1.95	7.84	2.30	8.72	2.56	10.16	2.98
5000	4.54	1.33	5.23	1.53	5.77	1.69	6.91	2.03	8.14	2.39	9.05	2.66	10.55	3.09
6000	4.71	1.38	5.43	1.59	5.99	1.76	7.17	2.10	8.45	2.48	9.40	2.76	10.96	3.21

注：环境温度35° C，吸气温度18.33° C，过冷度8.33° C，冷凝温度54.4° C
 note : * all points are at 35° C (95° F) ambient temperature, 18.33° C (65° F) suction, 8.33° C (15° F) subcooling, 54.4° C (130° F) condenser

10. 制冷量表：Refrigerating capacity table (R1234yf)

型号 Type : DM27A1		冷媒 Refrigerant : R1234yf												
本菱压缩机参数表 BENLING COMPRESSOR PARAMETER														
制冷量 Cooling Capacity								BTU/hr (K watt)						
蒸发温度 Evaporator Temperature														
RPM	-10° F (-23° C)	10° F (-12° C)	20° F	30° F	40° F	45° F	55° F	(-1° C)	4° C	7° C	13° C	13° C	13° C	
2000	1852	0.54	2938	0.86	3590	1.05	4554	1.34	5475	1.61	6129	1.80	7324	2.15
3000	2857	0.84	4525	1.33	5524	1.62	6997	2.05	8412	2.47	9411	2.76	11212	3.29
4000	3962	1.16	6264	1.84	7645	2.24	9680	2.84	11634	3.41	13012	3.82	15549	4.56
5000	5077	1.49	8023	2.35	9790	2.87	12391	3.63	14874	4.36	16640	4.88	19883	5.83
6000	6270	1.84	9848	2.89	11989	3.52	15157	4.45	18199	5.34	20357	5.97	24326	7.13
输入功率 Power Consumption (312V) - K watt								电流 Current (312V) - Amp						
蒸发温度 Evaporator Temperature														
RPM	-10° F	10° F	20° F	30° F	40° F	45° F	55° F	-10° F	10° F	20° F	30° F	40° F	45° F	55° F
2000	0.54	0.73	0.79	0.82	0.85	0.86	0.89	1.7	2.3	2.5	2.6	2.7	2.8	2.8
3000	0.79	1.07	1.16	1.23	1.25	1.26	1.32	2.5	3.4	3.7	3.9	4.0	4.0	4.2
4000	1.02	1.36	1.49	1.56	1.59	1.61	1.68	3.3	4.4	4.8	5.0	5.1	5.2	5.4
5000	1.24	1.67	1.82	1.92	1.97	2.00	2.07	4.0	5.4	5.8	6.1	6.3	6.4	6.6
6000	1.46	1.96	2.13	2.24	2.29	2.32	2.42	4.7	6.3	6.8	7.2	7.4	7.4	7.8
制冷系数 COP (BTU/hr)/W (W/W)														
蒸发温度 Evaporator Temperature														
RPM	-10° F (-23° C)	10° F (-12° C)	20° F	30° F	40° F	45° F	55° F	(-1° C)	4° C	7° C	13° C	13° C	13° C	
2000	3.46	1.01	4.04	1.19	4.56	1.34	5.57	1.63	6.46	1.89	7.14	2.09	8.24	2.42
3000	3.62	1.06	4.23	1.24	4.75	1.39	5.71	1.68	6.75	1.98	7.49	2.20	8.50	2.49
4000	3.89	1.14	4.59	1.35	5.14	1.51	6.22	1.82	7.33	2.15	8.09	2.37	9.26	2.72
5000	4.08	1.20	4.79	1.41	5.36	1.57	6.47	1.90	7.57	2.22	8.34	2.45	9.63	2.82
6000	4.28	1.26	5.02	1.47	5.63	1.65	6.78	1.99	7.93	2.33	8.76	2.57	10.04	2.95

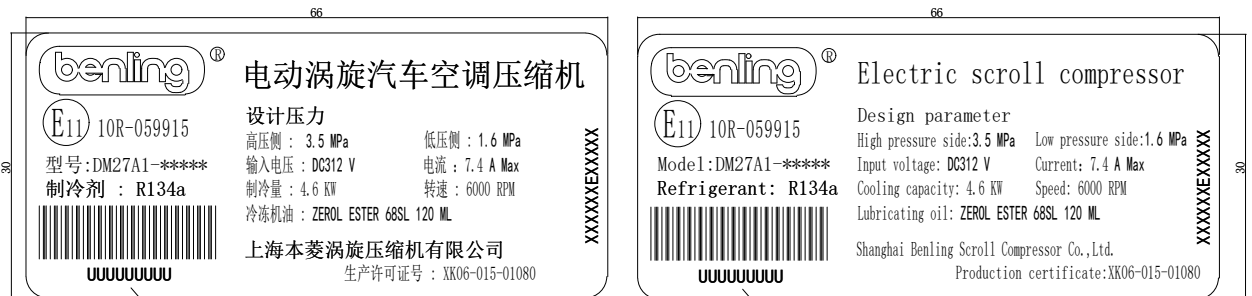
注：环境温度35° C，吸气温度18.33° C，过冷度8.33° C，冷凝温度54.4° C
 note : * all points are at 35° C (95° F) ambient temperature, 18.33° C (65° F) suction, 8.33° C (15° F) subcooling, 54.4° C (130° F) condenser

11. 特别说明：Special description

- 请在压缩机的工作范围内使用，以保证压缩机的正常工作，
- 压缩机内充注有干燥的氮气，在拔除压缩机的管塞时压缩机应处于水平位置，先拔出排气管塞，后拔出吸气管塞，以防止冷冻机油喷出，并建议尽快完成吸排气管的安装并开始抽真空。

- 加注制冷剂前，系统进行抽真空处理，真空度达到-0.095MPa 下保持 5 分钟后再加注制冷剂，加注时请从压缩机的排气管加注。
 - 新的压缩机内已有冷冻机油，不需要补加，不建议更换压缩机的冷冻机油的种类，且不建议不同品牌的冷冻机油混合使用。
 - 安装管路时请保持清洁，避免异物进入管路。
 - 禁止压缩机不加注制冷剂的情况下连续空载运行，否则会损坏压缩机。
 - 供电侧前端请设置预充电电路，建议预充电电阻 50Ω/20W，预充电时间不小于 0.2 秒。
 - 供电侧如果设置了快熔保险该保险的规格建议按照 40A 或以上配置。
 - 高低压电源的极性不可反接，否则有损坏压缩机的可能。
-
- Please use within the working area of the compressor to ensure the normal operation .
 - The compressor is filled with dry nitrogen. When removing the compressor plug, the compressor should be in a horizontal position, First pull out the exhaust pipe plug, then pull out the suction pipe plug, in order to Prevent the freezer oil from spraying. It is recommended that the suction and exhaust pipe should be installed and vacuuming started as soon as possible.
 - Before filling refrigerant, The system needs to be vacuum treated , the degree of vacuum reaches -0.095MPa for 5 minutes and then add refrigerant, when filling, please add from the compressor exhaust pipe.
 - The new compressor has freezer oil inside already , no need to add. It is not recommended to replace the type of compressor oil , and does not recommend the use of different brands of frozen oil mixed.
 - Please keep clean when install the pipeline ,Avoid foreign matter into the pipeline.
 - It is forbidden to operate the compressor continuously without add refrigerant , otherwise it will damage the compressor.
 - Please set the pre-charging circuit on the front of the power supply side . It is recommended that the pre-charging resistor be 50Ω / 20W and the pre-charging time be not less than 0.2 seconds.
 - If Fast-Fusing Insurance is set on the Power Supply Side, The insurance specifications are recommended in accordance with the configuration of 40A or above.
 - High and low voltage power polarity can not be reversed, otherwise there may damage the compressor.

12. 标签: Lable



条形码说明:

UU UU UU UUU
 年 月 日 序列号

Bar code description

UU UU UU UUU
 Year Month Day Serial number