

The logo for Krube, featuring the word "Krube" in a bold, black, sans-serif font with a stylized orange and blue graphic element to the right of the letters. The logo is enclosed in a white circle with a blue border.

**Krube**

规格书

SPECIFICATION

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**MODEL**

**K-AC146-D220-12**

## 1. 风机规格 Fan model:

- 1.1 电机型号 Motor Type: K-AC146-D220-12
- 1.2 额定电压 Rated voltage: 220V
- 1.3 额定频率 Rated frequency: 50Hz
- 1.4 绝缘等级 Insulation Class: B
- 1.5 运行方式 Mode of operation: 连续工作制 continuous duty
- 1.6 极数 Pole: 4 极 poles
- 1.7 额定电容 Rated capacitor: 4  $\mu$ F/450VAC
- 1.8 旋转方向 Rotation Direction:  
从转子端看, 顺时针方向旋转 CW viewing from rotor side.
- 1.9 输入功率 Input power: 105/75/60W $\pm$ 12%
- 1.10 额定转速 Rated speed: 1200/900/550r/min $\pm$ 12%
- 1.11 额定电流 Rated current: 0.48/0.39/0.32 A $\pm$ 12%
- 1.12 温度保护装置 Temperature protection device: STO1 125 $^{\circ}$ C (或同规格其它品牌型号)
- 1.13 结构型式 Construction: 外转子 External rotor
- 1.14 防护等级 IP degree: IP44
- 1.15 重量 Weight: 3.4KG
- 1.16 动平衡精度等级 Balancing degree: G6.3
- 1.17 储藏环境温度 Storage ambient temperature: -30 $^{\circ}$ C  $\sim$  +70 $^{\circ}$ C,  
相对湿度 relative humidity: 70%, 通风良好 with good ventilation.
- 1.18 使用寿命 Operation life:  
正常情况下大于等于 25000 小时 By normal operation, more than 25K hours.

## 2. 电机特性 Motor characteristic

### 2.1 线圈电阻(环境温度 20 $^{\circ}$ C )

Winding resistance(ambient temperature 20 $^{\circ}$ C)

引出线颜色 Cable color	线圈电阻(欧姆) Winding resistance	容差 Tolerance
黑—兰/Black-Blue	157.0	$\pm$ 10%
兰—灰/Blue -Gray	69.6	$\pm$ 10%
灰—棕/Gray—Brown	47.0	$\pm$ 10%
棕—白/Brown—White	39.0	$\pm$ 10%

### 2.2 负载特性(环境温度 25 $^{\circ}$ C ) Load characteristic (ambient temperature 25 $^{\circ}$ C)

档 位 Level	电 压/V Voltage	频 率/Hz Frequency	电 流/A Current	输入功率/W Power Input	转 速/r/min Speed	风量/m <sup>3</sup> /h Air Volume
H	220	50	0.48 $\pm$ 12%	105 $\pm$ 12%	1200 $\pm$ 12%	750 $\pm$ 12%
M	220	50	0.39 $\pm$ 12%	75 $\pm$ 12%	900 $\pm$ 12%	560 $\pm$ 12%
L	220	50	0.32 $\pm$ 12%	60 $\pm$ 12%	550 $\pm$ 12%	350 $\pm$ 12%

### 3. 技术要求 Technical Requirements

#### 3.1 绝缘电阻 Insulation resistance

电机定子绕组在热态或温升试验后,其对机壳绝缘电阻应不低于  $100\text{M}\Omega$  ,电机湿热试验后, 绝缘电阻不低于  $10\text{M}\Omega$  。

After the motor stator and winding get heated, or after the temperature rise test, its motor housing insulation resistance is not less than  $100\text{M}\Omega$ . And motor insulation resistance is not less than  $10\text{M}\Omega$  after humidity heat test.

#### 3.2 电气强度 Electrical strength

定子绕组与机壳间外加 50Hz 近似正弦波的电压 1500V 持续 1min 或 1800V 持续 1S 无击穿闪烁现象(泄露电流小于 5mA);在潮态时,应经受 1275V,持续 1min 无击穿闪烁现象。

With a force from 50Hz, 1500V voltage similar like sine wave for a duration of 1 minute, or 1800V continuously for a second, stator winding has no disruptive spark (Current leakage less than 5mA); In the humidity environment, the motor can withstand 1275V, and no disruptive spark for a minute.

#### 3.3 匝间绝缘试验 Turn to turn test

电机定子绕组应能承受匝间绝缘耐冲击电压试验而无击穿, 试验电压(峰值)为 1800V。

Motor stator winding can withstand turn-to-turn test and Impact resistance voltage test without breakdown impact. Test voltage(peak value) is 1800V.

3.4 电机在实际冷态和热态稳定后, 额定频率下施加 90%-110%额定电压, 带实际负载应能正常起动 (不含中、低档)。

After the actual cold and hot state, and motor become stable, under the rated frequency and rated voltage 90-110%, motor is able to start correctly under actual load(not include middle and low speed).

#### 3.5 温升试验 Temperature rise test

在额定电压, 额定频率(环境温度不超过  $40^{\circ}\text{C}$ )带实际负载运行, 热稳定后绕阻温升(电阻法)不超过 80K。

Under rated voltage, rated frequency(ambient temperature not more than  $40^{\circ}\text{C}$ ) and with actual load, after heat state, temperature rise less than 80K.

#### 3.6 电压波动特性 Voltage fluctuation characteristic

在额定频率下, 当外加电压在额定电压的  $\pm 10\%$  范围内波动时, 电机仍能正常启动 (不含中、低档), 无异常。

Under rated frequency, if the voltage fluctuate in the range of  $\pm 10\%$ , motor is still able to start correctly (not include middle and low speed).

### 3.7 噪声 Noise

风机在空载运转时（0Pa）距离风机进风口 1 米时测得的 A 计权声压级的噪声值为≤66dB。

In no-load operation(0Pa), noise level less than 66dB in the distance of 1 meter from fan inlet.

### 3.8 风轮径向跳动和端面跳动不大于 1mm。

Fan radial and end face runout are not more than 1mm。

### 3.9 外观 Aspect

各部位无划伤，脏污，锈斑；接插件牢固，无松脱；线色符合要求，铭牌清晰正确，粘贴牢固。

No scratch, dirty spot, rusty spot; Secure connector. Right wire color. Clean and right label, stucked securely.

## 4. 使用条件 Operation condition

4.1 环境温度 Ambient temperature: -25℃ ~ +40℃

4.2 相对湿度 Relative humidity : ≤80%

## 5.主要零件材料

### Main component material

项 目 Item	材 料 Material
硅钢片 Silicon lamination	B50A600
定子座 Stator housing	压铸铝合金 casting aluminium
漆包线 lacquered wire	漆包铜圆线 155℃或以上 round copper wire (≥155℃)
轴 Shaft	3Cr13
引出线 Cable	七芯护套线
轴承 Bearing	

6.未尽事宜依据:

All the other technical items not mentioned are in conformity with:

GB/T 5171-2002

《小功率电动机通用技术条件 General technical requirements for small power motors》

GB /T 12350-2009

《小功率电动机的安全要求 Small power motors safety requirements》

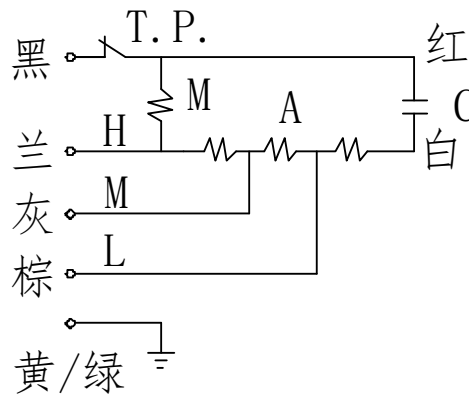
7、构造 Construction

1) 其他外观构造参照附加图面。

Other outer construction please refer to the attached picture:

接线原理图

Wiring diagram



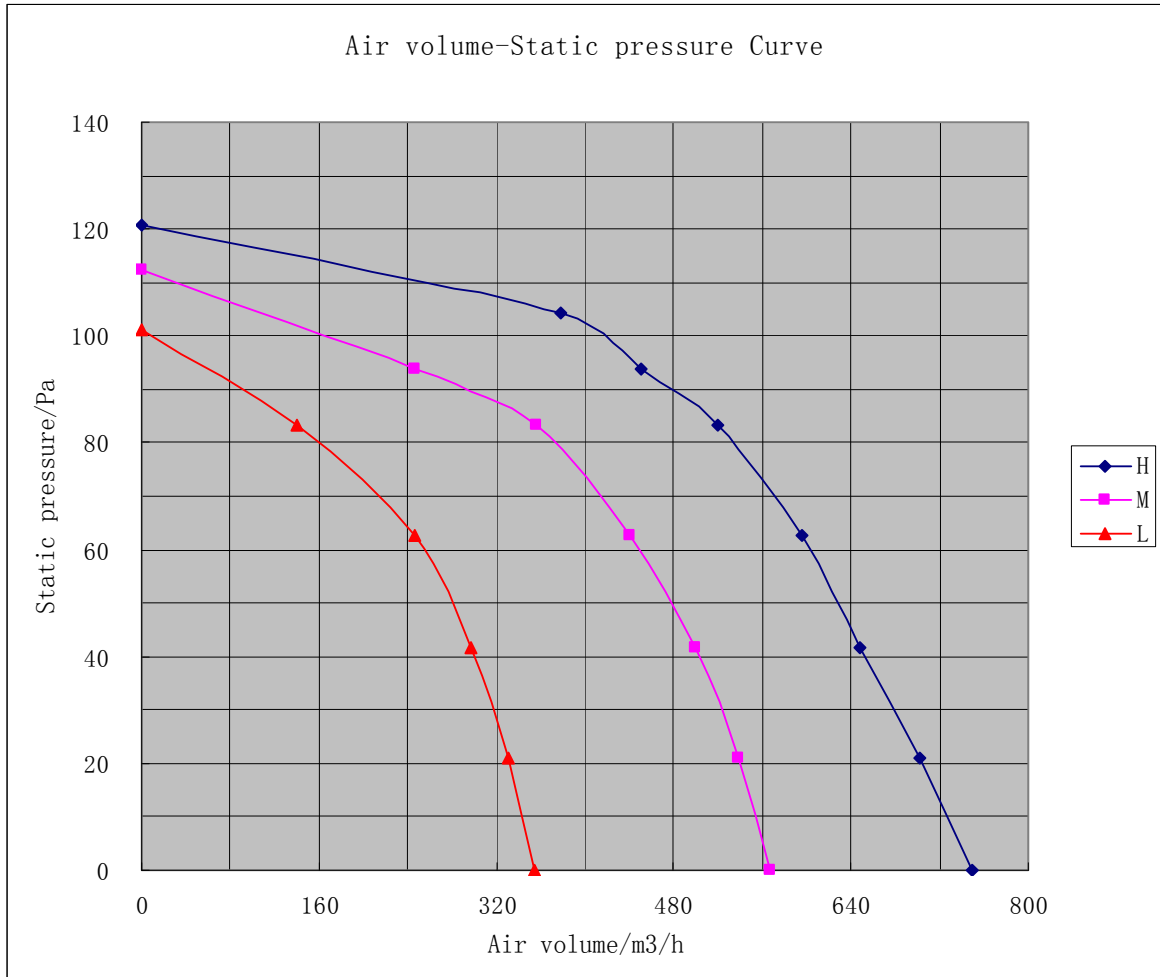
风量—静压曲线图

Air volume - Static pressure curve

环境温度: 27.3℃ 大气压: 1004.3Hpa

ambient temperature: 27.3℃

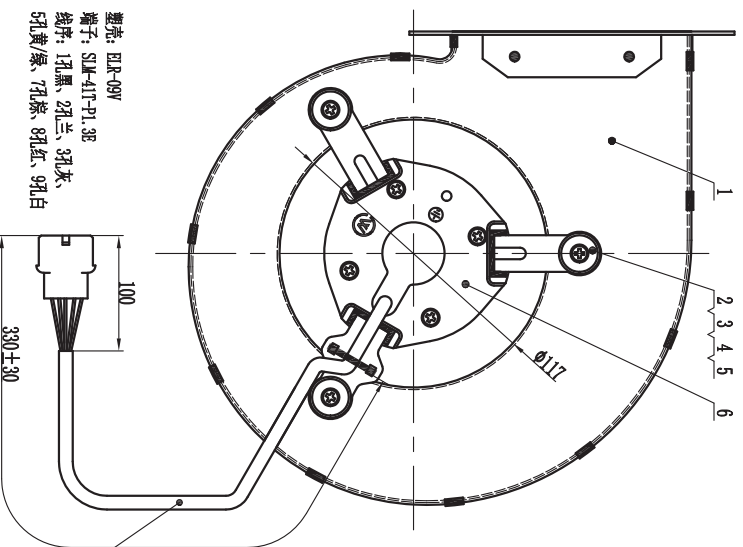
Atmospheric pressure: 1004.3Hpa



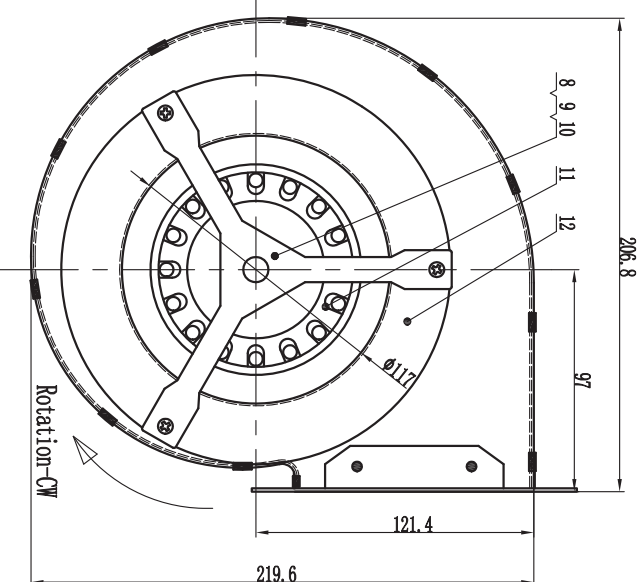
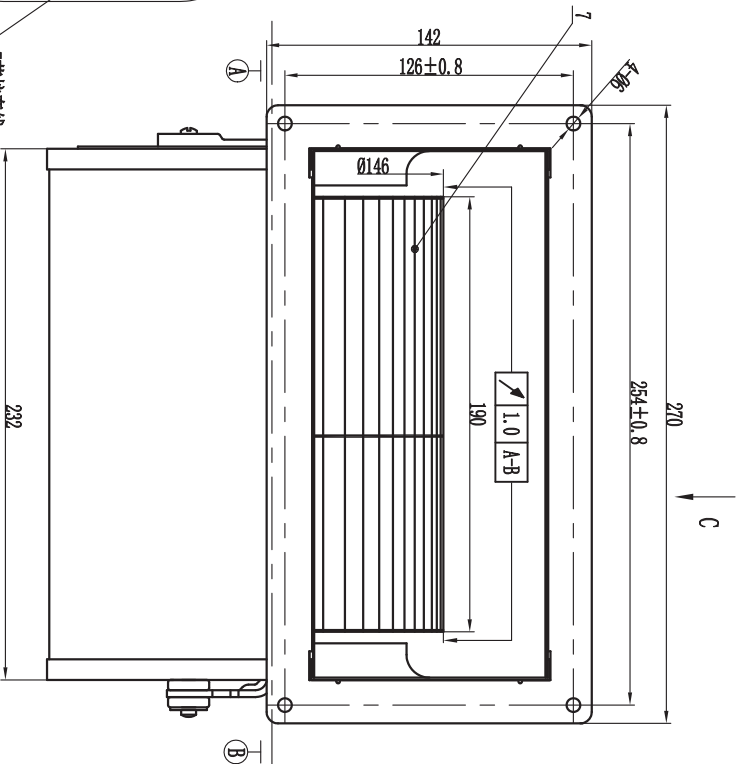
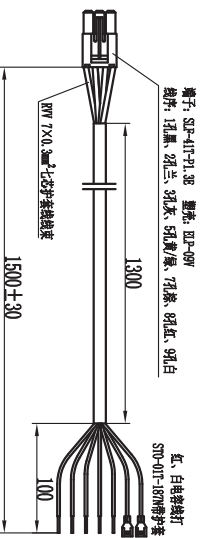
注: 本曲线为批量中抽样机实测数据, 仅供参考, 不作为检验和考核标准。

风机外形图: 见附图

Fan dimensions



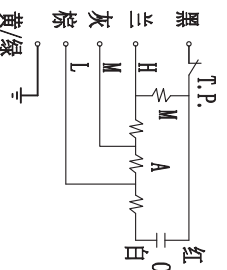
配套线束



C向 (1:1.3)



接线图:



额定电压 (VAC)	220	旋转方向/端子端	CW
额定频率 (Hz)	50	绝缘等级	B
适配电容 (μF)	4/450VAC	运行环境温度 (°C)	-25°C ~ +40°C
额定电流 (A)	0.48/0.39/0.32	径向脉动 (mm/s)	<1.0
额定功率 (W)	105/75/60	动平衡 (mm/s)	65.3
额定转速 (r/min)	1200/900/550	噪音 dB (A)/进口	<65
最大风量 (m³/h)	750/560/350		

8	CXM8, 680, 097	进风圈	1	
7	CXM3, 133, WX	电机	1	
6		滚珠轴承	1	
5	CXM8, 683, 074	轴承减震座	1	
4	CXM8, 038, 092	三脚支架	1	
3	CXM6, 395,	双进风风轮	1	
2	CXM6, 424, 005	电机支架(焊接)	1	
1	CXM6, 106, 037	双进风罩壳	1	

序号	物料编码	图样代号	物料名称	单重	数量	规格	备注

设计	丁	分区	更改单号	签名	日期
审核	G	2018-6-26	批准	D	2018-6-26
工艺		2018-6-26	版次	A	重量
标准化	T	2018-6-26	共 1 张	第 1 张	比例
					1:1