

# KLS ELECTRONIC CO., LTD.

## 承 认 书

### SPECIFICATION APPROVAL

品 名 DC Fan 客 户 开乐  
DESCRIPTION \_\_\_\_\_ CUSTOMER \_\_\_\_\_

机 种 L-KLS22-AV-6025SHD12 编 号 2017082807  
MODEL \_\_\_\_\_ PART NO \_\_\_\_\_

提样日期 2017 年 8 月 28 日  
DATE \_\_\_\_\_年\_\_\_\_\_月\_\_\_\_\_日

制作确认 MADE APPROVE		
制 作 MADE	检 查 CHECKED	核 准 APPROVE
张 宝 贵	穆 含 玉	

客户确认 CUSTOMER APPROVE
请于承认后签章 PLEASE STAMP AND DIGNATUER AFTER APPROVED

1. 客户 (Customer):
2. 型号 (Model): L-KLS22-AV-6025SHD12
3. 送样数量 (Samples attached): 5PCS
4. 详细说明 (Specifications) :

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项目 (ITEM)	技术参数 (SPECIFICATION/CONDITION)
外观尺寸 (DIMENSIONS)	: 60X60X25 (mm)
轴承类型 (BEARING TYPE)	: 含油 (Sleeve Bearing)
额定电压 (RATING VOLTAGE)	: DC 12.0V
工作电压 (RATED VOLTAGE)	: DC 9V-15 V
启动电压 (START-UP VOLTAGE)	: DC 6V (ON/OFF)
额定电流 (RATED CURRENT)	: 0.20±0.01A
转速 (RATED SPEED)	: 5200RPM±10%
功率 (RATED POWER)	: 2.4 W
风量 (AIR FLOW)	: 24.59CFM
风压 (AIR PRESSURE)	: 9.06mmH2O
噪音 (NOISE LEVEL)	: 43.62dB(A)
风扇保护类型 (PROTECTION TYPE)	
防潮保护 (MOISTUREPROOF PROTECTED)	: NO
温控转速 (THERMAL SPEED CONTROLLED)	: NO
自动启动: (AUTO START)	: NO
线材类别 (CONNECTION LEAD TYPE)	: 1007 26#AWG 并线 L= 250±2mm (RED: +, BLACK: - )
端子类别 (HOUSING)	: Bare wire tinned 5mm

## 5. 适用范围 (Scope) :

此文件说明 L-KLS22-AV-6025SHD12 的热、机械及电气特性 (This documentation defines the thermal, mechanical & electrical characteristics of EC DC FAN L-KLS22-AV-6025SHD12)。

## 6. 产品图形 (Product Drawing) :

外观尺寸 (Dimension) 60X60X25 (mm)

### 1.0 范围 (SCOPE)

此文件说明直流无刷风扇在机械和电气的特性 (This documentation defines mechanical & electrical characteristics of DC Brushless Fans)。

### 2.0 原料 (MATERIAL)

2.1 外框 (Housing) : UL94V-0-Glass 聚脂 P.B.T

2.2 扇叶 (Fan Blade): UL94V-0-Glass 聚脂 P.B.T

2.3 轴承类型 (Bearing Sys) :  双滚珠 (Two Ball Bearing)  
 单滚珠 (one Ball one Sleeve)  
 含油 (Sleeve Bearing)

### 3.0 尺寸与结构 (DIMENSIONS & CONSTRUCTION)

所有尺寸、旋转方向和气流按照所附图纸上说明 (All dimensions, direction of rotation and air flow were specified as per drawing attached.)

### 4.0 特性和说明 (CHARACTERISTICS & DEFINITION)

4.1 所有比率特性均按随附资料单上说明 (All rated characteristics were specified as per data sheet enclosed)。

4.2 电流: 电流在持续旋转 5 分钟后测量 (Rated Current: Rated Current shall be measured after 3 minutes of continuous rotation at rated voltage.)

4.3 转速: 速率在持续旋转 3 分钟后测量 (Rated Speed: Rated Speed shall be measured after 3 minutes of continuous rotation at rated voltage)。

4.4 起动电压: 打开开关 “ON” 后, 能够起动风扇运作的电压 (Start Voltage: The voltage which is able to start the fan to operate by suddenly switching “ON”)。

4.5 输入功率: 输入功率在持续旋转 3 分钟后测量 (Input Power: Input Power shall be measured after 3 minutes of continuous rotation at rated voltage)。

4.6 锁定电流: 可以锁机的风扇, 锁定电流在清新空气中锁机 3 分钟测定 (The fan can be locked, Locked Rotor Current: Locked Current shall be measured within one minute of rotor Locked after 3 minutes of continuous at rated voltage in clean air)。

4.7 空气流量资料及压力资料测定根据 “AMCA 标准” 或者 DIN24163 规则, 该资料测定在双压力仓进行, 并需测定压力仓各边所承受的压力资料 (Air Flow & Static Pressure: The air flow data and static pressures should be determined in accordance with AMCA standard or DIN24163 specification in a double chamber testing with intake side measurement)。

4.8 噪音标准: 噪音标准测试参照 DIN45635 标准, 测量在隔音室内进行, 将麦克风置于风扇一米处 (Noise Level: The measurement of noise level is carried out with reference to DIN45635 in an anechoic chamber with the microphone positioned 1 meter from the air intake. Testing fan shall be hung in clean air.)

### 5.0 机械力检测 (MECHANICAL INSPECTION)

5.1 旋转方向 (Rotation Direction)

从扇叶面看风扇，扇叶逆时针方向旋转，按外框一边的箭号指示相同方向 (The blade is count Clockwise viewing from the blade. The same direction also indicated by an arrow mark on one side of the housing.)

5.2 保护试验 (Protection)

几个风扇扇叶连在一起固定限制其旋转，如果风扇及电子组件不会损坏，限制旋转的组件被解松则风扇可自动重新启动旋转。(All fans have integrated protection against locked rotor condition so that there will be no damage to winding or any electronic component. Restarting is automatic as soon as any constraint component to rotation has been released.)

风扇放置在垂直位置，打开开关“ON”或“OFF”风扇旋转或停止，运转正常则说明风扇是合格品 (As fan placed at dead angle position, and the switch of FAN was changed from off to on, Restarting was automatic normal as soon as and proved that this fan is good fan)

5.3 转体锁定保护 (Locked Rotor Protection)

5.3.1 小电流或者带 Auto start 功能的风扇，在通电旋转状态将风扇扇叶锁定，持续 72 小时之后，松开被锁定扇叶，风扇立即自动重转，证明风扇无异常。(No damage shall be found after 72 hours continuously at condition of rotation locked, Restarting is automatic as soon as constraint to running has been released)

5.3.2 大电流或不带 Auto start 功能的风扇，不可长时间锁定，否则风扇会过热损坏。(The fan can't be locked or the fan will overheat and be damaged)

5.4 极性保护 (Polarity Protection)

电压正常条件下，如果反接电源对风扇通电 15 分钟，断电后重新按正常两极连接，所有功能将正常 (No damage shall be found with reverse connection 15 minute at rated voltage. After returning to normal polarity, all function shall be normal.)

5.5 自由跌落 (Free Drop shock)

单体由 600mm 高空跌到 30mm 厚的木板上,风扇 6 个表面中的任何一面和三个角均经得起一次跌落试验,并确认无损伤。(The product drops from the bight of 600mm to the wood board of 30mm. Any one of the 6 faces and any three of the corners could withstand once the pressure, and also no damage will be found.)。电力测定 (ELECTRICAL INSPECTION)。

5.6 绝缘电阻 (Insulation Resistance)

在 AC 500V 条件下，外框与导线正极电阻不少于 10MΩ (Not less than 10M ohm between housing and positive end of lead wire(red) at 500V AC)。

6.2 绝缘强度 (Dielectric Strength)

在 5mA 漏电流，AC 500V 条件下持续 60 秒，风扇外框与导线无异常，证明绝缘良好 (No damage should at 500V AC for 60 sec, measured with 5mA trip current between housing and positive end of lead wire)。

6.3 平均寿命 (Life Expectancy)

在指定恒温下持续工作后，经检验，90%能正常运转即可估算其平均使用寿命 (The continuous duty life at given temperature after which,90% of testing units shall still be running)。

Bearing System	Test Temperature	Test time
Sleeve Bearing	25°C	30000 hours
Sleeve Bearing	40°C	20000 hours
Sleeve Bearing	60°C	10000 hours

7.0 工作环境 (ENVIRONMENTAL)

7.1 运行温度 (Operating Temperature)

-10°C ~70°C为正常温度 ( -10°C to +70°C at normal humidity)。

7.2 贮存温度 (Storage Temperature)

在-40°C ~80°C温度下贮存 500 小时后, 经过在室内温度下 24 小时恢复期后, 所有功能正常运作 (All function shall be normal after 500 hours storage at -40°C to +80°C at normal humidity with a 24 hour recovery period at room temperature)。

7.3 湿度 (Humidity)

95%RH 40+/-2°C per MIL-STD-202F 标准 103B 湿度检测 96 小时, 绝缘电阻和绝缘强度测量资料符合 8.0 说明。(After 96 hours 95%RH 40+/-2°C per MIL-STD-202F, method 103B humidity test, the measured data on insulation resistance and dielectric strength shall meet the specification.8.0 REMARKS)

8.0 说明 (REMARKS)

8.1 材料和结构的改变将另附说明 (Material and construction are subject to change without advance. The changes should be within specification)

8.2 风扇的检验标准为 MIL-STD-105E II 标准。(All fans shall meet the quality inspection under sampling plan MIL-STD-105E II as follow)

致命的	Critical	0
严重	Major	0.65
轻微	Minor	1

9.0 产品图形(Product Drawing)

