

## SPECIFICATION FOR APPROVAL

## 客户承认书

Customer ID 客户: 141141-UKB P/N No.: KRE-2400200L Model No. 型号: KRE-2400200L  
 Sample Date 日期: 2017-07-03 Design No. 设计流水号: 170616-141141-140012-B5



景荣企业有限公司  
 中山市景荣电子有限公司

KINGRONG ENTERPRISE LTD. (Since 2008)

ZHONGSHAN KINGRONG ELECTRONICS CO., LTD.

## 客户承认书

## SPECIFICATION FOR APPROVAL

CUSTOMER ID/客户编号: 141141-UKB

DESCRIPTION/概述: Linear Power Supply(AC/AC adaptor)

CUSTOMER P.N. /客户料号:

PART NO. /产品编号: KRE-2400200L REV: 1.0 RoHS: Yes

## CUSTOMER AUTHORIZED SIGNATURE/客户承认签核

|                          |    |                                |
|--------------------------|----|--------------------------------|
| Notes<br>Special<br>特殊要求 | 1. | Signature & seal:<br><br>Date: |
|                          | 2. |                                |
|                          | 3. |                                |
|                          | 4. |                                |

Sign it means acknowledge our sample(s) performance and we production to samples. In the event of discrepancies between the sample(s) and specification, the sample(s) shall prevail. /客户确认签字, 盖章即视为确认样品性能, 以样品为准生产.

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盖章前审查: 拍照了吗? 录入产品库了吗?

|  |                                             |              |             |              |
|--|---------------------------------------------|--------------|-------------|--------------|
|  | <b>KINGRONG ENTERPRISE LTD.</b><br>景荣企业有限公司 | Approved by: | Checked by: | Prepared by: |
|  |                                             | 黄秀红          | 吴静雯         | 王苑           |

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### 0. Reversion List /变更履历表

变更后立即通知生产更新资料，切记！

| Rev.<br>版本 | Date<br>日期 | Description of Changes<br>变更内容描述 | Notes<br>备注 |
|------------|------------|----------------------------------|-------------|
| 1.0        |            |                                  |             |
| 2.0        |            |                                  |             |
| 3.0        |            |                                  |             |

|                                                                                     |                                             |              |             |              |
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## 1. Electrical Characteristics /电子性能

### 1.1 Input Voltage & Frequency/输入电压与频率

|                                                  |                 |
|--------------------------------------------------|-----------------|
| 额定输入电压<br><b>Rated Input Voltage</b>             | <b>AC230V</b>   |
| 额定输入频率<br><b>Rated Input Frequency</b>           | <b>50Hz</b>     |
| 最大空载电流<br><b>Max. Exciting Current (no load)</b> | <b>40mA max</b> |
| 空载功率<br><b>Maximum No Load Power</b>             | <b>2 W max</b>  |

### 1.2 Output Performance/输出电压与电流性能

|                                   |                  |
|-----------------------------------|------------------|
| 输出电压<br><b>Output Voltage</b>     | <b>24V ±5%</b>   |
| 负载电流<br><b>Rated Load Current</b> | <b>200mA</b>     |
| 空载电压<br><b>No Load Voltage</b>    | <b>30.3V ±5%</b> |

## 2. Safety Test /安全测试

### 2.1 Hi-Pot Test /高压测试

Primary to Secondary & Case for Class I /初级对次级及外壳::

**1500Vac** /10mA Max / 60 seconds

Primary to Secondary & Case for Class II /初级对次级及外壳::

**3750Vac** /10mA Max / 60 seconds

Leakage Current/漏电流

**0.25 mA** max. at 264Vac / 50Hz

### 2.2 Insulation Test /绝缘测试:

DC 500V 100 MΩ min between input to output plug and case (or core).

输入对输出 &外壳(或铁芯)施加 DC 500 V, 绝缘电阻最小 100 MΩ.

### 2.3 Temperature Rise /温升测试:

When at rated AC input/额定输入, output rated load/输出额定负载shall not exceed/表面温升≤ **65℃** on input coil, at ambient temperature 25℃±3℃.

|                                                                                                                                 |              |             |              |
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|                                                                                                                                 | <b>黄秀红</b>   | <b>吴静雯</b>  | <b>王苑</b>    |

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## 2.4 Overload Test /过载测试:

In an ambient temperature of 25℃ applies a power source of rated input with the output load adjusted to 5% of rated output and rated continuously for 4 hours, after turning off 60 minutes in normal temperature, shall meet item 2.1 ~ 2.2. 环境温度为 25℃的情况下,适配器不间断工作 4小时,且额定输入及输出有 5%调整率;断开电后恢复 60分钟,需满足 2.1~2.2的要求。

## 2.5 Life Test /寿命试验:

In an ambient temperature of 40℃, 90~95% R.H., reliability humidity applied a power source of rated input with rated load and operated continuously for 4 hours, after taken out from oven. Shall meet item 2.1 ~ 2.2.

在温度为 40℃、湿度为 90~95%的环境下,额定输入负载工作 4小时,取出烤箱后需满足 2.1~2.2的要求。

## 2.6 Humidity Test /湿度测试:

Temperature 40±2℃, 90~95% R.H. for 48 hours, after taken out from oven. Shall meet 2.1.

在 40±2℃,湿度 90~95%的环境下,放置 48小时,取出烤箱后需满足 2.1的要求

## 2.7 Caution(Attention) /警示(注意):

RISK OF ELECTRIC SHOCK DRY LOCATION USE ONLY (POUR UTILISATION À L'INTÉRIEUR SEULEMENT).

触电危险,仅用于干燥环境下使用。

# 3. Mechanical Characteristics /机械特性

## 3.1 Strain Relief Test /拉力测试:

Plug and cord, at their normal position applied a weight of 20lbs to input plug, 5 lbs to output cord, for 60 seconds each, there shall be no broken of lead or other damage result.

输入插头能承受 20lbs的拉力,输出线能承受 5lbs的拉力,无任何损坏。

|                                                                                     |                                             |              |             |              |
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### 3.2 Drop Test /落地测试: (EI48 & above, and desktop type are not applicable)

Products shall be dropped from a height of 0.75 m, onto 1cm thickness dry wood surface 3 times, after shall no abnormal condition happen, and insulation test 10 MΩ min. 产品从 0.75米高度落下, 落在 1 cm厚的干木板上跌落 3次, 产品无异常; 绝缘测试最小为 10 MΩ.

### 3.3 Cord Bending Test /摇摆测试:

The cord shall withstand a weight of 200 g, it swings from left to right at an angle of 120 degree(total), 40 cycle/min , 300 times minimum. The cord shall be conductible. 输出线悬挂 200克重量, 以 120度、40周/分钟左右摇摆最小 300次, 输出线无异常。

## 4. Reliability/可靠度

The design and construction of this power supply shall exhibit a minimum Mean Time Between Failure(MTBF) of 50,000 hours full rated load operation 25°C. 适配器的设计和结构在环境温度为 25°C的情况下, 带额定负载, 可至少工作时间。

## 5. Insulation System /绝缘等级

CLASS B(130°C)

## 6. Environment Requirements /环境要求

6.1 Operating Temperature Range /工作温度范围: -20°C ~ +40°C

6.2 Operating Humidity Range /工作湿度范围: 30% ~ 85%R.H

6.3 Storage Temperature Range /储藏温度范围: -20°C ~ +85 °C

## 7. DC Resistance /DC电阻

Under Ambient Temperature 25±5°C.

7.1 Primary /初级: ± 20% Ω(ref) 7.2 Secondary /次级: ± 20% Ω(ref)

## 8. Production Tests /生产线检查

8.1 Full Test Procedures for Each Product /全检测试项目:

- ☒Primary exciting current ☐Core loss ☒Output voltage  
☒Input current and power at rated load ☒Noise  
☒Polarity of output plug ☒Hi-pot test ☒Appearance ☒Ripple voltage

|                                                                                     |                                             |              |             |              |
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**8.2 Spot Check Procedures/抽检测试项目:**

☒ Humidity operating at rated load ☐ D.C. Resistance

☒ Insulation test ☒ Life test ☒ Drop test

**9. Safety Standards /安规标准**

The product has designed / approved by the following safety standards:

☐ UL60950 ☐ IEC/EN60950 ☐ AS/NZS60950 ☐ J60950 ☐ K60950 ☐ GB4943  
☐ UL60065 ☐ IEC/EN60065 ☐ AS/NZS60065 ☐ J60065 ☐ K60065 ☐ GB8898  
☐ UL60335 ☐ IEC/EN60335 ☐ AS/NZS60335 ☐ J60335  
☐ UL1310 ☒ IEC/EN61558 ☐ AS/NZS61558 ☐ J61558  
☐ IEC/EN61347

**10. EMI/EMS Standards /电磁兼容标准****10.1 EMI Standards/ EMI标准**

☒ EN55022:2010+AC:2011(IT) ☐ EN55013:2001+ A1:2003+ A:2006(AV)  
☐ FCC Part 15 Class B:2014 & ANSI C63.4:2009(USA)  
☐ GB9254-2008(IT) ☐ GB13837(AV)  
☐ J55022(IT) ☐ J55013(AV) ☐ CISPR 32/22/射频干扰  
☐ IEC/EN61547(LED)

**10.2 EMS Standards/ EMS标准**

☒ EN55024:2010(IT&AV) ☐ EN62493:2010(EMF) ☐ GB17625.1-2012/谐波电流限值  
☒ IEC61000-4-2/ESD静电放电 ☒ IEC61000-4-3/辐射干扰  
☒ IEC61000-4-4/EFT电快速瞬变脉冲群 ☒ IEC61000-4-5/雷击surge测试  
☒ IEC61000-4-6/CS传导性干扰 ☐ IEC61000-4-8/电源频率磁场耐受检测  
☐ IEC61000-4-11/电压跌落及中断  
☐ EN61000-3-2/谐波电流  
☐ EN 61000-3-3:2013/电压波动和闪烁

|                                                                                                                                 |              |             |              |
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# 客户承认书

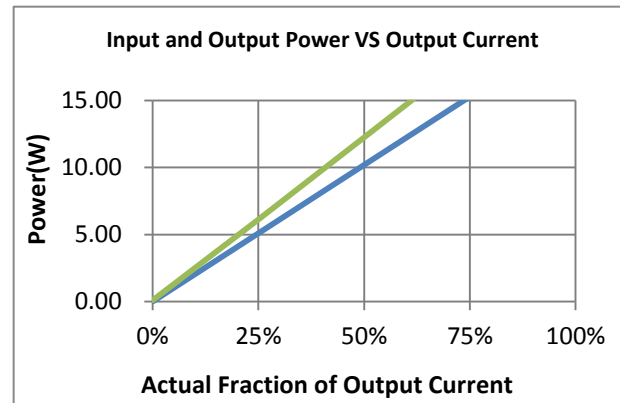
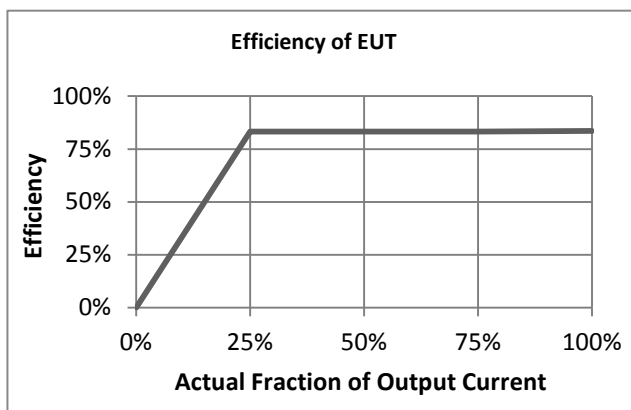
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## 11. Efficiency Level Standard and Test Report/节能标准和测试报告

☒ N/A ☐ IV ☐ V ☐ VI Efficiency Test Report 节能测试报告  
☐ GEMS ☐ CEC ☐ ErP ☐ DoE VI 6 (US) ☐ CoC V5 (EU)

| Item 项目     | Standard No-load Power<br>标准空载损耗(W) | Standard Average Efficiency<br>标准平均效率% |
|-------------|-------------------------------------|----------------------------------------|
| Standard 标准 |                                     |                                        |

|                                      | No Load | Active power values |     |     |      |  | No load Power<br>空载功率 W | Average Efficiency<br>平均效率% |
|--------------------------------------|---------|---------------------|-----|-----|------|--|-------------------------|-----------------------------|
| Percent of nameplate current<br>负载比例 | 0%      | 25%                 | 50% | 75% | 100% |  |                         |                             |
| Output Current<br>输出电流               |         |                     |     |     |      |  |                         |                             |
| Output voltage<br>输出电压               |         |                     |     |     |      |  |                         |                             |
| Output power<br>输出功率 W 次             |         |                     |     |     |      |  |                         |                             |
| AC input power<br>输入功率 W 初           |         |                     |     |     |      |  |                         |                             |
| Efficiency%<br>效率%                   |         |                     |     |     |      |  |                         |                             |



|                                                                                                                                 |              |             |              |
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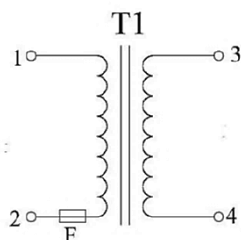


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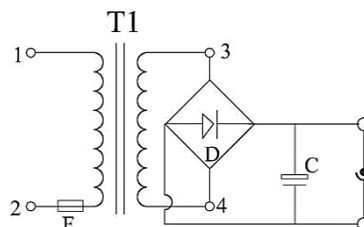
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## 12. Circuit Diagram /电路图



☒ AC / AC 交流



☐ AC / DC 直流

| No. | Symbol | Part Name    | Specification   |
|-----|--------|--------------|-----------------|
| 1   | T1     | Transformer  | EI-41           |
| 2   | F      | Thermal-Link | 125°C 250VAC 2A |
| 3   | D      | Diode        |                 |
| 4   | C      | Capacitor    |                 |
| 5   |        |              |                 |
| 6   |        |              |                 |

## 13. Outline Characteristics /外观特性

13.1 Dimension/尺寸: 6.3\*5.1\*7.8cm (LxWxH)

13.2 Net Weight/净重: 0.228 kgs (ref.)

13.3 AC Inlet/输入插头: ☒ 2P EU ☐ 2P US ☐ 3P UK

13.4 Power Cable Spec/输入电源线: N/A

13.5 Case Material/外壳材质: ABS or PC or PC+ABS, 94V-0

13.6 Product Color/颜色: Black

13.7 Output Cord & Length/输出线及长度: UL 2464 24AWG 180CM

13.8 DC Connector Size & Shape/DC头尺寸及外形: 2.1x5.5x12mm

☒ Straight ☐ L-type ☐ Fork Type

13.9 DC Polarity/极性: ☐ Center + ☐ Center-

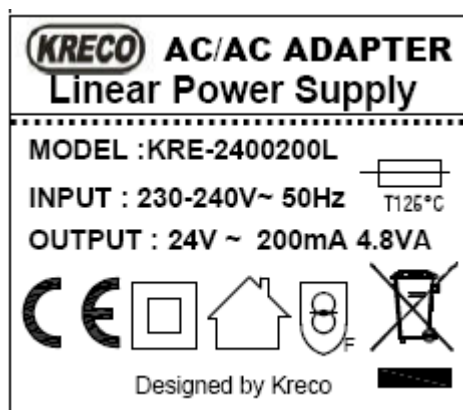
13.10 LED color/指示灯颜色: N/A

|                                                                                                                                 |              |             |              |
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**14. Label Diagram /铭牌图**

☐ Laser engraving    ☒ PVC sticker    ☒ Serial code 128

|                                                                                                                                 |              |             |              |
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**15. Mechanical Outline Photograph /外观示意图**

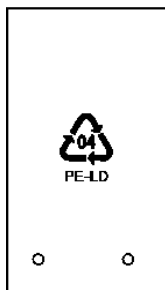
|                                                                                                                                 |              |             |              |
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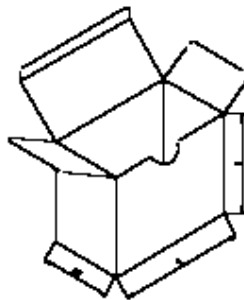
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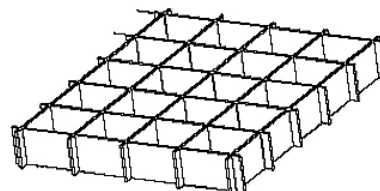
## 16. Package Drawing /包装示意图



☒: PE Bag



☒: White Box



☐: Blade Cardboard.

| No. | Item Name     | Density/Spec | Dimension (LxWxH cm) |
|-----|---------------|--------------|----------------------|
| 1   | PE bag 袋      | N/A          | 16*12                |
| 2   | White box 小白盒 | 400g/cm3     | 8.5*5.5*8            |



| Name         | Material | Measurement (LxWxH) | Q'ty  | Shipping Mark | Part No. On Carton |
|--------------|----------|---------------------|-------|---------------|--------------------|
| Outer Carton | K=K      | 42x26x23cm          | 45Pcs | KRECO         | KRE-2400200L       |

## 17. Certificates /认证证书

|                                                                                                                                 |              |             |              |
|---------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|--------------|
|  <b>KINGRONG ENTERPRISE LTD.</b><br>景荣企业有限公司 | Approved by: | Checked by: | Prepared by: |
|                                                                                                                                 | 黄秀红          | 吴静雯         | 王苑           |