

## SPECIFICATION FOR APPROVAL

## 產品確認書/製品仕様書

FILE SERIAL NO./文件序號:

XSG20230810002-T01

CUSTOMER / 客 戶:

ARTICLE / 品 名:

Switching Power Supply/charger

MODEL NO. / 機種型號:

XSG29420000MM

PARAMETER / 規 格:

29.4V20A

CERTIFICATE/認證:

ETL CE FCC UKCA PSE SAA RCM

ISSUE DATE / 發行日期:

2023/8/10

Please to sign back after you confirm

承認書確認後請回簽一份

この仕様書をご確認とご署名の上、対象の営業窓口にご返信いただきますよう宜しくお願い致します。

| CUSTOMER AUTHORIZED<br>客戶確認 |            |             |
|-----------------------------|------------|-------------|
| Approved by                 | Checked by | Prepared by |
|                             |            |             |

| SUPPLIER AUTHORIZED<br>供方確認 |            |             |
|-----------------------------|------------|-------------|
| Approved by                 | Checked by | Prepared by |
| 李麗敏                         | 賀子豐        | 張文娟         |

\*感謝您的支持，我們十分珍惜每次合作機會

\*Thank you for your support, we will treasure the opportunity to cooperate with you

| Rev.版本 | Description of change/ 變更內容描述 |           | Changed Date<br>日期 | Approved |
|--------|-------------------------------|-----------|--------------------|----------|
|        | Before(變更前)                   | After/變更後 |                    |          |
| A      | Original Release(初次發行)        |           | 2023/8/10          | 李麗敏      |
|        |                               |           |                    |          |
|        |                               |           |                    |          |



\* Make practical and safe power supply, Be enterprise with honesty and responsibility

\* 提供實用安全的電源，做誠信負責的企業

\* 実用的、安全な電源を提供し、誠実と信用、責任を持つ企業。

# Table of Content(目錄)

|   |    |
|---|----|
| 1.SAFETY STANDARD / 安規標準  | 3  |
| 2.INPUT FEATURE / 輸入特性  | 3  |
| 3.CHARGER OUTPUT VOLTAGE / CURRENT FEATURE/ 充電器輸出電壓 / 電流的特性     | 3  |
| 4.Work Status of LED indicator/LED燈工作狀態顯示                       | 3  |
| 5.CHARGING CURVE/充電曲線圖  | 4  |
| 6.PROTECTION FEATURE / 保護特性                                     | 4  |
| 7.ENVIRONMENTAL CONDITIONS / 環境條件                               | 5  |
| 8.EMC STANDARDS / 電磁相容性標準                                       | 5  |
| 9.RELIABILITY AND QUALITY CONTROL / 可靠性及品質控制                    | 6  |
| 10.WEIGHT / 重量  | 6  |
| 11.MECHANICAL REQUIREMENT / 結構參數                                | 6  |
| 12.INSULATION RESISTANCE / 絕緣阻抗                                 | 6  |
| 13.LEAKAGE CURRENT / 漏電流  | 6  |
| 14. ELECTRIC WITHSTANDING STRENGTH(HI-POT) / 絕緣介電強度（耐壓）         | 6  |
| 15.MAJOR MEASURE EQUIPMENT / 測量設備; VERIFIED BY THE THIRD LAB/外校 | 6  |
| 16.PRODUCT OUTLINE DIMENSION / 產品外觀尺寸                           | 7  |
| 17.AC CORD / 輸入線材   | 8  |
| 18.DC CORD / 輸出線材   | 9  |
| 19.RATING LABEL / 銘牌  | 10 |
|   |    |
|   |    |
|   |    |
|   |    |
|   |    |
|   |    |
|   |    |
|   |    |
|   |    |
|   |    |

|                |          |             |             |
|----------------|----------|-------------|-------------|
| <b>EDITION</b> | <b>A</b> | <b>PAGE</b> | <b>2/10</b> |
|----------------|----------|-------------|-------------|

## ELECTRICAL PERFORMANCE / 電器性能

### 1.SAFETY STANDARD / 安規標準

- 1.1 The green mode power supply shall be certified by the following international regulatory standards:  
 充電器應符合下列的國際標準:

| Certificate<br>證書                       | Country<br>國家 | Standard/安規標準                               | Certificate<br>證書                           | Country<br>國家   | Standard/安規標準                                     |
|---|---------------|---|---|-----------------|---|
| <input checked="" type="checkbox"/> ETL | USA/CA<br>北美  | CSA C22.2#62368-1:2019<br>Ed.3+U1]          | <input checked="" type="checkbox"/> FCC     | USA             | 47 CFR FCC Part<br>15,Subpart BANSI<br>C63.4:2014 |
| <input type="checkbox"/> LVD/ GS        | Germany<br>德國 | EN60950; EN62368<br>EN61558;EN60335         | <input checked="" type="checkbox"/> CE      | Europe<br>歐洲    | EN55032;EN55035;                                  |
| <input checked="" type="checkbox"/> CB  | Global<br>全球  | IEC62368                                    | <input type="checkbox"/> KC                 | Korea<br>韓國     | K60950-1  |
| <input checked="" type="checkbox"/> PSE | Japan<br>日本   | J62368-<br>1(2020)J3000(H25)<br>J55032(H29) | <input checked="" type="checkbox"/> UKCA    | UK<br>英國        | EN 62368-1:2014/A11:2017                          |
| <input type="checkbox"/> CCC            | China<br>中國   | GB4943.1;GB9254;GB176<br>25.1               | <input checked="" type="checkbox"/> SAA/RCM | Australia<br>澳洲 | AS/NZS 62368.1:2022;                              |

### 2.INPUT FEATURE / 輸入特性

- 2.1 INPUT VOLTAGE RANGE: 90Vac to 264Vac. 輸入電壓範圍可以從90Vac到264Vac.  
 2.2 RATED INPUT VOLTAGE: 100Vac to 240Vac. 額定輸入電壓從100Vac到240Vac.  
 2.3 INPUT FREQUENCY RANGE: 47Hz to 63Hz. 輸入頻率範圍從47Hz到63Hz.  
 2.4 INPUT CURRENT: 5A max.&100-240Vac. 最大輸入電流 5A(輸入條件100-240Vac)  
 2.5 INRUSH CURRENT: 60A max. at 100-240Vac input for a cold start at 25°C.在准開機條件下，  
 最大浪湧電流不超過60A (輸入條件100-240Vac).  
 2.6 EFFICIENCY: higher than 93% at 100-240Vac input and output full load. 效率高於 93%  
 (輸入100-240Vac 和輸出滿載條件) .  
 2.7 POWER FACTOR 功率因數: 0.9 MIN  
 2.8 No-Load Input Power Dissipation/輸入空載功率損耗: Input 115Vac or 230Vac,output no load,  
 the input power loss is less than 0.5W. 輸入115/230V交流，在空載時，輸入功耗小於0.5W.

### 3.OUTPUT/輸出特性

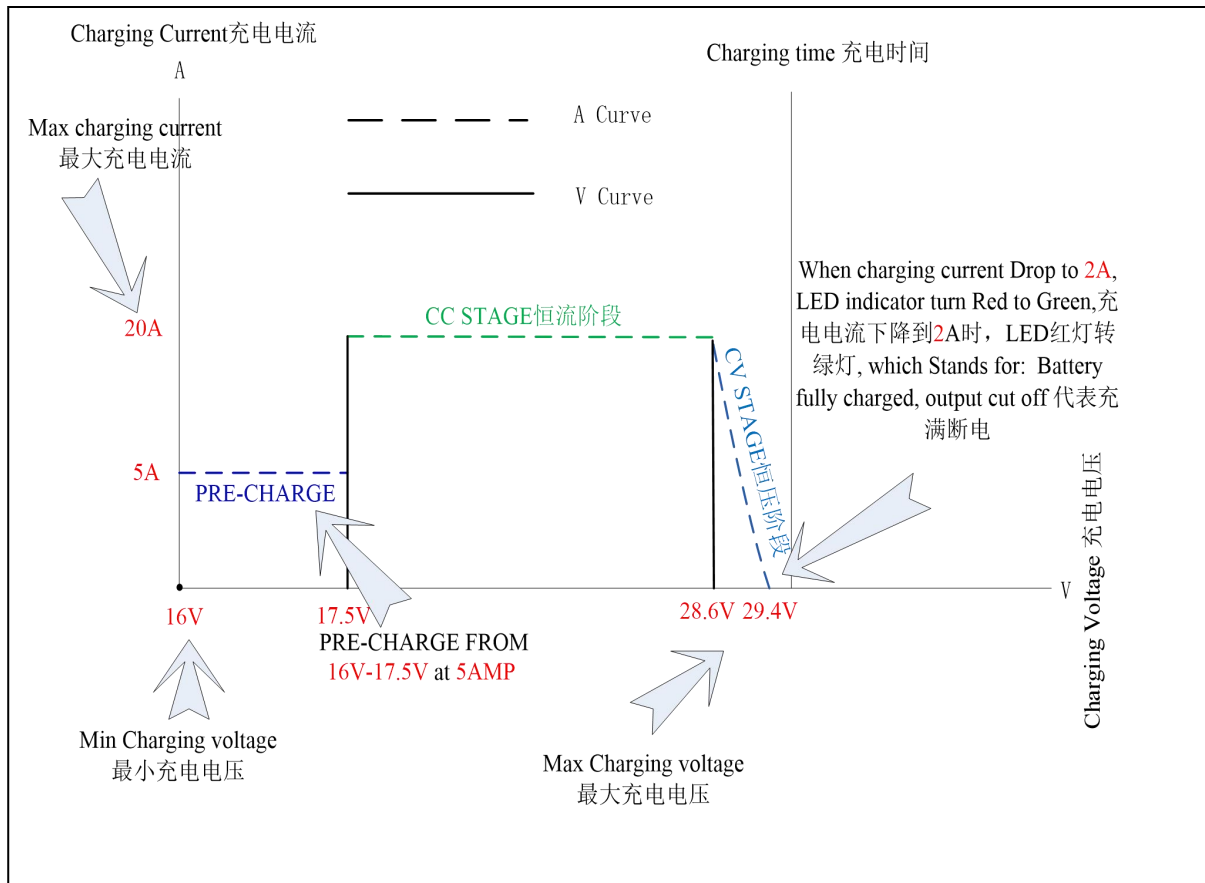
| Charging Status<br>充電狀態 | Charging Stage<br>充電階段 | Output current<br>輸出電流(A) | Output voltage<br>輸出電壓(V) | LED indicator<br>指示燈 |
|-------------------------|------------------------|---------------------------|---------------------------|----------------------|
| 1.Charging 充電中          | Pre-Charge 預充          | 5A±0.3A                   | 16V~17.5V±0.3%            | Red                  |
|                         | Constant Current 恒流    | 20A±0.3A                  | 17.5V~28.6V±0.2V          | Red                  |
|                         | Constant Voltage 恒壓    | 20A~2A                    | 28.6~29.4V±0.2V           | Red                  |
| 2.Charged full 充滿       | Cut Off 斷電             | 0                         | 0                         | Green                |
| 3.Re-charge 回充          | CC-CV                  | 20A                       | 28.6V~29.4V               | Red                  |

### 4.Work Status of LED indicator/LED燈工作狀態顯示

- No load output:Green Light 空載輸出:綠燈 
- In Process of Charging:Red Light 充電中:紅燈 
- Charged Full: Green Light 充滿:綠燈 

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|----------------|----------|-------------|-------------|
| <b>EDITION</b> | <b>A</b> | <b>PAGE</b> | <b>3/10</b> |
|----------------|----------|-------------|-------------|

5.CHARGING CURVE/充電曲線圖:



Brief description of charger operation 充電器操作簡要說明

- 1), Connect battery at first, then connect AC power source, charger start working, if detect the battery voltage less than Min charging voltage, then judge the battery abnormal and stop charging (security considerations). 連接電池，再連接電源，如果偵測到電池電壓低於最小充電電壓，則判定為電池異常，充電器停止充電。
- 2). When battery fully charged (signal: led indicator turns red to green), charger will stop working, then cut off output. 當電池充滿 (指示燈由紅轉綠)，充電器停止工作並切斷輸出。

6.PROTECTION FEATURE / 保護特性

6.1 OVER-CURRENT PROTECTION / 過電流保護:

The green mode power supply shall be hiccup when any output operating in overload condition (set @ Max load 105~110%) under any line condition for an indefinite period of time. The power supply shall be self-recovery when the fault condition is removed.

在任何時候任何輸入條件，當輸出操作在超載條件最大充電器的 (105~110%) 時，充電器將進入打嗝模式，當故障被移走後，充電器要能自動恢復到正常

6.2 SHORT-CIRCUIT PROTECTION / 輸出短路保護:

The power supply shall be hiccup and no damage shall occur when any output operating in a short circuit condition under any line condition for an indefinite period of time. The power supply shall be self-recovery when the fault condition is removed.

在任何時候，任何輸入條件下，當輸出操作在短路情況下，充電器將進入打嗝模式，當故障消失後，充電器要能自動恢復正常。

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|---------|---|------|------|
| EDITION | A | PAGE | 4/10 |
|---------|---|------|------|

6.3 REVERSE POLARITY PROTECTION / 防反接保護

6.3.1. To use Fool-Proof type DC plug. 建議使用防呆式設計的DC連接頭

6.3.2. When Connect wrong polarity, the charger will be self-recovery when fault condition is removed. 當錯誤操作，反向連接時，充電器進入保護狀態，紅燈滅，直到故障

6.4 ANTI-FLOW PROTECTION / 防倒灌保护

6.4.1. When connect charger with battery pack alone(no AC power input), the power in battery will not flow back to charger, the indicator is off all the time. 當充電器單獨連接電池組，電池裡的電能不會倒灌進充電器裡，充電器指示燈常滅狀態。

7. ENVIRONMENTAL CONDITIONS / 環境條件

7.1 OPERATING / 操作條件：

The power supply shall be capable of operating continuously in any mode without performance deterioration in the following environmental conditions.

在下列環境條件下，充電器要能夠連續操作在各種模式，且不能造成性能的退化。

7.1.1 Operation Temperature: -20°C~40°C 工作測度：-20°C~40°C

7.1.2 Relative Humidity: 10%~90% 相對濕度：10%~90%

7.1.3 Vibration: 1.0mm, 10—25Hz, 15 minutes per cycle for each axis (X, Y, Z)

7.1.4 Cooling: The power supply will operate with convection cooling. Blocking of vents must not cause damage to The power supply..

充電器將操作在對流冷卻的環境下，即使將通風口阻塞充電器也不允許有任何損傷發生。

7.2 NON-OPERATING / 非操作條件：

The power supply shall be capable of withstanding the following environmental conditions extended periods of time, without sustaining electrical or mechanical damage and subsequent operational deficiencies 充電器要能夠長期的經受下列的環境條件，且不允許有電氣級機械方

7.2.1 Storage Temperature: -30°C~70°C 儲存溫度：-30°C~70°C

7.2.2 Relative Humidity: 10%~90%相對濕度：10%~90%

7.2.3 Color of case and cable / 外殼及線材顏色：Black / 黑色

7.2.4 Vibration and Shock / 振動和衝擊

The power supply shall be designed to withstand normal transportation vibration per MIL-STD-810D, method 514 and procedures X, as it is mounted in the chassis assembly and packed for shipping.

充電器出貨的包裝設計，均要能承受正常運輸的振動，並符合MIL-STD-810D方法514 和程式 X

7.2.5 Dropping Testing / 跌落試驗：

X-Y-Z direction 100cm, one time with each direction

X-Y-Z三個方向高度1m每個方向各一次。

8. EMC STANDARDS / 電磁相容性標準

8.1 EMI STANDARDS / EMI 標準

The power supply met the radiated and conducted emission requirements for FCC CLASS B, EN55032 CLASS B.

本充電器符合輻射及傳導要求，滿足FCC CLASS B, EN55032 CLASS B.

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|---------|---|------|------|
| EDITION | A | PAGE | 5/10 |
|---------|---|------|------|

## ELECTRICAL PERFORMANCE / 電器性能

### 8.2 EMS STANDARDS / EMS 標準

The power supply shall meet the following EMS standards:  
本充電器滿足下列EMS標準

8.2.1 EN61000-4-2: Electrostatic Discharge(ESD)

8.2.2 EN61000-4-3: Radiated Electromagnetic Fields(RS)

8.2.3 EN61000-4-4: Electrical Fast Transient / Burst(EFT)

8.2.4 EN61000-4-5: Lighting Surge Attachment. Line to Neutral: 2KV

### 9.RELIABILITY AND QUALITY CONTROL / 可靠性及品質控制

9.1 BURN-IN / 老化 The power supply shall undergo a minimum of 4 hours Burn-In test under full load at 40 °C ~±5°C.

充電器應在40°C ~±5°C和滿載條件下老化4小時。

9.2 COMPONENT DERATING / 元件溫度要求 Semiconductor junction temperatures shall not exceed the manufacturer's maximum thermal rating. 半導體結溫不允許超過其製造商要求的最大溫度。

10.WEIGHT / 重量 The weight of the power supply shall be about 1800 g. 充電器的重量大約為 1800 g

### 11.MECHANICAL REQUIREMENT / 結構參數

The power supply size: L256\*W117\*60MM±1. 外殼尺寸: L256\*W117\*60MM±1

12 INSULATION RESISTANCE / 絕緣阻抗 Input to output: 50M OHM(500VDC)輸入對輸出50兆歐姆(500VDC)

### 13.LEAKAGE CURRENT / 漏電流

The leakage current shall be less than 0.75mA for class I when power supply is operated maximum input voltage and maximum load. 當充電器操作在最大輸入及最大負載情況下，其漏電流應小於0.75mA，滿足class I等級。

### 14. ELECTRIC WITHSTANDING STRENGTH(HI-POT) / 絕緣介電強度 (耐壓)

Primary to Secondary AC3000V, 10mA,1 minute for type test, 3 second for production.

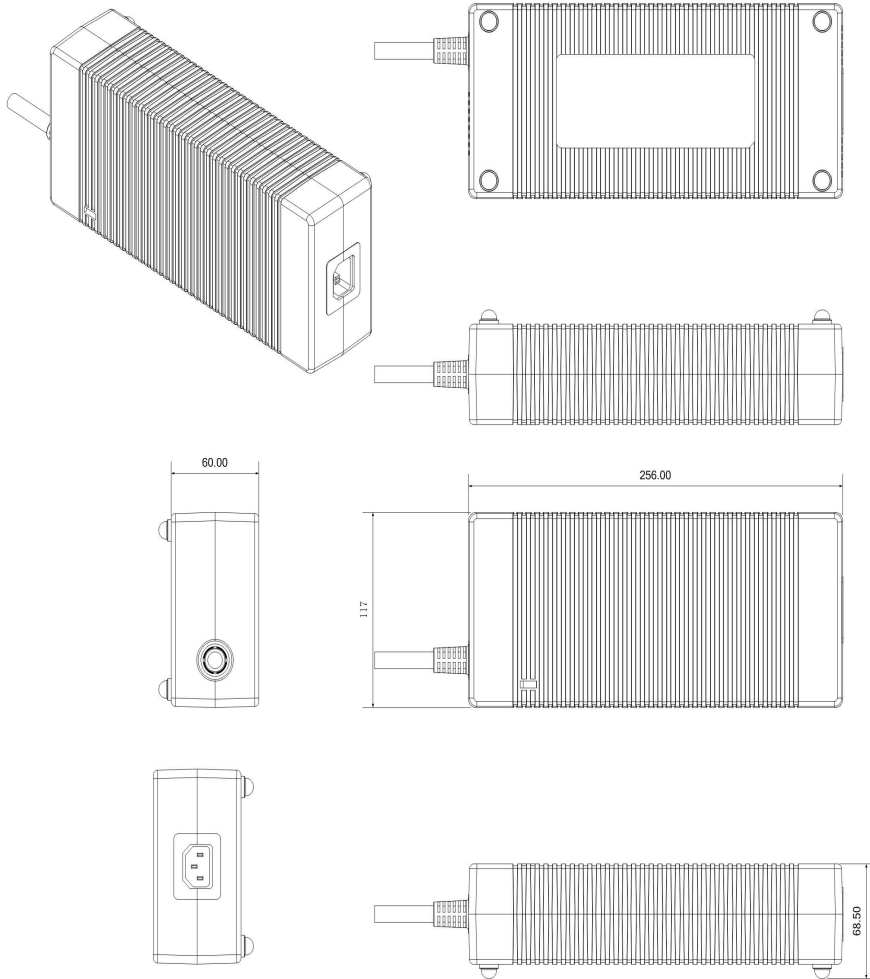
一次側對二次側: AC3000V, 10mA標準測試1分種，量產測試3秒鐘。

### 15.MAJOR MEASURE EQUIPMENT / 主要測量設備; VERIFIED BY THE THIRD LAB/外校

- |   |  |                          |                                     |
|---|--|--------------------------|-------------------------------------|
| A | AC SOURCE / AC变频电源: 固纬/GWINSTEK APS-7100E,校準頻次: 1次/年                               | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| B | DIGITAL POWER METER / 数字功率计功率仪: 固纬/GWINSTEK GPM-8213,校準頻次: 1次/年                    | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| C | ELECTRONIC LOAD / 开编程电子负载仪: MAYNUO M9713,校準頻次: 1次/年                                | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| D | OSCILLOSCOPE / 存儲示波器: 泰科/TEKTRONIX TBS1102B,校準頻次: 1次/年                             | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| E | DIGITAL MULTIMETER / 數字式萬用表: 福禄克(FLUKE) F12E+校準頻次: 1次/年                            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| F | DC POWER / 直流电源: 麦创 (MATRIX) MPS-6030D校準頻次: 1次/年                                   | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| G | HIPOT AND INSULATION RESISTANCE TESTER / 耐压安规测试仪: 固纬/GWINSTEK GPT-9803 ,校準頻次: 1次/年 | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| H | INSULATION RASISTANCE TESTER / 絕緣電阻表: YD2681A,校準頻次: 1次/年                           | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| I | MULTI CHANNEL TEMPERATURE SENSOR / 多路温度测试仪 艾维泰科/IVYTECH IV380-16校準頻次: 1次/年         | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

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|---------|---|------|------|
| EDITION | A | PAGE | 6/10 |
|---------|---|------|------|

**PRODUCT OUTLINE DIMENSION / 產品外觀尺寸(mm)**



**Material/材料:** PC

**Brand/品牌:** SABIC / 沙伯

**Fireproof Class/防火等級:** UL94V-0

**Color/顏色:** Black/黑色

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|----------------|----------|-------------|-------------|
| <b>EDITION</b> | <b>A</b> | <b>PAGE</b> | <b>7/10</b> |
|----------------|----------|-------------|-------------|

AC CORD / 輸入電源線

|                |                    |              |  |  |  |
|----------------|--------------------|--------------|--|--|--|
| Versions 版本: A | Drawing NO: X16006 | Customer: 鑫采 |  |  |  |
| 图号             | 客户                 | 鑫采           |  |  |  |
| Customer P/N:  |                    |              |  |  |  |

|   |       |          |     |        |                |
|---|-------|----------|-----|--------|----------------|
| 线材 (UL/E140081 SVT 3X18AWG 105° C 300V VW-1 N.S. (MT) CSA SVT 印字 3X0.824mm <sup>2</sup> (18AWG) 105° C 300V LL86908 FT2 |       |          |     |        |                |
| 7 扎线带 (Wire & tie)  | 黑色    | 包PVC胶铁丝  | 1   | 140    |                |
| 6 插字尾母插内套   | 白色    |          | 1   |        |                |
| 5 插字尾母  | 铜本色   | 2*10mm铜空 | 3   |        |                |
| 4 尾插母式 (Type of end plug)   | BK001 | 89A PVC  | 1   |        | 普通黑色           |
| 3 线材规格 (Cord specification)   | BK001 | 80A PVC  | 1   | 1185±9 | 普通黑色           |
| 2 插头型式 (Type of plug)   | BK001 | 94A PVC  | 1   |        | 普通黑色           |
| 1 插头五金 (Pin of plug)  | 镀镍    | CU       | 1+2 |        |                |
| ITL 备注  |       |          |     |        | REMARK 备注 材料编号 |

|    |      |    |    |
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| 标题 | 修改内容 | 姓名 | 日期 |
|    |      |    |    |

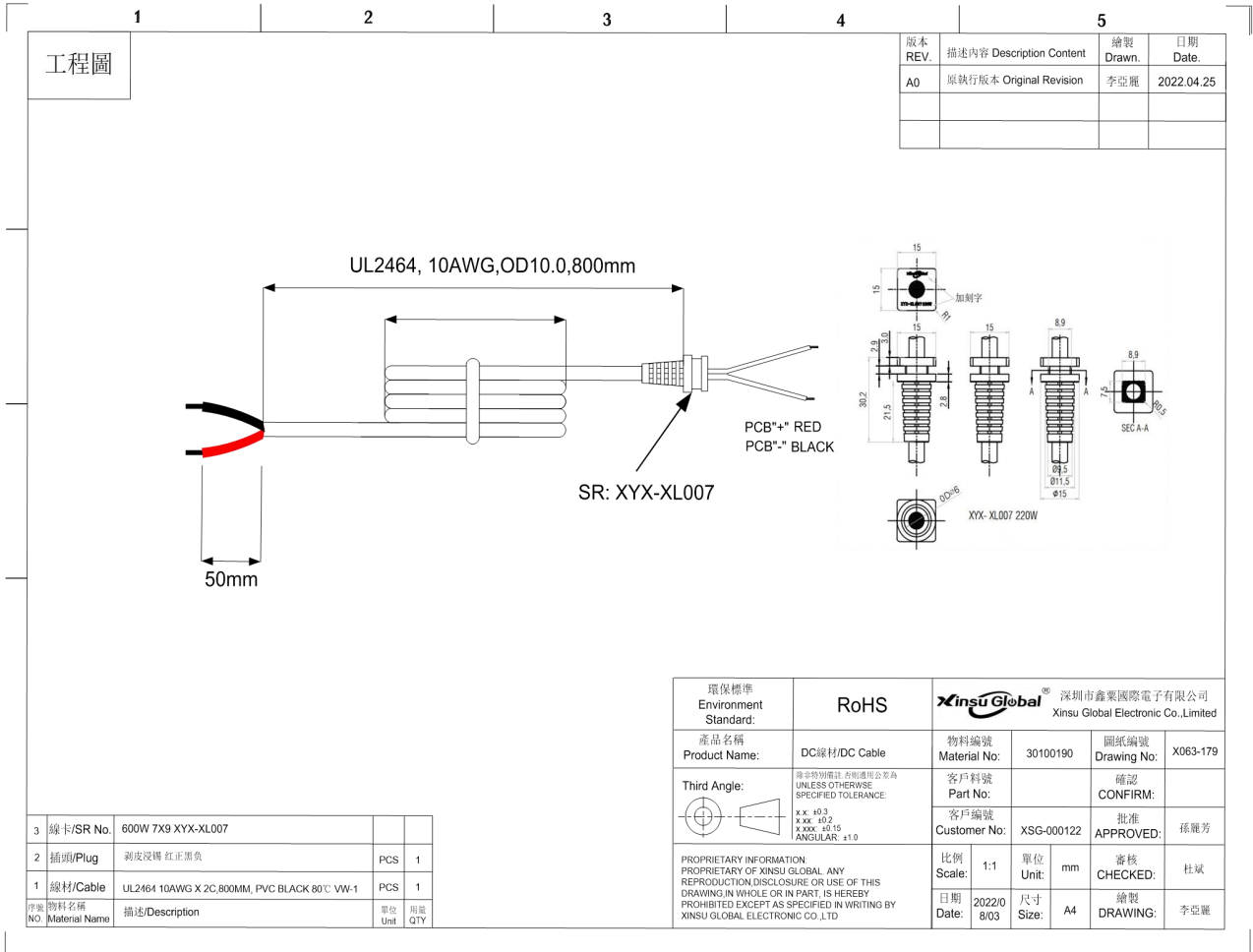
  

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|-------------|--------------|------------|--|
|             | 赣州永德电业制品有限公司 |            |  |
| TITLE: 名称   | Draw: QIN    | 2015-12-21 |  |
| PLUG & WIRE | Auditing: 审核 |            |  |
| Unit: 单位    | Approve: 核准  |            |  |

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|---------|---|------|------|
| EDITION | A | PAGE | 8/10 |
|---------|---|------|------|



# DC CORD / 輸出線材



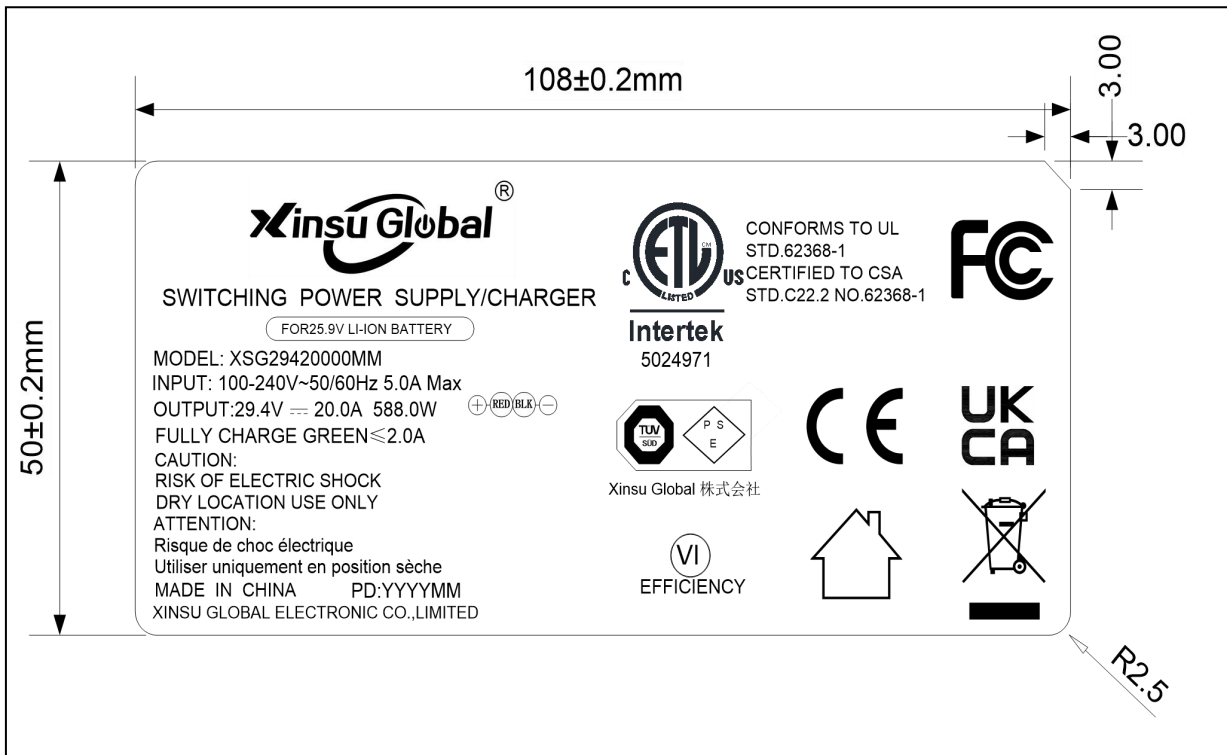
## Cable Specification/線材規格

**UL2464 Round Wire, 10AWG\*2C L=0.8M Black 80'C,300V**

|   |                              |              |
|---|------------------------------|--------------|
| A | Length of DC cord(DC線長度)     | <b>800MM</b> |
| B | Size of DC connector (DC頭尺寸) | 剥皮浸锡 红正黑负    |
| C | Length of coil (線包長度)        | 80MM±5       |
| D | SR NO(線卡編號)                  | XYX-XL007    |
| E | Stripped length(剥皮長度)        | 40MM±1mm     |
| F | Tinned length (吃錫長度)         | 4MM±1mm      |

|                |          |             |             |
|----------------|----------|-------------|-------------|
| <b>EDITION</b> | <b>A</b> | <b>PAGE</b> | <b>9/10</b> |
|----------------|----------|-------------|-------------|

RATING LABEL / 銘牌



Print/ 印刷

Laser Carving/ 鐳雕

1. Silver text on black background 黑底銀字
2. Material: PET 底材為消銀龍.
3. Clear Printing, Wipe Resistance 絲印清晰, 耐擦拭.
4. Gum Permanent 永久背膠.
5. Meet Requirements of Environmental Protection 符合環保要求

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|----------------|----------|-------------|--------------|
| <b>EDITION</b> | <b>A</b> | <b>PAGE</b> | <b>10/10</b> |
|----------------|----------|-------------|--------------|