

# CUSTOMER

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## SPECIFICATION FOR APPROVAL

### AC/DC ADAPTOR

CUSTOMER SPEC: INPUT: 100-240V AC 50/60Hz OUTPUT: 24VDC 5000mA

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CUSTOMER DWG./PART NO. \_\_\_\_\_

PART NO. 2ABU120M,10748#16 5.5\*2.5\*11mm 1200mm

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SAMPLE NO: A180509-01 REV.: A ISSUE DATE: 2018-5-10

PRDUCT NO: \_\_\_\_\_

Unit Color: Black



White



APPROVED SIGNATURES/客户确认		
核准/APPROVED BY	审核/CHECKED BY:	检测/TESTED BY:

Manufacturer/制造商			
业务/SALES	品管/QE	核准/APPROVED BY	制样/DESIGNED BY
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**1 SCOPE**

This document describes basic electrical characteristics and mechanical requirements of Model No. \_\_\_\_\_  
2ABU120M switching power supply.

**2 ELECTRICAL SPECIFICATION**

**2.1 INPUT REQUIREMENT**

**2.1.1 INPUT VOLTAGE RANGE**

Power supply shall operate within specification from 90 to 264Vrms or provide automatic switching in two ranges. The table below shows common input voltage range.

Input Range	Minimum	Nominal	Maximum	Unit
	90	100-240	264	Vac, rms

**Table 1 - Input Voltage Range**

**2.1.2 INPUT FREQUENCY RANGE**

The power supply shall operate within specification from 47 to 63 Hz.

**2.1.3 AC INRUSH CURRENT**

It shall be limited to a level below the  $I^2t$  of the fuse and the bridge diode. No damage.

**2.1.4 INPUT CURRENT**

Maximum steady state input current shall not exceed 2.0 A for any line voltage specified in 2.1.1.

**2.1.5 LOW POWER CONSUMPTION**

Vin	Load	Power consumption
230Vac / 50Hz	0A	< 0.15 W

**2.1.6 POWER FACTOR**

**PF > 0.9** (at 115V/230VAC with Full load)

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**2.2 INPUT PROTECTION**

**2.2.1 INPUT CURRENT PROTECTION**

A fuse with rating of 3.15 A / 250 V( Time Lag ) shall be installed on the input line side near the input connector to provided protection to the power supply.

**2.2.2 INPUT CURRENT HARMONIC**

Input current harmonic of the power supply should meet IEC 61000-3-2 requirement.

**2.3 OUTPUT REQUIREMENT**

**2.3.1 OUTPUT POWER**

Unit total output power, under steady state conditions, shall not exceed 120 W .

**2.3.2 OUTPUT VOLTAGE AND CURRENT**

Under any combination of line and load variation and environmental conditions, all outputs shall remain within tolerance defined in Table 2. Output voltage(s) shall be measured at the load side of output connector.

	Output Voltage	Voltage Range		Current Range	
		Lower Limit	Upper Limit	Minimum Load	Full rated load
1	+24V	22.8V	25.2V	0A	5A

**Table 2 - Output Voltage and Current**

**2.3.3 RIPPLE AND NOISE**

Measurements shall be made with an oscilloscope with minimum of 20MHz bandwidth. Output shall be bypassed at the connector with a 0.1µF ceramic disk capacitor and a 10µF electrolytic capacitor for general testing purpose.

Output Voltage	Maximum Ripple & Noise (Vp-p)
+24V	240mV

**Table 3 – Ripple and Noise**

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#### **2.3.4 OVER VOLTAGE PROTECTION**

The power supply shall be provided with over voltage protection such that under any single component failure, output channel shall exceed the voltages specified, the first will clamp, second will latch minimum load 0.1A.

Output Voltage	Maximum OVP Trip Voltage
+24V	+34V

**Table 4 – Over Voltage Protection**

**Note :** In the event of latch an over - voltage condition on output voltage, the power supply shall shutdown and require remove the AC mains.

#### **2.3.5 OVER POWER PROTECTION**

After the supply reaches temperature equilibrium, over power protection shall operate at 110% ~ 160% of rated power, after one hour burn-in and reached temperature equilibrium, defined in section 2.3.1 at 100~240Vac line input or temperature conditions.

#### **2.3.6 OVERSHOOT AND UNDERSHOOT**

During turn on, turn off condition, the output overshoot shall not exceed nominal voltage by more than 10%, and output shall not change its polarity with respect to its return line.

#### **2.3.7 SHORT CIRCUIT PROTECTION**

Power supply shall have self-limiting protection to protect against short circuit or overload conditions. No damage to the supply shall result from a continuous or intermittent short circuit condition.

### **2.4 PERFORMANCE REQUIREMENT**

#### **2.4.1 EFFICIENCY**

Efficiency (watt out / watt in) shall be a minimum of 89% with average mode at 115V/60Hz & 230Vac/50Hz input

Shall comply with CEC level 6

European CoC - EPS Version 5 Tier 2

#### **2.4.2 TURN ON DELAY TIME**

Output shall reach steady state in 3 seconds after turn on.

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### **2.4.3 HOLD-UP TIME**

Hold-up time shall be a minimum of 8\_ms at 45 degrees, 115Vac / 60Hz of input.

Hold-up time shall be a minimum of 8\_ms at 45 degrees, 230Vac / 50Hz of input.

### **2.4.4 DYNAMIC LOAD**

Power supply shall operate within regulation defined at following conditions:

Rate output voltage: +/-10%

Step load change: from 0 to 2.5A and 2.5 to 5A on the output

Dwell Time: 100Hz & 1 KHz 50% duty.

Slew rate: 2.5A/usec

## **3 ENVIRONMENTAL SPECIFICATION**

### **3.1 TEMPERATURE**

Operation within specification: 0 to 40 degrees C.

Storage: -20 to 80 degrees C

### **3.2 HUMIDITY**

Operation: 10% to 90% relative humidity, non-condensation.

Storage: 5% to 95% relative humidity, non-condensation.

### **3.3 VIBRATION**

Operating: 10-250Hz, 0.25G peak to peak, 3 axes, 15 min sweep.

Storage: 10-300Hz, 2.0G peak to peak, 3 axes, 15 min sweep.

### **3.4 ALTITUDE**

Power supply shall operate to an altitude of 5000 m

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### 3.5 CALCULATED MEAN TIME BETWEEN FAILURES (MTBF)

The MTBF for the power shall equal or exceed 200,000 hours when operated at full rated load and AC110V or AC230V in an ambient temperature of 40 °C by Telcordia SR-332, issue 2.

Minimum E-capacitor lifetime is 3 years at 25°C at AC 110V/230V and with 100% nominal load.

## 4 REGULATORY COMPLIANCE

### 4.1 EMC SPECIFICATION

#### 4.1.1 FCC REQUIREMENTS

Power supply shall comply with the radiated and conducted emission requirements for FCC Class B.

#### 4.1.2 CISPR REQUIREMENTS

Power supply shall comply with the radiated and conducted emission requirements for CISPR 22 Class B.

### 4.2 IMMUNITY

#### 4.2.1 ELECTROSTATIC DISCHARGE (ESD), EN 61000-4-2

The power supply shall compliance to EN61000-4-2, withstand the following ESD conditions at any point on the power supply enclosure when tested as following condition.

+/- 8KV discharge by air & +/- 4KV discharge by contact, no damage.

The storage capacitance shall be 150 pF and the discharge resistance shall be 330 ohms. The power supply shall meet all discharge requirements for the CE Mark designation.

#### 4.2.2 RADIATED FIELD IMMUNITY, EN 61000-4-3

Power supply shall withstand following condition:

Frequency Range: 80 - 1000MHz

Field Strength: 3 V/m with 80% amplitude modulation of 1 kHz

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**4.2.3 FAST TRANSIENT IMMUNITY, EN 61000-4-4**

Power supply shall withstand EN 61000-4-4 +/-1kV requirements.

**4.2.4 SURGE IMMUNITY, EN 61000-4-5**

Power supply shall withstand 1kV (L – L) and 2kV (L – PE) without functional failure.

**4.2.5 CONDUCTED IMMUNITY, EN 61000-4-6**

Power supply shall withstand following condition:

Frequency Range: 0.15 - 80MHz

Field Strength: 3 V/m with 80% amplitude modulation of 1 kHz

**4.2.6 VOLTAGE DIPS AND INTERRUPTIONS, EN 61000-4-11**

Power supply shall meet EN61000-4-11 requirements.

**4.3 AGENCIES CERTIFICATIONS**

Unless otherwise specified, the supply is designed to meet IEC 60950-1 and/or equivalent safety standards for use in Information Technology Equipment. For desktop universal adapter, CB certificate will identify and support worldwide deviations. Specific agency certifications will be applied at customer's request and cost.

**4.3.1 PRODUCT SAFETY COMPLIANCE**

<b>Agency</b>	<b>Countries</b>
(cUL)	Canada
(UL)	USA
(TUV)	Europe

**Table 5 - Safety Compliance**

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**4.3.2 LEAKAGE CURRENT**

Power supply touch current shall not exceed 3.5 mA at input voltage of 264Vac / 60Hz.

**4.3.3 DIELECTRIC STRENGTH**

The power supply shall withstand following Hi-pot test without breakdown.

4242 Vdc input(L & N) to output for 3 seconds.

2121 Vdc primary(L & N) to PE(primary earth ground) for 3 seconds.

**4.3.4 INSULATION RESISTANCE**

It shall be more than 50M ohm 500VDC 60S, between primary and secondary. 25°C

/55%RH.

**5 MECHANICAL****5.1 INPUT CONNECTOR AND OUTPUT CABLE****5.1.1 INPUT CONNECTOR**

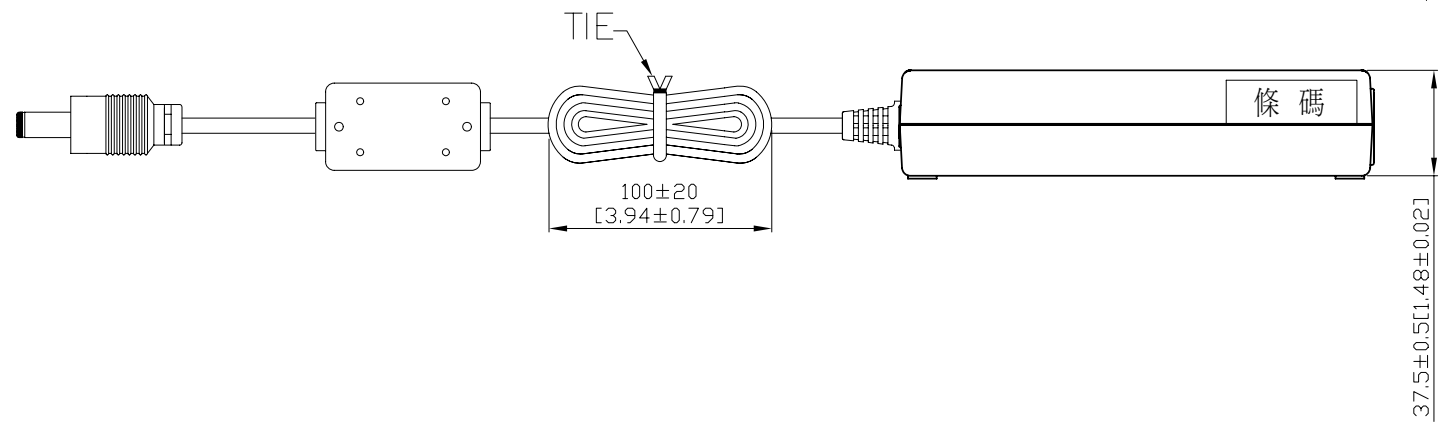
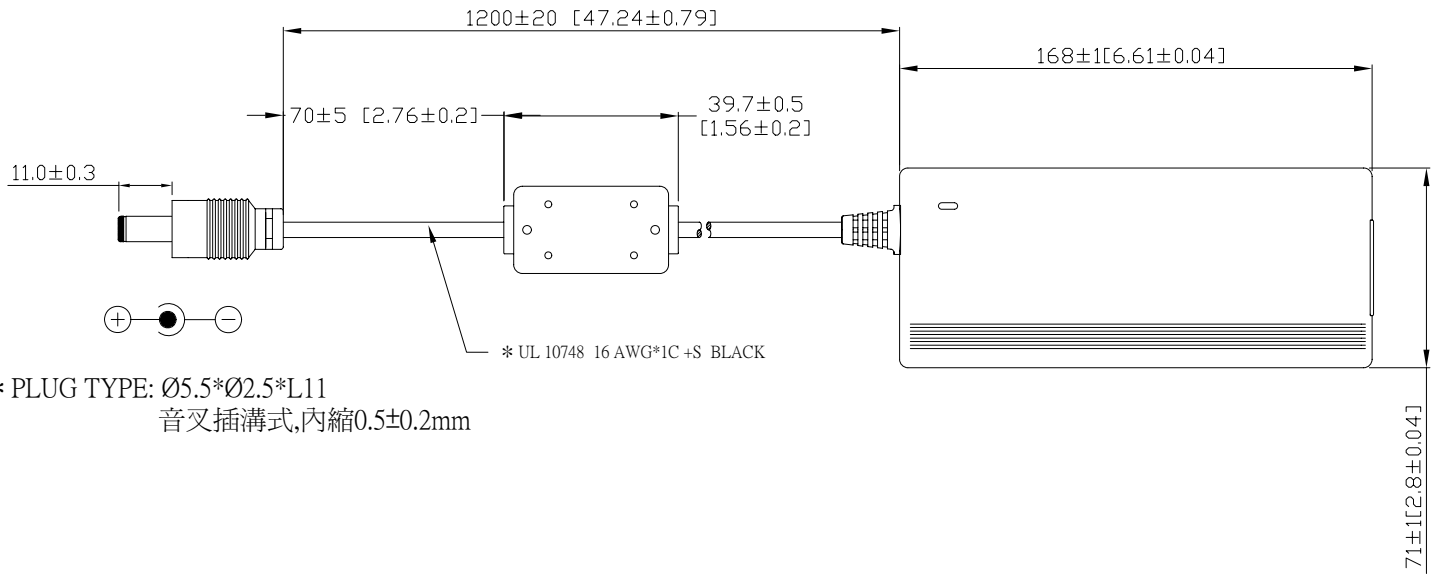
AC Input connector shall be an IEC60320 C14 power connector (International Class I Plug Style).

**5.1.2 OUTPUT CABLE:**

Refer to Refer to drawing.

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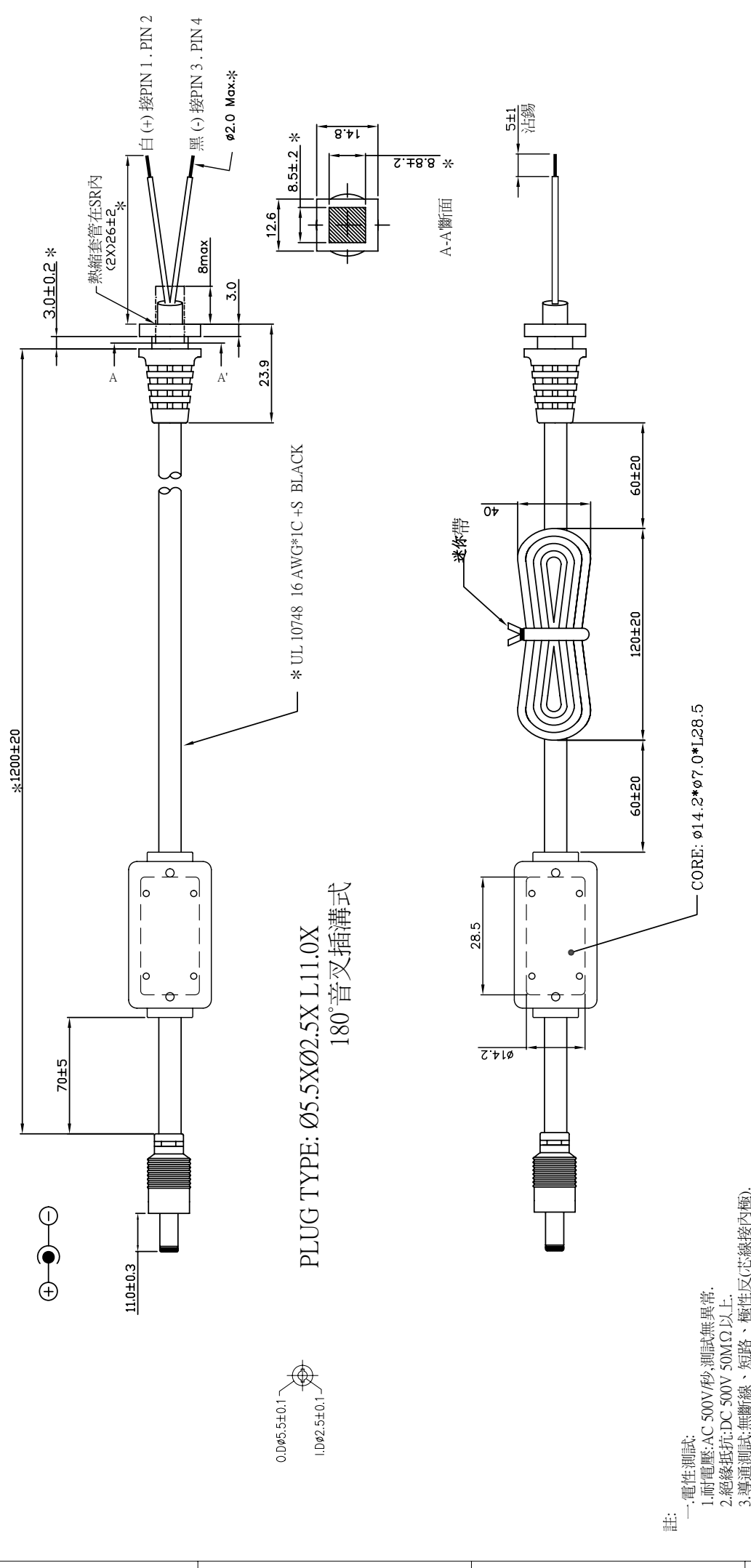
REV	DESCRIPTION OF CHANGE	REV BY	DATE
D01	New Drawing	cy,cai	17.11.03



- NOTES:
1. CASE & CABLE COLOR : BLACK
  2. INLET:
  3. CABLE SPEC.:CABLE ARE UL 10748 16AWG\*1C BLACK
  4. MODEL:G99-ABU120M-N031
  5. PART NO.:G18-B3W212A-M300

APPROVED	DRAWING NO.	UNIT	REV.
cy,cai	ABU120	INCHES(MM)	A
DATE	MODEL NO.	TOLERANCES:	SHEET
2017.11.03	ABU		1/1

TITLE Desktop Switching Adapter



註：  
 一、電性測試：  
 1.耐電壓:AC 500V/秒,測試無異常。  
 2.絕緣抵抗:DC 500V 50MΩ 以上。  
 3.導通測試:無斷線、短路、極性反(芯線接內極)。  
 二、拉力測試:電線與S/R間吊重 9Kg經過1分鐘無斷線脫落等異常。  
 三、折曲測試:  
 電線吊重300g,左右各 60°往復搖擺,45次/分,往復3,000 回後,不完全斷線且外觀無脫落、斷裂等異常。

標註 " \* " 為 IQC 必須檢驗的尺寸或內容。

環保材料標準:		SHEET METAL TOLERANCE (UNLESS OTHERWISE SPECIFIED)			REV.	
No	有害物質名稱	含量標準	DIMENSION	PIERCING	BENDING	ANGULAR
1	銅 (Cd)	<75ppm	X < 8	±0.1	±0.15	±0.3°
2	鉛 (Pb)	<800ppm	8 ≤ X < 25	±0.1	±0.2	±0.5°
3	汞 (Hg)	<800ppm	25 ≤ X < 100	±0.15	±0.25	±0.5°
4	六價鉻 (Cr)	<800ppm	100 ≤ X < 300	±0.2	±0.3	±1°
5	多氯聯苯 (PCB)	<800ppm	300 ≤ X < 800	±0.3	±0.5	±1.5°
6	多溴二苯醚 (PBDE)	結構含量 < 100ppm				
7	鎘、鉛、六價鉻、包裝材料					

DESCRIPTION		REV.	
0.1	在G18-B6W212A-*000基礎上改DC為5.5*2.5*11L 180°音叉插溝式		

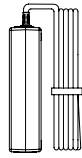
  

UNIT:	mm
MODEL NO.:	CAD120K
PART NO.:	G18-B3W212A-M300
DRAWING NO.:	
APPROVED	CHECKED
DESIGNED	
DATE: 2013.08.06	DATE: 2013.08.06
SCALE: 1/1	SCALE: 1/1
SHEET M/A3	SHEET M/A3

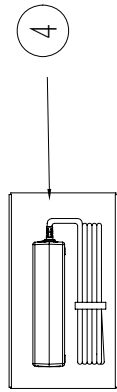


1 2 3 4 5 6

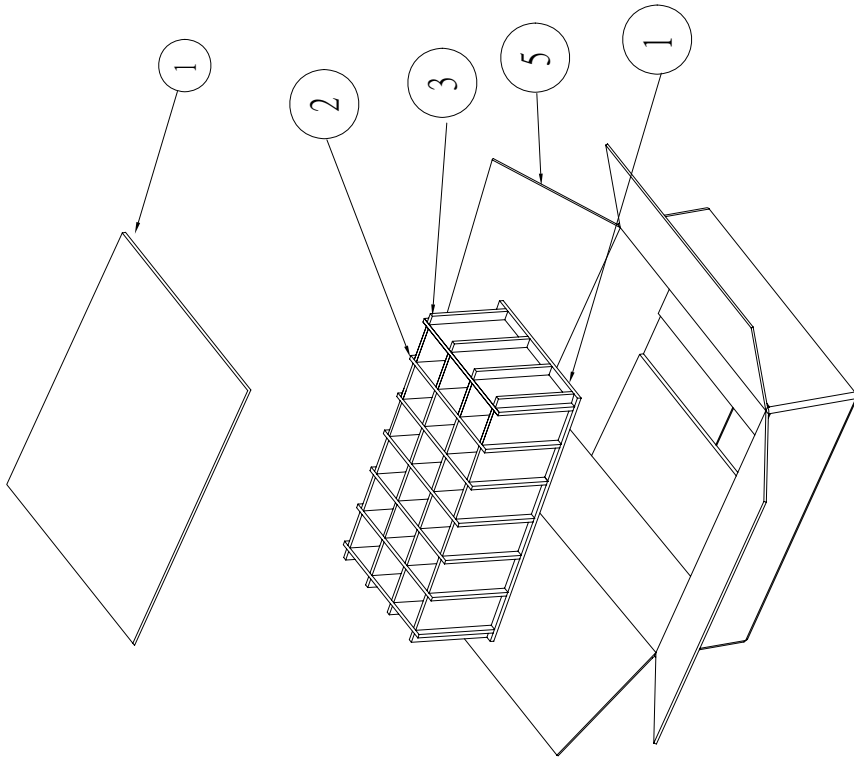
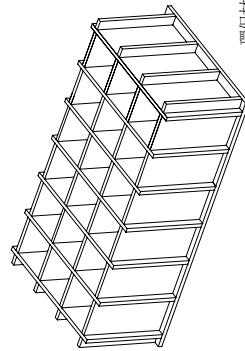
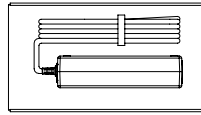
STEP1:將成品及線材整理如下圖,



STEP2:將成品放入PE袋內如下圖,



STEP3:將成品如圖般放入隔板內



- 1.組件:  
 1.1.:隔板: 用量:2PCS  
 1.2.:四刀卡: 用量:7PCS  
 1.3.:七刀卡: 用量:4PCS  
 1.4.:PE袋: 用量:18PCS  
 1.5.:外箱: 用量:1PCS  
 外箱尺寸 450\*400\*240mm  
 QTY.: 18PCS

環保材料標準:

No	有害物質名稱	含量標準
1	鎘 (Cd)	<75ppm
2	鉛 (Pb)	<80ppm
3	汞 (Hg)	<80ppm
4	六價鉻 (Cr)	<80ppm
5	多溴聯苯 (PBB)	<80ppm
6	多溴二苯醚 (PBDE)	<80ppm
7	鎘,鉛,汞,六價鉻(包膜材料)	總含量<10ppm

0.1

SHEET METAL TOLERANCE  
(UNLESS OTHERWISE SPECIFIED)

DIMENSION	PIERCING	BENDING	ANGULAR
X < 8	±0.1	±0.15	±0.3°
8 ≤ X < 25	±0.1	±0.2	±0.5°
25 ≤ X < 100	±0.15	±0.25	±0.5°
100 ≤ X < 300	±0.2	±0.3	±1°
300 ≤ X < 800	±0.3	±0.5	

\*\*\*\*\* DRAWING NO.:

YM.XIE JC.ZOU Q.LIU

DATE:2015.12.23 DME:2015.12.23

SHEET

1/1