

SPECIFICATION FOR APPROVAL



CUSTOMER: Ideal Power

MODEL NO. : XA024BM1200200

CUSTOMER P/N: 40XA024BM1200200-2.5

P/N: S-1900279

CUSTOMER MODEL: _____

REV. NO. : 0

DATE : 2019/10/16

DESCRIPTION: Input:100-240Vac ;Output:12.0Vdc2.0A, SMPS Adaptor

Dear Customer:

Please send one copy of this specification back after you sign and approve for Production.

Customer approved comments:

We have reviewed and approved all pages (page1 to page14) of this SPEC.

Approved By: _____

Date: _____

ISSUED BY

SKY

CHECKED BY

Alan

APPROVED BY

Eric

样品说明(SAMPLE DESCRIPTION)

样品用途 THE PURPOSE OF THE SAMPLE	无样板 (NO-SAMPLE)	工作样板 (WORK-SAMPLE)	功能样板 (FUNCTION-SAMPLE)	最终样板 (FINALLY-SAMPLE)
	☐	☐	☒	☐

此次送样后如客人测试 OK,还需继续的事项/

THE ITEMS NEED BE CONTINUED OF THESE SAMPLES CONFIRMED BY CLIENT

EMI 整改/EMI MODIFICATION	安规申请 /SAFETY APPLY	修改 PCB 设计/ PCB MODIFICATION	开模/MOULD			试产 /TRIAL-PRODUCE
			PCB	DC CORD	CASE	
☐	☐	☐	☐	☐	☐	☒

送样材料偏差清单/

DIFFERENCE OF THE SAMPLE WITH BOM:

位置编号 POSITION NO.	元件类型 PART TYPE	本次送样实际使用 MATERIAL OF THIS SAMPLE	未来量产应用 MASS-PRODUCTION MATERIAL	备注 REMARK

与上次送样差异描述/

DIFFERENCE OF THE SAMPLE WITH BOM:

编号 NO.	上次样品内容 ITEM OF LAST TIME	本次样品改变内容 CHANGED ITEM OF THIS TIME	改变原因 CHANGE REASON
1			
2			
3			
4			
5			

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1. SCOPE

This document details the electrical, mechanical and environmental specifications of a switching power supply.

1.1 Description

☒ Wall Mount

☐ Desk-Top

☐ Open Frame

☐ Others

2. INPUT REQUIREMENTS

2.1 Input Voltage & Frequency

The range of input voltage is from 90Vac to 264Vac

	Min	Normal	Max.
Input Voltage	90Vac	100-240Vac	264Vac
Input Frequency	47Hz	50/60Hz	63Hz

2.2 Input current

The maximum input current is 500mA Max. at 100-240Vac .

2.3 Inrush Current

The inrush current will not exceed 50A at 100-240Vac input and Max load for a cold start at 25°C.

3. OUTPUT FEATURES

3.1 Output Parameters

	Output Data	Spec. Limit			Test Condition
3.1.1	12.0Vdc	Min. Value	Typical	Max. Value	
3.1.2	Output Voltage	11.4Vdc	12.0Vdc	12.6Vdc	0.01 ~2.0A Loading
3.1.3	Output Load	0.01A	—	2.0A	
3.1.4	Ripple and Noise	—	—	200mVp-p	20MHz Bandwidth 10uF Elec. Cap.0.1uF Cer. Cap.
3.1.5	Output Overshoot	—	—	10%	MAX. load & 100-240Vac

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3.2 Turn On Delay

During turn on and turn off, no output voltage shall exceed its nominal voltage by more than 10% and no output shall change its polarity with respect to its return line. All outputs shall reach their steady state values within 3 seconds of turn on.

3.3 Hold Up Time

10 ms minimum at 115Vac/60Hz input at maximum load, and 20 ms minimum at 230Vac/50Hz input at maximum load.

3.4 Output Transient Response

The power supply shall maintain output transient response time within 1500mV with a loading current change from 20% to 80% of maximum current and 0.5A/ μ s rise up /drop down test at end of output terminal.

4. PROTECTION REQUIREMENT

4.1 Over Voltage Protection

Over voltage protection shall be included in the adaptor circuit. A single component failure must not cause an over voltage.

4.2 Over Current Protection

The adaptor must have a current limiting function on the output voltage. in overload mode, the output must drop to a low voltage. The OCP 4.0A max.

4.3 Short Circuit Protection

The adaptor must withstand a continuous short circuit on the output without damage.

5. ENVIRONMENTAL CONDITIONS

5.1 Operating

The power supply shall be capable of operating normally in any mode without malfunction happens in the following environmental conditions.

5.1.1 Operating Temperature: 0°C ~ 40°C

Relative Humidity: 10% ~ 90%

Altitude: Sea level to 2,000 m.

5.1.2 Vibration: 1.0mm, 10-55Hz, 15 minutes per cycle for each axis (X, Y, Z).

5.1.3 Cooling: Natural convection cooling.

5.2 Non - Operating

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.

5.2.1 Storage Temperature: -10°C ~ 60°C

5.2.2 Relative Humidity: 5% ~ 95%

5.2.3 Altitude: Sea level to 2,000 m.

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5.2.4 Vibration and Shock:

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.

6. RELIABILITY AND QUALITY CONTROL

6.1 MTBF

When the power supply is operating within the limits of this specification the MTBF shall be at least **50000** hours at 25°C (MIL-HDBK-217F).

6.2 Burn-In

The power supply shall withstand a minimum of **4** hours Burn-In test under full load at **35°C ~40°C** room temperature, after test, product shall operate normally.

6.3 Component De-rating

Semiconductor junction temperatures shall not exceed the manufacturer's maximum thermal rating.

7. MECHANICAL CHARACTERISTICS

7.1 Physical Dimensions

The detail dimension of the power supply is drawing on APPENDIX A.

7.2 Nameplate

The label of the power supply, please see APPENDIX B.

7.3 Drop test

Dropped freely from 1 m (for wall mount product) height onto the surface is consisted of hardwood 13 mm thick, mounted on two layers of plywood each 19-20 mm thick, all supported on concrete floor 1 time from 3 different surface, after test, it's no safety damage for product.

8. SAFETY

8.1 Safety Standard

The power supply shall be certified under the following international regulatory standards.

Item	Country	Certified	Standard	Present
UL	USA	APPROVED	UL60950-1 2 nd /UL60065	✓
CUL	Canada	APPROVED	CSA C22.2 NO.60950-1/UL60065	✓
FCC	USA	APPROVED	PART 15 CLASS B	✓
VDE/GS	Europe	MEET	EN 60950-1 2 nd /EN60065	✓
CE	Europe	APPROVED	EN 60950-1 2 nd /EN60065	✓
BS/UK	Britain		BS EN 60950-1 2 nd /EN60065	
SAA	Australia	MEET	AS/NZS 60950-1/NZS60065	✓
CCC	China		GB4943	
Ko	Korea		K60950	
PSE	Japan	MEET	J60950 (H27)/J60065 (H26)	✓
Others				

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8.2 Insulation Resistance

Input to output: 10 MΩ min. at 500 VDC.

8.3 Dielectric Strength (Hi-Pot)

Primary to Secondary DC4242V or AC3000V 10mA 1 minute for type test, 3 seconds for product.

8.4 Leakage Current

The leakage current shall be less than 0.25mA for Class II when the power supply is operated maximum input voltage and maximum frequency.

9. EMC STANDARDS

9.1 EMI Standards

The power supply shall meet the radiated and conducted emission requirements for EN55032 CLASS B, FCC PART 15 CLASS B.

9.2 EMS Standards(EN55035)

The power supply shall meet the following EMS standards.

9.2.1 IEC61000-4-2 Electrostatic Discharge (ESD)

Static – discharge test by contract or air should be conducted with Static – discharge teeter, energy storage capacitance of 150pF, and discharge resistance of 330Ω.

8KV air discharge, 4KV contact discharge, Performance Criterion B.

9.2.2 IEC61000-4-3 Radiated Electromagnetic Fields(RS)

Radio- frequency Electromagnetic Field Susceptibility Test, RS, 80-1000MHz, 3V/m, 80%AM(1KHz), Performance Criterion A.

9.2.3 IEC61000-4-4 Electrical Fast Transient / Burst (EFT)

Power Line to Line: 1KV

Performance Criterion B.

9.2.4 IEC61000-4-5 Lightning Surge Attachment

Lightning Surge voltage of differential and common modes shall be applied across AC input lines and across input and frame ground.

Power Line to Line (Common Mode): 1KV

Power Line & Neutral to Earth (Different Mode): 2KV

9.2.5 IEC61000-4-6 Conducted Radio Frequency Disturbances (CS)

Conducted Radio Frequency Disturbances Test, CS, 0.15-80 MHz, 3V/m, 80%AM, 1KHz, Performance Criterion A.

9.2.6 IEC61000-4-11 Voltage Dips/Short Interruption/Variations

Voltage Dips, 30% reduction- 10ms, Performance Criterion B, 60%

Reduction – 100ms, Performance Criterion C, Voltage Interruptions>95%

Reduction- 5000ms, Performance Criterion C.

10. OTHER REQUIREMENTS

10.1 Hazardous Substances

The components and used materials shall be in compliance with

 EU Directive 2011/65/EU "RoHS 2"

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10.2 Energy Efficiency

The power supply shall meet the following EMS standards.

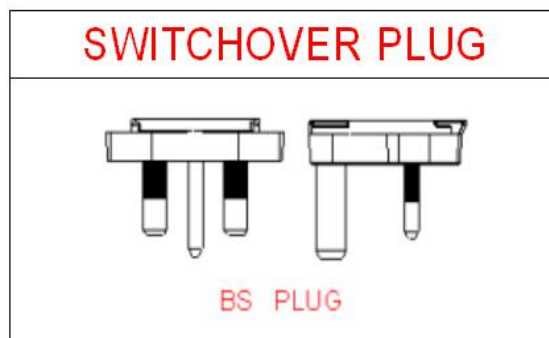
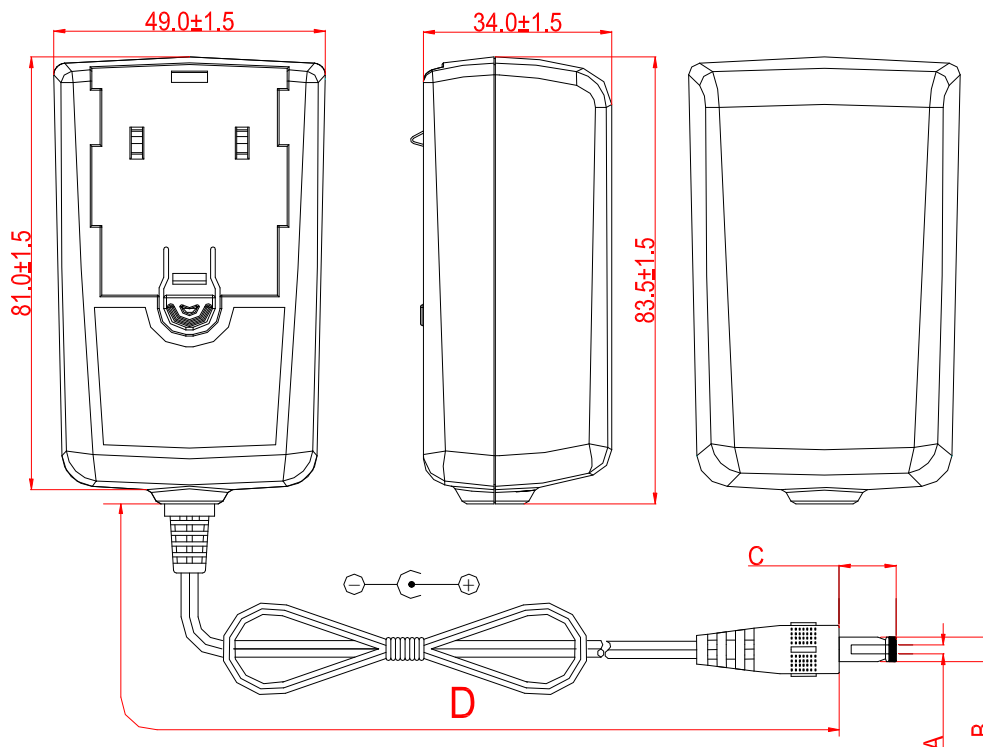
- 10.2.1 The No-Load power consumption shall be less than 0.1W at input 115/230 Vac.
 10.2.2 The average active mode efficiency shall be higher than 86.20% at input 115/230 Vac.
 10.2.3 International Efficiency Level VI
 10.2.4 This power supply is therefore in compliance with the requirements of

- ☐ California Energy Commission for external power supplies (CEC)
- ☒ Energy Star requirements for external power supplies(EPS Version 3.0)
- ☐ EU Code of Conduct Energy requirements of external power supplies
- ☐ Australian and New Zed Energy Performance Requirements for external power supplies (MEPS)
- ☐ China Energy Efficiency requirements for external power supplies (GB20943)

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APPENDIX A

External View



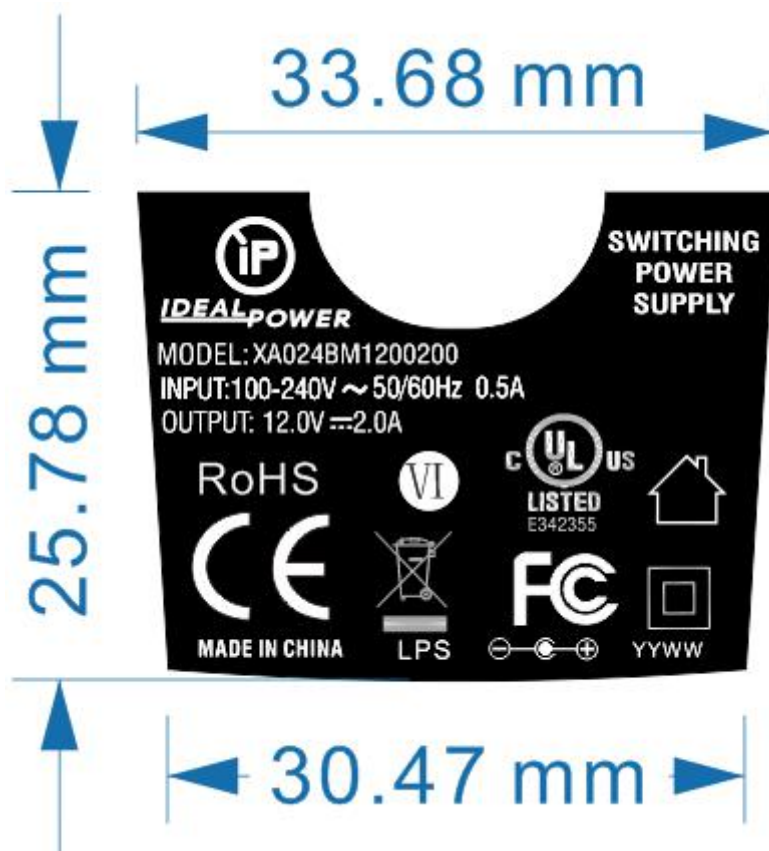
UNIT:mm

	ΦA	ΦB	C	D
DIMENSION	2.5	5.5	12.0	1800
TOLERANCE	+0.1/-0	±0.1	±0.5	±50
REMARK	AWG20#/2C UL2468 BLACK "Tunning fork with groove"			

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APPENDIX B

Nameplate



Unit: mm

Tolerance: +0/-0.2

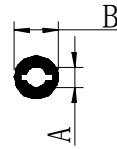
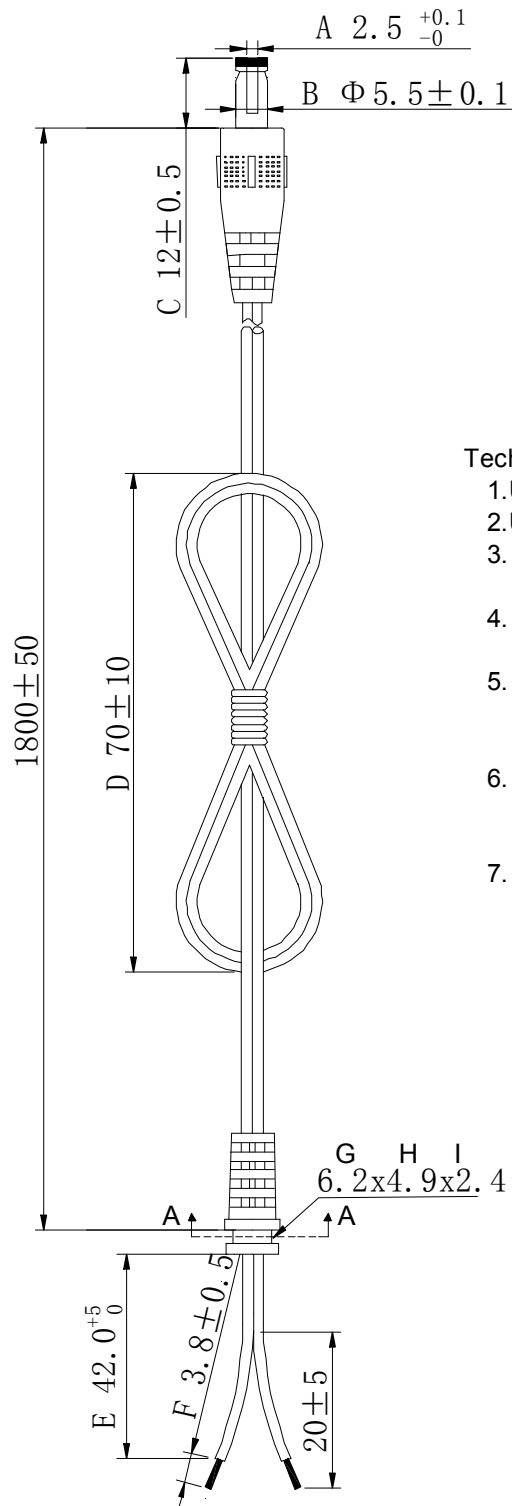
Printed by Laser Printer

* Please Advise If Any Comments About The Name Plate Information
Otherwise, This Information Is Defaulted As Customer Approval,
And Will Be Applied To Production.

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APPENDIX C

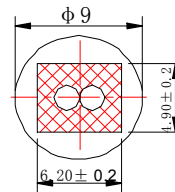
DC CORD



TUNNING FORK WITH GROOVE

Technical requirements:

1. Unit:mm
2. Unremarked Tolerance:±0.3;
3. 20AWGx2C, UL2468; one is black , the other is with white minus sign
4. Mode of connection: wire with white minus sign connect to inner tip
5. Plug bending test: load 200g weight, distance of hanging point and fulcrum: 30cm, angle: 60° 40 times/minute, min 20 00 times
6. S/R bending test: load 20LB(9072g), continuous 1minute and distance of hanging point and fulcrum is 30cm, displacement no more than 5mm
7. ROHS 2.0



SECTION A-A

Total length(L) : 1800 ± 50 (IQC checks)

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APPENDIX D

Packing Drawing

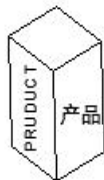
DIMENSION(UNIT IN cm):

	L	W	H
WHITE BOX	10	5	7.5
CARDBOARD	41.0	39.0	\
CARTON	42.0	40.0	23.0

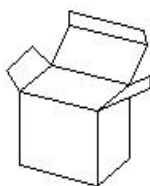
PACKING METHOD:

PAPERBOARD PLACEMENT METHOD	PUT A PAPERBOARD BETWEEN THE TOP AND BOTTOM,TOTAL 2PCS
PACKING METHOD	20PCS/LAYER X4 LAYERS
QTY	80PCS
N.W.	12.0kg
G.W.	13.5kg

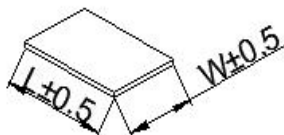
PRUDUCT/产品:



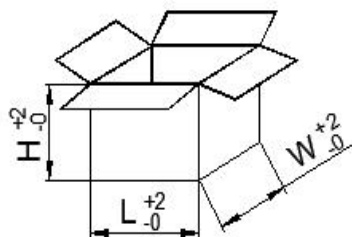
PRIMARY BOX/小白盒:



PAPERBOARD/平卡:



CARTON/纸箱:



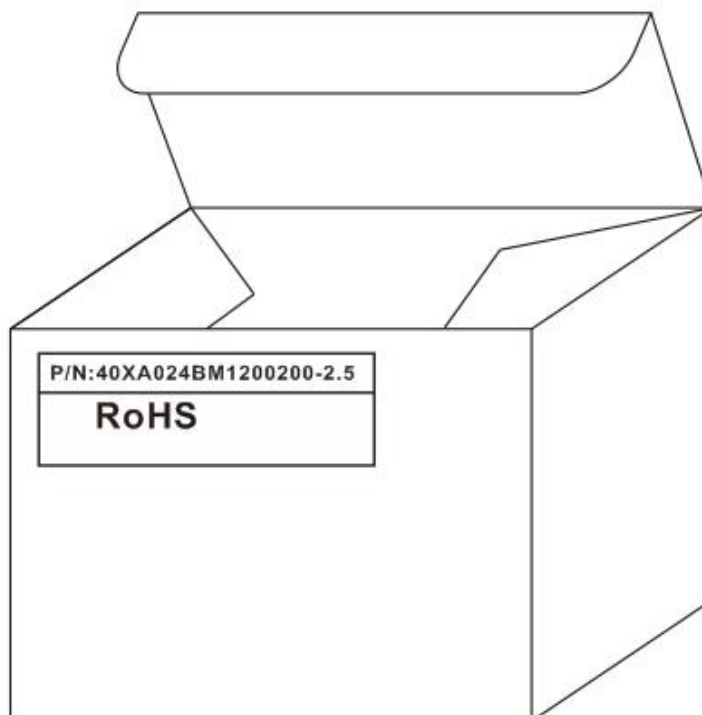
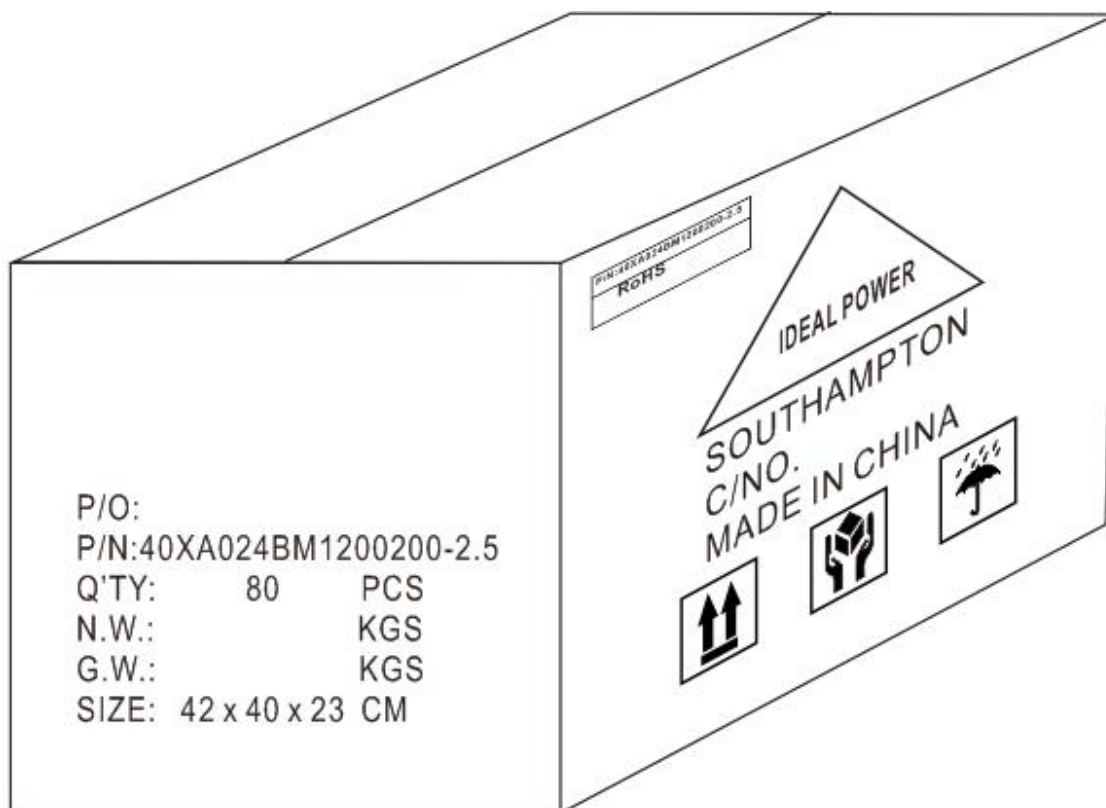
REMARK:

- STORAGE CONDITION
TEMPERATURE: -10℃~+60℃
RELATIVE HUMIDITY: 30%~80%
- STORAGE PERIOD: 6 MONTHES
- ANLISTATIG: NO REQUIREMENT
- PLEASE ADVISE IF ANY COMMENTS ABOUT THE PACKING INFORMATION.
OTHERWISE,THIS INFORMATION IS DEFAULTED AS CUSTOMER APPROVAL,
AND WILL BE APPLIED TO PRODUCTION.

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APPENDIX E

Description for marking on carton and white box



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