

**WH** 華興變壓器製造廠有限公司  
**WAH HING TRANSFORMER MFY. LTD.**

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***SPECIFICATION FOR APPROVAL***

**Customer:** Ivent Solutions Limited

**Customer P/N:**

**Customer Rev.:**

**Customer Model No.:**

**Customer ID: 1051**

**Wah Hing Model No.: S01844A**

**Wah Hing Rev.: 02**

**Article: SWITCHING POWER SUPPLY(AC-DC)**

**Standard: CB/CE/SAA/ETL/IEC60950-1**

**Safety No.:**

**Catalog No.:**

**Date: 16-Jan-20**

**Remarks:**

*Please note items listed in page.2 that requires your consent for deviation.*



**Designed/Maker**



**Checked by**



**Approved by**

*Please evaluate the samples, sign this approval sheet and return to  
 WAH HING*

- Approved
- Rejected
- Conditional Approved

**Comments:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

**Customer Approved by :** \_\_\_\_\_

Signature & Date

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**PRODUCT SPECIFICATION**

**Deviation and History**

*Please note items listed below does not meet your specifications and requires your consent for deviation:*

Item	Customer specification	Suggestion specification

Remarks:

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	02	update 8.5 Dimensions And Diagram update Size update 10.0 APPENDIX update 9.0 PROPOSED ARTWORK MARKING	Z J LIU	17-Jan-20
	01	9.0 update data plate content	Issac wu	14-Sep-17
	00	First issue.	X.W.Liu	12-Sep-16
Item	Rev	Description	Sign	Date

**History**

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## 1.0 INTRODUCTION

The document specifies the AC/DC switching power supply with one output, the total output power is 7.5W Max. The unit meet RoHS directive of the European Union. The unit meet US Department of Energy (DoE) Proposed Rule for External Power Supplies level VI.

## 2.0 INPUT CHARACTERISTICS

- 2.1 Input Voltage : AC100-240 V Performance guarantee  
Input Voltage Range : AC90-264 V
- 2.2 Input Current : 0.3Arms max. @ AC100-240 V full load
- 2.3 Operating Frequency : 50-60 Hz  
Operating Frequency Range : 47-63 Hz
- 2.4 Standby Power :  $\leq 0.1W$  @ AC100-240VAC 60/50Hz
- 2.5 Input Fuse : 4.7 $\Omega$  1W fusible resistor
- 2.6 Input Connector : US/EU/UK/AU Interchangeable Plug

## 3.0 OUTPUT CHARACTERISTICS

- 3.1 Output Voltage : DC5.0V $\pm$ 5% @ AC100-240VAC Load 0A  
DC5.0V $\pm$ 5% @ AC100-240VAC Load 1.5A
- 3.2 Output Current  
Rated loading current : 1500 mA  
Minimum loading current : 0 A
- 3.3 Ripple and Noise : 150 mV<sub>p-p</sub> max. @ AC100-240VAC full load  
Ambient temp. 25°C

The measurement for differential ripple and noise the output will be using oscilloscope, with 20MHz bandwidth. A 10uF electrolytic capacitor and a 0.1uF ceramic capacitor should be parallel with output load.

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3.4 Average Efficiency : 76.65 % min. @ AC115/230VAC  
After temperature is saturated, measurement be made at DC cord output terminals. Efficiency is averaged over 25%, 50%, 75%, 100% of load.

3.5 Line Regulation :  $\leq \pm 5\%$  @ AC100-240VAC full load

3.6 Load Regulation :  $\leq \pm 10\%$  @AC100-240VAC 60/50Hz

3.7 Hold-up Time : 10mS min @ AC100-240VAC full load  
During operation, cut off the primary power source until the 90% rated output voltage is falled.

3.8 Start up time : 3S max @AC100-240VAC 60/50Hz

During turn on output voltage shall not exceed its nominal voltage by more than 10% and all output shall reach their steady state values within 3seconds of turn on.

#### 4.0 PROTECTION FUNCTION

4.1 Over-current Protection : 2.0Amax @AC100-240VAC 60/50Hz

The power supply shall be hiccupped when any output operating in overload condition (set@ MAX2.0A ) under any line condition for an indefinite period of time the power supply shall be auto recovered when the fault condition is removed.

4.2 Short circuit protection :

The power supply shall be hiccupped and no damage shall be occurred when any output operating in over temperature conditions under any line conditions for an indefinite period of time the power supply shall be auto recovered when the fault condition is removed.

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**5.0 ENVIRONMENTAL CONDITION**

**5.1 Non-operation**

5.1.1 Ambient temperature : -20-70 °C

5.1.2 Relative humidity : 10-90 %

The power supply shall be capable of withstanding the above environmental conditions for extended periods of time, without sustaining electrical and/or mechanical damage and subsequently operational deficiencies.

**5.2 Operating**

5.2.1 Ambient temperature : 0-40 °C

5.2.2 Relative humidity : 20-80 %

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

**6.0 SAFETY AND EMC STANDARD**

6.1 Safety standard : CB/CE/SAA/ETL/IEC60950-1

6.2 EMC Standard : EN55022 class B, FCC Part 15 Class B

6.3 Immunity to electrostatic discharge(ESD) according : EN61000-4-2

6.4 Immunity to radiated electromagnetic field according : EN61000-4-3

6.5 Immunity to electrical fast transients(burst) according : EN61000-4-4

6.6 Surge capability according : EN61000-4-5

6.7 Immunity to conducted disturbances,induced by radio frequent fields according : EN61000-4-6

6.8 Immunity to voltage dips short interruptions and voltage variations, test according : EN61000-4-11

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6.9 Dielectric strength : AC3000V 60S Cut off current 5mA  
Primary to secondary

6.10 Insulation Resistance : DC500V 60S 10MΩ MIN  
Primary to secondary

## 7.0 RELIABILITY AND QUALITY CONTROL

### 7.1 Burn-in

7.1.1 Burn-in Ambient temperature : 40 °C

7.1.2 Burn-in Time : 2-4 hr.  
AC source 230Vac/50Hz, 80-100% loading.

7.2 MTBF(mean Time Between Failure)(MIL-HDBK-217F)  
MTBF 100000 hr @230V Ambient temp 40°C

## 8.0 MECHANICAL

### 8.1 Case

8.1.1 Case Material : Plastic

8.1.2 Case Dimension : L62\*W39.2\*H31.8 mm

8.1.3 Case Colour : Black

8.2 Weight(Adaptor unit) : 138 g (about)

8.3 Input plug type : US/EU/UK/AU Interchangeable Plug

### 8.4 Output terminal

8.4.1 Output cord : UL2468 AWG20 1500+/-50mm  
out of case

8.4.2 Output plug type : 2.1\*5.5\*10.0 mm, straight female

8.4.3 Output plug center polarity : + (Positive)

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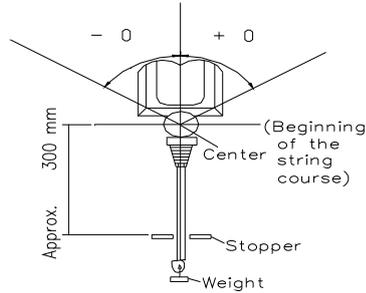
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8.4.4 Flexibility test

: SR: 1200 Cycles, loading 200g

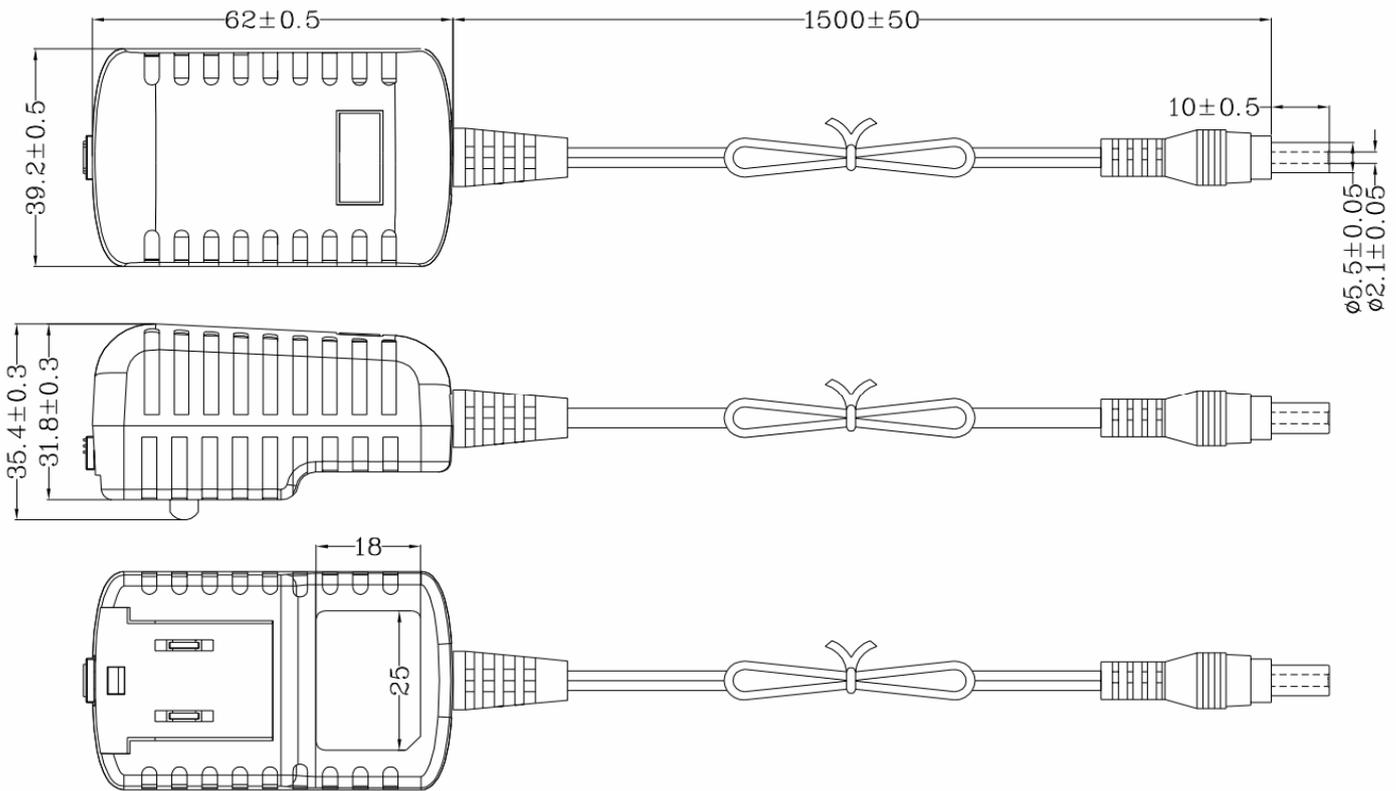
DC Plug: 600 Cycles, loading 200g



Bend in obverse at rate 20 time/min. and at an angle of  $\pm 60^{\circ}$ . Number of broken wire. Disconnection rate of the wire shall be 30% or less. and no abnormality on appearance.

8.5 Dimensions And Diagram

02



**Notice:**

1. Unit: mm
2. The otherwise tolerance is follows:  $\pm 0.2$

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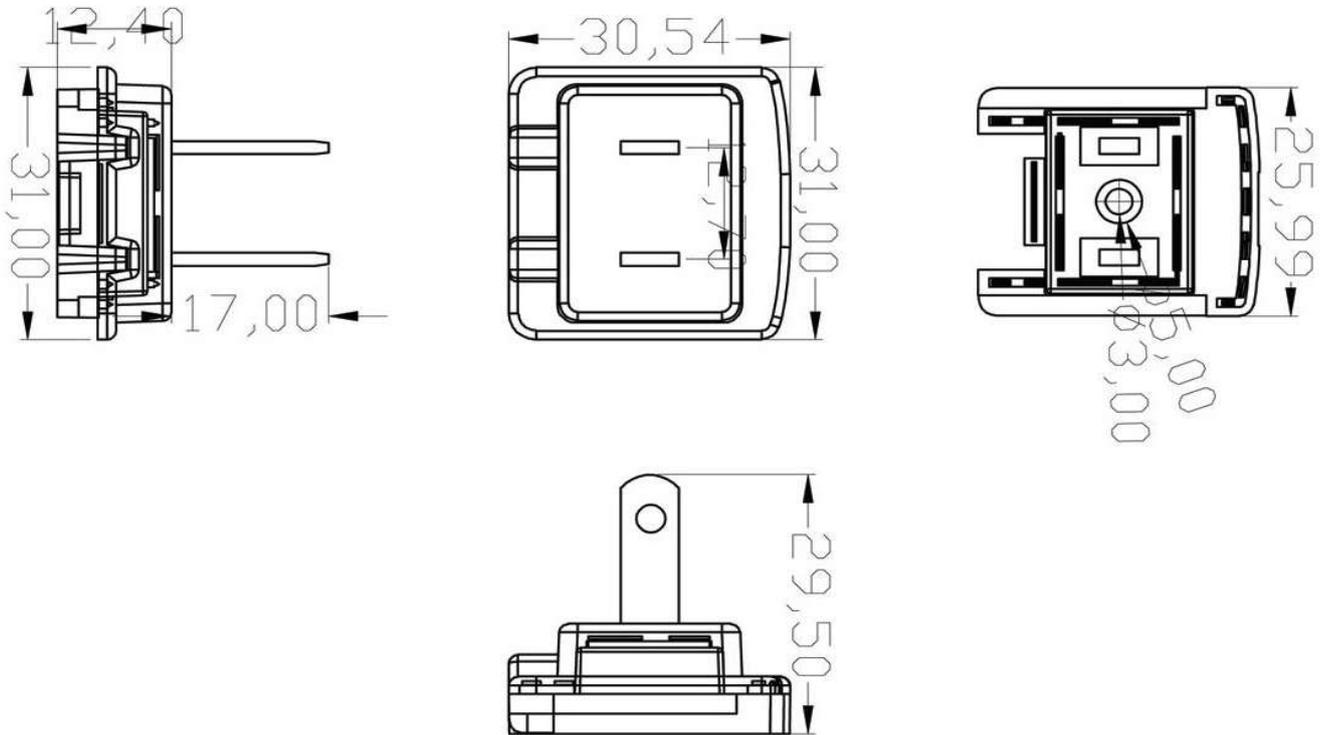


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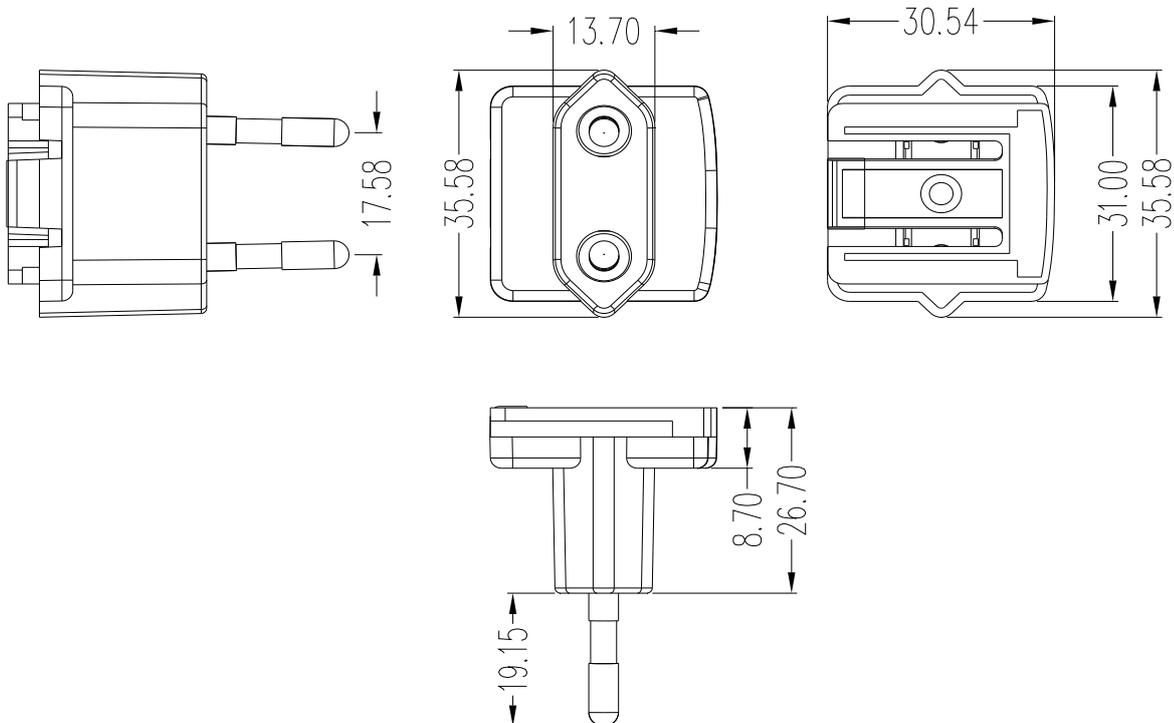
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### 8.5.1 US Plug Dimensions and Diagram



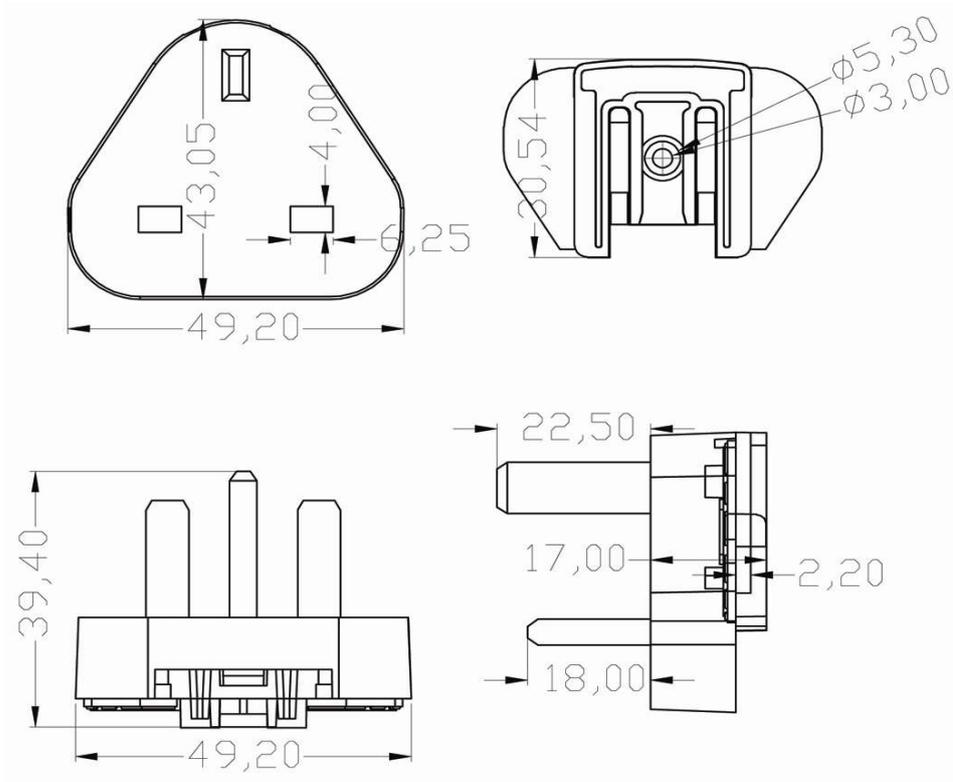
### 8.5.2 EU Plug Dimensions and Diagram



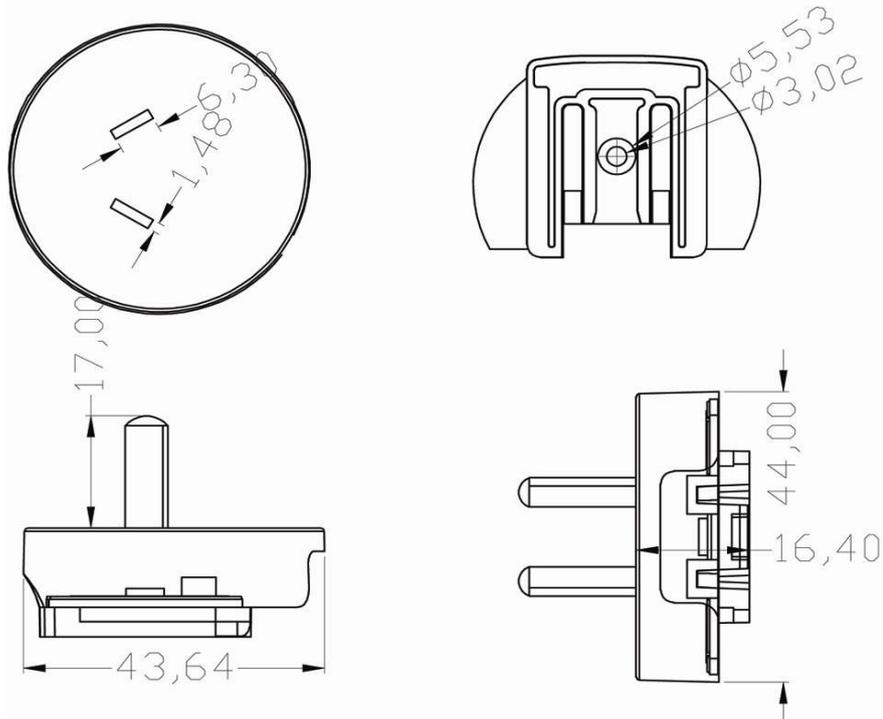
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8.5.3 UK Plug Dimension and Diagram



8.5.4 AU Plug Dimensions and Diagram

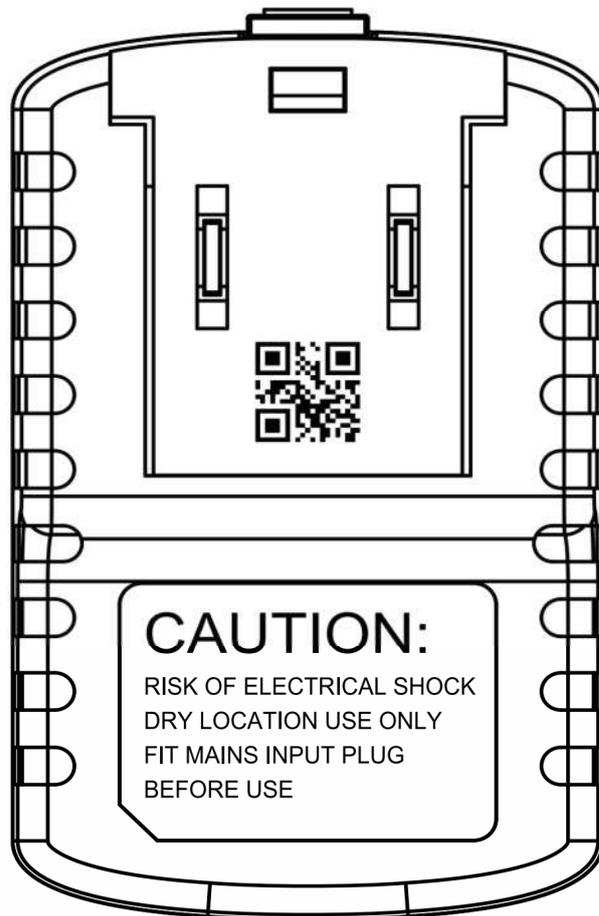
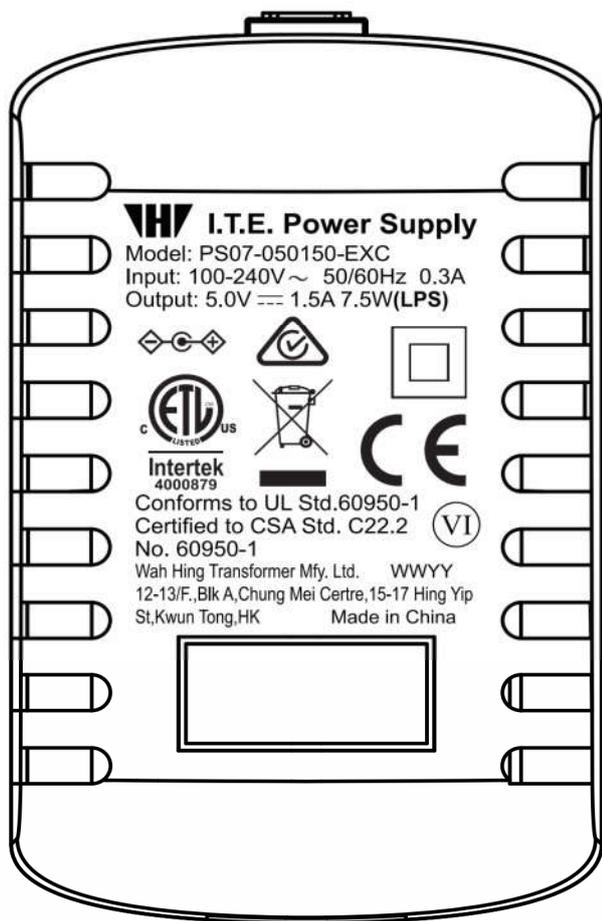


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9.0 PROPOSED ARTWORK MARKING



WW=week, YY=year

Notice:

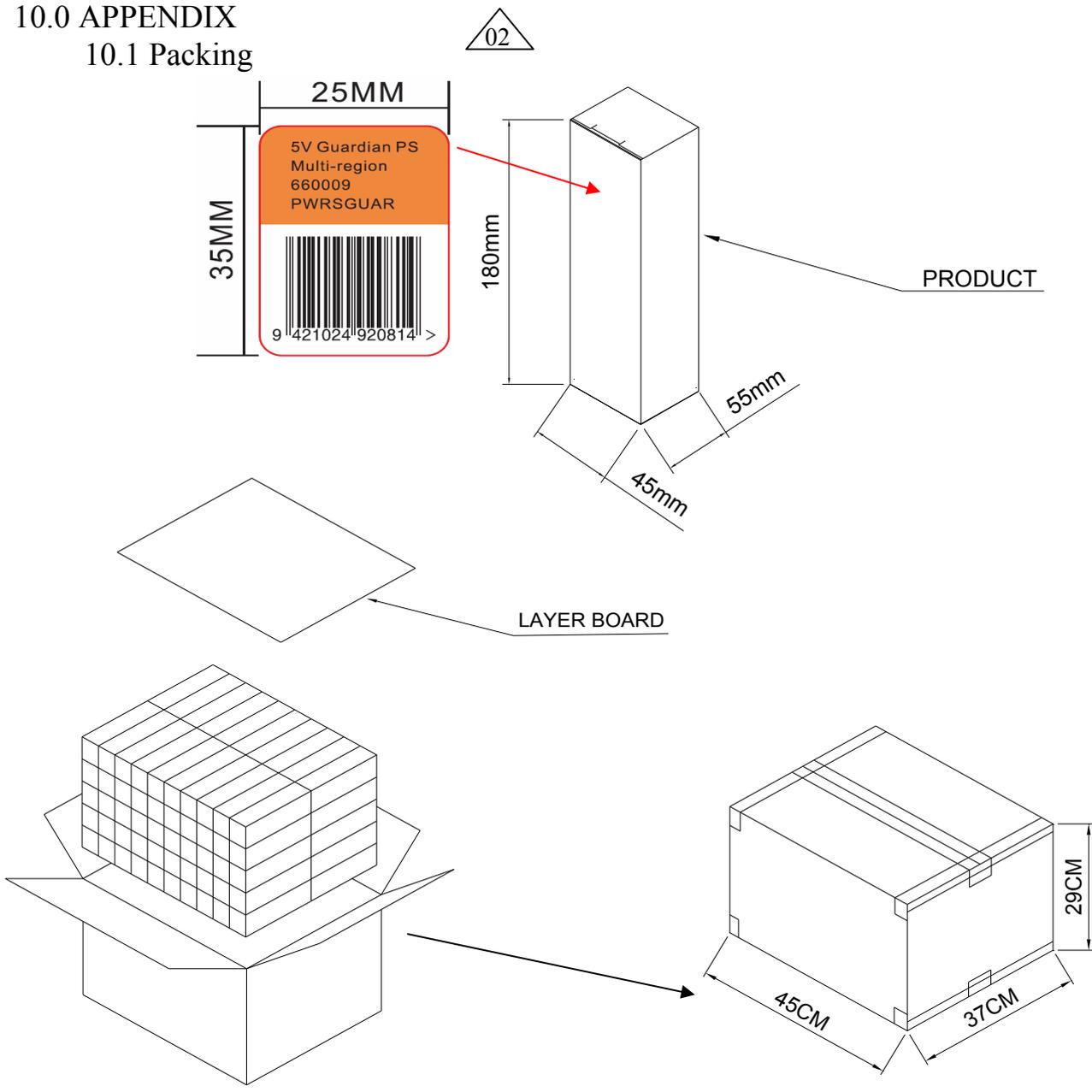
1. Unit : mm
2. Scale : None
3. Material : Using laser printing.
4. The otherwise tolerance is follows:  $\pm 0.2$

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10.0 APPENDIX  
 10.1 Packing



Packing description:

- 1.0 20PCS/LAYER,TOTAL 5LAYERS
- 2.0 100PCS/CARTON

	L	W	H
Size (cm)	45	37	29
Tolerance	+2/-0	+2/-0	+2/-0
QTY (pcs)	100		
G. W. (Kg)	18(about)		

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