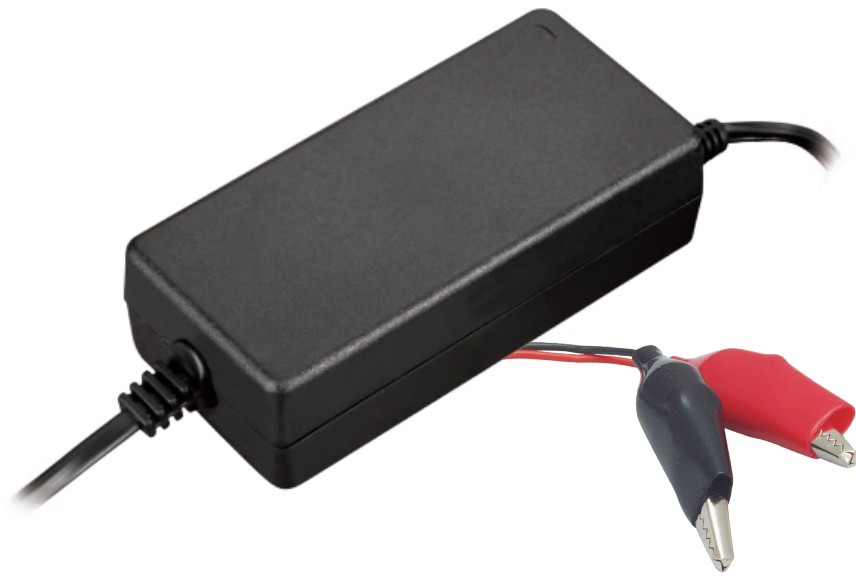




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FU-CP4000-12-CC • Lead acid battery charger



## FU-CP4000-12-CC • Lead acid battery charger

### 1. Scope

The purpose of the document is to specify the functional requirements of a 57.6W switching power supply.

### 2. INPUT characteristics

<b>Rated voltage</b>	100-240V AC
<b>Variation range</b>	90-264V AC
<b>Rated frequency</b>	50/60Hz
<b>Variation frequency</b>	47/63Hz
<b>Input current</b>	1.5Amps max at any input voltage and rated, DC output rated load
<b>AC leakage current</b>	0.25mA Max. at 264VAC input
<b>Inrush current</b>	120Amps Max. Cold start at 240Vac input, with rated load and 25°C ambient.

### 3. Output characteristics

Power output				
Voltage	Min. Load	Rated load	Peak load	Output power
14.4VDC	0.00A	4.0A	4.5A-8.0A	57.6W

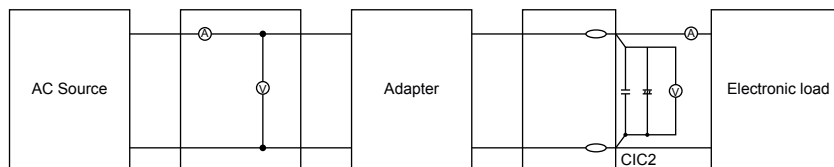
  

Combined Load/Line Regulation				
Voltage	Min. Load	Rated load	Line regulation	Load regulation
14.4VDC	0.00A	4.0A	±3% 13.97-14.84V	±5% 13.68-15.12V

#### 3.1 Voltage accuracy: ±5%.

#### 3.2 Ripple and Noise

Output Ripple voltage is 200mV peak to peak or less.(100Vac 60Hz/240Vac 50Hz).



#### Measured methods:

\* The ripple is measured from peak to peak with band width limit of 20MHz C1:0.1uF Ceramics capacitor C2:47uF/50V aluminum capacitor under DC output full load, AC nominal input 25°C ambient temperature).

#### 3.3 Turn on delay time

3Second Max.at 100Vac input and output Max.load.

#### 3.4 Rise time

40mS Max. at 100Vac input and output Max load.

#### 3.5 Hold up time

5mS Min. at 100Vac input and output Max.Load.

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### 4. Protection function

#### 4.1 Short circuit protection

The power supply will be auto recovered when short circuit faults remove.

#### 4.2 Over current protection

The power supply will be auto recovered when over current faults remove.

#### 4.3 Output voltage achieve over voltage protection point.will auto protection without output.be capable of auto-recovery function.

### 5. Environmental requirement

#### 5.1 Operating Temperature

-20°C to 50°C, Full load, Normal operation.

#### 5.2 Storage Temperature

-40°C to 80°C with package

#### 5.3 Relative Humidity

25%(0°C)~75%(40°C)RH, 72Hrs, Full load, Normal operating.

#### 5.4 Operating Altitude:

-50 to 4500m AMSL.

### 6. Safety and EMI requirement

#### 6.1 Regulatory Standards

	Type	Country	Standard
<input type="checkbox"/>	UL	USA	UL62368-1
<input type="checkbox"/>	TUV	Europe	EN62368-1
<input type="checkbox"/>	CCC	China	GB4943
<input checked="" type="checkbox"/>	CE	Europe	EN62368-1
<input type="checkbox"/>	RCM	Australia	AS/NZ62368-1
<input type="checkbox"/>	PSB/CB	Singapore	IEC62368-1
<input type="checkbox"/>	PSE	Japan	J62368-1
<input type="checkbox"/>	KC	Korea	K62368-1
<input type="checkbox"/>	CSA	Canadian	CAS C22.2

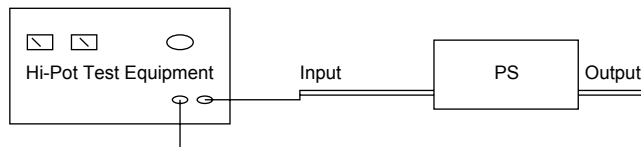
#### 6.2 Insulation resistance

Insulation Resistance: 500VDC primary to the secondary input impedance of 100MΩ(Min).

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### 6.3 Dielectric withstand Hi-Pot

HI-POT-- primary to secondary 3000Vac 5mA 1min



### 6.4 EMI standard

Meets the Limits of

EN55032:2015

EN61000-3-2:2014

EN55024:2010+A1:2015

EN61000-3-3:2013

## 7. Reliability requirements

### 7.1 Vibration

5 to 500Hz sweep at a shift gears for 20 minute for each of the perpendicular axes X,Y,Z.

There into: acceleration frequency for 10 m2/s3 at 5~10Hz; acceleration frequency for 3 m2/s3 At 10~200Hz; acceleration frequency for 1 m2/s3 at 200~500Hz.

### 7.2 Drop in

Random surface in all twice, Height: 1.0m, on the cement plane.

### 7.3 Steel ball impact

Ball weight: 500g±25g , diameter: 50mm

Top surface&back surface in all once, steel ball @Height:1.3m free faller, on the cement Plane, the case can not crack.

### 7.4 Qualification

The MTBF shall be at least 50000hours at 25°C, Full load and input 230Vac.

### 7.5 The lifetime electrolyte capacitor

The lifetime of electrolyte capacitor shall be at least 17520 hours at 25°C, 80°C load and Rated input condition.

### 7.6 Case description and flame retardant grade

The case is Black, the material is ABS+PC, and the flame retardant grade is UL94V-0.

### 7.7 DC wire and SR test

DC wire use 18#2468, Hang0.3kg weight at the position of below DC wire or SR, rocking angle±90°C

Swaying frequency 40 times perminute,and wobble 3000 times. The connectivity shall be well, and the Rate of wire breaking shall be less than 30%.

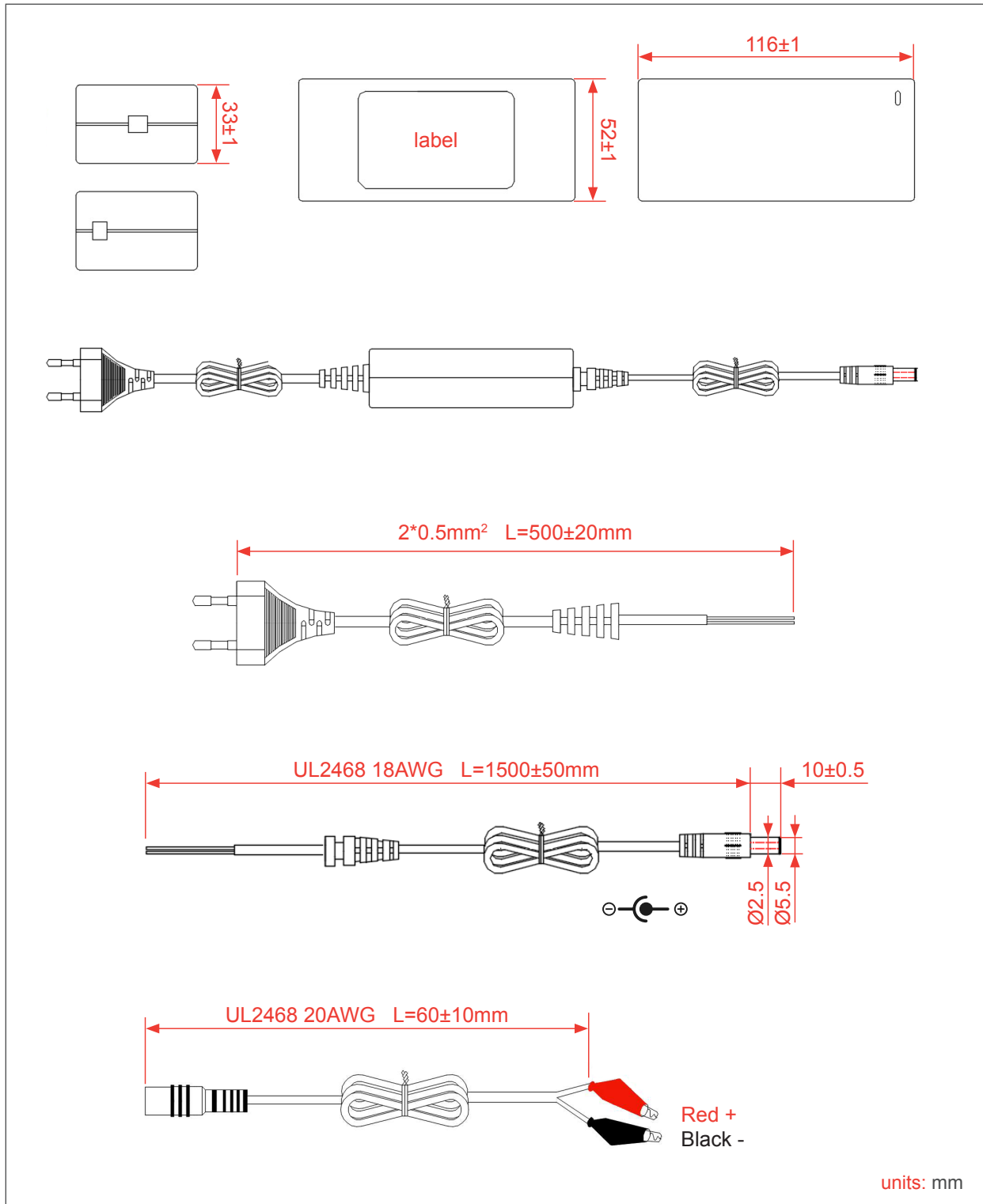
### 7.8 Connector insertion test

The connector insertion test 5000 times,after the test is completed, functional connectivity is normal and no loosening.

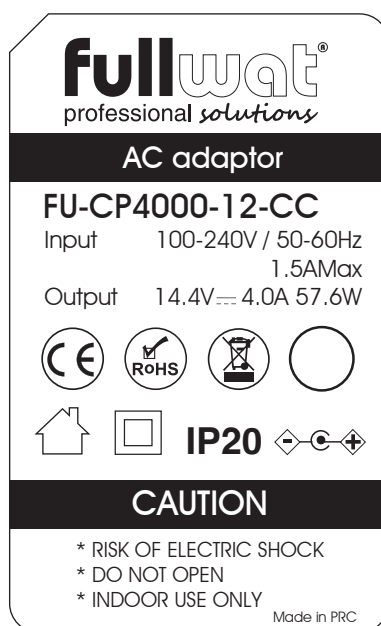
### 7.9 Temperature delta of the case surface

Temperature delta of the case surface should not exceed 45°C.

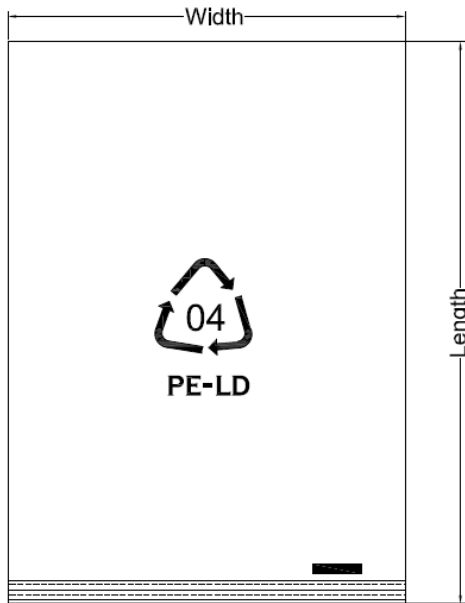
## Outline dimension



## Label



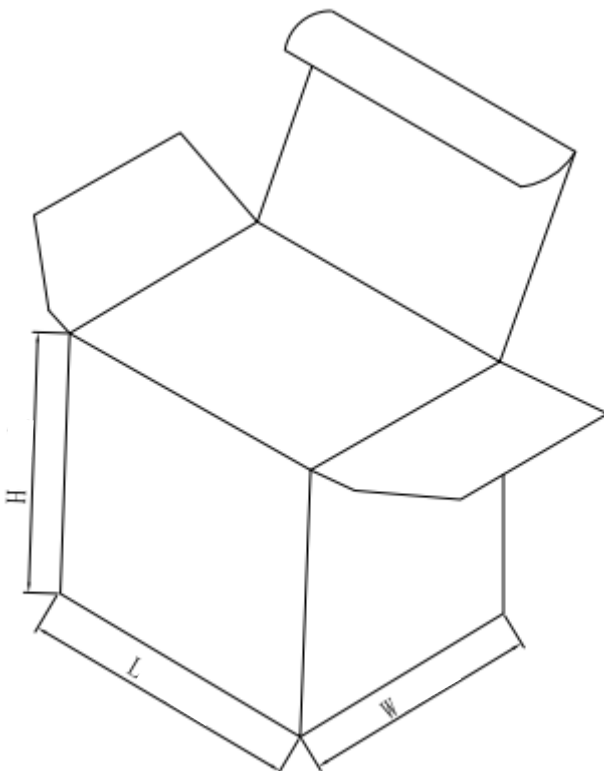
## Packing step



### PE bag

Length: 170mm

Width: 120mm



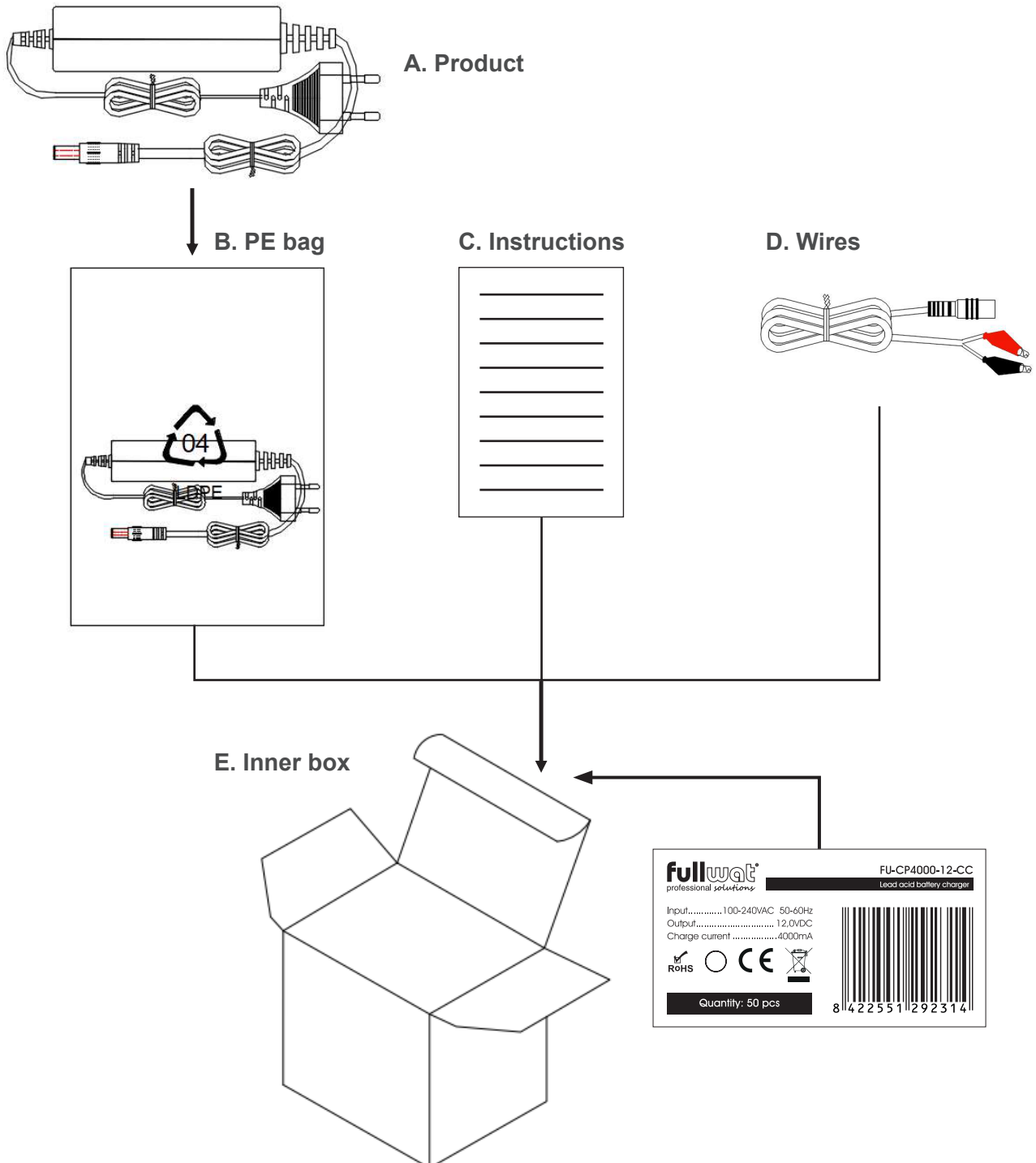
### Inner box

Length: 175mm

Width: 70mm

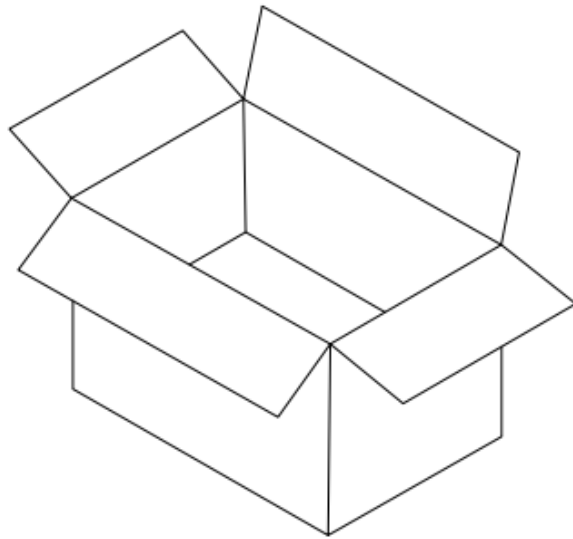
Height: 70mm

## Packing step





## Packing step



### Packing request

Packaging

Outsidebox: 370L\*370W\*370H

Quantity: 50PCS/CTN

### Remarks

1. Firstly, put the product into PE bag according to the picture "A/B".
2. After finishing the first step, then put the product into white box according to the picture "E".
3. Then put the product into outer carton.
4. When packing finished, then seals the carton and labels the mark.
5. Through the QA inspection, the products can be shipped.