Description	Ext. PSU
Model Number	5211012D-12-3A
Revision	A1
Notes	-

Ideal Power Ltd
Ideal Power, Ideal House, Tree Beech Enterprise Park, Gunn, Barnstaple, Devon, EX32 7NZ, England, UK
Tel: +44 (0) 845 260 3400 **Email:** sales@idealpower.co.uk **Web:** www.idealpower.co.uk

CONTAINS :

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1-0. General Description

The purpose of the document is to specify a Single phase AC input, single output switching power supply. This specification is suitable for: EA11012D Series

This product is AC to DC switching power transfer device, it can provide for a 12V, 8.33 A max & 100W max DC output with constant voltage source.

This Specification defines the input, output, performance characteristics, environment, noise and safety requirement for a power supply.

2-0. Input Requirements

2-1. Input Voltage

Rated Voltage 100-240 Vac +/- 10% full range.

Normal line input 115Vac/60Hz, 230Vac/50Hz.

2-2. Input Frequency

47~63 Hz

2-3. Input Current

a.1.5A(Max.) @ 115Vac input with full load.

b. 0.75A(Max.) @ 230Vac input with full load.

2-4. Energy saving standards:

2-4-0. Designed to meet the following standard :

Energy Star Ver. 2.0

CEC level V

ErP STEP 2

2-4-1.Efficiency

Efficiency ≧ 87% (avg.) normal input & 25%, 50%, 75% ,100% of max output load

2-4-2 No Load Power Consumption.

No Load Watt ≦ 0.5W at normal line input.

2-5. Configuration

2-wire AC input (Line , Neutral)

2-6. Input Fuse

The hot line side of the input shall have a fuse, rating (3.15A/250V)

2-7. Inrush Current

≦ 60A at 110Vac At cold start, maximum load.

≦ 120A at 220Vac At cold start, maximum load.

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2-8. Line Regulation

This line regulation is less than ± 1%, of rated output voltage @ full load .

2-9. Hold Up Time

≧ 10mSec., @ Normal line, with full load.

2-10. Rise Time

≦50mSec.,@ 100-240VAC input, with full load from 10% to 90% of output voltage.

2-11. Turn-ON Time

The output voltage should rise to 90% of rated output voltage
in less than 3 SEC. from AC apply to 110Vac start up.

2-12. Harmonic Standard and Power Factor

The adapter complied with IEC 61000-3-2 class D harmonic standard while input power over than 75W. The P.F. shall >0.95 @100Vac input and >0.9 @240Vac input.

3-0. Output Requirements

3-1. Output Voltage and Current

Output Voltage (Vdc)	Current Min.(A)	Current Max.(A)
+12V	0	8.33A

3-2. Load Regulation

Voltage (Vdc)	Tolerance (%)
+12V	+5/, -5

3-3. Dynamic Load Regulation

±5% excursion for 50% - 100% or 100% - 50% load change of DC output at any frequency up to 1KHz(duty 50%)

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3-4. Ripple & Noise

The power supply shall not exceed the following limits on the indicated voltage for 60Hz or 50Hz ripple, Switching frequency ripple and noise and dynamic load variations measured with a 20MHz bandwidth

Output	Ripple/Noise
+12V	1.5% max. of rated output voltage

Input condition : for rated voltage , Output condition : for max load
Ripple / Noise: 60Hz ripple + switching ripple and noise
Ripple & Noise are measured at the end of output cable which are added a 0.1uF ceramic capacitor and a 47uF electrolytic capacitor

3-5. Over Voltage Protection

150% Max. of rated voltage.
The output voltage shall be shutdown and latched when OVP occurred.

3-6. Over Current Protection

110%-150% of rated output current.
The adapter can withstand continuous short at DC output and no damage.
It will enter into normal condition if the fault condition is removed.

3-7. Stability

2% Max. at constant load with constant input (after 30 minutes of operation).

3-8.Temperature Rise

Less than 45℃ on top/bottom case at normal AC input & 80% load of DC output at environment temperature 25℃.

3-9. Drop-out (Power Line Disturbance)

Output voltage shall remain within the specified regulation range, through the absence of a line input during 1/2 cycle, at full load and normal AC line input

3-10. Voltage Isolation

The DC ground will be isolated from the AC neutral and AC line.

4-0.Reliability

4-1. MTBF (MIL-STD-781C)

The power supply shall be designed and produced to have a mean time between failure (MTBF) of 30,000 hours

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5-0. Environment

5-1 Temperature

a. Operating : 0 to 40 ℃

b. Storage : -20 to 85 ℃

5-2 Humidity

a. Operating : 10 to 90 %

b. Storage: 5 to 90 %

5-3 Altitude

From sea level to 5,000 Meter (operation) and 5,000 Meter (non operation)

6-0. Safety

6-1. Hi-Pot Test

3000Vac or 4242Vdc 3mA 2 Sec between primary and secondary circuit

6-2. Insulation Test

500Vdc, 3Sec. between primary and secondary circuit

IR should ≧ 50 MΩ.

6-3. Leakage Current

≦250uA, at 240Vac/50 Hz

6-4. Safety

UL/CUL, TUV, CB, CCC, CE, FCC

6-5. EMS

Items	Specification	Reference
ESD	Contact: ± 4KV	IEC 61000-4-2
	Air: ± 8KV	
RS	Frequency: 80~1000MHz Field Strength: 3V/M，80% AM(1KHz)	IEC 61000-4-3
EFT	1.0 KV on input AC power ports.	IEC 61000-4-4
SURGE	Line to Line: ± 1KV (peak)	IEC 61000-4-5
	Line to F.G : ± 2KV (peak)	

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6-6. EMI

Comply with Standards
CISPR 22, EN 55022 Class B

7-0. Mechanical Characteristics

7-1. Physical Size : 137mm (L) * 59 mm (W) * 34 mm (H)

7-2. Enclosure material : 94V-1 minimum

7-3. Output Cable (Reference) : UL2464 #16/2C

7-4. Vibration Test

The vibration frequencies are set at 20Hz, with total amplitude of 1.5mm Along the 3 directions namely X-Y-Z. The each direction should be vibrated for 60 minutes, after testing no abnormal electrical or mechanical should occur.

7-5. Drop Test (Referencing to CSA C22.2 No.950/UL1950/UL1310/EN60950)

Products shall be dropped from a height of 900 mm onto a horizontal surface consists of hardwood at 13mm thick, mounted on two layers of plywood each 19mm to 20mm thick, all supported on a concrete or equivalent non-resilient floor. Upon conclusion of test, the equipment need not be operational.

7-6. Net Weight (Reference) : 450 g

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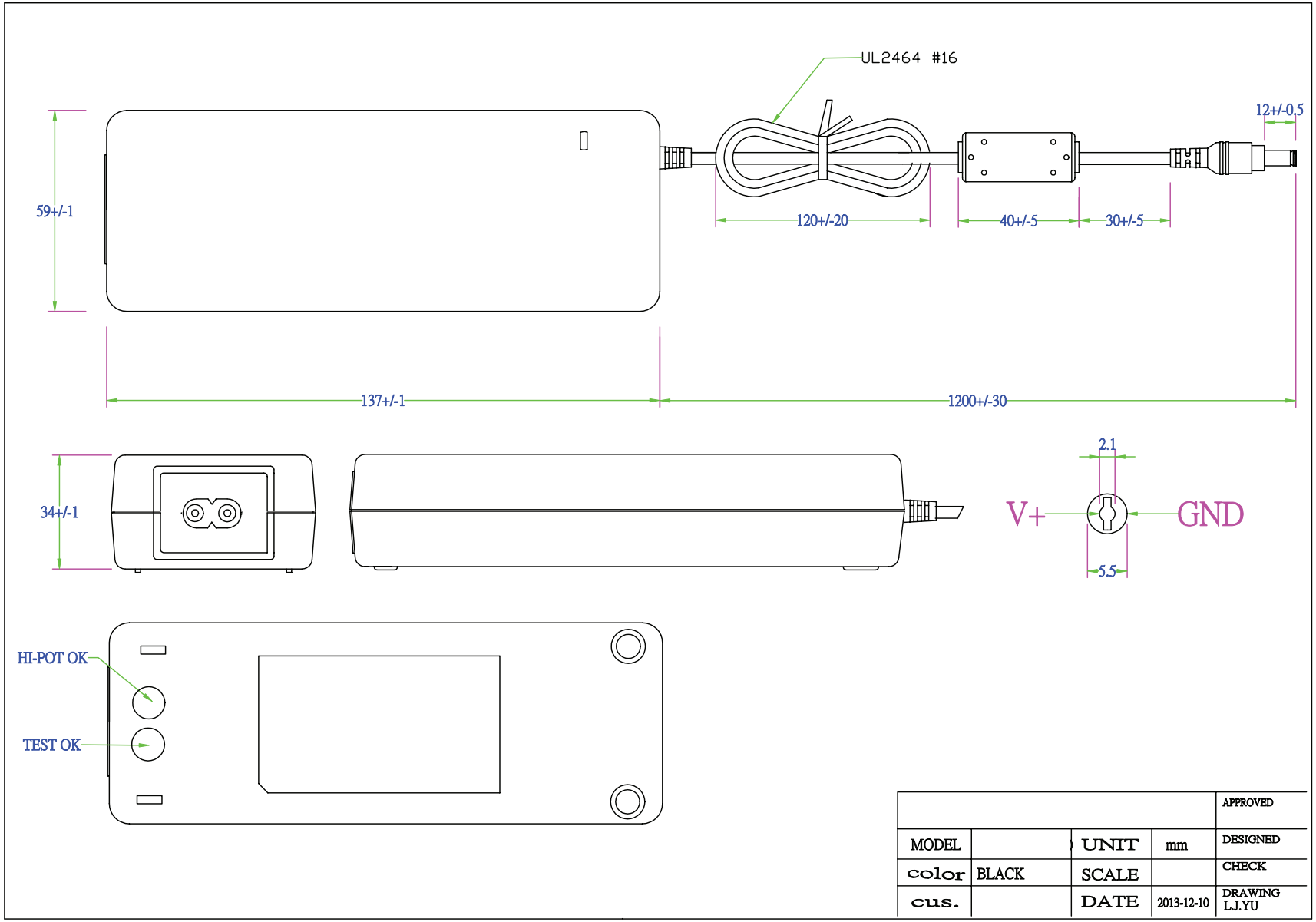

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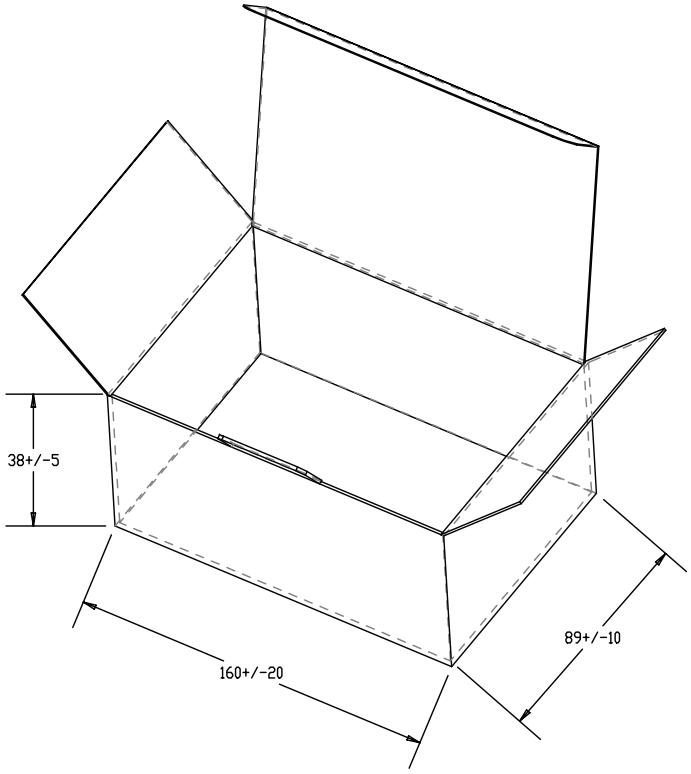

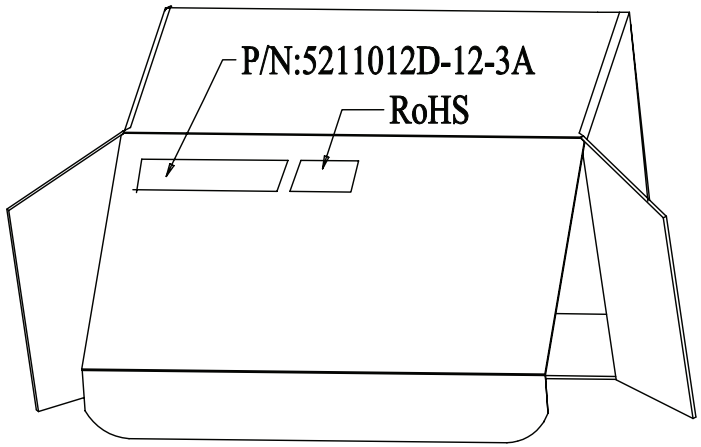

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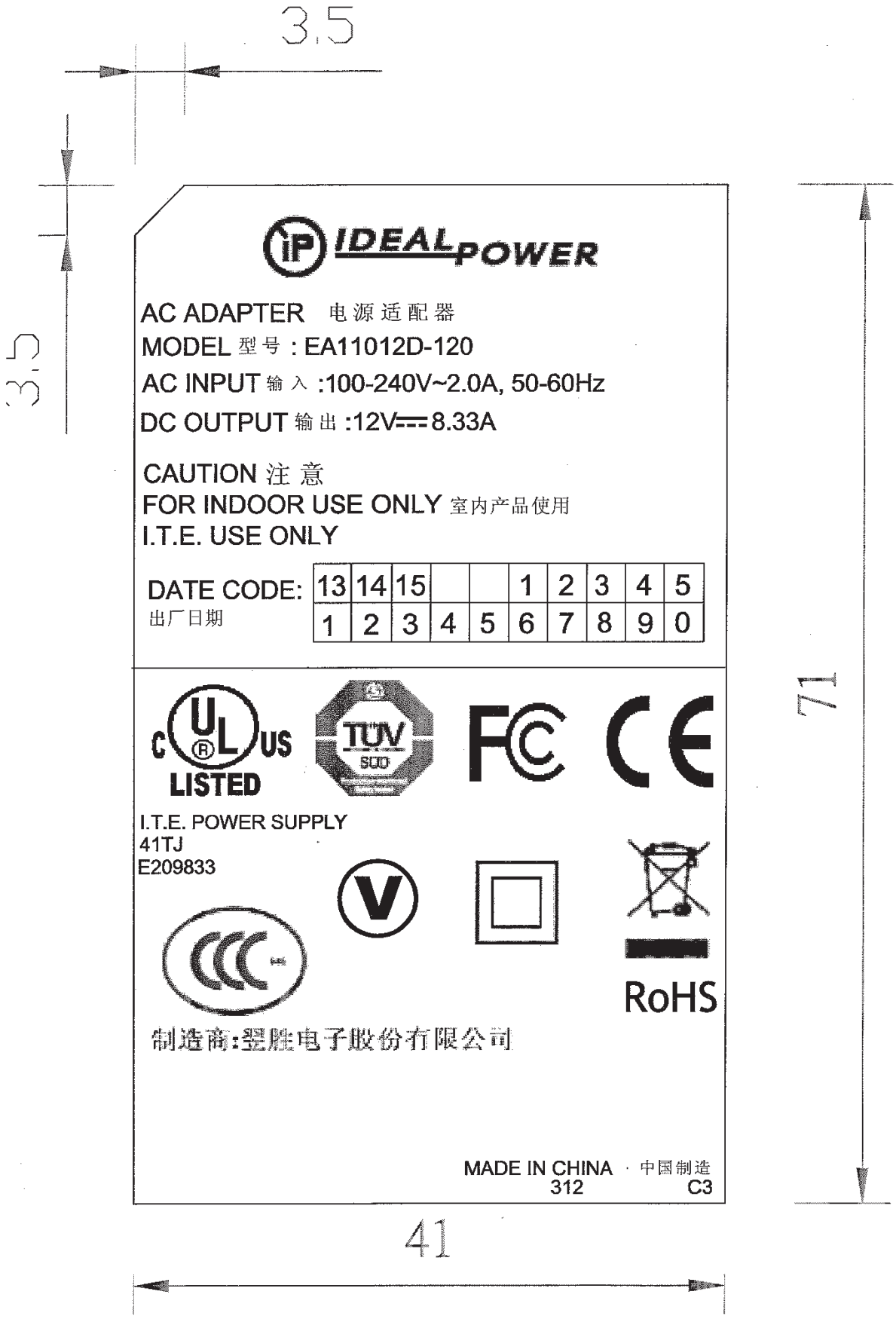

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