

adt	MODEL NO.	PD1120-190CAB0630	SHEET NO	AP20240507001
	DESCRIPTION	Car Charger	ISSUED DATE:	2024.05.07

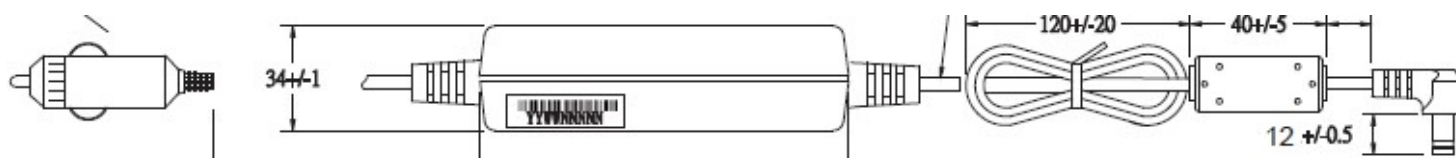
APPROVAL SIGNATURE
DATE:

Customer :

Model No : PD1120-190CAB0603

REVISION:V 0 (A1)

Type : DC to DC Converter



Input Voltage	11V---32VDC	Output Voltage	19V DC 6.3 A 120W
Output Cable	UL1185 16AWG L=1200mm DC Plug 5.5X2.5X12mm 90 度		
DC INLET	雪茄插頭 15A/120V Fuse	Packaging	氣泡袋

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Revision History

Approval No.	Description	Rev. date	Page	Rev No.
PD1120-190CAB0630-106-V0	Draft spec. released	2024/04/16	1/17~17/17	A0 (SCN0112404001)
PD1120-190CAB0630-106-V0	增加測試數據	2024/05/07	1/17~17/17	A1 (SCN0112404001)

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1. DESCRIPTION

This product is an DC to DC power device, It can provide for 119.7W single output with constant voltage source.

2. SCOPE

This specification is applied as description of electrical & mechanical characteristics for PD1120.

3. ELECTRICAL CHARACTERISTICS

3.1 Input Characteristics

3.1.1 DC input voltage

Rated input voltage: 11 - 32Vdc

3.1.2 DC input current

Minimum: 15.0A(MIN)

3.2 Output Characteristics

3.2.1 Output voltage

Output voltage : DC 19V $\pm 5\%$

3.2.2 Output current

Output current: 0~6300mA Max

3.3 Efficiency

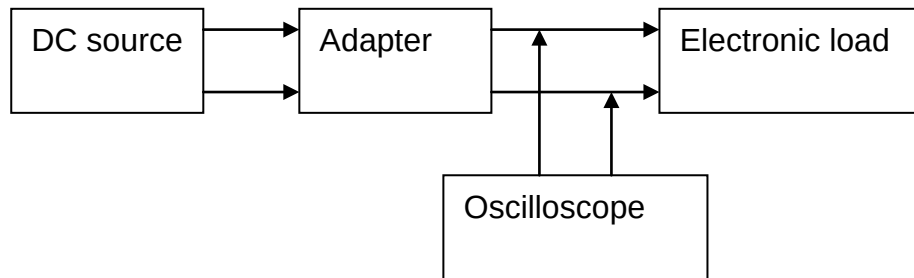
The efficiency of power supply will be higher than 79.0% at input voltage range with average value.

3.4 Ripple & Noise

Ripple limit: 190mV max.

Noise limit: 190mV max.

Test condition: This is measured over bandwidth of 20MHz at the power supply output connector a 10 μ F electrolytic capacitor in parallel with a 0.1 μ F ceramic capacitor in 5 minutes after the supply starts up.



3.5 Protection

3.5.1 Short circuit protection

When output short circuited, output voltage peak value will be less rating output voltage

3.5.2 Over current protection

Over current protection point will be less than output current 250%

4. Reliability

4.1 MTBF

40K hrs (Calculated at 25°C , by MIL-217-HK standard).

4.2 Temperature Rise (Delta-T).

Temperature rise will be less than 85°C and case temperature rise will be less than 35 °C at normal DC input / DC output full loading
Environment temperature 25 $\pm$ 1°C

4.3 Burn-in

100% Burn - in at full loading and 4 hours at 40 +/- 5°C Environment temperature

4.4 Drop Test

The adapter will be subjected to 3 drops from 1 M height on a hard wooden surface.

4.5 DC input ON/OFF test

The adapter must meet all specifications after test.

DC input voltage: 11-32Vdc

DC input ON/OFF cycle: min 5 sec/ 5 sec

DC input voltage drop: 30%/500msec

DC input ON/OFF times: 10,000

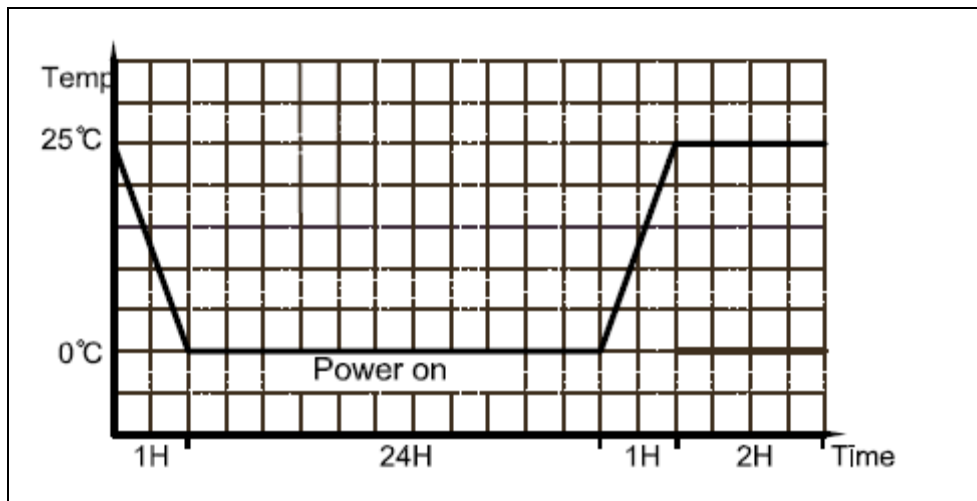
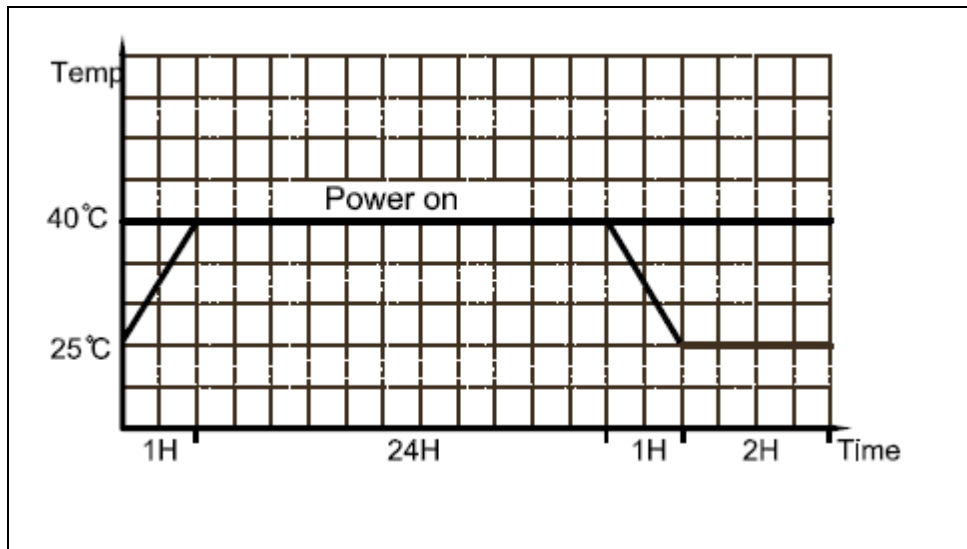
5. ENVIRONMENTAL CHARACTERISTICS.

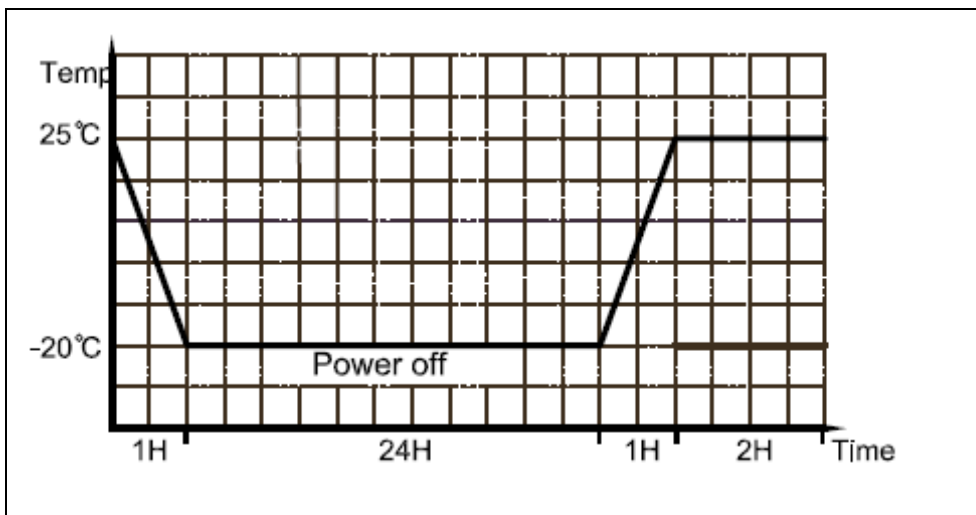
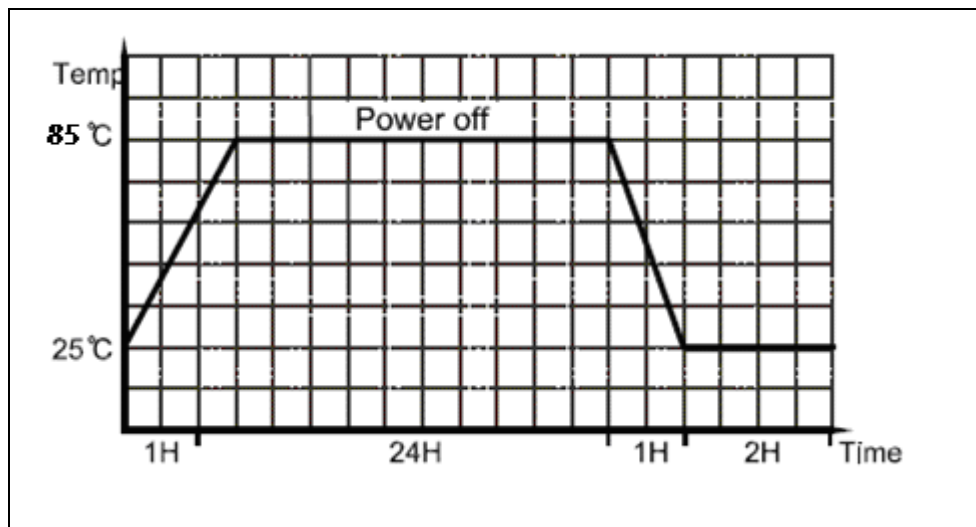
5.1 Temperature

The adapter must meet all specifications after test.

Unit operating temperature range: 0 to 40°C For AC input and DC output

Storage temperature range: -20 to 85°C





5.2 Max Temperature

The adaptor must meet all specifications after test.

Condition:

Measure the temperature continuously for more than 3 hours with max load.

5.3 Humidity

The adapter must meet all specifications after test.

Operating humidity: Max 75%RH

Storage humidity: Max 95% RH

5.4 Altitude

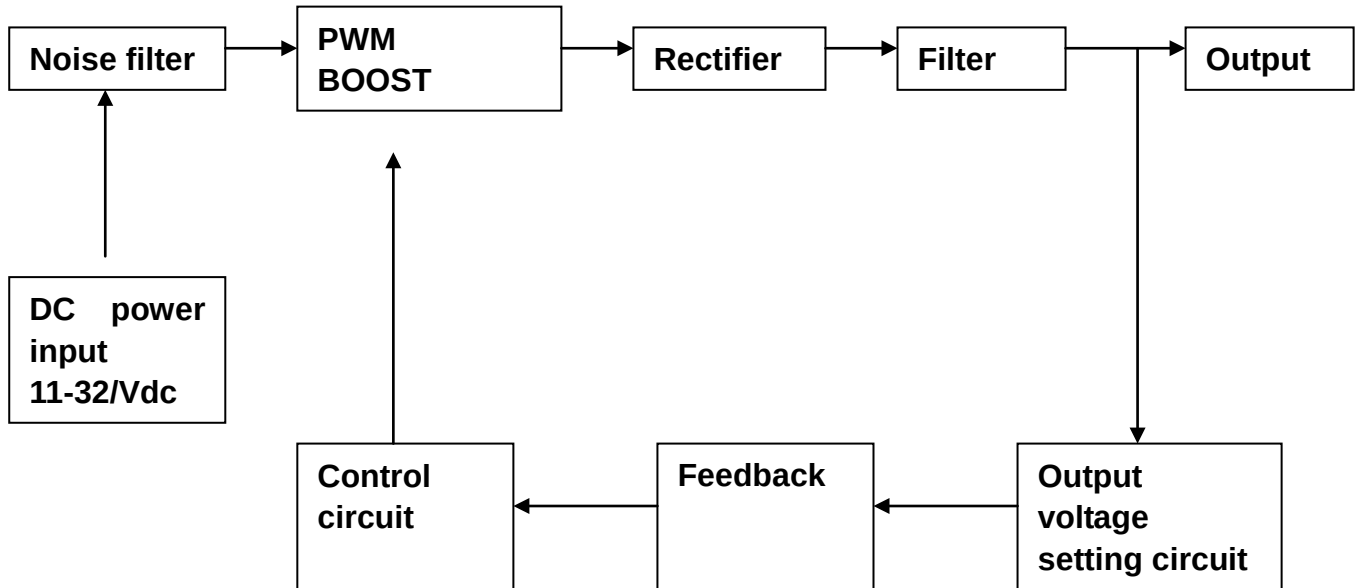
The adapter must meet all specifications after test.

Installation : Sea level up to +10,000 feet

Storage : Sea level -100 to +10,000 feet

6 Block Diagram & Schematic Drawing

6.1 Block Diagram



7 Mechanical

7.1 Plastic Case material: "PC"(Black)

7.2 Physical Size: (L)134X(W)54X(H)32mm.

7.3 Output Cable: UL1185, 16AWG, L=1200mm with plug: 5.5x2.5x12mm Barrel angled.



7.4 Input Cable: UL2468, 16AWG, L=600mm with plug: Car male cigarette lighter.

8.SAMPLE TEST REPORT

8.1. Burn - In Test

Test Purpose: To check reliability of the products.						
Test Condition: Ambient Temperature: 40 +/- 5°C 1. Vin = 11Vdc Full load 4hours 2. Vin = 32Vdc Full load 4hours						
Criteria: Power supply should be any abnormal found after test.						
Test result: ☒ Pass ☐ Fail						
Test Data	No.	1	2	3	4	5
	1	OK	OK	OK	OK	---
	2	OK	OK	OK	OK	---

8.2. COMBINE REGULATION TEST

Test Purpose: To check if the Total regulation and ripple noise meets the specification.												
Test Condition: Ambient Temperature: Room 1. Vin = 11Vdc Full load 2. Vin = 11Vdc Half load 3. Vin = 11Vdc No load 4. Vin = 32Vdc Full load 5. Vin = 32Vdc Half load 6. Vin = 32Vdc No load												
Criteria: 1. Output Voltage Range: 18.08V~19.95V 2. Ripple & Noise Range: 190mV Max												
Test result: ☒ Pass ☐ Fail												
Test Data	Output Voltage (V)						Ripple & Noise (mV)					
	No.	1	2	3	4	5	No.	1	2	3	4	5
	1	18.65	18.34	18.42	18.64	---	1	120	92	110	140	---
	2	18.95	18.73	18.72	18.88	---	2	96	49.6	70.4	61.2	---
	3	19.23	19.04	19.00	19.11	---	3	30	31.2	33.6	52.8	---
	4	18.66	18.32	18.42	18.64	---	4	60	45.6	51.2	66.4	---
	5	18.95	18.71	18.72	18.77	---	5	41.6	31.2	40	34.4	---
	6	19.23	19.05	19.00	19.11	---	6	25.6	29.6	41.6	53.6	---

8.3. Efficiency Test

Test Purpose: To check if the power supply efficiency meets the specification.						
Test Condition: Ambient Temperature: Room 1. Vin = 11Vdc Full load 2. Vin = 32Vdc Full load						
Criteria: Efficiency Range: 79.0% Min Input Power:3W Max						
Test result: ☒ Pass ☐ Fail						
Test Data	No(SAMPLE).	1	2	3	4	5
	1(%)DC11V	82.26%	82.43%	82.47%	83.29%	---
	2(%)DC32V	91.12%	90.03%	90.91%	91.36%	---
	3(w) 11V	1.6 W	1.5W	1.6W	1.6W	---
	4(w) 32V	2.5W	2.4W	2.5W	2.4W	---

8.4. OCP Test

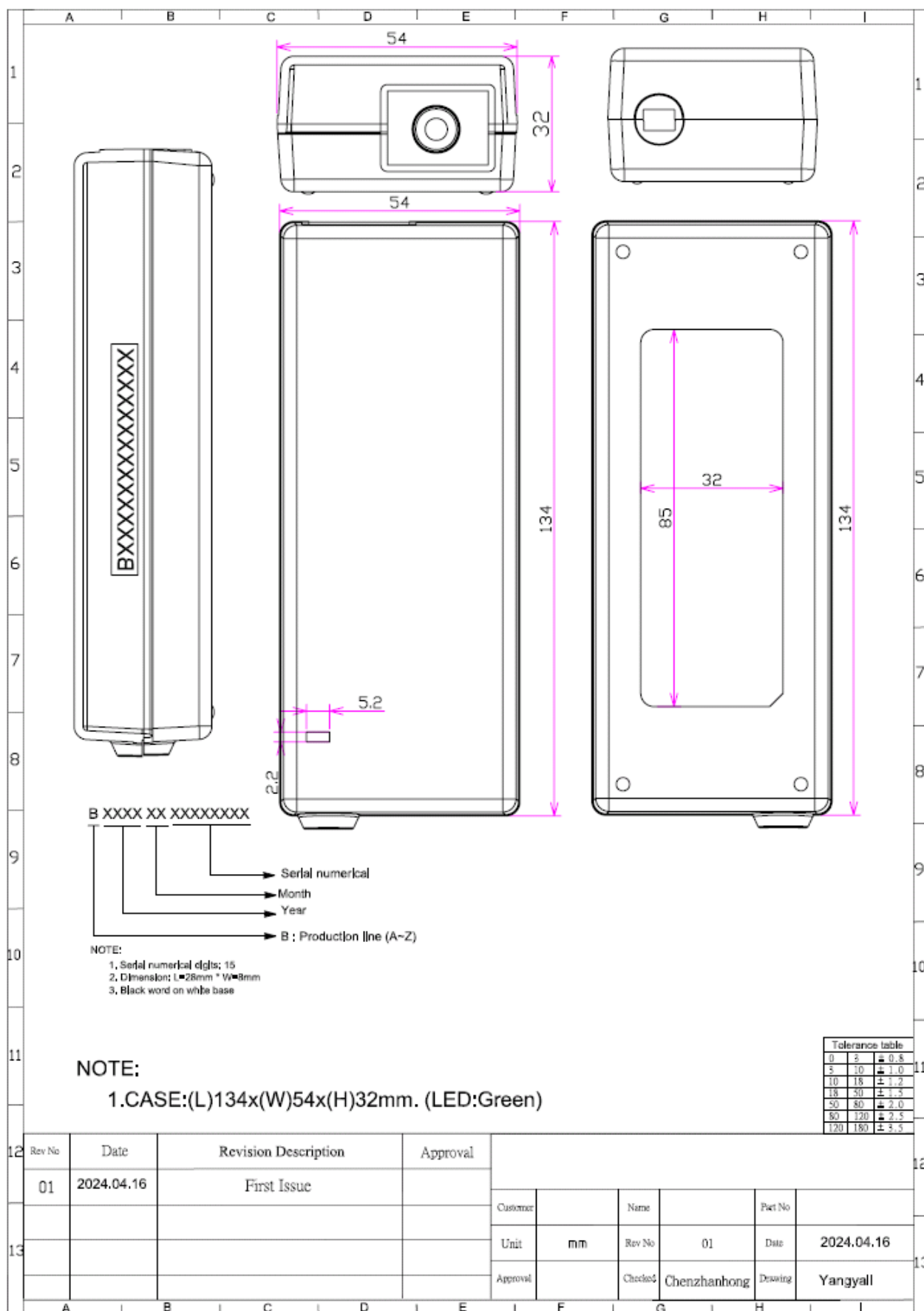
Test Purpose: To check max. over current meets the specification.						
Test Condition: Ambient Temperature: Room 1. Vin = 11Vdc 2. Vin = 32Vdc						
Criteria: 1.Over Current Range: MIN 7.56A 2.Power supply shall shutdown for over current test, and it shall recover automatically when the protection removed.						
Test result: ☒ Pass ☐ Fail						
Test Data	No.	1	2	3	4	5
	1	8.2	8.2	8.2	8.3	---
	2	8.1	8.1	8.1	8.1	---

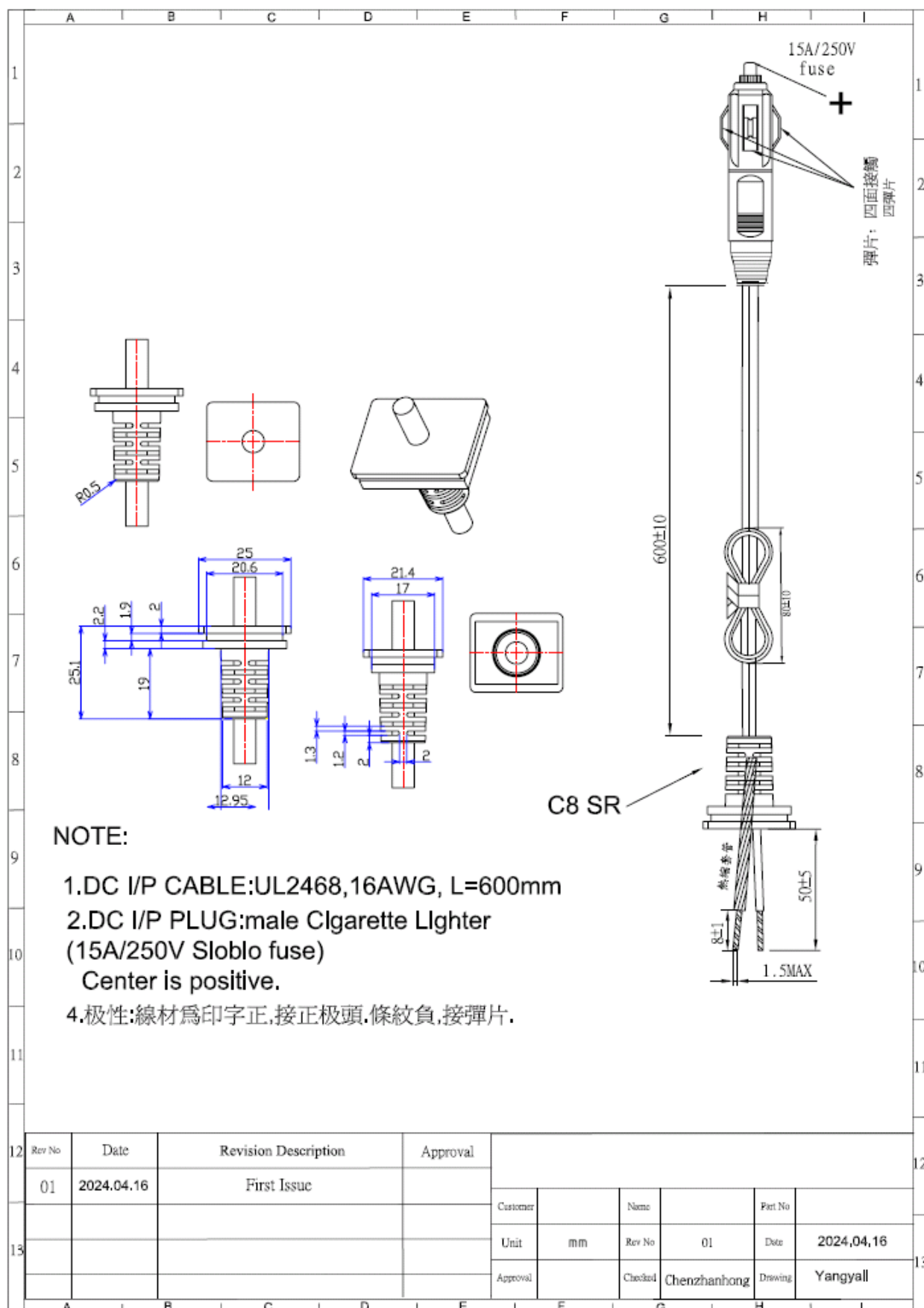
8.5. Short Circuit Test

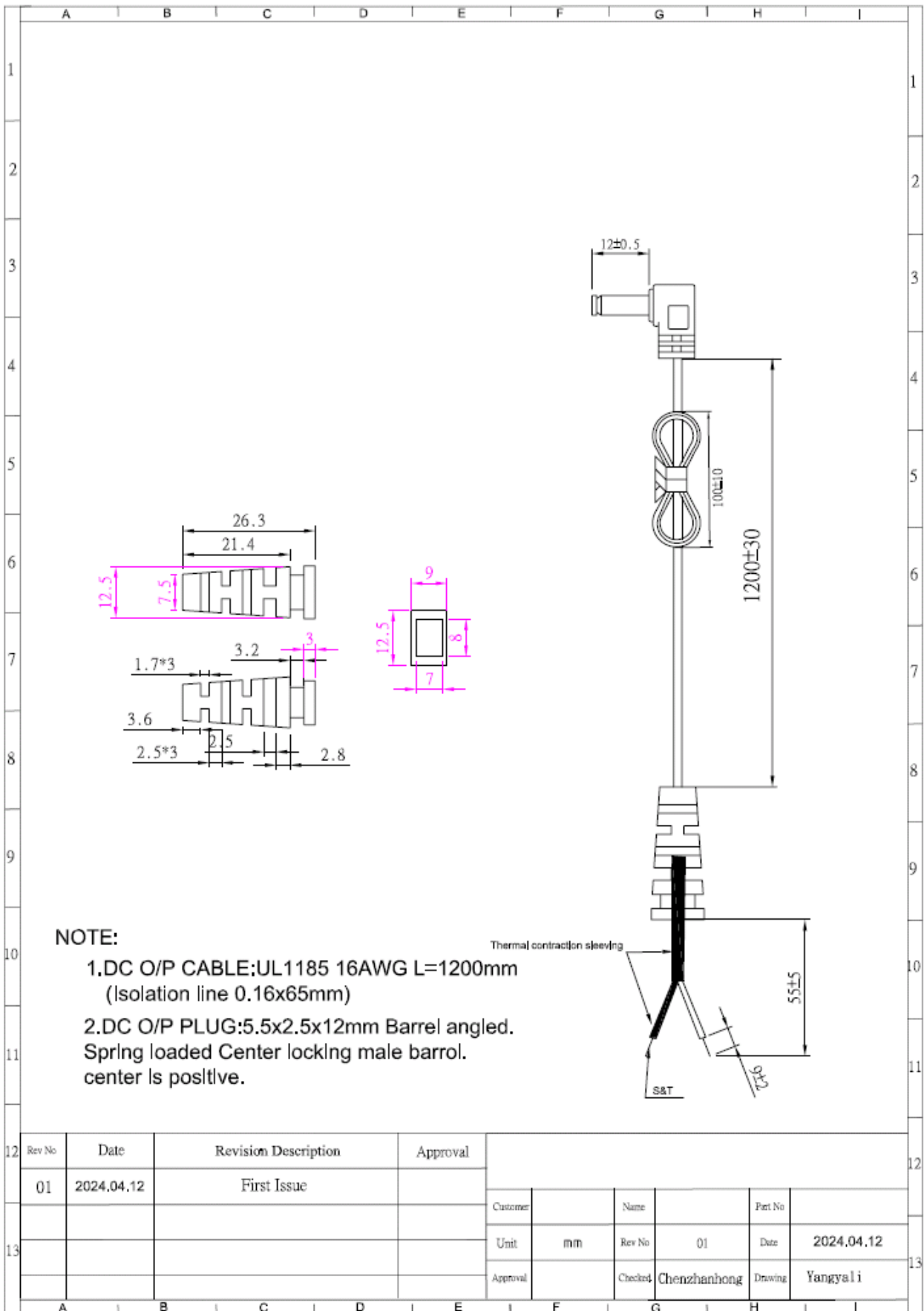
Test Purpose: To verify that no damage, fire or safety problem will result from a short circuit.						
Criteria: 1. Power supply shall recover automatically. 2. The maximum short-circuit energy in output short not exceed 20VA.						
Test Condition: Ambient Temperature: Room 1. Vin = 11Vdc 2. Vin = 32Vdc						
Test result: ☒ Pass ☐ Fail						
Test Data	No.	1	2	3	4	5
	1	OK	OK	OK	OK	---
	2	OK	OK	OK	OK	---

8.6 UVP OVP Test

Test Purpose: To verify that no damage, fire or safety problem will result from a UVP OVP.						
Criteria: 1. Power supply shall recover automatically.						
Test Condition: Ambient Temperature: Room 1. Vin =DC11V 2. Vin = DC32V						
Test result: ☒ Pass ☐ Fail						
Test Data	No.	1	2	3	4	5
	欠壓	8.4V	8.6V	8.6V	8.6V	---
	過壓	33.3V	33.4V	33.0V	33.0V	---







	A	B	C	D	E	F	G	H	
1									1
2									2
3									3
4									4
5									5
6									6
7									7
8									8
9									9
10									10
11									11
12									12
13									13
	A	B	C	D	E	F	G	H	

ADAPTER

DC/DC CONVERSION

PART NO.:PD1120-190CAB0630

INPUT:DC 11V~32V 15.0A Min

OUTPUT: 19.0V $\pm$ 6.3A 119.7W Max

<http://www.adtweb.com.tw>

WARNING:

RISK OF ELECTRIC SHOCK,

DO NOT OPEN, INDOOR USE ONLY

Manufactured by PEC In China

NOTE:

- 1.Fog black backgroud with silver sotid characters.霧黑底銀字
- 2.UL RECOGNIZED
- 3.MATERIAL PET, 100#

84.5

31.5

3

ADAPTER

DC/DC CONVERSION

PART NO.:PD1120-190CAB0630

INPUT:DC 11V~32V 15.0A Min

OUTPUT: 19.0V $\pm$ 6.3A 119.7W Max

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7.6

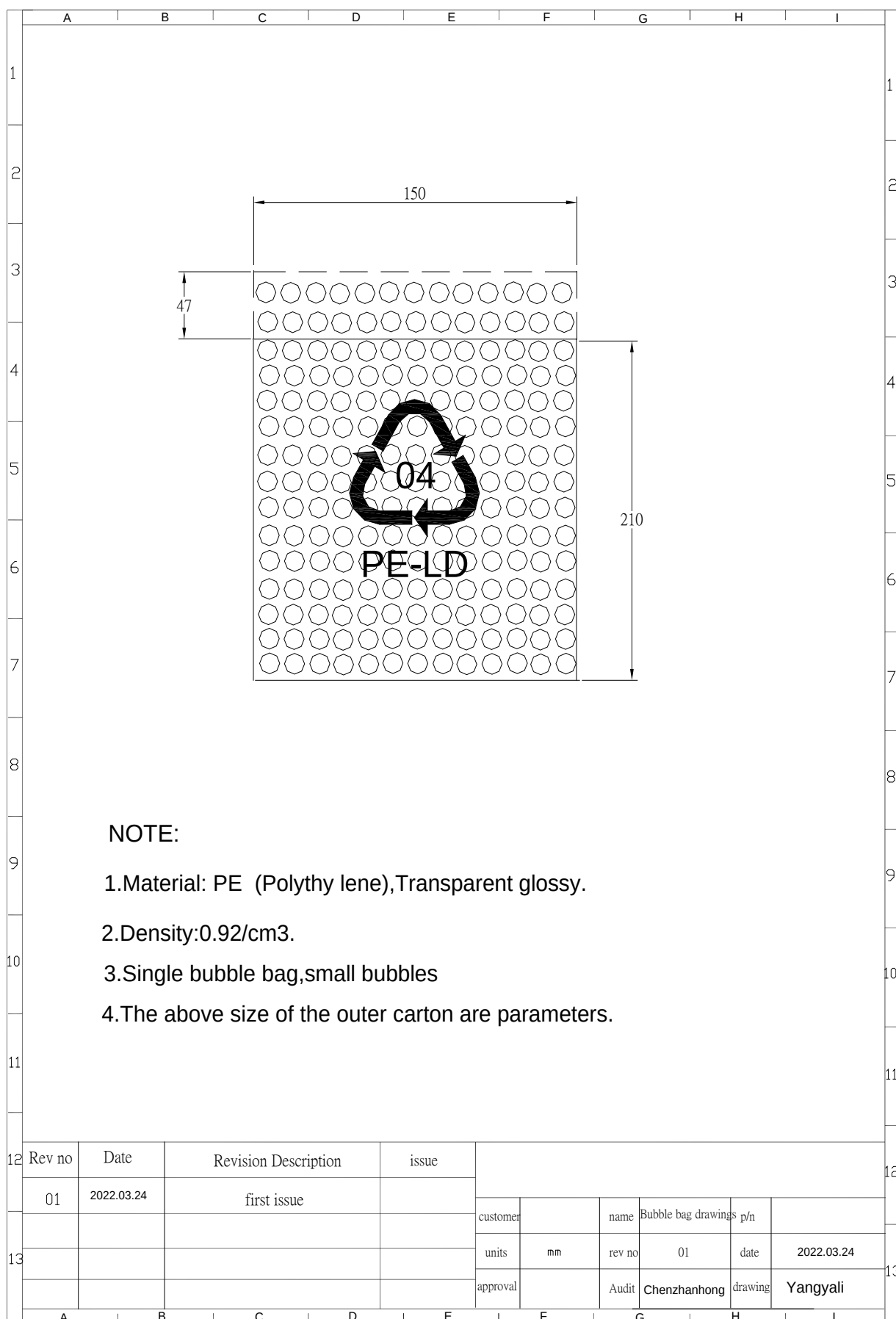
5.0

Remarks

1.Mark CE of length 7.6mm, height 5.0mm

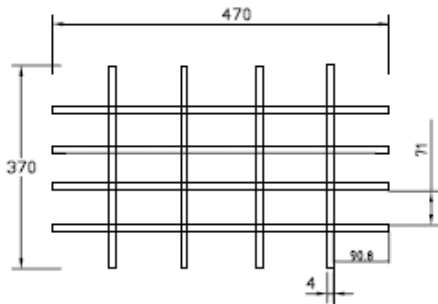
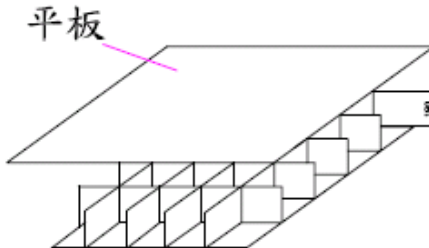
2.The garbage barrel mark height not less than 7mm.

Rev No	Date	Revision Description	Approval						
01	2024.04.16	First Issue							
				Customer		Name		Part No	
				Unit	mm	Rev No	01	Date	2024.04.16
				Approval		Checked	Chenzhanhong	Drawing	Yangyali



NOTE:

- 1.Material: PE (Polythy lene),Transparent glossy.
- 2.Density:0.92/cm3.
- 3.Single bubble bag,small bubbles
- 4.The above size of the outer carton are parameters.

	A	B	C	D	E	F	G	H	I	
1					外箱尺寸		平板	4刀卡	4刀卡	
2					K=K		B33	B=C	B=C	
3					L=480mm		L=470mm	L=470mm	L=370mm	
4					W=380mm		W=370mm	W=180mm	W=180mm	
5					H=225mm		H=6mm	H=4mm	H=4mm	
6							2/25	4/25	4/25	
7										
8					Front Mark (Black)		Side Mark (Black)			
9							PO:			
10							P/N:			
11					C/NO.:		MODEL NO.:			
12							Q'TY:			
13					MADE IN CHINA		N.W.:			
							G.W.:			
							MEAS:480X380X225MM			