

承 認 書

SPECIFICATION FOR APPROVAL

CUSTOMER : 杭州海康威視科技有限公司

Model Number : FSP120-AFAN2

Part Description: ,桌面型,48V2.5A,Φ1.7

Model Applied :

Part No. of Customer: 101700619

Date of Approval: MAY 27, 2016

Customer Signature :

Reported By

Checked By

Approved By

Prepared By: FSP Group Department.



全漢企業股份有限公司
FSP TECHNOLOGY INC.

總公司：桃園市建國東路22號

HEAD OFFICE : NO. 22, Jianguo E Rd., Taoyuan City, Taiwan, R.O.C.

TEL : 886-3-3759888 FAX : 8863-3756966

Factory / 工廠 : SPI Electronic Co., Ltd. / 輝力電子有限公司

Bldg. 7, Block C, County 73, Baoan Shenzhen, Guangdong, P. R. O. C.

輝力廠：深圳市寶安區新安鎮73區C7廠房



Electrical Specification

Electrical Requirements

1. Input Characteristics:

ITEM	CONDITION	SPECIFICATION
1.1 Rated Input Voltage:		100Vac~240Vac
1.2 Input Voltage Range:		90Vac to 264Vac
1.3 Input Frequency Range:		47Hz to 63Hz (± 1Hz)
1.4 Input Current:	100Vac, 240Vac / 2.5A load	≤ 1.8A
1.5 Input Current Harmonic:		IEC61000-3-2
1.6 Efficiency: (Warm up 10minutes later)	100Vac / 2.5A load 240Vac / 2.5A load	≥ 89% ≥ 91%
1.7 Power Saving:	115Vac, 230Vac / 5.2mA load(0.25W)	≤ 0.5W
1.8 Inrush Current:	100Vac, 240Vac / 2.5A load	Shall be less than the rating of adapter critical component (including rectifiers, fuse surge and current limiting device)
1.9 DOE(Level VI):	(1)115Vac / 0A load (2)115Vac / 25%,50%,75%,100% load (Average Active Mode Efficiency ,Warm up 30 minutes later)	≤ 0.21W ≥ 88% (DC Cable ≤ 1500 mm,18AWG)
1.10 Erp(Tier 2):	(1)230Vac / 0A load (2)230Vac / 25%,50%,75%,100% load (Average Active Mode Efficiency ,Warm up 30 minutes later)	≤ 0.15W ≥ 89% (DC Cable ≤ 1500 mm,18AWG)



Electrical Specification

2. Output Characteristics:

※Measured at the end of DC cable.

ITEM	CONDITION	SPECIFICATION
2.1 Output Rated Voltage:		48V
2.2 Output Current:	at constant voltage mode	0A to 2.5A
2.3 Output Voltage Setting:	at the output end of DC cable	48V ± 5%
2.4 Output Voltage Ripple and Noise: (0.1uF Ceramic Cap. and 63V 47uF Aluminum Cap. Paralleled between the end of output cable)	100Vac, 240Vac / 0A~2.5A load	≤ 350mVp-p
2.5 Turn-On Delay Time:	At 100Vac / 2.5A load, output voltage shall remain regulation	≤ 3Sec
2.6 Hold Up Time:	At 100Vac or 240Vac / 2.5A load, output voltage shall remain regulation	≥ 10ms
2.7 Rise Time:	At 100Vac / 2.5A load, DC output rise time from 5% to 95% of Vo	≤ 60ms
2.8 Dynamic Load Change:	(1) Output load step is : 【1】 0 % ~50 % 【2】 50 %~100 % (2) S/R=0.5A/us (3) Frequency is 100Hz and 1KHz	48V ± 10%
2.9 Overshoot:	100Vac, 240Vac / 0A and 2.5A load	48V ± 10%



Electrical Specification

3. Protection Characteristics:

ITEM	CONDITION	SPECIFICATION
3.1 Short Circuit Protection:	When an internal fault occurs, or an external fault is applied to the power supply, such that an overload or short circuit is applied to the output, the power supply shall shut down and enter auto-recovery mode.	Shutdown and no damage
3.2 Over Voltage Protection:	The adapter will enter into shut down that means no output while over voltage happened at output terminal that caused by internal fault, the output trip voltage shall not exceed 63 volts. That will be return to normal state by AC reset.	Shutdown and no damage
3.3 Over Power Protection:	When an internal fault occurs, or an external fault is applied to the power supply, such that an overload or short circuit is applied to the output, the power supply shall shut down and enter auto-recovery mode.	Shutdown and no damage
3.4 Over Temperature Protection:	The power supply will enter into shut down while the abnormal thermal rise occurs. That will be return to normal state by AC reset.	No fire, no smoke



Electrical Specification

4. Environmental Characteristics:

ITEM	CONDITION	SPECIFICATION
4.1 Electric Fast Transients: Refer to IEC61000-4-4	Impulse: $\pm 1\text{kV}$ applied to L,N	Normal operation shall be continued
4.2 Lightning Surge: Refer to IEC61000-4-5	$\pm 1\text{kV}$ applied differential mode	Normal operation shall be continued
	$\pm 2\text{kV}$ applied common mode	Normal operation shall be continued
4.3 Electron Static Discharge: (Refer to IEC61000-4-2 Energy Storage Capacitor 150pF; Discharge Resistor 330 Ω)	Air Discharge: $\pm 15\text{KV}$ Contact Discharge: $\pm 8\text{KV}$	Normal operation shall be continued
4.4 Cooling:	Natural air cooling	
4.5 EMI: Adapter comply with the following national standards: EMI Conducted Emission EMI Radiated Emission	1.Full Load 2. The power supply with internal filter can meet.	FCC PART 15J CLASS B CISPR22 EN55022 CLASS B VCCI LEVEL II
4.6 Safety conforming: 4.6.1 Energy-related Products 【ErP】 Department of Energy 【DOE】		Regulated by customer Comply with ErP standard Comply with DOE standard
4.7 Leakage Current:	264Vac / 50Hz	$\leq 0.25\text{mA}$
4.8 Dielectric Strength: (Hi-Pot)	Between AC input and secondary applied AC 1.5KV / test time 1 minute / cut off current shall be less than 10mA	
4.9 Temperature:	Operating Storage	0 to 40°C -20 to +80°C
4.10 Humidity:	Operating Storage	20% ~ 80% 10% ~ 90%



Electrical Specification

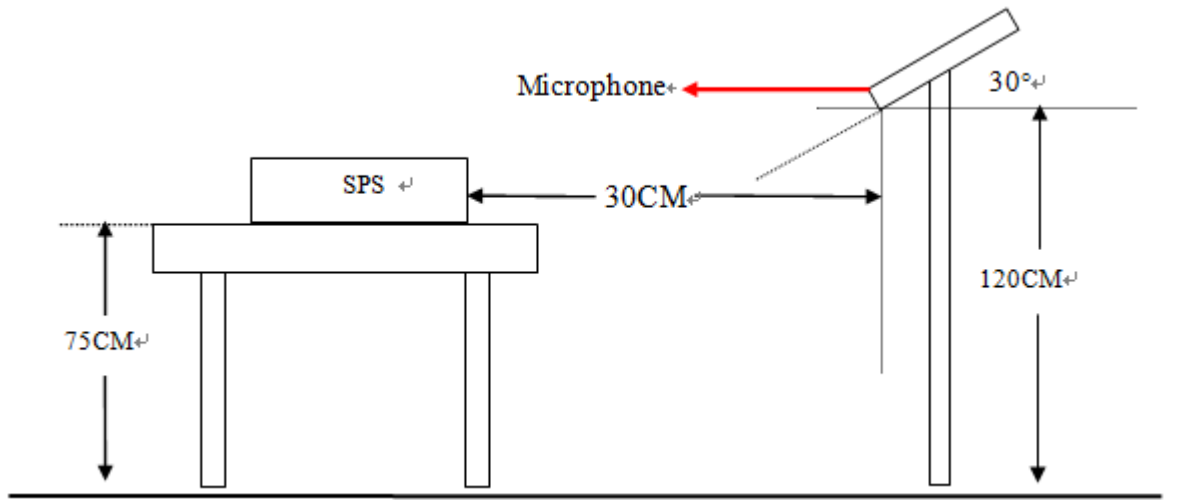
5. Mechanical Characteristics:

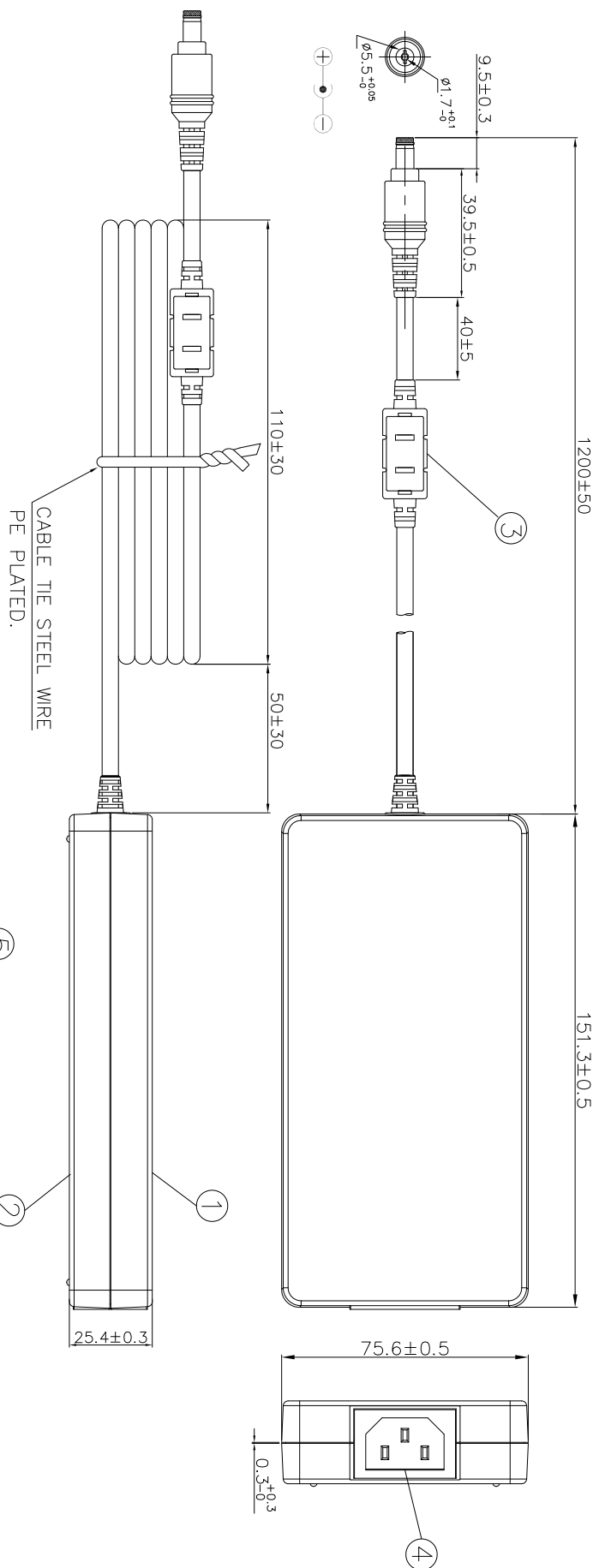
ITEM	CONDITION	SPECIFICATION
5.1 Dimension (Length x Width x Height):		151.3 X 75.6 X 25.4 mm
5.2 Adapter weight:		450g (typical)
5.3 Input AC socket Type:		IEC 320-C14 Type
5.4 Vibration Test:	(1) Non-operating, 0.01g ² /Hz at 5Hz slopping to 0.02g ² /Hz at 20Hz, And maintain 0.02g ² /Hz from 20Hz ~ 500Hz (2) PSD=3.13grms, 15 minutes/axis (3) Vibration duration:15minutes (4) Vibration waveform:Random (5) Force Direction X,Y,Z	Normal operation shall be continued.
5.5 Acoustic Noise:	(1) Position the microphone 30 centimeters above the x-y center of the AC adapter (2) Input voltage:110Vac/60Hz 220Vac/50Hz	The EUT < 30dB



Electrical Specification

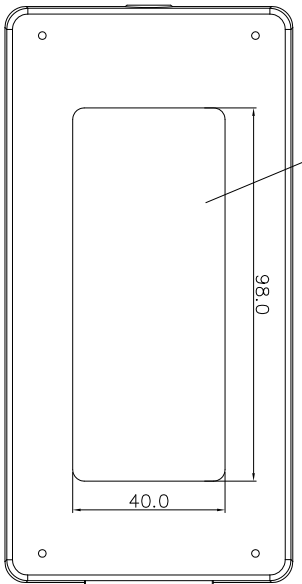
Note : Acoustic Noise





芯線	POLARITY	COLOR
纏繞線	VO(+)	WHITE
	GND(-)	BLACK

ITEM	PART NAME	COLOR
1	COVER	BLACK
2	CHASSIS	BLACK
3	POWER CORD	BLACK
4	SOCKET	BLACK
5	LABEL	BLACK



THIRD ANGLE PROJECTION

SCALE: UNIT: mm

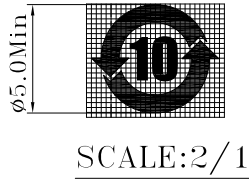
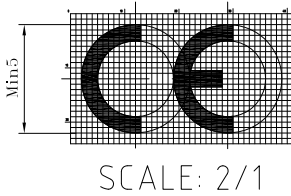
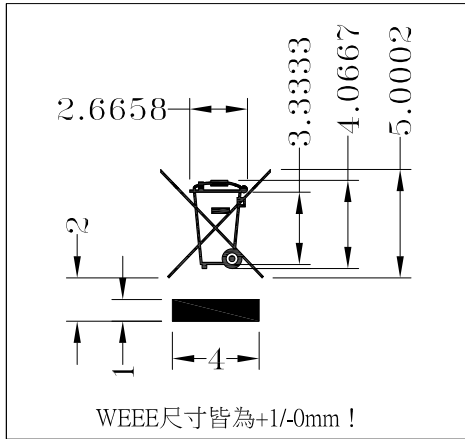
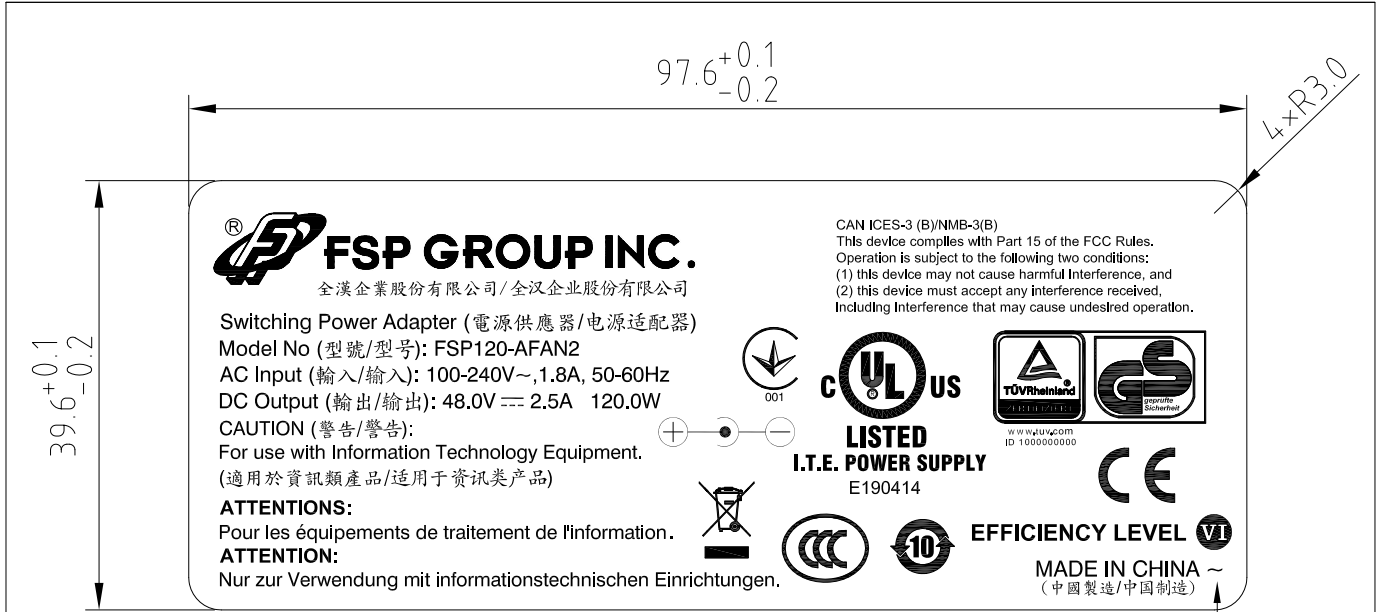
DIMENSIONAL TOLERANCES		HOURS : ±0.05		ANGLES : ±0.0°	
()	()	()	()	()	()
<30	±0.2	UP-100	±0.2	UP-600	±1.5
>30-100	±0.3	100-150	±0.25	600-900	±2.4
>100-300	±0.5	150-300	±0.45	900-1200	±3.1
>300-500	±0.6	300-450	±0.6		
ABOVE 500	±0.8	450-500	±0.75		
		500-750	±0.9		
		750-1000	±1.2		
		1000-1500	±1.5		
		1500-2000	±2.0		
		2000-3000	±2.5		
		3000-5000	±3.0		
		5000-10000	±4.0		
		10000-15000	±5.0		
		15000-20000	±6.0		
		20000-30000	±7.0		
		30000-50000	±8.0		
		50000-100000	±10.0		

MODEL NO. : FSP120-AFAN2(35201)	TITLE: Physical Dimension	SHEET: 1 OF 2	REV:02
R&D3 Division	PE	ME	DATE
L.J	Annie	Annie	2016/01/18
INTERIOR COUNTERSIGN:			

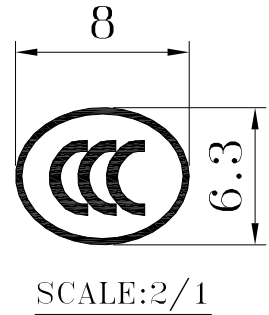
P/N.: 9NA1205803



全漢企業股份有限公司
FSP TECHNOLOGY INC.



Label Vender name



NOTES:

- MATERIAL: WHITE POLYESTER + MYLAR COATING(半霧面), t=0.15±0.05mm. ADHESIVE: # K.K. NO. 9 OR EQUIVALENT.
- BACKGROUND'S COLOR: BLACK. WORD'S COLOR: WHITE
- "~" LABEL VENDER IN ENGLISH NAME, 2 LETTERS.
- LABEL MUST BE DIE CUT PROPERLY AS PER DIMENSION.
- LABEL MUST BE UL RECOGNIZED: PGDQ2 OR PGJ12 AND CSA CERTIFIED: Plastic Group III(polycarbonate).
- THE LABEL IS SUPPOSED TO BE PASTED ON PC CASE EVENLY AND PROPERLY IT'S NOT ALLOWED TO HAVE ANY BULGE HAPPEN ON THE LABEL AFTER BE BURNT IN 72 HRS IN OVEN WHICH TEMPERATURE IS 100°C.
- DIMENSIONS MARKED * MARK MUST BE INSPECTED AND CONTROLLED STRICTLY BY IQC.
- THE PLASTIC MATERIAL OF APPLICATION SURFACE FOR THIS LABEL IS PC.
- ALL SPECIFICATION MUST BEEN APPROVED BY DESIGN ENGINEER.
- UNFOUNDED TOLERANCE: ±0.2mm.
- THE FINISHED LABEL GOODS SHOULD ALL THE SAME AS THIS DRAWING; INCLUDING: FONT TYPE, SYMBOLS, CONTENT, SIZE, POSITION,ETC.
- 黏貼於PC塑膠材質,表面屬於光面或是鏡面

SCALE:
UNIT: mm

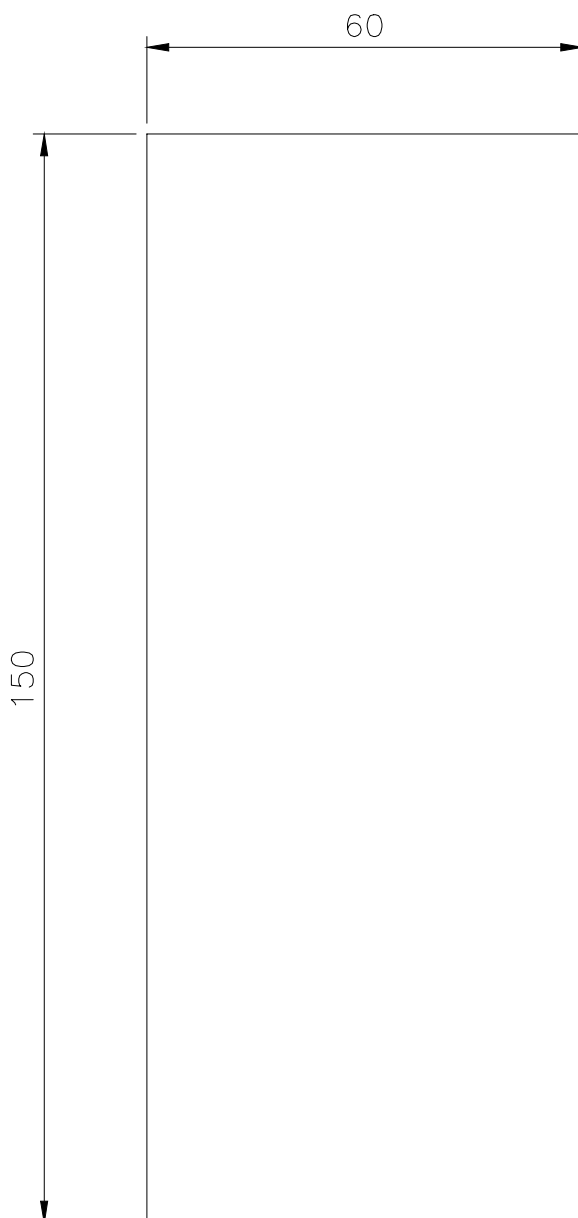
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MODEL NO. : FSP120-AFAN2(I35201)	TITLE: SPEC LABEL	SHEET: 1 OF 1	REV: 01
R&D3 Division	PE	ME	DATE
L.J	ABBY	ABBY	2020/03/04
INTERIOR COUNTERSIGN:			

Mechanical Drawing (外觀/機構圖)

工作要點

1. 材質: 鏡面銅板紙
2. 標籤顏色: 白色
3. 打印內容, 參看生產注意事項
4. 背膠必須耐溫 $80^{\circ}C$ 不會產生翹起, 起泡
5. 材質須符合 "SPI 環境管制物質技術標準 (SGP-0401)"
未標註之公差皆為 ± 0.5



UNIT:mm

P/N.: 6LO0817901GP

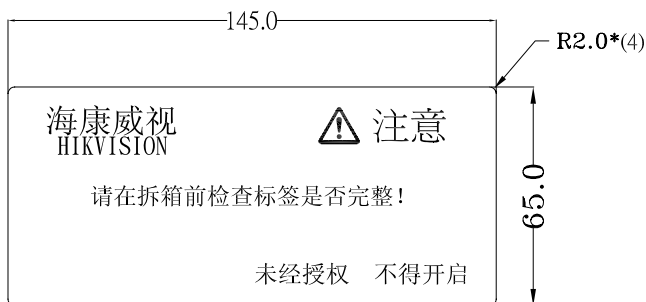
MODEL NO. : FSP030-DGAA1		TITLE: CARTON LABEL		SHEET: 1 OF 2	REV:01
R&D(5)	PE	DRAWN	DATE		
Arthur	Victoryu	Mina	JAN.13.2014		
INTERIOR COUNTERSIGN:					

Mechanical Drawing(外觀/機構圖)



工作要點

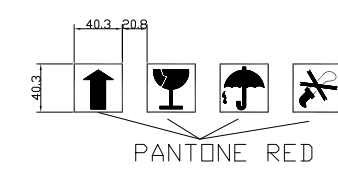
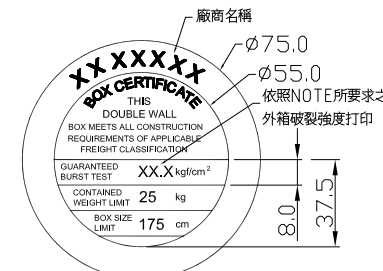
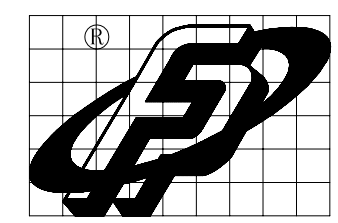
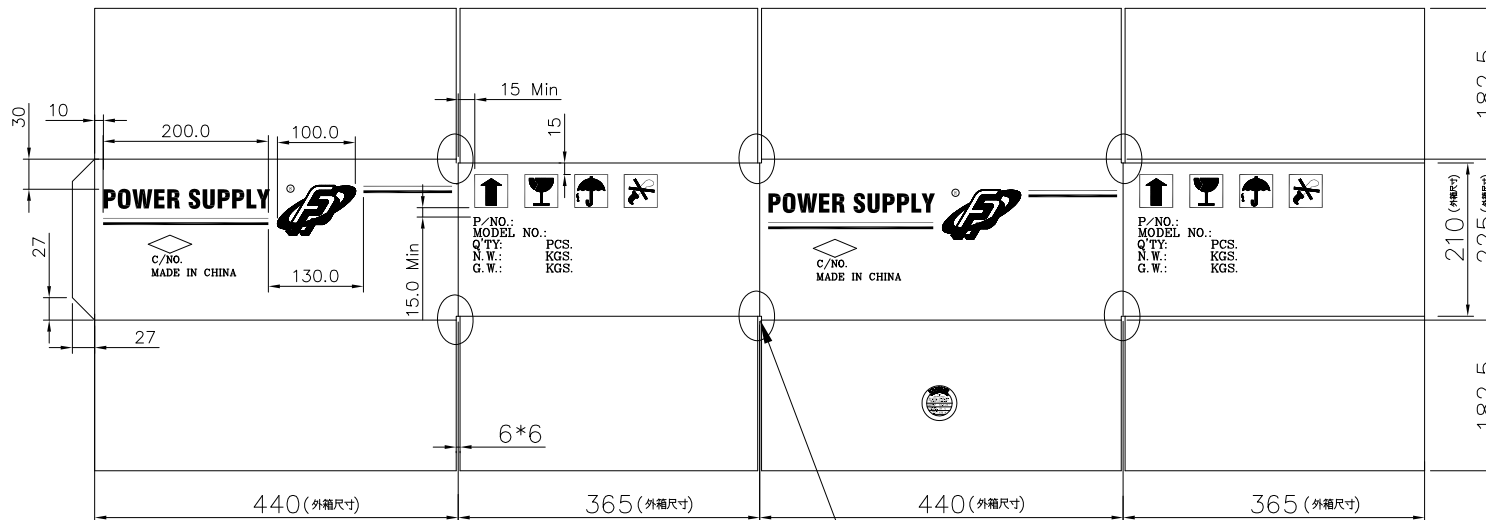
1. 材質:銅版紙
2. 印刷字體大小位置內容詳見drawing
3. 印刷必須清晰不得有斷線模糊不清等不良現象
4. 背膠必須耐溫80°C不會產生翹起
5. 白底黑字
6. 未標註之公差為±0.5
7. 必須符合"SPI環境管制物質技術標準(SGP-0401)"



P/N.:6LO0634501GP

MODEL NO. :FSP250-60GNV		SHEET: 1 OF 2		REV:01
R&D 8	PE	DRAWN	DATE	
		楊文	JUL.27.2011	

Mechanical Drawing(外觀/機構圖)表單編號7000P-0111



- NOTES :
- 外箱材質注意事項
材質係土色五層瓦楞紙, 破裂強度14.0kg.(耐破測試依據GB/T6545)。
 - 印刷內容
(a) 未標註之文字, 線框顏色為藍色PANTONE 2738C.
(b) LOGO用MARK 印刷
(c) POWER SUPPLY文字大小寬約17mm*高約26.5mm字粗5mm。
(d) 其餘文字大小寬約9.0mm*高約10.0mm字粗2.0mm。
(e) 淨重及毛重由工廠依實際量測重, 在下單時通知廠商印上。
(f) 所有油膜, 須符合無鉛材料。
 - 邊壓強度&空壓: (邊壓測試依據GB/T6546, 空壓測試依據GB/T4857.4)。
單箱毛重20kg(含)以上, 外箱紙板6.5kg/cm最小, 格板5.5kg/cm最小;
空箱抗壓5000N最小。
單箱毛重20kg(含)以下, 外箱紙板5.5kg/cm最小, 格板4.5kg/cm最小;
空箱抗壓4300N最小。
 - 雙層瓦楞紙板厚度規範: (厚度測試依據GB/T6547)。

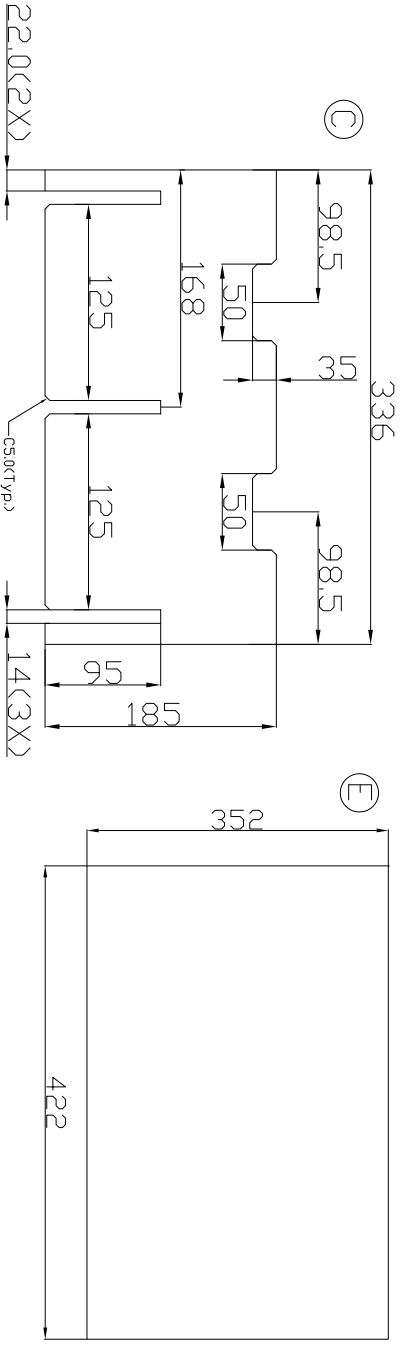
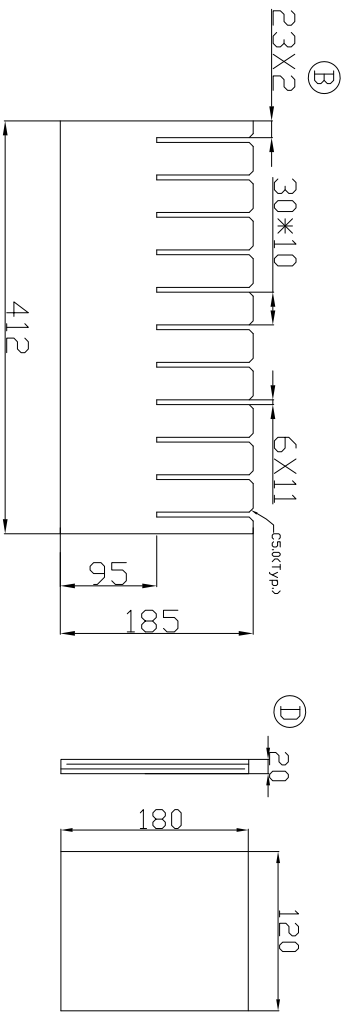
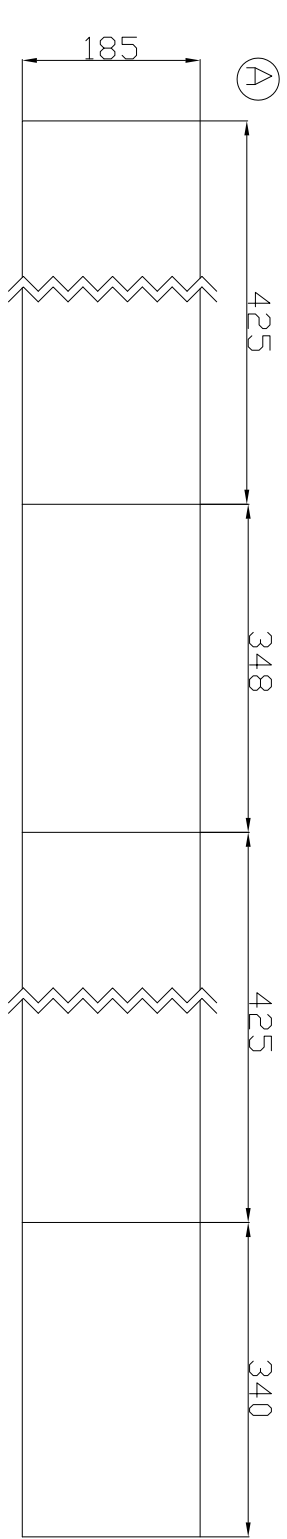
標型	標規(最小值),mm
C	3.5-4.0
B	2.5-3.0
 - 外箱尺寸標註(公差-0/+3mm), 但務必保證紙箱所有件(格板, 天地板, 圍板等)配合支撐成型後其所餘空隙應小於或等於3mm。
 - 材質須符合“SPL環境管制物質技術標準(SGP-0401)”最新版要求。
 - 外箱接合處需用雙釘釘合3~4處, 不可黏貼接合。
 - Requirements to fulfill to “Bromine and Chlorine free”:
(1) In PVC: 900 ppm
(2) In BFR (flame retardants): 900 ppm
(3) Maximum total halogens: 1500 ppm

9. 註明:不需加印ROHS。

P/N.:6PB0368401GP

THIRD ANGLE PROJECTION	DIMENSIONAL TOLERANCES			HOLES : ±0.05 ANGLES : ±0.5°	
	()	()	(V)	()	()
SCALE:	<30 :±0.2	DIGITALS	UP-100 :±0.2 250-300 :±0.4	UP-600 :±1.5	
UNIT: mm	>30-100 :±0.3	X ±0.6	100-150 :±0.25 300-350 :±0.45	600-900 :±2.4	
	>100-200 :±0.4	XX ±0.5	150-200 :±0.3 350-400 :±0.5	900-OVER :±3.1	
	>200-300 :±0.5	XXX ±0.3	200-250 :±0.35		
	ABOVE 300 :±0.8				

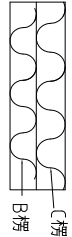
MODEL NO.: FSP120-AFAN2(I35201)	TITLE: PACKING		SHEET: 1 OF 4	REV:01
R&D3 Division	PE	ME	DATE	
L.J	Annie	Annie	2015/12/04	
INTERIOR COUNTERSIGN:				



NOTES:

1. 格板或圍板材質注意事項(公差 -0 / +3mm):
材質係土色五層瓦楞紙, 破裂強度 10kg. (耐破測試依據 GB/T 6545).
2. 組成之個體數:
A x 1PCS.
B x 6PCS.
C x 11PCS.
D x 4PCS.
E x 2PCS.

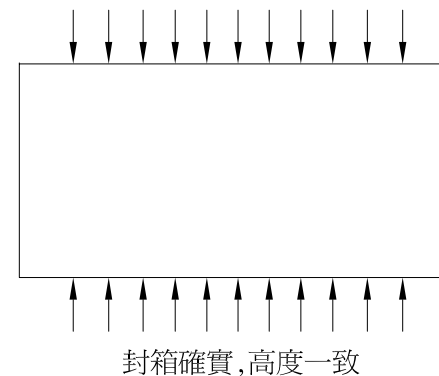
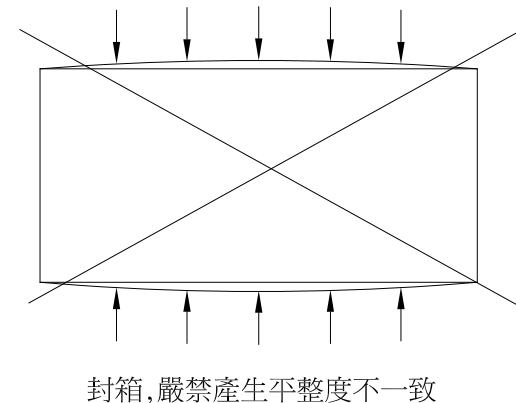
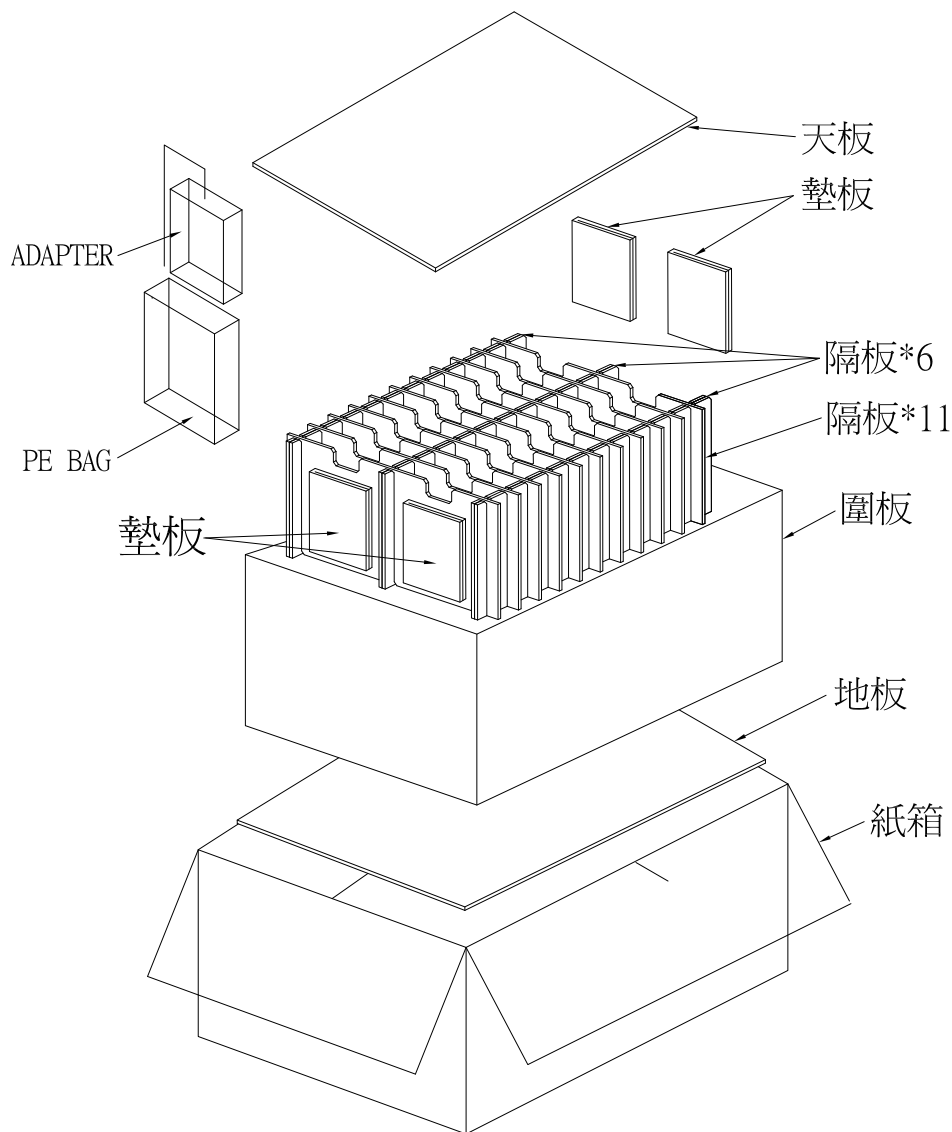
標型	標高與寬(最小標高), mm
C	3.5-4.0
B	2.5-3.0




THIRD ANGLE PROJECTION	DIMENSIONAL TOLERANCES		HOUSS : ±0.05	ANGLES : ±0.0°
SCALE: UNIT: mm	() < 30 : ±0.2 30-100 : ±0.3 > 100-200 : ±0.4 > 200-300 : ±0.5 300-500 : ±0.6	() DECIMALS XX : ±0.05 XXX : ±0.3	() UM : ±0.1 100-300 : ±0.3 300-500 : ±0.35	() UP-600 : ±1.5 900-0700R : ±3.1

MODEL NO.: FSP120-AFAN2(35201)	TITLE: PACKING	SHEET: 2 OF 4	REV: 01
R&D3 Division	PE	ME	DATE
LJ	Annie	Annie	2015/12/04
INTERIOR COUNTERSIGN:			

P/N.: 6PB0368401GP



P/N.:6PB0368401GP

 THIRD ANGLE PROJECTION SCALE: UNIT: mm	DIMENSIONAL TOLERANCES				HOLES : ±0.05		ANGLES : ±0.5°	
	()	()	()	()				
	<30	DIGIMALS	UP-100	250-300	UP-100	350-400	UP-600	
	±0.2		±0.2	±0.4	±0.2	±0.4	±1.5	
>30~100	X	100-150	300-350	600-900	±2.4			
±0.3		±0.6	±0.6	±0.6				
>100~200	XX	150-200	350-400	900-OVER	±3.1			
±0.4		±0.5	±0.5					
>200~300	XXX	200-250						
±0.5		±0.35						
ABOVE 300								
±0.8								

MODEL NO.: FSP120-AFAN2(I35201)		TITLE: PACKING		SHEET:3OF 4	REV:01
R&D3 Division	P E	ME		DATE	
L,J	Annie	Annie		2015/12/04	
INTERIOR COUNTERSIGN:					