

Specification for Approval

Customer :

Part Name : AC ADAPTER

Description : 24Volts / 3.75Amps

Model No. : (Level VI)

Customer P / N : SW3470B

Product P / N :

Issued Date : 16-Dec.-2015

Version : A1

Issued Stamp :

Customer's Approval Signature

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**90W
AC ADAPTER
SPECIFICATION**

Model No. : (Level VI)

Description : 24Volts / 3.75Amps

Part No. : SW3470B

Version : A1

Date : 16-Dec.-2015

Approved	Reviewed	Checked	Prepared	Sales
				

1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 47 ~ 63 Hz Input, without any slide switch.
- ◆ **Output** : +24V / 0~3.75A
- ◆ **Case Dimension** : 129 (L) * 54 (W) * 32 (H) mm
- ◆ **Efficiency** : Eff (av) \geq 88% Min
- ◆ **Safety** : cUL / UL / CB / GS / PSE / BSMI
- ◆ **EMI** : CE / FCC Class B ; Conduction & Radiation Met.
- ◆ **Protection** : OVP (Over Voltage Protection) 、 SCP (Short Circuit Protection) 、 OCP (Over Current Protection)
- ◆ High frequency design , less power consumption.
- ◆ Suitable for usage at Telecommunication, Computer, Industrial Controller, & OA System.
- ◆ Meet Level VI
- ◆ Meet LPS

2. Input :

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	47 ~ 63 Hz
2.3 Current	1.2A Max.
2.4 Inrush Current	80A Max. / 240Vac (Cold Start At 25 °C , Full Load)
2.5 Efficiency	Eff (av) \geq 88 % Min (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi \leq 0.21W (At 230Vac & No Load)
2.7 Power Factor(PF)	PF \geq 0.9 (At Full Load)

$$\text{※Eff (av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load
E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

3. Output :

3.1 DC Output	Voltage	+24V \pm 5%
	Current	3.75A Max.
	Regulation	22.80Vmin. ~ 25.20Vmax.
	Ripple & Noise	240mV Max.
	Total Power	90W Max.

Remark : For ripple & noise measurement, use a 20MHz bandwidth frequency oscilloscope, and add a 0.1 μ F multilayer Cap. and a Low ESR Electrolytic Cap. (10 μ F) at output connector terminals. (At nominal line voltage, Full Load)

4. Protection :

4.1 Over Voltage Protection (OVP)	V out *(150% Max.)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed
4.3 Over Current Protection(OCP)	I out *(170% Max.)

Remark : When Short Circuit Protection or Over Current Protection is activated,the power supply will shutdown automatically. Once the abnormal condition resulting in the failure being removed, the power supply will restart accordingly. When Over Voltage Protection is activated, the power supply will shutdown.

5. Safety 、EMI and EMC Requirement :

5.1 Safety Requirement

a. Safety : cUL / UL / CB / GS / PSE / BSMI

b. Dielectric Strength : 10mA Max. Cut off current

(1)	Primary to Secondary	3000Vac for 1 Minute
(2)	Primary to Frame Ground	1500Vac for 1 Minute

c. Insulation Resistance :

(1)	Primary to Secondary	10 M OHMS for 500Vdc
(2)	Primary to Frame Ground	10 M OHMS for 500Vdc

5.2 EMI Requirement : CE / FCC Class B ; Conduction & Radiation Met.

5.3 Leakage Current : Less than 3.5mA

5.4 Grounding Test : Resistance 0.1ohm Max. @ 32A

6. Operation and Environment Performance :

6.1 Temperature Range

Operating	0 °C ~ + 40 °C
Storage	- 20 °C ~ + 80 °C

6.2 Humidity Range(Non-condensing)

Operating	20% ~ 80% RH
Storage	10% ~ 90% RH

6.3 Cooling : By natural air.

7. M.T.B.F. : 300,000Hrs.(Calculated Hours at 25°C , By Telcordia SR-332)

8.Mechanical :

8.1 Weight : 340 g Typical

8.2 Cable Type : Black UL1185 16AWG
(Wire + Plug)

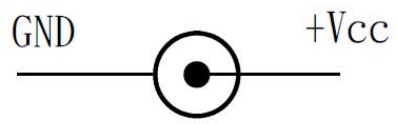
Plug : $\phi 5.5 * \phi 2.1 * 12\text{mm}$
(Cannelure)

8.3 Cable Length : 1500mm

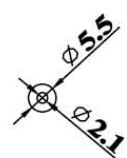
8.4 Case Dimension : 129mm(L)*54mm(W)*32mm(H)

8.5 Material Flammability : UL 94V-0

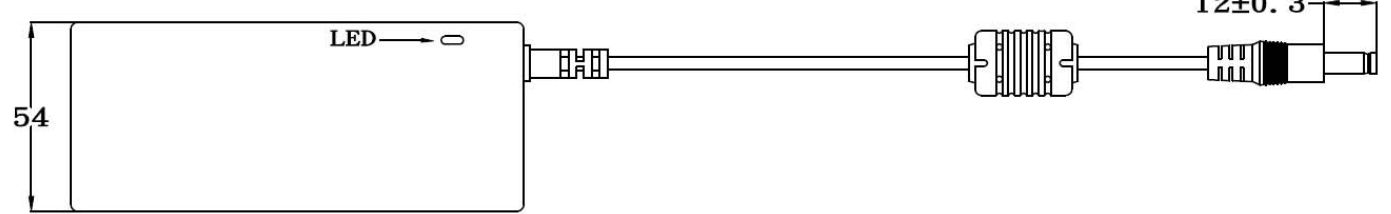
8.6 External Apperance : As drawing below (Scale \rightarrow mm)



Output Cable Plug Pin Assignment



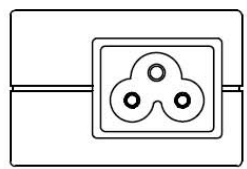
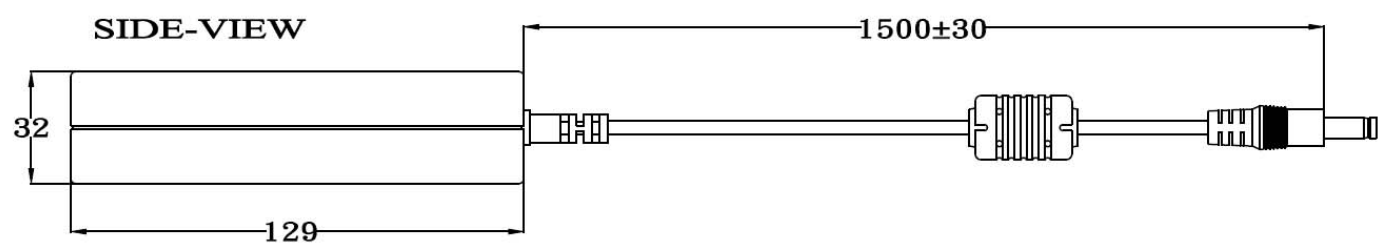
TOP-VIEW



BOTTOM-VIEW



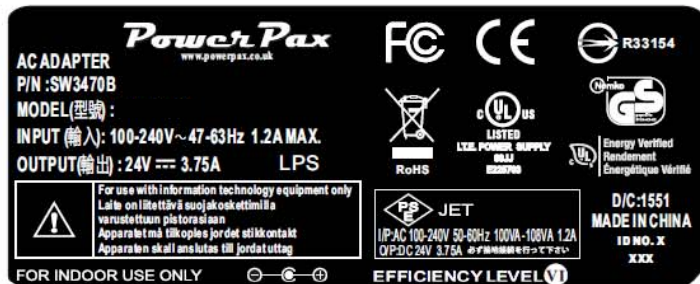
SIDE-VIEW



FRONT-VIEW

8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
 Color : Black Background with Silver Printing
 Label Dimension : 84.3mm(L) * 34.3mm(W)+/-0.1mm
 Label Thickness : 75#

100%



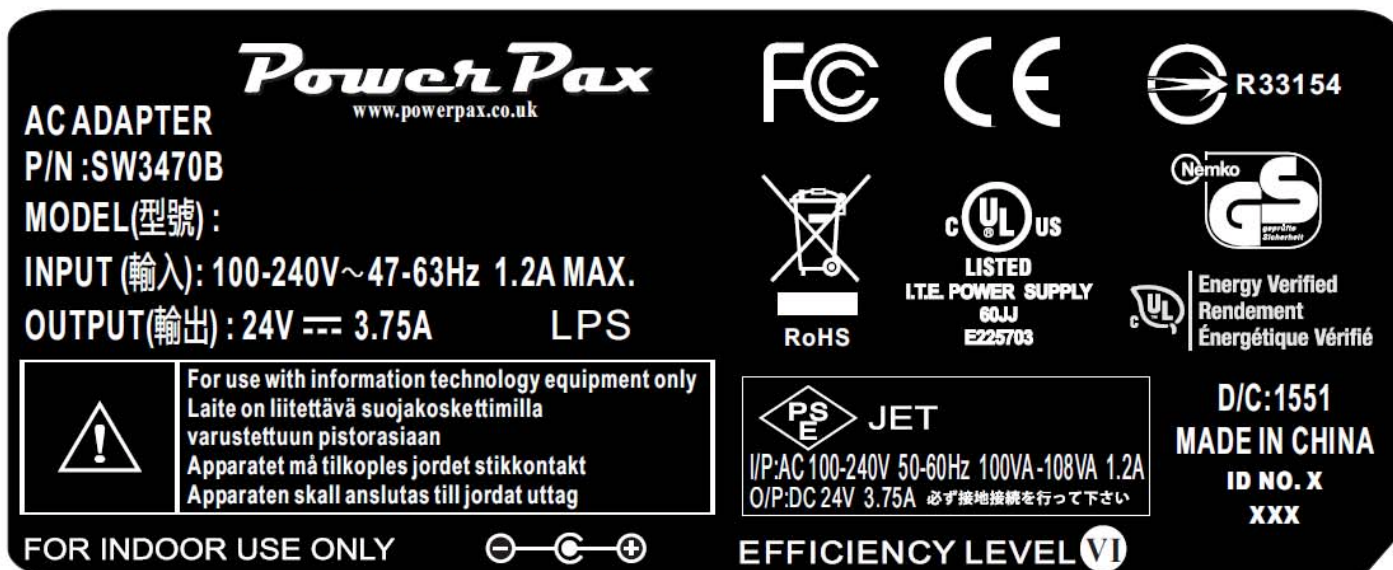
"XXX"

Label supplier's code.
 It is accurate that the number of words depends on the real finished product.

ID NO."X"

Manufacturer's code.
 It is accurate that the number of words depends on the real finished product.

200%



Label Part No. :9443061150
REV:A

8.8 Spec. Label Materials : Art Paper Label (OPP)
Color : White Background with Black Printing
Label Dimension : 85.8mm(H)*15mm(W)+/-0.1mm

100%

P/N:SW3470B

200%

P/N:SW3470B

Label Part No. : 9443020630

A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	22.80 V~ 25.20 V	24.06 V	24.02 V	23.99 V
115Vac / 50 % Load	22.80 V~ 25.20 V	24.06 V	24.02 V	23.99 V
132Vac / 50 % Load	22.80 V~ 25.20 V	24.06 V	24.02 V	23.99 V
180Vac / 50 % Load	22.80 V~ 25.20 V	24.05 V	24.02 V	24.00 V
230Vac / 50 % Load	22.80 V~ 25.20 V	24.05 V	24.02 V	24.00 V
264Vac / 50 % Load	22.80 V~ 25.20 V	24.05 V	24.02 V	24.00 V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	88 % Min.	89.62 %	89.46 %	89.27 %
230Vac / 100 % Load	88 % Min.	90.54 %	90.34 %	90.11 %

$$\text{Eff (av)} = \frac{E_1 + E_2 + E_3 + E_4}{4}$$

E1=efficiency with 25% rated load ; E2= efficiency with 50% rated load
E3=efficiency with 75% rated load ; E4= efficiency with 100% rated load

C. Load Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 0 % Load	22.80 V~ 25.20 V	24.24 V	24.21 V	24.17 V
115Vac / 50 % Load	22.80 V~ 25.20 V	24.06 V	24.02 V	23.99 V
115Vac / 100 % Load	22.80 V~ 25.20 V	23.82 V	23.78 V	23.73 V
230Vac / 0 % Load	22.80 V~ 25.20 V	24.24 V	24.21 V	24.17 V
230Vac / 50 % Load	22.80 V~ 25.20 V	24.05 V	24.02 V	24.00 V
230Vac / 100 % Load	22.80 V~ 25.20 V	23.82 V	23.77 V	23.74 V

D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	240mV Max.	174 mV	175 mV	178 mV
230Vac / 100 % Load	240mV Max.	176 mV	178 mV	180 mV

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
240Vac / 100 % Load	80A Max	65 A	67 A	65 A

F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Iout*(170% Max.)	127 %	125 %	128 %
230Vac / 100 % Load	Iout*(170% Max.)	130 %	127 %	129 %

G. Short Circuit Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	Auto Recovery	OK	OK	OK
230Vac / 100 % Load	Auto Recovery	OK	OK	OK

H. Input Power Consumption(No Load)

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 0 % Load	≤ 0.21 W	0.18 W	0.16 W	0.17 W

I. Power Factor

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
230Vac / 100 % Load	≥ 0.9	0.955	0.952	0.949

Efficiency Test Report

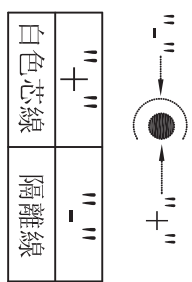
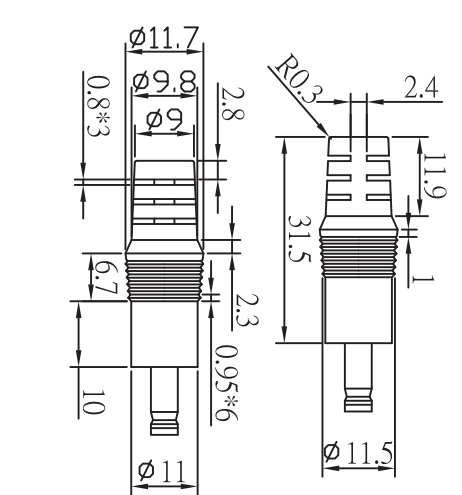
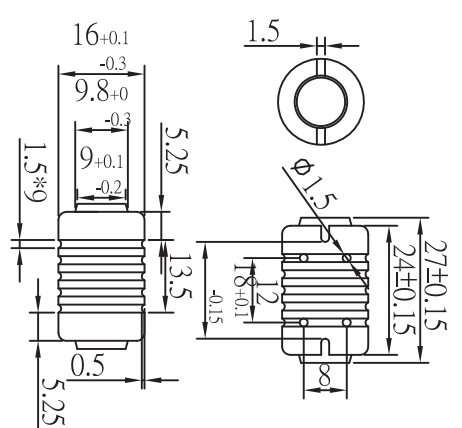
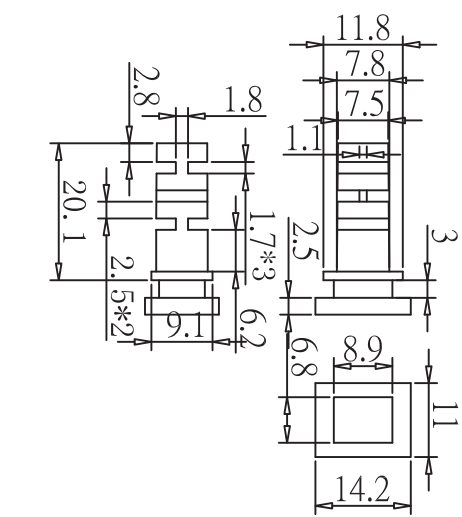
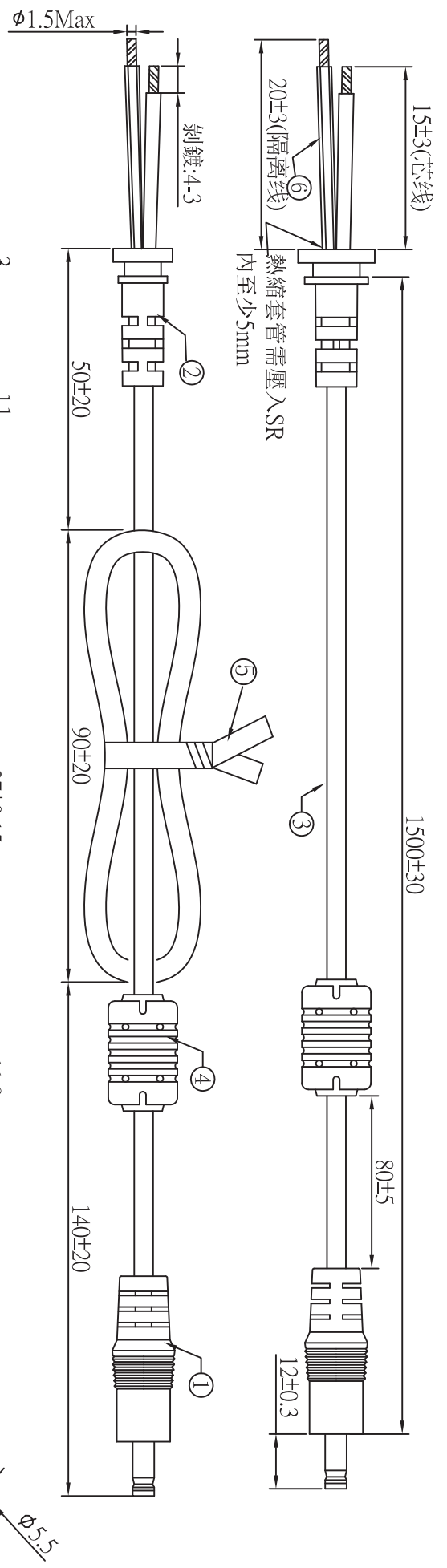
- A. Model Number : (24.0V/3.75A/90.0W)
 B. DC Power Cord : UL1185,18AWG,1.5M
 C. Average Efficiency :
 LEVEL VI : 88%Min.
 D. NO Load Power Consumptic :
 LEVEL VI : 0.21W max.
 E. Testing equipment :
 1. AC Power Source : " EXTECH " 6900
 2. Electronic Load : " PRODIGIT " 3302F
 3. Power Meter : " Zentech " WT210
 4. Digital Meter : " PRODIGIT " 3302F
 F. AC Input Voltage : 115Vac/60Hz

Load Conditions	$100\% * I_0$	$75\% * I_0$	$50\% * I_0$	$25\% * I_0$	$0\% * I_0$
Reported Quantity					
Rms Output Current(mA)	3750mA	2813mA	1875mA	938mA	0mA
Rms Output Voltage(V)	23.78V	23.90V	24.02V	24.14V	24.21V
Active Output Power(W)	89.18W	67.22W	45.03W	22.63W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	0.880A	0.657A	0.853A	0.446A	0.012A
Rms Input Power(W)	100.65W	75.04W	50.34W	25.08W	0.12W
Voltage T.H.D.(%)	-	-	-	-	-
True Power Factor	0.994	0.991	0.512	0.487	0.086
Power Consumed by UUT(W)	11.48W	7.82W	5.31W	2.45W	0.14W
Efficiency	88.60%	89.58%	89.45%	90.23%	*
Average Efficiency	89.46%				*

- G. AC Input Voltage : 230Vac/50Hz

Load Conditions	$100\% * I_0$	$75\% * I_0$	$50\% * I_0$	$25\% * I_0$	$0\% * I_0$
Reported Quantity					
Rms Output Current(mA)	3750mA	2813mA	1875mA	938mA	0mA
Rms Output Voltage(V)	23.77V	23.90V	24.02V	24.14V	24.21V
Active Output Power(W)	89.15W	67.21W	45.04W	22.63W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.453A	0.349A	0.439A	0.235A	0.023A
Rms Input Power(W)	99.45W	74.99W	49.65W	24.82W	0.16W
Voltage T.H.D.(%)	-	-	-	-	-
True Power Factor	0.952	0.932	0.490	0.455	0.033
Power Consumed by UUT(W)	10.30W	7.78W	4.61W	2.19W	0.16W
Efficiency	89.67%	89.66%	90.76%	91.28%	*
Average Efficiency	90.34%				*

Tester : Mingan



注意:此圖面所需材料符合"ROHS"標準

- ① 5.5*2.1*23內縮車溝黑色半邊,外模P-184號模(二次成型),用料外PVC60P黑色
- ② SR-310(A)號模,用料PVC60P黑色,吊重:1米/20磅/60秒
- ③ UL 1185 18AWG(0.18*34)單芯隔離線(0.12*54)BK亮 OD:3.5裁線長度:1540+10/-0
- ④ 鐵芯規格:12*20*5.6,外模SR-136號模用料PVC60P黑色
- ⑤ PE無鐵芯紫帶10CM黑色
- ⑥ 熱縮套管:Ø1.5*22
- ⑦ 單位:MM

10mm以下	±0.1mm	150mm以下	±0.8mm
2.0mm以下	±0.15mm	200mm以下	±1.0mm
3.0mm以下	±0.20mm	300mm以下	±1.0mm
100mm以下	±0.5mm	360mm以上	±1.2mm

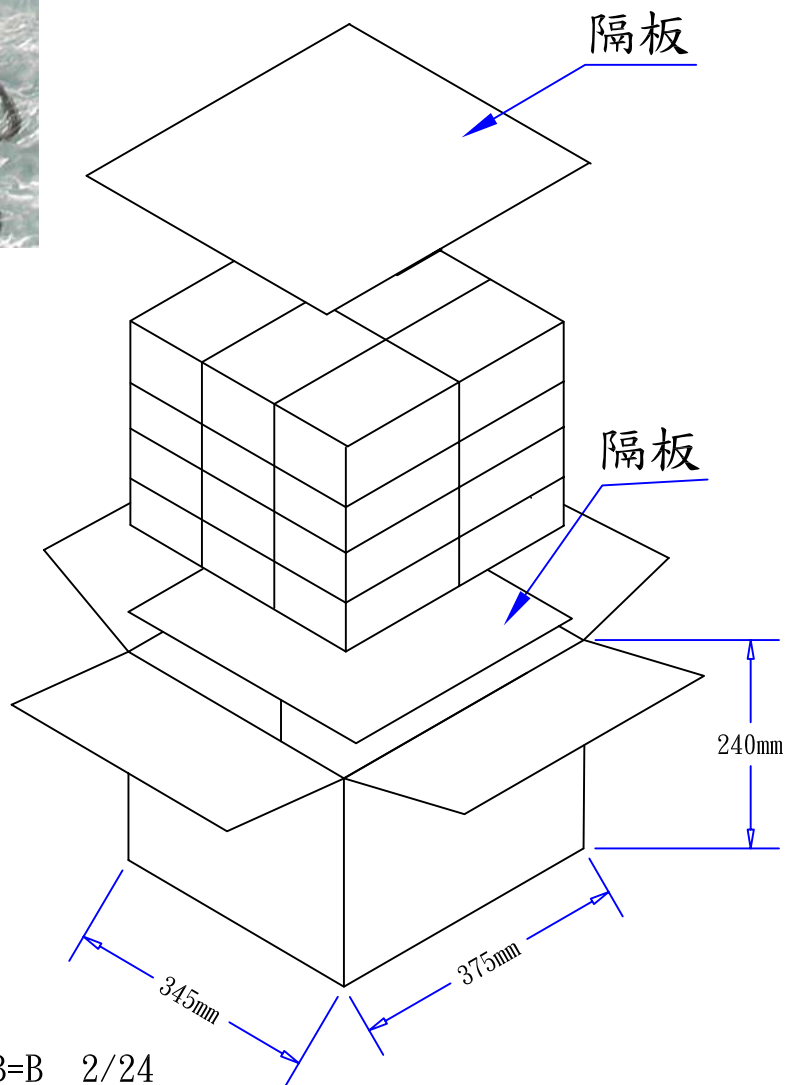
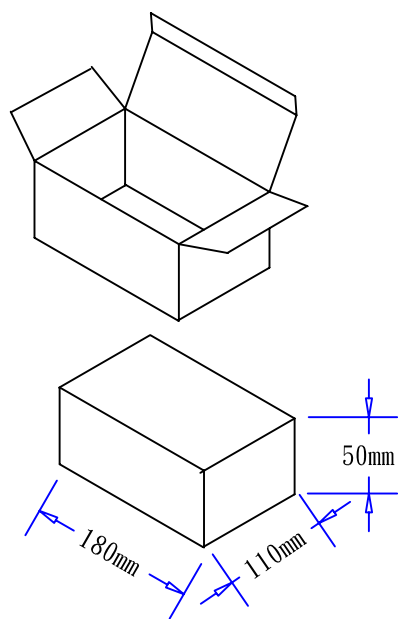
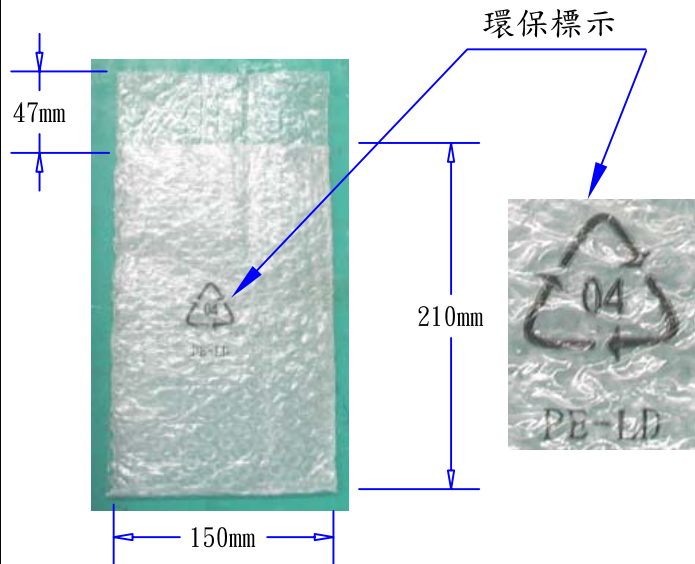
料號 R44N18150120

客戶 阿達特 制圖 潘勝

頁數 01 審核 批準

01	新出	2015/12/17	圖號	日期	2015/12/17
瓶次	變更內容	日期	圖號	日期	2015/12/17

REVISIONS				
SHOW	REV	DESCRIPTION	DATE	APPROVED
	A	客戶指定紙盒尺寸, 初版制作	07/6/13	
	B	修改隔板數量從5PCS改為2PCS	10/2/22	



- 9550006401 1. 隔板:360*330*6mm B=B 2/24
 2. 數量:6*4=24PCS
- 9520006902 3. 外箱:L*W*H=375*345*240mm K=K 1/24
- 9510003602 4. E坑瓦楞盒:L*W*H=180*110*50mm;350P+CE(即C9紙加裱350磅白板紙)
- 9540000901 5. 環保汽泡袋:210*150*47mm 無色透明,短邊單端開口,中間位置印環保標誌
 6. 白盒,外箱標注為外徑尺寸。
 7. 成品裝入汽泡袋折合袋口后用小膠紙封口,下蓋面位於環保標誌側。
 8. 成品下蓋向上平裝入白盒內,方向須統一。

DRAWING NO. PIS90W00002		APPROVAL2	
UNIT	MODEL NO. STD90w機種(阿達特)	APPROVAL1	
mm	FILE NO. ADT-0025	ENGINEER	
SCALE	REV. B	SHEET 1/1	DRAWN BY