

Specification for Approval

Customer : **Linkman Co.,Ltd.**

Part Name : **AC ADAPTER**

Description : **24.0Volts / 0.8Amps**

Model No. : **STD-24008U (U.S.A / Level V)**

Customer P / N :

Product P / N : **RXTD24008U415203**

Issued Date : **27 - Jan. - 2015**

Version : **A1**

Issued Stamp :

Customer's Approval Signature

ADAPTER TECHNOLOGY CO.,LTD.

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Factory (China) : BOAYANG ELECTRONICS CO., LTD.

**Di Feng Gong Ye Qu 2 Hao, Xiasha Liuwu Village, Shipai Town, Dong Guan City,
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86-0769-8186-8338 ; 86-0769-8186-8900

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19.2W

AC Adapter

SPECIFICATION

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Part No. : **RXTD24008U415203**

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Date : **27 - Jan. - 2015**

Approved	Reviewed	Checked	Prepared	Sales
				

Approval Documents/Spec. Revised Records

■ Customer : Linkman Co., Ltd.

■ Model No. : STD-24008U

■ Original Documents Content : Spec. 10 Pages, Attachment 2 Pages

Revised Records : No.	Date	Description (Before / After)	Page(s) Revised	Revised By (Adapter/Customer)	Remark
1	Jan./27/2015	Issue	-	Wei	A1

1. Feature :

- ◆ **Input** : Universal 100 ~ 240 Vac / 47 ~ 63 Hz Input, without any slide switch.
- ◆ **Output** : +24 V / 0~0.8A
- ◆ **Case Dimension** : 72 (L) * 34 (W) * 69 (H) mm (±0.5mm)
- ◆ **Efficiency** : Eff (av) ≥ 80.81% Min.
- ◆ **Safety** : PSE
- ◆ **EMI** : 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 Energy Star V / Erp (Stage 2) / MEPS V .

2. Input :

2.1 Voltage	Universal 100~240Vac, single phase
2.2 Frequency	47 ~ 63 Hz
2.3 Current	0.48A Max.
2.4 Inrush Current	30A Max. / 100Vac ; 60A Max. / 230Vac (Cold Start At 25 °C , Full Load)
2.5 Efficiency	Eff (av) ≥ 80.81% Min. (At 115 Vac & 230 Vac)
2.6 Power Consumption	Pi ≤ 0.3 W (At 230Vac & No 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 ± 5%
	Current	0.8 A Max.
	Regulation	22.8Vmin. ~ 24Vtyp. ~ 25.2Vmax.
	Ripple & Noise	100 mV Max.
	Total Power	19.2W Max.

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

4. Protection :

4.1 Over Voltage Protection (OVP)	27 V (Max)
4.2 Short Circuit Protection (SCP)	Automatic recovery after short-circuit fault being removed.
4.3 Over Current Protection(OCP)	3.5 A (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 : PSE

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

(1)	Primary to Secondary	3000Vac for 1 Minute
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c. Insulation Resistance :

(1)	Primary to Secondary	10 M Ohm for 500Vdc
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5.2 EMI Requirement : Class B ; Conduction & Radiation Met.

5.3 Leakage Current : Less than 0.25mA

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 : 165 g Typical

8.2 Cable Type : Black UL2468 AWG22
(Wire + Plug)

Plug : $\phi 5.5 \times \phi 2.1 \times 9.5 \text{mm}$ (Tuning Fork & Cannelure)

8.3 Cable Length : 1500mm

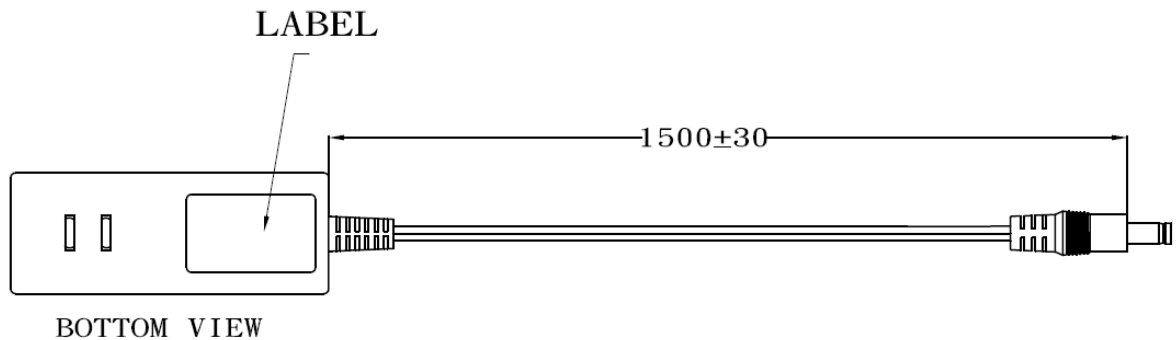
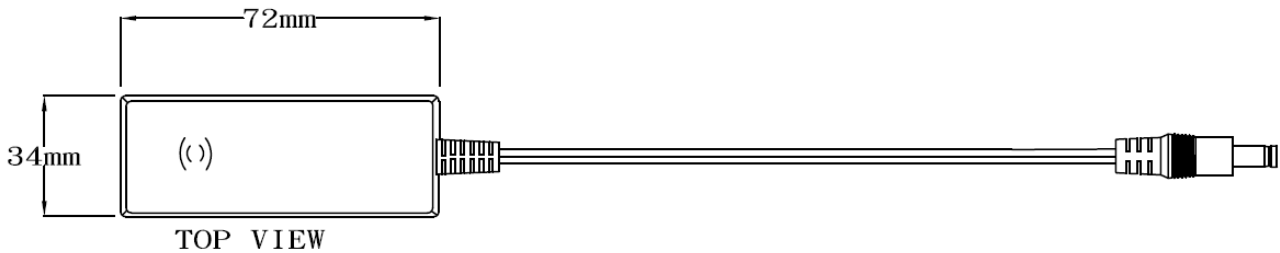
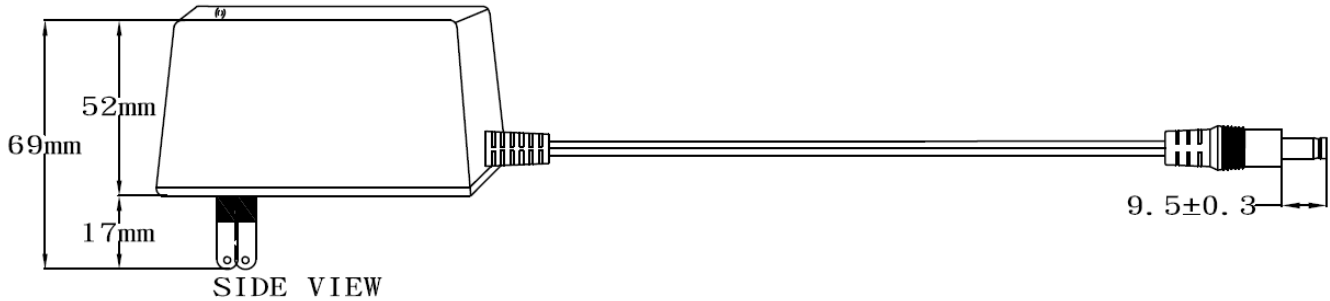
8.4 Case Dimension : 72mm(L)*34mm(W)*69mm(H) ($\pm 0.5 \text{mm}$)

8.5 Material Flammability : UL 94V-0

8.6 External Apperance : As drawing below (Scale - mm)

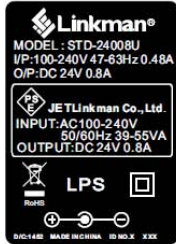


Output Cable Plug Pin Assignment



8.7 Spec. Label Materials : Metalized Polyester Label (Silver Gloss)
 Color : Black Background with Silver Printing
 Label Dimension : 34.5mm(L)*24.5mm(W)+/-0.1mm
 Label Thickness : #75

100%



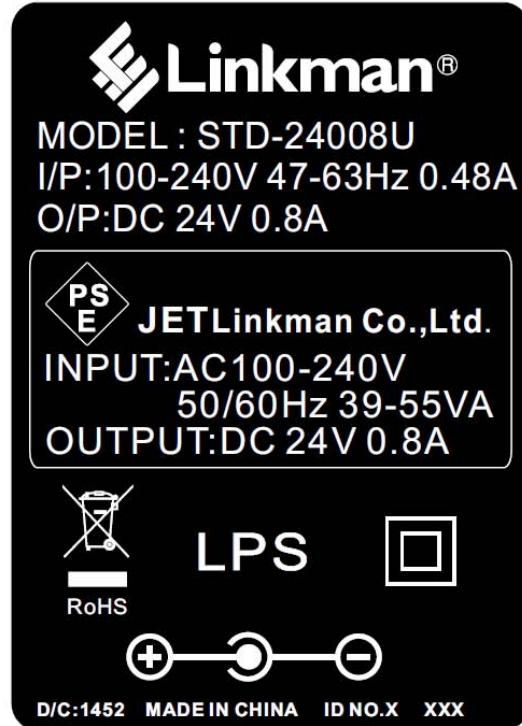
"XXX"

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.

300%



Label Part No. : 9443052540

A. Line Regulation Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
90Vac / 50 % Load	22.8~25.2 V	24.35 V	24.33 V	24.30 V
115Vac / 50 % Load	22.8~25.2 V	24.35 V	24.33 V	24.30 V
132Vac / 50 % Load	22.8~25.2 V	24.35 V	24.33 V	24.30 V
180Vac / 50 % Load	22.8~25.2 V	24.35 V	24.33 V	24.30 V
230Vac / 50 % Load	22.8~25.2 V	24.35 V	24.33 V	24.30 V
264Vac / 50 % Load	22.8~25.2 V	24.35 V	24.33 V	24.30 V

B. Efficiency Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac	80.81 % Min.	85.23 %	84.88 %	84.98 %
230Vac	80.81 % Min	85.27 %	84.47 %	84.33 %

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

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	22.8~25.2 V	24.51 V	24.59 V	24.55 V
115Vac / 50 % Load	22.8~25.2 V	24.35 V	24.33 V	24.30 V
115Vac / 100 % Load	22.8~25.2 V	24.29 V	24.26 V	24.27 V
230Vac / 0 % Load	22.8~25.2 V	24.51 V	24.59 V	24.55 V
230Vac / 50 % Load	22.8~25.2 V	24.35 V	24.33 V	24.30 V
230Vac / 100 % Load	22.8~25.2 V	24.29 V	24.26 V	24.27 V

D. Ripple & Noise Test

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	100 mVpp Max.	48.6mVpp	47.8mVpp	48.4mVpp
230Vac / 100 % Load	100 mVpp Max.	42.4mVpp	42.0mVpp	42.2mVpp

E. Inrush Current

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
100Vac / 100 % Load	30A Max.	27.5 A	28.1 A	27.2 A
230Vac / 100 % Load	60A Max	43.6 A	42.5 A	43.1 A

F. Over Current Protection

Test Result :

Test condition	Spec.	Reading 1	Reading 2	Reading 3
115Vac / 100 % Load	3.5A Max.	1.691 A	1.665A	1.680 A
230Vac / 100 % Load	3.5A Max.	2.121 A	2.088 A	2.115 A

G. Short Circuit Protection

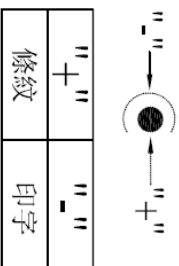
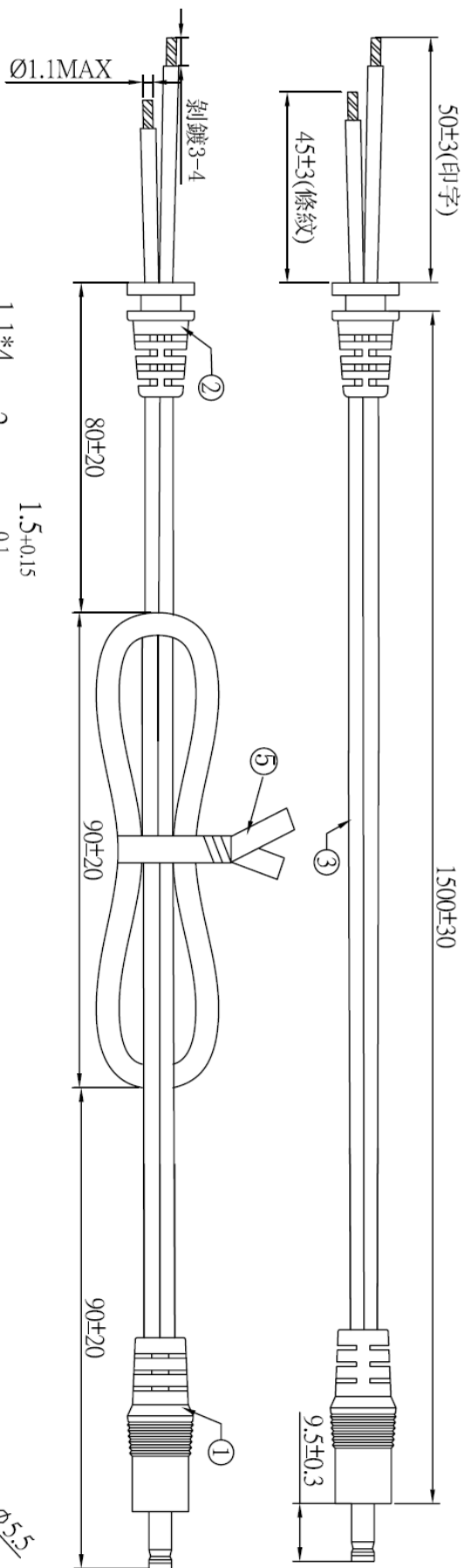
Test Result :

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	$\leq 0.3W$	0.26 W	0.26 W	0.25 W



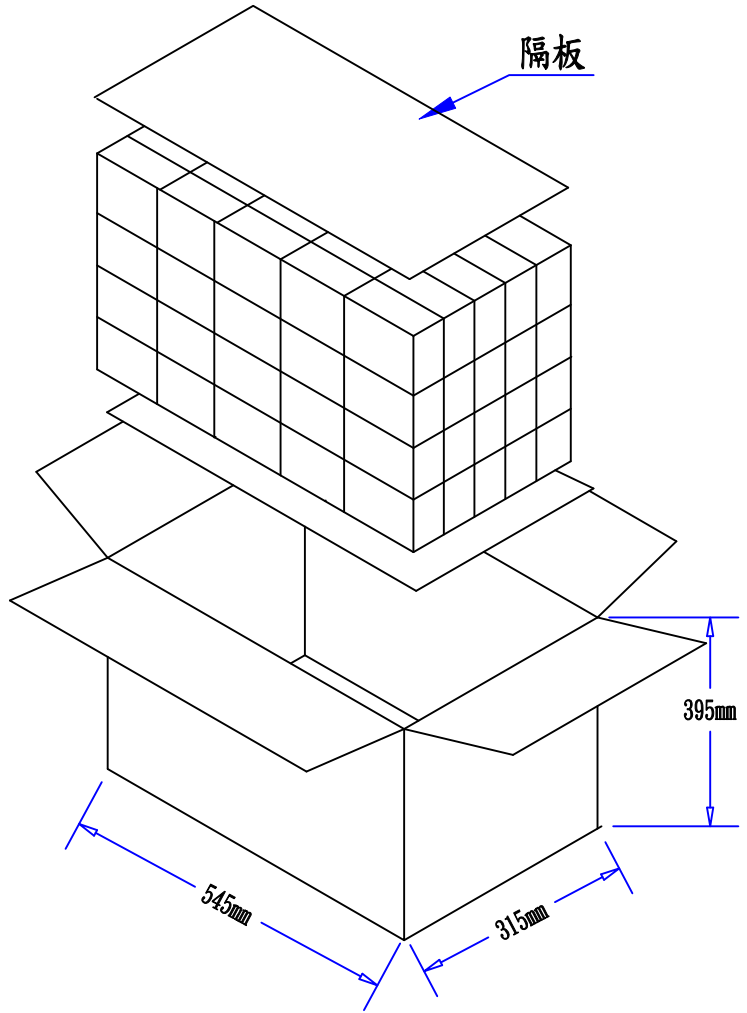
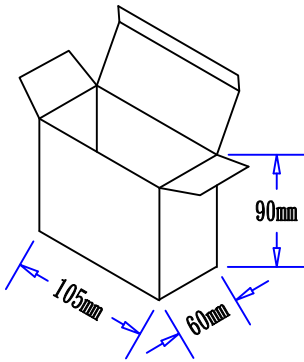
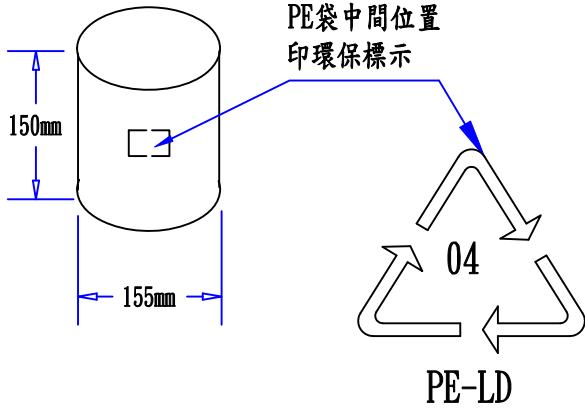
注意:此圖面所需材料符合"ROHS"標準

- ① 5.5*2.1*23 音叉車溝黑色半邊 (YY-PD-00186), 外模P-184號模(二次成型), 用料外PVC60P黑色 (YY-PV-00009)
- ② SR-101 號機, 用料PVC60P黑色 (YY-PV-00009), 吊重:1米/20磅/60秒
- ③ UL 2468 22AWG(0.16*17) BK OD:1.8*3.6(YY-DC-00025) 裁線長度:1560+10/-0
- ④ PE有鐵芯紫帶10CM黑色 (YY-ES-00001)
- ⑤ 絕緣阻抗:20Ω, 導通阻抗:1.5Ωmax
- ⑥ 單位:MM

版次	內容
02	SR尺寸

料號	R44MIC15019	
客戶	阿達特	
版次	02	制圖
頁數	01	初審
		審核
		批准
圖號	ADT-1328	日期
		2009/06/04

	A	初版制作	13/08/12	



PIS18W00048 包裝(FOR 18W, 24W插牆式) 短環保PE泡袋厚0.09-白盒-100

- 9550006001** 1. 隔板:530(L)*300(W)*6mm B=B 2/100
- 2. 數量:25*4=100PCS
- 9520006502** 3. 外箱:545(L)*315(W)*395(H)mm K=K 1/100
- 9510003502** 4. 白盒:105(L)*60(W)*90(H)mm 350P+CE(即C9紙加裱350磅白板紙) 1/1
- 9540008801** 5. 環保PE袋:150(L)*155(W)*0.09mm 無色透明,單端開口,中間位置印環保標示. 1/1
- 6. 成品裝入PE袋后封好,再放入外箱,方向必須統一.
- 7. 外箱,白盒標注為外徑尺寸
- 8. 上述所有材料須符合環保ROHS標準.

DRAWING NO. PIS18W00048		APPROVAL 1 BY	
UNIT	MODEL NO. 18W, 24W(插牆式)	APPROVAL 2 BY	
mm	FILE NO. ADT-0211	CHECKED BY(ENGINEER)	
SCALE	REV. A	SHEET 1/1	DRAWN BY 李金朝 DATE: 2013/08/12

Efficiency Test Report

- A. Model Number** : STD-24008Z (Z=A,B,C,E,K,I,U,V) (24V / 0.8A / 19.2W)
- B. DC Power Cord** : UL2468 , 22AWG , 1.8M
- C. Average Efficiency** :
- Energy Star V** (0.0626*Ln(Nameplate Output)+0.622) = 80.69 % Min.
- Erp (Stage 2)** (0.063*Ln(Nameplate Output)+0.622) = 80.81 % Min.
- MEPS V** (0.0626*Ln(Nameplate Output)+0.622) = 80.69 % Min.
- D. NO Load Power Consumption :**
- Energy Star V** 0.3W Max.
- Erp (Stage 2)** 0.3W Max.
- MEPS V** 0.3W Max.
- E. Testing Dequipment :**
- a. AC Power Source** : " Zentech " 2700M-10
- b. Electronic Load** : " PRODIGIT " 3311C
- c. Power Meter** : " Zentech " 2100
- d. Digital Meter** : " FLUKE " 45
- 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)	800mA	600mA	400mA	200mA	0mA
Rms Output Voltage(V)	24.170V	24.230V	24.280V	24.330V	24.380V
Active Output Power(W)	19.34W	14.54W	9.71W	4.87W	0.00W
Rms Input Voltage(V)	115V	115V	115V	115V	115V
Rms Input Current(A)	0.375A	0.295A	0.215A	0.130A	0.012A
Rms Input Power(W)	22.67W	16.77W	11.18W	5.91W	0.24W
T.H.D. (Voltage)	0.16	0.18	0.15	0.13	0.11
True Power Factor	0.523	0.493	0.449	0.394	0.171
Power Consumed by UUT(W)	3.33W	2.23W	1.47W	1.04W	0.24W
Efficiency	85.29%	86.69%	86.87%	82.34%	*
Average Efficiency	85.30%				*

- 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)	800mA	600mA	400mA	200mA	0mA
Rms Output Voltage(V)	24.170V	24.220V	24.280V	24.330V	24.420V
Active Output Power(W)	19.34W	14.53W	9.71W	4.87W	0.00W
Rms Input Voltage(V)	230V	230V	230V	230V	230V
Rms Input Current(A)	0.260A	0.301A	0.140A	0.081A	0.016A
Rms Input Power(W)	22.73W	16.97W	11.38W	6.10W	0.28W
T.H.D. (Voltage)	0.22	0.18	0.14	0.12	0.1
True Power Factor	0.379	0.365	0.352	0.324	0.073
Power Consumed by UUT(W)	3.39W	2.44W	1.67W	1.23W	0.28W
Efficiency	85.07%	85.63%	85.34%	79.77%	*
Average Efficiency	83.95%				*

Tester : Wei