

### Features:

- ◆ High Density, High Efficiency > 90%
- ◆ Mini. Size, Low Profile 3" x 5" x 1.6"
- ◆ Low Leakage Current < 750uA @ 230Vac
- ◆ Safety Compliant With UL60950-1
- ◆ OCP , OVP , OTP Protection
- ◆ High Power 280W@110V-130V/50°C Fan-less (note)
- ◆ High Power 270W@110V-130V/60°C Fan-less (note)
- ◆ High Power 350W@200V-240V/60°C Fan-less (note)
- ◆ High Power 400W max. With a 20CFM Airflow

### Application:

POE , POS , LCD TV  
 Industrial Equipment  
 Gaming Machine

### Safety Certified:



| INPUT SPECIFICATIONS  |                                   |
|-----------------------|-----------------------------------|
| INPUT VOLTAGE         | Universal Input : 90 ~ 264Vac     |
| INPUT FREQUENCY       | 47 ~ 63Hz                         |
| INPUT CURRENT         | 5.5A/115Vac , 2.5A/230Vac         |
| INRUSH CURRENT (Typ.) | 100A/230Vac half cycle cold start |
| POWER FACTOR (Typ.)   | PF > 0.95 / full load             |
| EFFICIENCY (Typ.)     | 90%                               |
| LEAKAGE CURRENT       | Leakage current < 750uA/230Vac    |

| OUTPUT SPECIFICATIONS             |             |
|-----------------------------------|-------------|
| VOLTAGE                           | +54V        |
| RATED LOAD(Convection)            | 0 ~ 5.18A   |
| Max. LOAD(W/20CFM Airflow or Fan) | 7.41A       |
| RIPPLE & NOISE                    | 560mV       |
| REGULATION                        | ±3%         |
| Max. POWER                        | 280W / 400W |

| PROTECTION SPECIFICATIONS       |                       |
|---------------------------------|-----------------------|
| OCP: ( Over Load Protection)    | 110 ~ 150%            |
| OVP: ( Over Voltage Protection) | 58 ~ 63V              |
| OTP: ( Over Temp. Protection)   | Shut down O/P voltage |

| GENERAL SPECIFICATIONS            |                                               |
|-----------------------------------|-----------------------------------------------|
| HOLD UP TIME (Typ.)               | ≥ 16mS @ 200W, ≥ 12mS @ 300W,<br>≥ 8mS @ 400W |
| REMOTE CONTROL                    | N/A                                           |
| DC OK SIGNAL                      | Led.                                          |
| 12Vaux For External Fan(Optional) | F11-NF w/o 12Vaux, F11-VF with 12Vaux. @ 1A   |
| COOLING                           | Convection/280W, 20CFM for 400W               |

| SAFETY & ENVIRONMENTAL SPECIFICATIONS |                                                                        |
|---------------------------------------|------------------------------------------------------------------------|
| SAFETY APPROVALS REQUIRED :           | Meet UL , cUL , CE , FCC , CB                                          |
| SAFETY STANDARDS                      | UL 60950-1 2nd , EN 60950-1                                            |
| EMC EMISSION                          | EN55032(CISPR22) & FCC Class B.                                        |
| OPERATING AMBIENT TEMP.               | -40 ~ 85°C<br>(note 1: -40°C start up condition , o/p ≤ 80% max. load) |

### Input Connector (CN1) :

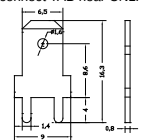
MOLEX 09-65-2038 (5273 SERIES) or equivalent  
 Mates with (MOLEX 5239) or equivalent

| Pin | Signal |
|-----|--------|
| 1   | N      |
| 2   | N/A    |
| 3   | L      |

### Input

### Connector(CN3) : (Optional)

Safety ground pin→Quick Disconnect TAB, 6.35[0.25] X 0.81[0.032] (Molex19705-4301)or Equ.  
 The safety ground connection is provided by the Quick Disconnect TAB near CN1.

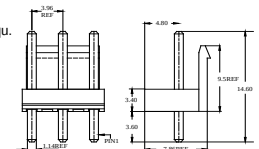


### Output Connector (CN2) -8PIN:

JST B\*P-VH Series or TKP PVH-XX Series or Equ.  
 Mates with JST VHR-\*N Series or TKP HVH-XX Series or Equ.

| Pin | Signal | Pin | Signal |
|-----|--------|-----|--------|
| 1   | V1     | 5   | GND    |
| 2   | V1     | 6   | GND    |
| 3   | V1     | 7   | GND    |
| 4   | V1     | 8   | GND    |

V1=54V



### De-rating Curve--- (Fan less)

**Condition A:** The bottom side of power unit direct fix to system frame.

**Condition B & C:** Add thermal pad (K≥1.3) between system cover and top side of power unit.



Condition A



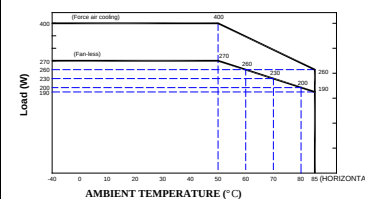
Condition B



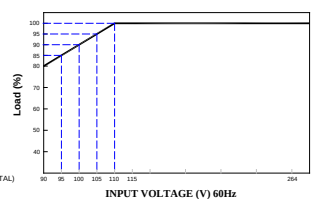
Condition C

### 270W (Fan less) DE-RATING O/P WATTS

De-rating Curve A1 (Load VS Ambient)



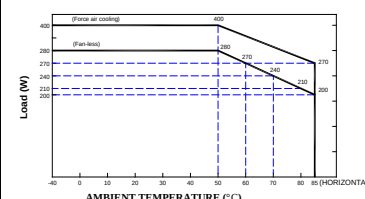
De-rating Curve A2 (Load VS I/P Voltage)



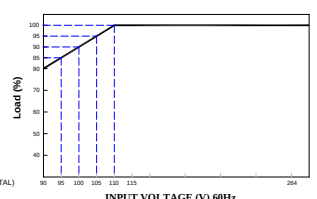
Note : Thermal test, SET-UP Condition → A

### 280W (Fan less) DE-RATING O/P WATTS

De-rating Curve A1 (Load VS Ambient)



De-rating Curve A2 (Load VS I/P Voltage)



Note : Thermal test, SET-UP Condition → A+B&C

Note: The maximum fan less ambient thermal test condition, please refer to the following conditions.

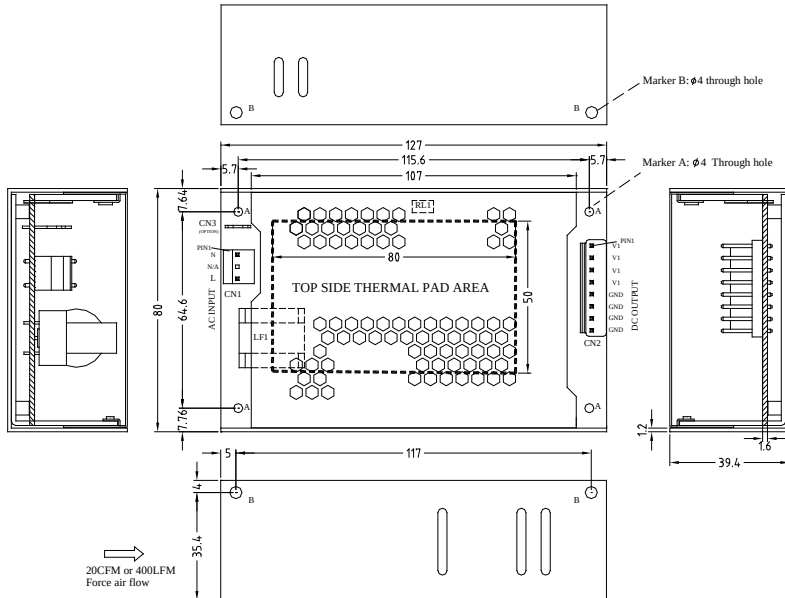
The part of LFI must be ≤ 120°C and the parts of RL1(thermal relay) must be ≤ 115°C--(the location of LFI and RL1, please reference Typical Mechanical Drawing).

**Mechanism of Fixing hole code : M\*\* → M50, M51**

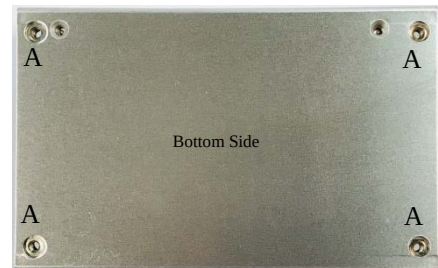
**Typical Mechanical Drawing :**

**WP213F11-400-48ADJ-(+54V)ADM50 (Connector code→AD)**

Fix hole: marker A are  $\phi 4$  through holes, Case dimension ( L\*W\*H ): 127\*80\*39.4 mm

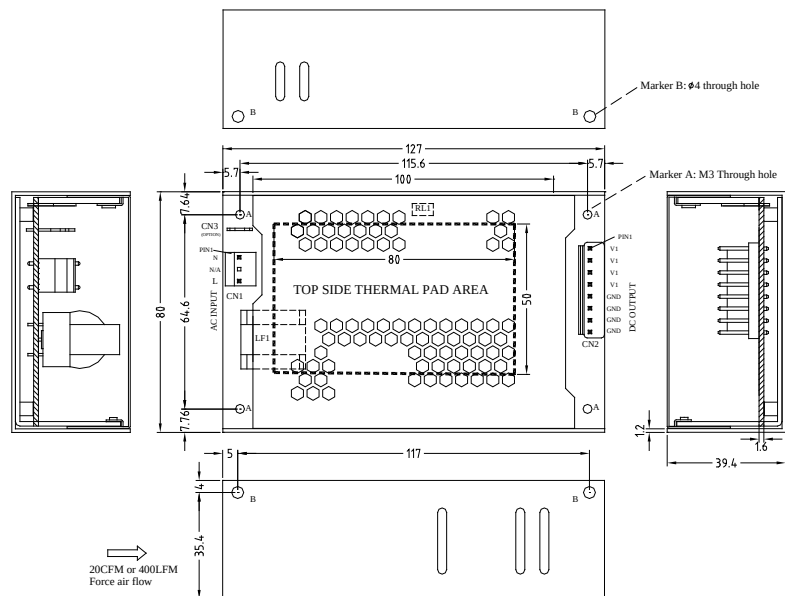


Marker A:  $\phi 4$  Through hole

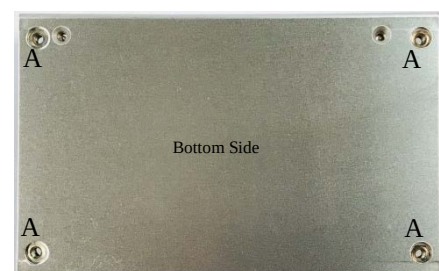


**WP213F11-400-48ADJ-(+54V)ADM51 (Connector code→AD)**

Fix hole: marker A are Fixing hole M3, Case dimension ( L\*W\*H ): 127\*80\*39.4mm



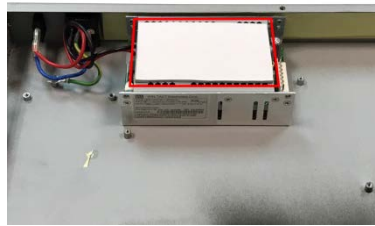
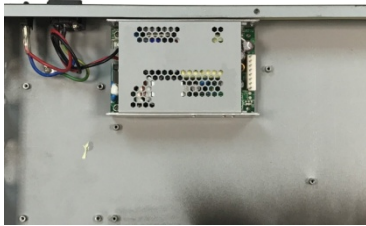
Marker A: Fixing hole M3



## Power Supply (Fan Less) Test Report

### set-up condition---(A + B & C)

- The bottom side of power unit direct fix to system frame.
- Add supper soft thermal pad ( $K \geq 1.3$ ) between system cover and top side of power unit. (note: The reference thermal pad material is Pioneer PMP-P300A or Equ.)
- The reference top side view of the system box.



Power unit set up picture

## ENVIRONMENT SETTING



Figure1: set-up and chamber



Figure2: side view of test box



Figure3: top view of test box

## ● RESULT : (Maximum O/P watts rating table)

| Maximum O/P watts rating table of Ambient temperature 50°C/60°C (IN CHAMBER) |           |           |           |           |           |
|------------------------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| VAC/IP<br>Ambient                                                            | 90V       | 95V       | 100V      | 110~130V  | 200~240V  |
| 50°C                                                                         | 260W max. | 270W max. | 270W max. | 280W max. | 350W max. |
| 60°C                                                                         | 235W max. | 245W max. | 255W max. | 270W max. | 350W max. |

Note 1 : VAC I/P vs Ambient temperature vs O/P Watts 50°C - 60°C

Note 2 : Thermal test, SET-UP Condition → A+B&C , IN CHAMBER (巨孚 GIANT FORCE) GTH-150-60-CP-AR)

Note 3 : Figure 1,2,3 : Test set up picture of Fan less condition

Note 4 : The maximum fan less ambient thermal test condition, please refer to the following conditions.

- The part of LF1 must be  $\leq 120^\circ\text{C}$  and the parts of RL1(thermal relay) must be  $\leq 115^\circ\text{C}$ .  
(the location of LF1 and RL1, please reference Typical Mechanical Drawing).