



## 40W Single Output AC Dimmable LED Power Supply

## PCD-40 series



### ■ Features :

- AC phase-cut dimming
- Work with leading edge and trailing edge TRIAC dimmers
- Built-in active PFC function
- Constant current design
- Protections: Short circuit / Over temperature
- Cooling by free air convection
- Fully isolated plastic case
- IP30 design
- Class II power unit, no FG
- Suitable for indoor LED lighting applications
- 100% full load burn-in test
- Low cost
- High reliability
- 3 years warranty

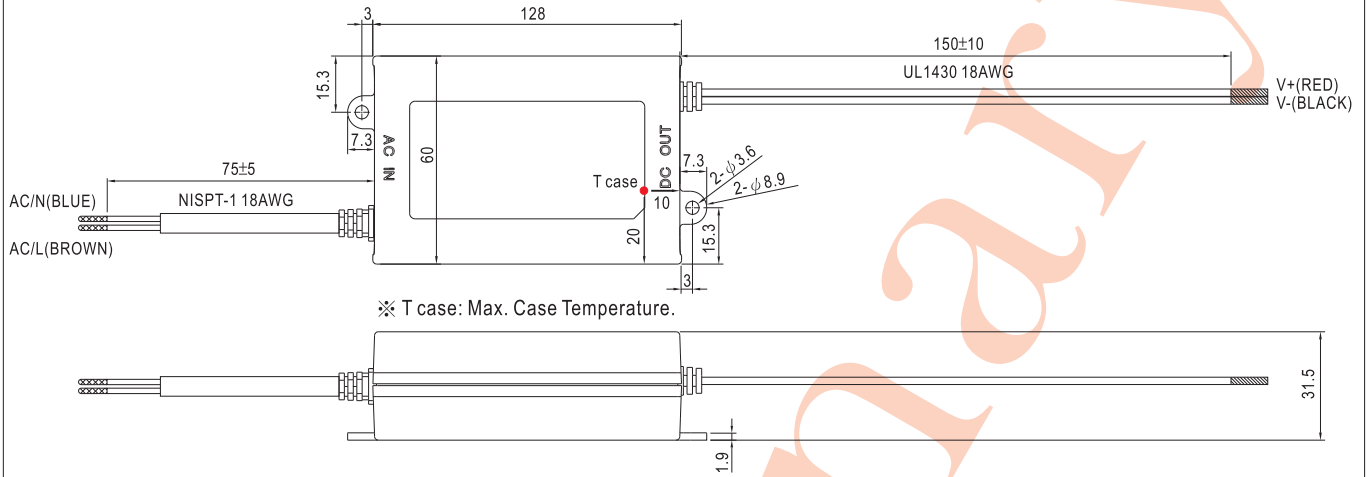


### SPECIFICATION

| MODEL        |                                                                                                                                                                                                                                          | PCD-40-350B                                                                                                       | PCD-40-500B | PCD-40-700B | PCD-40-1050B | PCD-40-1400B | PCD-40-1750B |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------|-------------|--------------|--------------|--------------|
| OUTPUT       | RATED CURRENT                                                                                                                                                                                                                            | 350mA                                                                                                             | 500mA       | 700mA       | 1050mA       | 1400mA       | 1750mA       |
|              | OPERATING VOLTAGE RANGE                                                                                                                                                                                                                  | 65 ~ 115V                                                                                                         | 45 ~ 80V    | 34 ~ 57V    | 22 ~ 38V     | 17 ~ 29V     | 13 ~ 23V     |
|              | CURRENT RANGE                                                                                                                                                                                                                            | 0 ~ 350mA                                                                                                         | 0 ~ 500mA   | 0 ~ 700mA   | 0 ~ 1050mA   | 0 ~ 1400mA   | 0 ~ 1750mA   |
|              | CURRENT ACCURACY                                                                                                                                                                                                                         | ±5.0%                                                                                                             |             |             |              |              |              |
|              | RATED POWER                                                                                                                                                                                                                              | 40.25W                                                                                                            | 40W         | 39.9W       | 39.9W        | 40.6W        | 40.25W       |
|              | RIPPLE & NOISE (max.) Note.1                                                                                                                                                                                                             | 11Vp-p                                                                                                            | 7Vp-p       | 4.5Vp-p     | 3.5Vp-p      | 3.4Vp-p      | 2.4Vp-p      |
|              | NO LOAD OUTPUT VOLTAGE (max.)                                                                                                                                                                                                            | 130V                                                                                                              | 100V        | 63V         | 50V          | 35V          | 35V          |
| SETUP TIME   |                                                                                                                                                                                                                                          | 1700ms / 230VAC at full load                                                                                      |             |             |              |              |              |
| INPUT        | VOLTAGE RANGE                                                                                                                                                                                                                            | 180~295VAC                                                                                                        |             |             |              |              |              |
|              | FREQUENCY RANGE                                                                                                                                                                                                                          | 47 ~ 63Hz                                                                                                         |             |             |              |              |              |
|              | POWER FACTOR (Typ.)                                                                                                                                                                                                                      | PF>0.9/230VAC, PF>0.9/277VAC at full load (Please refer to "Power Factor Characteristic" curve)                   |             |             |              |              |              |
|              | EFFICIENCY (Typ.)                                                                                                                                                                                                                        | 86%                                                                                                               | 86%         | 86%         | 85%          | 84%          | 84%          |
|              | AC CURRENT (Typ.)                                                                                                                                                                                                                        | 0.35A/230VAC                                                                                                      |             |             |              |              |              |
|              | INRUSH CURRENT(max.)                                                                                                                                                                                                                     | 15A/230VAC                                                                                                        |             |             |              |              |              |
|              | LEAKAGE CURRENT                                                                                                                                                                                                                          | <0.5mA / 240VAC                                                                                                   |             |             |              |              |              |
| PROTECTION   | SHORT CIRCUIT                                                                                                                                                                                                                            | Hiccup mode, recovers automatically after fault condition is removed.                                             |             |             |              |              |              |
|              | OVER TEMPERATURE                                                                                                                                                                                                                         | 105℃±10℃ (STW1)<br>Protection type : Shut down o/p voltage, re-power on to recover                                |             |             |              |              |              |
| ENVIRONMENT  | WORKING TEMP.                                                                                                                                                                                                                            | -30 ~ +60℃ (Refer to "Derating Curve")                                                                            |             |             |              |              |              |
|              | WORKING HUMIDITY                                                                                                                                                                                                                         | 20 ~ 95% RH non-condensing                                                                                        |             |             |              |              |              |
|              | STORAGE TEMP., HUMIDITY                                                                                                                                                                                                                  | -40 ~ +80℃, 10 ~ 95% RH                                                                                           |             |             |              |              |              |
|              | TEMP. COEFFICIENT                                                                                                                                                                                                                        | ±0.03%/℃ (0 ~ 50℃)                                                                                                |             |             |              |              |              |
|              | VIBRATION                                                                                                                                                                                                                                | 10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes                                           |             |             |              |              |              |
| SAFETY & EMC | SAFETY STANDARDS                                                                                                                                                                                                                         | UL8750, CSA C22.2 No. 250.0-08(except for PCD-40-1050B) ; ENEC EN61347-1, EN61347-2-13 independent, IP30 approved |             |             |              |              |              |
|              | WITHSTAND VOLTAGE                                                                                                                                                                                                                        | I/P-O/P:3.75KVAC                                                                                                  |             |             |              |              |              |
|              | ISOLATION RESISTANCE                                                                                                                                                                                                                     | I/P-O/P:100M Ohms / 500VDC / 25℃ / 70% RH                                                                         |             |             |              |              |              |
|              | EMC EMISSION                                                                                                                                                                                                                             | Compliance to EN55015, EN61000-3-2 Class C ; EN61000-3-3                                                          |             |             |              |              |              |
|              | EMC IMMUNITY                                                                                                                                                                                                                             | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level(Surge 2KV), criteria A                      |             |             |              |              |              |
| OTHERS       | MTBF                                                                                                                                                                                                                                     | Khrs min. MIL-HDBK-217F (25℃)                                                                                     |             |             |              |              |              |
|              | DIMENSION                                                                                                                                                                                                                                | 128*60*31.5mm (L*W*H)                                                                                             |             |             |              |              |              |
|              | PACKING                                                                                                                                                                                                                                  | Kg                                                                                                                |             |             |              |              |              |
| NOTE         | 1. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.<br>2. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers. |                                                                                                                   |             |             |              |              |              |

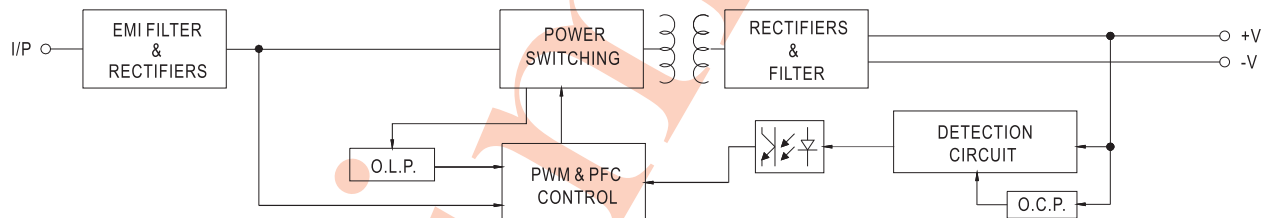
### Mechanical Specification

Case No. Unit:mm

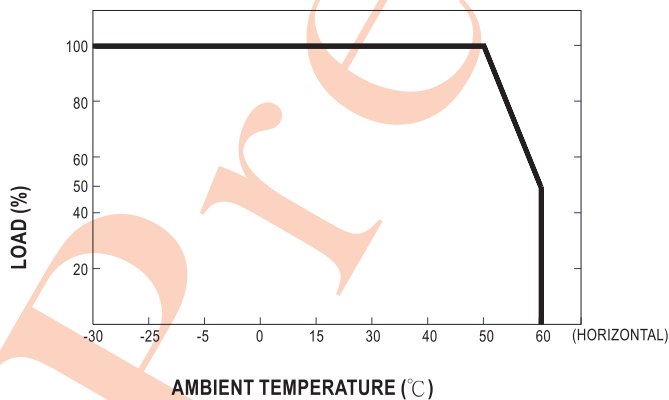


### Block Diagram

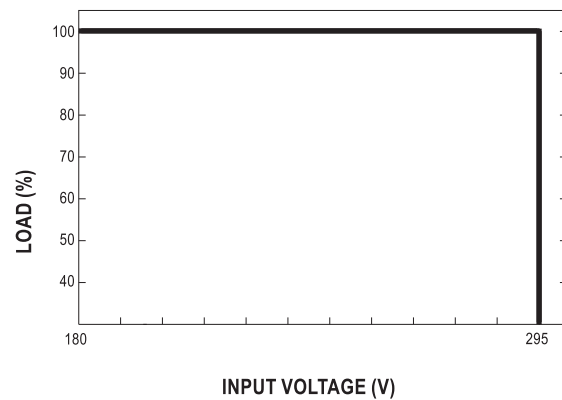
fosc:120KHz(230VAC)



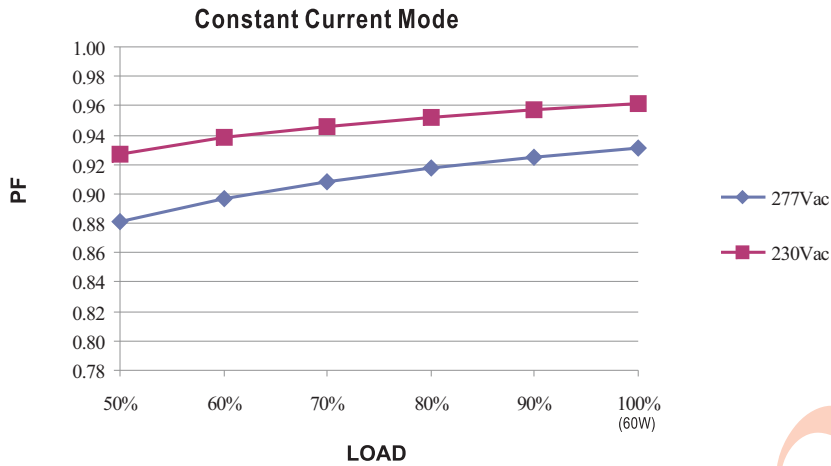
### Derating Curve



### Static Characteristics

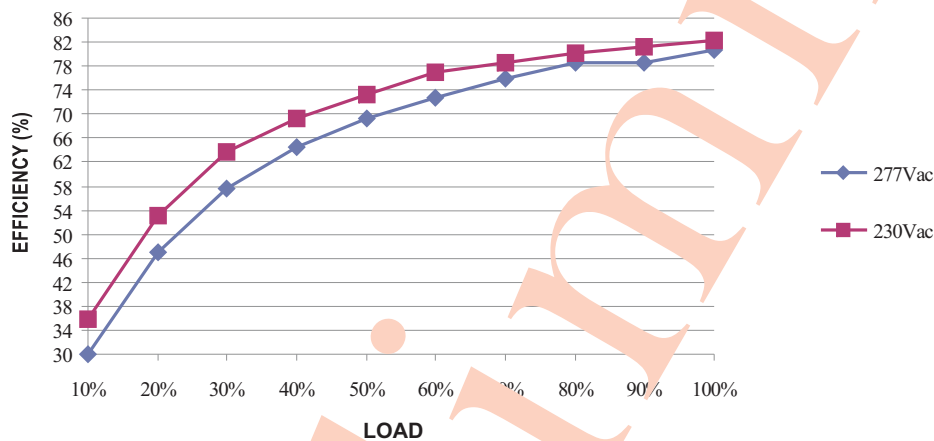


■ Power Factor Characteristic



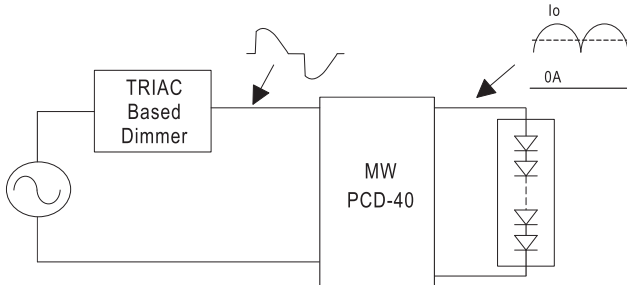
■ EFFICIENCY vs LOAD (PCD-40-500)

PCD-40 series possess superior working efficiency that up to 87% can be reached in field applications.



### ■ AC Dimming Operation

◎ The following diagram depicts a typical installation utilizing the PCD-40 :



Under direct driving, the power supply will work in "constant current mode (CC)" and output voltage of the power supply will be clamped by sum of forward voltage ( $V_f$ ) of the LED strip.

◎ Dimmer Compatibility Chart

| Manufacturer | Dimmer Model               |                     |
|--------------|----------------------------|---------------------|
| LUTRON       | SKYLARK SF-12P-277         | (277VAC / 60Hz)     |
| LUTRON       | DVF-103P-277               | (277VAC / 60Hz)     |
| JUNG         | Licht-Management 225 TDE   | (230VAC / 50Hz)     |
| JUNG         | Licht-Management 225 NV DE | (230VAC / 50Hz)     |
| BERKER       | Tronic-Drehdimmer 286710   | (230-240VAC / 50Hz) |
| CLIPSAL      | 32E450UDM                  | (220-240VAC / 50Hz) |
| CLIPSAL      | NO 32E450TM                | (220-240VAC / 50Hz) |
| CLIPSAL      | NO 32E450LM                | (220-240VAC / 50Hz) |
| CLIPSAL      | Cat 400T                   | (230-240VAC / 50Hz) |

Conduction angle: 30 degrees(min.) / 180 degrees(max.)