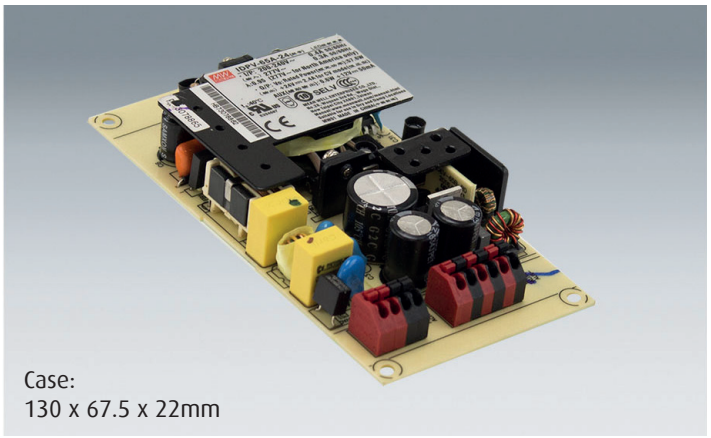
# IDPV-65 Series

65W PWM Output LED Power Supply



Case:
130 x 67.5 x 22mm

## Features

- Constant Voltage PWM style output with frequency 1KHz
- PCB Type design
- Built-in active PFC function
- No load power consumption <0.5W (Blank-Type)
- Function options: 2 in 1 dimming (dim-to-off); Auxiliary DC output
- 3 years warranty

| TYPE | FUNCTION |
|---|---|
| Blank | 2 in 1 dimming (0 ~ 10VDC and 10V PWM) |
| A | 2 in 1 dimming and auxiliary DC output |

**IDPV - 65 - A - 12** ← Rated output voltage (12/24/36/48/60V)

Series name | Rated wattage | Function options

## Specification

| | | | | | | |
|---|---|---|---|---|---|---|
| **INPUT** | **Voltage Range** | 180 ~ 295VAC 254~417VDC (Please refer to "STATIC CHARACTERISTIC" section) | | | | |
| | **Frequency Range** | 47 ~ 63Hz | | | | |
| | **Power Factor (Typ.)** | PF >0.95/230VAC, PF >0.9/277VAC at full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section) | | | | |
| | **Total Harmonic Distortion** | THD< 20%(@load ≥60%/230VAC; @load ≥75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION" section) | | | | |
| | **AC Current** | 0.4A / 230VAC 0.3A / 277VAC | | | | |
| | **Inrush Current (Typ.)** | COLD START 30A (twidth=270μs measured at 50% Ipeak) at 230VAC; Per NEMA 410 | | | | |
| | **Max. no. of PSUs on a 16A Circuit Breaker** | 32 units (circuit breaker of type B) / 32 units (circuit breaker of type C) at 230VAC | | | | |
| | **Leakage Current** | <0.75mA / 277VAC | | | | |
| | **NO LOAD POWER CONSUMPTION** | <0.5W for Blank-Type, <1.2W for A-Type | | | | |
| **OUTPUT** | **MODEL No.** | **IDPV-65☐ - 12** | **IDPV-65☐ - 24** | **IDPV-65☐ - 36** | **IDPV-65☐ - 48** | **IDPV-65☐ - 60** |
| | **DC Voltage** | 12V | 24V | 36V | 48V | 60V |
| | **Constant Current Region** | 4.2A | 2.4A | 1.8A | 1.35A | 1.08A |
| | **Rated Power** | 50.4W | 57.6W | 64.8W | 64.8W | 64.8W |
| | **Efficiency** | 85% | 87% | 88% | 89% | 90% |
| | **Dimming Range** | 0 ~ 100% | | | | |
| | **Voltage Tolerance** | ±10% | ±10% | ±10% | ±10% | ±10% |
| | **PWM Frequency** | 1KHz (±20%) | | | | |
| | **Setup Rise Time** | 500ms / 230VAC | | | | |
| | **AUXILIARY DC OUTPUT** | Nominal 12V (deviation 11.4~12.6) @50mA for A-Type only | | | | |
| **PROTECTION** | **Short Circuit** | Shut down output voltage, re-power on to recover | | | | |
| | **Over Current** | 105~115% | | | | |
| | | Protection type : Hiccup mode, recovers automatically after fault condition is removed | | | | |
| **ENVIRONMENT** | **Working Temperature** | Tcase = -20 ~ +40°C (Please refer to " OUTPUT LOAD vs TEMPERATURE" section) | | | | |
| | **Working Humidity** | 20 ~ 90% RH non-condensing | | | | |
| | **Storage Temperature** | -40 ~ +80°C, 10 ~ 95% RH non-condensing | | | | |
| | **Temp Coefficient** | ±0.03%/°C (0 ~ 40°C) | | | | |
| | **Vibration** | 10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes | | | | |
| **SAFETY & EMC** | **Safety Standards** | UL8750,CSA C22.2 NO.250.13-12;ENEC EN61347-1 & EN61347-2-13 independent, EN62384, GB19510.1, GB19510.14 approved | | | | |
| | **Withstand Voltage** | I/P-O/P: 3.75KVAC | | | | |
| | **Isolation Resistance** | I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH | | | | |
| | **EMC Emission** | Compliance to EN55015, EN61000-3-2 Class C (@load ≥60%); EN61000-3-3, GB17743, GB17625.1 | | | | |
| | **EMC Immunity** | Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge immunity:Line-Line:1KV) | | | | |
| **OTHERS** | **M.T.B.F.** | 398.7K hrs min. MIL-HDBK-217F (25°C) | | | | |
| | **Packing** | 0.15Kg; 81pcs/13Kg/1.46CUFT | | | | |

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to the increase of the set up time.
3. Derating may be needed under low input voltages. Please check the static characteristics for more details.
4. Aux. 12V will be damaged with short circuit; it will not be available with dimming off or output no load condition.
5. The power supply is considered as a component that will be operated in combination with final equipment. Since EMC performance will be affected by the complete installation, the final equipment manufacturers must re-qualify EMC Directive on the complete installation again.

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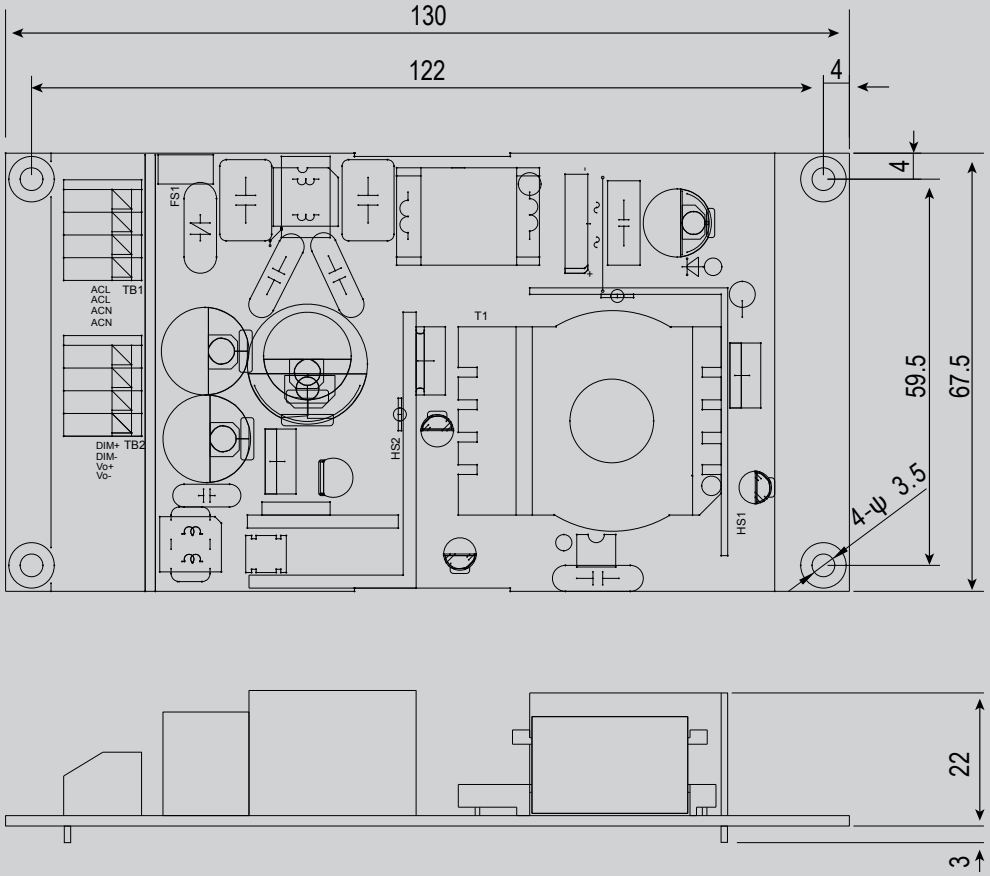
## Mechanical Diagram

### Blank-Type

Unit:mm




Terminal Pin No. Assignment(TB1)

| Pin No. | Assignment |
|---|---|
| 1 | ACL |
| 2 | ACL |
| 3 | ACN |
| 4 | ACN |

Terminal Pin No. Assignment(TB2)

| Pin No. | Assignment |
|---|---|
| 1 | DIM+ |
| 2 | DIM- |
| 3 | Vo+ |
| 4 | Vo- |

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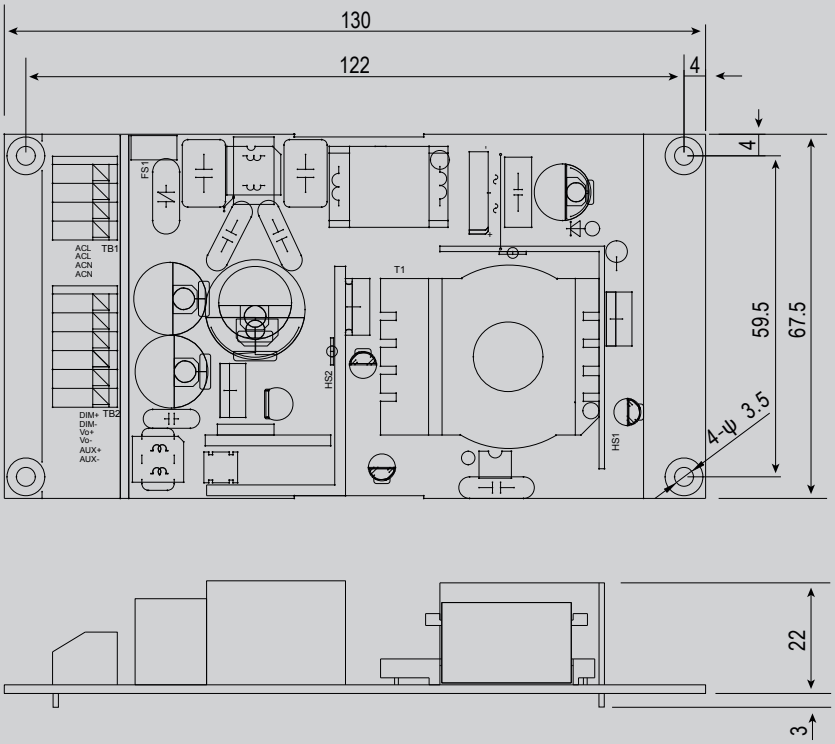
**A-Type**



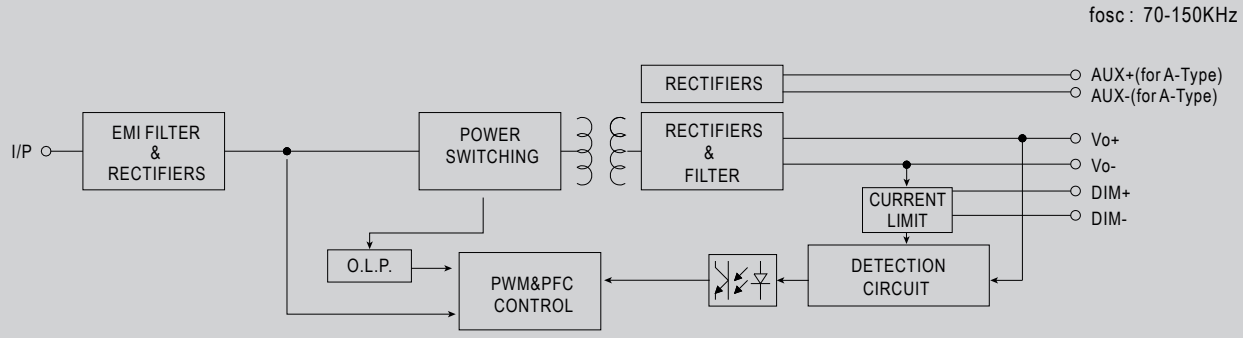

Terminal Pin No. Assignment(TB1)

| Pin No. | Assignment |
|---|---|
| 1 | ACL |
| 2 | ACL |
| 3 | ACN |
| 4 | ACN |

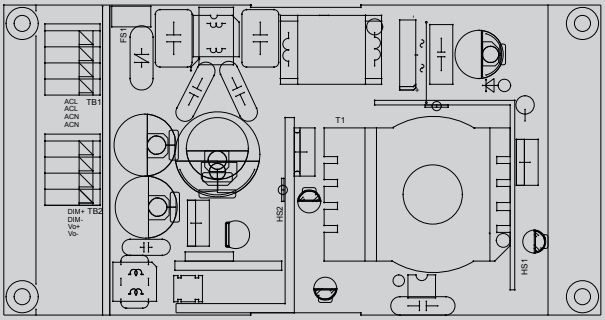
Terminal Pin No. Assignment(TB2)

| Pin No. | Assignment | Pin No. | Assignment |
|---|---|---|---|
| 1 | DIM+ | 4 | Vo- |
| 2 | DIM- | 5 | AUX+ |
| 3 | Vo+ | 6 | AUX- |

**Block Diagram**

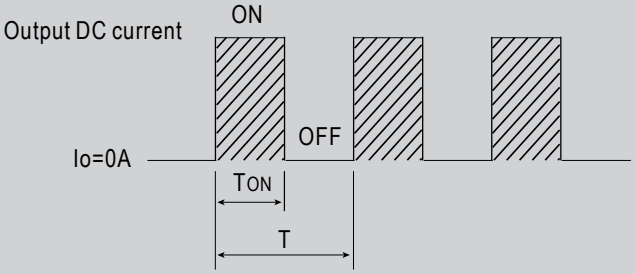


## Dimming Operation



**Dimming principle for PWM style output**

- Dimming is achieved by varying the duty cycle of the output current.

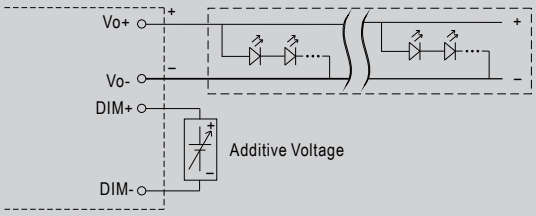



$$\text{Duty cycle}(\%) = \frac{T_{ON}}{T} \times 100\%$$

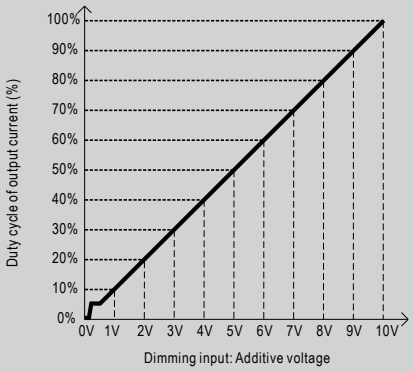
Output PWM frequency : 1KHz (± 20%)

**2 in 1 dimming function**

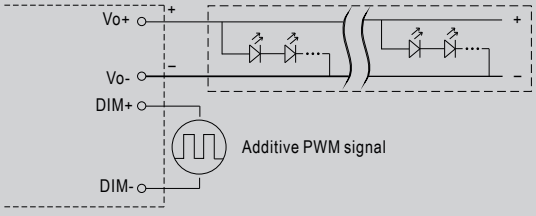
Applying additive 0 ~ 10VDC



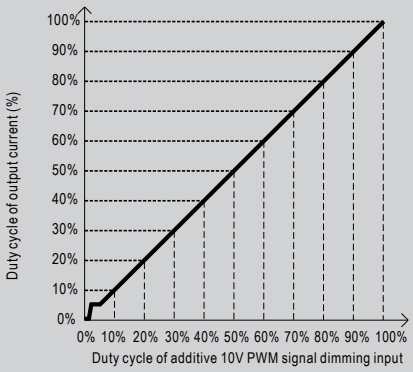

"DO NOT connect "DIM- to Vo-"




Applying additive 10V PWM signal (frequency range 300Hz~3KHz):




"DO NOT connect "DIM- to Vo-"




Note : 1. Min. duty cycle of output current is about 8% and the output current is not defined when 0%< Iout<8%.
2. The duty cycle of output current could drop down to 0% when dimming input is about 0Vdc or 10V PWM signal with 0% duty cycle.
3. To ensure the dimming effect, total power must be over 45W at 100% duty cycle.

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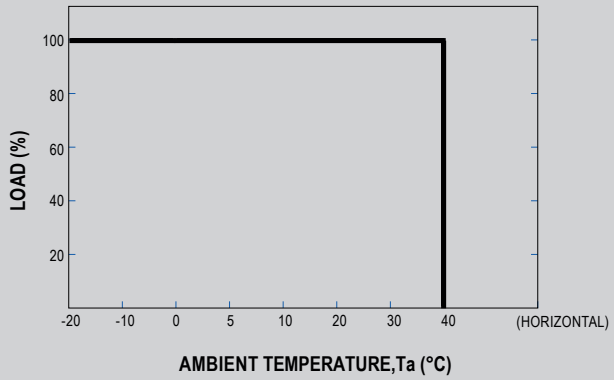
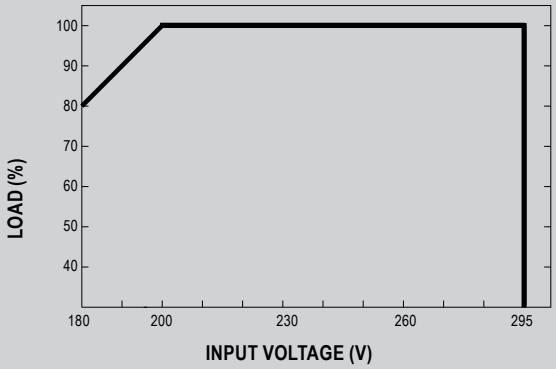
## Output Load vs Temperature

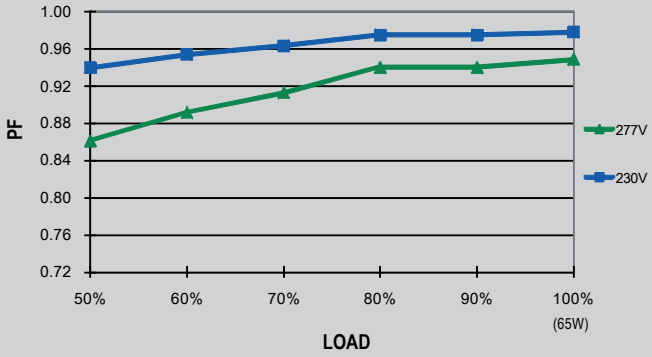



## Static Characteristic



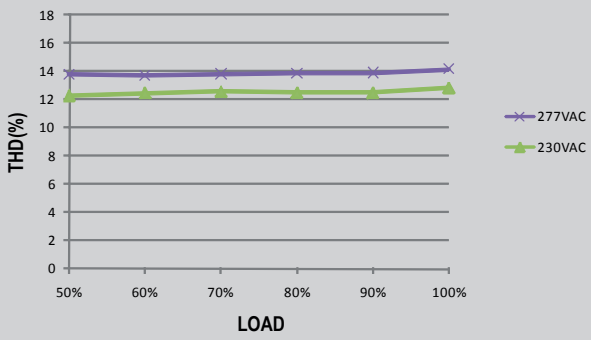

De-rating is needed under low input voltage.

## Power Factor (PF) Characteristic




## Total Harmonic Distortion

60V Model




## Efficiency vs Load

IDPV-65 series possess superior working efficiency that up to 90% can be reached in field applications.

60V Model