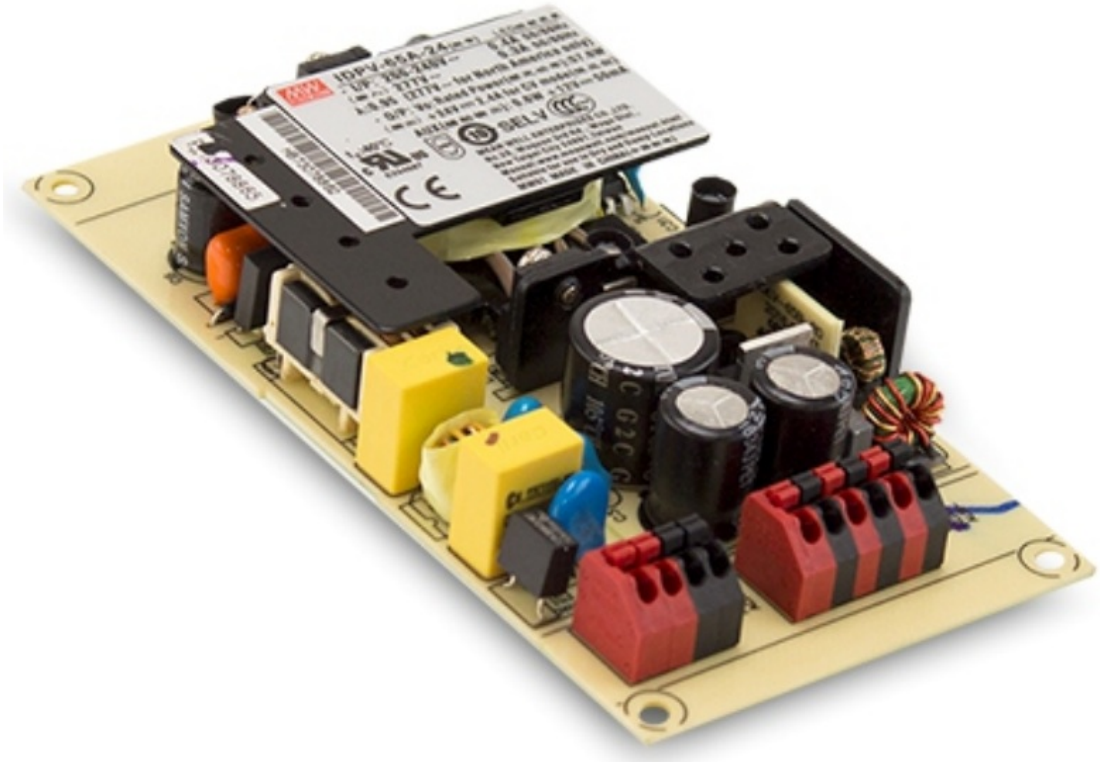
Mean Well IDPV-45 45W PWM Output LED Driver User Manual

45W PWM Output LED Driver
I D P V- 4 5 series

User's Manual

http://www.meanwell.com.cn/Upload/PDF/LED_EN.pdf



Contents

Features

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

Applications

- LED strip lighting

- Indoor LED lighting
- LED decorative lighting
- LED architecture lighting

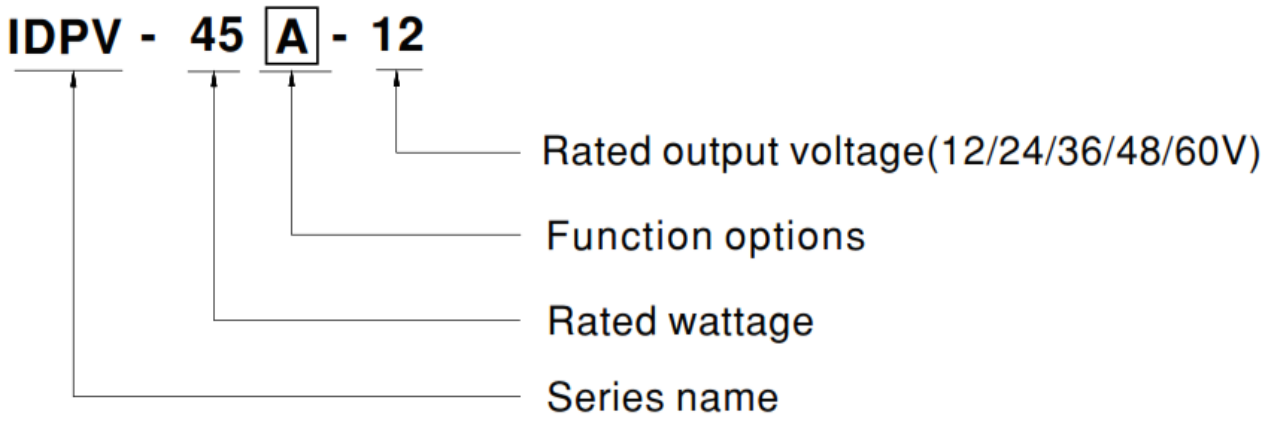
GTIN CODE

MW Search. haps://www.meanwell.corniserviceGTIN.aspx

Description

IDPV-45 series is a 45W PCB type AC/DC LED driver featuring the constant voltage mode PWM style output design. IDPV-45 operates from 90-295VAC and offers models with different rated voltages ranging between 12V and 60V. Thanks to the high efficiency of up to 90%, with the fanless design, the entire series is able to operate for -20 C -+40 C ambient temperature under free air convection. IDPV-45 is equipped with various function options, such as dimming methodologies, so as to provide design flexibility for the LED lighting systems.

Model Encoding



Type	Function
Blank	2 in 1 dimming (0-10VDC and 10V PWM)
A	2 in 1 dimming and Auxiliary DC output

SPECIFICATION

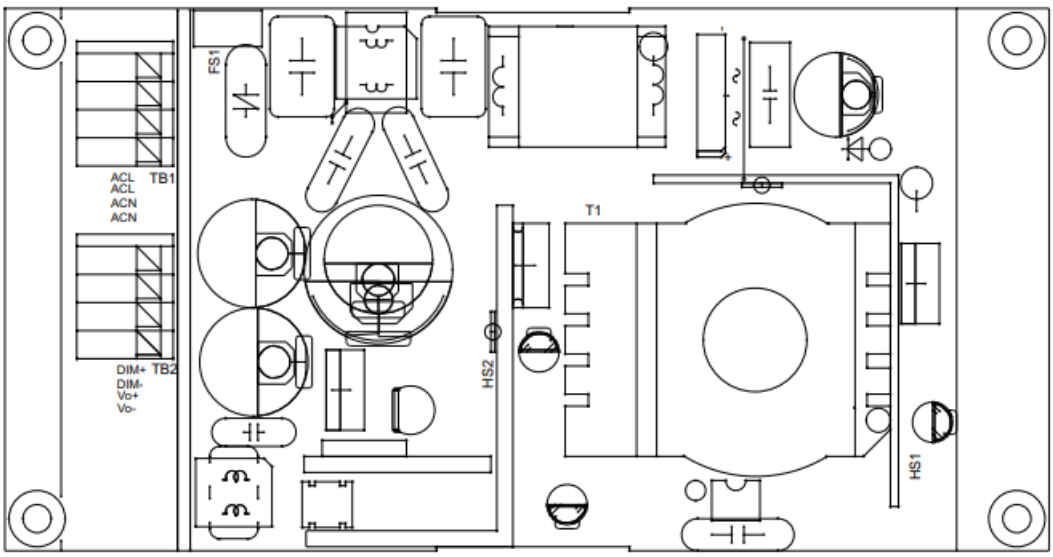
MODEL		IDPV-45□12	IDPV-450-24	IDPV-4C-36	IDPV450-48	IDPV-45□-60
	DC VOLTAGE	12V	24V	36V	48V	60V
	RATED CURRENT	3.0A	1.88A	1.25A	0.94A	0.75A
	RATED POWER	36W	45.12W	45W	45.12W	45W

OUTPUT	DIMMING RANGE	0-100%				
	VOLTAGE TOLERANCE	±10%				
	PWM FREQUENCY (Typ.)	1KHz(±20%)				
	SETUP **TIME** Note.3	500ms / 230VAC 1200ms/115VAC				
	AUXILIARY DC OUTPUT **NOW**	Nominal 1 2V(deviation 11.4-12.6)@50 mA for A-Type only				
INPUT	**VOLTAGE RANGE** Note.2	90 – 295VAC 127 – 417VDC (Please refer to the 'STATIC CHARACTERISTIC' section)				
	FREQUENCY RANGE	47 – 63Hz				
	POWER FACTOR (Typ.)	PF>0.95/115VAC, PF>0.92/230VAC, PF>0.9/277VAC@full load (Please refer to TOWER FACTOR (PF) CHARACTERISTIC' section)				
	TOTAL HARMONIC DISTORTION	THD< 20°0(@load60°0/115VAC,230VAC; @load75°0/277VAC) (Please refer to " TOTAL HARMONIC DISTORTION' section)				
	EFFICIENCY (Typ.)	84%	186%	188%	188%	190%
	AC CURRENT (Typ.)	0.6A / 115VAC 0.4A / 230VAC 0.3A / 27NAC				
	INRUSH CURRENT(Typ.)	COLD START 30A(hvidth=150)..ts measured at 50% (peak) at 230VAC; Per NEMA 410				
	MAX. No. of PSUs on 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
PROTECTION	SHORT CIRCUIT	Shut down 0/P voltage, re-power on to recovery
	OVER CURRENT	105 -115%
		Protection type: Hiccup mode, recovers automatically after the fault condition is removed
ENVIIGINENT	WORKING TEMP.	Ta=-20 – +40C (Please refer to OUTPUT LOAD vs TEMPERATURE' section)
	WORKING HUMIDITY	20- 90% RH non-condensing
	STORAGE TEMP., HUMIDITY	-40- +80°C, 10 -95% RH
	TEMP. COEFFICIENT	±0.03%/°C (0- 40°C)
	VIBRATION	10- 500Hz, 2G 10minficycle, the period for 60min. each along X, Y, and Z axes
SAFETY & EMC	SAFETY STANDARDS	UL8750,CSAC22.2 NO.250.13-12;E NEC BS EN/EN61347-1& BS E N/E N61347-2-13 independent, BS EN/EN62384 approved
	WITHSTAND VOLTAGE	UP-0/P:3.75KVAC
	ISOLATION RESISTANCE	UP-0/P:100M Ohms / 500VDC / 25°C/ 70% RH
	EMC EMISSION	Compliance to BS EN/E N55015, BS EN/EN61000-3-2 Class C (@load % 60%) ; BS EN/E N61000-3-3
	EMC IMMUNITY	Compliance to BS EN/EN61000-4-2,3,4,5,6,8,11; BS EN/E N61547, light industry level(surge im mu nity: Lin e-Lin e:1KV)

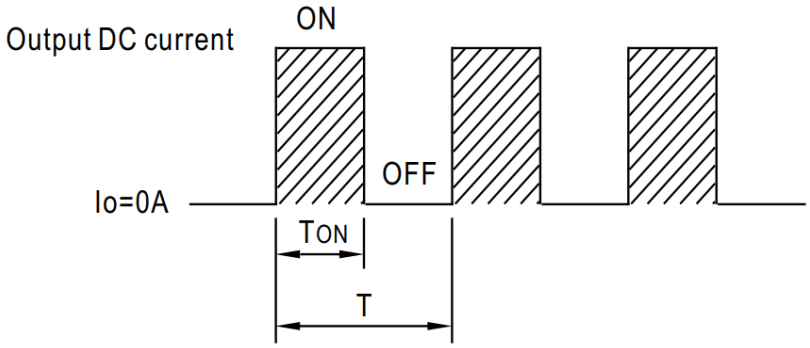
OTHERS	MTBF	4022.6K hrs min. Telcordia SR-332 (Bellcore); 425.1K hrs mm. MI L-H DBK-217F (25˚C)
	DIMENSION	120’66.5’22mm (L’W*H)
	PACKING	0.14Kg;81pcs/12.5Kg11.32CUFT
NOTE	1. All parameters NOT securely mentioned are measured at 230VAC input, rated current, and 25°C of ambient temperature. 2. De. rating may be needed under low input voltages. Please refer to ‘STATIC CHARACTERISTIC* s ections for details. 3. Length of setup time is measured at cold first std. Turning ON/OFF the driver may lead to b increas e in the setup time. 4. Aux. 12V will be damaged with a short circuit; It will not be available with dimming off or output no lo ad condition. 5. The driver is considered as a component that will be operated in combination with final equipment. Sinai, EMC performance will be affected by the complete installation, the final equipment manufacturer s must re-qualify EMC Directive on the complete installation again. 6. To fall! into the requirements of the latest ErP regulation for lighting fixtures, this LED power supply can only be used behind a switch without being permanently connected to the mains.※Product Liabilit y Disclaimer: For detailed information, please refer to htlps://www.meanwell.com/reerviceDisdaimer.aspx	

DIMMING OPERATION



※ Dimming principle for PWM style output

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

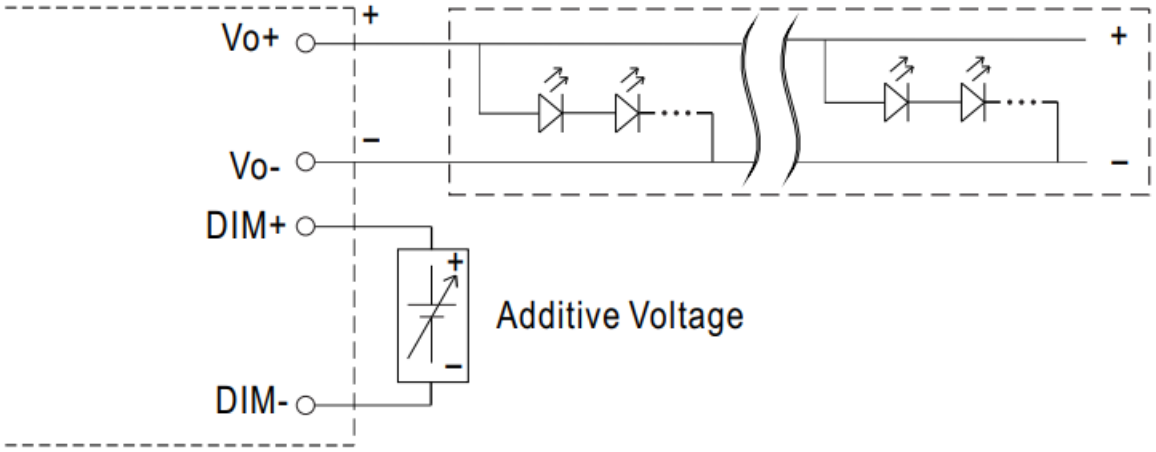


$$\text{Duty cycle}(\%) = \frac{T_{ON}}{T} \times 100\%$$

Output PWM frequency : 1KHz (±20%)

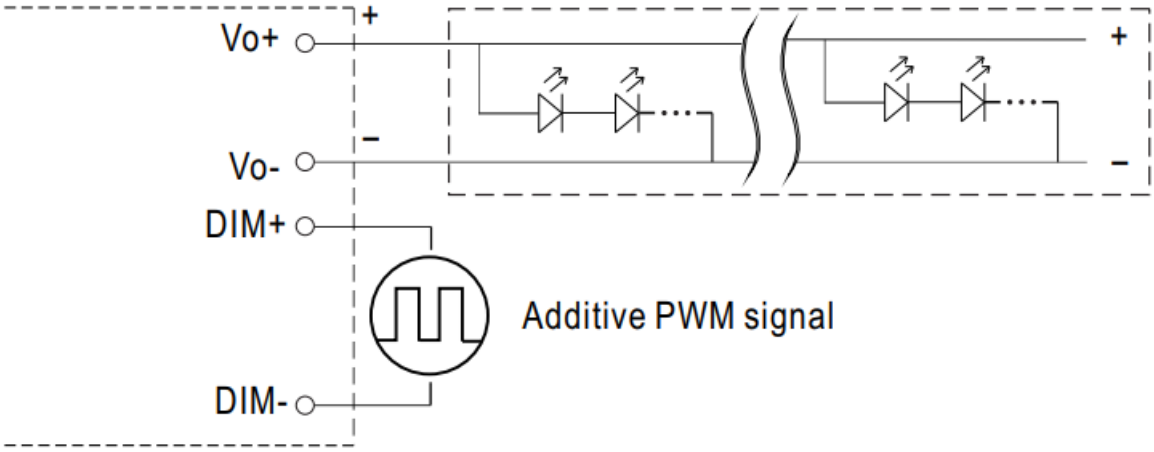
※ 2 in 1 dimming function

◎ Applying additive 0 ~ 10VDC



"DO NOT connect "DIM- to Vo-"

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



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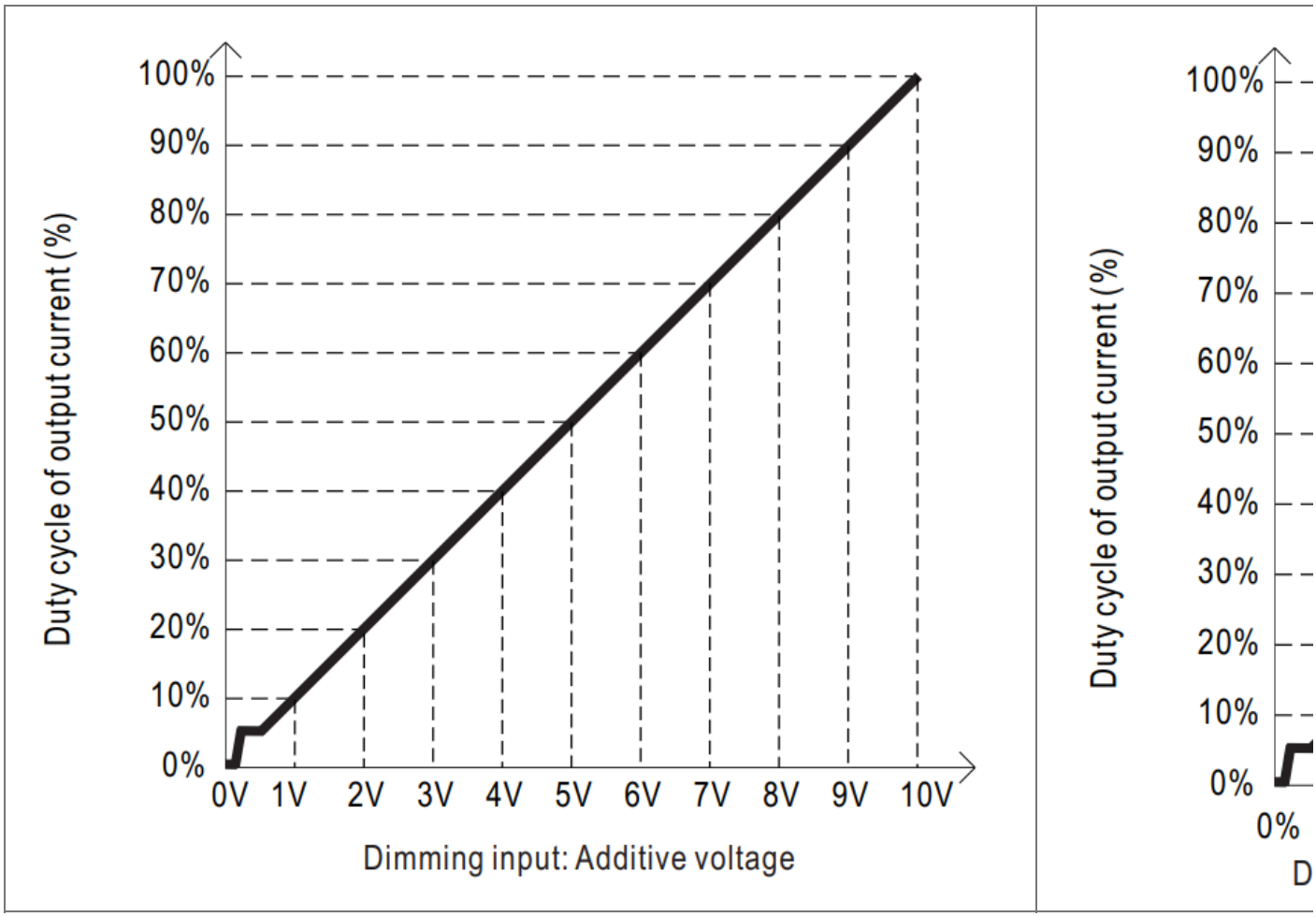
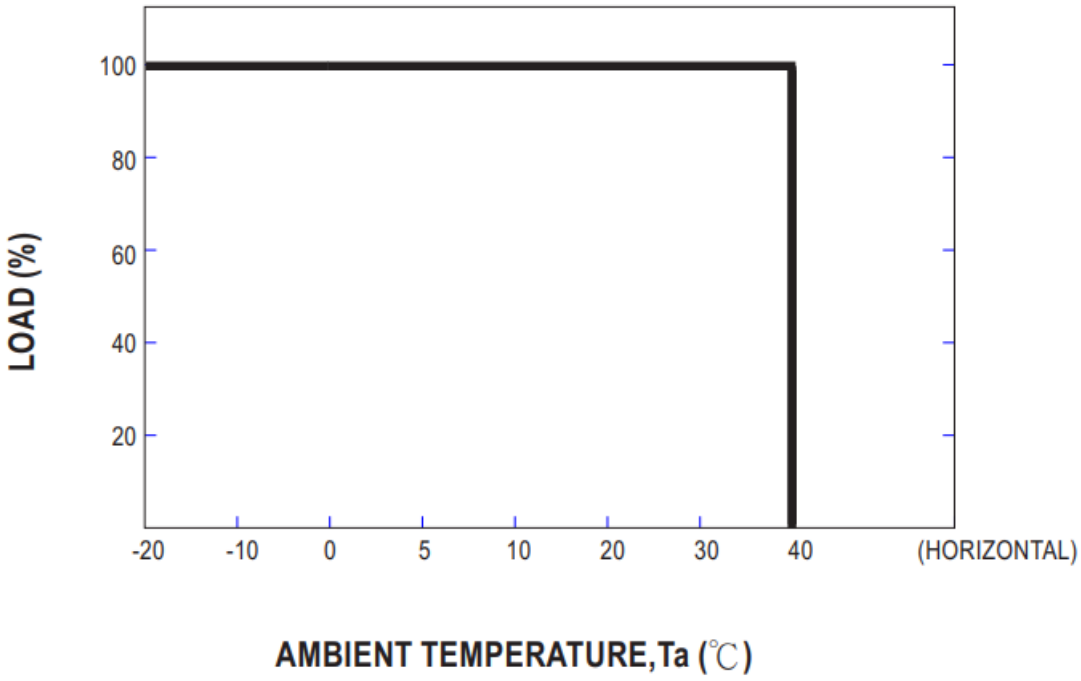


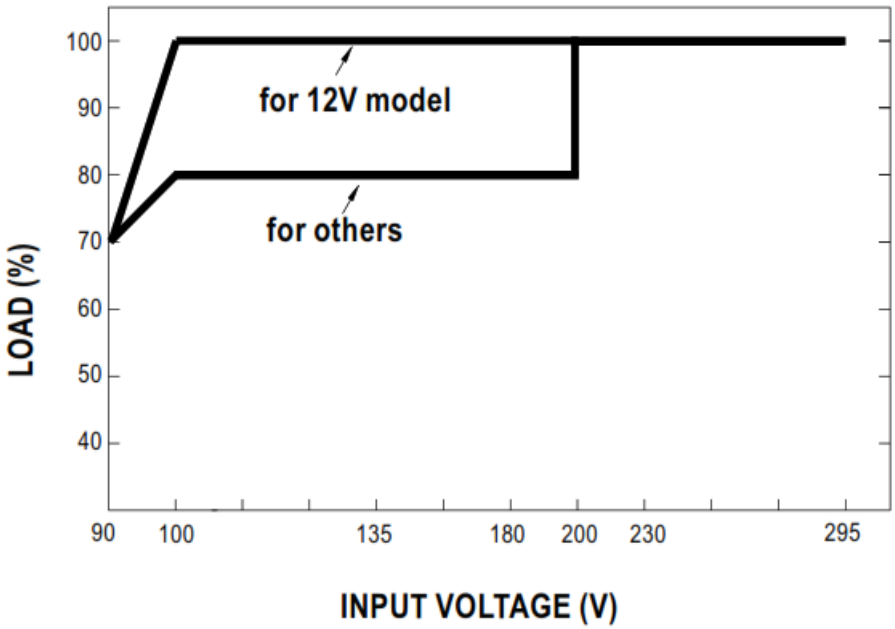
Note

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.

OUTPUT LOAD vs TEMPERATURE

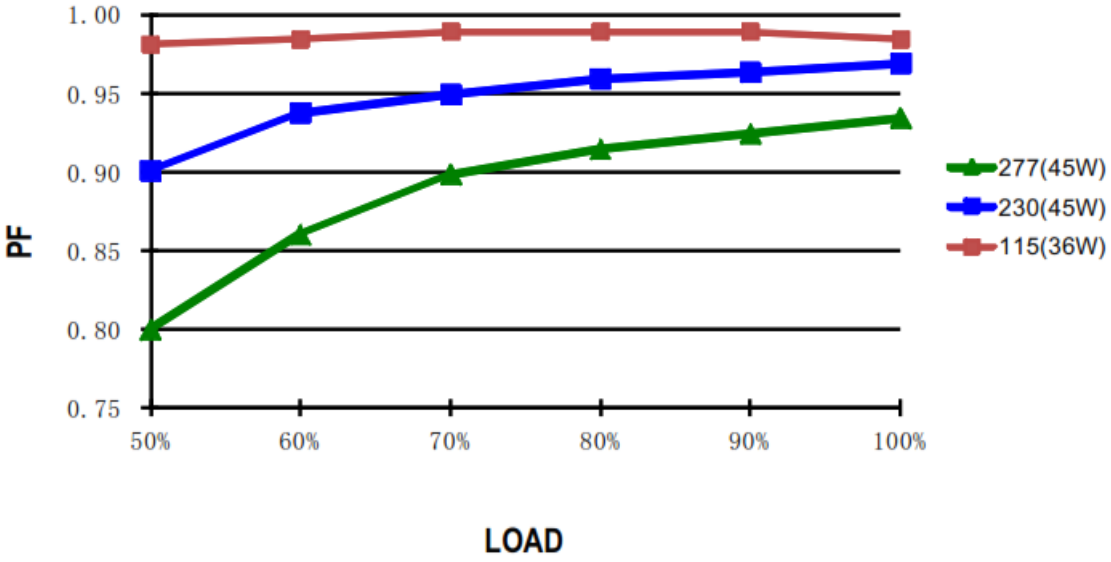


STATIC CHARACTERISTIC



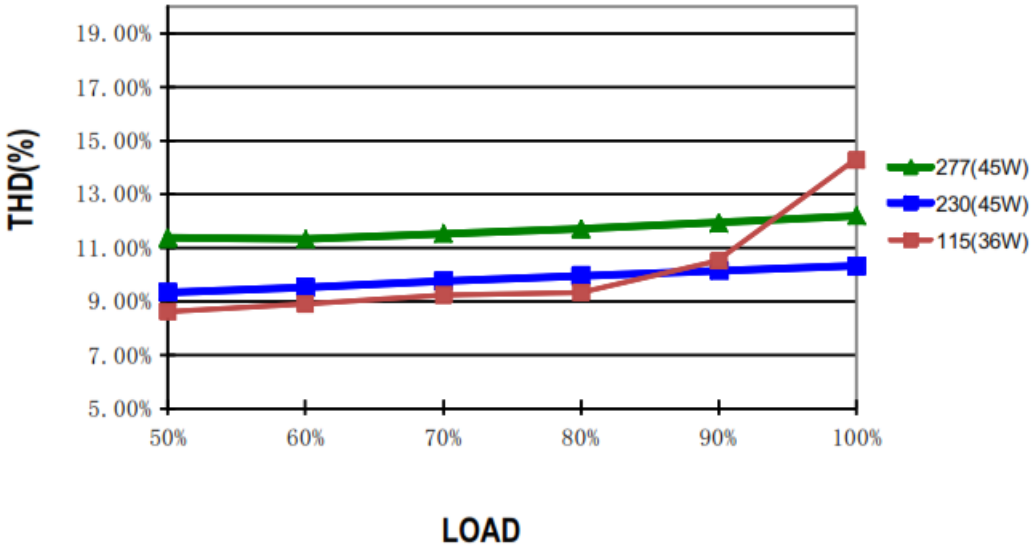
※ De-rating is needed under low input voltage.

POWER FACTOR (PF) CHARACTERISTIC



TOTAL HARMONIC DISTORTION (THD)

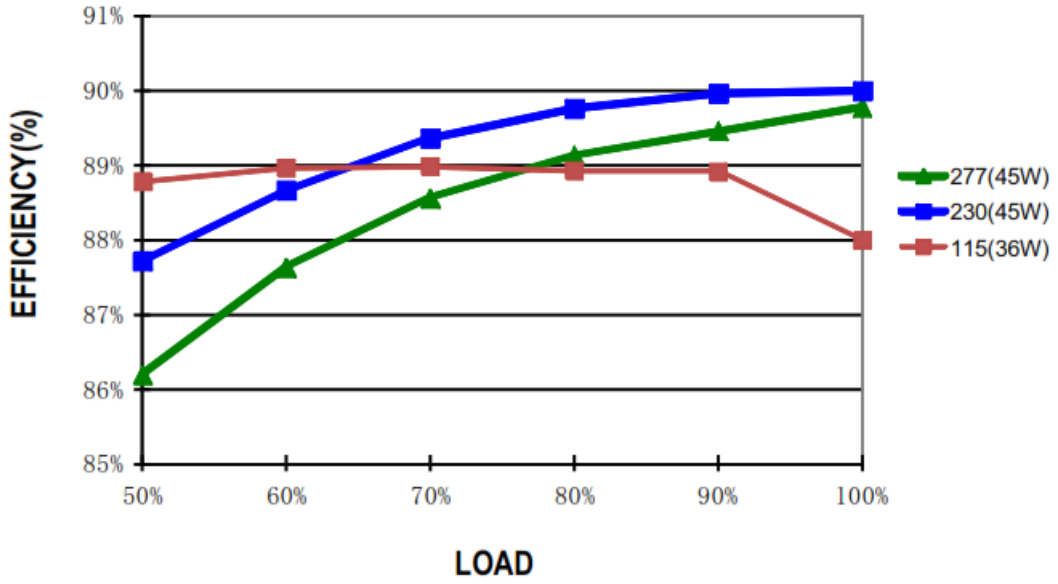
※ 60V Model



EFFICIENCY vs LOAD

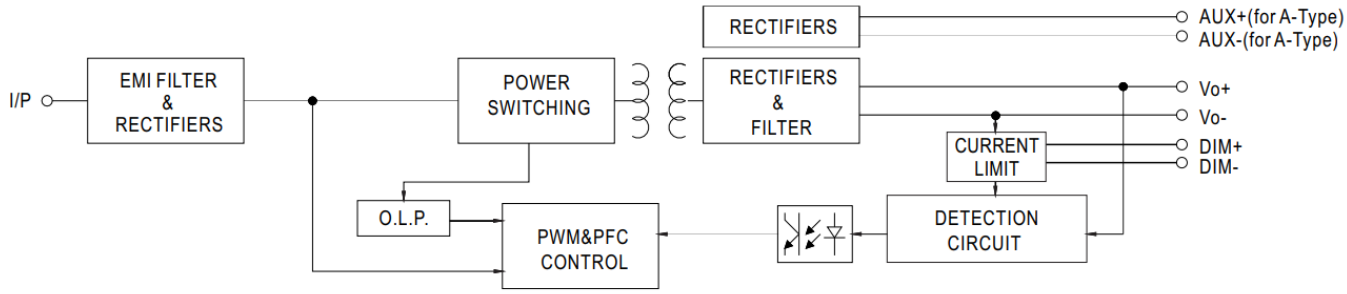
IDPV-45 series possess superior working efficiency that up to 90% can be reached in field applications.

※ 60V Model



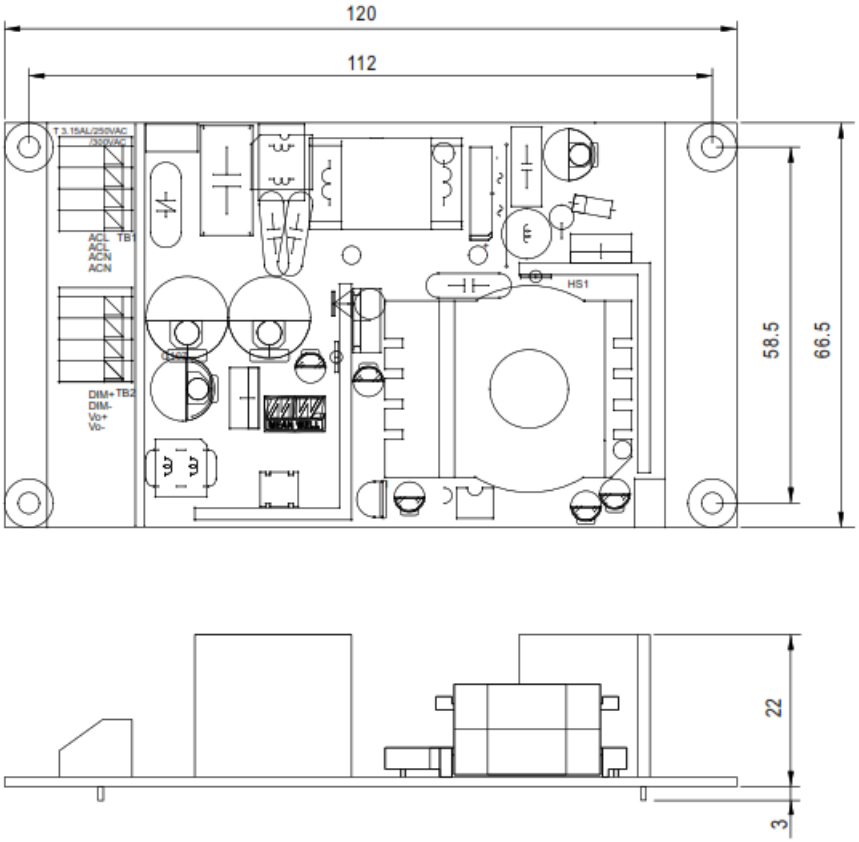
BLOCK DIAGRAM

fosc: 70-150KHz



MECHANICAL SPECIFICATION

※ Blank-Type
Unit: mm



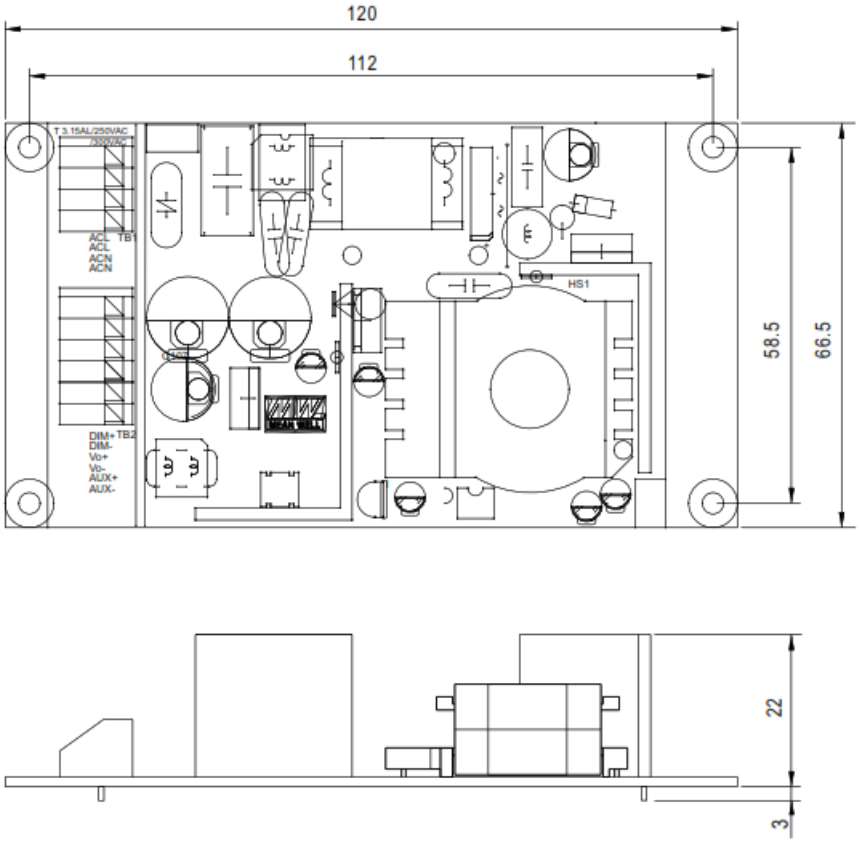
Terminal Pin No. Assignment(TB1)

Pin No.	Assignment
1	A
2	A
3	A
4	A

Terminal Pin No. Assignment(TB2)

Pin No.	Assignment
1	
2	
3	
4	

❊ 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.	
1	DIM+	4	
2	DIM-	5	
3	Vo+	6	

INSTALLATION MANUAL

Please refer to: http://www.meanwell.com/manual.html

SELV (optional)

Documents / Resources

	Mean Well IDPV-45 45W PWM Output LED Driver [pdf] User Manual IDPV-45, Output PWM, LED, Driver

References

- Installation Manual-MEAN WELL Switching Power Supply Manufacturer
- Product Liability Disclaimer-MEAN WELL Switching Power Supply Manufacturer