



■ Features

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- Constant voltage PWM style output
- Build in 2 in 1 dimming function(0~10Vdc or PWM signal)
- Dimming range : 0~100%
- High efficiency up to 90.5%
- Protections: Short circuit / Over load / Over voltage / Over temperature
- Class II power unit, no FG
- Class 2 power unit(Except for PWM-90-12)
- Suitable for dry / damp / wet locations
- No load power consumption<0.5W
- 5 years warranty

■ Applications

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

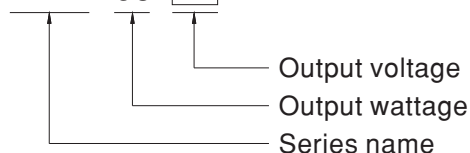
■ Description

PWM-90 is one 90W waterproof constant-voltage output LED power supply series. Differentiating from general DC output power supplies, PWM-90 transmits PWM style output, adapting to directly driving all kinds of LED strips that the color temperature can be maintained and the brightness homogeneity can be assured. Adopting a universal input range between 90VAC and 305VAC and incorporating the built-in PFC function, this series is also designed with a 2 in 1 dimming function (0~10Vdc or PWM signal) that simplifies the brightness adjustment for system designers so as to achieve light reduction and energy conservation.

Providing a high efficiency up to 90.5% and a low no load power consumption below 0.5W, PWM-90 can satisfy the energy saving demand for the new generation LED lighting. The class II design (without FG pin) and the double insulation weather-resistant cable (SJTW) on the input side make it convenient for users to flexibly install on various types of lighting systems. The enclosure design is a 94V-0 flame retardant plastic case. The interior is fully potted with silicone that enhances the heat dissipation and allows PWM-90 to meet the anti-vibration demand up to 5G; it also thus conforms to IP67 level, enabling PWM-90 to be used in a highly dusty and highly humid harsh environment. The entire series can operate under the temperature between -40~+70℃ and comply with the relevant global lighting safety certification.

■ Model Encoding

PWM - 90 - 12

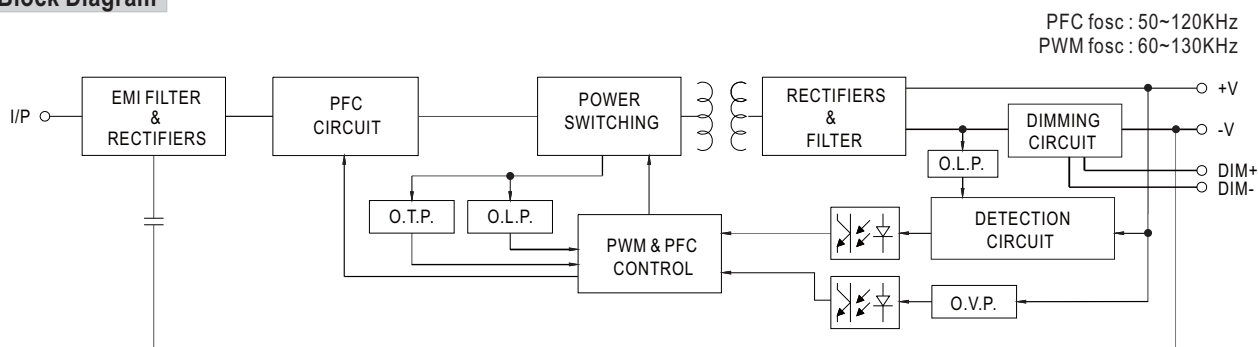




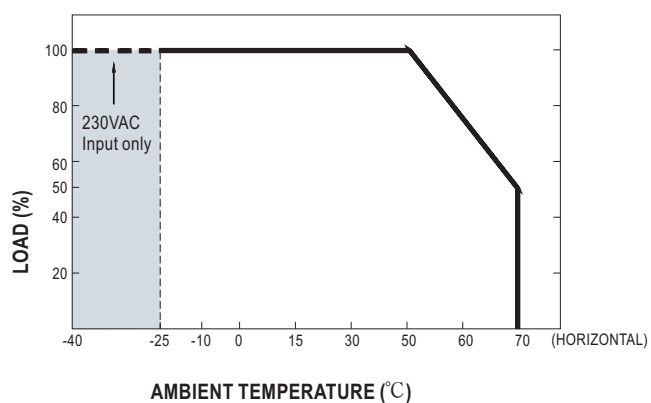
SPECIFICATION

MODEL		PWM-90-12		PWM-90-24		PWM-90-36		PWM-90-48	
OUTPUT	DC VOLTAGE	12V		24V		36V		48V	
	RATED CURRENT	7.5A		3.75A		2.5A		1.88A	
	RATED POWER	90W		90W		90W		90.24W	
	DIMMING RANGE	0 ~ 100%							
	PWM FREQUENCY (Typ.)	300Hz							
	VOLTAGE TOLERANCE	±4.0%		±3.0%		±2.0%		±1.0%	
	SETUP, RISE TIME Note.2	500ms, 80ms 115VAC / 230VAC at full load							
	HOLD UP TIME (Typ.)	16ms/230VAC		16ms/115VAC at full load					
INPUT	VOLTAGE RANGE	90 ~ 305VAC		127 ~ 431VDC					
	FREQUENCY RANGE	47 ~ 63Hz							
	POWER FACTOR (Typ.)	PF>0.98/115VAC, PF>0.96/230VAC, PF>0.94/277VAC at full load (Please refer to "Power Factor Characteristic" curve)							
	TOTAL HARMONIC DISTORTION	THD< 20% when output loading≥60% at 115VAC/230VAC input and output loading≥75% at 277VAC input							
	EFFICIENCY (Typ.)	88%		90.5%		90.5%		90.5%	
	AC CURRENT (Typ.)	0.95A / 115VAC		0.5A / 230VAC		0.4A / 277VAC			
	INRUSH CURRENT (Typ.)	COLD START 60A(twidth=550μs measured at 50% Ipeak) at 230VAC							
	LEAKAGE CURRENT	<0.25mA / 277VAC							
PROTECTION	OVER LOAD	108 ~ 120% rated output power Protection type : Hiccup mode, recovers automatically after fault condition is removed							
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed							
	OVER VOLTAGE	15 ~ 17V		28 ~ 34V		41 ~ 46V		54 ~ 60V	
		Protection type : Shut down o/p voltage, re-power on to recover							
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover							
ENVIRONMENT	WORKING TEMP.	-40 ~ +70°C (Refer to "Derating Curve")							
	WORKING HUMIDITY	20 ~ 95% RH non-condensing							
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)							
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes							
SAFETY & EMC	SAFETY STANDARDS	UL8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13, EN62384 independent, IP67 approved ; Design refer to EN60335-1							
	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 (≥60% load) ; EN61000-3-3							
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level(surge L- N : 2KV), criteria A							
OTHERS	MTBF	224.2K hrs min. MIL-HDBK-217F (25°C)							
	DIMENSION	171*63*37.5mm (L*W*H)							
	PACKING	0.77Kg; 18pcs/14.9Kg/0.82CUFT							
NOTE	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 cold first start. Turning ON/OFF the power supply may lead to increase of the set up time.								

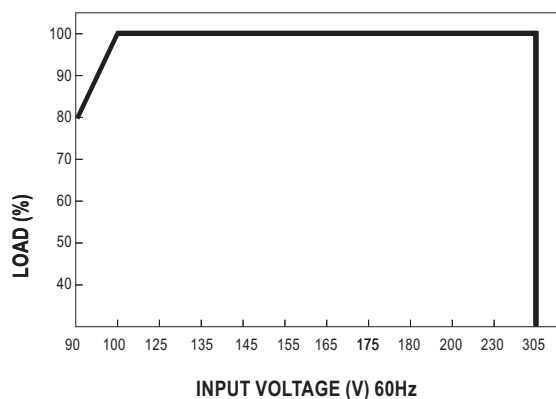
Block Diagram



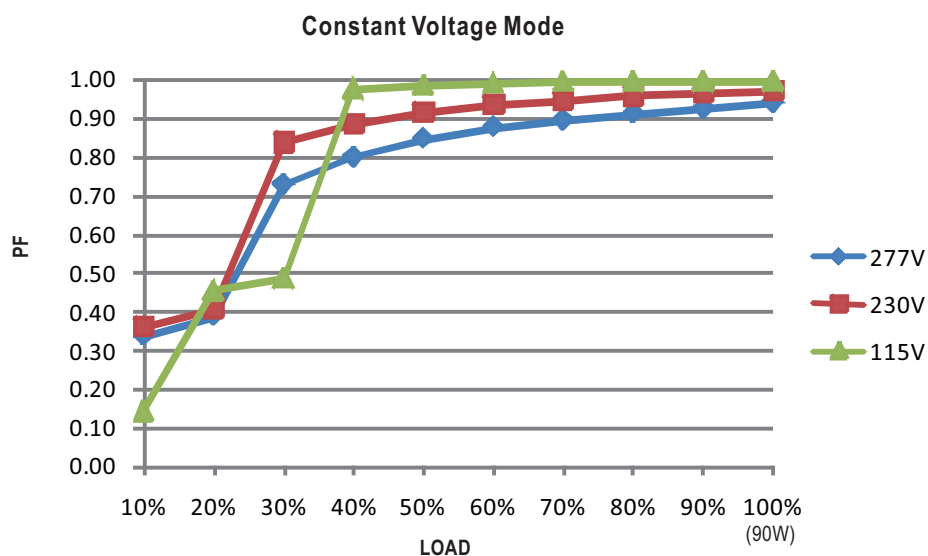
Derating Curve



Static Characteristics

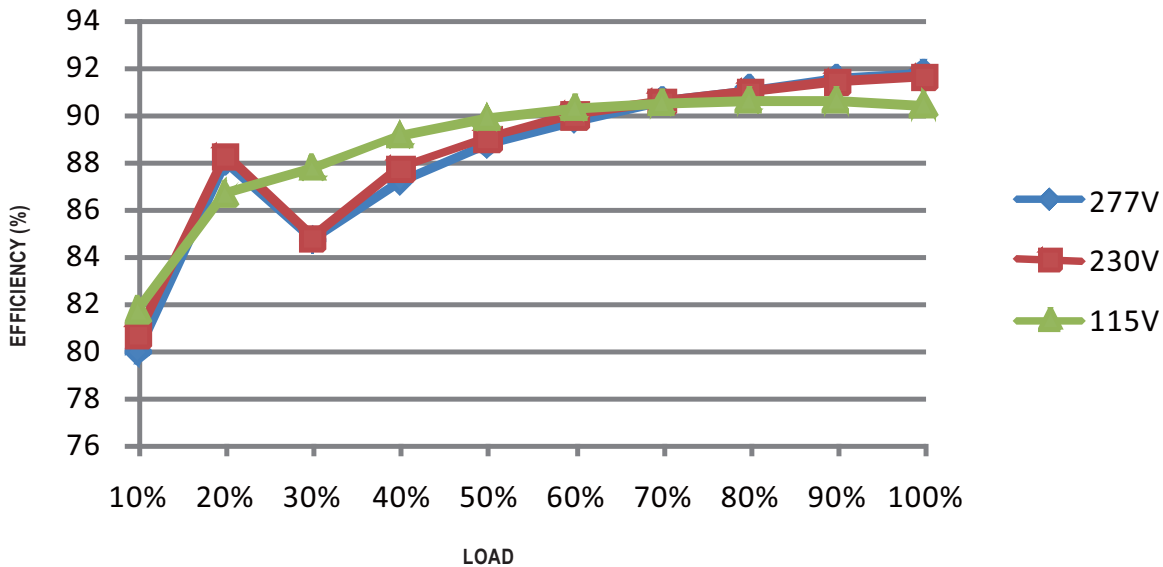


Power Factor Characteristic



■ EFFICIENCY vs LOAD (48V Model)

PWM-90 series possess superior working efficiency that up to 90.5% can be reached in field applications.

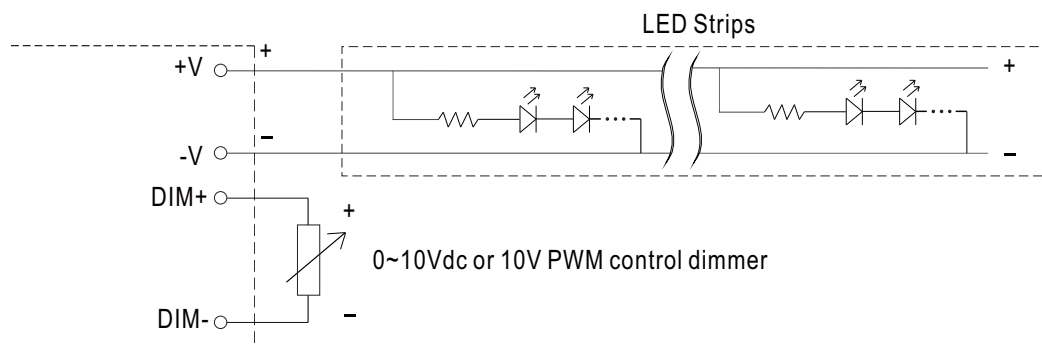


■ DIMMING OPERATION

The PWM style output is a simple switching of supply ON/OFF at a rate so fast that the human eye cannot see led flickering. Duty cycle describes the proportion of time when output voltage is on relative to the entire period of time. It is expressed in percentage, 100% being fully on (maximal brightness) and a low duty cycle corresponding to lower brightness.

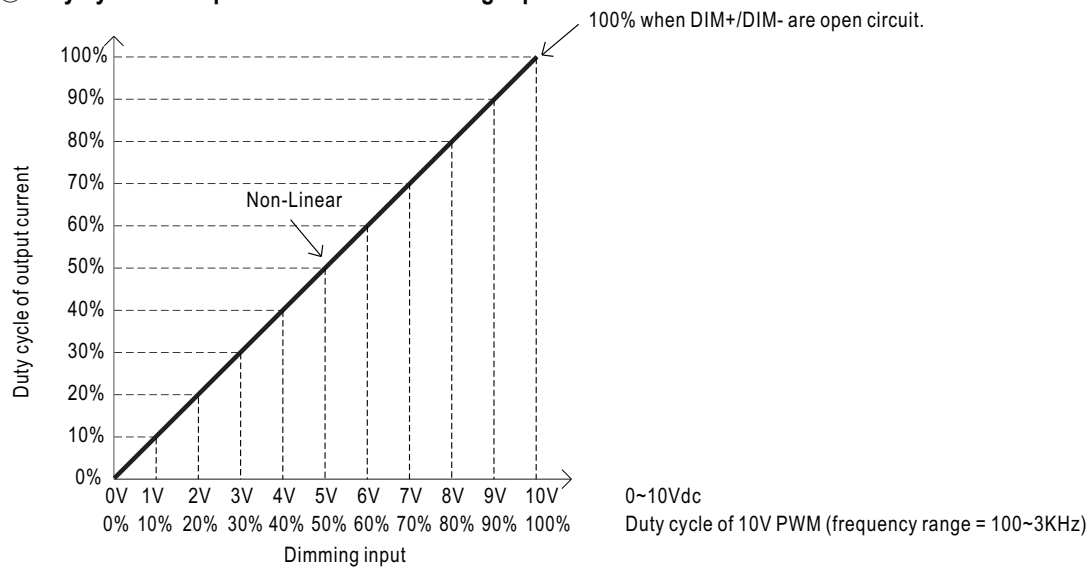
Built-in 2 in 1 dimming function. The duty of the PWM style output can be adjusted through output cable by connecting a 0~10Vdc or 10V PWM signal between DIM+ and DIM-.

◎Connection



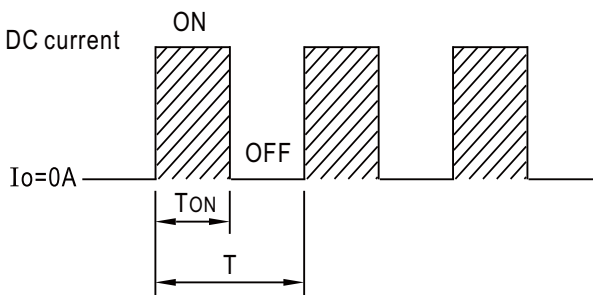
※DO NOT connect "DIM- to -V"

◎Duty cycle of output current VS Dimming input



◎PWM Style Output

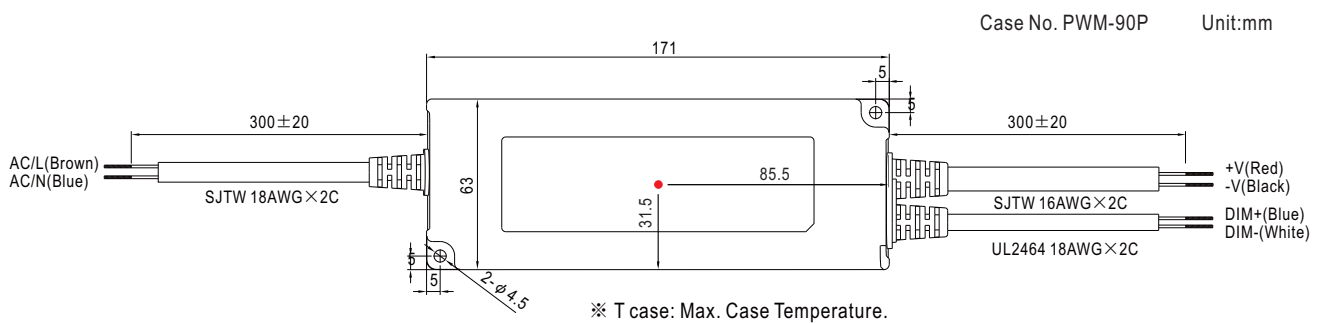
Output DC current



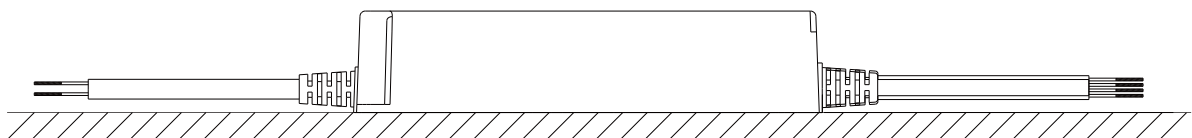
$$\text{Duty cycle(\%)} = \frac{T_{ON}}{T} \times 100\%$$

Output PWM frequency : 300Hz fixed (Typ.)

■ Mechanical Specification

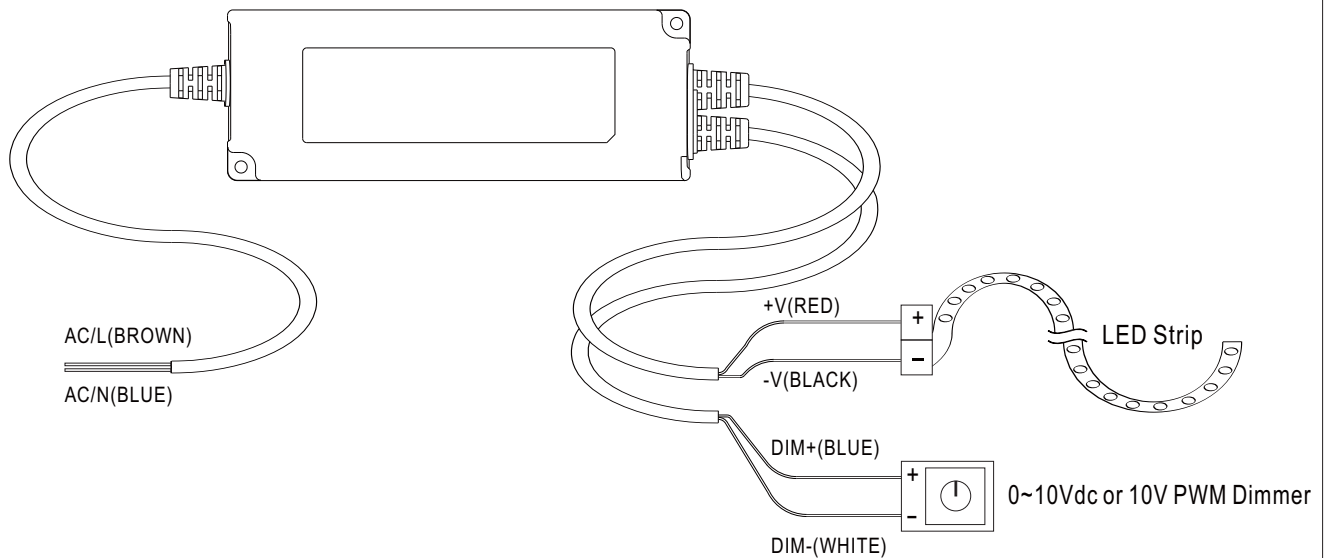


■ Recommend Mounting Direction



■ Installation Manual

◎ Connection



◎ Cautions

- Before commencing any installation or maintenance work, please disconnect the power supply from the utility. Ensure that it cannot be re-connected inadvertently!
- Keep proper ventilation around the unit and do not stack any object on it. Also a 10-15 cm clearance must be kept when the adjacent device is a heat source.
- Mounting orientations other than standard orientation or operate under high ambient temperature may increase the internal component temperature and will require a de-rating in output current.
- Current rating of an approved primary /secondary cable should be greater than or equal to that of the unit. Please refer to its specification.
- For LED power supplies with waterproof connectors, verify that the linkage between the unit and the lighting fixture is tight so that water cannot intrude into the system.
- For dimmable LED power supplies, make sure that your dimming controller is capable of driving these units. PWM series require 0.15mA each unit.
- Tc max. is identified on the product label. Please make sure that temperature of Tc point will not exceed limit.
- DO NOT connect "DIM+ to -V".
- Suitable for indoor use or outdoor use without direct sunlight exposure. Please avoid immerse in the water over 30 minutes.
- 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.
- For more information about installation, please refer to www.meanwell.com/webnet/search/installationsearch.html for details.