MEAN WELL

120W PWM Output Casambi Bluetooth LED Driver

PWM-120BLE

Features

- Casambi Bluetooth wireless LED driver
- Constant voltage PWM style output with frequency up to 4KHz compliant IEEE1789-2015 no risk
- Plastic housing with class II design
- Built-in active PFC function
- Standby power consumption <0.5W
- Typical lifetime>50000 hours
- 5 years warranty

Applications

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

Description

PWM-120BLE series is a Casambi ready bluetooth 120W AC/DC LED driver featuring the constant voltage mode with PWM style output, which is able to maintain the color temperature and the brightness homogeneity when driving all kinds of LED strips and constant voltage LED bulbs. PWM-120BLE operates from 90～305VAC and offers models with different rated voltage ranging between 12V and 24V. Thanks to the high efficiency up to 90%, with the fanless design, the entire series is able to operate for -40℃~+90℃ case temperature under free air convection. PWM-120BLE can provide minimal dimming level low to 0.4% suitable for low light level applications e.g cinema.The output frequency is up to 4KHz which compliant to IEEE1789-2015 requirement for no risk providing a great solution for health concern due to light flickering.

Model Encoding

PWM - 120 - 24 □

- Function options
- Rated output voltage(12/24)
- Rated wattage
- Series name

Type	Function	Note
BLE	Casambi Bluetooth control protocol	By request

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120W PWM Output Casambi Bluetooth LED Driver PWM-120BLE

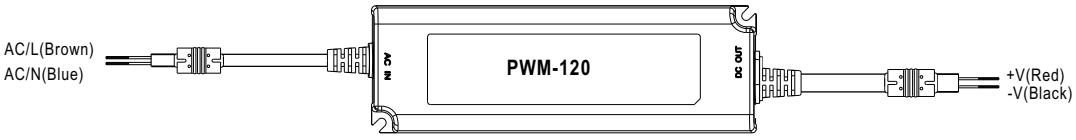
SPECIFICATION

MODEL		PWM-120-12 □	PWM-120-24 □
OUTPUT	DC VOLTAGE	12V	24V
	RATED CURRENT	10A	5A
	RATED POWER	120W	120W
	DIMMING RANGE	0 ~ 100% with min.dim level 0.4%	
	PWM FREQUENCY (Typ.)	up to 4kHz	
	SETUP, RISE TIME Note.2	500ms, 80ms/ 230VAC or 115VAC	
	HOLD UP TIME (Typ.)	16ms/230VAC or 115VAC	
INPUT	VOLTAGE RANGE Note.3	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)	
	FREQUENCY RANGE	47 ~ 63Hz	
	POWER FACTOR (Typ.)	PF>0.97/115VAC, PF>0.96/230VAC, PF>0.94/277VAC @ full load (Please refer to "POWER FACTOR (PF) CHARACTERISTIC" section)	
	TOTAL HARMONIC DISTORTION	THD< 20%(@load≧60%/115VAC, 230VAC; @load≧75%/277VAC) (Please refer to "TOTAL HARMONIC DISTORTION" section)	
	EFFICIENCY (Typ.)	88%	90%
	AC CURRENT (Typ.)	1.3A / 115VAC 0.65A / 230VAC 0.55A / 277VAC	
	INRUSH CURRENT (Typ.)	COLD START 60A(twidth=520μs measured at 50% Ipeak) at 230VAC; Per NEMA 410	
	MAX. NO. of PSUs on 16A CIRCUIT BREAKER	4 units (circuit breaker of type B) / 6 units (circuit breaker of type C) at 230VAC	
	LEAKAGE CURRENT	<0.25mA / 277VAC	
	STANDBY POWER CONSUMPTION	<0.5W	
PROTECTION	OVERLOAD	108 ~ 120% rated output power	
		Hiccup mode, recovers automatically after fault condition is removed	
	OVER VOLTAGE	15 ~ 17V	28 ~ 34V
		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.	Tcase=-25 ~ +90℃ (Please refer to " OUTPUT LOAD vs TEMPERATURE" section)	
	MAX. CASE TEMP.	Tcase=+90℃	
	WORKING HUMIDITY	20 ~ 95% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-25 ~ +80℃, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/℃ (0 ~ 45℃,except 0 ~ 40℃ for 12V)	
	VIBRATION	10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes	
FUNCTION	WIERLESS PROTOCOL	Casambi Bluetooth low energy 2.4GHz protocol	
	WIERLESS DISTANCE	Up to 20m	
SAFETY & EMC	SAFETY STANDARDS Note.5	ENEC EN61347-1, EN61347-2-13,EN62384 independent approved;IP67;Design refer to EN60335-1	
	WITHSTAND VOLTAGE	I/P-O/P:3.75KVAC	
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH	
	EMC EMISSION Note.6	Refer to EN55015, EN61000-3-2 Class C (@load≧60%) ; EN61000-3-3,GB17743 and GB17625.1,EAC TP TC 020	
	EMC IMMUNITY	Refer to EN61000-4-2,3,4,5,6,8,11; EN61547, light industry level (surge immunity Line-Line 2KV),EAC TP TC 020	
OTHERS	MTBF	860.4K hrs min. Telcordia SR-332 (Bellcore) ; 228.7K hrs min. MIL-HDBK-217F (25℃)	
	DIMENSION	191*63*37.5mm (L*W*H)	
	PACKING	0.97Kg; 15pcs/15.6Kg/0.87CUFT	

NOTE

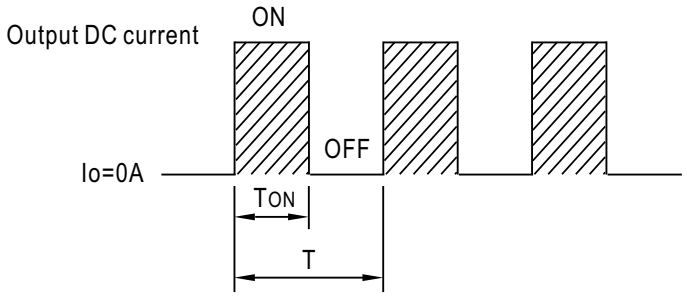
1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25℃ of ambient temperature.
2. De-rating may be needed under low input voltages. Please refer to "STATIC CHARACTERISTIC" sections for details.
3. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.
4. The driver 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.
5. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 75℃or less.
6. Please refer to the warranty statement on MEAN WELL's website at http://www.meanwell.com
7. The ambient temperature derating of 3.5℃/1000m with fanless models and of 5℃/1000m with fan models for operating altitude higher than 2000m(6500ft).
8. For any application note and IP water proof function installation caution, please refer our user manual before using. https://www.meanwell.com/Upload/PDF/LED_EN.pdf

■ DIMMING OPERATION



※ **Dimming principle for PWM style output**

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



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

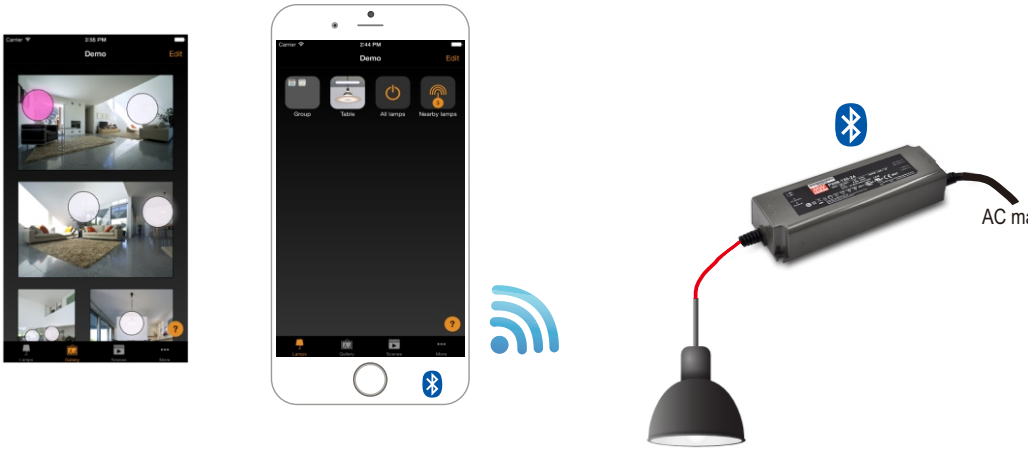
Output PWM frequency : up to 4KHz

※**Casambi Bluetooth control**

・To be used through APP available on Apple Store and Play Store for iOS and Android.

Download on the App Store

ANDROID APP ON Google play



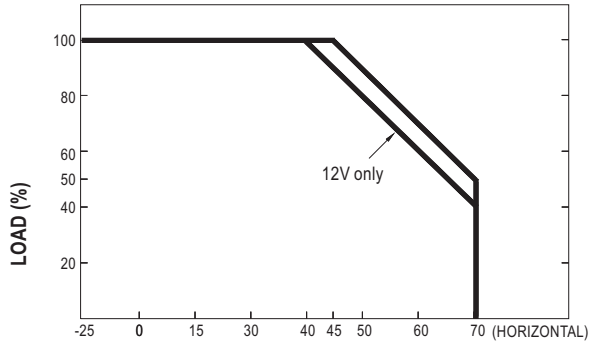
■ APP SOFTWARE OVER TEMPERATURE PROTECTION

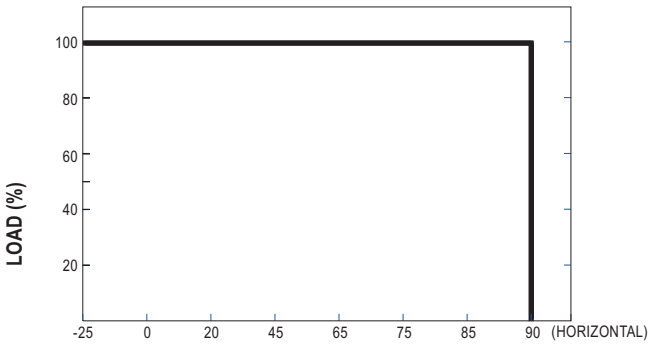
The real time Bluetooth IC temperature is shown in the APP. In case it reaches above 60 ºC (equivalent to Tc 85ºC), the driver will be turn off to provide a protection. In case the units is cooled down, it can be manually turn ON and back to normal operation again.

NOTE: 1.This software temperature protection is an extra independent function from driver its own hardware over temperature protection(when it is enabled, it needs re-AC power on to recover) and temperature compensation operation function described in the following section.

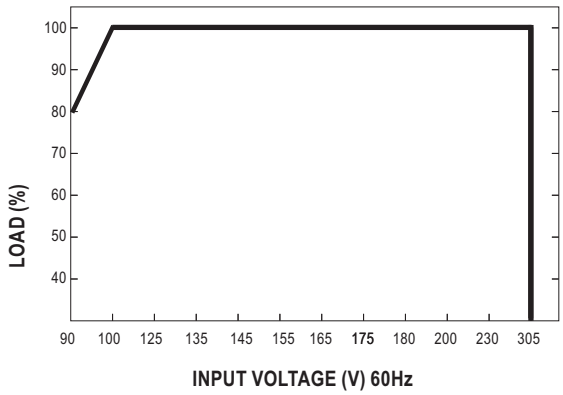
2.In general the software temperature protection is triggered before the hardware one when in over temperature.

■ OUTPUT LOAD vs TEMPERATURE





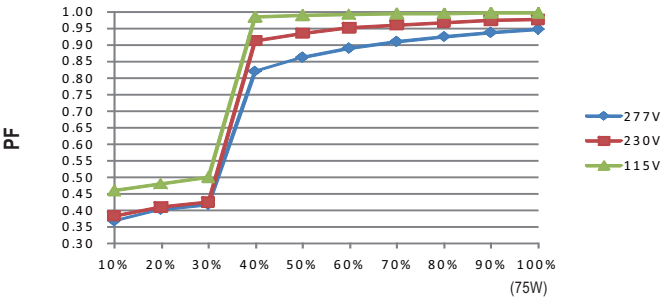
■ STATIC CHARACTERISTIC



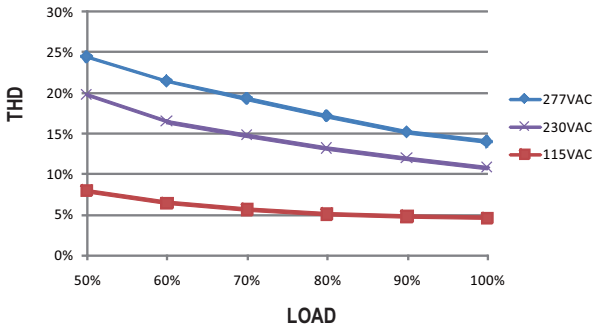
※De-rating is needed under low input voltage.

■ POWER FACTOR (PF) CHARACTERISTIC

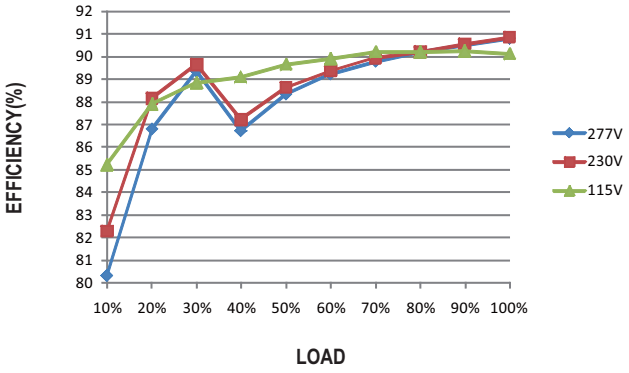
※ Tcase at 80℃



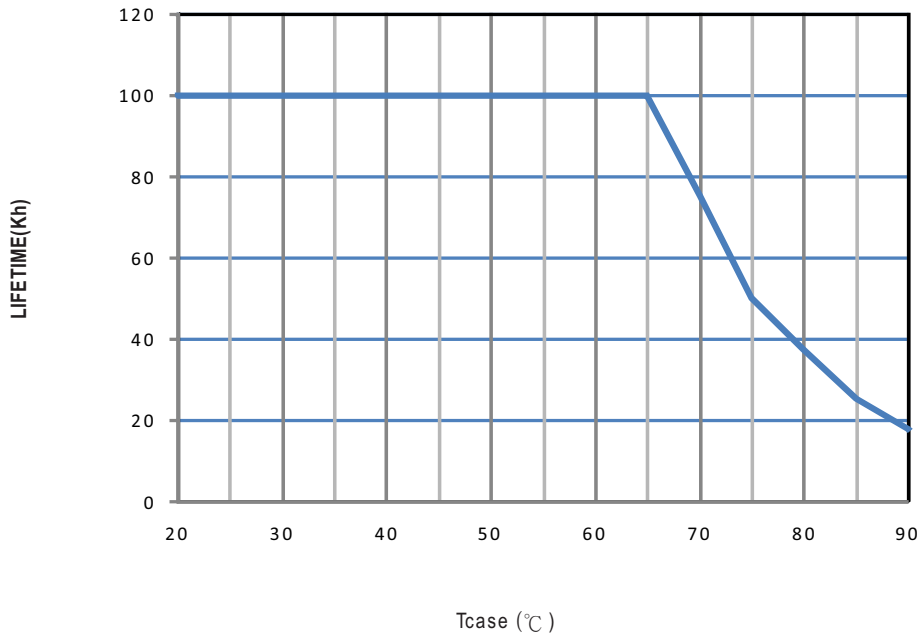
■ TOTAL HARMONIC DISTORTION (THD)



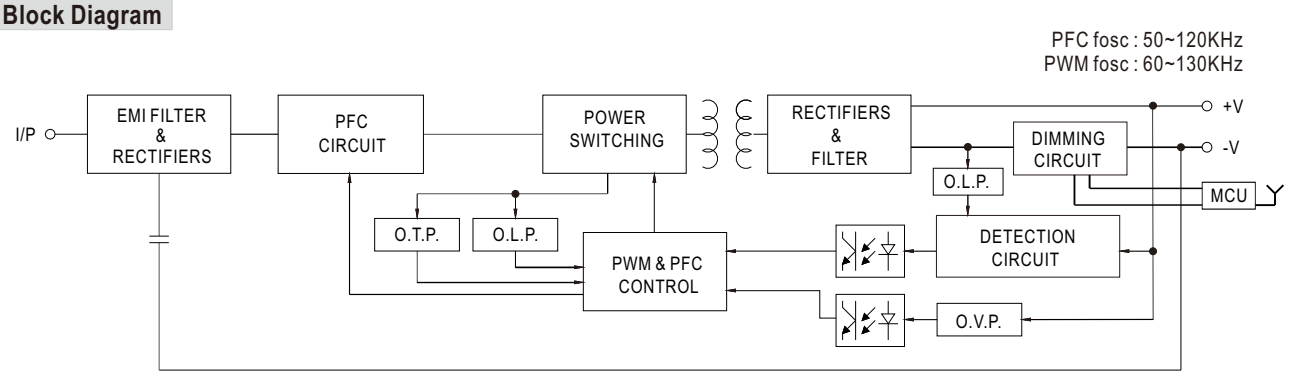
■ EFFICIENCY vs LOAD



■ LIFE TIME

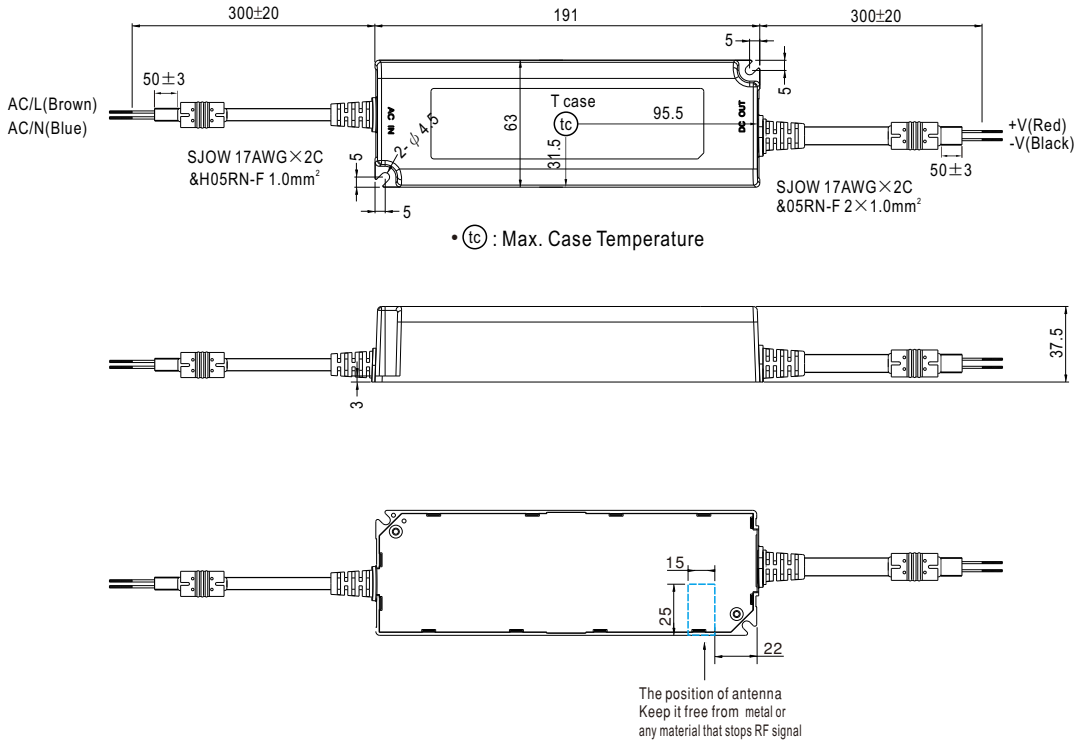


■ Block Diagram

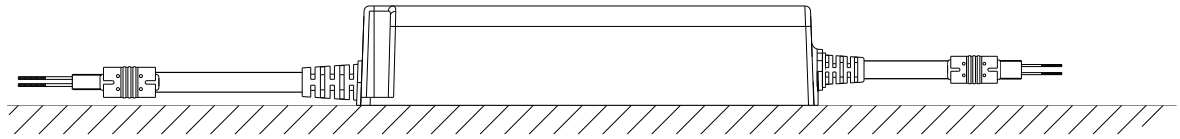


■ Mechanical Specification

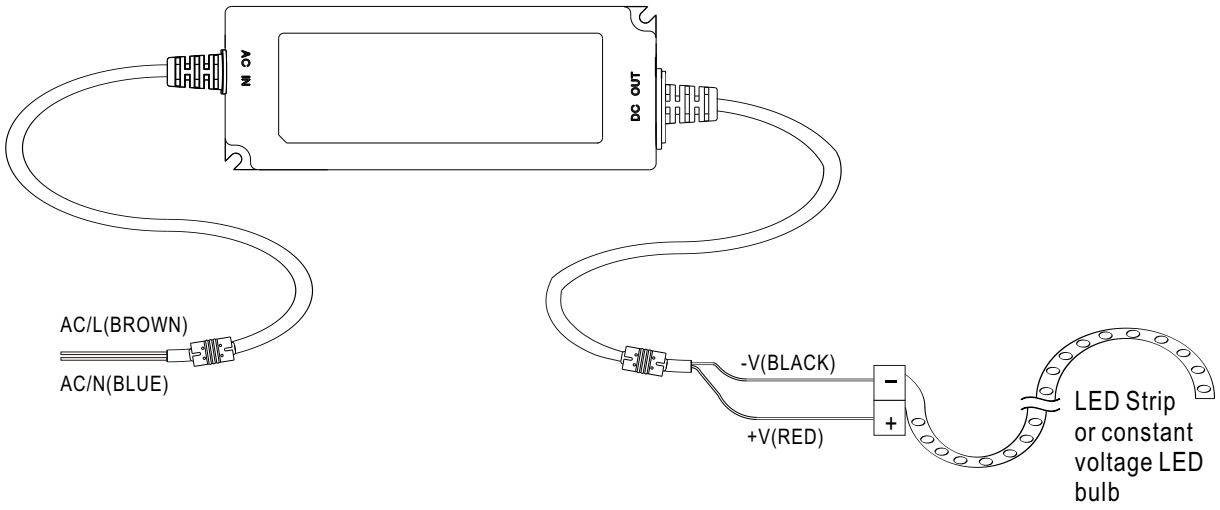
Case No. PWM-120 Unit:mm



■ Recommend Mounting Direction



■ Installation Manual



◎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 drivers with waterproof connectors, verify that the linkage between the unit and the lighting fixture is tight so that water cannot intrude into the system.
- Tc max. is identified on the product label. Please make sure that temperature of Tc point will not exceed limit.
- 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 : http://www.meanwell.com/manual.html for details.