L&L
Luce&Light

Made in Italy

TECHINICAL DATA SHEET

rev. 02 07/09/2016

AV12060IP67 - AV24060IP67 - AV48060IP67

Power supply units and control gear

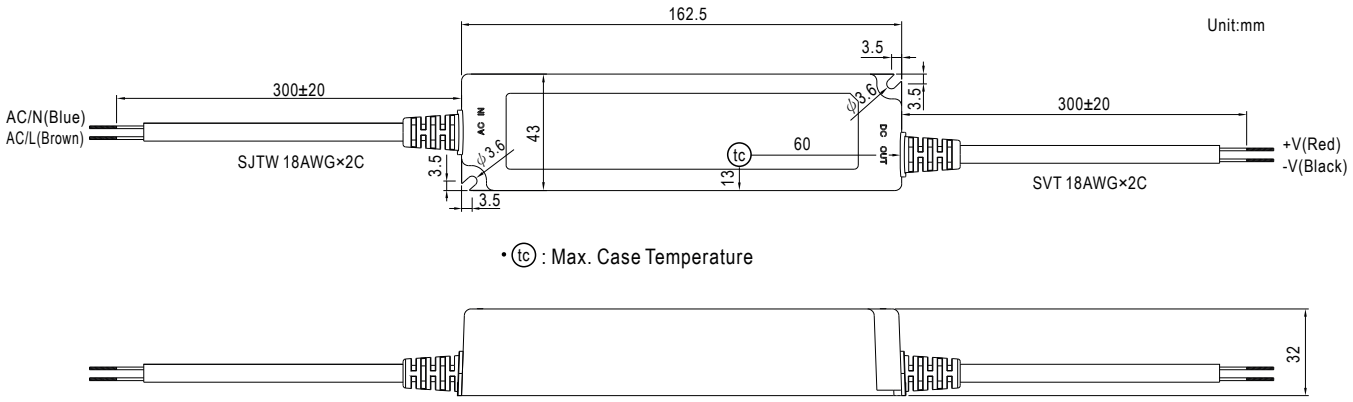
- **Features:**
- Constant voltage
- Plastic housing with Class II design
- Built-in active PFC function
- Class 2 power unit
- Fully encapsulated with IP67 level
- Typical lifetime>50000 hours
- 5 years warranty

SPECIFICATION

MODEL		AV12060IP67	AV24060IP67	AV48060IP67
OUTPUT	DC VOLTAGE	12V	24V	48V
	CONSTANT CURRENT REGION Note.2	7.2 ~ 12V	14.4 ~ 24V	28.8 ~ 48V
	RATED CURRENT	5A	2.5A	1.25A
	RATED POWER Note.5	60W	60W	60W
	RIPPLE & NOISE (max.) Note.3	150mVp-p	150mVp-p	250mVp-p
	VOLTAGE TOLERANCE Note.4	±4.0%	±4.0%	±4.0%
	LINE REGULATION	±0.5%	±0.5%	±0.5%
	LOAD REGLATION	±2.0%	±0.5%	±0.5%
	SETUP, RISE TIME Note.6	1000ms, 80ms/115VAC 500ms, 80ms/230VAC		
	HOLD UP TIME (Typ.)	16ms/230VAC 16ms/115VAC		
INPUT	VOLTAGE RANGE Note.6	90 ~ 305VAC 127 ~ 431VDC (Please refer to "STATIC CHARACTERISTIC" section)		
	FREQUENCY RANGE	47 ~ 63Hz		
	POWER FACTOR	PF ≥ 0.97/115VAC, PF ≥ 0.95/230VAC, PF ≥ 0.92/277VAC@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 (THD)" section)		
	EFFICIENCY (Typ.)	86%	89%	90%
	AC CURRENT	0.8A/115VAC 0.4A/230VAC 0.32A/277VAC		
	INRUSH CURRENT (Typ.)	COLD START 55A (t_{width}= 270μs measured at 50% I_{peak}) at 230VAC; Per NEMA 410		
	MAX. No. of PSU on 16A CIRCUIT BREAKER	8 units (circuit breaker of type B) / 14 units (circuit breaker of type C) at 230VAC		
	LEAKAGE CURRENT	< 0.75mA/240VAC		
PROTECTION	OVER CURRENT	95 ~ 108% Constant current limiting, recovers automatically after fault condition is removed		
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed		
	OVER VOLTAGE	15 ~ 17V	28 ~ 35V	54 ~ 63V
		Shut down and latch off o/p voltage, re-power on to recover		
	OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover		
ENVIRONMENT	WORKING TEMP.	Tcase= -40 ~ +80°C (Please refer to "OUTPUT LOAD vs TEMPERATURE" section)		
	MAX. CASE TEMP.	Tcase= +80°C		
	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 Note.8	ENEC EN61347-1, EN61347-2-13 independent, EN62384, IP67, design refer to TUV EN60950-1		
	WITHSTAND VOLTAGE	I/P-O/P: 3.75KVAC		
	ISOLATION RESISTANCE	I/P-O/P: 100M Ohms / 500VDC / 25°C / 70% RH		
	EMC EMISSION Note.8	Compliance to EN55015, EN61000-3-2 Class C (@load ≥ 60%); EN61000-3-3		
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11; EN61547, light industry level (surge immunity Line-Line 2KV)		
OTHERS	MTBF	440.5Khrs min. MIL-HDBK-217F (25°C)		
	DIMENSION	162.5*43*32mm (L*W*H)		
	PACKING	0.45Kg		

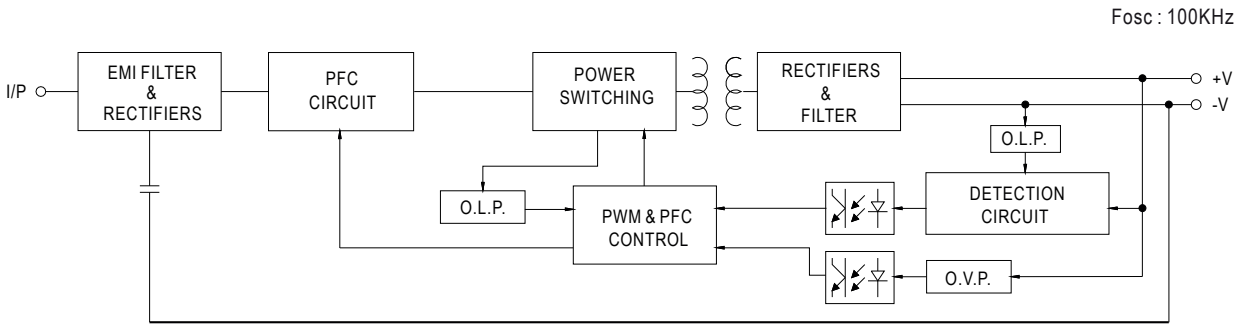
NOTE	1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25 °C of ambient temperature. 2. Please refer to "DRIVING METHODS OF LED MODULE". 3. Ripple & noise are measured at 20MHz of bandwith by using a 12" twisted pair-wire terminated with a 0.1μf & 47μf parallel capacitor. 4. Tolerance: includes set up tolerance, line regulation and load regulation. 5. Derating may be needed under low input voltages. Please refer to "STATIC CHARACTERIC" sections for details. 6. 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. 7. The driver is considered 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 be re-qualify EMC Directive on the complete installation again. 8. This series meets the typical life expectancy of >50000 hours of operation when Tcase, particularly (tc) point (or TMP, per DLC), is about 70 °C or less.

MECHANICAL SPECIFICATION

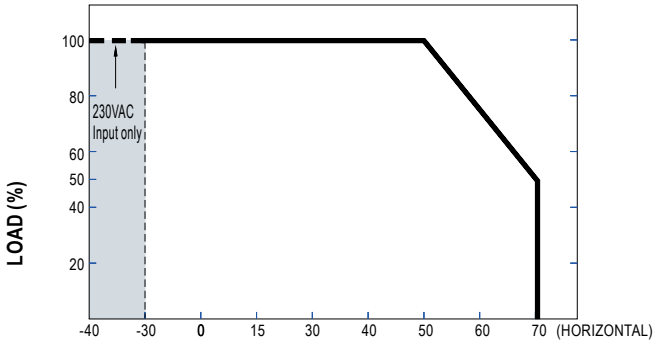


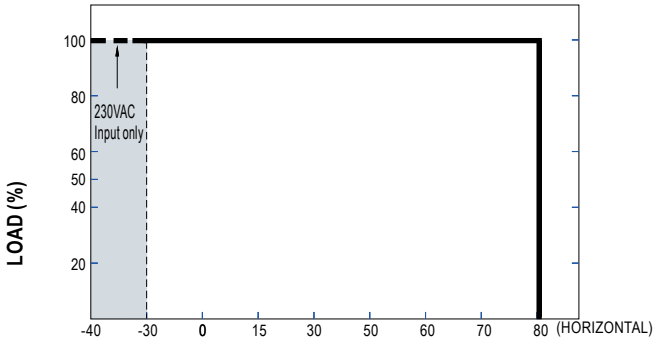
• (tc) : Max. Case Temperature

BLOCK DIAGRAM

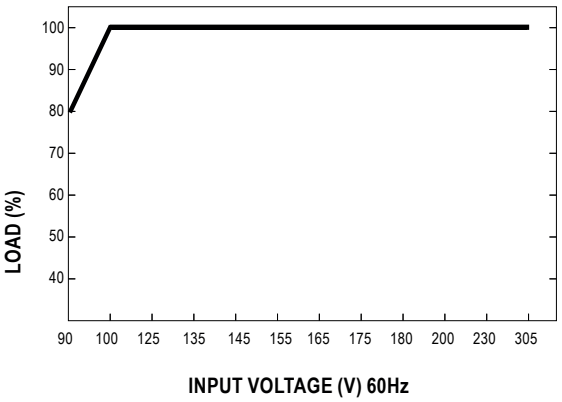


OUTPUT LOAD vs TEMPERATURE





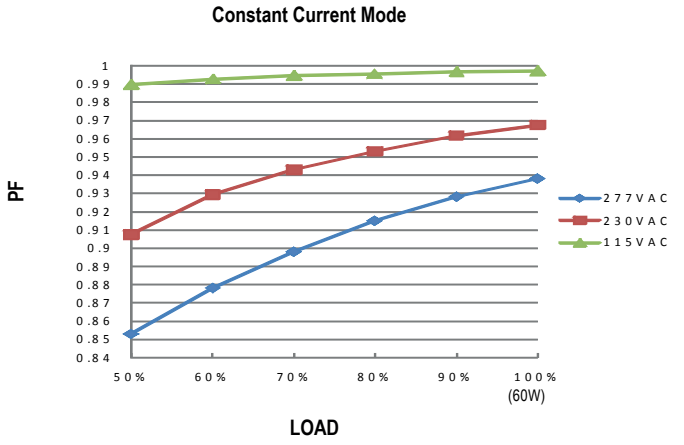
STATIC CHARACTERISTIC



Derating is needed under low input voltage.

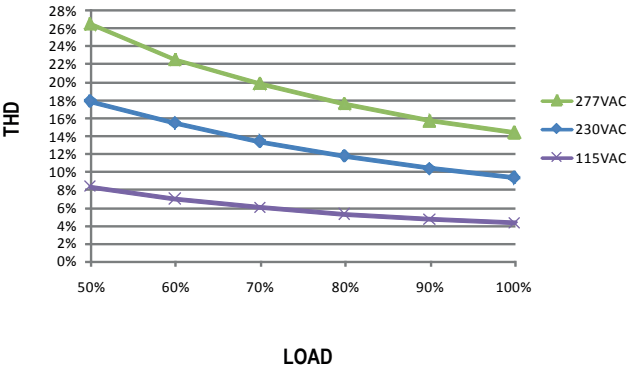
POWER FACTOR (PF) CHARACTERISTIC

Tcase at 70°C



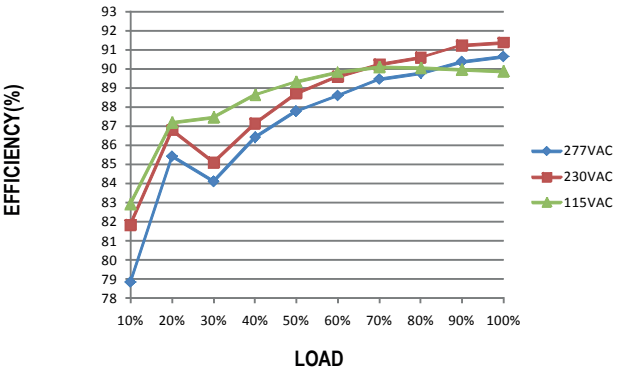
TOTAL HARMONIC DISTROTION (THD)

48V Model, Tcase at 70°C



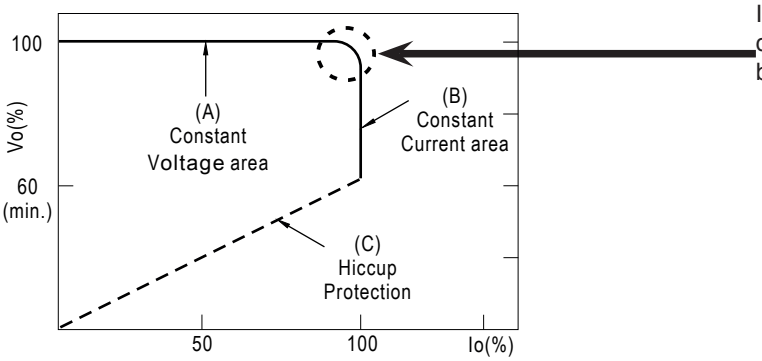
EFFICIENCY vs LOAD

The power supply unit possess superior working efficiency that up to 90% can be reached in field applications.
48V Model, Tcase at 70°C



DRIVING METHODS OF LED MODULE

This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/ DC driver) to drive the LEDs.



Typical output current normalized by rated current (%)

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems. Should there be any compatibility issues, please contact L&L.

LIFETIME