



■ Features

- 230VAC only or Full range (up to 295VAC) models available
- Built-in active PFC function
- Constant current design
- Protections: Short circuit
- Cooling by free air convection
- Fully isolated plastic case
- IP30 design
- Class II power unit, no FG
- No load power consumption <0.5W
- High reliability, low cost
- 2 years warranty

■ Applications

- Indoor LED lighting
- LED office lighting
- LED commercial lighting
- LED decorative lighting

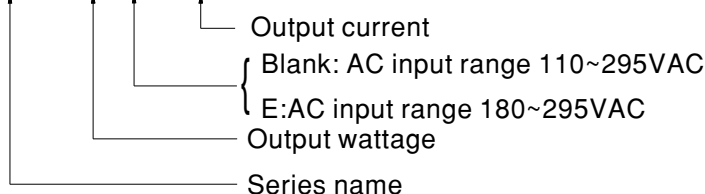
■ Description

PLM-40 is a 40W economical AC/DC LED power supply series. Incorporating a built-in active PFC design, PLM-40 provides a high Power Factor value greater than 0.9. In addition, with the low no load power consumption below 0.5W, and the setup time less than 500ms, PLM-40 is complied with the ErP regulation required by European Union for lighting fixtures.

PLM-40 is a class II (without FG pin) power unit housed with the UL 94V-0 rated flame retardant plastic case. The I/O terminals are designed with screw-less clamp style terminal block that greatly simplifies the wiring installation. Two types of models with different input voltage range are offered: PLM-40 series, which operates from 110~295VAC, and PLM-40E series, which operates from 180~295VAC. These two series are both constant current output design, supplying models with the current of 350mA, 500mA, 700mA, 1050mA, 1400mA and 1750mA, respectively.

■ Model Encoding

PLM - 40 E - 350



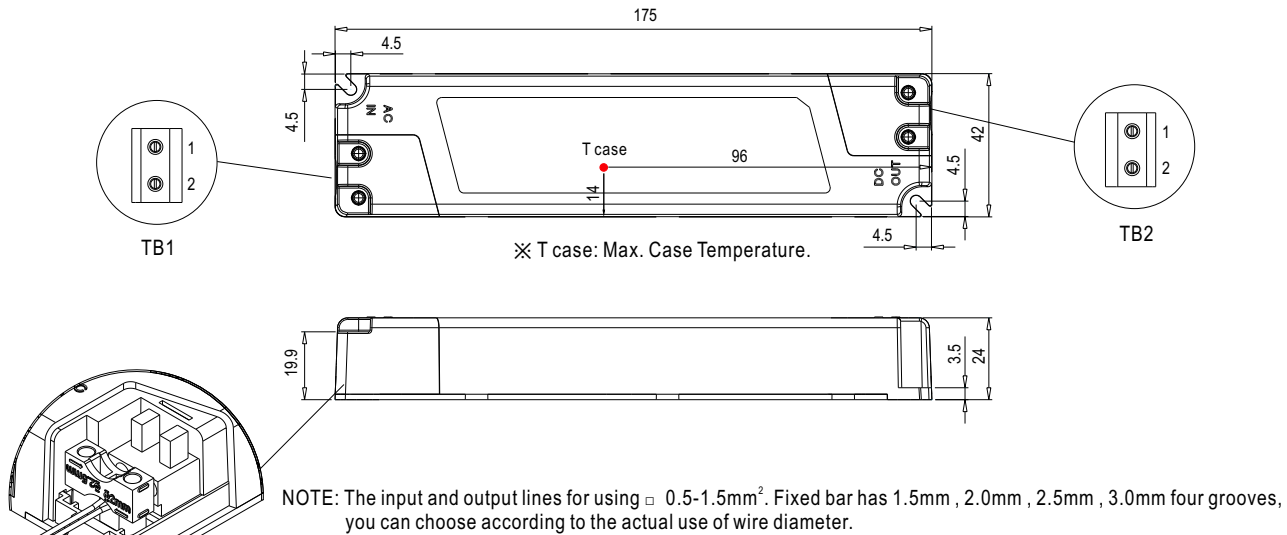


SPECIFICATION

MODEL		PLM-40□-350	PLM-40□-500	PLM-40□-700	PLM-40□-1050	PLM-40□-1400	PLM-40□-1750	
OUTPUT	RATED CURRENT	350mA	500mA	700mA	1050mA	1400mA	1750mA	
	OPERATING VOLTAGE RANGE Note.5	53 ~ 105V	40 ~ 80V	29 ~ 57V	19 ~ 38V	15 ~ 29V	12 ~ 23V	
	CURRENT ACCURACY Note.3	±8.0%						
	RATED POWER	36.75W	40W	39.9W	39.9W	40.6W	40.25W	
	RIPPLE & NOISE (max.) Note.2	10Vp-p	8Vp-p	6Vp-p	4Vp-p	3Vp-p	2.5Vp-p	
	NO LOAD OUTPUT VOLTAGE (max.)	115V	86V	63V	43V	34V	27V	
	SETUP TIME	Blank Type: 500ms /115VAC, 230VAC at full load; E Type: 500ms / 230VAC at full load						
INPUT	VOLTAGE RANGE Note.4	Blank Type: 110 ~ 295VAC 156 ~ 417VDC; E Type: 180 ~ 295VAC 254 ~ 417VDC						
	FREQUENCY RANGE	47 ~ 63Hz						
	POWER FACTOR (Typ.)	Blank type	PF ≥ 0.97/115VAC, PF ≥ 0.95/230VAC, PF > 0.9/277VAC (at full load) (Please refer to "Power Factor Characteristic" curve)					
		E type	PF ≥ 0.95/230VAC, PF > 0.9/277VAC (at full load) (Please refer to "Power Factor Characteristic" curve)					
	TOTAL HARMONIC DISTORTION	Blank type	THD < 20% when output loading ≥ 60% at 115VAC/230VAC input and output loading ≥ 75% at 277VAC input					
		E type	THD < 20% when output loading ≥ 60% at 230VAC input and output loading ≥ 75% at 277VAC input					
	EFFICIENCY (Typ.)	88%	88%	87%	87%	86%	86%	
	AC CURRENT (Typ.)	Blank Type: 0.5A/115VAC 0.3A/230VAC 0.25A/277VAC E Type: 0.3A/230VAC 0.25A/277VAC						
	INRUSH CURRENT (Typ.)	COLD START 15A (twidth=75μs measured at 50% Ipeak) at 230VAC						
MAX. No. of PSUs on 16A CIRCUIT BREAKER	47 units (circuit breaker of type B) / 47 units (circuit breaker of type C) at 230VAC							
LEAKAGE CURRENT	< 0.5mA / 240VAC							
PROTECTION	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.						
	OVER TEMPERATURE	Hiccup mode, recovers automatically after temperature goes down.						
ENVIRONMENT	WORKING TEMP.	-30 ~ +40°C (Refer to "Derating Curve")						
	WORKING HUMIDITY	20 ~ 95% RH non-condensing						
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH						
	TEMP. COEFFICIENT	±0.06%/°C (0 ~ 40°C)						
	VIBRATION	10 ~ 500Hz, 2G 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, GB19510.14, GB19510.1, IP30 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, GB17743, GB17625.1, EN61000-3-2 Class C (≥75% load); EN61000-3-3						
	EMC IMMUNITY	Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN61547, light industry level, criteria B (Surge 2KV)						
OTHERS	MTBF	822.7Khrs min. MIL-HDBK-217F (25°C)						
	DIMENSION	175*42*24mm (L*W*H)						
	PACKING	0.175Kg; 60pcs/11.5kg/0.68CUFT						
NOTE	<ol style="list-style-type: none"> All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. Please see "AC input voltage drop vs. output current characteristics" table. Derating may be needed under low input voltage, please check the static characteristic for more details. Constant current operation region is within 50% ~ 100% rated output voltage. This is the suitable operation region for LED related applications, but please reconfirm special electrical requirements for some specific system design. 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. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers. 							

■ Mechanical Specification

Case No. PLM-40 Unit:mm



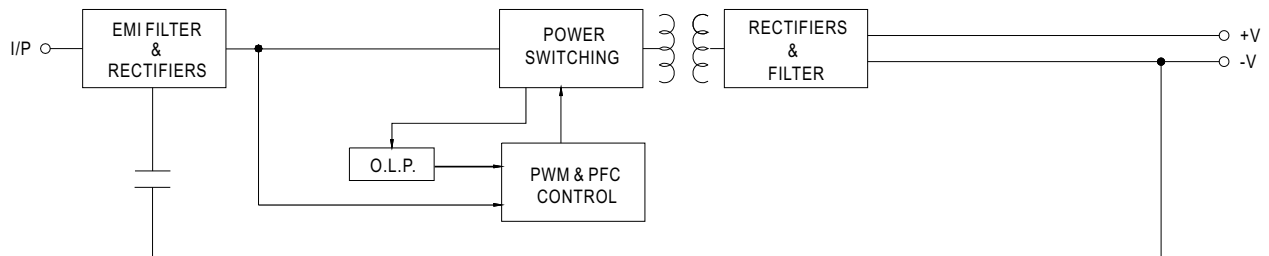
Terminal Pin No. Assignment (TB1) :
SWITCLAB DG235-7.5-2P(GRAY)

Pin No.	Assignment
1	AC/L
2	AC/N

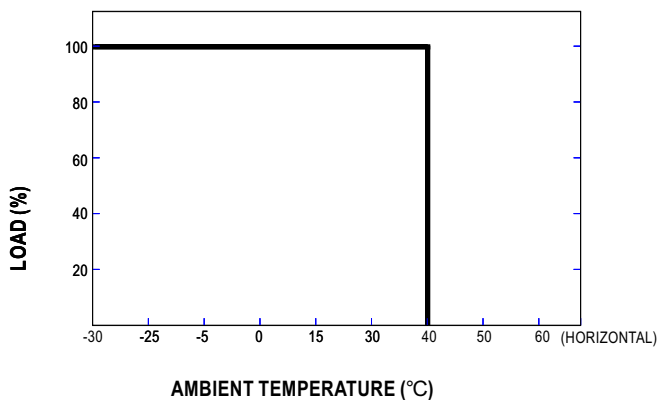
Terminal Pin No. Assignment (TB2) :
SWITCLAB DG235-7.5-2P(BLUE)

Pin No.	Assignment
1	-V
2	+V

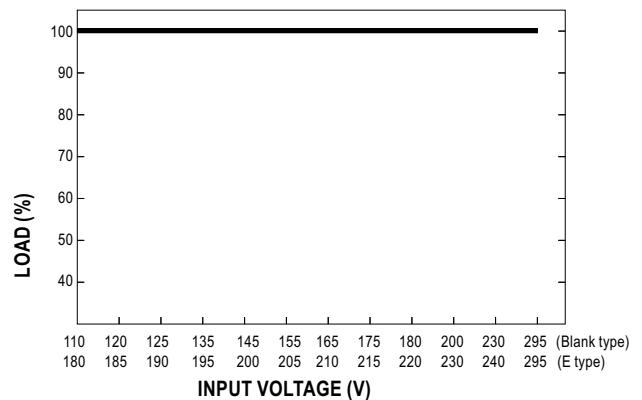
■ Block Diagram



■ Derating Curve

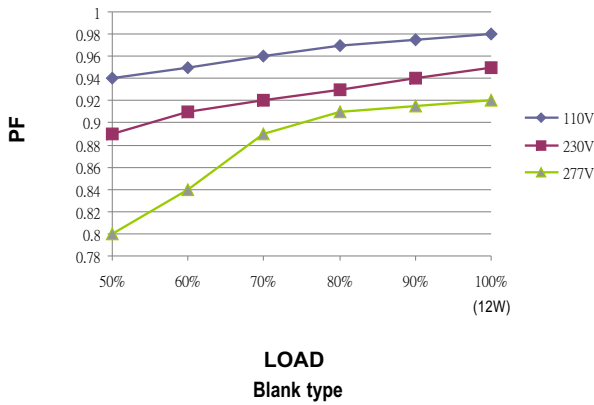


■ Static Characteristics

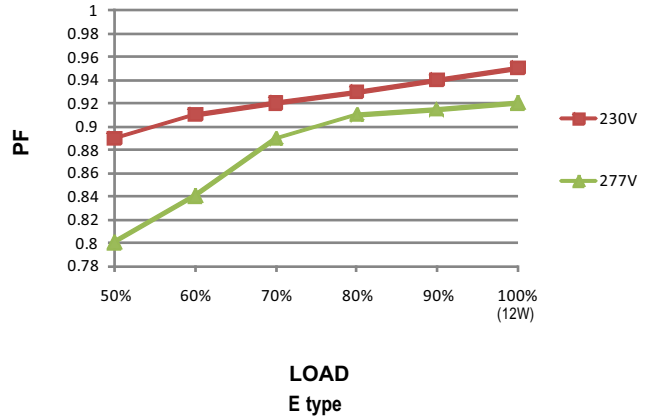


Power Factor Characteristic

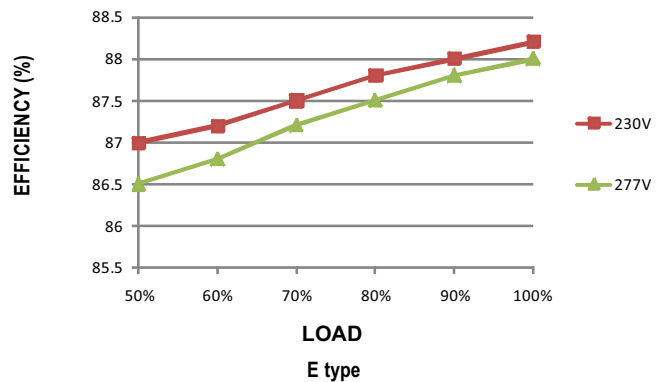
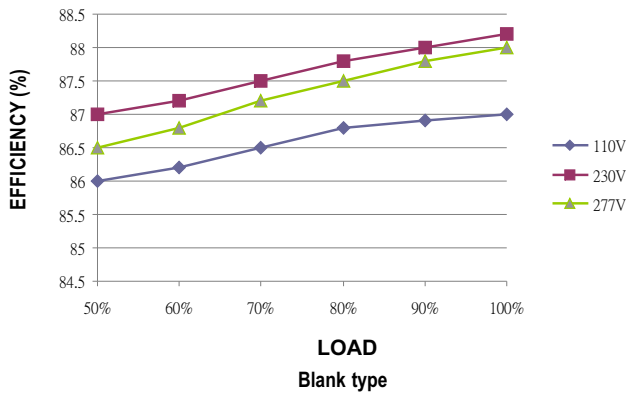
Constant Current Mode



Constant Current Mode



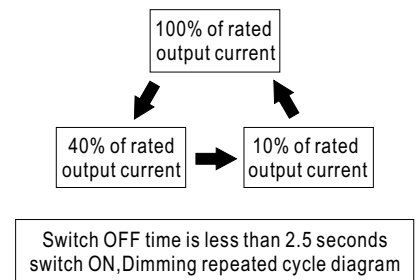
EFFICIENCY vs LOAD (500mA Model)



Three-step analog dimming

3-level analog dimming control using a wall switch

three-step analog dimming	STEP 1	STEP 2	STEP 3
	Switch turn ON	Switch turn OFF Less than 2.5 seconds Switch turn ON	Switch turn OFF Less than 2.5 seconds Switch turn ON
percentage of rated current	100%	40%	10%



NOTE: if the OFF time is longer than 2.5 seconds, once switch on again, PLM-40(E) will provide 100% of rated output current

AC input voltage drop vs. output current characteristics

AC input drop	10%	8%	5%	3%
Io drop	<18%	<13%	<8%	<6%

NOTE: Output current will return to the rated value within 70ms