



### ■ 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

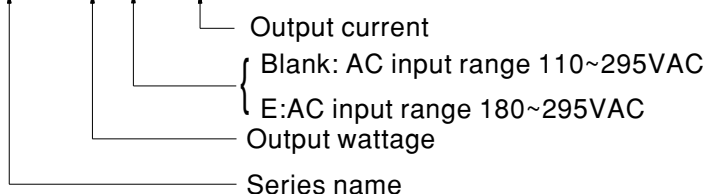
### ■ Description

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**





# 40W Single Output LED Power Supply

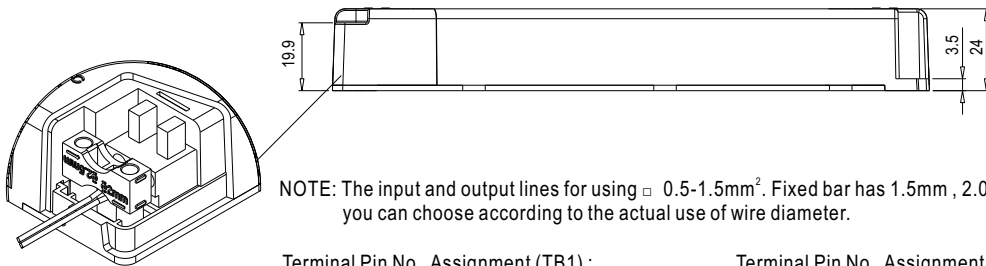
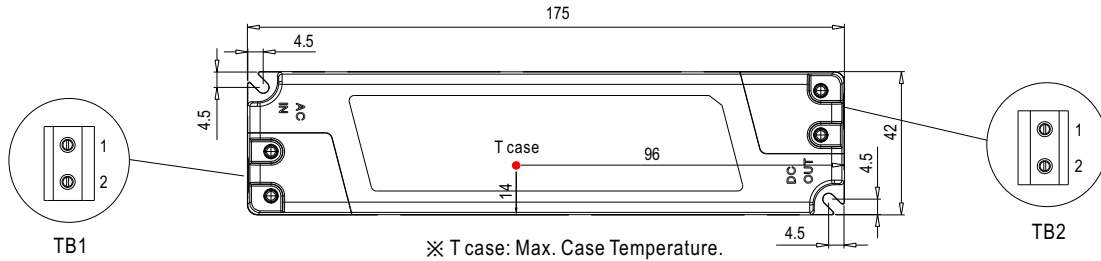
# PLM-40 series

## 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 (width=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"> <li>All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf &amp; 47uf parallel capacitor.</li> <li>Please see "AC input voltage drop vs. output current characteristics" table.</li> <li>Derating may be needed under low input voltage, please check the static characteristic for more details.</li> <li>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.</li> <li>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.</li> <li>Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.</li> </ol>							

■ Mechanical Specification

Case No. PLM-40 Unit: mm



NOTE: The input and output lines for using  $\square$  0.5-1.5mm<sup>2</sup>. Fixed bar has 1.5mm, 2.0mm, 2.5mm, 3.0mm four grooves, you can choose according to the actual use of wire diameter.

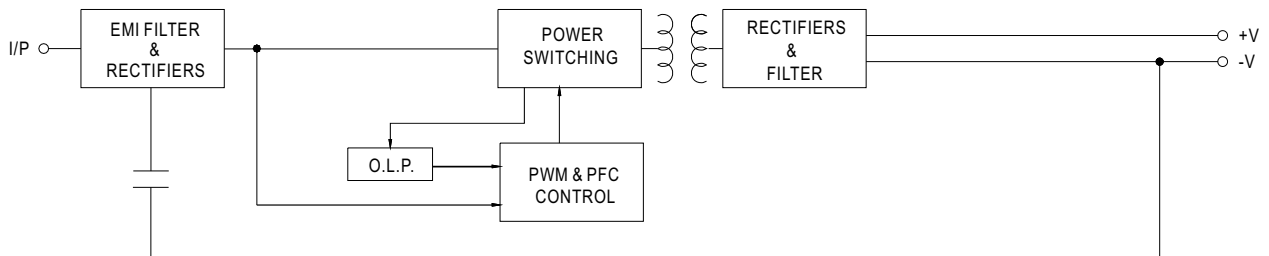
Terminal Pin No. Assignment (TB1) :  
SWITCLAB DG235-7.5-2P(GRAY)

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

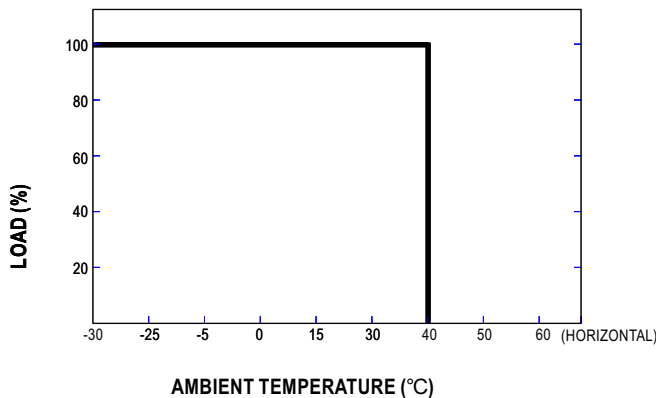
Terminal Pin No. Assignment (TB2) :  
SWITCLAB DG235-7.5-2P(BLUE)

Pin No.	Assignment
1	-V
2	+V

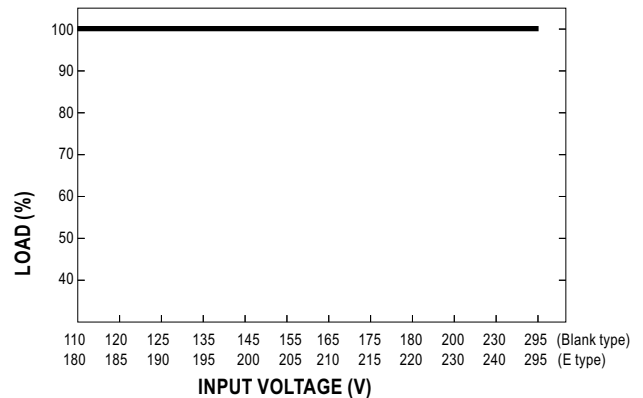
■ Block Diagram



■ Derating Curve

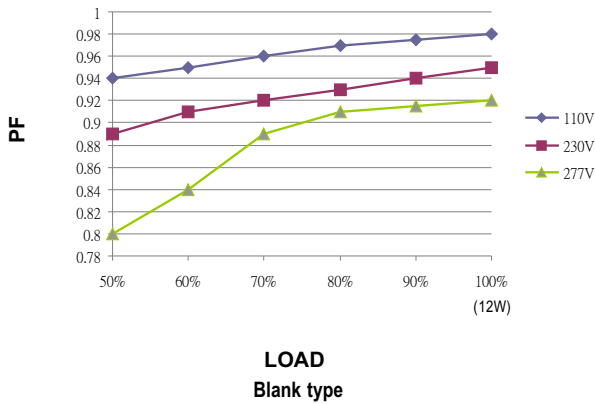


■ Static Characteristics

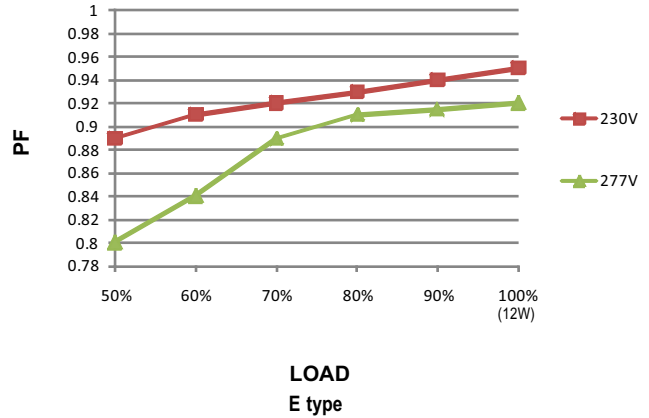


**Power Factor Characteristic**

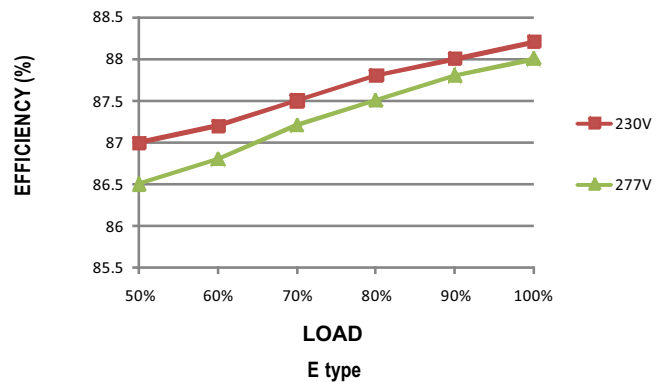
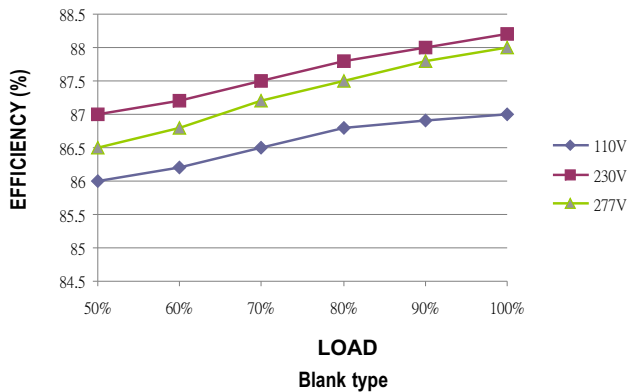
Constant Current Mode



Constant Current Mode



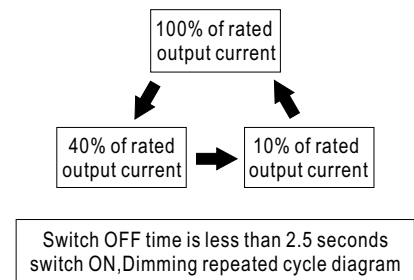
**EFFICIENCY vs LOAD (500mA Model)**



**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-40E 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