MEAN WELL

40W Single Output LED Power Supply

PLM-40 series

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

- 350: Output current
- E: Blank: AC input range 110~295VAC; E:AC input range 180~295VAC
- 40: Output wattage
- PLM: Series name

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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℃ (Refer to "Derating Curve")					
	WORKING HUMIDITY		20 ~ 95% RH non-condensing					
	STORAGE TEMP., HUMIDITY		-40 ~ +80℃, 10 ~ 95% RH					
	TEMP. COEFFICIENT		±0.06%/℃ (0 ~ 40℃)					
	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,EAC TP TC 004,IP30 approved					
	WITHSTAND VOLTAGE		I/P-O/P:3.75KVAC					
	ISOLATION RESISTANCE		I/P-O/P:100M Ohms / 500VDC / 25℃/ 70% RH					
	EMC EMISSION		Compliance to EN55015, GB17743, GB17625.1,EN61000-3-2 Class C (≧75% load) ; EN61000-3-3,EAC TP TC 020					
	EMC IMMUNITY		Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, light industry level, criteria B (Surge 2KV),EAC TP TC 020					
OTHERS	MTBF		822.7Khrs min. MIL-HDBK-217F (25℃)					
	DIMENSION		175*42*24mm (L*W*H)					
	PACKING		0.175Kg; 60pcs/11.5kg/0.68CUFT					

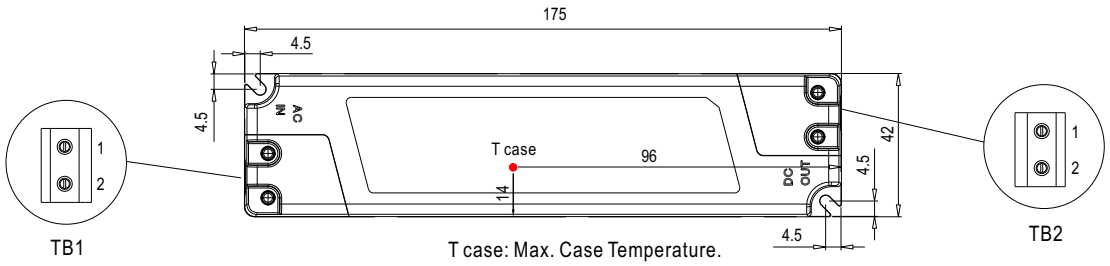
NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.
2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor.
3. Please see "AC input voltage drop vs. output current characteristics" table.
4. Derating may be needed under low input voltage, please check the static characteristic for more details.
5. 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.
6. 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.
7. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.
8. 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).

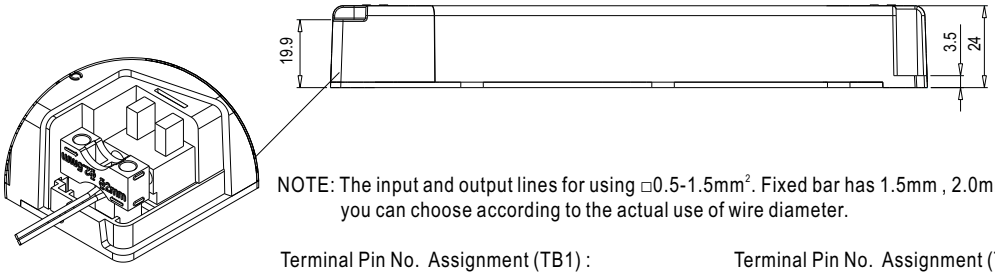
※ Product Liability Disclaimer : For detailed information, please refer to https://www.meanwell.com/serviceDisclaimer.aspx

■ Mechanical Specification

Case No.PLM-40 Unit:mm



T case: Max. Case Temperature.



NOTE: The input and output lines for using □0.5-1.5mm^2. Fixed bar has 1.5mm , 2.0mm , 2.5mm , 3.0mm four grooves, you can choose according to the actual use of wire diameter.

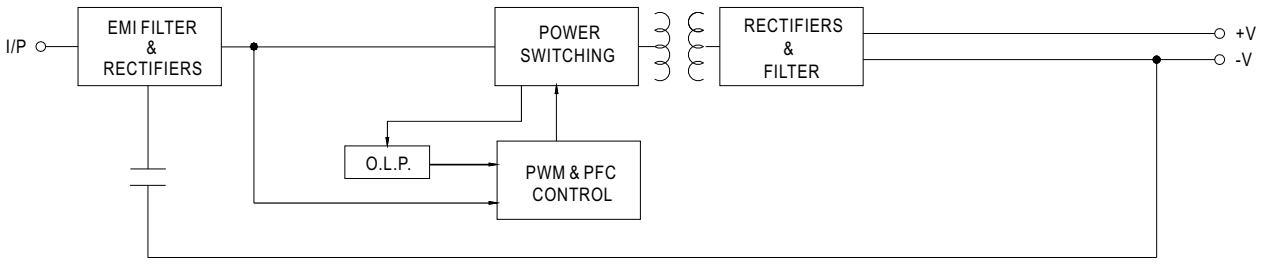
Terminal Pin No. Assignment (TB1) :
SWITCHLAB DG235-7.5-2P(GRAY)

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

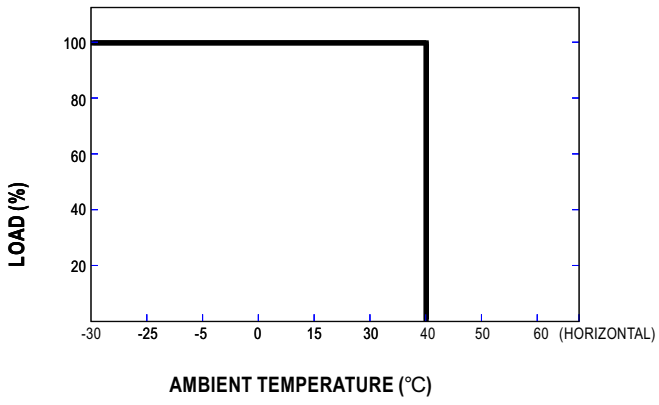
Terminal Pin No. Assignment (TB2) :
SWITCHLAB DG235-7.5-2P(BLUE)

Pin No.	Assignment
1	-V
2	+V

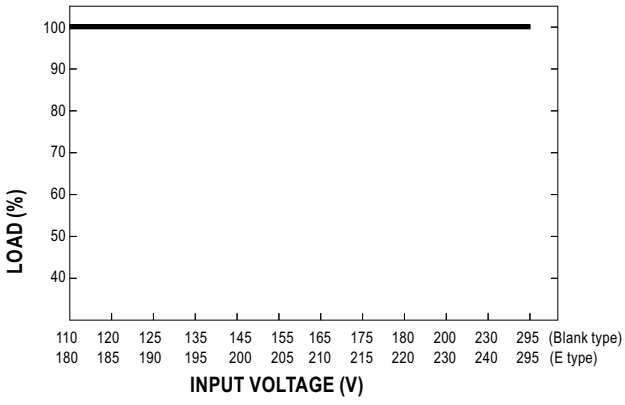
■ Block Diagram



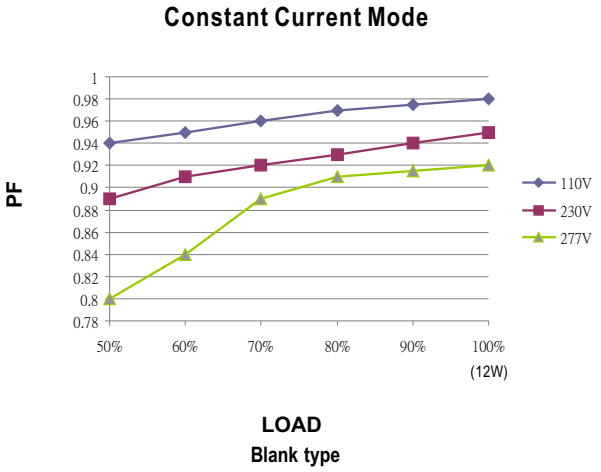
■ Derating Curve

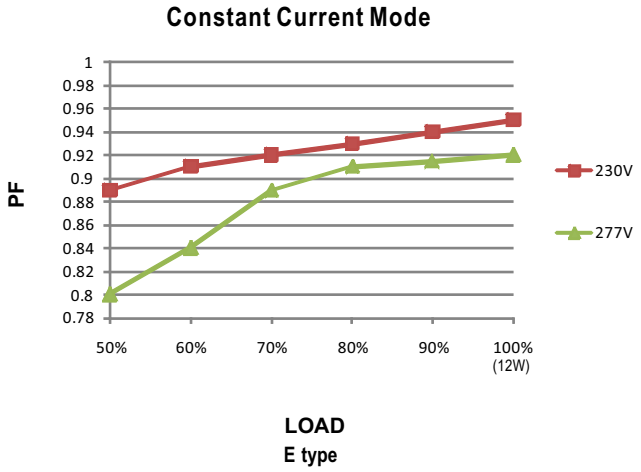


■ Static Characteristics

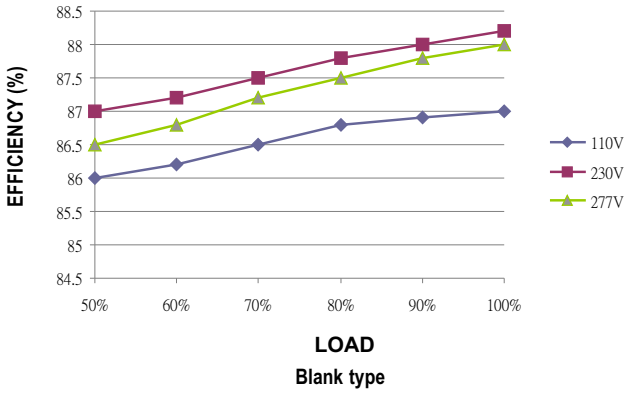


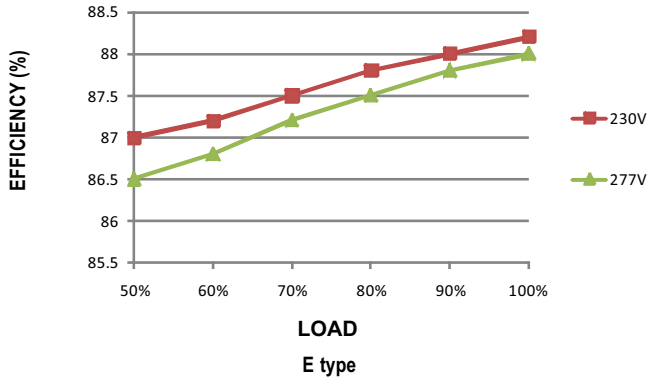
■ Power Factor Characteristic





■ EFFICIENCY vs LOAD (500mA Model)

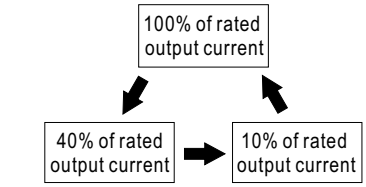




■ Three-step analog dimming

3-level analog dimming control using a wall switch

	STEP 1	STEP 2	STEP 3
three-step analog dimming	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%



Switch OFF time is less than 2.5 seconds switch ON,Dimming repeated cycle diagram

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