



# 40W Single Output AC Dimmable LED Power Supply

# PLM-40 series



### ■ Features :

- Universal AC input / Full range (up to 295VAC)
- Three-step analog dimming
- Built-in active PFC function
- Constant current design
- Protections: Short circuit / Over temperature
- Cooling by free air convection
- Fully isolated plastic case
- Class II power unit, no FG
- Suitable for indoor LED lighting applications
- 100% full load burn-in test
- No load power consumption <0.5W
- Low cost
- High reliability
- 2 years warranty

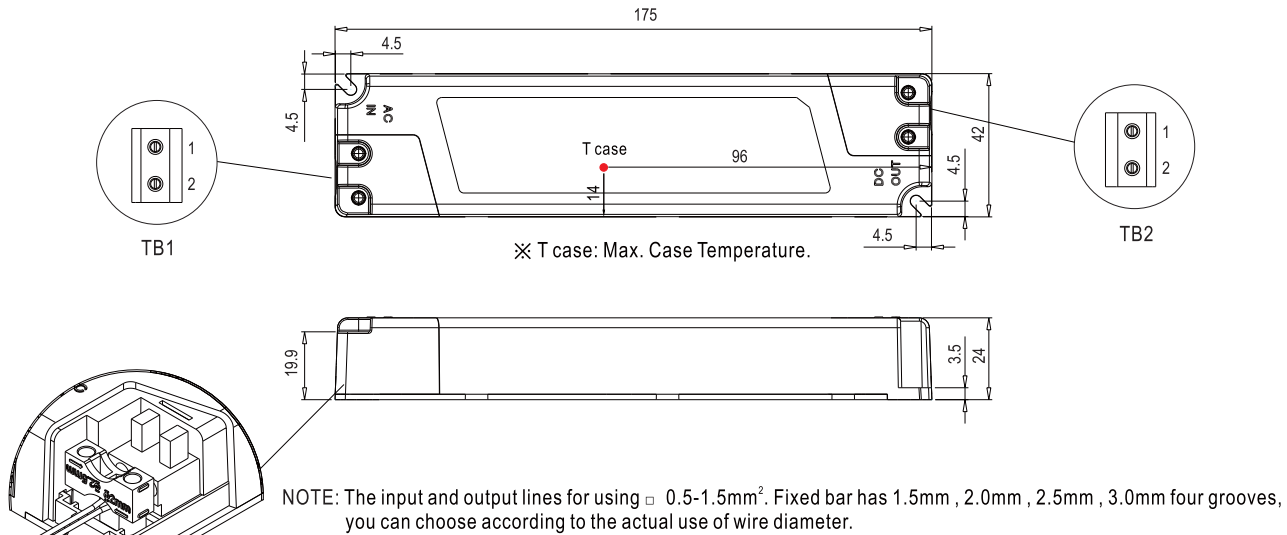
### SPECIFICATION



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	±5.0%					
	RATED POWER	36.75W	40W	38.5W	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	500ms / 115VAC, 230VAC at full load					
INPUT	VOLTAGE RANGE Note.4	110 ~ 295VAC 156 ~ 416VDC					
	FREQUENCY RANGE	47 ~ 63Hz					
	POWER FACTOR (Typ.)	PF ≥ 0.97/115VAC, PF ≥ 0.95/230VAC, PF > 0.9/277VAC (at full load) (Please refer to "Power Factor Characteristic" curve)					
	TOTAL HARMONIC DISTORTION	THD < 20% when output loading ≥ 60% at 115VAC/230VAC input and output loading ≥ 75% at 277VAC input					
	EFFICIENCY (Typ.)	88%	88%	87%	87%	86%	86%
	AC CURRENT (Typ.)	0.5A/115VAC 0.3A/230VAC		0.25A/277VAC			
	INRUSH CURRENT (Typ.)	COLD START 15A (twidth=75µs measured at 50% Ipeak) at 230VAC					
	LEAKAGE CURRENT	<0.5mA / 240VAC					
PROTECTION	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.					
	OVER TEMPERATURE	115°C ±5°C (TSW1) Protection type : Hiccup mode, recovers automatically after temperature goes down.					
ENVIRONMENT	WORKING TEMP.	-30 ~ +45°C (Refer to "Derating Curve")					
	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, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes					
SAFETY & EMC	SAFETY STANDARDS	UI8750, CSA C22.2 No. 250.13-12, ENEC EN61347-1, EN61347-2-13, EN62384 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, EN61000-3-2 Class C (≥50% 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>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.</li> <li>2. Ripple &amp; noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1µf &amp; 47µf parallel capacitor.</li> <li>3. Please see "AC input voltage drop vs. output current characteristics" table.</li> <li>4. Derating may be needed under low input voltage, please check the static characteristic for more details.</li> <li>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.</li> <li>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.</li> <li>7. Direct connecting to LEDs is suggested, but is not suitable for using additional drivers.</li> </ol>						

**Mechanical Specification**

Case No. PLM-40 Unit:mm



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

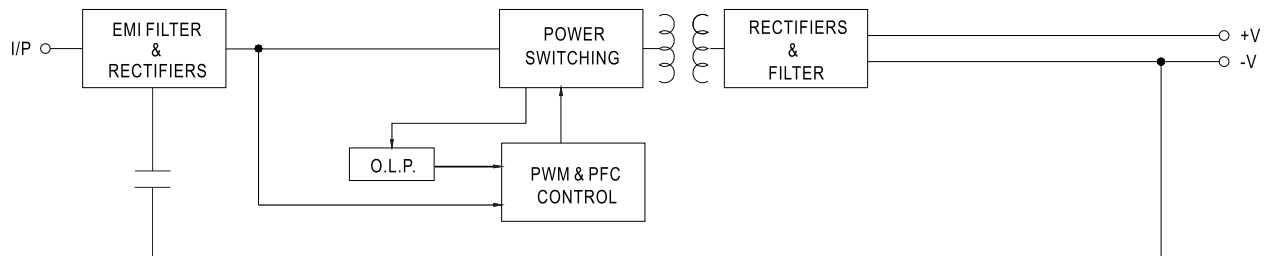
Pin No.	Assignment
1	AC/L
2	AC/N

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

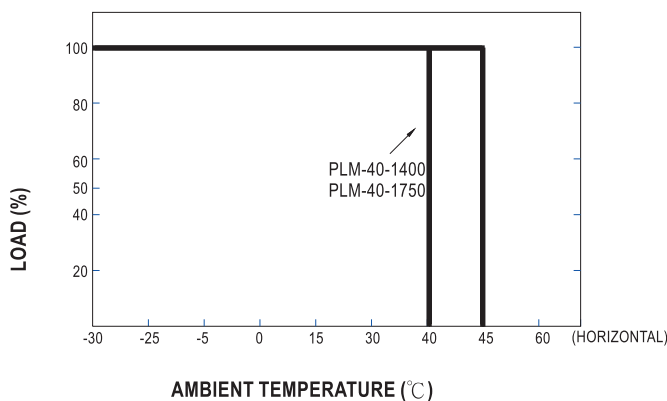
Pin No.	Assignment
1	-V
2	+V

**Block Diagram**

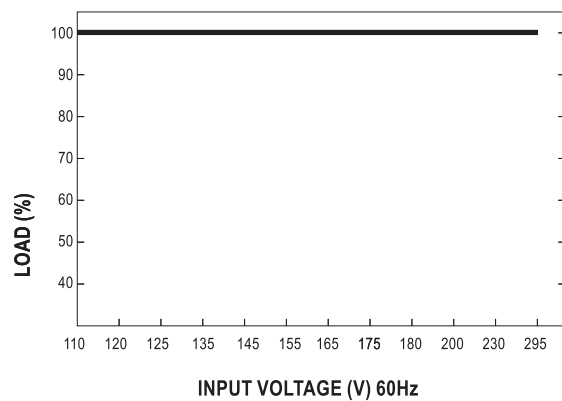
fosc : 67KHz



**Derating Curve**

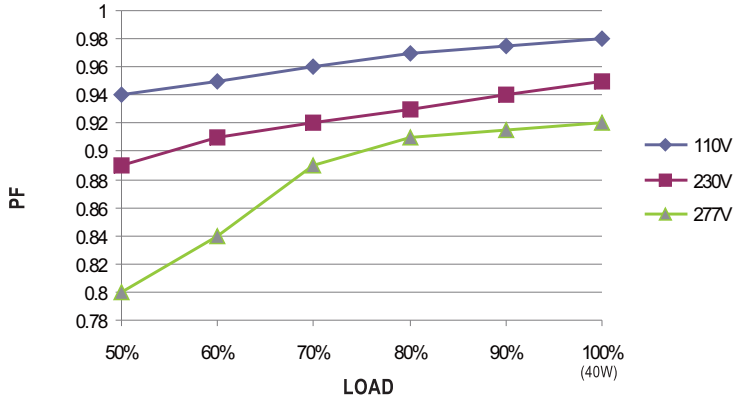


**Static Characteristics**



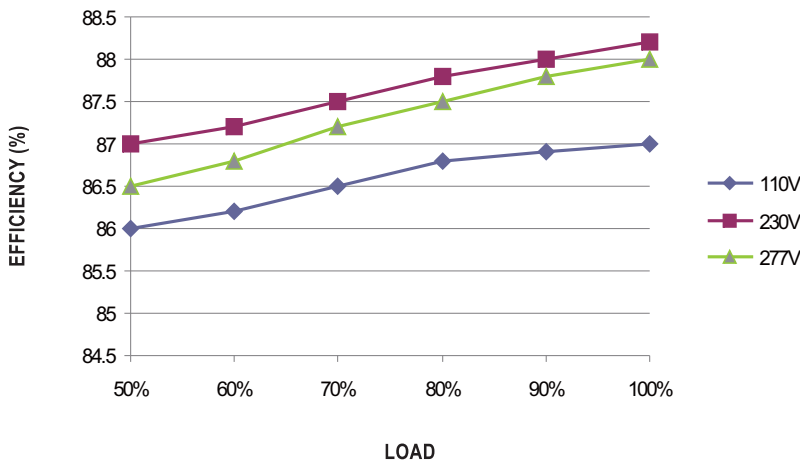
**Power Factor Characteristic**

Constant Current Mode



**EFFICIENCY vs LOAD (PLM-40-350)**

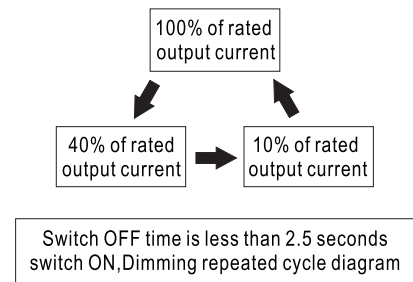
PLM-40 series possess superior working efficiency that up to 88% can be reached in field applications.



**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 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 50ms