

# LPC-20 Series

20 Watt Constant Current / Constant Voltage  
LED Power Supplies

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Size: 4.65 x 1.38 x 1.02"



■ Features :

- Constant current mode power supply
- Universal AC input / Full range
- Epoxy encapsulated with IP67 level
- Withstand 300VAC surge input for 5 seconds
- Protections: Short circuit / Over current / Over voltage
- Fully isolated plastic case
- Cooling by free air convection
- Small and compact size
- UL1310 Class 2 power unit, pass LPS
- 100% full load burn-in test
- Low cost, high reliability
- Suitable for LED lighting and moving sign applications
- 2 years warranty

LPS IP67 ( for 48V only) US ( except for 48V )

**SPECIFICATION**

MODEL		LPC-20-350	LPC-20-700
OUTPUT	RATED CURRENT	350mA	700mA
	DC VOLTAGE RANGE	9 ~ 48V	9 ~ 30V
	RATED POWER	16.8W	21W
	RIPPLE & NOISE (max.) Note.2	200mVp-p	200mVp-p
	VOLTAGE TOLERANCE Note.3	±5.0%	
	LINE REGULATION	±1.0%	
	LOAD REGULATION	±2.0%	
	SETUP, RISE TIME Note.6	500ms, 250ms / 230VAC 500ms, 250ms / 115VAC at full load	
HOLD UP TIME (Typ.)	50ms/230VAC 24ms/115VAC at full load		
INPUT	VOLTAGE RANGE	90 ~ 264VAC 127 ~ 370VDC	
	FREQUENCY RANGE	47 ~ 63Hz	
	EFFICIENCY (Typ.)	83%	
	AC CURRENT	0.55A/115VAC 0.35A/230VAC	
	INRUSH CURRENT(max.)	COLD START 35A/115VAC 70A/230VAC	
LEAKAGE CURRENT	0.25mA / 240VAC		
PROTECTION	CURRENT LIMIT Note.4	±5% rated output current Protection type : Constant current limiting type	
	OVER VOLTAGE	50.4 ~ 60V	31.5 ~ 40.5V
ENVIRONMENT	WORKING TEMP.	-30~ +70°C (Refer to output load derating curve)	
	WORKING HUMIDITY	20 ~ 90% RH non-condensing	
	STORAGE TEMP., HUMIDITY	-40 ~ +80°C, 10 ~ 95% RH	
	TEMP. COEFFICIENT	±0.03%/°C (0 ~ 50°C)	
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes	
SAFETY & EMC	SAFETY STANDARDS	UL879, UL1310 Class 2, CAN/CSA C22.2 No. 223-M91(except for 48V), IP67 approved, design refer to TUV EN60950-1, EN61347-2-13	
	WITHSTAND VOLTAGE	I/P-O/P:3KVAC	
	ISOLATION RESISTANCE	I/P-O/P:>100M Ohms / 500VDC / 25°C / 70% RH	
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B	
OTHERS	HARMONIC CURRENT	Compliance to EN61000-3-2,-3	
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; ENV50204, EN55024, light industry level, criteria A	
	MTBF	786.5Khrs min. MIL-HDBK-217F (25°C)	
NOTE	DIMENSION	118*35*26mm (L*W*H)	
	PACKING	0.22Kg; 60pcs/14.2Kg/0.62CUFT	
<p>1. All parameters NOT specially mentioned are measured at 230VAC input, rated load and 25°C of ambient temperature.                  2. 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.                  3. Tolerance : includes set up tolerance, line regulation and load regulation.                  4. Derating may be needed under low input voltage. Please check the derating curve for more details.                  5. 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.                  6. Length of set up time is measured at first cold start. Turning ON/OFF the power supply may lead to increase of the set up time.</p>			

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Size: 4.65 x 1.38 x 1.02"

**Mechanical Specification**

Case No. 972A Unit:mm

The drawing shows a top view of the power supply with dimensions: 600mm for the AC input section, 118mm for the main body, and 600mm for the output section. It features two 18AWG AC input wires (Blue for N, Brown for L) and two 18AWG DC output wires (Red for +V, Black for -V). Specific dimensions for wire placement and body width are also indicated.

**Block Diagram**

The block diagram illustrates the internal circuitry starting with an EMI Filter & Rectifiers block. This is followed by a Power Switching block connected to a transformer. The secondary of the transformer feeds into Rectifiers & Filter. The output of the filter goes through an O.C.P. (Over Current Protection) block and a Detection Circuit. The Detection Circuit is also connected to an O.V.P. (Over Voltage Protection) block. A PWM Control block is connected to the transformer and the Detection Circuit. An O.L.P. (Over Load Protection) block is also connected to the transformer. The final output is taken from the +V and -V terminals. The switching frequency is specified as fosc: 60KHz.

**Derating Curve**

The derating curve shows that the power supply can handle 100% load from -30°C to 60°C. Between 60°C and 70°C, the load capacity derates linearly to 60%. Above 70°C, the load capacity drops to 0%.

Ambient Temperature (°C)	Load (%)
-30	100
0	100
30	100
40	100
50	100
60	100
70	60
70	0

**Static Characteristics**

The static characteristics graph shows the load capacity at 60Hz input voltage. The load capacity is 80% at 90V and increases to 100% at 100V, remaining constant up to 264V at Ta=25°C.

Input Voltage (V) 60Hz	Load (%)
90	80
100	100
125	100
150	100
175	100
200	100
225	100
250	100
264	100

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