

**Professionally approved products.**

## Datasheet

# Constant Voltage LED Driver 90.24W 48V 1.88A RS LPF-90-48

RS Stock number 738-2148



### ■ Features :

- Universal AC input / Full range (up to 305VAC)
- Built-in active PFC function
- High efficiency up to 91%
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Cooling by free air convection
- Fully isolated plastic case
- Fully encapsulated with IP67 level (Note.6)
- Class II power unit, no FG
- Suitable for LED lighting and moving sign applications
- Compliance to worldwide safety regulations for lighting
- Suitable for dry / damp / wet locations

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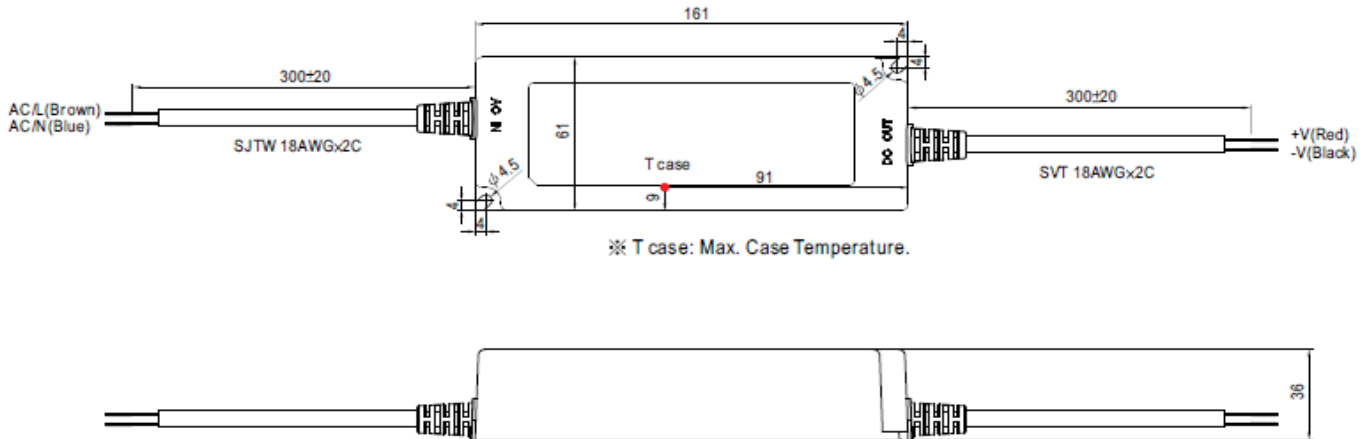
MODEL		LPF-90-15	LPF-90-20	LPF-90-24	LPF-90-30	LPF-90-36	LPF-90-42	LPF-90-48	LPF-90-54	
OUTPUT	DC VOLTAGE	15V	20V	24V	30V	36V	42V	48V	54V	
	CONSTANT CURRENT REGION <small>Note.4</small>	9 ~ 15V	12 ~ 20V	14.4 ~ 24V	18 ~ 30V	21.6 ~ 36V	25.2 ~ 42V	28.8 ~ 48V	32.4 ~ 54V	
	RATED CURRENT	5A	4.5A	3.75A	3A	2.5A	2.15A	1.88A	1.67A	
	RATED POWER	75W	90W	90W	90W	90W	90.3W	90.24W	90.18W	
	RIPPLE & NOISE (max.) <small>Note.2</small>	150mVp-p	150mVp-p	150mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	200mVp-p	
	VOLTAGE TOLERANCE <small>Note.3</small>	±4.0%	±4.0%	±4.0%	±4.0%	±4.0%	±4.0%	±4.0%	±4.0%	
	LINE REGULATION	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
	LOAD REGULATION	±1.5%	±1.0%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	±0.5%	
	SETUP, RISE TIME <small>Note.7</small>	2000ms, 80ms / 115VAC at full load    1000ms, 80ms / 230VAC at full load								
	HOLD UP TIME (Typ.)	16ms/230VAC    16ms/115VAC at full load								
INPUT	VOLTAGE RANGE <small>Note.5</small>	90 ~ 305VAC		127 ~ 431VDC						
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.97/115VAC, PF>0.96/230VAC, PF>0.95/277VAC at full load (Please refer to "Power Factor Characteristic" curve)								
	EFFICIENCY (Typ.)	89%	90%	90.5%	91%	91%	91%	91%	91%	
	AC CURRENT (Typ.)	0.95A / 115VAC		0.5A / 230VAC		0.4A / 277VAC				
	INRUSH CURRENT (Typ.)	COLD START 70A/230VAC								
	LEAKAGE CURRENT	<0.75mA / 277VAC								
PROTECTION	OVER CURRENT <small>Note.4</small>	95 ~ 108%								
		Protection type: Constant current limiting, recovers automatically after fault condition is removed								
	OVER VOLTAGE	18 ~ 21V	23 ~ 27V	28 ~ 34V	34 ~ 38V	41 ~ 46V	47 ~ 53V	54 ~ 60V	59 ~ 65V	
		Protection type: Shut down o/p voltage, re-power on to recover								
OVER TEMPERATURE	90°C ±10°C (RTH2)									
	Protection type: Shut down o/p voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	-40 ~ +70°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, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS	UL8750, EN61347-1, EN61347-2-13 independent, IP67 approved ; Design refer to UL60950-1, TUV EN60950-1								
	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 (≥60% load) ; EN61000-3-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11; EN61547, EN55024, light industry level (surge 2KV), criteria A								
OTHERS	MTBF	301.6Khrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	161*61*36mm (L*W*H)								
	PACKING	0.7Kg; 20pcs/15Kg/0.73CUFT								

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## Mechanical Specification

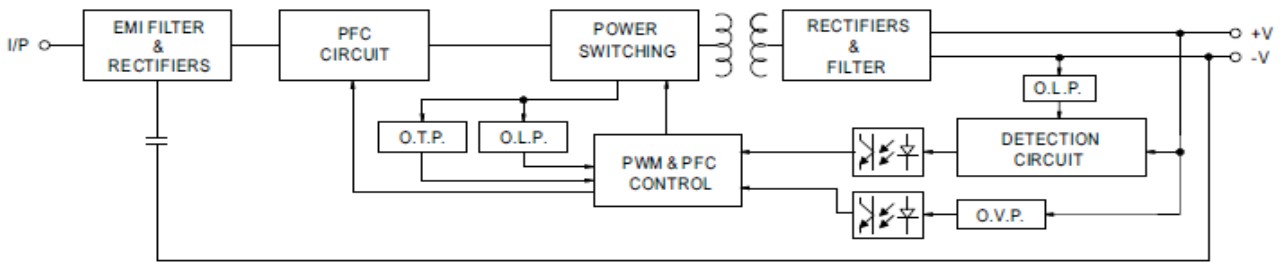
Case No.LPF-90A

Unit:mm

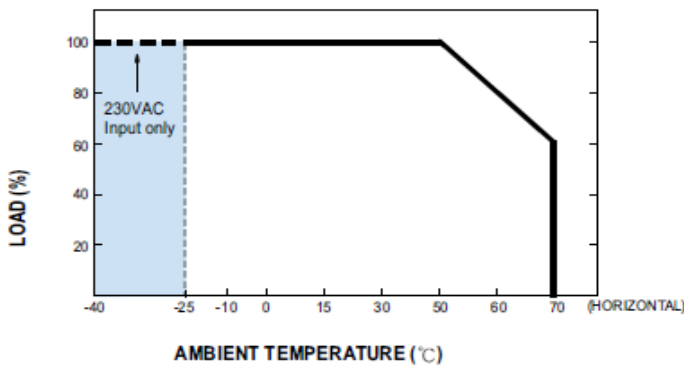


## Block Diagram

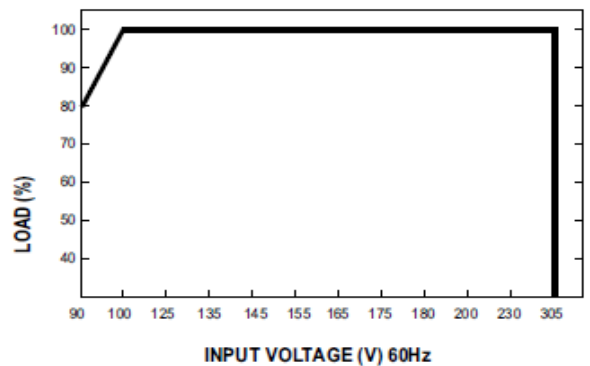
fosc : 100KHz



## Derating Curve

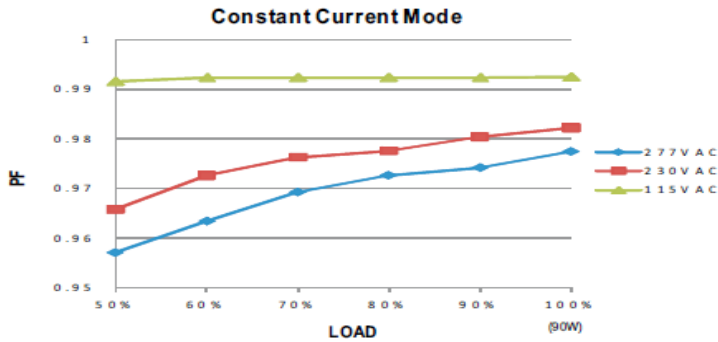


## Static Characteristics



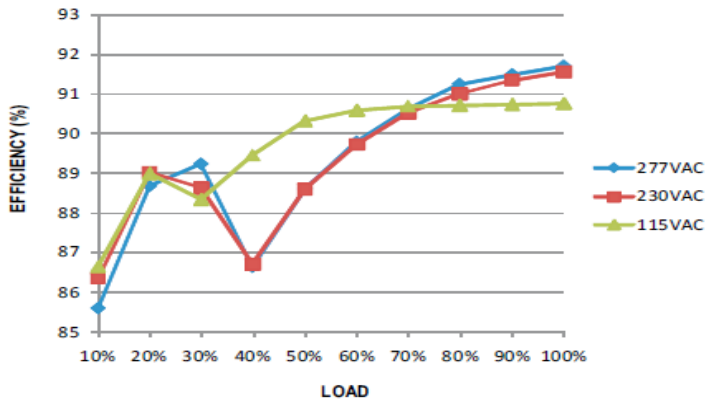
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## Power Factor Characteristic

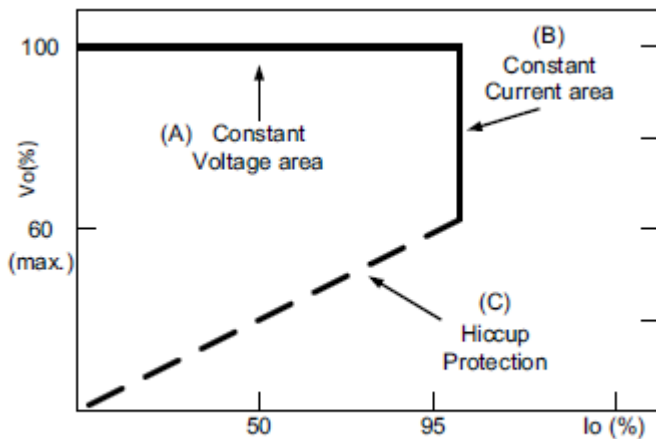


## EFFICIENCY vs LOAD (48V Model)

LPF-90 series possess superior working efficiency that up to 91% can be reached in field applications.



## DRIVING METHODS OF LED MODULE



Typical LED power supply I-V curve