

**Professionally approved products.**

## Datasheet

# Constant Voltage LED Driver 29.7W 9V 3.3A RS

RS Stock number 660-0173



### ■ Features :

- Universal AC input / Full range (up to 295VAC)
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in constant current limiting circuit with adjustable OCP level
- Fully isolated plastic case with IP64 level
- Built-in active PFC function
- Pass LPS
- Class II power unit, no FG
- Class 2 power unit
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications (Note.2)
- Compliance to worldwide safety regulations for lighting

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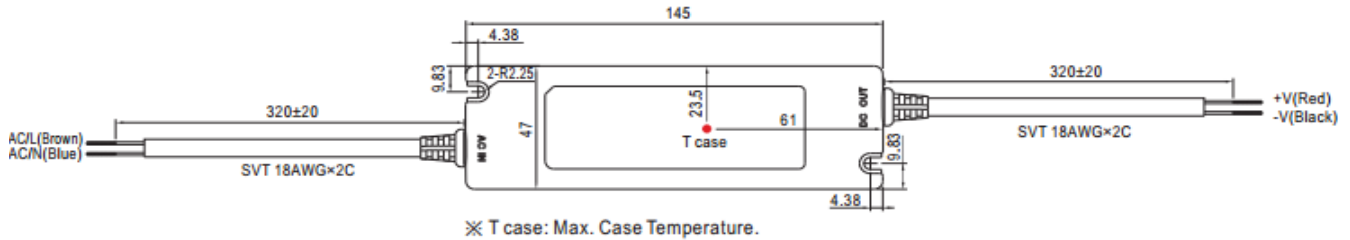
## Datasheet

MODEL	PLN-30-9	PLN-30-12	PLN-30-15	PLN-30-20	PLN-30-24	PLN-30-27	PLN-30-36	PLN-30-48		
OUTPUT	DC VOLTAGE	9V	12V	15V	20V	24V	27V	36V	48V	
	CONSTANT CURRENT REGION <small>Note.6</small>	6.3 ~ 9V	8.4 ~ 12V	10.5 ~ 15V	14 ~ 20V	16.8 ~ 24V	18.9 ~ 27V	25.2 ~ 36V	33.6 ~ 48V	
	RATED CURRENT	3.3A	2.5A	2A	1.5A	1.25A	1.12A	0.84A	0.63A	
	CURRENT RANGE	0 ~ 3.3A	0 ~ 2.5A	0 ~ 2A	0 ~ 1.5A	0 ~ 1.25A	0 ~ 1.12A	0 ~ 0.84A	0 ~ 0.63A	
	RATED POWER	29.7W	30W	30W	30W	30W	30.24W	30.24W	30.24W	
	RIPPLE & NOISE (max.) <small>Note.2</small>	2.6Vp-p	2Vp-p	2.6Vp-p	2.6Vp-p	2.6Vp-p	2.3Vp-p	4.5Vp-p	3.7Vp-p	
	VOLTAGE ADJ. RANGE <small>Note.5</small>	-5% ~ 10%. Can be adjusted by internal potentiometer SVR1								
	CURRENT ADJ. RANGE <small>Note.5</small>	3% ~ -25%. Can be adjusted by internal potentiometer SVR2								
	VOLTAGE TOLERANCE <small>Note.3</small>	±10%								
	LINE REGULATION	±3.0%								
LOAD REGULATION	±5.0%									
SETUP TIME	500ms / 230VAC 3000ms / 115VAC at full load									
INPUT	VOLTAGE RANGE <small>Note.4</small>	90 ~ 295VAC		127 ~ 417VDC						
	FREQUENCY RANGE	47 ~ 63Hz								
	POWER FACTOR (Typ.)	PF>0.95/115VAC, PF>0.9/230VAC, PF>0.9/277VAC at full load (Please refer to "Power Factor Characteristic" curve)								
	TOTAL HARMONIC DISTORTION	THD< 20% when output loading≥75% at 115VAC/230VAC input and output loading≥80% at 277VAC input								
	EFFICIENCY (Typ.)	80%	82.5%	83.5%	84%	84%	84.5%	85%	85.5%	
	AC CURRENT (Typ.)	0.4A/115VAC		0.2A/230VAC		0.15A/277VAC				
	INRUSH CURRENT (Typ.)	COLD START 35A(twidth=25µs measured at 50% Ipeak) at 230VAC								
	MAX. No. of PSUs on 16A CIRCUIT BREAKER	64 units (circuit breaker of type B) / 64 units (circuit breaker of type C) at 230VAC								
	LEAKAGE CURRENT	<0.5mA / 240VAC								
PROTECTION	OVER CURRENT	100 ~ 110%								
		Protection type : Constant current limiting, recovers automatically after fault condition is removed								
	SHORT CIRCUIT	Hiccup mode, recovers automatically after fault condition is removed.								
	OVER VOLTAGE	10 ~ 14V	14 ~ 17V	17 ~ 22V	23 ~ 26V	27 ~ 34V	31 ~ 35V	40 ~ 50V	53 ~ 63V	
	Protection type : Shut down o/p voltage, re-power on to recover									
OVER TEMPERATURE	Shut down o/p voltage, re-power on to recover									
ENVIRONMENT	WORKING TEMP.	-30 ~ +50°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 ~ 50°C)								
	VIBRATION	10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes								
SAFETY & EMC	SAFETY STANDARDS	UL879, UL1310, CSA C22.2 No. 207-M89(except for 48V), TUV EN61347-1, EN61347-2-13, CAN/CSA C22.2 No.223-M91 (except for 48V), IP64, J61347-1, J61347-2-13 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 (pin≥25W), Class D (>70% load) ; EN61000-3-3								
	EMC IMMUNITY	Compliance to EN61000-4-2,3,4,5,6,8,11, EN55024, EN61547, light industry level, criteria B								
OTHERS	MTBF	621.4Khrs min. MIL-HDBK-217F (25°C)								
	DIMENSION	145*47*30mm (L*W*H)								
	PACKING	0.22Kg; 60pcs/14.2Kg/1.25CUFT								

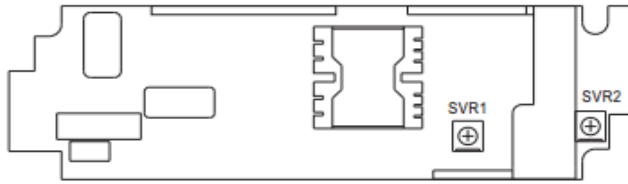
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## Mechanical Specification

Case No.964A Unit:mm

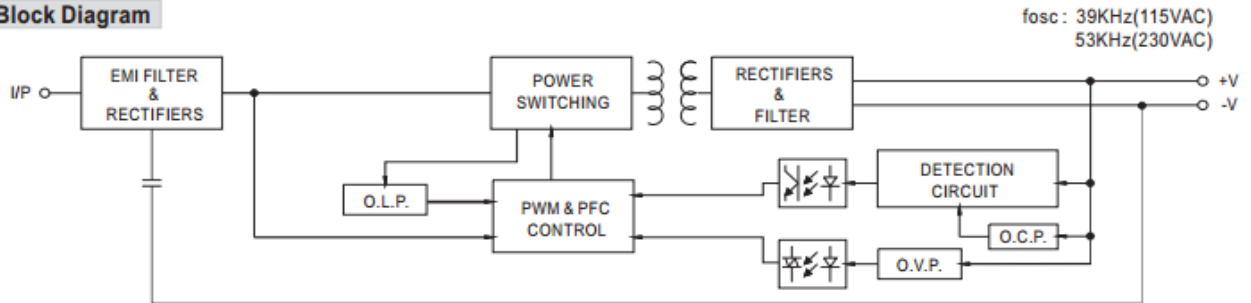


Output voltage and current adjustment : remove the upper case and adjust through SVR1 & SVR2 shown in the diagram.

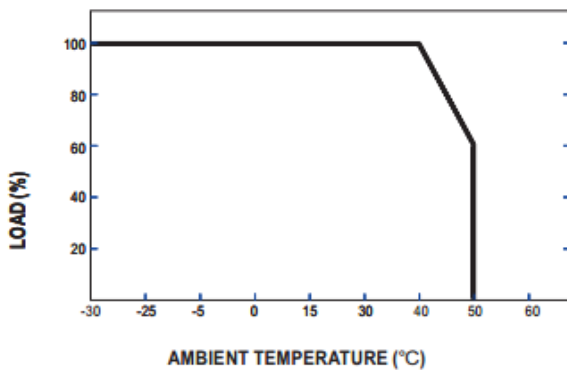


SVR1	Output voltage adjustment
SVR2	Output current adjustment

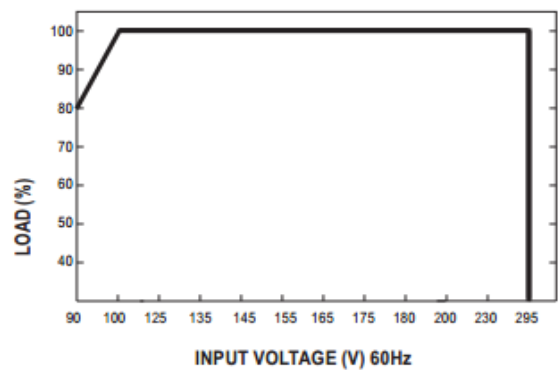
## Block Diagram



## Derating Curve

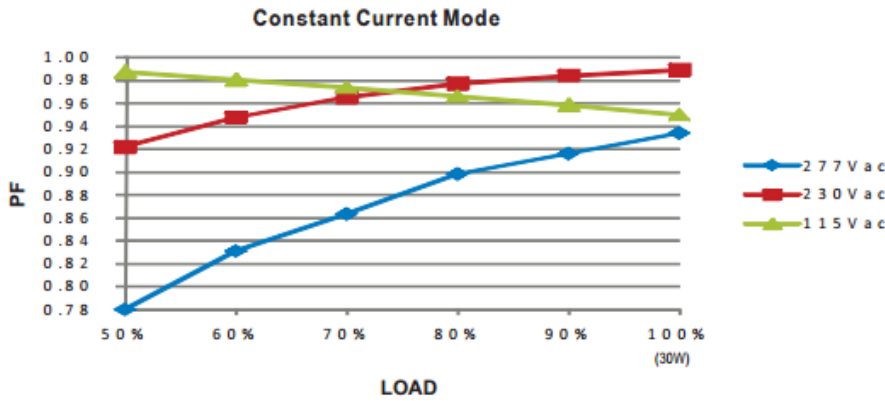


## Static Characteristics



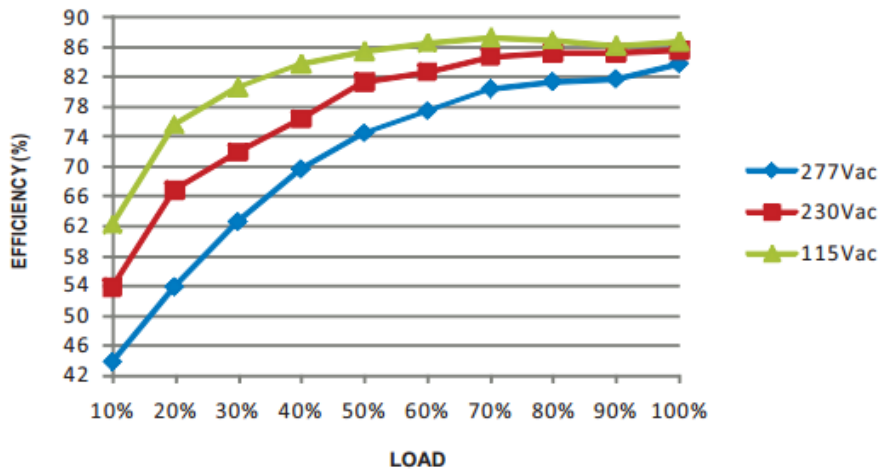
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## Power Factor Characteristic

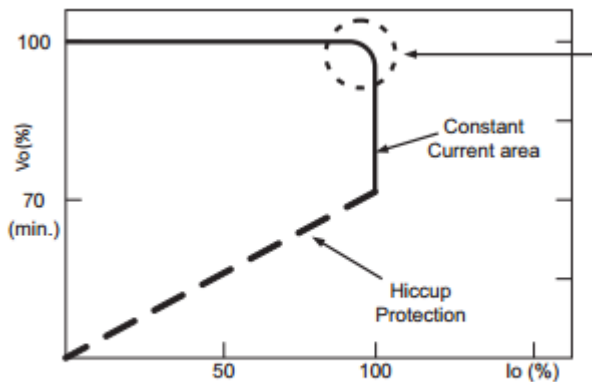


## EFFICIENCY vs LOAD (48V Model)

PLN-30 series possess superior working efficiency that up to 85.5% can be reached in field applications.



## DRIVING METHODS OF LED MODULE



Typical LED power supply I-V curve