

**Professionally approved products.**

## Datasheet

# Constant Voltage LED Driver 95.4W 36V 2.65A RS

RS Stock number 660-0233



### ■ Features :

- Universal AC input / Full range (up to 295VAC)
- High efficiency up to 88.5%
- Protections: Short circuit / Over current / Over voltage / Over temperature
- Cooling by free air convection
- Built-in active PFC function
- Fully isolated plastic case with IP64 level
- Pass LPS
- Class 2 power unit
- 100% full load burn-in test
- High reliability
- Suitable for LED lighting and moving sign applications
- Suitable for dry / damp locations
- Compliance to worldwide safety regulations for lighting

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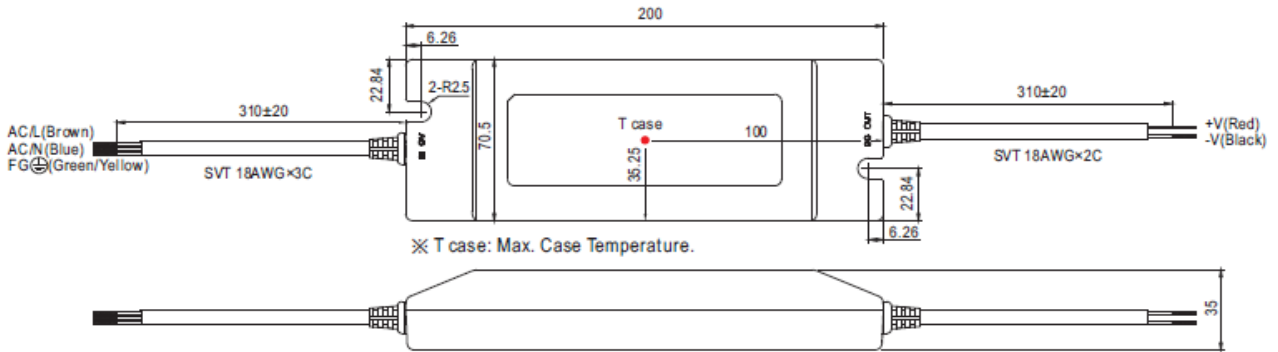
| MODEL               |   | PLN-100-12   | PLN-100-15                              | PLN-100-20 | PLN-100-24 | PLN-100-27  | PLN-100-36 | PLN-100-48 |
|---------------------|---|--|---|------------|------------|-------------|------------|------------|
| OUTPUT              | DC VOLTAGE                                    | 12V  | 15V                                     | 20V        | 24V        | 27V         | 36V        | 48V        |
|                     | CONSTANT CURRENT REGION <small>Note.5</small> | 9 ~ 12V  | 11.25 ~ 15V                             | 15 ~ 20V   | 18 ~ 24V   | 20.25 ~ 27V | 27 ~ 36V   | 36 ~ 48V   |
|                     | RATED CURRENT <small>Note.5</small>           | 5A   | 5A                                      | 4.8A       | 4A         | 3.55A       | 2.65A      | 2A         |
|                     | RATED POWER <small>Note.5</small>             | 60W  | 75W                                     | 96W        | 96W        | 95.85W      | 95.4W      | 96W        |
|                     | RIPPLE & NOISE (max.) <small>Note.2</small>   | 150mVp-p   | 150mVp-p                                | 150mVp-p   | 150mVp-p   | 150mVp-p    | 150mVp-p   | 200mVp-p   |
|                     | VOLTAGE ADJ. RANGE (SVR1)                     | 10.2 ~ 12V   | 12.8 ~ 15V                              | 17 ~ 20V   | 20.4 ~ 24V | 23 ~ 27V    | 30.6 ~ 36V | 40.8 ~ 48V |
|                     | CURRENT ADJ. RANGE (SVR2)                     | 3.75 ~ 5A  | 3.75 ~ 5A                               | 3.6 ~ 4.8A | 3 ~ 4A     | 2.6 ~ 3.55A | 2 ~ 2.65A  | 1.5 ~ 2A   |
|                     | VOLTAGE TOLERANCE <small>Note.3</small>       | ±3.0%  | ±3.0%                                   | ±3.0%      | ±3.0%      | ±3.0%       | ±2.0%      | ±2.0%      |
|                     | LINE REGULATION                               | ±1.0%  |   |            |            |             |            |            |
|                     | LOAD REGULATION                               | ±2.0%  |   |            |            |             |            |            |
|                     | SETUP, RISE TIME                              | 500ms, 80ms/230VAC 1200ms, 80ms/115VAC at full load  |   |            |            |             |            |            |
| HOLD UP TIME (Typ.) | 60ms/230VAC 16ms/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>0.95/230VAC, PF>0.92/277VAC 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≥75% at 277VAC input   |   |            |            |             |            |            |
|                     | EFFICIENCY (Typ.)                             | 83%  | 85%                                     | 88.5%      | 88.5%      | 88%         | 88%        | 88.5%      |
|                     | AC CURRENT (Typ.)                             | 12V:0.8A/115VAC 0.4A/230VAC 0.3A/277VAC 15V:0.9A/115VAC 0.45A/230VAC 0.35A/277VAC<br>20V ~ 48V:1.1A/115VAC 0.55A/230VAC 0.45A/277VAC   |   |            |            |             |            |            |
|                     | INRUSH CURRENT (Typ.)                         | COLD START 40A(twidth=1030µs measured at 50% Ipeak) at 230VAC  |   |            |            |             |            |            |
|                     | MAX. No. of PSUs on 16A CIRCUIT BREAKER       | 3 units (circuit breaker of type B) / 5 units (circuit breaker of type C) at 230VAC  |   |            |            |             |            |            |
|                     | LEAKAGE CURRENT                               | <0.75mA / 240VAC   |   |            |            |             |            |            |
| PROTECTION          | OVER CURRENT                                  | 95 ~ 102%<br>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                                  | 13 ~ 16V   | 16.5 ~ 20V                              | 22 ~ 27V   | 27 ~ 34V   | 30 ~ 36V    | 39 ~ 48V   | 52 ~ 64V   |
|                     | 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                             | ±0.03%/°C (0 ~ 50°C)   |   |            |            |             |            |            |
|                     | VIBRATION                                     | 10 ~ 500Hz, 2G 12min./1cycle, period for 72min. each along X, Y, Z axes  |   |            |            |             |            |            |
| SAFETY & EMC        | SAFETY STANDARDS <small>Note.7</small>        | UL879, UL1310, UL8750, CSA C22.2 No.207-M89(except for 48V), TUV EN61347-1, EN61347-2-13 independent, TUV EN60950-1, CAN/CSA C22.2 No. 223-M91(except for 48V), CSA C22.2 No. 250.0-08(except for 48V), IP64, J61347-1, J61347-2-13 approved ; design refer to UL60950-1 |   |            |            |             |            |            |
|                     | WITHSTAND VOLTAGE                             | I/P-O/P:3.75KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC   |   |            |            |             |            |            |
|                     | ISOLATION RESISTANCE                          | I/P-O/P:100M Ohms / 500VDC / 25°C/ 70% RH  |   |            |            |             |            |            |
|                     | EMC EMISSION                                  | Compliance to EN55015, EN55022 (CISPR22) Class B, EN61000-3-2 Class C (>75% load) ; EN61000-3-3  |   |            |            |             |            |            |
|                     | EMC IMMUNITY                                  | Compliance to EN61000-4-2,3,4,5,6,8,11, EN61547, EN55024, light industry level (surge 4KV), criteria A   |   |            |            |             |            |            |
| OTHERS              | MTBF  | 303.1Khrs min. MIL-HDBK-217F (25°C)  |   |            |            |             |            |            |
|                     | DIMENSION                                     | 200*70.5*35mm (L*W*H)  |   |            |            |             |            |            |
|                     | PACKING                                       | 0.52Kg; 20pcs/12.5Kg/0.9CUFT   |   |            |            |             |            |            |

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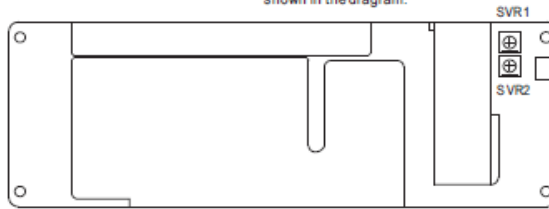
## Datasheet

### Mechanical Specification

Case No.955A Unit:mm



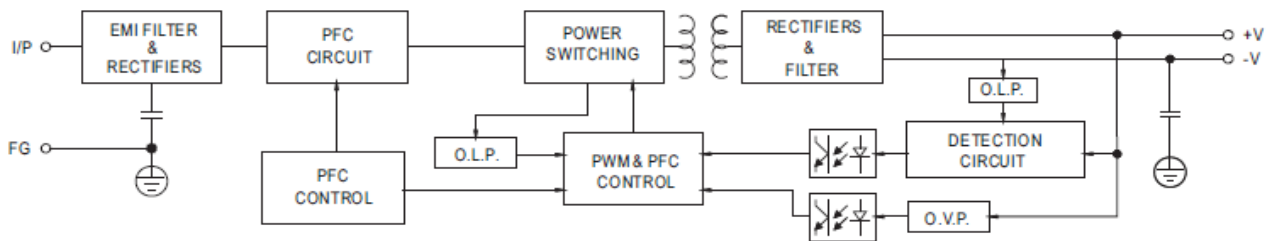
Output voltage and current adjustment : remove the upper case and adjust through SVR1 & SVR2 shown in the diagram.



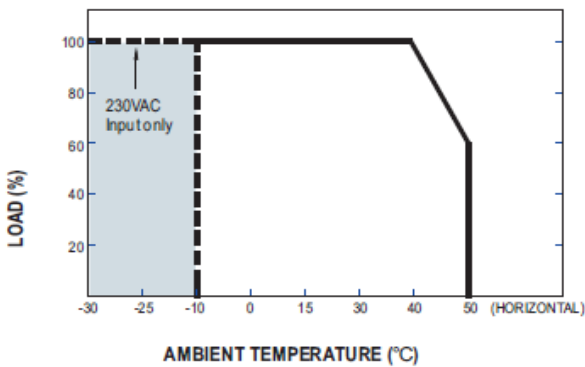
|      |                           |
|------|---------------------------|
| SVR1 | Output voltage adjustment |
| SVR2 | Output current adjustment |

### Block Diagram

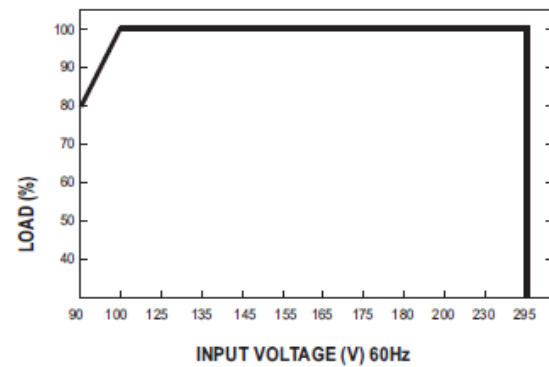
Fosc : 100KHz



### Derating Curve

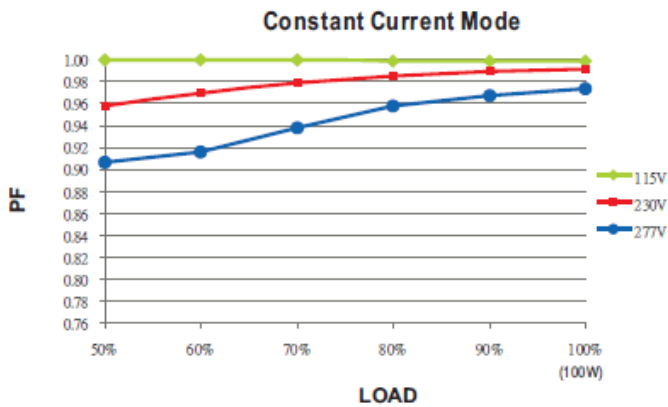


### Static Characteristics



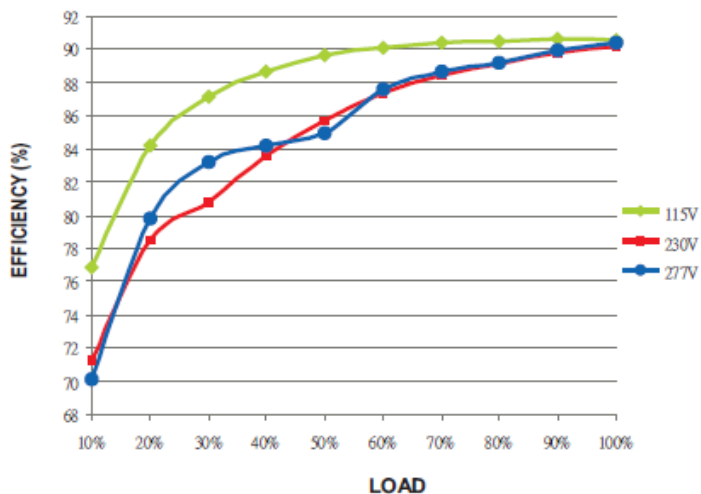
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## Power Factor Characteristic

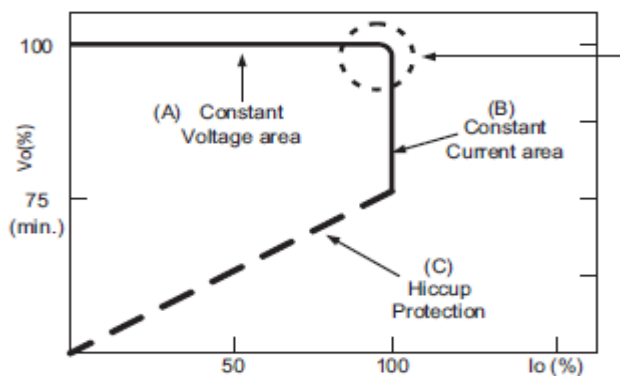


## EFFICIENCY vs LOAD (48V Model)

PLN-100 series possess superior working efficiency that up to 88.5% can be reached in field applications.



## DRIVING METHODS OF LED MODULE



Typical LED power supply I-V curve