

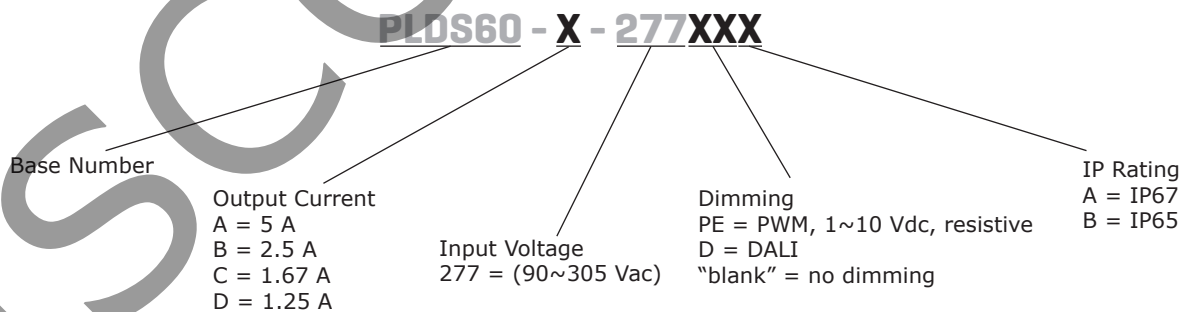
**SERIES: PLDS60 | DESCRIPTION: LED DRIVER**
**FEATURES**

- up to 60 W continuous power
- universal input range (90~305 Vac)
- single output
- dimming options: PWM, 1~10 Vdc, resistive, DALI
- power factor correction  $\geq 0.9$
- cc and cv function
- low profile for easy installation
- IP67/IP65 rated
- over voltage, continuous short circuit, and over temperature protection
- UL 8750, IEC/EN61347-2-13 approval
- EN61000-3-2 Class C (harmonic current) approval
- efficiency up to 90%
- suitable for LED lighting and signage applications



| MODEL        | output voltage range <sup>1</sup> |           | output current (A) | Vout adjustment range <sup>2</sup> | Iout adjustment range <sup>2</sup> | output power max (W) | ripple and noise <sup>3</sup> | efficiency |
|--------------|-----------------------------------|-----------|--------------------|------------------------------------|------------------------------------|----------------------|-------------------------------|------------|
|              | min (Vdc)                         | max (Vdc) |                    | (Vdc)                              | (A)                                |                      | max (mVp-p)                   | typ (%)    |
| PLDS60-A-277 | 6.5                               | 12        | 5                  | 10.8~13.2                          | 3~5                                | 60                   | 120                           | 87         |
| PLDS60-B-277 | 13                                | 24        | 2.5                | 21.6~26.4                          | 1.5~2.5                            | 60                   | 120                           | 88         |
| PLDS60-C-277 | 19                                | 36        | 1.67               | 32.4~39.6                          | 1~1.67                             | 60                   | 120                           | 89         |
| PLDS60-D-277 | 26                                | 48        | 1.25               | 43.2~52.8                          | 0.75~1.25                          | 60                   | 120                           | 90         |

Notes: 1. constant current region  
 2. adjustability option only available on IP65 rated models  
 3. ripple and noise are measured at 95% rated current, 20MHz bandwidth with a 0.1uF ceramic capacitor and 10uF aluminum capacitor on the output.

**PART NUMBER KEY**


## INPUT

| parameter                 | conditions/description             | min       | typ         | max        | units      |
|---------------------------|------------------------------------|-----------|-------------|------------|------------|
| voltage                   |                                    | 90<br>127 |             | 305<br>420 | Vac<br>Vdc |
| frequency                 |                                    | 47        |             | 63         | Hz         |
| current                   | at 110 Vac, 59W<br>at 230 Vac, 59W |           | 0.6<br>0.31 |            | A<br>A     |
| inrush current            | at 110/240 Vac, cold start, 25°C   |           |             | 60         | A          |
| leakage current           | at 277 Vac                         |           |             | 0.75       | mA         |
| power factor correction   | at 115 Vac/230 Vac, 60~100% load   | 0.9       |             |            |            |
| no load power consumption | at 230 Vac                         |           |             | 1.5        | W          |

## OUTPUT

| parameter                  | conditions/description                          | min | typ   | max | units  |
|----------------------------|-------------------------------------------------|-----|-------|-----|--------|
| current line regulation    | measured from high line to low line at 90% load |     |       | ±1  | %      |
| current load regulation    | measured from 10~90% load                       |     |       | ±2  | %      |
| constant current accuracy  |                                                 |     |       | ±5  | %      |
| voltage accuracy           | at 90% rated current                            |     |       | ±1  | %      |
| adjustability <sup>1</sup> | Vout<br>Iout                                    | 60  | ±10   | 100 | %<br>% |
| switching frequency        | at 100% rated current                           |     |       | 75  | kHz    |
| start-up time              | at 90~305 Vac                                   |     |       | 2.5 | s      |
| rise time                  | at 90~305 Vac                                   |     | 50    |     | ms     |
| hold-up time               | at 115 Vac                                      |     | 16    |     | ms     |
| temperature coefficient    |                                                 |     | ±0.05 |     | %/°C   |

Notes: 1. adjustability option only available on IP65 rated models via built-in potentiometer

## PROTECTIONS

| parameter                   | conditions/description     | min | typ | max | units |
|-----------------------------|----------------------------|-----|-----|-----|-------|
| over voltage protection     | TVS clamp, auto recovery   |     |     |     |       |
| over current protection     | hiccup mode                |     |     |     |       |
| short circuit protection    | hiccup mode, auto recovery |     |     |     |       |
| over temperature protection |                            |     | 110 |     | °C    |

## SAFETY & COMPLIANCE

| parameter            | conditions/description                                                                             | min | typ     | max                   | units             |
|----------------------|----------------------------------------------------------------------------------------------------|-----|---------|-----------------------|-------------------|
| isolation voltage    | input to output, for 1 minute<br>input to ground, for 1 minute<br>output to ground, for 1 minute   |     |         | 3,750<br>1,875<br>500 | Vac<br>Vac<br>Vac |
| isolation resistance |                                                                                                    | 100 |         |                       | MΩ                |
| safety approvals     | UL8750, IEC/EN61347-1, IEC/EN61347-2-13                                                            |     |         |                       |                   |
| DALI                 | IEC62386-102, IEC62386-207                                                                         |     |         |                       |                   |
| EMI/EMC              | EN55015, CISPR22, EN61547, EN61000-3-2 Class C (>60% load),<br>EN61000-3-3, EN61000-4-2 Criteria A |     |         |                       |                   |
| MTBF                 | as per MIL-HDBK-217F, at 25°C, 115 Vac                                                             |     | 150,000 |                       | hours             |
| RoHS                 | 2011/65/EU                                                                                         |     |         |                       |                   |

ENVIRONMENTAL

| parameter             | conditions/description                          | min | typ | max   | units |
|-----------------------|-------------------------------------------------|-----|-----|-------|-------|
| operating temperature | see derating curves                             | -40 |     | 70    | °C    |
| storage temperature   |                                                 | -40 |     | 85    | °C    |
| operating altitude    |                                                 |     |     | 2,000 | m     |
| vibration             | 15~2000 Hz, 60 min. along each X, Y, and Z axes |     | 4   |       | G     |

MECHANICAL

| parameter  | conditions/description                  | min | typ | max | units  |
|------------|-----------------------------------------|-----|-----|-----|--------|
| dimensions | 8.15 x 1.575 x 1.102 (207 x 40 x 28 mm) |     |     |     | inches |
| weight     |                                         |     | 454 |     | g      |

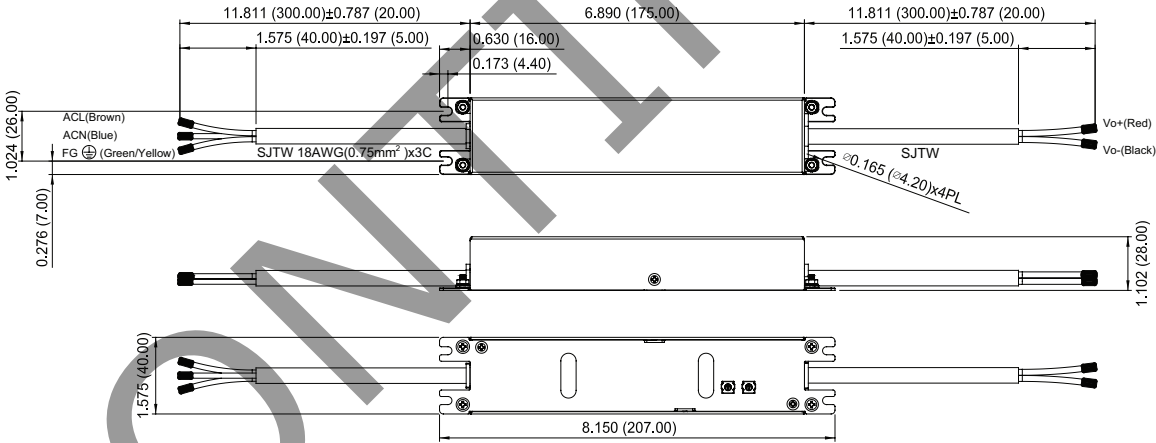
MECHANICAL DRAWING

MODELS WITHOUT DIMMING

units: inches[mm]  
tolerance: ±0.02[±0.5]  
unless otherwise specified

| INPUT WIRE CONNECTIONS |          |
|------------------------|----------|
| Color                  | Function |
| Brown                  | ACL      |
| Blue                   | ACN      |
| Green/<br>Yellow       | FG       |

| OUTPUT WIRE CONNECTIONS |          |
|-------------------------|----------|
| Color                   | Function |
| Red                     | Vo+      |
| Black                   | Vo-      |

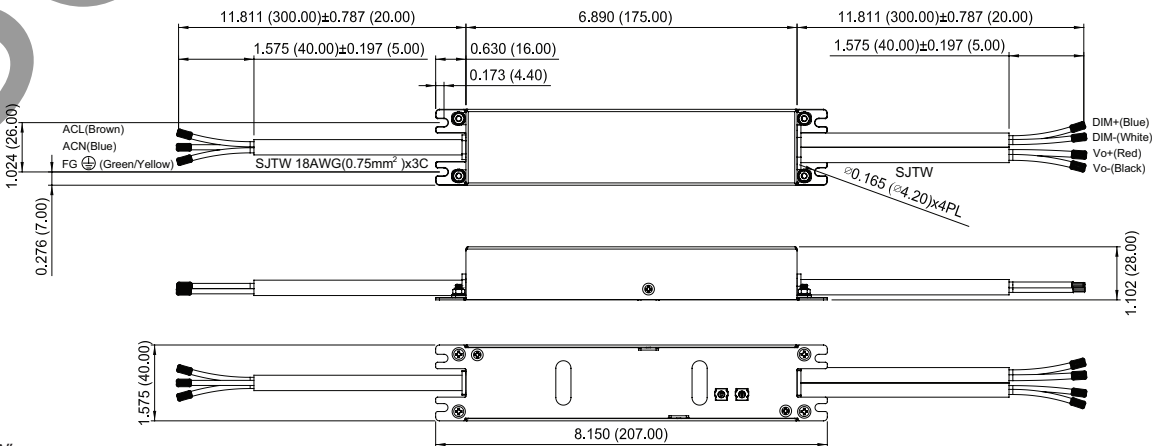


MODELS WITH DIMMING

units: inches[mm]  
tolerance: ±0.02[±0.5]  
unless otherwise specified

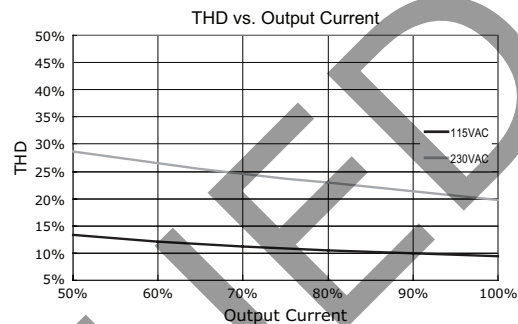
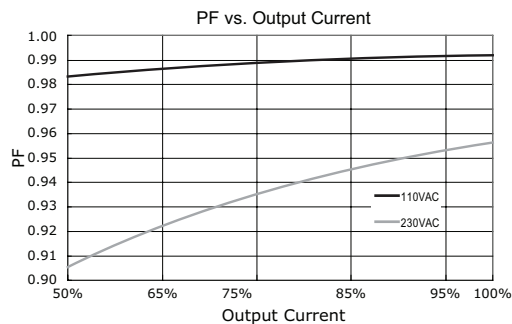
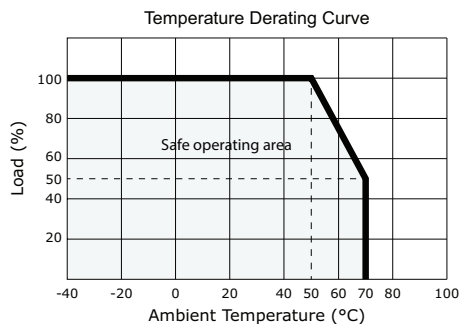
| INPUT WIRE CONNECTIONS |          |
|------------------------|----------|
| Color                  | Function |
| Brown                  | ACL      |
| Blue                   | ACN      |
| Green/<br>Yellow       | FG       |

| OUTPUT WIRE CONNECTIONS |          |
|-------------------------|----------|
| Color                   | Function |
| Red                     | Vo+      |
| Black                   | Vo-      |
| Blue¹                   | DIM+/DA+ |
| White¹                  | DIM-/DA- |

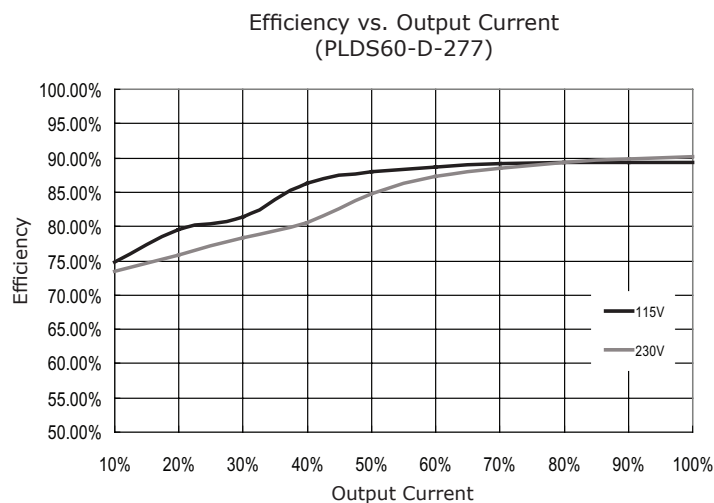
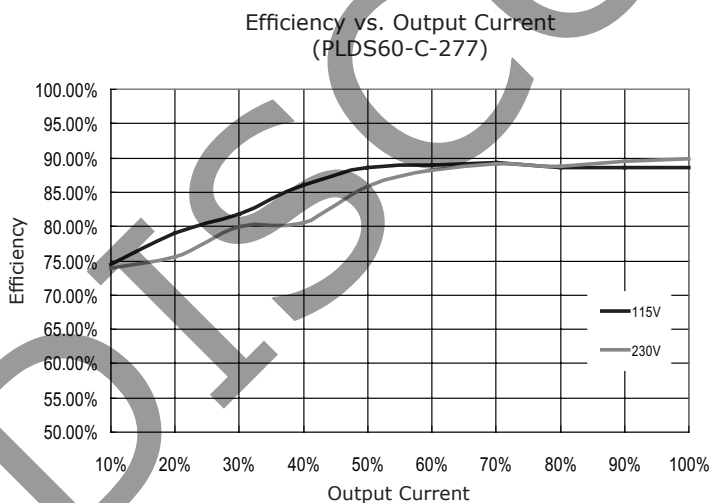
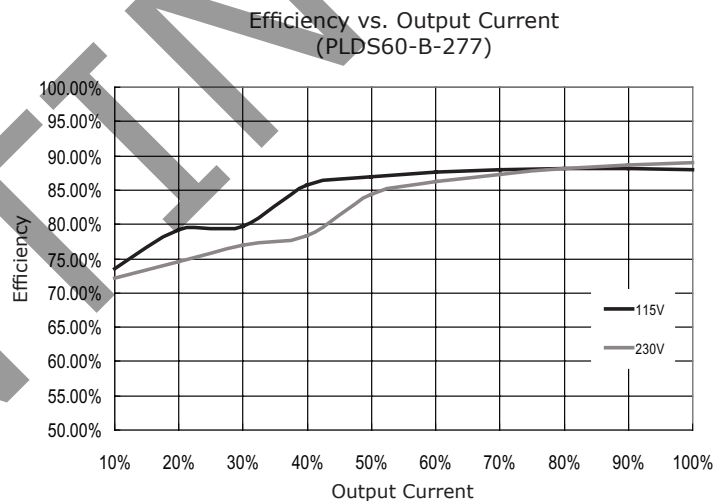
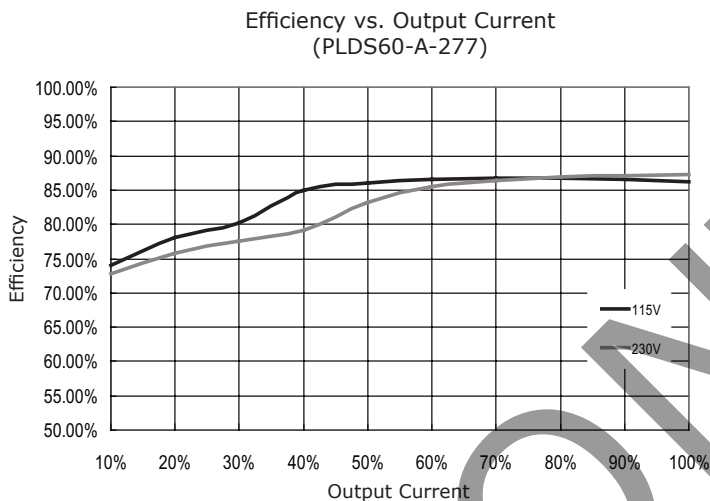


Note: 1. DALI models are marked with "DA"

## DERATING CURVES



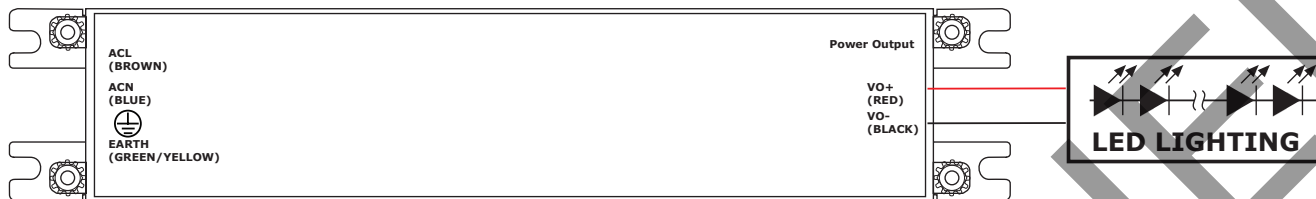
## EFFICIENCY CURVES



## APPLICATION NOTES

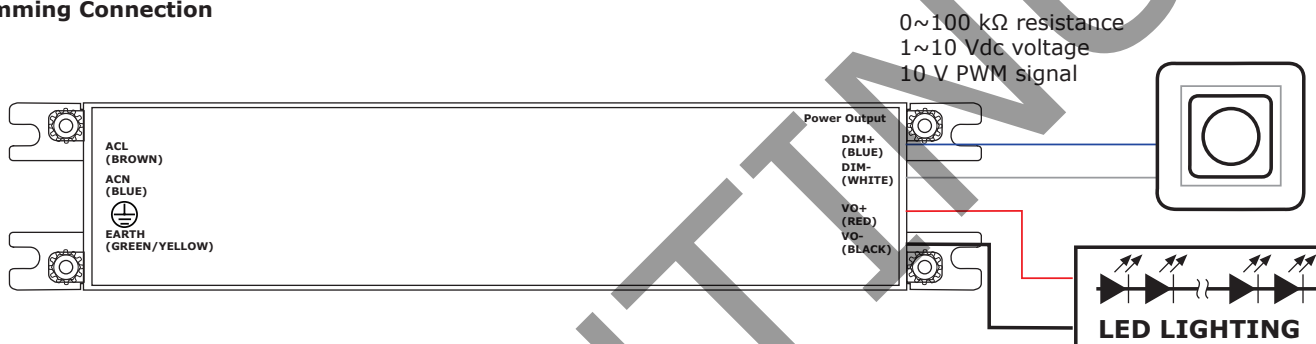
### 1. Installation Instructions

#### Direct Connection



Note: Output voltage of power supply must be higher than total forward voltage of series connecting LED.

#### Dimming Connection



Notes: 1. Output constant current can be adjusted through output cable by connecting 10~100 kΩ resistance, 1~10 Vdc, or 10 V PWM signal between DIM+ and DIM-.  
2. Do not connect DIM- to V-.  
3. The output will shutdown when dimming is less than 1 Vdc, 10 kΩ, or 10% PWM according to each dimming option.

#### 1~10 Vdc Dimming

| Voltage        | 1V  | 2V  | 3V  | 4V  | 5V  | 6V  | 7V  | 8V  | 9V  | 10V  | Open    |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---------|
| Output Current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95~105% |

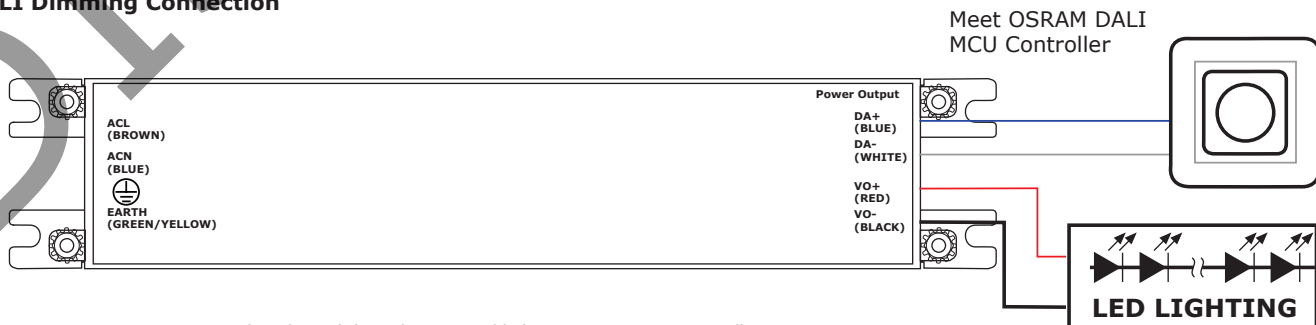
#### 10~100 kΩ Resistance Dimming

| Resistance     | 10K | 20K | 30K | 40K | 50K | 60K | 70K | 80K | 90K | 100K | Open    |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---------|
| Output Current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95~105% |

#### 10~100% PWM (10V) Frequency range: 250~1000 Hz

| Duty Cycle     | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | Open    |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|---------|
| Output Current | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% | 95~105% |

#### DALI Dimming Connection

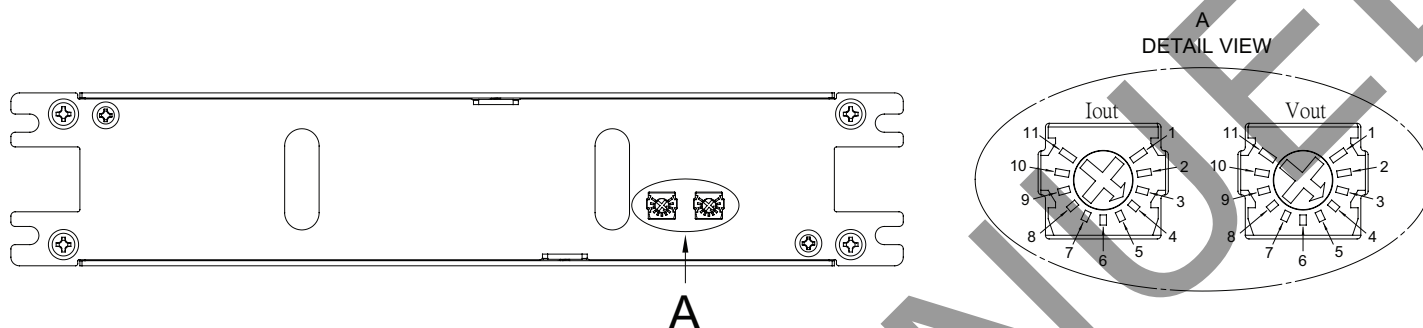


Note: Output constant current can be adjusted through output cable by connecting DALI controller.

## APPLICATION NOTES (CONTINUED)

### 2. Output Voltage/Output Current Adjustment

For the PLDS60-X-277XXB models there are two potentiometers to adjust the output voltage/output current. Each potentiometer has 11 tick marks, please refer to the below diagram and tables for specific values. Maximum output power is 60W.



| Output Current (Iout) |                 |                 |                 |                 |
|-----------------------|-----------------|-----------------|-----------------|-----------------|
| Tick #                | PLDS60-A-277XXB | PLDS60-B-277XXB | PLDS60-C-277XXB | PLDS60-D-277XXB |
| 1                     | 5.4A            | 2.6A            | 2.0A            | 1.33A           |
| 2                     | 5.4A            | 2.6A            | 2.0A            | 1.33A           |
| 3                     | 5.1A            | 2.5A            | 1.9A            | 1.27A           |
| 4                     | 4.9A            | 2.3A            | 1.8A            | 1.18A           |
| 5                     | 4.6A            | 2.2A            | 1.7A            | 1.14A           |
| 6                     | 4.3A            | 2.0A            | 1.5A            | 1.00A           |
| 7                     | 3.9A            | 1.9A            | 1.3A            | 0.97A           |
| 8                     | 3.5A            | 1.7A            | 1.2A            | 0.89A           |
| 9                     | 3.2A            | 1.6A            | 1.1A            | 0.81A           |
| 10                    | 2.9A            | 1.4A            | 0.9A            | 0.70A           |
| 11                    | 2.8A            | 1.3A            | 0.9A            | 0.70A           |

| Output Voltage (Vout) |                 |                 |                 |                 |
|-----------------------|-----------------|-----------------|-----------------|-----------------|
| Tick #                | PLDS60-A-277XXB | PLDS60-B-277XXB | PLDS60-C-277XXB | PLDS60-D-277XXB |
| 1                     | 10.6V           | 21.3V           | 31.6V           | 43.1V           |
| 2                     | 10.6V           | 21.3V           | 31.6V           | 43.1V           |
| 3                     | 10.9V           | 21.7V           | 32.2V           | 43.9V           |
| 4                     | 11.1V           | 22.3V           | 33.2V           | 44.2V           |
| 5                     | 11.3V           | 22.8V           | 34.1V           | 45.1V           |
| 6                     | 11.6V           | 23.5V           | 35.2V           | 46.3V           |
| 7                     | 12.0V           | 24.2V           | 36.4V           | 47.3V           |
| 8                     | 12.5V           | 25.0V           | 37.5V           | 48.9V           |
| 9                     | 12.8V           | 25.6V           | 38.8V           | 50.9V           |
| 10                    | 13.1V           | 26.4V           | 40.0V           | 53.2V           |
| 11                    | 13.3V           | 26.6V           | 40.3V           | 53.4V           |

Note: 1. All specifications are measured at Ta=25°C, 115/230 Vac input voltage, and 75% rated output load unless otherwise specified.

## REVISION HISTORY

| rev. | description     | date       |
|------|-----------------|------------|
| 1.0  | initial release | 09/23/2014 |

The revision history provided is for informational purposes only and is believed to be accurate.



**CUI INC®**

**Headquarters**  
20050 SW 112th Ave.  
Tualatin, OR 97062  
**800.275.4899**

Fax 503.612.2383  
**cui.com**  
techsupport@cui.com

CUI offers a two (2) year limited warranty. Complete warranty information is listed on our website.

CUI reserves the right to make changes to the product at any time without notice. Information provided by CUI is believed to be accurate and reliable. However, no responsibility is assumed by CUI for its use, nor for any infringements of patents or other rights of third parties which may result from its use.

CUI products are not authorized or warranted for use as critical components in equipment that requires an extremely high level of reliability. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.