60~75W Constant Current Mode LED Driver

ELG-75-C series

Features

- Constant Current mode output
- Metal housing design with functional Ground
- Built-in active PFC function
- No load / Standby power consumption <0.5W
- IP67 / IP65 rating for indoor or outdoor installations
- Function options: output adjustable via potentiometer; 3 in 1 dimming (dim-to-off); Smart timer dimming; DALI
- Typical lifetime>50000 hours
- 5 years warranty

Description

ELG-75-C series is a 75W LED AC/DC driver featuring the constant current mode and high voltage output. ELG-75-C operates from 100~305VAC and offers models with different rated current ranging between 350mA and 1400mA. Thanks to the high efficiency up to 91%, with the fanless design, the entire series is able to operate for -40°C ~ +85°C case temperature under free air convection. The design of metal housing and IP67/IP65 ingress protection level allows this series to fit both indoor and outdoor applications. ELG-75-C is equipped with various function options, such as dimming methodologies, so as to provide the optimal design flexibility for LED lighting system.

Model Encoding

ELG - 75 - C500 A -

Input wiring type
Function options
Rated output current (350/500/700/1050/1400mA)
Output wattage
Series name

<table>
<thead>
<tr>
<th>Type</th>
<th>IP Level</th>
<th>Function</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>IP67</td>
<td>Io fixed.</td>
<td>In Stock</td>
</tr>
<tr>
<td>A</td>
<td>IP67</td>
<td>Io adjustable through built-in potentiometer.</td>
<td>In Stock</td>
</tr>
<tr>
<td>B</td>
<td>IP67</td>
<td>3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)</td>
<td>In Stock</td>
</tr>
<tr>
<td>AB</td>
<td>IP65</td>
<td>Io adjustable through built-in potentiometer &amp; 3 in 1 dimming function (0~10Vdc, 10V PWM signal and resistance)</td>
<td>In Stock</td>
</tr>
<tr>
<td>DA</td>
<td>IP67</td>
<td>DALI control technology.</td>
<td>In Stock</td>
</tr>
<tr>
<td>Dx</td>
<td>IP67</td>
<td>Built-in Smart timer dimming function by user request.</td>
<td>By request</td>
</tr>
<tr>
<td>D2</td>
<td>IP67</td>
<td>Built-in Smart timer dimming and programmable function.</td>
<td>In Stock</td>
</tr>
</tbody>
</table>

File Name: ELG-75-C SPEC 2016-09-30
## SPECIFICATION

### OUTPUT

<table>
<thead>
<tr>
<th>Model</th>
<th>ELG-75-C350</th>
<th>ELG-75-C500</th>
<th>ELG-75-C700</th>
<th>ELG-75-C1050</th>
<th>ELG-75-C1400</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rated Current</td>
<td>350mA</td>
<td>500mA</td>
<td>700mA</td>
<td>1050mA</td>
<td>1400mA</td>
</tr>
<tr>
<td>Rated Power</td>
<td>200VAC - 305VAC</td>
<td>74.9W</td>
<td>74.9W</td>
<td>74.55W</td>
<td>75.6W</td>
</tr>
<tr>
<td></td>
<td>100VAC - 180VAC</td>
<td>59.85W</td>
<td>60W</td>
<td>59.5W</td>
<td>59.85W</td>
</tr>
<tr>
<td>Constant Current Region</td>
<td>107 - 214V</td>
<td>75 - 150V</td>
<td>53 - 107V</td>
<td>35 - 71V</td>
<td>27 - 54V</td>
</tr>
<tr>
<td>Open Circuit Voltage</td>
<td>224V</td>
<td>158V</td>
<td>114V</td>
<td>78V</td>
<td>81V</td>
</tr>
<tr>
<td>Current Adj. Range</td>
<td>Adjustable for A/AB-Type only (via built-in potentiometer)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Ripple</td>
<td>175 - 350mA</td>
<td>250 - 500mA</td>
<td>350 - 700mA</td>
<td>525 - 1050mA</td>
<td>700 - 1400mA</td>
</tr>
<tr>
<td>Current Tolerance</td>
<td>±5.0%</td>
<td>±5.0%</td>
<td>±5.0%</td>
<td>±5.0%</td>
<td>±5.0%</td>
</tr>
<tr>
<td>Set Up Time</td>
<td>500ms/115VAC, 230VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Voltage Range</td>
<td>100 - 305VAC</td>
<td>142 - 431VDC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency Range</td>
<td>47 - 63Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Power Factor (Typ.)</td>
<td>PF ≥ 0.97/115VAC, PF ≥ 0.95/230VAC, PF ≥ 0.92/277VAC @ full load</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Harmonic Distortion</td>
<td>THD = 20% (@load=50%/115VAC, 230VAC; @load=75%/277VAC)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficiency (Typ.)</td>
<td>91%</td>
<td>91%</td>
<td>90%</td>
<td>90%</td>
<td>90%</td>
</tr>
<tr>
<td>AC Current (Typ.)</td>
<td>0.7A/115VAC</td>
<td>0.45A/230VAC</td>
<td>0.38A/277VAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inrush Current (Typ.)</td>
<td>Cold start 50A (width=350us measured at 50% Ipeak)/230VAC; Per NEMA 410</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. No. of PSU's on 16A Circuit Breaker</td>
<td>5 units (circuit breaker of type B) / 8 units (circuit breaker of type C) at 230VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leakage Current</td>
<td>&lt;0.75mA/277VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Load / Standby Power Consumption</td>
<td>No load power consumption &lt;0.5W for Blank / A/Dx / D2-Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standby power consumption</td>
<td>&lt;0.5W for B/AB/DA-Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Protection Time</td>
<td>500ms/115VAC, 230VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Over Voltage</td>
<td>225 - 280V</td>
<td>160 - 190V</td>
<td>115 - 140V</td>
<td>80 - 100V</td>
<td>64 - 79V</td>
</tr>
<tr>
<td>Over Temperature</td>
<td>Shut down o/p voltage, re-power on to recover</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Temp.</td>
<td>Tcase=40 ~ 85°C (Please refer to &quot;OUTPUT LOAD vs TEMPERATURE&quot; section)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Max. Case Temp.</td>
<td>Tcase=85°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Humidity</td>
<td>20 ~ 95% RH non-condensing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Temp.</td>
<td>-40 ~ +80°C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humidity</td>
<td>10 ~ 95% RH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temp. Coefficient</td>
<td>±0.03%/°C (0 ~ 60°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vibration</td>
<td>10 ~ 500Hz, 5G 12min./1cycle, period for 72min. each along X, Y, Z axes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Safety Standards</td>
<td>UL8750 (type: “HL”), CSA C22.2 No. 250.13-12, EN/AS/NZS 61347-1, EN/AS/NZS 61347-2-13 independent, EN62384; EAC TP TC 004; Bis IS15885 for 700A/1050A only; IP65 or IP67; GB19510.1, 19510.14; KC61347-1, KC61347-2-13 approved</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DALI Standards</td>
<td>Compliance to IEC62386-101, 102, 207 for DA-Type only</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Withstand Voltage</td>
<td>I/P-O/P: 3.75KVAC</td>
<td>I/P-FG: 2.0KVAC</td>
<td>O/P-FG: 1.5KVAC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Isolation Resistance</td>
<td>I/P-O/P, I/P-FG, O/P-FG: 100M Ohms / 500VDC / 25/70% RH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMC Emission</td>
<td>Compliance to EN55015, EN61000-3-2 Class C (@load ≥ 50%); EN61000-3-3; GB17743, GB17625.1; EAC TP TC 020; KC KN19, KN61547</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EMC Immunity</td>
<td>Compliance to EN61000-4-2, 4, 6, 8, 11; EN61547, light industry level (surge immunity Line-Line: 6KV, Line-Ground: 4KV); EAC TP TC 020; KC KN19, KN61547</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MTBF</td>
<td>1171.4K hrs min. Telcordia SR-332 (Beltcore) 305K hrs min. MIL-HDBK-217F (25°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dimension</td>
<td>180<em>63</em>35.5 mm (L<em>W</em>H)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packing</td>
<td>0.8Kg;16pcs/13.4Kg/0.67CUFT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## NOTE

1. All parameters NOT specially mentioned are measured at 230VAC input, rated current and 25°C of ambient temperature.
2. Please refer to “DRIVING METHODS OF LED MODULES” for “DRIVING METHODS OF LED MODULES”.
3. De-rating may be needed under low input voltages. Please refer to “STATIC CHARACTERISTIC” sections for details.
4. Length of set up time is measured at first cold start. Turning ON/OFF the driver may lead to increase of the set up time.
5. The driver 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. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly ≥50°C (or TMP, per DLC), is about 80°C or less.
8. The ambient temperature derating of 3.5°C/1000m with fanless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6500ft).
9. For any application note and IP water proof function installation caution, please refer our user manual before using.

File Name: ELG-75-C-SPEC  2018-09-30
**60~75W Constant Current Mode LED Driver**

**ELG-75-C series**

---

### BLOCK DIAGRAM

- **EMI FILTER & RECTIFIERS**
- **PFC CIRCUIT**
- **POWER SWITCHING & FILTER**
- **RECTIFIERS & FILTER**
- **DETECTION CIRCUIT**
- **O.V.P.**
- **O.L.P.**

**PWM & PFC CIRCUIT**

- **Vo+**
- **Vo-**
- **DIM+**
- **DIM-** (B Type)

**CASE:** Protective Earth

---

### DRIVING METHODS OF LED MODULE

※ This series works in constant current mode to directly drive the LEDs.

In the constant current region, the highest voltage at the output of the driver depends on the configuration of the end systems. Should there be any compatibility issues, please contact MEAN WELL.

Typical output current normalized by rated current (%)
60~75W Constant Current Mode LED Driver
ELG-75-C series

DIMMING OPERATION

※ 3 in 1 dimming function (for B/AB-Type)

- Output constant current level can be adjusted by applying one of the three methodologies between DIM+ and DIM-:
  - 0 ~ 10VDC, or 10V PWM signal or resistance.
- Direct connecting to LEDs is suggested. It is not suitable to be used with additional drivers.
- Dimming source current from power supply: 100 μA (typ.)

◎ Applying additive 0 ~ 10VDC

*DO NOT connect "DIM- to Vo-"

◎ Applying additive 10V PWM signal (frequency range 100Hz ~ 3KHz):

*DO NOT connect "DIM- to Vo-"

◎ Applying additive resistance:

*DO NOT connect "DIM- to Vo-"

Note: 1. Min. dimming level is about 8% and the output current is not defined when 0%< Iout<8%.
2. The output current could drop down to 0% when dimming input is about 0kΩ or 0Vdc, or 10V PWM signal with 0% duty cycle.
DALI Interface (primary side; for DA-Type)
- Apply DALI signal between DA+ and DA-.
- DALI protocol comprises 16 groups and 64 addresses.
- First step is fixed at 8% of output.

Smart timer dimming function (for Dxx-Type by User definition)
MEAN WELL Smart timer dimming primarily provides the adaptive proportion dimming profile for the output constant current level to perform up to 14 consecutive hours. 3 dimming profiles hereunder are defined accounting for the most frequently seen applications. If other options may be needed, please contact MEAN WELL for details.

Ex: ◊ D01-Type: the profile recommended for residential lighting

- The power supply will switch to the constant current level at 100% starting from 6:00pm.
- The power supply will switch to the constant current level at 70% in turn, starting from 0:00am, which is 06:00 after the power supply turns on.
- The power supply will switch to the constant current level at 50% in turn, starting from 1:00am, which is 07:00 after the power supply turns on.
- The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.
- The constant current level remains till 8:00am, which is 14:00 after the power supply turns on.

Ex: ◊ D02-Type: the profile recommended for street lighting

- The power supply will switch to the constant current level at 50% starting from 5:00pm.
- The power supply will switch to the constant current level at 80% in turn, starting from 6:00pm, which is 01:00 after the power supply turns on.
- The power supply will switch to the constant current level at 100% in turn, starting from 8:00pm, which is 03:00 after the power supply turns on.
- The power supply will switch to the constant current level at 60% in turn, starting from 1:00am, which is 08:00 after the power supply turns on.
- The power supply will switch to the constant current level at 80% in turn, starting from 4:00am, which is 11:00 after the power supply turns on. The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.
**Ex:** D03-Type: the profile recommended for tunnel lighting

Set up for D03-Type in Smart timer dimming software program:

<table>
<thead>
<tr>
<th>TIME**</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
</tr>
</thead>
<tbody>
<tr>
<td>01:30</td>
<td>70%</td>
<td>---</td>
<td>70%</td>
</tr>
<tr>
<td>11:00</td>
<td>100%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**TIME** matches Operating Time in the diagram whereas **LEVEL** matches Dimming Level.

Example: If a tunnel lighting application adopts D03-Type, when turning on the power supply at 4:30pm, for instance:

[1] The power supply will switch to the constant current level at 70% starting from 4:30pm.
[2] The power supply will switch to the constant current level at 100% in turn, starting from 6:00pm, which is 01:30 after the power supply turns on.
[3] The power supply will switch to the constant current level at 70% in turn, starting from 5:00am, which is 11:00 after the power supply turns on.

The constant current level remains till 6:30am, which is 14:00 after the power supply turns on.
**ELG-75-C series**

**60~75W Constant Current Mode LED Driver**

### OUTPUT LOAD vs TEMPERATURE (Note.7)

![Graph showing temperature vs load for various input voltages](#)

- 230VAC input only
- 220VAC input only
- 230VAC input only

**AMBIENT TEMPERATURE, Ta (°C)**

**Tcase (°C)**

### STATIC CHARACTERISTIC

![Graph showing static characteristic](#)

- **INPUT VOLTAGE (V) 60Hz**

### POWER FACTOR (PF) CHARACTERISTIC

![Graph showing power factor vs load](#)

- **Tcase at 75°C**

### TOTAL HARMONIC DISTORTION (THD)

![Graph showing THD vs load](#)

- 350mA Model, Tcase at 75°C

### EFFICIENCY vs LOAD

![Graph showing efficiency vs load](#)

- ELG-75-C series possess superior working efficiency that up to 91% can be reached in field applications.

- 350mA Model, Tcase at 75°C

---

**Note.7**

- De-rating is needed under low input voltage.

*File Name: ELG-75-C-SPEC 2018-09-30*

[Downloaded from Arrow.com](https://www.arrow.com)
60~75W Constant Current Mode LED Driver

**ELG-75-C series**

- **LIFE TIME**
  - **Tcase (℃)**
  - **LIFETIME (Koh)**

File Name: ELG-75-C-SPEC  2018-09-30

Downloaded from Arrow.com.
Installation Manual

Please refer to: http://www.meanwell.com/manual.html

Note 1: Please connect the case to PE for the complete EMC deliverance and safety use.

Note 2: Please contact MEAN WELL for input wiring option with PE.

3Y Model (3-wire input)

* Note: Max. Case Temperature

45.8 ± 20

85

300 x 20

169

156

180

SJOW 17AWG x 3C & H05RN-F 1.0mm²

SJOW 17AWG x 2C & H05RN-F 1.0mm²

File Name: ELG-75-C-SPEC 2018-09-30

Downloaded from Arrow.com.