144~200W Constant Voltage + Constant Current LED Driver ELG-200 series

**Features**
- Constant Voltage + 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-200 series is a 200W AC/DC LED driver featuring the dual mode constant voltage and constant current output. ELG-200 operates from 100~305VAC and offers models with different rated voltage ranging between 12V and 54V. Thanks to the high efficiency up to 93%, with the fanless design, the entire series is able to operate for -40°C ~ +90°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-200 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 - 200 - 24 A
```

<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>I0 and Vo fixed.</td>
<td>In Stock</td>
</tr>
<tr>
<td>A</td>
<td>IP65</td>
<td>I0 and Vo 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>I0 and Vo 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>

Input wiring type: Blank: 2-wire input for standard model
Function mode option: 3Y: 3-wire input for standard model
Rated output voltage (12/24/36/42/48/54V)
Rated wattage
Series name

File Name: ELG-200-SPEC  2018-09-30
Downloaded from Arrow.com
### SPECIFICATION

**MODEL**

<table>
<thead>
<tr>
<th>MODEL</th>
<th>ELG-200-12</th>
<th>ELG-200-24</th>
<th>ELG-200-36</th>
<th>ELG-200-42</th>
<th>ELG-200-48</th>
<th>ELG-200-54</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC VOLTAGE</td>
<td>12V</td>
<td>24V</td>
<td>36V</td>
<td>42V</td>
<td>48V</td>
<td>54V</td>
</tr>
<tr>
<td>CONSTANT CURRENT</td>
<td>6 ~ 12V</td>
<td>12 ~ 24V</td>
<td>18 ~ 36V</td>
<td>21 ~ 42V</td>
<td>24 ~ 48V</td>
<td>27 ~ 54V</td>
</tr>
<tr>
<td>RATED CURRENT</td>
<td>16A</td>
<td>8.4A</td>
<td>5.55A</td>
<td>4.76A</td>
<td>4.16A</td>
<td>3.72A</td>
</tr>
<tr>
<td>RATED POWER</td>
<td>200VAC ~ 305VAC</td>
<td>192W</td>
<td>201.6W</td>
<td>198.9W</td>
<td>199.9W</td>
<td>199.68W</td>
</tr>
<tr>
<td>RIPPLE &amp; NOISE (max.)</td>
<td>1.86 ~ 3.72A</td>
<td>2.08 ~ 4.16A</td>
<td>2.78 ~ 4.55A</td>
<td>3.28 ~ 4.76A</td>
<td>2.88 ~ 5.16A</td>
<td>1.86 ~ 3.72A</td>
</tr>
<tr>
<td>VOLTAGE RANGE Note.5</td>
<td>11.2 ~ 12.8V</td>
<td>22.4 ~ 25.6V</td>
<td>33.5 ~ 38.5V</td>
<td>39 ~ 45V</td>
<td>44.8 ~ 51.2V</td>
<td>50 ~ 57V</td>
</tr>
<tr>
<td>FREQUENCY RANGE</td>
<td>47 ~ 63Hz</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POWER FACTOR</td>
<td>PF ≥ 0.97/115VAC, PF ≥ 0.95/230VAC, PF ≥ 0.92/277VAC@full load</td>
<td>(Please refer to “POWER FACTOR (PF) CHARACTERISTIC” section)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EFFICIENCY (Typ.)</td>
<td>90%</td>
<td>92%</td>
<td>92%</td>
<td>92.5%</td>
<td>93%</td>
<td>93%</td>
</tr>
<tr>
<td>AC CURRENT</td>
<td>1.8A / 115VAC</td>
<td>1.2A / 230VAC</td>
<td>1.0A/277VAC</td>
<td>(Please refer to “OUTPUT LOAD vs TEMPERATURE” section)</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>
<td></td>
</tr>
<tr>
<td>INRUSH CURRENT(Typ.)</td>
<td>COLD START 60A(twist width=510μm measured at 50% (peak) at 230VAC; Per NEMA 410</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NO LOAD / STANDBY POWER CONSUMPTION Note.3</td>
<td>No load power consumption &lt;0.5W for Blank / A / Dx / D-Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVER CURRENT</td>
<td>95 ~ 108%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SHORT CIRCUIT</td>
<td>10ms / 230VAC 10ms / 115VAC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVER VOLTAGE</td>
<td>100 ~ 305VAC 142 ~ 431VDC (Please refer to “TOTAL HARMONIC DISTORTION(THD)” section)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OVER TEMPERATURE</td>
<td>Shut down output voltage, re-power on to recover</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>WORKING TEMP.</td>
<td>Tcase=40 ~ +90°C (Please refer to “OUTPUT LOAD vs TEMPERATURE” section)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MAX. CASE TEMP.</td>
<td>Tcase=+90°C</td>
<td></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>
<td></td>
</tr>
<tr>
<td>STORAGE TEMP., HUMIDITY</td>
<td>-40 ~ +90°C</td>
<td>10 ~ 95% RH</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TEMP. COEFFICIENT</td>
<td>±0.3%/°C (0 ~ 50°C)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>VIBRATION</td>
<td>10 ~ 500Hz, 5G 12min./cycle, period for 72min. each along X, Y, Z axes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### SAFETY & EMC

**SAFETY STANDARDS**

- UL8750(type “HL”), CSA C22.2 No. 250.13-12;IEC/EN/AS/NZS 61347-1, IEC/EN/AS/NZS 61347-2-13 independent, EN62384; EAC TPC TP 004: BIS IS15885(for 12/12B/24/24B/36/36A/42A/48A/54A only); GB19510.14, GB19510.1, IP65 or IP67; KC61347-1:KC61347-2:13 approved

**DALI STANDARDS**

- Comply with IEC62386-101,102,207 for DA-Type only

**WITHSTAND VOLTAGE**

- I/P-O/P: 3.75kVAC / I/P-FG: 2.0kVAC / O/P-FG: 1.5kVAC

**ISOLATION RESISTANCE**

- I/P-O/P: I/P-FG, O/P-FG: 100M Ohms / 500VDC / 25°C / 70% RH

**EMC EMISSION**

- Compliance to EN55015,EN61000-3-2: Class C (@load: 50%): EN61000-3-3:GB17625.1,GB17743;EAC TPC TP 020; KC KN15,KN61547

**EMC IMMUNITY**

- Compliance to EN61000-4-2,4,5,6.8,11, EN61547, light industry level (surge immunity Line-Earth 6KV, Line-Line 4KV); EAC TPC TP 020; KC KN15,KN61547

**MTBF**

- 826.7K hrs min. Telcordia SR-332 (Belcore); 200.8Khrs min. MIL-HDBK-217F (25°C)

**DIMENSION**

- 244*71*37.5mm (L*W*H)

**PACKING**

- 1.22Kg; 12pcs / 15.2Kg / 0.72CUFT

**NOTE**

1. 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 MODULE”.
3. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1f & 47uf parallel capacitor.
4. Thermal resistance includes set up tolerance, line regulation and load regulation.
5. Over-voltage may be needed under low input voltages. Please refer to “TOTAL HARMONIC DISTORTION(THD)” section for details.
6. Length of setup time is measured at first start. Turning OFF the driver may lead to increase of the set up time.
7. No load standby consumption is specified for 230VAC input.
8. 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.
9. This series meets the typical life expectancy of >50,000 hours of operation when Tcase, particularly max point (or TEMP, per DLC), is about 70°C or less. Please refer to the warranty statement on MEAN WELL’s website at http://www.meanwell.com
10. The ambient temperature denating of 3.5°C/1000m with flawless models and of 5°C/1000m with fan models for operating altitude higher than 2000m(6600ft).
11. For any application note and IP water proof function instruction caution, please refer our user manual before using.

Downloaded from Arrow.com.
144~200W Constant Voltage + Constant Current LED Driver **ELG-200** series

### Block Diagram

- I/P
- EMI FILTER & RECTIFIERS
- PFC CIRCUIT
- POWER SWITCHING
- RECTIFIERS & FILTER
- DETECTION CIRCUIT
- O.V.P.
- O.L.P.
- O.L.P.
- PWM & PFC CONTROL
- PFC CONTROL
- Vo+
- Vo-

PFC fosc : 50~120KHz
PWM fosc : 60~130KHz

### Driving Methods of LED Module

This series is able to work in either Constant Current mode (a direct drive way) or Constant Voltage mode (usually through additional DC/DC driver) to 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 (%)

- **A** Constant Voltage area
- **B** Constant Current area
- **C** Hiccup Protection

V<sub>Io</sub> (%)

Vo (V)

(min.)

Io (%)

- 100
- 50
- 50
- 100

Downloaded from Arrow.com.
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: 100μA (typ.)

Applying additive 0 ~ 10VDC

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

Applying additive resistance:

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: Ø D01-Type: the profile recommended for residential lighting

![Graph](image1)

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

Example: If a residential lighting application adopts D01-Type, when turning on the power supply at 6:00pm, for instance:

1. The power supply will switch to the constant current level at 100% starting from 6:00pm.
2. 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.
3. 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.
4. 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: Ø D02-Type: the profile recommended for street lighting

![Graph](image2)

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

Example: If a street lighting application adopts D02-Type, when turning on the power supply at 5:00pm, for instance:

1. The power supply will switch to the constant current level at 50% starting from 5:00pm.
2. 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.
3. 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.
4. 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.
5. 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></td>
<td></td>
<td>---</td>
</tr>
<tr>
<td>11:00</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>70%</td>
<td>100%</td>
<td>70%</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-200 series

**OUTPUT LOAD vs TEMPERATURE (Note.10)**

- AMBIENT TEMPERATURE, Ta (°C)
  - If ELG-200 operates in Constant Current mode with the rated current, the maximum workable Ta is 50 °C for 12V-model whereas 60 °C for other models.

**STATIC CHARACTERISTIC**

- De-rating is needed under low input voltage.

**TOTAL HARMONIC DISTORTION (THD)**

- 48V Model, Tcase at 80 °C

**POWER FACTOR (PF) CHARACTERISTIC**

- Tcase at 80 °C

**EFFICIENCY vs LOAD**

- ELG-200 series possess superior working efficiency that up to 93% can be reached in field applications.
144~200W Constant Voltage + Constant Current LED Driver ELG-200 series

LIFE TIME

Temperature (°C)

Lifetime (Kh)

File Name: ELG-200-SPEC  2018-09-30
ELG-200 series

144~200W Constant Voltage + Constant Current LED Driver

**MECHANICAL SPECIFICATION**

※ Blank-Type (for 12V model)

※ Blank-Type (for other models)

* ⚠️: Max. Case Temperature
**A-Type (for 12V model)**

- **ACN (Blue)**
- **ACL (Brown)**

**A-Type (for other models)**

- **ACN (Blue)**
- **ACL (Brown)**

---

* TC: Max. Case Temperature

---

File Name: ELG-200-SPEC   2018-09-30

Downloaded from Arrow.com.
※ AB-Type (for 12V model)

-* : Max. Case Temperature

※ AB-Type (for other models)

-* : Max. Case Temperature
**B/DA/D2-Type (for 12V model)**

- **ACL (Brown)**
- **ACN (Blue)**
- **Vo+ (Red)**
- **Vo- (Black)**

**UNI2027: Max. Case Temperature**

- **DIM+ for B-Type**
- **DA+ for DA-Type**
- **PROG+ for D2-Type**

- **DIM- for B-Type**
- **DA- for DA-Type**
- **PROG- for D2-Type**

**DIM+**

- **DIM-**

**SJOV 17AWG x 2C**

**& H05RN-F 1.0mm²**

**SJTW 14AWG x 2C**

**& H05RN-F 1.0mm²**

**UL2517 20AWG x 2C**

---

**B/DA/D2-Type (for other models)**

- **ACL (Brown)**
- **ACN (Blue)**
- **Vo+ (Red)**
- **Vo- (Black)**

**UNI2027: Max. Case Temperature**

- **DIM+ for B-Type**
- **DA+ for DA-Type**
- **PROG+ for D2-Type**

- **DIM- for B-Type**
- **DA- for DA-Type**
- **PROG- for D2-Type**

**DIM+**

- **DIM-**

**SJOV 17AWG x 2C**

**& H05RN-F 1.0mm²**

**UL2517 20AWG x 2C**

---

File Name: ELG-200-SPEC  2018-09-30
144~200W Constant Voltage + Constant Current LED Driver ELG-200 series

※ 3Y Model (3-wire input)

ACIN (Blue)
ACL (Brown)
PE (Green/Yellow)

SJOW 17AWGx3C & HO5RN-F 1.0mm²
SJOW 17AWGx2C & HO5RN-F 1.0mm²

* ☺ - Max. Case Temperature

◎ Note1: Please connect the case to PE for the complete EMC deliverance and safety use.
◎ Note2: Please contact MEAN WELL for input wiring option with PE.

INSTALLATION MANUAL

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

File Name: ELG-200-SPEC 2018-09-30