**LED Driver - DS Series**

**12W DC Class 2 Power Supply**

**DS12W Series 90-305V**

**FEATURES**

- UL8750, EN61347, UL1310, UL48, cUL, CE, TUV, KAMA, CQC compliant
- FCC Part 15/18 Class B and EN55015 compliant
- Meet the RoHS directive; IP66 compliant,
- Suitable for high-temperature, high-dust location
- Suitable for indoor or outdoor applications
- Suitable in standard electrical junction boxes
- Compact, lightweight
- Single output, ranged from 4VDC up to 114VDC
- Active PFC reduces power consumption
- Isolation between primary and secondary

**Environmental Specifications**

1. Operating temperature: -30 to +60°C
2. Storage temperature range: -40 to +85°C
3. Humidity (non-condensing): 5% - 95%RH
4. Cooling: Free air cooling Convection
5. Vibration Frequency: 5-55Hz/2g, 30 minutes
6. Impact resistance: 1g/s
7. MTBF: 482,000 hours at full load and 40°C ambient conditions
8. EMC:
   Compliant to CISPR 22 CLASS B, CISPR 14-1 CLASS B, GB4343. 1-2003, GB17625.1-2003
   - Harmonic currents test conforming to GB4343-2003+A1, CISPR 14-1:EN 61000-3-2:1995
   - RF Electromagnetic Field Immunity test conforming to GB/T13926.3, IEC61000-4-3, PrEN55014-2 Section 6.5
   - Electrical fast transient/burst immunity test conforming to GB/T13926.4, IEC61000-4-4, PrEN55014-2 section 6.2
   - Voltage dips and short interrupts immunity test conforming to IEC61000-4-11
   - Voltage variations immunity test conforming to IEC61000-4-11
   - Electrostatic discharge immunity test conforming to IEC61000-4-11

* Under confirmed thermal condition

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**Electrical Specifications**

- Input range: 90 to 305VAC
- Frequency: 47-63HZ
- Power Factor: > 92% at full load
- Inrush current: <10A at 25°C, 230V, cold start
- Input current: 0.3A at 120V
- Efficiency: 85% (typical at maximum load)
- Maximum power: 12W
- Current accuracy: ±3%, Load regulation accuracy: ±4%
- Optional DC Dimming control: 0-10V dc, 2mA, 2-wire.
- Optional RD Dimming control: 3-wire 50KΩ Resistance Dimming
- Leakage current: 400uA (typical)
- Hold up time: half cycle
- Output over-voltage protection function: Less than 1.3 times the maximum output voltage;
- Output over-current protection: Less than 1.1 times the maximum output current;
- Output short circuit protection: Unlimited short-circuit, or long-term short-circuit, self-recovery after withdrawal;

### Constant Current

<table>
<thead>
<tr>
<th>Model #</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Current Accuracy</th>
<th>Power Factor</th>
<th>Output Power</th>
<th>Max Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS12W0250C</td>
<td>15-48V DC</td>
<td>250mA</td>
<td>±3%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W0280C</td>
<td>15-43V DC</td>
<td>280mA</td>
<td>±3%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W0350C</td>
<td>15-34V DC</td>
<td>350mA</td>
<td>±3%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W0500C</td>
<td>10-24V DC</td>
<td>500mA</td>
<td>±3%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W0550C</td>
<td>10-22V DC</td>
<td>550mA</td>
<td>±3%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W0600C</td>
<td>10-20V DC</td>
<td>600mA</td>
<td>±3%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W0700C</td>
<td>10-17V DC</td>
<td>700mA</td>
<td>±3%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W01000C</td>
<td>4-12V DC</td>
<td>1000mA</td>
<td>±3%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
</tbody>
</table>

### Dimming Guide

<table>
<thead>
<tr>
<th>Model #</th>
<th>Dimming Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS12W-XX-CXXX-D010</td>
<td>0 - 10 Dimming</td>
</tr>
<tr>
<td>DS12W-XX-CXXX-PD</td>
<td>PWM Dimming</td>
</tr>
</tbody>
</table>
### Constant Voltage

<table>
<thead>
<tr>
<th>Model #</th>
<th>Output Voltage</th>
<th>Max. Output Current</th>
<th>Min. Output Current</th>
<th>Voltage Accuracy</th>
<th>Power Factor</th>
<th>Output Power</th>
<th>Max. Efficiency</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS12W36V</td>
<td>36V DC</td>
<td>330mA</td>
<td>55mA</td>
<td>±5%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W24V</td>
<td>24V DC</td>
<td>500mA</td>
<td>83mA</td>
<td>±5%</td>
<td>95%</td>
<td>12W</td>
<td>87%</td>
</tr>
<tr>
<td>DS12W18V</td>
<td>18V DC</td>
<td>670mA</td>
<td>110mA</td>
<td>±5%</td>
<td>95%</td>
<td>12W</td>
<td>86%</td>
</tr>
<tr>
<td>DS12W12V</td>
<td>12V DC</td>
<td>1000mA</td>
<td>166mA</td>
<td>±5%</td>
<td>95%</td>
<td>12W</td>
<td>85%</td>
</tr>
</tbody>
</table>

Note: refer to 220V input power factor and maximum output. At 120V input and maximum output, power factor is 98%.

### Dimming Specifications

- Optional 0-10V Dimming control:
  - Directness Dimming Mode;
  - Input Voltage Range 0-10Vdc, When Output constant current Adjustable range: 10%-MAX; When input >10V, Constant current output for maximum value; When input ≤ 0V (Include input open circuit), Constant current output for 10%;
  - Input impedance 5KΩ, dimming response time : 20ms;
  - Input Current: MAX. 2mA;

#### PD 2-Wire PWM Positive Dimming Scheme

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Minimum</th>
<th>Typical</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>10V Source Output</td>
<td>9.2V</td>
<td>10.0V</td>
<td>10.8V</td>
</tr>
<tr>
<td>Absolute Voltage Range on PWM Input</td>
<td>-2.0V</td>
<td>12V</td>
<td>+28V</td>
</tr>
<tr>
<td>Input LOW Level Voltage Range</td>
<td>+2.0V</td>
<td>---</td>
<td>+7.5V</td>
</tr>
<tr>
<td>Input HIGH Level Voltage Range</td>
<td>+9.0V</td>
<td>---</td>
<td>+28V</td>
</tr>
</tbody>
</table>
**LED Driver - DS Series - Class 2**

**Technical Specs.**

**Dimming vs. 0-10V Input**

- Output Current % vs. DC Input Volts

**THD vs. Pout**

- THD % vs. Pout (W)

**Efficiency vs. Vout at 80°C case**

- Efficiency % vs. Vout (V)

**PF vs. Pout at 80°C case**

- Power Factor vs. Pout (W)

**Life Time vs. Ambient Temp**

- Life Time vs. Ambient Temp (°C)

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INSTALLATION SPECIFICATIONS

- Plastic enclosure, Used with thermal conductivity and flame retardant glue potting.
- AC input for connection the two core ANSI/UL1015/AWG18 temperature 105 °C core copper wire connection, Cable Length: 150mm, Stripping on the tin: 10mm.
- DC output for connection the two core ANSI/UL1569/AWG14 temperature 105 °C core copper wire, Cable Length: 150mm, Stripping on the tin: 10mm.
- The dimmer control input is the two copper wires, ANSI/UL1569/AWG24 & temperature 105 °C, Cable Length: 150mm, Stripping on the tin: 10mm.
- Where: 0-10V (or PWM) input — Purple wire, GND — Grey wire.
- This product has two Φ3.6mm mounting holes.

MECHANICAL SPECS.

<table>
<thead>
<tr>
<th>Available Form Factors</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>“L5”</td>
<td>95x41x25mm</td>
</tr>
<tr>
<td>Remote Enclosure</td>
<td></td>
</tr>
<tr>
<td>“G2”</td>
<td>233.1X85.5X48.9mm</td>
</tr>
<tr>
<td>“G3”</td>
<td>280X103X56mm</td>
</tr>
</tbody>
</table>

L5

G2: -RE MODELS

G3: -REO MODELS