Programmable & Dimmable LED Drivers

Revision: November 2018
Our Target Markets

- Indoor Residential and Commercial lighting
- Outdoor street and area lighting
- Office lighting
- Warehouses, manufacturing facilities, and Large retail store application
- Parking garages
- Architectural lighting
- Display / Signage
- Stage Lighting (entertainment, concert)
About ERP

ERP designs and manufactures energy-efficient LED drivers/power supplies for a wide range of lighting applications: from residential to commercial, industrial, outdoor, office buildings, architectural and stage lighting. Small, yet powerful, ERP products deliver an industry-leading combination of compact size, extensive dimmer compatibility, and high efficiency at competitive cost. Headquartered in Moorpark, CA, ERP owns and operates its own ISO 9001 certified manufacturing facility to ensure quality of design, sourcing, production and testing.

• Industry leader in high-efficiency (high-power-saving) & high-density (small footprint) LED drivers/power supplies

• Product offerings include standard and custom solutions for LED Lighting

• U.S.A. Headquarters in Moorpark, California, with sales/marketing, R&D, and technical support to serve the North-American market

• China Operations Center in Zhuhai include document center, QA, R&D, manufacturing, and sales / technical support to serve China and Asia

Our Presence
ERP Manufacturing

ERP products are manufactured in our wholly owned manufacturing facility in Zhuhai, China. The factory is configured with high-speed production lines for LED drivers and high-density power supplies, as well as state of the art burn-in chambers and automated test equipment. Strategic manufacturing partners provide significant upside capabilities. ERP products go through 100% burn-in to eliminate “infant mortality” failures. ISO 9001:2008 certified, with regular audits by safety agencies.

ERP Quality

Quality Management Systems (QMS)

- Design Qualification Assurance
  - Reliability testing
  - 4-stage development process
  - Component qualification (Derating, MTBF, Thermal testing)
  - Production auditing

- Product Qualification Assurance
  - Failure analysis
  - Customer returns

Supplier Quality Assurance / Incoming Quality Control
- Supplier management
- Material control

Standard Certifications

ERP products are designed and manufactured to comply with worldwide international IEC standards for lighting applications, and carry certifications by safety agencies such as UL, CSA and Nemko.

ERP products also comply with EMC regulations from Europe, and FCC/ICES in North America.
Best-In-Class Dimming

Forward-phase (TRIAC or leading-edge) and reverse-phase (ELV or trailing-edge)

Tri-Mode Dimming™
The ESS, ESP, ESM, EVM, and EVB series of LED drivers are compatible with Tri-Mode Dimming™ from 6 W up to 160 W, i.e. they are compatible with forward-phase (TRIAC or leading-edge), reverse-phase (ELV or trailing-edge) and 0-10 V dimmers.

Broad Dimming Compatibility
ERP LED drivers deliver an extensive dimmer compatibility. For each LED driver, a dimming compatibility matrix is available upon request, showing how the LED driver scores against a long list of dimmers according to several criteria such as: flicker, shimmer, smooth dimming, no flash at startup, etc...

Power Density
Highest Power Density in the industry

The new patent-pending power electronics design delivers more than double the density of the previous generation ERP platform, while delivering 5 times the power density of current industry competitors.
ERP has developed an extensive cross-reference for 12 different LED manufacturers. This cross-reference can be directly accessed from the ERP website at [www.erp-power.com](http://www.erp-power.com). On the homepage, using the pull-down menus, select the LED manufacturer and then the LED. You may also select your desired drive current. The cross-reference tool will return a list of driver(s) that are the most relevant for your LED selection. You can also access the cross-reference by clicking on **LED GUIDE** at the top of the homepage. The LED guide lists the 12 LED manufacturers whose LEDs have been cross referenced to some of our LED drivers.

<table>
<thead>
<tr>
<th>bridgelux</th>
<th>CITIZEN</th>
<th>CREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>LG Innotek</td>
<td>SAMSUNG</td>
<td>Luminus</td>
</tr>
<tr>
<td>NICHIA</td>
<td>Lumileds</td>
<td>Xicato</td>
</tr>
<tr>
<td>SEOUL</td>
<td>lumenetix</td>
<td></td>
</tr>
</tbody>
</table>

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4
ERP Constant Current and Constant Voltage LED Driver Portfolios

Below are two graphs that illustrate our portfolio of constant current and constant voltage LED drivers. ERP LED drivers are targeted at architectural, commercial and industrial applications requiring 10 W to 260 W of power with dimming, programming and connectivity to the Internet of Lights. The color coded drivers are represented in this brochure and include page number references.

### Constant Current LED Drivers

- **EBR Series** - page 9
  - 8-21 W
  - Forward & Reverse Phase
  - Dimming Range 1-100%

- **ESM Series** - page 14
  - 6-60 W
  - Forward, Reverse Phase & 0-10 V
  - Dimming Range 1-100%

- **ESPT & ESPV Series** - page 12 & 13
  - 40-60 W
  - Forward, Reverse Phase & 0-10 V

- **EVM Series** - page 15
  - 60-120 W
  - Forward, Reverse Phase & 0-10 V

- **PSB30/40/50 Series** - page 6
  - 30-50 W
  - Reverse Phase & 0-10 V
  - Dimming Range 1-100%

- **CNB30/40/50 Series** - page 27
  - 30-50 W
  - Reverse Phase & 0-10 V
  - Dimming Range 1-100%

- **PDB/CDB260 Series** - page 7 & 8
  - 260 W
  - Programmable, 0-10 V dimming only

- **SLM Series** - page 16
  - 90-160 W
  - Forward, Reverse Phase & 0-10 V
  - Dimming Range 1-100%

- **TLM Series** - page 17
  - 90-160 W
  - Forward, Reverse Phase & 0-10 V
  - Dimming Range 0.01-100%

- **EVM Series** - page 15
  - 60-120 W
  - Forward, Reverse Phase & 0-10 V

### Dimming Types:

- Phase-Cut Dimming
  - Forward-Phase = Leading-Edge, aka TRIAC
  - Reverse-Phase = Trailing-Edge, aka ELV
- 0-10V Dimming

### Constant Voltage LED Drivers

- **VGM & VIM & VZM Series** - page 24 & 25 & 26
  - 60-90 W

- **VLM40/60 Series** - page 19
  - 60 W

- **VLM100 & JVLM Series** - page 20 & 21
  - 96 W

- **VLB260 Series** - page 22
  - 260 W

- **xDrive Series Dimmer+Driver**
  - 40 W - page 18
  - 60 W - page 18

- **VGM & VIM & VZM Series**
  - 60-90 W - page 24 & 25 & 26
**PSB30/40/50 SERIES**

**30 W - 50 W**

Programmable, Constant Current, Class 2 / Class II LED Drivers with Tri-Mode Dimming™ (TRIAC, ELV & 0-10 V)

### Features
- Non-linear 0-10V dimming profile with dim-to-off (10V to 9.1V=100%, 1.5V to 0.6V=1%, <0.6V=dim-to-off)
- UL Class P
- Class 2 output power supply
- Lifetime: 50,000 hours @ Tc = 75°C
- 90°C maximum case hot spot temperature
- IP20-rated case with silicone-based potting
- No TRIAC/ELV dimming for “-T” (Terminal Blocks) models, only 0-10V dimming
- Complies with ENERGY STAR® luminaire specification and DLC (Design Light Consortium®) and CA Title technical requirements

### Programming
- Current: 100% to 50% in each voltage range
- Data log read: SKU, S/N, lot code, hours of operation, FW revision, fault events: power failure, transients (short or surge), thermal
- Fully programmable and selectable 0-10V dimming profiles: Non-linear with dim-to-off, Logarithmic, Non-Linear without dim-to-off

### Applications
- Commercial & residential lighting
- Architectural lighting
- Cove Lights

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### Nominal Input Voltage

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 &amp; 277 Vac, 220 to 240 Vac</td>
<td>50 W</td>
<td>up to 90% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>Forward-Phase, Reverse-Phase &amp; 0-10 V</td>
<td>1 to 100% (% of Iout)</td>
<td>300 ms typical</td>
</tr>
</tbody>
</table>

### Typical Application Diagram

- **Models with Flying Leads, Aluminum case**
  - L 98.5 x W 26.2 x H 21.85 mm
  - L 3.88 x W 1.03 x H 0.94 in
- **Models with “-S” Suffix**
  - Bottom Leads with Studs, Aluminum Case
  - L 98.5 x W 26.2 x H 23.85 mm
  - L 3.88 x W 1.03 x H 0.94 in
- **Models with “-T” Suffix**
  - Aluminum case with terminal blocks
  - L 154.2 x W 26.2 x H 21.85 mm
  - L 6.07 x W 1.03 x H 0.94 in

### Typical Application Diagram

- **ERP Part Number**
  - **Nominal Input Voltage (Vac)**
  - **Max. Output Power (W)**
  - **Iout (ma)**
  - **Vout Min. (Vdc)**
  - **Vout Nom. (Vdc)**
  - **Vout Max. (Vdc)**
  - **Open Loop (No Load) Voltage (Vdc)**

<table>
<thead>
<tr>
<th>ERP Part Number</th>
<th>Nominal Input Voltage (Vac)</th>
<th>Max. Output Power (W)</th>
<th>Iout (ma)</th>
<th>Vout Min. (Vdc)</th>
<th>Vout Nom. (Vdc)</th>
<th>Vout Max. (Vdc)</th>
<th>Open Loop (No Load) Voltage (Vdc)</th>
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<tbody>
<tr>
<td>PSB30W-0700-42</td>
<td>120 &amp; 277</td>
<td>29.4</td>
<td>350 to 700</td>
<td>28</td>
<td>37.8</td>
<td>42</td>
<td>50</td>
</tr>
<tr>
<td>PSB30W-1050-27</td>
<td>120 &amp; 277</td>
<td>28.4</td>
<td>525 to 1050</td>
<td>18</td>
<td>24.3</td>
<td>27</td>
<td>35</td>
</tr>
<tr>
<td>PSB30W-0700-34</td>
<td>120 &amp; 277</td>
<td>23.8</td>
<td>350 to 700</td>
<td>23</td>
<td>30.6</td>
<td>34</td>
<td>44.2</td>
</tr>
<tr>
<td>PSB30W-0700-42-S</td>
<td>120 &amp; 277</td>
<td>29.4</td>
<td>350 to 700</td>
<td>28</td>
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<td>120 &amp; 277</td>
<td>23.8</td>
<td>350 to 700</td>
<td>23</td>
<td>30.6</td>
<td>34</td>
<td>44.2</td>
</tr>
<tr>
<td>PSB40W-1400-27</td>
<td>120 &amp; 277</td>
<td>37.8</td>
<td>700 to 1400</td>
<td>18</td>
<td>24.3</td>
<td>27</td>
<td>35</td>
</tr>
<tr>
<td>PSB40W-1400-27-S</td>
<td>120 &amp; 277</td>
<td>37.8</td>
<td>700 to 1400</td>
<td>18</td>
<td>24.3</td>
<td>27</td>
<td>35</td>
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<tr>
<td>PSB50W-1400-27</td>
<td>120 &amp; 277</td>
<td>47.6</td>
<td>700 to 1400</td>
<td>23</td>
<td>30.6</td>
<td>34</td>
<td>44.2</td>
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<td>PSB50W-1400-27-S</td>
<td>120 &amp; 277</td>
<td>47.6</td>
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<td>30.6</td>
<td>34</td>
<td>44.2</td>
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<tr>
<td>PSB50W-0550-85</td>
<td>120 &amp; 277</td>
<td>46.8</td>
<td>275 to 550</td>
<td>57</td>
<td>76.5</td>
<td>85</td>
<td>100</td>
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<tr>
<td>PSB50W-0850-56</td>
<td>120 &amp; 277</td>
<td>47.6</td>
<td>425 to 850</td>
<td>38</td>
<td>50.4</td>
<td>56</td>
<td>60</td>
</tr>
<tr>
<td>PSB50W-1200-42</td>
<td>120 &amp; 277</td>
<td>50.4</td>
<td>600 to 1200</td>
<td>28</td>
<td>37.8</td>
<td>42</td>
<td>50</td>
</tr>
<tr>
<td>PSB50W-1200-42-S</td>
<td>120 &amp; 277</td>
<td>50.4</td>
<td>600 to 1200</td>
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<td>34</td>
<td>44.2</td>
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</tbody>
</table>

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
Programmable, Constant Current LED Drivers with 0-10 V Dimming

**Typical Application Diagram**

<table>
<thead>
<tr>
<th>ERP Part Number</th>
<th>Nominal Input Voltage (Vac)</th>
<th>Max. Output Power (W)</th>
<th>Iout 1 (mA)</th>
<th>Vout 1 (Vdc)</th>
<th>Iout 2 (mA)</th>
<th>Vout 2 (Vdc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDB260W-0860-400</td>
<td>120 &amp; 277</td>
<td>260.0</td>
<td>430 to 860</td>
<td>234 to 300</td>
<td>325 to 650</td>
<td>312 to 400</td>
</tr>
<tr>
<td>PDB260W-1300-280</td>
<td>120 &amp; 277</td>
<td>260.0</td>
<td>650 to 1300</td>
<td>156 to 200</td>
<td>485 to 930</td>
<td>218 to 280</td>
</tr>
<tr>
<td>PDB260W-1700-210</td>
<td>120 &amp; 277</td>
<td>260.0</td>
<td>850 to 1700</td>
<td>117 to 150</td>
<td>620 to 1240</td>
<td>164 to 210</td>
</tr>
</tbody>
</table>

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**Programming**
- Dual output voltage range selection
- Serial port programming
- Current: 100% to 50% in each voltage range
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., fault events: power failure, transients (short or surge), thermal events
- Non-linear 0-10 V dimming profile with dim-to-off (10 V to 9.1 V=100%, 1.5 V to 0.6 V=dim-to-off)
- Auxiliary output 12 V/100 mA
- Dual output voltage range
- UL Class P
- IP66-rated case with silicone-based potting
- Surge protection:
  - Combination wave IEC61000-4-5: 6 kV line to line/6 kV line to earth
  - 2.5 kV ring wave: ANSI/IEEE c62.41.1-2002 & c62.41.2-2002 category A
- 90°C maximum case hot spot temperature
- Complies with ENERGY STAR® luminaire specification and DLC (Design Light Certified)
CDB260 SERIES  260 W
Programmable, Constant Current LED Drivers with 0-10 V Dimming & Integrated Bluetooth® Mesh

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 &amp; 277 Vac nominal</td>
<td>260 W</td>
<td>up to 93% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>0-10 V</td>
<td>1 to 100% (% of Iout)</td>
<td>500 ms typical</td>
</tr>
</tbody>
</table>

Typical Application Diagram

Programming
- Dual output voltage range selection
- Serial port programming
- Current: 100% to 50% in each voltage range
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., fault events: power failure, transients (short or surge), thermal

Communication
- Bi-directional (dimming up and down and data log read)
- Bluetooth Mesh with wire whip antenna and external removable antenna

Avi-on Bluetooth Mesh Solution
- Wireless lighting controls with simple set-up
- Pre-integrated Bluetooth Smart + CSRmesh module enables brands to create multi-way controls and switching without additional wiring; no central gateway required
- Utility grade, secure, reliable mobile app & software
- Dimming, grouping, many users, schedules, timers
- Virtually unlimited range with mesh
- Download for free, additional services available

Applications
- Outdoor & indoor
- Street lights, Area lights
- Horticulture grow lights
- Industrial high-bay lights

Features
- Non-linear 0-10V dimming profile with dim-to-off
- Auxiliary output 12 V/100 mA
- IP66-rated case with silicone-based potting
- UL Class P
- Outdoor Surge protection:
  - IEC61000-4-5: 6 kV line to line/6 kV line to earth
  - 2.5 kV ring wave: ANSI/IEEE c62.41.1-2002 & c62.41.2-2002 category A
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class A at 120 Vac & 277 Vac
- Lifetime: 50,000 hours @ Tc = 70°C
- 90°C maximum case hot spot temperature

ERP Part Number | Nominal Input Voltage (Vac) | Max. Output Power (W) | Iout 1 (mA) | Vout 1 (Vdc) | Iout 2 (mA) | Vout 2 (Vdc) |
<table>
<thead>
<tr>
<th></th>
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<td>120 &amp; 277</td>
<td>260.0</td>
<td>850 to 1700</td>
<td>117 to 150</td>
<td>620 to 1240</td>
<td>164 to 210</td>
</tr>
</tbody>
</table>

1. To order the antenna option “Wire whip antenna”, add the suffix “-W”. Example: CDB260W-0860-400-W
2. To order the antenna option “Removable external antenna connected to RPSMA connector”, add the suffix “-R”. Example: CDB260W-0860-400-R

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
EBR SERIES  8 W - 21 W

Constant Current LED Drivers with Deep TRIAC and ELV Dimming (1% to 100%) and with Fast Startup Time

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 Vac, 220/230/240 Vac</td>
<td>21 W</td>
<td>16 to 42 Vdc</td>
<td>200 to 700 mA Constant Current</td>
<td>up to 85% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>Forward-Phase, Reverse-Phase</td>
<td>1 to 100% (% of Iout)</td>
<td>200 ms</td>
</tr>
</tbody>
</table>

Typical Application Diagram

- **EBR Series**
- **Diameter:** 2.28“ (58mm)
- **Height:** 1.25“ (31.7mm)

**Features**
- Compatible with industry standard phase-cut dimmers: TRIAC (forward-phase or leading-edge) and ELV (reverse-phase or trailing-edge)
- **Lifetime:** 50,000 hours at 70°C case hot spot temperature
- **Low acoustic noise** of 20 dBA
- **Class 2 power supply**
- **Protections:** output open load, over-current and short-circuit (hiccup), and over-temperature with auto recovery
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class B at 120 Vac and EN55015 (CISPR 15) at 220, 230 and 240 Vac
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements
- IP20-rated case with silicon-based potting

**Applications**
- **Recessed lighting (downlights)**
- **Commercial & Residential lighting**
- **Architectural lighting**

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
Typical Application Diagram

- Architectural lighting
- Office Lighting
- Commercial lighting & residential lighting

Applications
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements
- Indoor & outdoor lighting
- Recessed lighting (down lights)
- Commercial lighting & residential lighting
- Architectural lighting
- Office Lighting

Features
- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- ESSxxxW models: TRIAC and ELV dimming only at 120 Vac.
- ESSxxxxE models: TRIAC and ELV dimming only at 230 Vac.
- Class 2 power supply
- Lifetime: 50,000 hours at 70°C case hot spot temperature
- IP64-rated (IP66 for ESST) case with silicone-based potting
- Protections: output open load, over-current and short-circuit (hiccup), and over-temperature with auto recovery
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class B (120 Vac) and Class A (277 Vac), and EN55015 (CISPR 15) at 220, 230, and 240 Vac
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements

 NOMINAL INPUT VOLTAGE | OUTPUT VOLTAGE | OUTPUT CURRENT | EFFICIENCY |
---|---|---|---|
120 to 277 Vac, 220 to 240 Vac | 40 W | 6 to 56 Vdc | up to 87% typical |
### ESSV SERIES    10 W - 40 W

Constant Current LED Drivers with Tri-Mode Dimming™ (TRIAC, ELV & 0-10 V)

<table>
<thead>
<tr>
<th>ERP Part Number</th>
<th>Nominal Input Voltage (Vac)</th>
<th>Iout (mA)</th>
<th>Max. Output Power (W)</th>
<th>Output Voltage Range (Vdc) min. max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESSV010W</td>
<td>120 to 277</td>
<td>250</td>
<td>40 W</td>
<td>up to 10 W</td>
</tr>
<tr>
<td>ESSV015W-0300-42</td>
<td>120 to 277</td>
<td>300</td>
<td>15 W</td>
<td>11 to 15 W</td>
</tr>
<tr>
<td>ESSV020W-0400-42</td>
<td>120 to 277</td>
<td>400</td>
<td>20 W</td>
<td>16 to 20 W</td>
</tr>
<tr>
<td>ESSV030W-0500-42</td>
<td>120 to 277</td>
<td>500</td>
<td>30 W</td>
<td>21 to 30 W</td>
</tr>
<tr>
<td>ESSV030W-0620-42</td>
<td>120 to 277</td>
<td>620</td>
<td>40 W</td>
<td>26.0 max.</td>
</tr>
<tr>
<td>ESSV030W-0700-42</td>
<td>120 to 277</td>
<td>700</td>
<td>50 W</td>
<td>29.4 max.</td>
</tr>
<tr>
<td>ESSV040W-0900-42</td>
<td>120 to 277</td>
<td>900</td>
<td>60 W</td>
<td>37.8 max.</td>
</tr>
<tr>
<td>ESSV040W-1400-27</td>
<td>120 to 277</td>
<td>1400</td>
<td>70 W</td>
<td>37.8 max.</td>
</tr>
</tbody>
</table>

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com

---

**Features**

- Same features as ESS/ESST series but with SVA flammability, UL Class P and a thermally-enhanced plastic case
- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- UL Class P
- 90°C maximum case hot spot temperature
- Class 2 power supply
- Lifetime: 50,000 hours at 70°C case hot spot temperature
- IP66-rated thermally-enhanced case with silicone-based potting
- Protections: output open load, over-current and short-circuit (hiccup), and over-temperature with auto recovery
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class B (120 Vac) and Class A (277 Vac)
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements

**Applications**

- Indoor & outdoor
- Recessed lighting (down lights)
- Commercial lighting & residential lighting
- Architectural lighting
- Office Lighting
**ESPT SERIES 40 W - 60 W**

Constant Current LED Drivers with Tri-Mode Dimming™ (TRIAC, ELV & 0-10 V)

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 to 277 Vac, 220 to 240 Vac</td>
<td>60 W</td>
<td>24 to 56 Vdc</td>
<td>700 to 1400 mA</td>
<td>Constant Current</td>
<td>up to 87% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>Forward-Phase, Reverse-Phase &amp; 0-10 V</td>
<td>1 to 100% (% of Iout)</td>
</tr>
</tbody>
</table>

**Typical Application Diagram**

- **Features**
  - Same features as the ESP series but with a thermally-enhanced plastic case
  - Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
  - ESPTxxxW: TRIAC and ELV dimming only at 120 Vac
  - ESPTxxxE models: ELV dimming only at 230 Vac
  - 90°C maximum case hot spot temperature
  - Class 2 power supply
  - Lifetime: 50,000 hours at 70°C case hot spot temperature
  - IP66-rated case with silicone-based potting
  - Two 0-10V dimming profiles are available:
    - Linear 0-10 V dimming: 10V=100%, 1V=10%, 0.1V=1%
    - Non-linear 0-10V dimming: 10V to 8.1V=100%, 1V to 0.8V=1%, ≤0.8V dim-to-off.
  - Protections: output open load, over-current and short-circuit (hiccup), and over-temperature with auto recovery
  - Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class B (120 Vac) and Class A (277 Vac)
  - Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements

**Applications**

- Indoor & outdoor
- Recessed lighting (down lights)
- Commercial lighting & residential lighting
- Architectural lighting
- Office Lighting

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
### ESPV SERIES  40 W - 60 W

Constant Current LED Drivers with Tri-Mode Dimming™ (TRIAC, ELV & 0-10 V)

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 to 277 Vac</td>
<td>60 W</td>
<td>24 to 42 Vdc</td>
<td>1050 to 1400 mA</td>
<td>up to 87%</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>Forward-Phase, Reverse-Phase &amp; 0-10 V</td>
<td>1 to 100% (% of Iout)</td>
<td>400 ms</td>
</tr>
</tbody>
</table>

### Typical Application Diagram

![Typical Application Diagram](image)

### Features
- Same features as the ESP/ESPT series but with a thermally-enhanced plastic case, 5VA flammability and UL Class P
- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- TRIAC and ELV dimming only at 120 Vac
- UL Class P
- 90°C maximum case hot spot temperature
- Class 2 power supply
- Lifetime: 50,000 hours at 70°C case hot spot temperature
- IP66-rated case with silicone-based potting
- Non-linear 0-10V dimming with dim-to-off: 10V to 8.1V=100%, 1V to 0.8V=1%, <0.8V dim-to-off
- Protections: output open load, over-current and short-circuit(hiccup), and over-temperature with auto recovery
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class B (120 Vac) and Class A (277 Vac)
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®)and CA Title 24 technical requirements

### Applications
- Indoor & outdoor
- Recessed lighting (down lights)
- Commercial lighting & residential lighting
- Architectural lighting
- Office Lighting

---

1. Models with the "-Z1" suffix exhibit a non-linear 0-10V dimming profile with dim-to-off: 10V to 8.1V=100%, 1V to 0.8V=1%, <0.8V dim-to-off.
2. The ESPV driver case must be mounted by using a minimum of two metal clips. By default, the ESPV driver is shipped with 2 metal clips. Additional metal clips can be ordered with the following part numbers:
   - ESPT-CLIPS-100: bag of 100 clips
   - ESPT-CLIPS-1k: bag of 1000 clips
3. Please note that the metal clips are identical between the ESPV and ESPT series.

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
**Nominal Input Voltage**

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 to 277 Vac</td>
<td>60 W</td>
<td>8 to 56 Vdc</td>
<td>280 to 1400 mA</td>
<td>up to 87%</td>
<td>90°C (measured at the hot spot)</td>
<td>&gt; 20%</td>
<td>Forward-Phase, Reverse-Phase, &amp; 0-10 V</td>
<td>1 to 100% (% of Iout)</td>
<td>400 ms</td>
</tr>
</tbody>
</table>

**Features**

- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- TRIAC and ELV dimming only at 120 Vac
- 90°C maximum case temperature
- Class 2 power supply
- Lifetime: 50,000 hours at 70°C case temperature
- IP20-rated case with silicone-based potting
- Two 0-10V dimming profiles are available:
  - Linear 0-10 V dimming: 10V=100%, 1V=10%, 0.1V=1%.
  - Non-linear 0-10V dimming: 10V to 8.1V=100%, 1V to 0.8V=1%, 0.8V dim-to-off.
- Protections: output open load, over-current and short-circuit (hiccup), and over-temperature with auto recovery
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class B (120 Vac) and Class A (277 Vac)
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements

**Applications**

- Indoor & outdoor
- Recessed lighting (down lights)
- Commercial lighting & residential lighting
- Architectural lighting
- Office Lighting

---

**Typical Application Diagram**

- **ESM SERIES 10 W - 60 W**
  - Constant Current LED Drivers with Tri-Mode Dimming™ (TRIAC, ELV & 0-10 V)

---

**ERP Part Number**

<table>
<thead>
<tr>
<th>ERP Part Number</th>
<th>Nominal Input Voltage (Vac)</th>
<th>Iout (mA)</th>
<th>Max. Output Power (W)</th>
<th>Output Voltage Range (Vdc)</th>
<th>min.</th>
<th>max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>ESM020W: up to 20 W</td>
<td>120 to 277</td>
<td>280</td>
<td>11.8</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM030W: up to 50 W</td>
<td>120 to 277</td>
<td>500</td>
<td>21.0</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM040W: up to 50 W</td>
<td>120 to 277</td>
<td>800</td>
<td>33.6</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM040W: up to 40 W</td>
<td>120 to 277</td>
<td>800</td>
<td>33.6</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM040W: up to 40 W</td>
<td>120 to 277</td>
<td>800</td>
<td>33.6</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM040W: up to 40 W</td>
<td>120 to 277</td>
<td>800</td>
<td>33.6</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM050W: up to 20 W</td>
<td>120 to 277</td>
<td>940</td>
<td>31.0</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM050W: up to 20 W</td>
<td>120 to 277</td>
<td>940</td>
<td>31.0</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM050W: up to 20 W</td>
<td>120 to 277</td>
<td>940</td>
<td>31.0</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM060W: up to 20 W</td>
<td>120 to 277</td>
<td>940</td>
<td>31.0</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM060W: up to 20 W</td>
<td>120 to 277</td>
<td>940</td>
<td>31.0</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>ESM060W: up to 20 W</td>
<td>120 to 277</td>
<td>940</td>
<td>31.0</td>
<td>24</td>
<td>42</td>
<td></td>
</tr>
</tbody>
</table>

---

1. The ESM020W-0440-25-SS-F1B is specifically intended to drive the Cree LMH2 850 sunset module and exhibits a customized 0-10V dimming transfer function. It will not work with any other LED or LED string.
2. The ESM020W-0440-34-SS-F1B is specifically intended to drive the Cree LMH2 1250 sunset module and exhibits a customized 0-10V dimming transfer function. It will not work with any other LED or LED string.
3. The ESM020W-0440-34-SS-F1B is specifically intended to drive the Cree LMH2 2000 sunset module and exhibits a customized 0-10V dimming transfer function. It will not work with any other LED or LED string.
4. The ESM020W-0440-34-SS-F1B is specifically intended to drive the Cree LMH2 3000 sunset module and exhibits a customized 0-10V dimming transfer function. It will not work with any other LED or LED string.
5. Models with the “Z1” suffix exhibit a non-linear 0-10V dimming profile: (10V to 9.1V=100%, 1V to 0.8V=1%, <0.8V dim-to-off).

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
### EVM SERIES  60 W - 120 W

Constant Current LED Drivers with Tri-Mode Dimming™ (TRIAC, ELV & 0-10 V)

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Output Voltage Range</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 to 277 Vac</td>
<td>120 W</td>
<td>30 to 84 Vdc</td>
<td>1050 to 3000 mA Constant Current</td>
<td>up to 87% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>Forward-Phase, Reverse-Phase &amp; 0-10 V</td>
<td>1 to 100% (% of Iout)</td>
<td>400 ms</td>
</tr>
</tbody>
</table>

Typical Application Diagram

#### Features
- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- TRIAC and ELV dimming only at 120 Vac
- Outdoor surge protection: 4 kV line to line/6 kV line to earth
- Linear 0-10V dimming transfer function: 10V=100%, 1V=10%, 0.1V=1%
- Optional non-linear 0-10V dimming profile with dim to off
- Lifetime: 50,000 hours at 70°C case temperature
- 90°C maximum case hot spot temperature
- Class 2 power supply (only some models)
- IP20-rated Bottom Leads with Studs metal case with silicone-based potting. Optional IP64 metal case with side leads
- Protections: output open load, over-current and short-circuit (hiccup), and over-temperature with auto recovery
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class B (120 Vac) and Class A (277 Vac)
- Complies with ENERGY STAR® luminaire specification and DLC (Design Light Consortium®) technical requirements

#### Applications
- High Bay Lights
- Industrial LED Lighting
- Metal Halide replacement
- Tunnels and street lighting
- Outdoor LED Lighting
- Wide-area downlights
- Suitable for driving high current COB LEDs such as Cree’s CXA3050/3070/2590/3590, Bridgelux’ Vero series and modules such as Cree’s LMH2 6000/8000

#### ERP Part Number | Nominal Input Voltage (Vac) | Iout (mA) | Max. Output Power (W) | Output Voltage Range (Vdc) | min. | max. |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>EVM060W</td>
<td>up to 60 W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVM060W-1400-42-COB</td>
<td>120 to 277</td>
<td>1400</td>
<td>58.8</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM060W-1400-42-Z1B</td>
<td>120 to 277</td>
<td>1400</td>
<td>58.8</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM080W</td>
<td>61 to 80 W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVM080W-1250-56</td>
<td>120 to 277</td>
<td>1250</td>
<td>70.0</td>
<td>40</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>EVM080W-1750-42</td>
<td>120 to 277</td>
<td>1750</td>
<td>73.5</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM080W-1750-42-Z1B</td>
<td>120 to 277</td>
<td>1750</td>
<td>73.5</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM080W-1900-42</td>
<td>120 to 277</td>
<td>1900</td>
<td>79.8</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM090W</td>
<td>81 to 100 W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVM090W-1050-84</td>
<td>120 to 277</td>
<td>1050</td>
<td>88.2</td>
<td>70</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>EVM090W-1700-48-N1B</td>
<td>120 to 277</td>
<td>1700</td>
<td>81.6</td>
<td>37</td>
<td>48</td>
<td></td>
</tr>
<tr>
<td>EVM090W-2000-42</td>
<td>120 to 277</td>
<td>2000</td>
<td>84.0</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM090W-2000-42-Z1B</td>
<td>120 to 277</td>
<td>2000</td>
<td>84.0</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM100W</td>
<td>91 to 110 W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVM100W-1200-80</td>
<td>120 to 277</td>
<td>1200</td>
<td>96.0</td>
<td>66</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>EVM100W-1200-84</td>
<td>120 to 277</td>
<td>1200</td>
<td>100.8</td>
<td>70</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>EVM100W-1700-56</td>
<td>120 to 277</td>
<td>1700</td>
<td>85.2</td>
<td>40</td>
<td>56</td>
<td></td>
</tr>
<tr>
<td>EVM100W-2100-45</td>
<td>120 to 277</td>
<td>2100</td>
<td>84.5</td>
<td>32</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>EVM100W-2350-42</td>
<td>120 to 277</td>
<td>2350</td>
<td>88.7</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM110W</td>
<td>101 to 120 W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVM110W-2000-52-N1B</td>
<td>120 to 277</td>
<td>2000</td>
<td>104.0</td>
<td>40</td>
<td>52</td>
<td></td>
</tr>
<tr>
<td>EVM110W-2500-42</td>
<td>120 to 277</td>
<td>2500</td>
<td>105.0</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM120W</td>
<td>111 to 120 W</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVM120W-1400-84-S</td>
<td>120 to 277</td>
<td>1400</td>
<td>117.6</td>
<td>70</td>
<td>84</td>
<td></td>
</tr>
<tr>
<td>EVM120W-2700-42</td>
<td>120 to 277</td>
<td>2700</td>
<td>113.4</td>
<td>30</td>
<td>42</td>
<td></td>
</tr>
<tr>
<td>EVM120W-3000-40</td>
<td>120 to 277</td>
<td>3000</td>
<td>120.0</td>
<td>30</td>
<td>40</td>
<td></td>
</tr>
</tbody>
</table>

1. Not class 2.
2. The EVM090W-1700-48-N1B is specifically intended to drive the Cree LMH2 8000 module and exhibits a customized 0-10V dimming transfer function.
3. The EVM100W-2000-52-N1B is specifically intended to drive the Cree LMH2 8000 module and exhibits a customized 0-10V dimming transfer function.

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
**SLM SERIES  90 W - 160 W**

Tri-Mode Dimming™ (TRIAC, ELV & 0-10 V), High Power

Constant Current LED Drivers with 1-100% Dimming Range and with 12 V / 100 mA Auxiliary Output

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Output Voltage</th>
<th>Output Current</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 to 277 Vac</td>
<td>160 W</td>
<td>28 to 160 Vdc</td>
<td>1.0 to 4.4 A</td>
<td>up to 90%</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>Forward-Phase, Reverse-Phase &amp; 0 - 10V</td>
<td>1 to 100% (% of Iout)</td>
<td>0.75 sec</td>
</tr>
</tbody>
</table>

**Features**

- Compatible with TRIAC (forward-phase or leading-edge) / ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- TRIAC and ELV dimming only at 120 Vac
- 12 V/100 mA auxiliary output
- IP66-rated case with silicone-based potting
- 90°C maximum case hot spot temperature
- Protections: output open load, short-circuit (latch-off), and over-temperature with auto recovery
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class A at 120 Vac & 277 Vac
- Complies with ENERGY STAR® luminaire specification and DLC (DesignLight Consortium®) technical requirement

**Applications**

- Outdoor & Indoor
- Street lights, Area lights
- Horticulture grow lights
- Industrial high-bay lights

**Typical Application Diagram**

![Typical Application Diagram](image_url)

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com

---

1. T: ELV & 0-10 V dimming (1-100%), C: 1kV/2kV surge protection
2. T: ELV & 0-10 V dimming (1-100%), A: 4kV/4kV surge protection
3. X: No dimming, A: 4kV/4kV surge protection
4. Z: 0-10V dimming only (1-100%), A: 4kV/4kV surge protection
5. Forced air cooling or heatsink base plate (aluminum baseplate: 210mm x 200mm x 2mm) is required for total continuous power exceeding 120 W
**TLM SERIES  90 W - 160 W**

Tri-Mode Dimming™ (TRIAC, ELV & 0-10 V) High Power Constant Current LED Drivers with 0.01 to 100% Dimming Range and with 12 V / 100 mA Auxiliary Output

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>120 to 277 Vac typical</td>
<td>160 W</td>
<td>30 to 85 Vdc</td>
<td>1.8 A to 2.1 A</td>
<td>up to 90% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>Forward-Phase, Reverse-Phase &amp; 0 - 10V</td>
<td>0.01 to 100% (% of Iout)</td>
</tr>
</tbody>
</table>

**Features**

- Diming range: 0.01% – 100% with ETC, Leprecon and Elation stage lighting AC phase dimmers
- +12 V/100 mA auxiliary output to power external fan, motion or ambient light sensor, or wireless module
- TRIAC and ELV dimming only at 120 Vac
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class A at 120 Vac & 277 Vac
- Complies with ENERGY STAR® luminaire specification and DLC (Design Light Consortium®) technical requirements
- IP66-rated case with silicone-based potting
- 90°C maximum case hot spot temperature

**Applications**

- Stage, Theatrical lighting
- Studio Lighting

---

**Typical Application Diagram**

![Typical Application Diagram](image)

**ERP Part Number**

<table>
<thead>
<tr>
<th>Nominal Input Voltage (Vac)</th>
<th>Iout (A)</th>
<th>Max. Output Power (W)</th>
<th>Vout Min. (Vdc)</th>
<th>Vout Max. (Vdc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TLM90W: 81 to 90 W</td>
<td>2.1</td>
<td>88.2</td>
<td>30</td>
<td>42</td>
</tr>
<tr>
<td>TLM9W-2.1-42</td>
<td>120 to 277</td>
<td>1.8</td>
<td>153.0</td>
<td>68</td>
</tr>
<tr>
<td>TLM160W-1.8-85</td>
<td>120 to 277</td>
<td>1.8</td>
<td>153.0</td>
<td>68</td>
</tr>
</tbody>
</table>

1. Forced air cooling or heat sink base plate (aluminum baseplate: 210mm x 200mm x 2mm) is required for total continuous power exceeding 120 W

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
xDrive™ 40 W - 100 W

Constant Voltage LED Drivers with Integrated Dimmer for Single Gang Box Mount

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Output Voltage</th>
<th>Output Current Max</th>
<th>Efficiency</th>
<th>Max. Ambient Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 Vac</td>
<td>100 W</td>
<td>12, 24 V</td>
<td>4.2 A</td>
<td>up to 91% typical</td>
<td>40°C</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>1 to 100% of light output</td>
<td>500 ms typical</td>
</tr>
</tbody>
</table>

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com

Applications
- Track lights, downlights
- For Tape/strip lights, under-cabinet lights please contact Diode LED at: https://www.diodied.com/switchex.html

Features
- LED Driver + Dimmer in one physical unit
- Simplifies LED installation by eliminating compatibility issues between driver and dimmer
- Fits in a standard recessed electrical box (gang box)
- 100% - 1% smooth dimming
- Single pole preset dimmer with on/off push switch
- Adjustable voltage output dial to address voltage drop
- Includes voltage barrier partition to install high and low voltage circuit in same gang box
- No derating required when ganging units
- Power failure memory: If power is interrupted, xDrive will return to the setting prior to interruption.
- The Glossy White color is the default color for the face plate and the trim plate. Other colors (Glossy Light Almond, Glossy Dark Brown, and Glossy Black) are available but sold separately.

ERP Part Number | Pout Max (W) | Pout Min (W) | Vout Nom (V) | Iout Max (A) | Vout Regulation (Vdc) | Vout ripple (p-p) |
<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>VSW40U-12-ERP</td>
<td>40.0</td>
<td>8.0</td>
<td>12</td>
<td>3.3</td>
<td>11.1-12.9 (+/-0.9 V)</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>VSW60U-12-ERP</td>
<td>60.0</td>
<td>10.0</td>
<td>12</td>
<td>5</td>
<td>11.1-12.9 (+/-0.9 V)</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>VSW60U-24-ERP</td>
<td>60.0</td>
<td>3.0</td>
<td>24</td>
<td>2.5</td>
<td>22.2-25.8 (+/-1.8 V)</td>
<td>&lt;10%</td>
</tr>
<tr>
<td>VSW100U-24-ERP</td>
<td>100.0</td>
<td>5.0</td>
<td>24</td>
<td>4.2</td>
<td>22.2-25.8 (+/-1.8 V)</td>
<td>&lt;10%</td>
</tr>
</tbody>
</table>

1. 100 W: Metal Case & metal wall plate. 40 & 60 W: Plastic case & metal wall plate
**High Density, Compact Nom-Dimmable**

**Constant Voltage Class 2/ Class II LED Drivers**

### VLM40/60 SERIES

#### 40 W - 60 W

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</thead>
<tbody>
<tr>
<td>120 &amp; 277 Vac, 220 to 240 Vac</td>
<td>60 W</td>
<td>12, 24, 48 Vdc</td>
<td>5, 2.5, 1.25 A</td>
<td>up to 93% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
</tr>
</tbody>
</table>

**Applications**

- Strip lights
- Pendant lights
- Linear lights
- Cove Lights

**Typical Application Diagram**

- Models with Flying Leads, Aluminum case
  - L 130 x W 19.85 x H 19.85 mm
  - (L 5.12 x W 0.78 x H 0.78 in)

- Models with "-S" Suffix
  - Bottom Leads with Studs, Aluminum Case
  - L 130 x W 19.85 x H 23.85 mm
  - (L 5.12 x W 0.78 x H 0.94 in)

- Models with "-T" Suffix
  - Aluminum case with terminal blocks
  - L 183.2 x W 19.85 x H 19.85 mm
  - (L 7.12 x W 0.78 x H 0.78 in)

**Features**

- Very high power density of 20 W/in³
- Class 2 power supply
- UL Class P
- IP20-rated case with silicone-based potting
- 90°C maximum case hot spot temperature
- Lifetime: 50,000 hours min at 70°C case temperature
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements
- Additional safety approvals when using the optional strain reliefs for models with "-T" suffix

**Applications**

- Strip lights
- Pendant lights
- Linear lights
- Cove Lights

---

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
### Features
- Very high power density of 24 W/in³
- Class 2 power supply
- IP20-rated case with silicone-based potting
- Complies with ENERGY STAR® luminaire specification and DLC (DesignLight Consortium®) technical requirements
- 90°C maximum case hot spot temperature
- Lifetime: 50,000 hours min at 70°C case temperature
- UL Class P
- Additional safety approvals when using the optional strain reliefs for models with "-T" suffix

### Typical Application Diagram

- Models with Flying Leads, Aluminum case
  - L 137 x W 26.25 x H 19.85 mm
  - (L 5.12 x W 1.03 x H 0.78 in)

- Models with "-S" Suffix
  - Bottom Leads with Studs, Aluminum Case
  - L 137 x W 26.25 x H 23.85 mm
  - (L 5.12 x W 1.03 x H 0.94 in)

- Models with "-T" Suffix
  - Aluminum case with terminal blocks
  - L 193.2 x W 26.25 x H 19.85 mm
  - (L 7.60 x W 1.03 x H 0.78 in)

### Applications
- Strip lights
- Pendant lights
- Linear lights
- Cove lights

### ERP Part Number

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<tr>
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</thead>
<tbody>
<tr>
<td>120 &amp; 277 Vac, 220 to 240 Vac</td>
<td>12, 24, 48 Vdc</td>
<td>96</td>
<td>8, 4, 2 A</td>
<td>up to 93% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt;0.9</td>
</tr>
</tbody>
</table>

1. Not Class 2 because the over-current protection of this model exceeds the 8A UL Class 2 limit.
2. Suffix for the different mounting options:
   1) NO suffix: side leads
   2) "-T": Terminal blocks
   3) "-S": Bottom lead exit with studs

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
JVLM SERIES 40 W - 96 W
Efficient, Compact, Constant Voltage Class 2 LED Drivers

Features
- VLM40-60-100 series included in a very low profile junction box
- Knock-out holes available in all sides enable maximum wiring flexibility
- Same electrical features as the VLM series
- IP20-rated case with silicone-based potting

Typical Application Diagram

Applications
- Strip lights
- Pendant lights
- Linear lights

ERP Part Number | Nominal Input Voltage (Vac) | Pout Max (W) | Vout Nom (Vdc) | Iout Max (A) | Nominal Output Voltage | Max. Output Power | Max. Output Current | Efficiency | Max. Case Temperature | THD | Power Factor |
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</tr>
</thead>
<tbody>
<tr>
<td>JVLM40W-12</td>
<td>120 &amp; 277</td>
<td>40.0</td>
<td>12</td>
<td>1.67</td>
<td>JVLM40W: 60 W</td>
<td>40 W</td>
<td>8, 4, 2 A</td>
<td>up to 90%</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt;0.9</td>
</tr>
<tr>
<td>JVLM40W-24</td>
<td>120 &amp; 277</td>
<td>40.0</td>
<td>24</td>
<td>0.83</td>
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<td></td>
</tr>
<tr>
<td>JVLM40W-48</td>
<td>120 &amp; 277</td>
<td>40.0</td>
<td>48</td>
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</tr>
<tr>
<td>JVLM60W-12</td>
<td>120 &amp; 277</td>
<td>60.0</td>
<td>12</td>
<td>5</td>
<td>JVLM60W: 60 W</td>
<td>60 W</td>
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<td></td>
</tr>
<tr>
<td>JVLM60W-24</td>
<td>120 &amp; 277</td>
<td>60.0</td>
<td>24</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JVLM60W-48</td>
<td>120 &amp; 277</td>
<td>60.0</td>
<td>48</td>
<td>1.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>JVLM100W-12</td>
<td>120 &amp; 277</td>
<td>96.0</td>
<td>12</td>
<td>8</td>
<td>JVLM100W: 100 W</td>
<td>100 W</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>JVLM100W-24</td>
<td>120 &amp; 277</td>
<td>96.0</td>
<td>24</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JVLM100W-48</td>
<td>120 &amp; 277</td>
<td>96.0</td>
<td>48</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

1. Not Class 2 because the over-current protection of this model exceeds the 8A UL Class 2 limit.
2. Contains the VLM100 Series LED Driver in the aluminum case with flying leads

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
**FEATURES**

- Very high power density of 10.2 W/in³
- UL Class P
- IP66-rated case with silicone-based potting
- 90°C maximum case temperature
- Complies with ENERGY STAR® luminaire specification and DLC (DesignLight Consortium®) technical requirements

**APPLICATIONS**

- Horticulture
- Industrial lights
- Outdoor and indoor

**TYPICAL APPLICATION DIAGRAM**

- VLB260 Series
- + LEDs
- - LEDs

**APPLICATIONS**

- Horticulture
- Industrial lights
- Outdoor and indoor

**TABLE**

<table>
<thead>
<tr>
<th>ERP Part Number</th>
<th>Nominal Input Voltage (Vac)</th>
<th>Pout Max (W)</th>
<th>Vout Nom (Vdc)</th>
<th>Iout Max (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VLB260W-12</td>
<td>120 &amp; 277</td>
<td>260.0</td>
<td>12</td>
<td>21.67</td>
</tr>
<tr>
<td>VLB260W-24</td>
<td>120 &amp; 277</td>
<td>260.0</td>
<td>24</td>
<td>10.83</td>
</tr>
<tr>
<td>VLB260W-48</td>
<td>120 &amp; 277</td>
<td>260.0</td>
<td>48</td>
<td>5.42</td>
</tr>
</tbody>
</table>

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
Ultra High Density Open Frame AC-DC, Up to 365 W Power Supplies

**UHD SERIES** 70 W - 365 W

Applications

- Stage lighting
- LED displays
- RGB LED color mixing
- Diagnostic and imaging equipment
- Video, audio and broadcast gear

**Features**

- 3.3 V to 48 V outputs available
- Universal 90 to 264 Vac input
- Typical efficiency of 90%
- Industry standard 2” x 4” footprint
- OVP, OTP and short-circuit protection
- Fanless, convection-cooled operation up to 100 W
- Power density up to 18W/in³
- Active power factor correction (PFC)
- Auxiliary fan +12V output
- Full ITE and medical approvals
- Compliant to worldwide safety and EMC standards

**UHD160 Series**

<table>
<thead>
<tr>
<th>ERP Part Number</th>
<th>Main Output V1</th>
<th>12 V Auxiliary Output V2 (A)</th>
<th>Maximum Power (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UHD160-1000</td>
<td>5</td>
<td>20</td>
<td>100.0</td>
</tr>
<tr>
<td>UHD160-1001</td>
<td>12</td>
<td>13.3</td>
<td>160.0</td>
</tr>
<tr>
<td>UHD160-1002</td>
<td>24</td>
<td>6.66</td>
<td>160.0</td>
</tr>
<tr>
<td>UHD160-1003</td>
<td>48</td>
<td>3.33</td>
<td>160.0</td>
</tr>
</tbody>
</table>

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com

**UHD365 Series**

<table>
<thead>
<tr>
<th>ERP Part Number</th>
<th>Main Output V1</th>
<th>12 V Auxiliary Output V2 (A)</th>
<th>+5 Vsb Output (A)</th>
<th>Maximum Power (W)</th>
</tr>
</thead>
<tbody>
<tr>
<td>UHD365-1001</td>
<td>12</td>
<td>30.4</td>
<td>1</td>
<td>365.0</td>
</tr>
<tr>
<td>UHD365-1002</td>
<td>24</td>
<td>15.2</td>
<td>1</td>
<td>365.0</td>
</tr>
<tr>
<td>UHD365-1003</td>
<td>48</td>
<td>7.6</td>
<td>1</td>
<td>365.0</td>
</tr>
</tbody>
</table>

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
Features

• Class 2 power supply
• IP66-rated case with silicone-based potting
• Lifetime: 50,000 hours min at 50°C ambient temperature
• UL879 SAM (Sign Component Manual) listing
• Surge protection:
  - IEC61000-4-5: 6 kV line to line/6 kV line to earth
  - 2.5 kV ring wave: ANSI/IEEE c62.41.1-2002 & c62.41.2-2002 category A
• Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements

ERP Part Number | Nominal Input Voltage (Vac) | Pout Max (W) | Vout Nom (Vdc) | lout Max (A)
---|---|---|---|---
VGM060W-12 | 120 & 277 | 60.0 | 12 | 5
VGM100W-24 | 120 & 277 | 90.0 | 24 | 3.75

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com

Applications

• Signage
• Strip lights

Typical Application Diagram
**VIM SERIES  60 W - 90 W**

**Efficient, Class 2**

**Constant Voltage LED Drivers**

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<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>120 &amp; 277 Vac</td>
<td>90 W</td>
<td>12, 24 Vdc</td>
<td>5, 3.75 A</td>
<td>up to 90% typical</td>
<td>100°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt;0.9</td>
</tr>
</tbody>
</table>

**Typical Application Diagram**

- **Features**
  - Class 2 power supply
  - IP66-rated case with silicone-based potting
  - Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements
  - Lifetime: 50,000 hours min

**Applications**

- Signage
- Strip lights

**ERP Part Number**

<table>
<thead>
<tr>
<th>ERP Part Number</th>
<th>Nominal Input Voltage (Vac)</th>
<th>Pout Max (W)</th>
<th>Vout Nom (Vdc)</th>
<th>Iout Max (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIM60W</td>
<td>120 &amp; 277</td>
<td>60.0</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>VIM060W-12</td>
<td>120 &amp; 277</td>
<td>90.0</td>
<td>24</td>
<td>3.75</td>
</tr>
</tbody>
</table>

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
**VZM SERIES 60 W - 90 W**

**Efficient, Compact, Class 2**

**Constant Voltage LED Drivers with 0-10 V Dimming**

### Features

- Class 2 power supply
- Class II power supply per IEC61347
- UL Class P
- Ripple < 5% @ 20% & 100% load
- CV/CC mode
- 0-10V dimming profile with dim-to-off
- IP20-rated case with silicone-based potting
- 90°C maximum case hot spot temperature
- Lifetime: 50,000 hours min at 75°C case temperature
- EMI: Compliant with FCC CFR Title 47 Part 15 Class B at 120 Vac & Class A at 277 Vac and with CE EN55015 (CISPR 15) at 220, 230, and 240 Vac
- Surge protection:
  - IEC61000-4-5: 6 kV line to line/6 kV line to earth
  - 2.5 kV ring wave: ANSI/IEEE c62.41.1-2002 & c62.41.2-2002 category A
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements
- Additional safety approvals when using the optional strain reliefs for models with “-T” suffix

### Applications

- Strip lights
- Pendant lights
- Linear lights
- Cove Lights


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</tr>
</thead>
<tbody>
<tr>
<td>120 to 277 Vac</td>
<td>90 W</td>
<td>12, 24, 48 Vdc</td>
<td>7.50, 3.75, 1.9 A</td>
<td>up to 90% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt;0.9</td>
<td>0 - 10 V</td>
<td>1 to 100% (% of Iout)</td>
<td>300 ms typical</td>
</tr>
</tbody>
</table>

### Typical Application Diagram

- **Models with Flying Leads, Aluminum case**
  - L 139.7 x W 31.8 x H 21.4 mm
  - (L 5.5 x W 1.25 x H 0.84 in)

- **Models with “-S” Suffix**
  - Bottom Leads with Studs, Aluminum Case
  - L 142 x W 31.8 x H 23.4 mm
  - (L 5.59 x W 1.25 x H 0.92 in)

- **Models with “-T” Suffix**
  - Aluminum case with terminal blocks

For additional options of output current and output voltage, contact your sales representative or send an email to: SaveEnergy@ERP-Power.com
CNB30/40/50 SERIES 30 W - 50 W
Programmable, Constant Current LED Drivers with Bluetooth® Wireless Dimming

<table>
<thead>
<tr>
<th>Nominal Input Voltage</th>
<th>Max. Output Power</th>
<th>Efficiency</th>
<th>Max. Case Temperature</th>
<th>THD</th>
<th>Power Factor</th>
<th>Dimming Method</th>
<th>Dimming Range</th>
<th>Startup Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>120 &amp; 277 Vac</td>
<td>50 W</td>
<td>up to 90% typical</td>
<td>90°C (measured at the hot spot)</td>
<td>&lt; 20%</td>
<td>&gt; 0.9</td>
<td>Bluetooth</td>
<td>1 to 100% (% of Iout)</td>
<td>300 ms typical</td>
</tr>
</tbody>
</table>

**Typical Application Diagram**

**Features**
- Non-linear 0-10V dimming profile with dim-to-off pre-loaded by default (10V to 9.1V=100%, 1.5V to 0.55V=1%, <0.55V=dim-to-off)
- UL Class P
- Class 2 power supply
- Lifetime: 50,000 hours @ Tc = 75°C
- 90°C maximum case hot spot temperature
- IP20-rated case with silicone-based potting
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements

**Applications**
- Commercial & residential lighting
- Architectural lighting
- Indoor Lighting

**NFC Programming**
- Current: 100% to 50% in each voltage range
- Data log read: SKU, S/N, lot code, hours of operation, FW revision, fault events: power failure, transients (short or surge), thermal
- Fully programmable and selectable 0-10V dimming profiles: Non-linear with dim-to-off, Logarithmic, Non-Linear without dim-to-off

**Applications**
- Commercial & residential lighting
- Architectural lighting
- Indoor Lighting