ERP POWER®

lumenetix® powered by ERP

DRIVING QUALITY OF LIGHT™

Programmable & Dimmable LED Drivers

Revision: October 2020

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)

ERP POWER®

DRIVING QUALITY OF LIGHT™

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**

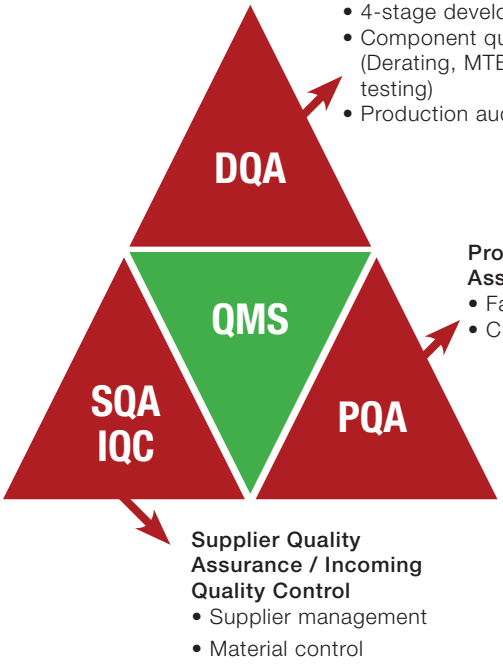
Our Presence

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

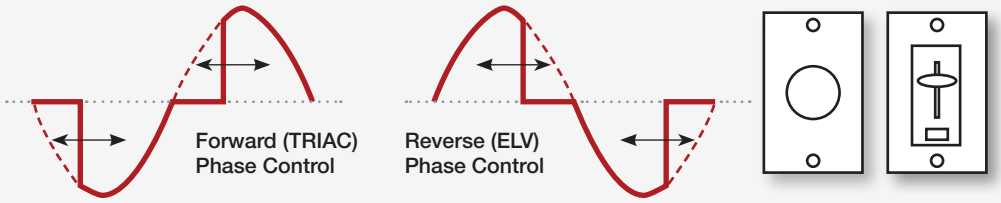
Standard Certifications

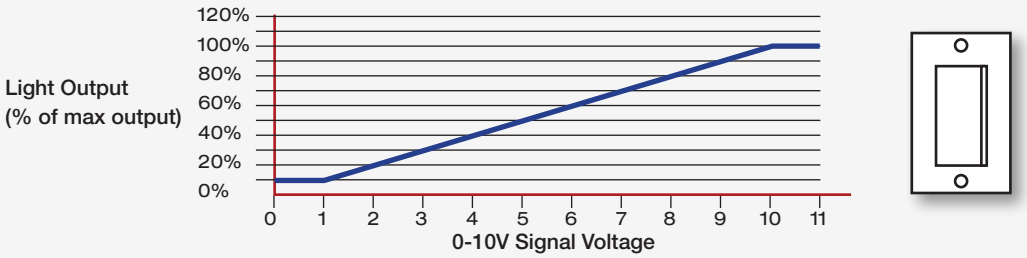
ERP products are designed and manufactured to comply with worldwide international IEC standards for lighting applications, and carry certifications by safety agencies such as UL, CSA and Nemko.

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)

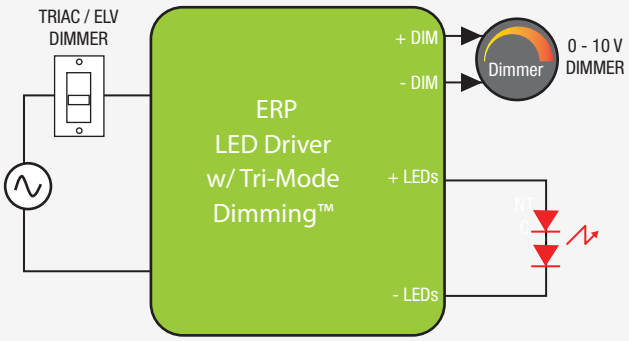




0-10 V control

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.

LED Cross-Reference

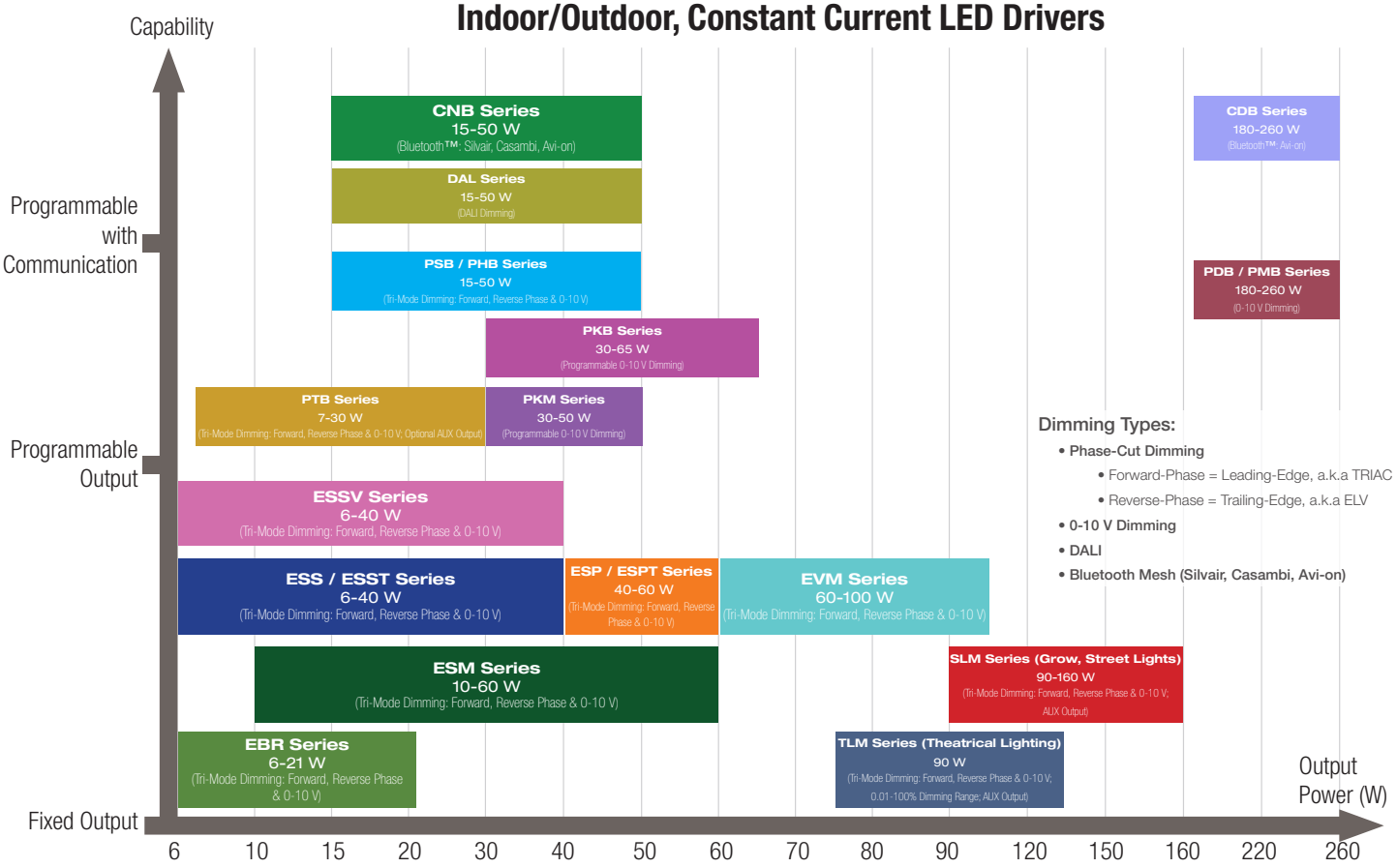
ERP has developed an extensive cross-reference for 12 different LED manufacturers. This cross-reference can be directly accessed from the ERP website at **www.erp-power.com**. On the homepage, using the pull-down menus, select the LED manufacturer and then the LED. You may also select your desired drive 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.

bridgelux	CITIZEN	CREE
LG Innotek	SAMSUNG	LUMINUS LEADER IN BIG CHIP LEDS XNOVA
NICHIA	LUMILEDS	XICATO AUTHORIZED DISTRIBUTOR
SEOUL	lumenetix	

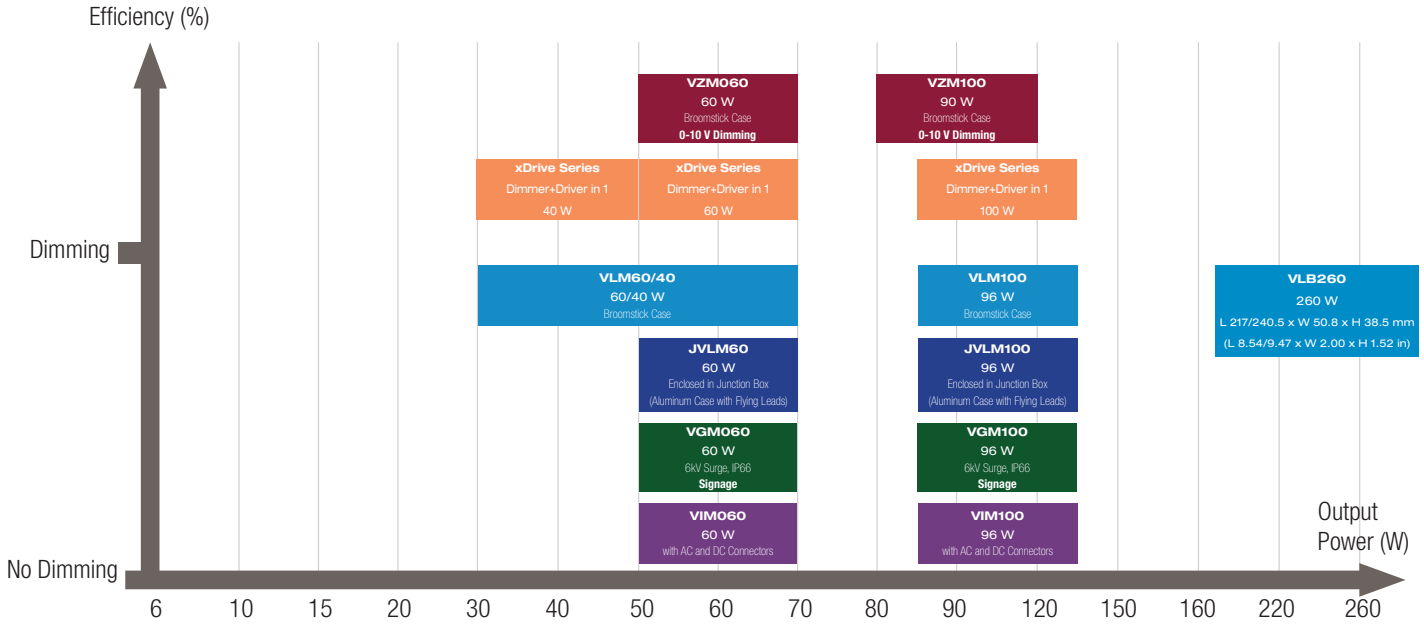
ERP Constant Current and Constant Voltage LED Driver Portfolios

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.

Indoor/Outdoor, Constant Current LED Drivers



Indoor/Outdoor, Isolated, Dimmable & Non-Dimmable, Constant Voltage LED Drivers

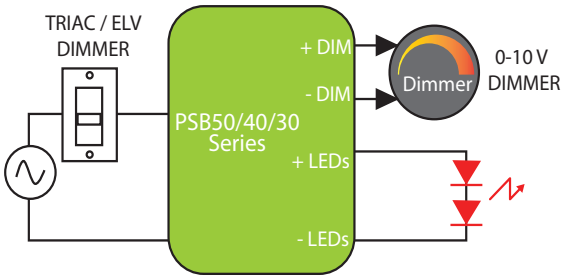


PSB SERIES 30 W - 50 W

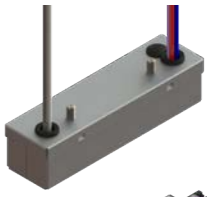
Programmable, Constant Current, Class 2 / Class II LED Drivers with Tri-Mode Dimming™ (TRIAC, ELV and 0-10 V)

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

Typical Application Diagram



Side Leads
PSBXXW Models
L 98.5 x W 26.0 x H 21.85 mm
(L 3.88 x W 1.02 x H 0.86 in.)



Bottom Leads with Studs: "-S" Suffix
L 98.5 x W 26.0 x H 23.7 mm
(L 3.88 x W 1.02 x H 0.93 in.)

Terminal Blocks: "-T" Suffix
L 154.2 x W 26.2 x H 21.85 mm
(L 6.07 x W 1.03 x H 0.86 in.)

SELV Class 2 CA Title 24 LISTED

Features

- Non-linear 0-10 V dimming profile with dim-to-off pre-loaded by default (10 V to 9.0 V = 100%, 1.5 V to 0.7 V = 1%, < 0.7 V = dim-to-off)
- UL Class P
- Class 2 output / Class II 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 PSBXXE models, only 0-10 V dimming
- Surge protection:
  - IEC61000-4-5: 2 kV line to line / 2 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)	Max. Output Power (W)	Iout (mA)	Vout Min. (Vdc)	Vout Nom. (Vdc)	Vout Max. (Vdc)	Open Loop (No Load) Voltage (Vdc)
120 & 277 VAC NOMINAL INPUT VOLTAGE							
PSB30W							
PSB30W-0700-42	120 & 277	29.4	350 to 700	28	37.8	42	50
PSB30W-1050-27	120 & 277	28.4	525 to 1050	18	24.3	27	35
PSB30W-0700-34	120 & 277	23.8	350 to 700	23	30.6	34	44.2
PSB30W-0700-42-S	120 & 277	29.4	350 to 700	28	37.8	42	50
PSB30W-1050-27-S	120 & 277	28.4	525 to 1050	18	24.3	27	35
PSB30W-0700-34-S	120 & 277	23.8	350 to 700	23	30.6	34	44.2
PSB40W							
PSB40W-1400-27	120 & 277	37.8	700 to 1400	18	24.3	27	35
PSB40W-1400-27-S	120 & 277	37.8	700 to 1400	18	24.3	27	35
PSB50W							
PSB50W-0550-85	120 & 277	46.8	275 to 550	57	76.5	85	100
PSB50W-0850-56	120 & 277	47.6	425 to 850	38	50.4	56	60
PSB50W-1200-42	120 & 277	50.4	600 to 1200	28	37.8	42	50
PSB50W-1400-34	120 & 277	47.6	700 to 1400	23	30.6	34	44.2
PSB50W-0550-85-S	120 & 277	46.8	275 to 550	57	76.5	85	100
PSB50W-0850-56-S	120 & 277	47.6	425 to 850	38	50.4	56	60
PSB50W-1200-42-S	120 & 277	50.4	600 to 1200	28	37.8	42	50
PSB50W-1400-34-S	120 & 277	47.6	700 to 1400	23	30.6	34	44.2
220 TO 240 VAC NOMINAL INPUT VOLTAGE							
PSB30E							
PSB30E-0700-42	220 to 240	29.4	350 to 700	28	37.8	42	50
PSB30E-0700-42-T	220 to 240	29.4	350 to 700	28	37.8	42	50
PSB30E-1050-27-T	220 to 240	28.4	525 to 1050	18	24.3	27	35
PSB30E-0700-34-T	220 to 240	27.2	350 to 700	23	30.6	34	44.2
PSB40E							
PSB40E-1400-27-T	220 to 240	37.8	700 to 1400	18	24.3	27	35
PSB50E							
PSB50E-1200-42	220 to 240	50.4	600 to 1200	28	37.8	42	50
PSB50E-0550-85-T	220 to 240	46.8	275 to 550	57	76.5	85	100
PSB50E-0850-56-T	220 to 240	47.6	425 to 850	38	50.4	56	60
PSB50E-1200-42-T	220 to 240	50.4	600 to 1200	28	37.8	42	50
PSB50E-1400-34-T	220 to 240	47.6	700 to 1400	23	30.6	34	44.2

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

Programming

- Current: 100% to 50% in each voltage range
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles
- Fully programmable and selectable 0-10 V dimming profiles: Non-linear with dim-to-off, Logarithmic, Non-Linear without dim-to-off

Typical Applications

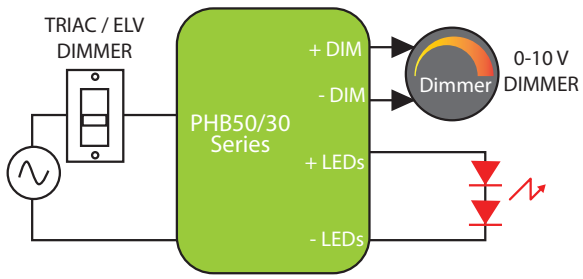
- Commercial lighting
- Architectural lighting
- Residential lighting
- Indoor Lighting

PHB SERIES 30 W & 50 W

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

Nominal Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	50 W	up to 90% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Programmable Forward-Phase, Reverse-Phase, & 0-10 V	1-100% (% of Iout)	300 ms typical

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)
120 & 277 VAC NOMINAL INPUT VOLTAGE							
PHB30W							
PHB30W-0500-42	120 & 277	21.0	250 to 500	28	37.8	42	50
PHB30W-0700-42	120 & 277	29.4	350 to 700	28	37.8	42	50
PHB30W-0500-42-S	120 & 277	21.0	250 to 500	28	37.8	42	50
PHB30W-0700-42-S	120 & 277	29.4	350 to 700	28	37.8	42	50
PHB50W							
PHB50W-0850-56	120 & 277	47.6	425 to 850	38	50.4	56	60
PHB50W-1200-42	120 & 277	50.4	600 to 1200	28	37.8	42	50
PHB50W-0850-56-S	120 & 277	47.6	425 to 850	38	50.4	56	60
PHB50W-1200-42-S	120 & 277	50.4	600 to 1200	28	37.8	42	50

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

Side Leads
L 103.5 x W 26.2 x H 23.85 mm
(L 4.07 x W 1.03 x H 0.94 in.)

Bottom Leads with Studs: "-S" Suffix
L 103.5 x W 26.2 x H 23.85 mm
(L 4.07 x W 1.03 x H 0.94 in.)

Class 2 CA Title 24 LISTED

Features

- Ripple < 10% @ 20% & 100% load for TRIAC, ELV, and 0-10 V
- Turn-on at 1% Iout for TRIAC, ELV, and 0-10 V dimming
- Programmable conduction angles with turn-on & turn-off for TRIAC & ELV
- Programmable 0-10 V dimming profile
- Non-linear 0-10 V dimming profile with dim-to-off pre-loaded by default (10 V to 9.0 V = 100%, 1.5 V to 0.7 V = 1%, < 0.7 V = dim-to-off)
- UL Class P
- Class 2 output / Class II power supply
- Lifetime: 50,000 hours @ Tc ≤ 75°C
- 90°C maximum case hot spot temperature
- IP20-rated case with silicone-based potting
- Surge protection:
  - IEC61000-4-5: 2 kV line to line / 2 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

Programming

- Current: 100% to 50% in each voltage range
- Data log read: Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles
- Fully programmable and selectable 0-10 V dimming profiles: Non-linear with dim-to-off, Logarithmic, Non-Linear without dim-to-off
- Programmable conduction angles with turn-on & turn-off for TRIAC & ELV

Typical Applications

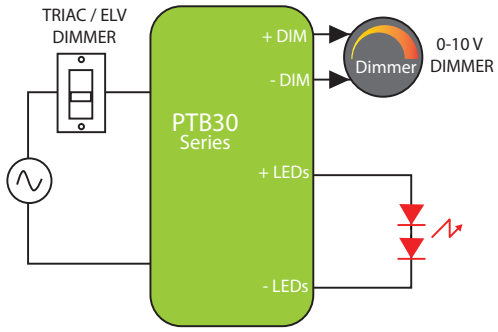
- Commercial lighting
- Architectural lighting
- Residential lighting
- Indoor Lighting

PTB SERIES 15 W - 30 W

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

Nominal Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	30 W	up to 90% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Programmable Forward-Phase, Reverse-Phase, & 0-10 V	1-100% (% of Iout)	300 ms typical

Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Max. Output Power (W)	Iout (mA)	Default Programmed Current (mA)	Vout Min. (Vdc)	Vout Max. (Vdc)
PTB15W						
PTB15W-0350-42	120 & 277	14.7	210 to 350	250	28	42
PTB30W						
PTB30W-0500-42	120 & 277	21.0	300 to 500	350	28	42
PTB30W-0700-42	120 & 277	29.4	420 to 700	500	28	42

1. Please order the programming cable using the part number PROG-JACK-USB.

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

Side Leads
L 70 x W 40 x H 29.5 mm
(L 2.76 x W 1.57 x H 1.16 in.)

CA Title 24

Programming

- Audio jack programming
- Current: 100% to 60% in each voltage range
- 0-10V dimming profiles: linear, non-linear, logarithmic
- Programmable conduction angles with turn-on and turn-off for TRIAC and ELV
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles

Features

- UL Class 2 power supply
- Lifetime: 5 years @ Tc = 75ºC
- 90ºC maximum case hot spot temperature
- IP20-rated case with silicone-based potting
- Surge protection:
  - IEC61000-4-5: 2 kV line to line / 2 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

Typical Applications

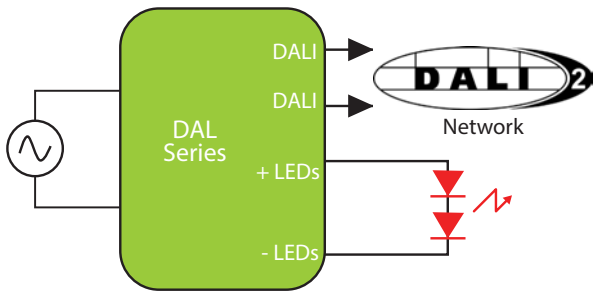
- Commercial lighting
- Architectural lighting
- Residential lighting
- Indoor lighting

DAL SERIES 30 W & 50 W

Programmable, Constant Current, Class 2 LED Drivers with DALI Dimming

Nominal Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range
120 to 277 Vac	50 W	up to 90% typical	90°C (measured at the hot spot)	< 20% (from 100% to 50% of load)	> 0.9 (from 100% to 50% of load)	DALI	1-100% (% of Iout)

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)
DAL30W							
DAL30W-0600-42-T	120 to 277	25.2	300 to 600	28	37.8	42	50
DAL50W							
DAL50W-0850-56-T	120 to 277	47.6	425 to 850	38	50.4	56	60
DAL50W-1200-42-T	120 to 277	50.4	600 to 1200	28	37.8	42	50

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

Terminal Blocks, Aluminum Case
L 132.2 x W 30.6 x H 20.7 mm
(L 5.21 x W 1.20 x H 0.81 in.)

SELV Class 2

Features

- Universal input voltage range
- Ripple < 10% @ 20% & 100% load
- Turn-on: @ 1% Iout
- 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
- Safety, Compliance
  - UL: Class 2 output, Class P
  - CB, CE
  - FCC, ENEC
  - DALI2, Device Type 6 (Parts 101, 102, 207)
- IP20-rated case with silicone-based potting
- Lifetime: 50,000 hours min. at 75°C case temperature
- Class II power supply
- 90°C maximum case hot spot temperature

NFC Programming

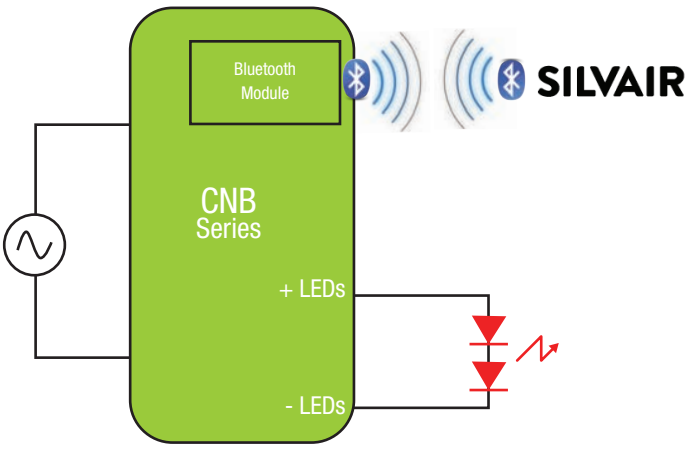
- Current: 100% to 50% in each voltage range
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles

CNB SERIES 30 W - 50 W

Programmable, Constant Current, Class 2
LED Drivers with Bluetooth® Wireless Dimming

Nominal Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	50 W	up to 90% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Bluetooth	1-100%	300 ms typical

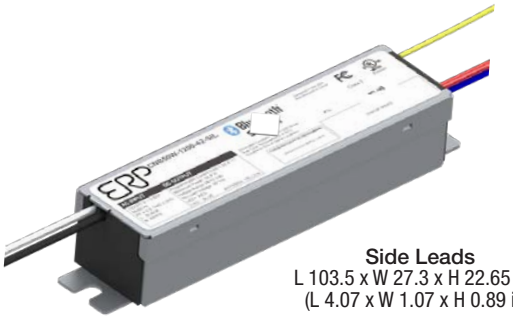
Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Max. Output Power (W)	Iout (mA)	Vout Min. (Vdc)	Vout Max. (Vdc)
CNB30W: 21 to 30 W					
CNB30W-0600-42-SIL	120 & 277	25.2	300 to 600	28	42
CNB50W: 51 to 60 W					
CNB50W-1200-42-SIL	120 & 277	50.4	600 to 1200	28	42

"-SIL" Suffix: Rigado BMD-300/1 Bluetooth Mesh module with Silvair Bluetooth firmware, with wire whip antenna, Side Leads case

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



Side Leads
L 103.5 x W 27.3 x H 22.65 mm
(L 4.07 x W 1.07 x H 0.89 in.)

CA Title 24

NFC Programming

- Current: 100% to 50% in each voltage range
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles

Features

- 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

Typical Applications

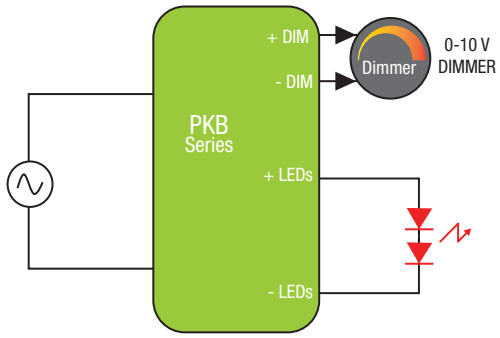
- Commercial lighting
- Indoor lighting
- Architectural lighting

PKB SERIES 30 W - 65 W

Programmable, Constant Current Class 2 LED Drivers with 0-10 V Dimming

Nominal Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	65 W	86% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Programmable 0-10 V	1-100% (% of Iout)	300 ms typical

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)
PKB30W							
PKB30W-1050-55-TD	120 & 277	30	275 to 1050	10	49.5	55	60
PKB50W							
PKB50W-1400-55-TD	120 & 277	50	455 to 1400	10	49.5	55	60
PKB65W							
PKB65W-1800-55-TD	120 & 277	65	591 to 1800	10	49.5	55	60

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

Terminal Blocks, Aluminum Case
L 257 x W 29.4 x H 25.1 mm
(L 10.12 x W 1.16 x H 0.99 in.)

CA Title 24

Programming

- Audio jack programming
- 0-10V dimming profiles: linear, non-linear, logarithmic
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles

Features

- UL Class P
- Class 2 output
- Lifetime: 5 years @ Tc ≤ 75°C
- 20% maximum ripple current
- 90ºC maximum case hot spot temperature
- Surge protection:
  - IEC61000-4-5: 2 kV line to line / 2 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

Typical Applications

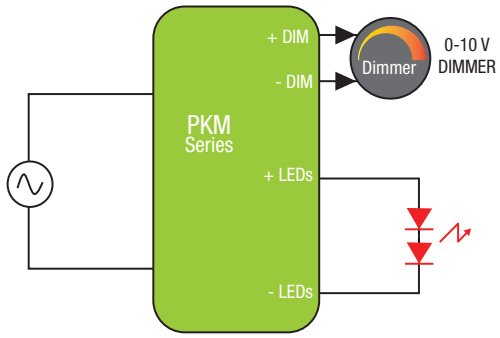
- Commercial lighting
- Architectural lighting
- Residential lighting
- Indoor lighting

PKM SERIES 30 W - 50 W

Programmable, Constant Current Class 2 LED Drivers with 0-10 V Dimming

Nominal Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	50 W	86% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Programmable 0-10 V	1-100% (% of Iout)	300 ms typical

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)
PKM30W							
PKM30W-1050-55-SD	120 & 277	30	275 to 1050	10	49.5	55	60
PKM30W-1050-55-TD	120 & 277	30	275 to 1050	10	49.5	55	60
PKM50W							
PKM50W-1400-55-SD	120 & 277	50	455 to 1400	10	49.5	55	60
PKM50W-1400-55-TD	120 & 277	50	455 to 1400	10	49.5	55	60

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

Terminal Blocks, Metal Case: "-TD" Suffix
L 106.5 x W 60.3 x H 25.5 mm
(L 4.19 x W 2.37 x H 1.00 in.)

Bottom Leads, Metal Case: "-SD" Suffix
L 106.7 x W 60.3 x H 25.2 mm
(L 4.20 x W 2.37 x H 0.99 in.)

CA Title 24

Programming

- Audio jack programming
- 0-10V dimming profiles: linear, non-linear, logarithmic
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles

Features

- UL Class P
- Class 2 output
- Lifetime: 5 years @ Tc ≤ 75°C
- 20% maximum ripple current
- 90°C maximum case hot spot temperature
- Surge protection:
  - IEC61000-4-5: 2 kV line to line / 2 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

Typical Applications

- Commercial lighting
- Architectural lighting
- Residential lighting
- Indoor lighting

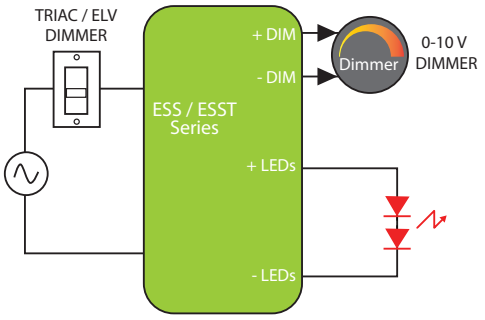
ESS / ESST SERIES 6 W - 40 W

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency
120 & 277 Vac, 220 to 240 Vac	40 W	6 to 56 Vdc	180 mA to 2.1 A Constant Current	up to 87% typical

Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
90°C (measured at the hot spot)	< 20%	> 0.9	Forward-Phase, Reverse-Phase, & 0-10 V	1-100% (% of Iout)	400 ms

Typical Application Diagram



ESS Plastic Case
L 84 x W 40 x H 25 mm
(L 3.30 x W 1.57 x H 0.99 in.)

ESST Thermally Enhanced Plastic Case (ESST040 ONLY)
L 84 x W 40 x H 27 mm
(L 3.30 x W 1.57 x H 1.06 in.)

CA Title 24

Features

- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- ESSxxxW models: only 0-10 V dimming at 277 Vac
- ESSxxxE models: no dimming
- 90°C maximum case hot spot temperature
- Class 2 power supply
- Lifetime: 50,000 hours at 70°C case hot spot temperature (some models have higher lifetime. Check lifetime curves in spec sheet)
- 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

ERP Part Number	Nominal Input Voltage (Vac)	Iout (mA)	Max. Output Power (W)	Output Voltage Range (Vdc)	
				min.	max.
120 & 277 VAC NOMINAL VOLTAGE					
ESS010W: up to 10 W					
ESS010W-0180-42	120 & 277	180	7.6	24	42
ESS010W-0200-42	120 & 277	200	8.4	24	42
ESS010W-0250-42	120 & 277	250	10.5	24	42
ESS010W-0250-42-Z1 [2]	120 & 277	250	10.5	24	42
ESS010W-0350-24	120 & 277	350	8.4	14	24
ESS010W-0500-12	120 & 277	500	6.0	6	12
ESS010W-0500-18	120 & 277	500	9.0	10	18
ESS010W-0750-12	120 & 277	750	9.0	6	12
ESS015W: 11 to 15 W					
ESS015W-0300-42	120 & 277	300	12.6	24	42
ESS015W-0350-32	120 & 277	350	11.2	21	32
ESS015W-0400-32	120 & 277	400	12.8	21	32
ESS015W-0350-42	120 & 277	350	14.7	24	42
ESS015W-0350-42-Z1 [2]	120 & 277	350	14.7	24	42
ESS015W-0440-25	120 & 277	440	11.0	19	25
ESS015W-0440-34	120 & 277	440	15.0	24	34
ESS015W-0700-18	120 & 277	700	12.6	10	18
ESS015W-0700-18-Z1 [2]	120 & 277	700	12.6	10	18
ESS015W-1000-12	120 & 277	1000	12.0	6	12
ESS015W-1050-14	120 & 277	1050	14.7	8	14
ESS015W-1050-14-Z1 [2]	120 & 277	1050	14.7	8	14
ESS020W: 16 to 20 W					
ESS020W-0350-56	120 & 277	350	19.6	40	56
ESS020W-0400-42	120 & 277	400	16.8	24	42
ESS020W-0450-42	120 & 277	450	18.9	24	42
ESS020W-0500-32	120 & 277	500	16.0	21	32
ESS020W-0500-34	120 & 277	500	17.0	24	34
ESS020W-0700-24	120 & 277	700	16.8	14	24
ESS020W-1400-14	120 & 277	1400	19.6	8	14
ESS020W-1400-14-Z1 [2]	120 & 277	1400	19.6	8	14
ESS030W: 21 to 30 W					
ESS030W-0500-42	120 & 277	500	21.0	24	42
ESS030W-0500-42-Z1 [2]	120 & 277	500	21.0	24	42
ESS030W-0550-42	120 & 277	550	23.1	24	42
ESS030W-0550-42-Y1 [1]	120 & 277	550	23.1	24	42
ESS030W-0620-42	120 & 277	620	26.0	24	42
ESS030W-0700-32	120 & 277	700	22.4	21	32
ESS030W-0700-42	120 & 277	700	29.4	24	42
ESS030W-0700-42-Z1 [2]	120 & 277	700	29.4	24	42
ESS030W-0900-27	120 & 277	900	24.3	20	27
ESS030W-0900-32	120 & 277	900	28.8	21	32
ESS030W-1050-21	120 & 277	1050	22.1	14	21
ESS030W-1100-27	120 & 277	1100	29.7	20	27
ESS030W-1750-14	120 & 277	1750	24.5	8	14
ESS030W-1750-14-Z1 [2]	120 & 277	1750	24.5	8	14
ESST040W: 31 to 40 W					
ESST040W-0800-42	120 & 277	800	33.6	24	42
ESST040W-0900-42	120 & 277	900	37.8	24	42
ESST040W-1400-24	120 & 277	1400	33.6	14	24
ESST040W-1400-27	120 & 277	1400	37.8	20	27
220 TO 240 VAC NOMINAL INPUT VOLTAGE					
ESS010E: up to 10 W					
ESS010E-0250-42	220 to 240	250	10.5	24	42
ESS015E: 11 to 15 W					
ESS015E-0350-42	220 to 240	350	14.7	24	42
ESS030E: 21 to 30 W					
ESS030E-0500-42	220 to 240	500	21.0	24	42
ESS030E-0700-42	220 to 240	700	29.4	24	42
ESST040E: 31 to 40 W					
ESST040E-0900-42	220 to 240	900	37.8	24	42

1. "-Y1" Suffix: Non-linear 0-10 V Dimming Profile (10 V to 9.1 V = 100%,1.2 V to 0.6 V = 1%, Dim-to-off < 0.68 V).

2. "-Z1" Suffix: Non-linear 0-10 V dimming profile (10 V to 8.1 V = 100%, 1 V to 0.8 V = 1%, Dim-to-off < 0.8 V).

Typical Applications

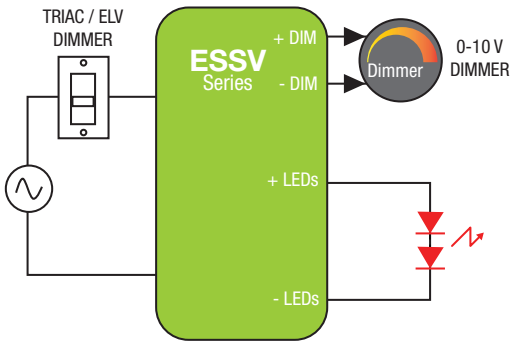
- Indoor & Outdoor
- Commercial lighting
- Architectural lighting
- Recessed lighting (downlights)
- Residential lighting
- Office Lighting

ESSV SERIES 11 W - 40 W

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	40 W	20 to 42 Vdc	250 mA to 1.4 A Constant Current	up to 87% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Forward-Phase, Reverse- Phase, & 0-10 V	1-100% (% of Iout)	400 ms

Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Iout (mA)	Max. Output Power (W)	Output Voltage Range (Vdc)	
				min.	max.
ESSV015W: 11 to 15 W					
ESSV015W-0300-42	120 & 277	300	12.6	24	42
ESSV030W: 21 to 30 W					
ESSV030W-0500-42	120 & 277	500	21.0	24	42
ESSV030W-0700-42	120 & 277	700	29.4	24	42

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

Plastic Case
L 84 x W 40 x H 27 mm
(L 3.30 x W 1.57 x H 1.06 in.)

CA Title 24

Features

- Same features as ESS/ESST series but with 5 VA 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 (some models have higher lifetime. Check lifetime curves in spec sheet)
- 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®) & CA Title 24 technical requirements

Typical Applications

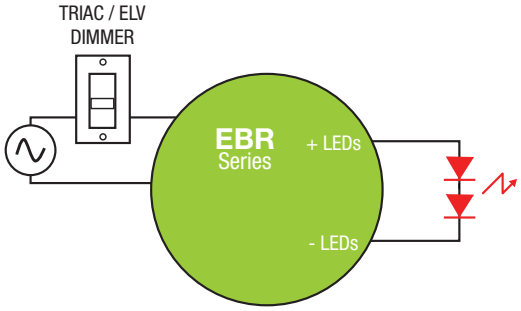
- Indoor & Outdoor
- Commercial lighting
- Architectural lighting
- Recessed lighting (downlights)
- Residential lighting
- Office Lighting

EBR SERIES 8 W - 21 W

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

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

Typical Application Diagram



Plastic Case
Diameter: 58 mm (2.28 in.)
Height: 31.7 mm (1.25 in.)

CA Title 24

ERP Part Number	Nominal Input Voltage (Vac)	Iout (mA)	Max. Output Power (W)	Output Voltage Range (Vdc)	
				min.	max.
120 VAC NOMINAL INPUT VOLTAGE					
EBR010U: 8 to 10 W					
EBR010U-0200-42	120	200	8.4	30	42
EBR010U-0250-42	120	250	10.5	30	42
EBR010U-0440-24	120	440	10.6	16	24
EBR015U: 11 to 15 W					
EBR015U-0300-42	120	300	12.6	30	42
EBR015U-0350-42	120	350	14.7	30	42
EBR015U-0440-36	120	440	15.8	24	36
EBR020U: 16 to 21 W					
EBR020U-0400-42	120	400	16.8	30	42
EBR020U-0500-32	120	500	16.0	21	32
EBR020U-0500-37	120	500	18.5	25	37
EBR020U-0500-42	120	500	21.0	30	42
EBR020U-0700-30	120	700	21.0	20	30
EBR020U-0720-21	120	720	15.1	14	21
220 TO 240 VAC NOMINAL INPUT VOLTAGE					
EBR010E: 8 to 10 W					
EBR010E-0250-42-CE	220 to 240	250	10.5	30	42
EBR015E: 11 to 15 W					
EBR015E-0350-42-CE	220 to 240	350	14.7	30	42
EBR020E: 16 to 21 W					
EBR020E-0500-42-CE	220 to 240	500	21.0	30	42

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

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 (some models have higher lifetime. Check lifetime curves in spec sheet)
- 90°C maximum 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

Typical Applications

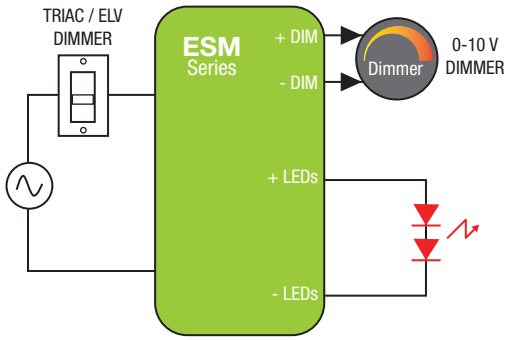
- Recessed lighting (downlights)
- Architectural lighting
- Commercial lighting
- Residential lighting

ESM SERIES 10 W - 60 W

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	60 W	8 to 56 Vdc	280 mA to 1.4 A Constant Current	up to 87% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Forward-Phase, Reverse-Phase, & 0-10 V	1-100% (% of Iout)	400 ms

Typical Application Diagram



Metal Case
L 110 x W 60 x H 26 mm
(L 4.33 x W 2.36 x H 1.02 in.)

CA Title 24

Features

- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- Only 0-10 V dimming at 277 Vac
- 90°C maximum case temperature
- Class 2 power supply
- Lifetime: 50,000 hours at 70°C case temperature (some models have higher lifetime. Check lifetime curves in spec sheet)
- IP20-rated case with silicone-based potting
- Two 0-10 V dimming profiles are available:
  - Linear 0-10 V dimming: 10 V = 100%, 1 V = 10%, 0.1 V = 1%.
  - Non-linear 0-10 V dimming: 10 V to 8.1 V = 100%, 1 V to 0.8 V = 1%, < 0.8 V 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®) & CA Title 24 technical requirements

ERP Part Number	Nominal Input Voltage (Vac)	Iout (mA)	Max. Output Power (W)	Output Voltage Range (Vdc)	
				min.	max.
ESM020W: 11 to 20 W					
ESM020W-0280-42	120 & 277	280	11.8	24	42
ESM020W-0350-42	120 & 277	350	14.7	24	42
ESM020W-0350-42-Z1 [1]	120 & 277	350	14.7	24	42
ESM020W-0440-25	120 & 277	440	11.0	19	25
ESM020W-0440-34	120 & 277	440	15.0	19	34
ESM020W-1000-14	120 & 277	1000	14.0	8	14
ESM030W: 21 to 30 W					
ESM030W-0500-42	120 & 277	500	21.0	24	42
ESM030W-0550-42	120 & 277	550	23.1	24	42
ESM030W-0700-42	120 & 277	700	29.4	24	42
ESM030W-0700-42-Z1 [1]	120 & 277	700	29.4	24	42
ESM030W-0900-26	120 & 277	900	23.4	20.5	26
ESM030W-1750-14	120 & 277	1750	24.5	8	14
ESM040W: 31 to 40 W					
ESM040W-0800-42	120 & 277	800	33.6	24	42
ESM040W-0850-42	120 & 277	850	35.7	24	42
ESM040W-0900-42	120 & 277	900	37.8	24	42
ESM040W-0940-43	120 & 277	940	40.4	32	43
ESM050W: 41 to 50 W					
ESM050W-1050-42	120 & 277	1050	44.1	24	42
ESM050W-1200-42	120 & 277	1200	50.4	24	42
ESM050W-1400-34	120 & 277	1400	47.6	23	34
ESM060W: 51 to 60 W					
ESM060W-1400-42	120 & 277	1400	58.8	24	42

1. Models with the "Z1" suffix exhibit a non-linear 0-10 V dimming profile with dim-to-off: 10 V to 9.1 V = 100%, 1 V to 0.8 V = 1%, < 0.8 V 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**

Typical Applications

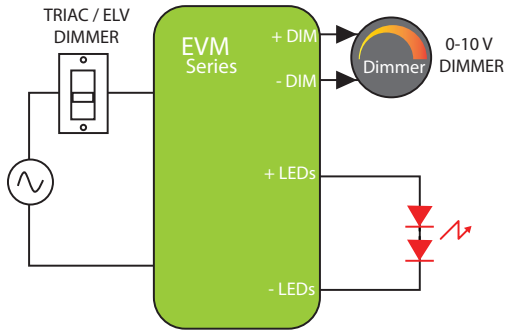
- Indoor & Outdoor
- Commercial lighting
- Architectural lighting
- Recessed lighting (downlights)
- Residential lighting
- Office Lighting

EVM SERIES 60 W - 100 W

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	100 W	30 to 48 Vdc	1.4 to 2.35 A Constant Current	up to 87% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Forward-Phase, Reverse-Phase, & 0-10 V	1-100% (% of Iout)	400 ms

Typical Application Diagram



Metal Case
L 144 x W 70 x H 40 mm
(L 5.67 x W 2.76 x H 1.57 in.)

ERP Part Number	Nominal Input Voltage (Vac)	Iout (mA)	Max. Output Power (W)	Output Voltage Range (Vdc)	
				min.	max.
EVM060W: up to 60 W					
EVM060W-1400-42-Z1B	120 & 277	1400	58.8	30	42
EVM080W: 71 to 80 W					
EVM080W-1750-42-Z1B	120 & 277	1750	73.5	30	42
EVM080W-1900-42	120 & 277	1900	79.8	30	42
EVM090W: 81 to 90 W					
EVM090W-1700-48-N1B [1]	120 & 277	1700	81.6	37	48
EVM090W-2000-42-S	120 & 277	2000	84.0	30	42
EVM090W-2000-42-Z1	120 & 277	2000	84.0	30	42
EVM100W: 91 to 100 W					
EVM100W-2100-45	120 & 277	2100	94.5	32	45
EVM100W-2350-42	120 & 277	2350	98.7	30	42
EVM120W: 111 to 120 W					

1. The EVM090W-1700-48-N1B is specifically intended to drive the Cree LMH2 6000 module and exhibits a customized 0-10 V 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**

Features

- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- Only 0-10 V dimming at 277 Vac
- Outdoor surge protection: 3 kV line to line / 6 kV line to earth
- Linear 0-10 V dimming transfer function: 10 V = 100%, 1 V = 10%, 0.1 V = 1%
- Optional non-linear 0-10 V 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 (most 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 (DesignLight Consortium®) technical requirements

Typical Applications

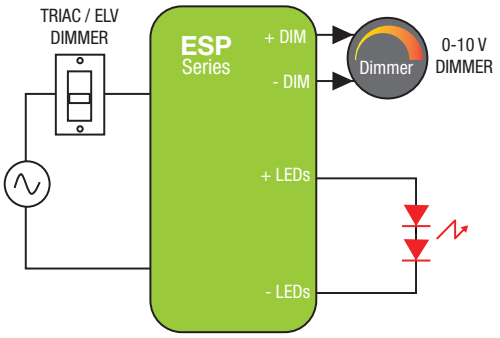
- High Bay Lights
- Tunnels & Street lighting
- Outdoor LED Lighting
- Industrial LED Lighting
- Metal Halide replacements
- Wide-area downlights
- Suitable for driving high current COB LEDs such as Cree's CXA3050/3070/3590 and Bridgelux's Vero series, and modules such as Cree's LMH2 6000/8000

ESP SERIES 40 W - 60 W

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac, 220 to 240 Vac	60 W	21 to 56 Vdc	700 mA to 1.4 A Constant Current	up to 87% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Forward-Phase, Reverse-Phase, & 0-10 V	1-100% (% of Iout)	400 ms

Typical Application Diagram



Plastic Case
L 90 x W 60 x H 27.2 mm
(L 3.54 x W 2.36 x H 1.07 in.)

CA Title 24

ERP Part Number	Nominal Input Voltage (Vac)	Iout (mA)	Max. Output Power (W)	Output Voltage Range (Vdc)	
				min.	max.
120 & 277 VAC NOMINAL VOLTAGE					
ESP040W: 31 to 40 W					
ESP040W-0700-56	120 & 277	700	39.2	40	56
ESP040W-0800-42	120 & 277	800	33.6	24	42
ESP040W-0850-42	120 & 277	850	35.7	24	42
ESP040W-0900-42	120 & 277	900	37.8	24	42
ESP040W-0940-33-SS-F1 [1]	120 & 277	940	31.0	28	33
ESP040W-0940-43	120 & 277	940	40.4	35	43
ESP050W: 41 to 50 W					
ESP050W-1050-42	120 & 277	1050	44.1	24	42
ESP050W-1200-42	120 & 277	1200	50.4	24	42
ESP050W-1400-32	120 & 277	1400	44.8	21	32
ESP050W-1400-34	120 & 277	1400	47.6	23	34
ESP060W: 51 to 60 W					
ESP060W-1400-42	120 & 277	1400	58.8	24	42
220 TO 240 VAC NOMINAL INPUT VOLTAGE					
ESP040E: 31 to 40 W					
ESP040E-0850-42	220 to 240	850	35.7	24	42
ESP060E: 51 to 60 W					
ESP060E-1400-42	220 to 240	1400	58.8	24	42

1. The ESP040W-0940-33-SS-F1 is specifically intended to drive the Cree LMH2 3000 sunset module and exhibits a customized 0-10 V dimming transfer function. It will not work with any other LED or LED string.

2. The ESP driver case can also be mounted by using two metal clips, one on each short side. The ordering part number for the two metal clips is ESP-CLIPS. By default, the ESP driver is shipped without metal clips. When metal clips are required, add ESP-CLIPS to your order.

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

Features

- NOT RECOMMENDED FOR NEW DESIGNS. FOR NEW DESIGNS, USE THE ESPT SERIES.
- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- ESPxxxW: only 0-10 V dimming at 277 Vac
- ESPxxxE models: only ELV dimming
- 90°C maximum case hot spot temperature (some models have higher lifetime. Check lifetime curves in spec sheet)
- Class 2 power supply
- Lifetime: 50,000 hours at 70°C case hot spot temperature
- IP66-rated 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

Typical Applications

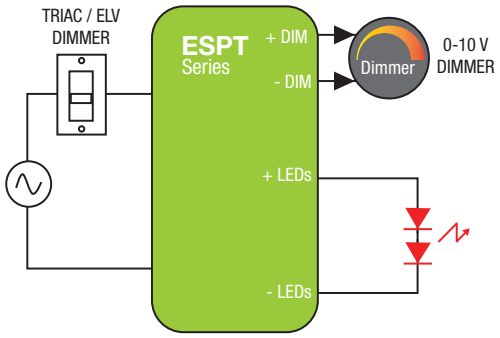
- Indoor & Outdoor
- Commercial lighting
- Architectural lighting
- Recessed lighting (downlights)
- Residential lighting
- Office Lighting

ESPT SERIES 40 W - 60 W

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	60 W	24 to 56 Vdc	700 mA to 1.4 A Constant Current	up to 87% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Forward-Phase, Reverse-Phase, & 0-10 V	1-100% (% of Iout)	400 ms

Typical Application Diagram



Plastic Case
L 87 x W 60 x H 30 mm
(L 3.43 x W 2.36 x H 1.18 in.)

CA Title 24

ERP Part Number	Nominal Input Voltage (Vac)	Iout (mA)	Max. Output Power (W)	Output Voltage Range (Vdc)	
				min.	max.
ESPT040W: 31 to 40 W					
ESPT040W-0900-42	120 & 277	900	37.8	24	42
ESPT050W: 41 to 50 W					
ESPT050W-1050-42-Z1 [1]	120 & 277	1050	44.1	24	42
ESPT050W-1200-42-Z1 [1]	120 & 277	1200	50.4	24	42
ESPT050W-1400-34	120 & 277	1400	47.6	23	34
ESPT060W: 51 to 60 W					
ESPT060W-1400-42-Z1 [1]	120 & 277	1400	58.8	24	42

1. ESPT models with the "-Z1" suffix exhibit a non-linear 0-10 V dimming profile with dim-to-off: 10 V to 8.1 V = 100%, 1 V to 0.8 V = 1%, < 0.8 V dim-to-off .

2. The ESPT driver case must be mounted by using a minimum of two metal clips. By default, the ESPT 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

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 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
- Only 0-10 V dimming at 277 Vac
- 90°C maximum case hot spot temperature
- Class 2 power supply
- Lifetime: 50,000 hours at 70°C case hot spot temperature (some models have higher lifetime. Check lifetime curves in spec sheet)
- IP66-rated case with silicone-based potting
- Two 0-10 V dimming profiles are available:
  - Linear 0-10 V dimming: 10 V = 100%, 1 V = 10%, 0.1 V = 1%.
  - Non-linear 0-10 V dimming: 10 V to 8.1 V = 100%, 1 V to 0.8 V = 1%, < 0.8 V 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®) & CA Title 24 technical requirements

Typical Applications

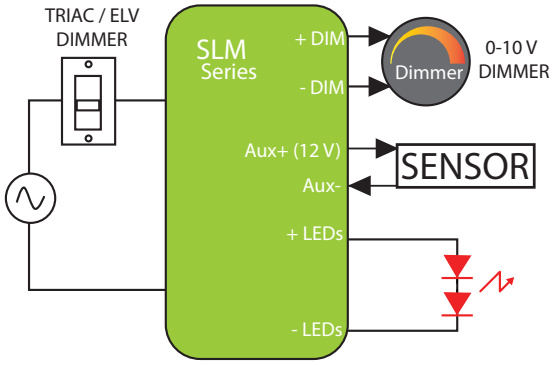
- Indoor & Outdoor
- Commercial lighting
- Architectural lighting
- Recessed lighting (downlights)
- Residential lighting
- Office Lighting

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	160 W	30 to 56 Vdc	1.7 to 2.8 A Constant Current	up to 90% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Forward-Phase, Reverse-Phase, & 0-10 V	1-100% (% of Iout)	0.75 sec

Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Max. Output Power (W)	Iout (A)	Vout Min. (Vdc)	Vout Max. (Vdc)
SLM90W: up to 90 W					
SLM090W-2.1-42-TC	120 & 277	88.2	2.1	30	42
SLM100W: 91 to 100 W					
SLM100W-1.7-56-TA	120 & 277	95.2	1.7	40	56
SLM120W: 111 to 120 W					
SLM160W-2.8-56-ZA	120 & 277	156.8	2.8	40	56

Forced air cooling or heatsink base plate (aluminum baseplate: 210 mm x 200 mm x 2 mm) 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**

Aluminum Case
L 101.6 x W 50.8 x H 38.5 mm
(L 4 x W 2 x H 1.52 in.)

Features

- Compatible with TRIAC (forward-phase or leading-edge) / ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- Only 0-10 V dimming at 277 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 requirements

Typical Applications

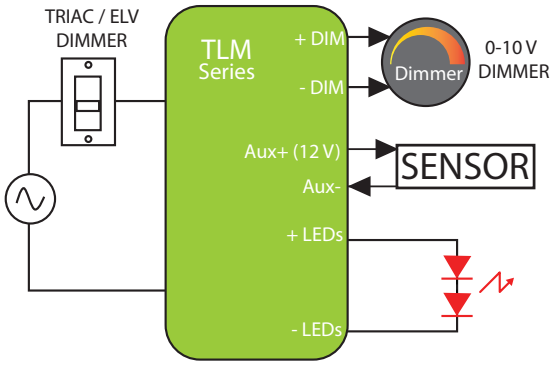
- Outdoor & Indoor
- Horticulture grow lights
- Street lights, Area lights
- Industrial high-bay lights

TLM SERIES 90 W

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range
120 & 277 Vac	90 W	30 to 42 Vdc	2.1 A Constant Current	up to 90% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Forward-Phase, Reverse-Phase, & 0-10 V	0.01-100% (% of Iout)

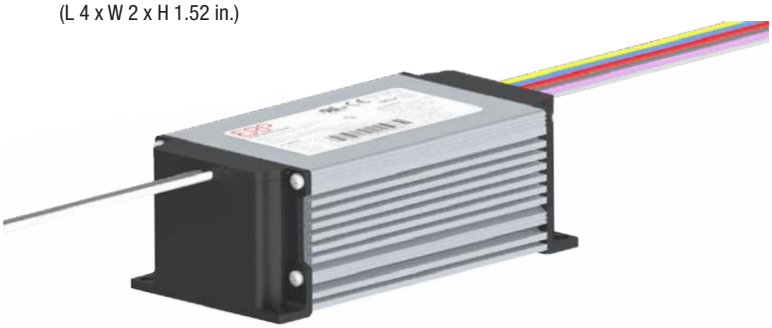
Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Iout (A)	Max. Output Power (W)	Vout Min. (Vdc)	Vout Max. (Vdc)
TLM90W: 81 to 90 W					
TLM90W-2.1-42	120 & 277	2.1	88.2	30	42

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

Aluminum Case
L 101.6 x W 50.8 x H 38.5 mm
(L 4 x W 2 x H 1.52 in.)



Features

- Dimming 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
- Only 0-10 V dimming at 277 Vac
- Conducted and radiated EMI: Compliant with FCC CFR Title 47 Part 15 Class A at 120 Vac & 277 Vac
- IP66-rated case with silicone-based potting
- 90°C maximum case hot spot temperature
- Complies with ENERGY STAR® luminaire specification and DLC (DesignLight Consortium®) technical requirements

Typical Applications

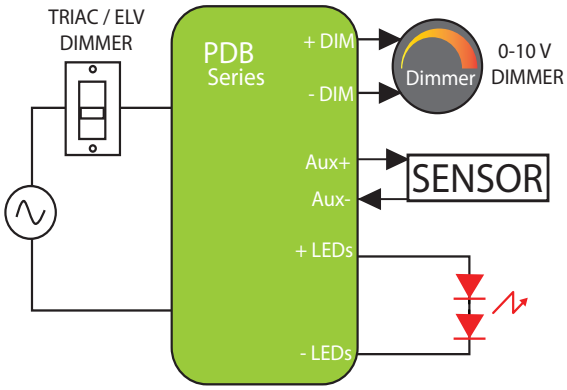
- Stage, Theatrical lighting
- Studio Lighting

PDB SERIES 260 W

Programmable, Constant Current LED Drivers with 0-10 V Dimming

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range
120 & 277 Vac	260 W	114 to 400 Vdc	325 mA to 1700 mA Constant Current	up to 93% typical	90°C (measured at the hot spot)	< 20%	> 0.9	0-10 V	1-100% (% of Iout)

Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Max. Output Power (W)	Iout 1 (mA)	Vout 1 (Vdc)	Iout 2 (mA)	Vout 2 (Vdc)
PDB260W						
PDB260W-0860-400	120 & 277	260.0	430 to 860	234 to 300	325 to 650	312 to 400
PDB260W-1300-280	120 & 277	260.0	650 to 1300	156 to 200	465 to 930	218 to 280
PDB260W-1700-210	120 & 277	260.0	850 to 1700	117 to 150	620 to 1240	164 to 210

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

Aluminum Case
L 214.4/240 x W 50.8 x H 38.5 mm
(L 8.44/9.47 x W 2 x H 1.52 in.)

Programming

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

Features

- 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 = 1%, < 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: 4 kV line to line / 4 kV line to earth (higher surge is available upon request)
  - 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 (DesignLight Consortium®) technical requirements

Typical Applications

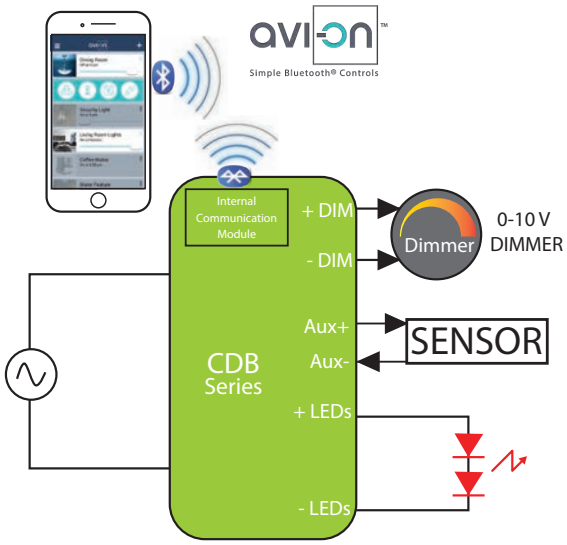
- Street lights, Area lights
- Industrial high-bay lights
- Horticulture grow lights

CDB SERIES 260 W

Programmable, Constant Current LED Drivers with 0-10 V Dimming & Integrated Bluetooth® Mesh

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range
120 & 277 Vac	260 W	114 to 400 Vdc	325 mA to 1700 mA Constant Current	up to 93% typical	90°C (measured at the hot spot)	< 20%	> 0.9	0-10 V	1-100% (% of Iout)

Typical Application Diagram



Aluminum Case
L 214.4/240 x W 50.8 x H 38.5 mm
(L 8.44/9.47 x W 2 x H 1.52 in.)

Features

- Non-linear 0-10 V 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: 4 kV line to line / 4 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
- Complies with ENERGY STAR® luminaire specification and DLC (DesignLight Consortium®) technical requirements

ERP Part Number	Nominal Input Voltage (Vac)	Max. Output Power (W)	Iout 1 (mA)	Vout 1 (Vdc)	Iout 2 (mA)	Vout 2 (Vdc)
CDB260W						
CDB260W-0860-400	120 & 277	260.0	430 to 860	234 to 300	325 to 650	312 to 400
CDB260W-1300-280	120 & 277	260.0	650 to 1300	156 to 200	465 to 930	218 to 280
CDB260W-1700-210	120 & 277	260.0	850 to 1700	117 to 150	620 to 1240	164 to 210

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**

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 that anyone can use
- 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
- Compatible with large ecosystem of products from major brands
- Avi-on battery-powered movable dimming switches available to complete the turnkey solution

Typical Applications

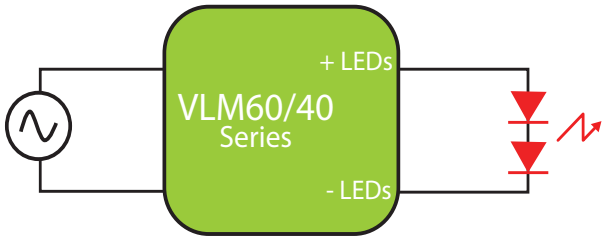
- Outdoor & Indoor
- Horticulture grow lights
- Street lights, Area lights
- Industrial high-bay lights

VLM60/40 SERIES 40 W - 60 W

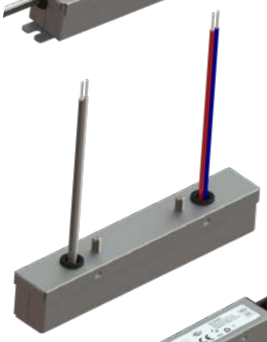
Efficient, Compact, Non-Dimmable
Constant Voltage Class 2 / Class II LED Drivers

Nominal Input Voltage	Max. Output Power	Nominal Output Voltage	Max. Output Current	Efficiency	Max. Case Temperature	THD	Power Factor
120 & 277 Vac, 220 to 240 Vac	60 W	12, 24, 48 Vdc	5, 2.5, 1.25 A	up to 90% typical	90°C (measured at the hot spot)	< 20%	> 0.9

Typical Application Diagram



Models with Flying Leads,
Aluminum Case (VLMXXW Models)
L 130 x W 19.65 x H 19.8 mm
(L 5.12 x W 0.77 x H 0.78 in.)



Models with "-S" Suffix
Bottom Leads with Studs, Aluminum Case
L 130 x W 19.65 x H 23.85 mm
(L 5.12 x W 0.77 x H 0.94 in.)

Models with "-T" Suffix (Terminal Blocks)
Aluminum case
L 183.2 x W 19.9 x H 19.85 mm
(L 7.12 x W 0.78 x H 0.78 in.)

SELV Class 2 RoHS CA Title 24 c UL us LISTED FC CE CB

ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	Iout Max (A)
120 & 277 VAC NOMINAL INPUT VOLTAGE				
VLM40W				
VLM40W-12	120 & 277	40.0	12	3.3
VLM40W-24	120 & 277	40.0	24	1.67
VLM40W-48	120 & 277	40.0	48	0.83
VLM40W-12-S	120 & 277	40.0	12	3.3
VLM40W-24-S	120 & 277	40.0	24	1.67
VLM40W-48-S	120 & 277	40.0	48	0.83
VLM60W				
VLM60W-12	120 & 277	60.0	12	5
VLM60W-24	120 & 277	60.0	24	2.5
VLM60W-48	120 & 277	60.0	48	1.25
VLM60W-12-S	120 & 277	60.0	12	5
VLM60W-24-S	120 & 277	60.0	24	2.5
VLM60W-48-S	120 & 277	60.0	48	1.25
220 TO 240 VAC NOMINAL INPUT VOLTAGE				
VLM40E				
VLM40E-12	220 to 240	40.0	12	3.3
VLM40E-24	220 to 240	40.0	24	1.67
VLM40E-12-T [1]	220 to 240	40.0	12	3.3
VLM40E-24-T [1]	220 to 240	40.0	24	1.67
VLM40E-48-T [1]	220 to 240	40.0	48	0.83
VLM60E				
VLM60E-12	220 to 240	60.0	12	5
VLM60E-24	220 to 240	60.0	24	2.5
VLM60E-48	220 to 240	60.0	48	1.25
VLM60E-12-T [1]	220 to 240	60.0	12	5
VLM60E-24-T [1]	220 to 240	60.0	24	2.5
VLM60E-48-T [1]	220 to 240	60.0	48	1.25

1. Strain reliefs for "-T" models can be ordered using part number SR1.

Suffix for the different mounting options:
a) NO suffix: side leads
b) "-T": Terminal blocks
c) "-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**

Features

- Very high power density of 20 W/in³
- Class 2 power supply
- Class II power supply per IEV 61347
- 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
- Worldwide safety approvals
- Additional safety approvals when using the optional strain reliefs for models with "-T" suffix

Typical Applications

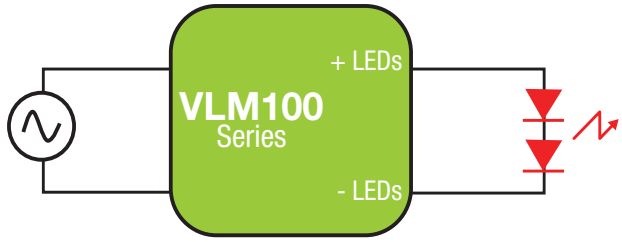
- Strip lights
- Linear lighting
- Pendant lights
- Cove Lights

VLM100 SERIES 96 W

Efficient, Compact, Non-Dimmable
Constant Voltage Class 2 / Class II LED Drivers

Nominal Input Voltage	Max. Output Power	Nominal Output Voltage	Max. Output Current	Efficiency	Max. Case Temperature	THD	Power Factor
120 & 277 Vac, 220 to 240 Vac	96 W	12, 24, 48 Vdc	8, 4, 2 A	up to 92% typical	90°C (measured at the hot spot)	< 20%	> 0.9

Typical Application Diagram



Models with Flying Leads,
Aluminum Case (VLM100W Models)
L 137 x W 26 x H 19.8 mm
(L 5.39 x W 1.02 x H 0.77 in.)

Models with "-S" Suffix
Bottom Leads with Studs, Aluminum Case
L 137 x W 26.0 x H 23.85 mm
(L 5.39 x W 1.02 x H 0.94 in.)

Models with "-T" Suffix (Terminal Blocks)
Aluminum case
L 193.2 x W 26.2 x H 19.85 mm
(L 7.60 x W 1.03 x H 0.78 in.)

SELV Class 2 | RoHS | CA Title 24 | ENERGY STAR | cULus LISTED | FC CE CB

ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	Iout Max (A)
120 & 277 VAC NOMINAL INPUT VOLTAGE				
VLM100W				
VLM100W-12 [1]	120 & 277	96.0	12	8
VLM100W-24	120 & 277	96.0	24	4
VLM100W-48	120 & 277	96.0	48	2
VLM100W-12-S [1]	120 & 277	96.0	12	8
VLM100W-24-S	120 & 277	96.0	24	4
VLM100W-48-S	120 & 277	96.0	48	2
220 TO 240 VAC NOMINAL INPUT VOLTAGE				
VLM100E				
VLM100E-12	220 to 240	96.0	12	8
VLM100E-24	220 to 240	96.0	24	4
VLM100E-48	220 to 240	96.0	48	2
VLM100E-12-T [2]	220 to 240	96.0	12	8
VLM100E-24-T [2]	220 to 240	96.0	24	4
VLM100E-48-T [2]	220 to 240	96.0	48	2

1. VLM100W-12 is not Class 2 because the over-current protection of this model exceeds the 5A UL Class 2 limit.

2. Strain reliefs for "-T" models can be ordered using part number SR2.

Suffix for the different mounting options:
a) NO suffix: side leads
b) "-T": Terminal blocks
c) "-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**

Features

- Very high power density of 24 W/in³
- Class 2 power supply
- Class II power supply per IEC 61347
- IP20-rated case with silicone-based potting
- Complies with ENERGY STAR®, DLC (DesignLight Consortium®) and CA Title 24 technical requirements
- 90°C maximum case hot spot temperature
- Lifetime: 50,000 hours min. at 70°C case temperature
- UL Class P
- Worldwide safety approvals
- Additional safety approvals when using the optional strain reliefs for models with "-T" suffix

Typical Applications

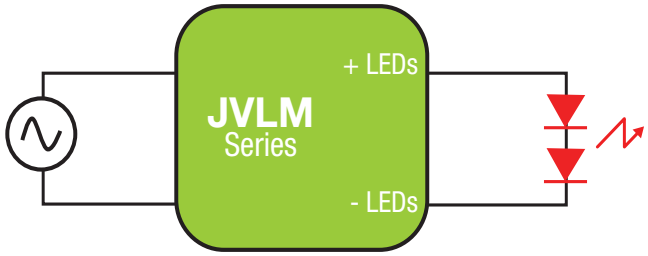
- Strip lights
- Linear lighting
- Pendant lights
- Cove Lights

JVLM SERIES 60 W - 96 W

Efficient, Compact, Constant Voltage
Class 2 LED Drivers in a Junction Box

Nominal Input Voltage	Max. Output Power	Nominal Output Voltage	Max. Output Current	Efficiency	Max. Case Temperature	THD	Power Factor
120 & 277 Vac	96 W	12, 24, 48 Vdc	5, 4, 2 A	up to 92% typical	90°C (measured at the hot spot)	< 20%	> 0.9

Typical Application Diagram

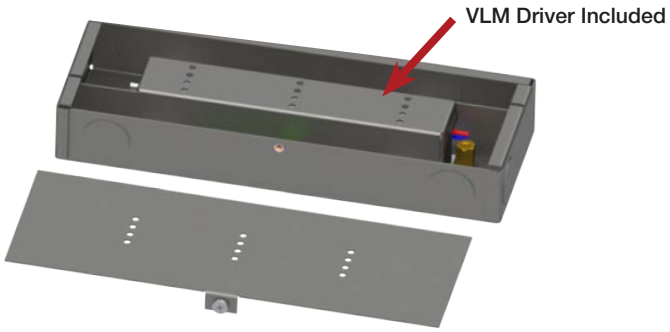


ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	Iout Max (A)
JVLM60W: 60 W				
JVLM60W-12	120 & 277	60.0	12	5
JVLM60W-24	120 & 277	60.0	24	2.5
JVLM60W-48	120 & 277	60.0	48	1.3
JVLM100W: 100 W				
JVLM100W-24	120 & 277	96.0	24	4
JVLM100W-48	120 & 277	96.0	48	2

Models contain the VLM 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**

Dimensions
L 207.2 x W 75.4 x H 33 mm
(L 8.16 x W 2.97 x H 1.30 in.)



CA Title 24

Typical Applications

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

Features

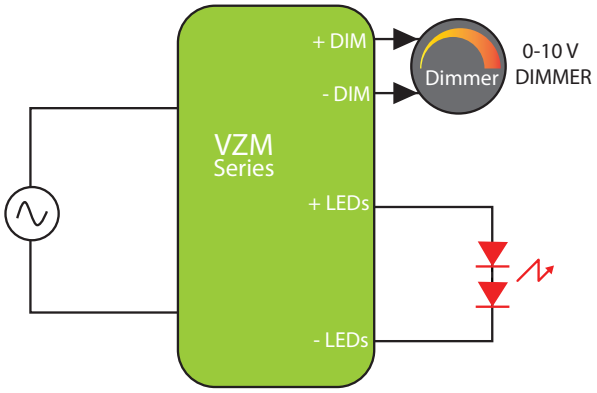
- Low profile, rugged steel enclosure designed for use with our Constant Voltage VLM series
- JVLM is Plenum-rated, so it can go in air handling spaces. (In building construction, the plenum is the space that is used for air circulation in heating and air conditioning systems, typically between the structural ceiling and the suspended ceiling or under a raised floor).
- Designed for contractor installation:
  - UL listed
  - Separation of low-voltage wiring and high-voltage wiring
  - 4 mounting holes for surface mounting
  - 4 knockout holes for low-voltage wiring and 4 knockout holes for high-voltage wiring enable maximum wiring flexibility
- Same electrical features as the VLM series
- IP20-rated case
- Patent protected

VZM SERIES 60 W - 90 W

Efficient, Compact, Constant Voltage, Class 2 / Class II LED Drivers with 0-10 V Dimming

Nominal Input Voltage	Max. Output Power	Nominal Output Voltage	Max. Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	90 W	24, 48 Vdc	3.75, 1.9 A	up to 90% typical	90°C (measured at the hot spot)	< 20%	> 0.9	Programmable 0-10 V	1-100%	300 ms typical

Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	Iout Max (A)
VZM60W				
VZM060W-24	120 & 277	60.0	24	2.5
VZM060W-48	120 & 277	60.0	48	1.25
VZM100W				
VZM100W-24	120 & 277	90.0	24	3.75
VZM100W-48	120 & 277	90.0	48	1.87

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

Models with Flying Leads, Aluminum Case

VZM100
L 150.2 x W 38.8 x H 24.9 mm
(L 5.91 x W 1.53 x H 0.98 in.)

VZM060
L 148.7 x W 31.8 x H 22.4 mm
(L 5.85 x W 1.25 x H 0.88 in.)

Features

- Class 2 power supply
- Class II power supply per IEC61347
- UL Class P
- Ripple ≤ 5% @ 20% & 100% load
- Constant voltage mode with over-current protection
- IP20-rated case with silicone-based potting
- 90°C maximum case hot spot temperature
- Lifetime: 5 years minimum at 70°C case temperature
- EMI: Compliant with FCC CFR Title 47 Part 15 Class B at 120 Vac & Class A at 277 Vac
- Surge protection:
  - IEC61000-4-5: 2 kV line to line / 2 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

NFC Programming

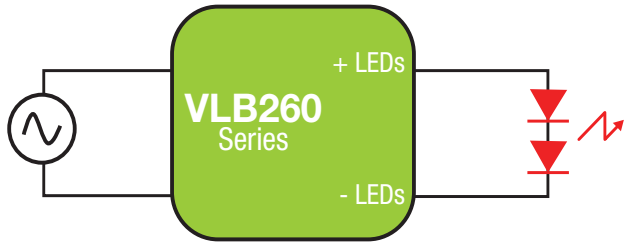
- Programmable output voltage for optimal dimming range
- Fully programmable 0-10V dimming profile with dim-to-off

VLB SERIES 260 W

Efficient, Compact,
Constant Voltage LED Drivers

Nominal Input Voltage	Max. Output Power	Nominal Output Voltage	Max. Output Current	Efficiency	Max. Case Temperature	THD	Power Factor
120 & 277 Vac, 220 to 240 Vac	260 W	12, 24, 48 Vdc	21.6, 10.8, 5.4 A	up to 93% typical	90°C (measured at the hot spot)	< 20%	> 0.9

Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	Iout Max (A)
120 & 277 VAC NOMINAL INPUT VOLTAGE				
VLB260W				
VLB260W-12	120 & 277	260.0	12	21.67
VLB260W-24	120 & 277	260.0	24	10.83
VLB260W-48	120 & 277	260.0	48	5.42
220 TO 240 VAC NOMINAL INPUT VOLTAGE				
VLB260E				
VLB260E-48	220 to 240	260.0	48	5.42

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

Aluminum Case
L 214.4/240 x W 50.8 x H 38.5 mm
(L 8.44/9.47 x W 2 x H 1.52 in.)

Typical Applications

- Horticulture
- Industrial lights
- Outdoor and indoor

Features

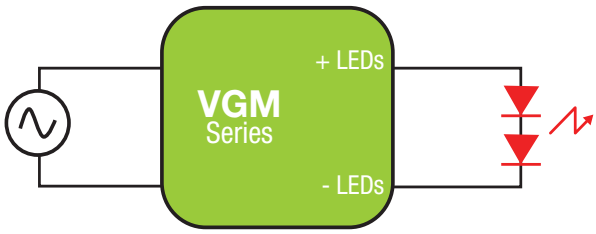
- Very high power density of 10.2 W/in³
- UL Class P
- IP66-rated case with silicone-based potting
- 90°C maximum case temperature
- Complies with ENERGY STAR® luminaire specification and DLC (DesignLight Consortium®) technical requirements

VGM SERIES 60 W - 90 W

Efficient, Class 2
Constant Voltage LED Drivers for Signage Applications

Nominal Input Voltage	Max. Output Power	Nominal Output Voltage	Max. Output Current	Efficiency	Max. Case Temperature	THD	Power Factor
120 & 277 Vac	90 W	12, 24 Vdc	5, 3.75 A	up to 85% typical	90°C (measured at the hot spot)	< 20%	> 0.9

Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	Iout Max (A)
VGM060W				
VGM060W-12	120 & 277	60.0	12	5
VGM100W				
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**

Aluminum Case
L 172.5 x W 43.9 x H 27.1 mm
(L 6.79 x W 1.73 x H 1.07 in.)

CA Title 24

Typical Applications

- Signage
- Strip lights

Features

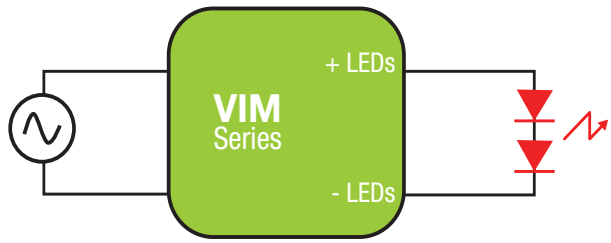
- Class 2 power supply
- IP66-rated case with silicone-based potting
- Lifetime: 50,000 hours min. at 50°C ambient temperature
- UL879 SAM (Sign Component Manual) listing
- Surge protection:
  - IEC61000-4-5: 6 kV line to line / 6 kV line to earth
  - 2.5 kV ring wave: ANSI/IEEE c62.41.1-2002 & c62.41.2-2002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

VIM SERIES 60 W - 90 W

Efficient, Class 2
Constant Voltage LED Drivers

Nominal Input Voltage	Max. Output Power	Nominal Output Voltage	Max. Output Current	Efficiency	Max. Case Temperature	THD	Power Factor
120 & 277 Vac	90 W	12, 24 Vdc	5, 3.75 A	up to 90% typical	90°C (measured at the hot spot)	< 20%	> 0.9

Typical Application Diagram



ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	Iout Max (A)
VIM60W				
VIM060W-12	120 & 277	60.0	12	5
VIM100W				
VIM100W-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**

Aluminum Case
L 172.5 x W 33.3 x H 24.1 mm
(L 6.79 x W 1.31 x H 0.95 in.)

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.

Typical Applications

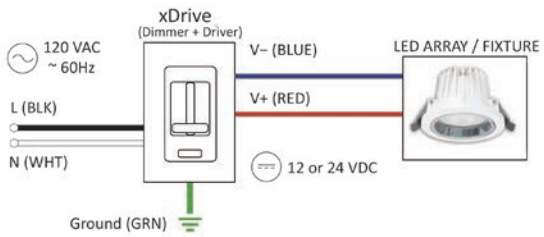
- Signage
- Strip lights

xDrive™ 40 W - 100 W

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

Nominal Input Voltage	Max. Output Power	Output Voltage	Output Current Max	Efficiency	Max. Ambient Temperature	THD	Power Factor	Dimming Range	Startup Time
120 Vac	100 W	12, 24 V Constant Voltage	4.2 A	up to 91% typical	40°C	< 20%	> 0.9	1-100% of light output	500 ms typical

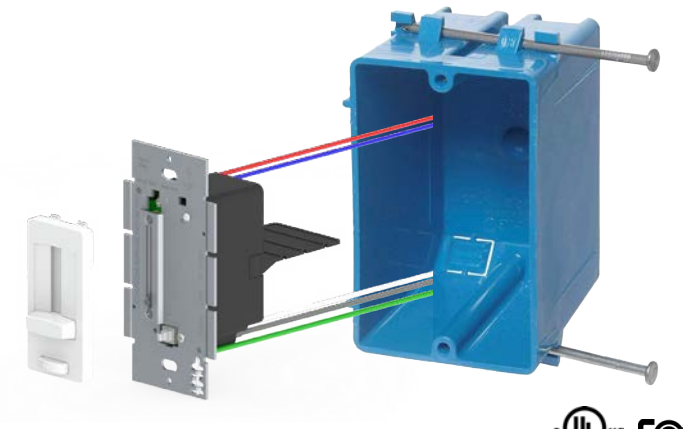
Typical Application Diagram



100 W: Metal Case & Metal Wall Plate
40 W & 60 W: Plastic Case & Metal Wall Plate

ERP Part Number	Nominal AC Line Voltage (Vac)	Pout Max (W)	Pout Min (W)	Vout Nom (V)	Iout Max (A)	Vout Regulation (Vdc)	Vout ripple (p-p)
VSW40U							
VSW40U-12-ERP	120	40.0	8.0	12	3.3	11.1 - 12.9 (+/-0.9 V)	< 10%
VSW60U							
VSW60U-12-ERP	120	60.0	10.0	12	5	11.1 - 12.9 (+/-0.9 V)	< 10%
VSW60U-24-ERP	120	60.0	3.0	24	2.5	22.2 - 25.8 (+/-1.8 V)	< 10%
VSW100U							
VSW100U-24-ERP	120	100.0	5.0	24	4.2	22.2 - 25.8 (+/-1.8 V)	< 10%

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



c UL us LISTED E472619

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

Typical Applications

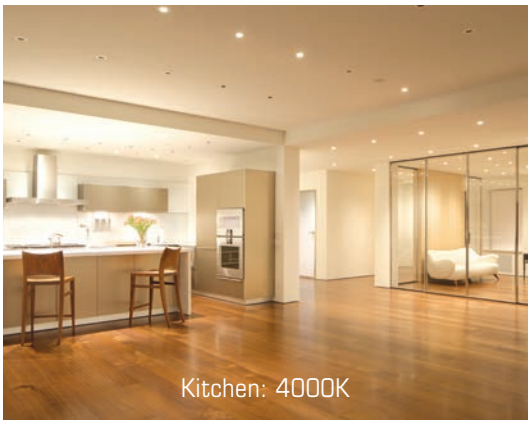
- Track lights
- Downlights
- Tape/Strip lights
- Under-cabinet lights

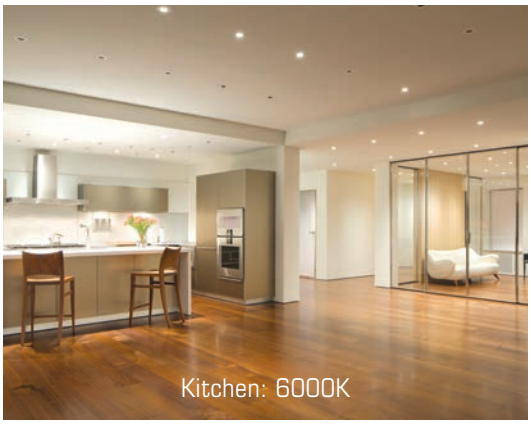
lumenetix-araya™ TUNABLE COLOR

IN THE BEST LIGHT™

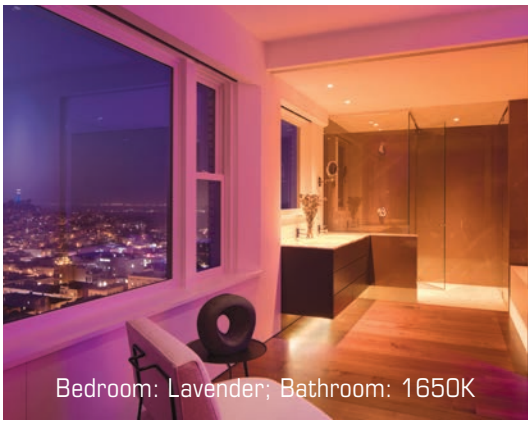
Lumenetix-araya recreates and controls light that emulates the spectral quality of daylight. And, Lumenetix-araya accesses a rich gamut of pastels and saturated colors to unveil new design frontiers.


Kitchen: 1650K

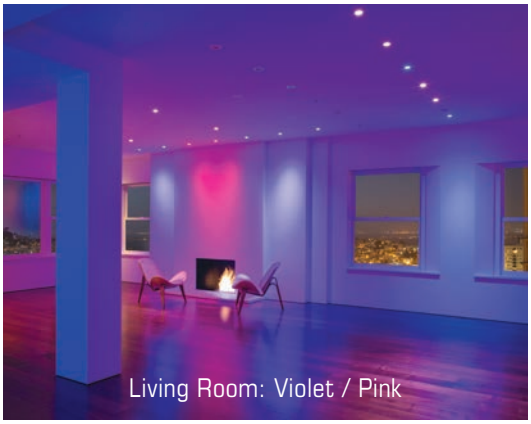

Kitchen: 4000K

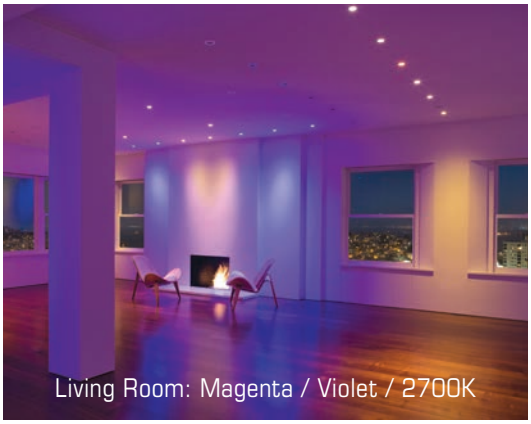

Kitchen: 6000K

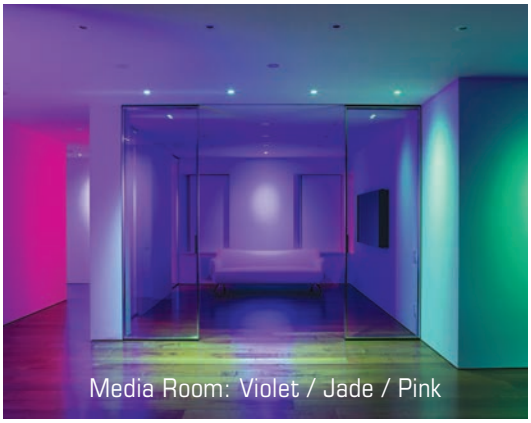

Bedroom and Bathroom: Violet


Bedroom: Lavender; Bathroom: 1650K


Bedroom and Bathroom: 2700K


Living Room: Violet / Pink


Living Room: Magenta / Violet / 2700K


Media Room: Violet / Jade / Pink

Private Residence in San Francisco. Fixtures by LF Illumination. DMX controls by Lutron®. Architect: Wesley Wei. Lighting Designer: Eve Quellman.

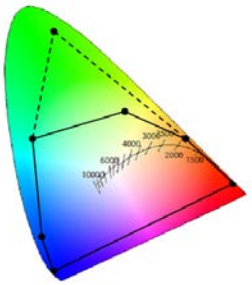
lumenetix® powered by ERP

THE LUMENETIX BREAKTHROUGH

The replication and control of the range and beauty of daylight while ensuring color consistency from fixture-to-fixture over life, whether you use Tunable Color, Tunable White, LED Dimming or Halogen Dimming light paths. After all, **Color is How You Light It™.**

Spectral Quality of Daylight

90+ CRI

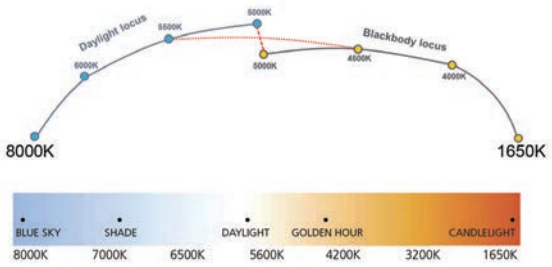


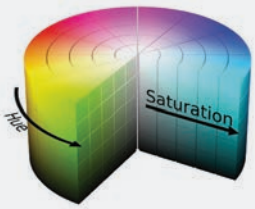
Saturated Green Option

Expanded Gamut

HIGHEST QUALITY TUNABLE WHITE LIGHT: Lumenetix-araya recreates daylight by mixing LED colors of the rainbow – red, amber, mint, cyan and blue, plus green if an expanded gamut option with saturated green is desired – to deliver full spectrum light from 1650K to 8000K at 90+ CRI.

NATURAL DAYLIGHT EMULATION from sunrise through sunset – the light tracks the CIE Blackbody locus from 1650 - 4500K and then smoothly transitions to the Daylight Curve to 8000K.





FULL COLOR ACCESS to millions of colors within the gamut area created by the LEDs in the CIE color space, enabling tailored light from shades of pastels to saturates.

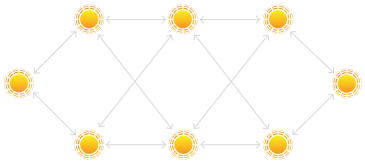
E-FLICKER FREE LED DIMMING TO 0.1%* is enabled by a proprietary hybrid technology that maintains color consistency while dimming.

LED Dimming

100% - 0.1%*

Halogen Dimming

3050 (100%)-1800K (1%)



Color Consistency Over Life

Less than 2 SDCM

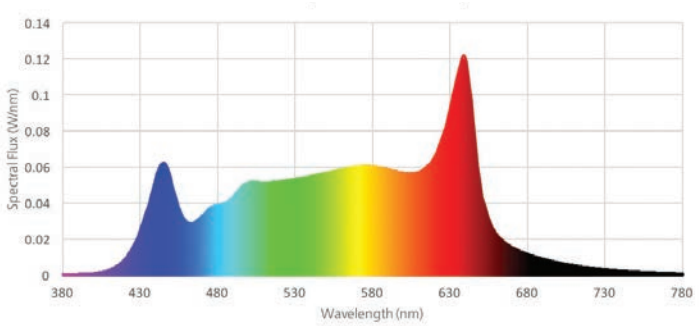
TRADITIONAL DIMMING RECREATED
by emulating a halogen lamp from 3050K at full brightness to 1800K at 1%.

COLOR CONSISTENCY OF LESS THAN 2 MACADAM ELLIPSE OVER LIFE
from fixture-to-fixture as verified by independent LM-84 testing – a corrective closed loop system and a predictive feedback algorithm resolve thermal droop and lumen depreciation for each LED.

THE DATA AND CONTROLS TELL THE STORY

TYPICAL SPD CURVE

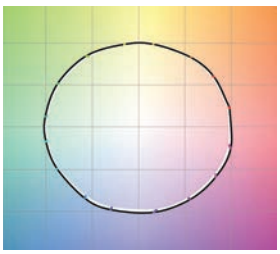
CTM 2
SPD at 4000K



TYPICAL TM-30 DATA

CTM 2
TM-30 Data at 4000K

Color Vector Graphic



Color Saturation Graphic

Rf = 96; Rg = 102; CRI Ra = 97

For additional color and performance information, please refer to www.erp-power.com.

COMMISSION AND CONTROL EFFORTLESSLY

DIGITAL - Lumenetix-araya is compatible with all industry-leading digital control systems.

ANALOG - Two 0-10 V lines can be used to control Dimming and CCT independently, or program Scenes — in any combination of Dimming, CCT, Saturation and Hue — and recall them with five 0-10 V presets or the Lumenetix-araya iOS App.

iOS - Used in conjunction with Digital or Analog controls, each module can be wirelessly commissioned and then the radio turns off for enhanced security.

CONTROL SYSTEM / PROTOCOL	DIMMING (100 - 0.1%)*	CCT - CTM 1C, CTM 1C HD (TUNABLE WHITE / COLOR; 1650 - 8000K)	CCT - CTM 1C HD WI, CTM 2, LTM 2 (TUNABLE WHITE / COLOR; 1650 - 8000K)	CCT - DDM 1C (WARM-DIM; 1800 - 3050K)	CCT - DDM 2 (WARM-DIM; 1800 - 3050K)	SAT	HUE
DMX512-A-RDM**	✓	✓	✓	✓	✓	✓	✓
0-10 V	~1%	✓	✓	✓	✓	***	***
LUTRON ECOSYSTEM**	✓	✓	✓	✓	✓	N/A	N/A
AVI-ON WIRELESS BLE MESH	✓	N/A	✓	N/A	✓	✓	✓
DALI TYPE 8	✓	✓	✓	✓	✓	N/A	N/A
WATTSTOPPER DLM	✓	✓	✓	✓	✓	N/A	N/A

*100 - 0.1% eFlicker-Free LED dimming is available for specific modules/arrays when connected to 0.1% dimming-capable digital controls.
100 - 1% dimming is available with analog 0-10 V control and for Warm/Dynamic Dimming Modules (DDM).
**Refer to the separate DMX Lookup Tables or Lutron EcoSystem Lookup Tables for specific programming values and information.
***Two 0-10 V lines can be used to control Dimming and CCT independently, or program Scenes — in any combination of Dimming, CCT, Saturation and Hue — and recall them with five 0-10 V presets or the Lumenetix-araya iOS App.

 Individual product specifications may vary; please refer to technical product data sheets. Bluetooth LE is provided on board for commissioning purposes only.

SAME GREAT FEATURES
ACROSS ALL PRODUCT FAMILIES

Spectral Quality of Daylight	Broad Tuning Range	Color Access	Halogen Dimming	LED Dimming	Color Consistency Over Life
90+ CRI	1650 -8000K	Pastels to Saturates	3050 (100%)-1800K (1%)	100% - 0.1%*	Less than 2 SDCM

COLOR TUNING MODULES & ARRAYS

WARM/DYNAMIC DIMMING MODULES & ARRAYS

	CTM 1C	CTM 1C HD	CTM 1C HD WI	CTM 2	LTM 2	DDM 1C	DDM 2
TUNABLE RANGE	1650K - 8000K					3050K - 1800K	
PEAK DELIVERED LUMENS	550 - 2000	750 - 2000	750 - 1700	990 - 9000	1000 lm/ft	480 - 1850	990 - 9000
NOMINAL WATTAGE (W)	12 - 35	12 - 35	12 - 35	20 - 120	10 watts/ft	12 - 35	20 - 120
CRI[1]	90+					90+	
COLOR GAMUT ACCESS	Yes					No	
DIMMING THRESHOLD	1%	0.1%[1]				1%	
COLOR ACCURACY[1]	Less than 2 SDCM					Less than 2 SDCM	
NOMINAL LES[2] (mm)	9, 12, 19	19	9, 19	9, 12, 19, 32, 41		9, 12, 19	9, 12, 19, 32, 41
DIAMETER (mm)	50	50	50	40, 50, 60, 70		50	40, 50, 60, 70
LINEAR ARRAY LENGTH (in)					11, 22, 24		
LINEAR CONNECTOR POSITION					Top or Bottom		
LINEAR LED POSITION					Symmetrical, Asymmetrical		
CONTROL OPTIONS	DMX512-A-RDM 0 - 10V Lutron® EcoSystem[3] DALI Type 8[4] Wattstopper® DLM[5]	DMX512-A-RDM 0 - 10V Lutron® EcoSystem[3] DALI Type 8[4] Wattstopper® DLM[5]	Avi-on BLE Mesh[6]	DMX512-A-RDM[7] 0 - 10V Lutron® EcoSystem[7] Avi-on BLE Mesh[7] DALI Type 8[7] Wattstopper® DLM[7]	DMX512-A-RDM[7] 0 - 10V Lutron® EcoSystem[7] Avi-on BLE Mesh[7] DALI Type 8[7] Wattstopper® DLM[7]	DMX512-A-RDM 0 - 10V Lutron® EcoSystem[3] DALI Type 8[5] Wattstopper® DLM[6]	DMX512-A-RDM[7] 0 - 10V Lutron® EcoSystem[7] Avi-on BLE Mesh[7] DALI Type 8[7] Wattstopper® DLM[7]

*0.1% eFlicker-Free / Hybrid LED dimming available for specific modules/arrays, and only when connected to 0.1% dimming-capable digital controls. Individual specifications may vary; please refer to technical product data sheets.

1. From 2000 - 6000K, down to 5% dimming level.
2. Light Emitting Surface. 3. Requires external Digital Control Adapter. 4. On-board the module or via external Digital Control Adapter.
5. Requires external Wattstopper adapter. 6. Requires wireless interface BLE Mesh dongle/harness. 7. Requires optional control card.

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lumenetix-araya™ TUNABLE COLOR

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+1-805-517-1300 | SaveEnergy@ERP-Power.com | 893 Patriot Drive, Suite E, Moorpark, CA 93021

U.S.A. Headquarters
Tel: +1-805-517-1300
893 Patriot Drive, Suite E
Moorpark, CA 93021

CHINA Operations
Tel: +86-756-6266298
No. 8 Pingdong Road 2
Zhuhai, Guangdong,
China 519060

www.erp-power.com