

DRIVING QUALITY OF LIGHT™

Programmable & Dimmable LED Drivers & LED Light Engines/Modules

Revision: May 2025

Our Target Markets



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 Westlake Village, CA, ERP owns and operates its own ISO 9001 / ISO 14001 / ISO 45001 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 Westlake Village, 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 / ISO 14001 / ISO 45001 certified, with regular audits by safety agencies.



ERP Quality

Quality Management Systems (QMS)



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)



120% 100% 80% Light Output 60% (% of max output) 40% 20% 0%

Tri-Mode Dimmina[™]

The majority of our 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 Power's Sustainability Initiatives (Environmental, Social, and Governance Policy)

Sustainability initiatives - such as our Environmental, Social, & Governance (ESG) policy - are integral to ERP's success.

ESG FRAMEWORK

Our ESG policy was designed to address several aspects of our industry that we are committed to improving upon responsibly and effectively. From pushing sustainability efforts, to diversifying our workforce, to enforcing stricter health and safety regulations, we are integrating ESG frameworks across the board.



The environmental aspect of ESG ranges from

work we do as a power and lighting company.

government requirements to company priorities and

lighting and power regulations. At ERP, we do our best to consider every little thing-given the kind of



1. Compliance & Standards

Our recently completed—and internationally-recognized—ISO 14001 certification ensures that we have an Environmental Management System (EMS) in place. In addition, our emissions are tested by a certified third party, to ensure compliance, transparency, and adherence.

ENVIRONMENTAL

2. Sustainability

- Our paperless PCBA (printed circuit board assembly) production has helped us save an estimated 98,280 pages of paper since 2011. Our Warehouse Management System (WMS) is RFID controlled, the activities between our IQC (in-line guality control) operators and warehouse are automated, and our Manufacturing Execution System (MES) has error-proofing in place.

ESG-RELATED CERTIFICATIONS

The documents pertaining to all these ESG-related certifications can be downloaded from our website at this link.

















ERP Power's Sustainability Initiatives (Environmental, Social, and Governance Policy)

SOCIAL

The social component of our ESG policy directly correlates with the health and safety of our team, our impact on our local community, and the importance of diversity and inclusion in the workplace. As an international company that works with advanced technology, this aspect of our ESG approach is critical to our continued success, the health and happiness of our team members, and our ongoing efforts to shine brightly in the field of lighting and power.

1. Compliance & Responsibility

Our latest audits reveal that we are 100% compliant across the board-including in the areas of labor laws, HR and SR policies, and training programs.

2. Equity & Diversity

- With a balanced number of male and female employees and growing ethnic diversity in our workforce, we are proudly compliant in the areas of gender and ethnic equality. We are also deeply proud of initiatives in the areas of continuing education, upward mobility, and Corporate Social Responsibility (CSR).

3. Health & Safety

- Our recently completed ISO 45001 certification works to ensure our compliance in the areas of occupational health and safety-even though we can proudly say that we have had no reported health or safety issues since 2015.



1. Corporate Structure

Our corporate structure is routinely audited by third-party watchdogs, who find that our standards and practices cover everything from sales and marketing to our board of directors..

2. Diversity, Equity, and Inclusion (DEI)

Our monthly DEI report holds us accountable to our commitment to diversity, equity, and inclusion. Our DEI standards and practices include provisions such as open channels of communication for employee concerns and suggestions, anti-discrimination policies regarding suppliers, and ongoing training and promotional initiatives free from discriminatory practices.



GOVERNANCE

Governance is the third and final cog in the wheel of ensuring a safe, equitable, and thriving workplace. From risk management to our corporate governance structure, governance covers a lot of ground, and we're proud to report our strict standards in this area.

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, Isolated, Dimmable & Non-Dimmable, Constant Voltage LED Drivers



PUWER + LIGHT

Constant Current & Constant Voltage LED Drivers



PSB SERIES 15 W – 50 W

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



PHB SERIES 30 W & 50 W

Nominal	Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 8 220-	& 277 Vac, –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 lout)	300 ms typical

Typical Application Diagram





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)	lout (mA)	Vout Min. (Vdc)	Vout Nom. (Vdc)	Vout Max. (Vdc)	Open Loop (No Load) Voltage (Vdc)				
120 & 277 VAC NOMINAL INPUT VOLTAGE											
PSB15W											
PSB15W-0300-38	120 & 277	11.4	150 to 300	26	32	38	50				
PSB30W											
PSB30W-0700-42	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				
		PSE	350W								
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-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				
	220–240 V/	AC NOMI	NAL INPUT	VOLTA	GE						
		PSE	330E								
PSB30E-0700-42-T	220-240	29.4	350 to 700	28	37.8	42	50				
		PSE	350E								
PSB50E-1200-42-T	220-240	50.4	600 to 1200	28	37.8	42	50				

Programming

(5)

- 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



Typical Application Diagram



- 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

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

ure	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
spot)	< 20%	> 0.9	Programmable Forward-Phase, Reverse-Phase, & 0–10 V	1–100% (% of lout)	300 ms typical

ERP Part Number	Nominal Input Voltage (Vac)	Max. Output Power (W)	lout (mA)	Vout Min. (Vdc)	Vout Nom. (Vdc)	Vout Max. (Vdc)	Open Loop (No Load) Voltage (Vdc)
	120 & 277 \	AC NOM	INAL INPUT	VOLTA	GE		
		PHE	330W				
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
		PHE	350W				
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

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

- Commercial lighting Architectural lighting
- Residential lighting Indoor Lighting





PTB SERIES 10 W – 30 W

Programmable, Constant Current, Class 2

LED Drivers with Enhanced Tri-Mode Dimming[™] (TRIAC, ELV & 0–10 V)



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 lout)	300 ms typical

Nominal Input Voltage	Max. Output Power	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range
120–277 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 lout)

Typical Application Diagram



ERP Part Number	Input Voltage (Vac)	Max. Output Power (W)	lout (mA)	Default Programmed Current (mA)	Vout Min. (Vdc)	Vout Max. (Vdc)			
		PTB	10W						
PTB10W-0250-42-ZN "	120–277	10.5	150 to 250	250	28	42			
PTB15W									
PTB15W-0350-42-FN ~	120–277	14.7	210 to 350	250	28	42			
		PTB	20W						
PTB20W-0420-42-ZN "	120-277	17.6	250 to 420	350	28	42			
		PTB	30W						
PTB30W-0500-42-FN ~	120-277	21.0	300 to 500	350	28	42			
PTB30W-0700-42-FN *	120-277	29.4	420 to 700	500	28	42			
PTB30W-0700-42-ZN	120–277	29.4	420 to 700	500	28	42			
Suffix for the different options:									

1. "-ZN": Dim-to-off capable; side leads 2. "-FN": No dim-to-off, side leads

votes: Models with the "-Z1" and "ZN" suffix feature dim-to-off and exhibit a default non-linear 0–10 V dimming profile: 10 V to 8.2 V = 100%, 1.5 V to 0.7 V = 1%, dim-to-off < 0.7. Dim-to-off is only available on "-Z1" and "-ZN" model numbers. By default, each PTB series driver is shipped with 2 metal mounting clips. Additional mounting clips can be ordered separately using the part number PTB-CLIPS-100 or PTB-CLIPS-1K.



Typical Application Diagram











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

- Audio jack programming
- Current: 100% to 60% in each voltage range
- 0-10 V dimming profiles: linear, non-linear, logarithmic
- Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles

Typical Applications

- Architectural lighting





Features

- UL 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
- 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
- Meets IEEE 1789-2015 "no impact" recommended practices for flicker
- · Mounting clips for multiple mounting methods

Programming

- Programmable conduction angles with turn-on and turn-off for TRIAC and ELV

- Commercial lighting

- Residential lighting Indoor lighting

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

DAL SERIES 30 W & 50 W

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

ERP Part Number	ber Nominal Input Voltage (Vac) (W)		lout (mA)	Vout Min. (Vdc)	Vout Nom. (Vdc)	Vout Max. (Vdc)	Open Loop (No Load) Voltage (Vdc)			
DAL30W										
DAL30W-0600-42-T	120-277	25.2	300 to 600	28	37.8	42	50			
		DAL	.50W							
DAL50W-0850-56-T	120–277	47.6	425 to 850	38	50.4	56	60			
DAL50W-1200-42-T	120-277	50.4	600 to 1200	28	37.8	42	50			

Features

- Universal input voltage range
- Ripple < 10% @ 20% & 100% load
- Turn-on: @ 1% lout
- 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



CNB SERIES 30 W – 50 W

Programmable, Constant Current, Class 2 LED Drivers with Integrated Bluetooth® Mesh



PKB SERIES 20 W – 85 W

Input Voltage	Max. Output Power Efficiency Max. Case Temperatur		Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120–277 Vac	85 W	up to 90% typical	90 °C (measured at the hot spot)	< 20%	> 0.9	Programmable 0–10 V	1–100% (% of lout)	300 ms typical

Typical Application Diagram





PKB85 L 425 x W 29 x H 25 mm (L 16.7 x W 1.2 x H 1.0 in.)



Features

- UL Class P
- Class 2 output
- Lifetime: 5 years @ Tc \leq 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

Nominal Input Voltage	Max. Output Power	Output Current	Efficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
120 & 277 Vac	50 W	300 mA to 1200 mA	up to 90% typical	90 °C (measured at the hot spot)	< 20%	> 0.9	Bluetooth	1–100%	300 ms typical

Typical Application Diagram



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.)



Features

- UL Class P
- · Class 2 power supply
- Lifetime: 50,000 hours @ Tc \leq 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

ERP Part Number	r Nominal Input Voltage (Vac) Max. Output Power (W)		lout (mA)	Vout Min. (Vdc)	Vout Max. (Vdc)				
CNB30W: 21–30 W									
CNB30W-0600-42-CAS	120 & 277	120 & 277 25.2 300 to 600		28	42				
	CNI	B50W: 51–6	60 W						
CNB50W-1200-42-CAS 120 & 277 50.4 600 to 1200 28 42									
"-CAS" Suffix: With Casambi Bluetooth firmware, wire whip antenna, Side Leads case									

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

Casambi Bluetooth Mesh Solution

- · Wireless lighting controls with simple set-up that anyone can use
- Pre-integrated Bluetooth mesh module enables brands to create multi-way controls and switching without additional wiring; no central gateway required
- Secure, reliable mobile app & software
- · Dimming, grouping, many users, schedules, timers
- · Virtually unlimited range with mesh
- Download for free: additional services available

Typical Applications

 Commercial lighting Architectural lighting Indoor lighting



Programmable, Constant Current Class 2

LED Drivers with 0–10 V Dimming

ERP Part Number	Input Voltage (Vac)	Max. Output Power (W)	lout (mA)	Vout Min. (Vdc)	Vout Nom. (Vdc)	Vout Max. (Vdc)	Open Loop (No Load) Voltage (Vdc)	
		PKB2	20W					
PKB20W-0700-55-TN	120 & 277	20	100 to 700	10	49.5	55	60	
PKB30W								
PKB30W-1050-55-TN	120 & 277	30	275 to 1050	10	49.5	55	60	
		PKB	50W					
PKB50W-1400-55-TN	120 & 277	50	455 to 1400	10	49.5	55	60	
		PKB	65W					
PKB65W-1800-55-TN	120 & 277	65	591 to 1800	10	49.5	55	60	
		PKB	30W					
PKB85W-2300-55-TN	120–277	85	700 to 2300	10	49.5	55	60	
"-TN" Suffix: Terminal Bloc	ks							

Programming

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

- 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

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 0–10 V	1–100% (% of lout)	300 ms typical

	Prog
[●] W E R + L I [©] H T _™	LED I

Input Voltage Max. Output Power Efficiency Max. Case Temperature 120 & 277 Vac 50 W up to 90% typical 90 °C (measured at the hot state)

Typical Application Diagram





Terminal Blocks (-TN), Metal Case L 106.7 x W 60.3 x H 25.5 mm (L 4.20 x W 2.37 x H 1.00 in.)



Bottom Leads (-SN), Metal Case L 106.7 x W 60.3 x H 25.3 mm (L 4.20 x W 2.37 x H 0.99 in.)



Features

- UL Class P
- Class 2 output
- Lifetime: 5 years @ Tc \leq 75 °C
- External NTC (negative temperature coefficient) functionality
- 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

ERP Part Number	Input Voltage (Vac)	Output Power (W)	lout (mA)	Vout Min. (Vdc)	Vout Nom. (Vdc)	Vout Max. (Vdc)	(No Load) Voltage (Vdc)			
PKM30W										
PKM30W-1050-55-SN "	120–277	30	275 to 1050	10	49.5	55	60			
PKM30W-1050-55-TN ~	120-277	30	275 to 1050	10	49.5	55	60			
PKM30W-1050-55-NN **	120-277	30	275 to 1050	10	49.5	55	60			
		PKM	50W							
PKM50W-1400-55-SN	120–277	50	455 to 1400	10	49.5	55	60			
PKM50W-1400-55-TN ~	120–277	50	455 to 1400	10	49.5	55	60			
PKM50W-1400-55-NN "	120–277	50	455 to 1400	10	49.5	55	60			
Suffix for the different optio 1. "-SN": Bottom leads v	Suffix for the different options: 1. "-SN": Bottom leads w/ studs									

Max. Open Loop

2. "-TN": Terminal Blocks w/ studs
 3. "-NN": Side leads no studs

Programming

NTC derating profile

Audio jack programming

• 0-10 V dimming profiles: linear, non-linear, logarithmic

• Data log read: SKU, S/N, lot code, hours of operation, FW rev., power cycles

o. -ININ . Olde leads no studis

Typical Application Diagram







Typical Applications

- Commercial lighting
 Architectural lighting

Residential lighting

• Indoor lighting

Features

- UL Class P
- Class 2 output
- Lifetime: 5 years @ Tc \leq 75 °C
- 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

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PLB SERIES 30 W – 50 W

rammable, Constant Current Class 2

Drivers with 0–10 V Dimming

re	THD	Pow	er Factor	Dimming Method			Dimm	ing Ran	ge	Startup Time
t spot)	< 20%	:	0.9 Programmable 0–10 V		1–100% (% of lout)			300 ms typical		
ER	ERP Part Number (Vac)		age	Max. Output lout Power (mA) (W)		Vout Min. (Vdc)	Vout Nom. (Vdc)	Vout Max. (Vdc)	Open Loop (No Load) Voltage (Vdc)	
					PLB ⁻	15W				
PLB15	W-0300-38		120 & 21	77	11.4	100 to 300	26	32	38	50
					PLB	30W				
PLB30	W-0600-38		120 & 21	77	22.8	300 to 600	26	32	38	50
					PLB	50W				
PLB50	W-1200-38		120 & 21	77	45.6	600 to 1200	26	32	38	50
Side le	ads.									

Programming

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

Typical Applications

- Commercial lighting
- Architectural lighting
- Residential lighting
 Indoor lighting



/ A le 24



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	40 W	'	6 to 56 Vdc		180 mA to 2.1 A Constant Current		up to 87% typical	
Max. Case Temperature	THD	Pov Fac	wer ctor	Dimn	ning Method	Din Ra	nming ange	Startup Time
90 °C (measured at the hot spot)	< 20%	> (> 0.9 Forv Reverse-		vard-Phase, Phase, & 0–10 V	1- (% (100% of lout)	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.)



Features

- · Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- TRIAC and ELV dimming at 120 Vac only
- 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	lout	Max. Output	Output Voltage Range (Vdc)		
	(Vac)	(MA)	Power (W)	min.	max.	
	ESS010W:	up to 10 W				
ESS010W-0180-42	120-277	180	7.6	24	42	
ESS010W-0180-42-XL	120-277	180	7.6	24	42	
ESS010W-0200-42	120-277	200	8.4	24	42	
ESS010W-0200-42-XL	120-277	200	8.4	24	42	
ESS010W-0250-42	120-277	250	10.5	24	42	
ESS010W-0250-42-Z1	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-0700-13-Z1	120-277	700	9.1	8	13	
ESS010W-0750-12	120-277	750	9.0	6	12	
	ESS015W	/: 11–15 W				
ESS015W-0300-42	120-277	300	12.6	24	42	
ESS015W-0300-42-XL *	120-277	300	12.6	24	42	
ESS015W-0350-32	120-277	350	11.2	21	32	
ESS015W-0350-42	120-277	350	14.7	24	42	
ESS015W-0350-42-XL	120-277	350	14.7	24	42	
ESS015W-0350-42-Z1	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-1000-12	120-277	1000	12.0	6	12	
ESS015W-1050-14	120-277	1050	14.7	8	14	
ESS015W-1050-14-Z1	120-277	1050	14.7	8	14	
	ESS020W	/: 16 –20 W				
ESS020W-0350-56	120-277	350	19.6	40	56	
ESS020W-0400-42	120-277	400	16.8	24	42	
ESS020W-0400-42-XL	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	120-277	1400	19.6	8	14	
	ESS030W	/: 21–30 W				
ESS030W-0500-42	120-277	500	21.0	24	42	
ESS030W-0500-42-Z1	120-277	500	21.0	24	42	
ESS030W-0550-42	120-277	550	23.1	24	42	
ESS030W-0550-42-XL	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-XL	120-277	700	29.4	24	42	
ESS030W-0700-42-Z1	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	120-277	1750	24.5	8	14	
	ESST040V	V: 31–40 W				
ESST040W-0800-42	120-277	800	33.6	24	42	
ESST040W-0850-42	120-277	850	35.7	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	

Suffix for the different options: 1. "-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

2. "-XL" Suffix: Extended wire leads 12 in. (300 mm) long

Typical Applications

- Indoor & Outdoor
- Commercial lighting
- Architectural lighting

 Recessed lighting (downlights) Residential lighting Office Lighting



EBR SERIES 8 W – 21 W

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, 220–240 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 lout)	200 ms

Typical Application Diagram





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

Constant Current LED Drivers with Deep TRIAC and ELV Dimming

(1–100%) and with Fast Startup Time

ERP Part Number	Nominal Input	lout	Max. Output	Output Voltage Range (Vdc)					
	voltage (vac)	(IIIA)	FOWEI (W)	min.	max.				
	120 VAC NOMI	NAL INPU	T VOLTAGE						
EBR010U: 8 –10 W									
EBR010U-0200-42	120	200	8.4	30	42				
EBR010U-0250-42	120	250	10.5	30	42				
EBR015U: 11–15 W									
EBR015U-0300-42	120	300	12.6	30	42				
EBR015U-0350-42	120	350	14.7	30	42				
	EBR02	20U: 16–21	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				
220–240 VAC NOMINAL INPUT VOLTAGE									
	EBR01	5E: 11–15	W						
EBR015E-0350-42-CE	220-240	350	14.7	30	42				



Typical Applications

Architectural lighting

• Recessed lighting (downlights)

- 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 lout)	400 ms

Typical Application Diagram





ERP Part Number	Nominal Input lout		Max. Output	Output Voltage Range (Vdc)		
	voltage (vac)	(IIIA)	FOWEI (W)	min.	max.	
	ESM020W: 11-	-20 W				
ESM020W-0350-42	120-277	350	14.7	24	42	
ESM020W-0440-34	120-277	440	15.0	19	34	
	ESM030W: 21-	-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	
	ESM040W: 31-	-40 W				
ESM040W-0800-42	120-277	800	33.6	24	42	
ESM040W-0900-42	120–277	900	37.8	24	42	
ESM040W-0940-43	120-277	940	40.4	32	43	
	ESM050W: 41-	-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-	-60 W				
ESM060W-1400-42	120-277	1400	58.8	24	42	



21 to 56 Vdc

Constant Current

typical

Typical Application Diagram

220–240 Vac

60 W







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: TRIAC and ELV dimming at 120 Vac only
- ESPxxxE models: ELV and 0-10 V dimming only
- 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



Features

- Compatible with TRIAC (forward-phase or leading-edge), ELV (reverse-phase or trailing-edge) and 0-10 V dimmers
- TRIAC and ELV dimming at 120 Vac only
- 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
- 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
- · Worldwide safety approvals

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



ESP SERIES 40 W - 60 W

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

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 lout)	400 ms

ERP Part Number	Nominal Input	lout	lout Max. Output		Output Voltage Range (Vdc)			
	voltage (vac)	(IIIA)		min.	max.			
120 & 27	7 VAC NOMINA	L INPUT	VOLTAGE					
	ESP040W: 3	1–40 W						
ESP040W-0700-56	120–277	700	39.2	40	56			
ESP040W-0800-42	120–277	800	33.6	24	42			
ESP040W-0900-42	120-277	900	37.8	24	42			
ESP040W-0940-43	120–277	940	40.4	35	43			
ESP050W: 41-50 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: 5	1–60 W						
ESP060W-1400-42	120–277	1400	58.8	24	42			
220–24	0 VAC NOMINAL	_ INPUT \	/OLTAGE					
	ESP040E: 3	1–40 W						
ESP040E-0850-42	220-240	850	35.7	24	42			
	ESP060E: 5	1–60 W						
ESP060E-1400-42	220-240	1400	58.8	24	42			

1. 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.



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





ESPT SERIES 40 W - 60 W

ERP Part Numbe

ESPT050W-1050-42-Z1

ESPT050W-1200-42-Z1 "

ESPT060W-1400-42-Z1 ^[1]

following part numbers:

ESPT050W-1400-34

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 lout)	400 ms

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
- TRIAC and ELV dimming at 120 Vac only
- 90 °C maximum case hot spot temperature
- · Class 2 power supply
- \bullet Lifetime: 50,000 hours at 70 $^\circ \text{C}$ 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	Applic	ations
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- Indoor & Outdoor Commercial lighting Architectural lighting
- Recessed lighting (downlights) Residential lighting Office Lighting



Nominal Input

Voltage (Vac)

120-277

120-277

120-277

SPT060V

120-277

10 V to 8.1 V = 100%. 1 V to 0.8 V = 1%. < 0.8 V dim-to-off

 ESPT-CLIPS-100: bag of 100 clips · ESPT-CLIPS-1k: bag of 1000 clips

ESPT050W 41-50 M

1. ESPT models with the "-Z1" suffix exhibit a non-linear 0–10 V dimming profile with 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

lout

(mA)

1050

1200

1400

1-60 M

1400

Max. Output

Power (W)

44.1

50.4

47.6

58.8





Typical Application Diagram









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



Output Voltage

Range (Vdc)

min. max.

42

42

34

42

24

24

23

24



VLM60/40 SERIES 40 W - 60 W

Efficient, Compact, Non-Dimmable

Constant Voltage Class 2 / Class II LED Drivers

out Current	Efficiency	Max. Case Temperature	THD	Power Factor
1.25 A	up to 90% typical	90 °C (measured at the hot spot)	< 20%	> 0.9

ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	lout Max (A)			
120	120 & 277 VAC NOMINAL INPUT VOLTAGE						
	VLM40	W					
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			
	VLM60	W					
VLM60W-12	120 & 277	60.0	12	5			
VLM60W-24	120 & 277	60.0	24	2.5			
VLM60W-36	120 & 277	60.0	36	1.67			
VLM60W-48	120 & 277	60.0	48	1.25			
220	-240 VAC NOMINA	L INPUT VOLT	AGE				
	VLM40	DE					
VLM40E-24-T ^[1]	220–240	40.0	24	1.67			
VLM40E-48-T ^{III}	220-240	40.0	48	0.83			
	VLM60	DE					
VLM60E-24	220-240	60.0	24	2.5			
VLM60E-24-T ¹¹¹	220-240	60.0	24	2.5			
VLM60E-48-T ^{III}	220-240	60.0	48	1.25			

1. Strain reliefs for "-T" models can be ordered using part number SR1. Order quantity for SR1 is per strain relief, and 2 strain reliefs are needed for each driver.

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

- 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, 220–240 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 "-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.)



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

ERP Part Number	Nominal Input Voltage (Vac)	Pout Max (W)	Vout Nom (Vdc)	lout Ma (A)
120	& 277 VAC NOMIN	AL INPUT VOL	TAGE	.,
	VLM10	OW		
VLM100W-12 ^[1]	120 & 277	96.0	12	8
VLM100W-24	120 & 277	96.0	24	4
VLM100W-36	96.0	36	2.7	
VLM100W-48	120 & 277	96.0	48	2
220	0–240 VAC NOMINA	L INPUT VOLT	AGE	
	VLM10	DOE		
VLM100E-24	220–240	96.0	24	4
VLM100E-48 220–240		96.0	48	2
VLM100E-24-T ^[2] 220–240		96.0	24	4
VLM100E-48-T [2]	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. Order quantity for SR2 is per strain relief, and 2 strain reliefs are needed for each driver.

Suffix for the different mounting options:

a) NO suffix: side leads b) "-T": Terminal blocks



- Strip lights Linear lighting
- Pendant lights Cove Lights









Typical Application Diagram





LVLE Class 2 RoHS ₀ৠus F© (5)

NFC Programming

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

VZM SERIES 60 W – 90 W

Efficient, Compact, Constant Voltage, Class 2

LED Drivers with 0–10 V Dimming

ficiency	Max. Case Temperature	THD	Power Factor	Dimming Method	Dimming Range	Startup Time
to 90% typical	90 °C (measured at the hot spot)	< 20%	> 0.9	Programmable 0–10 V	1–100%	300 ms typical

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



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
- 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



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



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



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

Fypical	Application	Diagram
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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.
- Worldwide safety approvals

- **Typical Applications**
- Signage Strip lights



xDrive[™] 40 W – 100 W

Constant Voltage LED Drivers with Integrated Dimmer

P Part Number	Nominal AC Line Voltage (Vac)	Pout Max (W)	Pout Min (W)	Vout Nom (V)	lout Max (A)	Vout Regulation (Vdc)	Vout ripple (p-p)
			VSW40U				
/40U-12-ERP	120	40.0	8.0	12	3.3	11.1 - 12.9 (+/-0.9 V)	< 10%
			VSW60U				
/60U-12-ERP	120	60.0	10.0	12	5	11.1 - 12.9 (+/-0.9 V)	< 10%
/60U-24-ERP	120	60.0	3.0	24	2.5	22.2 - 25.8 (+/-1.8 V)	< 10%
		١	/SW100U				
/100U-24-ERP	120	100.0	5.0	24	4.2	22.2 - 25.8 (+/-1.8 V)	< 10%

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







ERP DRIVER INSIDE

White & Tunable White LED Light Engines

ERP DRIVER INSIDE

Tunable Color LED Light Engines



LIGHT FOR LIFE®

White, tunable white, and tunable color LED light engines with integrated universal AC input drivers—to recreate and control the highest quality of light, and access a rich gamut of pastels and saturated colors to unveil new design frontiers.



Private Residence in San Francisco, illuminated by luminaires containing Araya tunable color light engines. . Fixtures by LF Illumination. DMX controls by Lutron[®]. Architect: Wesley Wei. Lighting Designer: Eve Quellman.







FIND THE RIGHT (WHITE) LIGHT

In a world where simplicity meets sophistication, ERP introduces revolutionary LED light engines with elegant driver-inside technology that improves quality and control-while dramatically reducing costs across-the-board.



BIANCO LIGHT ENGINES DO IT ALL

A true lighting breakthrough – embedding the AC-DC driver inside the light engine and delivering the highest quality of light.

The technology-rich module can be preconfigured on the assembly line to operate at a predefined color temperature, or dim-to-warm-with options to mimic halogen or incandescent.

Consider the versatility-four light emitting surfaces, three feature packages, programmable CCT range, warm dim profiles, and two tuning ranges.

BIANCO DELIVERS SUPERIOR QUALITY LIGHT

- Integrated Driver (120–277 VAC)
- CRI: 90+
- Color Consistency: 3-step (typically 2-step) MacAdam ellipse
- No Flicker (IEEE 1789-2015 compliant)
- Energy Star Compliant



BIANCO SLASHES COSTS EVERYWHERE

- · Eliminates external driver cost
- Eliminates UL required 90 °C thermal cutoff protector it's integral to the engine
- Reduces fixture cost
- Reduces fixture size
- Reduces fixture labor
- · Easy module replacement in the field
- · Programmability flexibility reduces SKU inventory

Bianco offers a full line of technology-rich LED light engines in 50 mm (Zhaga compliant) and 65 mm case diameters. Coupled with three control options, Bianco offers a robust line-up for all your lighting requirements.



Bianco Product Series	SWM1, SWM2	TWM1, TWM2	
Modes of Operation	SINGLE WHITE	TUNABLE WHITE, WARM DIM, SINGLE WHITE	
ERP Driver Inside	Yes	Yes	
CCT/Tunable Range (K)	2700, 3000, 3500, 4000	1800–6500	
Warm Dim	-	Halogen or Incandescent	
Tri-Mode Dimming	Yes	Yes	
0–10 V Tuning	-	Yes	
Optional Bluetooth	-	Yes	
LES (mm)	9, 12, 19, 32	9, 12, 19, 32	
Peak Lumens (Im)	1200–4800	1400–2600	
CRI	90+ 90+		
Color consistency	3 step (typical 2 step)	3 step (typical 2 step)	
Lumen Maintenance	L70	L70	
Flicker	IEEE1789 -2015 Compliant	IEEE1789 -2015 Compliant	



A POWERFUL LITTLE PUCK







AWM1 **AC INPUT TUNABLE COLOR LED LIGHT ENGINES**

Tunable color LED light engines with integrated universal AC input drivers—to recreate and control the highest quality of light, and access a rich gamut of pastels and saturated colors to unveil new design frontiers.



This innovative light engine ushers in a new era of dynamic illumination with radical simplicity. Offering tunable CCT from 1800 K to 6500 K, individual RGBW control, and a dimming range from 100% down to 1% – while maintaining high-quality color rendering (90+ CRI)-AWM1 ensures a tailored lighting experience with the ability to create captivating lighting scenes through RGBW customization.

Featuring on-board DMX512-A-RDM, AWM1 light engines have the capability to upgrade firmware over the wire via RDM.

ELECTRICAL SPECIFICATIONS AND PHOTOMETRIC INFORMATION

NOMINAL INPUT	120 & 277 VAC / 60 Hz
CONTROL OPTIONS	DMX512-A-RDM
CRI (RA / R9)	> 90 / > 50
DIMMING RANGE	100% to 1%, at constant CCT
NOMINAL COLOR CONSISTENCY	3 step MacAdam ellipse (typical 2 step)
CCT RANGE	1800–6500 K
CASE DIAMETER	50 mm (1.97 in.)
CASE HEIGHT	18.5 mm (0.73 in.)
LIGHT EMITTING SURFACE (LES) DIAMETER	12 mm, 19 mm
LIGHT OUTPUT	1200 lm, 1500 lm

OPERATIONAL SPECIFICATIONS

CONTROL SYSTEM / PROTOCOL	DIMMING	ССТ	WARM DIM	RGBW
DMX512-A-RDM	100–1%	TUNABLE 1800–6500 K	2850–1800 K (Incandescent) 3050–1800 K (Halogen)	\checkmark

All information is preliminary. Specifications may be subject to change without notice.

Questions? Please contact support@erp-power.com

THE AWM1 DATA TELLS THE STORY



RGB COLOR WHEEL & CORRESPONDING HUE DEGREES





LIGHT OUTPUT AND COLOR QUALITY



SPD AND DOMINANT WAVELENGTHS OF EACH RGB CHANNEL



	L_dominant (nm)	Excitation Purity (%)*
RED	617.3	95
GRN	515.7	46
BLU	485.4	94

*Achromatic Stimulus Point (0.3333, 0.3333) was used as reference.

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