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# SSL Light Engine and Power Supply Catalog 2014-2015



OSRAM is proud to offer an innovative selection of advanced lighting technologies and energy-saving products, systems and services. Our products are marketed under our family of brands: OSRAM, SYLVANIA, Traxon & e:cue and ENCELUM®.

Because our focus is on lighting, we provide the solutions that meet the needs of all our customers. Our products are designed to save energy, improve the quality of light and meet sustainability goals. The right lighting solution can make people more comfortable, more productive and feel safer. Whatever the need – from retail to entertainment lighting, depend on us for the ideal lighting solution to meet your requirements and to help make your company more efficient and productive.

# Our Brands

## Our family of brands:



OSRAM branded products are known worldwide for their high quality and advanced technology. Featuring energy-saving solutions for any application, the OSRAM brand is one of the most respected in lighting.



SYLVANIA branded products have signified lighting innovation for almost a century. Innovation, quality and dependability are why the SYLVANIA brand name is the name you can trust. The complete line of SYLVANIA products deliver unparalleled levels of performance to any modern lighting application.



The Traxon & e:cue portfolio of sustainable and reliable turnkey lighting solutions is designed to meet every demand. Traxon & e:cue LED lighting and control systems offer sophisticated RGB and white options for the architectural, hospitality, healthcare, retail and entertainment industries. These innovative solutions apply the benefits of LEDs as a highly-efficient, long-lasting and environmentally-safe light source by combining state-of-the-art technology with award-winning designs.



## ENCELIUM

The ENCELIUM® brand and Energy Management System from OSRAM offers some of the most brilliant tactics in the industry to combat the problem of escalating energy costs. The solution was the Energy Management System (EMS), the most advanced lighting control solution on the market. EMS is an intelligent, integrated lighting control and energy management solution that uses the collaborative power of addressable networking technology in conjunction with advanced control hardware and software. Proven solutions have been utilized in hundreds of new and retrofitted buildings around the globe.

We are also proud to have two technologically-advanced businesses in our OSRAM family.

## OSRAM

Opto Semiconductors

OSRAM Opto Semiconductors, a subsidiary of OSRAM GmbH, is one of the key players in the global opto-electronic semiconductor market and one of the guiding lights in technological development and high-quality manufacturing. For four decades, the high-tech company has been investing in research and developing new products on the technological cutting edge – enabling OSRAM Opto Semiconductors, to set international standards in the fields of illumination, visualization and sensor technology.

## SYLVANIA

LIGHTING SERVICES

SYLVANIA Lighting Services (SLS), a subsidiary of OSRAM SYLVANIA, is the industry leader in turnkey energy-management solutions.

We help design a solution that includes energy saving products as well as the latest in lighting controls to reduce energy consumption and ultimately save you money. We provide audit and survey capabilities, lighting design and project management, utility rebate management, recycling, turnkey solutions for EV charging and more, all with one point of contact.

As our business partner, you will benefit from the strength of our company, the versatility of our brands and our commitment to cutting-edge lighting technologies. We provide customized solutions to help you achieve your objectives, thus strengthening your bottom line and improving the light around you.







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## Important Notice

The data and suggested applications contained in this catalog, as well as any additional information our representatives may be able to furnish, are for general information only and are not intended and should not be taken as representations or warranties as to the suitability of a lamp for any particular application or use in any particular equipment, nor are our representatives authorized to make any such representations or give any such warranties. Applications and conditions of use are many and varied and beyond our control. We do not have the same degree of knowledge that the purchaser has with respect to the design of his equipment and the conditions of its use. Therefore, it is up to the purchaser to make his own determination as to the suitability of a lamp for his intended application or use and to assume responsibility for that determination.

The specifications and information shown in this catalog are believed to be accurate. Although OSRAM SYLVANIA believes this information to be correct, no warranty is made or implied as to the accuracy of this information and OSRAM SYLVANIA does not accept or assume responsibility of liability for errors, changes, omissions, or for harm resulting therefrom.

In accordance with our established policy to consistently improve our products, the specifications contained herein are subject to change without notice.

The OSRAM SYLVANIA Test and Measurement Laboratory is a participant in the Energy Efficient Lighting (EEL) Program of the National Voluntary Laboratory Accreditation Program (NVLAP-NIST) and is accredited for testing of lighting products according to the guidelines for the EEL Program. OSRAM SYLVANIA lamp and ballast measurements are conducted under laboratory conditions utilizing American National Standards Institute (ANSI), Canadian Standards Association (CSA), Commission Internationale de l'Eclairage (CIE), and Illuminating Engineering Society of North America (IESNA) standards and practices. The OSRAM SYLVANIA Electronic Component and Systems Development

Group participate in the Underwriters Laboratories Inc. Client Test Data Program. Ballast designs are tested for conformance to Underwriters Laboratory (UL) safety standards using practices audited, assessed and approved by UL. Actual lamp and ballast performance may vary depending on application and environment (i.e. ambient temperature, input voltage, ballast type, etc.)

OSRAM SYLVANIA designs and manufactures lamps and ballasts to meet American National Standard Institutes (ANSI) and/or IEC (International Electrotechnical Commission) standards of construction and performance through Total Quality Manufacturing (TQM) practices where applicable. In addition, ballasts are designed and manufactured to meet Underwriters Laboratory (UL) and Canadian Standards Association (CSA) safety standards as necessary. Ratings may change as a result of changes made to remain compliant with modified or updated standards. OSRAM SYLVANIA will release new or updated technical bulletins when appropriate. All product data presented in this catalog supersedes all data published before 10/01/14.

Many OSRAM SYLVANIA products listed in this catalog qualify under the North American Free Trade Agreement (NAFTA) as manufactured in Canada, the United States of America or Mexico.

# The Future of Lighting is Being Created Today at OSRAM SYLVANIA

## Leading you into the future of light

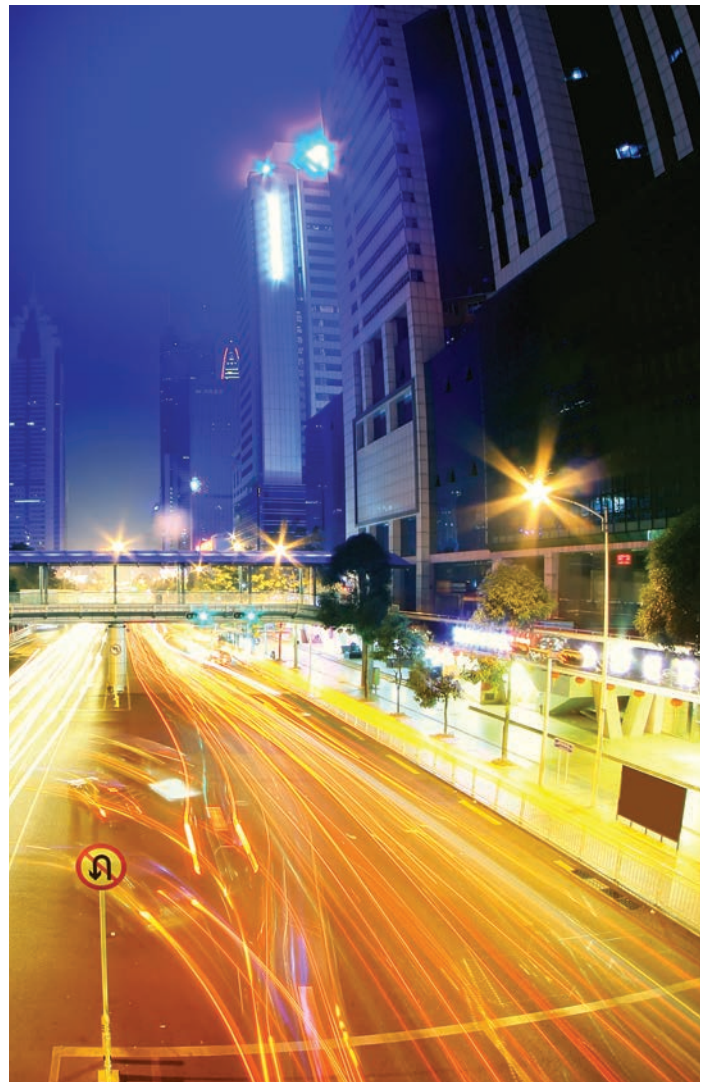
For over a century, OSRAM SYLVANIA has been a leader in introducing products that deliver energy savings, reduce impact on the environment and increase our customers' bottom line. We have consistently refined and improved our traditional lighting technologies, while embracing the challenge to explore and develop innovative products to meet future demands.

## The integrated lighting expert

As an integrated lighting expert, we are number two among the global companies in the lighting market. We offer vertically integrated products and solutions along the entire lighting value chain from light sources – including lamps, components, and optical semiconductors – through ballasts, light management systems, and value-added services.

## Follow a leader in lighting innovation

Our innovative products are driven by unparalleled expertise in all facets of lighting science and technology, and by the highest levels of customer support and service. Let us show you how lighting behaves, how it motivates and how it influences our lives and our performance. Most importantly, let us show you how our experience in specification and application will ensure you get the best performance and ROI from our products. Look to OSRAM SYLVANIA to provide tomorrow's lighting solutions for today's lighting projects.





# A Century of Illumination

OSRAM SYLVANIA's leadership in the industry results from our proud legacy, which extends back to the dawn of the twentieth century, and points the way for continued success in years to come.

We're proud of our long standing reputation of providing solutions in homes, businesses and institutions, automobiles and a broad range of specialty applications. Over the years we've changed to reflect the markets we serve and the customers we reach. But one thing has remained constant – a belief that our ideas can make a difference in every person's life and that our products reflect a commitment to making our world more comfortable, more productive and more imaginative.

<b>1964</b>	METALARC®	<b>2005</b>	DULUX L SUPERSAVER ECOLOGIC
<b>1972</b>	LUMALUX®	<b>2008</b>	QUICKTRONIC PowerSHED™
<b>1973</b>	UNALUX®	<b>2009</b>	METALARC POWERBALL EL ECOLOGIC
<b>1974</b>	SUPERSAVER® T12	<b>2009</b>	OCTRON XP XL ECOLOGIC
<b>1981</b>	OCTRON®	<b>2009</b>	QUICKTRONIC High Efficiency Systems
<b>1982</b>	DULUX®	<b>2010</b>	DULUX SUPERSAVER ECOLOGIC
<b>1983</b>	SUPERSAVER PLUS™	<b>2010</b>	METALARC POWERBALL Ceramic 15W TF & QUICKTRONIC SUPER Mini System
<b>1984</b>	LUMALUX ECOLOGIC®	<b>2011</b>	PENTRON HO XL ECOLOGIC
<b>1985</b>	OCTRON CURVALUME®	<b>2011</b>	QUICKTRONIC High Efficiency POWERSENSE Systems
<b>1987</b>	QUICKTRONIC® Systems	<b>2011</b>	QUICKTRONIC Metal Halide Dimming Systems
<b>1992</b>	METALARC PRO-TECH®	<b>2012</b>	Ultra IQ™ LED Lamps with integrated wireless dimming
<b>1995</b>	LUMALUX PLUS®	<b>2012</b>	Ultra SE™ LED Lamps with Sunset Effect
<b>1995</b>	METALARC Pulse Start	<b>2013</b>	OPTOTRONIC® Programmable Constant Current LED Power Supplies
<b>1996</b>	METALARC SUPERSAVER	<b>2013</b>	OCTRON® 800XP® XL Ecologic® 3 T8 Fluorescent Lamp
<b>1996</b>	DULUX D ECOLOGIC	<b>2014</b>	ORIOS™ LED Lamps
<b>1997</b>	ICETRON®	<b>2014</b>	SubstiTUBE® IS T8 LED Lamp
<b>1997</b>	PENTRON®	<b>2014</b>	ULTRA HE T8 LED Retrofit Kit
<b>1997</b>	PENTRON HO		
<b>1999</b>	METALARC POWERBALL® Ceramic		
<b>2001</b>	SUPER METALARC, OCTRON XP®, XPS® ECOLOGIC		
<b>2002</b>	OCTRON SUPERSAVER ECOLOGIC		
<b>2005</b>	PENTRON PREMIER™ ECOLOGIC		
<b>2005</b>	QUICKTRONIC POWERSENSE® Dimming Ballast		

# OSRAM SYLVANIA Distinctions and Awards

At OSRAM SYLVANIA, our singular focus is on lighting excellence. You can see it in our products. Our innovative lighting products are driven by unparalleled expertise in all facets of lighting science and technology and, equally important, by the highest levels of customer support and service. We are proud the industry has recognized our efforts.



2013 *Today's Facility Manager*  
Readers' Choice Award  
OCTRON® XP® XL ECOLOGIC®3



Lighting for Tomorrow  
MONAVI™ Double Arm  
ULTRA SE™ RT6 DDownlight



2014 IES Progress Report



Founding and governing member since 2008



2014 LIGHTFAIR Innovation Award  
OSRAM DEBUT™ Judges Citation Award  
OPTOTRONIC® Programmable Constant Current 2DIM  
Outdoor LED Power Supplies - Category Winner



2014 *Design Journal* ADEX Awards

MOSAIC™ Flexible Color Changing LED - Platinum

ULTRA iQ™ LED Lamps - Platinum

ULTRA SE™ LED Lamp Family - Platinum

ULTRA 25™ LED Lamps - Platinum

OPTOTRONIC® Programmable Dimmable Power Supplies -  
Platinum

RLS22 2x2 LED Troffer - Gold

PrevaLED® Cube LED Light Engine - Gold



Architectural SSL Pia Award

OPTOTRONIC® Programmable Dimmable LED Power Supplies

PrevaLED® Cube LED Light Engine

ULTRA SE™ LED Lamp Family

LINEARlight™ Flex UL2108 Protect System

OSRAM OPTO Semi-conductors DURIS® S9

OSRAM Luminaire Catalog



# SYLVANIA and OSRAM Products and the IESNA Progress Report

A proud legacy of achievement



Each year, the Progress Committee of the Illuminating Engineering Society of North America (IESNA) solicits the lighting industry for product submissions. If accepted, these submissions are featured in the committee's Progress Report that is published in the IESNA's publication, *LD+A*. The mandate of the Progress Committee is "to keep in touch with developments in the art and science of lighting throughout the world and prepare a yearly review of achievements for the Illuminating Engineering Society of North America". Submissions are organized into one of seven categories: light source, accessory, luminaire, research, application, publication and design tool. They are evaluated for their design, engineering characteristics, installation features and overall uniqueness. The 30-member committee of industry experts votes on up to 200 product submissions annually.

Over the years, many SYLVANIA and OSRAM branded products have been accepted for the Progress Report. An itemized list of our products is included in the table that follows along with their significant features. For detailed descriptions and specifications, please visit [www.osram-america.com](http://www.osram-america.com).

# IESNA Progress Report

## 2014 Progress Report

### OSRAM SYLVANIA LIGHTING SUBMISSIONS ACCEPTED BY THE IESNA PROGRESS Committee

### SIGNIFICANCE TO THE LIGHTING INDUSTRY\*

<b>ULTRA PRO HD Lamp Family</b>	Lamp family that offers industry's highest CRI with R9 above 75
<b>RT6HO and RT8HO LED Retrofit Products</b>	LED Retrofit package, wet rated and universal voltage
<b>DULUX® T/E/IN XL ECOLOGIC® CFL Lamps</b>	67% increase in life; improved lumen output of up to 6%
<b>OPTOTRONIC® Programmable Linear CC Power Supply</b>	Line extension to OPTOTRONIC Programmable power supply with linear form factor
<b>OPTOTRONIC® Programmable Outdoor CC Power Supply</b>	Line extension for OPTOTRONIC programmable outdoor power supply
<b>ENCELIUM® Wireless Wall Station</b>	Five buttons with available customization for scene setting and zone control
<b>ENCELIUM® Wireless PIR Sensor</b>	Uses PIR technology which is unique to wireless photosensors
<b>PrevaLED® Flex Linear Module</b>	Highest efficacy (up to 175 LPW) for linear strip
<b>PrevaLED® Cube AC LED Light Engine</b>	Highest lumen package module in industry with double lifetime, lowest profile for AC direct
<b>PrevaLED® Flat AC LED Module</b>	Highest efficacy flat AC LED module
<b>SOLERIQ® P9 LED Module</b>	Highest output chip-on-board LED module available
<b>Cove Light AC HO RGBW</b>	Smallest available RGBW cove light; designed for small areas
<b>DEBUT LED Virtual Reality Space</b>	First immersive lighting application to tailor light and sound to transport consumers into the environment where their garments will actually be used
<b>MOSAIC® Outdoor LED FLEX Light STRIP</b>	Line extension; First exterior rated RGB color changing light strip

\*based on the 2014 IESNA Progress Committee Review

# Warranties

**More systems covered. More service options. More peace of mind.**

ENCELIUM Standard Limited Warranty

Fluorescent Lamp Only Warranty

HID Magnetic System Warranty

HID Standard Lamp Warranty

Indoor Commercial Luminaire Warranty

LED Module and OPTOTRONIC® Power Supply or Control Warranty

LED Outdoor Fixture Warranty

LED Post Top Retrofit Warranty

LED Recessed Downlight Kit Limited Warranty

LED Signage System Warranty

LED System Warranty

LED T8 Replacement Lamp Warranty

LED Lamp Warranty

LEDstixx® Lighting System Warranty

Magnetic Ballast Warranty

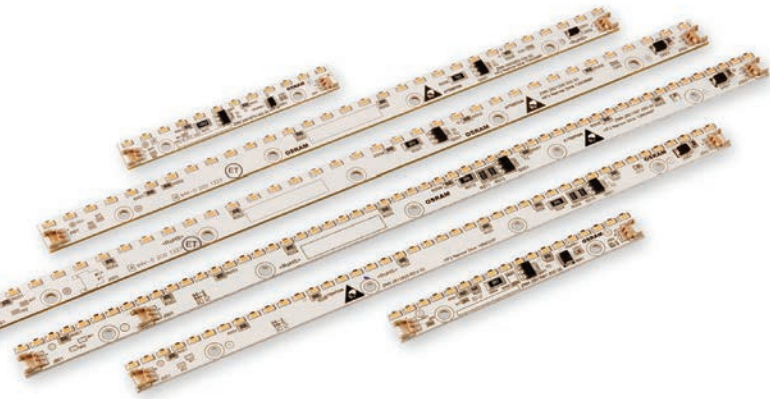
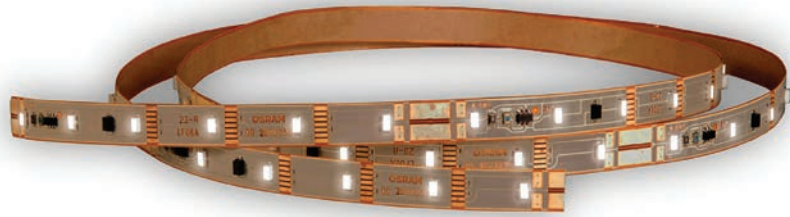
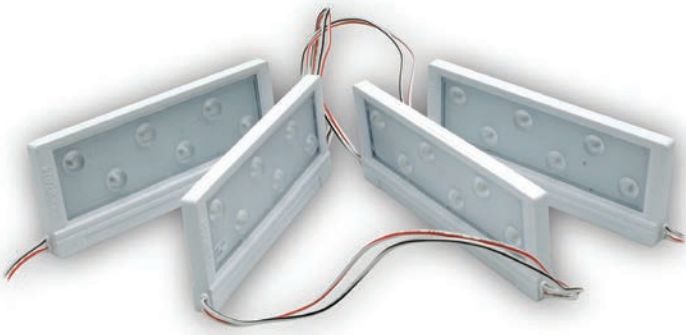
OPTOTRONIC Programmable LED Power Supplies Warranty

QUICK 60+® Lamp or Ballast Warranty

ULTRA RT4 and RT6 Warranty

QUICK 7XL+™

**For additional information and full warranty listing visit [www.osram-americas.com/Warranty](http://www.osram-americas.com/Warranty)**

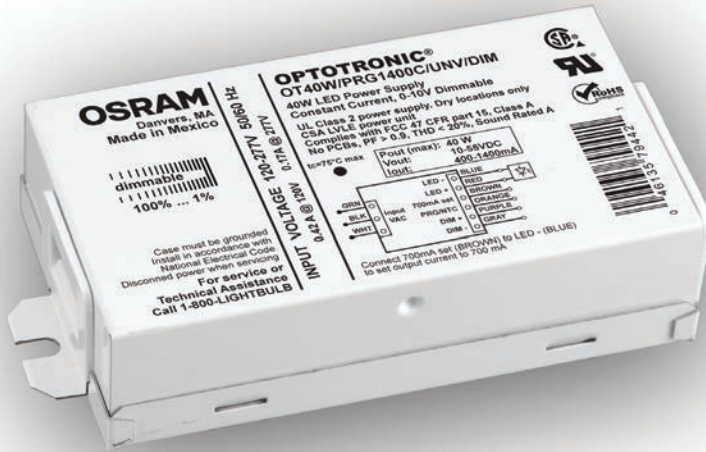
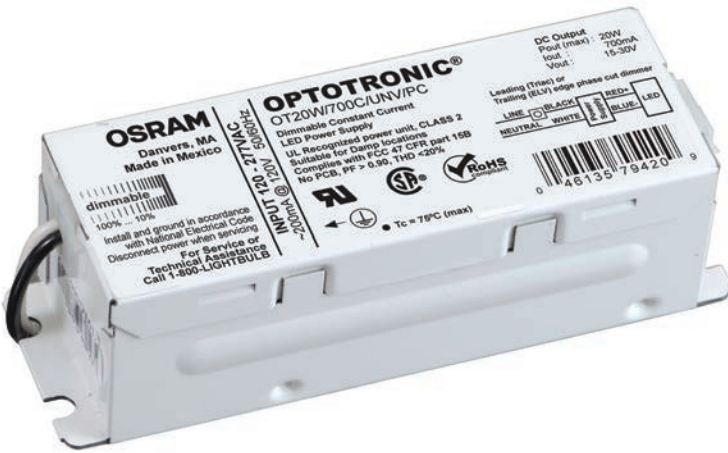


## LED Light Engines and Modules

OSRAM SYLVANIA offers Solid State Lighting (SSL) modules and light engines that produce high-quality light focused on a broad spectrum of indoor and outdoor lighting applications. Featuring modular designs that are easy for OEMs to integrate into their lighting fixtures, our directional, linear, chain and color-mixing modules are optimally paired with OPTOTRONIC® power supplies to achieve high-quality, well-controlled lighting solutions. New board designs provide equivalent performance to comparable fluorescent luminaires and controllability with up to 145 LPW. Innovative, highly-efficient directional modules and light engines open up additional design opportunities for recessed and track lighting solutions.

With more than a century of experience in general lighting, more than 30 years of experience in LED lighting and an industry-leading product warranty, our OEM partners can be confident in SSL products from OSRAM SYLVANIA.





## LED Power Supplies

For over a decade, the OSRAM family of OPTOTRONIC® LED Power Supplies has become the industry standard for robust performance, reliability—and peace of mind.

OPTOTRONIC product line features a complete portfolio of constant voltage, constant current and multiple output power supplies in a variety of standard and custom electrical configurations and form factors to suit every application space and system requirements. New constant current multi-channel, dimmable, programmable power supplies with a wide current range are programmable by the OEM reducing the number of power supplies needed. There is an OPTOTRONIC power supply option to fit your specific application need. All OSRAM LED system components are covered by the industry's finest five year LED Module, OPTOTRONIC Power Supply or Control Warranty.

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Directional LED Light Engines  
and Modules

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## DIRECTIONAL LED LIGHT ENGINES AND MODULES

### PrevaLED® Cube – Constant Current LED Light Engines



Nominal Wattage (W)	Operating Current (mA)	Dimensions L (in) x W (in) x H (in)	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Initial Lumens	LPW	CBCP	Beam Angle (°)
11	350	3.2 x 3.3 x 0.8	73145	PL-CUBE-1100-827-0.35A-G2	20	50000	2700	>80	1100	95	401	110
			73146	PL-CUBE-1100-830-0.35A-G2	20	50000	3000	>80	1100	103	428	110
			73147	PL-CUBE-1100-835-0.35A-G2	20	50000	3500	>80	1100	108	450	110
			73148	PL-CUBE-1100-840-0.35A-G2	20	50000	4000	>80	1100	111	462	110
19	500	3.2 x 3.3 x 0.8	73149	PL-CUBE-2000-827-0.5A-G2	20	50000	2700	>80	2000	90	658	110
			73150	PL-CUBE-2000-830-0.5A-G2	20	50000	3000	>80	2000	99	703	110
			73151	PL-CUBE-2000-835-0.5A-G2	20	50000	3500	>80	2000	105	739	110
			73152	PL-CUBE-2000-840-0.5A-G2	20	50000	4000	>80	2000	109	759	110
			73470*	PL-CUBE-2000-850-0.5A-G2	20	50000	5000	>80	2000	123	–	110
30	700	3.2 x 3.3 x 0.8	73153	PL-CUBE-3000-827-0.7A-G2	20	50000	2700	>80	3000	89	985	110
			73154	PL-CUBE-3000-830-0.7A-G2	20	50000	3000	>80	3000	97	1052	110
			73155	PL-CUBE-3000-835-0.7A-G2	20	50000	3500	>80	3000	103	1105	110
			73156	PL-CUBE-3000-840-0.7A-G2	20	50000	4000	>80	3000	107	1136	110
			73471*	PL-CUBE-3000-850-0.7A	20	50000	5000	>80	3000	121	–	110

\*These items do not have a cover

### Accessories for PrevaLED® Cube

Product Number	Ordering Abbreviation	Description
74799	PL-CUBE HS ADTR	PrevaLED® Cube Heat Sink Adaptor

### PrevaLED® Cube AC – Constant Current LED Light Engines



Nominal Wattage (W)	Voltage (V)	Dimensions L (in) x W (in) x H (in)	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Initial Lumens	LPW	CBCP	Beam Angle (°)
12	277	3.3 x 3.2 x 0.8	73279	PL-CUBE AC-G2 1100-827 277V	20	50000	2700	>80	1100	91	407	100
			73280	PL-CUBE AC-G2 1100-830 277V	20	50000	3000	>80	1100	91	407	100
			73218	PL-CUBE AC-G2 1100-835 277V	20	50000	3500	>80	1100	91	407	100
11	277	3.3 x 3.2 x 0.8	73282	PL-CUBE AC-G2 1100-840 277V	20	50000	4000	>80	1100	99	407	100
23	277	3.3 x 3.2 x 0.8	73283	PL-CUBE AC-G2 2000-827 277V	20	50000	2700	>80	2000	89	740	100
21	277	3.3 x 3.2 x 0.8	73284	PL-CUBE AC-G2 2000-830 277V	20	50000	3000	>80	2000	95	740	100
20	277	3.3 x 3.2 x 0.8	73285	PL-CUBE AC-G2 2000-835 277V	20	50000	3500	>80	2000	100	740	100
			73286	PL-CUBE AC-G2 2000-840 277V	20	50000	4000	>80	2000	102	740	100
40	277	3.3 x 3.2 x 0.8	73287	PL-CUBE AC-G2 3000-827 277V	20	50000	2700	>80	3000	75	1110	100
38	277	3.3 x 3.2 x 0.8	73288	PL-CUBE AC-G2 3000-830 277V	20	50000	3000	>80	3000	80	1110	100
36	277	3.3 x 3.2 x 0.8	73289	PL-CUBE AC-G2 3000-835 277V	20	50000	3500	>80	3000	83	1110	100
35	277	3.3 x 3.2 x 0.8	73290	PL-CUBE AC-G2 3000-840 277V	20	50000	4000	>80	3000	86	1110	100

For the current listing of available products and more complete product information, please visit us at [www.osram-americas.com](http://www.osram-americas.com).



## PrevaLED® Core – Constant Current LED Light Engines



Nominal Wattage (W)	Operating Current (mA)	Dimensions D (in) x H (in)	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Initial Lumens	LPW	Beam Angle (°)
Greater than 80 CRI											
12	300	1.97 x 0.34	72755	PL-CORE-1100-827 0.3A-Z3	20	50000	2700	>80	1100	91	120
			72756	PL-CORE-1100-830 0.3A-Z3	20	50000	3000	>80	1160	96	120
			72757	PL-CORE-1100-835 0.3A-Z3	20	50000	3500	>80	1220	101	120
			72758	PL-CORE-1100-840 0.2A-Z3	20	50000	4000	>80	1240	103	120
19	400	1.97 x 0.34	72759	PL-CORE-2000-827 0.4A-Z3	20	50000	2700	>80	2000	107	120
			72760	PL-CORE-2000-830 0.4A-Z3	20	50000	3000	>80	2110	113	120
			72761	PL-CORE-2000-835 0.4A-Z3	20	50000	3500	>80	2210	119	120
			72763	PL-CORE-2000-840 0.4A-Z3	20	50000	4000	>80	2220	119	120
27	600	1.97 x 0.34	72764	PL-CORE-3000-827 0.6A-Z3	20	50000	2700	>80	3000	109	120
			72765	PL-CORE-3000-830 0.6A-Z3	20	50000	3000	>80	3160	115	120
			72767	PL-CORE-3000-835 0.6A-Z3	20	50000	3500	>80	3300	120	120
			72768	PL-CORE-3000-840 0.6A-Z3	20	50000	4000	>80	3300	120	120
45	1100	1.97 x 0.34	72769	PL-CORE-5000-830 1.1A-Z3	20	50000	3000	>80	5000	111	120
			72770	PL-CORE-5000-835 1.1A-Z3	20	50000	3500	>80	5250	117	120
			72772	PL-CORE-5000-840 1.0A-Z3	20	50000	4000	>80	5450	121	120
Greater than 90 CRI											
21	500	1.97 x 0.34	72762	PL-CORE-2000-930 0.5A-Z3	20	50000	3000	>90	2000	89	120
33	700	1.97 x 0.34	72766	PL-CORE-3000-930 0.7A-Z3	20	50000	3000	>90	3000	90	120
52	1100	1.97 x 0.34	72771	PL-CORE-5000-930 1.1A-Z3	20	50000	3000	>90	5000	97	120

## PrevaLED® COIN 50 – Constant Current LED Light Engines



Nominal Wattage (W)	Operating Current (mA)	Diameter (in)	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Initial Lumens	LPW	CBGP	Beam Angle (°)
11	350	2	72934	PL-CN50-700-930-24D-G1	20	50000	3000	92	720	66	2950	24
			72936	PL-CN50-700-930-40D-G1	20	50000	3000	92	720	66	1370	40
			72935	PL-CN50-700-940-24D-G1	20	50000	4000	92	760	70	3115	24
			72937	PL-CN50-700-940-40D-G1	20	50000	4000	92	760	70	1445	40
			72938	PL-CN50-900-830-24D-G1	20	50000	3000	83	880	81	3610	24
			72940	PL-CN50-900-830-40D-G1	20	50000	3000	83	880	81	1670	40
			72939	PL-CN50-900-840-24D-G1	20	50000	4000	83	930	87	3810	24
			72941	PL-CN50-900-840-40D-G1	20	50000	4000	83	930	87	1765	40
14	350	2	72942	PL-CN50-1100-830-24D-G1	20	50000	3000	83	1040	80	4265	24
			72944	PL-CN50-1100-830-40D-G1	20	50000	3000	83	1040	80	1975	40
			72943	PL-CN50-1100-840-24D-G1	20	50000	4000	83	1100	85	4510	24
			72945	PL-CN50-1100-840-40D-G1	20	50000	4000	83	1100	85	2090	40

## DIRECTIONAL LED LIGHT ENGINES AND MODULES (CONT.)

### COINlight® Pro – Constant Voltage LED Light Engines



Nominal Wattage (W)	Operating Current (mA)	Diameter (in)	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Initial Lumens	LPW	CBCP	Beam Angle (°)
4	200	2	71759	L3DM/24V/827/FL36/CLP	1 or 20	50000	2700	85	240	67	540	36
			71760	L3DM/24V/857/FL36/CLP	1 or 20	50000	5700	85	290	80	650	36
8	390	2	71761	L8DM/24V/827/FL36/CLP	1 or 20	50000	2700	85	450	60	1000	36
			71762	L8DM/24V/857/FL36/CLP	1 or 20	50000	5700	85	530	71	1200	36
10	510	2	71763	L10DM/24V/827/FL36/CLP	1 or 20	50000	2700	85	590	60	1330	36
			71764	L10DM/24V/857/FL36/CLP	1 or 20	50000	5700	85	710	72	1600	36

### Accessories for DRAGONpuck® and COINlight® Pro

Product Number	Ordering Abbreviation	Description
71773	LAC/HS/DP51/45x45	Heat Sink



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# Linear and Array LED Modules

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# LINEAR/ARRAY LED MODULES

## PrevaLED® Bar – Constant Current LED Modules



Max Power (W)	Current (mA)	Dimensions L (in) x W (in)	No. LED Rows	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Initial Lumens	LPW	Beam Angle (°)
5	103	5.2" x 1.9"	3	72714	PLVG1-Bar-590-830-132x48-DC	40	60000	3000	>80	550	121	120
				72715	PLVG1-Bar-590-835-132x48-DC	40	60000	3500	>80	580	128	120
				72716	PLVG1-Bar-590-840-132x48-DC	40	60000	4000	>80	600	131	120
				72717	PLVG1-Bar-590-850-132x48-DC	40	60000	5000	>80	620	137	120
6	170	7" x 1.5"	3	73582	PLPG2-Bar-800-827-178x38-DC	40	60000	2700	>80	700	117	120
				73583	PLPG2-Bar-800-830-178x38-DC	40	60000	3000	>80	750	125	120
				73584	PLPG2-Bar-800-835-178x38-DC	40	60000	3500	>80	780	131	120
				73585	PLPG2-Bar-800-840-178x38-DC	40	60000	4000	>80	800	135	120
6	181	7.9" x 1.9"	3	72718	PLVG1-Bar-845-830-200x48-DC	40	60000	3000	>80	790	124	120
				72719	PLVG1-Bar-845-835-200x48-DC	40	60000	3500	>80	830	130	120
				72720	PLVG1-Bar-845-840-200x48-DC	40	60000	4000	>80	850	134	120
				72721	PLVG1-Bar-845-850-200x48-DC	40	60000	5000	>80	890	140	120
8	255	9" x 1.5"	3	73578	PLPG2-Bar-1000-830-229x38-DC	40	60000	3000	>80	930	125	120
				73579	PLPG2-Bar-1000-835-229x38-DC	40	60000	3500	>80	980	131	120
				73580	PLPG2-Bar-1000-840-229x38-DC	40	60000	4000	>80	1000	135	120
				73581	PLPG2-Bar-1000-850-229x38-DC	40	60000	5000	>80	1050	141	120
9	255	11" x 1.5"	3	73574	PLPG2-Bar-1100-830-280x38-DC	40	60000	3000	>80	1120	125	120
				73575	PLPG2-Bar-1100-835-280x38-DC	40	60000	3500	>80	1170	131	120
				73576	PLPG2-Bar-1100-840-280x38-DC	40	60000	4000	>80	1200	135	120
				73577	PLPG2-Bar-1100-850-280x38-DC	40	60000	5000	>80	1260	141	120
8	255	11" x 1.9"	3	72706	PLVG1-Bar-1100-830-280x48-DC	40	60000	3000	>80	1060	126	120
				72707	PLVG1-Bar-1100-835-280x48-DC	40	60000	3500	>80	1120	132	120
				72708	PLVG1-Bar-1100-840-280x48-DC	40	60000	4000	>80	1150	135	120
				72709	PLVG1-Bar-1100-850-280x48-DC	40	60000	5000	>80	1190	141	120
9	255	11.4" x 1.5"	3	72087	PLPG2-Bar-1100-927-289x38-DC	40	60000	2700	>90	920	110	120
				73570	PLPG2-Bar-1100-830-289x38-DC	40	60000	3000	>80	1120	125	120
				73571	PLPG2-Bar-1100-835-289x38-DC	40	60000	3500	>80	1170	131	120
				73572	PLPG2-Bar-1100-840-289x38-DC	40	60000	4000	>80	1200	135	120
17	380	22" x 1.9"	3	73656	PLVG1-Bar-2200-830-560x48-DC2	40	60000	3000	>80	2130	123	120
				73657	PLVG1-Bar-2200-835-560x48-DC2	40	60000	3500	>80	2240	129	120
				73658	PLVG1-Bar-2200-840-560x48-DC2	40	60000	4000	>80	2300	132	120
				73659	PLVG1-Bar-2200-850-560x48-DC2	40	60000	5000	>80	2390	138	120

For the current listing of available products and more complete product information, please visit us at [www.osram-americas.com](http://www.osram-americas.com).



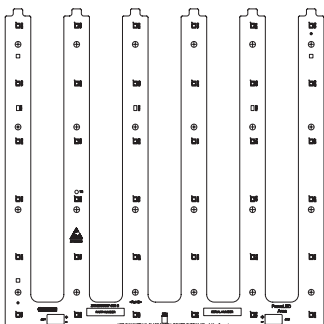
# PrevaLED® Line – Constant Current LED Modules



Max Power (W)	Current (mA)	Dimensions L (in) x W (in)	No. LED Rows	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Initial Lumens	LPW	Beam Angle (°)
9	255	11" x 0.75"	1	72099	PLPG2-Lin-1100-927-280x19-DC	40	60000	2700	>90	920	110	120
				73604	PLPG2-Lin-1100-830-280x19-DC	40	60000	3000	>80	1120	125	120
				73605	PLPG2-Lin-1100-835-280x19-DC	40	60000	3500	>80	1170	131	120
				73606	PLPG2-Lin-1100-840-280x19-DC	40	60000	4000	>80	1200	135	120
				73607	PLPG2-Lin-1100-850-280x19-DC	40	60000	5000	>80	1260	141	120
9	255	11" x 1.5"	1	73600	PLPG2-Lin-1100-830-280x38-DC	40	60000	3000	>80	1120	125	120
				73601	PLPG2-Lin-1100-835-280x38-DC	40	60000	3500	>80	1170	131	120
				73602	PLPG2-Lin-1100-840-280x38-DC	40	60000	4000	>80	1200	135	120
				73603	PLPG2-Lin-1100-850-280x38-DC	40	60000	5000	>80	1260	141	120
8	190	11.4" x 0.7"	1	72654	PLVG1-Lin-1100-830-289x18	40	60000	3000	>80	1030	123	120
				72655	PLVG1-Lin-1100-835-289x18	40	60000	3500	>80	1080	129	120
				72656	PLVG1-Lin-1100-840-289x18	40	60000	4000	>80	1110	132	120
8	190	22" x 0.7"	1	73612	PLVG1-Lin-1100-830-560x18-4C	40	60000	3000	>80	1030	123	120
				73613	PLVG1-Lin-1100-835-560x18-4C	40	60000	3500	>80	1080	129	120
				72662	PLVG1-Lin-1100-840-560x18-4C	40	60000	4000	>80	1110	132	120
				73012	PLVG1-Lin-1100-850-560x18-4C	40	60000	5000	>80	1150	137	120
17	380	22" x 0.7"	1	73608	PLVG1-Lin-2200-830-560x18-4C	40	60000	3000	>80	2060	123	120
				73609	PLVG1-Lin-2200-835-560x18-4C	40	60000	3500	>80	2160	129	120
				73610	PLVG1-Lin-2200-840-560x18-4C	40	60000	4000	>80	2210	132	120
				73611	PLVG1-Lin-2200-850-560x18-4C	40	60000	5000	>80	2300	137	120
17	380	22" x 0.9"	1	72438	PLVG1-Lin-2200-830-560x24	40	60000	3000	>80	2060	123	120
				72455	PLVG1-Lin-2200-835-560x24	40	60000	3500	>80	2160	129	120
				72464	PLVG1-Lin-2200-840-560x24	40	60000	4000	>80	2210	132	120
				72472	PLVG1-Lin-2200-850-560x24	40	60000	5000	>80	2300	137	120
32	710	22" x 1.6"	1	73653	PLVG1-Lin-4000-835-560x40	40	60000	3500	>80	3920	123	120
				73654	PLVG1-Lin-4000-840-560x40	40	60000	4000	>80	4020	126	120
				73655	PLVG1-Lin-4000-850-560x40	40	60000	5000	>80	4200	131	120

## LINEAR /ARRAY LED MODULES (CONT.)

### PrevaLED® Area – Constant Current LED Modules

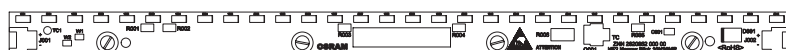


Max Power (W)	Current (mA)	Dimensions L (in) x W (in)	Product Number	Ordering Abbreviation	Pkg Qty	Rated Life L <sub>70</sub> (hrs)	Avg CCT (K)	CRI	Initial Lumens	LPW	Beam Angle (°)
8	230	8.7" x 8.7"	72722	PLVG1-Ar-1100-830-221x221-DC	40	60000	3000	>80	1060	131	120
			72723	PLVG1-Ar-1100-835-221x221-DC	40	60000	3500	>80	1110	138	120
			72724	PLVG1-Ar-1100-840-221x221-DC	40	60000	4000	>80	1140	141	120
17	565	8.7" x 8.7"	72725	PLVG1-Ar-2200-830-221x221-DC	40	60000	3000	>80	2060	121	120
			72726	PLVG1-Ar-2200-835-221x221-DC	40	60000	3500	>80	2160	127	120
			72727	PLVG1-Ar-2200-840-221x221-DC	40	60000	4000	>80	2220	131	120
8	230	10.6" x 10.6"	72728	PLVG1-Ar-1100-830-270x270-DC	40	60000	3000	>80	1060	132	120
			72729	PLVG1-Ar-1100-840-270x270-DC	40	60000	4000	>80	1140	142	120
33	940	20.8" x 20.8"	72736	PLVG1-Ar-4500-830-530x530-DC	40	60000	3000	>80	4200	126	120
			72737	PLVG1-Ar-4500-840-530x530-DC	40	60000	4000	>80	4520	135	120
			72738	PLVG1-Ar-4500-850-530x530-DC	40	60000	5000	>80	4720	141	120

## HF<sup>2</sup>Narrow Stick Seamless – Constant Voltage LED Modules



4 Inch



10 Inch



12 Inch

Max Power (W)	Voltage (V)	Dimensions L (in) x W (in)	Current (mA)	Product Number	Ordering Abbreviation	Pkg Qty	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Initial Lumens	LPW	Beam Angle (°)
Half Power Modules												
2	24	4 x 0.53	68	71779	L2LRE/24V/827/SMLS/4IN	20	50000	2700	85	120	60	120
				71783	L2LRE/24V/830/SMLS/4IN	20	50000	3000	85	120	60	120
				71787	L2LRE/24V/835/SMLS/4IN	20	50000	3500	85	130	65	120
				71791	L2LRE/24V/840/SMLS/4IN	20	50000	4000	85	140	68	120
4	24	10 x 0.53	166	71777	L4LRE/24V/827/SMLS/10IN	10	50000	2700	85	300	75	120
				71781	L4LRE/24V/830/SMLS/10IN	10	50000	3000	85	320	80	120
				71785	L4LRE/24V/835/SMLS/10IN	10	50000	3500	85	320	80	120
				71789	L4LRE/24V/840/SMLS/10IN	10	50000	4000	85	340	85	120
5	24	12 x 0.53	201	71793	L5LRE/24V/827/SMLS/12IN	10	50000	2700	85	370	74	120
				71795	L5LRE/24V/830/SMLS/12IN	10	50000	3000	85	380	76	120
				71797	L5LRE/24V/835/SMLS/12IN	10	50000	3500	85	390	77	120
				71799	L5LRE/24V/840/SMLS/12IN	10	50000	4000	85	410	82	120
Full Power Modules												
3	24	4 x 0.53	137	71780	L3LRE/24V/827/SMLS/4IN	10	50000	2700	85	240	80	120
				71784	L3LRE/24V/830/SMLS/4IN	10	50000	3000	85	350	117	120
				71788	L3LRE/24V/835/SMLS/4IN	10	50000	3500	85	260	85	120
				71792	L3LRE/24V/840/SMLS/4IN	10	50000	4000	85	270	88	120
8	24	10 x 0.53	347	71778	L8LRE/24V/827/SMLS/10IN	10	50000	2700	85	610	76	120
				71782	L8LRE/24V/830/SMLS/10IN	10	50000	3000	85	630	79	120
				71786	L8LRE/24V/835/SMLS/10IN	10	50000	3500	85	640	79	120
				71790	L8LRE/24V/840/SMLS/10IN	10	50000	4000	85	660	83	120
10	24	12 x 0.53	416	71794	L10LRE/24V/827/SMLS/12IN	10	50000	2700	85	730	73	120
				71796	L10LRE/24V/830/SMLS/12IN	10	50000	3000	85	760	76	120
				71798	L10LRE/24V/835/SMLS/12IN	10	50000	3500	85	760	76	120
				71800	L10LRE/24V/840/SMLS/12IN	10	50000	4000	85	790	79	120

## Accessories for HF<sup>2</sup>NarrowStick Seamless

Product Number	Ordering Abbreviation	Description	Length (in)	Pkg Qty
71838	LAC-C/SMLS/BB/2P/1IN	Seamless Board-to-Board connector	1	10
71839	LAC-C/SMLS/BWB/2P/2IN	Seamless Board-to-Board cable	2	10
71840	LAC-C/SMLS/BWB/2P/4IN	Seamless Board-to-Board cable	4	10
71841	LAC-C/SMLS/BWB/2P/8IN	Seamless Board-to-Board cable	8	10
71842	LAC-C/SMLS/WB/2P/24IN	Seamless Wire-to-Board cable	24	10

**NOTES:**





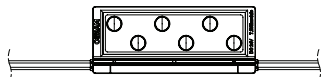
BoxLED® Plus DS .....	12
BoxLED® Plus .....	12
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# Signage LED Modules

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## LED SIGNAGE MODULES

### BoxLED® Plus DS – LED Module with Flat Ray Optics

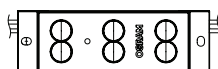


Nominal Wattage (W)	Power Supply	Overall Length per Reel (ft)	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K)	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
100	24V	21	16	73502	BX-DS-PL-865	6500	>80	555	6.24	423	4.8	89	150

### Accessories for BoxLED® Plus DS

Product Number	Ordering Abbreviation	Description	Pkg Qty
71921	BX-DS-MP	Aluminum Mounting Track	24
71922	BX-DS-MB	Mounting Bracket	30 (15 of each side)

### BoxLED® Plus – LED Modules with Flat Ray Optics

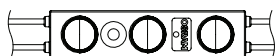


Nominal Wattage (W)	Power Supply	Overall Length per Reel (ft)	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K)	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
100	24V	42.8	32	73519	BX-PL-830	3000	>80	250	3.12	191	2.4	80	150
				73534	BX-PL-840	4000	>80	270	3.12	206	2.4	86	150
				73535	BX-PL-865	6500	>80	274	3.12	209	2.4	88	150

### Accessories for BoxLED® Plus

Product Number	Ordering Abbreviation	Description	Length (ft)	Pkg Qty
70923	BX-MP VS24	Mounting Track	7.8	24

### BackLED L Plus – LED Modules with Flat Ray Optics



Nominal Wattage (W)	Power Supply	Overall Length per Reel (ft)	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K)	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
50	12V	21	32	73664	BA-L-PL 830	3000	>80	125	1.56	190	2.4	80	150
				73665	BA-L-PL 840	4000	>80	135	1.56	206	2.4	86	150
				73666	BA-L-PL 865	6500	>80	137	1.56	209	2.4	88	150

### BackLED M Plus – LED Modules with Flat Ray Optics



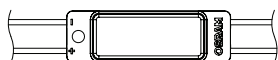
Nominal Wattage (W)	Power Supply	Overall Length per Reel (ft)	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K)	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
28.8	12V	20	40	71282	BA03MA-W4F-830	3000	>80	50	0.72	100	1.44	69	150
				71283	BA03MA-W4F-840	4000	>80	57	0.72	115	1.44	79	150
				71284	BA03MA-W4F-865	6500	>80	68	0.72	135	1.44	94	150
				71285	BA03MA-R2	Red - 625nm	>80	14	0.72	27.5	1.44	19	150

### BackLED L B – LED Modules



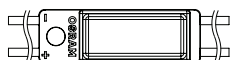
Nominal Wattage (W)	Power Supply	Overall Length per Reel (ft)	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K)	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
45	12V	23.7	36	73667	BA-L-BC-840	4000	>80	110	1.25	167	1.9	88	120
				73668	BA-L-BC-865	6500	>80	112	1.25	170	1.9	89	120

### BackLED M B – LED Modules



Nominal Wattage (W)	Power Supply	Overall Length per Reel (ft)	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K)	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
30	12V	20	40	73669	BA-M-BC-840	4000	>80	70	0.75	140	1.5	93	120
				73670	BA-M-BC-865	6500	>80	71	0.75	142	1.5	95	120

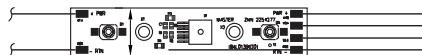
### BackLED XS B – LED Modules



Nominal Wattage (W)	Power Supply	Overall Length per Reel (ft)	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K)	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
13	12V	13.3	50	73569	BA-XS-BC-865	6500	>80	20	0.26	76	0.98	78	110

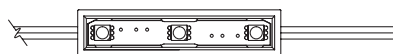
## LED SIGNAGE MODULES (CONT.)

### HF<sup>2</sup>Chain HE – LED Modules



Nominal Wattage (W)	Power Supply	Overall Length per Reel	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K)	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
26	24V	12 ft	18	70400	HF²Chain/36/W4-865/HE	6500	>80	122	1.44	183	2.17	85	170
1.4	24V	3.78 in	1	70368	HF²Chain/SB/02/W4-865/HE	6500	>80	122	1.44	183	2.17	85	170

### HF<sup>2</sup>Chain X1 – LED Modules



White

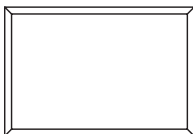


Colored

Nominal Wattage (W)	Power Supply	Overall Length per Reel (ft)	No. of Modules per Reel	Product Number	Ordering Abbreviation	CCT (K) Color	CRI	Lumens per Module	Watts per Module	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
36	12V	25	50	71071	L144/12V/865	6500K	>80	68	0.72	135	1.44	93.0	120
24	12V	25	50	71072	L096/12V/RED	Red - 625nm		11	0.48	21	0.96	25.0	120
				71073	L096/12V/GRE	Green - 525nm		29	0.48	58	0.96	43.0	120
				71074	L096/12V/BLU	Blue - 460nm		6	0.48	12	0.96	9.0	120

## ILLUMINATED THIN PANEL SIGNAGE

### Thin Panel



Nominal Wattage (W)	Film Size W (in) x L (in)	Voltage	Product Number	Ordering Abbreviation	Color Option	Typical Luminance (cd/m <sup>2</sup> )
20	21 x 21	120	71156	LTP/021/021/C/A1	Cool White	350
30	24 x 36		71154	LTP/024/036/C/A1		
60	36 x 48		71155	LTP/036/048/C/A1		
58	40 x 40		71278	LTP/040/040/C/A1		
60	42 x 42		71157	LTP/042/042/C/A1		

### Accessories for Thin Panel

	Product Number	Ordering Abbreviation	Description	Length (ft)
	71291	LTP/15FT/EXT	Wire to extend length between Thin Panel and Power Supply	15



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# Flexible LED Modules

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## FLEXIBLE LED MODULES

### LINEARlight FLEX® POWER FLEX – Constant Voltage LED Modules – Indoor, UL 2108 Listed System\*



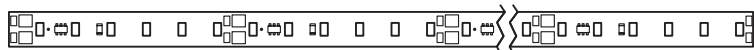
Nominal Wattage (W)	Power Supply	Max Overall Length per Reel (ft)	Product Number	Ordering Abbreviation	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Lumens/ Reel	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
68	24V	9.8	71329	L68LFE/24V/827/PF/G3	50000	2700K	>80	4790	489	6.9	71	120
			71328	L68LFE/24V/830/PF/G3	50000	3000K	>80	5170	525	6.9	76	120
			71327	L68LFE/24V/840/PF/G3	50000	4000K	>80	5545	566	6.9	82	120
			71326	L68LFE/24V/850/PF/G3	50000	5000K	>80	5545	566	6.9	82	120
			71325	L68LFE/24V/860/PF/G3	50000	6500K	>80	5545	566	6.9	82	120

### LINEARlight FLEX® Advanced – Constant Voltage LED Modules – Indoor, UL 2108 Listed System\*



Nominal Wattage (W)	Power Supply	Max Overall Length per Reel (ft)	Product Number	Ordering Abbreviation	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Lumens/ Reel	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
48	24V	32.8	71310	L48LFE/24V/827/ADVG3/A	50000	2700K	>80	3900	119	1.5	81	120
			71309	L48LFE/24V/830/ADVG3/A	50000	3000K	>80	3900	119	1.5	81	120
			71308	L48LFE/24V/840/ADVG3/A	50000	4000K	>80	4230	129	1.5	88	120
			71307	L48LFE/24V/850/ADVG3/A	50000	5000K	>80	4230	129	1.5	88	120
			71306	L48LFE/24V/865/ADVG3/A	50000	6500K	>80	4230	129	1.5	88	120

### LINEARlight FLEX® Short Pitch – Constant Voltage LED Modules – Indoor, UL2108 Listed System\*



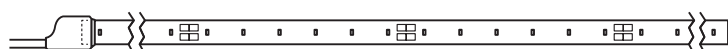
Nominal Wattage (W)	Power Supply	Max Overall Length per Reel (ft)	Product Number	Ordering Abbreviation	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Lumens/ Reel	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
58	24V	19.7	71390	L58LFE/24V/827/SP	50000	2700K	>80	4680	238	2.9	81	120
			71389	L58LFE/24V/830/SP	50000	3000K	>80	4680	238	2.9	81	120
			71388	L58LFE/24V/840/SP	50000	4000K	>80	5075	258	2.9	88	120
			71387	L58LFE/24V/850/SP	50000	5000K	>80	5075	258	2.9	88	120
			71386	L58LFE/24V/865/SP	50000	6500K	>80	5075	258	2.9	88	120

\*Modules are part of a UL2108 Listed System. For more information refer to the application guide (LED311).

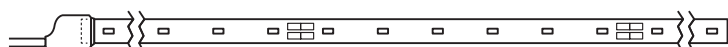
Please see page 20 for the LINEARlight FLEX® Accessories

**LINEARlight FLEX® Colormix – Constant Voltage LED Module – Indoor, UL 2108 Listed System\***

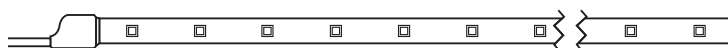
Nominal Wattage (W)	Power Supply	Max Overall Length per Reel (ft)	Product Number	Ordering Abbreviation	Avg Rated Life L <sub>70</sub> (hrs)	Color	Lumens/ Reel	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
72	24V	13.1	72618	LF05CA2-RGB3	50000	RBG (Red - 625nm, Green - 525nm, Blue - 465nm)	1880	144	5.5	26	120

**LINEARlight FLEX® Advanced Protect – Constant Voltage LED Modules – Outdoor IP67 Rated – UL2108 Listed System\***

Nominal Wattage (W)	Power Supply	Max Overall Length per Reel (ft)	Product Number	Ordering Abbreviation	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Lumens/ Reel	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
50	24V	32.8	72615	LF06A-W4F-830-P	50000	3000	>80	3500	107	1.5	70	120
			72616	LF06A-W4F-840-P	50000	4000	>80	3900	119	1.5	78	120
			72617	LF06A-W4F-870-P	50000	7000	>80	3900	119	1.5	78	120

**LINEARlight FLEX® POWER FLEX Protect – Constant Voltage LED Modules - Outdoor IP67 Rated – UL2108 Listed System\***

Nominal Wattage (W)	Power Supply	Max Overall Length per Reel (ft)	Product Number	Ordering Abbreviation	Avg Rated Life L <sub>70</sub> (hrs)	CCT (K)	CRI	Lumens/ Reel	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
96	24V	16.7	72596	LF06P2-W4F-830-P	50000	3000	>80	6375	382	5.7	66	120
			72597	LF06P2-W4F-840-P	50000	4000	>80	7140	428	5.7	74	120
88	24V	16.7	72598	LF06P2-W4F-876-P	50000	7600	>80	7140	428	5.2	81	120

**LINEARlight FLEX® Colormix Protect – Constant Voltage LED Module – Outdoor IP67 Rated – UL2108 Listed System\***

Nominal Wattage (W)	Power Supply	Max Overall Length per Reel (ft)	Product Number	Ordering Abbreviation	Avg Rated Life L <sub>70</sub> (hrs)	Color	Lumens/ Reel	Lumens/ Foot	Watts/ Foot	LPW	Beam Angle (°)
72	24V	13.1	71398	L72LFE/24V/RGB3/LF05/CAP	50000	RBG (Red - 625nm, Green - 525nm, Blue - 467nm)	1740	133	5.5	24	120

\*Modules are part of a UL2108 Listed System. For more information refer to the application guide (LED311).

Please see page 20 for the LINEARlight FLEX® Accessories

## LINEARLIGHT FLEX® ACCESSORIES

### Accessories for LINEARlight FLEX® POWER FLEX

Item Number	Ordering Abbreviation	European Part	Description	Length (in.)	Case Qty.	Min. Order Qty.
<b>Track</b>						
72356	LAC-T/STS/7FT	LF-LTS-2100	6.9' aluminium track	83	40	1
72357	LAC-M/STS/CLIP	LF-LTS-MB	Optional mounting bracket for track	1.1	280	35
72360	LAC-T/STS-COV/C/7FT	LF-LTS-COVER-CLEAR	6.9' clear cover for track	83	40	1
72358	LAC-T/STS-COV/D/7FT	LF-LTS-COVER-DIFFUSE	6.9' diffused cover for track	83	40	1
72359	LAC-S/STS/ENDCAP	LF-LTS-ENDCAP	End cap used only with 72358	0.8	160	20
72361	LAC-T/STS-COV/SP/7FT	LF-LTS-COVER-SHORTPITCH	6.9' diffused cover specifically designed for short pitch product	83	40	1
<b>White Indoor Accessories</b>						
71428	LAC-C/TP/TERMCAP	LF-2TERM FLEX	Termination Cap	–	200	10
72671	LF-CONN Flex SC	LF-CONN Flex SC	Board to board connector piece	0.35	250	10
72947	LF-WIRE-30 FLEX SC	LF-WIRE-30 FLEX SC	30mm connector wire	1.1	10,000	100
72948	LF-WIRE-150 FLEX SC	LF-WIRE-150 FLEX SC	150mm connector wire	5.9	5000	50
72946	LF-2PIN Flex SC	LF-2PIN Flex SC	Input connector	20	250	10
<b>Colormix Indoor Accessories</b>						
72670	LF-4PIN Flex SC	LF-4PIN Flex SC	Input connector	20	250	10
72671	LF-CONN Flex SC	LF-CONN Flex SC	Board to board connector piece	0.35	250	10
72947	LF-WIRE-30 FLEX SC	LF-WIRE-30 FLEX SC	30mm connector wire	1.1	10,000	100
72948	LF-WIRE-150 FLEX SC	LF-WIRE-150 FLEX SC	150mm connector wire	5.9	5000	50
<b>Colormix Protect Accessories</b>						
72362	LAC-C/IP67/ENDCAP	LF-ENDCAP PROTECT	Used to seal Protect product end when cut	–	100	10
72363	LF-CLIP-FIXTURE	LAC-M/IP67/CLIP	Optional flexible mounting bracket	–	500	50
72365*	LAC-C/IP67/IC/4P/20IN	LF-4PIN PROTECT IP67	Input connector	20	50	5
72366	LAC-C/IP67/BB/4P/7IN	LF-4CONN PROTECT IP67	Board to board connector	7	50	5
<b>White Protect Accessories</b>						
72667	LF/ENDCAP/IP67/LP	LF-ENDCAP	Used to seal Protect product end when cut	–	100	10
72363	LF-CLIP-FIXTURE	LAC-M/IP67/CLIP	Optional flexible mounting bracket	–	500	50
72669*	LF/2PIN/IP67/LP	LF-2PIN	Input connector	20	50	5
72668	LF/2CONN/IP67/LP	LF-2CONN	Board to board connector	7	50	5

\*Every Protect product comes with one pre-wired input connector

For the current listing of available products and more complete product information, please visit us at [www.osram-americas.com](http://www.osram-americas.com).



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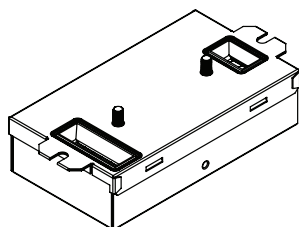
# OPTOTRONIC® Power Supplies and Control Interfaces

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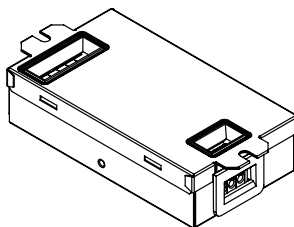


## OPTOTRONIC® COMPACT, CONSTANT CURRENT POWER SUPPLIES

### Compact Programmable, Constant Current 0-10V Dimmable Power Supplies



J-Style Housing



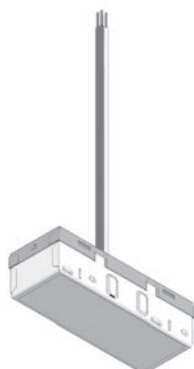
F-Style Housing

Max Output Power (W)	Output Current (mA)	Output Voltage (Vdc)	Product Number	Ordering Abbreviation	Input Voltage	Power Factor	THD	Dimming Range	Location Rating	LED Thermal Feedback
Dimensions: 5.0" x 2.4" x 1.2"    Housing: J-style & F-style										
40	400-1400	10 - 55	79441	OT40W/PRG1400C/UNV/DIM-1/J	120-277	>0.9	<20%	100 - 1%	Damp	Yes
			79442	OT40W/PRG1400C/UNV/DIM-1	120-277	>0.9	<20%	100 - 1%	Damp	Yes
40	400-1400	10 - 55	79449	OT40W/PRG1400C/UNV/DIM/J	120-277	>0.9	<20%	100 - 10%	Damp	Yes
			79448	OT40W/PRG1400C/UNV/DIM	120-277	>0.9	<20%	100 - 10%	Damp	Yes
25	150-1250	10 - 55	79405	OT25W/PRG1250C/UNV/DIM-1	120-277	>0.9	<20%	100 - 1%	Damp	Yes
			79406	OT25W/PRG1250C/UNV/DIM-1/J	120-277	>0.9	<20%	100 - 1%	Damp	Yes
25	350-1250	10 - 55	79403	OT25W/PRG1250C/UNV/DIM	120-277	>0.9	<20%	100 - 10%	Damp	Yes
			79404	OT25W/PRG1250C/UNV/DIM/J	120-277	>0.9	<20%	100 - 10%	Damp	Yes

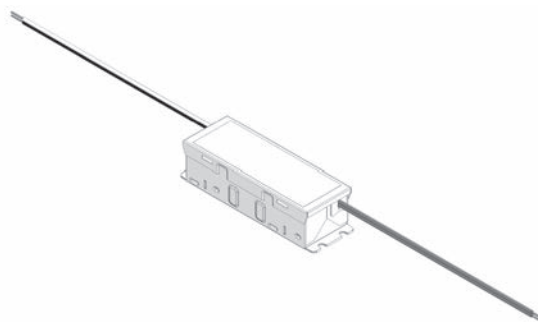
#### Accessories

	Product Number	Ordering Abbreviation	Description	Required
	51645	OT Programmer	USB Programming Tool	Yes
	51646	OT Programming Nest	Programming Fixture	Optional

## Constant Current, Leading and Trailing Edge Phase Cut Dimmable Power Supplies



J-Style Housing

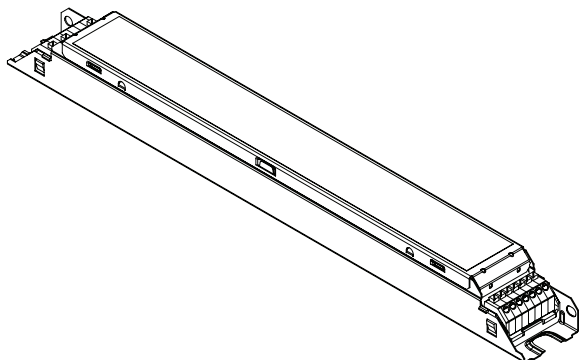


F-Style Housing

Max Output Power (W)	Output Current (mA)	Output Voltage (Vdc)	Product Number	Ordering Abbreviation	Input Voltage	Power Factor	THD	Dimming Range	Location Rating
Dimensions: 3.6" x 1.3" x 0.98"    Housing: J-style & F-style									
20	700	16 - 29	79420	OT20W/700C/UNV/PC	120-277	>0.9	<20%	100 - 10%	Damp
			79425	OT20W/700C/UNV/PC/J	120-277	>0.9	<20%	100 - 10%	Damp
20	500	28 - 40	79421	OT20W/500C/UNV/PC	120-277	>0.9	<20%	100 - 10%	Damp
			79426	OT20W/500C/UNV/PC/J	120-277	>0.9	<20%	100 - 10%	Damp
20	400	28 - 50	79422	OT20W/400C/UNV/PC	120-277	>0.9	<20%	100 - 10%	Damp
			79427	OT20W/400C/UNV/PC/J	120-277	>0.9	<20%	100 - 10%	Damp
20	350	28 - 55	79423	OT20W/350C/UNV/PC	120-277	>0.9	<20%	100 - 10%	Damp
			79428	OT20W/350C/UNV/PC/J	120-277	>0.9	<20%	100 - 10%	Damp
18	600	20 - 30	79429	OT18W/600C/UNV/PC	120-277	>0.9	<20%	100 - 10%	Damp
			79424	OT18W/600C/UNV/PC/J	120-277	>0.9	<20%	100 - 10%	Damp
15	500	18 - 30	79418	OT15W/500C/UNV/PC/J	120-277	>0.9	<20%	100 - 10%	Damp
			79419	OT15W/500C/UNV/PC	120-277	>0.9	<20%	100 - 10%	Damp
13	250	28 - 55	79412	OT13W/250C/UNV/PC	120-277	>0.9	<20%	100 - 10%	Damp
			79413	OT13W/250C/UNV/PC/J	120-277	>0.9	<20%	100 - 10%	Damp
12	400	18 - 30	79374	OT12W/400C/UNV/PC/J	120-277	>0.9	<20%	100 - 10%	Damp
			79375	OT12W/400C/UNV/PC	120-277	>0.9	<20%	100 - 10%	Damp

## OPTOTRONIC® COMPACT, CONSTANT CURRENT POWER SUPPLIES (CONT.)

### Linear Programmable, Constant Current 0-10V Dimmable Power Supplies

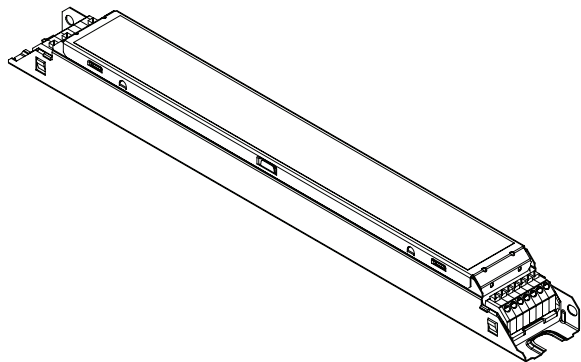


Max Output Power (W)	Output Current (mA)	Output Voltage (Vdc)	Product Number	Ordering Abbreviation	Input Voltage	Power Factor	THD	Dimming Range	Location Rating	AUX	LED Thermal Feedback
Dimensions: 11" x 1.2" x 1.0"											
30	150 - 1050	10-55	79466	OT30W/PRG1050C/UNV/DIM-1/L AUX	120-277	>0.9	<20%	100 - 1%	Damp	Yes	Yes
30	350 - 1050	10-55	79397	OT30W/PRG1050C/UNV/DIM/L AUX	120-277	>0.9	<20%	100 - 10%	Damp	Yes	Yes
30			79630	OT30W/PRG1050C/UNV/DIM/L	120-277	>0.9	<20%	100 - 10%	Damp	No	Yes
48	700 - 2000	10-55	79468	OT48W/PRG2000C/UNV/DIM-1/L AUX	120-277	>0.9	<20%	100 - 1%	Damp	Yes	Yes
			79399	OT48W/PRG2000C/UNV/DIM/L AUX	120-277	>0.9	<20%	100 - 10%	Damp	Yes	Yes
			79632	OT48W/PRG2000C/UNV/DIM/L	120-277	>0.9	<20%	100 - 10%	Damp	No	Yes
50	400 - 1400	10-55	79467	OT50W/PRG1400C/UNV/DIM-1/L AUX	120-277	>0.9	<20%	100 - 1%	Damp	Yes	Yes
			79398	OT50W/PRG1400C/UNV/DIM/L AUX	120-277	>0.9	<20%	100 - 10%	Damp	Yes	Yes
			79631	OT50W/PRG1400C/UNV/DIM/L	120-277	>0.9	<20%	100 - 10%	Damp	No	Yes
85	1250 - 2000	20-55	79470	OTi 85/120-277/2A0 DIMLT2 L	120-277	>0.9	<20%	100 - 10%	Damp	No	Yes
85	2000 - 2600	20-55	79471	OTi 85/120-277/2A6 DIMLT2 L	120-277	>0.9	<20%	100 - 10%	Damp	No	Yes

### Accessories

	Product Number	Ordering Abbreviation	Description	Required
	51645	OT Programmer	USB Programming Tool	Yes
	51647	OTLinearhandheldPRGTool	Programming Hand-held Tool	Optional
	51648	OTLinearAutoPRGTool	Programming Tool	Optional

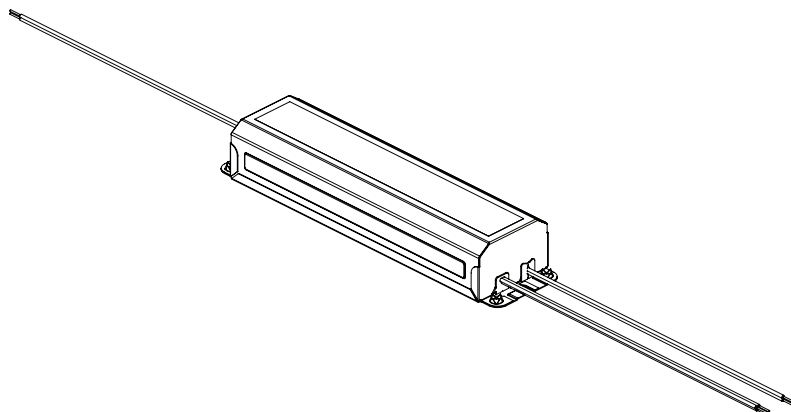
## Linear Constant Current, Line Voltage Step-Dimmable Power Supplies



Max Output Power (W)	Output Current (mA)	Output Voltage (Vdc)	Product Number	Ordering Abbreviation	Input Voltage	Power Factor	THD	Dimming Range	Location Rating
Dimensions: 11" x 1.2" x 1.0"									
30	250, 350, 500, 700, 1050	25-55	79376	OT30W/CS1050C/UNV/SD/L	120-277	>0.9	<20%	100/50%	Damp
50	700, 800, 1050, 1250, 1400	25-55	79377	OT50W/CS1400C/UNV/SD/L	120-277	>0.9	<20%	100/50%	Damp
50	1400, 1600, 1800, 2000, 2100	12-36	79378	OT50W/CS2100C/UNV/SD/L	120-277	>0.9	<20%	100/50%	Damp

## OPTOTRONIC® COMPACT, CONSTANT CURRENT POWER SUPPLIES (CONT.)

### Outdoor Programmable, Constant Current 2DIM\*\* Dimmable Power Supplies



Max Output Power (W)	Output Current (mA)	Output Voltage (Vdc)	Product Number	Ordering Abbreviation	Input Voltage	Power Factor	THD	Dimming Range	Location Rating	Type HL Type TL*	LED Thermal Feedback
Dimensions: OT50W: 6.6" x 1.7" x 1.2" OT100W: 6.6" x 2.4" x 1.5 OT150W: 9.5" x 2.4" x 1.5"											
50	350-800	30-120	79370	OT50W/UNV/800C/2DIMLT2/P6	120-277	>0.9	<20%	100-10%	Damp & Wet	Yes	Yes
50	600-1250	15-55	79371	OT50W/UNV/1250C/2DIMLT2/P6	120-277	>0.9	<20%	100-10%	Damp & Wet	Yes	Yes
100	350-800	50-185	79368	OT100W/UNV/800C/2DIMLT2/P6	120-277	>0.9	<20%	100-10%	Damp & Wet	Yes	Yes
100	600-1250	30-100	79369	OT100W/UNV/1250C/2DIMLT2/P6	120-277	>0.9	<20%	100-10%	Damp & Wet	Yes	Yes
180	350-800	82-280	79366	OT180W/UNV/800C/2DIMLT2/P6	120-277	>0.9	<20%	100-10%	Damp & Wet	Yes	Yes
180	600-1250	70-210	79367	OT180W/UNV/1250C/2DIMLT2/P6	120-277	>0.9	<20%	100-10%	Damp & Wet	Yes	Yes
180	350-800	82-280	79208	OT180W/347-480/800C/2DIMLT2/P6	347-480	>0.9	<20%	100-10%	Damp & Wet	Yes	Yes
180	600-1250	70-210	79209	OT180W/347-480/1250C/2DIMLT2/P6	347-480	>0.9	<20%	100-10%	Damp & Wet	Yes	Yes

### Accessories

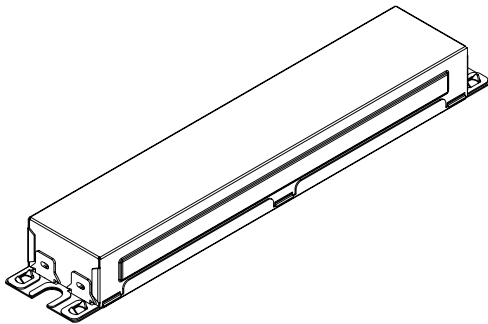
	Product Number	Ordering Abbreviation	Description	Required Accessory
	51645	OT Programmer	USB Programming Tool	Yes
	79360	OTOutdoorPRGTool	Programming Tool for Outdoor Drivers	Optional

\*Type HL - Hazardous Locations Type TL - Thermally Limited

\*\*Dimming - AstroDIM & 0-10V

For the current listing of available products and more complete product information, please visit us at [www.osram-americas.com](http://www.osram-americas.com).

## Linear OT10W Dimmable & Non-Dimmable Power Supplies



Max Output Power (W)	Output Current (mA)	Output Voltage (Vdc)	Product Number	Ordering Abbreviation	Input Voltage	Power Factor	THD	Dimming Range	Location Rating
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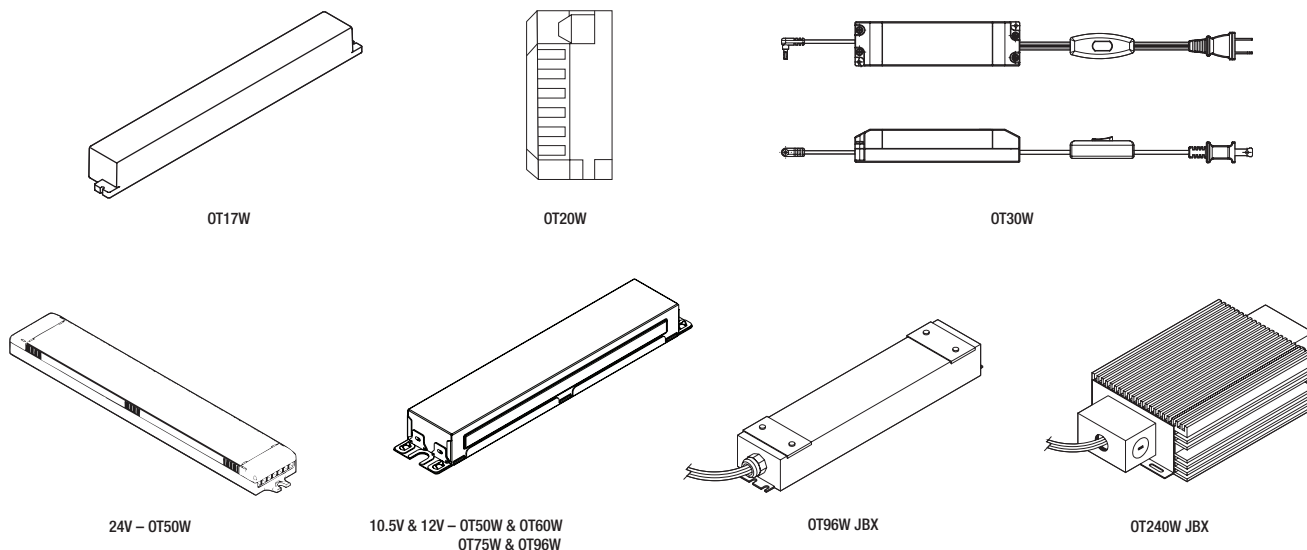
Dimensions: 9.4" x 1.6" x 1.1"

100	4100	12-24	51629	OT100W/4100C/UNV/DIM	120-277	>0.9	<20%	100 - 10%	Damp
100	2000-4100	12-24	51628	OT100W/4100C/UNV	120-277	>0.9	<20%	non-dim	Damp



## OPTOTRONIC® CONSTANT VOLTAGE POWER SUPPLIES

### Constant Voltage 24V<sub>DC</sub> Power Supplies



Max Output Power (W)	Output Voltage (Vdc)	Dimensions L(in) x W (in) x H (in)	Product Number	Ordering Abbreviation	Input Voltage	Power Factor	THD	Location Rating
Non-dimmable								
10V LED Power Supplies								
50	10.5	9.48 x 1.68 x 1.17	51509	OT50W/10V/UNV	120-277	>0.9	<20%	Damp
12V LED Power Supplies								
20	12	9.48 x 1.68 x 1.17	51604	OT20W/12V/UNV	120-277	>0.9	<20%	Damp
60	12		51632	OT60W/12V/UNV	120-277	>0.9	<20%	Damp
24V LED Power Supplies								
17	24	7.9 x 0.9 x 0.9	51622	OT17W/24V/UNV	120-277	>0.9	<20%	Damp
30	24	5.63 x 1.44 x 1.18	51521	OT30/120/24CORD	120	>0.5	<20%	Dry
50	24	9.5 x 1.5 x 0.65	51598	OT50W/24V/120V/LP	120	>0.9	<20%	Dry
75	24	9.48 x 1.68 x 1.17	51514	OT75W/24V/UNV	120 - 277	>0.9	<20%	Damp
96	24	9.48 x 1.68 x 1.17	51522	OT96W/24V/UNV	120 - 277	>0.9	<20%	Damp
96	24	12.32 x 2.54 x 2.95	51626	OT96W/24V/UNV/JBX	120 - 277	>0.9	<20%	Wet
240	24	11.95 x 5.98 x 2.95	51627	OT240W/3x24V/120-240V/JBX	120 - 240	>0.9	<20%	Wet
Dimmable 0 - 10V, 100 - 10%								
12V LED Power Supplies								
60	12	9.48 x 1.68 x 1.17	51633	OT60W/12V/UNV/DIM	120 - 277	>0.9	<20%	Damp
24V LED Power Supplies								
96	24	9.48 x 1.68 x 1.17	51520	OT96W/24V/UNV/DIM	120 - 277	>0.9	<20%	Damp

For the current listing of available products and more complete product information, please visit us at [www.osram-americas.com](http://www.osram-americas.com).

## OPTOTRONIC® LED CONTROL INTERFACES

Product Number	Ordering Abbreviation	Operating Voltage (V <sub>DC</sub> )	Control Type	Max. Power per Channel (W)	Max. Output Power (W)	Max. Output Current per Channel (A)	Output Frequency (Hz)
51516	OT DIM	10.5 24.0	1-10	0-50 0-100	50 100	2.5	135
49889	OT DIM L	10.5 24.1	1-10	0-50 0-100	50 100	2.5	135
51600	OTDMXRGB	24.4	10.5 DMX	0-50	0-21 100	50 2.0	350
51349	OTiDALI DIM	10.5 24.5	DALI	0-50 0-100	50 100	2.5	350

**NOTES:**

# Standard Safety Information

**WARNING: ONLY QUALIFIED PERSONNEL SHOULD PERFORM INSTALLATION.**

**TO AVOID ELECTRICAL SHOCK OR COMPONENT DAMAGE, DISCONNECT POWER BEFORE ATTEMPTING INSTALLATION OF THE POWER SUPPLIES AND/OR MODULES.**

Failure to install the power supplies and/or LED modules in accordance with the National Electric Code (NEC), all applicable Federal, State and local electric codes as well as the specific Underwriters Laboratories (UL) safety standards for the installation, location and application may cause serious personal injury, death, property damage and/or product malfunction.

1. The LED module itself and all its components shall not be subjected to mechanical stress and assembly must not damage or destroy conducting paths on the circuit board.
2. Observe correct electrical polarity, incorrect polarity may destroy the module. (Depending on the product, incorrect polarity may lead to emission of red or no light.)
3. Ensure the power supply is of adequate power to operate the total load.
4. Electrostatic Discharge (ESD) precautions shall be incorporated when handling or installing the module. (For more information, reference document # LED093 ESD Protection for LED Systems.)
5. Module must be installed on a flat, metal surface to ensure adequate heat sinking. Refer to that module's Product Information Bulletin or Installation Guide for specific heat sinking instructions.
6. Installation of LED modules shall be made with regard to all applicable electrical and safety standards. Only qualified personnel should be allowed to perform installations.
7. Modules may be hot to the touch. Use caution when handling.
8. Damage by corrosion and improper heat sinking will not be honored as a materials defect claim. It is the user's responsibility to ensure adequate heat sink and protection against corrosive agents such as moisture, condensation and other harmful elements.
9. Avoid looking directly into the light beam as the high brightness may damage eyes.
10. For applications involving exposure to humidity and dust, the module must be protected by a fixture, or housing with a suitable protection class. The module can be protected against condensation by treatment with an appropriate circuit board grade conformal coating. The conformal coating should have the following features:
  - a. Optical transparency
  - b. UV – resistance
  - c. Thermal expansion matching the thermal expansion of the module  $15\text{--}30 \times 10^{-6}\text{cm/cm/K}$
  - d. Low permeability of steam for all climate conditions
  - e. Resistance against corrosive environment

# Product Catalog Glossary of Terms

**Ampere** A unit expressing the rate of flow of electric current. Also see Current.

**Binning** A systematic process of dividing LEDs into smaller subgroups with a similar brightness and color distribution.

**Black Body (Planckian Radiator)** An ideal thermal radiator whose SPD curve is defined by its temperature in Kelvin and whose color coordinates lie exactly on the Planckian curve.

**Candela (cd)** The unit of measure indicating luminous intensity (candlepower) of a light source in a specific direction; any given light source will have many different intensities, depending upon the direction considered.

**Chromaticity** The aspect of color that includes consideration of its dominant wavelength and purity.

**CIE** *Commission Internationale De L'Eclairage* (International Commission on Illumination) – abbreviated as CIE from its French title, is an organization devoted to international cooperation and exchange of information among its member countries on all matters relating to the science and art of lighting.

**Color Rendering Index (CRI)** The Color Rendering Index measures the effect a light source has on the perceived color of objects and surfaces. High CRI light makes virtually all colors look natural and vibrant. Low CRI causes some colors to appear washed out or even to take on a completely different hue.

**Color Temperature** Color temperature, which is measured in degrees Kelvin (K), indicates whether a light source has a warm, midrange or cool color appearance. “Warm” light sources have a low color temperature (2000-3000K) and feature more light in the red/orange/yellow range. Light with a higher color temperature (>5000K) features more blue light and is referred to as “cool.”

**Colormixing** The process of mixing light output from red, green and blue LEDs to generate virtually any color. A combination of all three primary colors (red, green and blue) appears white to the human eye. Combinations of two primary colors produce “secondary” colors – magenta, cyan and yellow. Also see RGB.

**Constant Current LED Modules** LED modules that require power supplies that generate a constant DC output current.

**Constant Voltage LED Modules** LED modules that require power supplies that generate a constant DC voltage output.

**Correlated Color Temperature (CCT)** A specification of the color appearance of a lamp, relating its color to that of a reference source, black body radiator, heated to a particular temperature, measured in degrees Kelvin (K); CCT generally measures the “warmth” or “coolness” of light source appearance.

**Current** A measure of the rate of flow of electricity, expressed in Amperes (A).

**Efficacy** The rate at which a light source is able to convert power (watts) into light (lumens), expressed in lumens per watt (lm/W or LPW). Also see Lumens Per Watt (LPW) Performance.

**Energy** A measure of work done by an electrical system over a given period of time, often expressed in kilowatt-hours (kWh).

**Footcandle (fc)** A unit of illuminance equal to 1 lumen per square foot. 1 fc=10.764 lux.

**Frequency** The number of times per second that an alternating current system reverses from positive to negative and back to positive, expressed in cycles per second or hertz (Hz).

**Grounding** Grounding Systems are used to ensure Electrostatic Discharge (ESD) items, personnel and any other conductors are at the same electrical potential. All personnel shall be bonded or electrically connected to the ground or contrived ground when handling ESD-sensitive items.

**Hertz (Hz)** A unit of frequency equal to one cycle per second. Also see Frequency.

**Illuminance** Light arriving at a surface, expressed in lumens per unit area; 1 lumen per square foot equals 1 footcandle, while 1 lumen per square meter equals 1 lux.

**Integral LED Lamps:** A complete LED light source that includes optics, the outer shell or housing, a power supply and the means for installation into an existing luminaire/fixture. Typically screw or pin-based, these light sources are sold as retrofits or direct replacements for traditional sources.

**LED (Light Emitting Diode)** A semiconductor device that allows current to flow in one direction and convert electrical energy to visible light.

**LED Arrays** A combination of LEDs on a circuit board. LED arrays may require additional optics, housings and/or heat sinks. A separate power supply is required. LED arrays are typically integrated into a luminaire/fixture.

**LED Module** A combination of LEDs on a circuit board with an integrated optic and/or heat sink. A separate power supply is required. LED modules are typically integrated into a luminaire fixture.

**LED Power Supply** An electronic device that converts line voltage to a constant current or constant voltage output compatible with the LED module or array it is powering. Power supplies are typically integrated into an LED luminaire/fixture.

**Lens** A glass or plastic element used in LEDs and luminaires to change the direction and control the distribution of light rays.

**Light Management Systems** Control and enhance lighting by incorporating daylight harvesting, demand response and dynamic user interfaces. Lighting Controls and Systems includes products that will help with energy control, scenes and ambience. LMS products are capable of controlling LED Systems as well as Fluorescent, Halogen and Induction sources.

**Lumen Depreciation** The decrease in lumen output of a light source over time. Also see Service Life.

**Lumens (lm)** A unit of luminous flux; overall light output; quantity of light, expressed in lumens. For example, a dinner candle provides about 12 lumens and a 60-watt soft white incandescent lamp provides about 840 lumens.

**Lumens Per Watt (LPW) Performance** Lumens per watt. The number of lumens produced by a light source for each watt of electrical power supplied. Also see Efficacy.

**Luminaire** A complete lighting unit or system comprised of the light source, power supply, wiring, diffuser and housing.

**Luminance (L)** Light reflected in a particular direction; the photometric quantity most closely associated with brightness perception, measured in units of luminous intensity (candelas) per unit area (Square feet or square meters).

**Pulse Width Modulation (PWM)** In pulse width modulation, the length of the pulse that is used to deliver power to the LEDs is varied while the current through the LEDs is maintained at the same level as during full brightness. The variation of the pulse width allows the LEDs' intensity to be varied from 100% down to 0%.

**RGB** Red, green and blue colors can be added to generate virtually any color. Light output from red, green and blue LEDs can be mixed to generate specific colors or color sequences. RGB control schemes typically employ pulse width modulation to dim one or more of the primary colors. Also see Colormixing.

**Service Life** OSRAM SYLVANIA defines the service life of its LED modules as the period of time after which the luminous flux output drops to 70% of its initial value.

**Tc** A clearly defined and easily accessible temperature test point on SYLVANIA LED modules.

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