



PHILIPS

LED Components
Catalog



Strengthen **your path to success**

Fall 2017 guide to OEM
products and services
for LED applications



Table of contents

4	Introduction
5	Design-in services
6	My Technology Portal (OEM)
7	LED Easy Design-in Tool
8	Online tools
9	Evaluating lifetime and reliability of LED systems
11	Philips Fortimo LED Modules
12	Fortimo LED linear family
20	Fortimo LED downlight module (DLM) and spotlight (SLM) family
28	LED module SKUs and minimum order quantities
33	Complementary partners
34	Philips Advance LED Drivers
35	Philips Advance LED driver family
36	SimpleSet wireless programming technology
37	Xitanium SR LED drivers
38	CertaDrive indoor LED drivers
40	Xitanium indoor linear LED drivers
44	Xitanium indoor downlight and track LED drivers
49	Xitanium outdoor LED drivers
56	Xitanium SR bridge
58	Catalog number explanation
60	Surge protection devices
62	MultiOne Configurator
63	Philips Sensors
64	Philips EasySense fixture-mount sensor
65	EasySense and OEMs
65	EasySense and specifiers
65	SNS102 for Basic Grouping
65	SNS200 for Advanced Grouping
66	SNS300 for Networks
66	Convenient smartphone-based app
67	Philips Bodine Emergency Lighting
68	Philips Bodine emergency lighting introduction
69	Emergency code
70	Emergency LED drivers
71	Emergency LED driver product summary
72	Inverters for emergency lighting applications
73	ELI-S-20 emergency lighting inverter
73	Emergency lighting contact information
74	Footnotes
75	Disclaimer

The right LED solutions to help you succeed

Philips can help you stay at the forefront of lighting trends and regulations and react quickly to customer needs to ultimately grow and sustain your business. With Philips you can take advantage of over 125 years of lighting expertise, the broadest selection of industry-leading components and comprehensive services to strengthen your path to success.

Throughout this catalog, you have access to the latest high-performing, energy-saving LED components that best meet your needs and those of your customers. LED drivers, emergency drivers, point modules, linear modules, sensors and more allow you to build endless solutions. Each component is sustainably manufactured to high standards to ensure robust and long-lasting performance.

Together, we will deliver targeted lighting solutions that create value for your customers
and help you succeed.

Confidence through Philips **design-in services**

Depend on the global leader in lighting technologies to help you create robust, cutting-edge LED lighting solutions without wasted time or unnecessary expense through our OEM design-in services. Our dedicated experts perform vigorous thermal, mechanical, electrical and optical testing to your desired tolerances to take the guesswork out of the validation process and propose solutions or alternatives as necessary – all at no charge when Philips components are used.

With Philips as your trusted partner, you can take advantage of our long-standing relationships with industry associations and approbation organizations. Together, we will help you develop solutions that create value for your customers.

For more information on Philips design-in services, please contact your local Philips sales representative or go to www.philips.com/oemna.



My Technology Portal – **Innovation** starts here

Philips would like to introduce the OEM My Technology Portal. With access to the portal, you can empower yourself with complete, reliable and personalized online services to drive your business with Philips OEM technology. Log on today to request access to the My Technology Portal.



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Set preferences to stay up to date on the latest information available



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Customized overview of purchased products with notifications if they are to be phased out



Product News

Overview of products that will be phased in or phased out in the coming quarter



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Quick, sortable access to all technical and commercial documentation



News

Keeps you up to date with all other Philips Lighting OEM news



Share Center

Enables you to send, receive and store documents from your key account managers in dedicated folders



Inside Advance

Direct access to Inside Advance



Easy Design-in Tool

Access to the LED Easy Design-in Tool to help you find the right LED product for your application



My Contact

Overview of your Philips contact persons for all your questions

Go to www.mytechnologyportal.philips.com
to register today for your enhanced online experience.

Create your ideal LED configuration in minutes!

Check out
our tool online! Visit
www.na.easydesignintool.philips.com.

Design your LED system in the fastest, most flexible way with our real-time Easy Design-in Tool.

It takes just a few minutes to find the right combination of modules, drivers. Simple, easy-to-use filters enable you to deal quickly and effectively with the growing complexity of LED systems. In the end you will have a complete detailed technical overview of your system configuration.

LED driver selector

If you don't need a full system specification, you can use the driver selector function to find the right Philips Advance Xitanium LED driver for your application.

Emergency LED driver selector now available

Now you can use the Easy Design-in Tool to find the Philips Bodine emergency LED driver for your system.



Additional information at your fingertips



Online OEM lighting components provides you with online access to the entire OEM lighting components portfolio.



The Philips Lighting blog provides a platform to learn about new technologies, new design and industry trends, as well as connecting with Philips thought leaders.

philips.com/lightingblog



[https://twitter.com/
PhilipsLight](https://twitter.com/PhilipsLight)

The Philips Twitter account provides you with important industry news, product announcements and our latest lighting installations.



[www.linkedin.com/
company/philips-lighting](https://www.linkedin.com/company/philips-lighting)

Philips Innovations in Light provides you with a platform to collaborate, share, get questions answered and much much more.

philips.com/oemna

Evaluating lifetime and reliability of **LED systems**

After at least half a decade of LED adoption in general lighting applications, the dust has settled on many of the provisions surrounding the reliability and quality of the new technology. Lifetime promises beyond what has ever been seen before in the lighting industry have been proven in many applications and actual installations.

However, in absence of clearly defined standards governing the qualification of lifetime and reliability of LED systems (e.g., LED lamps, LED retrofit kits or LED luminaires), many false expectations for system lifetime have been created by interpreting technical data from single components within the system and using that information to define the lifetime of an entire system.

Both EnergyStar and Design Lights Consortium promote LED adoption and performance criteria for LED systems. The TM21 standard utilizing LM80 test data for L1 LED packages has been the commonly used source of lifetime predictions for product qualification initiatives.

Lumen maintenance, represented by TM21 calculations, is certainly an important component selection criteria parameter in an LED system.

*However, studies have shown that when it comes to evaluating the lifetime of an LED system, **critical or catastrophic failures of the system should be the main concern in assessing the reliability of the system.***

The LED Systems Reliability Consortium (LSRC) has identified the main causes for these catastrophic failures as wide-ranging and most commonly including failure of power electronics, solder joint, moisture ingress and corrosion, mechanical connections, gasket sealing leaks or poor thermal management.¹⁷

All of these failure modes cannot be predicted using only the LM80 data that have been generated under laboratory conditions. Moreover, most LM80 datasets do not provide more than 10,000 hour of data. Lifetime claims of

more than 100,000 hours for LED systems are, therefore, not supported by statistical evidence or product design and testing but are solely a result of a mathematical model based on one single subcomponent of the LED system.

In addition, application conditions like ambient temperature or ambient humidity are a key area of importance in assessing the lifetime expectation/prediction. Environmental factors like outgassing of volatile chemical components can also dramatically and negatively influence the lifetime of the LED itself and, thus, the entire system. Thermal cycling can lead to solder reliability issues and catastrophic failures of the LED. Power line quality is another factor to look at when considering potential failures in the application. Surges, brownouts or voltage spikes can also have an impact.

Assessing the reliability and performance of the LED system holistically through advanced methods of product design and validation is required to ensure that products meet lifetime specifications and are as reliable as the abiding LED promise suggests.

With this in mind, Philips designs, manufactures and services high quality LED component systems, including LED drivers and LED modules, that are meeting customer expectations. Throughout the following four phases of the Philips product lifecycle, products are rigorously tested and evaluated.

1. During the design phase, methods like FMEA and advance system modeling are used to ensure that quality and reliability are part of the product from day one. Demanding product validation test procedures like highly accelerated lifetime tests and multiple environmental overstress tests are among the tests that a product must pass before it is released for mass production.
2. Suppliers are carefully selected, audited and controlled for their quality according to stringent qualification standards.
3. Inline testing, process control and ongoing reliability testing are among the measures Philips uses to help guarantee state-of-the-art industrial quality.
4. Last but not least, Philips offers compassionate service quality to its customers. New systems of LED modules and drivers are tested and released as a system in the final application and backed by warranty. If against all odds a product in the field fails, customers experience hassle-free support. With more than 120 years of experience, Philips delivers peace-of-mind to lighting fixture manufacturers, specifiers and end users who want to engage in the world of LED lighting with a company they can trust.

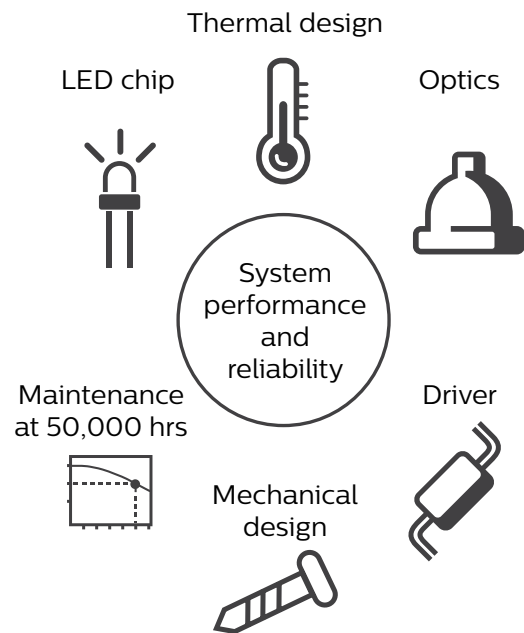


Figure 1. Impact of design choices on performance and reliability of an LED system.



Philips Fortimo LED Modules

Fortimo LED linear family



The Philips Fortimo LED linear module family has been designed to replace fluorescent lighting in new luminaires. By standardizing form factors, Philips has made it easy for designers to fit LED solutions into a variety of linear applications, including standard office to high-bay industrial and now into very slim fixtures where fluorescent light might not be suitable.

Fortimo LED line

Designed to replace general fluorescent lighting in new luminaires, the Fortimo LED line system goes into the third generation with improved efficiency and the same Zhaga⁹ footprint.

Fortimo LED line high flux

The Fortimo LED line high flux system is ideal for installations at greater application heights where more light output is needed, such as high-bay. It was designed to withstand high ambient temperatures that are common to applications like industry or vapor tight fixtures.

Fortimo LLS EaseSelect

The Philips Fortimo linear lighting system (LLS) EaseSelect (ES) enables OEM fixture manufacturers to design and manufacture 4ft long LED fixtures meeting minimum DLC²⁸ requirements and optimized for cost efficiency.

The patented EaseSelect system design provides opportunity to reduce mechanical and electrical fixture bill of materials while delivering high quality of light and performance in a fully optimized system.²⁹

Fortimo LED strip

The Fortimo LED strip system enables design of high-energy efficacy slim linear LED fixtures, which may not be possible with fluorescent lighting or the Fortimo LED line system.

Fortimo LED strip value offer (VO)

Philips Fortimo LED strip value offer (VO) is designed to enable cost breakthrough in recessed ambient LED lighting applications. With its optimized design and high overdrive capability of up to 1100 lm/ft, it offers high design flexibility to lighting fixture manufacturers, and the module's cost provides excellent price-per-lumen value.

Fortimo LED line

Benefits for the end users

- High energy efficiency
- Improved light output (3R) and quality of light (3 SDCM)¹⁸
- Improved total cost of ownership¹³
- Applicable for all fluorescent luminaires
- Flexible system design due to pairing with Philips Advance Xitanium LED drivers
- 5-year limited system warranty with Philips Advance Xitanium LED drivers¹¹

Philips Fortimo linear LED systems are the ideal solution for LED luminaires that traditionally would have been equipped with fluorescent lamps.

The wide range of system offerings provides a solution for all the different types of luminaires, including recessed and surface-mounted office luminaires, trunking and profile luminaires in retail and waterproof luminaires in industrial applications.

Fortimo LED line LV3 offers best-in-class module efficiency up to 165 lm/W, an increase of approximately 10% versus the previous generation. The new generation offers an improved color consistency of 3 SDCM. A 1,100 lm option is added to the 3R portfolio, which serves the need for higher output.

LED Module	Flux ^{2,3} (lm)	Power (W)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)
Fortimo LED Line 1ft 1100lm 830 1R LV3	1046	7.2	145	3000	>80	3	50,000	70
Fortimo LED Line 1ft 1100lm 835 1R LV3	1079	7.2	149	3500	>80	3	50,000	70
Fortimo LED Line 1ft 1100lm 840 1R LV3	1100	7.2	152	4000	>80	3	50,000	70
Fortimo LED Line 1ft 1100lm 850 1R LV3	1100	7.2	152	5000	>80	3	50,000	70
Fortimo LED Line 2ft 2200lm 830 1R LV3	2092	14.5	145	3000	>80	3	50,000	70
Fortimo LED Line 2ft 2200lm 835 1R LV3	2157	14.5	149	3500	>80	3	50,000	70
Fortimo LED Line 2ft 2200lm 840 1R LV3	2200	14.5	152	4000	>80	3	50,000	70
Fortimo LED Line 2ft 2200lm 850 1R LV3	2200	14.5	152	5000	>80	3	50,000	70
Fortimo LED Line 1ft 1100lm 830 3R LV3	1046	6.7	156	3000	>80	3	50,000	70
Fortimo LED Line 1ft 1100lm 835 3R LV3	1079	6.7	161	3500	>80	3	50,000	70
Fortimo LED Line 1ft 1100lm 840 3R LV3	1100	6.7	164	4000	>80	3	50,000	70
Fortimo LED Line 1ft 1100lm 850 3R LV3	1100	6.7	164	5000	>80	3	50,000	70



Next generation LV4 models available in Q4 2017.

Please visit the Philips Download Center on www.philips.com/oemna for current datasheets and other literature.

*See footnotes on page 74.

Fortimo LED line

high flux

Benefits for the end users

- Enables LED fixture designs in thermally challenging applications of -20°C to ± 55°C ambient temperatures
- High energy efficacy and optimal total cost of ownership vs. conventional lighting systems¹³
- Flexible system design due to pairing with programmable Philips Advance Xitanium LED drivers with SimpleSet technology

Philips Fortimo LED line high flux module is designed to replace conventional lighting in high lumen and high ceiling applications such as high-bay linear 80W TL 5 fluorescent systems.

The Fortimo LED line high flux offers high energy efficacy and an optimal thermal design.

Its high lumen output of >2,000 lm/ft and thermal capability of Tc life of 90°C for a 50,000-hour lifetime¹ make it an excellent fit for the most demanding applications.

Together with the wide range of available Philips Advance Xitanium LED drivers, it provides peace of mind for both OEM and end user, backed by a five-year limited system warranty.¹¹

LED Module	Flux ^{2,3} (lm)	Power (W)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)
Fortimo LED Line 1ft 2000lm 830 1R NA LV3	1900	12.0	159	3000	80	3	50,000	80
Fortimo LED Line 1ft 2000lm 835 1R NA LV3	1960	12.0	164	3500	80	3	50,000	80
Fortimo LED Line 1ft 2000lm 840 1R NA LV3	2000	12.0	167	4000	80	3	50,000	80
Fortimo LED Line 1ft 2000lm 850 1R NA LV3	2020	12.0	169	5000	80	3	50,000	80
Fortimo LED Line 2ft 4000lm 830 1R NA LV3	3800	23.9	159	3000	80	3	50,000	80
Fortimo LED Line 2ft 4000lm 830 1R NA LV3	3920	23.9	164	3500	80	3	50,000	80
Fortimo LED Line 2ft 4000lm 830 1R NA LV3	4000	23.9	167	4000	80	3	50,000	80
Fortimo LED Line 2ft 4000lm 830 1R NA LV3	4039	23.9	169	5000	80	3	50,000	80
Fortimo LED Line 2ft 6000lm 830 2R NA LV3	5683	31.5	183	3000	80	3	50,000	80
Fortimo LED Line 2ft 6000lm 835 2R NA LV3	5862	31.5	189	3500	80	3	50,000	80
Fortimo LED Line 2ft 6000lm 840 2R NA LV3	5982	31.5	193	4000	80	3	50,000	80
Fortimo LED Line 2ft 6000lm 850 2R NA LV3	6042	31.5	195	5000	80	3	50,000	80



Available in Q4 2017.

Please visit the Philips Download Center on www.philips.com/oemna for current datasheets and other literature.

Fortimo LED strip LV4

Benefits for the end users

- High energy efficiency and long lifetime allow state-of-the-art luminaire design
- Slim width enables optimized luminaire design and new form factors
- High color rendering and excellent color consistency bring linear LED lighting to the next level for quality of light
- 5-year limited system warranty with Philips Advance Xitanium LED drivers¹

Philips Fortimo LED strip module NA LV4 comes with a multitude of performance and product advancements that include higher efficacy, higher lumen output, increased lumen maintenance, additional mechanical designs and additional CCT and CRI options when compared to the previous generation (LV3).

With these advancements, the Fortimo LED strip module is the ideal choice for high-performance high-quality luminaires for direct and indirect lighting in offices, banks, schools, public buildings, supermarkets and other applications to replace high energy efficiency T5 fluorescent lighting.

LED Module	Flux ^{2,3} (lm)	Power (W)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)
Fortimo LED Strip 0.5ft 550lm 830 NA LV4	520	3.0	170	3000K	80	3	50,000	80
Fortimo LED Strip 0.5ft 550lm 835 NA LV4	530	3.0	175	3500K	80	3	50,000	80
Fortimo LED Strip 0.5ft 550lm 840 NA LV4	540	3.0	179	4000K	80	3	50,000	80
Fortimo LED Strip 0.5ft 550lm 850 NA LV4	550	3.0	181	5000K	80	3	50,000	80
Fortimo LED Strip 0.5ft 550lm 927 NA LV4	410	3.0	133	2700K	90	3	50,000	80
Fortimo LED Strip 0.5ft 550lm 930 NA LV4	430	3.0	141	3000K	90	3	50,000	80
Fortimo LED Strip 0.5ft 550lm 935 NA LV4	440	3.0	145	3500K	90	3	50,000	80
Fortimo LED Strip 0.5ft 550lm 940 NA LV4	450	3.0	148	4000K	90	3	50,000	80
Fortimo LED Strip 1ft 1100lm 830 NA LV4	1030	6.1	170	3000K	80	3	50,000	80
Fortimo LED Strip 1ft 1100lm 835 NA LV4	1070	6.1	175	3500K	80	3	50,000	80
Fortimo LED Strip 1ft 1100lm 840 NA LV4	1090	6.1	179	4000K	80	3	50,000	80
Fortimo LED Strip 1ft 1100lm 850 NA LV4	1100	6.1	181	5000K	80	3	50,000	80
Fortimo LED Strip 1ft 1100lm 927 NA LV4	810	6.1	133	2700K	90	3	50,000	80
Fortimo LED Strip 1ft 1100lm 930 NA LV4	860	6.1	141	3000K	90	3	50,000	80
Fortimo LED Strip 1ft 1100lm 935 NA LV4	880	6.1	145	3500K	90	3	50,000	80
Fortimo LED Strip 1ft 1100lm 940 NA LV4	900	6.1	148	4000K	90	3	50,000	80
Fortimo LED Strip 2ft 2200lm 830 NA LV4	2070	12.2	170	3000K	80	3	50,000	80
Fortimo LED Strip 2ft 2200lm 835 NA LV4	2130	12.2	175	3500K	80	3	50,000	80
Fortimo LED Strip 2ft 2200lm 840 NA LV4	2170	12.2	179	4000K	80	3	50,000	80
Fortimo LED Strip 2ft 2200lm 850 NA LV4	2200	12.2	181	5000K	80	3	50,000	80
Fortimo LED Strip 2ft 2200lm 927 NA LV4	1620	12.2	133	2700K	90	3	50,000	80
Fortimo LED Strip 2ft 2200lm 930 NA LV4	1720	12.2	141	3000K	90	3	50,000	80
Fortimo LED Strip 2ft 2200lm 935 NA LV4	1770	12.2	145	3500K	90	3	50,000	80
Fortimo LED Strip 2ft 2200lm 940 NA LV4	1800	12.2	148	4000K	90	3	50,000	80
Fortimo LED Strip 24in 2200lm 830 NA LV4	2070	12.2	170	3000K	80	3	50,000	80
Fortimo LED Strip 24in 2200lm 835 NA LV4	2130	12.2	175	3500K	80	3	50,000	80
Fortimo LED Strip 24in 2200lm 840 NA LV4	2170	12.2	179	4000K	80	3	50,000	80



Please visit the Philips Download Center on www.philips.com/oemna for current datasheets and other literature.

¹See footnotes on page 74.

Fortimo LED Strip LV4 Modules (continued)

Fortimo LED Strip 24in 2200lm 850 NA LV4	2200	12.2	181	5000K	80	3	50,000	80
Fortimo LED Strip 24in 2200lm 927 NA LV4	1620	12.2	133	2700K	90	3	50,000	80
Fortimo LED Strip 24in 2200lm 930 NA LV4	1720	12.2	141	3000K	90	3	50,000	80
Fortimo LED Strip 24in 2200lm 935 NA LV4	1770	12.2	145	3500K	90	3	50,000	80
Fortimo LED Strip 24in 2200lm 940 NA LV4	1800	12.2	148	4000K	90	3	50,000	80
Fortimo LED Strip 23in 2600lm 830 EL LV4	2362	14	171	3000	80	3	50,000	80
Fortimo LED Strip 23in 2600lm 835 EL LV4	2530	14	181	3500	80	3	50,000	80
Fortimo LED Strip 23in 2600lm 840 EL LV4	2580	14	185	4000	80	3	50,000	80
Fortimo LED Strip 23in 2600lm 850 EL LV4	2610	14	187	5000	80	3	50,000	80
Fortimo LED Strip 23in 2600lm 927 EL LV4	1930	14	138	3000	90	3	50,000	80
Fortimo LED Strip 23in 2600lm 930 EL LV4	2040	14	146	3500	90	3	50,000	80
Fortimo LED Strip 23in 2600lm 935 EL LV4	2100	14	150	4000	90	3	50,000	80
Fortimo LED Strip 23in 2600lm 940 EL LV4	2150	14	153	5000	90	3	50,000	80



Fortimo LED strip LV4

high flux

Benefits for the end users

- High energy efficiency and long lifetime allow state-of-the-art luminaire design
- Slim width enables optimized luminaire design and new form factors
- High color rendering and excellent color consistency bring linear LED lighting to the next level for quality of light
- 5-year limited system warranty with Philips Advance Xitanium LED drivers¹

The Philips Fortimo LED strip module comes in new high flux versions that round off the portfolio with a high LED count per foot. It is the next step in efficacy and economic fixture design in high-output and high-temperature applications like indoor high-bay. Fortimo LED strip 2ft

4000 lm can also enable economical fixture designs for indoor recessed applications like 2' x 2' troffers utilizing only one LED strip module. Fortimo LED strip 4ft 8000 lm can enable economical fixture designs for indoor high-bay applications.

LED Module	Flux ^{2,3} (lm)	Power (W)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)
Fortimo LED Strip 4ft 4400lm 830 NA LV4	4130	24.3	170	3000K	80	3	50,000	80
Fortimo LED Strip 4ft 4400lm 835 NA LV4	4260	24.3	175	3500K	80	3	50,000	80
Fortimo LED Strip 4ft 4400lm 840 NA LV4	4350	24.3	179	4000K	80	3	50,000	80
Fortimo LED Strip 4ft 4400lm 850 NA LV4	4390	24.3	181	5000K	80	3	50,000	80
Fortimo LED Strip 4ft 4400lm 927 NA LV4	3250	24.3	133	2700K	90	3	50,000	80
Fortimo LED Strip 4ft 4400lm 930 NA LV4	3430	24.3	141	3000K	90	3	50,000	80
Fortimo LED Strip 4ft 4400lm 935 NA LV4	3540	24.3	145	3500K	90	3	50,000	80
Fortimo LED Strip 4ft 4400lm 940 NA LV4	3610	24.3	148	4000K	90	3	50,000	80
Fortimo LED Strip 2ft 4000lm 830 NA LV4	3780	23.2	163	3000K	80	3	50,000	80
Fortimo LED Strip 2ft 4000lm 835 NA LV4	3900	23.2	168	3500K	80	3	50,000	80
Fortimo LED Strip 2ft 4000lm 840 NA LV4	3980	23.2	171	4000K	80	3	50,000	80
Fortimo LED Strip 2ft 4000lm 850 NA LV4	4020	23.2	173	5000K	80	3	50,000	80
Fortimo LED Strip 4ft 8000lm 830 NA LV4	7560	46.5	163	3000K	80	3	50,000	80
Fortimo LED Strip 4ft 8000lm 835 NA LV4	7800	46.5	168	3500K	80	3	50,000	80
Fortimo LED Strip 4ft 8000lm 840 NA LV4	7950	46.5	171	4000K	80	3	50,000	80
Fortimo LED Strip 4ft 8000lm 850 NA LV4	8040	46.5	173	5000K	80	3	50,000	80



Please visit the Philips Download Center on www.philips.com/oemna for current datasheets and other literature.

¹See footnotes on page 74.

Fortimo LED strip value offer

Benefits for the end users

- Enables easy and economical fixture design for existing LED luminaires utilizing 20mm linear LED modules
- Perfectly married system components offer low system cost and excellent system performance
- 5-year limited system warranty with Philips Advance Xitanium LED drivers¹¹ or Certadrive

Philips Fortimo LED strip module value offer (VO) is designed to enable cost break-through in recessed ambient LED lighting applications. With its optimized design and high overdrive capability of up to 1100 lm/ft, it offers high design flexibility to lighting fixture manufacturers, and the module's cost provides excellent price-per-lumen value.

With module efficacies of up to 150 lm/W, CRI80, 3SDCM color consistency, 50,000-hour life¹ and a five-year limited system warranty¹¹, Fortimo LED strip VO is designed to meet all the basic needs of indoor linear lighting applications for maximum customer satisfaction.

LED Module	Flux ^{2,3} (lm)	Power (W)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)
Fortimo LED Strip VO 1ft 700lm 830 LV1	640	4.7	137	3000	80	3	50,000	80
Fortimo LED Strip VO 1ft 700lm 835 LV1	670	4.7	142	3500	80	3	50,000	80
Fortimo LED Strip VO 1ft 700lm 840 LV1	700	4.7	150	4000	80	3	50,000	80
Fortimo LED Strip VO 1ft 700lm 850 LV1	700	4.7	150	5000	80	3	50,000	80
Fortimo LED Strip VO 2ft 1400lm 830 LV1	1280	9.4	137	3000	80	3	50,000	80
Fortimo LED Strip VO 2ft 1400lm 835 LV1	1330	9.4	142	3500	80	3	50,000	80
Fortimo LED Strip VO 2ft 1400lm 840 LV1	1400	9.4	150	4000	80	3	50,000	80
Fortimo LED Strip VO 2ft 1400lm 850 LV1	1400	9.4	150	5000	80	3	50,000	80
Fortimo LED Strip VO 1ft 700lm 830 LV1	1006	8.4	120	3000	80	3	50,000	80
Fortimo LED Strip VO 1ft 700lm 835 LV1	1045	8.4	124	3500	80	3	50,000	80
Fortimo LED Strip VO 1ft 700lm 840 LV1	1103	8.4	131	4000	80	3	50,000	80
Fortimo LED Strip VO 1ft 700lm 850 LV1	1103	8.4	131	5000	80	3	50,000	80
Fortimo LED Strip VO 2ft 1400lm 830 LV1	2008	16.8	120	3000	80	3	50,000	80
Fortimo LED Strip VO 2ft 1400lm 835 LV1	2085	16.8	124	3500	80	3	50,000	80
Fortimo LED Strip VO 2ft 1400lm 840 LV1	2201	16.8	131	4000	80	3	50,000	80
Fortimo LED Strip VO 2ft 1400lm 850 LV1	2201	16.8	131	5000	80	3	50,000	80
Fortimo LED Strip VO 2ft 2200lm 830 NA LV1	2040	13.80	148	3000	80	3	50,000	80
Fortimo LED Strip VO 2ft 2200lm 8305NA LV1	2160	13.80	157	3500	80	3	50,000	80
Fortimo LED Strip VO 2ft 2200lm 840 NA LV1	2200	13.80	160	4000	80	3	50,000	80
Fortimo LED Strip VO 2ft 2200lm 850 NA LV1	2200	13.80	160	5000	80	3	50,000	80
Fortimo LED Strip VO 2ft 4000lm 830 NA LV1	3720	26.20	142	3000	80	3	50,000	80
Fortimo LED Strip VO 2ft 4000lm 835 NA LV1	3930	26.20	150	3500	80	3	50,000	80
Fortimo LED Strip VO 2ft 4000lm 840 NA LV1	4000	26.20	153	4000	80	3	50,000	80
Fortimo LED Strip VO 2ft 4000lm 850 NA LV1	4000	26.20	153	5000	80	3	50,000	80

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Fortimo LLS EaseSelect

Benefits for the end users

- Easy to design-in
- Cost efficient
- Meets performance specifications for standard DLC²⁸
- High quality of light
- Enables flexible supply chain

The Philips Fortimo linear lighting system (LLS) EaseSelect (ES) is Philips' first linear integrated LED light engine solution that combines a 36W UL Class 2 constant current LED drivers (fixed and 0-10V dimming) and a 2ft and 4ft long L2 LED module into a fully optimized system.

It enables OEM fixture manufacturers to design and manufacture 4ft long LED fixtures meeting minimum DLC²⁸

requirements and optimized for cost efficiency. Its patented system design provides opportunity to reduce mechanical and electrical fixture bill of materials while delivering high quality of light and performance.²⁹

With the application of commercial LED strip and waterproof fixtures in mind, Philips has designed this economic system solution to provide added value to designers.

LED Module	Flux ^{2,3} (lm)	Power (W)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)
Fortimo LLS ES 4ft 4400lm 830 1R LV1	4010	34	115	3000	80	3	50,000	80
Fortimo LLS ES 4ft 4400lm 835 1R LV1	4227	34	121	3500	80	3	50,000	80
Fortimo LLS ES 4ft 4400lm 840 1R LV1	4400	34	123	4000	80	3	50,000	80
Fortimo LLS ES 4ft 4400lm 850 1R LV1	4400	34	123	5000	80	3	50,000	80
LED Driver								
Fortimo LLS ES 36W INT LV1								
Fortimo LLS ES 36W INT 0-10V LV1								

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*See footnotes on page 74.

Fortimo LED downlight module (DLM) and spotlight (SLM) family



LED technologies continue to shift the lighting paradigm across all applications, and downlighting is no exception. In fact, downlighting was one of the first lighting applications to commercially embrace LED technology.

As the technologies continue to evolve, long lifetimes, environmental sustainability and low initial costs attract general commercial audiences requiring functional lighting, while the exponential rise in LED efficiency, light quality and light output are creating new opportunities for high-end, sophisticated applications. The challenge remains for luminaire manufacturers to leverage these valuable advancements without costly and time-consuming retooling while also satisfying functional and performance end user lighting needs.

Fortimo DLM EaseSelect

Philips Fortimo DLM EaseSelect represents a new approach to LED system design that delivers unmatched efficiency, flexibility and value for OEMs looking to offer quality lighting solutions at competitive prices. For point source (downlight) applications, the Philips Fortimo DLM EaseSelect system brings the same convenience and efficiency as the Fortimo LLS system with

an optimized LED Class 2 power source and L2 LED module. The integrated system includes a 0–10V, 1% dimmable LED driver and a 3 SDCM, CRI 80 LED module for highly consistent, high-quality light. The Fortimo DLM EaseSelect simplifies the traditional LED module/LED driver arrangement, which allows for slimmer fixture designs. The integrated design eliminates the need for conduit mounts and fittings, separate wires and a heatsink (up to 1,500 lumens).

Fortimo DLM flex and DLM gen 5

Philips Fortimo LED downlight module (DLM) flex and Fortimo LED downlight module (DLM) gen 5 systems now provide you with the latest high quality LED options to satisfy both functional and performance requirements, along with excellent energy efficiencies and color consistency. Best of all, we retained the same familiar DLM footprint so that you don't have to endure the hassles of retooling or redesigning fixtures.



Reliable options in the evolving LED downlight world



In close cooperation with UL, Philips has released its latest additions of the Fortimo LED downlight module (DLM) product family for the UL Safety Related Electronic Circuit program. By designing a system consisting of a Fortimo LED downlight module and Philips Advance Xitanium LED driver, this solution complies with UL991 and CSA22.2 No. 0.8 and enables fixture design without additional thermal protection.

This system uses a thermal sensing circuit to help prevent hazardous conditions caused by potential overheating of the electronic components. If the temperature of the module and/or the driver rises above a critical threshold, a thermal circuit in the driver is activated and reduces the drive current of the module until the temperature returns below 90°C, meeting UL Safety regulations for recessed downlight fixtures.

The UL SREC feature reduces components and complexity while providing an energy savings to the end user of up to 2W of power compared to a similar product requiring active thermal protection.¹²

*See footnotes on page 74.

Fortimo LED downlight module (DLM) EaseSelect (ES)

Benefits for the end users

- Easy to design-in, assemble and install
- Enables late stage selection
- Flicker rating comparable to external drivers
- No external heat sink needed for up to 1500 lm

The new Philips Fortimo downlight module (DLM) EaseSelect (ES) is an integrated module with a 0-10V 1% dimmable driver inside, enabling speed on design and assemble and installation. It also offers a self-cooling solution for up to 1500 lm. Fortimo DLM EaseSelect represents a new approach to LED system design that delivers unmatched efficiency, flexibility and value for OEMs looking to offer quality lighting solutions at competitive prices.



LED Module	Flux ^{2,3,31} (lm)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	Color Consistency	Nominal Input Voltage (V)	Nominal Input Current (A) 120V/277V	Nominal Input Frequency (Hz)	Power @ 277V AC 50Hz (W)	Power Factor 277V AC 50Hz	THD @ 277V	Minimum Dimming (0-10V)
Fortimo LED DLM ES 1100 830 0-10V G1 NA	1100	95	3000	80	3 SDCM	120 - 277	0.09/0.042	50 - 60	10.8	> 0.9	<15%	1%
Fortimo LED DLM ES 1100 835 0-10V G1 NA	1100	97	3500	80	3 SDCM	120 - 277	0.09/0.042	50 - 60	10.8	> 0.9	<15%	1%
Fortimo LED DLM ES 1100 840 0-10V G1 NA	1100	100	4000	80	3 SDCM	120 - 277	0.09/0.042	50 - 60	10.8	> 0.9	<15%	1%
Fortimo LED DLM ES 1500 830 0-10V G1 NA	1500	95	3000	80	3 SDCM	120 - 277	0.128/0.058	50 - 60	14.7	> 0.9	<15%	1%
Fortimo LED DLM ES 1500 835 0-10V G1 NA	1500	97	3500	80	3 SDCM	120 - 277	0.128/0.058	50 - 60	14.7	> 0.9	<15%	1%
Fortimo LED DLM ES 1500 840 0-10V G1 NA	1500	100	4000	80	3 SDCM	120 - 277	0.128/0.058	50 - 60	14.7	> 0.9	<15%	1%
Fortimo LED DLM ES 2000 830 0-10V G1 NA	2000	95	3000	80	3 SDCM	120 - 277	0.17/0.077	50 - 60	19.5	> 0.9	<15%	1%
Fortimo LED DLM ES 2000 835 0-10V G1 NA	2000	97	3500	80	3 SDCM	120 - 277	0.17/0.077	50 - 60	19.5	> 0.9	<15%	1%
Fortimo LED DLM ES 2000 840 0-10V G1 NA	2000	100	4000	80	3 SDCM	120 - 277	0.17/0.077	50 - 60	19.5	> 0.9	<15%	1%



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Fortimo LED downlight module (DLM) flex L2 and accessories

Benefits for the end users

- High energy efficiency (up to 159lm/W at Tc 85°C), also enabling excellent thermal management
- Flexible output/performance when set through our Philips Advance Xitanium LED drivers with SimpleSet technology
- Limited glare
- Integrated thermal protection, enabling universal voltage fixtures and low power consumption (compliant with UL SREC/991)

Philips Fortimo LED downlight module (DLM) flex L2 expands application possibilities beyond downlight commercial fixtures, bringing even more possibilities than the previous DLM flex generation. Fortimo DLM flex L2 expands applications to include high-bay and other sectors. We provide you with a system proposition ranging from 1,100 lm to 10,000 lm, from high performance to low cost, all in one flexible portfolio. Models can be easily tuned to meet your needs through Philips Advance Xitanium LED drivers with SimpleSet technology.

- Wide lumen output range: from 1,100 to 10,000 lm
- Variation of color temperatures (2700K, 3000K, 3500K and 4000K)
- Lifetime > 50,000 hrs (B50L70 at Tc 85°C)¹
- High color consistency: 3SDCM
- Various mechanical interface options
 - Enabling standard or slim designs
 - Self-cooled option for up to 3,000 lm²⁴
 - No additional heat sink needed²⁵

Fortimo LED DLM Flex L2 Module with Cover

LED Module	Flux ¹⁹ (lm)	Power (W)	Efficacy (lm/W)	CCT ²⁰ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)	Rad. Angle ²²
Fortimo LED DLM Flex L2 827 24 G1 NA	1,046	9.2	115	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 24 G1 NA	1,104	9.2	120	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 24 G1 NA	1,104	9.2	120	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 24 G1 NA	1,187	9.2	129	4000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 827 30 G1 NA	1,386	12.2	113	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 30 G1 NA	1,453	12.2	119	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 30 G1 NA	1,453	12.2	119	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 30 G1 NA	1,560	12.2	128	4000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 827 36 G1 NA	1,909	17.4	110	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 36 G1 NA	2,009	17.4	115	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 36 G1 NA	2,009	17.4	115	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 36 G1 NA	2,158	17.4	124	4000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 827 54 G1 NA	3,021	27.9	108	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 54 G1 NA	3,171	27.9	114	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 54 G1 NA	3,171	27.9	114	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 54 G1 NA	3,411	27.9	122	4000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 827 80 G1 NA	4,590	42.7	108	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 80 G1 NA	4,814	42.7	113	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 80 G1 NA	4,814	42.7	113	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 80 G1 NA	5,179	42.7	121	4000	>80	<3	>50,000 hs	85	120



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¹⁹See footnotes on page 74.

Fortimo LED DLM Flex L2 Module

LED Module	Flux ¹⁹ (lm)	Power (W)	Efficacy (lm/W)	CCT ²⁰ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life ²¹ (°C)	Rad. Angle ²²
Fortimo LED DLM Flex L2 827 24 G1 NA	1260	9.2	138	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 24 G1 NA	1330	9.2	145	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 24 G1 NA	1330	9.2	145	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 24 G1 NA	1430	9.2	155	4000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 827 30 G1 NA	1670	12.2	136	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 30 G1 NA	1750	12.2	143	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 30 G1 NA	1750	12.2	143	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 30 G1 NA	1880	12.2	154	4000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 827 36 G1 NA	2300	17.4	132	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 36 G1 NA	2420	17.4	139	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 36 G1 NA	2420	17.4	139	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 36 G1 NA	2600	17.4	149	4000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 827 54 G1 NA	3640	27.9	130	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 54 G1 NA	3820	27.9	137	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 54 G1 NA	3820	27.9	137	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 54 G1 NA	4110	27.9	147	4000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 827 80 G1 NA	5530	42.7	130	2700	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 830 80 G1 NA	5800	42.7	136	3000	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 835 80 G1 NA	5800	42.7	136	3500	>80	<3	>50,000 hs	85	120
Fortimo LED DLM Flex L2 840 80 G1 NA	6240	42.7	146	4000	>80	<3	>50,000 hs	85	120

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*See footnotes on page 74.



Fortimo LED downlight module (DLM) gen 5

Benefits

- State-of-art color consistency maintenance over life
- Increased quality of light (CRI 90 and 2SDCM¹)
- Flexibility to tune the performance as needed by modifying the operating point
- UL SREC compliance enables fixture design without additional thermal protection
- Improved temperature management²⁷
- Smart systems with Philips Advance Xitanium drivers with SimpleSet technology
- Easy design-in (backward compatible across Fortimo DLM family)

The Philips Fortimo LED downlight module (DLM) gen 5 brings enhanced quality of light features, increasing even further the value of its remote phosphor technology and its color consistency over life³⁰. Moreover, high-energy efficiency, compliance with current regulations and market standards and the Philips five-year limited warranty¹¹ help to make Fortimo DLM gen 5 one of the best LED solutions for architectural commercial downlight luminaires.

- CRI90 & R9>50
- 2SDCM
- Self-cooling possibility up to 2000 lm
- One-stop shop for your system

LED Module	Flux ^{2,3} (lm)	Power (W)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)
Fortimo LED DLM 1100 13W/927 Gen 5	1100	11.2	98.0	2700	>90	2	>50,000	85
Fortimo LED DLM 1100 12W/930 Gen 5	1100	10.5	105.3	3000	>90	2	>50,000	85
Fortimo LED DLM 1100 12W/935 Gen 5	1100	10.2	107.9	3500	>90	2	>50,000	85
Fortimo LED DLM 1100 11W/940 Gen 5	1100	9.9	110.7	4000	>90	2	>50,000	85
Fortimo LED DLM 1500 18W/927 Gen 5	1500	15.7	95.4	2700	>90	2	>50,000	85
Fortimo LED DLM 1500 17W/930 Gen 5	1500	15.0	99.7	3000	>90	2	>50,000	85
Fortimo LED DLM 1500 16W/935 Gen 5	1500	14.4	104.2	3500	>90	2	>50,000	85
Fortimo LED DLM 1500 15W/940 Gen 5	1500	13.9	107.7	4000	>90	2	>50,000	85
Fortimo LED DLM 2000 23W/927 Gen 5	2000	21.5	93.2	2700	>90	2	>50,000	85
Fortimo LED DLM 2000 22W/930 Gen 5	2000	20.5	97.4	3000	>90	2	>50,000	85
Fortimo LED DLM 2000 22W/935 Gen 5	2000	20.2	99.1	3500	>90	2	>50,000	85
Fortimo LED DLM 2000 20W/940 Gen 5	2000	18.8	106.6	4000	>90	2	>50,000	85
Fortimo LED DLM 3000 35W/927 Gen 5	3000	33.0	90.8	2700	>90	2	>50,000	85
Fortimo LED DLM 3000 34W/930 Gen 5	3000	31.5	95.3	3000	>90	2	>50,000	85
Fortimo LED DLM 3000 33W/935 Gen 5	3000	29.8	100.7	3500	>90	2	>50,000	85
Fortimo LED DLM 3000 31W/940 Gen 5	3000	28.8	104.2	4000	>90	2	>50,000	85



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*See footnotes on page 74.

Fortimo LED spotlight module (SLM) gen 6

Benefits

- 5-year limited system warranty with over 50,000 hours lifetime¹¹

Philips Fortimo LED spotlight module (SLM) gen 6 continues to focus on the combination of quality of light and performance. By offering the CoB separate from the holder, even more flexibility in possible system combinations and specifications is achieved. This results in an extensive portfolio of lumen ranges, CCTs and spectra.

- Excellent quality of light available for all applications
- Extensive range of CCT
- Small LES for narrow beam angles and small reflector designs
- Flexibility to select a different lumen output between 800 lm and 10000 lm

- State-of-the-art chip-on-board (CoB) technology, enabling high system efficacy
- System proposition (CoB + holder + driver)
- Flexibility to optimize luminaire performance (lm/W or high lumen output)
- Philips Advance Xitanium LED window drivers with SimpleSet technology for maximum flexibility
- Mini drivers for small luminaire designs
- Three dedicated product lines:
 - SLM gen 6 premium white
 - SLM gen 6 crisp white
 - SLM gen 6 food



LED Module	Flux ^{2,3} (lm)	Power (W)	Efficacy (lm/W)	CCT ⁴ (K)	CRI ⁵ (Ra)	SDCM ⁶	Lifetime ¹ (L70)	Tcase Life (°C)
Fortimo SLM C 827 1203 L09 1619 G6	1370	10.3	133	2700	>80	<3	>50,000	85
Fortimo SLM C 830 1203 L09 1619 G6	1410	10.3	136	3000	>80	<3	>50,000	85
Fortimo SLM C 835 1203 L09 1619 G6	1430	10.3	139	3500	>80	<3	>50,000	85
Fortimo SLM C 840 1203 L09 1619 G6	1490	10.3	144	4000	>80	<3	>50,000	85
Fortimo SLM C 927 1203 L09 1619 G6	1140	10.3	110	2700	>90	<3	>50,000	85
Fortimo SLM C 930 1203 L09 1619 G6	1170	10.3	114	3000	>90	<3	>50,000	85
Fortimo SLM C 827 1205 L13 2024 G6	2330	16.8	158	2700	>80	<3	>50,000	85
Fortimo SLM C 830 1205 L13 2024 G6	2420	16.8	144	3000	>80	<3	>50,000	85
Fortimo SLM C 835 1205 L13 2024 G6	2470	16.8	146	3500	>80	<3	>50,000	85
Fortimo SLM C 840 1205 L13 2024 G6	2530	16.8	150	4000	>80	<3	>50,000	85
Fortimo SLM C 927 1205 L13 2024 G6	1930	16.8	114	2700	>90	<3	>50,000	85
Fortimo SLM C 930 1205 L13 2024 G6	2010	16.8	119	3000	>90	<3	>50,000	85
Fortimo SLM C 740 1208 L15 2024 G6	4090	25.5	160	4000	>70	<3	>50,000	85
Fortimo SLM C 827 1208 L15 2024 G6	3490	25.5	137	2700	>80	<3	>50,000	85
Fortimo SLM C 830 1208 L15 2024 G6	3640	25.5	143	3000	>80	<3	>50,000	85
Fortimo SLM C 835 1208 L15 2024 G6	3710	25.5	143	3500	>80	<3	>50,000	85
Fortimo SLM C 840 1208 L15 2024 G6	3790	25.5	148	4000	>80	<3	>50,000	85

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Fortimo LED SLM Gen 6 Modules (continued)

Fortimo SLM C 850 1208 L15 2024 G6	3790	25.5	148	5000	>80	<3	>50,000	85
Fortimo SLM C 857 1208 L15 2024 G6	3710	25.5	143	5000	>90	<3	>50,000	85
Fortimo SLM C 927 1208 L15 2024 G6	2890	25.5	113	2700	>90	<3	>50,000	85
Fortimo SLM C 930 1208 L15 2024 G6	3000	25.5	118	3000	>90	<3	>50,000	85
Fortimo SLM C 740 1211 L19 2828 G6	6570	41.6	158	4000	>70	<3	>50,000	85
Fortimo SLM C 827 1211 L19 2828 G6	5610	41.6	135	2700	>80	<3	>50,000	85
Fortimo SLM C 830 1211 L19 2828 G6	5770	41.6	139	3000	>80	<3	>50,000	85
Fortimo SLM C 835 1211 L19 2828 G6	5890	41.6	142	3500	>80	<3	>50,000	85
Fortimo SLM C 840 1211 L19 2828 G6	6090	41.6	146	4000	>80	<3	>50,000	85
Fortimo SLM C 850 1211 L19 2828 G6	6090	41.6	146	5000	>80	<3	>50,000	85
Fortimo SLM C 857 1211 L19 2828 G6	5890	41.6	142	5000	>90	<3	>50,000	85
Fortimo SLM C 927 1211 L19 2828 G6	4640	41.6	112	2700	>90	<3	>50,000	85
Fortimo SLM C 930 1211 L19 2828 G6	4860	41.6	117	3000	>90	<3	>50,000	85
Fortimo SLM C 930 CW 1203 L09 1619 G6	980	10.6	92	3000	>90	<3	>50,000	85
Fortimo SLM C 930 CW 1205 L13 2024 G6	1710	17.3	99	3000	>90	<3	>50,000	85
Fortimo SLM C 930 CW 1208 L15 2024 G6	2540	25.9	98	3000	>90	<3	>50,000	85
Fortimo SLM C 930 CW 1211 L19 2828 G6	4110	42.4	97	3000	>90	<3	>50,000	85
Fortimo SLM C 925 FWW 1208 L15 2024 G6	2170	25.5	85	2500	>92	<3	>50,000	85
Fortimo SLM C 930 FPR 1208 L15 2024 G6	2250	25.5	88	3000	>87	<3	>50,000	85
Fortimo SLM C 925 FWW 1211 L19 2828 G6	3460	41.6	84	2500	>93	<3	>50,000	85
Fortimo SLM C 930 FPR 1211 L19 2828 G6	3620	41.6	85	3000	>88	<3	>50,000	85
Fortimo SLM C 830 PW 1203 L09 1619 G6	1390	10.4	133	3000	>82	<3	>50,000	85
Fortimo SLM C 930 PW 1203 L09 1619 G6	1170	10.4	113	3000	>92	<3	>50,000	85
Fortimo SLM C 935 PW 1203 L09 1619 G6	1240	10.4	119	3500	>92	<3	>50,000	85
Fortimo SLM C 940 PW 1203 L09 1619 G6	1270	10.4	122	4000	>92	<3	>50,000	85
Fortimo SLM C 830 PW 1205 L13 2024 G6	2380	17	139	3000	>80	<3	>50,000	85
Fortimo SLM C 930 PW 1205 L13 2024 G6	2030	17	119	3000	>90	<3	>50,000	85
Fortimo SLM C 935 PW 1205 L13 2024 G6	2130	17	125	3500	>90	<3	>50,000	85
Fortimo SLM C 940 PW 1205 L13 2024 G6	2190	17	128	4000	>90	<3	>50,000	85
Fortimo SLM C 830 PW 1208 L13 2024 G6	3580	25.5	140	3000	>80	<3	>50,000	85
Fortimo SLM C 930 PW 1208 L13 2024 G6	3040	25.5	119	3000	>90	<3	>50,000	85
Fortimo SLM C 935 PW 1208 L15 2024 G6	3200	25.5	125	3500	>90	<3	>50,000	85
Fortimo SLM C 940 PW 1208 L15 2024 G6	3290	25.5	129	4000	>90	<3	>50,000	85
Fortimo SLM C 830 PW 1211 L19 2024 G6	5740	41.2	139	3000	>80	<3	>50,000	85
Fortimo SLM C 930 PW 1211 L19 2024 G6	4920	41.2	119	3000	>90	<3	>50,000	85
Fortimo SLM C 935 PW 1211 L19 2828 G6	5130	41.2	124	3000	>90	<3	>50,000	85
Fortimo SLM C 940 PW 1211 L19 2828 G6	5270	41.2	128	4000	>90	<3	>50,000	85

LED module SKUs and minimum order quantities

Linear Modules

Part Number	Description	Minimum Order Quantity / Box Size [pcs]
929000759413	Fortimo LED Strip VO LV1 1ft 700lm 830 LV1	160
929000759513	Fortimo LED Strip VO LV1 1ft 700lm 835 LV1	160
929000759613	Fortimo LED Strip VO LV1 1ft 700lm 840 LV1	160
929000759713	Fortimo LED Strip VO LV1 1ft 700lm 850 LV1	160
929000759813	Fortimo LED Strip VO LV1 2ft 1400lm 830 LV1	200
929000759913	Fortimo LED Strip VO LV1 2ft 1400lm 835 LV1	200
929000760013	Fortimo LED Strip VO LV1 2ft 1400lm 840 LV1	200
929000760113	Fortimo LED Strip VO LV1 2ft 1400lm 850 LV1	200
929000775413	Fortimo LED Strip 0.5ft 550lm 830 NA LV4	56
929000775513	Fortimo LED Strip 0.5ft 550lm 835 NA LV4	56
929000775613	Fortimo LED Strip 0.5ft 550lm 840 NA LV4	56
929000775713	Fortimo LED Strip 0.5ft 550lm 850 NA LV4	56
929000775813	Fortimo LED Strip 0.5ft 550lm 927 NA LV4	56
929000775913	Fortimo LED Strip 0.5ft 550lm 930 NA LV4	56
929000776013	Fortimo LED Strip 0.5ft 550lm 935 NA LV4	56
929000776113	Fortimo LED Strip 0.5ft 550lm 940 NA LV4	56
929000776213	Fortimo LED Strip 1ft 1100lm 830 NA LV4	160
929000776313	Fortimo LED Strip 1ft 1100lm 835 NA LV4	160
929000776413	Fortimo LED Strip 1ft 1100lm 840 NA LV4	160
929000776513	Fortimo LED Strip 1ft 1100lm 850 NA LV4	160
929000776613	Fortimo LED Strip 1ft 1100lm 927 NA LV4	160
929000776713	Fortimo LED Strip 1ft 1100lm 930 NA LV4	160
929000776813	Fortimo LED Strip 1ft 1100lm 935 NA LV4	160
929000776913	Fortimo LED Strip 1ft 1100lm 940 NA LV4	160
929000777013	Fortimo LED Strip 2ft 2200lm 830 NA LV4	200
929000777113	Fortimo LED Strip 2ft 2200lm 835 NA LV4	200
929000777213	Fortimo LED Strip 2ft 2200lm 840 NA LV4	200
929000777313	Fortimo LED Strip 2ft 2200lm 850 NA LV4	200
929000777413	Fortimo LED Strip 2ft 2200lm 927 NA LV4	200
929000777513	Fortimo LED Strip 2ft 2200lm 930 NA LV4	200
929000777613	Fortimo LED Strip 2ft 2200lm 935 NA LV4	200
929000777713	Fortimo LED Strip 2ft 2200lm 940 NA LV4	200
929000777813	Fortimo LED Strip 24in 2200lm 830 NA LV4	180
929000777913	Fortimo LED Strip 24in 2200lm 835 NA LV4	180
929000778013	Fortimo LED Strip 24in 2200lm 840 NA LV4	180
929000778113	Fortimo LED Strip 24in 2200lm 850 NA LV4	180
929000778313	Fortimo LED Strip 24in 2200lm 930 NA LV4	180

Linear Modules (continued)

Part Number	Description	Minimum Order Quantity / Box Size [pcs]
929000777613	Fortimo LED Strip 4ft 4400lm 830 NA LV4	96
929000777713	Fortimo LED Strip 4ft 4400lm 835 NA LV4	96
929000778813	Fortimo LED Strip 4ft 4400lm 840 NA LV4	96
929000778913	Fortimo LED Strip 4ft 4400lm 850 NA LV4	96
929000779013	Fortimo LED Strip 4ft 4400lm 927 NA LV4	96
929000779113	Fortimo LED Strip 4ft 4400lm 930 NA LV4	96
929000779213	Fortimo LED Strip 4ft 4400lm 935 NA LV4	96
929000779313	Fortimo LED Strip 4ft 4400lm 940 NA LV4	96
929000779413	Fortimo LED Strip 2ft 4000lm 830 NA LV4	200
929000779513	Fortimo LED Strip 2ft 4000lm 835 NA LV4	200
929000779613	Fortimo LED Strip 2ft 4000lm 840 NA LV4	200
929000779713	Fortimo LED Strip 2ft 4000lm 850 NA LV4	200
929000779813	Fortimo LED Strip 4ft 8000lm 830 NA LV4	96
929000779913	Fortimo LED Strip 4ft 8000lm 835 NA LV4	96
929000780013	Fortimo LED Strip 4ft 8000lm 840 NA LV4	96
929000780113	Fortimo LED Strip 4ft 8000lm 850 NA LV4	96
929000918806	Fortimo LED Line 1ft 1100lm 830 1R LV3	180
929000918906	Fortimo LED Line 1ft 1100lm 835 1R LV3	180
929000919006	Fortimo LED Line 1ft 1100lm 840 1R LV3	180
929000919106	Fortimo LED Line 1ft 1100lm 850 1R LV3	180
929000921706	Fortimo LED Line 1ft 1100lm 830 3R LV3	180
929000921806	Fortimo LED Line 1ft 1100lm 835 3R LV3	180
929000921906	Fortimo LED Line 1ft 1100lm 840 3R LV3	180
929000922006	Fortimo LED Line 1ft 1100lm 850 3R LV3	180
929000919906	Fortimo LED Line 2ft 2200lm 830 1R LV3	180
929000920006	Fortimo LED Line 2ft 2200lm 835 1R LV3	180
929000920106	Fortimo LED Line 2ft 2200lm 840 1R LV3	180
929000920206	Fortimo LED Line 2ft 2200lm 850 1R LV3	180
929000760813	Fortimo LLS ES 4ft 4400lm 830 1R LV1	96
929000760913	Fortimo LLS ES 4ft 4400lm 835 1R LV1	96
929000761013	Fortimo LLS ES 4ft 4400lm 840 1R LV1	96
929000771313	Fortimo LLS ES 4ft 4400lm 850 1R LV1	96
929000761113	Fortimo LLS ES 36W INT LV1	96



Downlight Modules

Part Number	Description	Minimum Order Quantity / Box Size [pcs]
929001518806	Fortimo LED DLM 1100 13W/927 Gen 5	30
929001518906	Fortimo LED DLM 1100 12W/930 Gen 5	30
929001519006	Fortimo LED DLM 1100 12W/935 Gen 5	30
929001519106	Fortimo LED DLM 1100 11W/940 Gen 5	30
929001519206	Fortimo LED DLM 1500 18W/927 Gen 5	30
929001519306	Fortimo LED DLM 1500 17W/930 Gen 5	30
929001519406	Fortimo LED DLM 1500 16W/935 Gen 5	30
929001519506	Fortimo LED DLM 1500 15W/940 Gen 5	30
929001519606	Fortimo LED DLM 2000 23W/927 Gen 5	30
929001519706	Fortimo LED DLM 2000 22W/930 Gen 5	30
929001519806	Fortimo LED DLM 2000 22W/935 Gen 5	30
929001519906	Fortimo LED DLM 2000 20W/940 Gen 5	30
929001520006	Fortimo LED DLM 3000 36W/927 Gen 5	30
929001520106	Fortimo LED DLM 3000 34W/930 Gen 5	30
929001520206	Fortimo LED DLM 3000 33W/935 Gen 5	30
929001520306	Fortimo LED DLM 3000 31W/940 Gen 5	30
929000749613	Fortimo LED DLM Flex L2 827 24 G1 NA	40
929000749713	Fortimo LED DLM Flex L2 830 24 G1 NA	40
929000749813	Fortimo LED DLM Flex L2 835 24 G1 NA	40
929000749913	Fortimo LED DLM Flex L2 840 24 G1 NA	40
929000750013	Fortimo LED DLM Flex L2 827 30 G1 NA	40
929000750113	Fortimo LED DLM Flex L2 830 30 G1 NA	40
929000750213	Fortimo LED DLM Flex L2 835 30 G1 NA	40
929000750313	Fortimo LED DLM Flex L2 840 30 G1 NA	40
929000750413	Fortimo LED DLM Flex L2 827 36 G1 NA	40
929000750513	Fortimo LED DLM Flex L2 830 36 G1 NA	40
929000750613	Fortimo LED DLM Flex L2 835 36 G1 NA	40
929000750713	Fortimo LED DLM Flex L2 840 36 G1 NA	40
929000750813	Fortimo LED DLM Flex L2 827 54 G1 NA	40
929000750913	Fortimo LED DLM Flex L2 830 54 G1 NA	40
929000751013	Fortimo LED DLM Flex L2 835 54 G1 NA	40
929000751113	Fortimo LED DLM Flex L2 840 54 G1 NA	40
929000751213	Fortimo LED DLM Flex L2 827 80 G1 NA	40
929000751313	Fortimo LED DLM Flex L2 830 80 G1 NA	40
929000751413	Fortimo LED DLM Flex L2 835 80 G1 NA	40
929000751513	Fortimo LED DLM Flex L2 840 80 G1 NA	40
929000791513	Fortimo LED DLM ES 1100 830 0-10V G1 NA	20
929000791613	Fortimo LED DLM ES 1100 835 0-10V G1 NA	20
929000791713	Fortimo LED DLM ES 1100 840 0-10V G1 NA	20

Downlight Modules (continued)

929000791813	Fortimo LED DLM ES 1500 830 0-10V G1 NA	20
929000791913	Fortimo LED DLM ES 1500 835 0-10V G1 NA	20
929000792013	Fortimo LED DLM ES 1500 840 0-10V G1 NA	20
929000792113	Fortimo LED DLM ES 2000 830 0-10V G1 NA	20
929000792213	Fortimo LED DLM ES 2000 835 0-10V G1 NA	20
929000792313	Fortimo LED DLM ES 2000 840 0-10V G1 NA	20
929000765413	Fortimo LED DLM Thermal Accessory G1	40
929000765313	Fortimo LED DLM Flex Cover NA	40
929001454506	Fortimo SLM C 827 1203 L09 1619 G6	20
929001454606	Fortimo SLM C 830 1203 L09 1619 G6	20
929001454706	Fortimo SLM C 835 1203 L09 1619 G6	20
929001454806	Fortimo SLM C 840 1203 L09 1619 G6	20
929001455106	Fortimo SLM C 927 1203 L09 1619 G6	20
929001455206	Fortimo SLM C 930 1203 L09 1619 G6	20
929001458706	Fortimo SLM C 827 1205 L13 2024 G6	20
929001458806	Fortimo SLM C 830 1205 L13 2024 G6	20
929001458906	Fortimo SLM C 835 1205 L13 2024 G6	20
929001459006	Fortimo SLM C 840 1205 L13 2024 G6	20
929001459306	Fortimo SLM C 927 1205 L13 2024 G6	20
929001459406	Fortimo SLM C 930 1205 L13 2024 G6	20
929001445806	Fortimo SLM C 740 1208 L15 2024 G6	20
929001445906	Fortimo SLM C 827 1208 L15 2024 G6	20
929001446006	Fortimo SLM C 830 1208 L15 2024 G6	20
929001446106	Fortimo SLM C 835 1208 L15 2024 G6	20
929001446206	Fortimo SLM C 840 1208 L15 2024 G6	20
929001446306	Fortimo SLM C 850 1208 L15 2024 G6	20
929001446406	Fortimo SLM C 857 1208 L15 2024 G6	20
929001446506	Fortimo SLM C 927 1208 L15 2024 G6	20
929001446606	Fortimo SLM C 930 1208 L15 2024 G6	20
929001447206	Fortimo SLM C 740 1211 L19 2828 G6	10
929001447306	Fortimo SLM C 827 1211 L19 2828 G6	10
929001447406	Fortimo SLM C 830 1211 L19 2828 G6	10
929001447506	Fortimo SLM C 835 1211 L19 2828 G6	10
929001447606	Fortimo SLM C 840 1211 L19 2828 G6	10
929001447706	Fortimo SLM C 850 1211 L19 2828 G6	10
929001447806	Fortimo SLM C 857 1211 L19 2828 G6	10
929001447906	Fortimo SLM C 927 1211 L19 2828 G6	10
929001448006	Fortimo SLM C 930 1211 L19 2828 G6	10
929001455706	Fortimo SLM C 930 CW 1203 L09 1619 G6	20
929001459906	Fortimo SLM C 930 CW 1205 L13 2024 G6	20

Downlight Modules (continued)

929001447106	Fortimo SLM C 930 CW 1208 L15 2024 G6	20
929001448506	Fortimo SLM C 930 CW 1211 L19 2828 G6	10
929001452680	Fortimo SLM C 925 FWW 1208 L15 2024 G6	20
929001452980	Fortimo SLM C 930 FPR 1208 L15 2024 G6	20
929001452280	Fortimo SLM C 925 FWW 1211 L19 2828 G6	10
929001452580	Fortimo SLM C 930 FPR 1211 L19 2828 G6	10
929001455306	Fortimo SLM C 830 PW 1203 L09 1619 G6	20
929001455406	Fortimo SLM C 930 PW 1203 L09 1619 G6	20
929001455506	Fortimo SLM C 935 PW 1203 L09 1619 G6	20
929001455606	Fortimo SLM C 940 PW 1203 L09 1619 G6	20
929001459506	Fortimo SLM C 830 PW 1205 L13 2024 G6	20
929001459606	Fortimo SLM C 930 PW 1205 L13 2024 G6	20
929001459706	Fortimo SLM C 935 PW 1205 L13 2024 G6	20
929001459806	Fortimo SLM C 940 PW 1205 L13 2024 G6	20
929001446706	Fortimo SLM C 830 PW 1208 L13 2024 G6	20
929001446806	Fortimo SLM C 930 PW 1208 L13 2024 G6	20
929001446906	Fortimo SLM C 935 PW 1208 L15 2024 G6	20
929001447006	Fortimo SLM C 940 PW 1208 L15 2024 G6	20
929001448106	Fortimo SLM C 830 PW 1211 L19 2024 G6	10
929001448206	Fortimo SLM C 930 PW 1211 L19 2024 G6	10
929001448306	Fortimo SLM C 935 PW 1211 L19 2828 G6	10
929001448406	Fortimo SLM C 940 PW 1211 L19 2828 G6	10

Complementary partners

In order to make the Fortimo LED module systems more easily accessible to all luminaire manufacturers, whether small or large, Philips has set up links with our complementary partners.

These are companies who have developed components specifically for the Fortimo LED systems. These complementary partners have regular contact with Philips and receive early information about the Philips Fortimo product roadmap. We recommend that you visit the websites of these companies and contact them directly about their Fortimo-related products.

Cooling Systems

AVC

www.avc.com.tw

MechaTronix

www.mechatronix-asia.com

Nuventix

www.nuventix.com

Sunon

www.sunon.com

Wisefull

<http://www.wisefull.com>

Thermal Interface

Laird Technologies

www.lairdtech.com

The Bergquist Company

www.bergquistcompany.com

The following are suggestions of products that can be used with certain Philips Fortimo systems. Philips makes no warranties regarding these products and assumes no legal liability or responsibility for loss or damage resulting from the use of the information herein.

The list of partners below is current as of March 2017. Please contact your local Philips sales representative for a complete listing.

Reflector

ACL

www.reflektor.com

Almeco

www.almecogroup.com

Alux Luxar

www.alux-luxar-reflektoren.com

Jordan

www.jordan-reflektoren.de/en/home

LEDIL

www.ledil.com

NATA

www.nata.cn

Widegerm

www.widegerm.com.hk

Other

SLP Lighting

www.splighting.com



Philips Advance **LED Drivers**

Philips Advance LED driver family



A proven portfolio

LED light sources require reliable LED drivers for optimal performance that is long-lasting with low maintenance. Our wide range of Philips Advance Xitanium, SR (Sensor Ready) and CertaDrive²⁶ LED drivers are specifically designed to operate LEDs in a variety of indoor and outdoor lighting applications while meeting a variety of customer application needs. All Philips LED drivers lead the transformation with:

Benefits:

- Reliable and consistent operation
- High efficiency >90% in some cases
- Greater than 0.9 PF and less than 20% THD
- Class P on select models
- Greater than 50k hours lifetime¹⁰
- 5-year limited warranty¹¹
- RoHS compliance⁷

SimpleSet technology

Philips' proven SimpleSet wireless programming technology for Xitanium LED drivers is designed to help OEMs quickly and easily program LED drivers at any time during the manufacturing, distribution or installation process. The flexibility of the drivers with SimpleSet technology enables an OEM to cover a large performance window with a handful of drivers. Visit www.philips.com/simpleset for more information.

Xitanium SR drivers

The Philips Advance Xitanium SR LED drivers set a strong foundation for OEMs to create a connected lighting solution. The SR platform provides an open, standardized, digital communication protocol that enables OEM to simplify the integration of sensors within the luminaire. A variety of SR-certified devices are available on the market enabling OEMs to quickly meet various end user requirements. Multiple functionalities are bundled into the driver to reduce the complexity of setting up network lighting fixtures, thus making smart lighting a practical reality.

CertaDrive drivers

Philips Advance CertaDrive indoor LED drivers are designed to meet basic indoor lighting needs. These drivers are offered with specific voltage-current settings and are, thus, optimized with specifications that are appropriately suited for the application, making LED conversion even more affordable.

Xitanium drivers

Philips Advance Xitanium LED drivers are designed to maximize performance with unmatched flexibility to handle the varying demands of potential LED lighting configurations. Rated for long life with efficient performance, these drivers are excellent design choices for LED fittings, offering the benefits of long-lasting energy savings with low maintenance costs.

All Philips Advance LED drivers comply with Part 15 of the FCC rules.

Canada:
CAN ICES-005 (A) / NMB-005 (A)

*See footnotes on page 74.

SimpleSet wireless programming technology

Benefits of Xitanium with SimpleSet and OEMs

- **Speed:** program fixtures faster without requiring complex and time-consuming wiring mechanics or the need to power up drivers
- **Flexibility:** program at any stage in the manufacturing process, from one to multiple drivers at once
- **Reduced costs:** meet a diverse set of lighting requirements without overextending your SKUs or managing different driver SKUs
- **Simplicity:** intuitive for anyone to use regardless of experience, and easy to deploy anywhere in the assembly process
- **Security:** set and protect proprietary information with dedicated memory space for OEMs with password protection

Wireless programming for Xitanium drivers

Philips Advance Xitanium LED drivers with SimpleSet technology are designed to help OEMs quickly and easily program LED drivers at any time during the manufacturing, distribution or installation process. As a result, OEMs and their customers can meet orders faster with greater confidence while potentially reducing costs and inventory.

Accelerate LED programming

Currently, there are a variety of methods used to adjust output current of LED drivers. One method is putting a resistor on the driver that allows you to set the desired drive current. Other methods include DIP switches or adjustable potentiometers. These solutions are cumbersome to incorporate into high volume production environments because the driver either has to be powered for programming or needs to be wired to a programming device.

Using our Xitanium LED drivers with SimpleSet technology, on the other hand, you are able to quickly and easily program drive current and set specific lumen levels without the driver being powered or wired. This simplicity and flexibility allow you and your customers to set and reset parameters as needed.



Accelerate LED programming

1. Take the driver out of the box. Locate the designated communication area on the driver.
2. Touch the LED driver to the programming device. Programming confirmation will appear on the monitor.
3. Install the driver into the fixture.



Stay ahead of business demands

SimpleSet technology enables you to do more for your customers and your business. OEMs can quickly meet a broad range of customer requirements and order variations. In addition, wireless programming is flexible so it can be incorporated directly into any and all areas of your product development process, warehouse and distribution. You now have never-before-available possibilities to create customized lighting solution for your customers.

Visit www.philips.com/simpleset or call your local Philips sales representative for more information.

Xitanium SR LED drivers

Benefits of Xitanium SR

- Standardized digital interface with integral power supply
- Simple 2-wire connection
- Common Xitanium form factors
- Dim-to-off
- Energy metering
- Compatible with devices from SR Certified partners
- For outdoor models:
 - 24V AUX for high power nodes
 - Logic signal input for motion sensors
 - Metering accuracy per proposed ANSI C136.52
 - Diagnostics and asset management tools



Unlocking the potential of lighting beyond illumination

The depth and complexity of connected lighting systems can vary greatly – from simple luminaire-level controls to integrated systems connected to building networks. Philips Advance Xitanium SR (Sensor Ready) LED drivers make it easy to develop and deploy control-ready luminaires for a host of applications. SR represents the standard interface for connecting drivers to nodes/sensors and is the key foundational element for any connected lighting system.

Reducing complexity: Streamlined fixture design

The all-in-one design of SR LED drivers standardizes the digital connection between the driver and sensor and includes an integral power supply, so no additional auxiliary components or power packs are required. A simple, two-wire connection is all that is needed to connect to various certified devices. As a result, fixtures for connected lighting become less complex and more practical.



Flexibility: Wide range of applications and SR certified partners

SR LED drivers are available for the primary lighting applications: indoor commercial and outdoor. They leverage the established Xitanium footprint for drop-in design for the fixture OEM. To ensure seamless compatibility between SR LED drivers and third-party sensors, Philips created the SR certified program. This gives end users the flexibility to choose the type of connected lighting system that best suits their needs.

SR drivers for linear applications

Philips pioneered SR LED drivers first for indoor commercial office lighting. SR has set the pace to make networked lighting more useful and practical while further accelerating the integration of lighting into building management systems. SR bundles the right functionality to simplify light fixtures used in connected light applications.

SR drivers for outdoor applications

Following on the successful establishment of SR for indoor applications, SR drivers are available for outdoor lighting to bring the benefits of SR to yet another fast-emerging application. Having the same features as indoor, outdoor SR drivers are further tailored for use in city management systems with higher node power, tight metering accuracy requirement, and asset management tracking. Models are available for 75W and 150W (class 1) with 700ma and 1050ma drive currents as well as for 95W class 2.

CertaDrive indoor LED drivers

Benefits

- Optimized for use with Philips Fortimo value offer (VO) modules
- Small form-factor
- Class P Listing
- Input voltage range of 120-277V
- 5% 0-10V dimming
- High efficiency for maximum payback
- 5-year limited warranty¹⁾

Philips Advance CertaDrive indoor LED drivers are designed to meet basic lighting needs, thus, making LED conversion even more attainable.

Philips Advance CertaDrive drivers are offered in the following categories:

Fixed

IntelliVolt models are designed for basic indoor applications that do not require dimming, while still meeting the energy-saving benefits from LED.

Dimmable

Addressing the needs of essential dimming applications, these models are offered in an assortment of voltage-current combinations for (0-10V) dimming systems.

Optimized

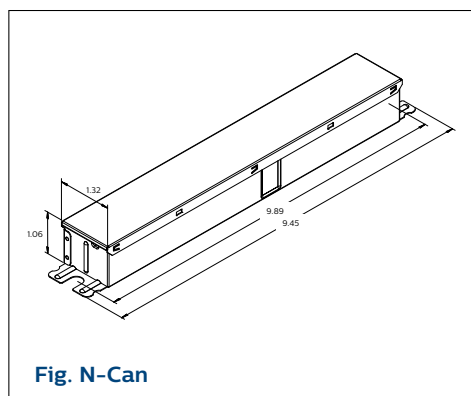
These drivers are offered with specific voltage-current settings and are, thus, optimized with specifications that are appropriately suited for the application.

The CertaDrive LED drivers along with the Fortimo LED strip value offer (VO) boards cater to the varying lighting needs in both non-dimming and dimming applications for economically designed luminaires.



Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2	Input Voltage (Vac)	Dimming	Additional Features	Max Tcase for Warranty (°C)	Max Tcase for UL (°C)	Housing
CI018C039V046FNN1	18	0.39	40 - 46	Yes	120 - 277	No	Class P	65	75	N-Can
CI021C045V046FNN1	21	0.45	30 - 46	Yes	120 - 277	No	Class P	65	75	N-Can
CI035C075V046FNN1	35	0.75	30 - 46	Yes	120 - 277	No	Class P	65	75	N-Can
CI036C078V046FNN1	36	0.78	40 - 46	Yes	120 - 277	No	Class P	65	75	N-Can
CI023C048V046CNN1	23	0.48	30 - 46	Yes	120 - 277	0-10V	Class P	65	75	N-Can
CI024C045V052CNN1	24	0.45	35 - 52	Yes	120 - 277	0-10V	Class P	65	75	N-Can
CI026C055V046CNN1	26	0.55	30 - 46	Yes	120 - 277	0-10V	Class P	65	75	N-Can
CI030C065V046CNN1	30	0.65	30 - 46	Yes	120 - 277	0-10V	Class P	65	75	N-Can
NEW! CI031C068V045CNN2	31	0.68	30 - 45	Yes	120 - 277	0-10V	Class P & EMI Class B	65	75	N-Can
CI034C072V046CNN1	34	0.72	30 - 46	Yes	120 - 277	0-10V	Class P	65	75	N-Can
CI037C082V045CNN1	37	0.82	30 - 45	Yes	120 - 277	0-10V	Class P	65	75	N-Can
CI039C075V052CNN1	39	0.75	35 - 52	Yes	120 - 277	0-10V	Class P	65	75	N-Can
CI041C087V046CNN1	41	0.87	30 - 46	Yes	120 - 277	0-10V	Class P	65	75	N-Can
CI042C092V045CNN1	42	0.92	30 - 45	Yes	120 - 277	0-10V	Class P	65	75	N-Can
CI045C096V046CNN1	45	0.96	30 - 46	Yes	120 - 277	0-10V	Class P	65	75	N-Can
NEW! CI046C102V045CNN2	46	1.02	30 - 45	Yes	120 - 277	0-10V	Class P & EMI Class B	65	75	N-Can

CertaDrive indoor LED driver dimensions



Xitanium indoor linear LED drivers

Benefits

- Adjustable output current
- Wide operating windows
- UL Class 2
- Input voltage range of 120-277V, 347V, or 347-480V
- 1% 0-10V dimming on select models
- Class P on select models
- High efficiency
- High reliability

Applications

- Office
- Retail
- Hospitality
- Meeting rooms

Philips Advance Xitanium LED drivers for linear applications are available in three types:

Dimmable

Dimmable drivers include 0-10V, step-dim or leading-edge dimming to integrate into common dimming systems used in commercial applications. Dimming improve energy savings and can help to enhance worker comfort. Philips SimpleSet technology permits easy, basic programming of current levels and dimming curves, allowing a few SKUs to cover a wide range of applications.

Programmable

These drivers are easily managed through a programmable interface. This allows the OEM to customize a light fixture for a wide range of applications, using a minimum number SKUs to reduce lighting design complexity and simplify installation logistics.

SR

Xitanium SR LED drivers share the same form factor as the non-SR drivers for simple, hassle-free integration into luminaires. These versatile drivers provide power metering and DC power to the sensor over the DALI 2.0 open standard digital interface.

Philips Advance Xitanium LED drivers are available in wattages up to 95W. The form factor is perfectly suited to applications in which LED luminaires need to be compatible with the mechanical aspects of traditional fluorescent fixtures. Visit www.philips.com/leddrivers for more information.



Xitanium linear LED drivers

Dimmable

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2 and Class P	Input Voltage (Vac)	Dimming	Additional Features	Max T _{case} for Warranty (°C)	Max T _{case} for UL (°C)	Housing
NEW! XI040C110V054SST1	40	0.1 - 1.1	27-54	Class 2/P	120 - 277	Step Dim	2 or 3 Customizable Dim Levels	75	85	T- 360
NEW! XI054C150V054SST1	54	0.1 - 1.5	27-54	Class 2/P	120 - 277	Step Dim	2 or 3 Customizable Dim Levels	75	85	T- 360
NEW! XI075C200V054SST1	75	0.1 - 2	27-54	Class 2/P	120 - 277	Step Dim	2 or 3 Customizable Dim Levels	75	85	T- 425
XI020C056V054BST2	20	0.1 - 0.56	22.5 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), 1% Dimming	75	80	T-254
XG020C056V054BST1	20	0.1 - 0.56	22.5 - 54	Class 2/P	347	0-10V	AOC (SimpleSet/Rset), MTP, 1% Dimming	75	80	T-254
XI040C110V054BST1	40	0.1 - 1.1	22.5 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), 1% Dimming	75	80	T-360
XG040C110V054BST1	40	0.1 - 1.1	22.5 - 54	Class 2/P	347	0-10V	AOC (SimpleSet/Rset), MTP, 1% Dimming	75	80	T-360
LEDINTA2000C24DO	48	1.0 - 2.0	12 - 24	Class 2	120 - 277	0-10V	AOC (Rset)	80	80	T-425
XI054C150V054BST1	54	0.1 - 1.5	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), 1% Dimming	75	85	T-360
XR054C150V054RNT1	54	0.1 - 1.5	27 - 54	Class 2	120	LE	AOC (Rset), MTP	75	85	T-360
XV054C150V054RNT1	54	0.1 - 1.5	27 - 54	Class 2	277	LE	AOC (Rset), MTP	75	85	T-360
XG054C150V054BST1	54	0.1 - 1.5	27 - 54	Class 2/P	347	0-10V	AOC (SimpleSet/Rset), MTP, 1% Dimming	75	80	T-360
XI075C200V054BST1	75	0.1 - 2.0	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), 1% Dimming	80	85	T-425
XG075C200V054BST1	75	0.1 - 2.0	27 - 54	Class 2/P	347	0-10V	AOC (SimpleSet/Rset), MTP, 1% Dimming	80	80	T-425
XI095C275V054BSS1	95	0.1 - 2.75	20 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet)	85	90	S-Can
XI095C275V054DNF1	95	1.0 - 2.75	27 - 54	Class 2	120 - 277	0-10V	AOC (Rset), MTP	85	90	F-Can Chassis Mount
XH095C275V054BSF1	95	0.1 - 2.75	20 - 54	Class 2/P	347 - 480	0-10V	AOC (SimpleSet)	85	90	F-Can Gen 2
XI190C275V054BSG1	190	0.1 - 2.75	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet), Dual Channel	85	90	G-Can

AOC: Adjustable Output Current
 MTP: Module Temperature Protection
 PROG: Programmable, includes Constant Light Output (CLO)

Programmable

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2 and Class P	Input Voltage (Vac)	Dimming	Additional Features	Max Tcase for Warranty (°C)	Max Tcase for UL (°C)	Housing
XI040C110V054YPT2	40	0.1 - 1.1	27-54	Class 2/P	120-277	DALI	AOC (SimpleSet/RSET), Class P	75	85	T-360
XI075C200V054YPT2	75	0.1 - 2.0	27-54	Class 2/P	120-277	DALI	AOC (SimpleSet/RSET), Class P	75	85	T-425
XI075C200V054XPT1	75	0.7 - 2.0	27 - 54	Class 2	120 - 277	0-10V	AOC (Rset), MTP, PROG	75	75	T-425
XI075C200V054YPT1	75	0.7 - 2.0	27 - 54	Class 2/P	120 - 277	DALI	AOC (Rset), MTP, PROG	75	75	T-425

SR

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2 and Class P	Input Voltage (Vac)	Dimming	Additional Features	Max Tcase for Warranty (°C)	Max Tcase for UL (°C)	Housing
XI040C110V054VPT1	40	0.1 - 1.1	27 - 54	Class 2/P	120-277	SR	AOC (SimpleSet/Rset), Class P	75	85	T-360
XI075C200V054VPT1	75	0.7 - 2.0	27 - 54	Class 2/P	120 - 277	SR	AOC (SimpleSet/Rset), Class P	75	85	T-425
NEW! XI095C275V054VPP1	95	0.1-2.75	20-54	Class 2/P	120-277	SR	AOC (SimpleSet), 6kV Surge, Class P	85	90	F-Can Gen 2

Xitanium linear LED driver dimensions

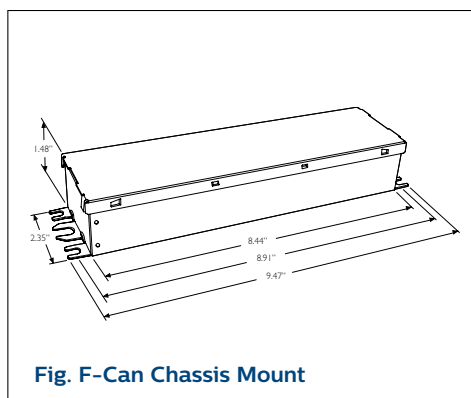


Fig. F-Can Chassis Mount

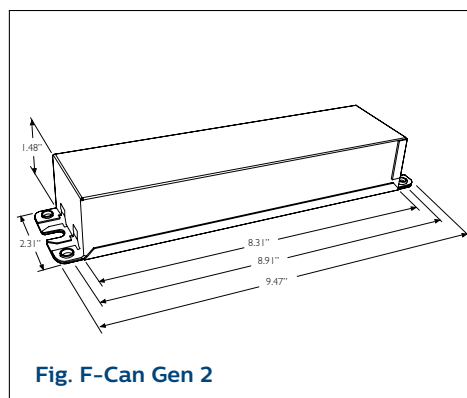


Fig. F-Can Gen 2

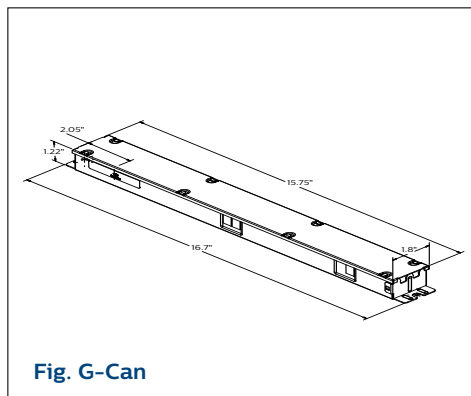


Fig. G-Can

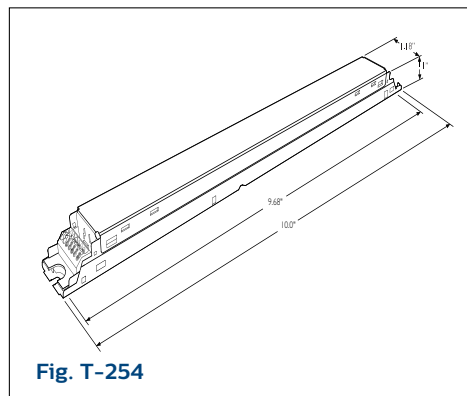


Fig. T-254

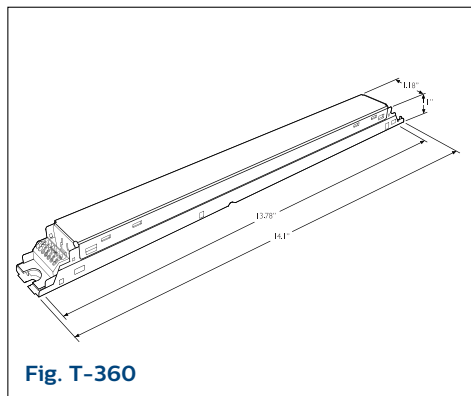


Fig. T-360

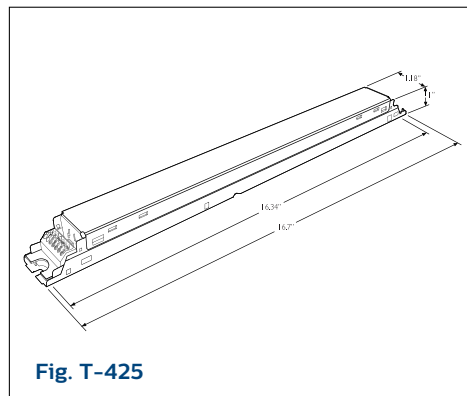


Fig. T-425

Xitanium indoor downlight and track LED drivers

Benefits

- Adjustable output current
- Wide operating windows
- UL Class 2
- Input voltage range of 120-277V
- 1% 0-10V dimming on select models
- Class P on select models
- High efficiency for maximum payback
- High reliability for low maintenance costs

Applications

- Office
- Retail
- Hospitality
- Meeting rooms

Philips Advance Xitanium LED drivers for indoor downlight and track applications are available in three types:

Fixed output

Fixed output LED drivers set the standard for reliability and performance needed for indoor downlight and track lighting.

Dimmable

Dimmable drivers include 0-10V, step-dim or leading-edge dimming to integrate into common dimming systems used in commercial applications. Dimming enables maximum energy savings and can help to facilitate worker comfort. Philips SimpleSet technology permits easy, basic programming of current levels and dimming curves, allowing a few SKUs to cover a wide range of applications.

Programmable

These drivers provide a feature set managed through a programmable interface. This allows the OEM to create a fixture portfolio to meet specific needs for a wide range of applications, using a minimum number SKUs to reduce complexity and simplify logistics.

Philips Advance Xitanium LED drivers for indoor downlight and track applications are available in wattages up to 95W for hard-wired integration into recessed downlights and track light fixtures. These LED drivers are available in the familiar SmartMate housing for junction-box mounting in downlights and slim housings for incorporation into track housings. Visit www.philips.com/leddrivers for more information.



Xitanium downlight LED drivers

Fixed Output

Catalog Number	Max Output Power (W)	Output Current (A dc)	Output Voltage (V dc)	UL/CSA Class 2 and Class P	Input Voltage (Vac)	Max Tc case for Warranty (°C)	Max Tc case for UL (°C)	Housing
LEDUNIA0350C12F	4	0.35	2.8 - 12	Class 2	120 - 230	60	69	8W
LEDUNIA0700C12F	6.5	0.70	2.4 - 12	Class 2	120 - 230	60	69	8W
LED120A0024V07F	17	0.10 - 0.70	24	Class 2	120	70	80	V-Can Indoor
LED120A0700C24F	17	0.70	2.8 - 24	Class 2	120	75	85	V-Can Indoor
LED120A1400C24F	34	1.40	2.8 - 24	Class 2	120	75	85	J-Box Indoor

Dimmable

Catalog Number	Max Output Power (W)	Output Current (A dc)	Output Voltage (V dc)	UL/CSA Class 2 and Class P	Input Voltage (Vac)		Additional Features	Max Tc case for Warranty (°C)	Max Tc case for UL (°C)	Housing
XR009C022V042RNO2	9	0.22	25 - 42	Class 2	120	LE, TE	1% Dimming	85	85	O-Can
XR013C033V042RNO2	13	0.33	25 - 42	Class 2	120	LE, TE	1% Dimming	85	85	O-Can
XI013C030V042RNP1	13	0.15/0.2/ 0.25/0.3	20 - 42	Class 2/P	120 - 277	LE, TE	Dip Switch	75	85	P1-Can
XI020C050V042RNP2	20	0.35 - 0.5	20 - 42	Class 2/P	120 - 277	LE, TE	AOC (Dip Switch), 1% Dimming	75	80	P1-Can
XI020C070V030RNP2	20	0.4 - 0.7	15 - 30	Class 2/P	120 - 277	LE, TE	AOC (Dip Switch), 1% Dimming	75	80	P1-Can
NEW! XI042C080V052RNP1	42	0.5/0.6/ 0.7/ 0.8	25 - 52	Class 2/P	120- 277	LE, TE	Dip Switch	75	85	P2-Can
NEW! XI055C130V042RNP1	55	1.0/1.1/ 1.2/1.3	20 - 42	Class 2/P	120- 277	LE, TE	Dip Switch	75	85	P2-Can
XI013C036V054DNM1	13	0.1 - 0.36	27 - 54	Class 2/P	120 - 277	0-10V	AOC (Rset), MTP, SREC, 1% Dimming	80	90	M1 BS-Can
XI025C070V054DSM1	25	0.1 - 0.70	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, SREC, 1% Dimming	80	90	M1 BS-Can
XI025C070V054DSM5	25	0.1 - 0.70	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, SREC, 1% Dimming, Class P	80	90	M1 LD-Can
XI025C100V036DSM1	25	0.1 - 1.0	18 - 36	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, SREC, 1% Dimming	80	90	M1 BS-Can
XI025C100V036DSM5	25	0.1 - 1.0	18 - 36	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, SREC, 1% Dimming	80	90	M1 LD-Can

AOC: Adjustable Output Current
MTP: Module Temperature Protection
SREC: Safety Related Electrical Circuit
FAN: 12V auxiliary voltage to power an active cooling device

Chart continues on next page.

Dimmable (continued)

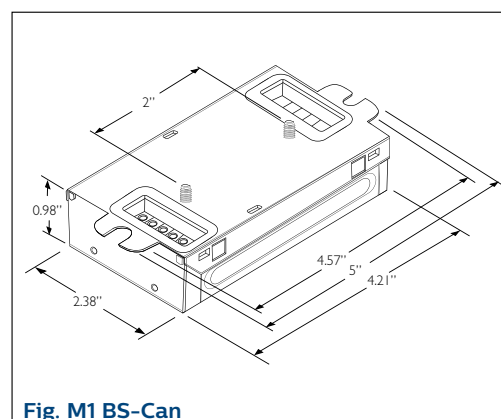
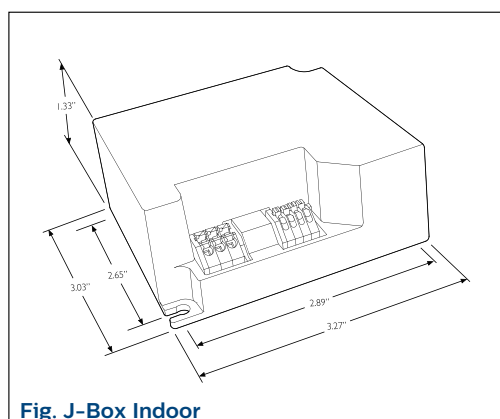
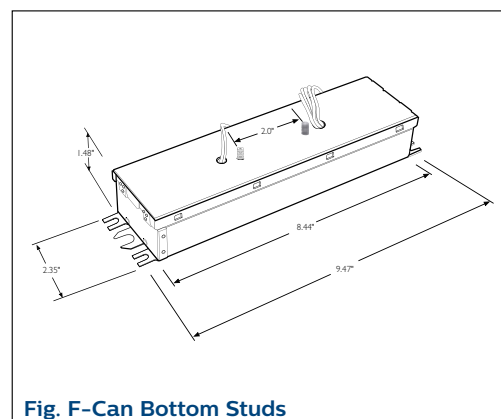
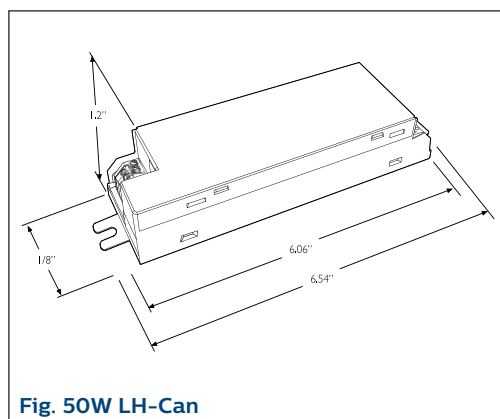
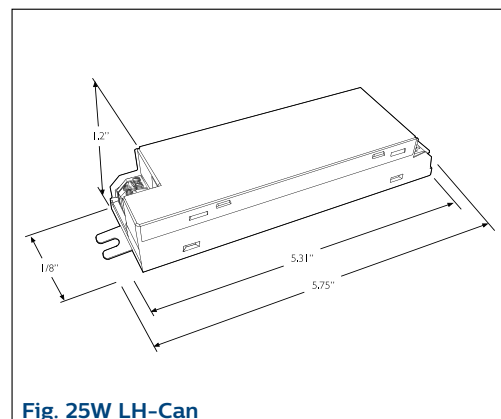
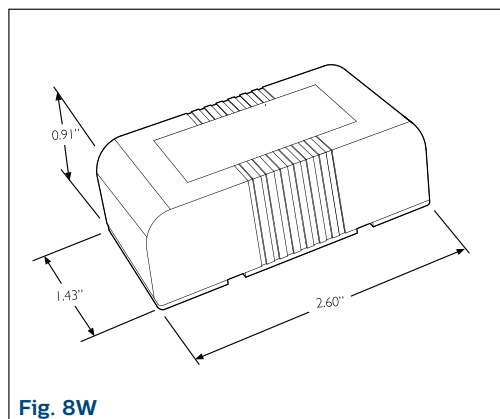
Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2 and Class P	Input Voltage (Vac)		Additional Features	Max Tcase for Warranty (°C)	Max Tcase for UL (°C)	Housing
XI036C100V054DSM1	36	0.1 - 1.0	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, SREC, 1% Dimming	80	90	M1 BS-Can
XI036C100V054DSM5	36	0.1 - 1.0	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, SREC, 1% Dimming	80	90	M1 LD-Can
XI050C140V054DSM1	50	0.1 - 1.4	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, SREC, 1% Dimming	80	90	M5 BS-Can
XI050C140V054DSM5	50	0.1 - 1.4	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, SREC, 1% Dimming	80	90	M5 LD-Can
XI075C200V054DSM1	75	0.007 - 2.0	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, 1% Dim	80	90	M6-BS
XI075C200V054DSM5	75	0.007 - 2.0	27 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet/Rset), MTP, Side entry, 1% Dim	80	90	M6-LD
XI095C275V054DNF5	95	1.0 - 2.75	27 - 54	Class 2	120 - 277	0-10V	AOC (Rset), MTP, 1% Dimming	85	90	F-Can Bottom Stud

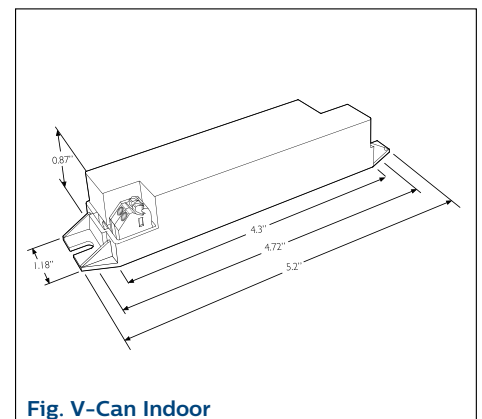
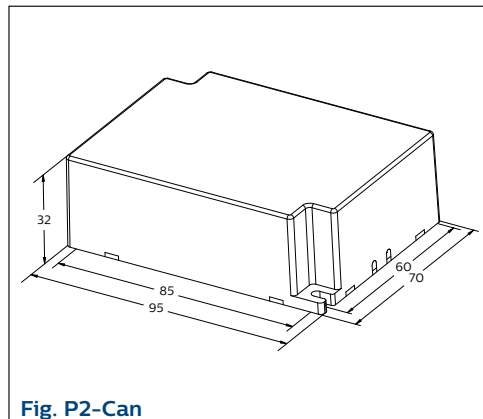
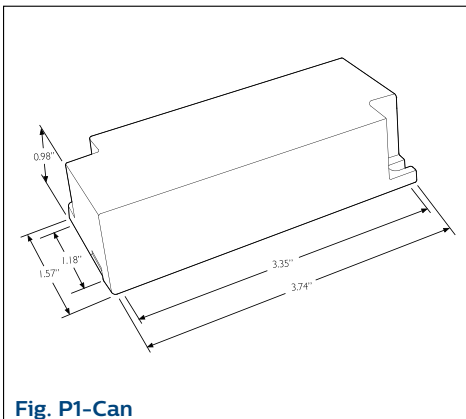
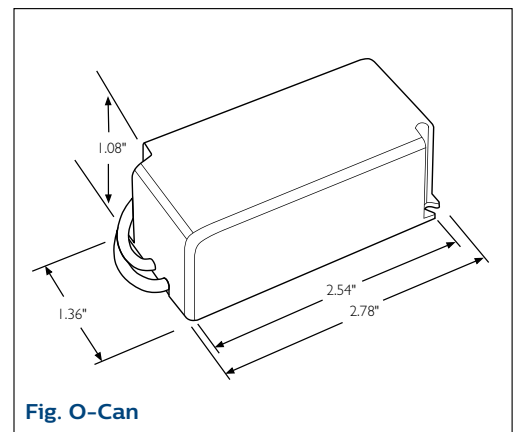
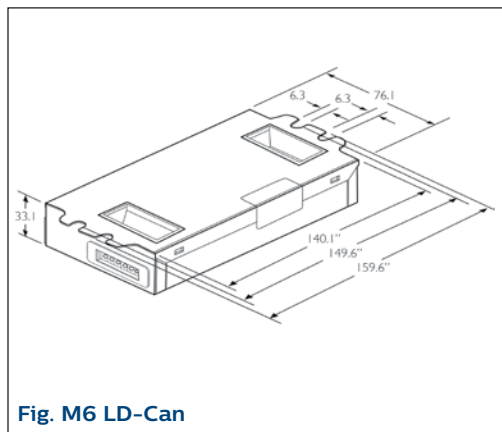
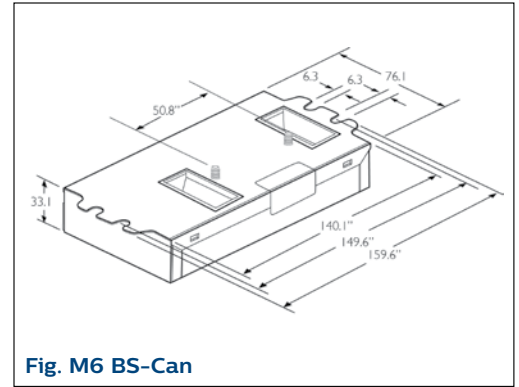
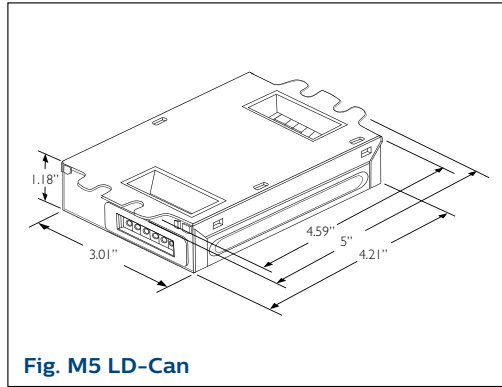
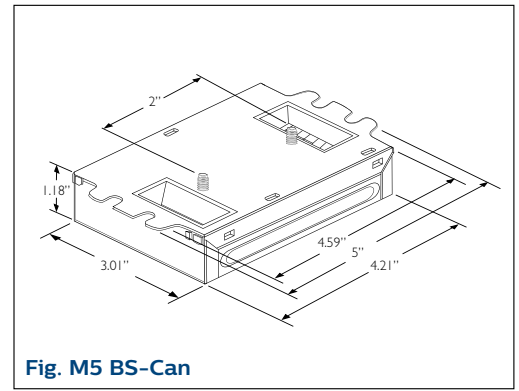
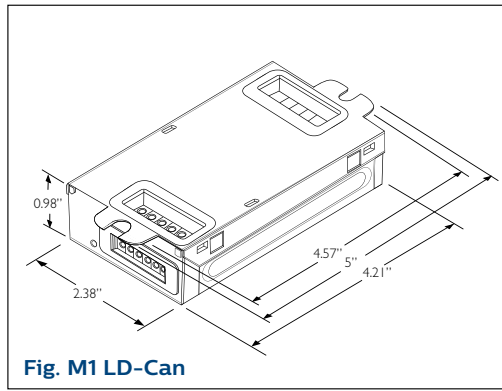
Programmable

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2 and Class P	Input Voltage (Vac)	Dimming	Additional Features	Max Tcase for Warranty (°C)	Max Tcase for UL (°C)	Housing
XI025C100V036XPL1	25	0.3 - 1.0	18 - 36	Class 2	120 - 277	0-10V (120V only), TE (120V only)	AOC, MTP, FAN, PROG, 1% Dimming,	65	75	25W LH-Can
XI050C100V054XPL1	50	0.3 - 1.0	27 - 54	Class 2	120 - 277	0-10V (120V only), TE (120V only)	AOC, MTP, FAN, PROG, 1% Dimming,	75	75	50W LH-Can

AOC: Adjustable Output Current
MTP: Module Temperature Protection
FAN: 12V auxiliary voltage to power an active cooling device
PROG: Programmable, includes Constant Light Output (CLO)
SREC: UL Safety Related Electronic Circuit

Xitanium downlight LED driver dimensions





Xitanium outdoor LED drivers

Benefits

- Adjustable output current
- Wide operating windows
- UL Class 1 or Class 2
- Input voltage range of 120-277V or 347-480V
- Surge protection
- High efficiency
- High reliability
- Class P on certain models

Applications

- Area
- Roadway
- Parking garage
- Gas station canopy
- Wallpacks
- Floodlights

Philips Advance Xitanium LED drivers for outdoor applications are available in wattages up to 300W for hard-wired integration into outdoor luminaires for rugged applications. They operate to specification under wide temperature and electrical ranges to help ensure reliability. Visit www.philips.com/leddrivers for more information.

Philips Advance Xitanium LED drivers for outdoor applications are available in four types:

Fixed output

Fixed output LED drivers set the standard for reliability and performance needed for outdoor lighting.

Dimmable

These 0-10V dimming drivers help address the growing demand for controllability and flexibility, allowing the lighting system to be used with various controls to maximize energy savings. Philips SimpleSet technology enables easy, basic programming of current levels and dimming curves, allowing a few SKUs to cover a wide range of applications.

Programmable

Programmable LED drivers provide a feature set managed through a programmable interface. This allows the OEM to create a fixture portfolio to meet specific needs for a wide range of applications, using a minimum number SKUs to reduce complexity and simplify logistics.

SR

Xitanium SR LED drivers share the same form-factor as the non-SR drivers for simple, hassle-free integration into luminaires. These versatile drivers provide power metering and DC power to the sensor over the DALI 2.0 open standard digital interface.



Xitanium outdoor LED drivers

Fixed Output

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2 and Class P	Input Voltage (Vac)	Max T _{case} for Warranty (°C)	Max T _{case} for UL (°C)	Housing
LED120A0350C28FO	10	0.35	2.8 - 28	Class 2	120	80	90	V-Can
LED120A0012V10F	12	1.00	12	Class 2	120	80	90	V-Can
LED120A0700C24FO	17	0.70	2.8 - 24	Class 2	120	80	90	V-Can
LED120A0700C28FO	20	0.70	2.8 - 28	Class 2	120	80	90	V-Can
LED277A0700C28FO	20	0.70	2.8 - 28	Class 2	277	80	90	V-Can
LED120A0024V14FO	34	1.40	2.8 - 24	Class 2	120	80	90	J-Box
LED120A0024V18FO	40	1.75	2.8 - 24	Class 2	120	80	85	J-Box
LEDINTA0024V20FLO	48	0.10 - 2.0	24	Class 2	120 - 277	75	85	F-Can Bump
LEDINTA0024V22FO	53	2.20	24	Class 2	120 - 277	80	90	S-Can
LED120A0012V50F	60	0.8 - 5.0	12	Class 2	120	80	90	S-Can
LEDINTA0012V50FO	60	0.10 - 5.0	12	Class 2	120 - 277	80	90	S-Can
LEDINTA0024V28FO	67	0.10 - 2.8	24	Class 2	120 - 277	80	90	S-Can
NEW! XI072C300V024CNS1	72	3	12 - 24	Class 2/P	120- 277	85	85	S-Can
NEW! XI077C320V024FNS1	77	3.2	12 - 24	Class 2/P	120- 277	85	85	S-Can
LED120A0024V33F	80	0.8 - 3.3	24	Class 2	120	80	85	S-Can
LEDINTA700C140F30	100		60 - 140	No	120 - 277	75	80	F-Can Bump
XI100C230V042FNS1	100	2.30	21 - 42	Class 2	120 - 277	80	90	S-Can
XI100C410V024FNS1	100	0.4 - 4.1	12 - 24	Class 2/P	120 - 277	85	85	S-Can
LEDHCNA0024V41FLO	100	4.16	3.5 - 24	Class 2	347 - 480	75	85	F-Can Bump
LEDINTA0350C425FO	150	0.35	120 - 425	No	120 - 277	80	80	F-Can Bump
LEDHCNA0350C425FO	150	0.35	120 - 425	No	347 - 480	80	80	F-Can Bump
LEDINTA0700C210FO	150	0.70	60 - 210	No	120 - 277	80	80	F-Can Bump
XH150C070V210FNF1	150	0.70	60 - 210	No	347 - 480	80	80	F-Can Gen 2

Dimmable

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2 and Class P	Input Voltage (Vac)	Dimming	Additional Features	Max T _{case} for Warranty (°C)	Max T _{case} for UL (°C)	Housing
LED120A0700C28DO	20	0.70	10 - 28	Class 2	120	0-10V		80	90	V-Can
LED277A0700C30DO	21	0.70	15 - 30	Class 2	277	0-10V		80	90	V-Can
XI040C070V056CNJ1	40	0.70	12 - 54	Class 2	120 - 277	0-10V		75	80	J-Can
XI040C105V042CNJ1	40	1.05	14 - 42	Class 2	120 - 277	0-10V		80	80	J-Can
XI040C120V035CNJ1	40	1.20	12 - 36	Class 2	120 - 277	0-10V		80	80	J-Can
LEDINTA0024V20DLO	48	2.00	24	Class 2	120 - 277	0-10V		75	85	F-Can Bump
NEW! XI055C180V054BSJ1	55	0.1 - 1.8	18 - 54	Class 2/P	120 - 277	0-10V	6kV Surge, AOC (SimpleSet)	85	90	J-Can
XI063C150V042CNS1	63	1.50	21 - 42	Class 2	120 - 277	0-10V		80	90	S-Can
LEDINTA0024V30DLO	72	3.00	24	Class 2	120 - 277	0-10V		75	85	F-Can Bump
XI075C070V105CNY2	75	0.70	43 - 107	No	120 - 277	0-10V		80	80	Y-Can Gen 2
929000708003	75	0.10 - 0.70	54 - 107	No	120 - 277	0-10V	AOC (Rset), MTP	80	80	Y-Can
XI075C105V070CNY2	75	1.05	32 - 72	No	120 - 277	0-10V		80	80	Y-Can Gen 2
XH075C105V070CNF1	75	1.05	24 - 71	No	347 - 480	0-10V		80	80	F-Can Gen 2
XI075C150V050CNY1	75	1.50	25 - 50	No	120 - 277	0-10V		80	80	Y-Can Gen 2
XI076C180V042CNS1	76	1.80	21 - 42	Class 2	120 - 277	0-10V		80	90	S-Can
XI080V070V054CNH1	80	0.70	27 - 54	Class 2	120 - 277	0-10V	Dual Channel	80	80	H-Can
XI095C275V054BSS1	95	0.1 - 2.75	20 - 54	Class 2/P	120 - 277	0-10V	AOC (SimpleSet)	85	90	S-Can
XH095C275V054BSF1	95	0.1 - 2.75	20 - 54	Class 2/P	347 - 480	0-10V	AOC (SimpleSet)	85	90	F-Can
XI095C275V054BSF1	95	0.1 - 2.75	20 - 54	Class2/P	120 - 277	0-10V	AOC (SimpleSet), 6kV Surge	85	90	F-Can Chassis Mount
XI100C110V143BSY1	100	0.1 - 1.10	48 - 143	No	120 - 277	0-10V	AOC (SimpleSet), 6kV Surge	85	85	Y-Can Gen 2
NEW! XI100C150V091BSY1	100	0.1-1.5	30- 91	Class P	120-277	0-10	AOC SimpleSet, 6kV Surge	85	85	Y- Can Gen 2
NEW! XH100C150V091BSY1	100	0.1-1.5	30- 91	Class P	347-480	0-10	AOC SimpleSet, 6kV Surge	85	85	Y- Can Gen 2
NEW! XH100C110V143BSY1	100	0.1-1.1	48-143	Class P	347-480	0-10	AOC SimpleSet, 6kV Surge	85	85	Y- Can Gen 2
XI100C150V038CNH1	100	1.50	20 - 36	Class 2	120 - 277	0-10V	Dual Channel	80	80	H-Can
XI100C230V042CNS1	100	2.30	21 - 42	Class 2	120 - 277	0-10V		80	90	S-Can
XI100C410V024CNS1	100	0.4 - 4.1	12 - 24	Class 2/P	120 - 277	0-10V	4kV Surge	85	85	S-Can

Dimmable (continued)

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/CSA Class 2 and Class P	Input Voltage (Vac)	Dimming	Additional Features	Max Tcase for Warranty (°C)	Max Tcase for UL (°C)	Housing
LEDHCNA0024V41DLO	100	4.10	15 - 24	Class 2	347 - 480	0-10V		75	85	F-Can Bump
LEDINTA0350C425DO	150	0.35	120 - 425	No	120 - 277	0-10V	6kV Surge	80	80	F-Can Bump
LEDHCNA0350C425DN	150	0.35	120 - 425	No	347 - 480	0-10V	6kV Surge	80	80	F-Can Bump
LEDINTA0530C280DO	150	0.53	120 - 280	No	120 - 277	0-10V	6kV Surge	80	80	F-Can Bump
XH150C053V280CNF1	150	0.53	120 - 280	No	347 - 480	0-10V	6kV Surge	80	80	F-Can Gen 2
LEDINTA0700C210DO	150	0.70	60 - 210	No	120 - 277	0-10V		80	80	F-Can Bump
XH150C070V210CNF1	150	0.70	60 - 210	No	347 - 480	0-10V	6kV Surge	80	80	F-Can Gen 2
XI150C105V140CNF1	150	1.05	44 - 140	No	120 - 277	0-10V	6kV Surge	80	80	F-Can Gen 2
XH150C105V140CNF1	150	1.05	47 - 142	No	347 - 480	0-10V	6kV Surge	80	80	F-Can Gen 2
XI150C150V100CNF1	150	1.50	30 - 100	No	120 - 277	0-10V	6kV Surge	80	80	F-Can Gen 2
XI180C090V285BSF1	180	0.1 - 0.90	100 - 285	No	120 - 277	0-10V	0-10V, AOC (SimpleSet), 6kV Surge, Class P	85	90	F-Can Gen 2
NEW! XI180C125V200PSF1	180	0.1-1.25	70-210	Class P	120-277	0-10	AOC SimpleSet, 6kV Surge, Aux Power supply for basic devices	85	85	F-Can Gen 2
NEW! XH180C125V200PSF1	180	0.1-1.25	70-210	Class P	347-480	0-10	AOC SimpleSet, 6kV Surge, Aux Power supply for basic devices	85	85	F-Can Gen 2
XH180C090V285BSF1	180	0.1 - 0.90	100 - 285	No	347 - 480	0-10V	0-10V, AOC (SimpleSet), 6kV Surge, Class P	85	90	F-Can Gen 2
XI180C125V200BSF1	180	0.1 - 1.25	70 - 210	No	120 - 277	0-10V	0-10V, AOC (SimpleSet), 6kV Surge, Class P	85	90	F-Can Gen 2
XH180C125V200BSF1	180	0.1 - 1.25	70 - 210	No	347 - 480	0-10V	0-10V, AOC (SimpleSet), 6kV Surge, Class P	85	90	F-Can Gen 2
XI180C180V144BSF1	180	0.1 - 1.80	50 - 144	No	120 - 277	0-10V	0-10V, AOC (SimpleSet), 6kV Surge, Class P	85	90	F-Can Gen 2
XH180C180V144BSF1	180	0.1 - 1.80	50 - 144	No	347 - 480	0-10V	0-10V, AOC (SimpleSet), 6kV Surge, Class P	85	90	F-Can Gen 2
NEW! XI220C105V210CNA1	220	1.05	105-210	Class P	120-277	0-10	6kV Surge	85	85	A-Can
NEW! XH220C105V210CNA1	220	1.05	105-210	Class P	347-480	0-10	6kV Surge	85	85	A-Can
XI300C150V300BSR1	300	0.10 - 1.50	100 - 300	No	120 - 277	0-10V	AOC (SimpleSet)	85	85	R-Can
XH300C150V300BSR1	300	0.10 - 1.50	100 - 300	Class P	347-4 80	0-10V	AOC (SimpleSet), 6kV Surge	85	85	R-Can

AOC: Adjustable Output Current
MTP: Module Temperature Protection

Programmable

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/ CSA Class 2	Input Voltage (Vac)	Dimming	Additional Features	Max Tcase for Warranty (°C)	Max Tcase for UL (°C)	Housing
929000710303	40	0.10 - 0.53	38 - 76	No	120 - 277	0-10V, DALI	AOC, MTP, PROG+	80	80	J-Can
929000708803	40	0.10 - 0.70	29 - 57	Yes	120 - 277	0-10V, DALI	AOC, MTP, PROG+	80	80	J-Can
929000702302	75	0.35 - 0.70	80 - 152	No	120 - 277	0-10V, DALI	AOC, MTP, PROG	80	80	F-Can Flat
929000710103	75	0.10 - 0.70	54 - 107	No	120 - 277	0-10V, DALI	AOC, MTP, PROG+	75	80	Z-Can
929000708903	75	0.10 - 1.05	36 - 75	No	120 - 277	0-10V, DALI	AOC, MTP, PROG+	80	80	F-Can Flat
929000710403	100	0.10 - 0.53	94 - 189	No	120 - 277	0-10V, DALI	AOC, MTP, PROG+	75	80	Z-Can
929000708703	100	0.10 - 0.70	71 - 143	No	120 - 277	0-10V, DALI	AOC, MTP, PROG+	75	80	Z-Can
929000702202	150	0.35 - 0.70	125 - 280	No	120 - 277	0-10V, DALI	AOC, MTP, PROG	80	80	F-Can Flat
929000709003	150	0.10 - 1.05	70 - 148	No	120 - 277	0-10V, DALI	AOC, MTP, PROG+	80	80	F-Can Flat
929000712703	300	0.10 - 1.50	80 - 280	No	120 - 277	0-10V, DALI	AOC, MTP, PROG+	75	80	R-Can

SR

Catalog Number	Max Output Power (W)	Output Current (A _{dc})	Output Voltage (V _{dc})	UL/ CSA Class 2	Input Voltage (Vac)	Dimming	Additional Features	Max Tcase for Warranty (°C)	Max Tcase for UL (°C)	Housing
NEW! XI075C070V118VSY1	75	0.07 - 0.70	43-118	No	120-277	SR	AOC (SimpleSet), 6kV surge, AUX, LSI, Class P	80	80	Y-Can Gen 2
NEW! XI075C105V079VSY1	75	0.105 - 1.05	32-79	No	120-277	SR	AOC (SimpleSet), 6kV surge, AUX, LSI, Class P	80	80	Y-Can Gen 2
NEW! XI095C275V054VPPF1	95	0.10 - 2.75	20-54	Yes	120-277	SR	AOC (SimpleSet), 6kV surge, Class P	85	90	F-Can Gen 2
NEW! XI095C275V054VVSF1	95	0.10 - 2.75	20-54	Yes	120-277	SR	AOC (SimpleSet), 6kV surge, AUX, LSI, Class P	85	90	F-Can Gen 2
XI150C070V235VVSF1	150	0.07 - 0.70	78-235	No	120-277	SR	AOC (SimpleSet), 6kV Surge, AUX, LSI	80	80	F-Can Gen 2
XI150C105V157VVSF1	150	0.105 - 1.05	44-157	No	120-277	SR	AOC (SimpleSet), 6kV Surge, AUX, LSI	80	80	F-Can Gen 2

AOC: Adjustable Output Current
 MTP: Module Temperature Protection
 AUX: Auxiliary Power Supply
 LSI: Logic Signal Input
 PROG: Programmable, includes DALI, Dimmer, Constant Light Output (CLO), Adjustable Startup Time (AST), Over The Life (OTL)
 PROG+: All the above + AMP DIM

Xitanium outdoor LED driver dimensions

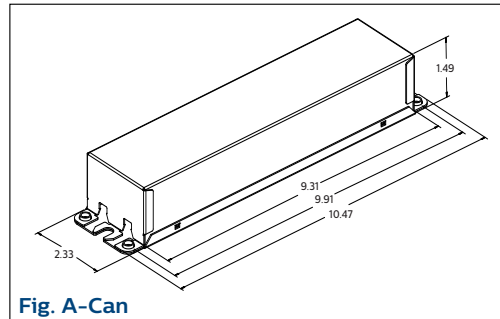


Fig. A-Can

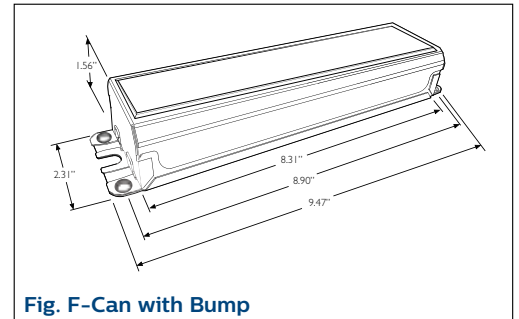


Fig. F-Can with Bump

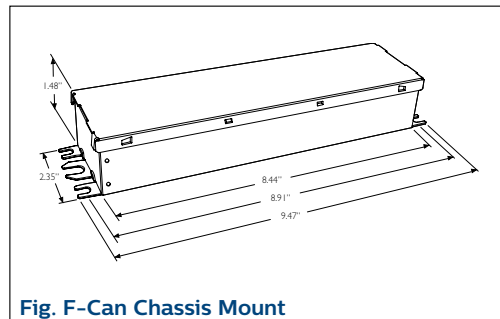


Fig. F-Can Chassis Mount

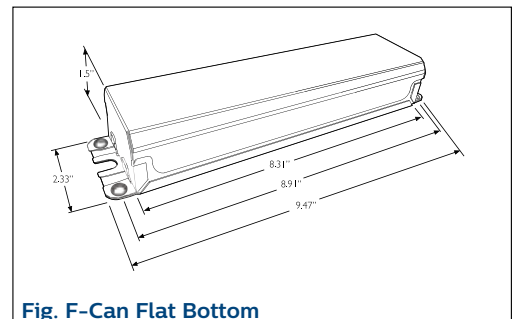


Fig. F-Can Flat Bottom

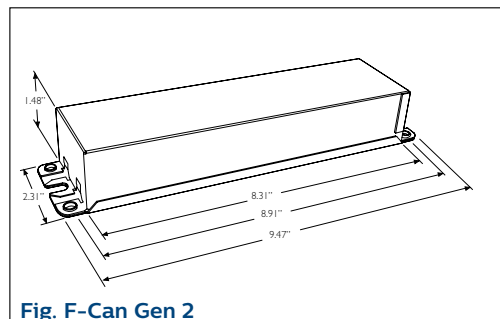


Fig. F-Can Gen 2

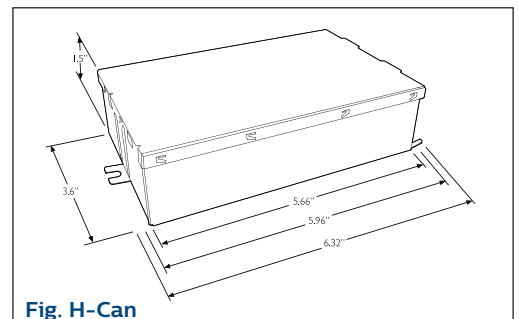


Fig. H-Can

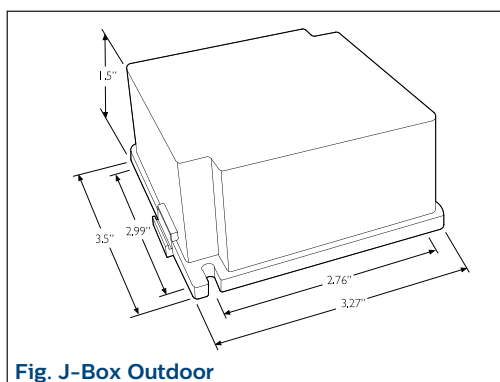


Fig. J-Box Outdoor

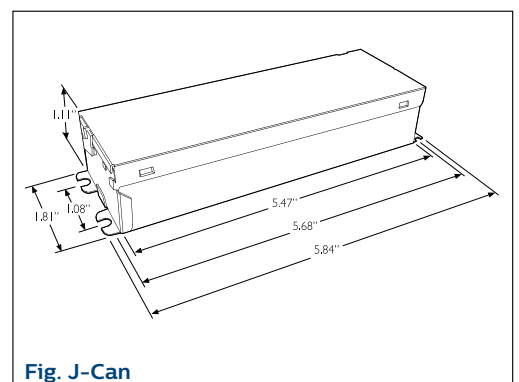


Fig. J-Can

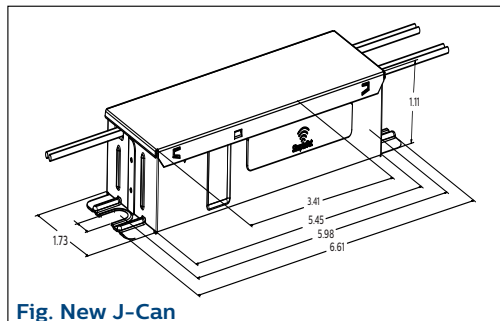


Fig. New J-Can

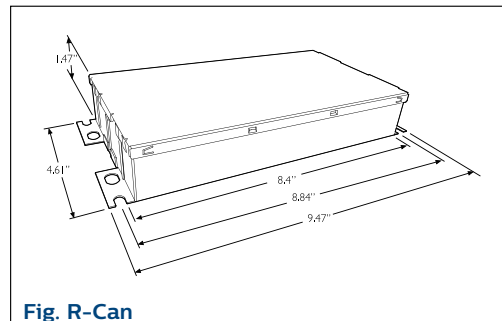


Fig. R-Can

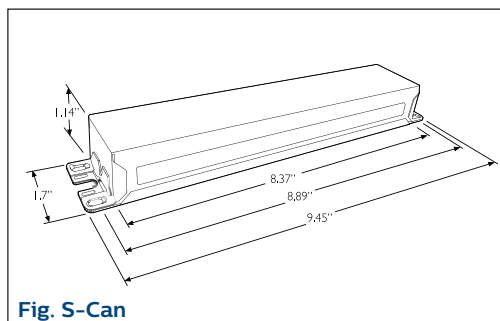


Fig. S-Can

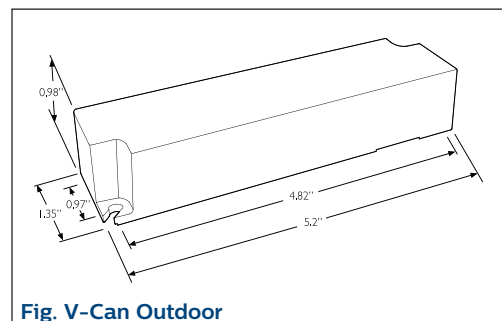


Fig. V-Can Outdoor

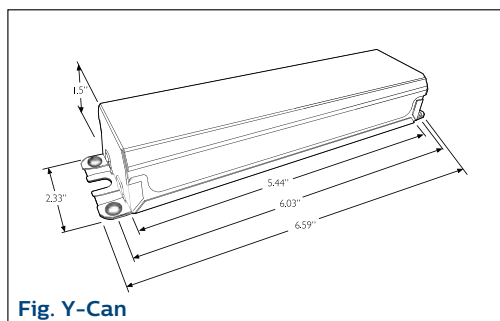


Fig. Y-Can

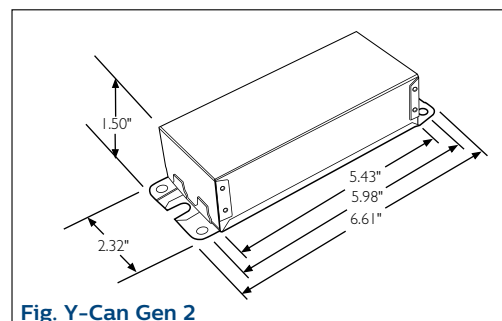


Fig. Y-Can Gen 2

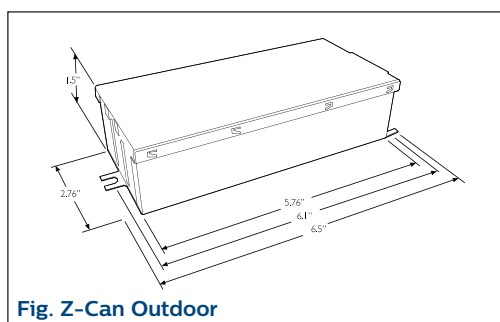


Fig. Z-Can Outdoor

Xitanium SR bridge

Expanding SR (Sensor Ready) to any application

The Philips Advance Xitanium SR bridges are designed to expand the flexibility and application of the SR protocol with SR-certified components. These models enable use of SR with the full range of Philips Advance Xitanium 0-10V dimming drivers. Primary use cases are:

- For use with multiple 0-10V drivers where managing fixtures as a group is desired or where per-fixture control is not practical. In such application, the SR bridge aggregates all drivers and controls/monitors as one group.
- For use in combination with 0-10V drivers where SR-specific models are not available. This makes deployment of SR practical for any niche application where a 0-10V dimming driver is available.



Bottom Entry



End Entry

Specifications

Input Voltage (Vac)	Max. Power (VA)	Max. Current (A)	Max. Losses (W)	Max. Case Temp (°C)	Surge Protection Common/Diff (KV)
120	730	6.1	1.0	70	2.5
208	1270	6.1			
240	1270	5.3			
277	1270	4.6			
347	1280	3.7			

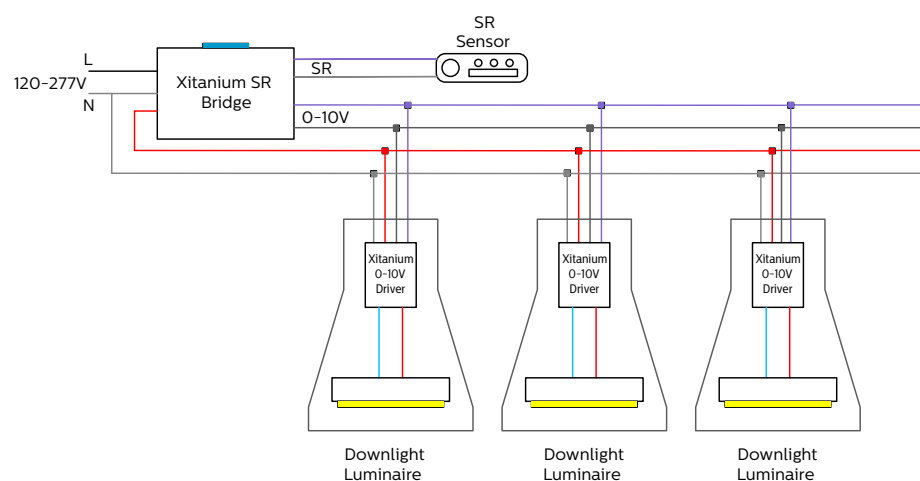
Models

SRB-LD	SR Bridge with side entry
SRB-BS	SR Bridge with bottom entry

Number of Drivers Per Bridge

The SR bridge is compatible with Philips Advance Xitanium drivers (0-10V dimming) having published output power ratings shown below.

Driver		Input Voltage	# Drivers
Downlight	13W	120	32
		277	40
	25W	120	17
		277	30
	36W	120	12
		277	22
	50W	120	8
		277	15
	75W	120	5
		277	10
Linear	20W	120	20
		277	36
		347	36
	40W	120	11
		277	19
		347	19
	54W	120	8
		277	14
		347	15
	75W	120	5
		277	10
		347	10
	95W	120	4
		277	8
		347	8



Catalog number explanation

Prior to January 2011

LED	INT	A	C035	V	425	DN	M
							Packaging: M=Midpack
							Fixed or Dimming: FO=Fixed DO=Dimming (0-10V) Isolated DN=Dimming (0-10V) NON-Isolated
							DL=Dimming (0-10V) NON-Isolated in F-can F3=Tritap FL=Fixed in F-can
							Max Voltage or Max Current: 210=210V 24=24V 30=3.0A 425=425V 07=0.7A 32=3.2A 140=140V 21=2.1A 41=4.1A 280=280V 14=1.4A 24=24V 80=80V 20=2.0A 60=60V 33=3.3A 22=2.2A 80=80V 28=2.8A 36=36V 18=1.8A 10=1.0A 50=5.0A
							Constant Current or Constant Voltage: C= Constant Current V= Constant Voltage
							Max Current or Max Voltage: 0350=350mA 1050=1.05A 0036=36V 0400=400mA 2000=2.0A 0520=520mA 0530=530mA 0024=24V 1000=1.0A 0700=700mA 0012=12V 1600=1.6A
							Input Voltage: A=AC Voltage D=DC Voltage
							Input Voltage: INT=120 - 277V UNI=120 - 240V 120=120V HCN=347-480V 277=277V
General: LED= Xitanium LED Driver							

After January 2011

X	I	075	C070	V105	C	N	Y	1	M
									Packaging: M=Midpack
									Version Control: 1=Version 1, 2=Version 2, ...
									Enclosure Designation
									Features: P=Programming S=SimpleSet N=Non-Programming
									Fixed or Dimming: B=0-10V, AOC R=Leading Edge & Trailing Edge Dimming C=0-10V S=Step Dim D=0-10V, AOC, MTP V=Sensor Ready F=Fixed X=0-10V, AOC, MTP, CLO (linear) K=DALI, 0-10V, MTP X=TE, 0-10V, AOC, MTP, FAN (downlight) M=DALI, 0-10V, AOC, MTP Y=DALI, AOC, MTP, CLO P=Aux Power Supply
									Max Voltage: Examples: 012=12V, 054=54V, 280=280V
									Max Current: Examples: 035=350mA, 070=700mA, 053=530mA, 105=1050mA
									Max Power: Examples: 025=25W, 060=60W, 300=300W
									Input Voltage: I=120-277V G=347V R=120V H=347-480V V=277V

General:
 X= Xitanium LED Driver, C=CertaDrive

Date codes

Most date codes are stamped on the back of the driver (opposite the label side). The date code is part of a larger group of numbers and letters that call out the various codes for the factory where the driver was manufactured. Depending upon which Philips Lighting factory manufactured the driver, the date stamp can vary slightly in terms of its position on the driver and the number sequence.

For plastic case drivers the date code will appear as a label.

693POMMA
 53301707

The date code is the 5th day of the 33rd week of 2001 stamped on the back of the ballast.

06127M50
 F2104571

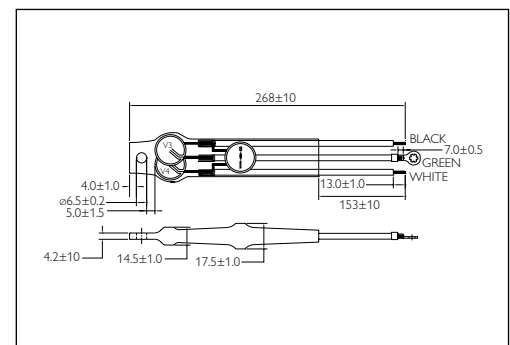
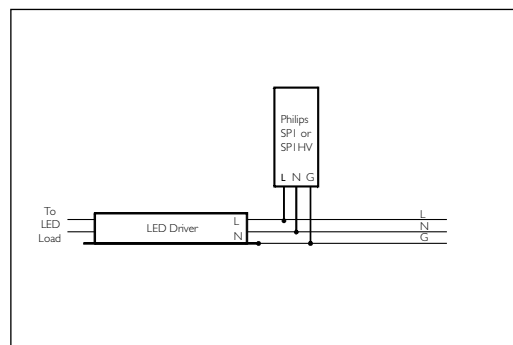
The date code is the 127th day of 2006 stamped on the back of the ballast.

SP1 surge protection device



Adapted to SSL outdoor lighting, the Philips SP1 surge protection device provides single phase protection for line/neutral, line/ground and neutral/ground in accordance with IEEE C62.41 2002 C Low. The SP1's small size corresponds to the current design requirements for the new technology luminaires, like an LED light engine in outdoor lighting.

Catalog	SP1
Voltage Input	120V-277V (+/- 10%)
Frequency	50Hz-60Hz
Maximum Continuous RMS Voltage AC	320V
Maximum Energy	430 Joules
Maximum Peak Current (single pulse)	10kA (8/20 μ s standard wave)
Wiring	14 Gauges stranded wires, 105°C, 600V
Wire Connections	Black and white: 12mm skinned and thin plated Green: 12mm skinned with terminal malt
Mounting Hole	5.5mm
Ambient Temperature (operating)	-55°C to 85°C



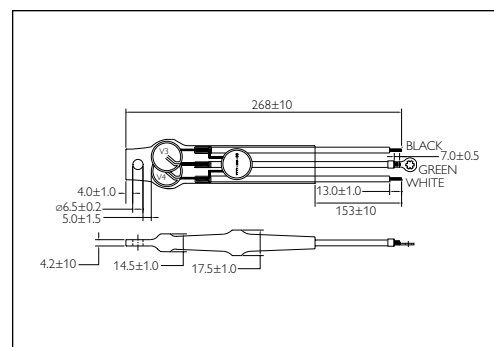
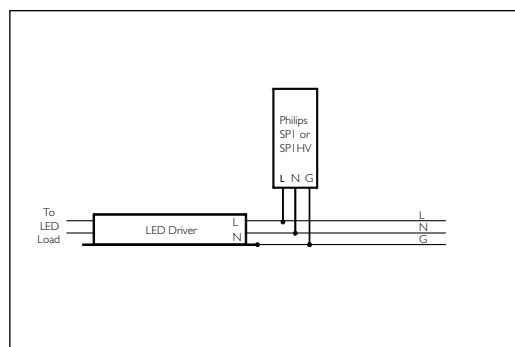
In order to protect the surrounding environment, this surge protection device must be enclosed in a luminaire that can contain flames and sparks, which may occur in case of malfunction, such as overvoltage power connection (ex: 600V).

SP1HV surge protection device



Adapted to SSL outdoor lighting, the Philips SP1HV surge protection device provides single phase protection for line/neutral, line/ground and neutral/ground in accordance with IEEE C62.41 2002 C Low. The SP1HV's small size corresponds to the current design requirements for the new technology luminaires, like an LED light engine in outdoor lighting.

Catalog	SP1HV
Voltage Input	347V-480V (+/- 10%)
Frequency	50Hz-60Hz
Maximum Continuous RMS Voltage AC	520V
Maximum Clamping Voltage (8/20 μ s)	1500V
Maximum Energy	570 Joules
Maximum Peak Current (single pulse)	10kA (8/20 μ s standard wave)
Wiring	14 Gauges stranded wires, 105°C, 600V
Wire Connections	Black and white: 12mm skinned and thin platted Green: 12mm skinned with terminal malt Mounting hole: 6.5mm
Ambient Temperature (operating)	-55°C to 85°C



In order to protect the surrounding environment, this surge protection device must be enclosed in a luminaire that can contain flames and sparks, which may occur in case of malfunction, such as overvoltage power connection (ex: 600V).

MultiOne configuration system

Benefits

- One software tool for all the Philips programmable LED drivers
- Provides a simple user interface with easy access to the features supported by Philips programmable LED drivers

A unified easy-to-use programming tool box that configures various features in multiple lighting solutions

The MultiOne Configurator enables the end-user to easily configure and commission Philips programmable LED drivers and controls. For a full list of supported products please go to www.philips.com/multione. The MultiOne Configurator consists of two key building blocks:

- **The MultiOne configuration module** – a hardware component which connects to a PC via USB connection. It provides communication between the driver or controls and MultiOne software.
- **The MultiOne software** – available in two versions, Workflow (streamlined version designed for the manufacturing/production environment) and Engineering (full feature set version designed for the engineering environment).

The MultiOne software can be downloaded www.philips.com/multione.



DALI MultiOne configurator module



SimpleSet MultiOne configurator module



MultiOne Engineering



MultiOne WorkFlow



Philips **Sensors**

Philips EasySense fixture-mount sensor



Until now, it hasn't been simple or cost-effective to add sensors to luminaires in order to maximize energy-saving goals, meet strict code requirements or to address advanced smart lighting use cases. Traditional built-in lighting sensor design uses a bulky two-box system that is expensive and cumbersome to design-in and install. And remote mounted ceiling sensors are usually unsightly and require extra wiring.

On the other hand, the Philips EasySense fixture-mount sensor, with its single-box design and small form factor, is a cost-effective and flexible solution to integrate occupancy sensing and daylight harvesting into whichever luminaires you would like in a room.

Whether your application calls for simple per-fixture control, extended room-level control, or a fully networked lighting system, EasySense provides a full range of solutions to meet your near-term energy-saving requirements and code-compliance as well as unanticipated smart lighting use cases in the long-term.

- SNS102 for Basic Grouping
- SNS200 for Advanced Grouping
- SNS300 for Networks



EasySense and OEMs

Increase speed to market

Incorporate Philips EasySense fixture-mount sensors as part of a standard fixture portfolio while saving design time and money:

- Compatibility with Philips Advance Xitanium SR LED drivers eliminates the need for auxiliary devices and alleviates time-consuming configuration issues
- Simple two-wire connection from driver to sensor reduces design-in complexity and additional components that add to overall costs
- Streamlined process allows products to be brought to market quickly

EasySense and specifiers

Increase project efficiency

Specify Philips EasySense fixture-mount sensors as part of energy-saving and code-compliance strategies without hindering project time or aesthetics:

- Single-box format reduces installation time and eliminates the need to wire sensors outside the fixture in the ceiling, so projects can be completed quickly and with reduced chance of errors
- Integrated sensors blend within the luminaire, leaving the ceiling uncluttered

SNS102 for basic grouping

- Combined occupancy sensing, daylight harvesting and task tuning
- Per-fixture control and grouping to wireless switches
- Auto-off/manual-on (vacancy sensing) and auto-off/partial-on
- Common pre-sets; works out of the box
- Android app-based configuring and grouping

SNS200 for advanced grouping

- All the features of SNS102
- Scene setting – Create presentation mode for a conference room, e.g., set light levels low near the screen while keeping higher levels in the back of the room
- Occupancy sharing – Program peripheral fixtures to stay at task or background level if occupancy is detected elsewhere in the group
- DLC Qualified – Listed in the DLC Qualified Products List (QPL) for Networked Lighting Control (NLC) systems

SNS300 for networks

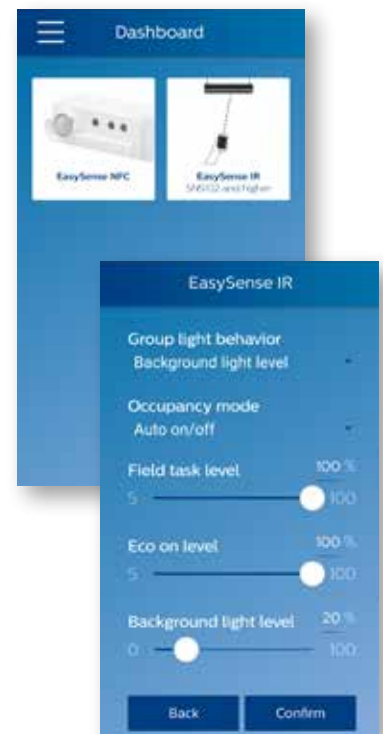
- Centralized lighting control through Zigbee wireless technology
- Compatible with qualified third-party lighting control system or building management system (BMS)
- Provides fixture-specific information for smart lighting uses cases such as energy monitoring, scheduling, and demand response

Convenient smartphone-based app (for SNS102 and SNS200)

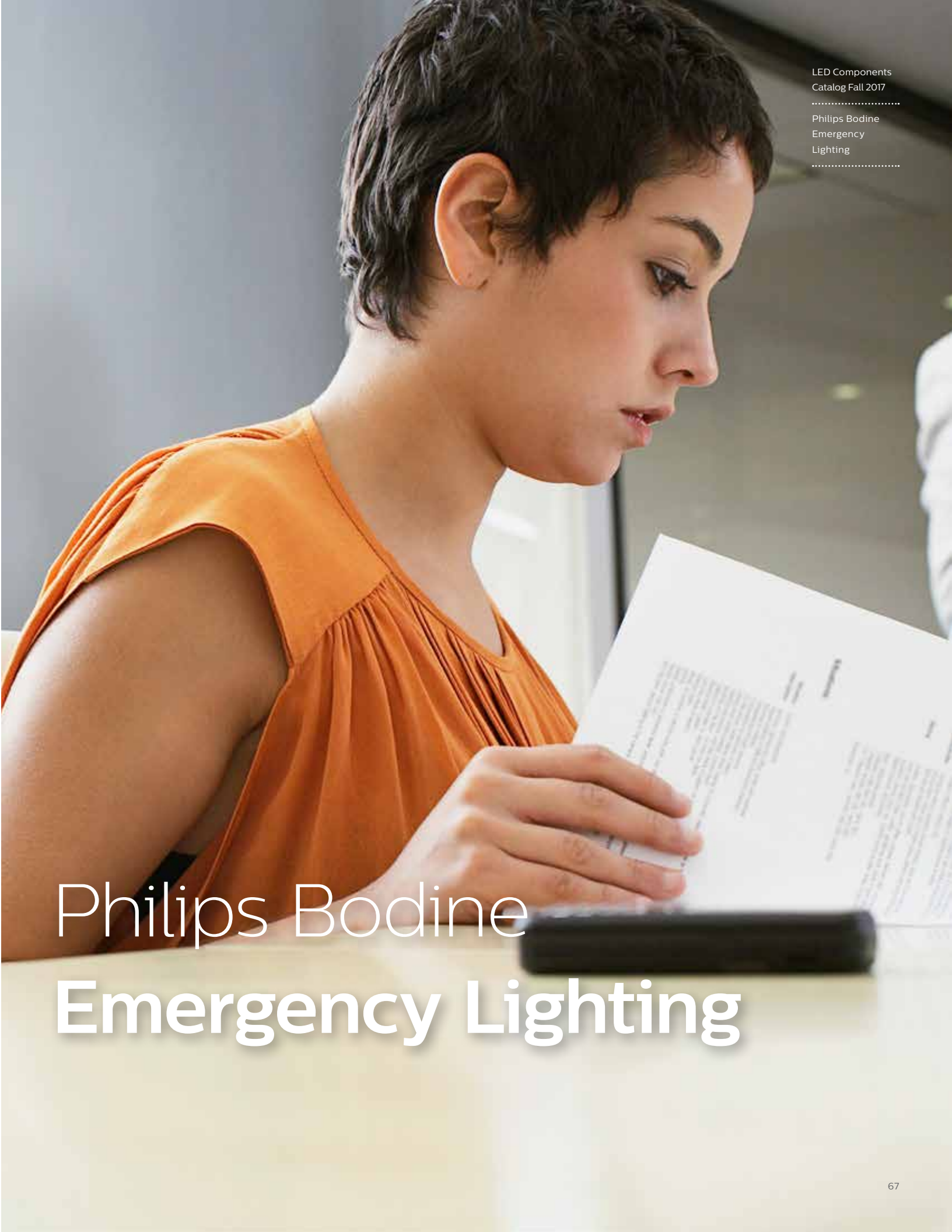
Philips Field Apps (Android-based app available on Google Play) allow programming of occupancy/daylight sensing parameters and fine-tuning of lumen levels during installation. This is easily done through two available features: EasySense NFC (for programming of LED driver during installation when the smart phone can be placed next to the driver) and EasySense IR (for programming of LED driver after installation from floor level). Basic grouping to applicable wireless switches can also be accomplished from floor level through EasySense IR

Examples of the lighting parameters that can be controlled through the Field Apps:

- Occupancy based control (on/off)
- Daylight based control (on/off)
- LED indicator (on/off)
- Occupancy mode: auto-on/off, manual-on/off, or manual-on/auto-off
- Field task level: 5-100%
- Eco-on level: 5-100%
- Background level: 0-100%
- Hold time
- Prolong time
- Grace fading time



To use Philips field apps, register for a username/password at www.philips.com/easysense and download "Philips field apps" from the Google Play Store. An app user manual and compatible phone list are also available at www.philips.com/easysense.



Philips Bodine
Emergency Lighting

Philips Bodine

emergency lighting



Emergency lighting is a vital part of every facility's life safety program. Local, state and national building codes, such as the NFPA® 101® Life Safety Code® and National Electrical Code®, require reliable and sufficient emergency illumination for commercial, industrial and institutional buildings in the United States¹⁴. When normal power fails for any reason, emergency lighting provides critical illumination.

Philips Bodine emergency lighting provides instant backup

Philips Bodine emergency LED drivers and inverters from Philips Emergency Lighting provide instant backup lighting whenever normal power fails. They deliver 90 minutes of battery-supplied power.

Complements original designs

Philips Bodine emergency lighting units complement original lighting designs. Because they can be installed inconspicuously inside, on top of, near or remote from the fixture – depending on factors such as fixture, emergency lighting product and product model – they do not detract from fixture or interior design. Philips Bodine emergency lighting is emergency lighting you'll never see until you need it.



Emergency code

AC power failures occur for a variety of reasons. Storms, tornadoes, hurricanes and other extreme weather conditions can affect AC power. Vehicular accidents, fires or equipment failure can also result in power outages. When this happens, liability concerns are inevitable. Serious accidents or mishaps could occur when occupants are left in total darkness during a power failure. In such instances, the first area of inquiry is often, “Did this building meet code?”

Laws, codes and regulations

Although state and local building codes vary, most are based upon:

1. National Electrical Code®, NFPA 70®, Article 700;
2. Life Safety Code®, NFPA 101®, Section 7.9;
3. Occupational Safety and Health Act (OSHA) regulations.

These codes provide complete information about emergency lighting requirements. However, a basic starting point is provided in the LSC 7.9.2.1 – 7.9.2.1.3 (2015), which states:

7.9.2.1 Emergency illumination shall be provided for a minimum of 1½ hours in the event of failure of normal lighting.

7.9.2.1.1 Emergency lighting facilities shall be arranged to provide initial illumination that is not less than an average of 1 ft-candle (10.8 lux) and, at any point, not less than 0.1 ft-candle (1.1 lux), measured along the path of egress at floor level.

7.9.2.1.2 Illumination levels shall be permitted to decline to not less than an average of 0.6 ft-candle (6.5 lux) and, at any point, not less than 0.06 ft-candle (0.65 lux) at the end of 1½ hours.

7.9.2.1.3 The maximum-to-minimum illumination shall not exceed a ration of 40 to 1.

It is important to remember that codes generally set minimum standards. Specifiers, building owners, facility management or municipalities may choose to go beyond minimums in their effort to keep people and property safe.

Maintenance

Codes mandate periodic monitoring of emergency lighting equipment once it is installed. Emergency operation must be tested monthly for a minimum of 30 seconds, and, for battery-powered systems, a 90-minute discharge test must be conducted once a year. Additionally, the NFPA requires that records be kept as proof of maintenance.¹⁵

Specifiers, building owners or facility management may choose to go beyond minimums in their effort to keep people and property safe.

*See footnotes on page 74.

Emergency LED drivers

The Philips Bodine emergency LED driver line allows LED fixtures to serve as emergency lighting sources. The expanding line includes drivers designed for a variety of applications: indoor, covered outdoor, damp, cold temperatures, steplights, downlights, security lighting, Class 2 installations and more. Recently, combination drivers that provide both AC and emergency operation have been added.

As with other types of lighting, LED lighting must meet life safety code requirements for emergency lighting when it is used in an

emergency capacity. Therefore, LED fixtures serving as emergency lighting sources must provide 90 minutes of illumination in the event of a power failure.

When normal AC power fails, the emergency LED drivers switch into emergency mode and support LED fixtures for 90 minutes. When AC power is restored, the drivers automatically return to the charging mode.



Emergency LED driver product summary

When normal AC power fails, the emergency LED drivers switch into emergency mode and support LED fixtures for 90 minutes.

	Model	Maximum Output Power	Flexible Output Voltage	Features
NEW!	BAC40EM10+	40W AC / 10W [§] EM	22.5-54 VDC	Combination AC and emergency driver; SimpleSet AC output programming
NEW!	BAC40EM6+	40W AC / 6W [§] EM	22.5-54 VDC	Combination AC and emergency driver; SimpleSet AC output programming
NEW!	BSL10LST+‡	10W [§]	15-54VDC	Compact design (16.6" x 1.18" x 1.0"); self-testing
NEW!	BSL6LST+‡	6W [§]	15-54VDC	Compact design (14.1" x 1.18" x 1.0"); self-testing
	BSL10 Cold-Pak+	14.0W [§]	24-52 VDC	Operates in an extended-temperature range of -20°C to +55°C (-4°F to +131°F)
	BSL17C‡	7.0W [§]	30-130 VDC	Multiple mounting/test switch options
	BSL17C-C2+°‡	7.0W [§]	15-50 VDC	Compatible with Philips Fortimo
	BSL17CC2ST+‡	7.0W [§]	15-50 VDC	Compatible with Philips Fortimo; self-testing
	BSL20LV+‡	20.0W [†]	20-50 VDC	High output emergency LED driver; dual flex option available
	BSL20MV‡	20.0W [†]	50-130 VDC	High output emergency LED driver
	BSL20HV‡	20.0W [†]	125-200 VDC	High output emergency LED driver; dual flex option available
	BSL23C	4.5W [*]	3-20 VDC	For lower wattage LED fixtures
	BSL26C	5.1W [*]	3-30 VDC	Multiple mounting/test switch options
	BSL36 Cold-Pak+	6.0W [§]	15-52 VDC	Operates in an extended-temperature range of -20°C to +55°C (-4°F to +131°F)
	BSL310+°‡	10.0W [§]	10-50 VDC	Compatible with LED strips
	BSL310C/C-DF+‡	10.0W [§]	10-50 VDC	Compatible with LED strips
	BSL310LP+‡	10.0W [§]	15-52 VDC	Low-profile emergency LED driver
	BSL310M+‡	10.0W [§]	10-50 VDC	Compatible with LED strips
	BSL310HAZ+‡	10.0W [§]	10-50-VDC	Suitable for hazardous location fixtures; Class I, Division II
	BSL310SB+‡	10.0W [§]	10-50 VDC	Compatible with LED strips; Separate battery design
	BSL718‡	18.0W [†]	20-50 VDC	Operates in an extended-temp range of -20°C to +60°C (-4°F to +140°F); Separate battery design (single & dual battery options)
	BSL722	23.1W [†]	28-33 VDC	Separate battery design; multiple battery configuration options
	BSL722 Cold-Pak	23.1W [†]	28-33 VDC	Separate battery design; Operates in an extended-temp range of -20°C to +60°C (-4°F to +140°F)

* Measured at nominal battery voltage.
 + Output Class 2 compliant.
 ° Multiple case/conduit options available.

§ Controlled.
 † Constant.

‡ CEC Title 20 compliant; includes proprietary charging technology designed for low energy consumption.

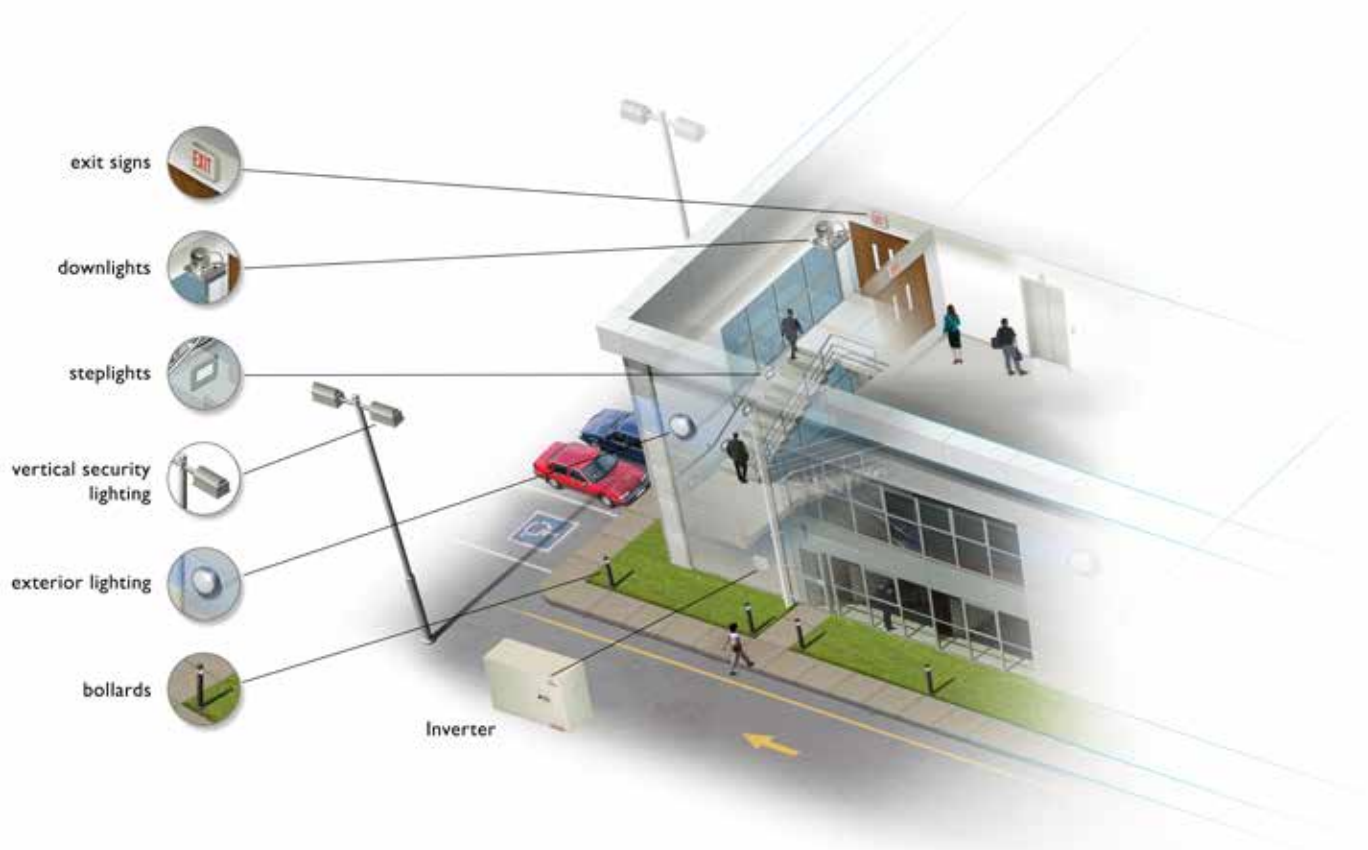
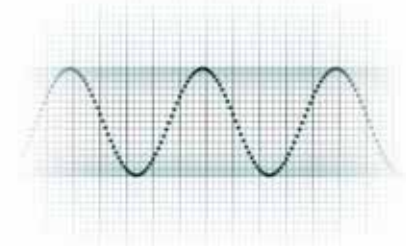
Please see product specification sheets for approbation information.

Inverters for emergency lighting applications

Philips Bodine emergency lighting inverters are sinusoidal (sine wave) units that support LED and fluorescent fixtures during loss of normal AC power. The inverters sense the loss and immediately begin supplying emergency power to the designated lighting load. Philips Bodine inverters support emergency lighting for 90 minutes, in accordance with code-established runtime requirements (NFPA® 101® Life Safety Code®).

When an emergency LED driver cannot be used, line voltage inverters, such as the Philips Bodine ELI-S-20, may be the best solution.

A key feature of Philips Bodine emergency lighting inverters is sinusoidal output. Sinusoidal output is especially important for LED applications and is characterized by low harmonic distortion and by clean power similar to that produced by utility-supplied electricity.



ELI-S-20

emergency lighting inverter

Benefits

- Works with LED and fluorescent fixtures up to 25W
- Supplies 90 minutes of emergency illumination at full brightness
- Provides power to the input side of connected lighting loads
- Ideal for but not limited to screw-base LED lamps
- Compatible with Philips 22W TLED linear LED lamps and most manufacturers' LED lamps²³
- Suitable for indoor, dry and damp applications
- Features fused output load connections
- AC input power rating: 9.5W; output voltage 120/277 VAC (auto select), 60 Hz
- Dimensions: 16.6" x 2.8" x 2.85"
- Remote mounting distance: 250 feet max.
- 5-year limited warranty¹⁶
- UL Listed for 25W / CSA Certified for 20W

The Philips Bodine 25W ELI-S-20 emergency lighting inverter transforms LED and fluorescent fixtures into code-compliant emergency lighting.

It is the ideal emergency backup for the Edison-base (screw-base) LED lamps that are commonly replacing CFLs in retrofit applications and is a superior choice for office, retail, hospitality and other similar spaces.

ELI-S-20 allows fixtures to be on, off, switched or dimmed. It supports 100% of AC rated output throughout its 90-minute runtime so fixtures operate at full brightness during emergency operation. The device provides power to the input side of the fixture, including the ballast, and is designed for use with indoor applications.

The ELI-S-20 features an LED-friendly sinusoidal (sine) waveform and is UL Listed (25W) and CSA Certified (20W) unit equipment designed for new and retrofit lighting projects.

ELI-S-20 includes auto select (120/277 VAC) to help reduce wiring errors. With the convenient auto select, ELI-S-20 automatically detects input voltage and sets the output voltage accordingly.



Model	Wattage	Feature
ELI-S-20	25	For LED and fluorescent lamps

Emergency lighting contact information

Phone

Sales: 800-223-5728
 Tech Support: 888-263-4638
 Local: 901-853-7211
 Fax: 901-853-5009

E-mail

For technical questions, contact tech support at BodineTech@philips.com or visit the Tech Support page (<http://www.bodine.com/tech/tech.html>) on our website, www.philips.com/bodine. For general questions, e-mail us at BodineInfo@philips.com.

*See footnotes on page 74.

Footnotes

1. Average rated life is based on engineering data testing and probability analysis. The hours are at the B50, L70 - 50,000 hours life with 70% lumen maintenance at Tc of 56°C for 3R and 61°C for 1R.
2. Photometric testing consistent with CIE 127:2007 2nd Edition.
3. Production units fall between +/-7.5% of listed values.
4. 3000K = +/-100K, 3500K = +/-120K, 4000K = +/-140K, 5000K = +/-160K.
5. All CRI are 80 or above.
6. Production units will fall between +/- 0.2 of listed value.
7. Restrictions on Hazardous Substances (RoHS) is a European directive (2002/95/EC) designed to limit the content of 6 substances [lead, mercury, cadmium, hexavalent chromium, polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE)] in electrical and electronic products. For products used in North America compliance to RoHS is voluntary and self-certified.
8. Indicates that the LEDs are components recognized with UL and complies with UL8750 Standard for LEDs.
9. Philips Fortimo LED linear module is a Zhaga certified light engine. For more information visit www.zhagastandard.org.
10. Philips Advance Xitanium LED drivers are designed and manufactured to engineering standards correlating to an average life expectancy of 50,000 hours of operation at maximum rated case temperature. Minimum 90% survivals based on MTBF modeling.
11. View limited warranty at <http://www.usa.lighting.philips.com/support/support/warranty> for details and restrictions.
12. Based on Fortimo LED DLM 1100 9W/840 UL gen 4 and the assumption of 2W power consumption 21 of a thermal protector.
13. Fortimo LED DLM 1100/840 (Gen 3 91 lm/W, Gen 4 120 lm/W module efficacy). Improved over generation 2.
14. NFPA® 101® Life Safety Code® e.g., 14.2.9 Emergency Lighting, 18.2.9 Emergency Lighting, 28.2.9 Emergency Lighting and 38.2.9 Emergency Lighting, 2015.
15. NFPA® 101® Life Safety Code® 7.9.3 Periodic Testing of Emergency Lighting Equipment, 2015.
16. Warranty information is available at www.bodine.com/sales/warranty.html.
17. Next Generation Lighting Industry Alliance LED Systems Reliability Consortium: LED LUMINAIRE LIFETIME: RECOMMENDATIONS FOR TESTING AND REPORTING – THIRD EDITION, SEPTEMBER 2014.
18. Compared to Gen 2: 650lm, 3.5 SDCM.
19. Luminous flux of 100% of all production units fall between -10% and +20% of the listed value.
20. Correlated color temperature (CCT) complies with ANSI C78.377A Specifications.
21. Value at which lifetime is specified (Max. T case at typical current within warranty).
22. Radiation angle falls between -10% and 10% of the listed value.
23. Contact Philips Emergency Lighting technical support at 888-236-4638 for compatibility information.
24. When combined with Fortimo LED thermal accessory G1. Please refer to product design-in guide for design instructions and restrictions.
25. When combined with the Fortimo thermal accessory G1, the need for an external heat sink is eliminated (for up to 3,000lm, according to the product design-in guide rules), resulting in simplified thermal management design and testing.
26. For indoor linear applications.
27. When compared to current generation.
28. Fortimo LLS EaseSelect is not a DLC qualified product. It is an OEM component that meets certain performance specifications that are geared toward meeting DLC Standard Tier (v4.0) in a fully assembled fixture. The customer is liable for proper design, manufacturing, testing and qualification according to DLC requirements.
29. Reduced compared to usage of conventional LED components with separate LED modules and LED drivers.
30. Improved over Philips Fortimo DLM gen 4.
31. Values have been rounded for clearer view.

Disclaimer

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