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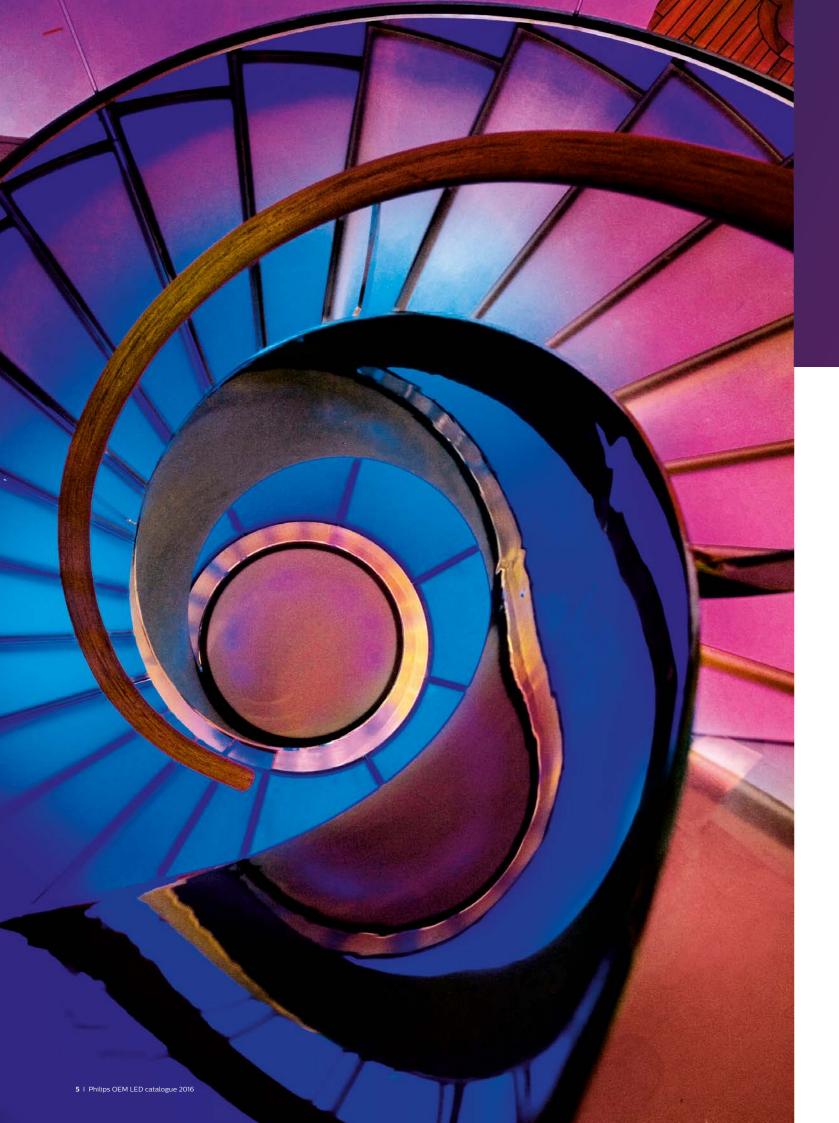
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# Our range

# LED sytems and LED drivers

Philips has designed these families of systems and drivers, each with their features and benefits, to help you in designing luminaires for a variety of application. Get to know these products better with this latest catalogue, and we are certain that they will meet your OEM needs.

# Fortimo LED systems

Fortimo LED systems consist of a Fortimo module and a choice of Xitanium driver, specially designed around each other, to bring you maximum performance and compatibility. Engineered to be robust they are highly reliable and of exceptional light quality. The energy efficient range of portfolio can cover downlight, spotlight, linear and outdoor LED light engines for use in indoor and outdoor luminaires. Standard local system warranty from Philips applies.

# Xitanium LED drivers

Our popular Xitanium LED drivers are reliable, robust and offer much needed flexibility through the operating window and its smart features. They are designed and manufactured for indoor and outdoor applications, available in various form factors with fixed light output, dimming and programmable versions. A unique characteristic of the Xitanium LED driver is that it actually allows one to carry out late stage programming and drivers configuration, which is very helpful in the production process.

# **CertaFlux** LED systems

CertaFlux LED light engines offer basic product performance and functionalities, with a quality of light that is good enough to meet the market needs for basic, general lighting. CertaFlux systems are designed for luminaires targeted at high volume markets. Currently, our LED linear and downlighting applications meet EU regulations and standards. These LED systems come complete with standard local system warranty.

# **CertaDrive** LED drivers

CertaDrive LED drivers are designed to meet the market needs for basic lighting. These are ideal for high volume manufacturing and design, suitable for applications to be put together along with CertaFlux LED modules. Offering basic specifications, such as specific current and voltage settings, they are basic but efficient and dependable. Each driver comes with standard local warranty.

# Just released

As with every year, the passionate team at Philips endeavors to bring you a series of new product introductions that are relevant to your design and business needs.

# **LED** electronics indoor module – Downlight



#### Fortimo DLM Flex Gen2

Highest flexibility and best performance for downlighting.

See page 15



#### Fortimo DLM EaseSelect Gen1 and CertaFlux DLM EaseSelect Gen1

Maximum design-in simplicity for high quality downlighting.

See page 17

## **LED** electronics outdoor module



#### Fortimo Fast Flex Value Offer Gen3

Breakthrough in cost efficiency while OEM short time to market.

To be launched in Q1 2016

## LED electronics indoor module - Spotlight



#### Fortimo SLM EaseSelect Gen1

Maximum design-in simplicity for high quality spotlighting.

See page 29

## **Outdoor drivers**



#### Xitanium adjustable output current outdoor drivers

Specifically designed for maximum flexibility and reliability in low voltage outdoor applications.

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## LED electronics indoor module - Linear



#### CertaFlux LED Strip Gen2

Cost effective system with good performance and functionality.

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## **Point drivers**



# CertaDrive single current point drivers

An easy to use solution for essential spot, downlight and panel light applications.

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# Just released

# **LED lamps – Spot**







An ideal retrofit solution for spot and general lighting applications for use in hospitality industry.

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#### Master LEDspot LV AR111

Robustly designed which offers various beam angles for a clearly defined beam spread.

See page 95





#### Master LEDspot PAR (Retail)

Brings you huge energy savings while minimizing maintenance costs without any reduction in brightness.

See page 96

## **LED lamps - Tube**



#### Master LEDtube

Mercury-free LED light source in traditional fluorescent form.

See page 99



#### Master LEDtube Ultra Output

Optimized energy efficiency to the highest light output for the most demanding applications.

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#### **Essential LEDtube**

Affordable LED tube suitable for T8 fluorescent replacements.

See page 100

# **LED lamps – Bulb**



#### Master Clear Bulb Dimtone

Delivers a dimmable glow effect for a welcoming and warm atmosphere.

See page 108



#### **LED Deco Classic**

The perfect LED filament bulb looking like the tungsten classic, yet giving you an estimated energy savings of 90%.

See page 109



#### Scene Switch LED bulb

A revolutionary bulb that truly surprises by giving out not one but two color temperatures within a single E27 bulb form.

See page 110





# **Downlight** systems

**Perfect downlighting** can be achieved for offices, malls, hospitality and public buildings. Offering light of high quality, minimal glare and a high level of flexibility, our downlight systems can be easily integrated into your designs.



## Fortimo DLM Flex Gen2

**Downlight** 

Being the trend setter in high performance LED downlighting with the Fortimo DLM range, Philips introduced the next generation of the Fortimo LED DLM Flex family. Being backwards compatible with the previous generation, Fortimo LED DLM Flex Gen2 enables further optimization of existing as well as new flexible downlight luminaire designs.

#### **Features**

- Range of 1100 to 5000lm
- Offer includes PCB only version, shallow housing and high housing
- Compatible with both high performance, full flexibility window drivers and high value-for-money CertaDrive drivers
- Backwards compatibility and up to 162lm/W at an improved Tc of 75°C
- Better glare performance vs CoB solutions
- CRI >80 and perfect colour stability over lifetime
- Color temperatures: 3000K, 4000K, 5000K and 6500K

#### Benefits

- Full flexibility and design freedom based on a full portfolio
- Easy design-in based on outstanding efficiencies and high robustness
- · High quality of light
- A reliable and flexible system proposition offering peace of mind

#### **Applications**

- Offices
- Public buildings
- Hospitality
- Retail





Fortimo DLM Flex Gen2

#### **Product specifications**

Product type	Light output	Module efficacy@ low-housing	Module efficacy@ high-housing	Color temperature	Color rendering	Color consistency	Tc life	B50/L70 at Tc Life	Order code
	lm	lm/W	lm/W	К	Ra	SDCM	(°C)	Hours	12NC
FORTIMO LED DLM FLEX 1100/830 GEN2	1100	115	93	3000	> 80	3	75	> 50,000	929001503880
FORTIMO LED DLM FLEX 1100/840 GEN2	1100	127	104	4000	> 80	3	75	> 50,000	929001503980
FORTIMO LED DLM FLEX 1100/850 GEN2	1100	127	104	5000	> 80	3	75	> 50,000	929001508380
FORTIMO LED DLM FLEX 1100/865 GEN2	1100	127	104	6500	> 80	3	75	> 50,000	929001504080
FORTIMO LED DLM FLEX 2000/830 GEN2	2000	113	91	3000	> 80	3	75	> 50,000	929001504180
FORTIMO LED DLM FLEX 2000/840 GEN2	2000	125	102	4000	> 80	3	75	> 50,000	929001504280
FORTIMO LED DLM FLEX 2000/850 GEN2	2000	125	102	5000	>80	3	75	> 50,000	929001508480
FORTIMO LED DLM FLEX 2000/865 GEN2	2000	125	102	6500	> 80	3	75	> 50,000	929001504380
FORTIMO LED DLM FLEX 3000/830 GEN2	3000	115	94	3000	> 80	3	75	> 50,000	929001504480
FORTIMO LED DLM FLEX 3000/840 GEN2	3000	127	105	4000	> 80	3	75	> 50,000	929001504580
FORTIMO LED DLM FLEX 3000/850 GEN2	3000	127	105	5000	> 80	3	75	> 50,000	929001508580
FORTIMO LED DLM FLEX 3000/865 GEN2	3000	127	105	6500	> 80	3	75	> 50,000	929001504680
FORTIMO LED DLM FLEX 5000/830 GEN2	5000	110	88	3000	>80	3	75	> 50,000	929001504780
FORTIMO LED DLM FLEX 5000/840 GEN2	5000	122	99	4000	> 80	3	75	> 50,000	929001504880
FORTIMO LED DLM FLEX 5000/850 GEN2	5000	122	99	5000	> 80	3	75	> 50,000	929001508680
FORTIMO LED DLM FLEX 5000/865 GEN2	5000	122	99	6500	> 80	3	75	> 50,000	929001504980

<sup>\*</sup> Module efficacy is calculated for the typical Im output. For more detailed specifications (including lifetime), please check the datasheets or the Easy Design-in Tool.

Fortimo LED DLM Flex Cover Shallow housing	929000908506
Fortimo LED DLM Flex High Cover High housing	929000927806
Fortimo LED DLM Flex cable 600mm Cable	929000910706



#### Compatible LED drivers

The Fortimo LED SLM portfolio is compatible with multiple Xitanium LED drivers. Xitanium LED drivers are available as abuilt-in or independent driver, dimmable or with a fixed output. For a detailed overview of all available Xitanium point drivers, please refer to the Xitanium point driver section on pages 67 - 71. To find the best driver module combination for your application, the Easy Design-in tool is available via philips.com/technology. Below table shows which Xitanium LED driver window is compatible by default with Fortimo LED DLM.

#### Product specifications

Product type	1100 lm	2000 lm	3000 lm	5000 lm	Order code
					12NC
Smart Point LED Drivers					
Xitanium 25W LH 0.3-1A 36V TD/Is 230V	•	•			929000863703
Xitanium 36W LH 0.3-1A 48V TD/I 230V		•	•		929000870806
Xitanium 36W/s 0.3-1A 48V TD 230V		•	•		929000897606
Xitanium 50W LH 0.7-1.5A 48V TD/I 230V			•	•	929000904106
Fixed Point LED Drivers					
Xitanium 20W LH 0.15-0.5A 48V Is 230V	•	•			929000941306
LED Driver 36W 0.3-1A 48V 230V		•	•		929000871808
Xitanium 50W LH 0.7-1.5A 48V I 230V			•	•	929000934706
Xitanium 50W/m 0.7-1.5A 48V 230V			•	•	929000934606
Xitanium 50W/s 0.9-1.4A 48V 230V				•	929000899306
Fixed Peak Point LED Drivers					
CertaDrive 15W 0.35A 42V I 230V	•				929000898106
CertaDrive 20W 0.5A 40V I 230V		•			929000898006
CertaDrive 30W 0.7A 42V I 230V			•		929000932006
CertaDrive 40W 1.05A 38V I 230V				•	929000931906
Xitanium 15W 0.35A 42V I 230V	•				929001410180
Xitanium 21W 0.5A 42V I 230V		•			929001410280
Xitanium 32W 0.7/0.75A 42V I 230V			•		929001410480
Xitanium 44W 0.9/1.05A 42V I 230V				•	929001410680

<sup>\*</sup> Check the Xitanium point driver portfolio on pages 67 - 71 for all available drivers with the operating window you need.

Fortimo DLM EaseSelect is a high performance driver-on-board (DoB) solution, delivering an excellent quality of light with low flicker. Having an integrated driver and the same mechanical footprint as existing DLM solutions (DLM Flex), this enables an easy and hassle-free design-in process. The Fortimo brand promise brings with it the assurance of quality, reliability and performance. Anytime, and everytime.

Certaflux DLM EaseSelect brings with it good performance in a cost-effective driver-on-board (DoB) solution, delivering a high quality of light with low flicker. Having an integrated driver, enables easy and hassle-free design-in.

#### **Features**

- · Low flicker
- · Ease of design-in
- · Cost-effective solution
- High system Im/W of 115 for high end project needs (Fortimo)
- Good enough Im/W of 90 for standard, more initial cost driven projects (CertaFlux)
- Long life-time: 50,000 hours
- Excellent color consistency of 3 SDCM
- Full portfolio with all typical downlight lumen packages (1100lm, 2000lm, 3000lm) and different CCTs (3000K, 4000K, 6500K)

#### **Benefits**

- Excellent cost-performance
- Suitable for compact heat sink designs
- Long-lasting
- Covers all downlight applications and ambience needs
- Simple and easy to maintain

#### **Applications**

- Offices
- Public buildings
- Retail



Fortimo DLM EaseSelect Gen1

#### Product specifications

Product type	Light output	Module power	Module efficacy	Color temperature	Color rendering	Color consistency	Tc life	B50/L70 at Tc Life	Order code
	lm	w	lm/W	К	Ra	SDCM	(°C)	Hours	12NC
Fortimo DLM ES 1100/830 G1	1100	10.5	105	3000	> 80	3	70	> 50,000	929000978103
Fortimo DLM ES 1100/840 G1	1150	9.9	116	4000	> 80	3	70	> 50,000	929000978203
Fortimo DLM ES 1100/865 G1	1150	9.9	116	6500	> 80	3	70	> 50,000	929000978403
Fortimo DLM ES 2000/830 G1	1940	18.1	107	3000	> 80	3	70	> 50,000	929000978503
Fortimo DLM ES 2000/840 G1	2040	17.9	114	4000	> 80	3	70	> 50,000	929000978603
Fortimo DLM ES 2000/865 G1	2040	17.9	114	6500	> 80	3	70	> 50,000	929000978803
Fortimo DLM ES 3000/830 G1	2770	26.7	104	3000	> 80	3	70	> 50,000	929000978903
Fortimo DLM ES 3000/840 G1	2992	26.7	112	4000	>80	3	70	> 50,000	929000979003
Fortimo DLM ES 3000/865 G1	2992	26.7	112	6500	>80	3	70	> 50,000	929000979203
Certaflux DLM ES 1100/830 G1	1080	11.4	95	3000	>80	3	60	> 50,000	929000997880
Certaflux DLM ES 1100/840 G1	1130	11.1	102	4000	>80	3	60	> 50,000	929000997980
Certaflux DLM ES 1100/865 G1	1130	11.1	102	6500	>80	3	60	> 50,000	929000998080
Certaflux DLM ES 2000/830 G1	1930	21.7	89	3000	>80	3	60	> 50,000	929000998180
Certaflux DLM ES 2000/840 G1	2020	21.3	95	4000	>80	3	60	> 50,000	929000998280
Certaflux DLM ES 2000/865 G1	2020	21.3	95	6500	> 80	3	60	> 50,000	929000998380
Certaflux DLM ES 3000/830 G1	2770	31	89	3000	> 80	3	60	> 50,000	929000998480
Certaflux DLM ES 3000/840 G1	2956	31	95	4000	> 80	3	60	> 50,000	929000998580
Certaflux DLM ES 3000/865 G1	2956	31	95	6500	> 80	3	60	> 50,000	929000998680

# **CertaFlux DLM EaseSelect Ceiling Light**

CertaFlux DLM ES Ceiling Light is a perfect solution for wide-diameter ceiling light application. This solution combines LED technology and driver with optical distribution. The system offers two lumen packages: 1500lm and 1900lm, along with two color temperatures: 3000K and 6500K. External optics ensure good uniformity of light distribution, and the design of this ceiling light ensures good heat management thus no need for an external heat sink. A standard Philips systems warranty is available for this product with a lifetime of 25,000 hours. An optimal choice to consider for a fast return on investment with a payback period estimated to be less than 1.5 years.

#### **Features**

- Two lumen output: 1500lm and 1900lm
- $\cdot$  Efficiency levels surpassing TLE 32W
- · High quality white light CRI 80
- 25,000 hours lifetime

#### **Benefits**

- · Easy design-in
- · >50% energy savings
- · Standard warranty available

#### Applications

 Ceiling light for residential application, to replace TLE32/54 and TLE32/865



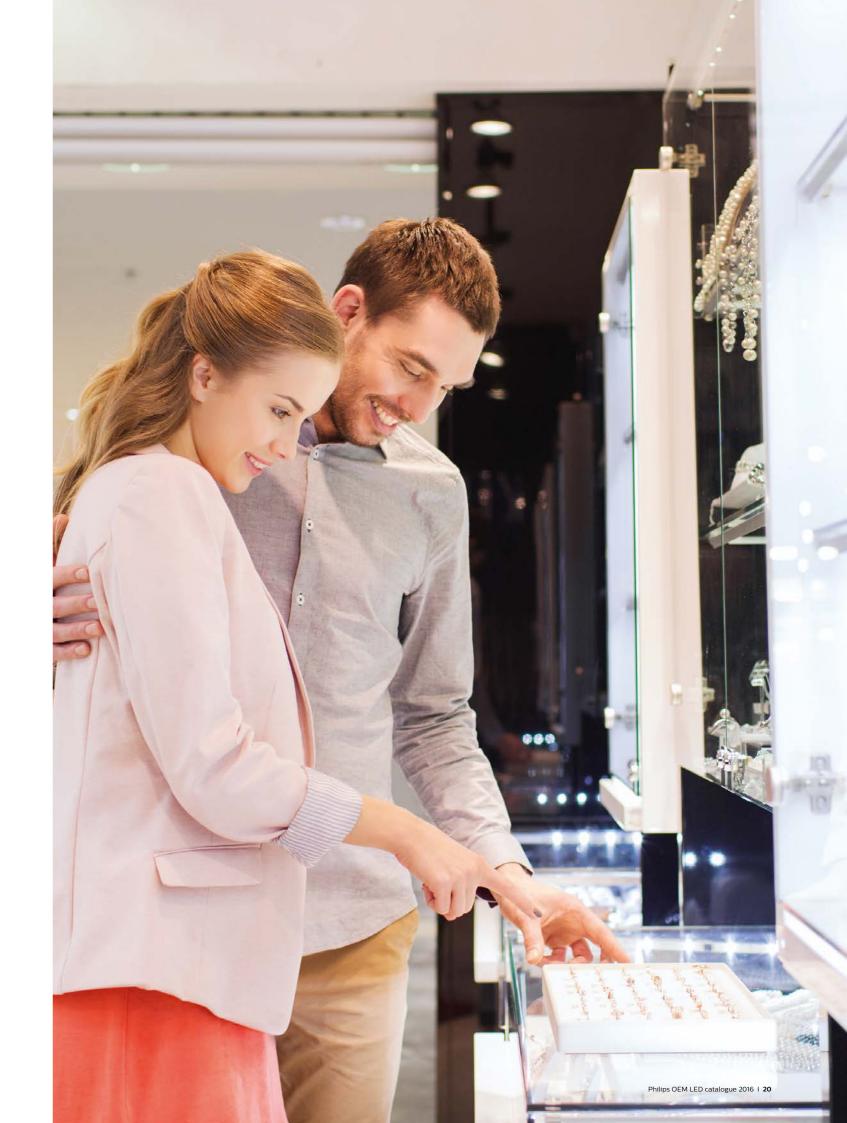
CertaFlux DLM EaseSelect Ceiling Light

#### Product specifications

Product specifications									
Product type	Light output	Module power	Module efficacy	Color temperature	Color rendering	Color consistency	Tc max	B50/L70 at Tc Life	Order code
	Im	w	lm/W	К	Ra	SDCM	(°C)	Hours	12NC
Certaflux DLM ES 1500/830 CL G1	1379	14.8	93	3000	> 80	5	< 80	25,000	929000994080
Certaflux DLM ES 1500/865 CL G1	1500	14.7	102	6500	>80	5	< 80	25,000	929000994180
Certaflux DLM ES 1900/830 CL G1	1748	18.4	95	3000	> 80	5	< 85	25,000	929000994480
Certaflux DLM ES 1900/865 CL G1	1900	18.3	104	6500	>80	5	< 85	25,000	929000994580
Certaflux DLM ES 1500/830 CLC G1	1379	14.8	93	3000	> 80	5	< 80	25,000	929000994280
Certaflux DLM ES 1500/865 CLC G1	1500	14.7	102	4000	> 80	5	< 80	25,000	929000994380
Certaflux DLM ES 1900/830 CLC G1	1748	18.4	95	3000	> 80	5	< 85	25,000	929000994680
Certaflux DLM ES 1900/865 CLC G1	1900	18.3	104	4000	> 80	5	< 85	25,000	929000994780

# **Spotlight** systems

**Because retail is detail.** With the Fortimo LED SLM portfolio, Philips offers the ideal combination of high quality spotlighting with state-of-the-art performance and energy efficiency.



## Fortimo SLM Gen5

**Spotlight** 

The Fortimo LED SLM Gen5 continues to focus on the combination of quality of light and superior cost-performance. By offering the CoB separately from the holder, this allows greater flexibility in permutations of system combinations and specifications. An extensive portfolio of lumen ranges, CCTs and spectra can be achieved. The online Easy Design-in tool is provided for your use, to swiftly come up with the perfect system combination to match your needs.

#### Feature

- Lumen packages from 1100lm to above 6000lm
- Broad portfolio in terms of CCT 2700K, 3000K, 3500K, 4000K, 5000K, 5700K and CRI 80, 90 available
- A new holder (Poke-in in Zhaga form factor) to be added
- Separation of CoB and holders to increase reactivity and speed
- High lumen modules for highbay and outdoor applications
- Up to 160lm/W at 85°C Tc
- Same form factor and LES as SLM Gen 4
- High Tc of up to 95 for simple heat management
- Large choice of drivers available, including DALI dimming

#### Benefits

- Outstanding quality of light
- · Easy design-in
- Very good efficiencies
- Excellent beam control and small reflector design
- A reliable and flexible system proposition

# Applications

- Retail
- $\cdot$  Highbay and outdoor



#### Product specifications

Product type	Light output	Module power	Module efficacy	Module temperature	Color rendering	Color consistency	Tc life	B50/L70 at Tc Life	Order code
	lm	w	lm/W	К	Ra	SDCM	(°C)	Hours	12NC
Fortimo SLM C 827 1203 L09 1619 G5	1230	10.4	118	2700	> 80	3	85	> 50,000	929000983480
Fortimo SLM C 830 1203 L09 1619 G5	1300	10.5	124	3000	> 80	3	85	> 50,000	929000983580
Fortimo SLM C 835 1203 L09 1619 G5	1350	10.5	129	3500	> 80	3	85	> 50,000	929000983680
Fortimo SLM C 840 1203 L09 1619 G5	1400	10.4	134	4000	> 80	3	85	> 50,000	929000983780
Fortimo SLM C 927 1203 L09 1619 G5	1080	10.5	103	2700	> 90	3	85	> 50,000	929000983880
Fortimo SLM C 930 1203 L09 1619 G5	1120	10.5	107	3000	> 90	3	85	> 50,000	929000983980
Fortimo SLM C 935 1203 L09 1619 G5	1160	10.5	111	3500	> 90	3	85	> 50,000	929000984080
Fortimo SLM C 940 1203 L09 1619 G5	1210	10.4	116	4000	> 90	3	85	> 50,000	929000984180
Fortimo SLM C 827 1204 L13 2024 G5	1300	10.0	130	2700	>80	3	85	> 50,000	929000984580
Fortimo SLM C 830 1204 L13 2024 G5	1370	10.1	136	3000	>80	3	85	> 50,000	929000984680
Fortimo SLM C 835 1204 L13 2024 G5	1420	10.0	142	3500	>80	3	85	> 50,000	929000984780
Fortimo SLM C 840 1204 L13 2024 G5	1470	10.0	147	4000	>80	3	85	> 50,000	929000984880
Fortimo SLM C 927 1204 L13 2024 G5	1130	10.0	113	2700	> 90	3	85	> 50,000	929000984980
Fortimo SLM C 930 1204 L13 2024 G5	1170	10.0	117	3000	> 90	3	85	> 50,000	929000985080
Fortimo SLM C 935 1204 L13 2024 G5	1210	10.0	121	3500	> 90	3	85	> 50,000	929000985180
Fortimo SLM C 940 1204 L13 2024 G5	1270	10.0	127	4000	> 90	3	85	> 50,000	929000985280
Fortimo SLM C 827 1205 L13 2024 G5	2100	17.1	123	2700	> 80	3	85	> 50,000	929000985680
Fortimo SLM C 830 1205 L13 2024 G5	2220	17.1	130	3000	> 80	3	85	> 50,000	929000985780
Fortimo SLM C 835 1205 L13 2024 G5	2310	17.1	135	3500	> 80	3	85	> 50,000	929000985880
Fortimo SLM C 840 1205 L13 2024 G5	2390	17.1	140	4000	> 80	3	85	> 50,000	929000985980
Fortimo SLM C 850 1205 L13 2024 G5	2397	17.1	140	5000	> 80	3	85	> 50,000	929000993880
Fortimo SLM C 927 1205 L13 2024 G5	1840	17.0	108	2700	> 90	3	85	> 50,000	929000986080
Fortimo SLM C 930 1205 L13 2024 G5	1910	17.1	112	3000	> 90	3	85	> 50,000	929000986180
Fortimo SLM C 935 1205 L13 2024 G5	1970	17.1	115	3500	> 90	3	85	> 50,000	929000986280
Fortimo SLM C 940 1205 L13 2024 G5	2060	17.0	121	4000	> 90	3	85	> 50,000	929000986380

#### **Product specifications**

Product type	Light output	Module power	Module efficacy	Module temperature	Color rendering	Color consistency	Tc life	B50/L70 at Tc Life	Order code
	lm	W	lm/W	К	Ra	SDCM	(°C)	Hours	12NC
Fortimo SLM C 827 1208 L15 2024 G5	3180	25.6	124	2700	>80	3	85	> 50,000	929000986580
Fortimo SLM C 830 1208 L15 2024 G5	3340	25.5	131	3000	>80	3	85	> 50,000	929000986680
Fortimo SLM C 835 1208 L15 2024 G5	3480	25.6	136	3500	> 80	3	85	> 50,000	929000986780
Fortimo SLM C 840 1208 L15 2024 G5	3600	25.7	140	4000	>80	3	85	> 50,000	929000986880
Fortimo SLM C 850 1208 L15 2024 G5	3613	25.6	141	5000	> 80	3	85	> 50,000	929000993980
Fortimo SLM C 927 1208 L15 2024 G5	2780	25.7	108	2700	> 90	3	85	> 50,000	929000986980
Fortimo SLM C 930 1208 L15 2024 G5	2880	25.7	112	3000	> 90	3	85	> 50,000	929000987080
Fortimo SLM C 935 1208 L15 2024 G5	2970	25.6	116	3500	> 90	3	85	> 50,000	929000987180
Fortimo SLM C 940 1208 L15 2024 G5	3110	25.5	122	4000	> 90	3	85	> 50,000	929000987280
Fortimo SLM C 857 1211 L19 2828 G5	5292	41.7	127	5700	> 80	3	85	> 50,000	929001500480
Fortimo SLM C 830 1211 L19 2828 G5	5090	41.7	122	3000	> 80	3	85	> 50,000	929000987680
Fortimo SLM C 835 1211 L19 2828 G5	5290	41.7	127	3500	> 80	3	85	> 50,000	929000987780
Fortimo SLM C 840 1211 L19 2828 G5	5470	41.8	131	4000	> 80	3	85	> 50,000	929000987880
Fortimo SLM C 927 1211 L19 2828 G5	4220	41.8	101	2700	> 90	3	85	> 50,000	929000987980
Fortimo SLM C 930 1211 L19 2828 G5	4380	41.7	105	3000	> 90	3	85	> 50,000	929000500380
Fortimo SLM C 935 1211 L19 2828 G5	4520	41.5	109	3500	> 90	3	85	> 50,000	929000988080
Fortimo SLM C 940 1211 L19 2828 G5	4730	41.5	114	4000	> 90	3	85	> 50,000	929000988180

<sup>\*</sup> Module efficacy is calculated for the typical Im output. For more detailed specifications (including lifetime), please refer to the datasheets or the Easy Design-in tool.

#### Compatible LED drivers

The Fortimo LED SLM portfolio is compatible with multiple Xitanium LED drivers. Xitanium LED drivers are available as a built-in or independent driver, dimmable or with a fixed output. For a detailed overview of all available Xitanium point drivers, please go to the Xitanium point driver section on pages 67 - 71. To find the best driver module combination for your application, the Easy Design-in tool is available via philips.com/technology. Below table shows the Xitanium LED driver windows – and which are compatible by default with Fortimo LED SLM.

#### Product specifications

Product type			CoB			Order code
	1203	1204	1205	1208	1211	12NC
Smart point LED drivers						
Xitanium 25W LH 0.3-1A 36V TD/Is 230V	•	•				929000863703
Xitanium 36W LH 0.3-1A 48V TD/I 230V		•	•			929000870806
Xitanium 50W LH 0.7-1.5A 48V TD/I 230V				•	•	929000904106
Fixed point LED drivers						
Xitanium 20W/m 0.15-0.5A 48V 230V	•	•				929000893806
Xitanium 36W/m 0.3-1.05A 48V 230V		•	•	•		929000881806
Xitanium 50W/m 0.5-1.5A 48V 230V				•	•	929000934606
Xitanium 15W 0.35A 42V I 230V	•	•				929001410180
Xitanium 21W 0.5A 42V I 230V		•	•			929001410280
Xitanium 30W 0.7A 42V I 230V		•	•	•		929001410480
Xitanium 32W 0.75A 42V I 230V		•	•	•		929001410580
Xitanium 44W 1.05A 42V I 230V			•	•	•	929001410680
Elizador de la colonidad ED delizador						
Fixed peak point LED drivers						020001410005
CertaDrive 10W 0.25A 40V LPF I 230V	•	•				929001410006
CertaDrive 12W 0.3A 40V LPF I 230V	•	•				929001409506
CertaDrive 15W 0.35A 42V I 230V	•	•	•	•		929000898106
CertaDrive 20W 0.5A 40V I 230V	•	•	•	•		929000898006
CertaDrive 30W 0.7A 42V I 230 V		•	٠	•	•	929000932006
CertaDrive 36W 0.75A 48V I 230 V		•	•	•	•	929000933506
CertaDrive 34W 0.8A 42V I 230 V			•	•	•	929000932108
CertaDrive 40W 0.9A 43V I 230 V			•	•	•	929000933406
CertaDrive 40W 1.05A 38V I 230 V			•	•	•	929000931908

<sup>\*</sup> Check the Xitanium point driver portfolio on pages 67 - 71 for all available drivers with the operating window you need.

<sup>\*\*</sup> The CoB size defines the compatibility with the SLM Gen5 Holders. The CoB size is also given in the name of the holder (see page 27).

## Fortimo SLM Gen5 PremiumWhite

**Spotlight** 

Fortimo LED SLM PremiumWhite provides excellent quality of light and color rendition, combined with high energy efficiency. With color points carefully chosen just below the black body locus, PremiumWhite is ideal for creating ambience, fresh whites and depth of color in many retail environments. The PremiumWhite portfolio is available in all Fortimo LED SLM Gen5 CoB sizes.

#### **Features**

#### · Available in 3000K in CRI 80 and 90

- · Colour point below the black body line
- Same outline (Zhaga form factor) and thermal behavior as SLM Gen 4
- Information and support available to tune the system to specific needs
- Large choice of drivers available, incl DALI dimming
- 50,000 hours lifetime, standard Philips systems warranty applies

#### **Benefits**

#### Outstanding quality of light – similar to MasterColour CDM Elite

- Good energy efficiency
- · Easy design-in
- A reliable and flexible system proposition

#### **Applications**

 $\cdot \text{ Retail}$ 











Fortimo SLM Gen5 PremiumWhite

#### Product specifications

Product type	Light output	Module power	Module efficacy	Module temperature	Color rendering	Color consistency	Tc life	B50/L70 at Tc Life	Order code
	lm	w	lm/W	К	Ra	SDCM	(°C)	Hours	12NC
Fortimo SLM C 830 PW 1203 L09 1619 G5	1250	10.4	120	3000	> 80	3	85	> 50,000	929000984280
Fortimo SLM C 930 PW 1203 L09 1619 G5	1100	10.4	106	3000	> 90	3	85	> 50,000	929000984380
Fortimo SLM C 830 PW 1204 L13 2024 G5	1360	10.1	135	3000	> 80	3	85	> 50,000	929000985380
Fortimo SLM C 930 PW 1204 L13 2024 G5	1170	10.0	117	3000	>90	3	85	> 50,000	929000985480
Fortimo SLM C 830 PW 1205 L13 2024 G5	2160	17.4	124	3000	>80	3	85	> 50,000	929000979303
Fortimo SLM C 930 PW 1205 L13 2024 G5	1870	17.3	108	3000	>90	3	85	> 50,000	929000979403
Fortimo SLM C 830 PW 1208 L15 2024 G5	3270	26.2	125	3000	>80	3	85	> 50,000	929000979503
Fortimo SLM C 930 PW 1208 L15 2024 G5	2840	26.1	109	3000	>90	3	85	> 50,000	929000979603
Fortimo SLM C 830 PW 1211 L19 2828 G5	5110	42.6	120	3000	>80	3	85	> 50,000	929000979703
Fortimo SLM C 930 PW 1211 L19 2828 G5	4440	42.7	104	3000	>90	3	85	> 50,000	929000979803

<sup>\*</sup> Module efficacy is calculated for the typical Im output. For more detailed specifications (including lifetime), please check the datasheets or the Easy Design-in tool.



#### **Compatible LED drivers**

The Fortimo LED SLM portfolio is compatible with multiple Xitanium LED drivers. Xitanium LED drivers are available as a built-in or independent driver, dimmable or with a fixed output. For a detailed overview of all available Xitanium point drivers, please go to the Xitanium point driver section on pages 67 - 71. To find the best driver module combination for your application, the Easy Design-in tool is available via philips.com/technology. Below table shows the Xitanium LED driver windows – and which are compatible by default with Fortimo LED SLM.

#### Product specifications

Product type			СоВ			Order code
	1203	1204	1205	1208	1211	12NC
Smart point LED drivers						
Xitanium 25W LH 0.3-1A 36V TD/Is 230V	•	•				929000863703
Xitanium 36W LH 0.3-1A 48V TD/I 230V		•	•			929000870806
Xitanium 50W LH 0.7-1.5A 48V TD/I 230V				•	•	929000904106
Fixed point LED drivers						
Xitanium 20W/m 0.15-0.5A 48V 230V	•	•				929000893806
Xitanium 36W/m 0.3-1.05A 48V 230V		•	•	•		929000881806
Xitanium 50W/m 0.5-1.5A 48V 230V				•	•	929000934606
Xitanium 15W 0.35A 42V I 230V	•	•				929001410180
Xitanium 21W 0.5A 42V I 230V		•	•			929001410280
Xitanium 30W 0.7A 42V I 230V		•	•	•		929001410480
Xitanium 32W 0.75A 42V I 230V		•	•	•		929001410580
Xitanium 44W 1.05A 42V I 230V			•	•	•	929001410680
Fixed peak point LED drivers						
CertaDrive 10W 0.25A 40V LPF I 230V	•	•				929001410006
CertaDrive 12W 0.3A 40V LPF I 230V	•	•				929001409506
CertaDrive 15W 0.35A 42V I 230V	•	•	•	•		929000898106
CertaDrive 20W 0.5A 40V I 230V	•	•	•	•		929000898006
CertaDrive 30W 0.7A 42V I 230 V		•	•	•	•	929000932006
CertaDrive 36W 0.75A 48V I 230 V		•	•	•	•	929000933506
CertaDrive 34W 0.8A 42V I 230 V			•	•	•	929000932108
CertaDrive 40W 0.9A 43V I 230 V			•	•	•	929000933406
CertaDrive 40W 1.05A 38V I 230 V			•	•	•	929000931908

<sup>\*</sup> Check the Xitanium point driver portfolio on pages 67 - 71 for all available drivers with the operating window you need.

<sup>\*\*</sup> The CoB size defines the compatibility with the SLM Gen5 Holders. The CoB size is also given in the name of the Holder (see page 27).

# Fortimo SLM Gen5 CrispWhite

**Spotlight** 

Fortimo LED SLM CrispWhite is an unique solution that offers an unparalleled rendering of intense white and warm, deep colors within one light source. Fortimo SLM CrispWhite is ideal for use in fashion lighting applications, where the white colors in the fabric and material truly stand out from the display. The CrispWhite portfolio is available in all Fortimo LED SLM Gen5 CoB sizes.

#### Features

## • The perfect mix of Crisp White Light and warm colours in one LED source

- CRI 90
- · Zhaga form factor
- Tc life of up to 85°C
- · Up to 135lm/W at 85°C Tc
- Up to 3000lm with LES 15mm
- Philips standard systems warranty applies

#### **Benefits**

- · Outstanding quality of light
- · Easy design-in
- Very good efficiencies
- Excellent beam control and small reflector design
- A reliable and flexible system proposition

#### **Applications**

- Retail
- CrispWhite works best for: paper, garment and textiles



#### Product specifications

Product type	Light output	Module power	Module efficacy	Module temperature	Color rendering	Color consistency	Tc life	B50/L70 at Tc Life	Order code
	lm	W	lm/W	К	Ra	SDCM	(°C)	Hours	12NC
Fortimo SLM C 930 CW 1203 L09 1619 G5	910	10.6	86	3000	> 90	3	85	> 50,000	929000984480
Fortimo SLM C 930 CW 1204 L13 2024 G5	960	10.3	93	3000	> 90	3	85	> 50,000	929000985580
Fortimo SLM C 930 CW 1205 L13 2024 G5	1570	17.4	90	3000	> 90	3	85	> 50,000	929000986480
Fortimo SLM C 930 CW 1208 L15 2024 G5	2770	33.8	82	3000	>90	3	85	> 50,000	929000987380
Fortimo SLM C 930 CW 1211 L19 2828 G5	3610	42.5	85	3000	>90	3	85	> 50,000	929000988280

<sup>\*</sup> Module efficacy is calculated for the typical Im output. For more detailed specifications (including lifetime), please check the datasheets or the Easy Design-in tool.

#### **Compatible LED drivers**

The Fortimo LED SLM portfolio is compatible with multiple Xitanium LED drivers. Xitanium LED drivers are available as a built-in or independent driver, dimmable or with a fixed output. For a detailed overview of all available Xitanium point drivers, please go to the Xitanium point driver section on pages 67 - 71. To find the best driver module combination for your application, the Easy Design-in tool is available via philips.com/technology. Below table shows the Xitanium LED driver windows – and which are compatible by default with Fortimo LED SLM.

#### Product specifications

•						
Product type			СоВ			Order code
	1203	1204	1205	1208	1211	12NC
Smart point LED drivers						
Xitanium 20W LH 0.15-0.5A 48V TD/I 230V	•	•	•			929000600303
Xitanium 36W LH 0.3-1A 48V TD/I 230V		•	•	•		929000870806
Xitanium 50W LH 0.7-1.5A 48V TD/I 230V				•	•	929000904106
Fixed point LED drivers						
Xitanium 20W/m 0.15-0.5A 48V 230V	•	•	•			929000893806
Xitanium 36W/m 0.3-1.05A 48V 230V		•	•	•		929000881806
Xitanium 50W/m 0.5-1.5A 48V 230V				•	•	929000934606

<sup>\*</sup> Check the Xitanium point driver portfolio on pages 67 - 71 for all available drivers with the operating window you need.

# Fortimo SLM Gen5 – Spotlight Food Warm-White and Food Premium Red

Fortimo LED SLM Food Warm-White and Fortimo LED SLM Food Premium Red are dedicated propositions, geared towards fresh food applications. The Fortimo SLM Food Warm-White offers a specific spectrum enhancing the appearance of fresh food such as bread, fruit and vegetables, whereas the Fortimo LED SLM Food Premium Red specifically enhances the appearance of fresh meat. Both products are best in class light quality solutions.



Fortimo SLM Gen5 – Food Warm-White and Food PremiumRed

#### Product specifications

Product type	Light output	Module power	Module efficacy	Color temperature	Color rendering	Color consistency	Tc life	B50/L70 at Tc Life	Order code
	lm	w	lm/W	к	Ra	SDCM	(°C)	Hours	12NC
Fortimo SLM C 930 FWW 1211 L19 2828 G5	2880	42.4	68	Food Warm White	90	5	85	> 50,000	929000988380
Fortimo SLM C 930 FPR 1211 L19 2828 G5	3040	42.2	72	Food Premium Red	87	5	85	> 50,000	929000988480

<sup>\*</sup> Module efficacy is calculated for the typical Im output. For more detailed specifications (including lifetime), please check the datasheets or the Easy Design-in tool.

#### **Compatible LED drivers**

The Fortimo LED SLM portfolio is compatible with multiple Xitanium LED drivers. Xitanium LED drivers are available as a built-in or independent driver, dimmable or with a fixed output. For a detailed overview of all available Xitanium point drivers, please go to the Xitanium point driver section on pages 67 - 71. To find the best driver module combination for your application, the Easy Design-in tool is available via philips.com/technology. Below table shows the Xitanium LED driver windows – and which are compatible by default with Fortimo LED SLM.

#### Product specifications

Product type	Col	3	Order code
	FWW 1211	FPR 1211	12NC
Xitanium 50W LH 0.7-1.5A 48V TD/I 230V	•	•	929000904106
Xitanium 50W/s 0.9-1.4A 48V 230V	•	•	929000899306
LED Driver 50W 0.7-1.5A 44V I 230V	•	•	929000892606
Xitanium 50W/m 0.5-1.5A 48V 230V	•	•	929000934606

<sup>\*</sup> Check the Xitanium point driver portfolio on pages 67 - 71 for all available drivers with the operating window you need.



<sup>\*\*</sup> The CoB size defines the compatibility with the SLM Gen5 Holders. The CoB size is also given in the name of the Holder (see page 27).

<sup>\*\*</sup> The CoB size defines the compatibility with the SLM Gen5 Holders. The CoB size is also given in the name of the Holder (see page 27).

# **Fortimo SLM holders**

**Spotlight** 

The great news is Fortimo LED SLM Gen5 CoBs and holders can be ordered separately. This results in added flexibility and an even more extensive product portfolio. Optimized holders are available for spot and downlight applications. For pre-cabled luminaire designs holders, Poke-in connectors can be ordered. Every holder type is available for every CoB size. CoB compatibility is defined by the CoB size.



Fortimo SLM holders

#### Product specifications

. rounce specimentions						
Product type	Type	CoB count	Wire length	Wire type	LES	Order code
			mm	mm2		12NC
FORTIMO SLM H 2024 G1	Standard	1204, 1205, 1208	600	0.5	L13, L15	929000904106
FORTIMO SLM H DL 2024 G1	Down light	1204, 1205, 1208	600	0.5	L13, L15	929000980803
FORTIMO SLM H PI 2024 G1	Poke in	1204, 1205, 1209	NA	0.3-0.75	L13, L15	929000980903
FORTIMO SLM H 2828 G1	Standard	1211	600	0.5	L19	929000981003
FORTIMO SLM H DL 2828 G1	Down light	1211	600	0.5	L19	929000981103
FORTIMO SLM H PI 2828 G1	Poke in	1211	NA	0.3-0.75	L19	929000981203
FORTIMO SLM H 1619 G1	Standard	1203	600	0.5	L09	929000993580
FORTIMO SLM H DL 1619 G1	Down light	1203	600	0.5	L09	929000993680
FORTIMO SLM H PI 1619 G1	Poke in	1203	NA	0.3-0.75	L09	929000993780



## Fortimo SLM EaseSelect Gen1

**Spotlight** 

Quality of light is key in retail lighting. The need for miniaturization is continuously pushing LED technology to greater heights, to be applicable for smaller luminaires. If this is not done correctly, it often jeopardizes important specifications such as flicker control, lifetime and reliability. Fortimo LED SLM EaseSelect offers an integrated portfolio that combines the high quality standards of a Philips Fortimo/Xitanium system with the possibility for a luminaire design without a driver box.

#### Features

- Low flicker (4% ripple)
- Ease of design-in
- System efficacy of up to 115lm/W
- · Long life-time: 50,000 hours
- · Excellent color consistency of 3 SDCM
- Same LES and holder types as standard SLM modules (Zhaga)
- · Full portfolio with all typical downlight lumen packages (1100lm, 2000lm, 3000lm), different CCTs (Premium White, 4000K) and CRI (80Ra, 90Ra)

#### **Benefits**

- $\cdot \ \text{Suitable for compact heat sink} \\$ designs
- · Diameter of 70mm and max 90mm incl. heatsink for up to 3000lm
- · No driver box needed anymore
- Small LES enabling small reflectors even with small beams
- · Heatsink part of the solution
- No cabling needed
- No thermal pad hassle with the CoB
- $\boldsymbol{\cdot}$  Simple and easy to maintain

#### **Applications**

- Offices
- Public buildings
- Retail



Fortimo SLM EaseSelect Gen1

#### **Product specifications**

Product type	Light output	Module power	Module efficacy	Color temperature	Color rendering	Color consistency	Tc life	B50/L70 at Tc Life	Order code
	lm	W	lm/W	К	Ra	SDCM	(°C)	Hours	12NC
Fortimo SLM ES 1100 830 PW L09 G1	1190	12.5	95	3000	> 80	3	85	> 50,000	929001500580
Fortimo SLM ES 1100 840 L09 G1	1190	10.9	109	4000	> 80	3	85	> 50,000	929001500680
Fortimo SLM ES 1100 930 PW L09 G1	1030	12.3	84	3000	> 90	3	85	> 50,000	929001500780
Fortimo SLM ES 2000 830 PW L13 G1	2150	21.5	100	3000	>80	3	85	> 50,000	929001500880
Fortimo SLM ES 2000 840 L13 G1	2150	18.5	116	4000	>80	3	85	> 50,000	929001500980
Fortimo SLM ES 2000 930 PW L13 G1	1880	21.6	87	3000	>90	3	85	> 50,000	929001501080
Fortimo SLM ES 3000 830 PW L15 G1	2860	26.5	108	3000	>80	3	88	> 50,000	929001501180
Fortimo SLM ES 3000 840 L15 G1	3110	25.9	120	4000	>80	3	88	> 50,000	929001501280
Fortimo SLM ES 3000 930 PW L15 G1	2510	26.7	94	3000	>90	3	88	> 50,000	929001501380

### **CertaFlux SLS**

**Spotlight** 

CertaFlux is an integrated spotlight solution that comes in a modern, sleek and stylish package. It comes with an integrated heat sink and a compact driver, making OEM design-in simple and enables fast and efficient development of spotlights. This product portfolio covers a lumen level from 800lm, 1600lm to 2400lm, with two color temperatures: 3000K and 4000K. To meet our customers' optical design requirements, three beam angles 15D, 24D and 36D are available for your selection.

#### **Features**

- Integrated driver, heat sink and optics
- · 25,000 hours lifetime and standard Philips systems warranty
- · CRI 80
- · 3 lumen packages: 800lm, 1600lm and 2400lm
- · Color temperatures: 3000K, 4000K
- 3 beam angles: 15, 24 and 36

- · Maximum simplicity for design-in
- · Reliable and value-for-money

#### **Applications**

- Retail
- · Food and beverage







#### Product specifications

Product type	Light output	Module power	Module efficacy	Color temperature	Color rendering	Color consistency	Beam angle	Diameter	B50/L70 at Tc Life	Order code
	Im	W	lm/W	К	Ra	SDCM	(°C)	mm	Hours	12NC
CERTAFLUX SLS 800LM S 830 15D	850	11	77	3000	> 80	5	15	75	25,000	929000904606
CERTAFLUX SLS 800LM S 840 15D	950	11	86	4000	>80	5	15	75	25,000	929000904706
CERTAFLUX SLS 800LM S 830 24D	850	11	77	3000	>80	5	24	75	25,000	929000904806
CERTAFLUX SLS 800LM S 840 24D	950	11	86	4000	>80	5	24	75	25,000	929000904906
CERTAFLUX SLS 800LM S 830 36D	850	11	77	3000	> 80	5	36	75	25,000	929000905006
CERTAFLUX SLS 800LM S 840 36D	950	11	86	4000	>80	5	36	75	25,000	929000905106
CERTAFLUX SLS 1600LM S 830 15D	1700	22	77	3000	>80	5	15	99	25,000	929000905206
CERTAFLUX SLS 1600LM S 840 15D	1850	22	84	4000	>80	5	15	99	25,000	929000905306
CERTAFLUX SLS 1600LM S 830 24D	1700	22	77	3000	>80	5	24	99	25,000	929000905406
CERTAFLUX SLS 1600LM S 840 24D	1850	22	84	4000	> 80	5	24	99	25,000	929000905506
CERTAFLUX SLS 1600LM S 830 36D	1700	22	77	3000	>80	5	36	99	25,000	929000905606
CERTAFLUX SLS 1600LM S 840 36D	1850	22	84	4000	> 80	5	36	99	25,000	929000905706
CERTAFLUX SLS 2400LM S 830 24D	2550	33	77	3000	>80	5	24	99	25,000	929000905806
CERTAFLUX SLS 2400LM S 840 24D	2750	33	83	4000	>80	5	24	99	25,000	929000905906
CERTAFLUX SLS 2400LM S 830 36D	2550	33	77	3000	>80	5	36	99	25,000	929000906006
CERTAFLUX SLS 2400LM S 840 36D	2750	33	83	4000	>80	5	36	99	25,000	929000906106

# **Linear** systems

# **LED linear lighting that surpasses fluorescent efficiency.** With a low cost of ownership, linear systems are ideal for recessed and surface mounted office luminaires, trunking and profile luminaires in retail. They are also perfect for waterproof and highbay applications.



## **Fortimo LED Line Gen3**

Linear

Fortimo LED Line systems are designed to produce pure white light for general lighting applications with high efficiency levels. The Fortimo LED Line portfolio consists of three main ranges of products, which have been differentiated by the number of rows of LEDs on the module. The Fortimo LED Line 1R system, with one row of LEDs on the module, is ideal for applications requiring beam shaping and where light is intended to fall on a vertical surface, such as racking or shelves. The Fortimo LED Line 2R and 3R systems have been designed to produce high efficiency, pure white light, for general lighting applications where diffuse lighting on the horizontal plane is key.

#### Features

- State-of-the-art LED module efficiency of up to 165lm/W
- · Long life-time: >50,000 hours
- · High color rendering (CRI >80 and >90)
- Excellent color consistency of 3 SDCM
- · Color temperatures: 3000K, 4000K, 5000K and 6500K
- · Zhaga compliant

- Increased energy efficiency
- · Improved temperature management · Applicable for all fluorescent
- luminaires
- Smart system with Xitanium driver



**Applications** 

Offices

Industry

Fortimo LED Line Gen 3

#### Product specifications

Product type	Light output	Power consumption	Module efficacy	Color temperature	Color consistency	Color rendering index	Tc life	Lifetime	Order code
	lm	W	lm/W	К	SDCM	Ra	°C	Hours	12NC
Fortimo LED Line 1ft 1100lm 830 1R HV3	1060	6.84	155	3000	3	80	65	50,000	929000919406
Fortimo LED Line 1ft 1100lm 840 1R HV3	1100	6.88	160	4000	3	80	65	50,000	929000919506
Fortimo LED Line 1ft 1100lm 850 1R HV3	1120	6.87	163	5000	3	80	65	50,000	929000919606
Fortimo LED Line 1ft 1100lm 865 1R HV3	1100	6.85	162	6500	3	80	65	50,000	929000919706
Fortimo LED Line 1ft 1100lm 930 1R HV3	1000	9.26	108	3000	3	90	65	50,000	929000965806
Fortimo LED Line 1ft 1100lm 940 1R HV3	1100	9.16	120	4000	3	90	65	50,000	929000919806
Fortimo LED Line 2ft 2200lm 830 1R HV3	2120	13.68	155	3000	3	80	65	50,000	929000920406
Fortimo LED Line 2ft 2200lm 840 1R HV3	2200	13.75	160	4000	3	80	65	50,000	929000920606
Fortimo LED Line 2ft 2200lm 850 1R HV3	2240	13.74	163	5000	3	80	65	50,000	929000920706
Fortimo LED Line 2ft 2200lm 865 1R HV3	2220	13.70	162	6500	3	80	65	50,000	929000920806
Fortimo LED Line 2ft 2200lm 930 1R HV3	2000	18.50	108	3000	3	90	65	50,000	929000966006
Fortimo LED Line 2ft 2200lm 940 1R HV3	2200	18.30	120	4000	3	90	65	50,000	929000966106
Fortimo LED Line 1ft 650lm 830 3R HV3	618	4.23	146	3000	3	80	65	50,000	929000921306
Fortimo LED Line 1ft 650lm 840 3R HV3	650	4.22	154	4000	3	80	65	50,000	929000921406
Fortimo LED Line 1ft 650lm 850 3R HV3	650	4.22	154	5000	3	80	65	50,000	929000921506
Fortimo LED Line 1ft 650lm 865 3R HV3	650	4.22	154	6500	3	80	65	50,000	929000921606
Fortimo LED Line 1ft 1100lm 830 3R HV3	1046	6.70	156	3000	3	80	65	50,000	929000922206
Fortimo LED Line 1ft 1100lm 840 3R HV3	1100	6.70	164	4000	3	80	65	50,000	929000922306
Fortimo LED Line 1ft 1100lm 850 3R HV3	1100	6.70	164	5000	3	80	65	50,000	929000922406
Fortimo LED Line 1ft 1100lm 865 3R HV3	1100	6.70	164	6500	3	80	65	50,000	929000922506
Fortimo LED Line 1ft 1100lm 930 3R HV3	1000	8.54	117	3000	3	90	65	50,000	929000966406
Fortimo LED Line 1ft 1100lm 940 3R HV3	1100	8.46	130	4000	3	90	6	50,000	929000922606

#### Non-isolated LED drivers (HV)

#### Product specifications

roduct specifica	itions					
Driver type	Product type	LED Line 1 ft 1100 lm	LED Line 2 ft 2200 lm	LED Line 1 ft 650 lm	LED Line 1 ft 1100 lm	Order code
		1R systems	1R systems	3R systems	3R systems	12NC
DALI	Xitanium 150W 0.2-0.7A 300V TD 230V iXt	6-10, 12, 14,	3, 4, 6, 8	10, 12, 14, 15, 16,	7-10, 12, 14,	929000893306
		16, 18		18, 20, 21, 24, 25,	16, 18, 20, 21	
				27, 28, 30, 32, 35		
	Xitanium 110W 0.2-0.6A 215V TD 230V iXt	5, 6, 8, 10, 12	3, 4, 6	8, 10, 12, 15, 16,	5 - 8, 10, 12, 14	929000877306
				18, 20, 24	12, 14	
	Xitanium 75W 0.12-0.4A 215V TD 230V	4-6	2, 3	5-8, 10, 12	4-7	929000852103
	Xitanium 36W 0.12-0.4A 110V TD 230V	2, 3	1	3, 4, 6	2, 3	929000852203
	Xitanium 17W 0.12-0.4A 54V TD 230V	1	NA	2	1	929000684703
1-10V	Xitanium 75W 0.12-0.4A 220V 1-10V 230V	4-6	2, 3	5-8, 10, 12	4-7	929000953706
	Xitanium 36W 0.12-0.4A 115V 1-10V 230V	2, 3	1	3, 4, 6	2, 3	929000953606
	Xitanium 17W 0.12-0.4A 54V 1-10V 230V	1	NA	2	1	929000684803
Fixed output	Xitanium 75W 0.12-0.4A 220V 230V	4-6	2, 3	5-8, 10, 12	4-7	929000950706
	Xitanium 36W 0.12-0.4A 115V 230V	2, 3	1	3, 4, 6	2, 3	929000950606

#### Product specifications

Product specifications									
Product type	Light output	Power consumption	Module efficacy	Color temperature	Color consistency	Color rendering index	Tc life	Lifetime	Order code
	lm	W	lm/W	К	SDCM	Ra	°C	Hours	12NC
Fortimo LED Line 1ft 1100lm 830 1R LV3	1060	6.84	155	3000	3	80	65	50,000	929000918806
Fortimo LED Line 1ft 1100lm 840 1R LV3	1100	6.88	160	4000	3	80	65	50,000	929000919006
Fortimo LED Line 1ft 1100lm 850 1R LV3	1120	6.87	163	5000	3	80	65	50,000	929000919106
Fortimo LED Line 1ft 1100lm 865 1R LV3	1110	6.85	162	6500	3	80	65	50,000	929000919206
Fortimo LED Line 1ft 1100lm 930 1R LV3	1000	9.25	108	3000	3	90	65	50,000	929000965906
Fortimo LED Line 1ft 1100lm 940 1R LV3	1100	9.16	120	4000	3	90	65	50,000	929000919306
Fortimo LED Line 2ft 2200lm 830 1R LV3	2120	13.68	155	3000	3	80	65	50,000	929000919906
Fortimo LED Line 2ft 2200lm 840 1R LV3	2200	13.75	160	4000	3	80	65	50,000	929000920106
Fortimo LED Line 2ft 2200lm 850 1R LV3	2240	13.74	163	5000	3	80	65	50,000	929000920206
Fortimo LED Line 2ft 2200lm 865 1R LV3	2220	13.70	162	6500	3	80	65	50,000	929000920306
Fortimo LED Line 2ft 2200lm 930 1R LV3	2200	20.30	108	3000	3	90	65	50,000	929000966206
Fortimo LED Line 2ft 2200lm 940 1R LV3	2200	18.30	120	4000	3	90	65	50,000	929000966306
Fortimo LED Line 1ft 650lm 830 3R LV3	650	5.41	120	3000	3	80	65	50,000	929000920906
Fortimo LED Line 1ft 650lm 840 3R LV3	650	5.41	120	4000	3	80	65	50,000	929000921106
Fortimo LED Line 1ft 650lm 850 3R LV3	650	5.41	120	5000	3	80	65	50,000	929000921206

#### Isolated LED drivers (LV)

#### Product specifications

Driver type	Product type	LED Line 1 ft 1100 lm	LED Line 2 ft 2200 lm	LED Line 1 ft 650 lm	Order code
		1R systems	1R systems	3R systems	12NC
DALI	Xitanium 75W 0.7-2A 54V TD 230V	4-8	2-4	6-14	929000692103
	Xitanium 36W 0.3-1A 54V TD 230V	2-4	1, 2	3-7	929000832303
1-10V	Xitanium 75W 0.7-2A 54V 1-10V 230V	4-8	2-4	6-14	929000692203
	Xitanium 36W 0.3-1A 54V 1-10V 230V	2-4	1, 2	3-7	929000854003
Fixed output	Xitanium 75W 0.7-2A 54V 230V	4-8	2-4	6-14	929000863403
	Xitanium 36W 0.3-1A 54V 230V	2-4	1, 2	3-7	929000853903

# Fortimo LED Line HighFlux Gen2

Linear

Fortimo LED Line High Flux systems consist of linear LED modules with high lumens per foot, high energy efficiency and a high quality of light. Fortimo LED Line High Flux systems are designed to enable LED lighting at higher application heights where more light is needed, such as trunking, battens and high-bay applications in warehouses, factories or large-format retail stores. These smart systems come complete with the Xitanium iXt drivers offering the flexibility to adjust current settings to differentiate on lumen output, efficacy and lifetime in extreme temperature conditions.

#### **Features**

- · High Tc life of 90°C enables usage in rough application conditions
- Tc range of -40°C to +100°C enables extreme ambient temperatures in the lighting application
- LED module efficiency of up to 143lm/W
- · Long life-time: >50,000 hours
- High color rendering: CRI >80
- Excellent color consistency of 3 SDCM

#### **Benefits**

- Enabling luminaires for high application heights
- Excellent thermal performance
- · High product performance
- Easy design-in
- Flexible specification due to smart Xitanium drivers

#### Applications

- Warehouses
- Factories
- Big retail stores
- · Cold storage



Fortimo LED Line HighFlux Gen2

#### **Product specifications**

Product type	Light output	Power consumption	Module efficacy	Color temperature	Color consistency	Color rendering index	Tc life	Lifetime	Order code
	lm	W	lm/W	К	SDCM	Ra	°C	Hours	12NC
Fortimo LED Line 1ft 2000lm 830 1R LV2	1910	14.1	136	3000	3	80	90	50,000	929000719713
Fortimo LED Line 1ft 2000lm 835 1R LV2	1950	14.1	138	3500	3	80	90	50,000	929000719813
Fortimo LED Line 1ft 2000lm 840 1R LV2	2000	14.1	142	4000	3	80	90	50,000	929000719913
Fortimo LED Line 1ft 2000lm 850 1R LV2	2010	14.1	143	5000	3	80	90	50,000	929000720013
Fortimo LED Line 1ft 2000lm 830 1R HV2	1910	14.1	136	3000	3	80	90	50,000	929000720113
Fortimo LED Line 1ft 2000lm 835 1R HV2	1950	14.1	138	3500	3	80	90	50,000	929000720213
Fortimo LED Line 1ft 2000lm 840 1R HV2	2000	14.1	142	4000	3	80	90	50,000	929000720313
Fortimo LED Line 1ft 2000lm 850 1R HV2	2010	14.1	143	5000	3	80	90	50,000	929000720413
Fortimo LED Line 1ft 2000lm 865 1R HV2	2020	14.1	143	6500	3	80	90	50,000	929000974106
Fortimo LED Line 2ft 4000lm 830 1R LV2	3820	28.2	135	3000	3	80	90	50,000	929000720513
Fortimo LED Line 2ft 4000lm 835 1R LV2	3900	28.2	138	3500	3	80	90	50,000	929000720613
Fortimo LED Line 2ft 4000lm 840 1R LV2	4000	28.2	142	4000	3	80	90	50,000	929000720713
Fortimo LED Line 2ft 4000lm 850 1R LV2	4020	28.2	143	5000	3	80	90	50,000	929000720813
Fortimo LED Line 2ft 4000lm 830 1R HV2	3820	28.2	135	3000	3	80	90	50,000	929000720913
Fortimo LED Line 2ft 4000lm 835 1R HV2	3900	28.2	138	3500	3	80	90	50,000	929000721013
Fortimo LED Line 2ft 4000lm 840 1R HV2	4000	28.2	142	4000	3	80	90	50,000	929000721113
Fortimo LED Line 2ft 4000lm 850 1R HV2	4020	28.2	143	5000	3	80	90	50,000	929000721213
Fortimo LED Line 2ft 4000lm 865 1R HV2	4030	28.2	143	6500	3	80	90	50,000	929000974206



#### Non-isolated LED drivers (HV)

#### Product specifications

Driver type	Product type	LED Line 1 ft 2000 lm*	LED Line 2 ft 4000 lm*	LED Line 1 ft 2000 lm**	Order code
		1R systems	1R systems	3R systems	12NC
DALI	Xitanium 150W 0.2-0.7A 300V TD 230V iXt	5-9	3, 4	5-9	929000893306
	Xitanium 110W 0.2-0.6A 215V TD 230V iXt	4-6	2, 3	4-6	929000877306
	Xitanium 75W 0.12-0.4A 215V TD 230V	4-6	2, 3	4-6	929000852103
	Xitanium 36W 0.12-0.4A 110V TD 230V	2, 3	1	2, 3	929000852203
	Xitanium 17W 0.12-0.4A 54V TD 230V	1	NA	1, 2	929000684703
1-10V	Xitanium 75W 0.12-0.4A 220V 1-10V 230V	4-6	2, 3	4-6	929000638203
	Xitanium 36W 0.12-0.4A 115V 1-10V 230V	2, 3	1	2, 3	929000673903
	Xitanium 17W 0.12-0.4A 54V 1-10V 230V	1	NA	1	929000684803
Fixed output	Xitanium 75W 0.12-0.4A 220V 230V	4-6	2, 3	4-6	929000950606
	Xitanium 36W 0.12-0.4A 115V 230V	2, 3	1	2, 3	929000950706

<sup>\*</sup> The current 6W and 75W drivers limit the module up to 1835lm/ft. The highest configurations 3 and 6 shall be driver at max with 360mA giving 1670lm/ft.

#### Isolated LED drivers (LV)

Product specifica	tions		
Driver type	Product type	LED Line 2 ft 4000 lm**	Order code
		1R systems	12NC
DALI	Xitanium 75W 0.7-2A 54V TD 230V	1, 2	929000863403
	Xitanium 36W 0.3-1A 54V TD 230V	1	929000832303
1-10V	Xitanium 75W 0.7-2A 54V 1-10V 230V	1, 2	929000863503
	Xitanium 36W 0.3-1A 54V 1-10V 230V	1	929000854003
Fixed output	Xitanium 75W 0.7-2A 54V 230V	1, 2	929000863403
	Xitanium 36W 0.3-1A 54V 230V	1	929000853903

<sup>\*\*</sup> The current 36W and 75W drivers limit the module up to 1890lm/ft. The highest configurations 3 and 6 shall be driver at max with 370mA giving 1740lm/ft (36W) or 385mA, giving 1810lm/ft (75W).

# **Fortimo LED Strip Gen3**

Linear

Design is a major differentiator for you as a luminaire designer/manufacturer. But you cannot afford to compromise on the quality of light or to accept less than the best in terms of energy efficiency. This third generation of LED strip ensures just that. It allows you to design high-performance, slim linear LED luminaires without having to compromise on design freedom, quality of light, or total cost of ownership. The systems are ideal for use in luminaires for direct lighting in offices, banks, schools, public buildings, supermarkets and any applications where fluorescents are predominantly used.

#### **Features**

- State-of-the-art LED module efficiency of up to 165lm/W
- Long life-time: >50,000 hours
- High color rendering (CRI >80 and >90)
- Excellent color consistency of 3 SDCM
- Color temperatures: 3000K, 4000K, 5000K and 6500K
- · Zhaga compliant

#### **Benefits**

- · Increased energy efficiency
- · Improved temperature management
- Applicable for all fluorescent
- luminaires
- Smart system with Xitanium driver



**Applications** 

Offices

Industry

Fortimo LED Strip Gen3

#### Product specifications

Product type	Light output*	Power consumption*	Module efficacy*	Color temperature	Color consistency	Color rendering index	Tc life	Lifetime	Order code
	Im	w	Im/W	К	SDCM	Ra	(°C)	Hours	12NC
Fortimo LED Strip 1ft 1100lm 830 1R LV3	1060	6.84	155	3000	3	80	65	50,000	929000922706
Fortimo LED Strip 1ft 1100lm 840 1R LV3	1100	6.88	160	4000	3	80	65	50,000	929000922906
Fortimo LED Strip 1ft 1100lm 850 1R LV3	1120	6.87	163	5000	3	80	65	50,000	929000923006
Fortimo LED Strip 1ft 1100lm 865 1R LV3	1110	6.85	162	6500	3	80	65	50,000	929000923106
Fortimo LED Strip 1ft 1100lm 940 1R LV3	910	6.84	133	4000	3	90	65	50,000	929000923206
Fortimo LED Strip 1ft 1100lm 830 1R HV3	1060	6.84	155	3000	3	80	65	50,000	929000923306
Fortimo LED Strip 1ft 1100lm 840 1R HV3	1100	6.88	160	4000	3	80	65	50,000	929000923406
Fortimo LED Strip 1ft 1100lm 850 1R HV3	1120	6.87	163	5000	3	80	65	50,000	929000923506
Fortimo LED Strip 1ft 1100lm 865 1R HV3	1110	6.85	162	6500	3	80	65	50,000	929000923606
Fortimo LED Strip 1ft 1100lm 940 1R HV3	910	6.84	133	4000	3	90	65	50,000	929000923706
Fortimo LED Strip 2ft 2200lm 830 1R LV3	2120	13.68	155	3000	3	80	65	50,000	929000923806
Fortimo LED Strip 2ft 2200lm 840 1R LV3	2200	13.75	160	4000	3	80	65	50,000	929000924006
Fortimo LED Strip 2ft 2200lm 850 1R LV3	2240	13.74	163	5000	3	80	65	50,000	929000924106
Fortimo LED Strip 2ft 2200lm 865 1R LV3	2220	13.70	162	6500	3	80	65	50,000	929000924206
Fortimo LED Strip 2ft 2200lm 830 1R HV3	2120	13.68	155	3000	3	80	65	50,000	929000924306
Fortimo LED Strip 2ft 2200lm 840 1R HV3	2200	13.75	160	4000	3	80	65	50,000	929000924506
Fortimo LED Strip 2ft 2200lm 850 1R HV3	2240	13.74	163	5000	3	80	65	50,000	929000924606
Fortimo LED Strip 2ft 2200lm 865 1R HV3	2220	13.70	162	6500	3	80	65	50,000	929000924706



#### Non-isolated LED drivers (HV)

#### Product specifications

Driver type	Product type	Dimensions	LED Strip 1ft 1100 lm HV3	LED Strip 2ft 2200 lm HV3	Order code
		mm	# modules	# modules	12 NC
DALI	Xitanium 150W 0.2-0.7A 300V TD 230V iXt	360 x 30 x 21	7-2, 14, 16, 18, 20, 22	4, 5, 6, 8, 10	929000893306
	Xitanium 110W 0.2-0.6A 215V TD 230V iXt	360 x 30 x 21	5-10, 12, 14, 16	3, 4, 6, 8	929000877306
	Xitanium 75W 0.12-0.4A 215V TD 230V	360 x 30 x 22	5-9	3-4	929000852103
	Xitanium 36W 0.12-0.4A 110V TD 230V	360 x 30 x 22	3-4	2	929000852203
	Xitanium 17W 0.12-0.4A 54V TD 230V	360 x 30 x 22	2	1	929000684703
1-10V	Xitanium 75W 0.2-0.4A 200V 1-10V 230V	360 x 30 x 22	5-8	3-4	929000638203
	Xitanium 36W 0.12-0.4A 100V 1-10V 230V	360 x 30 x 22	3-4	2	929000673903
	Xitanium 17W 0.12-0.4A 54V 1-10V 230V	360 x 30 x 22	2	1	929000684803
Fixed output	Xitanium 75W 0.12-0.4A 220V 230V	280 x 30 x 22	5-9	3-4	929000950606
	Xitanium 36W 0.12-0.4A 115V 230V	280 x 30 x 22	3-4	2	929000950706

#### Isolated LED drivers (LV)

#### Product specifications

Driver type	Product type	Dimensions	LED Strip 1ft 1100 lm HV3	LED Strip 2ft 2200 lm HV3	Order code
		mm	# modules	# modules	12 NC
DALI	Xitanium 75W 0.7-2A 54V TD 230V	425 x 30 x 25	4 - 10	2 - 5	929000692103
	Xitanium 36W 0.3-1A 54V TD 230V	425 x 30 x 25	2 - 4	1 - 2	929000832303
1-10 V	Xitanium 75W 0.7-2A 54V 1-10V 230V	425 x 30 x 25	4 - 10	2 - 5	929000863503
	Xitanium 36W 0.3-1A 54V 1-10V 230V	360 x 30 x 25	2 - 4	1 - 2	929000854003
Fixed output	Xitanium 75W 0.7-2A 54V 230V	425 x 30 x 25	4 - 10	2 - 5	929000863403
	Xitanium 36W 0.3-1A 54V 230V	360 x 30 x 25	2 - 4	1 - 2	929000853903

# **Fortimo LED Square**

Linear

Fortimo LED Square systems consist of white light LED modules with square outer dimensions delivering high energy efficiency and high quality of homogeneous light. These smart systems are completed with the Xitanium drivers offering the flexibility to adjust current settings to differentiate on lumen output, efficacy and lifetime. Fortimo LED Square systems are ideal for office applications where the luminaires require very homogeneous exit surface window. Typical applications are recessed, surface mounted and suspended office luminaires.

#### **Features**

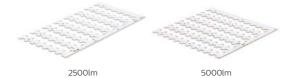
- Homogeneous exit windows for luminaires with depth of 4.5cm
- Module efficiency up to 170lm/W
- Quick mounting of modules with only 1 screw
- Tc up to 80 °C
- · High quality of white light

#### Benefits

- Enabling homogeneous and shallow luminaires
- · High energy efficiency
- Improved luminaire manufacturability
- $\bullet \ {\sf Flexible} \ {\sf system} \ {\sf with} \ {\sf Xitanium} \ {\sf drivers}$
- Fast and easy mounting with less cabling

#### **Applications**

- · Ideal for office applications
- Recessed, surface mounted or suspended
- Ideal replacement in e.g. 600 x 600mm, 500 x 500mm and below



#### LED Square 2500lm

#### Product specifications

Product type	Light output	Module efficacy	Color rendering	Color consistency	Lifetime	Case temp. lifetime	Order code
	Im	Im/W @ Tc Nom	CRI	SDCM	Hours	°C	12NC
Fortimo LED Square 2500lm 830 HV/LV1	2322	158	> 80	3	> 50,000	75	929000958406
Fortimo LED Square 2500lm 840 HV/LV1	2500	170	> 80	3	> 50,000	75	929000958506
Fortimo LED Square 2500lm 865 HV/LV1	2500	170	> 80	3	> 50,000	75	929000958606

#### LED Square 5000lm

#### Product specifications

Product type	Light output	Module efficacy	Color rendering	Color consistency	Lifetime	Case temp. lifetime	Order code
	Im	Im/W @ Tc Nom	CRI	SDCM	Hours	°C	12NC
Fortimo LED Square 380mm 5000lm 830 HV1	4605	129	> 80	3	> 50,000	75	929000945206
Fortimo LED Square 380mm 5000lm 840 HV1	5000	140	> 80	3	> 50,000	75	929000945606
Fortimo LED Square 380mm 5000lm 830 LV1	4605	129	> 80	3	> 50,000	75	929000945106
Fortimo LED Square 380mm 5000lm 840 LV1	5000	140	> 80	3	> 50,000	75	929000945506



#### Non-isolated LED drivers (HV)

#### Product specifications

Driver type	Product type	LED Square 2500Im	LED Square 5000lm	Order code
		SQ systems	SQ systems	12 NC
DALI	Xitanium 150W 0.2-0.7A 300V TD 230V iXt	4	NA	929000893306
	Xitanium 110W 0.2-0.6A 215V TD 230V iXt	3.4	1, 2	929000877306
	Xitanium 75W 0.12-0.4A 215V TD 230V	3.4	1	929000852103
	Xitanium 36W 0.12-0.4A 110V TD 230V	2	NA	929000852203
1-10 V	Xitanium 75W 0.12-0.4A 220V 1-10V 230V	3.4	1	929000953706
	Xitanium 36W 0.12-0.4A 115V 1-10V 230V	2	NA	929000953606
	Xitanium 17W 0.12-0.4A 54V 1-10V 230V	1	NA	929000684803
Fixed output	Xitanium 75W 0.12-0.4A 220V 230V	3.4	1	929000950706
	Xitanium 36W 0.12-0.4A 115V 230V	2	NA	929000950606

#### Isolated LED drivers (LV)

#### Product specifications

Driver type	Product type	LED Square 2500Im	LED Square 5000lm	Order code
		SQ systems	SQ systems	12 NC
DALI	Xitanium 75W 0.7-2A 54V TD 230V	3.4	2	929000692103
	Xitanium 36W 0.3-1A 54V TD 230V	1.2	1	929000832303
1-10 V	Xitanium 75W 0.7-2A 54V 1-10V 230V	3.4	2	929000863503
	Xitanium 36W 0.3-1A 54V 1-10V 230V	1.2	1	929000854003
Fixed output	Xitanium 75W 0.7-2A 54V 230V	3.4	2	929000863403
	Xitanium 36W 0.3-1A 54V 230V	1.2	1	929000853903

# **CertaFlux LED Strip Gen2**

Linear

While further improving the specifications of our Fortimo range, we focused on offering the most cost-efficient solution for linear LED lighting with our CertaFlux range. CertaFlux LED Strip systems offer good product performance and functionality, with good quality of light, meeting market needs for basic lighting. These cost effective systems are completed with the CertaDrive linear LED driver portfolio, specifically designed to match the CertaFlux LED Strips and focused on lumen packages for high volume applications.

#### **Features**

- 775, 1100, 1550lm and 2200lm lumen output are available
- Efficiency levels surpassing T8 systems
- $\cdot$  High quality white light CRI 80
- 50,000 hours lifetime
- Efficacy up to 123lm/W

#### **Benefits**

- > 50% energy saving
- < 1.5 payback period on LED investment</p>
- Philips standard systems warranty applies
- · Flexible and reliable

#### **Applications**

- Office: Reception, lobby, corridors, meeting rooms, open offices and pantry areas
- Retail: Aisles, warehouses and storage areas
- Industry: Warehouses, production areas and office areas



CertaFlux LED Strip Gen2

#### Product specifications

Product type	Light output	Module efficacy	Color rendering	Color consistency	Lifetime	Case temp. lifetime	Order code
	lm	Im/W @ Tc Nom	CRI	SDCM	Hours	°C	12NC
CertaFlux LED Strip 1ft 775lm 830 HV2	727	117	> 80	4	> 50,000	75	929000971106
CertaFlux LED Strip 1ft 775lm 840 HV2	775	123	> 80	4	> 50,000	75	929000971206
CertaFlux LED Strip 1ft 775lm 865 HV2	775	123	> 80	4	> 50,000	75	929000971306
CertaFlux LED Strip 1ft 1100lm 830 HV2	1018	112	>80	4	> 50,000	75	929000971406
CertaFlux LED Strip 1ft 1100lm 840 HV2	1100	120	> 80	4	> 50,000	75	929000971506
CertaFlux LED Strip 1ft 1100lm 865 HV2	1100	120	> 80	4	> 50,000	75	929000971606
CertaFlux LED Strip 2ft 1550lm 830 HV2	1454	117	>80	4	> 50,000	75	929000971706
CertaFlux LED Strip 2ft 1550lm 840 HV2	1550	123	> 80	4	> 50,000	75	929000971806
CertaFlux LED Strip 2ft 1550lm 865 HV2	1550	123	> 80	4	> 50,000	75	929000971906
CertaFlux LED Strip 2ft 2200lm 830 HV2	2036	112	> 80	4	> 50,000	75	929000972006
CertaFlux LED Strip 2ft 2200lm 840 HV2	2200	120	> 80	4	> 50,000	75	929000972106
CertaFlux LED Strip 2ft 2200lm 865 HV2	2200	120	> 80	4	> 50,000	75	929000972206



#### Non-isolated LED drivers (HV)

#### Product specifications

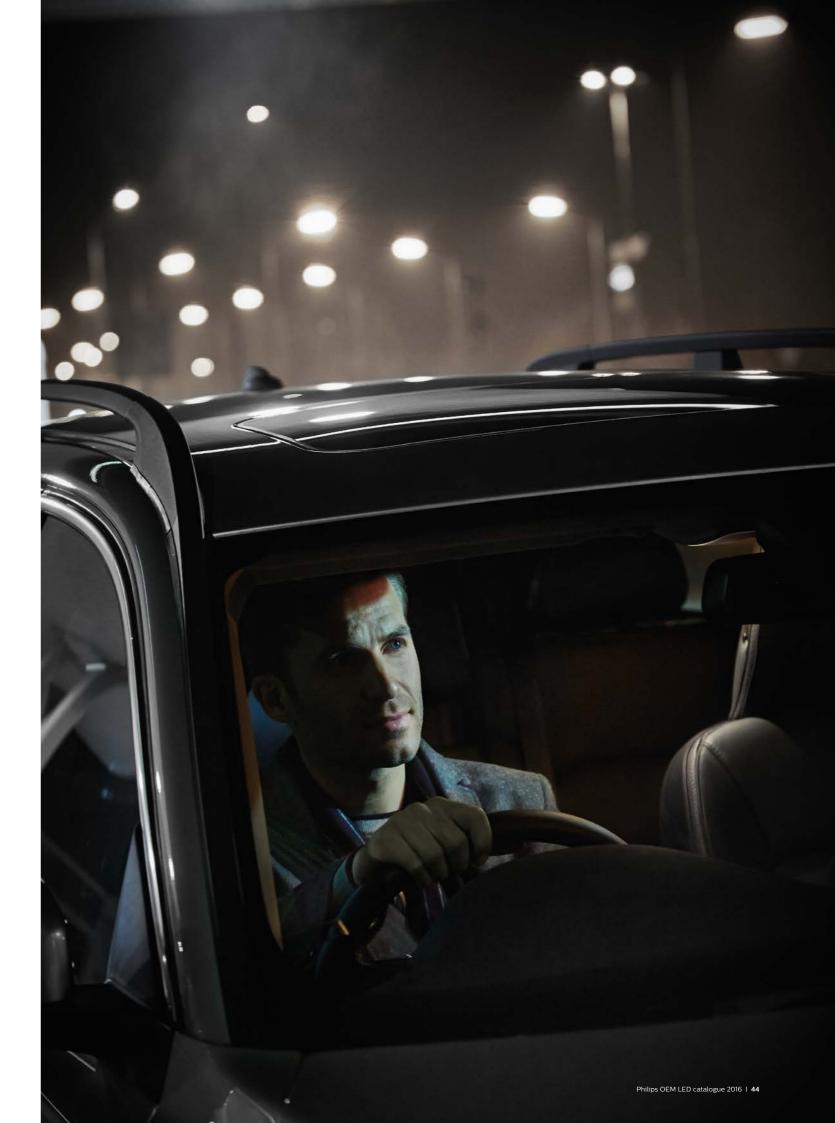
Driver type	Product type	LED strip 1 ft 775lm	LED strip 1 ft 1100lm	LED strip 2 ft 1550lm	LED strip 2 ft 2200lm	Order code
		1R systems	1R systems	1R systems	1R systems	12 NC
Fixed output	Xitanium 75W 0.12-0.4A 220V 230V	6-10	5-7	3-5	3	929000950706
	Xitanium 36W 0.12-0.4A 115V 230V	4-5	3	2	NA	929000950606
Fixed current	CertaDrive 60W 360mA 170V 230V	7*, 8*	5, 6	4*	3	929000974806
	CertaDrive 40W 360mA 110V 230V	5*	4	NA	2	929000974906
	Xitanium 75W 0.12-0.4A 220V 230V	4	3**	2	NA	929000975006

Note: The overview shows system configuration of the CertaFlux LED Strip modules achieving nominal lumen output. Configurations marked\* will give a slightly higher-than-typical flux, configuration marked\*\* will give a slightly lower-than-typical flux. Please consult the online Easy Design-in tool for all possible system configuration, available via philips.com/technology.

# **Outdoor** systems



Outdoor LED lighting components must be cost-effective building blocks that can be smartly configured to create tailored outdoor luminaires for various applications.



### Fortimo FastFlex Gen3

Outdoor

The Fortimo FastFlex LED system Gen3 portfolio has been designed to offer a suitable solution to OEMs who want to distinguish themselves through their fixture design and speed to market, as well as OEMs wanting to differentiate their propositions based on optical (photometric) performance. As a result the standard Fortimo FastFlex Gen3  $2 \times 8$  and  $2 \times 4$  are designed for for those looking for a central 'one-stop shop', where board and lens are provided by Philips, allowing a short fixture development cycle, while enabling good optical flexibility with its eight standard light distributions.

For OEMs looking to have a unique photometric performance, the new Fortimo FastFlex Differentiation Family (DA and DS Gen3) are designed to operate together with third party lenses, enabling an unlimited number of possible optical configurations, allowing the use of standard components for a unique photometric result. In the new generation, two new variants are launched. Fortimo FastFlex DA Gen 3 (differentiation array) and Fortimo FastFlex DS Gen3 (differentiation single) have been designed to the best in class efficacy, life time, and lumen depreciation specifications; while providing the maximum optical freedom, to differentiate in the market with unique light distribution.

This exceptional optical freedom comes with the possibility of using lens arrays, or individual lenses in combination with the DA or DS FastFlex variants. While the Fortimo FastFlex DA in combination with lens arrays offers an excellent compromise between optical uniqueness and assembly speed, the Fortimo FastFlex DS excels in terms of maximum differentiation, as each LED can be tuned to a given light distribution.

#### Features

- Modular approach to luminaire design; choice of 4 optical distributions
- Color temperatures: 3000K, 4000K and 5700K
- Patented interface between lens, module and mounting surface
- High Tcase 75 °C
- · CRI 70 or 80

#### **Benefits**

- · A perfect match for any project
- · Flexible system design
- Easy factory assembly and reliable lifetime performance
- · Low cost of thermal management
- Minimal scrap and outdated component cost

#### **Applications**

- · Road lighting
- Flood and area lighting
- Urban street lighting
- Tunnels
- High bay



Fortimo FastFlex Gen3

#### Product specifications

Product type	Module power	Module efficacy typical	0	Correlated color temperature	Color rendering index	Тс	Thermal load	Max input voltage	Color consistency	Lifetime 90% survivals	Order code
	w	lm/W	Im	K	min. CRI	(°C)	w	V	SDCM	Hours	12NC
Fortimo FastFlex LED board 2x8/730 G3	24	137	3245	3000	> 70	75	14.6	50	4*	> 50,000**	929000954706
Fortimo FastFlex LED board 2x8/740 G3	24	148	3505	4000	> 70	75	14	50	4*	> 55,000**	929000954806
Fortimo FastFlex LED board 2x8/757 G3	24	151	3575	5700	> 70	75	14	50	4*	> 55,000**	929000954906
Fortimo FastFlex LED board 2x8/840 G3	24	137	3245	4000	> 80	75	14.6	50	4*	> 55,000**	929000955006
Fortimo FastFlex LED board 2x4/740 G3	12	148	1753	4000	> 70	75	7	25	4*	> 55,000**	929000955306
Fortimo FastFlex LED board 2x4/730 G3	12	137	1623	3000	> 70	75	7.3	25	4*	> 55,000**	929000955206
Fortimo FastFlex LED board 2x8/730 DA G3	24	137	3245	3000	> 70	75	14.6	50	4*	> 55,000**	929000955706
Fortimo FastFlex LED board 2x8/740 DA G3	24	148	3505	4000	>70	75	14	50	4*	> 55,000**	929000955806
Fortimo FastFlex LED board 2x8/757 DA G3	24	151	3575	5700	> 70	75	14	50	4*	> 55,000**	929000955906
Fortimo FastFlex LED board 2x8/730 DS G3	24	137	3245	3000	> 70	75	14.6	50	4*	> 55,000**	929000955406
Fortimo FastFlex LED board 2x8/740 DS G3	24	148	3505	4000	>70	75	14	50	4*	> 55,000**	929000955506
Fortimo FastFlex LED board 2x8/757 DS G3	24	151	3575	5700	>70	75	14	50	4*	> 55,000**	929000955606

Note: Light output is specified at board level (lens optical losses not included).

When using standard Fortimo FastFlex lenses, optical losses of 4% need to be taken into account. Specification given at 530 mA and Tc 75  $^{\circ}$ C.

#### FastFlex LED Lenses and clip Gen2

#### Product specifications

Product type	Order code
	12 NC
FastFlex lens 2x8/II-X Gen2	929000873806
FastFlex lens 2x8/III-X Gen2	929000873906
FastFlex lens 2x8/IV-X Gen2	929000874006
FastFlex lens 2x8/V Gen2	929000874106
FastFlex lens 2x8/HB65 Gen2	929000896306
FastFlex lens 2x8/II-X WTR Gen2	929000906206
FastFlex lens 2x4/SW-X Gen2	929000897406
FastFlex lens 2x4/V_C Gen2	929000897506
FastFlex module clip*	929000948106
FastFlex lensless mounting Gen 2	929000904506

Recommended drivers FastFlex LED board 2 x 8 (standard and DA version)

#### Product specifications

Number of FastFlex LED modules	Max output current	Driver
(2 x 8)	mA	
1	700	Xi LP 40W 0.2-0.7A S1 230V S175 sXt
1	1000	Xi LP 75W 0.3-1.0A S1 230V S240 sXt
2	700	Xi LP 75W 0.2-0.7A S1 230V S240 sXt
2	1000	Xi LP 150W 0.3-1.0A S1 230V S240 sXt
3	700	Xi LP 150W 0.2-0.7A SL 230V S240 sXt
3	1000	Xi LP 150W 0.3-1.0A SL 230V S240 sXt
4	700	Xi LP 150W 0.2-0.7A SL 230V S240 sXt
5	530	Xi LP 150W 0.2-0.7A S1 230V S240 sXt

Recommended drivers FastFlex LED board 2 x 8 (standard and DA version)

#### Product specifications

Number of FastFlex LED modules	Max output current	Driver
(2 x 8)	mA	
1	700	Xitanium FULL Prog 35W 1000 NLD C150 Xt
2	700	Xitanium FULL Prog 70W 1000 NLD C150 Xt
3	750	Xitanium FULL Prog 110W 1000 NLD C150 Xt
4	550	Xitanium FULL Prog 110W 1000 NLD C150 Xt

Note: Driving current of module must be programmed via MultiOne configurator.

Recommended drivers FastFlex LED board 2 x 8 (DS version)

#### Product specifications

Number of FastFlex LED modules	Max output current	Driver
(2 x 8)	mA	
1	700	Xitanium FULL Prog 35W 1000 NLD C150 Xt
1	700	Xi LP 40W 0.2-0.7A S1 230V S175 sXt
2	700	Xitanium FULL Prog 70W 1000 NLD C150 Xt
2	700	Xi LP 75W 0.2-0.7A S1 230V S240 sXt
3	750	Xitanium FULL Prog 110W 1000 NLD C150 Xt
4	700	Xitanium 150W 0.35-0.7A GL Prog+ sXt

Note: Driving current of module must be programmed via MultiOne configurator.

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 $<sup>^{*}</sup>$ Typical color consistency specified at beginning of life time.

<sup>\*\*</sup> Charts presenting module's Tc and current Vs expected lifetime (up to 100,000 hours), as well as module's Tc and current Vs expected lumen depreciation (L70 and above)

#### Recommended drivers FastFlex LED board 2 x 4

#### Product specifications

Number of FastFlex LED modules	Max output current	Driver
(2 x 4)	mA	
1	1000	Xitanium 27W 1.0A Prog 230V-J sXt
2	700	Xi LP 40W 0.2-0.7A S1 230V S175 sXt
3	530	Xi LP 40W 0.2-0.7A SL 230V S175 sXt
3	700	Xi LP 75W 0.2-0.7A S1 230V S240 sXt
4	700	Xi LP 75W 0.3-1.0A S1 230V S240 sXt
4	700	Xi LP 75W 0.3-1.0A SL 230V S240 sXt
4	1000	Xi LP 150W 0.3-1.0A S1 230V S240 sXt
5	700	Xi LP 150W 0.3-1.0A SL 230V S240 sXt

#### Product specifications

Number of FastFlex LED modules	Max output current	Driver
(2 x 4)	mA	
1	1000	Xitanium FULL Prog 35W 1000 NLD C150 Xt
1	1000	Xitanium FULL Prog 35W 1000 NL1 C150 Xt
2	700	Xitanium FULL Prog 35W 1000 NLD C150 Xt
2	1000	Xitanium FULL Prog 70W 1000 NLD C150 Xt
3	1000	Xitanium FULL Prog 70W 1000 NLD C150 Xt
4	1000	Xitanium FULL Prog 110W 1000 NLD C150 Xt

Note: Driving current of module must be programmed via MultiOne configurator.



## CertaFlux PLM Outdoor

The CertaFlux PLM is an integrated module solution with IP66 protection, excellent optical and heat management, made possible by its mid-power LED and glass lens technology. The entire system set includes PLM module, IP67 driver and connectors, creating a total IP solution perfect for easy design-in for outdoor applications. CertaFlux PLM is a modular system, with each module having a lumen output of 3000lm. The portfolio has been broadened to include color temperatures of 4000K and 5000K, suitable for new streetlight installations and could replace SON 150W, 250W and 400W.

#### Features

- Integrated heat sink and optics
- Complete IP 66 system including module, driver and connector
- Color temperatures: 3000K, 4000K and 5000K
- · CRI 70/80
- 50,000 hours lifetime

#### **Benefits**

- Easy design-in
- · Relatively low investment
- · Reliable and flexible
- Good value-for-money



**Applications** 

Streetlight

#### CertaFlux PLM

#### Product specifications

Product type	Light output	Power	System efficacy	Module efficacy	Input voltage	Color temperature index	Color rendering	Color consistency	Lifetime	Order code
	Im	W	Im/W	lm/W	V	К	Ra	SDCM	Hours	12NC
CertaFlux PLM II 3000lm 740 Gen1	3000	25.2	106	119	36	4000	70	7	50,000*	929000895808
CertaFlux PLM II 3000lm 830 Gen1	3000	25.3	107	119	36.1	3000	80	7	50,000*	929000947708
CertaFlux PLM II 3000lm 850 Gen1	2850	25.3	101	113	36.1	5000	80	7	50,000*	929000901108

<sup>\*@</sup> Tamb 30°C

#### Current accessaries and compatible drivers

Product	Order code 12NC
CertaFlux PLM 2/3 multi-connector	929000895908
CertaFlux PLM 4/5 multi-connector	929000896008
Xitanium 150W 0.7A 230V-6P I67	929000897108
Xitanium 75W 0.7A 230V-3P I67	929000897208
Xitanium 50W 0.7A 230V-2C I67	929000846808

#### New accessaries and compatible drivers

Product Control of the Control of th	Order code 12NC
CertaFlux PLM 2/3 multi-connector CSA	929001450408
CertaFlux PLM 4/5 multi-connector CSA	929001450508
Xitanium 150W 0.7A 230V 1175C	929001400180
Xitanium Dim 150W 0.7A 1-10V 230V I175C	929001401380
Xitanium 100W 0.7A 230V 1175C	929001400780
Xitanium Dim 100W 0.7A 1-10V 230V 1175C	929001401980

#### Module and driver combination

#### Product specifications

Product	Order code				Remark
	12NC				
Xitanium 150W 0.7A 230V-6P I67	929000897108	3x	4x	5x	
Xitanium 150W 0.7A 230V 1175C	929001400180	3x	4x	5x	New
Xitanium Dim 150W 0.7A 1-10V 230V I175C	929001401380	3x	4x	5x	New
Xitanium 100W 0.7A 230V 1175C	929001400780	2x	3x	4x	New
Xitanium Dim 100W 0.7A 1-10V 230V 1175C	929001401980	2x	3x	4x	New
Xitanium 75W 0.7A 230V-3P I67	929000897208	2x			
Xitanium 50W 0.7A 230V-2C I67	929000846808	1x			

#### Product specifications

Product	Order code	1PLM	2PLM	3PLM	4PLM	5PLM	6PLM	7PLM	8PLM	9PLM
	12NC									
Xitanium 75W 0.70A 230V-Y cXt	929000865208		•							
Xitanium 150W 0.70A 230V-F cXt	929000865008			•	•	•				
Xitanium 250W 0.70A 1-10V 230V-Q sXt	929000838508							•	•	•



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# LED electronics Easy Design-in tool

In order to help luminaire manufacturers find their way through the growing maze of complexity of LED systems and the different specifications they are capable of achieving, Philips has developed a Easy Design-in tool. Here you can experiment with the effects of tuning and combining LED modules and drivers, establishing the right settings needed to customize your LED luminaire.

With the Philips Easy Design-in tool you can adjust optical, thermal, electrical and mechanical specifications of Philips LED systems to get your shopping list of associated LED modules and drivers.

The Philips Easy Design-in tool is an online platform that covers all Philips Fortimo LED modules portfolio, Xitanium LED indoor and outdoor drivers, CertaFlux and CertaDrive LED systems, with the exception of modules with integrated drivers.

# The new Easy Design-in tool

The Philips Easy Design-in tool aims to help you navigate systematically, through the specifications and decisions that one needs to make to get to a recommended LED systems of a best match. A calculation engine is introduced here, with simple filters for you to click and select, to come close to a LED system needed for your particular luminaire in mind. This tool then helps narrow down your options, directing you to a set of tools best suitable for your design-in application.



#### Method 1

Calculate and select by desired lumen output, efficiency level. measurement requirements, CCT, or CRI



Match the LED modules to the driver options, with the appropriate window settings



#### Method 2

Start with a family of Philips LED modules that you already have in mind



Explore the options for your particular luminaire needs



#### Method 3

Start with a LED module that you have developed yourself. or sourced elsewhere



complement your module



With the Easy Design-in tool you can also experience the impact on luminous flux, current and voltage if you change the default temperature Tc setting of the module to another level. This helps model a realistic scenario of the temperature specifications required for your particular luminaire, in accordance with your thermal choices.



To try the Philips Easy Design-in tool, please visit our website at www.lighting.philips.com.sg/oem-asia



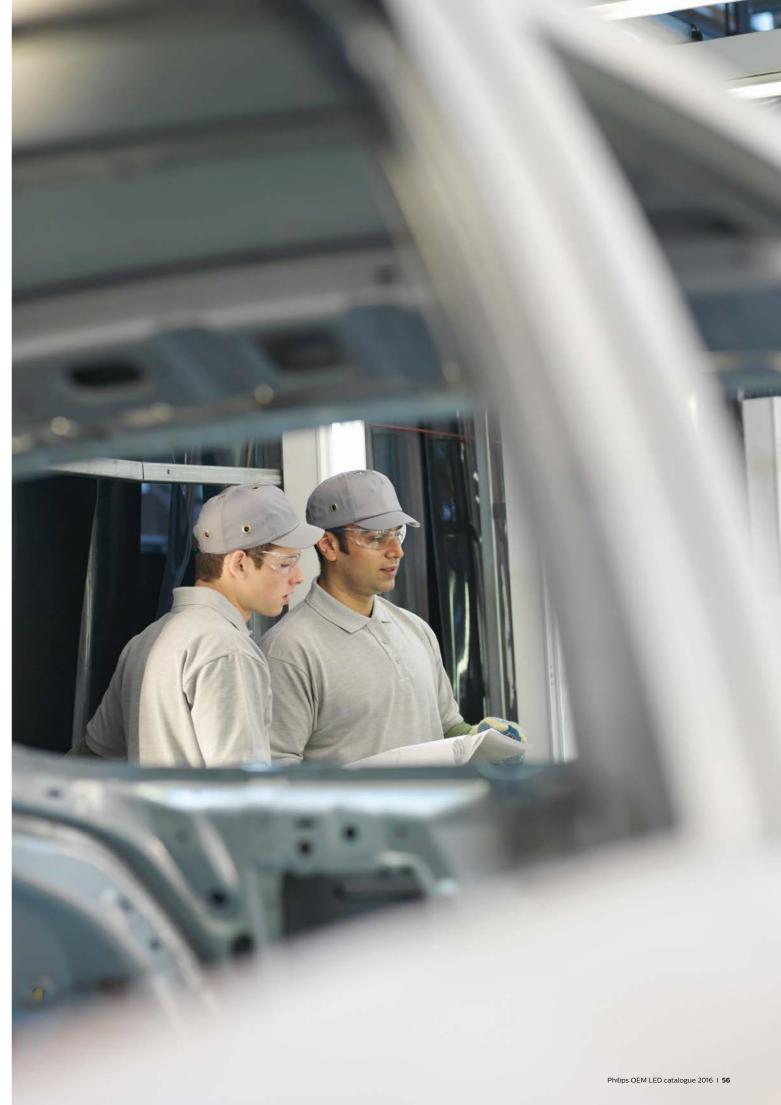
# LED drivers

# LED drivers

# portfolio

Our range of Philips LED drivers are categorized for you to match your business requirements with ease. Refer to each range description to find out more.





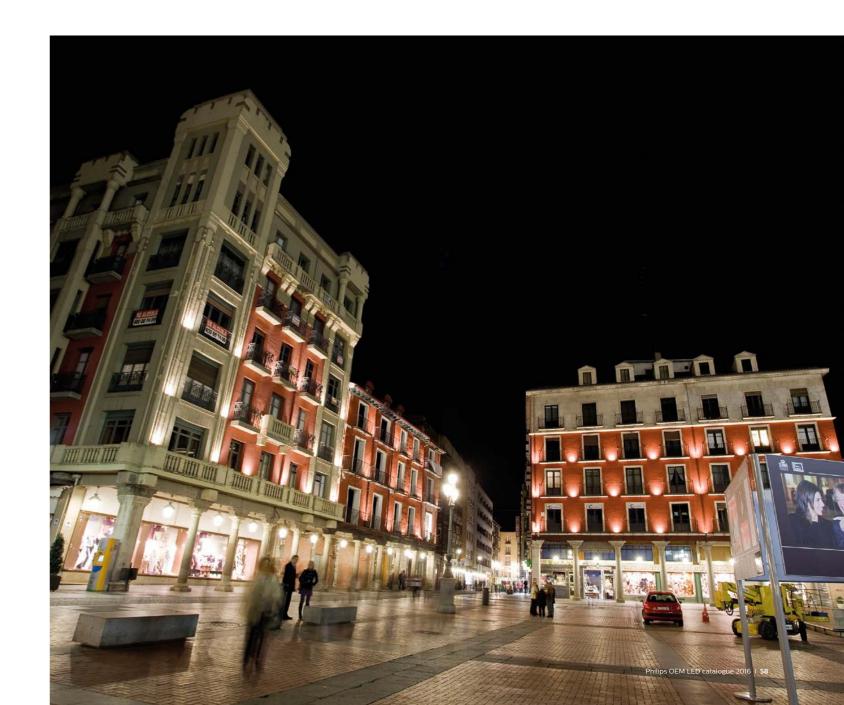
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# **Outdoor** drivers

**Philips outdoor LED drivers** offer extreme reliability and maximum flexibility, enabling you to get the best out of LED lighting applications.

### **Portfolio**

	Dimn	ning	Basic features and performance					
Outdoor drivers	DALI	_l 1-10V SimpleSet		Adjustable output current (AOC)	Housing/ installation			
S Statement	Yes	No	Yes	Yes	Built-in			
O Parformance	No	Yes	Yes	Yes	Built-in			
Performance	No	No	No	Yes	IP65			
C Core	No No		No	No	IP67/Built-in			
E Entry	No		No	No	IP67/Built-in			



**Outdoor** 

Philips Xitanium full programmable LED drivers are specifically designed to deliver the highest performance, protection and configurability. The portfolio offers both central and standalone dimming protocols further increasing the energy savings and CO2 reductions achieved with LED lighting. The technology ensures maximum robustness and protection combined with a very long lifetime.

In this product family, Philips introduces new drivers in a stretched form factor with state-of-the-art features, which offers high value for both OEM customers and end-users. The products can replace the existing programmable outdoor LED drivers and will bring significant improvement in programming, assembly into a luminaire and electrical performance. One of the key feature is SimpleSet, an easy and fast way to configure the drivers in a production environment, without the need to power the driver.

#### **Features**

- SimpleSet, wireless configuration interface
- High surge protection, 6KV Differential Mode and 8KV Common Mode
- · Long lifetime up to 100k hours and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- · Multiple control interfaces: DALI, LineSwitch, AmpDim
- · Autonomous dimming via integrated DynaDimmer
- Thermal protection for driver and for module (MTP)
- · Constant light output (CLO)
- · Adjustable start-up time (AST)
- Adjustable light output (ALO)

#### **Benefits**

- · Robust, offering peace of mind and lower maintenance costs
- Fully programmable LED drivers designed for the new digital and connected lighting world
- · Extended diagnostics via SimpleSet and MultiOne
- · Easy design-in, configuration and installation for Class I and Class II applications
- · Energy savings through high efficiency and via multiple dimming options

#### **Applications**

- · Road and street lighting
- · Tunnel lighting
- · Area lighting
- · Industry lighting







#### Product specifications

Product type	Housing type	Housing		Output current		Dimensions	Dimming	Order code
			w	Α	v	mm		12NC
Xi FP 22W 0.3-1.0A SNLDAE 230V S175 sXt	Built-in	S175	22	0.3-1.0	10-32	175 x 46 x 34	DALI/LineSwitch/Dynadimmer	929000991206
Xi FP 40W 0.3-1.0A SNLDAE 230V S175 sXt	Built-in	S175	40	0.3-1.0	20-54	175 x 46 x 34	DALI/LineSwitch/Dynadimmer	929000989306
Xi FP 75W 0.3-1.0A SNLDAE 230V S240 sXt	Built-in	S240	75	0.3-1.0	35-105	240 x 58 x 38	DALI/LineSwitch/Dynadimmer	929000962506
Xi FP 150W 0.3-1.0A SNLDAE 230V S240 sXt	Built-in	S240	150	0.3-1.0	70-214	240 x 58 x 38	DALI/LineSwitch/Dynadimmer	929000962306

# Xitanium lite programmable outdoor drivers

**Outdoor** 

Philips Xitanium lite programmable LED drivers are value enginered to deliver a carefully selected feature set of high-end performance, making it a preferred choice for many outdoor applications. The portfolio offers high flexibility with a customizable operating window, enabling differentiation in LED lighting design via system tuning and being prepared for LED efficacy upgrades.

These new LED drivers come in a stretched form factor with a balanced feature set, offering high value for both OEM luminaire makers and end-users. The products can replace the existing programmable outdoor LED drivers and will bring significant improvement in programming, assembly into a luminaire and electrical performance. One of the key feature is SimpleSet, an easy and fast way to configure the drivers in a production environment, without the need to power the driver.

#### **Features**

- · SimpleSet, wireless configuration
- High surge protection, 6KV Differential Mode and 8KV Common Mode
- · Long lifetime up to 100k hours and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- · External control interface
- 1-step autonomous dimming via integrated DynaDimmer lite
- · Thermal protection for driver (integrated)
- · Simplified linear version of constant light output (CLO LITE)

· Robust, offering peace of mind and lower maintenance costs

**Benefits** 

- Balanced configurable feature set covering the most common applications
- · Easy design-in, configuration and installation for Class I and Class II applications
- · Energy savings through high efficiency and via multiple dimming options

#### **Applications**

- · Road and street lighting
- · Tunnel lighting
- · Area lighting
- · Industry lighting







roduct specifications										
Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code		
			W	Α	V	mm		12NC		
Xi LP 40W 0.3-1.0A S1 230V S175 sXt	Built-in	S175	40	0.3-1.0	4-40	175 x 46 x 34	1-10V/Dynadimmer LITE	929000940806		
Xi LP 75W 0.3-1.0A S1 230V S240 sXt	Built-in	S240	75	0.3-1.0	35-108	240 x 58 x 38	1-10V/Dynadimmer LITE	929000963306		
Yi I D 150W 0 3_1 0A S1 230V S240 cYt	Built_in	\$240	150	0.3-10	70-214	240 v 58 v 38	1-10V/Dynadimmer LITE	929000962906		

# Xitanium adjustable output current outdoor drivers

**Outdoor** 

Philips Xitanium low voltage LED adjustable current drivers are specifically designed for maximum flexibility in low voltage outdoor applications. With superior surge protection, these durable, independently-housed drivers deliver consistent and high performance in luminaires even after multiple indirect lightning strikes. This makes an ideal solution for OEMs who need affordable, reliable and flexible LED solutions in rugged, independent outdoor applications.

#### Feature

- Proven robustness and reliable electronic driver design
- Adjustable output current with wide window
- Long lifetime to withstand harsh outdoor conditions
- Compact size, fitting with varied and critical luminaires
- · Suitable for Class I isolated luminaires
- Authorized certifications: ENEC, CB, CE and CCC
- Surge protection 4kV

#### Benefit

- Low voltage/high current output fitting the application of LED strings connecting in parallel
- Adjustable output current (AOC) gives the full flexibility to output different currents to spec-in different projects
- Easy adjustment of output current/ voltage by simply using a screwdriver
- Various power wattage drivers that are related to the lumen packages/ applications
- Consistent waterproof performance through the lifecycle
- IP-rated housing supports luminaires without fully sealed gearboxes

#### **Applications**

- · Road and street lighting
- · Area and flood lighting
- Tunnel lighting
- · High-bay lighting



#### Product specifications

Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm		12NC
Xitanium 100W 2.1-4.2A AOC 230V I220	IP65	1220	100	2.1-4.2	12-48	220 x 68 x 45	No	929001404580
Xitanium 150W 2.45-4.9A AOC 230V I220	IP65	1220	150	2.45-4.9	15-61	220 x 68 x 45	No	929001404480
Xitanium 200W 2.8-5.6A AOC 230V I250	IP65	1250	200	2.8-5.6	21-72	250 x 68 x 45	No	929001404680



LED-based light sources are excellent for outdoor environments. They are long-lasting and require low maintenance. However, to get the best out of the LEDs, these light sources require highly reliable and efficient LED Drivers. The new Philips Xitanium dimmable (1-10V) LED outdoor drivers are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements. Smallest form factor in the industry and robust design for the lowest cost luminaires.

#### **Features**

- · Proven robustness and reliable electronic driver design
- · Achieving highest efficiency based on advance technology
- Long lifetime, 100K hours@Tc life
- · High surge protection, 4KV Differential Mode and 4KV Common Mode
- Extremely compact in size, suitable for various luminaires
- Suitable for Class I isolated luminaires
- · Authorized certifications: ENEC, CB, CE and CCC
- · 1-10V dimmable

#### **Benefits**

- · Robust design, capable of withstanding harsh outdoor conditions
- · Long lifetime and high survival rate
- Superior thermal management suitable for outdoor application
- · Backed by standard warranty
- Consistent waterproof performance through the lifecycle
- · Component integration in advanced IC enabling cost-effective designs
- · Proven robustness and reliability, allowing lowest luminaire maintenance over time
- · Compact in size, suitable for various
- · Easy design-in due to superior thermal management and extra EMI margin

#### **Applications**

- · Road and street lighting
- · Area and flood lighting
- · Tunnel lighting
- · Highbay lighting



#### Product specifications

Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			w	Α	V	mm		12NC
Xitanium DIM 100W 0.7A 1-10V 230V Y	Built-in	Y-can	100	0.7	64-154	168 x 68 x 38	1-10V	929001402280
Xitanium DIM 100W 1.05A 1-10V 230V Y	Built-in	Y-can	100	1.05	42-102	168 x 68 x 38	1-10V	929001402380
Xitanium DIM 100W 0.7A 1-10V 230V I175	IP67	1175	100	0.7	64-154	175 x 68 x 45	1-10V	929001401880
Xitanium DIM 100W 1.05A 1-10V 230V I175	IP67	1175	100	1.05	42-102	175 x 68 x 45	1-10V	929001402080
Xitanium DIM 150W 0.7A 1-10V 230V Y	Built-in	Y-can	150	0.7	96-240	168 x 68 x 38	1-10V	929001401680
Xitanium DIM 150W 1.05A 1-10V 230V Y	Built-in	Y-can	150	1.05	62-154	168 x 68 x 38	1-10V	929001401780
Xitanium DIM 150W 0.7A 1-10V 230V I175	IP67	I175	150	0.7	96-240	175 x 68 x 45	1-10V	929001401280
Xitanium DIM 150W 1.05A 1-10V 230V I175	IP67	I175	150	1.05	62-154	175 x 68 x 45	1-10V	929001401480
Xitanium DIM 250W 0.7A 1-10V 230V Q	Built-in	Q-can	250	0.7	178-357	241 x 90 x 42	1-10V	929000838508
Xitanium DIM 250W 1.05A 1-10V 230V Q	Built-in	Q-can	250	1.05	118-238	241 x 90 x 42	1-10V	929001404280
Xitanium DIM 250W 0.7A 1-10V 230V I220C	IP67	1220C	250	0.7	178-357	220 x 94 x 49	1-10V	929001404080
Xitanium DIM 250W 1.05A 1-10V 230V I220C	IP67	1220C	250	1.05	118-238	220 x 94 x 49	1-10V	929001404180

# Xitanium fixed single current outdoor drivers

The new Philips Xitanium fixed output LED outdoor drivers are excellent for use in outdoor lighting application areas. When in use, the luminaires put together will be highly reliable and well protected, while meeting strict performance, technical and application requirements. Smallest form factor in the industry and robust design for the lowest cost luminaires.

#### **Features**

- · Proven robustness and reliable electronic driver design
- · Achieving highest efficiency based on advance technology
- · Long lifetime, 50K hours@Tc max
- · High surge protection, 4KV Differential Mode and 4KV Common Mode
- · Suitable for Class I isolated luminaires
- · Authorized certifications: ENEC, CB, CE and CCC

#### Benefits

- · Robust design, capable of withstanding harsh outdoor conditions
- · Long lifetime and high survival rate
- · Superior thermal management suitable for outdoor application
- Backed by standard warranty
- Consistent waterproof performance through the lifecycle
- · Component integration in advanced IC enabling cost-effective designs
- Proven robustness and reliability, allowing lowest luminaire maintenance over time
- · Compact in size, suitable for various luminaires
- · Easy design-in due to superior thermal management and extra EMI margin

#### **Applications**

- · Road and street lighting
- · Area and flood lighting
- Tunnel lighting
- · Highbay lighting



Product specifications								
Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm		12NC
Xitanium 100W 0.7A 230V Y	Built-in	Y-can	100	0.7	64-154	168 x 68 x 38	No	929001401080
Xitanium 100W 1.05A 230V Y	Built-in	Y-can	100	1.05	42-102	168 x 68 x 38	No	929001401180
Xitanium 100W 0.7A 230V 1175	IP67	1175	100	0.7	64-154	175 x 68 x 45	No	929001400680
Xitanium 100W 1.05A 230V I175	IP67	1175	100	1.05	42-102	175 x 68 x 45	No	929001400880
Xitanium 150W 0.7A 230V Y	Built-in	Y-can	150	0.7	96-240	168 x 68 x 38	No	929001400480
Xitanium 150W 1.05A 230V Y	Built-in	Y-can	150	1.05	62-154	168 x 68 x 38	No	929001400580
Xitanium 150W 0.7A 230V 1175	IP67	1175	150	0.7	96-240	175 x 68 x 45	No	929001400080
Xitanium 150W 1.05A 230V I175	IP67	1175	150	1.05	62-154	175 x 68 x 45	No	929001400280

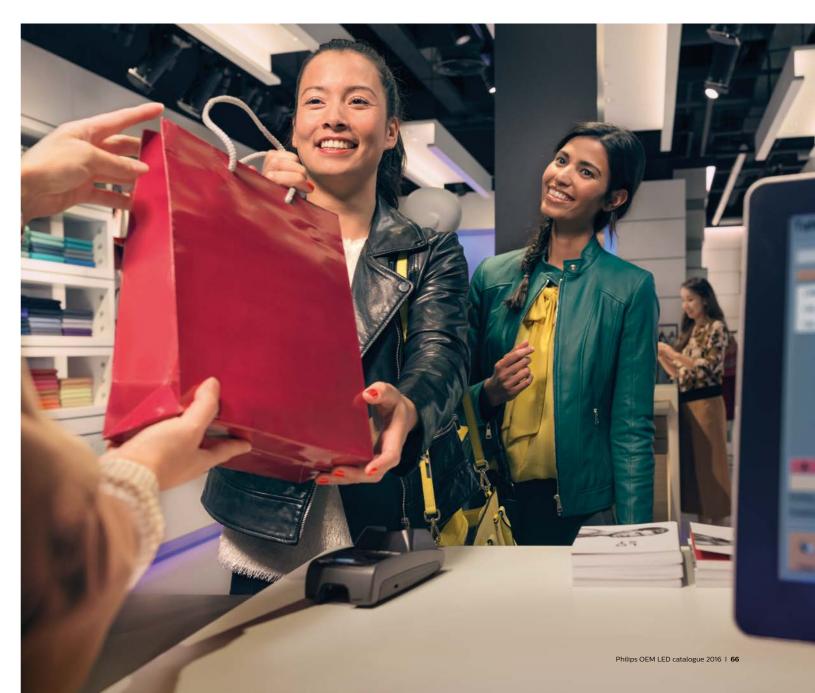
# **Point** drivers

**An optimized indoor LED drivers portfolio** for Chip on Board (COB) and mid-power LED technology, offers full flexibility for every spot and downlight application.

### **Portfolio**

	Dimn	ning	Basic features and performance						
Point drivers	DALI	1-10V	Adjustable output current (AOC)	Lifetime (Hours at TcLife)	Output current ripple LF				
S Statement	Yes	No	MultiOne	50,000	<4%				
P Performance	No	No	SimpleSet/LEDset	50,000	<4%				
C Core	No	No	No	50,000	<4%				
E Entry	No	No	No	30,000	<30%*				

<sup>\*</sup> CertaDrive LPF <5%



# Xitanium programmable point drivers

**Point** 

Our Xitanium programmable window LED drivers ensure our OEM partners have complete flexibility and control in producing high quality luminaires. Available in application dedicated form factors, our LED point drivers provide further customization possibilities via wide operating windows. Additionally, almost all drivers feature the following specifications: SELV, temperature derating, hot wiring, providing luminaire makers all the right tools to produce and later on adjust, the designs of premium downlights and spotlights.

#### **Features**

- · DALI dimmable
- · Adjustable output current via MultiOne and SimpleSet (WH series)
- +/-5% output current tolerance
- Power range from 20W to 50W
- Lifetime of 50,000 hours

#### **Benefits**

- · LH housing is the smallest design for downlighting and spotlighting
- · High reliability underpinned by standard warranty
- Future-proof flexbility: applicationoriented operating windows enable LED generation and complexity management
- · Compatibility: can be paired with other manufacturers' modules or OEM makers' PCB designs
- · Authorized certifications: ENEC, CB, CE, CCC, RCM

#### **Applications**

- Downlight
- Track light Spotlight





LH140





#### Product specifications

Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm	%	12NC
Xitanium 20W LH 0.15-0.5A 48V TD/Is 230V	Optional	LH100	20	0.15-0.5	24-48	150 x 46 x 32	Dali & Touch Dim	929000904006
Xitanium 20W WH 0.15-0.5A 54V TD/Is 230V	Optional	/WH	20	0.15-0.5	24-48	200 x 74 x 32	Dali & Touch Dim	929000991706
Xitanium 36W LH 0.3-1A 48V TD/I 230V	Independent	LH140	36	0.3-1.0	24-48	190 x 46 x 32	Dali & Touch Dim	929000870806
Xitanium 36W WH 0.3-1A 54V TD/Is 230V	Optional	/WH	36	0.3-1.0	24-54	200 x 74 x 32	Dali & Touch Dim	929000969906
Xitanium 50W LH 0.3-1A 62V TD/I 230V	Independent	LH140	50	0.3-1.0	31-62	190 x 46 x 32	Dali & Touch Dim	929000863803
Xitanium 50W LH 0.7-1.5A 48V TD/I 230V	Independent	LH140	50	0.7-1.5	24-48	190 x 46 x 32	Dali & Touch Dim	929000904106

# Xitanium adjustable output current point drivers (SimpleSet)

**Point** 

Philips Xitanium adjustable window drivers offer flexibility when you are designing and producing high quality luminaires. Suitable for all form factors, our LED point drivers further provide customization possibilities via wide operating windows. Features include SELV, temperature derating, hot wiring, providing an excellent platform for luminaires maker to produce and adjust the designs for downlights and spotlights.

- · Adjustable output current via SimpleSet
- +/-5% output current tolerance
- Low ripple current <= 4%</li>
- 50,000 hours lifetime

- · High reliability underpinned by standard warranty
- · Future-proof flexbility: applicationoriented operating windows enable LED generation and complexity management
- · Compatibility: can be paired with other manufacturers' modules or OEM makers' PCB designs
- · Authorized certifications: ENEC, CB, CE, CCC, RCM

#### **Applications**

- Downlight
- Track light
- Spotlight







roduct specifications								
Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm		12NC
Xitanium 20W LH 0.15-0.5A 48V I 230V	Independent	LH100	20	0.15-0.5	24-48	150 x 46 x 32	No	929000941306
Xitanium 36W LH 0.3-1A 48V I 230V	Independent	LH140	36	0.3-1.0	24-48	190 x 46 x 32	No	929001404306
Xitanium 50W LH 0.7-1.5A 48V I 230V	Independent	LH140	50	0.7-1.5	24-48	190 x 46 x 32	No	929000934706

# Xitanium adjustable output current point drivers (Mini)

**Point** 

Philips Xitanium mini indoor point drivers come in the same form as conventional HID Prima vision driver, widely used in downlights and spotlights. The output currents can be adjusted by Rset, allowing OEM partners to have greater design flexibility in the process.

#### **Features**

- · Adjustable output current via Rset
- Smallest build-in LED driver with adjustable output current. Now also available for independent use
- +/-5% output current tolerance
- Low ripple current <=4%</li>
- · THD <=10%
- Lifetime of 50,000 hours

#### **Benefits**

- · Current output adjustable via Rset offers optimal flexibility
- Compact in size, suitable for design-in
- · Addresses flickering issue in some applications · Authorized Certifications: ENEC, CB,
- Spotlight



**Applications** 

Downlight

• Track light





#### **Product specifications**

Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	А	V	mm		12NC
Xitanium 20W/m 0.15-0.5A 48V 230V	Built-in	/m	20	0.15-0.5	24-48	97 x 43 x 30	No	929000893806
Xitanium 36W/m 0.3-1.05A 48V 230V	Built-in	/m	36	0.3-1.05	24-48	97 x 43 x 30	No	929000881806
Vitanium 50W/m 0 5-15A 48V 230V	Ruilt_in	/m	50	0.3_1.05	24-48	97 v 43 v 30	No	929000934606



# Xitanium single current point drivers

**Point** 

This is an affordable range of Xitanium single current indoor point drivers, with a lifetime of 50,000 hours. The driver specifically addresses flickerinng issues by low ripple current, making this ideal for camera operation.

### Feature

- Small and compact in dimension
- Specific, optimized output current and voltage
- 50,000 hours lifetime
- At TcLife
- Low ripple current <=4%</li>
- THD <=15%
- Additional currents available via Fast lane release

### Benefit

- Designed based on Philips expertise in conventional fluorescent and HID technologies
- Various power wattage drivers suitable for different lumen packages/applications
- Independent housing design for stand-alone installations
- · No flicker and camera ready
- Authorized certifications: ENEC, CB, CE, CCC and RCM

### **Applications**

- Downlight
- Track light
- SpotlightPanel light



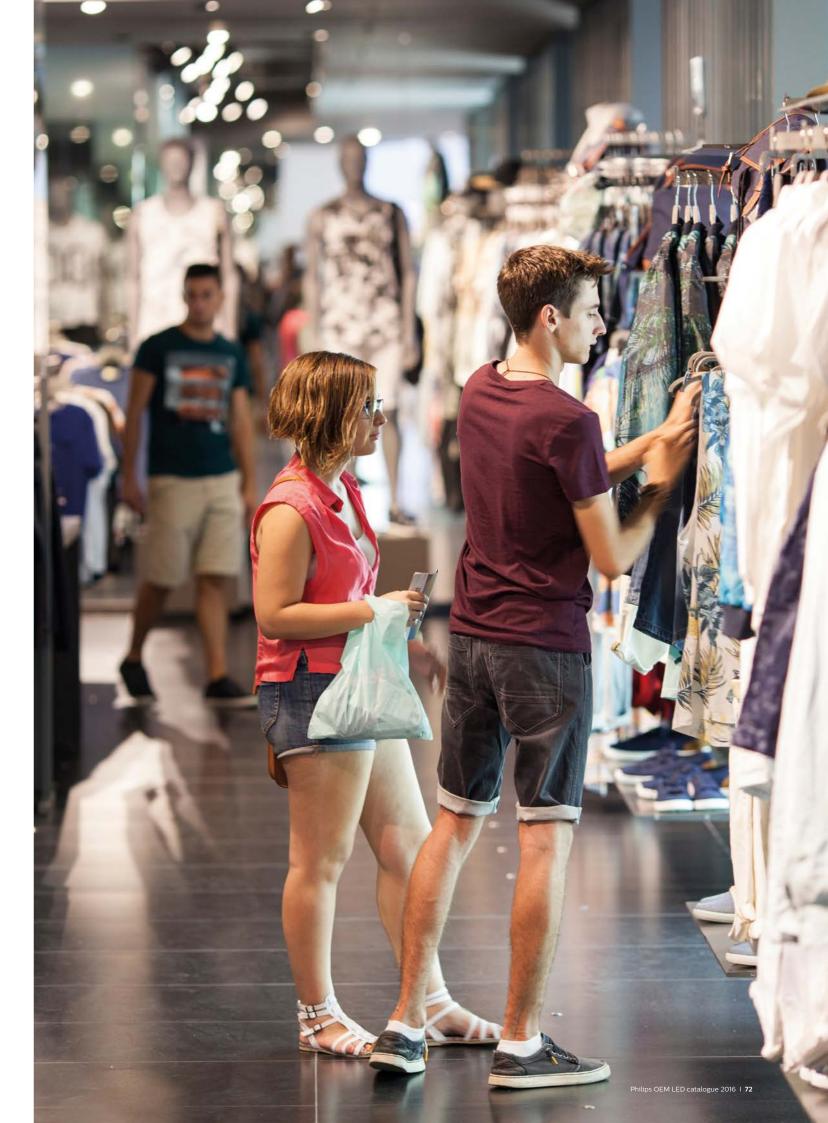




L115

### Product specifications

•								
Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm		12NC
Xitanium 15W 0.35A 42V I 230V	Independent	L115	15	0.35	32-42	115 x 45 x 29	No	929001410180
Xitanium 21W 0.5A 42V I 230V	Independent	L115	21	0.5	32-42	115 x 45 x 29	No	929001410280
Xitanium 32W 0.7/0.75A 42V I 230V	Independent	L105	32	0.7/0.75	32-42	105 x 68 x 32	No	929001410480
Xitanium 44W 0.9/1.05A 42V I 230V	Independent	L105	44	0.9/1.05	32-42	105 x 68 x 32	No	929001410680



# CertaDrive single current point drivers

TrustSight LED emergency drivers

**Point** 

These fixed current drivers offer an easy to use solution for essential spot, downlight and panel light applications. The CertaDrive range is designed to meet the market needs for basic lighting. They are therefore ideal for use in high volume applications and can be used with different types of LED light engines. These driver are optimized for Chip On Board (COB) LED technology and are available in a variety of wattages.

### **Features**

- High reliability
- Luminaire design flexibility, stable and constant
- · Lumen output and light quality levels
- · Fast time-to-market
- One-stop-shop for all professional, general lighting LED drivers
- Affordability LED drivers
- · +/- 10% output current tolerance
- · 30,000 hours life time

### Benefits

- Various power wattage drivers to match lumen packages and applications
- Fixed output drivers
- Independent housing design for stand-alone installations
- Authorized certifications: ENEC, CB, CE, CCC and RCM

### **Applications**

**Point** 

- Downlight
- Track light
- $\cdot \, \mathsf{Spotlight}$
- · Panel light



### Product specifications

-roduct specifications								
Product type	Housing type	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	А	V	mm		12NC
CertaDrive 6W 0.15A 40V LPF I 230V	Independent	L88	6	0.15	32-40	88 x 39 x 32	No	929001411780
CertaDrive 8W 0.2A 40V LPF I 230V	Independent	L88	8	0.2	32-40	88 x 39 x 32	No	929001409980
CertaDrive 8W 0.7A 11V LPF I 230V	Independent	L88	8	0.7	8-11	88 x 39 x 32	No	929001412080
CertaDrive 10W 0.25A 40V LPF I 230V	Independent	L88	10	0.25	32-40	88 x 39 x 32	No	929001410006
CertaDrive 10W 0.5A 20V LPF I 230V	Independent	L88	10	0.5	16-20	88 x 39 x 32	No	929001412180
CertaDrive 12W 0.3A 40V LPF I 230V	Independent	L88	12	0.3	32-40	88 x 39 x 32	No	929001409506
CertaDrive 8W 0.2A 40V I 230V	Independent	L115	8	0.2	32-40	115 x 45 x 29	No	929000956006
CertaDrive 10W 0.25A 40V I 230V	Independent	L115	10	0.25	32-40	115 x 45 x 29	No	929000956106
CertaDrive 10W 0.5A 20V I 230V	Independent	L115	10	0.5	16-20	115 x 45 x 29	No	929000953306
CertaDrive 12W 0.3A 40V I 230V	Independent	L115	12	0.3	32-40	115 x 45 x 29	No	929000953506
CertaDrive 15W 0.35A 42V I 230V	Independent	L115	15	0.35	32-42	115 x 45 x 29	No	929000898108
CertaDrive 18W 0.3A 60V I 230V	Independent	L115	18	0.3	50-60	115 x 45 x 29	No	929001410380
CertaDrive 20W 0.5A 40V I 230V	Independent	L115	20	0.5	32-40	115 x 45 x 29	No	929000898008
CertaDrive 20W 0.7A 28V I 230V	Independent	L115	20	0.7	22-28	115 x 45 x 29	No	929000897908
CertaDrive 25W 0.6A 42V I 230V	Independent	L115	20	0.6	32-42	115 x 45 x 29	No	929001410706
CertaDrive 30W 0.7A 42V I 230V	Independent	L105	30	0.7	32-42	105 x 68 x 32	No	929000932008
CertaDrive 34W 0.8A 42V I 230V	Independent	L105	34	8.0	32-42	105 x 68 x 32	No	929000932108
CertaDrive 38W 0.9A 42V I 230V	Independent	L105	38	0.9	32-42	105 x 68 x 32	No	929000933406

For indoor applications without central emergency power, local emergency lighting is required. Philips TrustSight solutions are designed to operate LED modules on battery power. In the event of a mains voltage failure, the LED emergency driver immediately switches from battery charge mode to illumination mode and takes over the function of the standard LED driver. In order to comply with relevant standards the LED emergency kits are CE and ENEC-certified (incl. IEC EM standards).



TrustSight LED emergency drivers

### Product specifications

-						
Product type	Dimensions*	Output forward voltage range	Self test	Self test battery pack	SELV	Order code
	mm	V		Rate duration		12NC
TrustSight Pro P 15-55V 3W 1hr kit	190 x 46 x 32	15-55	Automatic	1 hr for 3W (NiMH)	Yes	871869648650400
TrustSight Pro P 15-55V 3W 3hrs kit	190 x 46 x 32	15-55	Automatic	3 hrs for 3W (NiMH)	Yes	871869648652800
TrustSight Basic P 15-55V 3W 1hr kit	190 x 46 x 32	15-55	Manual	1 hr for 3W (NiMH)	Yes	871869652581400
TrustSight Basic P 15-55V 3W 3hrs kit	190 x 46 x 32	15-55	Manual	3 hrs for 3W (NiMH)	Yes	871869652583800

\*Note: Excluding strain relief.

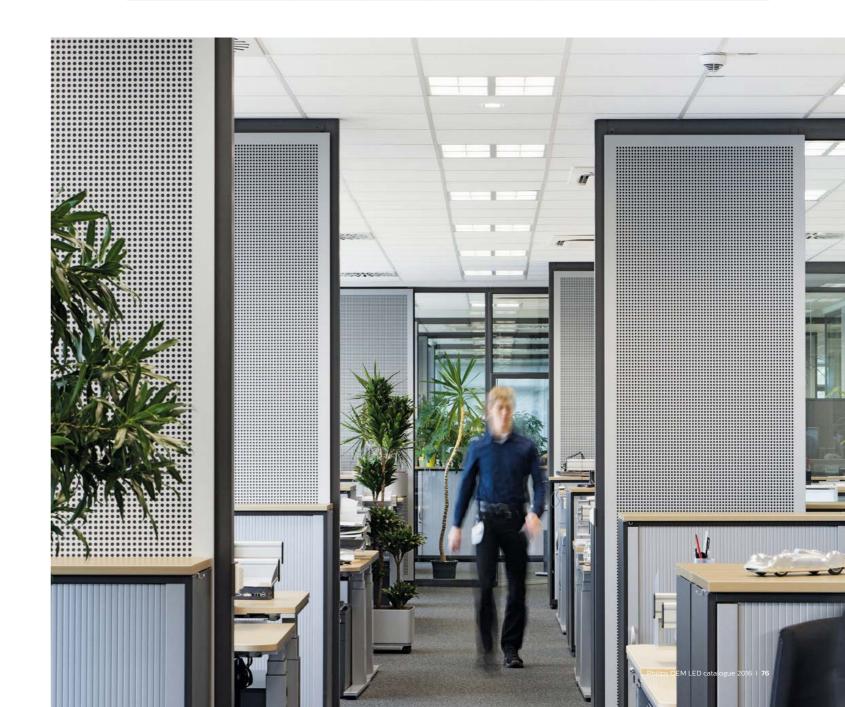
A kit includes: Emergency driver, the battery set, battery adapter harness and the LED indicator.

# **Linear** drivers

**Xitanium and CertaDrive LED drivers** make up a complete portfolio of LED drivers to support project and high volume trade LED luminaires businesses.

### **Portfolio**

	Dimm	ning	Basic features and performances						
Linear drivers	DALI dim	1-10V	MultiOne programmable	Adjustable output current (AOC)	Lifetime (Hours at TcLife)				
S Statement	Yes	No	Yes	Yes	100,000				
P Performance	No	Yes	No	Yes	100,000				
C Core	No	No	No	No	100,000				
E Entry	No	No	No	No	50,000				



Xitanium programmable indoor linear drivers are designed to operate LED solutions for professional general lighting applications, with non-isolated and isolated drivers to support high voltage and low voltage linear systems. Flexibility in luminaire design is assured thanks to adjustable output current. Application-oriented operating windows offer the flexibility required to provide a stable lumen output and light quality levels that lighting specifiers and architects demand. Reliability is enhanced by specific features that protect the connected LED module, e.g. hot wiring, reduced ripple current and thermal de-rating. With Xitanium programmable indoor linear drivers, it supports light point management and is programmable for all your needs.

### Features

- · DALI dimming and programmable
- Isolated (low voltage) and nonisolated (high voltage) versions available
- Operating windows output current can be adjusted with a resistor outside the driver, and all TD drivers can be programmed via the Philips MultiOne configurator
- Reduced ripple current and thermal de-rating for increased reliability
- Longer lifetime (100,000 hours), improved surge and burst specifications
- · Central DC operation supported

### Benefits

- High voltage systems for highest efficiency and lowest cost
- Low voltage systems involve simpler approbation process and ease of design-in
- High reliability underpinned by standard local warranty
- Future-proof flexibility applicationoriented operating windows enable LED generation and complexity management
- Compatibility adjustable output current enables operation of various LED solutions from different manufacturers or or OEM maker's designs
- Low ripple for camera and scanner friendly operation
- More robust LED drivers for industry applications
- Flicker and noise free dimming with all Touch and DALI LED drivers due to amplitude dimming (AM)

### **Applications**

- Office
- Industry
- Retail
- Public buildings (airports, cinemas, theatres, exhibition halls), distribution centers and shopping malls



### **Product specifications**

Product type	Isolate	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm		12NC
Xitanium 36W 0.12-0.4A 110V TD 230V	No	L360	36	0.12-0.4	50-110	360 x 30 x 22	Dali & Touch Dim	929000852203
Xitanium 75W 0.12-0.4A 215V TD 230V	No	L360	75	0.12-0.4	100-215	360 x 30 x 22	Dali & Touch Dim	929000852103
Xitanium 36W 0.3-1A 54V TD 230V	Yes	L425	36	0.3-1.0	27-54	425 x 30 x 26.5	Dali & Touch Dim	929000832303
Xitanium 75W 0.7-2A 54V TD 230V	Yes	L425	75	0.7-2.0	27-54	425 x 30 x 26.5	Dali & Touch Dim	929000870403
Xitanium 110W 0.2-0.6A 215V TD 230V iXt	No	L360	110	0.2-0.6	100-215	360 x 30 x 22	Dali & Touch Dim	929000877306
Xitanium 150W 0.2-0.7A 300V TD 230V iXt	No	L360	150	0.2-0.7	150-300	360 x 30 x 22	Dali & Touch Dim	929000893306

# Xitanium adjustable output current linear drivers

Xitanium adjustable output current indoor linear drivers can be widely used to operate LED lighting solutions across general lighting applications. Flexibility in luminaire design is assured thanks to the adjustable output current. A stable lumen output and high quality light levels are made possible by the application-oriented operating windows, matching the requirements by lighting specifiers and architects. This is a reliable driver enhanced with multiple features and benefits allowing wide usage across multiple applications.

### Features

- Multiple versions 1-10V dimmable and fixed output, non-isolated and isolated available
- Adjustable output current via a resistor outside the driver
- Reduced ripple current and thermal de-rating for increased reliability
- Longer lifetime (100,000 hours), improved surge and burst specifications
- · Central DC operation supported

### **Benefits**

- High voltage systems for highest efficiency and lowest cost
- Low voltage systems involve simpler approbation process and ease of design-in
- High reliability underpinned by standard local warranty
- Future-proof flexibility applicationoriented operating windows enable LED generation and complexity management
- Compatibility adjustable output current enables operation of various LED solutions from different manufacturers or OEM maker's designs
- Low ripple for camera and scanner friendly operation

### **Applications**

- Office
- Industry
- Retail
- Public buildings (airports, cinemas, theatres, exhibition halls), distribution centers and shopping malls



### **Product specifications**

roduct specifications								
Product type	Isolate	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm		12NC
Xitanium 75W 0.12-0.4A 220V 1-10V 230V	No	L280	75	0.12-0.4	100-220	280 x 30 x 21	1-10V	929000953706
Xitanium 36W 0.12-0.4A 115V 1-10V 230V	No	L280	36	0.12-0.4	50-115	280 x 30 x 21	1-10V	929000953606
Xitanium 75W 0.12-0.4A 220V 230V	No	L280	75	0.12-0.4	100-220	280 x 30 x 21	No	929000950706
Xitanium 36W 0.12-0.4A 115V 230V	No	L280	36	0.12-0.4	50-115	280 x 30 x 21	No	929000950606
Xitanium 75W/0.7-2A 54V 1-10V 230V	Yes	L425	75	0.7-2.0	27-54	425 x 30 x 26.5	1-10V	929000863503
Xitanium 36W/0.3-1A 54V 1-10V 230V	Yes	L360	36	0.3-1.0	27-54	360 x 30 x 26.5	1-10V	929000854003
Xitanium 75W/0.7-2A 54V 230V	Yes	L360	75	0.7-2.0	27-54	360 x 30 x 21	No	929000958806
Xitanium 36W/0.3-1A 54V 230V	Yes	L360	36	0.3-1.0	27-54	360 x 30 x 21	No	929000958706

# Xitanium single current linear drivers

Linear

Xitanium LED drivers with single current output offer industry leading performance and reliability at optimized cost. They are ideal for high volume applications where performance specification is key. These drivers guarantee OEM makers Xitanium performance and Philips reliability but with standard current settings.

### **Features**

- Low output current tolerance
- · High efficiency
- · Compact in dimension
- Specific current and voltage
- 50,000 hours lifetime

### Benefits

- High voltage systems for highest efficiency and lowest cost
- Easy design-in with specific output current settings
- Low profile drivers enabling greater luminaire design freedom
- · Good light quality

### **Applications**

- Office
- IndustryRetail
- Public buildings (airports, cinemas, theatres, exhibition halls), distribution

centers and shopping malls





1 280

### Product specifications

Product type	Isolate	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm		12NC
Xitanium 30W 400mA 76V 230V	No	L280	30	0.4	64-76	280 x 30 x 22	No	929000830608
Xitanium 40W 280mA 142V 230V	No	L280	40	0.28	116-142	280 x 30 x 22	No	929000805108



# CertaDrive single current linear drivers

Linear

CertaDrive LED drivers are designed to fulfill the market needs for essential lighting. They are therefore ideal for high volume applications and can be used with CertaFlux LED modules, or other LED light engines. These drivers offer basic specifications such as specific current and voltage settings, with lifetime of the driver set up to 50,000 hours.

### **Features**

- High efficiency
- · Small dimensions
- · Specific current and voltage
- · Fast time-to-market
- 30,000 to 50,000 hours lifetime

### **Benefits**

- High voltage systems for highest efficiency and lowest cost
- Various power/wattage combination which is easy to design
- Low profile drivers enabling greater luminaire design freedom
- Optimized to operate CertaFlux LED modules
- $\cdot$  Philips local standard warranty applies

### **Applications**

- Recessed, surface and suspended luminaires in offices
- Waterproof luminaires and high bay luminaires for industry applications
- Trunking in retail applications









### Product specifications

Product type	Isolate	Housing	Max output power	Output current	Output voltage	Dimensions	Dimming	Order code
			W	Α	V	mm		12NC
CertaDrive 15W 0.4A 36V 230V	No	L138	15	0.4	30-42	138 x 25 x 22	No	929001409880
CertaDrive 30W 0.4A 80V 230V	No	L138	30	0.4	51-82	138 x 25 x 22	No	929001409780
LED driver 20W 280mA 69V 230V	No	L138	20	0.28	64-76	138 x 25 x 22	No	929000887180
CertaDrive 30W 0.4A 72V 230V	No	L138	30	0.4	56-80	138 x 25 x 22	No	929000914606
LED driver 40W 280mA 132V 230V	No	L150	40	0.28	118-145	150 x 40 x 28	No	929000887280
CertaDrive 30W 350mA 82V 230V	No	L210	30	0.35	57-82	210 x 30 x 21	No	929000934806
CertaDrive 30W 330mA 82V 230V	No	L210	30	0.33	72-82	210 x 30 x 21	No	929000974806
CertaDrive 40W 240mA 160V 230V	No	L210	40	0.24	116-160	210 x 30 x 21	No	929000934906
CertaDrive 40W 360mA 110V 230V	No	L210	40	0.36	91-110	210 x 30 x 21	No	929000974906
CertaDrive 60W 360mA 170V 230V	No	L210	60	0.36	120-170	210 x 30 x 21	No	929000970006
CertaDrive 60W 300mA 200V 230V	No	L210	60	0.3	145-200	210 x 30 x 21	No	929000934906

### **TrustSight LED emergency drivers**

Linear

For indoor applications without central emergency power, local emergency lighting is required. Philips LED emergency solutions are designed to operate LED modules on battery power. In the event of a mains voltage failure, the LED emergency driver immediately switches from battery charge mode to illumination mode and takes over the function of the standard LED driver. In order to comply with relevant standards the LED emergency kits are CE and ENEC-certified.



### **Product specifications**

1 Todact Specifications						
Product type	Dimensions	Output current range	Output voltage range	Central DC operation	SELV	Order code
	mm	Α	V	V		12NC
TrustSight LED 40-80mA 2.6W 1hr F	360 x 30 x 22	40-80	33-66	No	No	8718291 697824 00
TrustSight LED 40-80mA 2.6W 3hrs F	360 x 30 x 22	40-80	33-66	No	No	8718291 697848 00



### Product specifications

Floduct specifications						
Product type	Dimensions	Output forward voltage range	Self test	Self test battery pack	SELV	Order code
	mm	V		Rate duration		12NC
TrustSight Pro L 20-95V 3W 1hr kit	245 x 30 x 21	20-95	Automatic	1 hr for 3W (NiMH)	No	871869648654200
TrustSight Pro L 20-95V 6W 1hr kit	245 x 30 x 21	20-95	Automatic	1 hr for 6W (NiMH)	No	871869648686300
TrustSight Pro L 20-95V 3W 3hrs kit	245 x 30 x 21	20-95	Automatic	3 hrs for 3W (NiMH)	No	871869648688700
TrustSight Basic L 20-95V 3W 1hr kit	245 x 30 x 21	20-95	Manual	1 hr for 3W (NiMH)	No	871869652585200
TrustSight Basic L 20-95V 6W 1hr kit	245 x 30 x 21	20-95	Manual	1 hr for 6W (NiMH)	No	871869652587600
TrustSight Basic L 20-95V 3W 3hrs kit	245 x 30 x 21	20-95	Manual	3 hrs for 3W (NiMH)	No	871869652591300

A kit includes: emergency driver, the battery set, battery adapter harness and the LED indicator.



### MultiOne configurator

The demands from customers for flexibility and diversity are fast increasing in multi-folds. This is the reason why Philips has introduced simplified tools which allow you to easily configure your drivers for ease of use.

The universal Philips MultiOne configurator is a tool you can use with any Philips programmable driver and configure the functions in your lighting solutions for any application. It has become a must-have in all applications where the lighting system needs to match specific requirements.

### Features

- For use with all Philips LED, fluorescent and HID programmable drivers
- Suitable for standard Windows computers with USB connection
- Different interfaces depending on the installation
- Enables optimization of installation, last minute changes, easy diagnostics and maintenance

### **Benefits**

- One tool for all Philips configurable drivers, both for conventional and LED systems
- Flexibility for OEM providing access to the features built into the driver
- Optimized for use in the production process
- Unique tool that combines configuration with diagnostics

### Applications

- · General lighting
- · Retail lighting
- · Outdoor lighting
- Office lighting

### The MultiOne configurator consists of two building blocks





### LCN8600/00 MultiOne Interface USB2DALI

The interface that can be used with the MultiOne PC software to commission, configure, diagnose drivers via the DALI interface.



### LCN9610 or LCN9620 MultiOne SimpleSet Interface

The tools can be used with the MultiOne PC software to configure drivers wirelessusing SimpleSet® Technology.

### Product specifications

Product type	Order code  12NC
LCN8600/00 MultiOne interface USB2DALI	9137 003 46703
LCN8650/10 MultiOne interface USB2ZigBee	9137 003 59203
LCN 9610 MultiOne interface SimpleSet®	9290 009 99400
LCN 9620 MultiOne interface SimpleSet®	9290 009 99500



### **Supporting MultiOne Software**

to be installed on a PC, laptop or production work station.

### System requirements:

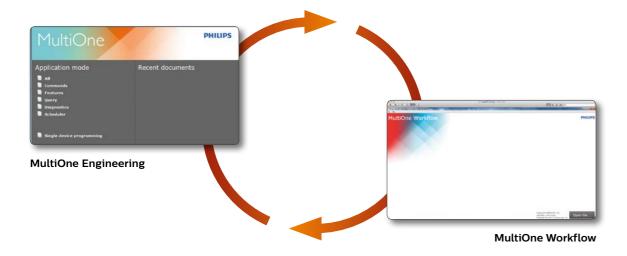
- · Windows PC or laptop
- Microsoft windows 7, 8.0, 8.1 (support of Windows XP will stop in end 2015)
- USB 2.0 ports
- (Two free ports preferred)
- · Min 35 MB of free disk space
- · Microsoft .NET Framework 3.5 SP1

### Free download

Find out more about MultiOne software via www.philips.com/multiOne

### **Philips MultiOne configurator**

All programmable Outdoor, Indoor (Linear and Point) LED systems can be configured with the MultiOne configurator. Also all existing programmable conventional Philips systems, HID and FLUO can be configured with the same tool. Using the unique tool along with the installation of the software makes flexibility comes alive, providing you with access to all featured built in within the driver.



### The MultiOne configurator software

is free and downloadable from our website. It consists of:

### 1. MultiOne Engineering

Specially developed to access all functionalities of the driver; to configure, diagnose and prepare the configuration file for the production environment.

### Also includes:

- · DALI commands, scheduler
- $\cdot \, \mathsf{SimpleSet}^{@}$

### 2. MultiOne Workflow

Developed to configure all devices or subassemblies in the production environment in a simple and quick way.

Depending on the type of driver, a combination of features can be configured. With these features, one can create diversity (e.g. Adjustable light output and Adjustable output current), but also extra security (e.g. Module temperature protection and DC emergency), including costdown improvements (e.g. Constant light output, Dynadimmer and Corridor mode).

Detailed explanations of each feature and how to configure, are available in the instruction manual on our website.

www.philips.com/MultiOne

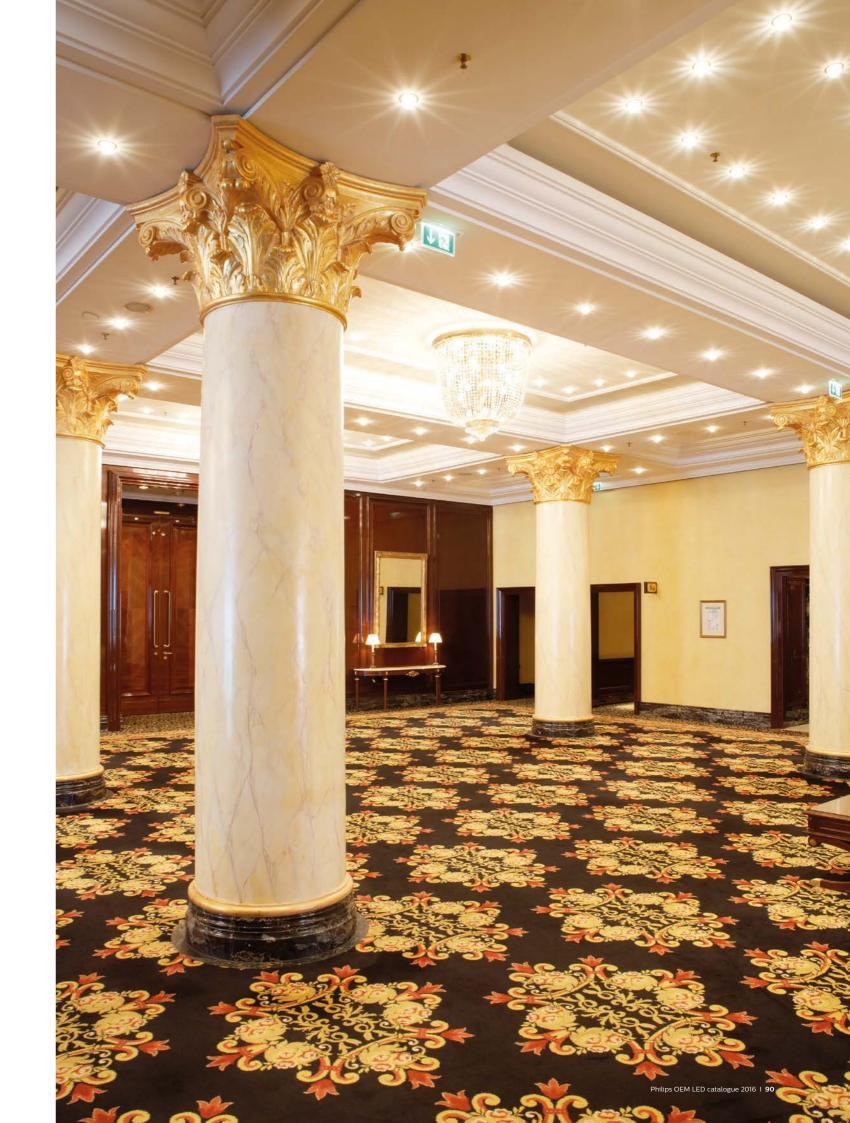
Configurable device features	
Active cooling	
Module temperature protection	
DC emergency	
End of life indication	
Light source operating hours	
Energy meter	
Lamp burn-in	
Lamp selection	
Quick lamp start	
Adjustable output current	
Adjustable light output	
Adjustable startup time	
Constant light output	
Constant light output Lite	
Dimming interface	
1-10 V dim level	
AmpDim	
LumiStep	
LineSwitch	
Touch and dim	
Min dim level	
Dynadimmer	
Dynadimmer Lite	





# LED spot

**Reliability and long lifetime is vital.** Low maintenance means lowered operating costs and no business disruption, making sure customers are happy and keep coming back.



### **Master LED MR16**

Spot

Delivering a warm, halogen-like accent beam, Philips Master LED MR16 is an ideal retrofit solution for spot and general lighting applications for use in the hospitality industry. The range is especially perfect for public spaces such as reception areas, lobbies, corridors, stairwells and washrooms, where there's light turned on all the time. The Master LED MR16 is well designed and robust, offering a variety of beam angles to manage a clearly defined beam spread suitable across various applications. There is no UV or IR in the beam, making it suitable for illuminating heat-sensitive objects (food, organic materials, paintings, etc.). The patented intelligent driver enables broad compatibility with existing electromagnetic and electronic halogen transformers. The dimmable versions drive further efficiencies, while helping to create the desired atmosphere to suit your needs.

### **Features**

- Dimmable (7W and 8W versions)
- · Patented intelligent driver
- · Air movement mechanism
- · Lifetime of 40,000 hours
- · CRI80

### **Benefits**

- Up to 80% energy savings compared to halogen lamp
- $\cdot \ {\bf Broad\ compatibility\ with\ transformers}$
- Can be retrofitted with low-voltage MR16 halogen lamps with GU5.3 sockets

### **Applications**

- Ideal for accent lighting in hotels, hospitals, shops and museums (e.g. floors, elevators, displays)
- Dimmable versions are perfect for hospitality suites and guest rooms requiring adjustable settings



### Product specifications

Product type—Premium range LED MR16	Lamp Wattage	Replaced Wattage	Color temp.	Beam angle	Lumen	MBCP	Lifetime	CRI	Voltage	Dimming	Order code
	w	w	к	(°)	Im		Hours	Ra	v		12NC
MASTER LED 7-50W 827 MR16 15D Dim	7	50	2700	15	400	2900	40,000	80	12	Yes	929001152508
MASTER LED 7-50W 830 MR16 15D Dim	7	50	3000	15	420	3100	40,000	80	12	Yes	929001152608
MASTER LED 7-50W 840 MR16 15D Dim	7	50	4000	15	440	3250	40,000	80	12	Yes	929001152708
MASTER LED 7-50W 827 MR16 24D Dim	7	50	2700	24	420	2100	40,000	80	12	Yes	929001152808
MASTER LED 7-50W 830 MR16 24D Dim	7	50	3000	24	440	2200	40,000	80	12	Yes	929001152908
MASTER LED 7-50W 840 MR16 24D Dim	7	50	4000	24	460	2300	40,000	80	12	Yes	929001153008
MASTER LED 7-50W 827 MR16 36D Dim	7	50	2700	36	420	1200	40,000	80	12	Yes	929001153108
MASTER LED 7-50W 830 MR16 36D Dim	7	50	3000	36	440	1250	40,000	80	12	Yes	929001153208
MASTER LED 7-50W 840 MR16 36D Dim	7	50	4000	36	460	1300	40,000	80	12	Yes	929001153308
MASTER LED 6.5-50W 827 MR16 24D	6.5	50	2700	24	450	2250	40,000	80	12	No	929001154318
MASTER LED 6.5-50W 830 MR16 24D	6.5	50	3000	24	470	2350	40,000	80	12	No	929001154418
MASTER LED 6.5-50W 840 MR16 24D	6.5	50	4000	24	490	2450	40,000	80	12	No	929001154518
MASTER LED 6.5-50W 827 MR16 36D	6.5	50	2700	36	450	2250	40,000	80	12	No	929001154618
MASTER LED 6.5-50W 830 MR16 36D	6.5	50	3000	36	470	2350	40,000	80	12	No	929001154718
MASTER LED 6.5-50W 840 MR16 36D	6.5	50	4000	36	490	2450	40,000	80	12	No	929001154818
MASTER LED 8.0-50W 2700K MR16 24D Dim	8	50+	2700	24	635	3100	40,000	80	12	Yes	929001149808
MASTER LED 8.0-50W 3000 MR16 24D Dim	8	50+	3000	24	660	3250	40,000	80	12	Yes	929001149908
MASTER LED 8.0-50W 2700K MR16 36D Dim	8	50+	2700	36	635	1700	40,000	80	12	Yes	929001150108
MASTER LED 8.0-50W 3000 MR16 36D Dim	8	50+	3000	36	660	1800	40,000	80	12	Yes	929001150208





### Product specifications

Product type—Entry range LED MR16	Lamp Wattage	Replaced Wattage	Color temp.	Beam angle	Lumen	MBCP	Lifetime	CRI	Voltage	Dimming	Order code
	w	w	к	(°)	lm		Hours	Ra	V		12NC
MASTER LED 4-35W 2700KK MR16 24D	4	35	2700	24	240	1000	25,000	80	12	NA	929001147408
MASTER LED 4-35W 2700KK MR16 36D	4	35	2700	36	240	550	25,000	80	12	NA	929001147508
MASTER LED 4-35W 3000K MR16 24D	4	35	3000	24	240	1000	25,000	80	12	NA	929001147708
MASTER LED 4-35W 3000K MR16 36D	4	35	3000	36	240	600	25,000	80	12	NA	929001147608
MASTER LED 5.5-50W 2700KK MR16 24D	5.5	50	2700	24	415	1800	25,000	80	12	NA	929001145908
MASTER LED 5.5-50W 2700KK MR16 36D	5.5	50	2700	36	415	1000	25,000	80	12	NA	929001146108
MASTER LED 5.5-50W 3000K MR16 24D	5.5	50	3000	24	425	1800	25,000	80	12	NA	929001146708
MASTER LED 5.5-50W 3000K MR16 36D	5.5	50	3000	36	425	1000	25,000	80	12	NA	929001146608
MASTER LED 5.5-50W 4000K MR16 24D	5.5	50	4000	24	450	1800	25,000	80	12	NA	929001146808
MASTER LED 5.5-50W 4000K MR16 36D	5.5	50	4000	36	450	1000	25,000	80	12	NA	929001146908

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### **Master LEDspot MV GU10**

**Spot** 

The stylish Master LEDspot MV GU10 delivers a warm, halogen-like accent beam, perfect for use in spotlighting for track, corridors, lift lobbies, display cases and cabinets. Versatile for use in hospitality and retail industries, where lights are expected to be turned on for extended hours, the Master LEDspot MV can deliver huge energy savings when used in volume and applied in public areas. While minimizing maintenance costs for retailers and building operators, brightness is never compromised, thereby ensuring a fast return on investment within an estimated period of one year. These LEDspots are compatible with most existing fixtures with a GU10 holder and are designed to be ideal retrofit replacements for halogen or incandescent spots. Dimmable models drive further efficiencies while helping you create the desired atmosphere via the different applications.

### **Features**

- Compatible with an extensive range of dimmers
- Lifetime of 35,000 to 50,000 hours
- · Clearly defined beam spread
- UV- and IR-free light for less heat and protection for heat-sensitive objects

### **Benefits**

- Up to 80% energy savings compared to halogen lamp
- Easy retrofit
- · Lower maintenance costs

### **Applications**

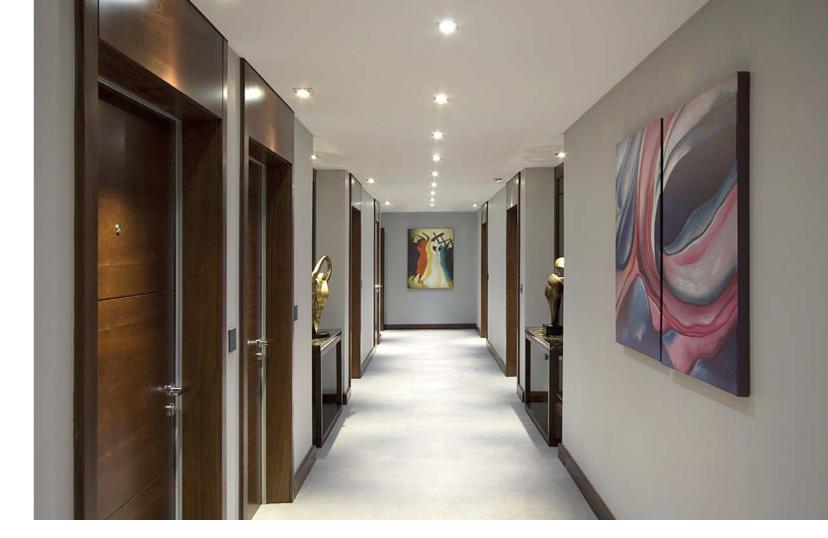
- Retail
- Hospitality





### Product specifications

Product specifications											
Product type—Premium LED GU10	Lamp Wattage	Replaced Wattage	Color temp.	Beam angle	Lumen	MBCP	Lifetime	CRI	Voltage	Dimming	Order code
	w	w	к	(°)	lm		Hours	Ra	v		12NC
MAS LEDspotMV D 5.4-50W GU10 927 25D	5.4	50	2700	25	395	1350	50,000	90	230	Yes	929001138602
MAS LEDspotMV D 5.4-50W GU10 927 40D	5.4	50	2700	40	402	800	50,000	90	230	Yes	929001138702
MAS LEDspotMV D 5.4-50W GU10 930 25D	5.4	50	3000	25	395	1350	50,000	90	230	Yes	929001138802
MAS LEDspotMV D 5.4-50W GU10 930 40D	5.4	50	3000	40	402	800	50,000	90	230	Yes	929001138902
MAS LEDspotMV D 5.4-50W GU10 940 40D	5.4	50	4000	40	416	830	50,000	90	230	Yes	929001139102
MAS LEDspotMV D 4-35W GU10 927 25D	4	35	2700	25	272	925	50,000	90	230	Yes	929001139202
MAS LEDspotMV D 4-35W GU10 927 40D	4	35	2700	40	279	560	50,000	90	230	Yes	929001139302
MAS LEDspotMV D 4-35W GU10 930 25D	4	35	3000	25	282	962	50,000	90	230	Yes	929001139402
MAS LEDspotMV D 4-35W GU10 930 40D	4	35	3000	40	290	582	50,000	90	230	Yes	929001139502
MAS LEDspotMV D 4-35W GU10 940 25D	4	35	4000	25	307	1040	50,000	90	230	Yes	929001139602
MAS LEDspotMV D 4-35W GU10 940 40D	4	35	4000	40	314	624	50,000	90	230	Yes	929001139702
Product type—Premium DimTone LED GU10											
MAS LEDspotMV DimTone 4.5-50W GU10 25D	4.5	50	2200-2700	25	385	1400	50,000	80	230	Yes	929001130802
MAS LEDspotMV DimTone 4.5-50W GU10 40D	4.5	50	2200-2700	40	385	800	50,000	80	230	Yes	929001130902







value

Value

### Product specifications

Product type—Value LED GU10	Lamp Wattage	Replaced Wattage	Color temp.	Beam angle	Lumen	MBCP	Lifetime	CRI	Voltage	Dimming	Order code
	w	w	к	(°)	lm		Hours	Ra	v		12NC
MAS LEDspotMV VLE D 3.5-35W GU10 827 25D	3.5	35	2700	25	280	1000	35,000	80	230	Yes	929001129802
MAS LEDspotMV VLE D 3.5-35W GU10 827 40D	3.5	35	2700	40	280	600	35,000	80	230	Yes	929001137602
MAS LEDspotMV VLE D 3.5-35W GU10 830 25D	3.5	35	3000	25	290	1000	35,000	80	230	Yes	929001129902
MAS LEDspotMV VLE D 3.5-35W GU10 830 40D	3.5	35	3000	40	290	600	35,000	80	230	Yes	929001137702
MAS LEDspotMV VLE D 3.5-35W GU10 840 25D	3.5	35	4000	25	310	100	35,000	80	230	Yes	929001130002
MAS LEDspotMV VLE D 3.5-35W GU10 840 40D	3.5	35	4000	40	310	600	35,000	80	230	Yes	929001137802
MAS LEDspotMV VLE D 4.3-50W GU10 827 25D	4.3	50	2700	25	380	1400	35,000	80	230	Yes	929001130102
MAS LEDspotMV VLE D 4.3-50W GU10 827 40D	4.3	50	2700	40	380	800	35,000	80	230	Yes	929001137902
MAS LEDspotMV VLE D 4.3-50W GU10 830 25D	4.3	50	3000	25	390	1400	35,000	80	230	Yes	929001130202
MAS LEDspotMV VLE D 4.3-50W GU10 830 40D	4.3	50	3000	40	390	800	35,000	80	230	Yes	929001138002
MAS LEDspotMV VLE D 4.3-50W GU10 840 25D	4.3	50	4000	25	420	1400	35,000	80	230	Yes	929001130302
MAS LEDspotMV VLE D 4.3-50W GU10 840 40D	4.3	50	4000	40	420	800	35,000	80	230	Yes	929001138102

Delivering a warm, halogen-like accent beam, Master LEDspot LV AR111 is an ideal retrofit solution for spot and general lighting applications in the hospitality and retail industry. It is particularly suitable for general lighting where the light is on all the time, such as creative accent lighting applications in shops, restaurants, hotels, and especially for galleries, exhibitions and museums. The robustly designed Master LEDspot LV AR111 offers various beam angles for a clearly defined beam spread. There is no UV or IR in the beam, making it suitable for illuminating heat-sensitive objects (food, organic materials, paintings, etc.). The patented intelligent driver enables broad compatibility with existing electromagnetic and electronic halogen transformers. Master LEDspot LV AR111 delivers huge energy savings and minimizes maintenance cost without any reduction in brightness.

### **Features**

- Patented intelligent driver
- · Lifetime of 25,000 to 40,000 hours
- Low energy consumption
- · Clearly defined beam spread
- UV- and IR-free light for less heat and protection for heat-sensitive objects

### **Benefits**

- Up to 80% energy savings compared to halogen lamp
- Broad compatibility with transformers
- · Easy retrofit

### **Applications**

- · Retail, F&B, hospitality
- Galleries, museums, exhibitions, lobbies, corridors, stairwells, wash rooms, reception areas



### Product specifications

	Lamp Wattage	Replaced Wattage	Color temp.	Beam angle	Lumen	MBCP	Lifetime	CRI	Voltage	Dimming	Order code
	w	w	К	(°)	Im		Hours	Ra	V		12NC
MAS LEDspotLV D 11-50W 927 AR111 24D	11	50	2700	24	620	2900	40,000	90	12	Yes	929001169808
MAS LEDspotLV D 11-50W 930 AR111 24D	11	50	3000	24	640	3000	40,000	90	12	Yes	929001169908
MAS LEDspotLV D 11-50W 927 AR111 40D	11	50	2700	40	620	1100	40,000	90	12	Yes	929001170008
MAS LEDspotLV D 11-50W 930 AR111 40D	11	50	3000	40	640	1150	40,000	90	12	Yes	929001170108
MAS LEDspotLV D 15-75W 927 AR111 24D	15	75	2700	24	830	3900	40,000	90	12	Yes	929001170208
MAS LEDspotLV D 15-75W 930 AR111 24D	15	75	3000	24	840	4000	40,000	90	12	Yes	929001170308
MAS LEDspotLV D 15-75W 927 AR111 40D	15	75	2700	40	830	1400	40,000	90	12	Yes	929001170408
MAS LEDspotLV D 15-75W 930 AR111 40D	15	75	3000	40	840	1450	40,000	90	12	Yes	929001170508
MAS LEDspotLV D 20-100W 830 AR111 12D	20	100	3000	12	1350	10,000	25,000	80	12	Yes	929001170608
MAS LEDspotLV D 20-100W 840 AR111 12D	20	100	4000	12	1400	11,000	25,000	80	12	Yes	929001170708
MAS LEDspotLV D 20-100W 830 AR111 24D	20	100	3000	24	1350	6000	25,000	80	12	Yes	929001170908
MAS LEDspotLV D 20-100W 840 AR111 24D	20	100	4000	24	1400	6100	25,000	80	12	Yes	929001171008
MAS LEDspotLV D 20-100W 830 AR111 40D	20	100	3000	40	1350	2350	25,000	80	12	Yes	929001171208
MAS LEDspotLV D 20-100W 840 AR111 40D	20	100	4000	40	1400	2350	25,000	80	12	Yes	929001171308

### **Master LEDspot PAR**

With its robust design and warm-white beam of light, these new-generation PAR lamps are ideal for general lighting and spot lighting in the hospitality industry. Dimmable and non-dimmable models are available for your careful selection to meet various application needs. They are especially suitable for public areas such as lobbies, corridors, stairwells, where the light is always on. Compatible with existing fixtures with an E27 holder and designed for retrofit replacement of halogen or incandescent lamps, Philips Master LEDspot PAR brings you huge energy savings while minimizing maintenance costs without any reduction in brightness. The dimmable PAR20 in particular, is a perfect retrofit replacement for an incandescent spot.

### **Features**

- · Lifetime of 25.000 to 45.000 hours
- Dimmable
- UV and IR-free, ideal for lighting heat-sensitive objects
- Free of mercury and hazardous materials

### **Benefits**

- Up to 80% energy savings compared to halogen lamp
- Easy retrofit and compatible with existing fixtures with E27 holder
- · Lower maintenance costs

### **Applications**

 Especially suitable for public areas like lobbies, corridors, stairwells and restaurants/bars



### Product specifications

Product type—Retail LED PAR30	Lamp Wattage	Replaced Wattage	Color temp.	Beam angle	Lumen	MBCP	Lifetime	CRI	Voltage	Dimming	Order code
	W	w	к	(°)	lm		Hours	Ra	V		12NC
MasterLED PAR30L 20W 15D 3000K SO	20	NA	3000	15	1800	18,000	25,000	80	220	No	929001132908
MasterLED PAR30L 20W 15D 4000K SO	20	NA	4000	15	1850	18,500	25,000	80	220	No	929001133008
MasterLED PAR30L 20W 30D 3000K SO	20	NA	3000	30	1800	4850	25,000	80	220	No	929001133108
MasterLED PAR30L 20W 30D 4000K SO	20	NA	4000	30	1850	5000	25,000	80	220	No	929001133208
MasterLED PAR30L 32W 15D 3000K SO	32	NA	3000	15	3000	30,000	25,000	80	220	No	929001202608
MasterLED PAR30L 32W 15D 4000K SO	32	NA	4000	15	3000	30,000	25,000	80	220	No	929001202708
MasterLED PAR30L 32W 15D 5700K SO	32	NA	5700	15	3000	30,000	25,000	80	220	No	929001202808
MasterLED PAR30L 32W 30D 3000K SO	32	NA	3000	30	3000	8000	25,000	80	220	No	929001202908
MasterLED PAR30L 32W 30D 4000K SO	32	NA	4000	30	3000	8000	25,000	80	220	No	929001203008
MasterLED PAR30L 32W 30D 5700K SO	32	NA	5700	30	3000	8000	25,000	80	220	No	929001203108
Product type—Dimmable PAR											
MASTER LEDspot D 5.5-50W 2700K PAR20 25D	5.5	50	2700	25	440	2000	45,000	80	230	Yes	929001145302
MAS LEDspot D 9.5-75W 827 PAR30S 25D SO	9.5	75	2700	25	700	3500	45,000	80	230	Yes	929001198702
MASTER LEDspot D 13-100W 827 PAR38 25D	13	100	2700	25	1100	5000	40,000	80	230	Yes	929001142802

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# LED tube

A perfect tube with a perfectly uniform visual appearance delivering superior performance, far more outstanding than the traditional fluorescent.



The Philips Master LEDtube cleverly integrates LED light sources into a traditional fluorescent form factor. Its unique design creates a perfectly familiar and uniform visual appearance which cannot be distinguished from its traditional fluorescent equivalent. For volume usage, and wide-scale applications, the Master LEDtube is great value-for-money, actualizing your projects within limited budgets and easy re-lamping works can be done to achieve better light effects and lifetime.

### Features

- Fit-and-forget LED tube, a direct replacement for T8 fluorescent tube
- Energy consumption >50% lower than fluorescent tubes
- Lifetime of 40,000 hours: 2-3 times longer than fluorescent lamps
- Full safety features and EM Protector safety device; completely safe installation process
- No mercury

### For APR excluding Japan

### **Benefits**

- Reduced operational costs due to lower need for maintenance
- Energy savings and a long life time
- Fastest and easiest way to upgrade existing luminaire to LED technology without a need for re-wiring
- $\cdot$  Comfort to the eye, and minimal heat

### **Applications**

- · Retail, industry
- · Offices, schools
- · Hospitals, indoor public spaces
- Parking lots, covered car parks

· Warehouses, cold-rooms, signages

· Transport and distribution areas



Master LEDtube

Master LEDtube Ultra Output

Master LEDtube

### Product specifications

Product type—Master LEDtube	Lumen	Wattage	Voltage	Color temp.	Beam angle	CRI	Power factor	Lifetime	Frequency	Dimming	Order code
	lm	w	V	К	(°)	Ra	Pf	Hours	Hz		12NC
MAS LEDtube 1200mm 18W865 T8 I	2100	18	220-240	6500	150	83	>0.9	40,000	50/60	No	929001178708
MAS LEDtube 1200mm 18W840 T8 I	2100	18	220-240	4000	150	83	>0.9	40,000	50/60	No	929001178608
MAS LEDtube 1200mm 18W830 T8 I	2000	18	220-240	3000	150	83	>0.9	40,000	50/60	No	929001178508
MAS LEDtube 600mm 10W865 T8 I	1050	10	220-240	6500	150	83	>0.9	40,000	50/60	No	929001179008
MAS LEDtube 600mm 10W840 T8 I	1050	10	220-240	4000	150	83	>0.9	40,000	50/60	No	929001178908
MAS LEDtube 600mm 10W830 T8 I	1000	10	220-240	3000	150	83	>0.9	40,000	50/60	No	929001178808
MAS LEDtube STD 1200mm 14.5W865 T8 I	1600	14.5	220-240	6500	150	83	>0.9	40,000	50/60	No	929001119108
MAS LEDtube STD 1200mm 14.5W840 T8 I	1600	14.5	220-240	4000	150	83	>0.9	40,000	50/60	No	929001119008
Product type—Master LEDtube G5 Lamp he	olders*										
MACTER I Entube 1200mm 12W96E CE I	1600	12	NΙΛ	SEO0	160	02	NΙΔ	40.000	NΙΔ	No	020001121210

Product type—Master LEDtube G5 Lamp I	Product type—Master LEDtube G5 Lamp holders*														
MASTER LEDtube 1200mm 13W865 G5 I	1600	13	NA	6500	160	83	NA	40,000	NA	No	929001131210				
MASTER LEDtube 1200mm 13W840 G5 I	1600	13	NA	4000	160	83	NA	40,000	NA	No	929001131110				
MASTER LEDtube 600mm 7.5W865 G5 I	800	7.5	NA	6500	160	83	NA	40,000	NA	No	929001155010				
MASTER LEDtube 600mm 7.5W840 G5 I	800	7.5	NA	4000	160	83	NA	40,000	NA	No	929001154910				

Product type—Master LEDtube Ultra Output													
MAS LEDtube 1200mm UO 20W 830 T8 ROT	2300	20	220-240	3000	160	83	>0.9	40,000	50/60	No	929001148802		
MAS LEDtube 1200mm UO 20W 840 T8 ROT	2500	20	220-240	4000	160	83	>0.9	40,000	50/60	No	929001148902		
MAS LEDtube 1200mm UO 20W 865 T8 ROT	2500	20	220-240	6500	160	83	>0.9	40,000	50/60	No	929001149002		
MAS LEDtube 1500mm UO 25W 830 T8 ROT	3400	25	220-240	3000	160	83	>0.9	40,000	50/60	No	929001149102		
MAS LEDtube 1500mm UO 25W 840 T8 ROT	3700	25	220-240	4000	160	83	>0.9	40,000	50/60	No	929001149202		
MAS LEDtube 1500mm UO 25W 865 T8 ROT	3700	25	220-240	6500	160	83	>0.9	40,000	50/60	No	929001149302		

<sup>\*</sup>Only applies to Philips approved CertaDrive models.

### **Essential LEDtube**

Philips Essential LEDtube is an affordable LED tube suitable for T8 fluorescent replacements. The product delivers a natural lighting effect that is needed across a wide range of general lighting applications. It also brings instant energy savings and cost savings, when applied to projects of substantial scale, making this a much more environmentally-friendly and superior solution to replace fluorescents.

### **Features**

- Affordable LED replacement for T8 fluorescent tubes
- Energy consumption >50% lower than fluorescent tubes
- 30,000 hours lifetime, twice the length of normal fluorescents
- No mercury, glass-free tube with no breakage concerns

### **Benefits**

- Reduced electricity costs thanks to significant energy savings
- Longer lifetime equates to reduced maintenance costs
- A better choice for the environment no mercury
- · Comfort to the eye, and minimal heat

### Applications

- Retail, offices
- Industry, warehouses, public places,

Tube

· Schools, hospitals, car parks



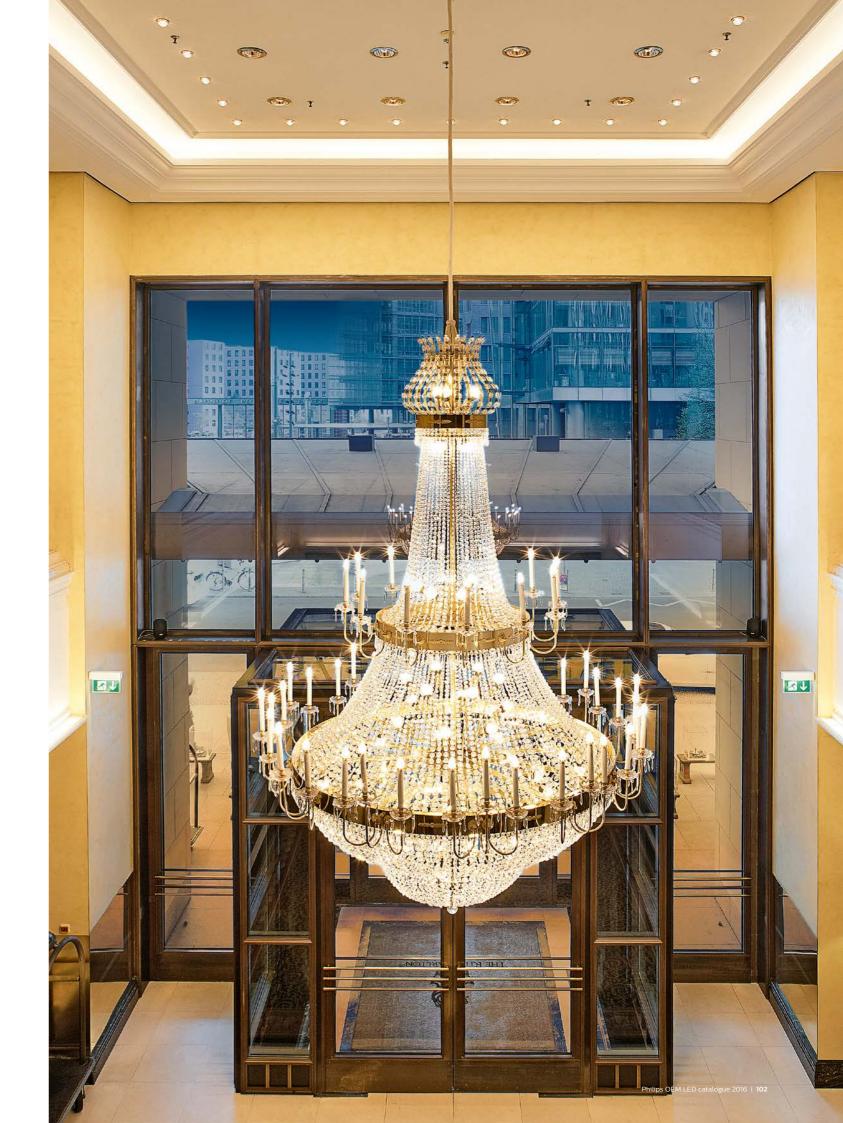
Essential LEDtube

### Product specifications

i roduct specifications											
Product type—Essential LEDtube	Lumen	Wattage	Voltage	Color temp.	Beam angle	CRI	Power factor	Lifetime	Frequency	Dimming	Order code
	lm	w	v	К	(°)	Ra	Pf	Hours	Hz		12NC
ESSENTIAL LEDtube 1200mm 16W865 T8 AP I G	1600	16	220-240	6500	240	80	>0.9	30,000	50/60	No	929001173108
ESSENTIAL LEDtube 1200mm 16W840 T8 AP I G	1600	16	220-240	4000	240	80	>0.9	30,000	50/60	No	929001173008
ESSENTIAL LEDtube 600mm 8W865 T8 AP I G	800	8	220-240	4000	240	80	>0.9	30,000	50/60	No	929001173308
ESSENTIAL LEDtube 600mm 8W840 T8 AP I G	800	8	220-240	6500	240	80	>0.9	30,000	50/60	No	929001173208

# LED candle and lustre

**Designed to enhance the aesthetic appeal of chandeliers and luminaires**, these bulbs come in classical form factors with unique eye-catching lens design for the extra sparkle.



Specially developed for chandeliers, we've upgraded our Master LED candle lamps to enhance the decorative and aesthetic appeal of luminaires – whether they are switched on or off. The new candles incorporate a revolutionary new shaped lens that allows the optics to radiate brilliant, clear and sparkling white LED light. The improved light quality provides consistent colour from every angle – even when dimmed in the most intimate of ambiences. What's more, the new ivory lamp colour is the perfect match for existing luminaires. The classic slender shape when used in multiple quantities will ensure the whole luminaire lights up brilliantly.

### Features

- With DimTone technology
- · Revolutionary new lens design
- Lifetime of 25,000 hours
- Retrofittable with existing E14
- or B22 sockets
- · Available in 25 W and 40 W

### Benefits

- · Sparkling white LED light
- · Low energy consumption
- · Dimmable, saving more energy

### **Applications**

- · Hotels, restaurants, bars, cafés
- · Chandelier, wall scone or modern



### Product specifications

Product type	Cap	Bulb shape	Lamp wattage	Replaced wattage	Color temp.	Lumen	Lifetime	CRI	Voltage	Dimming	Order code
			w	w	к	Im	Hours	RA	v		12NC
MAS LEDcandle DT 6-40W B38 B22 827 CL	B22	LED Candle	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001140802
MAS LEDcandle DT 6-40W B38 E14 827 CL	E14	LED Candle	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001140402
MAS LEDcandle DT 6-40W BA38 E14 827 CL	E14	LED Candle	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001140502
MAS LEDcandle DT 6-40W B38 B22 827 CL	B22	LED Candle	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001140802
MAS LEDcandle DT 6-40W B38 E27 827 CL	E27	LED Candle	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001157902
MAS LEDcandle DT 6-40W B38 B15 827 CL	B15	LED Candle	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001140302
MAS LEDcandle DT 4-25W B38 E14 827 CL	E14	LED Candle	4.0	25	2200-2700	250	25,000	80	220-240	Yes	929001139802
MAS LEDcandle DT 4-25W BA38 E14 827 CL	E14	LED Candle	4.0	25	2200-2700	250	25,000	80	220-240	Yes	929001139902

### **Master LEDlustre DimTone**

A new shape developed for chandeliers or open luminaires, the LEDlustre DimTone range gives off light all around due to its clear bulb head, enhancing the decorative appeal of all luminaires. The creatively shaped lens allow the optics to radiat brilliant, clear and sparkling white LED light that yet releases minimal heat. The improved light quality is beautiful, suitable for a variety of luminaires and open cords used often in hotels, F&B chains and in retail.

· Dimmable to save even more energy

### Features

- With DimTone technology
- · Revolutionary new lens design
- Lifetime of 25,000 hours
- · Retrofittable with existing E14 and E27 holders
- · Available in 25 W and 40 W

### Benefits

- · Sparkling white LED light
- · Low energy consumption

### **Applications**

- · Hotels, restaurants, bars, cafés
- · CHandelier, open luminaire, or glass



Product specifications											
Product type	Cap	Bulb shape	Lamp wattage	Replaced wattage	Color temp.	Lumen	Lifetime	CRI	Voltage	Dimming	Order code
			w	w	К	lm	Hours	RA	V		12NC
MAS LEDlustre DT 6-40W P48 E14 827 CL	E14	LED Lustre	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001140602
MAS LEDlustre DT 6-40W P48 E27 827 CL	E27	LED Lustre	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001140702
MAS LEDlustre DT 6-40W P48 B22 827 CL	B22	LED Lustre	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001157302
MAS LEDlustre DT 4-25W P48 E14 827 CL	E14	LED Lustre	4.0	25	2200-2700	250	25,000	80	220-240	Yes	929001140002
MAS LEDlustre DT 4-25W P48 E27 827 CL	E27	LED Lustre	4.0	25	2200-2700	250	25,000	80	220-240	Yes	929001140102

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# LED bulb

**We started the journey 125 years ago.** And we are more determined than ever to challenge the convention, improving the technology and how it illuminates our world.



Our Philips signature entry-level LED bulb provides an instant-on, retrofit lighting solution, perfect for use in large volumes across multiple application areas. It delivers energy savings, reduces the need for regular bulb replacement, without compromising on the quality of your warm or white light. Available in E27 lamp base, and two color temperatures. Comfortable to the eye with minimal glare.

### **Features**

- · Instant start
- Simple replacement with existing sockets and fixtures
- Manufactured without any hazardous materials, making them a safe and sustainable choice

### Benefits

- · Minimal heat, and comfort to the eye
- No UV and IR, safe for fabric and light sensitive materials
- · Easy retrofit
- Long lifetime of up to 15 years, reducing the need for maintenance

### **Applications**

- · Shops, hotels, restaurants, bars, cafés
- Galleries, museums, exhibitions, lobbies, corridors, stairwells, wash rooms, reception areas



Entry range LED bu

### Product specifications

Product type	Cap	Bulb shape	Lamp wattage	Replaced GLS wattage	Color temp.	Lumen	Lifetime	CRI	Voltage	Dimming	Order code
			w	w	К	lm	Hours	RA	V		12NC
LEDBulb 6-50W E27 3000K 230V A60	E27	A60	6.0	50	3000	470	15,000	80	220-240	No	929001162037
LEDBulb 7-60W E27 3000K 230V A60	E27	A60	7.0	60	3000	600	15,000	80	220-240	No	929001162137
LEDBulb 9.5-70W E27 3000K 230V A60	E27	A60	9.5	70	3000	806	15,000	80	220-240	No	929001162237
LEDBulb 10.5-85W E27 3000K 230V A60	E27	A60	10.5	85	3000	1055	15,000	80	220-240	No	929001162337
LEDBulb 13-100W E27 3000K 230V A60	E27	A60	13.0	100	3000	1400	15,000	80	220-240	No	929001162437
LEDBulb 6-50W E27 6500K 230V A60	E27	A60	6.0	50	6500	470	15,000	80	220-240	No	929001163537
LEDBulb 7-60W E27 6500K 230V A60	E27	A60	7.0	60	6500	600	15,000	80	220-240	No	929001163637
LEDBulb 9-70W E27 6500K 230V A60	E27	A60	9.0	70	6500	806	15,000	80	220-240	No	929001163737
LEDBulb 10.5-85W E27 6500K 230V A60	E27	A60	10.5	85	6500	1055	15,000	80	220-240	No	929001163837
LEDBulb 13-100W E27 6500K 230V A60	E27	A60	13.0	100	6500	1400	15,000	80	220-240	No	929001163937
LEDBulb 18-130W E27 6500K 230V A67	E27	A67	18.0	130	6500	2000	15,000	80	220-240	No	929001165019

### **Master Clear Bulb Dimtone**

The Master Clear Bulb DimTone range delivers a dimmable glow effect for a welcoming, warm atmosphere, making it ideal for general lighting applications in the hospitality segment. Its unique design radiates warm light all around, making it a bright and energy efficient alternative to the incandescent lamp. They are particularly suitable for public areas such as lobbies, corridors, stairwells, where the light is always on. Compatible with existing fixtures with E27 or B22 holder, they are designed for retrofit replacement of incandescent bulbs. Master Clear Bulb DimTone delivers huge energy savings and minimizes maintenance cost without any compromise on light quality. They can be used together with most leading-edge dimmers, enabling further efficiencies while helping to create the desired atmosphere.

### **Features**

- Dimmable
- Compatible with an extensive range of dimmers
- · Warm white light
- · Lifetime of 25,000 hours
- UV- and IR-free light

### **Benefits**

- Up to 80% energy savings compared to traditional incandescent lamps
- · Easy (retrofit) replacement
- · Lower maintenance costs

### **Applications**

- · Hotels, restaurants, bars, cafés
- Lobbies, corridors, stairwells, reception areas



### Product specifications

Product specifications											
Product type	Cap	Bulb shape	Lamp wattage	Replaced GLS wattage	Color temp.	Lumen	Lifetime	CRI	Voltage	Dimming	Order code
			w	w	K	lm	Hours	RA	V		12NC
MAS LEDbulb DT 6-40W E27 A60 CL	E27	A60	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001150802
MAS LEDbulb DT 6-40W B22 A60 CL	B22	A60	6.0	40	2200-2700	470	25,000	80	220-240	Yes	929001150602
MAS LEDbulb DT 9-60W E27 A60 CL	E27	A60	9.0	60	2200-2700	806	25,000	80	220-240	Yes	929001150902
MAS LEDbulb DT 9-60W B22 A60 CL	B22	A60	9.0	60	2200-2700	806	25,000	80	220-240	Yes	929001150702
MAS LEDbulb DT 11-75W A67 E27 827 FR	E27	A60	11.0	75	2200-2700	1055	25,000	80	220-240	Yes	929001200502
MAS LEDbulb DT 11-75W A67 B22 827 FR	B22	A60	11.0	75	2200-2700	1055	25,000	80	220-240	Yes	929001200402
MAS LEDbulb DT 15-100W A67 E27 827 FR	E27	A67	15.0	100	2200-2700	1521	25,000	80	220-240	Yes	929001184402
MAS LEDbulb DT 15-100W A67 B22 827 FR	B22	A67	15.0	100	2200-2700	1521	25,000	80	220-240	Yes	929001200302

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LED Deco Classic is the perfect LED filament bulb looking like the tungsten classic, yet giving you an estimated energy savings of 90%. It sets off beautiful, decorative, warm light in a variety of bulb shapes from the standard to the tall/balloon shape giving off a brighter and more defined, warm glow. The LED Deco Classic is ideal for installation in a variety of fixtures whether exposed or within glass shades. The bulb itself is an art form, working perfectly with modern or classic chandeliers, wall sconces and open fixtures.

### **Features**

- A classic bulb with a modern LED twist
- Timeless shape with hardy strands of LED filament
- · Available in multiple wattages

### **Benefits**

- Energy savings estimated around 90%
- Long lifetime, unlike the old incandescent
- $\cdot$  Instant on, little heat
- Environmentally friendly, contains no mercury

### **Applications**

- Home: living room, bedroom
- Hospitality: restaurants, cafe and bars, hotel lobbies and guest rooms



### Product specifications

Product type	Cap	Bulb shape	Lamp wattage	Replaced wattage	Color temp.	Lumen	Lifetime	CRI	Voltage	Dimming	Order code
			w	w	к	lm	Hours	RA	v		12NC
LED Fila 4.3-50W E27 WW A60 ND	E27	Filament A60	4.3	50	2700	470	15,000	>80	220-240	No	929001180407
LED Fila 7.5-70W E27 WW A60 ND	E27	Filament A60	7.5	70	2700	806	15,000	>80	220-240	No	929001180507
LED Fila 2.3-25W E27 WW ST64 ND	E27	Filament ST64	2.3	25	2700	250	15,000	>80	220-240	No	929001190208
LED Fila 4.3-50W E27 WW ST64 ND	E27	Filament ST64	4.3	50	2700	470	15,000	>80	220-240	No	929001190408
LED Fila 7.5-70W E27 WW ST64 ND	E27	Filament ST64	7.5	70	2700	806	15,000	>80	220-240	No	929001190808
LED Fila 2.3-25W E14 WW B35 ND	E14	Filament B35	2.3	25	2700	250	15,000	>80	220-240	No	929001180107
LED Fila 2.3-25W E14 WW BA35 ND	E14	Filament BA35	2.3	25	2700	250	15,000	>80	220-240	No	929001180307
LED Fila 2.3-25W E14 WW P45 ND	E14	Filament P45	2.3	25	2700	250	15,000	>80	220-240	No	929001180207
LEDClassic 4.5-50W P45 E27 WW CL	E27	Filament P45	4.5	50	2700	470	15,000	80	220-240	Yes	929001227608
LEDClassic 4.5-50W A60 E27 WW CL	E27	Filament B35	4.5	50	2700	470	15,000	80	220-240	Yes	929001227908
LEDClassic 4.5-50W B35 E14 WW CL	E14	Filament BA35	4.5	50	2700	470	15,000	80	220-240	Yes	929001227208
LEDClassic 4.5-50W BA35 E14 WW CL	E14	Filament BA35	4.5	50	2700	470	15,000	80	220-240	Yes	929001227308
LEDClassic 4.5-50W P45 E14 WW CL	E14	Filament P45	4.5	50	2700	470	15,000	80	220-240	Yes	929001227408
LEDClassic 8-60W A60 E27 2200K CL-Gold	E27	Filament A60	8	60	<2200	600	15,000	80	220-240	Yes	929001228108
LEDClassic 8-60W G120 E27 2200K CL-Gold	E27	Filament G120	8	60	<2200	600	15,000	80	220-240	Yes	929001229108
LEDClassic 8-60W ST64 E27 2200K CL-Gold	E27	Filament ST64	8	60	<2200	600	15,000	80	220-240	Yes	929001228908
LEDClassic 8-70W ST64 E27 WW CL-Gold	E27	Filament ST64	8	70	<2200	800	15,000	80	220-240	Yes	929001228508
LEDClassic 8-70W A60 E27 WW CL	E27	Filament A60	8	70	2700	800	15,000	80	220-240	Yes	929001228008
LEDClassic 8-70W G93 E27 WW CL	E27	Filament G93	8	70	2700	800	15,000	80	220-240	Yes	929001229008
LEDClassic 8-70W ST64 E27 WW CL	E27	Filament ST64	8	70	2700	800	15,000	80	220-240	Yes	929001228608

### Scene Switch LED bulb

The Scene Switch bulb is a revolutionary bulb that truly surprises by giving out not one but two color temperatures within a single E27 bulb form. It allows spaces to be personalized for ease and comfort by using the existing wall switch with no need of re-wiring, to simply toggle the light color from warm white at 3000K to cool daylight at 6500K at your finger tips. The result is a uniformly lit bulb that delivers glare-free light that is easy on the eyes. A hassle-free retrofit that turns on instantly, adding flexibility and more value to any luminaire with an E27 base.

### **Features**

- $\boldsymbol{\cdot}$  Retrofit bulb with an E27 base
- · 806 lumen, CCT 3000K/6500K
- · CRI 80
- · Lifetime 15000 hours

### **Benefits**

- Warm white and cool day light, switchable instantly
- Unique bulb shape that gives light all around
- No hazardous materialVersatile for all spaces
- zardous material

### **Applications**

- Homes, offices and cafés
- · Hotel guest rooms, spa
- · Modern or classical luminaires
- · Wall sconces, open fixtures



### Product specifications

Froduct specifications											
Product type	Cap	Bulb shape	Lamp wattage	Replaced wattage	Color temp.	Lumen	Lifetime	CRI	Voltage	Dimming	Order code
			w	w	к	lm	Hours	RA	v		12NC
Scene Switch A60 CCT 9.5-70W E27 3000K/6500K	E27	A60	9.5	70	3000/ 6500	806	15,000	>80	220-240	No	929001140602
Scene Switch A60 3Step 9.5-70W E27 6500K	E27	A60	9.5	70	6500	806-470-150	15,000	>80	220-240	Yes	929001140702
Scene Switch A60 3Step 9.5-70W E27 3000K	E27	A60	9.5	70	3000	806-470-150	15,000	>80	220-240	Yes	929001157302
Scene Switch P45 2Step 7-60W E27 6500K	E27	A60	7.0	60	6500	600-150	15,000	>80	220-240	Yes	929001140002

# LED Deco Classic

A well-loved classic with a modern LED twist

Retro and classy, yet it saves you a good 90% in energy consumption. Perfect for decorative lighting for hotels, restaurants and other creative spaces, this is the answer to a final replacement of the incandescent or tungsten equivalent. The long, elegant yet hardy strands of LED filaments gives out refined and defined warm light that cannot be distinguished from the traditional bulbs.

### **Application notes:**

- · Operating temperatures: -20°C to 40°C ambient
- Designed for indoor application only
  Not intended for use as exit lights/emergency lights
- For indoor application in open luminaires/fixtures



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Legend technical specifications	Symbol	Definition
Backwards compatible		Workable with an older product or technology
Beam angle	(⁰)	Exit angle of the light beam
Central beam candela		Power emitted by a light source in a particular direction. A common candle emits light with a luminous intensity of roughly one candela
Chip on board	СОВ	Refers to the semiconductor assembly technology where the microchip or die is directly mounted on and electrically connected to its final circuit board, instead of undergoing traditional assembly or packaging as an individual IC.
Correlated color temperature	K	CCT; describes whether white light appears warm (reddish), neutral or cool (bluish)
Color rendering index	Ra	CRI; the ability to reproduce the colors of various objects faithfully in reference to an ideal light source
Color consistency (initial)	SDCM	Standard Deviation of color-matching; describing the difference between two colors. E.g. a difference of 1-3 SDCM is virtually imperceptible; a difference of 4 or more is readily visible
Dimmable average lifetime 10% failure	hrs	Lifetime in hours, defined by reaching 10% failures (ie. 90% survivors) when dimmed
Dimming range	%	Dimming range in which the system will perform as specified
Driver power factor	%	Indicating how effective the driver converts electric current to useful power output
Efficiency range max load		Efficiency when operating at maximum power (non-dimmed)
EOC code		European Order Code
Frequency	Hz	The number of oscillations in one second. Measured in Hertz (Hz).
Housing color		Color of housing
Input Voltage	V	Voltage required as input for the product
IP Classification		Ingress protection defined in terms of object size and water beam protected against
Inrush current peak		The highest current at which the capacitive components operate
Lifetime	hrs	Lifetime in hours, associated with specific conditions (e.g. lumen maintenance, Tc, failure)
Lifetime 10% failure	hrs	Lifetime in hours, defined by reaching 10% failures (ie. 90% survivors) for a population
Light output	lm	Output of luminous flux
Lumen maintenance @ 50 k hrs	%	% of the original lumen flux remaining after indicated (life-)time for a defined population; e.g. B50/L70 indicates 50% of the population retaining 70% of the original light output
Luminous Flux	lm	Total energy emitted by a light source across the visible wavelengths of light
Module efficacy	lm/W	Efficiency module; lumen output per watt input
Module power	W	Energy required to operate the module
Module temperature control		Protective feature where the driver is regulating down the module power when a certain critical temperature of the module is passed
Passive cooling		Cooling without power consumption
Power factor	Pf	Indicating how effective the driver converts electric current to useful power output
Relative Humidity	%	Portion of water vapor in a mixture of air and water vapor
System efficacy	lm/W	Efficiency module + driver
System power	W	Energy required to operate the system
Tc life driver	°C	Temperature of indicated point on the product on which the lifetime is based
Tc life module	°C	Temperature of indicated point on the product on which the lifetime is based
Total harmonic distortion	%	Indication of the influence of the lighting products on frequencies of other equipment
Zhaga		Zhaga is an industry-wide cooperation between companies aimed at enabling the interchangeability of LED light sources made by different manufacturers

# **Notes Notes**

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