LED Lighting systems

The rules of lighting design are being re-written. It's all thanks to today's rapidly advancing developments in LED technology. A technology that can be incorporated into almost any luminaire, object, surface or appliance and provide light that changes color and intensity.

We offer a range of LED Lighting systems – not bare LEDs but specially designed products. These comprise guaranteed – compatible LED, driver, optic and heat sink. As a global lighting company and a leading semiconductor supplier we have optimized all of the mechanical, optical thermal and electronic characteristics.

LED Module System

A LED Module System is a highly versatile, self-contained lighting system that you can easily connect to other LED Modules – several configurations are possible. What's more, you can confidently integrate LED Module Systems into your next luminaire or architectural design because we have taken care of all the optical, thermal and mechanical-optimisation. Our Module Systems also come with DALI and DMX-compatible control interfaces. Connected to a control system your customers can change the light intensity and create lighting that complements the time of day or establishes their desired mood.

LED Component System

These are printed circuit boards with LEDs & electronics integrated, and they provide maximum flexibility to enable you to seamlessly integrate LED lighting into your new product designs. We also offer separate matching control interfaces and a range of optics.

LED String System

The LED String is a unique lighting system (string and driver) that can be directly mounted to a sign backplate or other substrate. The LED String is made up of colored or white LED devices connected by wire and the driver converts mains voltage to low voltage DC. All colored LED Strings have a high degree of saturation. The warm and cool white versions have a high color rendering. Each LED device in the string comprises a sealed LED, optic and heat sink. – All with specially optimized optical and thermal characteristics.
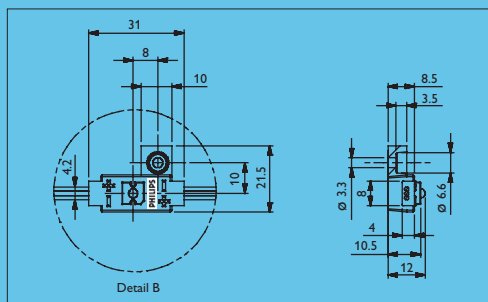
It's up to you to push the boundaries and create new ways of enjoying light. To empower people to express themselves, transform their surroundings and enlighten their lives.
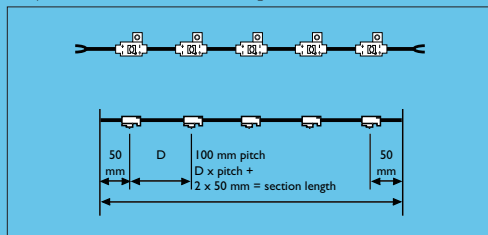
LED String System
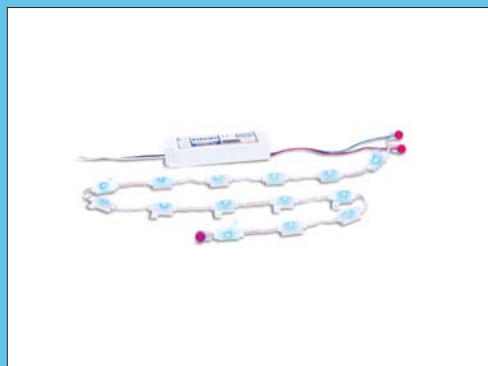
LED String System

LED String System

Product description

LED String is a sophisticated lighting system (string and driver) that can be directly mounted to a sign backplate or other substrate. The String is flexible, water resistant and robust which allows new designs for signage (IP66), band lighting and architectural applications. The system is specifically suitable for large projects where economical solutions are looked for.

With LED String your customers can now reduce their running costs compared when using neon or fluorescent solutions.

Both white and colored versions are available. Each LED device in the string comprises a sealed LED, optic and heat sink – all with specially optimised optical and thermal characteristics.

Features and benefits

- LED String's energy consumption is around 4W per meter (e.g. for red) compared to 20W per meter of e.g. a neon lamp.
- Maintenance costs are lower; the lifetime of the LED String system is around 50,000 hrs whilts neon or fluorescent lamps only lasts 20,000 hrs. Low power LED string versions have >50% lumen maintenance at a maximum temperature Tamb +70°C.

Safety

- The LED String System operates at only 33V. This means that there is no fire risk as with systems operating at about 1000 Volt.

Reliability

- LED String is very robust and will not easily break as a neon or fluorescent lamp.

Flexibility

- Thanks to its low dimensions, you can create slimmer signs or architectural designs.
- It is easy to optimise the brightness of the design.

No harmful materials

- LEDs do not contain any mercury and lead (RoHS compliant)..

Applications in indoor and outdoor

- Sign lighting
- Band lighting (in e.g. petrol stations)
- Architectural designs

Dimensions in mm

Detail B

Low power white and colored LED string device dimensions

LED String low power	Nr. of LEDs per section	Section length
LED String Red/Amber	5	50cm
LED String Blue/Green	7	70cm
LED String White	11	110cm

50 mm | D | 100 mm pitch D x pitch + 2 x 50 mm = section length | 50 mm

Specification

| LED String Gen 1 Type	LED Driver Xitanium	Wavelength nanometer nm	Color temp. Kelvin K	Power mW	Lumen per device Lm	Lumen per meter Lm/m	Beam angle max. °	Case temp. range °C	Ambient temp °C
LED String Red 624 P10	12 or 17W**	624+/-10	-	221	7	70	130	45	-20/+70
LED String Amber 594 P10	12 or 17W**	594+/-5	-	221	4.5	45	130	45	-20/+70
LED String Blue 476 P10	12 or 17W**	476+/-7	-	233	2.8	28	130	45	-20/+70
LED String Green 526 P10	12 or 17W**	526+/-7	-	233	6.3	63	130	45	-20/+70
LED String White 6300 K P10	12 or 17W**	-	6300+/-700	114	5.8	58	105	45	-20/+70

17W driver is capable of operating 2 parallel connected LED String Colors & white 6300. See technical application guide of LED String.
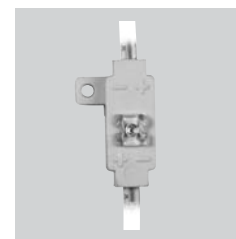
Optical characteristics
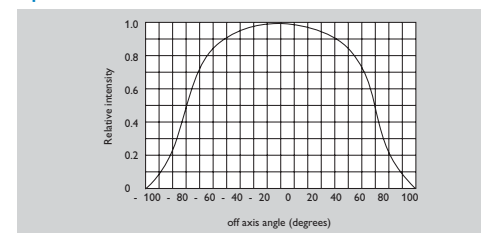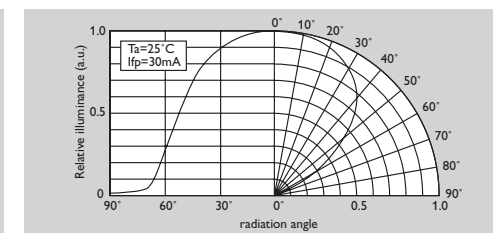
Relative intensity vs off axis angle for the colored LEDs

Relative illuminance vs radiation angle for the white LEDs

Definitions

String: Chain of sections
Section: Chain of LED devices
LED Device: One encapsulated LED
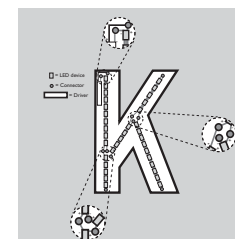
LED device

Installation

Advice:
1. always apply the recommended LS Mounting Tape pads at every LED device.
2. apply screws at curved positions; type ST 2.9 x 13 mm according to DIN 7504 M, screw head according to DIN 7981 type H.
3. do not use counter sunk screws.
4. you can find more installation advice and drawings in the technical application manual.

Material and tools

To make easy and reliable connections we recommend using IDC connectors from 3M. Use type UR-2 in combination with the special crimping tool E-9Y. The connection must be made at a "2-wire point".

UR-2 connector | E-9Y crmping tool

Note:

These materials and tools are not included to order.
Contact the 3M local sales offices. (www.3m.com)

Quantities of LED devices and sections per driver

In this table you find the maximum wiring length between the driver and the first LED in the LED String, when using the same wire thickness as used with the LED String AWG26/0.13mm^2. The maximum length depends on the number of LED devices and sections connected to the driver eg. when you use less sections on a driver the wiring length between the driver and the first LED device can be longer, see table.

LED String Gen 1	Start point is "2-wire point" LED sections	LED devices	Wiring length between driver output and first LED (mtr.)	Spacing between devices (cm)
Type	min./max.	min./max.	max.	min./max.
LED String Red 624 P10	1/9	5/45	0	2.2/10
	1/8	5/40	20	2.2/10
LED String Amber 594 P10	1/9	5/45	0	2.2/10
	1/8	5/40	20	2.2/10
LED String Blue 476 P10	1/6	7/42	0	2.2/10
	1/5	7/35	50	2.2/10
LED String Green 526 P10	1/6	7/42	0	2.2/10
	1/5	7/35	50	2.2/10
LED String White 6300 K P10	1/7	11/77	0	2.2/10
	1/6	11/66	40	2.2/10

Ordering data

LED String Gen 1 (low power)	Box packaging Qty	Dimensions (cm) L	W	H	Weight (kg)	Ordering numbers EAN code 8711559	EOC 8711559
LED String LP Red 624 P10 24V	1x20 mtr	54	54	3.5	2	763828	763811 00
LED String LP Amber 594 P10 24V	1x20 mtr	54	54	3.5	2	763842	763835 00
LED String LP Blue 476 P10 24V	1x20 mtr	54	54	3.5	2	763866	763859 00
LED String LP Green 526 P10 24V	1x20 mtr	54	54	3.5	2	763880	763873 00
LED String LP White 6300 K P10 24V	1x20 mtr	54	54	3.5	2	763903	763897 00

LED String Gen 1 Accessories	Box packaging Qty	Dimensions (cm) L	W	H	Weight (kg)	Ordering numbers EAN code 8711559	EOC 8711559
LS Mounting Tape 210 pads[1]	1 reel of 210 pads	11	11	2.5	0.085	764023	764016 00
LS Mounting Tape 1700 pads[1]	1 reel of 1680 pads	25	25	3.5	0.68	764047	764030 00

[1] The use of self adhesive tapes together with the LED String has been tested for stainless steel, aluminium and PMMA.

If other materials or coatings are used, please ensure that these are compatible with the adhesive tape

If there is any doubt, use the advised screws instead.

| Xitanium drivers	Box packaging	EOC 8711500
LED Outdoor Driver 12W[1]	10	930453 30
LED Outdoor Driver 17W[1]	10	930958 30

[1] (IP66) Note operating ambinet temperature range -40 to +60 °C. Max case temperature 90 °C.

Compliances and approvals

- Safety EN 60598
- Endurance
  – High temp storage +100°C 1000Hr.IEC68-2-1
  – Low temp storage -40°C 1000Hr.IEC68-2-2
  – Damp heat 85%RH/85°C 1000Hr.IEC68-2-3
  – Temp/cycle -40°C/100°C 45'/45' 260 cycles IEC68-2-14
- Mechanical
  – Vibration, variable frequency test MIL883-E 2002.7 meth.-A
  – Dynamic cable pull test at speed 500 mm/min

- Quality
  – Ingress protection IP 66 (EN 60598, EN 60529)
  – Approval mark ENEC
  – Quality standard ISO 9001-2000
  – Environmental standard ISO 14001
  – CE marking
- Environmental
  – RoHS compliant
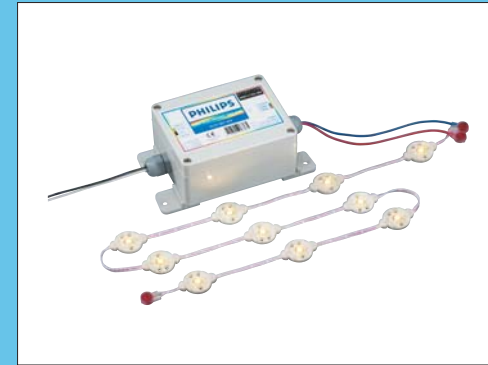
LED String System medium power white

Product description

LED String medium power is a sophisticated lighting system, based on a white LEDs (string and driver) that can be directly mounted to a sign backplate or other substrate. The String is flexible, water resistant and robust which allows new designs for signage (IP66), band lighting and architectural applications. The system is specifically suitable for large projects where economical solutions are looked for.

With LED String your customers can now reduce their running costs compared when using neon or fl uorescent solutions.

Each LED device in the string comprises a sealed LED, optic and heat sink, all with specially optimised optical and thermal characteristics.

Features and benefits

- LED String's energy consumption is around 6W per meter compared to 20W per meter of e.g. a neon lamp.
- Maintenance costs are lower; the lifetime of the LED String system is around 50,000 hrs whilts neon or fluorescent lamps only lasts 20,000 hrs. Medium power LED string versions have >70% lumen maintenance at a maximum temperature Tamb +75°C.

Safety

- The LED String System operates at only 24V. This means that there is no fire risk as with systems operating at about 1000V Volt.

Reliability

- LED String is very robust and will not easily break as a neon or fluorescent lamp.

Flexibility

- Thanks to its low dimensions, you can create slimmer signs or architectural designs.
- It is easy to optimise the brightness of the design.

No harmful materials

- LEDs do not contain any mercury and lead (RoHS compliant)..

Applications in indoor and outdoor

- Sign lighting
- Band lighting (in e.g. petrol stations)
- Architectural designs

Dimensions in mm
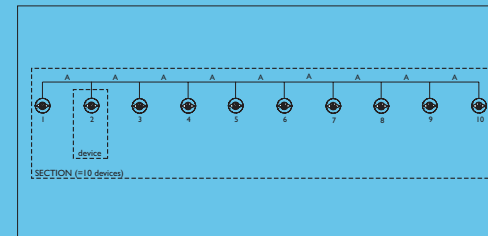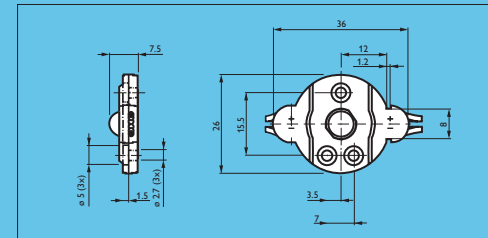
Product ID	Section length
LED String White 3300 K 10 BW (Warm White, Batwing radiation)	100
LED String White 6300 K 10 LB (Cool White, Lambertian radiation)	100
LED String White 6300 K 15 LB (Cool White, Lambertian radiation)	150

LED String System

Specification

LED String Gen 1 Type	LED Driver Xitanium	Color temp. Kelvin K	Power mW	Lumen per device Lm	Lumen per meter Lm/m	Beam angle max. °	Case temp. range °C	Ambient temp °C
LED String White 3300 K 10 BW	40W	3300 +/- 500	600	10	100	110	55	-20/ +75
LED String White 6300 K 10 LB	40W	6300 +/- 500	600	15	150	110	55	-20/ +75
LED String White 6300 K 15 LB	40W	6300 +/- 500	600	15	100	110	55	-20/ +75

Optical characteristics

Relative luminous flux vs off angle for LED String White 6300K 10LB/15LB devices.

Definitions

String: Chain of sections
Section: Chain of LED devices
LED Device: One encapsulated LED

LED device

Installation

Advice:
1. apply stainless steel slotted pan head cylindrical screw M2 / M2.5 x 5mm according to DIN 85.
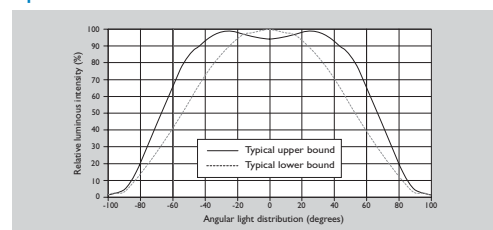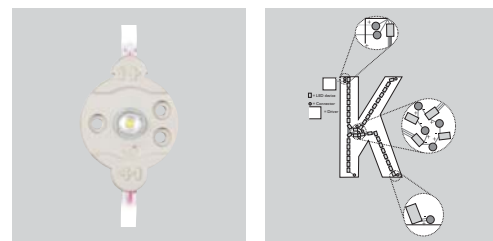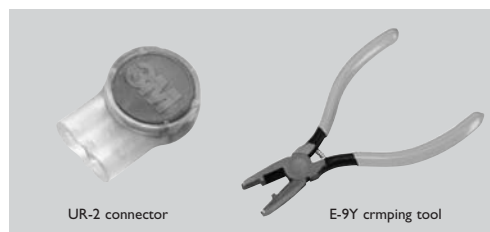2. it is recommended to apply screws at curved positions.
3. an alternative for screws is adhesive tape especially in case of retrofit for fast installation; type VHB9469PG Adhesive Transfer Tape (0.13mm / 0.005 inch) of 3M.
4. do not use counter sunk screws.
5. you can find more installation advice and drawings in the technical application manual.

Material and tools

To make easy and reliable connections we recommend using IDC connectors from 3M. Use type UR-2 in combination with the special crimping tool E-9Y. The connection must be made at a "2-wire point"

UR-2 connector   E-9Y crmping tool

Note:
These materials and tools are not included to order.
Contact the 3M local sales offices. (www.3m.com)

Quantities of LED devices and sections per driver

In this table you find the maximum wiring length between the driver and the first LED in the LED String, when using the same wire thickness as used with the LED String AWG26/0.13mm^2. The maximum length depends on the number of LED devices and sections connected to the driver eg. when you use less sections on a driver the wiring length between the driver and the first LED device can be longer, see table.

LED String medium Power White Type	Start point is "2-wire point" LED sections min./max.	LED devices min./max.	Wiring length between driver output and first LED (mtr.) max.	Spacing between devices (cm) min./max.
LED String White 3300 K 10 BW	1/4	10/40	20	3/10
LED String White 6300 K 10 LB	1/4	10/40	20	3/10
LED String White 6300 K 15 LB	1/4	10/40	20	3/15

Ordering data

LED String medium Power White	Box packaging Qty	Dimensions (cm) L	W	H	Weight (kg)	Ordering numbers EAN code 8711559	EOC 8711559
LED String White 3300 K 10 BW	1x10 mtr	37	37	4.5	1.1	762074	762074 00
LED String White 6300 K 10 LB	1x10 mtr	37	37	4.5	1.1	762081	762081 00
LED String White 6300 K 15 LB	1x10 mtr	37	37	4.5	1.1	762098	762098 00

Xitanium drivers	Box packing	EOC 8711500
LED Outdoor Driver 40W[1]	3	931221 30

[1] (IP66) Note operating temperature range -40 to +60 °C. Max case temperature +50 °C.

Outdoor drivers are also advised for indoor use.

Packing
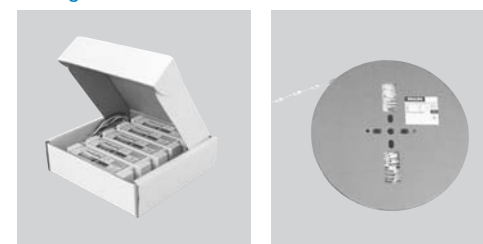
Xitanium Drivers

LED String on reel

Compliances and approvals

- Safety EN 60598
- Endurance
  – High temp storage +100°C 1000Hr.IEC68-2-1
  – Low temp storage -40°C 1000Hr.IEC68-2-2
  – Damp heat 85%RH/85°C 1000Hr.IEC68-2-3
  – Temp/cycle -40°C/100°C 45'/45' 260 cycles IEC68-2-14
- Mechanical
  – Vibration, variable frequency test MIL883-E 2002.7 meth.-A
  – Dynamic cable pull test at speed 500 mm/min

- Quality
  – Ingress protection IP 66 (EN 60598, EN 60529)
  – Approval mark ENEC
  – Quality standard ISO 9001-2000
  – Environmental standard ISO 14001
  – CE marking
- Environmental
  – RoHS compliant

LED String System

Affinium LED String System

Affinium LED string system

LED String System

Affinium LED string system

Product description
As a sign maker or reseller, you know that your job is to enhance and protect your customers' brands. They want signs that look great and keep working perfectly over long periods. The Philips Affinium LED string system is designed to guarantee this.

Philips enables you to protect your customers' brands by offering you an easy-to-install LED string system, including both LED string and driver. The system can be used in virtually every situation, thanks to its fully outdoor proof IP66 rating. Excellent light quality and uniformity are ensured by the broad viewing angle plus the flexible string wiring, which allows accurate positioning of the individual LEDs.

Features and benefits
Easy installation
The LED strings are very flexible and can be cut at any position and attached to your backplate with a choice of mounting clips or tape. This enables fast layouts and installation, saving you time and money. The system operates at 24V making it safe to install.

Outdoor proof
Both the overall LED string system and all individual components are fully outdoor proof and have an IP66 rating, ensuring high reliability under all operating conditions. What's more, the LED string starts instantly, even at temperatures as low as -20°C. High operating temperatures are also no problem, for example in warm locations exposed to strong sunshine.

Quality and uniformity of light
To ensure a uniform light distribution in your signs, the LEDs in the string have a broad angle of light output (angle of luminous flux is 130° for the colored LEDs). Furthermore the wiring developed for the string is extremely flexible, allowing a uniform light distribution even in the most complex layouts and small signs. All LEDs are carefully selected from the same color range, ensuring visually consistent colors between the different sections and strings. Colors are also well maintained between different signs for consistent presentation of your customer's corporate identity.

For large and small channel letters
Thanks to the very small width of the LED devices (15 mm), the string easily fits into the narrowest channel letters while still providing uniform lighting. The small LED strings provide an excellent alternative to conventional neon or fluorescent lighting, which require much more space to make effective signs. The effectiveness of the system allows it to compete with neon even in large signs.
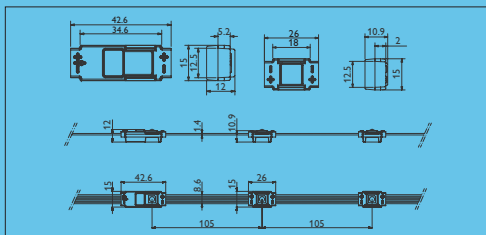
Signs made with the Affinium LED string system offer an outstanding solution for your customer. Not only do they provide a reliable, high-quality brand presentation, they also offer significant savings on both energy and maintenance costs.

Savings in energy consumption
Energy consumption of the LED string is only around 4W per meter (e.g. for red), compared with 20W per meter for a neon lamp. This reduction of energy consumption with LED strings allows substantial savings to be made in operating costs.

Savings in maintenance costs
As well as immediate energy savings, the high reliability and long lifetime of LED strings also offer savings in maintenance costs. Both the LED strings and drivers are maintenance-free for up to 50,000 hours, whereas conventional systems often need replacing after just 20,000 hours. The lumen maintenance of the system is 50% at 50,000 hours at an ambient temperature of 70°C.

Tools to support your customer presentation
To help you in presenting your LED string proposition to your customers, Philips has developed two important tools.

1. LED string layout creator
The design of an LED string based channel letter is different from that of a traditional neon or fluorescent system. To help you create the optimal design that meets your customer's requirements. Philips has developed a unique LED string layout creator. Based on the graphic format of your sign, this tool calculates the layout of the LEDs for optimal light distribution, as well as the total costs involved to realize this layout.

2. Cost savings calculator
Based on your customer's actual data and numbers, this tool provides insights into the actual savings that your customer can expect when selecting the Philips Affinium LED string system over a neon or fluorescent solution.

Guaranteed performance and service
The Philips Affinium LED string system gives you guaranteed performance – both of the products themselves and of our pre and after-sales service. Our guarantee is based on proven system reliability thanks to:
- Long lifetime of LEDs and all other components
- Exhaustive system testing
- Outdoor-proof to IP66 (both system and components)
- Excellent heat management

This guarantee ensures high customer satisfaction together with low service call rates for signmakers. For more information about the Philips Affinium LED string system guarantee, visit our website www.philips.com or contact your distributor.

Applications in indoor and outdoor
- Sign lighting, channel letters and band lighting

Compliances and approvals
- Safety EN 60598
- Endurance
  - High temp storage +100°C 96hrs IEC 68-2-1
  - Low temp storage -40°C 96hrs IEC 68-2-2
  - Damp heat 85%RH/85°C 96hrs IEC 68-2-3
  - Temp/shock -40°C/100°C 45'/45' 260 cycles IEC 68-2-14
  - Temp/cycle -20°C/+70°C
- Mechanical
  - Vibration and bump IEC 60068-2-29
    (Affinium LED string tested with mounting clips)
- Quality
  - Ingress protection IP 66 (EN 60598, EN 60529)
  - Complying damp and wet locations
    (ANSI/UL 2108, low voltage lighting systems)
  - Approval marks ENEC 05, UL recognition (pending) CSA approved
  - Quality standard ISO 9001-2000
  - Environmental standard ISO 14001
  - CE marking

Dimensions in mm

LED String System

Affinium LED String System

LED String System

Affinium LED string system

Specification

Type	LED Power Driver	Wavelength nanometer nm	Color temp. Kelvin K	Power mW	Lumen per device Lm	Lumen per meter Lm/m	Beam angle max. °	Case temp. range °C	Ambient temp °C
Affinium LED string lp red P10	20W/60W/100W	624+/-10	-	221	7	70	130	45	-20/+70
Affinium LED string lp amber P10	20W/60W/100W	594+/-5	-	221	4.5	45	130	45	-20/+70
Affinium LED string lp blue P10	20W/60W/100W	476+/-7	-	233	2.8	28	130	45	-20/+70
Affinium LED string lp green P10	20W/60W/100W	526+/-7	-	233	6.3	63	130	45	-20/+70
Affinium LED string lp W6300 P10 (cool white)	20W/60W/100W	-	6300+/-700	114	5.8	58	105	45	-20/+70

Optical characteristics
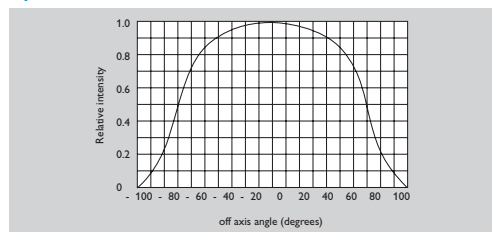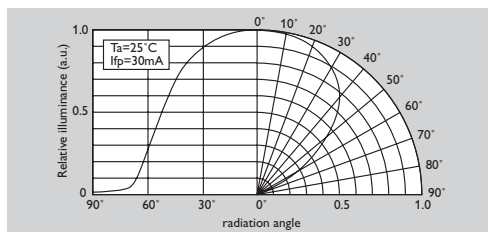
Relative intensity vs off axis angle for the colored LEDs

Relative illuminance vs radiation angle for the white LEDs

Definitions

String: Chain of sections
Section: Chain of LED devices, always starting with LED Driver Device
LED Driver Device: Encapsulated LED with integrated electronics = minimum operating string length on one LED Power Driver
LED Device: Encapsulated LED without integrated electronics; cannot operating without LED Power Driver

LED Device (LD)

LED Driver Device (LDD)

Installation data

Quantities of LEDs per driver for <1m distance between driver and first LED Driver Device (LDD).

Nr. of branches (being connected in parallel to a Driver)	LED Power Driver version		
	20W LED devices min./max.	60W LED devices min./max.	100W LED devices min./max.
LED string Red 1	1/75	1/170	1/170
2	-	2/320	2/340
3	-	-	3/370
			max. 170 LEDs per branch
LED string Amber 1	1/65	1/135	1/135
2	-	2/195	2/270
3	-	-	3/330
			max. 135 LEDs per branch
LED string Blue 1	1/60	1/80	1/80
2	-	2/160	2/160
3	-	3/184	3/240
4	-	-	4/308
			max. 80 LEDs per branch
LED string Green 1	1/60	1/80	1/80
2	-	2/160	2/160
3	-	3/184	3/240
4	-	-	4/308
			max. 80 LEDs per branch
LED string White 1	1/100	1/180	1/180
2	-	2/304	2/360
3	-	-	3/508
			max. 180 LEDs per branch

Note:
You can find information on extended cable lengths between drivers and LED strings in the technical application and installation manuals.

Installation example
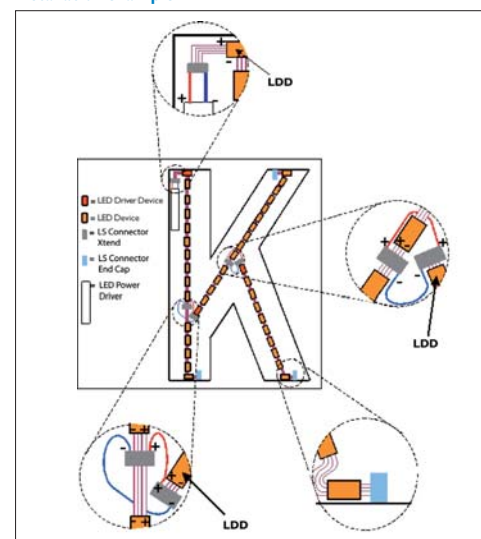
Constructing a channel letter using LED strings

You can find more information and installation advice in:
1. the technical application & installation manuals
2. the installation instructions added to the LED string packing
3. www.philips.com/led or
4. via your distributor or local Philips office.

Ordering data

Affinium LED string	Box packaging Qty	Dimensions (cm)			Weight	Ordering numbers EAN code 8711559	EOC 8711559
		L	W	H	(kg)		
Affinium LED string lp red P10	1x20 mtr	55	55	3.5	2	763682	763675 00
Affinium LED string lp amber P10	1x20 mtr	55	55	3.5	2	763705	763699 00
Affinium LED string lp blue P10	1x20 mtr	55	55	3.5	2	763729	763712 00
Affinium LED string lp green P10	1x20 mtr	55	55	3.5	2	763743	763736 00
Affinium LED string lp W6300 P10 (cool white)	1x20 mtr	55	55	3.5	2	763767	763750 00

Accessories	Box packaging Qty	Dimensions (cm)			Weight	Ordering numbers EAN code 8711559	EOC 8711559
		L	W	H	(kg)		
LS Mounting Clip	200 pcs	10	10	10	0.3	763927	763910 30
LS Extension Cable 4W	50 mtr	18	18	1.5	0.75	764054	763934 00
LS Connector Xtend+LS Applicator Tool[1]	10 pcs/1 pc	7.7	4.8	4.2	0.05	763989	763972 30
LS Connector End Cap	10 pcs	7.7	4.8	4.2	0.05	764009	763996 30
LS Mounting Tape 210 pads[2]	1 reel of 210 pads	11	11	2.5	0.085	764023	764016 00
LS Mounting Tape 1700 pads[2]	1 reel of 1680 pads	25	25	2.5	0.68	764047	764030 00
LS Connector Tool[3]	1 pc	29	25	10	0.9	763965	763958 00

[1] In each box of LS Connector Xtend an applicator is included to connect the strings and driver.

[2] The use of self adhesive tapes together with the LED string has been tested for stainless steel, aluminium and PMMA.
If other materials or coatings are used, please ensure that these are compatible with the adhesive tape. If there is any doubt, use the dedicated mounting clips instead.

[3] This tool can be ordered when many strings have to be connected (for small quantities you can use the LS Applicator Tool).

Note: LED string warm white available end 2006

LED Power Driver (IP66)	Box packing	EOC 8711500
100-240V 20W-24V	10	911940 30
100-240V 60W-24V	10	911469 30
100-240V 100W-24V	10	911964 30

LED Power Drivers are advised for indoor and outdoor use (IP66).
In the USA Xitanium outdoor LED drivers can be applied.
Your distributor or local Philips Advance office can provide more detailed information.
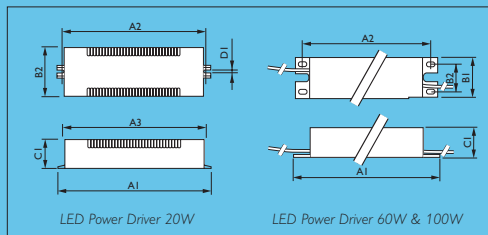
LED String System

LED Power driver 20W

LED Power driver 60W & 100W

Product description

Philips LED Power Drivers have a universal mains input (100-240V) and generate a 24DC voltage. The LED Power Drivers have an operating life matching that of LEDs. The range consist of a slim 20W version with a plastic housing and 60 and 100W versions with a metal housing. All three types have been tested according IP66.

Philips LED Power Drivers perfectly operate the Philips LED based systems including:
• Philips Affinium LED string: a wire connected string of LEDs for safer, more energy efficient signs and architectural effects.
• The LED Module System: lighting blocks that can be joined in a flexible "domino" like arrays to produce creative luminaires and displays.

Features and benefits

Excellent reliability
LED Power Drivers last up to 50,000 hours, to take advantage of the long life of LEDs. They come with the Philips electronic ballast guarantee.

Low-temperature performance (-30°C)
So you can be confident in any outdoor application (tested according IP66).

Hazard-free & universal mains (100-240V)
All major safety requirements (as defined in CE, UL, CSA and VDE) are met. Furthermore all three types come in universal mains, so you can install them in practically any location.

Improved safety
Philips LED Power Drivers generate a limited output voltage and also provide isolation for safe operation (SELV)..

Applications
• Channel letter/contour lighting
• Architectural lighting
• Retail/theme lighting
• Orientation lighting
• Entertainment lighting
• Emergency and security lighting

Dimensions in mm

LED Power Driver 20W   LED Power Driver 60W & 100W

Overall length						
Product ID	A1	A2	B1	B2	C1	D1
20W	140.0	130.0	37.0	18.5	25.0	4.4
60W	241.3	228.6	43.1	26.6	30.0	4.4
100W	241.3	228.6	43.1	26.6	30.0	4.4

Notes:
1. All dimensions are in mm.
2. Drawings are not to scale.
3. Two mounting slots for M4 or #6 screws.
4. Lead wires: 300mm length, 0.8 mm2 solid-core copper.

Specification
Input

Parameter	Symbol	20W driver	60W driver	100W driver	Unit
Input voltage range	V_{in}	100-240V	100-240V	100-240V	V
Frequency	f	47/63	47/63	47/63	Hz
Power consumption range	P_{in}	25 max.	75 max.	120 max.	W
Power factor	P_f	0.9 min	0.9 min	0.9 min	-
Total harmonic distortion	THD	20%	20%	20%	%
Efficiency	-	80% typical	80% typical	80% typical	%

Output

Parameter	Symbol	20W driver	60W driver	100W driver	Unit
Output voltage range	V_{in}	23 - 25.6	23 - 25.6	23 - 25.6	V
Output current	I_n	0.85	2.5	4.1	A
Output voltage ripple	-	1.0	1.0	1.0	%
Short circuit protection	-	yes	yes	yes	-

Environmental ratings

Parameter	Symbol	Minimum	Maximum	Unit
Storage ambient temperature	T_{st}	-40	+85	°C
Operating ambient temperature	T_{op}	-30	+60	°C
Case temperature	T_c	-	+90	°C
Lifetime (at Ta=40°C and Tc=70°C)	L	-	50K	hrs.
Failure rate at max. lifetime	L_{50k}	-	5	%

Notes:
1. *Case temperature should be measured at test point (Tc) as marked on driver label.*
2. *The housing provides protection against the ingress of dust and heavy seas or water jets, tested according the IP66 classification for luminaries by the IEC.*

Ordering data

LED Power Driver (IP66)	Box packing (qty)	EOC 8711500
100-240V 20W-24V	10	911940 30
100-240V 60W-24V	10	911469 30
100-240V 100W-24V	10	911964 30
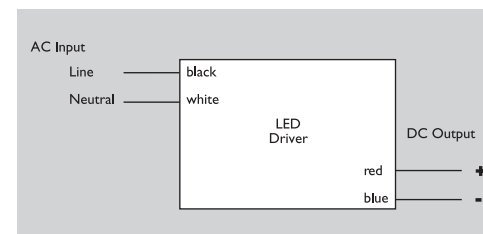
Driver wiring diagram for 20W, 60W & 100W

LED Module System

LED Module System

LED Module System

LED Module System

Product description

LED Module System is a complete LED subsystem for integration into luminaires and other applications. You can configure your own system from our LED modules, Xitanium LED power drivers and control interface units, all available individually. The LED modules contain LEDs, optics, LED driver electronics and an integrated heat sink to ensure reliable and highly efficient operation. Dynamic lighting effects can be created by connecting external control systems such as DALI or DMX via the control interface.

Features and benefits

- Highly flexible modular system; virtually unlimited freedom of configuration
- Choice of module shapes: 1 × 4 LEDs rectangular, 2 × 2 LEDs square or single 1 × 1 LED
- Integrated driver function and heat sink; optimum operating conditions, both electrical and thermal
- Integrated control functions for color control and dimming
- Control interface to external DALI or DMX control systems
- Solid-state devices are vibration- and shock-resistant for high reliability
- Choice of LED colors per module: red, blue, green, amber, cool white or warm white
- Color consistency of LEDs of same type; each module type is made with LEDs from same color bin
- Choice of 1W or 3W Luxeon LEDs (1W, 3W, 4W or 12W module power ratings)
- Lumen output calibrated to achieve a maximum deviation of ±15%
- Long lifetime of 50,000 h for low maintenance costs
- Excellent lumen maintenance and very low failure rate:
  - 70% lumen maintenance and <5% failures for 1W and 4W LED modules at 35,000 h (case temperature <60°C)
  - 70% lumen maintenance and <5% failures for 3W and 12W LED modules at 25,000 h (case temperature <70°C)
- Integrated optics for optimum ease of use and rapid system development
- Low-voltage operation (20-24V DC) for safety and ease of use
- UV- and IR-free beam allows safe use with light- and heat-sensitive products
- Optimum design freedom with remote location of power supply and control interface (up to 10 m with standard 0.5 mm^2 cable)
- All modules are IP67 rated for outdoor or indoor use
- Cold-start capability down to -30°C for unrestricted low temperature use

Applications:

- Architectural lighting, e.g. wall washing, cove lighting, feature spots
- Accent lighting in retail environments
- Showcases, display cabinets, signs
- Gardens and parks
- Indoor and outdoor orientation lighting, e.g. paths
- Emergency and security lighting

LED Module System

Dimensions in mm   **LED Modules**
Burning position: universal

Control Interface

Technical data
LED Modules

Shape	Wattage	Color	Optics beam	Type	Correlated color temp./ wavelength K / nm	Maximum power con- sumption W	Lumen output (expected at advised maximum case temp.) lm	Beam intensity (expected at advised maximum case temp.) cd	Advised maximum case temp. °C	Minimum ambient temp. °C
1x1	1W	Warm White	Narrow beam	LMS 1x1 1W 20-24VDC /932 8D	3150	1.5	10	275	60	-30
		Warm White	Medium beam	LMS 1x1 1W 20-24VDC /932 36D	3150	1.5	10	17	60	-30
		Warm White	Line beam	LMS 1x1 1W 20-24VDC /932 8Dx50	3150	1.5	10	35	60	-30
		Cool White	Narrow beam	LMS 1x1 1W 20-24VDC /767 8D	6700	1.5	22	600	60	-30
		Cool White	Medium beam	LMS 1x1 1W 20-24VDC /767 36D	6700	1.5	22	80	60	-30
		Cool White	Line beam	LMS 1x1 1W 20-24VDC /767 8Dx50	6700	1.5	22	165	60	-30
		Red	Narrow beam	LMS 1x1 1W 20-24VDC R 8D	613.5-620.5	1.5	25	690	60	-30
		Red	Medium beam	LMS 1x1 1W 20-24VDC R 36D	613.5-620.5	1.5	25	90	60	-30
		Amber	Narrow beam	LMS 1x1 1W 20-24VDC A 8D	589.5-592.0	1.5	10	270	60	-30
		Amber	Medium beam	LMS 1x1 1W 20-24VDC A 36D	589.5-592.0	1.5	10	35	60	-30
		Blue	Narrow beam	LMS 1x1 1W 20-24VDC B 8D	465.0-470.0	1.5	9	250	60	-30
		Blue	Medium beam	LMS 1x1 1W 20-24VDC B 36D	465.0-470.0	1.5	9	32	60	-30
		Green	Narrow beam	LMS 1x1 1W 20-24VDC G 8D	530.0-535.0	1.5	27	750	60	-30
		Green	Medium beam	LMS 1x1 1W 20-24VDC G 36D	530.0-535.0	1.5	27	100	60	-30
1x1	3W	Cool White	Narrow beam	LMS 1x1 3W 20-24VDC /763 8D	6300	3	33	900	70	-30
		Cool White	Medium beam	LMS 1x1 3W 20-24VDC /763 36D	6300	3	33	120	70	-30
		Cool White	Line beam	LMS 1x1 3W 20-24VDC /763 8Dx50	6300	3	33	250	70	-30
		Blue	Narrow beam	LMS 1x1 3W 20-24VDC B 8D	465.0-470.0	3	15	410	70	-30
		Blue	Medium beam	LMS 1x1 3W 20-24VDC B 36D	465.0-470.0	3	15	55	70	-30
		Green	Narrow beam	LMS 1x1 3W 20-24VDC G 8D	530.0-535.0	3	30	830	70	-30
		Green	Medium beam	LMS 1x1 3W 20-24VDC G 36D	530.0-535.0	3	30	110	70	-30
2x2	4W	Warm White	Narrow beam	LMS 2x2 4W 20-24VDC /932 8D	3150	4.5	40	1100	60	-30
		Warm White	Medium beam	LMS 2x2 4W 20-24VDC /932 36D	3150	4.5	40	70	60	-30
		Cool White	Narrow beam	LMS 2x2 4W 20-24VDC /767 8D	6700	4.5	88	2400	60	-30
		Cool White	Medium beam	LMS 2x2 4W 20-24VDC /767 36D	6700	4.5	88	320	60	-30
		Red	Narrow beam	LMS 2x2 4W 20-24VDC R 8D	613.5-620.5	4.5	100	2760	60	-30
		Red	Medium beam	LMS 2x2 4W 20-24VDC R 36D	613.5-620.5	4.5	100	360	60	-30
		Amber	Narrow beam	LMS 2x2 4W 20-24VDC A 8D	589.5-592.0	4.5	40	1080	60	-30
		Amber	Medium beam	LMS 2x2 4W 20-24VDC A 36D	589.5-592.0	4.5	40	140	60	-30
		Blue	Narrow beam	LMS 2x2 4W 20-24VDC B 8D	465.0-470.0	4.5	36	1000	60	-30
		Blue	Medium beam	LMS 2x2 4W 20-24VDC B 36D	465.0-470.0	4.5	36	130	60	-30
		Green	Narrow beam	LMS 2x2 4W 20-24VDC G 8D	530.0-535.0	4.5	108	3000	60	-30
		Green	Medium beam	LMS 2x2 4W 20-24VDC G 36D	530.0-535.0	4.5	108	400	60	-30
2x2	12W	Cool White	Narrow beam	LMS 2x2 12W 20-24VDC /763 8D	6300	12	130	3600	70	-30
		Cool White	Medium beam	LMS 2x2 12W 20-24VDC /763 36D	6300	12	130	480	70	-30
		Blue	Narrow beam	LMS 2x2 12W 20-24VDC B 8D	465.0-470.0	12	60	1640	70	-30
		Blue	Medium beam	LMS 2x2 12W 20-24VDC B 36D	465.0-470.0	12	60	220	70	-30
		Green	Narrow beam	LMS 2x2 12W 20-24VDC G 8D	530.0-535.0	12	120	3320	70	-30
		Green	Medium beam	LMS 2x2 12W 20-24VDC G 36D	530.0-535.0	12	120	440	70	-30
1x4	4W	Warm White	Narrow beam	LMS 1x4 4W 20-24VDC /932 8D	3150	4.5	40	1100	60	-30
		Warm White	Medium beam	LMS 1x4 4W 20-24VDC /932 36D	3150	4.5	40	70	60	-30
		Warm White	Line beam	LMS 1x4 4W 20-24VDC /930 8Dx50	2950	4.5	40	140	60	-30
		Cool White	Narrow beam	LMS 1x4 4W 20-24VDC /767 8D	6700	4.5	88	2400	60	-30
		Cool White	Medium beam	LMS 1x4 4W 20-24VDC /767 36D	6700	4.5	88	320	60	-30
		Cool White	Line beam	LMS 1x4 4W 20-24VDC /767 8Dx50	6700	4.5	88	660	60	-30
		Red	Narrow beam	LMS 1x4 4W 20-24VDC R 8D	613.5-620.5	4.5	100	2760	60	-30
		Red	Medium beam	LMS 1x4 4W 20-24VDC R 36D	613.5-620.5	4.5	100	360	60	-30
		Amber	Narrow beam	LMS 1x4 4W 20-24VDC A 8D	589.5-592.0	4.5	40	1080	60	-30
		Amber	Medium beam	LMS 1x4 4W 20-24VDC A 36D	589.5-592.0	4.5	40	140	60	-30
		Blue	Narrow beam	LMS 1x4 4W 20-24VDC B 8D	465.0-470.0	4.5	36	1000	60	-30
		Blue	Medium beam	LMS 1x4 4W 20-24VDC B 36D	465.0-470.0	4.5	36	130	60	-30
		Green	Narrow beam	LMS 1x4 4W 20-24VDC G 8D	530.0-535.0	4.5	108	3000	60	-30
		Green	Medium beam	LMS 1x4 4W 20-24VDC G 36D	530.0-535.0	4.5	108	400	60	-30
1x4	12W	Cool White	Narrow beam	LMS 1x4 12W 20-24VDC /763 8D	6300	12	130	3600	70	-30
		Cool White	Medium beam	LMS 1x4 12W 20-24VDC /763 36D	6300	12	130	480	70	-30
		Cool White	Line beam	LMS 1x4 12W 20-24VDC /763 8Dx50	6300	12	130	1000	70	-30
		Blue	Narrow beam	LMS 1x4 12W 20-24VDC B 8D	465.0-470.0	12	60	1640	70	-30
		Blue	Medium beam	LMS 1x4 12W 20-24VDC B 36D	465.0-470.0	12	60	220	70	-30
		Green	Narrow beam	LMS 1x4 12W 20-24VDC G 8D	530.0-535.0	12	120	3320	70	-30
		Green	Medium beam	LMS 1x4 12W 20-24VDC G 36D	530.0-535.0	12	120	440	70	-30

Note: Actual beam angle varies by color
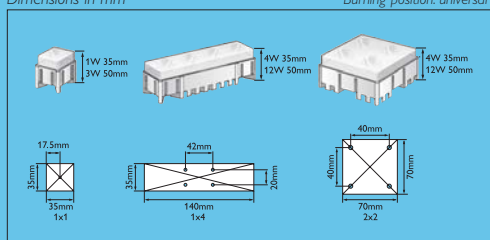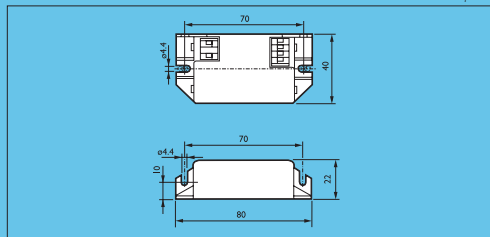
LED Module System

LED Module System

Control interface

| Description	Type	Power consumption W	Maximum case temp. °C	Minimum ambient temp. °C
DALI /DMX Control Interface	CI 36W 20-24VDC DALI/DMX	2.5	60	-30

Xitanium LED Power Drivers

Type		Input voltage range V	Input frequency range Hz	Power consumption max. W	Max. power load when used with LCS Components W	Max. case temp. °C	Minimum ambient temp. °C
LED Driver Indoor	40W/230V	207-264	47-63	51	32	85	-40
LED Driver Outdoor	40W/230V	207-264	47-63	51	32	50	-40
LED Driver Outdoor	67W/230V	207-264	47-63	80	60	90	-40
LED Driver Outdoor	80W/230V	207-264	47-63	95	72	90	-40
LED Driver Indoor	40W/120V	108-132	47-63	51	32	85	-40
LED Driver Outdoor	40W/120V	108-132	47-63	51	32	50	-40

Maximum number of LED Modules to be connected to a Xitanium driver.

Xitanium	LMS 1W	LMS 4W	LMS 3W	LMS 12W
40W	n= 21 max	n= 7 max	n= 10 max	n= 2 max
67W	n= 39 max	n= 13 max	n= 19 max	n= 5 max
80W	n= 48 max	n= 16 max	n= 23 max	n= 6 max

Xitanium	LMS 1W	LMS 4W	LMS 3W	LMS 12W
40W	n= 19 max	n= 6 max	n= 9 max	n= 2 max
67/80W	n= 20 max	n= 6 max	n= 10 max	n= 2 max

Wiring
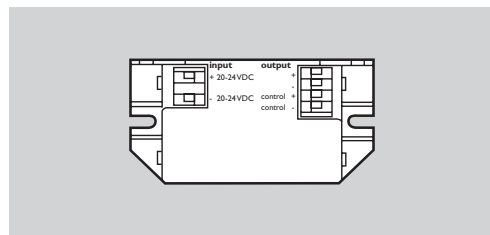
Wiring control interface

Ordering data
LED Modules

Shape	Wattage	Color	Optics	Type	EOC code 8711559	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
1x1	1W	Warm White	Narrow beam	LMS 1x1 1W 20-24VDC /932 8D	760124 30	50	10	800	32x22x7
		Warm White	Medium beam	LMS 1x1 1W 20-24VDC /932 36D	760186 30	50	10	800	32x22x7
		Warm White	Line beam	LMS 1x1 1W 20-24VDC /932 8Dx50	760209 30	50	10	800	32x22x7
		Cool White	Narrow beam	LMS 1x1 1W 20-24VDC /767 8D	760223 30	50	10	800	32x22x7
		Cool White	Medium beam	LMS 1x1 1W 20-24VDC /767 36D	760247 30	50	10	800	32x22x7
		Cool White	Line beam	LMS 1x1 1W 20-24VDC /767 8Dx50	760261 30	50	10	800	32x22x7
		Red	Narrow beam	LMS 1x1 1W 20-24VDC R 8D	760285 30	50	10	800	32x22x7
		Red	Medium beam	LMS 1x1 1W 20-24VDC R 36D	760308 30	50	10	800	32x22x7
		Amber	Narrow beam	LMS 1x1 1W 20-24VDC A 8D	760322 30	50	10	800	32x22x7
		Amber	Medium beam	LMS 1x1 1W 20-24VDC A 36D	760346 30	50	10	800	32x22x7
		Blue	Narrow beam	LMS 1x1 1W 20-24VDC B 8D	760360 30	50	10	800	32x22x7
		Blue	Medium beam	LMS 1x1 1W 20-24VDC B 36D	760384 30	50	10	800	32x22x7
		Green	Narrow beam	LMS 1x1 1W 20-24VDC G 8D	760407 30	50	10	800	32x22x7
		Green	Medium beam	LMS 1x1 1W 20-24VDC G 36D	760421 30	50	10	800	32x22x7
1x1	3W	Cool White	Narrow beam	LMS 1x1 3W 20-24VDC /763 8D	761145 30	65	10	950	32x22x7
		Cool White	Medium beam	LMS 1x1 3W 20-24VDC /763 36D	761169 30	65	10	950	32x22x7
		Cool White	Line beam	LMS 1x1 3W 20-24VDC /763 8Dx50	761183 30	65	10	950	32x22x7
		Blue	Narrow beam	LMS 1x1 3W 20-24VDC B 8D	761206 30	65	10	950	32x22x7
		Blue	Medium beam	LMS 1x1 3W 20-24VDC B 36D	761220 30	65	10	950	32x22x7
		Green	Narrow beam	LMS 1x1 3W 20-24VDC G 8D	761244 30	65	10	950	32x22x7
		Green	Medium beam	LMS 1x1 3W 20-24VDC G 36D	761268 30	65	10	950	32x22x7
2x2	4W	Warm White	Narrow beam	LMS 2x2 4W 20-24VDC /932 8D	760445 30	160	5	1100	39x15x9
		Warm White	Medium beam	LMS 2x2 4W 20-24VDC /932 36D	760469 30	160	5	1100	39x15x9
		Cool White	Narrow beam	LMS 2x2 4W 20-24VDC /767 8D	760506 30	160	5	1100	39x15x9
		Cool White	Medium beam	LMS 2x2 4W 20-24VDC /767 36D	760520 30	160	5	1100	39x15x9
		Red	Narrow beam	LMS 2x2 4W 20-24VDC R 8D	760568 30	160	5	1100	39x15x9
		Red	Medium beam	LMS 2x2 4W 20-24VDC R 36D	760582 30	160	5	1100	39x15x9
		Amber	Narrow beam	LMS 2x2 4W 20-24VDC A 8D	760605 30	160	5	1100	39x15x9
		Amber	Medium beam	LMS 2x2 4W 20-24VDC A 36D	760629 30	160	5	1100	39x15x9
		Blue	Narrow beam	LMS 2x2 4W 20-24VDC B 8D	760643 30	160	5	1100	39x15x9
		Blue	Medium beam	LMS 2x2 4W 20-24VDC B 36D	760667 30	160	5	1100	39x15x9
		Green	Narrow beam	LMS 2x2 4W 20-24VDC G 8D	760681 30	160	5	1100	39x15x9
		Green	Medium beam	LMS 2x2 4W 20-24VDC G 36D	760704 30	160	5	1100	39x15x9
2x2	12W	Cool White	Narrow beam	LMS 2x2 12W 20-24VDC /763 8D	761282 30	210	5	1350	39x15x9
		Cool White	Medium beam	LMS 2x2 12W 20-24VDC /763 36D	761305 30	210	5	1350	39x15x9
		Blue	Narrow beam	LMS 2x2 12W 20-24VDC B 8D	761343 30	210	5	1350	39x15x9
		Blue	Medium beam	LMS 2x2 12W 20-24VDC B 36D	761367 30	210	5	1350	39x15x9
		Green	Narrow beam	LMS 2x2 12W 20-24VDC G 8D	761381 30	210	5	1350	39x15x9
		Green	Medium beam	LMS 2x2 12W 20-24VDC G 36D	761404 30	210	5	1350	39x15x9
1x4	4W	Warm White	Narrow beam	LMS 1x4 4W 20-24VDC /932 8D	760728 30	160	5	1100	32x22x7
		Warm White	Medium beam	LMS 1x4 4W 20-24VDC /932 36D	760742 30	160	5	1100	32x22x7
		Warm White	Line beam	LMS 1x4 4W 20-24VDC /932 8Dx50	760766 30	160	5	1100	32x22x7
		Cool White	Narrow beam	LMS 1x4 4W 20-24VDC /767 8D	760780 30	160	5	1100	32x22x7
		Cool White	Medium beam	LMS 1x4 4W 20-24VDC /767 36D	760803 30	160	5	1100	32x22x7
		Cool White	Line beam	LMS 1x4 4W 20-24VDC /767 8Dx50	760827 30	160	5	1100	32x22x7
		Red	Narrow beam	LMS 1x4 4W 20-24VDC R 8D	760841 30	160	5	1100	32x22x7
		Red	Medium beam	LMS 1x4 4W 20-24VDC R 36D	760865 30	160	5	1100	32x22x7
		Amber	Narrow beam	LMS 1x4 4W 20-24VDC A 8D	760889 30	160	5	1100	32x22x7
		Amber	Medium beam	LMS 1x4 4W 20-24VDC A 36D	760902 30	160	5	1100	32x22x7
		Blue	Narrow beam	LMS 1x4 4W 20-24VDC B 8D	760926 30	160	5	1100	32x22x7
		Blue	Medium beam	LMS 1x4 4W 20-24VDC B 36D	760940 30	160	5	1100	32x22x7
		Green	Narrow beam	LMS 1x4 4W 20-24VDC G 8D	760964 30	160	5	1100	32x22x7
		Green	Medium beam	LMS 1x4 4W 20-24VDC G 36D	760988 30	160	5	1100	32x22x7
1x4	12W	Cool White	Narrow beam	LMS 1x4 12W 20-24VDC /763 8D	761008 30	190	5	1250	32x22x7
		Cool White	Medium beam	LMS 1x4 12W 20-24VDC /763 36D	761022 30	190	5	1250	32x22x7
		Cool White	Line beam	LMS 1x4 12W 20-24VDC /763 8Dx50	761046 30	190	5	1250	32x22x7
		Blue	Narrow beam	LMS 1x4 12W 20-24VDC B 8D	761060 30	190	5	1250	32x22x7
		Blue	Medium beam	LMS 1x4 12W 20-24VDC B 36D	761084 30	190	5	1250	32x22x7
		Green	Narrow beam	LMS 1x4 12W 20-24VDC G 8D	761107 30	190	5	1250	32x22x7
		Green	Medium beam	LMS 1x4 12W 20-24VDC G 36D	761121 30	190	5	1250	32x22x7

Accessories

Description	Type	EOC code 8711559	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
Mechanical Module Connector	LMS Module Connector	761800 30	2	100	250	10x10x10
Cable Connector	LMS Cable Connector	761824 30	1	100	150	10x10x10

Xitanium LED Power Drivers

Type			EOC code 8711500	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
LED Driver Indoor	40W/230V		927385 30	240	12	3200	28x16x8
LED Driver Outdoor	40W/230V		931221 30	675	3	2225	27.4x17.4x6.4
LED Driver Outdoor	67W/230V		931207 30	640	20	12900	33.7x31.1x10.2
LED Driver Outdoor	80W/230V		931245 30	640	20	12900	33.7x31.1x10.2
		Partnumber					
LED Driver Indoor	40W/120V	LED120A0024V18F					
LED Driver Outdoor	40W/120V	LED120A0024V18FO					

LED Module RGBA

Product description

LED Module System RGBA is a complete LED subsystem for integration into luminaires and other applications. Where the standard LED modules are made up of LEDs of the same color, the RGBA LED modules contain 4 LEDs of red, green, blue and amber colors. Each LED can be dimmed and addressed individually, enabling a full spectrum of colors to be created at varying intensities. You can configure your own system from our LED modules, Xitanium LED power drivers and control interface units, all available individually. The LED modules contain LEDs, optics, LED driver electronics and an integrated heat sink to ensure reliable and highly efficient operation. Dynamic lighting effects can be created by connecting external control systems such as DALI or DMX via the control interface.
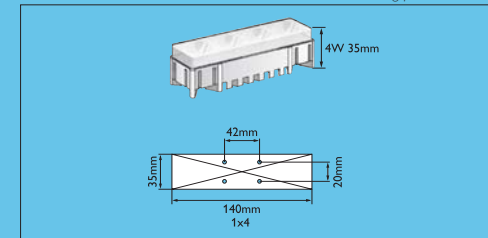
Features and benefits

- Dynamic color control and dimming
- Highly flexible modular system; virtually unlimited freedom of configuration
- The RGBA LED module can be used in combination with white and mono color LED modules
- Integrated driver function and heat sink; optimum operating conditions, both electrical and thermal
- Integrated control functions for color control and dimming
- Control interface to external DALI or DMX control systems
- Solid-state devices are vibration- and shock-resistant for high reliability
- Color consistency of LEDs of same type; each module type is made with LEDs from same color bin
- Choice of 1W or 3W Luxeon LEDs (4W or 12W module power ratings)
- Lumen output calibrated to achieve a maximum deviation of ±15%
- Long lifetime of 50,000 h for low maintenance costs
- Excellent lumen maintenance and very low failure rate: 70% lumen maintenance and <5% failures at 35,000 h (case temperature <60°C)
- Integrated optics for optimum ease of use and rapid system development
- Low-voltage operation (20-24V DC) for safety and ease of use
- UV- and IR-free beam allows safe use with light- and heat-sensitive products
- Optimum design freedom with remote location of power supply and control interface (up to 10 m with standard 0.5 mm^2 cable)
- All modules are IP67 rated for outdoor or indoor use
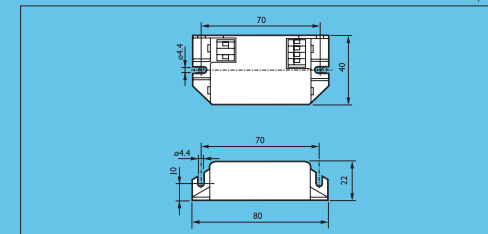- Cold-start capability down to -30°C for unrestricted low temperature use

Applications:

- Architectural and decorative lighting
- Wall washing and special lighting effects

Dimensions in mm   *LED Modules*
Burning position: universal

4W 35mm

42mm
35mm
20mm
140mm
1x4

Control Interface

70
40

70
22
80

LED Module System

LED Module System (RGBA)

LED Module System

LED Module System (RGBA)

Technical data
LED Module RGBA

Shape	Wattage	Color	Optics	Type	Wavelength	Maximum power consumption	Lumen output (expected at advised maximum case temp.)	Advised maximum case temp.	Minimum ambient temp.
					nm	W	lm	°C	°C
1×4	4W	RGBA	Line beam	LMS 1×4 4W 20-24VDC RGBA 8DX50	Blue 465.0-470.0	4.5	9	60	-30
					Red 613.5-620.0		25		
					Amber 589.5-592.0		10		
					Green 530.0-535.0		27		

Control interface

Description	Type		Power consumption W	Maximum case temp. °C	Minimum ambient temp. °C
DALI /DMX Control Interface	CI 36W 20-24VDC DALI/DMX		2.5	60	-30

Xitanium LED Power Drivers

Type		Input voltage range V	Input frequency range Hz	Power consumption max. W	Maximum case temp. °C	Minimum ambient temp. °C
LED Driver Indoor	40W/230V	207-264	47-63	51	85	-40
LED Driver Outdoor	40W/230V	207-264	47-63	51	50	-40
LED Driver Outdoor	67W/230V	207-264	47-63	80	90	-40
LED Driver Outdoor	80W/230V	207-264	47-63	95	90	-40
LED Driver Indoor	40W/120V	108-132	47-63	51	85	-40
LED Driver Outdoor	40W/120V	108-132	47-63	51	50	-40

Maximum number of LED Modules to be connected to a Xitanium driver.

Xitanium	
40W	n= 6max
67W	n= 6max
80W	n= 6max

Wiring control interface

Ordering data
LED Module RGBA

Description		EOC code 8711559	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
LMS 1×4 4W 20-24VDC RGBA 8Dx50		761985 30	160	5	1100	32×22×7

Control interface

Description	Type	EOC code 8711559	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
DALI /DMX Control Interface	CI 36W 20-24VDC DALI/DMX	761787 30	35	5	250	10×10×10

Xitanium LED Power Drivers

Type		EOC code 8711500	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
LED Driver Indoor	40W/230V	927385 30	240	12	3200	28×16×8
LED Driver Outdoor	40W/230V	931221 30	675	3	2225	27.4×17.4×6.4
LED Driver Outdoor	67W/230V	931207 30	640	20	12900	33.7×31.1×10.2
LED Driver Outdoor	80W/230V	931245 30	640	20	12900	33.7×31.1×10.2
		Partnumber				
LED Driver Indoor	40W/120V	LED120A0024V18F				
LED Driver Outdoor	40W/120V	LED120A0024V18FO				

LED Module System

LED Module System
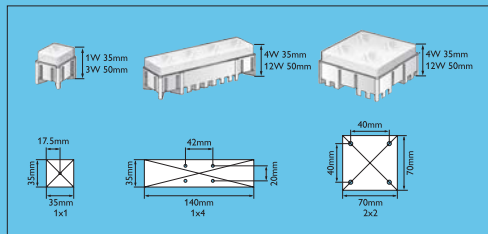
Module system on/off

Product description

Philips LED modules on/off offer an integrated solution for easy access to LED lighting. Thanks to their small size and freedom of configuration, these modules offer extensive opportunities for new lighting concepts. The Philips LED Module System on/off is a complete LED subsystem for integration into luminaires and other applications. The system consists of LED modules and Xitanium LED power drivers. The LED modules contain LEDs, optics, LED driver electronics and an integrated heat sink to ensure reliable and highly efficient operation.

Features and benefits

- Highly flexible modular system; great freedom of configuration
- Choice of module shapes: 1 × 4 LEDs rectangular; 2 × 2 LEDs square or single 1 × 1 LED
- Integrated driver function and heat sink; optimum operating conditions, both electrical and thermal
- Solid-state devices are vibration- and shock-resistant for high reliability
- Choice of LED colours: red, blue, green, amber, cool white or warm white
- Colour consistency of LEDs of same type; each module type is made with LEDs from same colour bin
- Choice of 1W or for cool white also 3W Luxeon LEDs (1W, 3W, 4W or 12W module power ratings)
- Long lifetime of 50,000 h for low maintenance costs
- Excellent lumen maintenance and very low failure rate:
  - 70% lumen maintenance and <5% failures at case temperature <60°C (1W and 4W LED modules at 35,000 h)
  - 70% lumen maintenance and <5% failures at case temperature <70°C (3W and 12W LED modules at 25,000 h)
- Designed to withstand 25000 switching cycles
- Integrated optics for optimum ease of use and rapid system development
- Low-voltage operation (24V DC) for safety and ease of use
- UV- and IR-free beam allows safe use with light- and heat-sensitive products
- Optimum design freedom with remote location of power supply (<10 m with standard 0.5 mm^2 cable)
- The LED Modules are IP67 rated for outdoor or indoor use
- Cold-start capability down to -30°C for unrestricted low temperature use

Applications:

- Architectural lighting, e.g. wall washing, cove lighting, feature spots
- Accent lighting in retail environments
- Showcases, display cabinets
- Gardens and parks
- Indoor and outdoor orientation lighting, e.g. paths

Dimensions in mm *LED Modules*

Technical data

LED Modules

Shape	Wattage	Color	Optics beam	Type	Correlated color temp./wavelength K / nm	Maximum power con-sumption W	Lumen output (expected at advised maximum case temp.) lm	Beam intensity (expected at advised maximum case temp.) cd	Advised maximum case temp. °C	Minimum ambient temp. °C
1x1	1W	Cool white	Narrow	LMS 1x1 1W 24VDC /763 8D on/off	6300	1.8	21	600	60	-30
			Medium	LMS 1x1 1W 24VDC /763 36D on/off	6300	1.8	21	80	60	-30
		Red	Narrow	LMS 1x1 1W 24VDC R 8D on/off	613.5-620.5	1.8	24	690	60	-30
		Amber		LMS 1x1 1W 24VDC A 8D on/off	589.5-592.0	1.8	10	270	60	-30
		Blue		LMS 1x1 1W 24VDC B 8D on/off	470.0-475.0	1.8	9	250	60	-30
		Green		LMS 1x1 1W 24VDC G 8D on/off	530.0-535.0	1.8	26	750	60	-30
1x1	3W	Cool white	Narrow	LMS 1x1 3W 24VDC /763 8D on/off	6300	4.0	32	900	70	-30
			Medium	LMS 1x1 3W 24VDC /763 36D on/off	6300	4.0	32	120	70	-30
2x2	4W	Warm white	Medium	LMS 2x2 4W 24VDC /932 36D on/off	3150	7.3	40	70	60	-30
		Cool white		LMS 2x2 4W 24VDC /763 36D on/off	6300	7.3	88	320	60	-30
2x2	12W	Cool white	Medium	LMS 2x2 12W 24VDC /763 36D on/off	6300	16.0	130	480	70	-30
1x4	4W	Cool white	Line	LMS 1x4 4W 24VDC /763 8Dx50 on/off	6300	7.3	88	660	60	-30
		Red		LMS 1x4 4W 24VDC R 8Dx50 on/off	613.5-620.5	7.3	96	710	60	-30
		Amber		LMS 1x4 4W 24VDC A 8Dx50 on/off	589.5-592.0	7.3	40	300	60	-30
		Blue		LMS 1x4 4W 24VDC B 8Dx50 on/off	470.0-475.0	7.3	36	270	60	-30
		Green		LMS 1x4 4W 24VDC G 8Dx50 on/off	530.0-535.0	7.3	106	790	60	-30
1x4	12W	Cool white	Line	LMS 1x1 12W 24VDC /763 8Dx50 on/off	6300	16.0	130	1000	70	-30

Xitanium LED Power Drivers

Type		Input voltage range V	Input frequency range Hz	Power consumption max. W	Maximum case temp. °C	Minimum ambient temp. °C
LED Driver Indoor	40W/230V	207-264	47-63	51	85	-40
LED Driver Outdoor	40W/230V	207-264	47-63	51	50	-40
LED Driver Outdoor	67W/230V	207-264	47-63	80	90	-40
LED Driver Outdoor	80W/230V	207-264	47-63	95	90	-40
LED Driver Indoor	40W/120V	108-132	47-63	51	85	-40
LED Driver Outdoor	40W/120V	108-132	47-63	51	50	-40

Maximum number of LED Modules to be connected to a Xitanium driver.

Xitanium	LMS 1W	LMS 4W	LMS 3W	LMS 12W
40W	n= 6 max	n= 3 max	n= 2 max	n= 1 max
67W	n= 11 max	n= 6 max	n= 4 max	n= 2 max
80W	n= 13 max	n= 7 max	n= 5 max	n= 3 max

LED Modules on/off

LED Module System

LED Module System

Ordering data
LED Module LMS on/off

Description	EOC code 8711559	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
LMS 1x1 1W 24VDC /763 8D on/off	762371 30	50	10	800	32x22x7
LMS 1x1 1W 24VDC /763 36D on/off	762395 30	50	10	800	32x22x7
LMS 1x1 1W 24VDC R 8D on/off	762418 30	50	10	800	32x22x7
LMS 1x1 1W 24VDC A 8D on/off	762432 30	50	10	800	32x22x7
LMS 1x1 1W 24VDC B 8D on/off	762456 30	50	10	800	32x22x7
LMS 1x1 1W 24VDC G 8D on/off	762470 30	50	10	800	32x22x7
LMS 1x1 3W 24VDC /763 8D on/off	762517 30	65	10	950	32x22x7
LMS 1x1 3W 24VDC /763 36D on/off	762531 30	65	10	950	32x22x7
LMS 2x2 4W 24VDC /932 36D on/off	762555 30	160	5	1100	39x15x9
LMS 2x2 4W 24VDC /763 36D on/off	762579 30	160	5	1100	39x15x9
LMS 2x2 12W 24VDC /763 36D on/off	762593 30	210	5	1350	39x15x9
LMS 1x4 4W 24VDC /763 8Dx50 on/off	762616 30	160	5	1100	32x22x7
LMS 1x4 4W 24VDC R 8Dx50 on/off	762654 30	160	5	1100	32x22x7
LMS 1x4 4W 24VDC A 8Dx50 on/off	762678 30	160	5	1100	32x22x7
LMS 1x4 4W 24VDC B 8Dx50 on/off	762692 30	160	5	1100	32x22x7
LMS 1x4 4W 24VDC G 8Dx50 on/off	762715 30	160	5	1100	32x22x7
LMS 1x4 12W 24VDC /763 8Dx50 on/off	762739 30	190	5	1250	32x22x7

Xitanium LED Power Drivers

Type		Partnumber	EOC code 8711500	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
LED Driver Indoor	40W/230V		927385 30	240	12	3200	28x16x8
LED Driver Outdoor	40W/230V		931221 30	675	3	2225	27.4x17.4x6.4
LED Driver Outdoor	67W/230V		931207 30	640	20	12900	33.7x31.1x10.2
LED Driver Outdoor	80W/230V		931245 30	640	20	12900	33.7x31.1x10.2
		Partnumber					
LED Driver Indoor	40W/120V	LED120A0024V18F					
LED Driver Outdoor	40W/120V	LED120A0024V18FO					

Specification for power supplies fit to operate LMS on/off modules
LMS on/off modules require constant voltage power supplies that are conform following specifications:
• Ensure that power supply is able to deliver the total LMS power and cable losses.
• Output voltage: 24Vdc ± 5%.
• Output voltage ripple: $V_{peak-peak}$ <1 V
• Output voltage should stay within 24Vdc ± 5% range with step load of 0 ➤ I_{rated}
• Overload protection ⩾ 110% I_{rated}
• Rise time of output voltage during startup < 30ms
• Preferred: Holdup time (mains voltage interrupt) ⩾ 20ms
• The power supply must be SELV classified
  (Safety Extra Low Voltage - output reinforced or double isolated from mains)
• The power supply needs to be in line with applicable and local safety standards.

It is recommended that the following protective measures are ensured:
– Short-circuit protection
– Overload protection
– Overheating protection

When these specifications are respected following number of modules can be used per power supply (distance of max 10 meters with AWG 20/ 0.5 mm^2 cable included).

Maximum number of LMS on/off Suply	LMS on/off 1x1 1W	LMS on/off 2x2/1x4 4W	LMS on/off 1x1 3W	LMS on/off 2x2/4x4 12W
	P_{max}=1.8	P_{max}=7.3	P_{max}=4	P_{max}=16
100W	45	11	20	5
60W	27	6	12	3
20W	9	2	4	1

As a reference the following formula can be used for power supplies up to 100W:

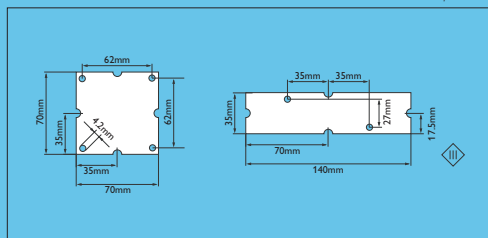$$P_{PSU\ rated} > 1.23 * P_{max\ LMS\ on/off}$$

Note: Using power supplies above 100W the cable losses / voltage drop at 10m with AWG20 cable will be too high and minimum input 20V to modules not reached.
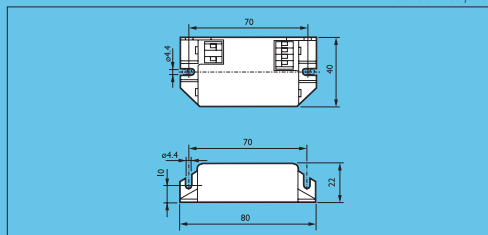
LED Component System
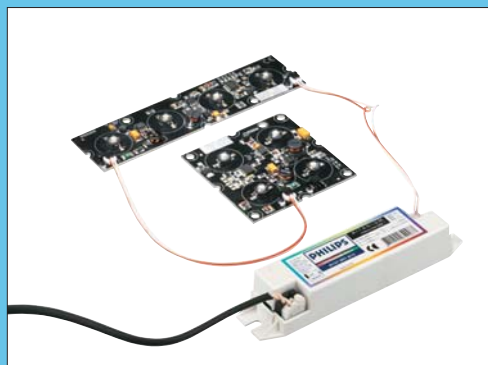
LED Component System

LED Component

Product description

LED Component System offers the highest possible design freedom and flexibility in creating all kinds of LED lighting solutions. The system consists of LED components, Xitanium LED Power Drivers and control interface units, all available individually. The LED components contain LEDs, LED driver electronics and controls mounted on a metal-core PCB for reliable and efficient operation. A range of optics and jumper cables to connect the boards complete the system package. Dynamic lighting effects can be created by connecting external control systems such as DALI or DMX via the control interface. Both dimming and addressing of individual LED colors are possible

Features and benefits

- Component based system for virtually unlimited freedom of configuration
- Choice of component shapes: 1 × 4 LEDs rectangular or 2 × 2 LEDs square
- Integrated driver function for optimum electrical operation
- Integrated control functions for color control and dimming
- Optional control interface to external DALI or DMX control systems
- Solid-state devices are vibration- and shock-resistant for high reliability
- Choice of LED colors: red, blue, green, amber, cool white or warm white
- Color consistency of LEDs of same type; each component type is made with LEDs from same color bin
- Choice of 1W or 3W Luxeon LEDs (4W or 12W component power ratings)
- Lumen output calibrated to achieve a maximum deviation of ±15%
- Long lifetime of 50,000 h for low maintenance costs
- Excellent lumen maintenance and very low failure rate:
  - 70% lumen maintenance and <5% failures at board temperature <60°C (4W LED components at 35,000 h)
  - 70% lumen maintenance and <5% failures at board temperature <70°C (12W LED components at 25,000 h)
- Prepared for various optics and sufficient space for own optic design: optimum design freedom, ease of use and rapid system development
- Low-voltage operation (20-24V DC) for safety and ease of use
- UV- and IR-free beam allows safe use with light- and heat-sensitive products
- Optimum design freedom with remote location of power supply and control interface (up to 10 m with standard 0.5 mm^2 cable)
- All components are IP20 rated

Applications:

- Architectural lighting, e.g. wall washing, cove lighting, feature spots
- Accent lighting in retail environments
- Showcases, display cabinets, signs
- Gardens and parks
- Indoor and outdoor orientation lighting, e.g. paths
- Emergency and security lighting

Dimensions in mm   *LED Components*

Control Interface

Technical data
LED Components

Shape	Wattage	Color	Type				Correlated color temp./ wavelength K / nm	Maximum power consumption W	Lumen output (expected at advised Tmax) °C	Advised max board temp. Tmax °C	Minimum ambient temp.
2x2	4W	Warm White	LCS	2x2	4W	20-24VDC /932	3150	4.5	50	60	-30
		Cool White	LCS	2x2	4W	20-24VDC /763	6300	4.5	115	60	-30
		Red	LCS	2x2	4W	20-24VDC R	613.5 - 620.5	4.5	130	60	-30
		Amber	LCS	2x2	4W	20-24VDC A	589.5 - 592.0	4.5	50	60	-30
		Blue	LCS	2x2	4W	20-24VDC B	465.0 - 470.0	4.5	47	60	-30
		Green	LCS	2x2	4W	20-24VDC G	530.0 - 535.0	4,5	140	60	-30
2x2	12W	Cool White	LCS	2x2	12W	20-24VDC /763	6300	12	170	70	-30
		Blue	LCS	2x2	12W	20-24VDC B	465.0 - 470.0	12	80	70	-30
		Green	LCS	2x2	12W	20-24VDC G	530.0 - 535.0	12	160	70	-30
1x4	4W	Warm White	LCS	1x4	4W	20-24VDC /932	3150	4.5	50	60	-30
		Cool White	LCS	1x4	4W	20-24VDC /763	6300	4.5	115	60	-30
		Red	LCS	1x4	4W	20-24VDC R	613.5 - 620.5	4.5	130	60	-30
		Amber	LCS	1x4	4W	20-24VDC A	589.5 - 592.0	4.5	50	60	-30
		Blue	LCS	1x4	4W	20-24VDC B	465.0 - 470.0	4.5	47	60	-30
		Green	LCS	1x4	4W	20-24VDC G	530.0 - 535.0	4.5	140	60	-30
1x4	12W	Cool White	LCS	1x4	12W	20-24VDC /763	6300	12	170	70	-30
		Blue	LCS	1x4	12W	20-24VDC B	465.0 - 470.0	12	80	70	-30
		Green	LCS	1x4	12W	20-24VDC G	530.0 - 535.0	12	160	70	-30

Notes:

1. Lumen output depends on application / operating temperature

2. For each LED Component a different color bin is used. This optimizes color consistency between LCS Components of an identical type. Some color deviation between individual LEDs is still visible (bin spread).

Accessories

Description			Type
Jumper cable			LCS Jumper cable
Collimator + holder	Narrow beam	2x6°	LCS Optic 12D
Collimator + holder	Medium beam	2x15°	LCS Optic 30D
Collimator + holder	Wide beam	2x25°	LCS Optic 50D
Collimator + holder	Elliptical beam	2x25°/2x6°	LCS Optic 50x12D

Holder + collimator (Optic)   Jumper cable

Control interface

Description	Type	Maximum power consumption W	Maximum case temp. °C	Minimum ambient temp. °C
DALI /DMX Control Interface	CI 36W 20-24VDC DALI/DMX	2.5	60	-30

Xitanium LED Power Drivers

Type		Input voltage range V	Input frequency range Hz	Power consumption max. W	Max. power load when used with LCS Components W	Max. case temp. °C	Minimum ambient temp. °C
LED Driver Indoor	40W/230V	207-264	47-63	51	32	85	-40
LED Driver Outdoor	40W/230V	207-264	47-63	51	32	50	-40
LED Driver Outdoor	67W/230V	207-264	47-63	80	32	90	-40
LED Driver Outdoor	80W/230V	207-264	47-63	95	32	90	-40
LED Driver Indoor	40W/120V	108-132	47-63	51	32	85	-40
LED Driver Outdoor	40W/120V	108-132	47-63	51	32	50	-40

Notes:

1. Maximum power load is valid for use in LCS LED Component System (LCS)

2. For more details on Xitanium drivers see relevant datasheet
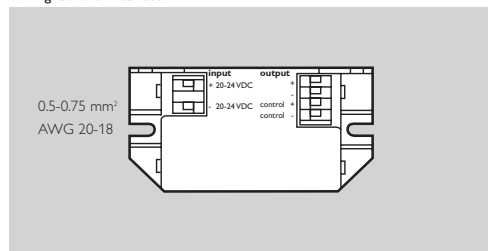
LED Component System
LED Components System

LED Component System
LED Components System

Maximum number of LED Components to be connected to a Xitanium driver.

Xitanium	LCS 4W	LCS 12W
40W	n= 7max	n= 2max
67W	n= 9max	n= 3max
80W	n= 9max	n= 3max

Xitanium	LCS 4W	LCS 12W
40W	n= 6max	n= 2max
67W	n= 6max	n= 2max
80W	n= 6max	n= 2max

Note: Drawings are schematic. By interconnecting the LCS LED Components with the Jumper Cable the LED Components are in parallel.

Wiring Control Interface

0.5-0.75 mm² AWG 20-18

*DALI = Digital Addressable Lighting Interface

Ordering data
LED Components

Shape	Wattage	Color	Type					EOC code 8711559	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
2x2	4W	Warm White	LCS	2x2	4W	20-24VDC	/932	761428 30	35	10	650	39x15x9
		Cool White	LCS	2x2	4W	20-24VDC	/763	761442 30	35	10	650	39x15x9
		Red	LCS	2x2	4W	20-24VDC	R	761466 30	35	10	650	39x15x9
		Amber	LCS	2x2	4W	20-24VDC	A	761480 30	35	10	650	39x15x9
		Blue	LCS	2x2	4W	20-24VDC	B	761503 30	35	10	650	39x15x9
		Green	LCS	2x2	4W	20-24VDC	G	761527 30	35	10	650	39x15x9
2x2	12W	Cool White	LCS	2x2	12W	20-24VDC	/763	761541 30	35	10	650	39x15x9
		Blue	LCS	2x2	12W	20-24VDC	B	761565 30	35	10	650	39x15x9
		Green	LCS	2x2	12W	20-24VDC	G	761589 30	35	10	650	39x15x9
1x4	4W	Warm White	LCS	1x4	4W	20-24VDC	/932	761602 30	35	10	650	32x22x7
		Cool White	LCS	1x4	4W	20-24VDC	/763	761626 30	35	10	650	32x22x7
		Red	LCS	1x4	4W	20-24VDC	R	761640 30	35	10	650	32x22x7
		Amber	LCS	1x4	4W	20-24VDC	A	761664 30	35	10	650	32x22x7
		Blue	LCS	1x4	4W	20-24VDC	B	761688 30	35	10	650	32x22x7
		Green	LCS	1x4	4W	20-24VDC	G	761701 30	35	10	650	32x22x7
1x4	12W	Cool White	LCS	1x4	12W	20-24VDC	/763	761725 30	35	10	650	32x22x7
		Blue	LCS	1x4	12W	20-24VDC	B	761749 30	35	10	650	32x22x7
		Green	LCS	1x4	12W	20-24VDC	G	761763 30	35	10	650	32x22x7

Accessories

Description	Beam	Optics	Type	EOC code 8711559	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
Jumper cable			LCS Jumper cable	761848 30	1,5	100	200	10x10x10
Collimator + holder	Narrow beam	2x6°	LCS Optic 12D	761862 30	3	80	350	31x7x5
Collimator + holder	Medium beam	2x15°	LCS Optic 30D	761886 30	3	80	350	31x7x5
Collimator + holder	Wide beam	2x25°	LCS Optic 50D	761909 30	3	80	350	31x7x5
Collimator + holder	Elliptical beam	2x25°/2x6°	LCS Optic 50x12D	761923 30	3	80	350	31x7x5

Control interface

Description	Type	EOC code 8711559	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
DALI /DMX Control Interface	CI 36W 20-24VDC DALI/DMX	761787 30	35	5	250	10x10x10

Xitanium LED Power Drivers

Type		EOC code 8711500	Net weight product (g)	Min. order quantity (= 1 box)	Gross weight box (g)	Dimen. box (lxwxh) in cm
LED Driver Indoor	40W/230V	927385 30	240	12	3200	28x16x8
LED Driver Outdoor	40W/230V	931221 30	675	3	2225	27.4x17.4x6.4
LED Driver Outdoor	67W/230V	931207 30	640	20	12900	33.7x31.1x10.2
LED Driver Outdoor	80W/230V	931245 30	640	20	12900	33.7x31.1x10.2
		Partnumber				
LED Driver Indoor	40W/120V	LED120A0024V18F				
LED Driver Outdoor	40W/120V	LED120A0024V18FO				

LED Module System

Xitanium™ LED Power Drivers

12W, 17W

25W, 40W

67W, 80W

Product description

These drivers are included in the illumination segment of the Xitanium™ family of products. The Xitanium™ drivers are designed specifically to optimally power Luxeon™ high power LEDs. The constant DC current output provides the long life and optimum operation of high power LEDs. Xitanium™ drivers have an operating life matching that of LEDs. The 25W dimming driver controls the LEDs by pulsing the LEDs on and off in relation with the input voltage for the driver's light regulation circuit. The input voltage for this light regulation circuit varies from 1V to 10V DC: 1V results in a minimum lighting level (5% LED output) and 10V in a maximum (100% LED output). The PMW-frequency is 700Hz (± 10%). Dimming does not affect LED life. The outdoor versions have an IP66 rating.

Features and benefits

Xitanium™ drivers also perfectly operate the Philips LED based systems including:
- The LED Module System: lighting blocks which can be joined in flexible "domino" like arrays to produce creative luminaries and displays
- LED String: a wire connected string of LEDs for safer, more energy efficient signs and architectural effects

New design opportunities

The Xitanium's small, compact size enables you to innovate with new, low-profile fixture designs.

Hazard-free

All the major safety requirements (as defined in CE, ENEC, KEMA, and UL) are met, so you can install them in practically any location.

Excellent reliability

Xitanium LED Drivers last up to 50,000 hours, to take advantage of the long life of LEDs. They come with the Philips electronic ballast guarantee.

Wide choice

Extensive product portfolio gives you a wide choice. Portfolio consist of in- and outdoor types with power ratings from 12 to 80W, including a 25W for dimming possibilities.

LED Module System

Xitanium™ LED Power Drivers

Improved safety

Xitanium LED Drivers generate a limited output voltage and current and also provide isolation for safe operation.

Low-temperature performance (-40°C)

So you can be confident in any outdoor application (IP66).

Universality

Although optimized for high power Luxeon LEDs, the Xitanium range of Drivers is also suitable for other LED based systems.

Applications

- Channel letter/contour lighting
- Architectural lighting
- Retail/theme lighting
- Orientation lighting (path lighting)
- Entertainment lighting
- Emergency and security

Quick selection table

Description	Configuration options
12W 350mA	- 1-8 one-watt Luxeons
	- max. 4.5m Philips LED String Generation I Red & Amber
	- max. 4.2m Philips LED String Generation I Blue & Green
	- max. 7.7m Philips LED String Generation I White
17W 700mA	- 2, 4, 6, 8, 10 or 12 one-watt Luxeons
	- 6-up and 12-up Luxeon lines, rings or arrays
	- 1-5 three-watt Luxeons
	- 1-3 five-watt Luxeons
	- max. 7.0m Philips LED String Generation I Red & Amber
	- max. 7.0m Philips LED String Generation I Blue & Green
	- max. 11m Philips LED String Generation I White
25W 1050mA (indoor only)	- 3, 6, 9, 12, 15 or 18 one-watt Luxeons
	- 18-up Luxeon array
	- 1-5 three-watt Luxeons at 1.0A

Description	Configuration options
25W 1050mA Dimming (indoor only)	- 15 or 18 one-watt Luxeons
	- 5 three-watt Luxeons
40W 1750mA	- 5, 10, 15, 20, 25 or 30 one-watt Luxeons
	- Philips LED String Generation I Medium Power White max. 4.0m
	- 1-21 Philips LED Modules
67W 2800mA	- 8, 16, 24, 32, 40 or 48 one-watt Luxeons
	- 4, 8, 12, 16 or 20 three-watt Luxeons
80W 3150mA (outdoor only)	- 9, 18, 27, 36, 45 or 54 one-watt Luxeons
	- 5, 10, 15, 20 or 25 three-watt Luxeons

Specification

Description LED Driver	Voltage V	Input Max. power W	Max. current mA	Max. power W	Output Current mA	Voltage V	Tc max.
12W indoor	207 - 264	15.0	0.14	12.0	350 +/- 5%	2.6 - 33.0	85
17W indoor	207 - 264	21.5	0.20	17.1	700 +/- 5%	2.6 - 24.6	85
25W indoor	207 - 264	31.9	0.30	25.5	1050 +/- 5%	2.6 - 24.6	85
25W DIM indoor	207 - 264	31.9	0.30	25.5	1050 +/- 5%	14 - 24.0	85
40W indoor	207 - 264	51.0	0.47	40.8	1750 +/- 5%	2.6 - 24.0	85
12W outdoor	207 - 264	15.0	0.14	12.0	350 +/- 5%	2.6 - 33.0	90
17W outdoor	207 - 264	21.5	0.20	17.1	700 +/- 5%	2.6 - 24.6	90
40W outdoor	207 - 264	51.0	0.47	40.8	1750 +/- 5%	2.6 - 24.0	50
67W outdoor	207 - 264	80.0	0.40	67.2	2800 +/- 5%	2.6 - 25.0	90
80W outdoor	207 - 264	95.0	0.50	80.0	3150 +/- 5%	2.6 - 25.0	90

Specification

Description LED Driver	Box packaging	EOC 8711500	Description LED Driver	Box packaging	EOC 8711500
12W indoor	10	749963 30	12W outdoor	10	930453 30
17W indoor	10	749987 30	17W outdoor	10	930958 30
25W indoor	12	927361 30	40W outdoor	3	931221 30
25W DIM indoor	12	927408 30	67W outdoor	20	931207 30
40W indoor	12	927385 30	80W outdoor	20	931245 30

LED Module System
Xitanium™ LED Power Drivers

LED Module System
Xitanium™ LED Power Drivers

12W indoor

D1
A2
B1
C1
A1

Dimensional drawing

AC Input
(WAGO 2-pin
wire trap 18 AWG)

Neutral

Line

LED
Driver

DC Output
(AMP 2-pin header
1365323-1)

+
-

Wiring diagram

350mA
230Vac
Xitanium
350mA
1 to 8 LEDs in series

Configuration arrays

17W indoor

D1
A2
B1
C1
A1

Dimensional drawing

AC Input
(WAGO 2-pin
wire trap 18 AWG)

Neutral

Line

LED
Driver

DC Output
(AMP 2-pin header
1365323-1)

+
-

Wiring diagram

700mA
230Vac
Xitanium
350mA   350mA
1 to 6 LEDs in series
2 legs in parallel

Configuration arrays

25W indoor

B2
A1
A2
D1
C1
B1

Dimensional drawing

AC Input
(WAGO 3-pin
wire trap 18 AWG)

LED Driver

Ground

Line

Neutral

NA   NA

D1   D2

DC Output
(WAGO 4-pin
wire trap 20 AWG)

-   +

Wiring diagram

1050mA
230Vac
Xitanium
350mA 350mA 350mA
1 to 6 LEDs in series 3 legs in parallel

Configuration arrays

25W DIM indoor

B2
A1
A2
D1
C1
B1

Dimensional drawing

AC Input
(WAGO 3-pin
wire trap 18 AWG)

LED Driver

Ground

Line

Neutral

Dimmable

D1   D2

DC Output
(WAGO 4-pin
wire trap 20 AWG)

-   +

Wiring diagram

1050mA
230Vac
Xitanium
350mA 350mA 350mA
1 to 6 LEDs in series 3 legs in parallel

Configuration arrays

Note:
Special attention is required for parallel connections in case of Vf binding differences.

40W indoor

B2
A1
A2
D1
C1
B1

Dimensional drawing

LED Driver

Ground

AC Input
(WAGO 3-pin
wire trap 18 AWG)

Line

Neutral

NA   NA

D1   D2

DC Output
(WAGO 4-pin
wire trap 20 AWG)

-   +

Wiring diagram

1750mA
230Vac
Xitanium
350mA 350mA 350mA 350mA
1 to 6 LEDs in series
5 legs in parallel
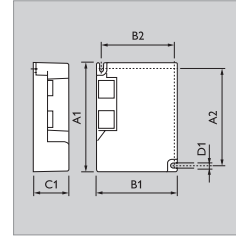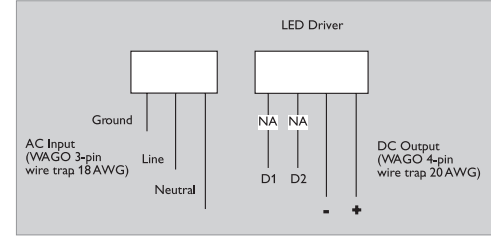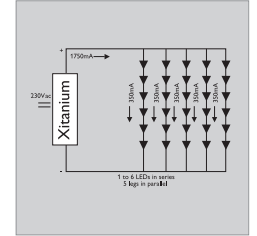
Configuration arrays

12W outdoor

A2
B2
B1
C1
A1

Dimensional drawing

AC Input

Line

Neutral

black

white

LED
Driver

DC Output

red

blue

+

-

Wiring diagram

350mA
230Vac
Xitanium
350mA
1 to 8 LEDs in series
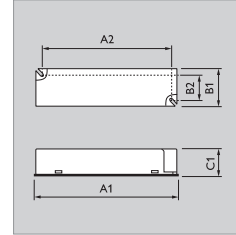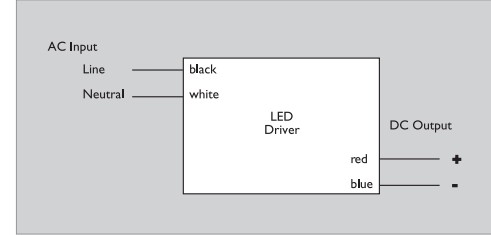
Configuration arrays

17W outdoor

A2
B2
B1
C1
A1

Dimensional drawing

AC Input

Line

Neutral

black

white

LED
Driver

DC Output

red

blue

+

-

Wiring diagram

700mA
230Vac
Xitanium
350mA 350mA
1 to 6 LEDs in series
2 legs in parallel

Configuration arrays

40W outdoor

A2
B2
B1
C1
A1

Dimensional drawing

AC Input

Line

Neutral

black

white

LED
Driver

DC Output

red

blue

+

-

Wiring diagram

1750mA
230Vac
Xitanium
350mA 350mA 350mA 350mA
1 to 6 LEDs in series
5 legs in parallel

Configuration arrays

Note:
Special attention is required for parallel connections in case of Vf binding differences.

LED Module System

Xitanium™ LED Power Drivers

67W outdoor

Dimensional drawing

Wiring diagram

Configuration arrays

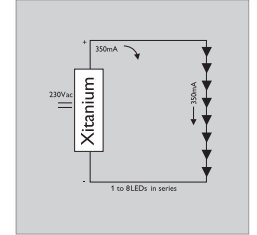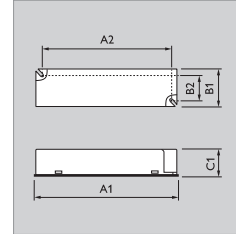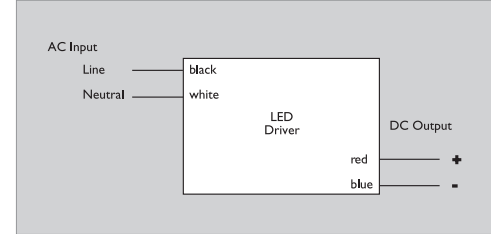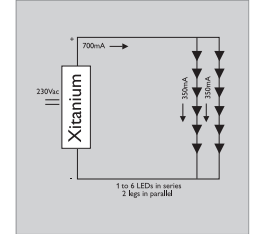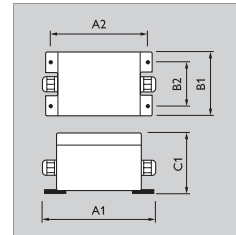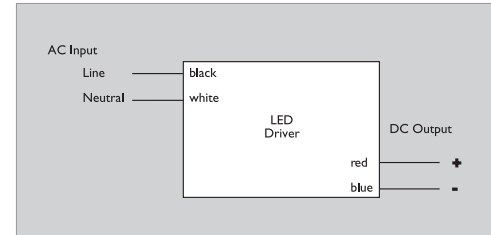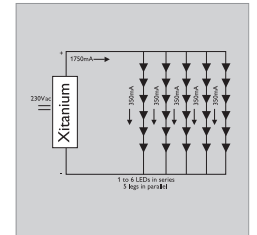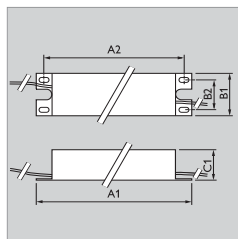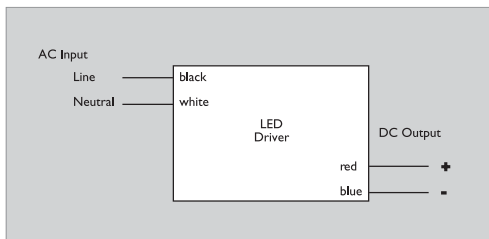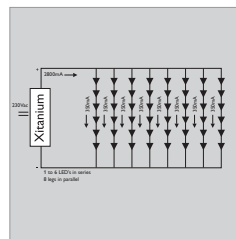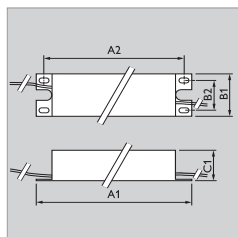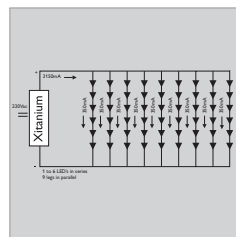**80W outdoor**

Dimensional drawing
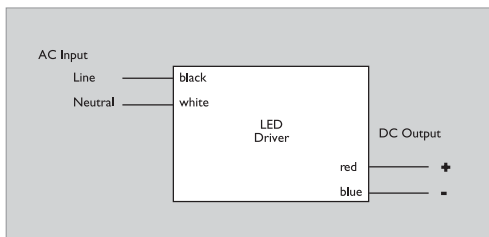
Wiring diagram

Configuration arrays

	Overall length					
Product ID	A1 max.	A2 max.	B1 max.	B2 max.	C1 max.	D1 max.
12W indoor	132.0	120.0	30	-	22.0	4.4
17W indoor	132.0	120.0	30	-	22.0	4.4
25W indoor	83.0	73.4	77.0	67.4	33.8	4.4
25W DIMindoor	83.0	73.4	77.0	67.4	33.8	4.4
40W indoor	83.0	73.4	77.0	67.4	33.8	4.4
12W oudoor	132.0	122.4	34.2	24.6	25.0	-
17W oudoor	132.0	122.4	34.2	24.6	25.0	-
40W oudoor	158.0	144.0	88.5	60.0	59.0	-
67W oudoor	240.0	225.0	43.2	30.0	29.5	-
80W oudoor	240.0	225.0	43.2	30.0	29.5	-

Note:
Special attention is required for parallel connections in case of Vf binning differences.