

PHILIPS

Xitanium

LED indoor drivers



Enabling
future-proof
LED technology



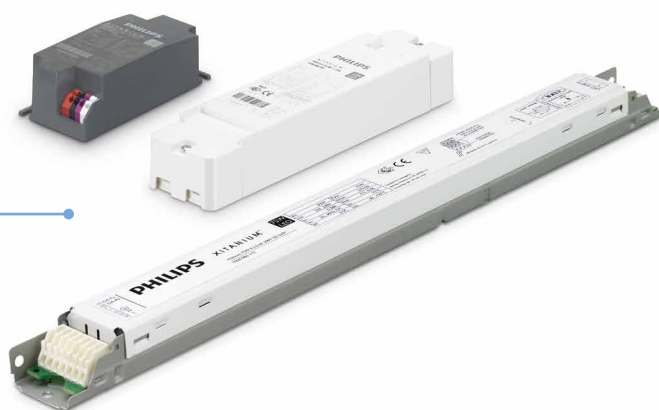


Enabling **future-proof** **LED technology** for dynamic LED markets

Xitanium LED drivers for general lighting applications were first introduced in 2009 and are now being upgraded in 2015. The improved specifications will further strengthen the flexibility and reliability of these LED drivers. These improvements will include:

- **Philips SimpleSet®** new wireless programming technology, which allows luminaire manufacturers to quickly and easily program Xitanium LED drivers at any stage during the manufacturing process, without a connection to mains power, offering great flexibility. As a result you can meet orders faster, while reducing costs and inventory. (From Q1 2015 onwards).
- **LEDset** addressing the new interface standard for LED modules and LED drivers. (From Q1 2015 onwards).
- **Low ripple output current** (<4%) to assure camera and scanner friendly performance.
- **Miniaturization** enabling greater design freedom. Linear LED drivers with 21 mm height and where possible drivers with reduced length. Point LED drivers with a comparable housing to the PrimaVision mini drivers for CDM lamps.
- **Amplitude dimming (AM)** of Touch and DALI LED drivers for flicker free and noise free dimming.

Up to
94%
 efficiency



The Xitanium LED drivers are designed with professional general lighting applications in mind, like Retail, Office and Industry. There are fixed-output, dimmable (1-10 V and Touch & DALI) and programmable versions.

Reliability is guaranteed for 5 years by building on the Philips' experience and knowledge of conventional fluorescent and HID technologies. The reliability of the LED solution is also enhanced by specific features that protect the connected LED module, such as hot wiring, reduced ripple current and thermal derating. Almost all drivers feature central DC operation.

In the coming years LEDs will continue to increase in efficiency, creating complexity challenges for OEMs. Application-oriented operating windows offer the flexibility required to provide the stable lumen output and light quality levels that are needed by lighting specifiers and architects. These operating windows enable the LED generation and complexity management that are required to survive in the lighting business in the future. The operating windows are stacked so that a wide number of LEDs can be operated.

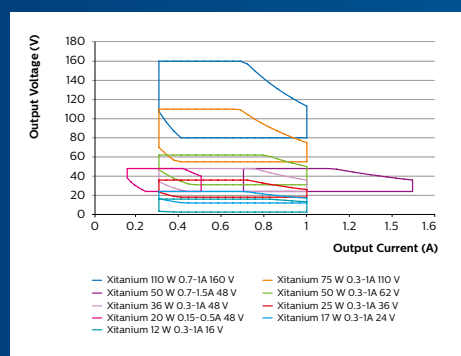
The Xitanium LED driver portfolio isn't just for operating Philips Fortimo LED modules. LED modules from other manufacturers or OEMs own PCB designs can also be operated as long as the V/I setting fits the operating window.

The output current within the operating window can be set in various ways:

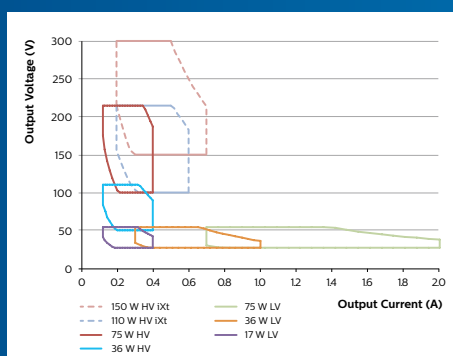
- Programmed via Philips MultiOne configurator
 - Via DALI interface.
 - Wireless via SimpleSet® (for fixed output and DALI drivers).
- With a resistor outside the driver:
 - On LED PCB (Level 2 board).
 - In the cable.
 - In the connector (output) of the LED driver.

The relevant forward voltage (V_f) is determined by the number and type of LEDs used in the module or on the PCB. The min/max levels of the relevant operating window have to be respected in order to safeguard other driver specifications.

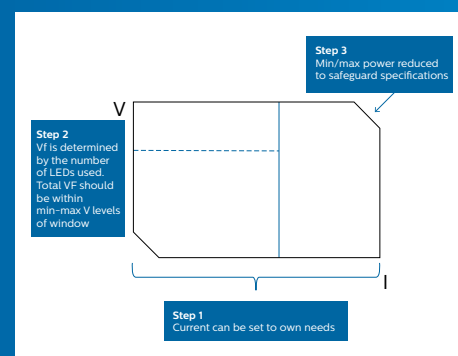
Down and spotlight operating windows



Linear office operating windows



Explanation of operating windows



Indoor lighting

Xitanium

LED indoor drivers



General characteristics for Xitanium LED Indoor drivers

High reliability

- We use our experience and knowledge of industrial-based conventional Fluo & HID technologies to design and produce LED electronics for general lighting applications.
- In addition specific general lighting features have been integrated to increase reliability even further:
 - Thermal derating: driver will dim LED module back to the standard specified Tc point, if the LED luminaire/ LED module becomes too hot, thereby offering a safety feature and protecting lifetime.
 - Hot wiring: protects LED module. Allows wiring of module and driver while driver mains is live.
 - Improved ripple current: reduced peak current ensures lifetime of LED module. Further reduction to 4% ensures camera and scanner friendly performance.
 - Central DC operation: in case of mains interruption and when the central battery takes over the electrical supply, the LED driver will switch from AC to DC operation mode.
 - Amplitude (AM) dimming: flicker free and noise free dimming of Touch and DALI versions.

High energy efficiency

- Up to 94% efficiency.
- Lower power LED drivers have lower efficiencies due to the fact that fixed power losses have a bigger impact on lower power LED drivers.

Operating windows

- Operating windows offer the flexibility that is necessary to manage LED generation upgrades (enabling future-proof solutions) and related complexity management.
- By choosing your own current within the operating window an OEM can operate with 1 single driver:
 - Fortimo LED modules: OEMs can play with the specifications of LED modules to differentiate their luminaire, by adjusting the current supplied to the LED module, thereby making it a higher/lower lumen package or a higher/lower efficacy. Choose your own light level or efficacy.
 - Any LED module/PCB from other suppliers.
 - For several years (several LED efficiency upgrades).
- Adjusting the current can be done in various ways: either via a resistor that is used outside the driver or via the Philips MultiOne configurator Tool. The Philips MultiOne software tool allows configuration for Xitanium DALI and Xitanium SimpleSet® drivers (available from Q1 2015).
- There are various operating windows optimised for various general lighting applications, like for Office and Industry, Retail and Outdoor.

Philips MultiOne configurator

- Next to current setting (AOC) the Philips MultiOne configurator offers the OEM the possibility to create more differentiation. Thermal derating, CLO, DC emergency DIM and corridor function are other features that can be programmed to individual OEM needs.
- There are different profiles for experts (Engineering) and production (Workflow) users.
- The Philips MultiOne configurator is a one Philips tool that can be used for In- & Outdoor LED drivers as well as for HID and Fluo drivers/ballast.



Configurability gives you **flexibility and differentiation possibilities**”

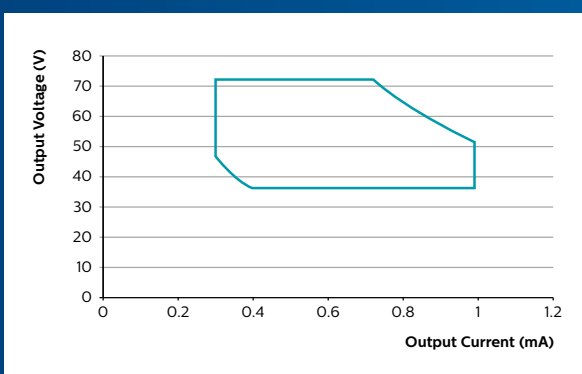
Wide portfolio

- Various power/wattage drivers that are related to the operating windows/lumen packages/applications.
- Fixed output versions next to dimmable drivers for DALI, 1-10 V protocols.
- Form factors derived from conventional ballasts enabling OEM to use same tooling.
- New form factors for retail/track lighting.
- EMEA/APR voltages (230 V) and specific NA voltages (120/277 V).
- Latest new introductions are single current drivers that enable cost optimised LED solutions for main (high volume) general lighting applications in down-, spot- and office lighting.

Applications

- Offices
- Industry
- Public buildings (airports, cinemas, theatres, exhibition halls)
- High-end shops
- Retail (supermarkets, bakery/butcher's shops, leather goods, etc.)

Typical operating window



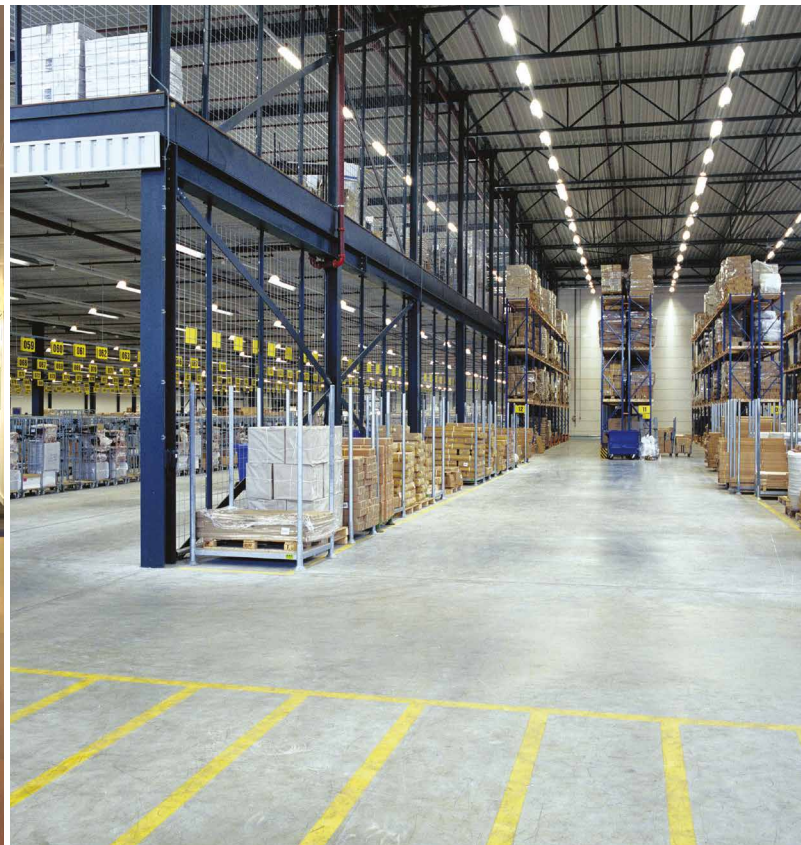
Example of operating window. Can operate all points within window.

Typical single current specification



Example of peak design driver fixed output driver with fixed current and voltage setting (only drives a module with specs at star (in reality a small operation line).

Linear Office & Industry LED driver portfolio



Office



Industry




Retail

- Non-isolated and isolated drivers to support HV and LV linear office systems.
- HV systems for highest efficiency, lowest cost and smallest dimensions.
- LV systems for simpler approval process and ease of design in.
- Power ratings: 17 W, 36 W, 75 W, 110 W & 150 W.
- All in T5 form factor, but with various lengths.
- Dimmable/programmable, Rset (1-10 V and fixed output) and fixed current/fixed output versions.
- Extra robust LED drivers for industry applications. With longer lifetime, wider temperature range and improved surge & burst specifications.
- Unique AM dimming (TD drivers) for flicker and noise free dimming.
- Low ripple output current for camera and scanner friendly performance.

Non-isolated LED drivers (HV)


DALI dimmable & programmable



	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm	%	A	V	(EOC)
Xitanium 75W 0.12-0.4A 215V TD 230V	360x30x22	100-1	0.12-0.4	100-215	8718291 684022 00
Xitanium 36W 0.12-0.4A 110V TD 230V	360x30x22	100-1	0.12-0.4	50-110	8718291 684046 00
Xitanium 17W 0.12-0.4A 54V TD 230V	360x30x22	100-10	0.12-0.4	27-54	8718291 198048 00

Module recommendations: Fortimo LED Line HV systems


DALI dimmable & programmable (for industry applications)



	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm	%	A	V	(EOC)
Xitanium 110W 0.2-0.6A 215V TD 230V iXt	360x30x21	100-1	0.2-0.6	100-215	8718291 736295 00
Xitanium 150W 0.2-0.7A 300V TD 230V iXt	360x30x21	100-1	0.2-0.7	140-300	8718291 768265 00

Module recommendations: Fortimo LED Line HV systems


1-10 V dimmable



	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm	%	A	V	(EOC)
Xitanium 75W 0.2-0.4A 200V 1-10V 230V*	360x30x22	100-10	0.2-0.4	100-200	8718291 163800 00
Xitanium 36W 0.12-0.4A 100V 1-10V 230V*	360x30x22	100-10	0.12-0.4	50-100	8718291 187202 00
Xitanium 17W 0.12-0.4A 54V 1-10V 230V	360x30x22	100-10	0.12-0.4	27-54	8718291 198062 00
NEW Xitanium 75W 0.12-0.4A 220V 1-10V 230V	280x30x21	100-10	0.12-0.4	100-220	8718696 469682 00
NEW Xitanium 36W 0.12-0.4A 115V 1-10V 230V	280x30x21	100-10	0.12-0.4	50-115	8718696 469705 00

Module recommendations: Fortimo LED Line HV systems * Will be phased out by end of September 2015

Fixed output




	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm	%	A	V	(EOC)
Xitanium 75W 0.12-0.4A 215V 230V*	280x30x22	n.a.	0.12-0.4	100-215	8718291 228097 00
Xitanium 36W 0.12-0.4A 110V 230V*	280x30x22	n.a.	0.12-0.4	50-110	8718291 228110 00
NEW Xitanium 75W 0.12-0.4A 220V 230V	280x30x21	n.a.	0.12-0.4	100-220	8718696 440025 00
NEW Xitanium 36W 0.12-0.4A 115V 230V	280x30x21	n.a.	0.12-0.4	50-115	8718696 440001 00

Module recommendations: Fortimo LED line and Philips Core LED Line * Will be phased out by end of June 2015


Isolated) LED drivers (LV)

DALI dimmable & programmable




	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm	%	A	V	(EOC)
Xitanium 75W 0.7-2A 54V TD 230V	425x30x26.5	100-1	0.7-2	27-54	8718291 710691 00
Xitanium 36W 0.3-1A 54V TD 230V	425x30x26.5	100-1	0.3-1	27-54	8718291 57422 00

1-10 V dimmable



	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm	%	A	V	(EOC)
Xitanium 75W 0.7-2A 54V 1-10V 230V	425x30x26.5	100-10	0.7-2	27-54	8718291 696445 00
Xitanium 36W 0.3-1A 54V 1-10V 230V	360x30x26.5	100-10	0.3-1	27-54	8718291 684060 00

Fixed output



	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm	%	A	V	(EOC)
Xitanium 75W 0.7-2A 54V 230V*	425x30x26.5	n.a.	0.7-2	27-54	8718291 696414 00
Xitanium 36W 0.3-1A 54V 230V*	425x30x26.5	n.a.	0.3-1	27-54	8718291 684084 00
NEW Xitanium 75W 0.7-2A 54V 230V	360x30x21	n.a.	0.7-2	27-54	8718696 468890 00
NEW Xitanium 36W 0.3-1A 54V 230V	360x30x21	n.a.	0.3-1	27-54	8718696 468876 00

For driver and cable combinations please check Fortimo linear systems. * Will be phased out by end of September 2015

Indoor lighting
.....
Xitanium
.....
LED indoor drivers
.....

Down and spotlight LED driver portfolio



Retail



Supermarket

- Dimmable and fixed output LED drivers.
- Power ratings and related operating windows from 12 W to 110 W.
- Various housing designs:
 - Linear housed form factor with “3 in 1” design (loop-through functionality offered via Xitanium loop-through adaptor).
 - Conventional HID housings for down- and spotlighting.
 - SH housing for independent use with strain relief and loop through.
- All Xitanium drivers feature the following specifications:
 - Operating window.
 - SELV.
- Based on the application requirements, selected Xitanium also have these features based on application needs:
 - Low output current ripple (<4%).
 - Hot wiring.
 - 12 V fan power supply.
 - central DC operation.
 - Temperature derating.

SimpleSet®.

Simply touch to configure

New

Easy, fast wireless configurability, making luminaire manufacturing and logistics more flexible, simple and cost efficient.

Xitanium LED drivers with SimpleSet® technology inside can now be wirelessly configured at any stage during or after the manufacturing process, without any mains connection. Configuration has never been easier.

In conjunction with the Philips MultiOne configurator software tool and the SimpleSet® programming device, you can wirelessly set the exact current level and driver features required for your luminaire.

SimpleSet® technology will start to appear in Xitanium Indoor and Outdoor LED drivers from Q1 2015 onwards, in both fixed output and DALI versions.

Xitanium LED Indoor Point drivers with SimpleSet®:

Xitanium 20 W LH, 50 W LH, fixed output point	May 2015
Xitanium 36 W LH, fixed output point	Q4 2015
Xitanium 20 W, 36 W TD	Q4 2015
Xitanium 50 W TD:	Q1 2016

MultiOne Configurator Software

Simply install MultiOne Configurator Software, connect the MultiOne SimpleSet® Interface and choose the configuration required for the Xitanium LED driver.



Xitanium LED driver

Xitanium LED drivers can be wirelessly configured, without a connection to mains power at any time during the manufacturing process.



SimpleSet®.
Simple, fast
and wireless
configuration



MultiOne SimpleSet® Interface

A small handheld device needs to be held near to the Xitanium LED driver which is to be configured. The MultiOne Configurator Software will indicate a green tick to confirm a successful configuration of the Xitanium LED driver.

SELV LED drivers

Fixed output



	Housing type	Housing mm	Output current range A	Output voltage range V	Central DC operation	SimpleSet®	SELV	Order code (EOC)
Xitanium 110W SH 0.3-1A 160V I 230V	4	220x83x35	0.3-1	80-160	Yes	No	No	8718291 259367 00
Xitanium 75W SH 0.3-1A 110V I 230V	4	220x83x35	0.3-1	55-110	Yes	No	Yes	8718291 676256 00
Xitanium 50W SH 0.3-1A 62V I 230V	4	220x83x35	0.3-1	31-62	Yes	No	Yes	8718291 676218 00
Xitanium 50W/s 0.9-1.4A 48V 230V	3	110x75x31	0.9-1.4	24-48	Yes	No	Yes	8718291 777588 00
Xitanium 50W/s 0.3-1A 62V 230V	3	110x75x32	0.3-1	31-62	Yes	No	Yes	8718291 676157 00
NEW Xitanium 50W LH 0.7-1.5A 48V I 230V	2	190x46x32	0.7-1.5	24-48	Yes	Yes	Yes	8718696 437629 00
Xitanium 50W/m 0.7-1.5A 48V 230V	5	97x43x30	0.7-1.5	24-48	No	No	Yes	8718696 437186 00
Xitanium 36W LH 0.3-1A 48V I 230V	2	190x46x32	0.3-1	24-48	Yes	No	Yes	8718291 666448 00
Xitanium 36W/s 0.3-1A 48V 230V	3	110x75x31	0.3-1	24-48	Yes	No	Yes	8718291 695851 00
Xitanium 36W/m 0.3-1A 48V 230V	5	97x43x30	0.3-1	24-48	No	No	Yes	8718291 750277 00
Xitanium 25W LH 0.3-1A 36V I 230V	2	190x46x32	0.3-1	18-36	Yes	No	Yes	8727900 900965 00
NEW Xitanium 20W LH 0.15-0.5A 48V Is 230V	1	150x46x32	0.15-0.5	24-48	Yes	Yes	Yes	8718696 474044 00
Xitanium 20W/m 0.15-0.5A 48V 230V	5	97x43x30	0.15-0.5	24-48	No	No	Yes	8718291 766636 00
Xitanium 17W LH 0.3-1A 24V I 230V	2	190x46x32	0.3-1	12-24	Yes	No	Yes	8718291 668060 00
Xitanium 12W 0.3-1A 16V I 230V	1	150x46x32	0.3-1	2.5-16	Yes	No	Yes	8718291 163701 00

These drivers are compatible with Fortimo LED DLM/SLM range.

DALI dimmable & programmable



	Housing type	Housing mm	Dimming range %	Output current range A	Output voltage range V	Central DC operation	SELV	Order code (EOC)
Xitanium 75W SH 0.3-1A 110V TDI 230V	5	220x83x35	100-1	0.3-1	55-110	Yes	Yes	8718291 728030 00
Xitanium 50W LH 0.7-1.5A 62V TD/I 230V	2	190x46x32	100-1	0.7-1.5	31-62	Yes	Yes	8718291 782360 00
Xitanium 50W 0.3-1A 62V TD/TE 230V	4	141x75x32	100-10	0.3-1	31-62	Yes	Yes	8718291 157120 00
Xitanium 50W SH 0.3-1A 62V TD/TE/I 230V	5	220x83x35	100-10	0.3-1	31-62	Yes	Yes	8718291 119487 00
Xitanium 50W LH 0.3-1A 62V TD/I 230V	2	190x46x32	100-1	0.3-1	31-62	Yes	Yes	8718291 710950 00
Xitanium 36W/s 0.3-1A 48V TD 230V	3	110x75x31	100-1	0.3-1	24-48	Yes	Yes	8718291 770947 00
Xitanium 36W LH 0.3-1A 48V TD/I 230V	2	190x46x32	100-1	0.3-1	24-48	Yes	Yes	8718291 729037 00
Xitanium 25W LH 0.3-1A 36V TD/Is 230V	1	150x46x32	100-1	0.3-1	18-36	Yes	Yes	8728291 708032 00
Xitanium 20W LH 0.15-0.5A 48V TD/Is 230V	1	150x46x32	100-1	0.15-0.5	24-48	Yes	Yes	8718291 782346 00
Xitanium 17W LH 0.3-1A 24V TD/Is 230V	1	150x46x32	100-1	0.3-1	12-24	Yes	Yes	8718291 668060 00

These drivers are compatible with Fortimo LED DLM/SLM range.

Trailing edge dimmable



	Housing mm	Dimming range %	Output current range A	Output voltage range V	Central DC operation	SELV	Order code (EOC)
Xitanium 25W 0.3-0.7A 36V TE/I 230V	190x46x32	100-20	0.3-0.7	18-36	Yes	Yes	8727900 907308 00
Xitanium 17W 0.3-0.7A 24V TE/I 230V	190x46x32	100-20	0.3-0.7	12-24	Yes	Yes	8727900 907292 00

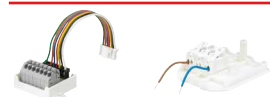
Emergency LED drivers



	Housing mm	Dimming range	Order code (EOC)
Xitanium EM 3 W 50mA 50 V 3H 230 V	135x34x55	n.a.	8718291 152859 00

Module recommendations: Fortimo LED DLM/SLM

Accessories



	Order code (EOC)
JST to push-in adapter	8718291 245254 00
Xitanium loop-through adaptor	8718291 770299 00



