Xitanium LED Drivers

Enabling future-proof
LED technology

PHILIPS

Enabling future-proof LED technology for dynamic LED markets

The Xitanium electronic LED drivers are designed with professional general lighting applications like Retail, Office and Industry in mind. There are fixed-output, dimmable (trailing edge, 0/1-10 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 required 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.
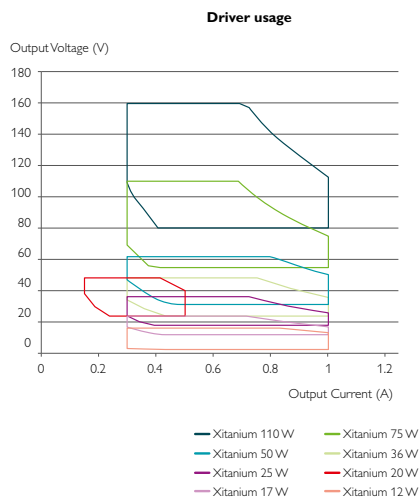
The Xitanium LED driver portfolio isn't just for operating Philips Fortimo LED modules. LED modules from other manufacturers or OEMs own PCB designs can also be operated as long as the V/I setting fits the operating window.

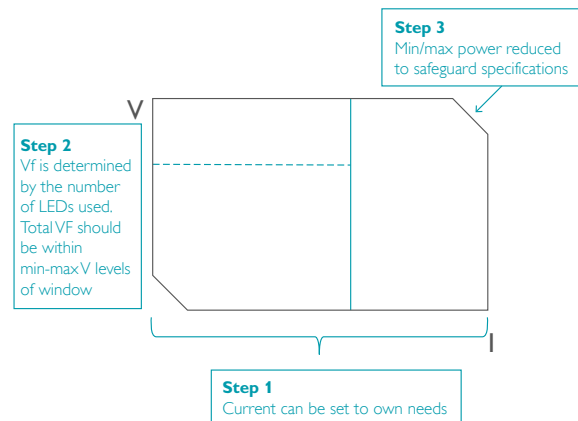The output current within the operating window can be set in various ways:
• Programmed via Philips MultiOne configurator
• With a resistor outside the driver:
  - On LED PCB (Level 2 board)
  - In the cable
  - In the connector (output) of the LED driver

The relevant forward voltage (Vf) 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.
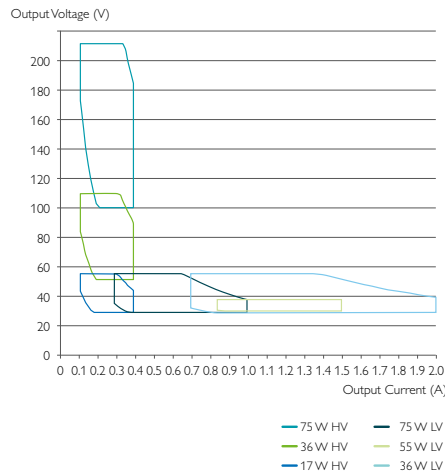
DLM/SLM operating windows

Driver usage

Output Voltage (V) vs Output Current (A)

- Xitanium 110 W
- Xitanium 50 W
- Xitanium 25 W
- Xitanium 17 W
- Xitanium 75 W
- Xitanium 36 W
- Xitanium 20 W
- Xitanium 12 W

Explanation of operating windows

Step 3
Min/max power reduced to safeguard specifications

Step 2
Vf is determined by the number of LEDs used. Total VF should be within min-max V levels of window

Step 1
Current can be set to own needs

Lineair office operating windows

Output Voltage (V) vs Output Current (A)

- 75 W HV
- 36 W HV
- 17 W HV
- 75 W LV
- 55 W LV
- 36 W LV

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
  - 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

High energy efficiency

- Up to 92 % 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 the Philips MultiOne configurator. Tool or with a resistor that is used outside the driver. The resistor can be integrated in the LED module/PCB, cable or connector and can be changed to the desired current setting. The resistor determines the current the driver will supply
- There are various operating windows optimised for various general lighting applications, like for Office and Industry, Retail and Outdoor
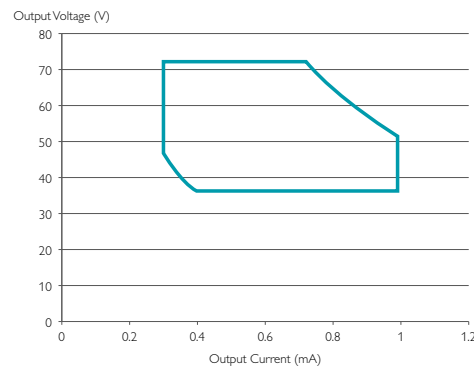
Philips MultiOne configurator

- Next to current setting (AOC) the Philips MultiOne configurator offers the OEM the possibility to create more differentiation. Thermal derating, CLO (Constant Light Output) are other features that can be programmed to individual OEM needs
- There are different profiles for expert (DALI) and advanced (R&D) users as well a basic profile for production environment
- 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

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, 0/1-10 V and Trailing edge protocols
- Form factors derived from conventional ballasts enabling OEM to use same tooling

Typical operating window

Example of operating window of FlexDrive/TD or Rset driver. Can operate all points within window

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)

- New form factors for retail/track lighting
- EMEA/APR voltages (230 V) and specific NA voltages (120/277 V)
- Latest new introductions are peak design drivers that enable cost optimised LED solutions for main (sweet spots/sequoias) general lighting applications in down-, spot- and office lighting

Applications

- Offices (more 'prestigious' spaces such as reception areas, boardrooms, restaurants etc.)
- Public buildings (airports, cinemas, theatres, exhibition halls)
- High-end shops
- Retail (supermarkets, bakery/butcher's shops, leather goods, etc.)

Linear Office & Industry LED driver portfolio

- Non-isolated and isolated drivers to support HV and LV linear office systems
- **NEW** Extra robust LED drivers for industry applications. With longer lifetime, wider temperature range and improved surge & burst specifications
- 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 and 110 W
- All T5 form factor but various lengths
- Programmable, Rset (1-10 V and fixed output) and fixed current/fixed output versions

Retail   Industry   Office

Non-isolated LED drivers (HV)

DALI dimmable & programmable

Product specification

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

Module recommendations

Driver type	Suitable module
Xitanium 75 W/0.12-0.4 A 215 V TD 230 V	Fortimo LED Line HV systems
Xitanium 36 W/0.12-0.4 A 110 V TD 230 V	Fortimo LED Line HV systems
Xitanium 17 W/0.12-0.4 A 54 V TD 230 V	Fortimo LED Line HV systems

For driver and cable combinations please check Fortimo linear systems.

NEW Non-isolated LED drivers (HV) *for industry applications*

DALI dimmable & programmable

Product specification

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

Module recommendations

Driver type	Suitable module
Xitanium 110 W 0.2-0.6 A 215 V TD 230 V iXt	Fortimo LED Line HV systems

For detailed driver & LED line combinations check Fortimo linear systems.

1-10 V dimmable

	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm		A	V	(EOC)
Xitanium 75 W/0.2-0.4 A 200 V 1-10 V 230 V	360x30x22	100-10 %	0.2-0.4	100-200	8718291 163800 00
Xitanium 36 W/0.12-0.4 A 100 V 1-10 V 230 V	360x30x22	100-10 %	0.12-0.4	50-100	8718291 187202 00
Xitanium 17 W/0.12-0.4 A 54 V 1-10 V 230 V	360x30x22	100-10 %	0.12-0.4	27-54	8718291 198062 00

Module recommendations

Driver type	Suitable module
Xitanium 75 W/0.2-0.4 A 200 V 1-10 V 230 V	Fortimo LED Line HV systems
Xitanium 36 W/0.12-0.4 A 100 V 1-10 V 230 V	Fortimo LED Line HV systems
Xitanium 17 W/0.12-0.4 A 54 V 1-10 V 230 V	Fortimo LED Line HV systems

For driver and cable combinations please check Fortimo linear office systems.

Fixed output

	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm		A	V	(EOC)
Xitanium 75 W/0.12-0.4 A 215 V 230 V	280x30x22	n.a.	0.12-0.4	100-215	8718291 228097 00
Xitanium 36 W/0.12-0.4 A 110 V 230 V	280x30x22	n.a.	0.12-0.4	50-110	8718291 228110 00

Module recommendations

Driver type	Suitable module
Xitanium 75 W/0.12-0.4 A 215 V 230 V	Fortimo LED line and Philips Core LED Line
Xitanium 36 W/0.12-0.4 A 110 V 230 V	Fortimo LED line and Philips Core LED Line

For driver and cable combinations please check Fortimo linear office systems.

LV (isolated) LED drivers

DALI dimmable & programmable

	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm		A	V	(EOC)
Xitanium 75 W 0.7-2 A 54 V TD 230 V	425x30x26.5	100-1 %	0.7-2	27-54	8718291 710691 00
Xitanium 36 W 0.3-1 A 54 V TD 230 V	425x30x26.5	100-1 %	0.3-1	27-54	87182916 57422 00

1-10 V dimmable

	Housing	Dimming range	Output current range	Output voltage range	Order code
	mm		A	V	(EOC)
Xitanium 75 W/0.7-2 A 54 V 1-10 V 230 V	425x30x26.5	100-10 %	0.7-2	27-54	8718291 696445 00
Xitanium 36 W 0.3-1 A 54 V 1-10 V 230 V	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 75 W/0.7-2 A 54 V 230 V	425x30x26.5	n.a.	0.7-2	27-54	8718291 696414 00
Xitanium 36 W 0.3-1 A 54 V 230 V	425x30x26.5	n.a.	0.3-1	27-54	8718291 684084 00

Down- and spotlight LED driver portfolio

- Dimmable, fixed output and fixed current 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

- Almost all drivers feature the following specifications:
  - Operating window
  - SELV
  - Improved ripple current
  - Temperature derating
  - Hot wiring
  - 12 V output for active cooling or decorative effects
  - Central DC operation

retail   supermarket

SELV LED drivers

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 50 W 0.3-1 A 62 V TD/TE 230 V	3	141x75x32	100-10 %	0.3-1	31-62	Yes	Yes	8718291 157120 00
Xitanium 50 W LH 0.3-1 A 62 V TD/TE/I 230 V	2	190x46x32	100-1 %	0.3-1	31-62	Yes	Yes	8718291 710950 00
Xitanium 50 W SH 0.3-1 A 62 V TD/TE/I 230 V	4	220x83x35	100-10 %	0.3-1	31-62	Yes	Yes	8718291 119487 00
NEW Xitanium 50 W LH 0.3-1 A 62 V TD/I 230 V	2	190x46x32	100-1 %	0.3-1	31-62	Yes	Yes	8718291 710950 00
NEW Xitanium 36 W LH 0.3-1 A 48 V TD/I 230 V	2	190x46x32	100-1 %	0.3-1	24-48	Yes	Yes	8718291 729037 00
Xitanium 25 W 0.3-1 A 36 V TD/I 230 V	1	170x46x32	100-10 %	0.3-1	18-36	Yes	Yes	8727900 914344 00
Xitanium 25 W LH 0.3-1 A 36 V TD/Is 230 V	5	150x46x32	100-1 %	0.3-1	18-36	Yes	Yes	8728291 708032 00
Xitanium 17 W LH 0.3-1 A 24 V TD/Is 230 V	2	190x46x32	100-1 %	0.3-1	12-25	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 25 W 0.3-0.7 A 36 V TE/I 230 V	190x46x32	100-20 %	0.3-0.7	18-36	Yes	Yes	8727900 907308 00
Xitanium 17 W 0.3-0.7 A 24 V TE/I 230 V	190x46x32	100-20 %	0.3-0.7	12-24	Yes	Yes	8727900 907292 00

Fixed current trailing edge dimmable

	Housing type	Housing mm	Dimming range	Output current range A	Output voltage range V	Central DC operation	SELV	Order code (EOC)
Xitanium LD-R 30 W 700 mA	4	150x40x28	100-20 %	0.7	42	No	Yes	8727900 843316 00
Xitanium 30 W 0.70 A 42 V DIM	3	150x40x28	100-20 %	0.7	42	No	Yes	8710163 064185 30
Xitanium 10 W 0.50 A 20 V DIM	2	120x45x20	100-20 %	0.5	20	No	Yes	8727900 834734 00
Xitanium 10 W 0.70 A 14 V DIM	2	120x45x20	100-20 %	0.7	14	No	Yes	8710163 064161 30
Xitanium 9 W 0.7 A 12 V TE DIM	1	100x40x21	100-10 %	0.7	16	No	Yes	8718291 245018 00

Module recommendations

Driver type	Suitable module
Xitanium LD-R 30 W 700 mA	Fortimo LED decoratives
Xitanium 30 W 0.70 A 42 V DIM	Fortimo LED decoratives
Xitanium 10 W 0.50 A 20 V DIM	Fortimo LED decoratives
Xitanium 10 W 0.70 A 14 V DIM	Fortimo LED decoratives
Xitanium 9 W 0.7 A 12 V TE DIM	Fortimo LED decoratives

For driver and cable combinations please check the Fortimo decorative systems.

Fixed output

Product specification

	Housing type	Housing mm	Output current range A	Output voltage range V	Central DC operation	SELV	Order code (EOC)
Xitanium 110 W SH 0.3-1 A 160 V I 230 V	5	220x83x35	0.3-1	80-160	Yes	Yes	8718291 259367 00
Xitanium 75 W SH 0.3-1 A 110 V I 230 V	5	220x83x35	0.3-1	55-110	Yes	Yes	8718291 676256 00
Xitanium 50 W SH 0.3-1 A 62 V I 230 V	5	220x83x35	0.3-1	31-62	Yes	Yes	8718291 676218 00
Xitanium 50 W 0.3-1 A 62 V 230 V	4	141x75x32	0.3-1	31-62	Yes	Yes	8718291 137825 00
Xitanium 50 W/s 0.3-1 A 62 V 230 V	3	110x75x32	0.3-1	31-62	Yes	Yes	8718291 676157 00
Xitanium 36 W LH 0.3-1 A 48 V I 230 V	2	190x46x32	0.3-1	24-48	Yes	Yes	8718291 666448 00
Xitanium 36 W/s 0.3-1 A 48 V 230 V	3	110x75x31	0.3-1	24-48	Yes	Yes	8718291 695851 00
Xitanium 36 W/m 0.3-1 A 48 V 230 V	6	97x43x30	0.3-1	24-48	No	Yes	8718291 750277 00
Xitanium 25 W LH 0.3-1 A 36 V I 230 V	2	190x46x32	0.3-1	18-36	Yes	Yes	8727900 900965 00
Xitanium 20 W/m 0.15-0.5 A 48 V 230 V	6	97x43x30	0.15-0.5	24-48	No	Yes	8718291 766636 00
Xitanium 17 W LH 0.3-1 A 24 V I 230 V	2	190x46x32	0.3-1	25-12	Yes	Yes	8718291 668060 00
Xitanium 12 W 0.3-1 A 16 V I 230 V	1	150x46x32	0.3-1	2.5-16	Yes	Yes	8718291 163701 00

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

Fixed current; fixed output

Product specification

	Housing mm	Dimming range	Output current range A	Output voltage range V	Central DC operation	SELV	Order code (EOC)
Xitanium 25 W 820 mA 32 V I 230 V	190x46x32	n.a.	0.82	32	No	No	87182911 97218 00

Emergency LED drivers

Product specification

	Housing mm	Dimming range	Output current range A	Output voltage range V	Central DC operation	SELV	Order code (EOC)
Xitanium EM 3 W 50mA 50 V 3H 230 V	135x34x55	n.a.	n.a.	n.a.	n.a.	n.a.	8718291 152859 00

Module recommendations

Driver type	Suitable module
Xitanium EM 3 W 50mA 50 V 3H 230 V	Fortimo LED DLM

Accessories

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

"3 in 1" housing concept

independent, screw, click

For more information, please visit:
www.philips.com/xitanium

PHILIPS