

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LED drivers – linear HV non-isolated

Xitanium 100W 0.25-0.7A 220V S 230V

Enabling future-proof LED technology

Xitanium LED drivers are designed to operate LED solutions for general lighting applications such as linear lighting, as well as down lighting and spot/accent lighting.

Reliability is enhanced by specific features that protect the connected LED module, e.g. hot wiring, reduced ripple current and thermal de-rating. Most drivers feature central DC operation.

In the coming years LEDs will continue to increase in efficiency, creating generation and complexity challenges for OEMs. With Xitanium LED drivers, flexibility in luminaire design is assured thanks to an adjustable output current. Application-oriented operating windows offer the flexibility required to provide the stable lumen output and light quality levels that lighting specifiers and architects demand.

Benefits

- High reliability underpinned by 5 year warranty
- Future-proof flexibility - application-oriented operating windows enable LED generation and complexity management
- Compatibility - adjustable output current enables operation of various LED solutions from different manufacturers or OEM own designs
- Flicker and noise free dimming with all Touch and DALI LED drivers due to amplitude dimming (AM)

Features

- Up to 95% efficiency, lowest cost and smallest dimensions
- Operating windows - output current can be adjusted via the Philips MultiOne configurator (TD drivers) or with a resistor outside the driver
- Reduced ripple current and thermal de-rating for increased reliability
- Multiple versions - DALI dimmable & programmable, 1-10V dimmable, and fixed-output;
- All T5 form factors but various lengths
- Longer life time (100khrs), improved surge and burst (4kV) and Tambient (-40°C to +60°C) specifications

Application

- 17W, 36W and 75W LED drivers for office applications
- 110W and 150W LED drivers for industry, warehouses, public areas, distribution centers and shopping malls

Electrical input data

| Specification item | Value | Unit | Condition |
|------------------------------|-----------|-----------------|--|
| Rated input voltage range | 220...240 | V _{ac} | Performance range |
| Rated input voltage | 230 | V _{ac} | |
| Rated input frequency range | 50...60 | Hz | Performance range |
| Rated input current | 0.47 | A | @ full output power @ rated input voltage |
| Rated input power | 107 | W | @ rated output power @ rated input voltage |
| Power factor | ≥ 0.9 | | @ rated output power @ rated input voltage |
| Total harmonic distortion | ≤ 20 | % | @ rated output power @ rated input voltage |
| Efficiency | ≥ 93 | % | @ full output power @ rated input voltage |
| Rated input voltage DC range | 186...250 | V _{dc} | Performance range |
| Rated input current DC range | ≤ 0.47 | A _{dc} | Performance range |
| Input voltage AC range | 202...254 | V _{ac} | Operational range |
| Input frequency AC range | 47.5...63 | Hz | Operational range |
| Input voltage DC range | 168...275 | V _{dc} | Operational range |
| Isolation input to output | No | | |

Electrical output data

| Specification item | Value | Unit | Condition |
|--------------------------|------------------|-----------------|-----------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 50...220 | V _{dc} | |
| Output voltage max. | 250 | V | Peak voltage at open load |
| Output current | 0.25...0.7 | A | Full output current setting |
| Output current tolerance | ± 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average |
| Output current ripple HF | ≤ 4 | % | |
| Output power | 28...100 | W | Full output |

Electrical data controls input

| Specification item | Value | Unit | Condition |
|--------------------|-------|------|-----------|
| Control method | Fixed | | |
| Galvanic Isolation | NA | | |

Logistical data

| Specification item | Value |
|--------------------|-------------------------------------|
| Product name | Xitanium 100W 0.25-0.7A 220V S 230V |
| Order code | 871869665708900 |
| Logistic code 12NC | 9290 015 29506 |
| Pieces per box | 24 |

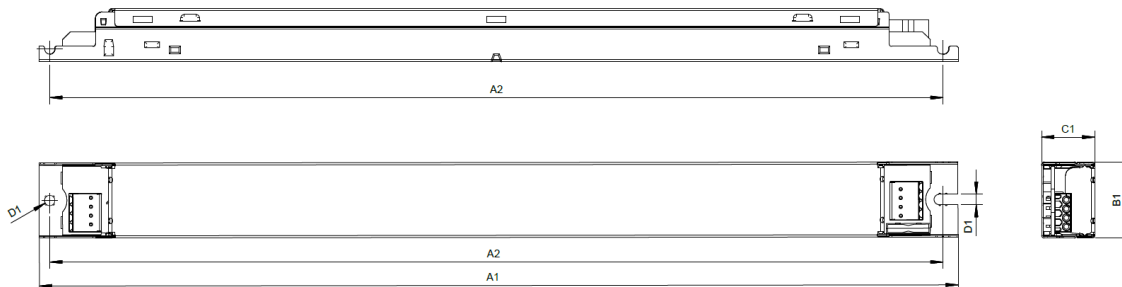
Wiring & Connections

| Specification item | Value | Unit | Condition |
|---------------------------|-----------|-----------------|--|
| Input wire cross-section | 0.5...1.5 | mm ² | WAGO744, solid wire |
| | 16...20 | AWG | WAGO744, solid wire |
| Input wire strip length | 8...9 | mm | |
| Output wire cross-section | 0.5...1.5 | mm ² | WAGO744, solid wire |
| | 16...20 | AWG | WAGO744, solid wire |
| Output wire strip length | 8...9 | mm | |
| Maximum cable length | 2000 | mm | Total length of wiring including LED module, one way |



Dimensions and weight

| Specification item | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1) | 360 | mm | |
| Width (B1) | 30 | mm | |
| Height (C1) | 21 | mm | |
| Fixing hole diameter (D1) | 4.1 | mm | |
| Fixing hole distance (A2) | 350 | mm | |
| Weight | 258 | gram | |



Operational temperatures and humidity

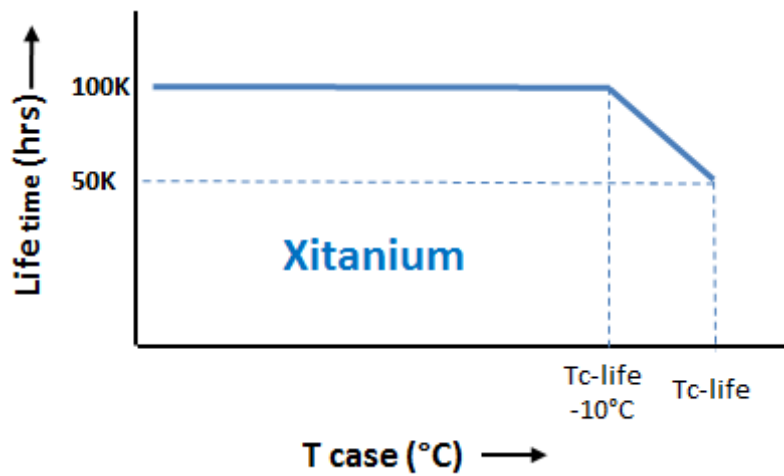
| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|------|--|
| Ambient temperature | -25...+50 | °C | Higher ambient temperature allowed as long as Tcase-max is not exceeded. |
| Tcase-max | 75 | °C | lifetime 50khrs; |
| Tcase-life | 75 | °C | Measured at Tcase-point |
| Maximum housing temperature | 110 | °C | In case of a failure |
| Relative humidity | 10...90 | % | Non-condensing |

Storage temperature and humidity

| Specification item | Value | Unit | Condition |
|---------------------|-----------|------|----------------|
| Ambient temperature | -25...+85 | °C | |
| Relative humidity | 5...95 | % | Non-condensing |

Lifetime

| Specification item | Value | Unit | Condition |
|--------------------|--------|-------|--|
| Driver lifetime | 50,000 | hours | Measured temperature at T_{case} -point is T_{case} -life. Maximum failures = 10% |



Programmable features

| Specification item | Value | Remark | Condition |
|---------------------------------------|---------------------------------|----------------------|---------------------------------------|
| Set output current (AOC) | LEDset, Programmable, SimpleSet | See Design-in guide. | Default output current: ≤ 700 mA |
| LED module temperature derating (MTP) | No | | |
| Constant Lumen Over Lifetime (CLO) | No | | |
| DC emergency dimming (DCemDIM) | No | | |

Features

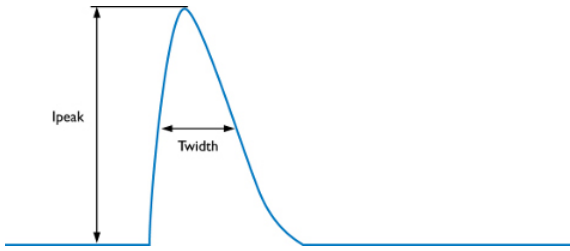
| Specification item | Value | Remark | Condition |
|---|-------|--------|----------------------|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Hot wiring | No | | |
| Suitable for fixtures with protection class | I | | per IEC60598 |

Certificates and standards

| Specification item | Value |
|-----------------------------------|---------------------------------------|
| Approval marks | C-tick / CCC / CE / ENEC / RCM / TISI |
| Ingress Protection classification | 20 |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-----------|---------|--|
| Inrush current I_{peak} | 7 | A | Input voltage 230V |
| Inrush current T_{width} | 62 | μ s | Input voltage 230V, measured at 50% I_{peak} |
| Drivers / MCB 16A type B | ≤ 22 | pcs | |



| MCB | Rating | Relative number of LED drivers |
|-----|--------|--------------------------------|
| B | 10A | 63% |
| B | 13A | 81% |
| B | 16A | 100% (stated in datasheet) |
| B | 20A | 125% |
| B | 25A | 156% |
| C | 10A | 104% |
| C | 13A | 135% |
| C | 16A | 170% |
| C | 20A | 208% |
| C | 25A | 260% |

Driver touch current / protective conductor current

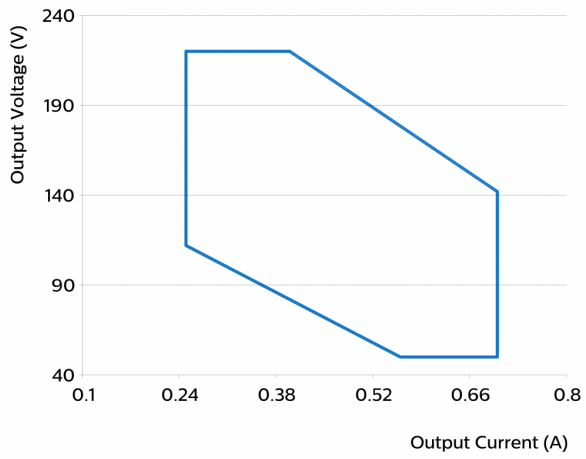
| Specification item | Value | Unit | Condition |
|---------------------------------------|-------|---------|---|
| Typical touch current (ins. Class II) | < 0.5 | mA peak | Acc. IEC61347-1. LED module contribution not included |

Surge immunity

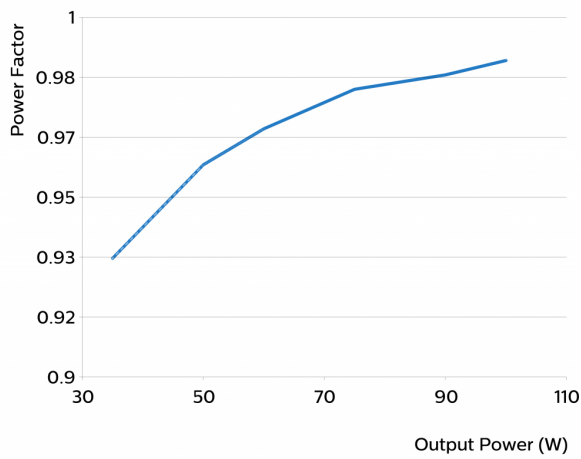
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 1 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 2 | kV | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

Graphs

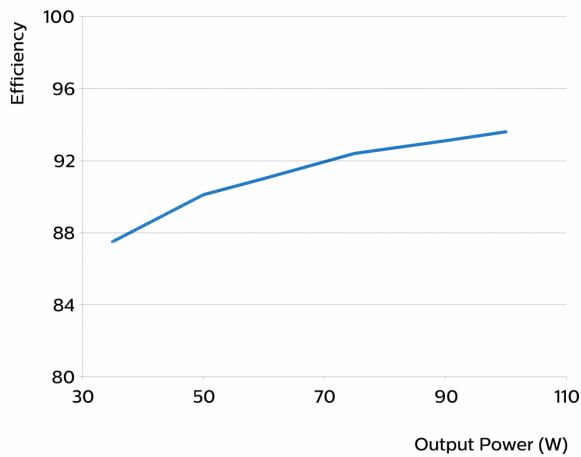
Operating window



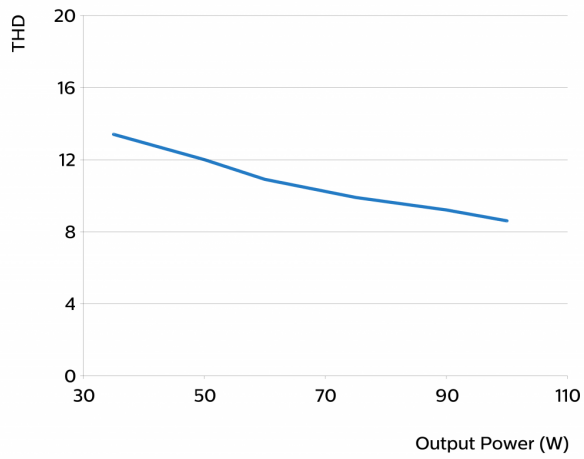
Power factor versus output power



Efficiency versus output power



THD versus output power



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