

PHILIPS

Xitanium

LED driver



Datasheet

LED drivers – mini

Xitanium 48W/m 1.05A 46V SC 230V

Enabling future-proof LED technology

Xitanium LED drivers are designed to operate LED solutions for general lighting applications. Reliability is enhanced by features that protect the connected LED module, e.g. hot wiring, reduced ripple current and thermal derating. Most drivers feature central DC operation. In the coming years LEDs will continue to increase in efficiency, creating challenges for OEMs. With Xitanium LED drivers, flexibility in luminaire design is assured thanks to an adjustable output current. Application-oriented operating windows offer stable lumen output and light quality levels that specifiers and architects demand. The adjustable output current also enables operation of various LED PCB solutions from different manufacturers.

Benefits

- High reliability underpinned by 5 year warranty
- Future-proof flexibility - application-oriented operating windows enable LED generation and complexity management
- Compatibility - can also be used for other manufacturers' modules or OEMs' own PCB designs

Features

- Operating windows - output current can be adjusted via the Philips MultiOne configurator ('TD' drivers) or with a resistor outside the driver
- Multiple versions - DALI dimmable & programmable, trailing-edge dimmable, fixed-current/fixed-output trailing-edge dimmable, fixed-output, and fixed-current/fixed-output
- Power ratings: 10-110 W
- Choice of housing designs - linear housing for tracks in '3 in 1' in design, conventional HID housings for down- and spotlighting, and SH housing for independent use with strain relief and loop through

Application

- Retail

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 | 0.25 | A | @ rated output power @ rated input voltage |
| Rated input power | 52 | 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 | ≥ 91 | % | @ rated output power @ rated input voltage |
| Input voltage AC range | 202...254 | V _{ac} | Operational range |
| Input frequency AC range | 47.5...63 | Hz | Operational range |
| Isolation input to output | SELV | | |

Electrical output data

| Specification item | Value | Unit | Condition |
|--------------------------|------------------|-----------------|-----------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 31...46 | V _{dc} | |
| Output voltage max. | 60 | V | Peak voltage at open load |
| Output current | 1.05 | A | Full output current setting |
| Output current tolerance | ± 8 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average |
| Output current ripple HF | ≤ 15 | % | |
| Output power | 32...48 | W | Full output |

Electrical data controls input

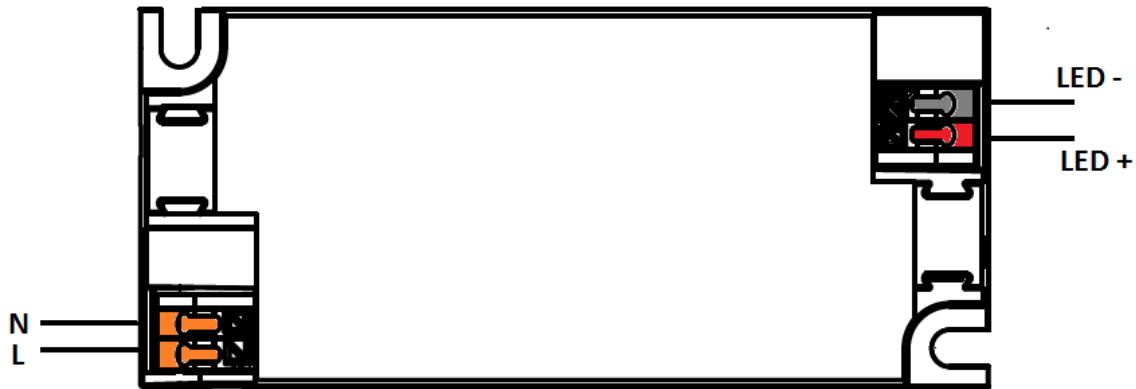
| Specification item | Value | Unit | Condition |
|--------------------|-------|------|-----------|
| Control method | Fixed | | |

Logistical data

| Specification item | Value |
|--------------------|----------------------------------|
| Product name | Xitanium 48W/m 1.05A 46V SC 230V |
| Logistic code 12NC | 9290 015 72806 |
| Pieces per box | 20 |

Wiring & Connections

| Specification item | Value | Unit | Condition |
|---------------------------|-----------|-----------------|--|
| Input wire cross-section | 0.2...1.5 | mm ² | WAGO250 (3.5 mm), solid / stranded wire |
| | 16...24 | AWG | WAGO250 (3.5 mm), solid / stranded wire |
| Input wire strip length | 8.5...9.5 | mm | |
| Output wire cross-section | 0.2...1.5 | mm ² | WAGO250 (3.5 mm), solid / stranded wire |
| | 16...24 | AWG | WAGO250 (3.5 mm), solid / stranded wire |
| Output wire strip length | 8.5...9.5 | mm | |
| Maximum cable length | 600 | mm | Total length of wiring including LED module, one way |

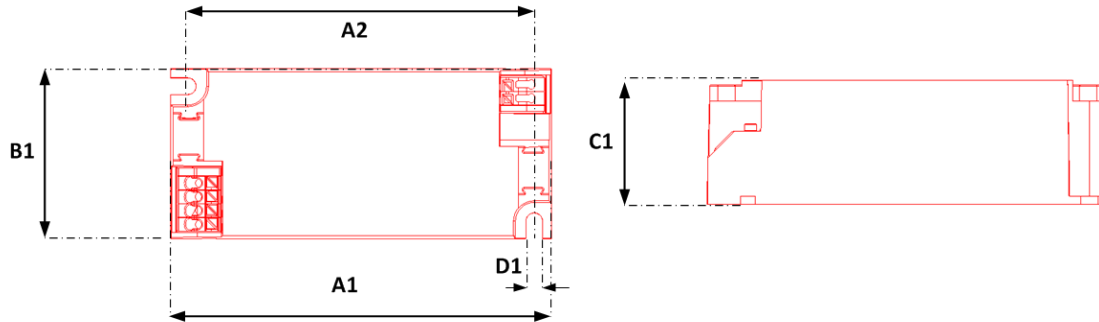


Insulation

| Insulation | input | output |
|------------|-------|--------|
| input | | SELV |
| output | SELV | |

Dimensions and weight

| Specification item | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1) | 97.2 | mm | |
| Width (B1) | 43 | mm | |
| Height (C1) | 30 | mm | |
| Fixing hole diameter (D1) | 4.2 | mm | |
| Fixing hole distance (A2) | 88.5 | mm | |
| Weight | 105 | gram | |



Operational temperatures and humidity

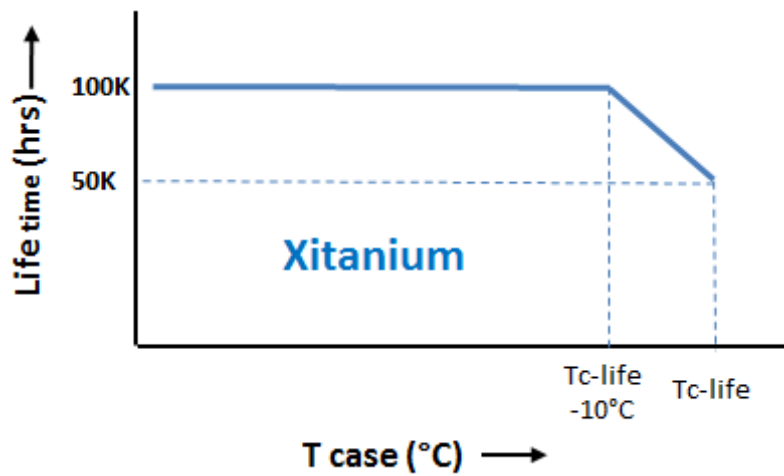
| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|------|--|
| Ambient temperature | -20...+50 | °C | Higher ambient temperature allowed as long as T _{case-max} is not exceeded. |
| T _{case-max} | 85 | °C | Maximum temperature measured at T _{case-point} |
| T _{case-life} | 75 | °C | Measured at T _{case-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) | No | See Design-in guide. | Default output current: = 1050 mA |
| LED module temperature derating (MTP) | No | | |
| Constant Lumen Over Lifetime (CLO) | No | | |
| DC emergency dimming (DCemDIM) | No | | |
| Corridor mode | No | | |
| Energy metering | No | | |
| Diagnostics | No | | |
| Adjustable Light Output ALO | No | | |

Features

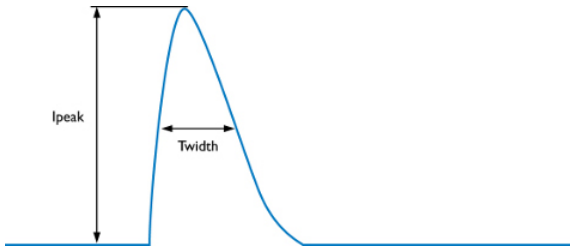
| Specification item | Value | Remark | Condition |
|---|----------|--------|----------------------|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Hot wiring | No | | |
| Suitable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

Certificates and standards

| Specification item | Value |
|-----------------------------------|-----------------|
| Approval marks | CCC / CE / ENEC |
| Ingress Protection classification | 20 |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-----------|---------|--|
| Inrush current I_{peak} | 22 | A | Input voltage 230V |
| Inrush current T_{width} | 260 | μ s | Input voltage 230V, measured at 50% I_{peak} |
| Drivers / MCB 16A type B | ≤ 24 | 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

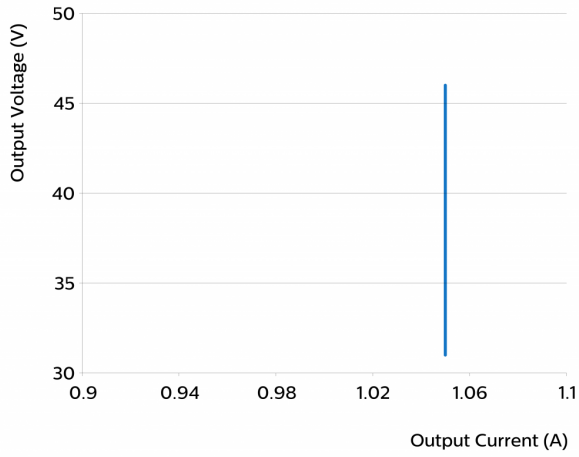
| Specification item | Value | Unit | Condition |
|---------------------------------------|-------|---------|---|
| Typical touch current (ins. Class II) | < 0.7 | mA peak | Acc. IEC61347-1. LED module contribution not included |

Surge immunity

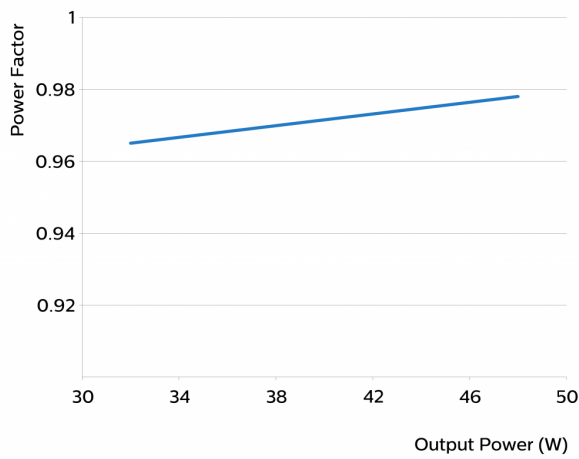
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 1 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 2 | kV | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

Graphs

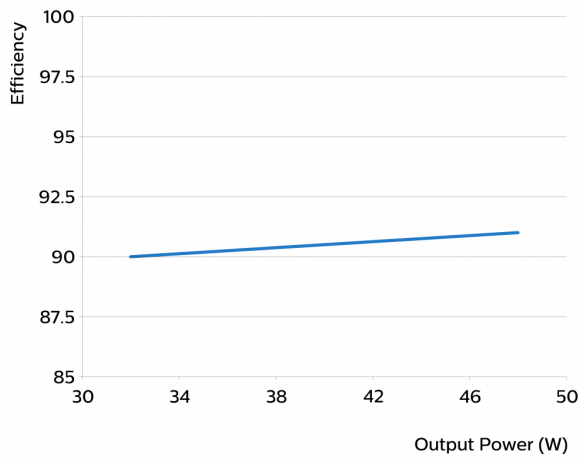
Operating window



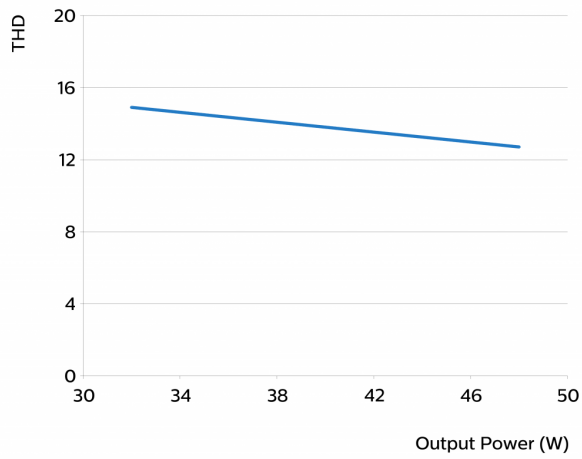
Power factor versus output power



Efficiency versus output power



THD versus output power



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