PHILIPS

Xitanium

LED driver


Datasheet

# Xitanium LED drivers – spot- and downlight SELV

## Xitanium 75W SH 0.3-1A 110V TD/I 230V

### Enabling future-proof LED technology

Our Xitanium programmable window LED drivers ensure OEMs have complete flexibility and control in producing high quality luminaires. Available in application dedicated form factors, our LED point drivers provide further customization via wide operating windows. Additionally, almost all drivers feature the following specifications: SELV, improved ripple current, temperature derating, hot wiring, – providing OEMs the tools to produce, and even alter later if necessary, premium downlights and spotlights.

### 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 or SimpleSet
- Power ratings: 10-75W
- Choice of housing designs -linear housing for tracks in '3 in 1' in design, conventional HID housings for down and Spotlighting and WH housing for independent use with strain relief and loop through

### Application

- Retail
- Office

## 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 | 0.41 | A | @ rated output power @ rated input voltage |
| Rated input power | 87 | 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 | ≥ 90 | % | @ rated output power @ rated input voltage |
| Rated input voltage DC range | 186…250 | $V_{dc}$ | Performance range |
| Rated input current DC range | ≤ 0.25 | $A_{dc}$ | 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 | SELV | | |

## Electrical output data

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Regulation method | Constant Current | | |
| Output voltage | 55…110 | $V_{dc}$ | |
| Output voltage max. | 120 | V | Peak voltage at open load |
| Output current | 0.3…1 | A | Full output current setting |
| Output current tolerance | ± 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average |
| Output power | 21…75 | W | Full output |

## Electrical data controls input

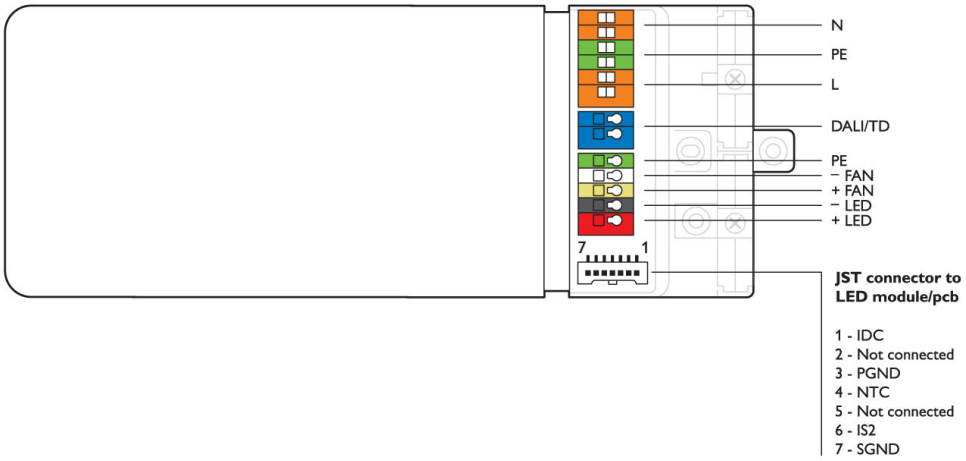
| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Control method | DALI, TD | | |
| Dimming range | 1…100 | % | Default range |
| Galvanic Isolation | Basic | | |

## Logistical data

| Specification item | Value |
|---|---|
| Product name | Xitanium 75W SH 0.3-1A 110V TD/I 230V |
| Order code | 728030 00 |
| Logistic code 12NC | 9290 008 70203 |
| EAN3 | 8718291728030 |
| Pieces per box | 6 |

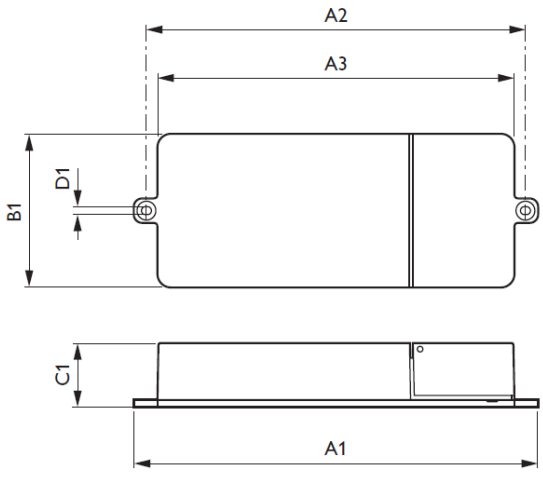
## Wiring & Connections

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Input wire cross-section | 0.5…2.5 | $mm^2$ | WAGO804, solid / stranded wire |
| | 12…20 | AWG | WAGO804, solid / stranded wire |
| Input wire strip length | 10…11 | mm | |
| Output wire cross-section | 0.08…0.33 | $mm^2$ | JST, solid wire |
| | 22…28 | AWG | JST, solid wire |
| 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 |




## Dimensions and weight

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Length (A1) | 219 | mm | |
| Width (B1) | 83 | mm | |
| Height (C1) | 35 | mm | |
| Fixing hole diameter (D1) | 4.1 | mm | |
| Fixing hole distance (A2) | 206 | mm | |
| Weight | 425 | gram | |



## Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Ambient temperature | -20…+50 | °C | Higher ambient temperature allowed as long as Tcase-max is not exceeded. |
| Tcase-max | 75 | °C | Maximum temperature measured at $T_{case}$-point |
| Tcase-life | 65 | °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.<br>Maximum failures = 10% |

## Programmable features

| Specification item | Value | Remark | Condition |
|---|---|---|---|
| Set output current (AOC) | Rset2 | See Design-in guide. | Default output current: = 700 mA |
| LED module temperature derating (MTP) | Yes | | |
| Constant Lumen Over Lifetime (CLO) | Yes | | |
| DC emergency dimming (DCemDIM) | Yes | | Current output decreased to 15% |
| Corridor mode | Yes | | |
| Energy metering | No | | |
| Diagnostics | No | | |

## Features

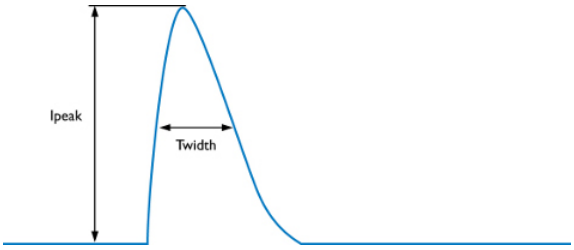
| Specification item | Value | Remark | Condition |
|---|---|---|---|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Hot wiring | Yes | | |
| Suitable for fixtures with protection 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 $I_{peak}$ | 7.4 | A | Input voltage 230V |
| Inrush current $T_{width}$ | 530 | µs | Input voltage 230V, measured at 50% $I_{peak}$ |
| Drivers / MCB 16A type B | ≤ 18 | 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

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

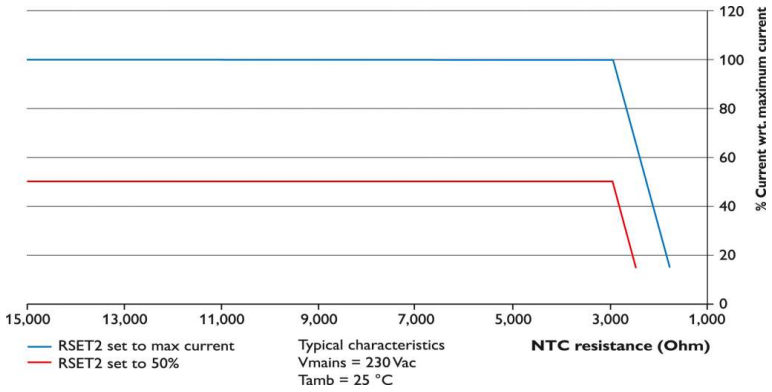
## Surge immunity

| 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 |
| Control surge immunity (diff. mode) | 1 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Control surge immunity (comm. mode) | 2 | kV | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

## Module Temperature Protection

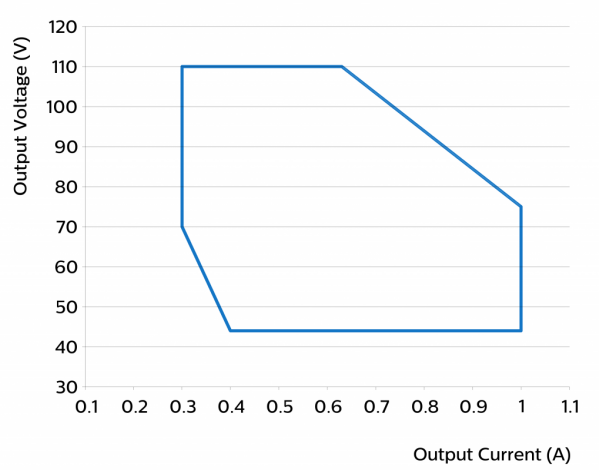
| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Advised NTC type | Vishay 15kOhm±2%NTC | 238161554153 | |
| | Murata NCP15XW153E03RC | NCP15XW153E03RC | With 390Ω in series |
| NTC resistance threshold | 2966 | Ω | Start limiting output current |
| Corresponding temperature | 70 | °C | With advised type 238161554153 |

## NTC resistance versus output current

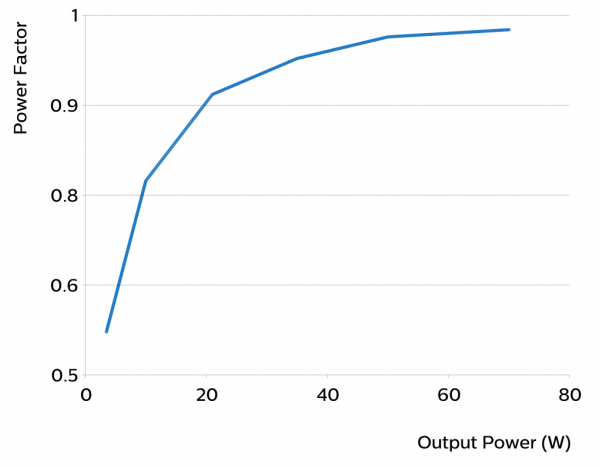



## Graphs

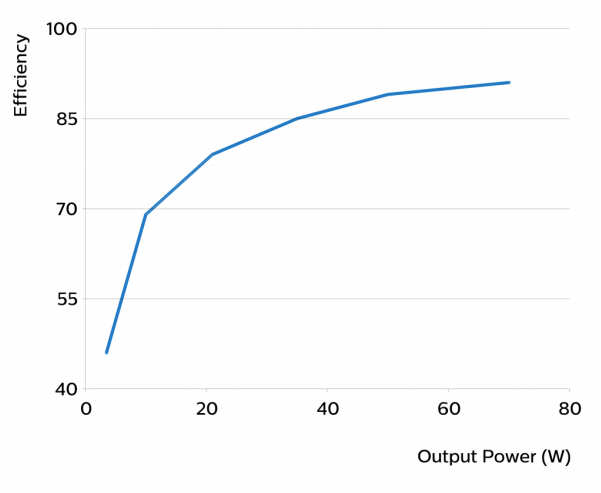
## Operating window




## Power factor versus output power



## Efficiency versus output power



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