

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LED drivers – spot- and downlight SELV

Xitanium 50W WH 0.7-1.5A 54V Is

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 | 0.27 | A | @ full output power @ rated input voltage |
| Rated input power | 60 | 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 | % | @ full output power @ rated input voltage |
| Rated input voltage DC range | 186...250 | V _{dc} | Performance range |
| Rated input current DC range | ≤ 0.32 | 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 | 186...250 | V _{dc} | Operational range |
| Isolation input to output | SELV | | |

Electrical output data

| Specification item | Value | Unit | Condition |
|--------------------------|------------------|-----------------|-----------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 24...54 | V _{dc} | |
| Output voltage max. | 60 | V | Peak voltage at open load |
| Output current | 0.7...1.5 | A | Full output current setting |
| Output current tolerance | ± 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average |
| Output power | 17...50 | W | Full output |

Electrical data controls input

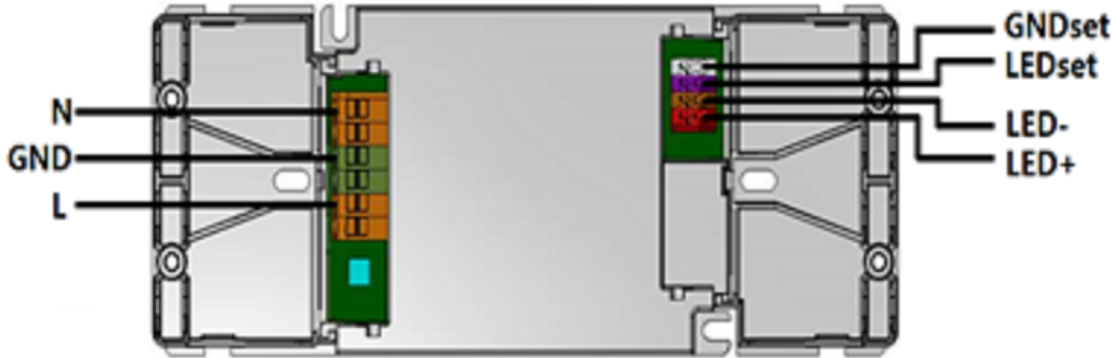
| Specification item | Value | Unit | Condition |
|--------------------|-------|------|-----------|
| Control method | Fixed | | |
| Galvanic Isolation | NA | | |

Logistical data

| Specification item | Value |
|--------------------|---------------------------------|
| Product name | Xitanium 50W WH 0.7-1.5A 54V Is |
| Order code | |
| Logistic code 12NC | 9290 014 16806 |
| EAN3 | |
| Pieces per box | 20 |

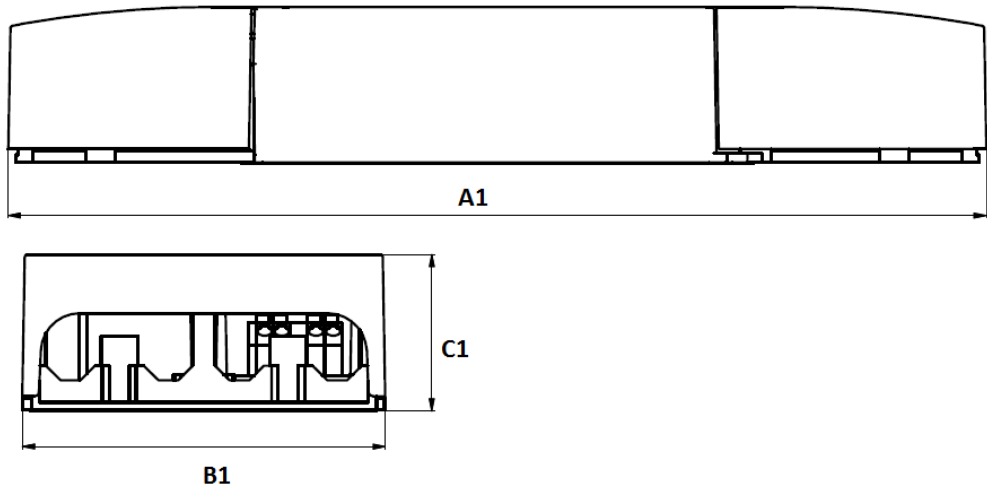
Wiring & Connections

| Specification item | Value | Unit | Condition |
|---------------------------|-----------|------|--|
| Input wire cross-section | 0.5...2.5 | mm² | WAGO804, solid / stranded wire |
| | 12...20 | AWG | WAGO804, solid / stranded wire |
| Input wire strip length | 10...11 | mm | |
| Output wire cross-section | 0.2...1.5 | mm² | WAGO250 (3.5 mm), solid / stranded wire |
| | 16...24 | AWG | WAGO250 (3.5 mm), solid / stranded wire |
| Output wire strip length | 8...9 | 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) | 200 | mm | |
| Width (B1) | 74.2 | mm | |
| Height (C1) | 32 | mm | |
| Weight | 248 | gram | |



Operational temperatures and humidity

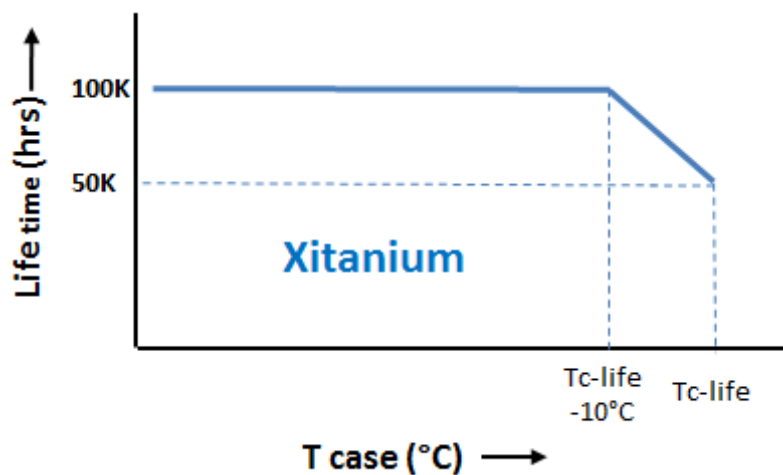
| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|------|--|
| Ambient temperature | -20...+50 | °C | Higher ambient temperature allowed as long as Tcase-max is not exceeded. |
| Tcase-max | 85 | °C | Maximum temperature measured at T _{case} -point |
| Tcase-life | 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...+90 | °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, SimpleSet | See Design-in guide. | Default output current: ≤ 700 mA |
| LED module temperature derating (MTP) | Yes | | |
| Constant Lumen Over Lifetime (CLO) | No | | |
| DC emergency dimming (DCemDIM) | Yes | | output power = 100% |
| Corridor mode | No | | |
| Energy metering | No | | |
| Diagnostics | No | | |

Features

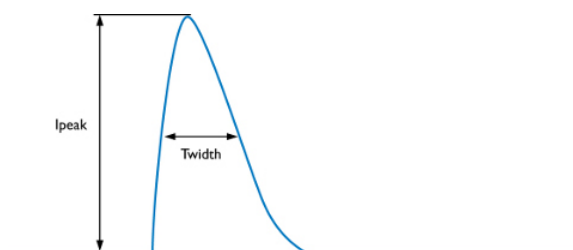
| Specification item | Value | Remark | Condition |
|---|----------|--------|----------------------|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Hot wiring | Yes | | |
| Suitable for fixtures with protection class | I and II | | per IEC60598 |

Certificates and standards

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

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-----------|---------|--|
| Inrush current I_{peak} | 23.5 | A | Input voltage 230V |
| Inrush current T_{width} | 272 | μs | 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

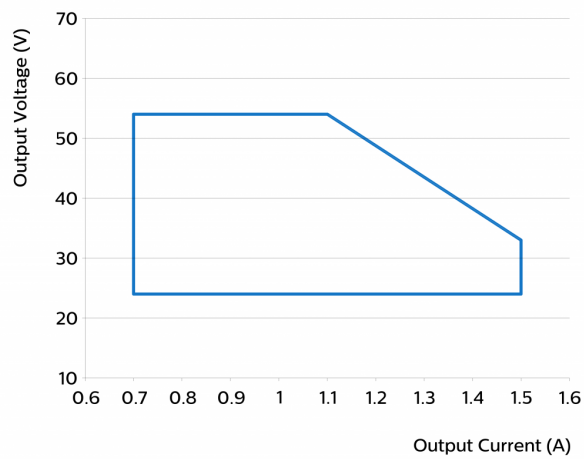
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 1 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 2 | kV | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

Additional information

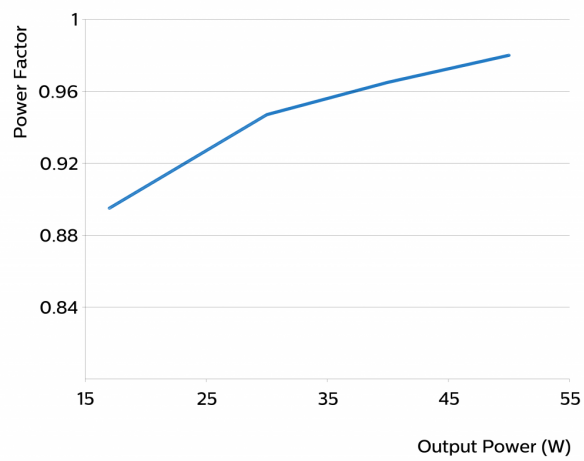
| Specification item | Default setting | Remark | Condition |
|--------------------|-----------------|--------|-----------|
| AOC | 700 | mA | |

Graphs

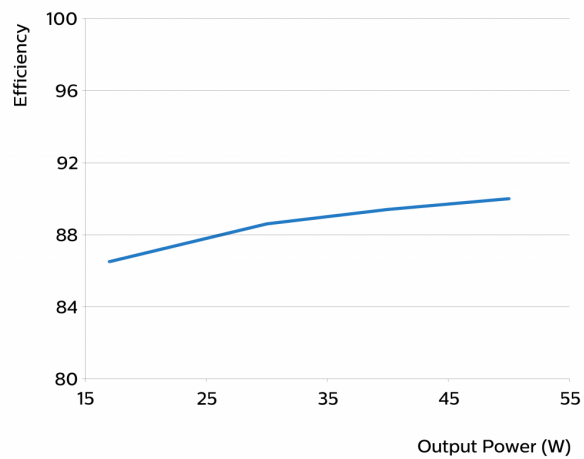
Operating window



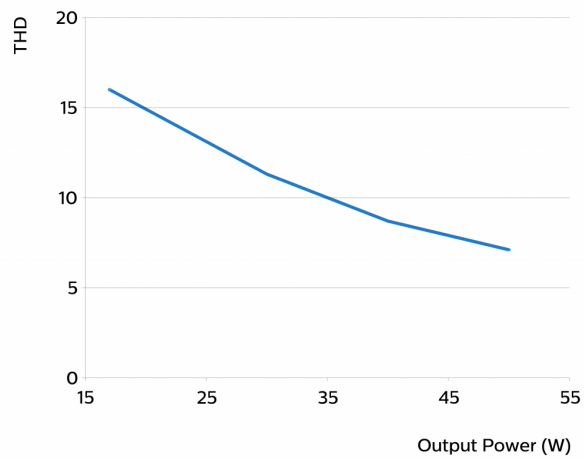
Power factor versus output power



Efficiency versus output power



THD versus output power



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