

PHILIPS

Xitanium

LED driver



Datasheet

LED drivers – Extreme Small

Xitanium 12W 0.08-0.5A 24V 230V

9290 034 56706

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.

Features

- Configurable operating window (AOC) via SimpleSet
- Wide range of power ratings
- Housing for independent use with strain relief and loop through or built-in for Spot- and down-lighting

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

Application

- Retail
- Office

Logistical data

| Specification item | Value |
|--------------------|---------------------------------|
| Product name | Xitanium 12W 0.08-0.5A 24V 230V |
| EOC | 872016926341300 |
| Logistic code 12NC | 9290 034 56706 |
| EAN1 (GTIN) | 8720169263413 |
| EAN3 (box) | 8720169263420 |
| Pieces per box | 25 |
| Strain Relief 12NC | 929001431106 |

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 | 50...60 | Hz | Performance range |
| Rated input current | 0.07 | A | @ rated output power @ rated input voltage |
| Rated input power | 14.5 | W | @ rated output power @ rated input voltage |
| Power factor performance range | 0.9 C | | @ rated output power @ rated input voltage |
| Total harmonic distortion | 20 | % | @ rated output power @ rated input voltage |
| Efficiency | 83.0 | % | @ rated output power @ rated input voltage @ max. U _{out} |
| Rated input voltage DC | 186...250 | V _{dc} | Performance range |
| Rated input current DC | 0.08 | A _{dc} | Performance range |
| Input voltage AC | 198...264 | V _{ac} | Safety operational range |
| Input frequency AC | 45...66 | Hz | Safety operational range |
| Input voltage DC | 168...275 | V _{dc} | Safety operational range |
| Isolation input to output | SELV | | |

Electrical output data

| Specification item | Value | Unit | Condition |
|--------------------------------------|------------------|-----------------|--------------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 8...24 | V _{dc} | |
| Output voltage max. | 60 | V | Maximum voltage at open load |
| Output current | 80...500 | mA | |
| Output current tolerance ± | 5 | % | @full load |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average @ 1kHz |
| Output P _{st} ^{LM} | ≤ 0.3 | | |
| Output SVM | ≤ 0.1 | | |
| Output power | 1.6...12.0 | W | |

Control interfaces

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

Wiring and Connections

| Specification item | Value | Unit | Type |
|---------------------------|----------------------|-----------------------|--|
| Input wire cross-section | 0.75...1.5 / 18...16 | mm ² / AWG | solid / stranded wire |
| Input wire strip length | 8.5...9.5 | mm | |
| Input wire cross-section | 0.5...1.5 | mm ² / AWG | solid / stranded wire |
| Input wire strip length | 8.5...9.5 | mm | |
| Output wire cross-section | 0.75...1.5 / 18...16 | mm ² / AWG | solid / stranded wire |
| Output wire strip length | 8.5...9.5 | mm | |
| Output wire cross-section | 0.5...1.5 | mm ² / AWG | solid / stranded wire |
| Output wire strip length | 8.5...9.5 | mm | |
| Maximum cable length | 0.6 | m | Total length of wiring including LED module, one way |

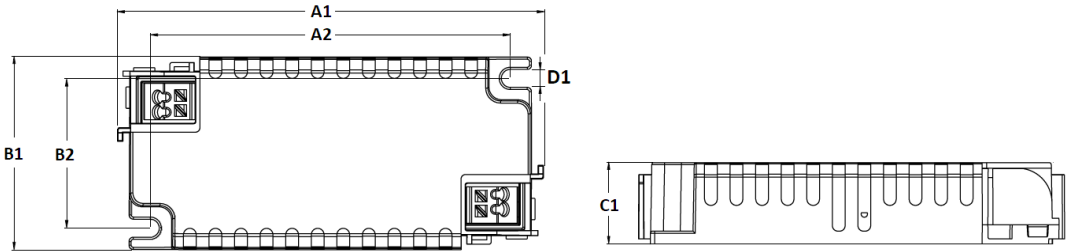


Isolation

| Insulation per IEC61347-1 | Input | Output |
|---------------------------|-------|--------|
| Input | - | SELV |
| Output | SELV | - |

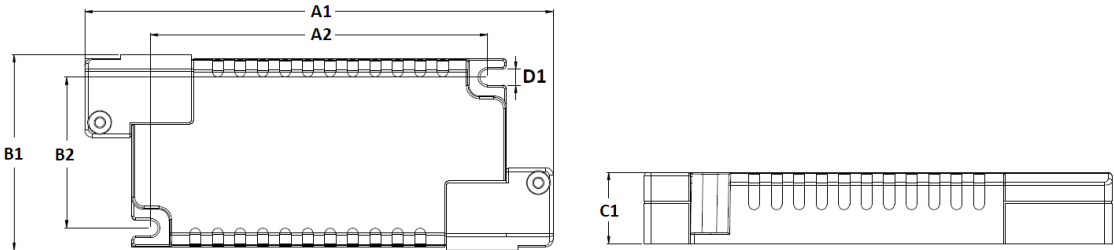
Dimensions and weight (for housing Mini flat 100x45x19 built-in 2p2p)

| Specification item | Value | Unit | Tolerance (mm) |
|-----------------------------|------------------|------|----------------|
| Length (A1) | 100 | mm | |
| Mounting hole distance (A2) | 84 | mm | |
| Width (B1) | 45 | mm | |
| Width (B2) | 35 | mm | |
| Height (C1) | 19.4 | mm | |
| Mounting hole diameter (D1) | 4.1 | mm | |
| Weight | 90 | gram | |
| Housing color | White (RAL 9016) | | |



Dimensions and weight (for housing Mini flat 125x47x19 independent 2p2p)

| Specification item | Value | Unit | Tolerance (mm) |
|-----------------------------|------------------|------|----------------|
| Length (A1) | 125 | mm | |
| Mounting hole distance (A2) | 84 | mm | |
| Width (B1) | 47 | mm | |
| Width (B2) | 35 | mm | |
| Height (C1) | 19.4 | mm | |
| Mounting hole diameter (D1) | 4.1 | mm | |
| Weight | 90 | gram | |
| Housing color | White (RAL 9016) | | |

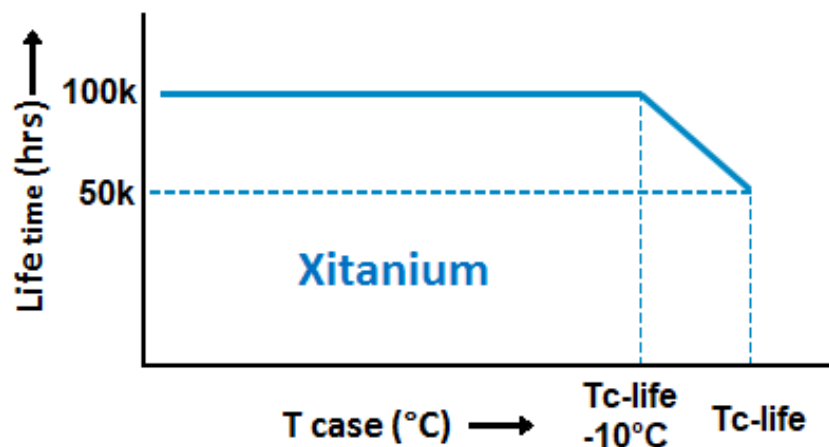


Operational temperatures and humidity

| 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 Tcase-point |
| Tcase-life | 75 | °C | Measured at Tcase-point |
| Maximum housing temperature | 110 | °C | In case of a failure, inherent by design |
| Relative humidity | 10...90 | % | Non-condensing |

Lifetime

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



Maximum failures = 10%

| Temperature [°C] | Lifetime | Unit | Condition |
|------------------|----------|------|--------------------------------|
| 75 | 50000 | hr | Temperature measured @Tc point |
| 70 | >50000 | hr | |
| 65 | >50000 | hr | |

Storage temperature and humidity

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

Programmable features

| Specification item | Available | Default setting | Condition |
|-------------------------------------|-----------|-----------------|---|
| Set Adjustable Output Current (AOC) | SimpleSet | 80 mA | Approach SimpleSet antenna from the top of the driver |
| Adjustable Light Output (ALO) | Yes | OFF | |
| OEM Write Protection (OWP) | Yes | OFF | |
| Luminaire Info (DALI part 251) | Yes | — | |

Non-programmable features

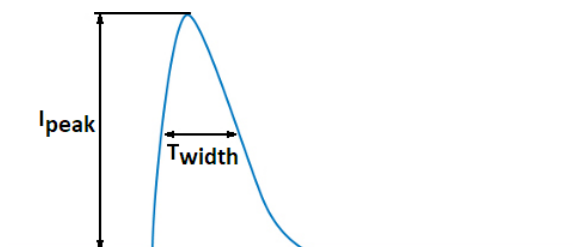
| Specification item | Value | | Condition |
|---|----------|--|----------------------|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Hot wiring | No | | |
| Suitable for fixtures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

Inrush current

| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|---|
| Inrush current | 8.1 | A | Input voltage 230V |
| Inrush peak width | 27 | μs | Input voltage 230 V, measured at 50% height |
| Drivers / MCB 16A type B @230V AC | ≤ 40 | pcs | Input voltage 230V |

Please refer to the driver design in guide if you use other MCB-types.

If several mini circuit breakers are used directly side-by-side (without distance pieces)
a correction factor of 80% has to be applied to the rated current



Driver touch current / protective conductor current / earth leakage 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

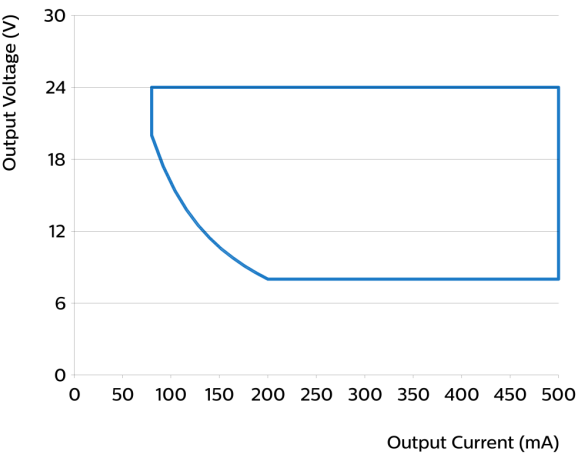
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 1 | kV | L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 2 | kV | L/N - EQUI: acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us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

Application Info (Approbation)

| Specification item | Value |
|--|---|
| Approval marks and Certifications | CCC / CE / EAC / EL / ENEC / RCM / SELV / UA / UKCA |
| Ingress Protection classification (IP) | 20 |
| Noise and hum dB(A) | 20 |
| Application | Indoor Point |
| Mounting Type | Built-in / Independent |

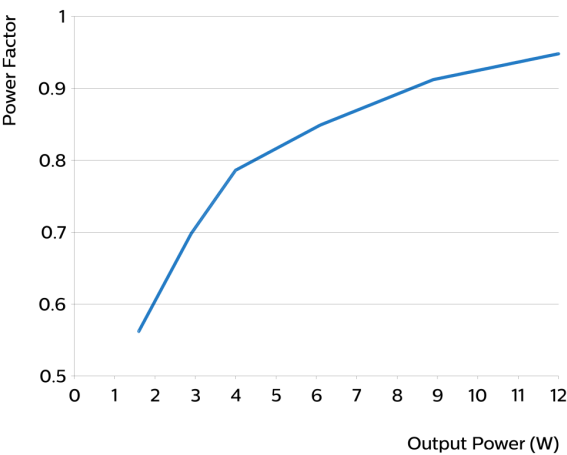
Graphs

Operating window

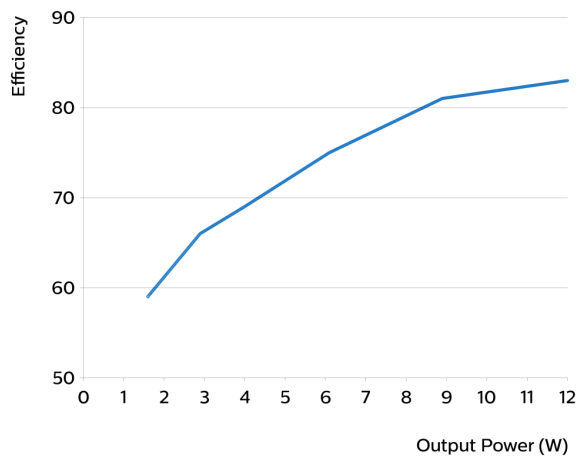


| Type | Output current (mA) | Min. output voltage (V) | Max. output voltage (V) | Max. output power (W) |
|---------------------------------|---------------------|-------------------------|-------------------------|-----------------------|
| Xitanium 12W 0.08-0.5A 24V 230V | 80 | 20 | 24 | 1.92 |
| Xitanium 12W 0.08-0.5A 24V 230V | 130 | 12 | 24 | 3.12 |
| Xitanium 12W 0.08-0.5A 24V 230V | 180 | 8 | 24 | 4.32 |
| Xitanium 12W 0.08-0.5A 24V 230V | 230 | 8 | 24 | 5.52 |
| Xitanium 12W 0.08-0.5A 24V 230V | 280 | 8 | 24 | 6.72 |
| Xitanium 12W 0.08-0.5A 24V 230V | 330 | 8 | 24 | 7.92 |
| Xitanium 12W 0.08-0.5A 24V 230V | 380 | 8 | 24 | 9.12 |
| Xitanium 12W 0.08-0.5A 24V 230V | 430 | 8 | 24 | 10.32 |
| Xitanium 12W 0.08-0.5A 24V 230V | 500 | 8 | 24 | 12 |

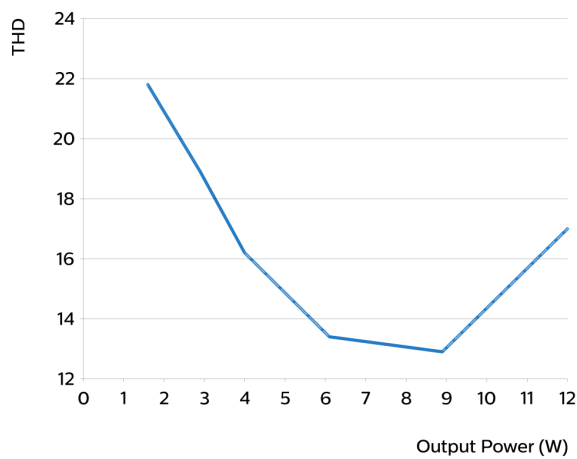
Power factor versus output power



Efficiency versus output power



THD versus output power



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