

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium High Bay LED Drivers Dimmable (1-10V) Independent

Xi 150W 1.0-1.5A 1-10V 220-240V RI132

9290 021 83380

LED-based light sources are an excellent solution for highbay industrial applications.

They are long-lasting and require low maintenance. However, to get the best out of the LEDs, these light sources require highly reliable and efficient LED Drivers. Philips Xitanium Dimmable (1-10V) LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting the strict approbation and application requirements.

Benefits

- Reliable and robust design, capable of withstanding harsh industrial operating conditions
- Enable highest efficiencies to your luminaire based on advanced technology
- Wide flexibility to adjust light output and output current
- Easy to design-in, based on superior thermal management and compact size
- Extremely long lifetime, fitting with high bay industrial applications
- Peace of mind. Backed by a 5 year warranty from a company you can trust

Features

- Independent/IP65 rated
- High efficiency
- Adjustable output current
- Dimmable through 1-10V interface
- High ambient temperature rating
- Suitable for IEC insulation Class I systems
- Authorized certificates: CE, ENEC, CB and CCC
- Long lifetime

Application

- Highbay industrial lighting
- Warehouse lighting
- Big-box retail store lighting

Electrical input data

| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|-----------------|--|
| Rated input voltage range | 202...254 | V _{ac} | Performance range |
| Rated input voltage | 230 | V _{ac} | |
| Rated input frequency range | 50...60 | Hz | Performance range |
| Rated input current | 0.72 | A | @ rated output power @ rated input voltage |
| Rated input power | 160 | W | @ rated output power @ rated input voltage |
| Power factor | 0.95 | | @ rated output power @ rated input voltage |
| Total harmonic distortion | 10 | % | @ rated output power @ rated input voltage |
| Efficiency | 94 | % | @ rated output power @ rated input voltage |
| Input voltage AC range | 85...305 | V _{ac} | Operational safety range |
| Input frequency AC range | 47.5...63 | Hz | Operational safety range |

Electrical output data

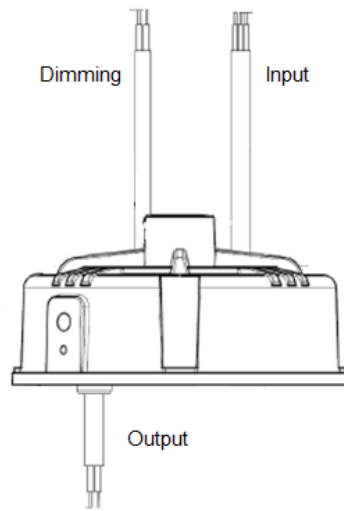
| Specification item | Value | Unit | Condition |
|----------------------------|------------------|-----------------|---------------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 70...130 | V _{dc} | |
| Output voltage max. | 330 | V | Maximum output voltage (rms) |
| Output current | 0.9...1.5 | A | |
| Output current min dimming | 100 | mA | |
| Output current tolerance | ± 5 | % | |
| Output current ripple LF | ≤ 5 | % | Ripple = peak / average, < 1kHz |
| Output current ripple HF | ≤ 5 | % | |
| Output power | 7...150 | W | |

Electrical data controls input

| Specification item | Value | Unit | Condition |
|--------------------|----------|------|---|
| Control method | | | Output current amplitude dimming, 1-10V acc. IEC60929 |
| Dimming range | 10...100 | % | 1-9V |

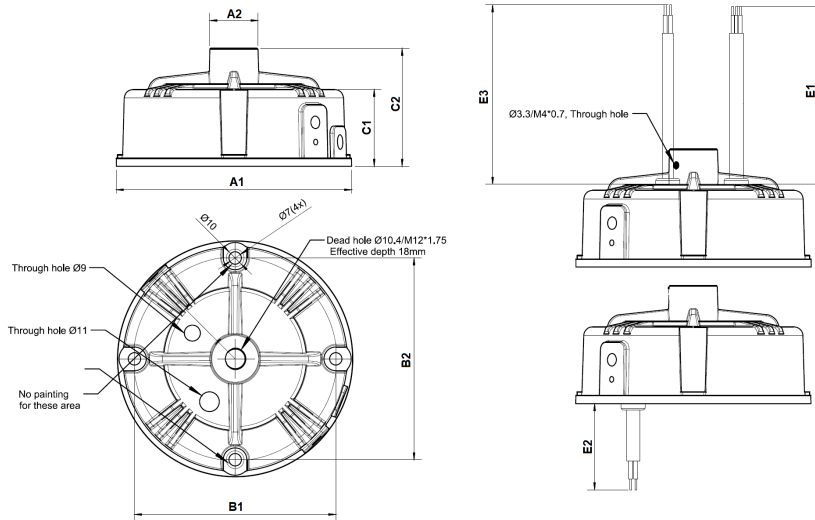
Wiring and Connections

| Specification item | Value | Unit | Condition |
|----------------------------|-------|-----------------|---|
| Input wire cross-section | 1 | mm ² | 3x 1.04mm ² stranded wires, waterproof cable |
| Output wire cross-section | 1 | mm ² | 2x 1.04mm ² stranded wires, waterproof cable |
| Control wire cross-section | 0.35 | mm ² | 2x 0.35mm ² stranded wires, waterproof cable |
| Maximum cable length | 300 | mm | Total length of wiring including LED module, one way |



Dimensions and weight

| Specification item | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1) | 132 | mm | |
| Width (B1) | 113 | mm | |
| Width (B2) | 113 | mm | |
| Height (C1) | 66 | mm | |
| Height (C2) | 43 | mm | |
| Fixing hole distance (A2) | 27 | mm | |
| Input cable length (E1) | 1500 | mm | |
| Output cable length (E2) | 300 | mm | |
| Control cable length (E3) | 1500 | mm | |
| Weight | 1130 | gram | |



Logistical data

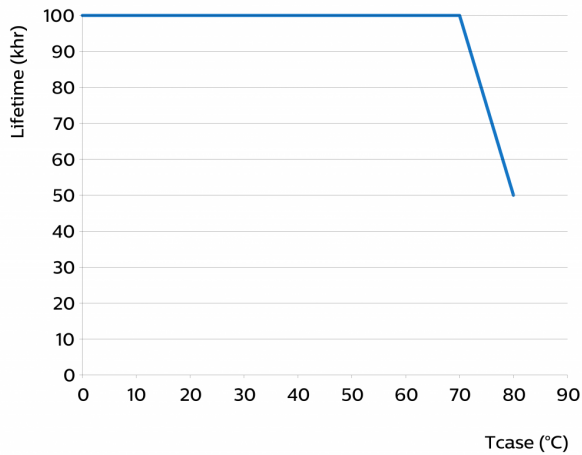
| Specification item | Value |
|--------------------|---------------------------------------|
| Product name | Xi 150W 1.0-1.5A 1-10V 220-240V RI132 |
| Logistic code 12NC | 9290 021 83380 |
| Pieces per box | 10 |

Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|------------------------------|-----------|------|---|
| Ambient temperature | -40...+65 | °C | Higher ambient temperature allowed as long as T _{case-max} is not exceeded |
| Starting Ambient temperature | -40...+65 | °C | |
| T _{case-max} | 80 | °C | Maximum temperature measured at T _{case-point} |
| T _{case-life} | 70 | °C | Measured at T _{case-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-max. Maximum failures = 10% |



Storage temperature and humidity

| Specification item | Value | Unit | Condition |
|---------------------|-----------|------|----------------|
| Ambient temperature | -40...+85 | °C | |
| Relative humidity | 5...95 | % | Non-condensing |

Programmable features

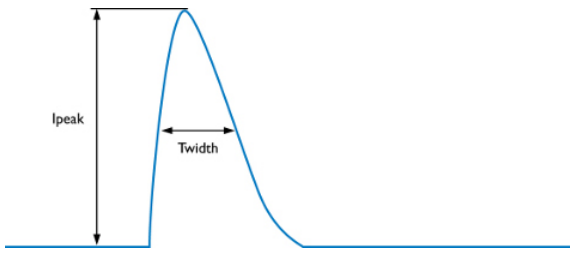
| Specification item | Available | Default setting | Condition |
|-------------------------------------|-----------|-----------------|-----------|
| Set Adjustable Output Current (AOC) | | 1150 mA | |

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 |
| Over temperature protection driver | Yes | | Automatic recovering |
| Overheating protection | Yes | | Automatic recovering |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|----------|---------|--|
| Inrush current I_{peak} | 55 | A | Input voltage 230V |
| Inrush current T_{width} | 214 | μ s | Input voltage 230V, measured at 50% I_{peak} |
| Drivers / MCB 16A type B | ≤ 9 | pcs | Indicative value |



| MCB | Rating | Relative number of LED drivers |
|-----|--------|--------------------------------|
| B | 4A | 25% |
| B | 6A | 40% |
| B | 10A | 63% |
| B | 13A | 81% |
| B | 16A | 100% (stated in datasheet) |
| B | 20A | 125% |
| B | 25A | 156% |
| B | 32A | 200% |
| B | 40A | 250% |
| C | 4A | 42% |
| C | 6A | 63% |
| C | 10A | 104% |
| C | 13A | 135% |
| C | 16A | 170% |
| C | 20A | 208% |
| C | 25A | 260% |
| C | 32A | 340% |
| C | 40A | 415% |

Driver touch current / protective conductor current

| Specification item | Value | Unit | Condition |
|---|-------|--------|---|
| Typical Protective Conductor Current (ins. Class I) | 2 | mA rms | Acc. IEC60598-1. LED module contribution not included |

Surge immunity

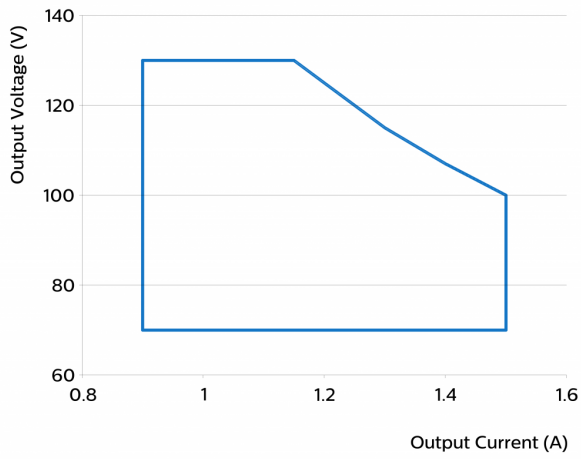
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|--|
| Mains surge immunity (diff. mode) | 4 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 4 | kV | Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us |

Application Info

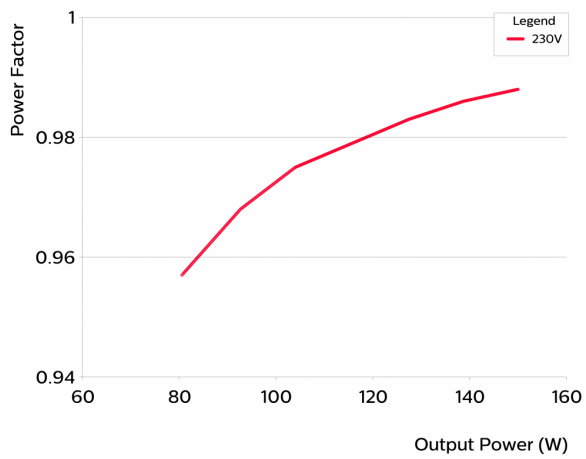
| Specification item | Value |
|--|----------------------------|
| Approval marks | CB / CCC / CE / ENEC / RCM |
| Ingress Protection classification (IP) | 65 |

Graphs

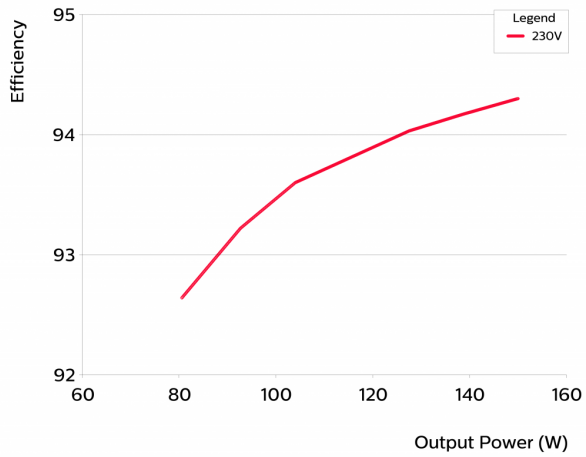
Operating window



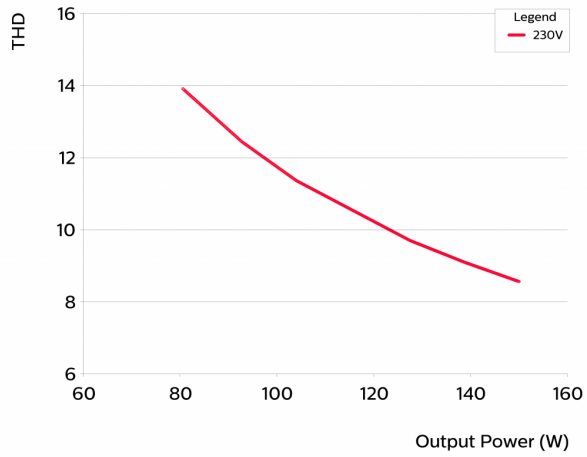
Power factor versus output power



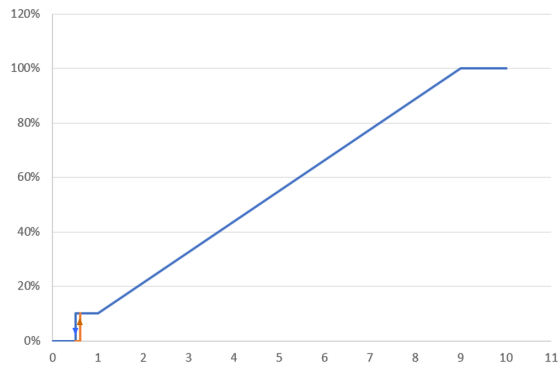
Efficiency versus output power



THD versus output power



I_{out} as function of 1-10V interface



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