

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium non-isolated SR dimmable & programmable

Xitanium 60W 0.08-0.35A 220V SR 230V

9290 016 95406

Because light is all around us, the lighting infrastructure is an ideal platform for collecting and carrying information.

The Philips Xitanium SR drivers are sensor ready, making them perfect for use in building management systems. You can power and interface with sensors directly from the driver without the need for additional modules, devices or power packs. The versatile and scalable DALI-2 open standard digital interface is used via a simple 2-wire connection to the sensor, so that you can confidently design flexible lighting, and incorporate your preferred sensors and networks, without worrying about potential incompatibilities.

Benefits

- Sensor Ready concept, ideal for use with indoor sensors & building management systems
- Integrated power supply over DALI-2 to power sensors and wireless radios directly from the driver, open spec for all OEMs, simplifying integration of sensors into the luminaire
- Highly accurate integrated power metering for use in building management systems
- Certified per DIIA intra-luminaire standard D4i
- Suitable for central emergency DC operation

Features

- Integrated Bus Power Supply for sensors and radios (DALI part 250)
- SimpleSet configuration interface (NFC)
- Configurable operating windows (AOC)
- Dimming supported during DC operation (DCemDim)
- Constant Light Output (CLO)
- Adjustable Light Output (ALO)
- OEM Write Protection (OWP)
- Memory Bank 1 Extension / Luminaire Data (DALI part 251)
- Energy reporting (DALI part 252)
- Diagnostics & Maintenance (DALI part 253)

Application

- Offices
- Healthcare
- Education
- Retail: supermarkets, shopping malls

Electrical input data

| Specification item | Value | Unit | Condition |
|------------------------------|-----------|-----------------|--|
| Rated input voltage range | 220...240 | V _{ac} | Nominal range |
| Rated input voltage | 230 | V _{ac} | |
| Rated input frequency range | 50...60 | Hz | Nominal range |
| Rated input current | 0.3 | A | @ rated output power @ rated input voltage |
| Rated input power | 66 | 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 | 93 | % | @ rated output power @ rated input voltage |
| Rated input voltage DC range | 186...250 | V _{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 |
| Standby Power | 0.3 | W | |
| Isolation input to output | No | | |

Electrical output data

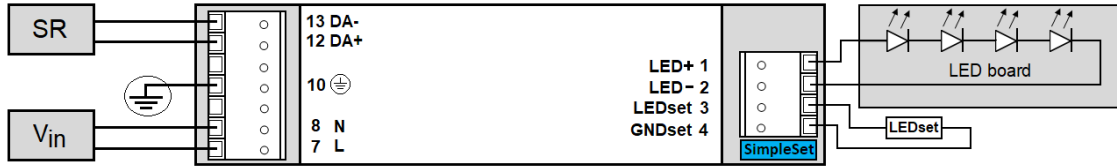
| Specification item | Value | Unit | Condition |
|--------------------------------------|------------------|-----------------|---------------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 50...220 | V _{dc} | |
| Output voltage max. | 250 | V | Maximum output voltage (rms) |
| Output current | 0.08...0.35 | A | |
| Output current min programmable | 80 | mA | |
| Output current min dimming | 2 | mA | |
| Output current tolerance ± | 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average, < 3kHz |
| Output current ripple HF | ≤ 4 | % | |
| Output P _{st} ^{LM} | ≤ 1 | | |
| Output SVM | ≤ 0.4 | | |
| Output power | 17...60 | W | |

Electrical data controls input

| Specification item | Value | Unit | Condition |
|------------------------------------|---------|------|---|
| Control method | SR | | DALI Parts: 101, 102, 207, 250, 251, 252, 253 |
| Dimming range | 1...100 | % | With AOC >80mA 1% dimming possible; AOC <80mA min. physical current = 2mA |
| Isolation controls input to output | Double | | acc. IEC61347-1 |
| SR output voltage max. | 22.5 | V | |
| SR guaranteed current | 52 | mA | |
| SR maximum current | 60 | mA | |

Wiring and Connections

| Specification item | Value | Unit | Type |
|---------------------------|---------------------|-----------------------|--|
| Input wire cross-section | 0.5...1.5 / 20...16 | mm ² / AWG | WAGO744, solid wire |
| Input wire strip length | 8...9 | mm | |
| Output wire cross-section | 0.5...1.5 / 20...16 | mm ² / AWG | WAGO744, solid wire |
| Output wire strip length | 8...9 | mm | |
| Maximum cable length | 2 | m | Total length of wiring including LED module, one way |

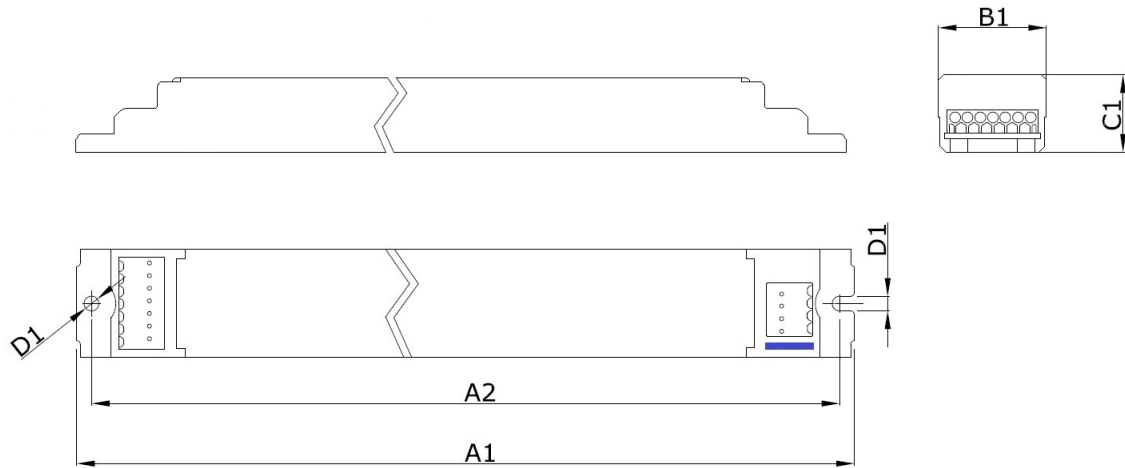


Insulation

| Insulation per IEC61347-1 | Input | Output | SR-interface | Housing |
|---------------------------|--------|--------|--------------|---------|
| Input | | Non | Double | Basic |
| Output | Non | | Double | Basic |
| SR-interface | Double | Double | | Basic |
| Housing | Basic | Basic | Basic | |

Dimensions and weight

| Specification item | Value | Unit | Tolerance (mm) |
|-----------------------------|-------|------|----------------|
| Length (A1) | 360 | mm | |
| Mounting hole distance (A2) | 350 | mm | |
| Width (B1) | 30 | mm | |
| Height (C1) | 21 | mm | |
| Mounting hole diameter (D1) | 4.1 | mm | |
| Weight | 250 | gram | |



Logistical data

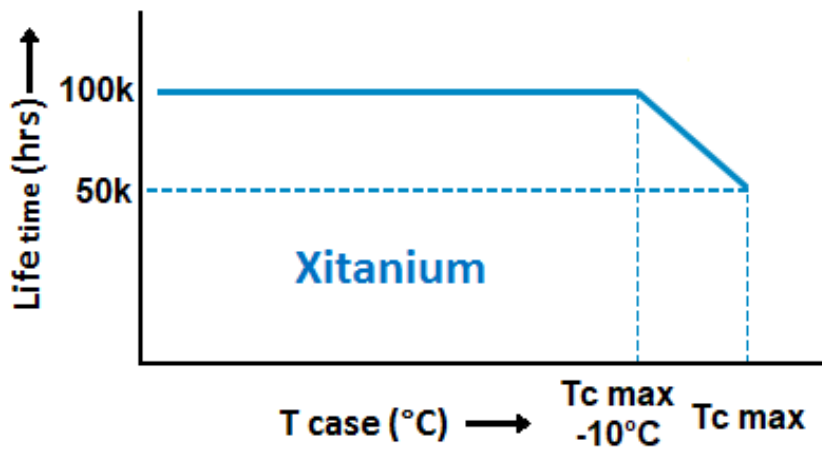
| Specification item | Value |
|--------------------|--------------------------------------|
| Product name | Xitanium 60W 0.08-0.35A 220V SR 230V |
| EOC | 871951426407600 |
| Logistic code 12NC | 9290 016 95406 |
| EAN1 (GTIN) | 8719514264076 |
| EAN3 | 8719514264083 |
| Pieces per box | 24 |

Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|------|---|
| Ambient temperature | -25...+50 | °C | Higher ambient temperature allowed as long as Tcase-max is not exceeded |
| Tcase-max | 75 | °C | Lifetime 50khrs; |
| Tcase-life | 65 | °C | Lifetime 100khrs; measured at T _c -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 | 100,000 | hours | Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10% |
| Mains switching cycles | > 100,000 | switches | See Design-in guide for detailed explanation |



Storage temperature and humidity

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

Programmable features

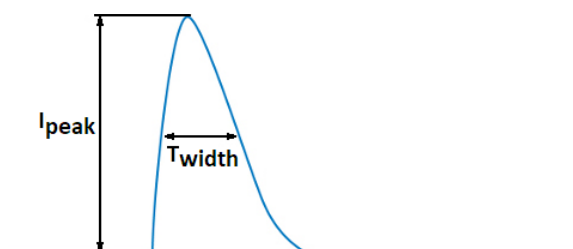
| Specification item | Available | Default setting | Condition |
|-------------------------------------|---------------------------------|-----------------|--|
| Set Adjustable Output Current (AOC) | LEDset, Programmable, SimpleSet | 80 mA | |
| NTC on LEDset | Yes | OFF | |
| Adjustable Light Output (ALO) | Yes | OFF | |
| Constant Light Output (CLO) | Yes | OFF | |
| DALI 102 | Yes | ON | Programmable via SimpleSet |
| DALI 253 M | Yes | — | |
| Min Dim Level | Yes | 1 % | |
| DC emergency (DCemDim) | Yes | ON | Default 15%, EOFx range = 1 .. 100% (EOFx = DCemDIM level) |
| Dimming support at DC operating | Yes | OFF | |
| OEM Write Protection (OWP) | Yes | OFF | |
| SR PSU | Yes | ON | |
| Luminaire Info | Yes | — | |

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 | per IEC60598 |
| Output Overvoltage Detection | Yes | |
| Energy metering | Yes | Accuracy 4% |
| Diagnostics | Yes | |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-----------|---------|--|
| Inrush current I_{peak} | 21 | A | Input voltage 230V |
| Inrush current T_{width} | 280 | μ s | Input voltage 230V, measured at 50% I_{peak} |
| Drivers / MCB 16A type B | ≤ 21 | 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) | 0.5 | mA rms | Acc. IEC60598-1. LED module contribution not included |

Surge immunity

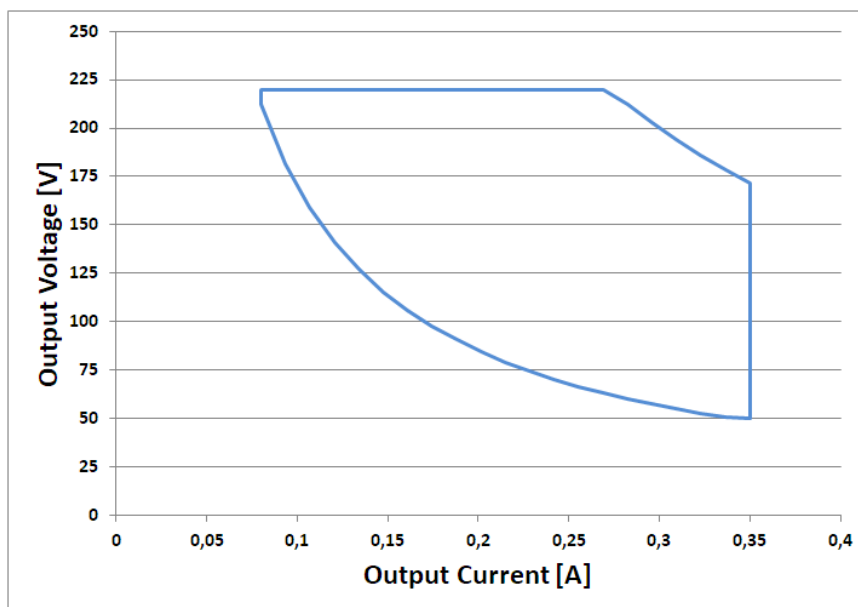
| Specification item | Value | Unit | Condition |
|-------------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 1 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 2 | kV | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |
| Control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

Application Info

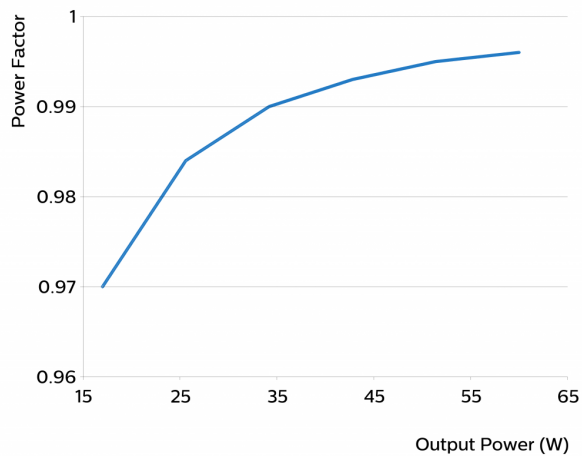
| Specification item | Value |
|--|--|
| Approval marks | BIS / CCC / CE / D4i / EAC / EL / ENEC / RCM / SR / UA |
| Ingress Protection classification (IP) | 20 |
| Application | Indoor Linear |
| Mounting Type | Built-in |

Graphs

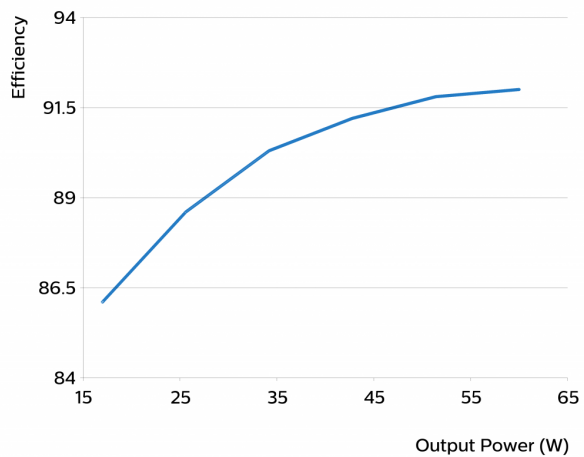
Operating window



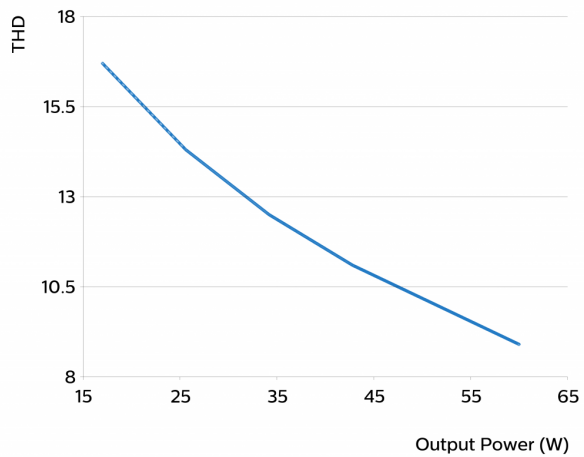
Power factor versus output power



Efficiency versus output power



THD versus output power



Notes

Standby Power: typical 0.3W, max 0.5W (No load on SR), max 1W (250mW load on SR).

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