

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Outdoor LED Drivers Single Current

Xitanium 65W 0.7A 230V S157

LED-based light sources are an excellent solution for outdoor environments. 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. The Philips Xitanium Fixed Output LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting strict performance, approbation and application requirements.

Benefits

Reliable

- Robust design; capable of withstanding harsh outdoor conditions
- Long lifetime and high survival rate
- Superior thermal management suitable for outdoor application
- Backed by high year warranty from a company you can trust

Affordable

- Component integration in advanced IC enables cost effective design
- Proven robustness & reliability secure the lowest luminaire maintenance over time

Easy to use

- Extreme compact size. fitting with varied luminaires
- Easy to design-in based on the good thermal management and extra EMI margin

Features

- Proven robustness and reliable electronic driver design
- Achieving highest efficiencies based on advance technology
- Long lifetime warrantee @Tc max
- Extreme compact size, fitting with varied and critical luminaires
- Authorized certificate: ENEC, CB, CE and CCC

Applications

- Residential areas
- Road and street lighting
- Area and flood lighting
- Tunnel lighting
- High-bay lighting

Electrical Input Data

| Specification item | Value | Unit | Condition |
|---------------------------|-------------|-----------------|----------------------------|
| Nominal input voltage | 220 ... 240 | V _{ac} | |
| Input Voltage AC | 202 ... 254 | V _{ac} | performance range |
| Nominal input frequency | 50 ... 60 | Hz | |
| Nominal input current | 0.28 | A | @230V @ full load |
| Max. input current | 0.31 | A | @ minimum input voltage AC |
| Nominal input power | 72 | W | @230V @ full load |
| Power factor | ≥ 0.9 | | @ full load. See graph. |
| Total harmonic distortion | ≤ 20 | % | @ full load. See graph. |
| Efficiency | 89 | % | @230V @ full load |
| Input voltage AC | 110 ... 305 | V _{ac} | Safety operation range |
| Input frequency AC | 45 ... 66 | Hz | Maximum permissible range |
| Isolation Input to Output | Basic | | |

Electrical Output Data

| Specification item | Value | Unit | Condition |
|--------------------------|------------------|-----------------|---|
| Regulation method | Constant Current | | |
| Output voltage | 65 ... 93 | V _{dc} | |
| Output voltage max. | 120 | V | Peak voltage at open load |
| Output current | 0.7 | A | Full output current setting |
| Output current tolerance | ± 5 | % | |
| Output current ripple LF | ≤ 30 | % | Ripple=(peak-average)/average, at <1kHz |
| Output power | 45.5 ... 65 | W | Full output |

Electrical Data Control Input

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

Logistical Data

| Specification item | Value |
|--------------------|-----------------------------|
| Product name | Xitanium 65W 0.7A 230V S157 |
| Order code | |
| Logistic code 12NC | 9290 014 06280 |
| EAN3 | |
| Pieces per box | 20 |

Wiring & Connections

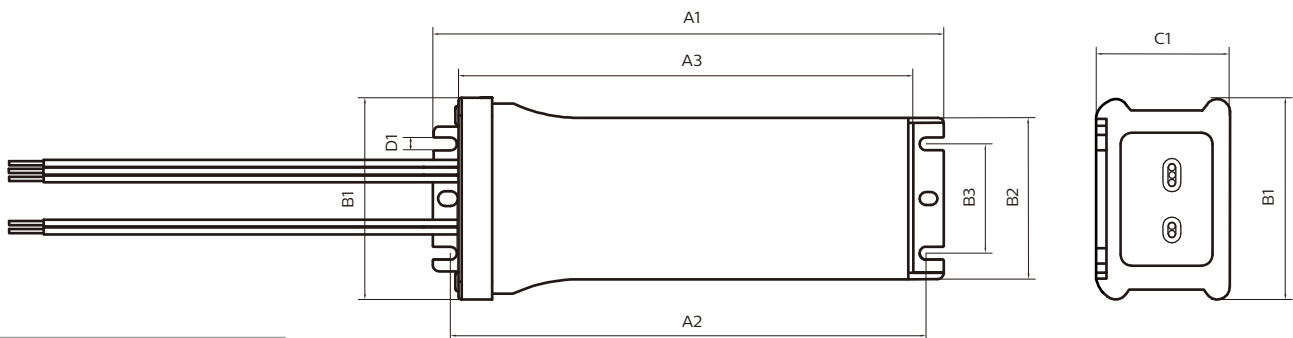
| Specification item | Value | Unit | Condition |
|---------------------------|-------------|-----------------|------------------|
| Input wire cross-section | 0.75 | mm ² | stranded wire |
| | 18 | AWG | stranded wire |
| Input wire strip length | 7.5 ... 8.5 | mm | |
| Output wire cross-section | 0.75 | mm ² | stranded wire |
| | 18 | AWG | stranded wire |
| Output wire strip length | 7.5 ... 8.5 | mm | |
| Input Wire Length | 330 ± 30 | mm | Out of enclosure |
| Output Wire Length | 300 ± 30 | mm | Out of enclosure |

Insulation

| Insulation | Mains | LED | Protective Earth |
|------------------|-------|-------|------------------|
| Mains | | Basic | Basic |
| LED | Basic | | Basic |
| Protective Earth | Basic | Basic | |

Dimensions and weight

| Specification item | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1) | 157 | mm | |
| Width (B1) | 60 | mm | |
| Height (C1) | 40 | mm | |
| Fixing hole diameter (D1) | 4.5 | mm | |
| Fixing hole distance (A2) | 146 | mm | |
| Fixing hole diameter (B3) | 34 | mm | |
| Weight | | gram | |



| Data Sheet | |
|------------|-----------------|
| Item | Dimensions |
| A1 | 157.4 +0.5/-0.5 |
| A2 | 146.4 +0.5/-0.5 |
| A3 | 137.4+0.5/-0.5 |
| B1 | 59.2 +0.5/-0.5 |
| B2 | 50.2 +0.2/-0.2 |
| B3 | 34 +0.2/-0.2 |
| C1 | 39.5 +0.5/-0.5 |
| D1 | 4.5 |

Operational temperatures and humidity

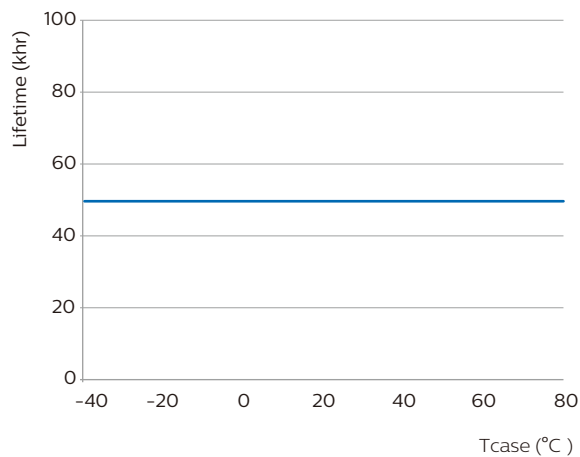
| Specification item | Value | Unit | Condition |
|-----------------------------|-------------|------|---|
| Ambient Temperature | -40 ... +50 | °C | Higher ambient temperature allowed as long as T _{case-max} is not exceeded |
| T _{case-max} | 80 | °C | Maximum temperature measured at T _{case-point} |
| T _{case-life} | 80 | °C | Measured at T _{case-point} |
| Maximum housing temperature | 90 | °C | In case of a failure |
| Relative humidity | 5...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-max} . Maximum failures = 10% |



Programmable features

| Specification item | Value | Remark | Condition |
|--------------------------|-------|---------------------|----------------------------------|
| Set output current (AOC) | No | See Design-in guide | Default output current: ≤ 700 mA |

Features

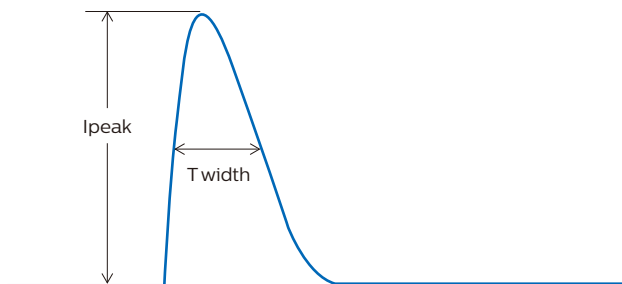
| Specification item | Value | Remark | Condition |
|---|-------|--------|----------------------|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Hot wiring | No | | |
| Suitable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

Certificates and Standards

| Specification item | Value |
|---------------------------|----------------------|
| Approval Marks | CB / CCC / CE / ENEC |
| Ingress Protection Rating | Built in |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-----------|---------|--|
| Inrush Current I_{peak} | 9 | A | Input voltage 230V |
| Inrush Current T_{width} | 58 | μs | Input voltage 230V, measured at 50% I_{peak} |
| Drivers / MCB 16A Type B | ≤ 48 | 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

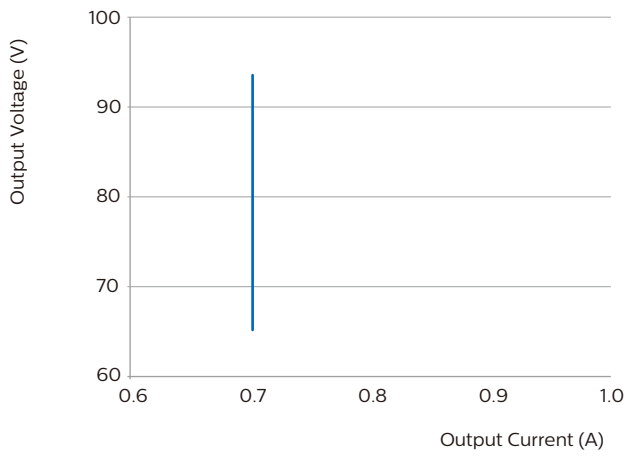
| Specification item | Value | Unit | Condition |
|-----------------------|-------|---------|---|
| Typical touch current | 0.7 | mA peak | Acc. IEC61347-1. LED module contribution not included |

Surge immunity

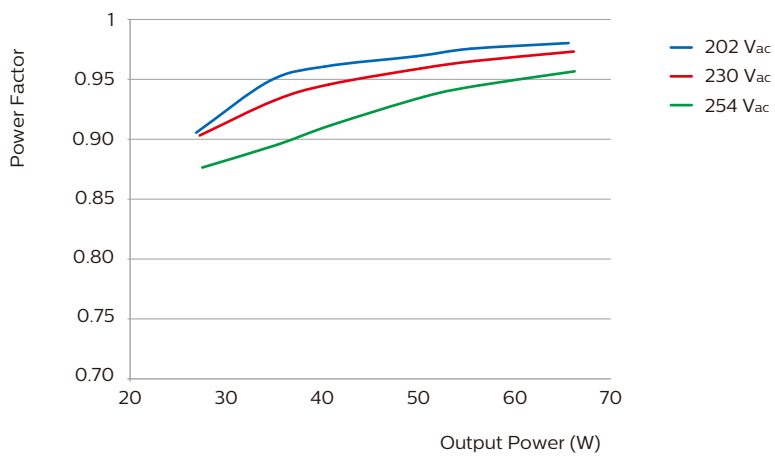
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|--|
| Mains surge immunity (diff. mode) | 4 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 6 | kV | Acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us |

Graphs

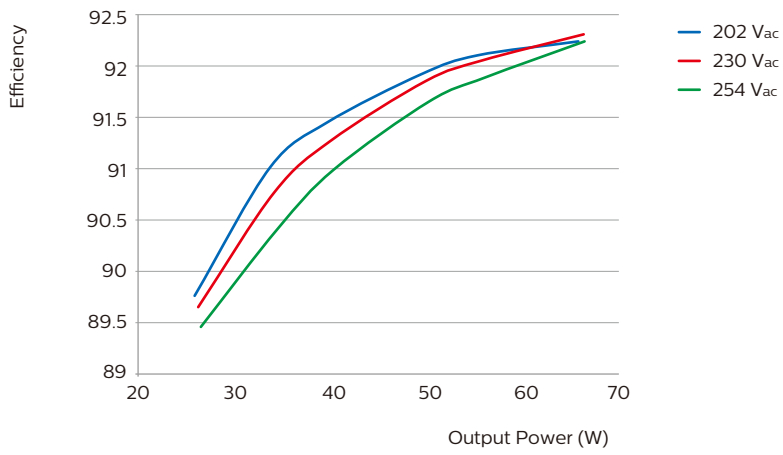
Operating window



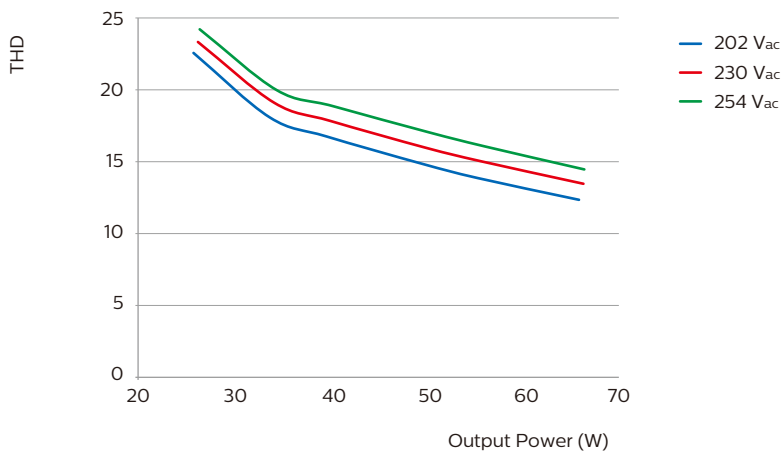
Power factor versus output power ($T_{case} = 70^{\circ}C$)



Efficiency versus output power (Tcase = 70°C)



THD versus output power (Tcase = 70°C)



The information in this datasheet is accurate at the time of writing. All data and specification is subject to change.

This datasheet is provided “as is” without express or implied warranty of any kind, it is based on the data of this new product.

Neither Philips nor its agents assume any liability for inaccuracies in this guide or losses incurred by use or misuse of the information in this guide.

Philips will not be liable for any indirect, special, incidental or consequential damages (including damages for loss of business, loss of profits or the like), whether based on breach of contract, tort (including negligence), product liability or otherwise, even if Philips or its representatives have been advised of the possibility of such damages.

Philips Lighting desires to provide, and the customer identified below (“Customer”) desires to receive, limited prototypes of this product listed in this document (“Products”) at no charge and free-of-cost. In consideration of receiving the Products at no charge and free-of-cost, Customer agrees to assume, and does assume, all risk and liability for the use of the Products and its employees’ and agents’ use of the Products, and that Philips shall have no liability to Customer with respect to Customer’s use, or the performance of, of the Products.

We like you to contact Philips and report problems, suggestions towards a prototype of this product, and provide suggestions regarding this New Product. Philips has no obligation whatsoever to respond in any way to such a problem report or suggestion but will evaluate to any feedback as possible improvement.

The customer shall not sell or otherwise provide a Prototype to any third party.



©2016 Philips Lighting B.V.

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights. Data subject to change.

Date of release: June 16, 2016

www.philips.com/technology