

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Outdoor LED Drivers Independent 1-10V

Xi LP 65W 0.3-1.05A S1 230V I150

Philips Xitanium Lite Programmable LED drivers are value engineered to deliver a carefully selected feature set and high-end performance, making it a preferred choice for many outdoor applications. The portfolio offers high flexibility with a customizable operating window, enabling differentiation in LED lighting designs via system tuning and being prepared for LED efficacy upgrades.

In this product family Philips introduces new drivers in a stretched form factor with a balanced feature set, which offer high value for both OEM customers and end-users. The products can replace the existing programmable outdoor LED drivers and will bring significant improvement in programming, assembly into a luminaire and electrical performance. One of the key features is SimpleSet®, an easy and fast way to configure the driver without the need to power the driver.

Benefits

- Ultimate robustness, offering peace of mind and lower maintenance costs
- Energy savings through high efficiency and via a choice of dimming options
- Balanced configurable feature set covering the most common applications
- Consistent waterproof performance through the lifecycle
- Easy to design-in, configure and install for Class I applications

Features

- SimpleSet®, wireless configuration interface
- High surge protection
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- External control interface (1-10V) available
- Digital Configuration Interface (DCI) via MultiOne Interface
- Autonomous or Fixed time based (FTBD) dimming via integrated 5-step DynaDimmer
- Programmable Constant Light Output (CLO)
- Integrated Driver Temperature protection

Application

- Residential areas
- Road and street lighting
- Area and flood lighting
- Tunnel lighting
- High-bay 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 | 47...63 | Hz | Performance range |
| Rated input current | 0.3 | A | @ rated output power @ rated input voltage |
| Max. input current | 0.33 | A | @ rated output power @ minimum performance input voltage |
| Rated input power | 75 | 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 | ≤ 86 | % | @ rated output power @ rated input voltage |
| Input voltage AC range | 85...305 | V _{ac} | Safety operational range |
| Input frequency AC range | 45...66 | Hz | Operational range |
| Isolation Input to Output | Basic | | |

Electrical output data

| Specification item | Value | Unit | Condition |
|---------------------------------|------------------|-----------------|--------------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 31...93 | V _{dc} | |
| Output voltage max | 130 | V | Peak voltage at open load |
| Output current | 0.07...1.05 | A | Full output current setting |
| Output current min programmable | 300 | mA | |
| Output current min dimming | 70 | mA | |
| Output current tolerance | ± 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak/average @ ≤ 1KHz |
| Output current ripple HF | ≤ 15 | % | |
| Output power | 2.5...65 | W | Full output |

Electrical data controls input

| Specification item | Value | Unit | Condition |
|--------------------|----------|------|--|
| Control method | 1-10 | V | Default: 1-10V. Optional: reversed 1-10V, reversed 0-5V |
| Dimming range | 10...100 | % | |
| Galvanic Isolation | Basic | | |

Logistical data

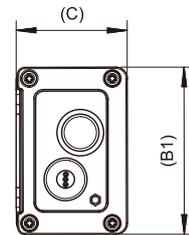
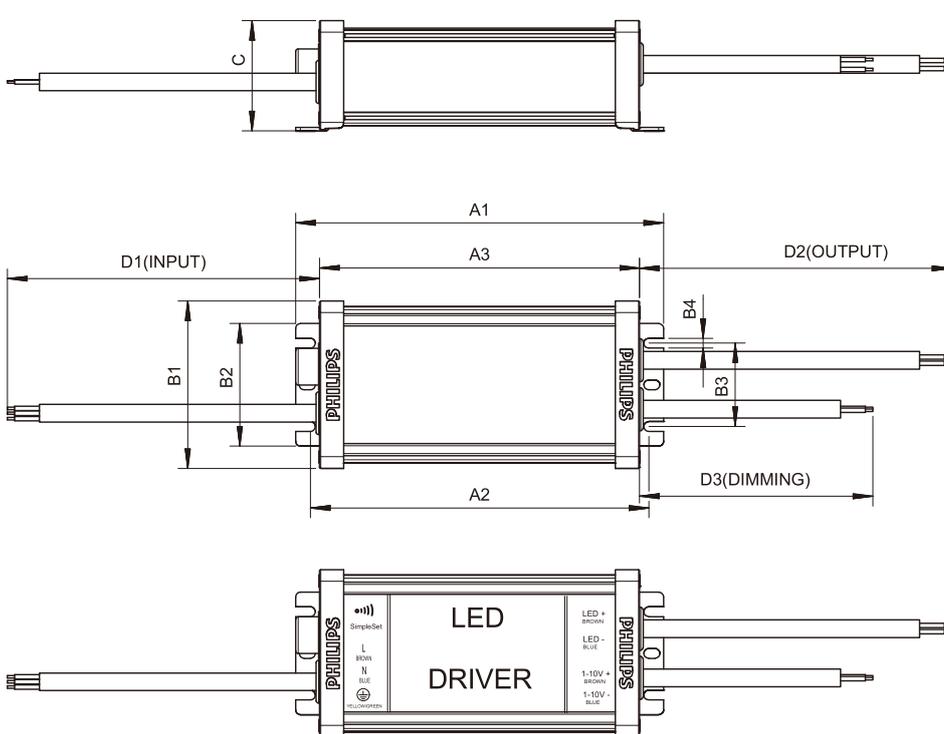
| Specification item | Value |
|--------------------|----------------------------------|
| Product name | Xi LP 65W 0.3-1.05A S1 230V I150 |
| Logistic code 12NC | 9290 014 73980 |
| Pieces per box | 16 |

Wiring & Connections

| Specification item | Value | Unit | Condition |
|----------------------------|-------|-----------------|--|
| Input wire cross-section | 1.04 | mm ² | Waterproof cable |
| Output wire cross-section | 1.04 | mm ² | Waterproof cable |
| Dimming wire cross-section | 1.04 | mm ² | Waterproof cable |
| Maximum cable length | 350 | mm | Total length of wiring including LED module, one way |

Dimensions and weight

| Specification item | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1) | 150 | mm | |
| Length (A2) | 138 | mm | |
| Length (A3) | 130 | mm | |
| Width (B1) | 68.2 | mm | |
| Width (B2) | 50 | mm | |
| Fixing hole distance (B3) | 34 | mm | |
| Fixing hole distance (B4) | 4 | mm | |
| Height (C) | 45 | mm | |
| Input cable length (D1) | 450 | mm | |
| Output cable length (D2) | 350 | mm | |
| Control cable length (D3) | 300 | mm | |
| Weight | 650 | gram | |



| Data Sheet | |
|------------|----------------|
| Item | Dimensions |
| A1 | 150 +0.5/-2.5 |
| A2 | 138 +0.5/-2.5 |
| A3 | 130 +0.5/-2.5 |
| B1 | 68.2 +0.5/-0.5 |
| B2 | 50 +0.3/-0.3 |
| B3 | 34 +0.3/-0.3 |
| B4 | 4 +0.3/-0.3 |
| C | 45 +0.5/-0.5 |
| D1 | 450 +30/-30 |
| D2 | 350 +30/-30 |
| D3 | 300 +30/-30 |

Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|-----------------------------|-------------|------|---|
| Ambient Temperature | -40 ... +55 | °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} | 70 | °C | Measured at T _{case-point} |
| Maximum housing temperature | 90 | °C | In case of a failure |
| Relative humidity | 10...90 | % | Non-condensing |

Storage temperature and humidity

| Specification item | Value | Unit | Condition |
|---------------------|-----------|------|----------------|
| Ambient temperature | -40...+80 | °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) | SimpleSet | See Design-in guide | Default output current: = 700 mA |
| Constant Lumen Over Lifetime (CLO) | Yes | | |
| Diagnostics | Yes | | |
| Dynadimmer | Yes | | |
| Ampdim | Yes | | |

Features

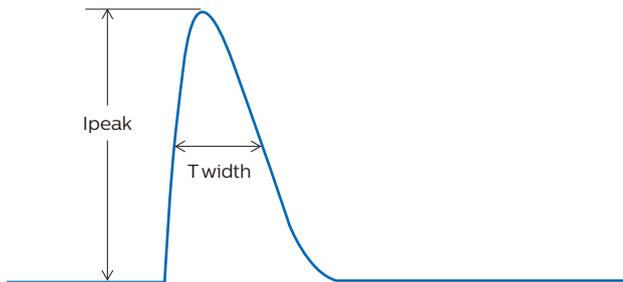
| Specification item | Value | Remark | Condition |
|---|-------|--------|----------------------|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Hot wiring | No | | |
| Over temperature protection driver | Yes | | Automatic recovering |
| Overheating protection | Yes | | Automatic recovering |
| Input over-voltage | Yes | | 320Vac @ 48hrs |
| Suitable for fixtures with protection class | I | | per IEC60598 |

Certificates and Standards

| Specification item | Value |
|---------------------------|----------------------|
| Approval Marks | CE / ENEC / CB / CCC |
| Ingress Protection Rating | IP66/67 |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-------|---------|--|
| Inrush Current I_{peak} | 35 | A | Input voltage 230V |
| Inrush Current T_{width} | 210 | μs | Input voltage 230V, measured at 50% I_{peak} |
| Drivers / MCB 16A Type B | 18 | 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

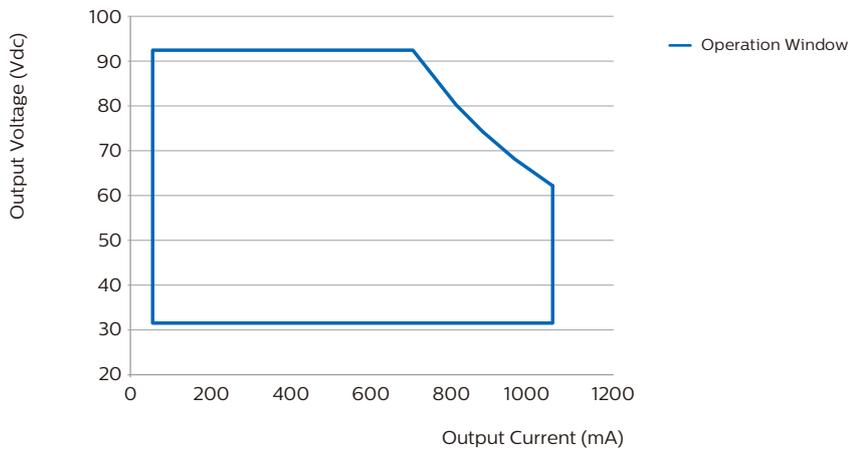
| Specification item | Value | Unit | Condition |
|---|-------|--------|---|
| Typical protective conductor current (ins. Class I) | < 0.7 | mA rms | Acc. IEC61347-1. LED module contribution not included |

Surge immunity

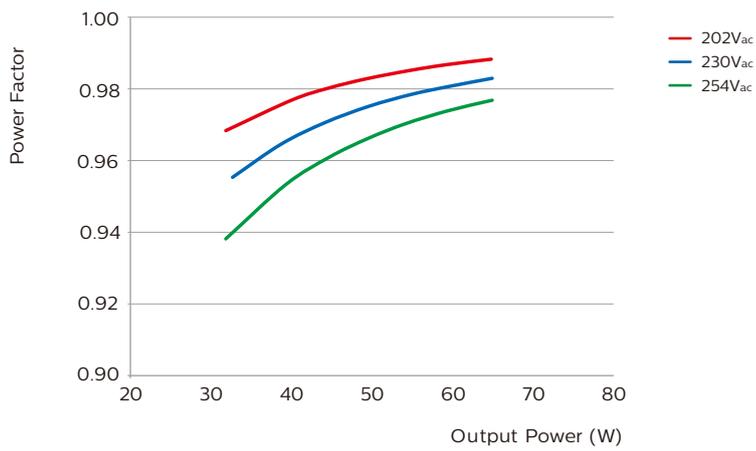
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 6 | kV | L-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 10 | kV | L/N - GND acc. EN61547 12 Ohm, 1.2/50us, 8/20us |

Graphs

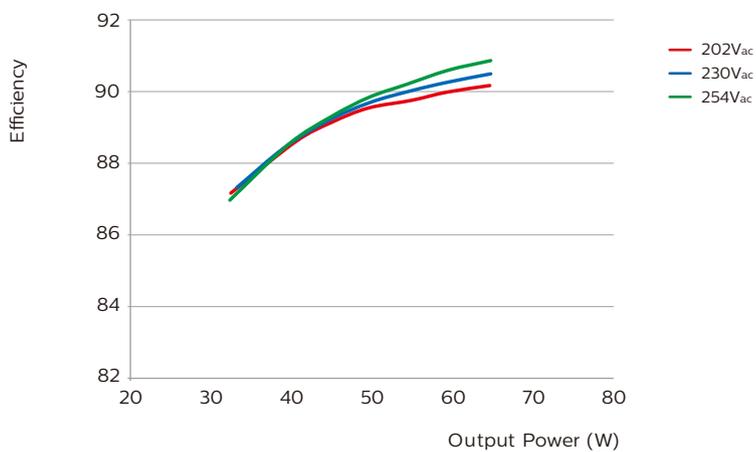
Operating window



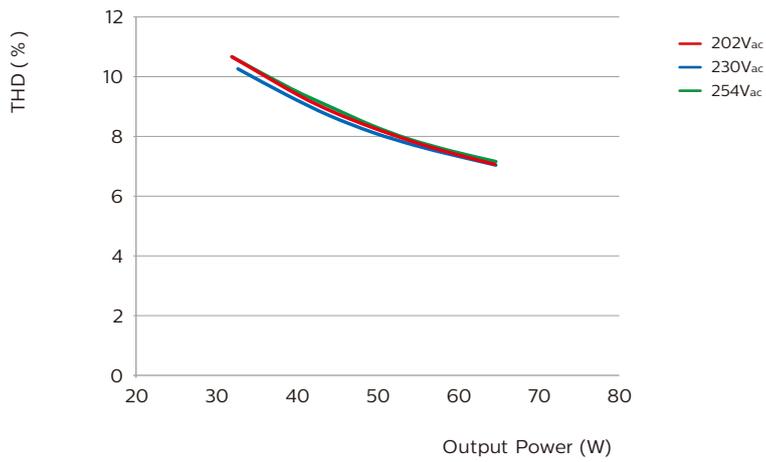
Power factor versus output power



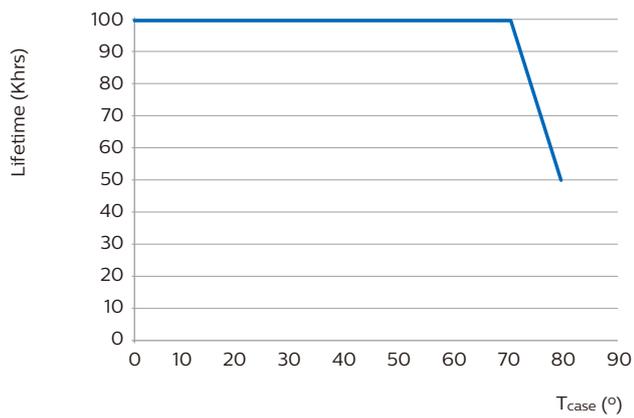
Efficiency versus output power



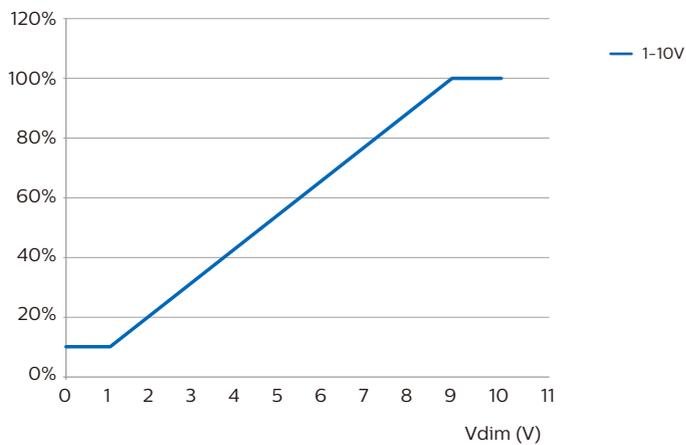
THD versus output power



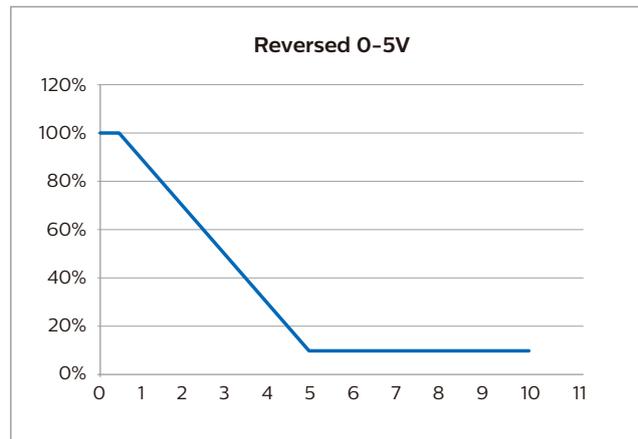
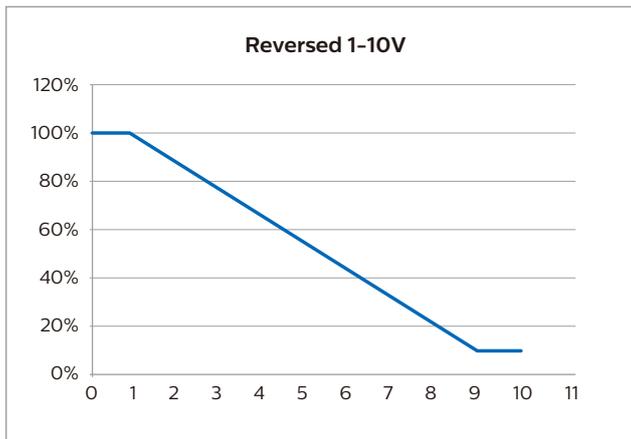
Lifetime vs Tcase



Dimming Curve



Reversed



Note:

1. During reverse dimming mode, when the Dim+ /Dim- is open, the driver will be at maximum output current.
2. During reverse dimming mode, there is a hysteresis of 2V between 10V and 12V to keep previous status unchanged when dim voltage is above the linear dimming range.



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Date of release: December 18, 2018

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