

# PHILIPS

## Xitanium

### LED driver



## Datasheet

# Xitanium LITE Prog LED Xtreme drivers

Xi LP 75W 0.3-1.0A S1 230V S240 sXt

### Xitanium LITE Prog LED Xtreme drivers

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 offers drivers in both compact as well as stretched form factors 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
- Balanced configurable feature set covering the most common applications
- Easy to design-in and install for Insulation Class I and Class II applications
- Energy savings through high efficiency and via a choice of dimming options

#### Features

- SimpleSet®, wireless configuration interface
- High surge immunity
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- External control interface 1-10V or LineSwitch
- Autonomous dimming via integrated Dynadimmer or Dynadimmer LITE
- Adjustable thermal protection for driver (DTL, select models)
- Adjustable thermal protection for LED module (MTP, select models)
- Simplified linear version of Constant Light Output (CLO LITE)
- DC input voltage operation (select models)

#### Application

- Road and street lighting
- Area lighting
- Tunnel lighting
- Industrial lighting

## Electrical input data

| Specification item          | Value     | Unit            | Condition                                                |
|-----------------------------|-----------|-----------------|----------------------------------------------------------|
| Rated input voltage range   | 202...254 | V <sub>ac</sub> | Performance range                                        |
| Rated input voltage         | 230       | V <sub>ac</sub> |                                                          |
| Rated input frequency range | 47...63   | Hz              | Performance range                                        |
| Rated input current         | 0.37      | A               | @ rated output power @ rated input voltage               |
| Max. input current          | 0.42      | A               | @ rated output power @ minimum performance input voltage |
| Rated input power           | 82        | W               | @ rated output power @ rated input voltage               |
| Power factor                | 0.98      |                 | @ rated output power @ rated input voltage               |
| Total harmonic distortion   | 8         | %               | @ rated output power @ rated input voltage               |
| Efficiency                  | 91        | %               | @ rated output power @ rated input voltage               |
| Input voltage AC range      | 50...264  | V <sub>ac</sub> | Operational range                                        |
| Input frequency AC range    | 45...66   | Hz              | Operational range                                        |
| Isolation input to output   | Double    |                 |                                                          |

## Electrical output data

| Specification item              | Value            | Unit            | Condition                 |
|---------------------------------|------------------|-----------------|---------------------------|
| Regulation method               | Constant Current |                 |                           |
| Output voltage                  | 35...108         | V <sub>dc</sub> |                           |
| Output voltage max.             | 140              | V               | Peak voltage at open load |
| Output current                  | 0.1...1.05       | A               |                           |
| Output current min programmable | 300              | mA              |                           |
| Output current min dimming      | 100              | mA              |                           |
| Output current tolerance        | ± 5              | %               |                           |
| Output current ripple LF        | ≤ 4              | %               | Ripple = peak / average   |
| Output current ripple HF        | ≤ 4              | %               |                           |
| Output power                    | 4...75           | W               |                           |

## Electrical data controls input

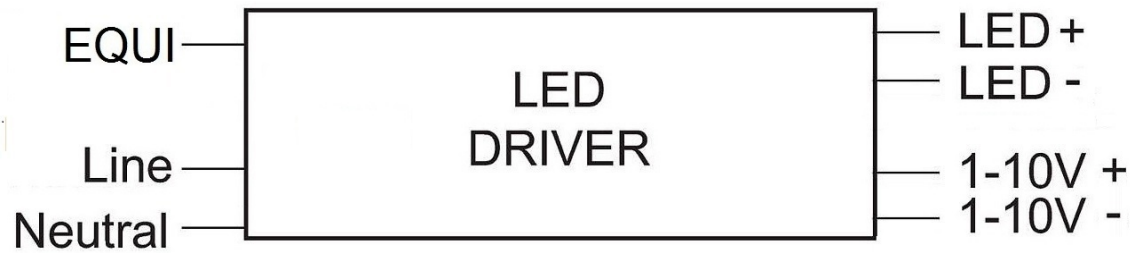
| Specification item | Value             | Unit | Condition                                             |
|--------------------|-------------------|------|-------------------------------------------------------|
| Control method     | 1-10V, Dynadimmer |      | Output current amplitude dimming, 1-10V acc. IEC60929 |
| Dimming range      | 10...100          | %    | Default curve: 1-8V                                   |
| Galvanic Isolation | Double            |      |                                                       |

## Logistical data

| Specification item | Value                               |
|--------------------|-------------------------------------|
| Product name       | Xi LP 75W 0.3-1.0A S1 230V S240 sXt |
| Order code         | 871869648158500                     |
| Logistic code 12NC | 9290 009 63306                      |
| EAN3               | 8718696481592                       |
| Pieces per box     | 10                                  |

## Wiring & Connections

| Specification item         | Value     | Unit            | Condition                                            |
|----------------------------|-----------|-----------------|------------------------------------------------------|
| Input wire cross-section   | 0.5...2.5 | mm <sup>2</sup> | WAGO804, solid / stranded wire                       |
|                            | 14...20   | AWG             | WAGO804, solid / stranded wire                       |
| Input wire strip length    | 10...11   | mm              |                                                      |
| Output wire cross-section  | 0.2...1.5 | mm <sup>2</sup> | WAGO250 (3.5 mm), solid / stranded wire              |
|                            | 16...24   | AWG             | WAGO250 (3.5 mm), solid / stranded wire              |
| Output wire strip length   | 8.5...9.5 | mm              |                                                      |
| Dimming wire cross-section | 0.2...1.5 | mm <sup>2</sup> | WAGO250 (3.5 mm), solid / stranded wire              |
|                            | 16...24   | AWG             | WAGO250 (3.5 mm), solid / stranded wire              |
| Dimming wire strip length  | 8.5...9.5 | mm              |                                                      |
| Maximum cable length       | 2500      | mm              | Total length of wiring including LED module, one way |

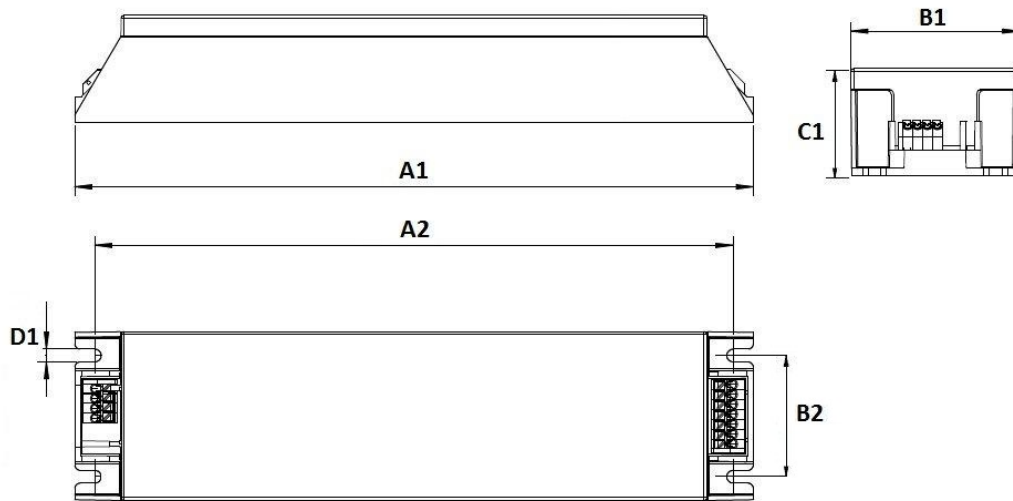


## Insulation

| Insulation | Mains  | EQUI   | LED    | 1-10V  |
|------------|--------|--------|--------|--------|
| Mains      |        | Double | Double | Basic  |
| EQUI       | Double |        | Basic  | Double |
| LED        | Double | Basic  |        | Double |
| 1-10V      | Basic  | Double | Double |        |

## Dimensions and weight

| Specification item        | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1)               | 240   | mm   |           |
| Width (B1)                | 59.7  | mm   |           |
| Width (B2)                | 42.9  | mm   |           |
| Height (C1)               | 37.8  | mm   |           |
| Fixing hole diameter (D1) | 4.5   | mm   |           |
| Fixing hole distance (A2) | 226   | mm   |           |
| Weight                    | 640   | gram |           |



## Operational temperatures and humidity

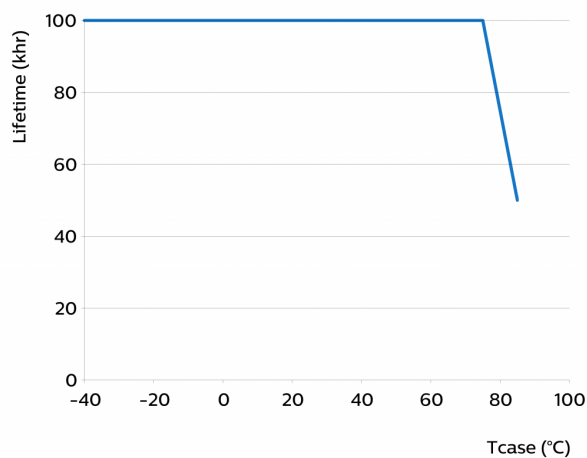
| Specification item          | Value     | Unit | Condition                                                                |
|-----------------------------|-----------|------|--------------------------------------------------------------------------|
| Ambient temperature         | -40...+55 | °C   | Higher ambient temperature allowed as long as Tcase-max is not exceeded. |
| Tcase-max                   | 85        | °C   | Maximum temperature measured at Tcase-point                              |
| Tcase-life                  | 75        | °C   | Measured at Tcase-point                                                  |
| Maximum housing temperature | 130       | °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    | 100,000 | hours | Measured temperature at $T_{case}$ -point is $T_{case}$ -life.<br>Maximum failures = 10% |



## Programmable features

| Specification item                 | Value     | Remark               | Condition                          |
|------------------------------------|-----------|----------------------|------------------------------------|
| Set output current (AOC)           | SimpleSet | See Design-in guide. | Default output current: = 700 mA   |
| Driver Temperature Limit (DTL)     | Yes       |                      |                                    |
| Constant Lumen Over Lifetime (CLO) | Yes       |                      |                                    |
| Diagnostics                        | Yes       |                      |                                    |
| 1-10V minimum dim level            | Yes       |                      |                                    |
| Integrated Dynadimmer              | Yes       |                      | 5-step, no light turn-off possible |

## Features

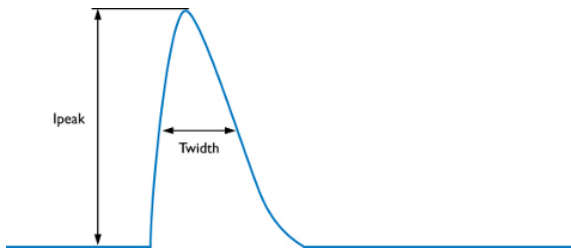
| Specification item                          | Value    | Remark | Condition            |
|---------------------------------------------|----------|--------|----------------------|
| Open load protection                        | Yes      |        | Automatic recovering |
| Short circuit protection 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

## Certificates and standards

| Specification item                     | Value                             |
|----------------------------------------|-----------------------------------|
| Approval marks                         | CB / CCC / CE / ENEC / RCM / TISI |
| Ingress Protection classification (IP) | 20                                |

## Inrush current

| Specification item         | Value     | Unit    | Condition                                      |
|----------------------------|-----------|---------|------------------------------------------------|
| Inrush current $I_{peak}$  | 46        | A       | Input voltage 230V                             |
| Inrush current $T_{width}$ | 250       | $\mu s$ | Input voltage 230V, measured at 50% $I_{peak}$ |
| Drivers / MCB 16A type B   | $\leq 11$ | 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 touch current (ins. Class II)               | 0.34  | mA peak | Acc. IEC61347-1. LED module contribution not included |
| Typical protective conductor current (ins. Class I) | 0.24  | mA rms  | Acc. IEC61347-1. LED module contribution not included |

## Surge immunity

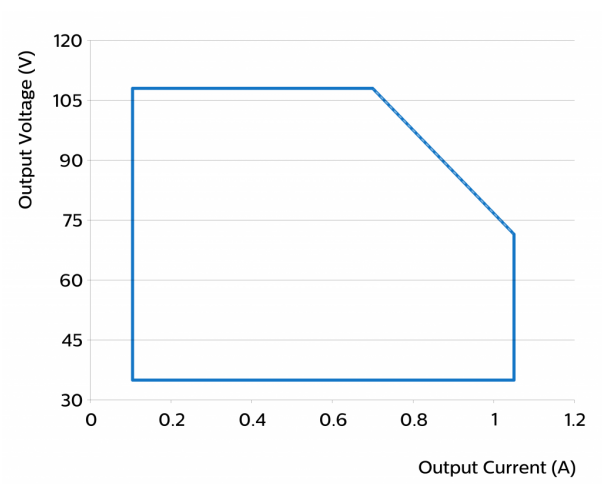
| Specification item                  | Value | Unit | Condition                                                                    |
|-------------------------------------|-------|------|------------------------------------------------------------------------------|
| Mains surge immunity (diff. mode)   | 6     | kV   | L-N acc. IEC61000-4-5. 2 Ohm 1.2/50us, 8/20us                                |
| Mains surge immunity (comm. mode)   | 10    | kV   | L/N - EQUI 10kV acc. EN61547; 8kV acc. IEC61000-4-5, 12 Ohm 1.2/50us, 8/20us |
| Control surge immunity (diff. mode) | 0.5   | kV   | 1-10V + - acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us                         |
| Control surge immunity (comm. mode) | 6     | kV   | 1-10V - L/N acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us                      |
| Control surge immunity (comm. mode) | 2.5   | kV   | 1-10V - EQUI acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us                     |

## Additional information

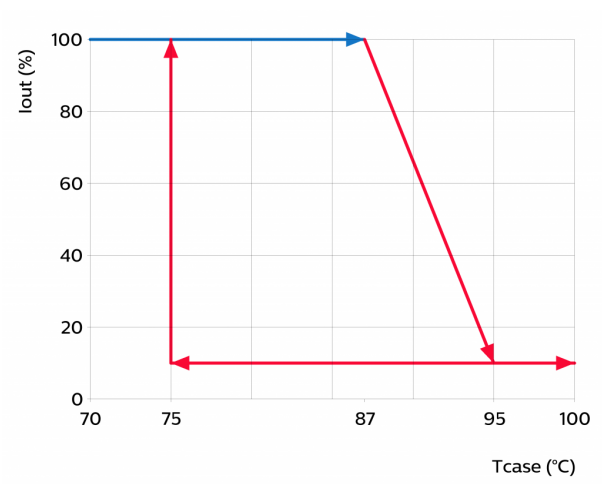
| Specification item | Default setting | Remark | Condition |
|--------------------|-----------------|--------|-----------|
| AOC                | 700             | mA     |           |
| CLO                | OFF             |        |           |
| Dynadimmer         | OFF             |        |           |
| 1-10V              | ON              |        |           |

Graphs

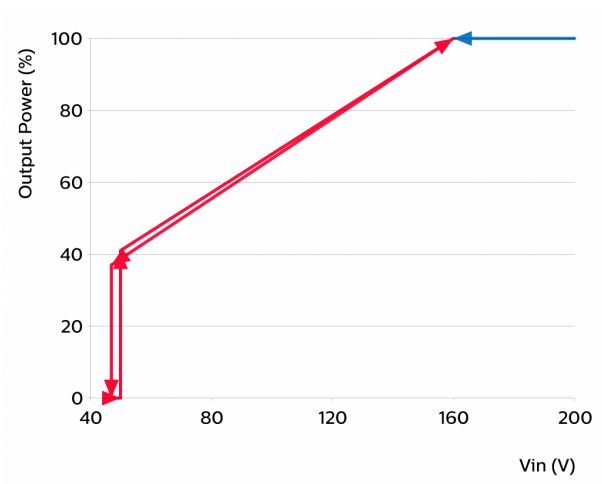
Operating window



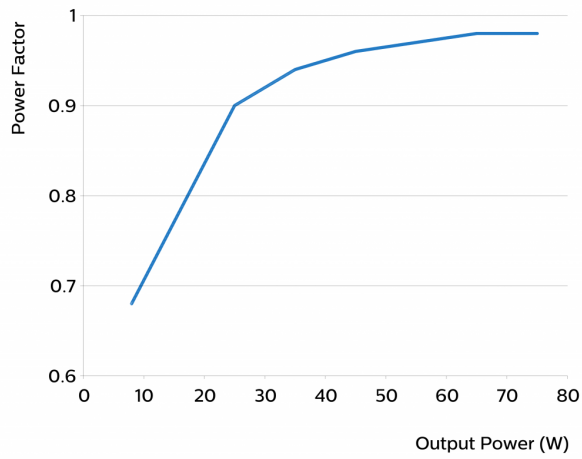
Thermal Guard



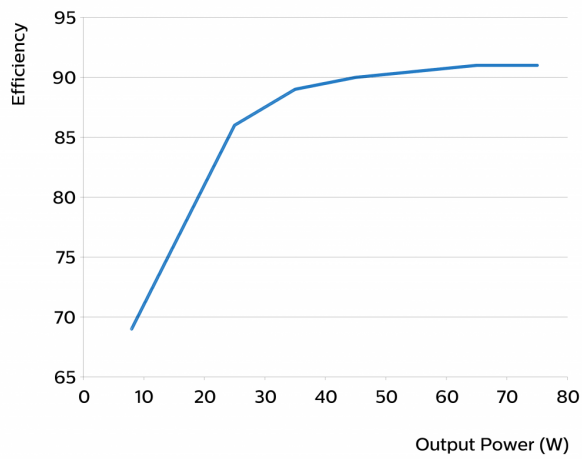
Mains Guard



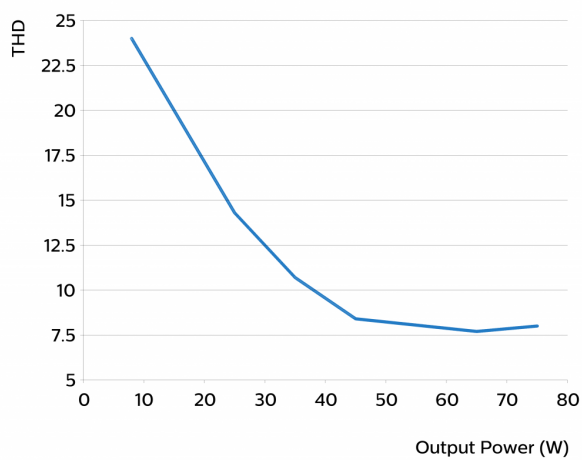
### Power factor versus output power



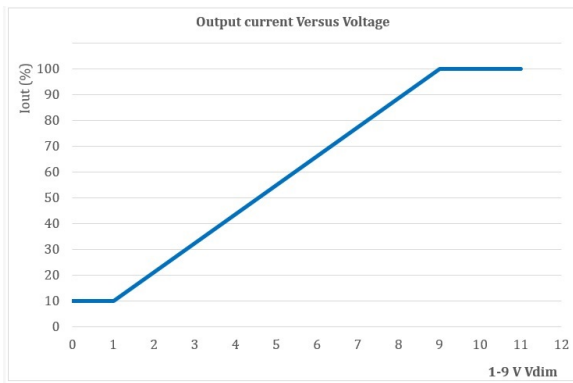
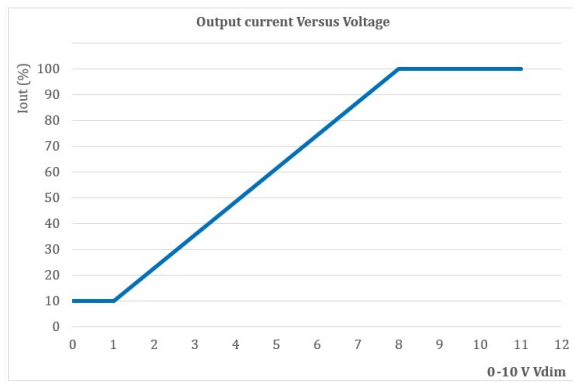
### Efficiency versus output power



### THD versus output power







©2019 Signify Holding, IBRS 10461, 5600 VB, NL. All rights reserved.

The information provided herein is subject to change without notice. Signify does not give any representation or warranty as to the accuracy or completeness of the information included herein and shall not be liable for any action in reliance thereon. The information presented in this document is not intended as any commercial offer and does not form part of any quotation or contract, unless otherwise agreed by Signify.

Philips and the Philips Shield Emblem are registered trademarks of Koninklijke Philips N.V. All other trademarks are owned by Signify Holding or their respective owners.

Date of release: April 19, 2019 v3

[www.philips.com/oem](http://www.philips.com/oem)