PHILIPS

Xitanium

LED driver

Datasheet

# Xitanium LITE Prog LED Xtreme drivers

## Xi LP 40W 0.2-0.7A S1 230V S175 sXt

### 9290 009 30706

**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

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## 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 | 0.2 | A | @ rated output power @ rated input voltage |
| Max. input current | 0.21 | A | @ rated output power @ minimum performance input voltage |
| Rated input power | 46 | 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 | 89 | % | @ rated output power @ rated input voltage @ max. Uout |
| Input voltage AC range | 80…264 | $V_{ac}$ | Safety operational range; see MainsGuard graph |
| Input frequency AC range | 45…66 | Hz | Safety operational range |
| Isolation input to output | SELV | | |

## Electrical output data

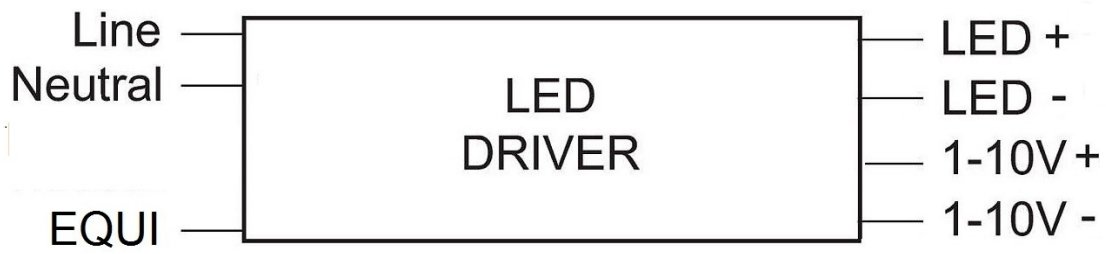
| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Regulation method | Constant Current | | |
| Output voltage | 23…77 | $V_{dc}$ | |
| Output voltage max. | 90 | V | Maximum voltage at open load |
| Output current | 0.05…0.7 | A | |
| Output current min programmable | 200 | mA | |
| Output current min dimming | 50 | mA | |
| Output current tolerance ± | 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average < 3kHz |
| Output current ripple HF | ≤ 4 | % | |
| Output $P_{st}^{LM}$ | ≤ 0.04 | | In entire operating window |
| Output SVM | ≤ 0.07 | | In entire operating window |
| Output power | 1.3…40 | W | |

## Electrical data controls input

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Control method | 1-10V, Dynadimmer | | Output current amplitude dimming, 1-10V acc. IEC60929. Please refer to design-in guide at www.philips.com/oem for more controllability details. |
| Dimming range | 10…100 | % | Default curve: 1-8V |
| Isolation controls input to output | Basic | | acc. IEC61347-1 |

## Wiring and Connections

| Specification item | Value | Unit | Type |
|---|---|---|---|
| Input wire cross-section | 0.5…1.5 / 20…16 | $mm^2$ / AWG | solid / stranded wire |
| Input wire strip length | 8.5…9.5 | mm | |
| Output wire cross-section | 0.5…1.5 / 20…16 | $mm^2$ / AWG | solid / stranded wire |
| Output wire strip length | 8.5…9.5 | mm | |
| Control wire cross-section | 0.5…1.5 / 20…16 | $mm^2$ / AWG | solid / stranded wire |
| Control wire strip length | 8.5…9.5 | mm | |
| Maximum cable length | 2.5 | m | CISPR15: between driver and LED module |

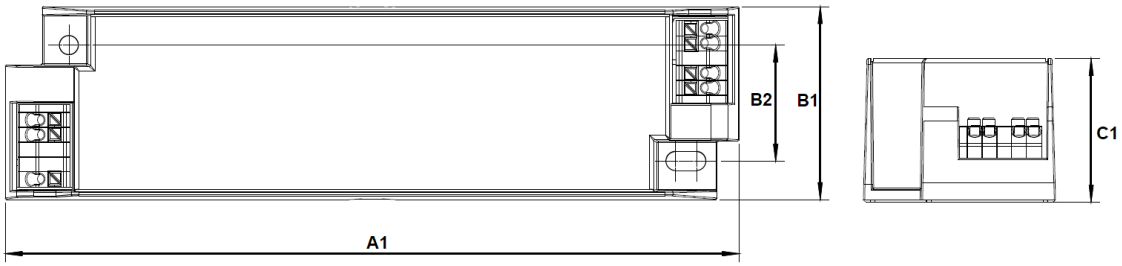



## Insulation

| Insulation per IEC61347-1 | Mains | EQUI | LED | 1-10V |
|---|---|---|---|---|
| Mains | | Double | SELV | Basic |
| EQUI | Double | | Basic | Basic |
| LED | SELV | Basic | | Basic |
| 1-10V | Basic | Basic | Basic | |

## Dimensions and weight

| Specification item | Value | Unit | Tolerance (mm) |
|---|---|---|---|
| Length (A1) | 175 | mm | |
| Mounting hole distance (A2) | 144 | mm | |
| Width (B1) | 46 | mm | |
| Width (B2) | 27.35 | mm | |
| Height (C1) | 34 | mm | |
| Mounting hole diameter (D1) | 4.5 | mm | |
| Weight | 172 | gram | |




## Logistical data

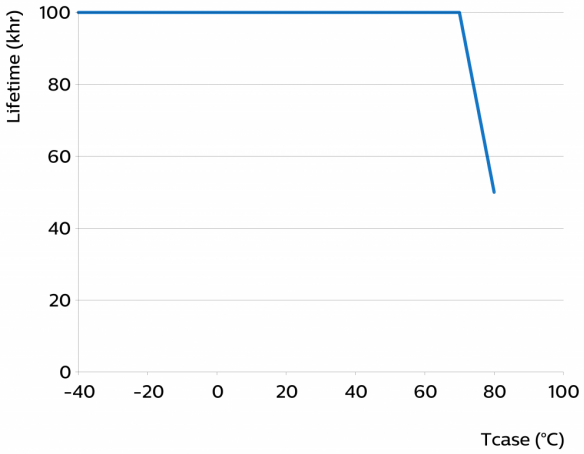
| Specification item | Value |
|---|---|
| Product name | Xi LP 40W 0.2-0.7A S1 230V S175 sXt |
| EOC | 871869647032900 |
| Logistic code 12NC | 9290 009 30706 |
| EAN1 (GTIN) | 8718696470329 |
| EAN3 (box) | 8718696470336 |
| Pieces per box | 20 |

## 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 | 80 | °C | Maximum temperature measured at $T_{case}$-point |
| Tcase-life | 70 | °C | Measured at $T_{case}$-point |
| Maximum housing temperature | 130 | °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% |




## Storage temperature and humidity

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Ambient temperature | -40...+80 | °C | |
| Relative humidity | 5...95 | % | Non-condensing |

## Programmable features

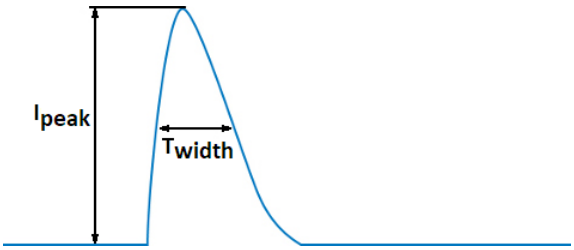
| Specification item | Available | Default setting | Condition |
|---|---|---|---|
| Set Adjustable Output Current (AOC) | SimpleSet | 700 mA | |
| Constant Light Output (CLO) LITE | Yes | OFF | |
| 1-10V | Yes | ON | |
| Integrated Dynadimmer | Yes | OFF | 5-step, no light turn-off possible |
| Min Dim Level | Yes | 10 % | |
| OEM Write Protection (OWP) | Yes | OFF | |

## 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 and II | | per IEC60598 |
| Overtemperature protection | Yes | | Automatic recovering |
| Diagnostics | Yes | | |

## Inrush current

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Inrush current | 16/240 | A/µs | Input voltage 230V |
| Drivers / MCB 16A type B | ≤ 25 | pcs | Indicative value |




Please refer to the driver design in guide if you use other MCB-types.

## Driver touch current / protective conductor current

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Typical Touch Current (ins. Class II) | 0.3 | mA peak | Acc. IEC61347-1. LED module contribution not included |
| Typical Protective Conductor Current (ins. Class I) | 0.2 | mA rms | Acc. IEC60598-1. LED module contribution not included |

## Surge immunity

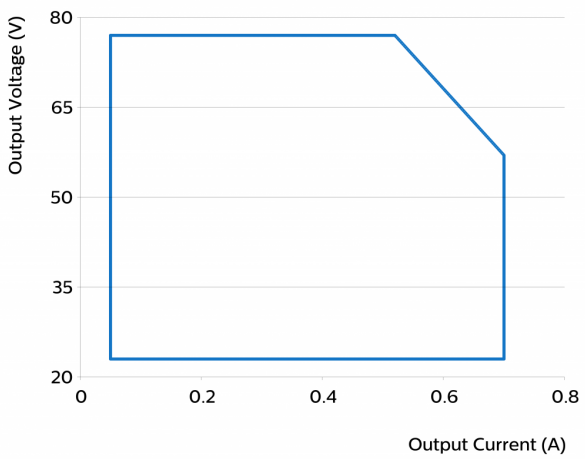
| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Mains surge immunity (diff. mode) | 6 | kV | L-N acc. IEC61000-4-5. 2 Ohm 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 10 | kV | L/N - EQUI 10kV acc. EN61547; 8kV acc. IEC61000-4-5, 12 Ohm 1.2/50us,8/20us |
| Control surge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

## Application Info

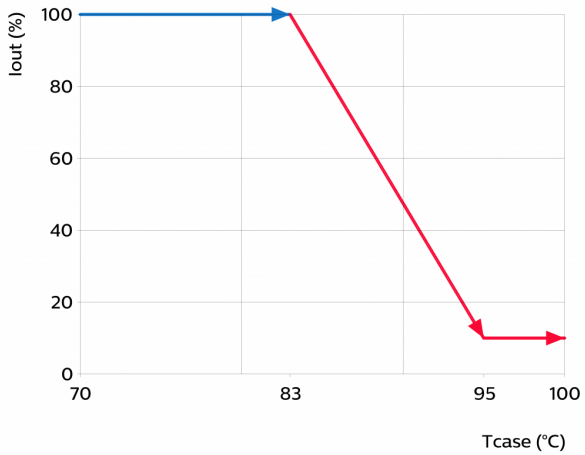
| Specification item | Value |
|---|---|
| Approval marks | CCC / CE / Double-insulated Built-In / EAC / ENEC / SELV / UA / WEEE |
| Ingress Protection classification (IP) | 20 |
| Application | Outdoor |
| Mounting Type | Built-in |

## Graphs

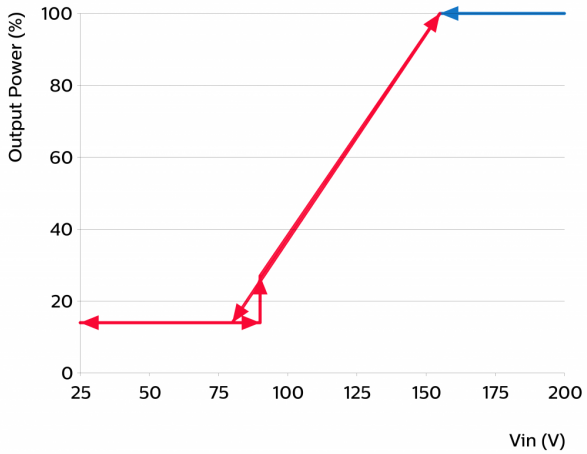
### Operating window



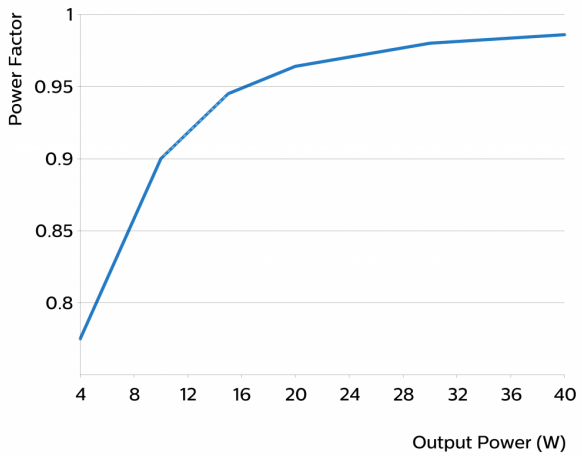

### Thermal Guard



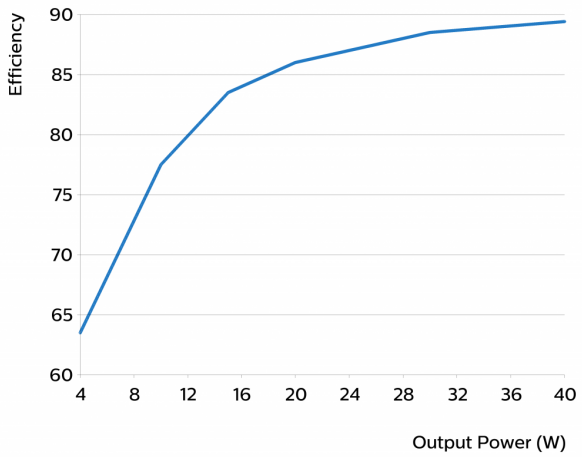

### Mains Guard



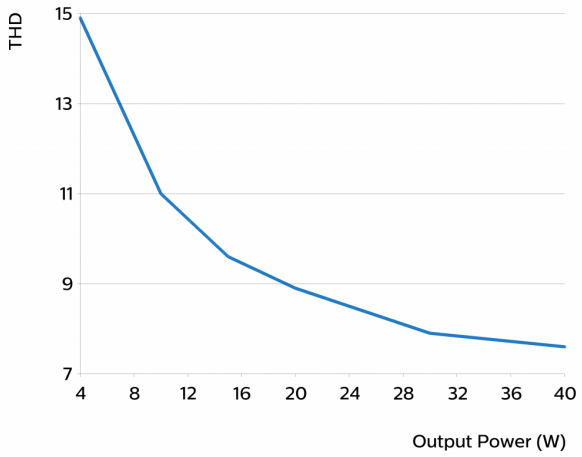
## Power factor versus output power



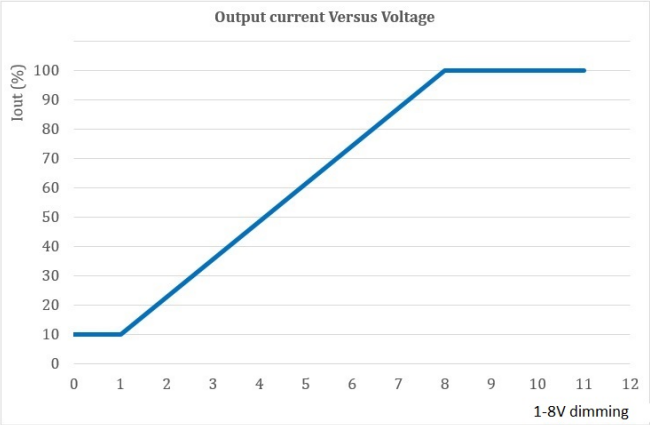

## Efficiency versus output power

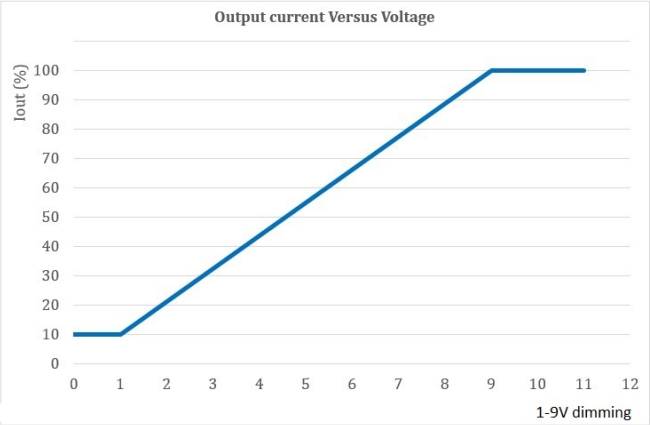



## THD versus output power



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

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