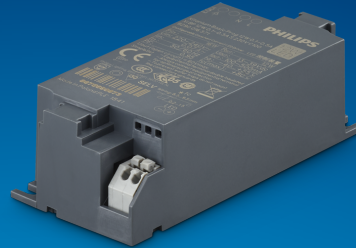


PHILIPS

Xitanium

LED driver



Datasheet

Xitanium Basic Prog LED Outdoor drivers

Xi BP 12W 0.1-0.5A S 230V C100

9290 016 57106

Xitanium Basic Prog LED Outdoor drivers

Philips Xitanium Basic Programmable LED drivers are offering a basic feature set and high performance, making it a preferred choice for various outdoor applications. The portfolio offers 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 compact form factors with a basic feature set, which offer high value for both OEM customers and end-users. The key features AOC (Adjustable Output Current) and OWP (Over Write Protection) are programmable via SimpleSet[®], an easy and fast way to configure the driver without the need to power the driver. A great combination with MultiOne Basic configuration software. The products can replace the existing single current outdoor LED drivers and will bring significant improvement in programming, assembly into a luminaire, electrical performance, and less variety in logistical codes.

Benefits

- Outdoor robustness, offering peace of mind and lower maintenance costs
- Basic configurable features covering many applications
- Easy to design-in and install for Insulation Class I and Class II applications
- Enabling integration in small(er) size luminaires due to compact form factor(s)

Features

- SimpleSet[®], wireless configuration interface
- High surge immunity
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating window (AOC)
- Over Write Protection (OWP)

Application

- Road and street lighting
- Park lighting (e.g. BP 12W driver for bollards, landscape fixture, wall mounts)
- Residential lighting
- Architectural 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 | 0.07 | A | @ rated output power @ rated input voltage |
| Max. input current | 0.08 | A | @ rated output power @ minimum performance input voltage |
| Rated input power | 16 | 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 | 81 | % | @ rated output power @ rated input voltage @ max. U _{out} |
| Input voltage AC range | 90...264 | V _{ac} | Safety operational range |
| Input frequency AC range | 45...66 | Hz | Safety operational range |
| Isolation input to output | SELV | | |

Electrical output data

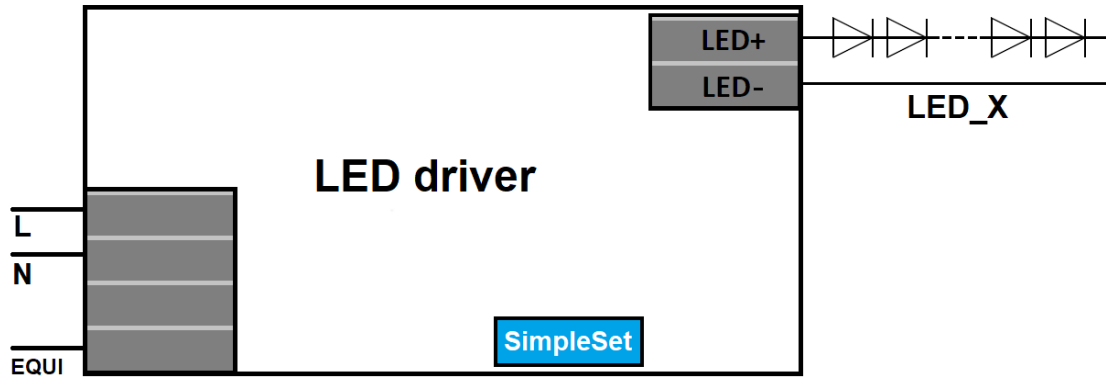
| Specification item | Value | Unit | Condition |
|--------------------------------------|------------------|-----------------|----------------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 13...39 | V _{dc} | |
| Output voltage max. | 60 | V | Maximum voltage at open load |
| Output current | 0.1...0.5 | A | |
| Output current min programmable | 100 | mA | |
| Output current tolerance ± | 6 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average @ < 3kHz |
| Output current ripple HF | ≤ 4 | % | |
| Output P _{st} ^{LM} | ≤ 0.09 | | In entire operating window |
| Output SVM | ≤ 0.07 | | In entire operating window |
| Output power | 2...12 | W | |

Electrical data controls input

| Specification item | Value | Unit | Condition |
|--------------------|-------|------|-------------------------------|
| Control method | Fixed | | No control options available. |

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 | |
| Maximum cable length | 1.5 | m | CISPR15: between driver and LED module |

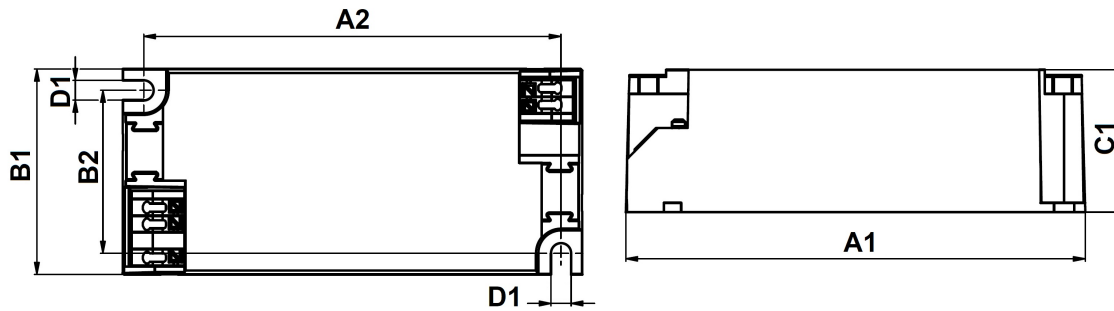


Insulation

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

Dimensions and weight

| Specification item | Value | Unit | Tolerance (mm) |
|-----------------------------|-------|------|----------------|
| Length (A1) | 97.2 | mm | |
| Mounting hole distance (A2) | 88.3 | mm | |
| Width (B1) | 43.2 | mm | |
| Width (B2) | 34.3 | mm | |
| Height (C1) | 30 | mm | |
| Mounting hole diameter (D1) | 4.2 | mm | |
| Weight | 90 | gram | |



Logistical data

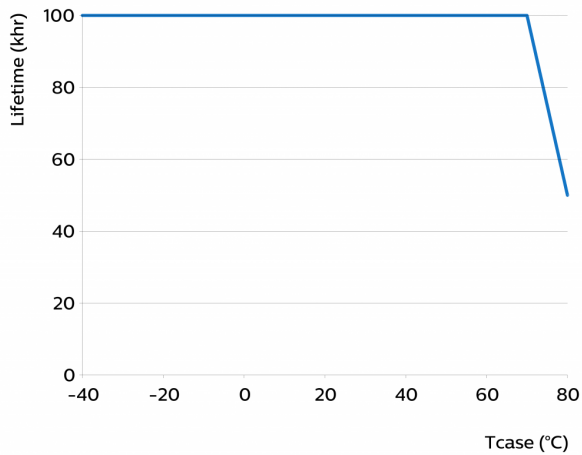
| Specification item | Value |
|--------------------|--------------------------------|
| Product name | Xi BP 12W 0.1-0.5A S 230V C100 |
| EOC | 871869961822300 |
| Logistic code 12NC | 9290 016 57106 |
| EAN1 (GTIN) | 8718699618223 |
| EAN3 (box) | 8718699618230 |
| Pieces per box | 20 |

Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|------|---|
| Ambient temperature | -40...+55 | °C | Higher ambient temperature allowed as long as 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 | 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

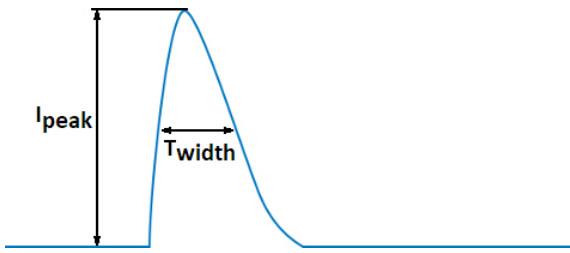
| Specification item | Available | Default setting | Condition |
|-------------------------------------|-----------|-----------------|-----------|
| Set Adjustable Output Current (AOC) | SimpleSet | 300 mA | |
| OEM Write Protection (OWP) | Yes | OFF | |

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 |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-----------|---------|--|
| Inrush current I_{peak} | 5.5 | A | Input voltage 230V |
| Inrush current T_{width} | 20 | μ s | Input voltage 230V, measured at 50% I_{peak} |
| Drivers / MCB 16A type B | ≤ 48 | 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) | 0.3 | mA peak | Acc. IEC61347-1. LED module contribution not included |
| Typical Protective Conductor Current (ins. Class I) | 0.22 | mA rms | Acc. IEC60598-1. LED module contribution not included |

Surge immunity

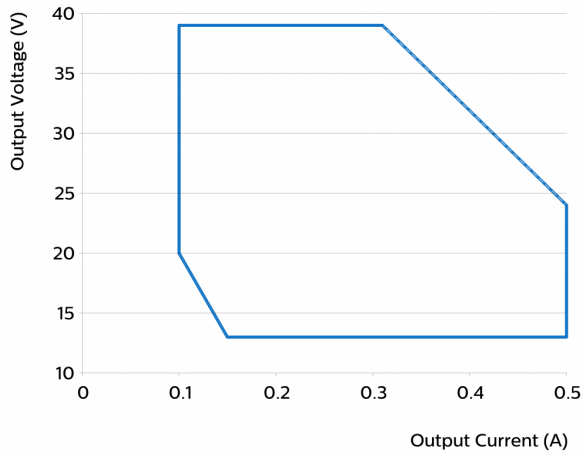
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 4 | kV | L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 6 | kV | L/N - EQUI: acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us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

Application Info

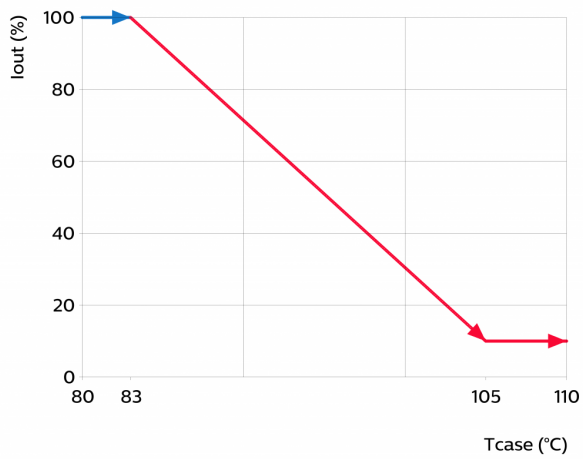
| Specification item | Value |
|--|--|
| Approval marks | CCC / CE / Double-insulated Built-In / EAC / ENEC / SELV / UA / WEEE |
| Ingress Protection classification (IP) | 20 |
| Application | Outdoor |
| Mounting Type | Built-in |

Graphs

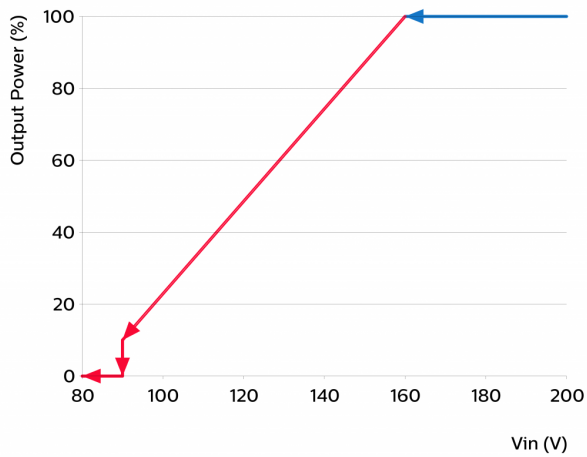
Operating window



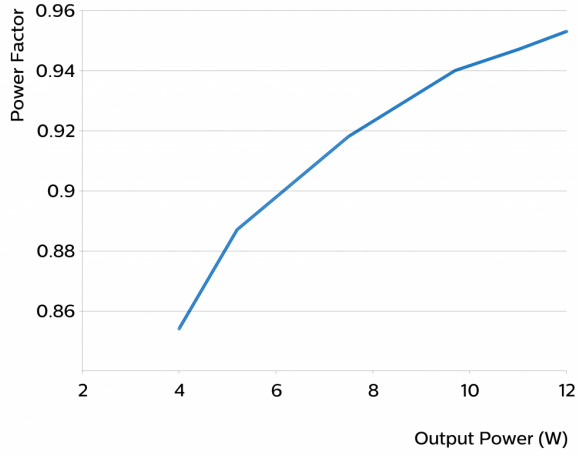
Thermal Guard



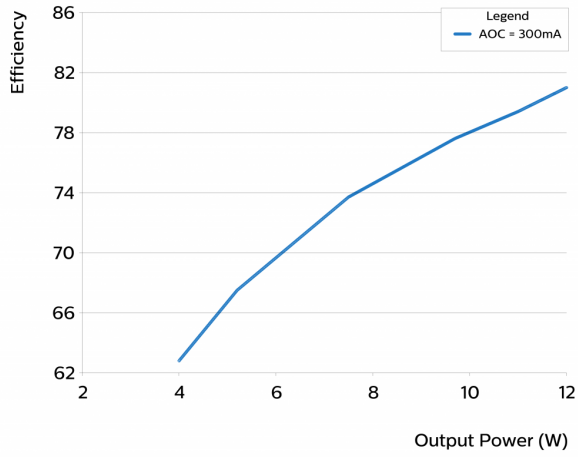
Mains Guard



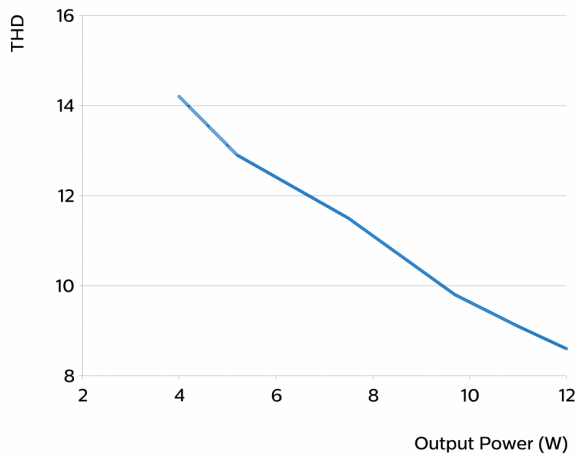
Power factor versus output power



Efficiency versus output power



THD versus output power





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