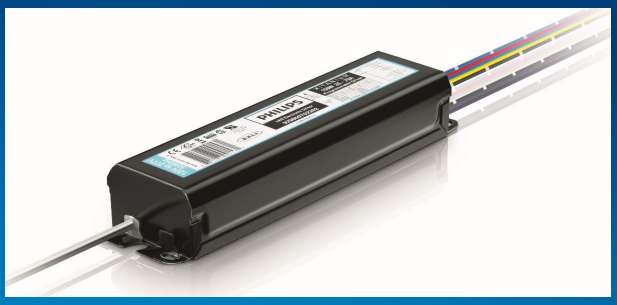
PHILIPS

Xitanium

LED driver



Datasheet

# Xitanium Prog/Prog+ LED Xtreme drivers

## Xitanium 75W 0.35-0.70A GL Prog sXt

## 9290 007 02302

### Xitanium Prog/Prog+ LED Xtreme drivers

Philips Xitanium Prog/Prog+ Programmable LED drivers are specifically designed to deliver the highest performance, protection and configurability.  The portfolio offers both central and standalone dimming protocols further increasing the energy savings and CO2 reductions achieved with LED lighting. The Xtreme technology ensures maximum robustness and protection combined with a very long lifetime.

### Benefits

- Ultimate robustness, offering peace of mind and lower maintenance costs
- Fully programmable LED-drivers designed for the new digital and connected lighting world
- Extended diagnostics via MultiOne
- Easy to design-in, configure and install
- Energy savings through high efficiency and via multiple dimming options

### Features

- High surge protection (CM/DM)
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows (AOC)
- Multiple control interfaces: DALI, 1-10V (Prog+ : also AmpDim)
- Autonomous dimming via integrated DynaDimmer
- Suitable for DC operation
- Thermal protection for driver and for module (MTP)
- Constant Light Output (CLO)
- Adjustable Start-up Time (AST)
- End-Of-Life indicator (EOL)

### Application

- Road and street lighting
- Area lighting
- Industrial lighting

August 2021

## Electrical input data

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Rated input voltage range | 108…305 | $V_{ac}$ | Performance range |
| Rated input voltage | 230 | $V_{ac}$ | |
| Rated input frequency range | 47…63 | Hz | Performance range |
| Rated input current | 0.37 | A | @ rated output power @ rated input voltage |
| Max. input current | 0.79 | A | @ rated output power @ minimum performance input voltage |
| Rated input power | 85 | W | @ rated output power @ rated input voltage |
| Power factor | 0.97 | | @ rated output power @ rated input voltage |
| Total harmonic distortion | 9 | % | @ rated output power @ rated input voltage |
| Efficiency | 91.5 | % | @ rated output power @ 230Vac input voltage @ max. Uout |
| Rated input voltage DC range | 186…250 | $V_{dc}$ | Performance range |
| Rated input current DC range | 0.47 | $A_{dc}$ | |
| Input voltage AC range | 108…305 | $V_{ac}$ | Operational range |
| Input frequency AC range | 45…66 | Hz | Operational range |
| Input voltage DC range | 168…275 | $V_{dc}$ | Operational range |
| Standby Power | 0.48 | W | |
| Isolation input to output | Basic | | |

## Electrical output data

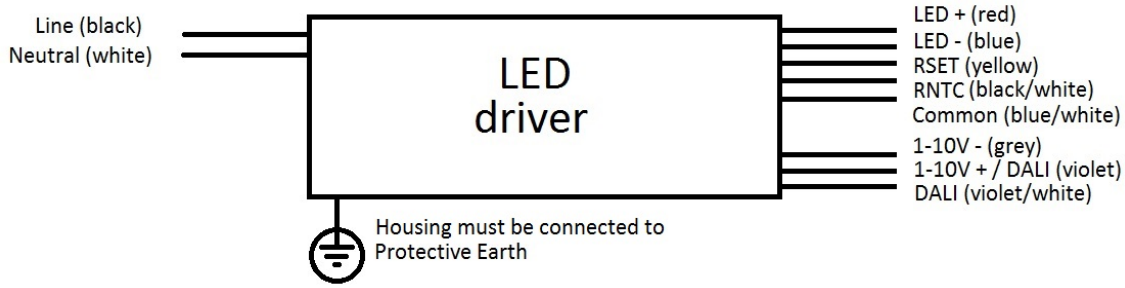
| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Regulation method | Constant Current | | |
| Output voltage | 80…152 | $V_{dc}$ | |
| Output voltage max. | 160 | V | Maximum voltage at open load |
| Output current | 0.05…0.7 | A | |
| Output current min programmable | 200 | mA | |
| Output current min dimming | 50 | mA | |
| Output current tolerance ± | 5 | % | |
| Output current ripple LF | ≤ 15 | % | Ripple = peak / average, < 3kHz |
| Output current ripple HF | ≤ 15 | % | |
| Output power | 4.5…75 | W | |

## Electrical data controls input

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

## Wiring and Connections

| Specification item | Value | Unit | Type |
|---|---|---|---|
| Input wire cross-section | 0.82 / 18 | $mm^2$ / AWG | solid wire, double-insulated |
| Input wire strip length | 8...12 | mm | |
| Output wire cross-section | 0.82 / 18 | $mm^2$ / AWG | solid wire, double-insulated |
| Output wire strip length | 8...12 | mm | |
| Control wire cross-section | 0.82 / 18 | $mm^2$ / AWG | solid wire, double-insulated |
| Control wire strip length | 8...12 | mm | |
| Maximum cable length | 10 | m | CISPR15: between driver and LED module |
| Maximum NTC output cable length | 0.6 | m | |

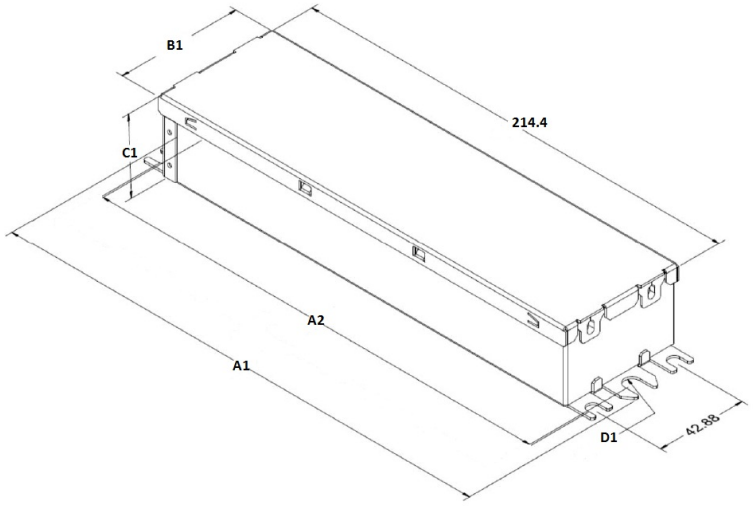



## Insulation

| Insulation per IEC61347-1 | Mains | LED + NTC | DALI/1-10V | Housing |
|---|---|---|---|---|
| Mains | | Basic | Basic | Double |
| LED + NTC | Basic | | Basic | Double |
| DALI/1-10V | Basic | Basic | | Double |
| Housing | Double | Double | Double | |

## Dimensions and weight

| Specification item | Value | Unit | Tolerance (mm) |
|---|---|---|---|
| Length (A1) | 240.5 | mm | |
| Mounting hole distance (A2) | 226 | mm | |
| Width (B1) | 59.8 | mm | |
| Width (B2) | 42.88 | mm | |
| Height (C1) | 37.6 | mm | |
| Mounting hole diameter (D1) | 6 | mm | |
| Weight | 1270 | gram | |




## Logistical data

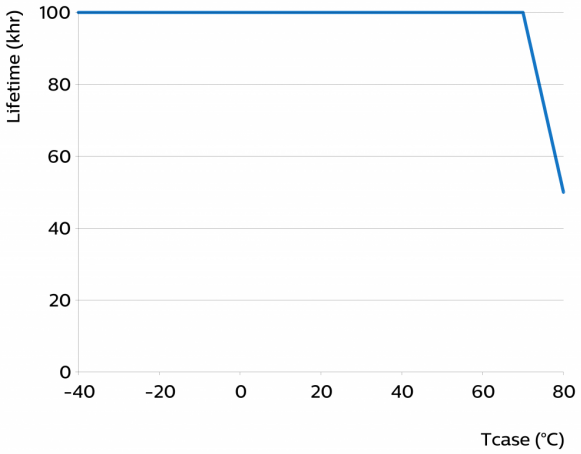
| Specification item | Value |
|---|---|
| Product name | Xitanium 75W 0.35-0.70A GL Prog sXt |
| EOC | 871829111887900 |
| Logistic code 12NC | 9290 007 02302 |
| EAN1 (GTIN) | 8718291118879 |
| EAN3 (box) | 8718291999799 |
| Pieces per box | 10 |

## 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 | 100 | °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

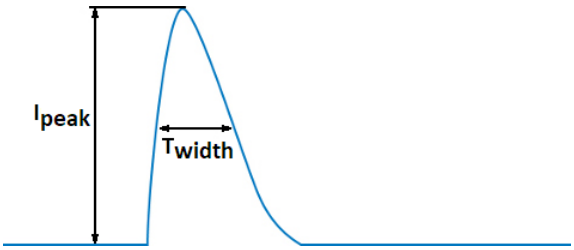
| Specification item | Available | Default setting | Condition |
|---|---|---|---|
| Set Adjustable Output Current (AOC) | Programmable, Rset1 | 700 mA | |
| LED Module Temperature Protection (MTP) | Yes | ON | |
| Driver Temperature Limit (DTL) | No | | |
| Adjustable Light Output (ALO) | No | | |
| Constant Light Output (CLO) | Yes | OFF | |
| Adjustable Start-up Time (AST) | Yes | 1 s | |
| DALI 253 M | No | | |
| 1-10V | Yes | ON | |
| Integrated Dynadimmer | Yes | OFF | 5-step, light turn-off possible, Dynadimmer and DALI cannot be used simultaneously. |
| LineSwitch single-step | No | | |
| AmpDim | No | | |
| Min Dim Level | Yes | 10 % | |
| DC emergency (DCemDim) | No | | EOFi = 100%. No external DC rated fuse required. |
| DALI control supported at DC operation | Yes | ON | |
| End Of Life indicator (EOL) | Yes | OFF | |
| OEM Write Protection (OWP) | No | | |
| Luminaire Info (DALI part 251) | No | | |

## 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 | | per IEC60598 |
| Overtemperature protection | Yes | | Automatic recovering |
| Energy metering (DALI part 252) | No | | |
| Diagnostics | Yes | | |
| Diagnostics (DALI part 253) | No | | |

## Inrush current

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Inrush current | 108 | A | Input voltage 230V |
| Inrush peak width | 140 | µs | Input voltage 230 V, measured at 50% height |
| Drivers / MCB 16A type B | ≤ 7 | 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 Protective Conductor Current (ins. Class I) | 0.5 | mA rms | Acc. IEC60598-1. LED module contribution not included. LED module contribution not included |

## Surge immunity

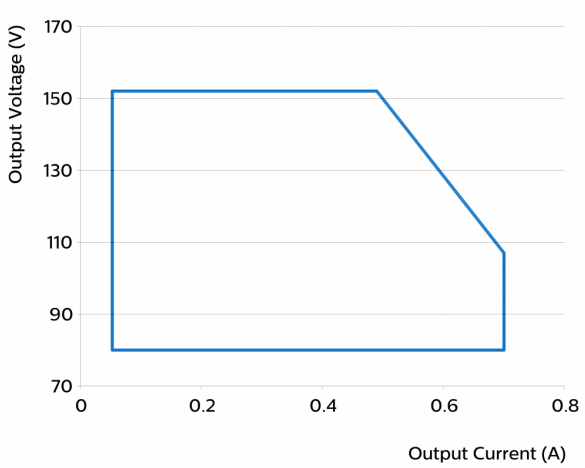
| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Mains surge immunity (diff. mode) | 3 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 3 | kV | Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us |
| Control surge immunity (diff. mode) | 0.5 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Control surge immunity (comm. mode) | 3 | kV | Acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us |
| Control surge immunity (comm. mode) | 3 | kV | Acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us |

## Application Info

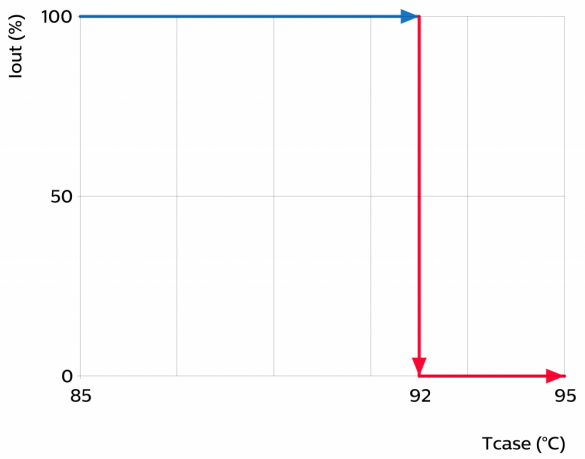
| Specification item | Value |
|---|---|
| Approval marks | CCC / CE / DALI 2 / EAC / ENEC / RCM / UA / UL Recognized US & Can / WEEE |
| Ingress Protection classification (IP) | 20 |
| Application | Outdoor |
| Mounting Type | Built-in |

## Graphs

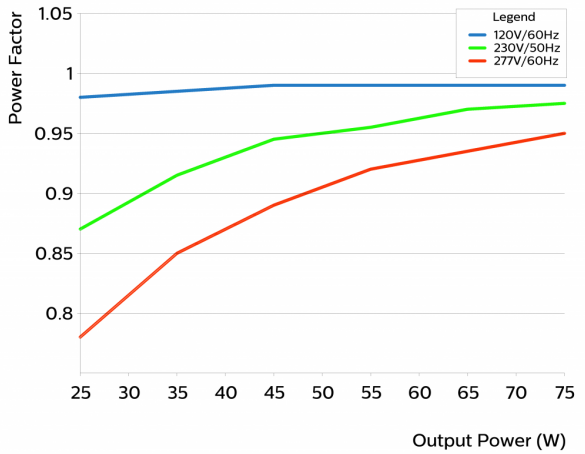
### Operating window



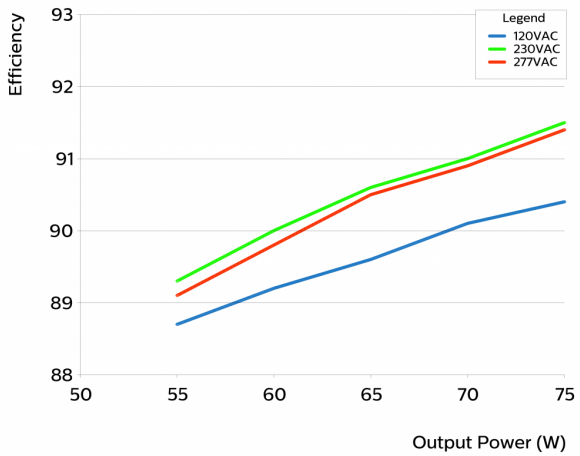

### Thermal Guard



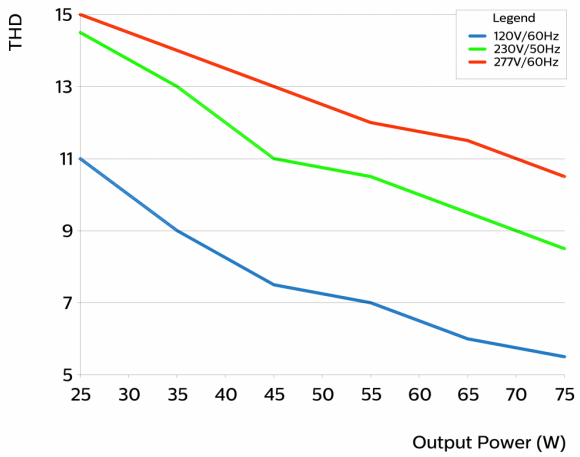

### Power factor versus output power



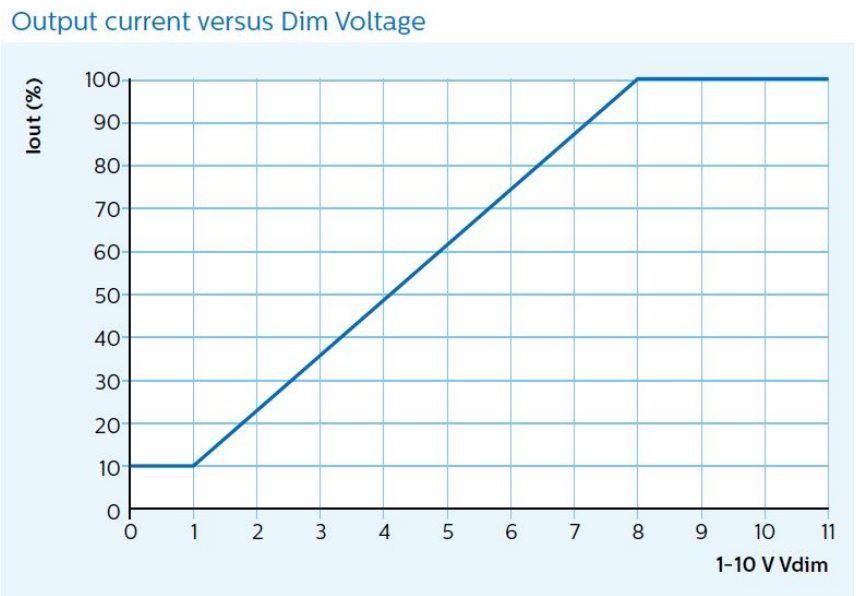
## Efficiency versus output power




## THD versus output power




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



## Notes

Installation & Application Notes:

1: By factory default, the 1-10V interface is enabled and DALI interface is disabled.
These controls are mutually exclusive.

2: Integrated Dynadimmer cannot be overruled by DALI. These controls are mutually exclusive.

3: Driver is for built-in use only and must not be exposed to the elements such as snow, water and ice or to any other chemical agent which can be expected to have an adverse effect on the driver (e.g. corrosive environments). It is the responsibility of both luminaire manufacturer and installer to prevent exposure. Common sense needs to be used in order to define the proper luminaire or application IP rating.

4: Suitable for UL Damp & Dry locations

5: IEC: driver housing is not allowed to be connected to accessible insulation Class II luminaire parts. Driver is suitable for insulation Class I application only.

6: Standard lead length on all wires: 500 +/- 30mm solid copper. Insulation rating: 105°C/600V.

7: Driver complies with the requirements of UL, CSA, CE, ENEC, CISPR15, FCC 47CFR15 Class A

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