

# PHILIPS

## Xitanium

### LED driver



## Datasheet

### Xitanium Spot / Downlight LED Drivers Single Current

Xitanium 4W 0.1A 40V TE SC 230V

9290 014 20706

Single current LED drivers for enhanced lighting performance

Reliable and cost effective Xitanium single current drivers enable luminaires to deliver high quality light over an industry standard lifetime of 50,000 hours. Specifically designed with low ripple current to address luminaire flickering issues - making this optimal for camera, scanner, and barcode operation. These drivers provide assured reliability, safety, and long-term energy savings.

#### Benefits

- Designed to operate solutions based on Chip On Board (COB) or mid-power LEDs
- Various power wattage Drivers that are related to the lumen packages/applications
- Independent-version housing design for stand-alone installations

#### Features

- Small, compact dimensions
- Fixed, SELV output
- Low ripple, low THD
- Specific current and voltage
- Fast Time to Market
- 50,000 hours lifetime

#### Application

- Public buildings (airports, cinemas, theaters, exhibition halls)
- Retail (supermarkets, shops)
- Office

## Electrical input data

| Specification item          | Value     | Unit            | Condition                                  |
|-----------------------------|-----------|-----------------|--------------------------------------------|
| Rated input voltage range   | 220...240 | V <sub>ac</sub> | Performance range                          |
| Rated input voltage         | 230       | V <sub>ac</sub> |                                            |
| Rated input frequency range | 50...60   | Hz              | Performance range                          |
| Rated input current         | 0.023     | A               | @ rated output power @ rated input voltage |
| Rated input power           | 5.25      | W               | @ rated output power @ rated input voltage |
| Power factor                | 0.9       |                 | @ rated output power @ rated input voltage |
| Total harmonic distortion   | 20        | %               | @ rated output power @ rated input voltage |
| Efficiency                  | 78.3      | %               | @ rated output power @ rated input voltage |
| Input voltage AC range      | 198...264 | V <sub>ac</sub> | Operational range                          |
| Input frequency AC range    | 45...66   | Hz              | Operational range                          |
| Isolation input to output   | SELV      |                 |                                            |

## Electrical output data

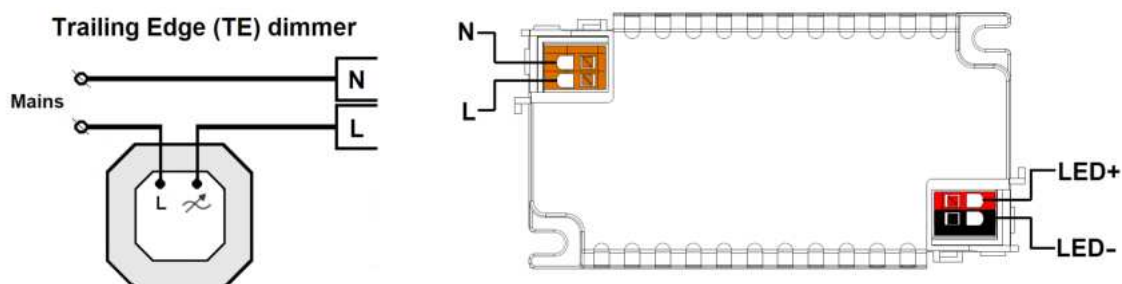
| Specification item                   | Value            | Unit            | Condition                       |
|--------------------------------------|------------------|-----------------|---------------------------------|
| Regulation method                    | Constant Current |                 |                                 |
| Output voltage                       | 29...40          | V <sub>dc</sub> |                                 |
| Output voltage max.                  | 60               | V               | Maximum output voltage (rms)    |
| Output current                       | 0.1              | A               |                                 |
| Output current min dimming           | 5                | mA              |                                 |
| Output current tolerance ±           | 5                | %               |                                 |
| Output current ripple LF             | ≤ 20             | %               | Ripple = peak / average, < 3kHz |
| Output P <sub>st</sub> <sup>LM</sup> | ≤ 0.14           |                 |                                 |
| Output SVM                           | ≤ 0.56           |                 |                                 |
| Output power                         | 2.9...4          | W               |                                 |

## Electrical data controls input

| Specification item | Value   | Unit | Condition                                                                                                             |
|--------------------|---------|------|-----------------------------------------------------------------------------------------------------------------------|
| Control method     | TE      |      | See design-in guide at <a href="http://www.philips.com/oem">www.philips.com/oem</a> for more controllability details. |
| Dimming range      | 5...100 | %    | Default range                                                                                                         |

## Wiring and Connections

| Specification item        | Value     | Unit                  | Type                                                 |
|---------------------------|-----------|-----------------------|------------------------------------------------------|
| Input wire cross-section  | 0.5...1.5 | mm <sup>2</sup> / AWG | solid / stranded wire                                |
| Input wire strip length   | 8.5...9.5 | mm                    |                                                      |
| Output wire cross-section | 0.5...1.5 | mm <sup>2</sup> / AWG | solid / stranded wire                                |
| Output wire strip length  | 8.5...9.5 | mm                    |                                                      |
| Maximum cable length      | 0.6       | m                     | Total length of wiring including LED module, one way |

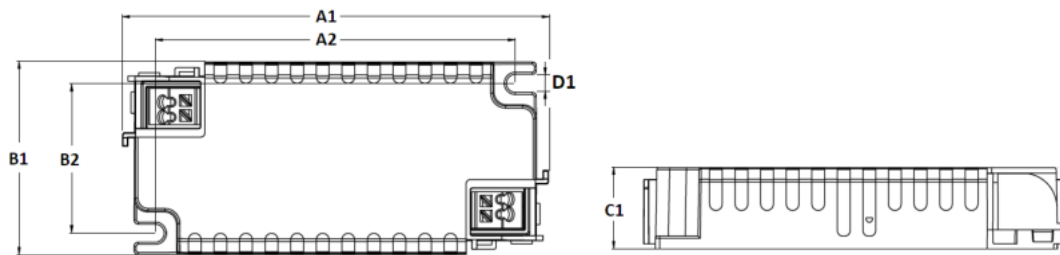


## Insulation

| Insulation per IEC61347-1 |  | Input | Output |
|---------------------------|--|-------|--------|
| Input                     |  |       | SELV   |
| Output                    |  | SELV  |        |

## Dimensions and weight

| Specification item          | Value | Unit | Tolerance (mm) |
|-----------------------------|-------|------|----------------|
| Length (A1)                 | 85    | mm   |                |
| Mounting hole distance (A2) | 69.4  | mm   |                |
| Width (B1)                  | 50    | mm   |                |
| Width (B2)                  | 40    | mm   |                |
| Height (C1)                 | 19    | mm   |                |
| Weight                      | 105   | gram |                |



## Logistical data

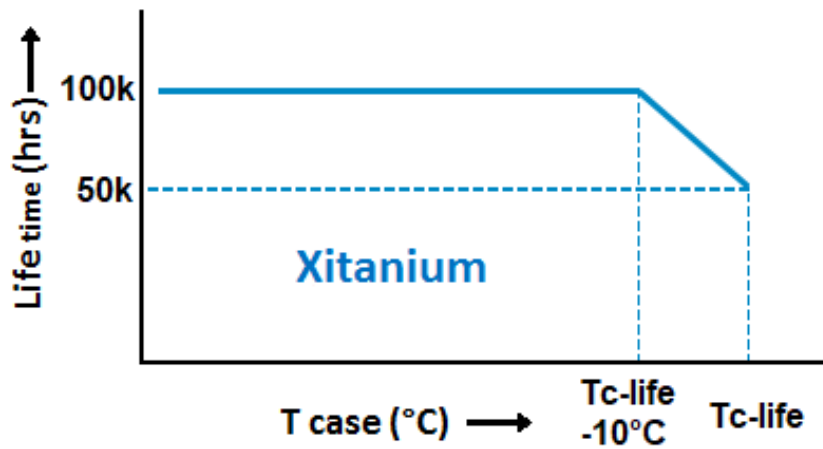
| Specification item | Value                           |
|--------------------|---------------------------------|
| Product name       | Xitanium 4W 0.1A 40V TE SC 230V |
| EOC                | 871869676558600                 |
| Logistic code 12NC | 9290 014 20706                  |
| EAN1 (GTIN)        | 8718696765586                   |
| EAN3 (box)         | 8718696765593                   |
| Pieces per box     | 50                              |

## Operational temperatures and humidity

| Specification item          | Value     | Unit | Condition                                                                           |
|-----------------------------|-----------|------|-------------------------------------------------------------------------------------|
| Ambient temperature         | -20...+50 | °C   | Higher ambient temperature allowed as long as T <sub>case-max</sub> is not exceeded |
| T <sub>case-max</sub>       | 80        | °C   | Maximum temperature measured at T <sub>case-point</sub>                             |
| T <sub>case-life</sub>      | 70        | °C   | Measured at T <sub>case-point</sub>                                                 |
| Maximum housing temperature | 110       | °C   | In case of a failure, inherent by design                                            |
| Relative humidity           | 10...90   | %    | Non-condensing                                                                      |

## Lifetime

| Specification item | Value  | Unit  | Condition                                                                 |
|--------------------|--------|-------|---------------------------------------------------------------------------|
| Driver lifetime    | 50,000 | hours | Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10% |



## Storage temperature and humidity

| Specification item  | Value     | Unit | Condition      |
|---------------------|-----------|------|----------------|
| Ambient temperature | -25...+85 | °C   |                |
| Relative humidity   | 5...95    | %    | Non-condensing |

## Programmable features

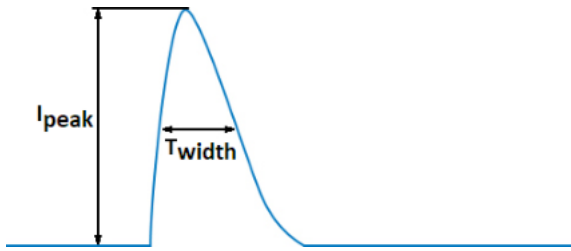
| Specification item                  | Available | Default setting | Condition                                                       |
|-------------------------------------|-----------|-----------------|-----------------------------------------------------------------|
| Set Adjustable Output Current (AOC) | No        | 100 mA          | Fixed output, dimming possible via Trailing Edge phase-cut (TE) |

## 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 | II    |  | per IEC60598         |

## Inrush current

| Specification item       | Value | Unit | Condition                                   |
|--------------------------|-------|------|---------------------------------------------|
| Inrush current           | 1     | A    | Input voltage 230V                          |
| Inrush peak width        | 17    | μs   | Input voltage 230 V, measured at 50% height |
| Drivers / MCB 16A type B | ≤ 350 | pcs  | Indicative value                            |



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

## Driver touch current / protective conductor current

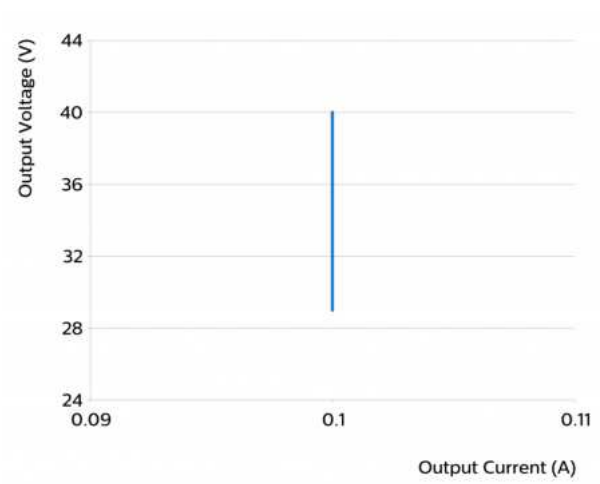
| Specification item                    | Value | Unit    | Condition                                             |
|---------------------------------------|-------|---------|-------------------------------------------------------|
| Typical Touch Current (ins. Class II) | 0.36  | mA peak | Acc. IEC61347-1. LED module contribution not included |

## Surge immunity

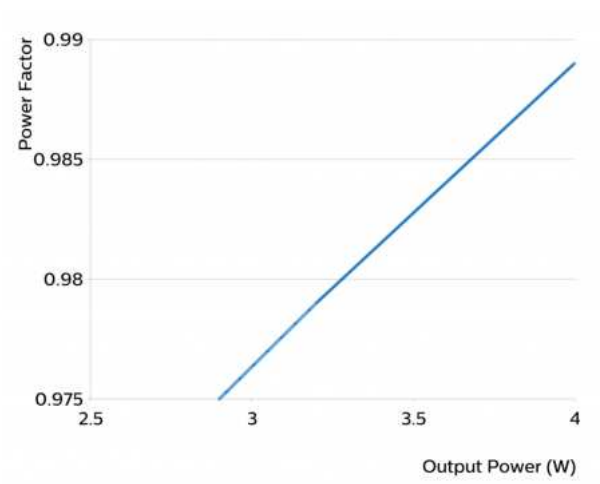
| Specification item                | Value | Unit | Condition                                   |
|-----------------------------------|-------|------|---------------------------------------------|
| Mains surge immunity (diff. mode) | 1     | kV   | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us  |
| Mains surge immunity (comm. mode) | 2     | kV   | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

## Application Info

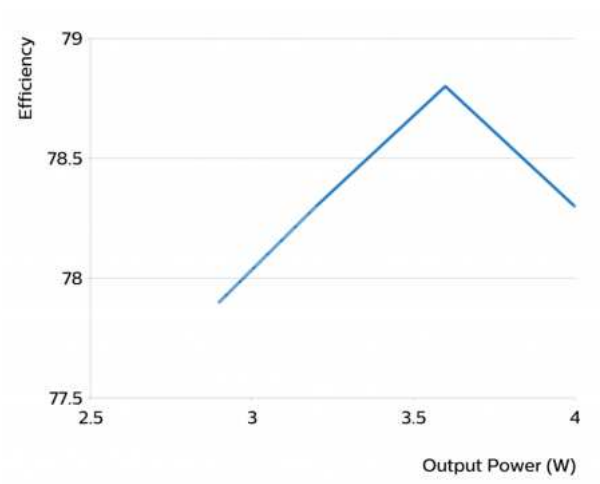
| Specification item                     | Value                             |
|----------------------------------------|-----------------------------------|
| Approval marks                         | CCC / CE / EAC / ENEC / SELV / UA |
| Ingress Protection classification (IP) | 20                                |
| Application                            | Indoor Point                      |
| Mounting Type                          | Built-in / Independent            |



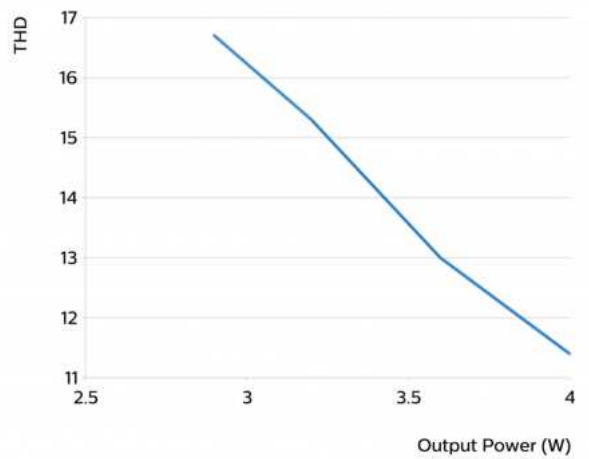
Power factor versus output power



Efficiency versus output power



## THD versus output power



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