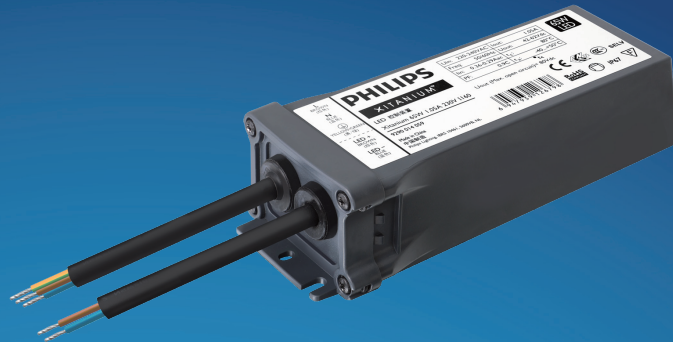


# PHILIPS

## Xitanium

### LED driver



## Datasheet

# Xitanium Outdoor LED Drivers Single Current

## Xitanium 65W 1.05A 230V I160

LED-based light sources are an excellent solution for outdoor environments. They are long-lasting and require low maintenance. However, to get the best out of the LEDs. These light sources require highly reliable and efficient LED Drivers. The Philips Xitanium Fixed Output LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting strict performance, approbation and application requirements.

### Benefits

#### Reliable

- Robust design; capable of withstanding harsh outdoor conditions
- Long lifetime and high survival rate
- Superior thermal management suitable for outdoor application
- Backed by high year warranty from a company you can trust

#### Affordable

- Component integration in advanced IC enables cost effective design.
- Proven robustness & reliability secure the lowest luminaire maintenance over time.

#### Easy to use

- Extreme compact size. fitting with varied luminaires.
- Easy to design-in based on the good thermal management and extra EMI margin

### Features

- Proven robustness and reliable electronic driver design
- Achieving highest efficiencies based on advance technology
- Long lifetime warrantee @Tc max
- Extreme compact size, fitting with varied and critical luminaires
- Authorized certificate: ENEC, CB, CE and CCC

### Applications

- Residential areas
- Road and street lighting
- Area and flood lighting
- Tunnel lighting
- High-bay lighting

## Electrical Input Data

| Specification item        | Value       | Unit            | Condition                  |
|---------------------------|-------------|-----------------|----------------------------|
| Nominal input voltage     | 220 ... 240 | V <sub>ac</sub> |                            |
| Input Voltage AC          | 202 ... 254 | V <sub>ac</sub> | performance range          |
| Nominal input frequency   | 50 ... 60   | Hz              |                            |
| Nominal input current     | 0.28        | A               | @230V @ full load          |
| Max. input current        | 0.31        | A               | @ minimum input voltage AC |
| Nominal input power       | 72          | W               | @230V @ full load          |
| Power factor              | ≥ 0.9       |                 | @ full load. See graph.    |
| Total harmonic distortion | ≤ 20        | %               | @ full load. See graph.    |
| Efficiency                | 89          | %               | @230V @ full load          |
| Input voltage AC          | 110 ... 305 | V <sub>ac</sub> | Safety operation range     |
| Input frequency AC        | 47.5 ... 63 | Hz              | Maximum permissible range  |
| Isolation Input to Output | Basic       |                 |                            |

## Electrical Output Data

| Specification item       | Value            | Unit            | Condition                               |
|--------------------------|------------------|-----------------|-----------------------------------------|
| Regulation method        | Constant Current |                 |                                         |
| Output voltage           | 42 ... 62        | V <sub>dc</sub> |                                         |
| Output voltage max.      | 80               | V               | Peak voltage at open load               |
| Output current           | 1.05             | A               | Full output current setting             |
| Output current tolerance | ± 5              | %               |                                         |
| Output current ripple LF | ≤ 30             | %               | Ripple=(peak-average)/average, at <1kHz |
| Output power             | 45.5 ... 65      | W               | Full output                             |

## Electrical Data Control Input

| Specification item | Value | Unit | Condition |
|--------------------|-------|------|-----------|
| Control method     | Fixed |      |           |

## Logistical Data

| Specification item | Value                        |
|--------------------|------------------------------|
| Product name       | Xitanium 65W 1.05A 230V I160 |
| Order code         |                              |
| Logistic code 12NC | 9290 014 06080               |
| EAN3               |                              |
| Pieces per box     | 20                           |

Wiring & Connections

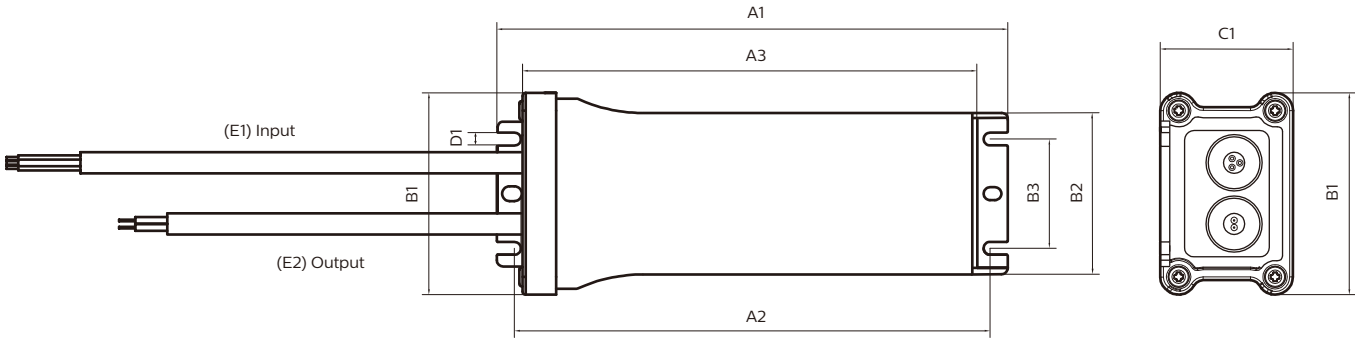
| Specification item | Value    | Unit            | Condition                                           |
|--------------------|----------|-----------------|-----------------------------------------------------|
| Input Wire Size    | 1.0      | mm <sup>2</sup> | 3-wire cable: 300V/500V rating or higher            |
| Output Wire Size   | 1.0      | mm <sup>2</sup> | 2-wire cable: 300V/500V rating or higher            |
| Input Wire Length  | 350 ± 30 | mm              | Out of enclosure and not including connector length |
| Output Wire Length | 300 ± 30 | mm              | Out of enclosure and not including connector length |

Insulation

| Insulation       | Mains | LED   | Protective Earth |
|------------------|-------|-------|------------------|
| Mains            |       | Basic | Basic            |
| LED              | Basic |       | Basic            |
| Protective Earth | Basic | Basic |                  |

Dimensions and weight

| Specification item        | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1)               | 160   | mm   |           |
| Width (B1)                | 63    | mm   |           |
| Height (C1)               | 41.3  | mm   |           |
| Fixing hole diameter (D1) | 4.5   | mm   |           |
| Fixing hole distance (A2) | 148   | mm   |           |
| Fixing hole diameter (B3) | 34    | mm   |           |
| Weight                    |       | gram |           |



| Data Sheet |                |
|------------|----------------|
| Item       | Dimensions     |
| A1         | 159 +0/-2.5    |
| A2         | 148 +0.5/-2    |
| A3         | 142 +0.5/-2    |
| B1         | 63 +0.5/-0.5   |
| B2         | 50.2 +0.3/-0.3 |
| B3         | 34 +0.3/-0.3   |
| C1         | 41.3 +0.5/-0.5 |
| D1         | 4.5            |
| E1         | 350 +30/-30    |
| E2         | 300 +30/-30    |

## Operational temperatures and humidity

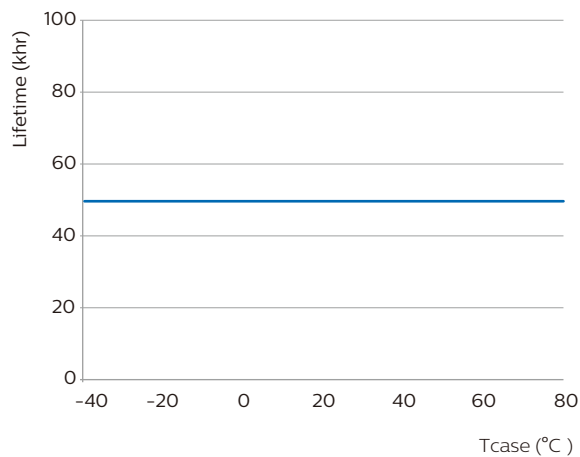
| Specification item          | Value       | Unit | Condition                                                                            |
|-----------------------------|-------------|------|--------------------------------------------------------------------------------------|
| Ambient Temperature         | -40 ... +50 | °C   | Higher ambient temperature allowed as long as T <sub>case</sub> -max is not exceeded |
| T <sub>case</sub> -max      | 80          | °C   | Maximum temperature measured at T <sub>case</sub> -point                             |
| T <sub>case</sub> -life     | 80          | °C   | Measured at T <sub>case</sub> -point                                                 |
| Maximum housing temperature | 90          | °C   | In case of a failure                                                                 |
| Relative humidity           | 5...90      | %    | Non-condensing                                                                       |

## Storage Temperature and Humidity

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

## Lifetime

| Specification item | Value  | Unit  | Condition                                                                                             |
|--------------------|--------|-------|-------------------------------------------------------------------------------------------------------|
| Driver lifetime    | 50,000 | hours | Measured temperature at T <sub>case</sub> -point is T <sub>case</sub> -max.<br>Maximum failures = 10% |



## Programmable features

| Specification item       | Value | Remark              | Condition                         |
|--------------------------|-------|---------------------|-----------------------------------|
| Set output current (AOC) | No    | See Design-in guide | Default output current: ≤ 1050 mA |

## Features

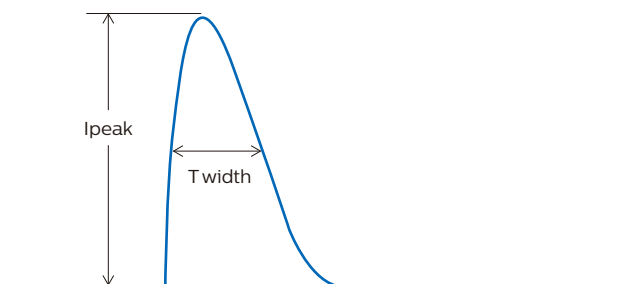
| Specification item                          | Value | Remark | Condition            |
|---------------------------------------------|-------|--------|----------------------|
| Open load protection                        | Yes   |        | Automatic recovering |
| Short circuit protection          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

## Certificates and Standards

| Specification item        | Value                |
|---------------------------|----------------------|
| Approval Marks            | CB / CCC / CE / ENEC |
| Ingress Protection Rating | IP 67                |

## Inrush current

| Specification item         | Value     | Unit    | Condition                                      |
|----------------------------|-----------|---------|------------------------------------------------|
| Inrush Current $I_{peak}$  | 9         | A       | Input voltage 230V                             |
| Inrush Current $T_{width}$ | 58        | $\mu s$ | Input voltage 230V, measured at 50% $I_{peak}$ |
| Drivers / MCB 16A Type B   | $\leq 48$ | pcs     |                                                |



| MCB | Rating | Relative number of LED drivers |
|-----|--------|--------------------------------|
| B   | 10A    | 63%                            |
| B   | 13A    | 81%                            |
| B   | 16A    | 100% (stated in datasheet)     |
| B   | 20A    | 125%                           |
| B   | 25A    | 156%                           |
| C   | 10A    | 104%                           |
| C   | 13A    | 135%                           |
| C   | 16A    | 170%                           |
| C   | 20A    | 208%                           |
| C   | 25A    | 260%                           |

## Driver touch current

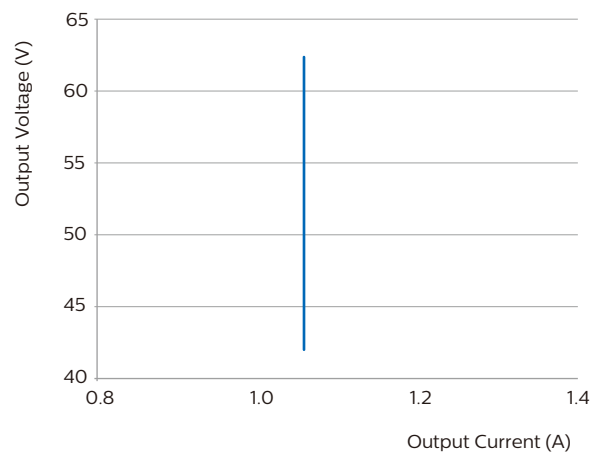
| Specification item    | Value | Unit    | Condition                                             |
|-----------------------|-------|---------|-------------------------------------------------------|
| Typical touch current | 0.7   | mA peak | Acc. IEC61347-1. LED module contribution not included |

## Surge immunity

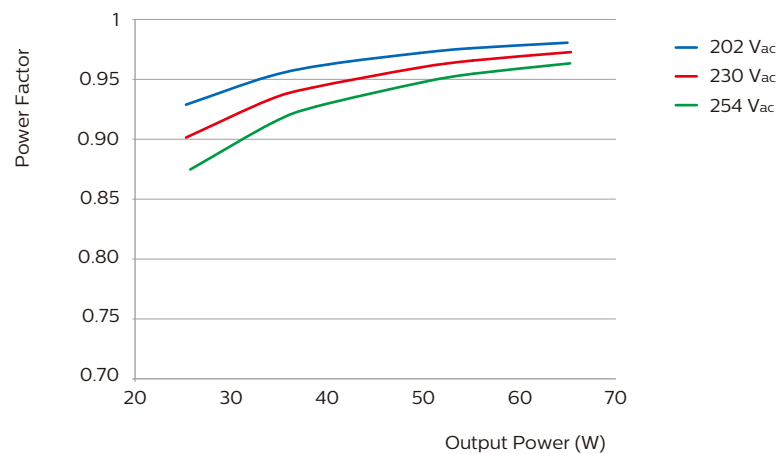
| Specification item                | Value | Unit | Condition                                  |
|-----------------------------------|-------|------|--------------------------------------------|
| Mains surge immunity (diff. mode) | 4     | kV   | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains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

Graphs

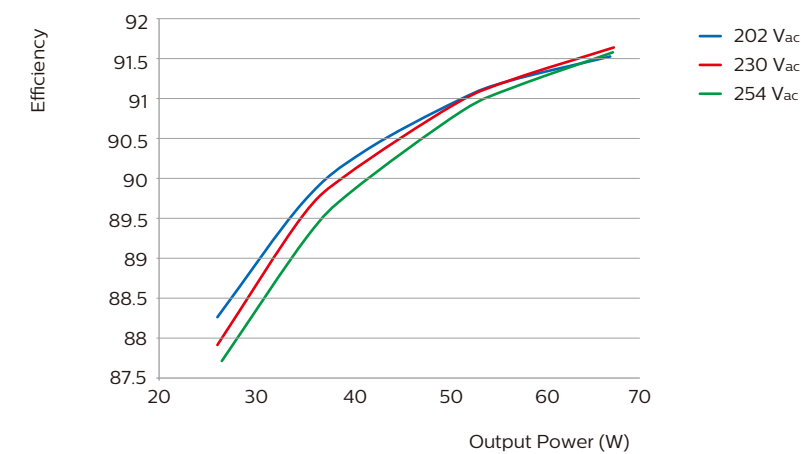
Operating window



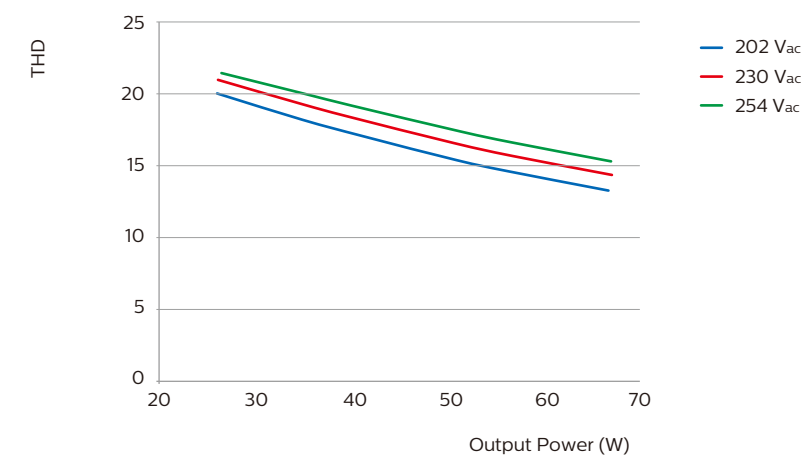
Power factor versus output power (Tcase = 70°C)



Efficiency versus output power (Tcase = 70°C)



THD versus output power (Tcase = 70°C)



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