

# PHILIPS

## Xitanium LED Driver



## Datasheet

# Xitanium 100W 0.7A 230V I175

LED-based light sources are an excellent solution for outdoor environment. 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 new Philips Xitanium Fixed Output and Dimmable (1-10V) LED Outdoor Drivers are specifically designed to deliver reliable performance and protection while meeting the strict performance, approbation and application requirements.

### Benefits

#### Reliability

- Robust design; capable of withstanding harsh outdoor conditions.
- Long lifetime and high survival rate.
- Superior thermal management suitable for outdoor application.
- Backed by 5 year warranty from a company you can trust.
- Consistent waterproof performance through the lifecycle.

#### 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; 50k hrs @Tc max.
- Extreme compact size, fitting with varied and critical luminaires.
- Suitable for Class I isolated luminaires.
- Authorized certificate: ENEC, CB, CE and CCC.

### Applications

- 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   | Vac  |                           |
| Input Voltage AC          | 202...254   | Vac  | Performance range         |
| Operation Voltage AC      | 110...305   | Vac  | Safety operation          |
| Nominal Input Frequency   | 50...60     | Hz   |                           |
| Input Frequency AC        | 47...63     | Hz   | Maximum permissible range |
| Nominal Input Current     | 0.52...0.48 | A    | 220V...240V at full load  |
| Maximum Input Current     | 0.55        | A    | At 202V                   |
| Nominal Input Power       | 115         | W    | At 230V at full load      |
| Power Factor              | ≥0.95       |      | At 230V at full load      |
| Total Harmonic Distortion | ≤10         | %    | At 230V at full load      |
| Efficiency                | 90          | %    | At 230V at full load      |

## Electrical Output Data

| Specification item       | Value            | Unit | Condition                                     |
|--------------------------|------------------|------|---|
| Regulation Method        | Constant Current |      |   |
| Output Voltage           | 64...143         | Vdc  |   |
| Output Voltage Max       | 220              | Vdc  | Peak voltage at open circuit                  |
| Output Current           | 700              | mA   | Performance range                             |
| Output Current Tolerance | ±5               | %    | At max. output current, Ta=25 °C (cold start) |
| Output Current Ripple LF | 5                | %    | Ripple = peak / average, at<1kHz              |
| Output Power             | 100              | W    | At full load                                  |
| Galvanic Isolation       | Yes              |      | Basic; 2U+1000V                               |

## Electrical Data Control Input

| Specification item            | Value | Unit | Condition                      |
|-------------------------------|-------|------|--------------------------------|
| Control Method                | N/A   | V    |                                |
| Digital Interface             | N/A   |      | According 2.0 specifications   |
| Mains Control                 | N/A   |      | Can be configured via MultiOne |
| Time-based Integrated Control | N/A   |      | Can be configured via MultiOne |
| Dimming Range                 | N/A   | %    |                                |

## 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 & Output Wire Length | 450 ±30 | mm              | Out of enclosure                         |
| Control Wire Size          | N/A     | mm              | N/A                                      |
| Control Wire Length        | N/A     | mm              |  |

## CE Isolation

| Basic Isolation: 2U+1000 V | Input Wires | Output Wires | Chassis |
|----------------------------|-------------|--------------|---------|
| Input Wires                | N/A         | Basic        | Basic   |
| Output Wires               | Basic       | N/A          | Basic   |
| Chassis                    | Basic       | Basic        | N/A     |

## Operational Temperature and Humidity

| Specification Item  | Value     | Unit | Condition                |
|---------------------|-----------|------|--------------------------|
| Ambient Temperature | -40...+55 | °C   |                          |
| Tcase Maximum       | 80        | °C   | Measured at Tc-point     |
| Tcase Life          | 70        | °C   | Measured at Tc-point     |
| Tcase Cut-Off       | 85        | °C   | Power to LEDs is reduced |

## Storage Temperature and Humidity

| Specification item  | Value     | Unit | Condition |
|---------------------|-----------|------|-----------|
| Ambient Temperature | -40...+55 | °C   |           |

## Lifetime

| Specification item | Value   | Unit  | Condition                          |
|--------------------|---------|-------|------------------------------------|
| Lifetime           | 100,000 | Hours | At Tcase Life; Survival rate = 90% |

## Programmable Features

| Specification item                    | Value | Remark | Condition           |
|---------------------------------------|-------|--------|---------------------|
| Adjustable Output Current (AOC)       | N/A   |        | See Design-In Guide |
| LED Module Temperature Derating (MTP) | N/A   |        |                     |
| Constant Lumen Output (CLO)           | N/A   |        |                     |
| DC Emergency Dimming (DCEmDIM)        | N/A   |        |                     |
| Corridor Mode                         | N/A   |        |                     |
| Energy Metering                       | N/A   |        |                     |
| Diagnostics                           | N/A   |        |                     |

## Features

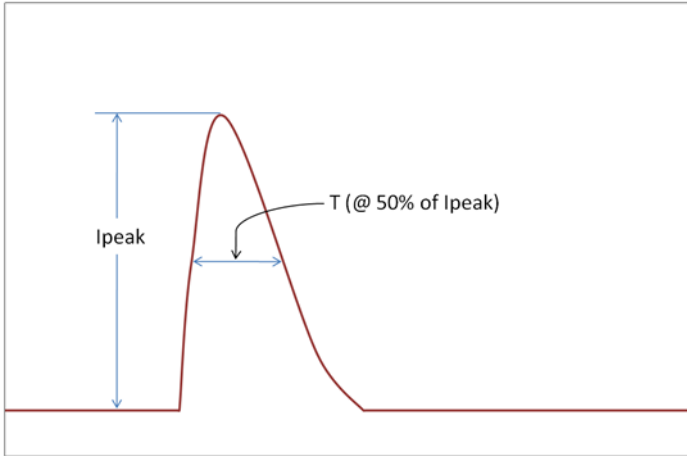
| Specification item                          | Value   | Remark | Condition                   |
|---|---------|--------|-----------------------------|
| Open Circuit Protection                     | Yes     |        |                             |
| Short Circuit Protection                    | Yes     |        | Automatic Recovery          |
| Over Power Protection                       | Yes     |        | Automatic Recovery          |
| Hot Wiring                                  | N/A     |        |                             |
| Suitable for fixtures with Protection Class | Class I |        |                             |
| Input Over-voltage                          | Yes     |        | 320Vac@48hrs<br>350Vac@2hrs |

## Certificates and Standards

| Specification item        | Value                |
|---------------------------|----------------------|
| Approval Marks            | CE / CCC / ENEC / CB |
| Ingress Protection Rating | IP67                 |

## Inrush Current

| Specification item         | Value     | Unit    | Condition                        |
|----------------------------|-----------|---------|----------------------------------|
| Inrush Current Ipeak       | 46        | A       | At 230Vac                        |
| Inrush Current Twidth      | 440       | $\mu$ s | At 230Vac, measured at 50% Ipeak |
| Drivers per MCB 16A Type B | $\leq 11$ | pcs     |                                  |



## Earth Leakage Current

| Specification item    | Value      | Unit | Condition                               |
|-----------------------|------------|------|---|
| Typical Touch Current | $\leq 0.7$ | mApk | Meets IEC60598; LED module not included |

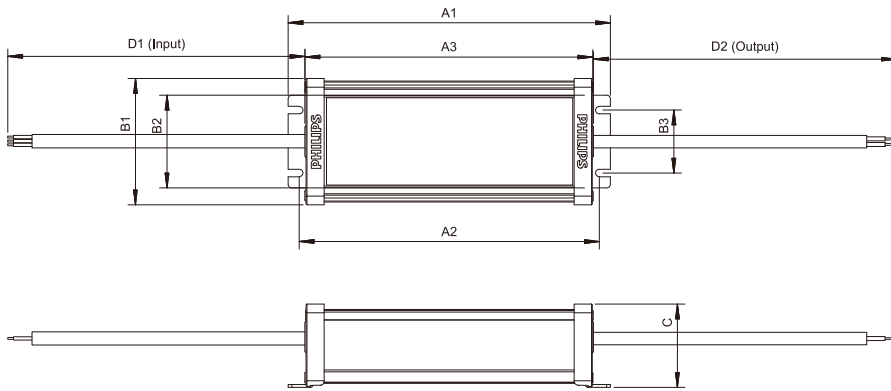
## Surge Capability

| Specification item                       | Value | Unit | Condition     |
|--|-------|------|---------------|
| Mains Surge Capability Differential Mode | 4     | KV   | L-N, 20hm     |
| Mains Surge Capability Common Mode       | 4     | KV   | L/N-GND, 20hm |

## Dimensions

| Specification item      | Value | Unit | Condition                             |
|-------------------------|-------|------|---------------------------------------|
| Length overall          | 175   | mm   |                                       |
| Width overall           | 68    | mm   |                                       |
| Height overall          | 45    | mm   |                                       |
| Mounting Holes Distance | 162   | mm   |                                       |
| Mounting Holes Width    | 34    | mm   |                                       |
| Mounting Holes Size     | 5     | mm   | For M4 with max head diameter of 10mm |
| Weight                  | 730   | g    |                                       |

Dimensions (in mm unless, otherwise specified)



| Data Sheet |                |
|------------|----------------|
| Item       | Dimensions     |
| A1         | 175 +0/-2.5    |
| A2         | 162 +0.5/-2    |
| A3         | 155 +0.5/-2    |
| B1         | 68.2 +0.5/-0.5 |
| B2         | 50 +0.3/-0.3   |
| B3         | 34 +0.3/-0.3   |
| C          | 45 +0.5/-0.5   |
| D1         | 450 +30/-30    |
| D2         | 450 +30/-30    |

#### Logistical Data

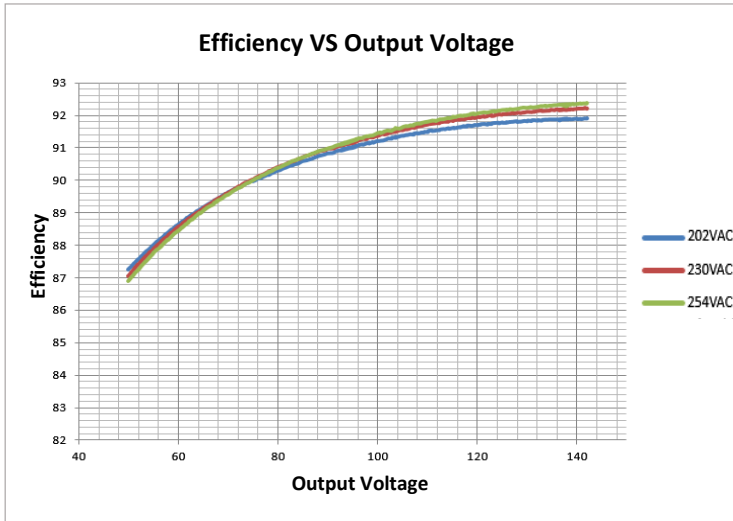
| Specification item  | Value                        |
|---------------------|------------------------------|
| Product Name        | Xitanium 100W 0.7A 230V I175 |
| Logistics Code 12NC | 9290 014 00680               |
| Pieces per Box      | 10                           |

Graphs

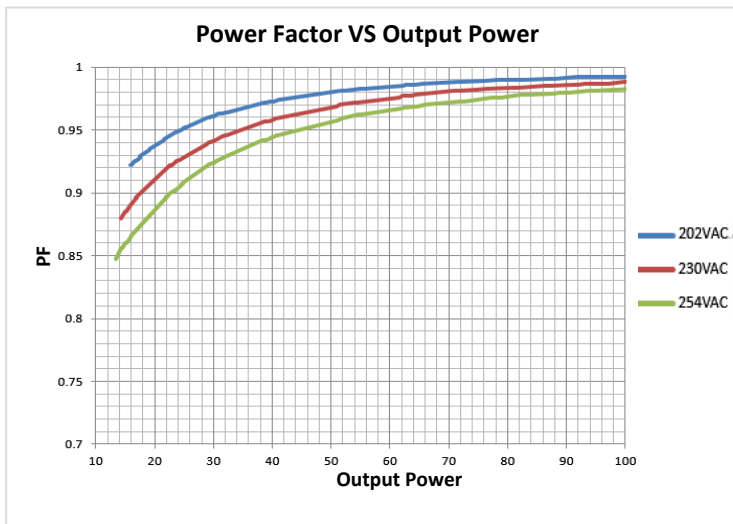
Operating window



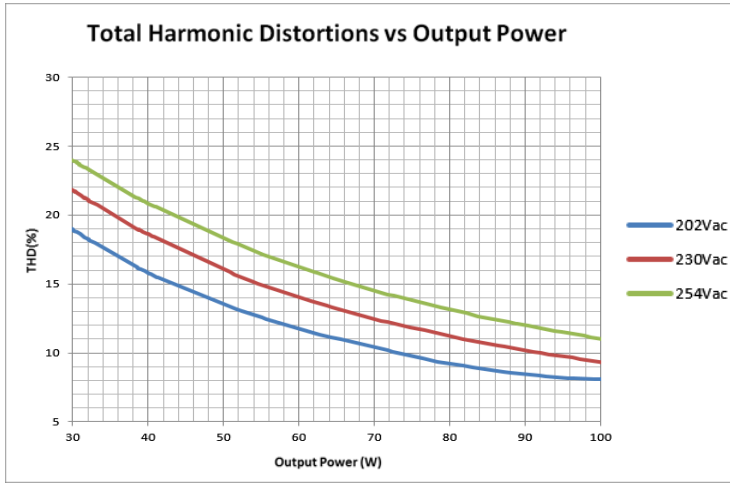
Efficiency (Tcase = 70°C)



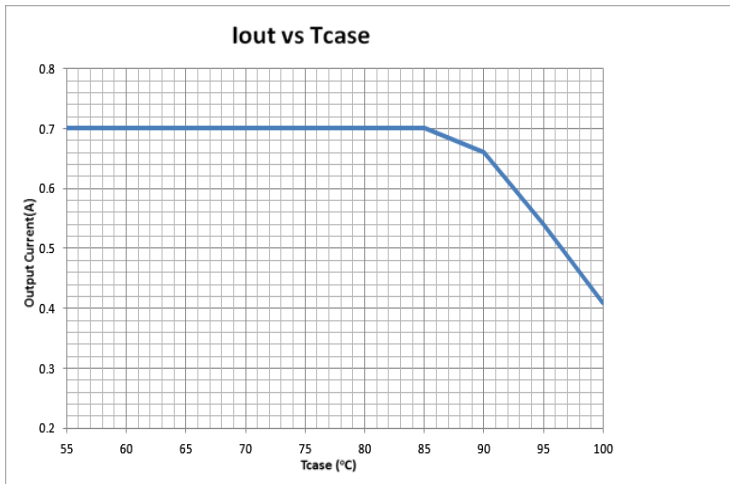
Power Factor (Tcase = 70°C)



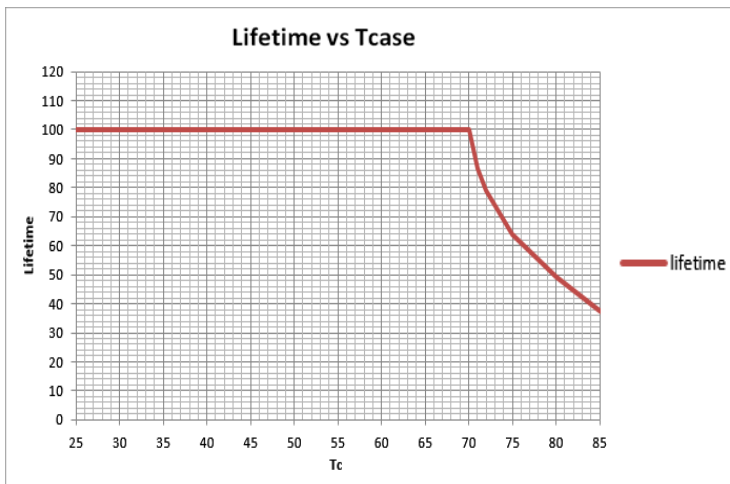
Total Harmonic Distortion (Tcase = 70°C)



Output Current vs Tcase



Lifetime vs Tcase



- Failure rate information based upon MTTF modeling: 90% survival at end of life @ Tcase <=80°C
- Failure rate information based upon field call rate data: <0.01% per 1K hour @ Tcase <=80°C



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