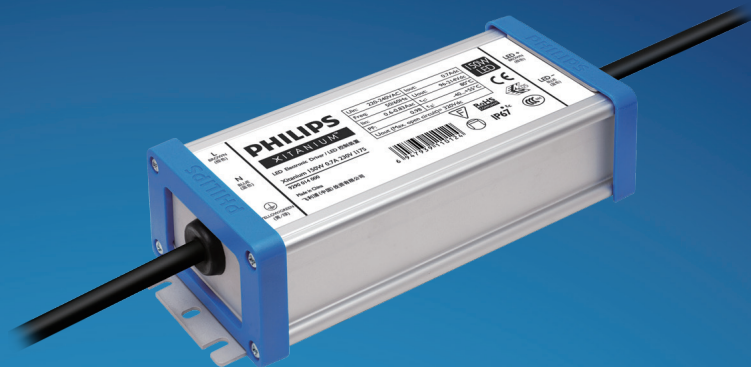


# PHILIPS

## Xitanium

### LED driver



## Datasheet

# Xitanium Outdoor LED Drivers Single Current Independent

## Xitanium 75W 1.05A TWE I175

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

- Robust design; capable of withstanding harsh outdoor conditions
- Long lifetime and high survival rate
- Superior thermal management suitable for outdoor application
- Component integration in advanced IC enables cost effective design
- Proven robustness & reliability secure the lowest luminaire maintenance over time

### Features

- Proven robustness and reliable electronics driver design
- Achieving highest efficiencies based on advanced technology
- Long lifetime warranty @ Tc max.
- Extreme compact size, fitting with varied and critical luminaires

### Application

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

## Electrical input data

| Specification item          | Value     | Unit            | Condition  |
|-----------------------------|-----------|-----------------|--|
| Rated input voltage range   | 110...277 | V <sub>ac</sub> |  |
| Rated input voltage         | 230       | V <sub>ac</sub> |  |
| Rated input frequency range | 47...63   | Hz              |  |
| Rated input current         | 0.38      | A               | @ rated output power @ rated input voltage               |
| Max. input current          | 0.82      | A               | @ rated output power @ minimum performance input voltage |
| Rated input power           | 90        | 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                  | ≤ 90      | %               | @ rated output power @ rated input voltage               |
| Input voltage AC range      | 99...305  | V <sub>ac</sub> | Performance range  |
| Input frequency AC range    | 45...66   | Hz              | Operational range  |
| Isolation input to output   | Basic     |                 |  |

## Electrical output data

| Specification item               | Value            | Unit            | Condition                        |
|----------------------------------|------------------|-----------------|----------------------------------|
| Regulation method                | Constant Current |                 |                                  |
| Output voltage                   | 30...72          | V <sub>dc</sub> |                                  |
| Output voltage max.              | 150              | V               | Peak voltage at open load        |
| Output current                   | 1.05             | A               | Full output current setting      |
| Output current tolerance         | ± 5              | %               | @230V input @full load           |
| Output current ripple LF (<3kHz) | 5                | %               | Ripple = peak/average, full load |
| Output current ripple HF (≥3kHz) | ≤ 15             | %               |                                  |
| Output power                     | 31...75          | W               |                                  |

## Electrical data controls input

| Specification item | Value | Unit | Condition |
|--------------------|-------|------|-----------|
| Control method     | Fixed |      |           |
| Galvanic Isolation | NA    |      |           |

## Logistical Data

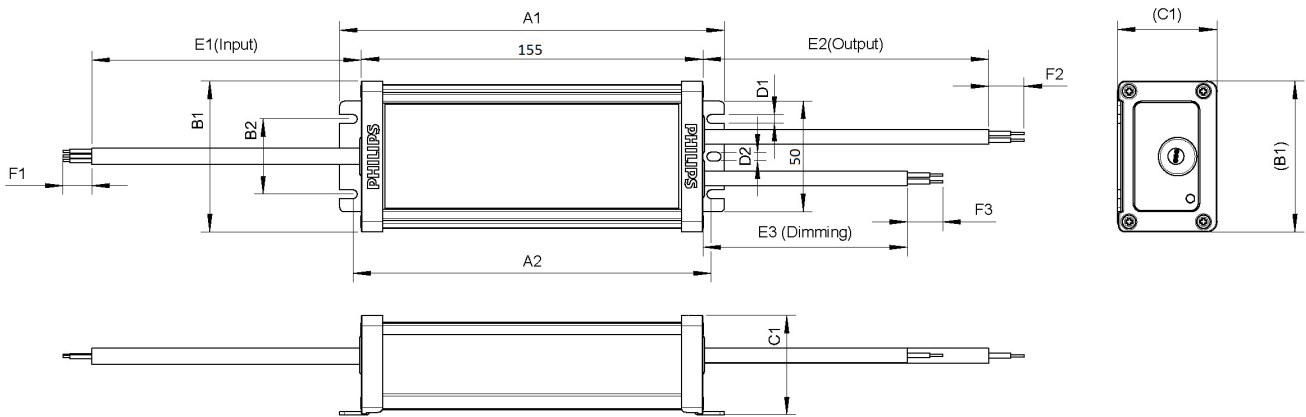
| Specification item  | Value                       |
|---------------------|-----------------------------|
| Product Name        | Xitanium 75W 1.05A TWE I175 |
| Logistics Code 12NC | 9290 014 68280              |
| Pieces per Box      | 10                          |

## Wiring & Connections

| Specification item        | Value | Unit            | Condition    |
|---------------------------|-------|-----------------|--------------|
| Input wire cross-section  | 1     | mm <sup>2</sup> | 3-wire cable |
| Input wire length         | 450   | mm              |              |
| Output wire cross-section | 1     | mm <sup>2</sup> | 2-wire cable |
| Output wire length        | 450   | mm              |              |

## Dimensions

| Specification item        | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1)               | 175   | mm   | Typical   |
| Width (B1)                | 68.2  | mm   | Typical   |
| Height (C1)               | 45    | mm   | Typical   |
| Fixing hole diameter (D1) | 4     | mm   | Typical   |
| Weight                    | 720   | gram | Typical   |



## Operational Temperature and Humidity

| Specification item           | Value     | Unit | Condition  |
|------------------------------|-----------|------|--|
| Ambient temperature          | -40...+55 | °C   | Higher ambient temperature allowed as long as Tcase-max is not exceeded. |
| Starting Ambient temperature | -40...+55 | °C   |  |
| Tcase-max                    | 80        | °C   | Maximum temperature measured at Tcase-point                              |
| Maximum housing temperature  | 90        | °C   | In case of a failure   |
| Relative humidity            | 10...90   | %    | Non-condensing   |

## Storage Temperature and Humidity

| Specification item  | Value     | Unit | Condition      |
|---------------------|-----------|------|----------------|
| Ambient Temperature | -25...+80 | °C   |                |
| Ambient Humidity    | 5...95    | %    | Non-condensing |

## Lifetime

| Specification item | Value  | Unit  | Condition   |
|--------------------|--------|-------|---|
| Lifetime           | 50,000 | Hours | Measured temperature at Tcase-point is Tcase-max.<br>Maximum failures = 10% |

## Programmable Features

| Specification item              | Value | Remark               | Condition                         |
|---------------------------------|-------|----------------------|-----------------------------------|
| Adjustable Output Current (AOC) | No    | See Design-in guide. | Default output current: = 1050 mA |

## Features

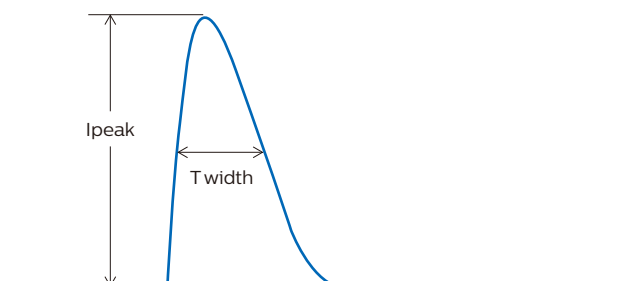
| Specification item                          | Value | Remark | Condition            |
|---|-------|--------|----------------------|
| Open load protection                        | Yes   |        | Automatic recovering |
| Short circuit protection                    | Yes   |        | Automatic recovering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

## Certificates and Standards

| Specification item        | Value                           |
|---------------------------|---------------------------------|
| Approval Marks            | UL / CSA / CE / ENEC / CB / CCC |
| Ingress Protection Rating | IP66/67                         |

## Inrush current

| Specification item         | Value     | Unit    | Condition                                      |
|----------------------------|-----------|---------|--|
| Inrush Current $I_{peak}$  | 30        | A       | Input voltage 230V                             |
| Inrush Current $T_{width}$ | 332       | $\mu s$ | Input voltage 230V, measured at 50% $I_{peak}$ |
| Drivers / MCB 16A Type B   | $\leq 14$ | 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 / protective conductor current

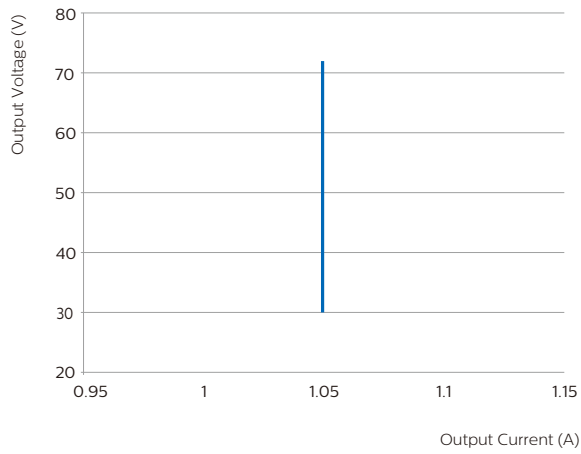
| Specification item    | Value      | Unit    | Condition   |
|-----------------------|------------|---------|---|
| Typical Touch Current | $\leq 0.7$ | mA peak | Acc. IEC61347-1. LED module contribution not included |

## Surge immunity

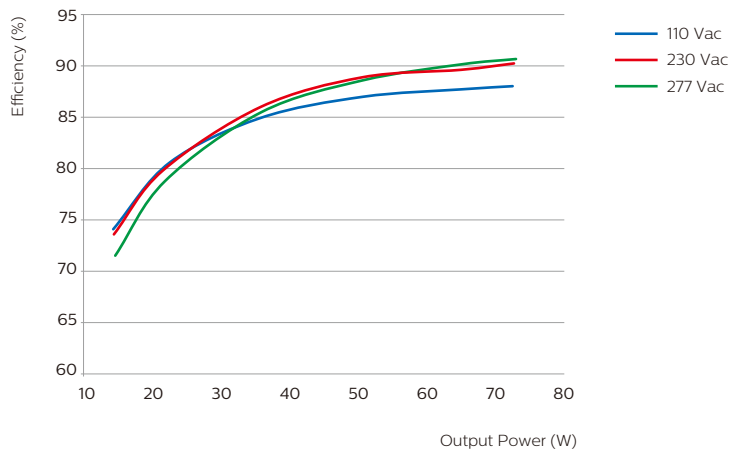
| Specification item                | Value | Unit | Condition                                  |
|-----------------------------------|-------|------|--|
| Mains surge immunity (diff. mode) | 4     | kV   | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 4     | kV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

## Graphs

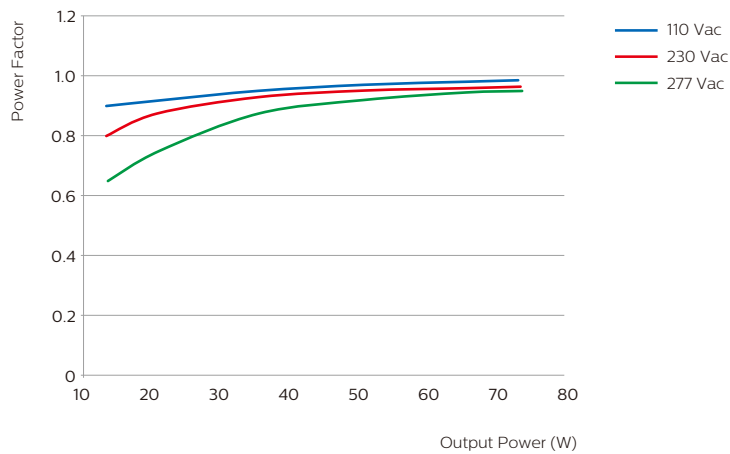
### Operating window



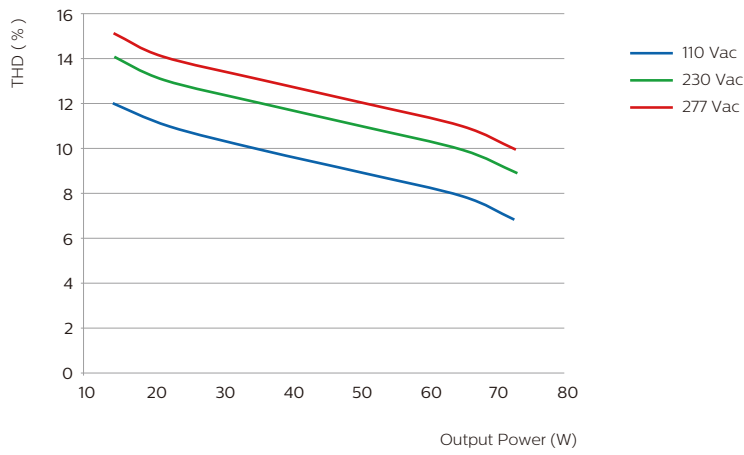
### Efficiency versus output power (at T<sub>case-max</sub>)



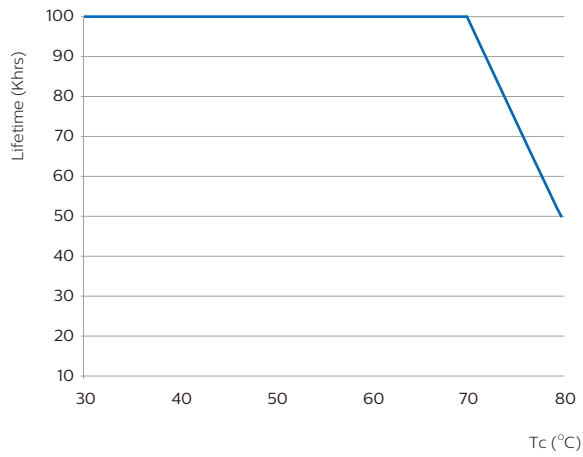
### Power factor versus output power (at T<sub>case-max</sub>)



## Total Harmonic Distortion (at T<sub>case-max</sub>)



## Lifetime vs T<sub>case</sub>



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