

# PHILIPS

## Xitanium

### LED driver



## Datasheet

### Xitanium Essential Programmable LED Drivers

Xi EP 65W 1.3-2.0A WL I112

9290 034 22780

Xitanium Essential Programmable (EP) LED drivers are designed for maximum reliability and flexibility, making it a preferred choice for outdoor applications. The key feature is to adjust the output current with the new e-set tool, a simple and fast way to configure the driver without the need to power on the driver and without the need for any software configuration. The WideLine family can operate on input voltage 100-277Vac anywhere around the world and ensure 100% performance from 200-254Vac.

#### Features

- Digital and simple Adjustable Output Current (AOC) with e-set tool, based on NFC technology
- Suitable for Class I and Class II application
- WideLine input voltage range: 100-277Vac
- Surge protection: 4/6kV (DM/CM)
- IP66 with 50,000 hours lifetime
- SELV certified

#### Benefits

- Reliable and repeatable adjustment of output current, saving labor cost and manufacturing time
- Easy to design-in and reduces SKUs
- Low maintenance cost and peace of mind in extreme conditions
- Safe to use and provides luminaire design freedom

#### Application

- Road and street lighting
- Tunnel lighting
- Residential area

## Electrical input data

| Specification item          | Value     | Unit            | Condition                                                         |
|-----------------------------|-----------|-----------------|-------------------------------------------------------------------|
| Rated input voltage range   | 200...254 | V <sub>ac</sub> | Performance range                                                 |
| Rated input voltage         | 230       | V <sub>ac</sub> |                                                                   |
| Rated input frequency range | 47...63   | Hz              | Performance range                                                 |
| Rated input current         | 0.32      | A               | @ rated output power @ rated input voltage                        |
| Rated input power           | 73        | W               | @ rated output power @ rated input voltage                        |
| Nominal Power factor        | 0.95      |                 | @ rated output power @ rated input voltage                        |
| Total harmonic distortion   | 15        | %               | @ rated output power @ rated input voltage                        |
| Efficiency                  | 88        | %               | @ rated output power @ rated input voltage @max. U <sub>out</sub> |
| Input voltage AC range      | 85...305  | V <sub>ac</sub> | Operational range                                                 |
| Input frequency AC range    | 45...66   | Hz              | Operational range                                                 |
| Isolation input to output   | Double    |                 |                                                                   |

## Electrical output data

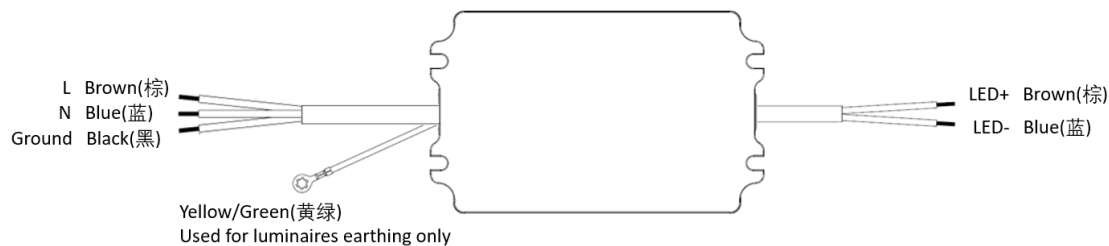
| Specification item                   | Value            | Unit            | Condition                                     |
|--------------------------------------|------------------|-----------------|-----------------------------------------------|
| Regulation method                    | Constant Current |                 |                                               |
| Output voltage                       | 27...42          | V <sub>dc</sub> |                                               |
| Output voltage max.                  | 60               | V               | Maximum output voltage (rms)                  |
| Output current                       | 1.3...2          | A               |                                               |
| Output current min programmable      | 1300             | mA              |                                               |
| Output current tolerance ±           | 8                | %               | At max. output current, Ta=25°C               |
| Output current ripple LF             | ≤ 60             | %               | Ripple = peak / average, @Low frequency range |
| Output P <sub>st</sub> <sup>LM</sup> | ≤ 0.1            |                 | In entire operating window                    |
| Output SVM                           | ≤ 1.8            |                 | In entire operating window                    |
| Output power                         | 35.1...65        | W               | Rated output power is 65W                     |

## Electrical data controls input

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

## Wiring and Connections

| Specification item                         | Value | Unit            | Type                                                   |
|--------------------------------------------|-------|-----------------|--------------------------------------------------------|
| Input wire cross-section                   | 1     | mm <sup>2</sup> | 3x 1.0mm <sup>2</sup> stranded wires, waterproof cable |
| Output wire cross-section                  | 1     | mm <sup>2</sup> | 2x 1.0mm <sup>2</sup> stranded wires, waterproof cable |
| Grounding wire(Yellow/Green) cross-section | 1     | mm <sup>2</sup> |                                                        |
| Maximum cable length                       | 2     | m               | Total length of wiring including LED module, one way   |

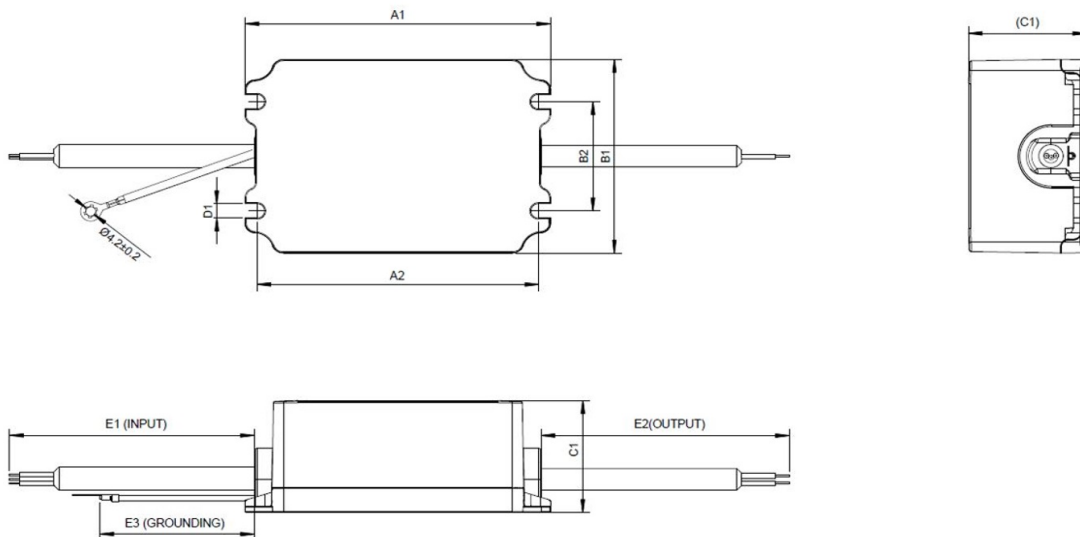


## Isolation

| Insulation per IEC61347-1 | Input  | Output | Ground |
|---------------------------|--------|--------|--------|
| Input                     | -      | Double | Double |
| Output                    | Double | -      | Basic  |
| Ground                    | Double | Basic  | -      |

## Dimensions and weight

| Specification item          | Value | Unit | Tolerance (mm) |
|-----------------------------|-------|------|----------------|
| Length (A1)                 | 112   | mm   | ± 0.5          |
| Mounting hole distance (A2) | 105   | mm   | ± 0.5          |
| Width (B1)                  | 67.5  | mm   | ± 1            |
| Width (B2)                  | 34    | mm   | ± 0.3          |
| Height (C1)                 | 35    | mm   | ± 1            |
| Mounting hole diameter (D1) | 4.5   | mm   | ± 0.3          |
| Input cable length (E1)     | 450   | mm   | ± 30           |
| Output cable length (E2)    | 300   | mm   | ± 30           |
| Grounding cable length (E3) | 64    | mm   | ± 5            |
| Weight                      | 420   | gram |                |



## Logistical data

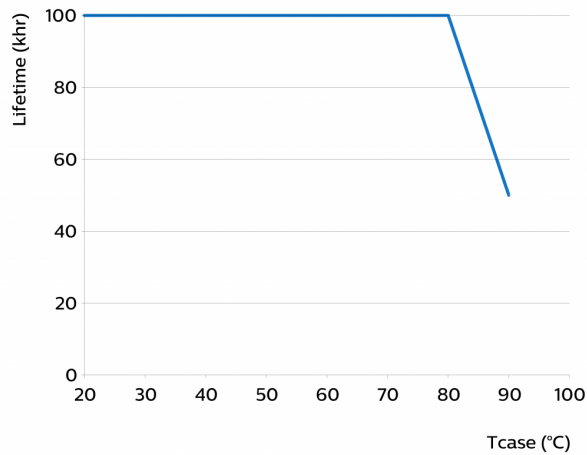
| Specification item | Value                      |
|--------------------|----------------------------|
| Product name       | Xi EP 65W 1.3-2.0A WL I112 |
| Logistic code 12NC | 9290 034 22780             |
| Pieces per box     | 24                         |

## Operational temperatures and humidity

| Specification item     | Value     | Unit | Condition                                                                           |
|------------------------|-----------|------|-------------------------------------------------------------------------------------|
| Ambient temperature    | -40...+55 | °C   | Higher ambient temperature allowed as long as T <sub>case-max</sub> is not exceeded |
| T <sub>case-max</sub>  | 90        | °C   | Maximum temperature measured at T <sub>case-point</sub>                             |
| T <sub>case-life</sub> | 80        | °C   | Measured at T <sub>case-point</sub>                                                 |
| Relative humidity      | 10...90   | %    | Non-condensing                                                                      |

## Lifetime

| Specification item | Value  | Unit  | Condition                                                                |
|--------------------|--------|-------|--------------------------------------------------------------------------|
| Driver lifetime    | 50,000 | hours | Measured temperature at Tcase-point is Tcase-max. 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

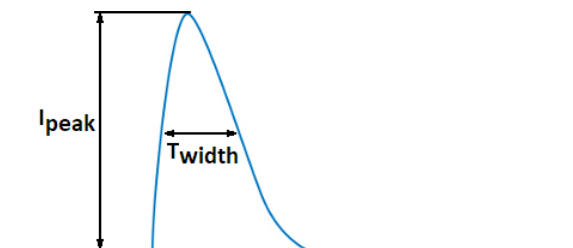
| Specification item                  | Available | Default setting | Condition |
|-------------------------------------|-----------|-----------------|-----------|
| Set Adjustable Output Current (AOC) | NFC       | 1300 mA         |           |

## Features

| Specification item                          | Value    |  | Condition                                          |
|---------------------------------------------|----------|--|----------------------------------------------------|
| Open load protection                        | Yes      |  | Automatic recovering                               |
| Short circuit protection                    | Yes      |  | Automatic recovering                               |
| Over power protection                       | No       |  |                                                    |
| Hot wiring                                  | No       |  |                                                    |
| Suitable for fixtures with protection class | I and II |  | per IEC60598                                       |
| Overtemperature protection                  | Yes      |  | Automatic recovering, refer to thermal guard curve |

## Inrush current

| Specification item       | Value | Unit | Condition                                   |
|--------------------------|-------|------|---------------------------------------------|
| Inrush current           | 20    | A    | Input voltage 230V                          |
| Inrush peak width        | 130   | μs   | Input voltage 230 V, measured at 50% height |
| Drivers / MCB 16A type B | ≤ 40  | pcs  | Indicative value at 230V                    |



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

## Driver touch current / protective conductor current / earth leakage current

| Specification item                                  | Value | Unit    | Condition                                             |
|-----------------------------------------------------|-------|---------|-------------------------------------------------------|
| Typical Touch Current (ins. Class II)               | 0.7   | mA peak | Acc. IEC61347-1. LED module contribution not included |
| Typical Protective Conductor Current (ins. Class I) | 2     | mA rms  | Acc. IEC60598-1. LED module contribution not included |

## Surge immunity

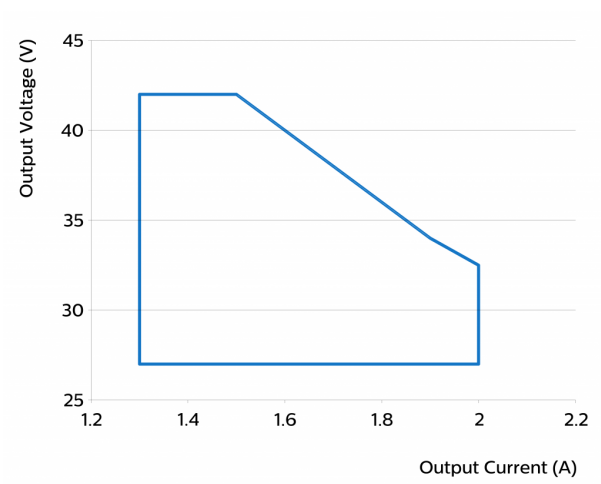
| Specification item                | Value | Unit | Condition                                  |
|-----------------------------------|-------|------|--------------------------------------------|
| Mains surge immunity (diff. mode) | 4     | kV   | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains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

## Application Info

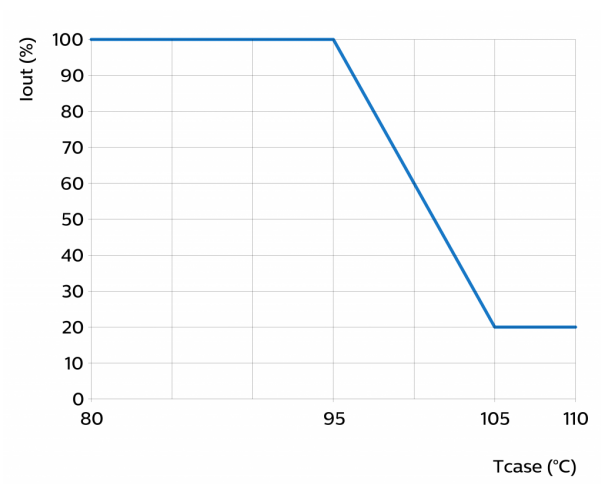
| Specification item                     | Value                              |
|----------------------------------------|------------------------------------|
| Approval marks and Certifications      | CB / CCC / CE / ENEC / SELV / UKCA |
| Ingress Protection classification (IP) | 66                                 |
| Application                            | Outdoor                            |
| Mounting Type                          | Independent                        |

Graphs

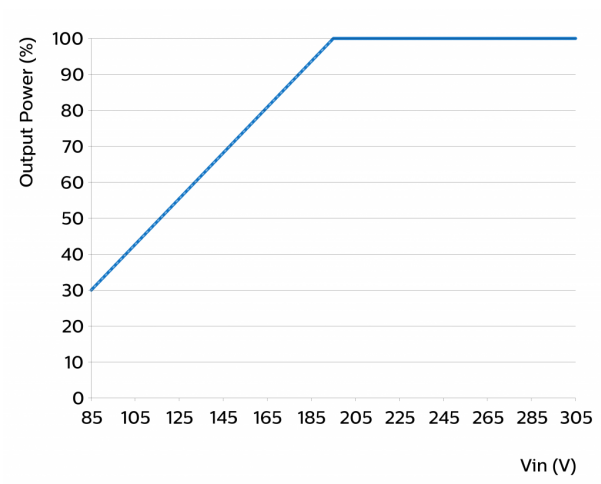
Operating window



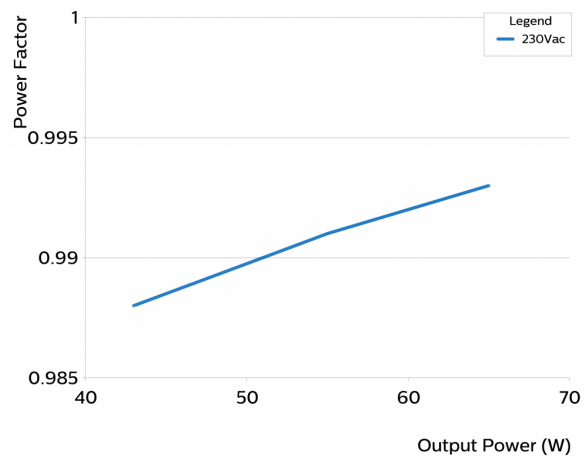
Thermal Guard



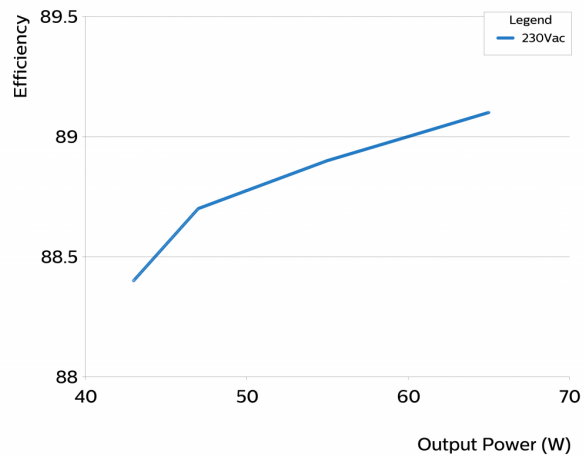
Mains Guard



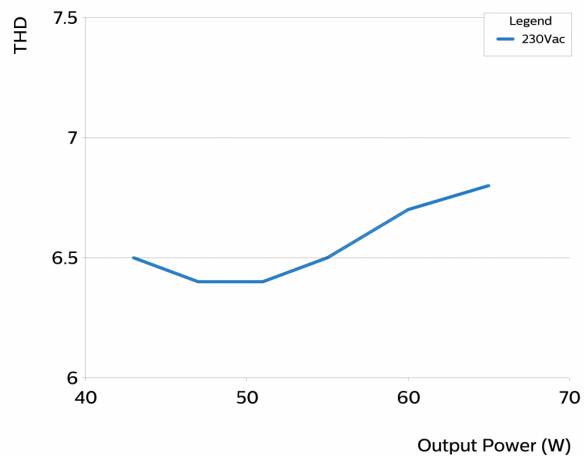
## Power factor versus output power



## Efficiency versus output power



## THD versus output power





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