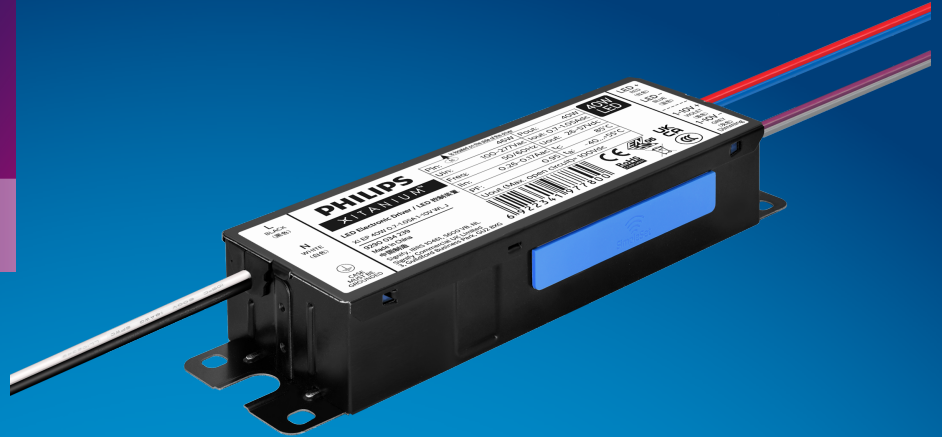


# PHILIPS

## Xitanium

### LED driver



## Datasheet

### Xitanium Outdoor Essential Programmable LED Drivers

Xi EP 40W 0.7-1.05A 1-10V WL J

9290 034 23980

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
- WideLine input voltage range: 100-277Vac
- High surge protection: 6/10kV (DM/CM)
- 50,000 hours lifetime

#### Benefits

- Reliable and repeatable adjustment of output current/voltage to save labor cost and time
- Easy to design-in and reduces SKUs
- Low maintenance cost and peace of mind in extreme conditions

#### Application

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

## Logistical data

| Specification item | Value                          |
|--------------------|--------------------------------|
| Product name       | Xi EP 40W 0.7-1.05A 1-10V WL J |
| Logistic code 12NC | 9290 034 23980                 |
| Pieces per box     | 12                             |

## 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         | 0.2       | A               | @ rated output power @ rated input voltage                        |
| Rated input power           | 46        | W               | @ rated output power @ rated input voltage                        |
| Nominal Power factor        | 0.95      |                 | @ rated output power @ rated input voltage                        |
| Total harmonic distortion   | 10        | %               | @ rated output power @ rated input voltage                        |
| Efficiency                  | 88        | %               | @ rated output power @ rated input voltage @max. U <sub>out</sub> |
| Input voltage AC range      | 95...305  | V <sub>ac</sub> | Operational 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                       | 26...57          | V <sub>dc</sub> |                                                      |
| Output voltage max.                  | 100              | V               | Maximum output voltage (rms)                         |
| Output current                       | 0.07...1.05      | A               |                                                      |
| Output current min programmable      | 700              | mA              |                                                      |
| Min output current                   | 70               | mA              |                                                      |
| Output current tolerance ±           | 5                | %               | At max. output current, T <sub>a</sub> =25°C         |
| Output current ripple LF             | ≤ 5              | %               | Ripple = peak / average, @Low frequency range(<3kHz) |
| Output current ripple HF             | ≤ 15             | %               |                                                      |
| Output P <sub>st</sub> <sup>LM</sup> | ≤ 0.4            |                 | In entire operating window                           |
| Output SVM                           | ≤ 0.1            |                 | In entire operating window                           |
| Output power                         | 1.8...40         | W               | Rated output power is 40W                            |

## Electrical data controls input

| Specification item                 | Value         | Unit | Condition       |
|------------------------------------|---------------|------|-----------------|
| Control method                     | 1-10V         |      |                 |
| Dimming range                      | 10...100      | %    | Default range   |
| Isolation controls input to output | Supplementary |      | acc. IEC61347-1 |

## Wiring and Connections

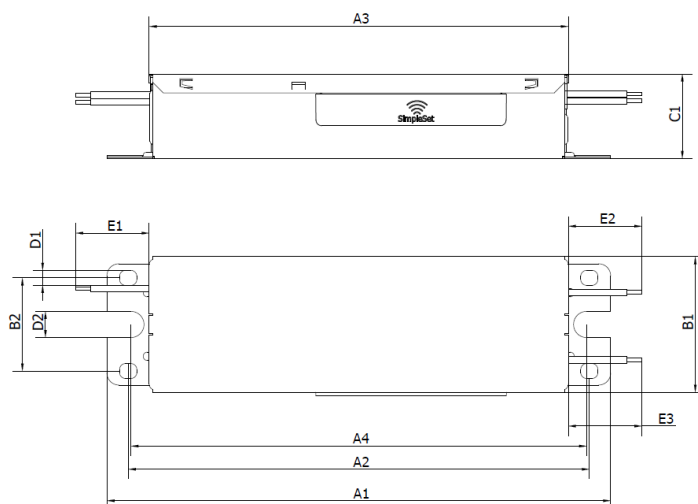
| Specification item         | Value     | Unit                  | Type                                                 |
|----------------------------|-----------|-----------------------|------------------------------------------------------|
| Input wire cross-section   | 0.82 / 18 | mm <sup>2</sup> / AWG | solid wire, double-insulated                         |
| Input wire strip length    | 8...12    | mm                    |                                                      |
| Output wire cross-section  | 0.82 / 18 | mm <sup>2</sup> / AWG | solid wire, double-insulated                         |
| Output wire strip length   | 8...12    | mm                    |                                                      |
| Control wire cross-section | 0.82 / 18 | mm <sup>2</sup> / AWG | solid wire, double-insulated                         |
| Control wire strip length  | 8...12    | mm                    |                                                      |
| Maximum cable length       | 2         | m                     | Total length of wiring including LED module, one way |

## Isolation

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

## Dimensions and weight

| Specification item          | Value | Unit | Tolerance (mm) |
|-----------------------------|-------|------|----------------|
| Length (A1)                 | 168   | mm   | ± 0.5          |
| Mounting hole distance (A2) | 153.8 | mm   | ± 0.5          |
| Length (A3)                 | 139.8 | mm   | ± 0.5          |
| Width (B1)                  | 45.1  | mm   | ± 0.5          |
| Width (B2)                  | 31    | mm   | ± 0.5          |
| Height (C1)                 | 28.2  | mm   | ± 1            |
| Mounting hole diameter (D1) | 5     | mm   | ± 0.3          |
| Mounting hole diameter (D2) | 8.8   | mm   | ± 0.3          |
| Input cable length (E1)     | 270   | mm   | ± 30           |
| Output cable length (E2)    | 270   | mm   | ± 30           |
| Control cable length (E3)   | 270   | mm   | ± 30           |
| Weight                      | 374   | gram |                |



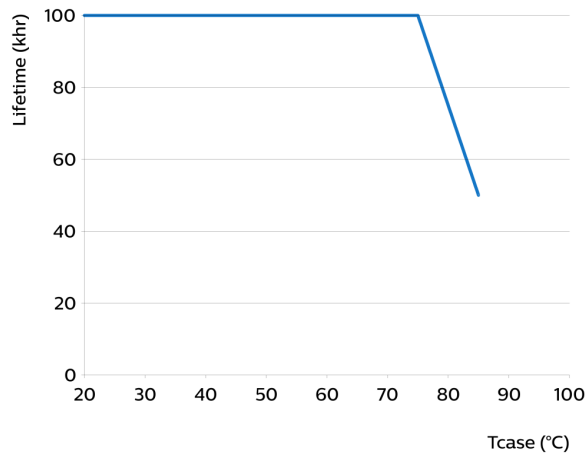
Note: For driver installation, proper screws should be used via mounting hole. Star washer should be used for grounding reliability.  
 注意：安装电源时，用合适的螺丝通过安装孔固定电源。应使用带齿垫圈以保证接地的可靠性。

## Operational temperatures and humidity

| Specification item  | Value     | Unit | Condition                                                               |
|---------------------|-----------|------|-------------------------------------------------------------------------|
| Ambient temperature | -40...+55 | °C   | Higher ambient temperature allowed as long as Tcase-max is not exceeded |
| Tcase-max           | 85        | °C   | Maximum temperature measured at Tcase-point                             |
| Tcase-life          | 75        | °C   | Measured at Tcase-point                                                 |
| 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       | 700 mA          |           |

## 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 | I     |  | per IEC60598                                       |
| Overtemperature protection                  | Yes   |  | Automatic recovering, refer to thermal guard curve |

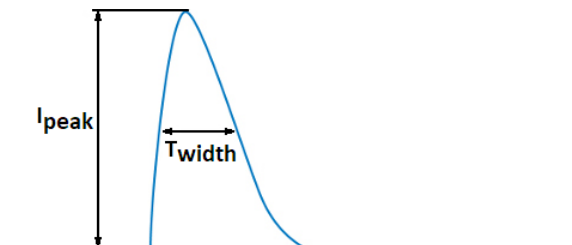
## Inrush current

| Specification item       | Value | Unit | Condition                                   |
|--------------------------|-------|------|---------------------------------------------|
| Inrush current           | 28    | A    | Input voltage 230V                          |
| Inrush peak width        | 205   | μs   | Input voltage 230 V, measured at 50% height |
| Drivers / MCB 16A type B | ≤ 22  | pcs  | Indicative value at 230V                    |

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

If several mini circuit breakers are used directly side-by-side (without distance pieces)

a correction factor of 80% has to be applied to the rated current



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

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

## Surge immunity

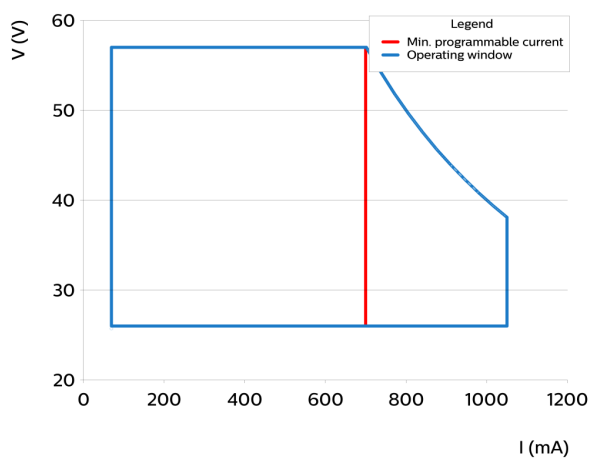
| Specification item                | Value | Unit | Condition                                  |
|-----------------------------------|-------|------|--------------------------------------------|
| Mains surge immunity (diff. mode) | 6     | kV   | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 10    | kV   | Acc. IEC61000-4-5. 12 Ohm 1.2/50us, 8/20us |

## Application Info

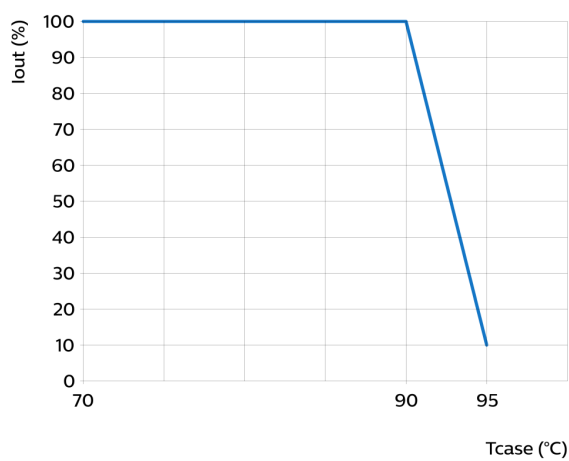
| Specification item                     | Value                       |
|----------------------------------------|-----------------------------|
| Approval marks and Certifications      | CB / CCC / CE / ENEC / UKCA |
| Ingress Protection classification (IP) | 20                          |
| Application                            | Outdoor                     |
| Mounting Type                          | Built-in                    |

Graphs

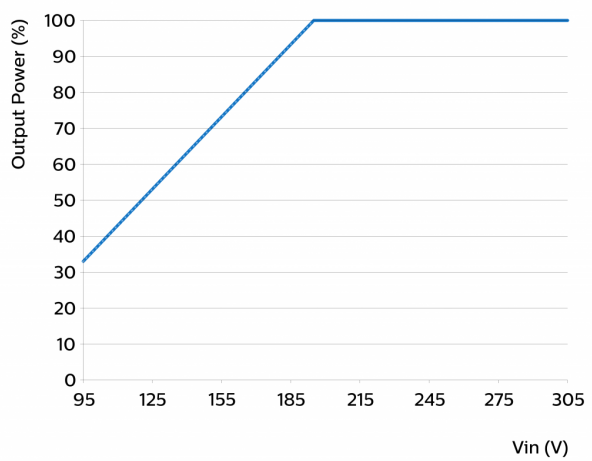
Operating window



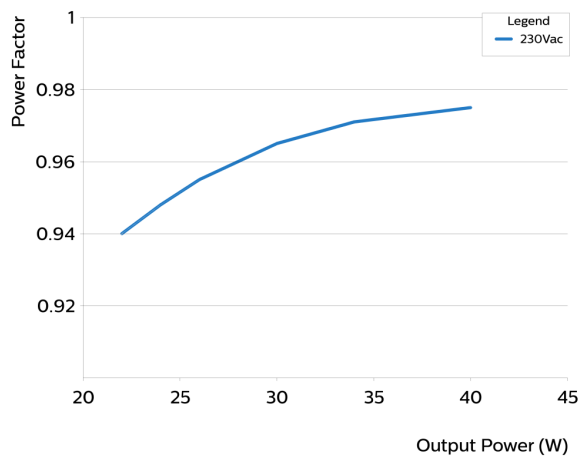
Thermal Guard



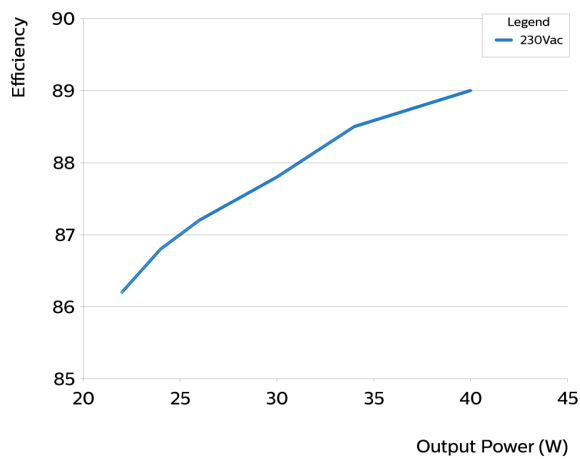
Mains Guard



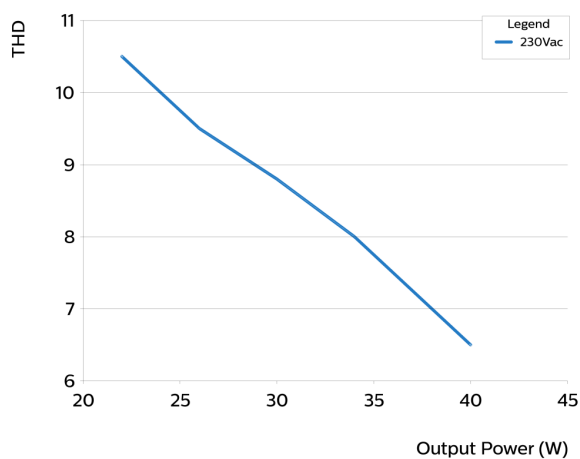
Power factor versus output power

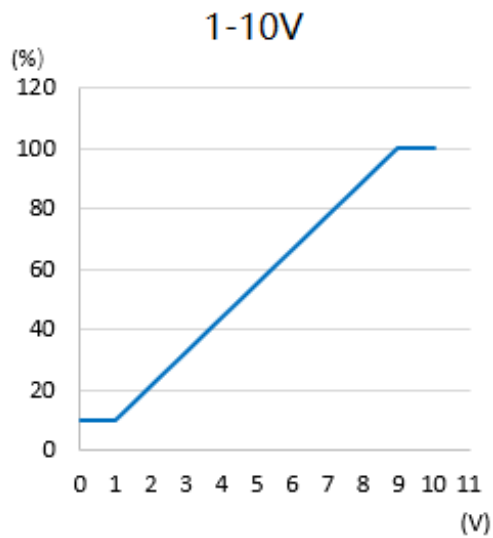


Efficiency versus output power



THD versus output power





Note: The 1-10V port is not used for networking, and the cable length is less than 3 meters.  
注意：1-10V 端口不组网使用，且电缆线长小于3米。



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