

# PHILIPS

## Xitanium

### LED driver



## Datasheet

### Xitanium LED drivers – DALI SELV

Xitanium 40W R 0.3-1.05A 54V TD/I

9290 028 01206

#### Enabling future-proof LED technology

Xitanium LED drivers are designed to operate LED solutions for general lighting applications. Reliability is enhanced by features that protect the connected LED module, e.g. hot wiring, reduced ripple current and thermal derating. Most drivers feature central DC operation. In the coming years LEDs will continue to increase in efficiency, creating challenges for OEMs. With Xitanium LED drivers, flexibility in luminaire design is assured thanks to an adjustable output current. Application-oriented operating windows offer stable lumen output and light quality levels that specifiers and architects demand. The adjustable output current also enables operation of various LED PCB solutions from different manufacturers.

#### Benefits

- High reliability underpinned by 5 year warranty
- Future-proof flexibility - application-oriented operating windows enable LED generation and complexity management
- Compatibility - can also be used for other manufacturers' modules or OEMs' own PCB designs

#### Features

- Operating windows - Output current can be adjusted via the Philips MultiOne configurator ('TD' drivers) or with a resistor outside the driver
- Multiple versions - DALI dimmable & programmable, trailing-edge dimmable, fixed-current/fixed-output trailing-edge dimmable, fixed-output, and fixed-current/fixed-output
- Wide range of power ratings
- Choice of application oriented flexible housing designs

#### Application

- Retail
- Office

## Electrical input data

| Specification item           | Value     | Unit            | Condition                                  |
|------------------------------|-----------|-----------------|--------------------------------------------|
| Rated input voltage range    | 220...240 | V <sub>ac</sub> | Performance range                          |
| Rated input voltage          | 230       | V <sub>ac</sub> |                                            |
| Rated input frequency range  | 50...60   | Hz              | Performance range                          |
| Rated input current          | 0.2       | A               | @ rated output power @ rated input voltage |
| Rated input power            | 45        | W               | @ rated output power @ rated input voltage |
| Power factor                 | 0.9       |                 | @ rated output power @ rated input voltage |
| Total harmonic distortion    | 20        | %               | @ rated output power @ rated input voltage |
| Efficiency                   | 89        | %               | @ rated output power @ rated input voltage |
| Rated input voltage DC range | 186...250 | V <sub>dc</sub> | Performance range                          |
| Rated input current DC range | ≤ 0.22    | A <sub>dc</sub> | Performance range                          |
| Input voltage AC range       | 198...264 | V <sub>ac</sub> | Operational range                          |
| Input frequency AC range     | 45...66   | Hz              | Operational range                          |
| Input voltage DC range       | 168...275 | V <sub>dc</sub> | Operational range                          |
| Standby Power                | 0.5       | W               |                                            |
| Isolation input to output    | SELV      |                 |                                            |

## Electrical output data

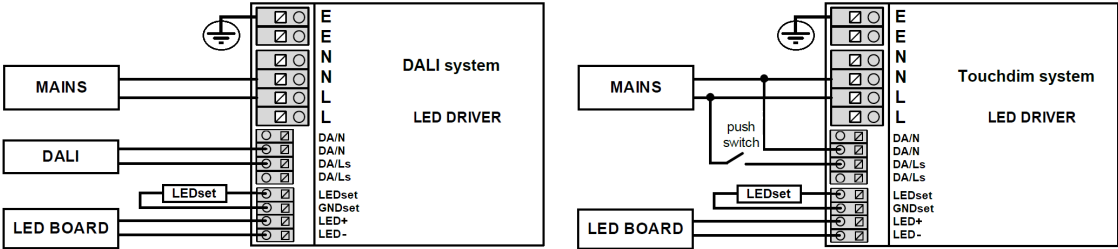
| Specification item                   | Value            | Unit            | Condition                       |
|--------------------------------------|------------------|-----------------|---------------------------------|
| Regulation method                    | Constant Current |                 |                                 |
| Output voltage                       | 24...54          | V <sub>dc</sub> |                                 |
| Output voltage max.                  | 60               | V               | Maximum output voltage (rms)    |
| Output current                       | 0.3...1.05       | A               | Full output operating window    |
| Output current min programmable      | 300              | mA              |                                 |
| Output current min dimming           | 15               | mA              |                                 |
| Output current tolerance             | ± 8              | %               |                                 |
| Output current ripple LF             | ≤ 4              | %               | Ripple = peak / average, < 3kHz |
| Output P <sub>st</sub> <sup>LM</sup> | ≤ 1              |                 |                                 |
| Output SVM                           | ≤ 0.5            |                 |                                 |
| Output power                         | 13...40          | W               |                                 |

## Electrical data controls input

| Specification item                 | Value                  | Unit | Condition       |
|------------------------------------|------------------------|------|-----------------|
| Control method                     | DALI, Touch & Dim (TD) |      |                 |
| Dimming range                      | 5...100                | %    | Default range   |
| Isolation controls input to output | Basic                  |      | acc. IEC61347-1 |

Wiring and Connections

| Specification item         | Value                | Unit                  | Type                                                 |
|----------------------------|----------------------|-----------------------|------------------------------------------------------|
| Input wire cross-section   | 0.75...2.5 / 18...13 | mm <sup>2</sup> / AWG | WAGO804 (Loop Through), solid / stranded wire        |
| Input wire strip length    | 10...11              | mm                    |                                                      |
| Output wire cross-section  | 0.5...1.5 / 20...16  | mm <sup>2</sup> / AWG | WAGO250 (pitch 3.5 mm), solid / stranded wire        |
| Output wire strip length   | 8...9                | mm                    |                                                      |
| Control wire cross-section | 0.5...1.5 / 20...16  | mm <sup>2</sup> / AWG | WAGO250 (pitch 3.5 mm), solid / stranded wire        |
| Control wire strip length  | 8...9                | mm                    |                                                      |
| Maximum cable length       | 2                    | m                     | Total length of wiring including LED module, one way |

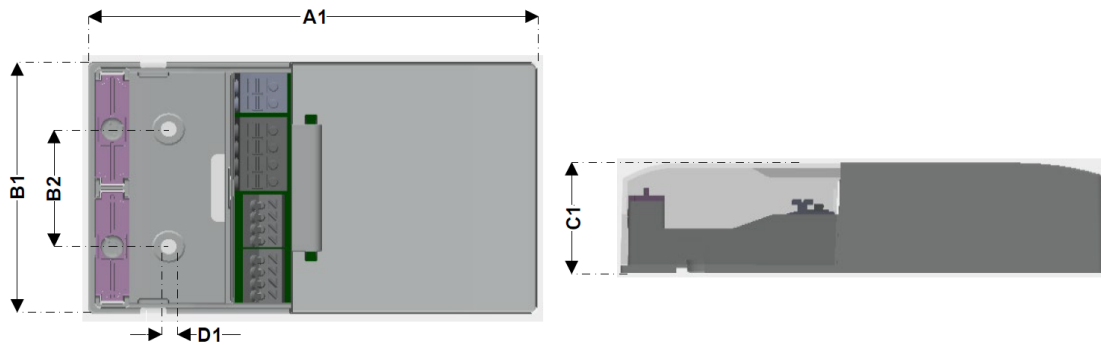


Insulation

| Insulation per IEC61347-1 | Input      | Output     | DALI       | LEDset     |
|---------------------------|------------|------------|------------|------------|
| Input                     |            | SELV       | Basic      | Reinforced |
| Output                    | SELV       |            | Basic      | Reinforced |
| DALI                      | Basic      | Basic      |            | Reinforced |
| LEDset                    | Reinforced | Reinforced | Reinforced |            |

## Dimensions and weight

| Specification item          | Value            | Unit | Tolerance (mm) |
|-----------------------------|------------------|------|----------------|
| Length (A1)                 | 127.6            | mm   |                |
| Width (B1)                  | 74               | mm   |                |
| Width (B2)                  | 34.5             | mm   |                |
| Height (C1)                 | 30               | mm   |                |
| Mounting hole diameter (D1) | 4.1              | mm   |                |
| Weight                      | 160              | gram |                |
| Housing color               | White (RAL 9016) |      |                |



## Logistical data

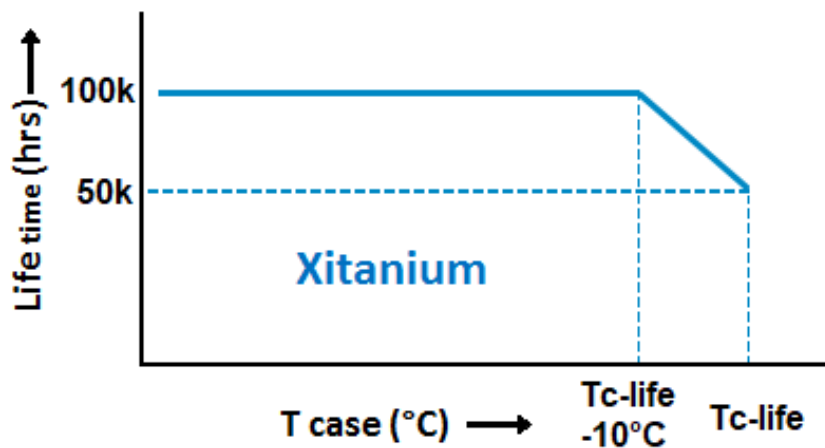
| Specification item | Value                             |
|--------------------|-----------------------------------|
| Product name       | Xitanium 40W R 0.3-1.05A 54V TD/I |
| EOC                | 871951425108300                   |
| Logistic code 12NC | 9290 028 01206                    |
| EAN1 (GTIN)        | 8719514251083                     |
| EAN3               | 8719514251090                     |
| Pieces per box     | 18                                |

## Operational temperatures and humidity

| Specification item          | Value     | Unit | Condition                                                                           |
|-----------------------------|-----------|------|-------------------------------------------------------------------------------------|
| Ambient temperature         | -20...+50 | °C   | Higher ambient temperature allowed as long as T <sub>case-max</sub> is not exceeded |
| T <sub>case-max</sub>       | 80        | °C   | Maximum temperature measured at T <sub>case</sub> -point                            |
| T <sub>case-life</sub>      | 70        | °C   | Measured at T <sub>case</sub> -point                                                |
| Maximum housing temperature | 110       | °C   | In case of a failure, inherent by design                                            |
| Relative humidity           | 10...90   | %    | Non-condensing                                                                      |

## Lifetime

| Specification item | Value  | Unit  | Condition                                                                 |
|--------------------|--------|-------|---------------------------------------------------------------------------|
| Driver lifetime    | 50,000 | hours | Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10% |



## Storage temperature and humidity

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

## Programmable features

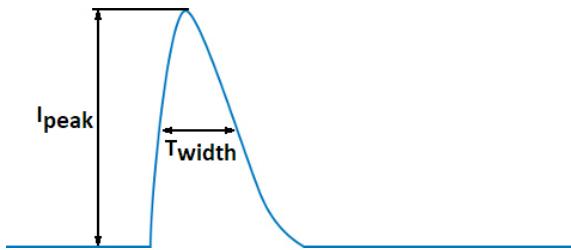
| Specification item                  | Available            | Default setting | Condition                                  |
|-------------------------------------|----------------------|-----------------|--------------------------------------------|
| Set Adjustable Output Current (AOC) | LEDset, Programmable | 300 mA          |                                            |
| Constant Light Output (CLO)         | No                   |                 |                                            |
| Adjustable Light Output (ALO)       | No                   |                 |                                            |
| Touch & Dim (TD)                    | Yes                  | ON              |                                            |
| Min dim level                       | No                   |                 |                                            |
| DC emergency (DCemDim)              | No                   |                 |                                            |
| Dimming support at DC operating     | No                   |                 |                                            |
| Corridor mode                       | Yes                  | OFF             | Default: Default: T1=55s, T2=12s, T3=30min |
| OEM Write Protection (OWP)          | Yes                  | OFF             |                                            |
| Luminaire Info                      | Yes                  |                 |                                            |

## 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 and II |  | per IEC60598         |

## Inrush current

| Specification item         | Value     | Unit    | Condition                                      |
|----------------------------|-----------|---------|------------------------------------------------|
| Inrush current $I_{peak}$  | 9         | A       | Input voltage 230V                             |
| Inrush current $T_{width}$ | 22        | $\mu s$ | Input voltage 230V, measured at 50% $I_{peak}$ |
| Drivers / MCB 16A type B   | $\leq 40$ | pcs     | Indicative value                               |



| MCB | Rating | Relative number of LED drivers |
|-----|--------|--------------------------------|
| B   | 4A     | 25%                            |
| B   | 6A     | 40%                            |
| B   | 10A    | 63%                            |
| B   | 13A    | 81%                            |
| B   | 16A    | 100% (stated in datasheet)     |
| B   | 20A    | 125%                           |
| B   | 25A    | 156%                           |
| B   | 32A    | 200%                           |
| B   | 40A    | 250%                           |
| C   | 4A     | 42%                            |
| C   | 6A     | 63%                            |
| C   | 10A    | 104%                           |
| C   | 13A    | 135%                           |
| C   | 16A    | 170%                           |
| C   | 20A    | 208%                           |
| C   | 25A    | 260%                           |
| C   | 32A    | 340%                           |
| C   | 40A    | 415%                           |

## Driver touch current / protective conductor current

| Specification item                    | Value | Unit    | Condition                                             |
|---------------------------------------|-------|---------|-------------------------------------------------------|
| Typical Touch Current (ins. Class II) | 0.75  | mA peak | Acc. IEC61347-1. LED module contribution not included |

## Surge immunity

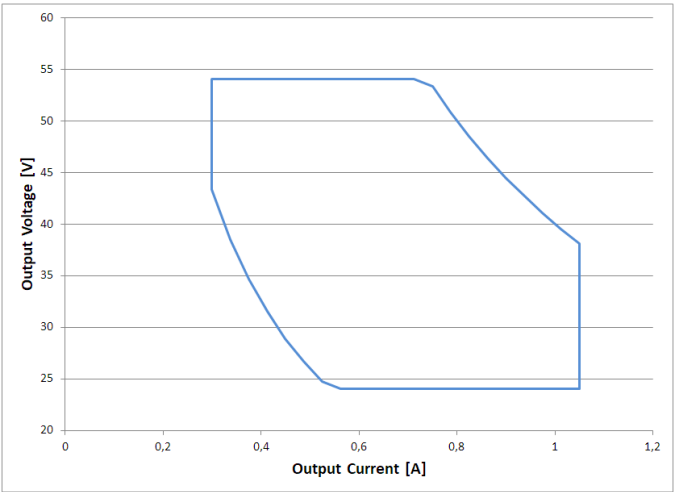
| Specification item                  | Value | Unit | Condition                                                            |
|-------------------------------------|-------|------|----------------------------------------------------------------------|
| Mains surge immunity (diff. mode)   | 1     | kV   | L- N Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us                      |
| Mains surge immunity (comm. mode)   | 2     | kV   | L/N - PE Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us                 |
| Control surge immunity (diff. mode) | 1     | kV   | DALI/TD - DALI-TD Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us         |
| Control surge immunity (comm. mode) | 2     | kV   | DALI/TD - PE, DALI - L/N Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

## Application Info

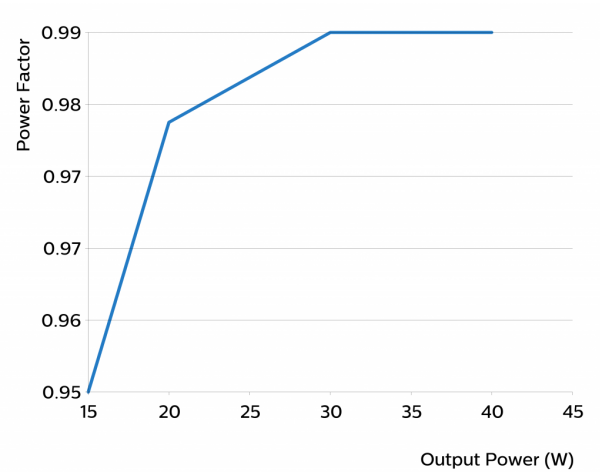
| Specification item                     | Value                                |
|----------------------------------------|--------------------------------------|
| Approval marks                         | CE / DALI 2 / EAC / EL / ENEC / SELV |
| Ingress Protection classification (IP) | 20                                   |
| Noise and hum dB(A)                    | 20                                   |

Graphs

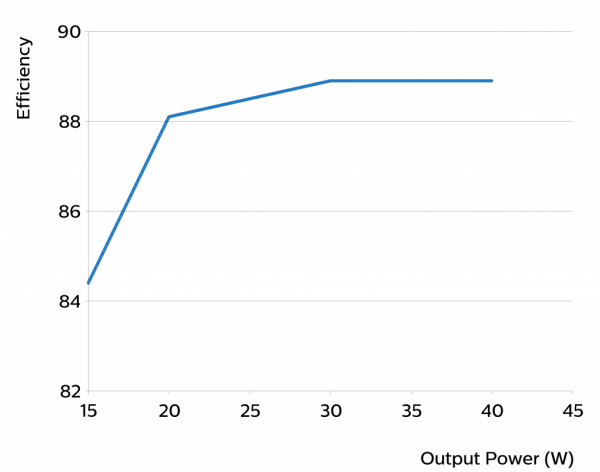
Operating window



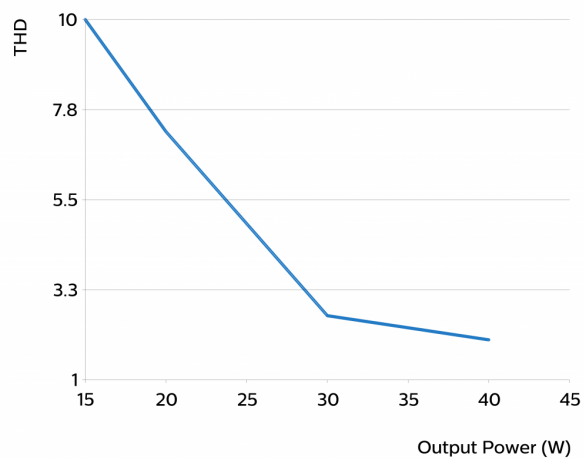
Power factor versus output power



Efficiency versus output power



## THD versus output power



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