

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LED drivers – linear LV isolated

Xitanium 48W 0.7-1.05A 46V TD DS 230V I

9290 028 51780

Enabling future-proof LED technology

Xitanium LED drivers with single current output offer industry leading performance and reliability at optimized cost.

They are ideal for high volume applications while delivering to specific requirements. These drivers offer the same level of performance as Xitanium adjustable current linear drivers to ensure high quality of light, but with a specific current setting for optimized performance. Due to the low output current ripple, you can be sure to offer your customers high quality of light without visual flicker and stroboscopic effects.

Benefits

- High quality of light -assurance of camera and scanner-friendly performance
- High reliability
- Optimized performance at specific output current settings
- Flicker and noise free dimming with all Touch and DALI LED drivers due to amplitude dimming (AM)

Features

- Low output current tolerance
- Low output ripple current
- Long lifetime at high operating temperature
- Easy current selection via dipswitch
- Dali dimmable & programmable, 1-10V dimmable, and fixed-output versions available

Application

- Offices
- Industry
- Supermarkets / Retail

Electrical input data

| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|-----------------|---|
| Rated input voltage range | 220...240 | V _{ac} | Performance range |
| Rated input voltage | 230 | V _{ac} | |
| Rated input frequency range | 50...60 | Hz | Performance range |
| Rated input current | 0.24 | A | @ full output power @ rated input voltage |
| Rated input power | 54.2 | 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 | 88 | % | @ rated output power @ rated input voltage @max. U _{out} |
| Input voltage AC range | 202...254 | V _{ac} | Operational range |
| Input frequency AC range | 47.5...63 | Hz | Operational range |
| Standby Power | 0.43 | W | |
| Isolation input to output | SELV | | |

Electrical output data

| Specification item | Value | Unit | Condition |
|--------------------------------------|------------------|-----------------|---------------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 23...46 | V _{dc} | |
| Output voltage max. | 60 | V | Maximum output voltage (rms) |
| Output current | 0.7/0.8/0.9/1.05 | A | |
| Output current tolerance | ± 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average, < 3kHz |
| Output current ripple HF | ≤ 15 | % | |
| Output P _{st} ^{LM} | ≤ 0.02 | | In entire operating window |
| Output SVM | ≤ 0.07 | | In entire operating window |
| Output power | 16.1...48.3 | W | |

Electrical data controls input

| Specification item | Value | Unit | Condition |
|--------------------|------------------------|------|---------------|
| Control method | DALI, Touch & Dim (TD) | | |
| Dimming range | 3...100 | % | Default range |

Wiring and Connections

| Specification item | Value | Unit | Type |
|----------------------------|----------------------|-----------------------|--|
| Input wire cross-section | 0.75...1.5 / 18...16 | mm ² / AWG | Type250 (Independent), solid / stranded wire |
| Input wire strip length | 8.5...9.5 | mm | |
| Output wire cross-section | 0.5...1.5 / 20...16 | mm ² / AWG | Type250, solid / stranded wire |
| Output wire strip length | 8.5...9.5 | mm | |
| Control wire cross-section | 0.75...1.5 / 18...16 | mm ² / AWG | Type250 (Independent), solid / stranded wire |
| Control wire strip length | 8.5...9.5 | mm | |
| Maximum cable length | 1 | m | Total length of wiring including LED module, one way |

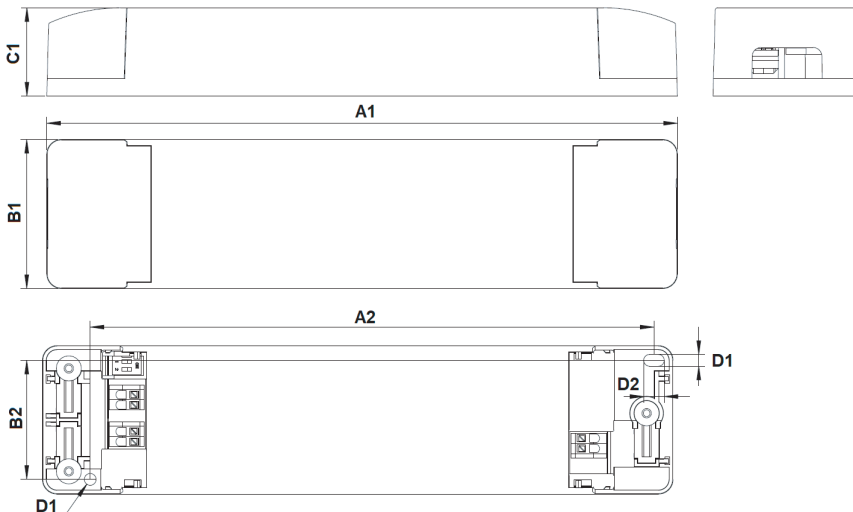


Insulation

| Insulation per IEC61347-1 | Input | Output | DALI |
|---------------------------|-------|--------|--------|
| Input | | SELV | Basic |
| Output | SELV | | Double |
| DALI | Basic | Double | |

Dimensions and weight

| Specification item | Value | Unit | Tolerance (mm) |
|-----------------------------|-------|------|----------------|
| Length (A1) | 215 | mm | |
| Mounting hole distance (A2) | 192.2 | mm | |
| Width (B1) | 50.5 | mm | |
| Width (B2) | 40.5 | mm | |
| Height (C1) | 30 | mm | |
| Mounting hole diameter (D1) | 4 | mm | |
| Mounting hole diameter (D2) | 7 | mm | |
| Housing color | White | | |
| Weight | 168 | gram | |



Logistical data

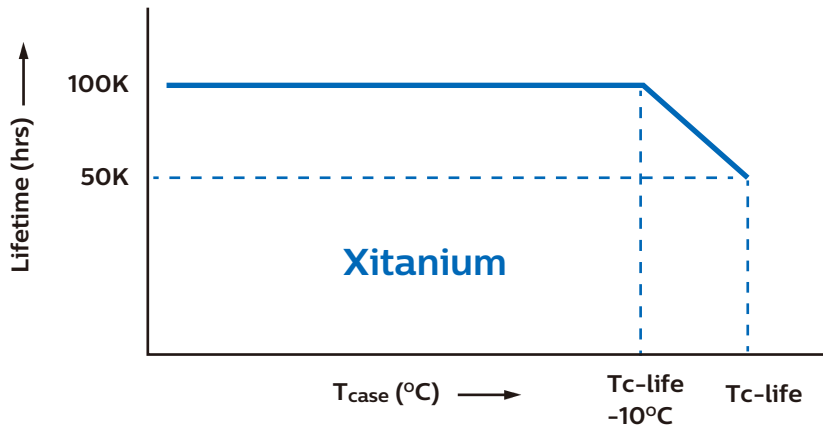
| Specification item | Value |
|--------------------|---|
| Product name | Xitanium 48W 0.7-1.05A 46V TD DS 230V I |
| Logistic code 12NC | 9290 028 51780 |
| EOC | 692234192215200 |
| Pieces per box | 24 |

Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|------|---|
| Ambient temperature | -20...+45 | °C | Higher ambient temperature allowed as long as T _{case-max} is not exceeded |
| T _{case-max} | 75 | °C | Maximum temperature measured at T _{case-point} |
| T _{case-life} | 65 | °C | Measured at T _{case-point} |
| Maximum housing temperature | 130 | °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

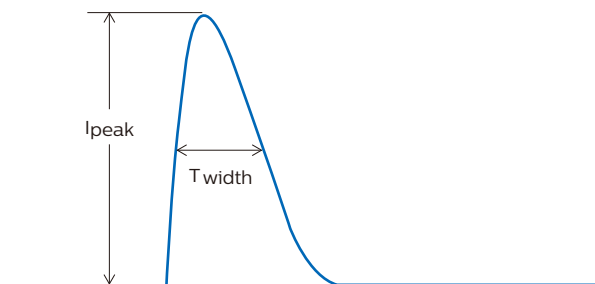
| Specification item | Available | Default setting | Condition |
|-------------------------------------|-----------|-----------------|---------------|
| Set Adjustable Output Current (AOC) | | 700 mA | Via dipswitch |
| Constant Light Output (CLO) | No | | |
| Adjustable Light Output (ALO) | No | | |
| Dynadimmer | No | | |
| Touch & Dim (TD) | Yes | ON | |
| DC emergency (DCemDim) | No | | |
| Corridor mode | No | | |
| OEM Write Protection (OWP) | No | | |

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 | II | | per IEC60598 |
| Energy metering | No | | |
| Diagnostics | No | | |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-----------|---------|---|
| Inrush current I_{peak} | 17.2 | A | Input voltage V |
| Inrush current T_{width} | 270 | μ s | Input voltage V, measured at 50% I_{peak} |
| Drivers / MCB 16A type B | ≤ 24 | 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) | 0.7 | mA peak | Acc. IEC61347-1. LED module contribution not included |

Surge immunity

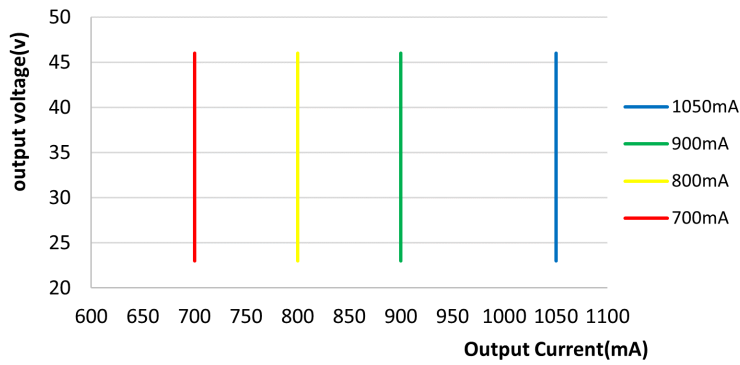
| Specification item | Value | Unit | Condition |
|-------------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 1 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 2 | kV | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |
| Control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

Application Info

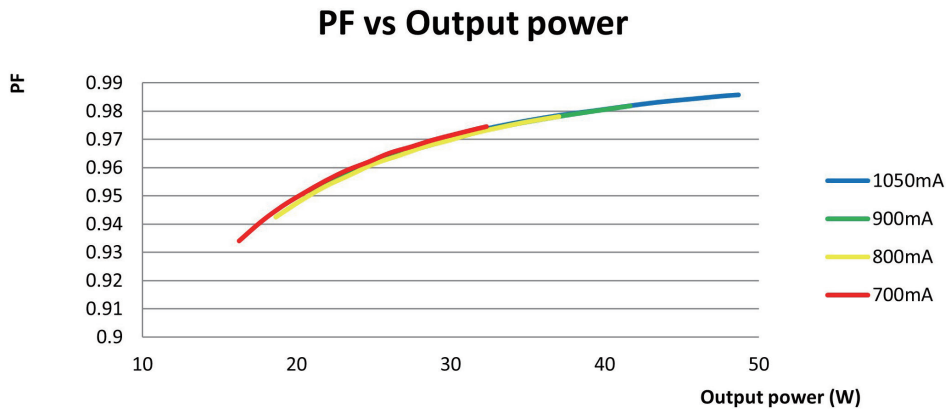
| Specification item | Value |
|--|---|
| Approval marks | CB / CCC / CE / DALI-2 / ENEC / SELV / RCM / TISI |
| Ingress Protection classification (IP) | 20 |

Graphs

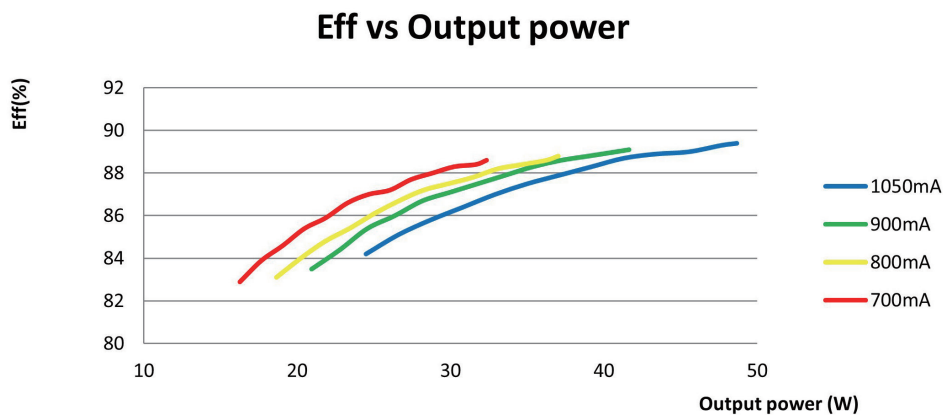
Operating window

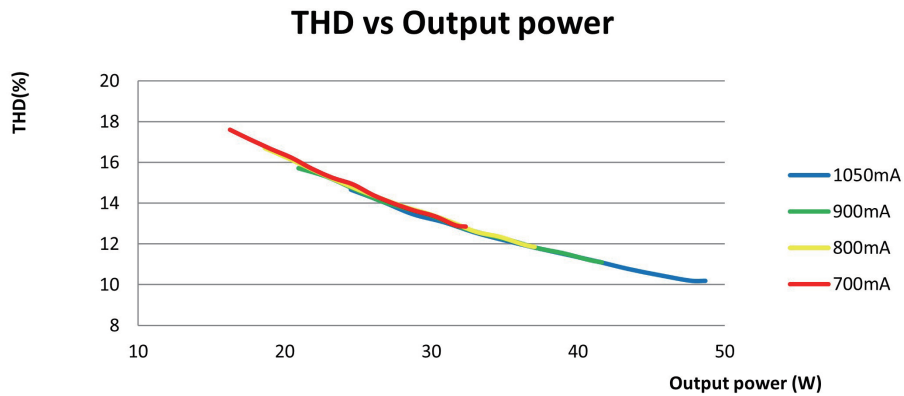


Power factor versus output power



Efficiency versus output power





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