

PHILIPS

Xitanium

LED driver



Datasheet

Xitanium LITE Prog LED Xtreme drivers

Xi LP 150W 0.2-0.7A SN 230V S240 sXt

Xitanium LITE Prog LED Xtreme drivers

Philips Xitanium Lite Programmable LED drivers are value engineered to deliver a carefully selected feature set and high-end performance, making it a preferred choice for many outdoor applications. The portfolio offers high flexibility with a customizable operating window, enabling differentiation in LED lighting designs via system tuning and being prepared for LED efficacy upgrades.

In this product family Philips introduces new drivers in a stretched form factor with a balanced feature set, which offer high value for both OEM customers and end-users. The products can replace the existing programmable outdoor LED drivers and will bring significant improvement in programming, assembly into a luminaire and electrical performance. One of the key features is SimpleSet®, an easy and fast way to configure the driver without the need to power the driver.

Benefits

- Ultimate robustness, offering peace of mind and lower maintenance costs
- Balanced configurable feature set covering the most common applications
- Easy to design-in and install for Class I and Class II applications
- Energy savings through high efficiency and via a choice of dimming options

Features

- SimpleSet®, wireless configuration interface
- High surge protection
- Long lifetime and robust protection against moisture, vibration and temperature
- Configurable operating windows(AOC)
- External control interface
- 1-step autonomous dimming via integrated DynaDimmer LITE
- Thermal protection for driver (integrated)
- Simplified linear version of Constant Light Output (CLO LITE)

Application

- Road and street lighting
- Area lighting

Electrical input data

| Specification item | Value | Unit | Condition |
|-----------------------------|---------------|------|--------------------------------------|
| Rated input voltage range | 220 ... 240 | Vac | Performance |
| Input voltage range | 198 ... 264 | Vac | Operational |
| Rated input frequency range | 50 ... 60 | Hz | Performance |
| Input frequency range | 45 ... 66 | Hz | Operational |
| Rated input current | 0.79 ... 0.65 | A | Rated input voltage range, full load |
| Rated input power | 162 | W | 230Vac, full load |
| Power factor | ≥ 0.99 | | 230Vac, full load. See graph |
| Total harmonic distortion | ≤ 9 | % | 230Vac, full load. See graph |
| Efficiency | 93 | % | 230Vac, full load. See graph |

Electrical output data

| Specification item | Value | Unit | Condition |
|-----------------------------|------------------|------|--|
| Regulation method | Constant Current | | |
| Output voltage | 90 ... 283 | Vdc | See graph |
| Output voltage max. | 340 | V | Peak voltage at open load |
| Programmable output current | 200 ... 700 | mA | |
| Output current min dimming | 80 | mA | |
| Output current tolerance | ± 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average, 70Hz ... 1kHz |
| Output current ripple HF | ≤ 15 | % | Ripple = peak / average, > 1kHz |
| Output power range | 7 ... 150 | W | |

Electrical data controls input

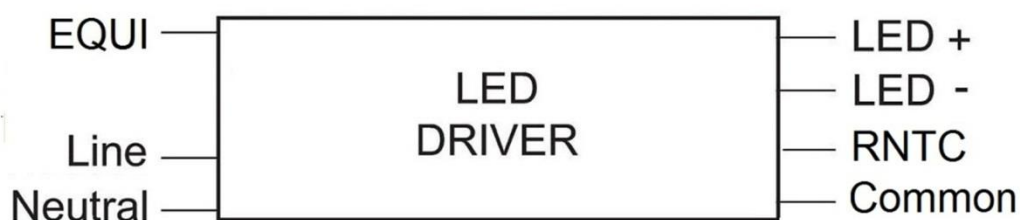
| Specification item | Value | Unit | Condition |
|--------------------|-----------------|------|----------------------------------|
| Control method | Dynadimmer LITE | | |
| Dimming range | 11...100 | % | Output current amplitude dimming |

Logistical data

| Specification item | Value |
|--------------------|--------------------------------------|
| Product name | Xi LP 150W 0.2-0.7A SN 230V S240 sXt |
| Order code | 871869648162200 |
| Logistic code 12NC | 9290 009 63806 |
| Pieces per box | 10 |

Wiring & Connections

| Specification item | Value | Unit | Condition |
|---------------------------------|-----------|-----------------|---|
| Input wire cross-section | 0.5...2.5 | mm ² | Push-in at 0° angle, solid and stranded wire |
| | 20...12 | AWG | |
| Input wire strip length | 10 ... 11 | mm | |
| Output wire cross-section | 0.2...1.5 | mm ² | Push-in at 45° angle, solid and stranded wire |
| | 24...16 | AWG | |
| Output wire strip length | 8.5...9.5 | mm | |
| Maximum NTC output cable length | 0.6 | m | |
| Maximum output cable length | 2.5 | m | CISPR15: between driver and LED module |

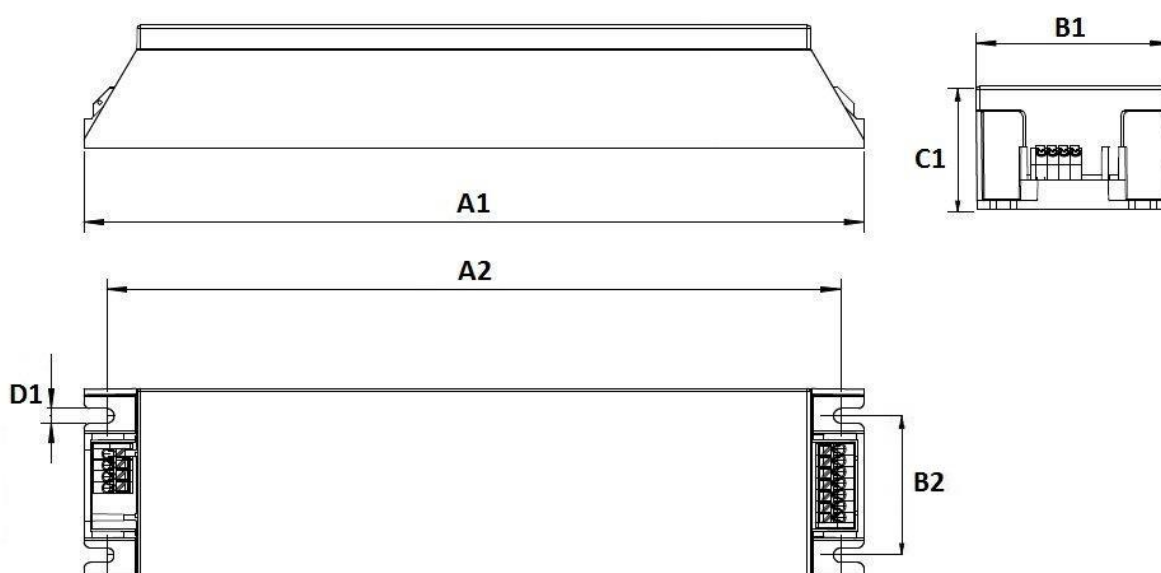


Insulation

| Insulation | Mains | EQUI | LED + NTC |
|------------|--------|--------|-----------|
| Mains | N/A | Double | Double |
| EQUI | Double | N/A | Basic |
| LED + NTC | Double | Basic | N/A |

Dimensions and weight

| Specification item | Value | Unit | Condition |
|---------------------------|-------------|------|---|
| Length (A1) | 240.5 ± 0.5 | mm | |
| Width (B1) | 58.6 ± 0.3 | mm | |
| Height (C1) | 37.8 ± 0.5 | mm | |
| Fixing hole diameter (D1) | 4.5 | mm | Screw: M4. washer: $\varnothing \leq 10.5\text{mm}$, torque: $\leq 1.5\text{Nm}$ |
| Fixing hole distance (A2) | 226.2 ± 0.5 | mm | |
| Fixing hole distance (B2) | 42.9 ± 0.3 | mm | |
| Weight | 640 | gram | |



Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|------|---|
| Driver ambient temperature | -40...+55 | °C | At rated output power. Higher ambient temperature allowed as long as Tcase-max is not exceeded. |
| Tcase-min | -30 | °C | Min. steady-state Tcase |
| Tcase-max | +90 | °C | Max. steady-state Tcase |
| Tcase-life | -30...+80 | °C | For nominal driver lifetime |
| Maximum housing temperature | 130 | °C | In case of failure |
| Relative humidity | 5 ... 95 | % | Non-condensing |
| Ingress Protection | 20 | | Suggested luminaire IP: ≥ IP54 |
| Noise and hum | 24 | dB | Typical |

Storage temperature and humidity

| Specification item | Value | Unit | Condition |
|---------------------|-----------|------|----------------|
| Ambient temperature | -30...+80 | °C | |
| Relative humidity | 10...90 | % | Non-condensing |

Lifetime

| Specification item | Value | Unit | Condition |
|-----------------------|---------|-------|--|
| Rated driver lifetime | 100,000 | hours | Tcase ≤ Tcase-life Maximum failures = 10% |

Programmable features

| Specification item | Value | Remark | Default setting |
|-------------------------------------|-----------|--|-----------------|
| Adjustable Output Current (AOC) | SimpleSet | See Design-in guide | 700mA |
| Module Temperature Protection (MTP) | Yes | NTC types: Murata: 10kOhm, NCP18XH103J03RB Vishay: 15kOhm, 2381 615 54153 Murata: 15kOhm, NCP15XW153E03RC | Enabled |
| Constant Lumen Over Lifetime (CLO) | Yes | CLO LITE | Disabled |
| Diagnostics | Yes | Basic options | Enabled |
| Integrated Dynadimmer | Yes | Dynadimmer LITE | Disabled |

Features

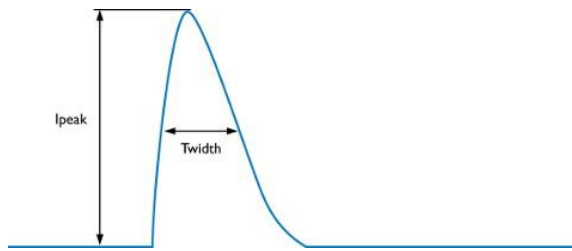
| Specification item | Value | Remark | Condition |
|---|----------|--------|---------------------------------|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Overheating protection | Yes | | Automatic recovering. See graph |
| Hot wiring | No | | |
| Suitable for luminaire insulation class | I and II | | Per IEC60598 |

Certificates and standards

| Specification item | Value |
|--------------------|----------------|
| Approval marks | CE / ENEC / CB |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|--------|---------|---|
| Inrush current I_{peak} | 53 | A | Input voltage 230Vac |
| Inrush current T_{width} | 300 | μs | Input voltage 230Vac, measured at 50% I_{peak} |
| Typical number of drivers | Max. 8 | pcs | MCB 16A B type, mains impedance $200m\Omega + 400\mu H$ |



| MCB | Rating | Relative number of LED drivers |
|-----|--------|--------------------------------|
| B | 10A | 63% |
| B | 13A | 81% |
| B | 16A | 100% |
| B | 20A | 125% |
| B | 25A | 156% |
| C | 10A | 104% |
| C | 13A | 135% |
| C | 16A | 170% |
| C | 20A | 208% |
| C | 25A | 260% |

Driver touch current

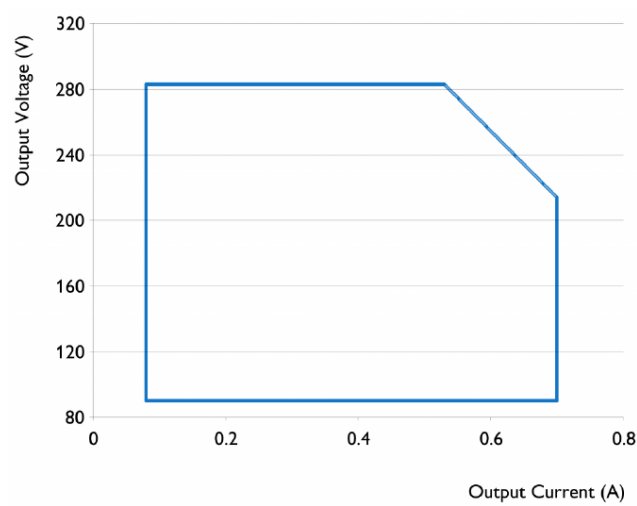
| Specification item | Value | Unit | Condition |
|-----------------------|-------------|---------|---|
| Typical touch current | 0.34 / 0.41 | mA peak | Acc. IEC61347-1 at 230Vac 50/60Hz LED module contribution not included |

Surge immunity

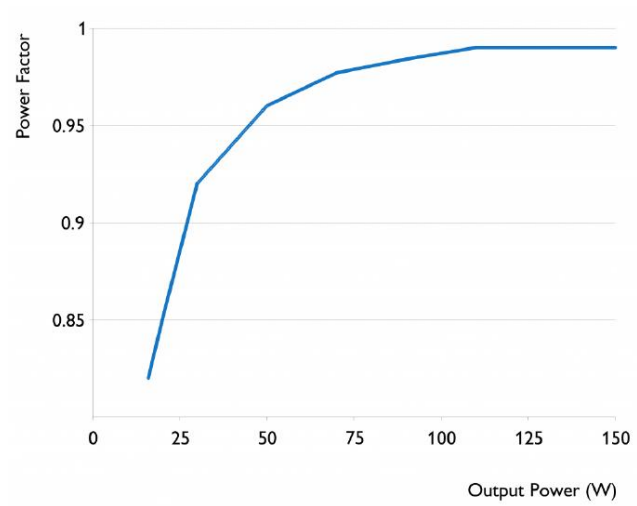
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|---------|---|
| Mains surge immunity (diff. mode) | 6 / 3 | kV / kA | L-N, acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 8 | kV | L/N – GND acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

Graphs

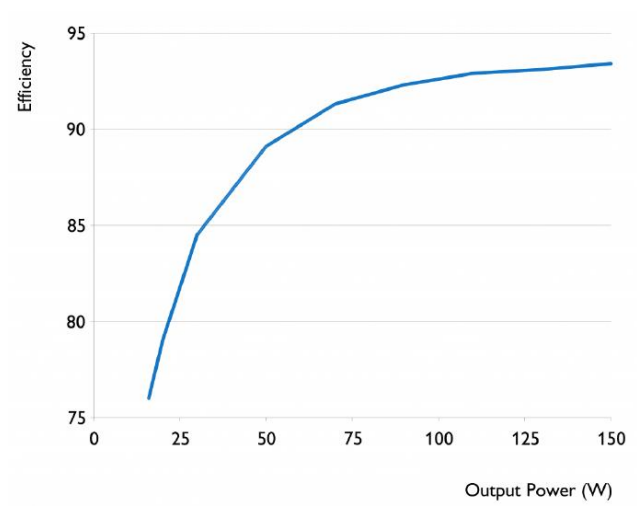
Operating window



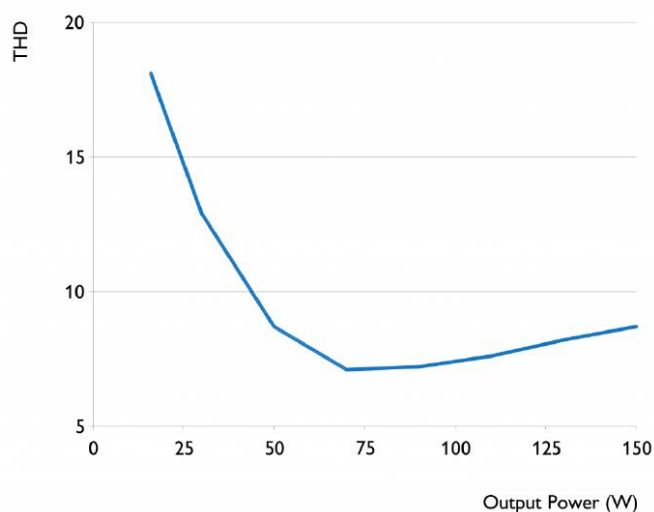
Power factor versus output power



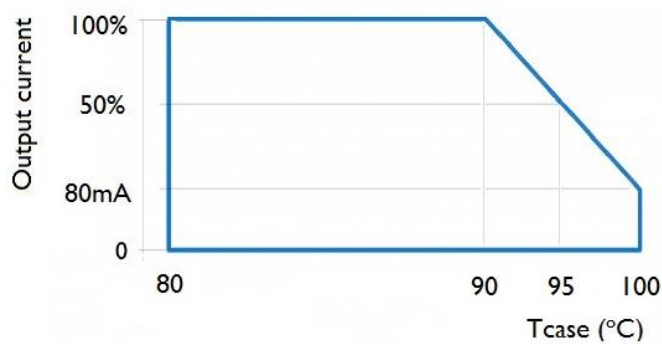
Efficiency versus output power



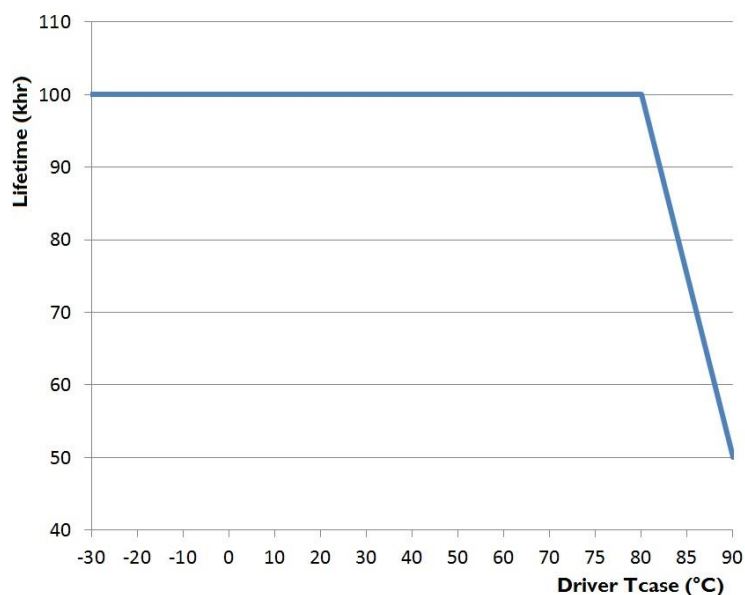
THD versus output power



Driver output current versus Tcase



Driver lifetime versus driver case temperature Tc



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