## Datasheet
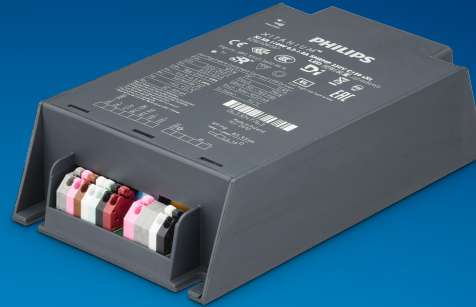
# Xitanium LED Xtreme drivers – Sensor Ready

## Xi SR 75W 0.3-1.0A SNEMP 230V C150 sXt

### 9290 028 08506

**Simplifying connectivity solutions with sensors and controls**

Philips LED Xtreme Sensor Ready drivers are ideal for use with sensors applied in outdoor and industrial management systems. With its dual integrated power supplies it is easy to power sensors and wireless modules directly from the driver. The driver also features integrated energy metering related to these management systems from the SR Certified partner program. This program with key management and sensor vendors ensures that certified sensors and controllers work seamlessly with the Xitanium SR driver.

| Benefits | Features | Application |
|---|---|---|
| • Sensor Ready concept, ideal for use with sensors applied in outdoor and industrial management systems | • Integrated Bus Power Supply for sensors and radios (DALI part 250) | • Road and street lighting |
| • Dual integrated power supplies to power sensors and wireless radios directly from the driver, open spec for all OEMs, simplifying integration of sensors into the luminaire | • Integrated 24VDC auxiliary power supply (DALI Part 150) | • Area lighting |
| | • Memory Bank 1 Extension / Luminaire Data (DALI part 251) | • Industrial lighting |
| | • Highly accurate energy reporting (DALI Part 252) | • Tunnel lighting |
| • Low inrush current due to IntelliStart, a driver-integrated feature enabling a high amount of drivers per MCB (on select models) | • Diagnostics & Maintenance data (DALI part 253) | |
| | • SimpleSet*, wireless configuration interface | |
| • High-accuracy integrated power metering | • High surge immunity (CM/DM) | |
| • Certified per DIIA intra-luminaire standard D4i | • Long lifetime and robust protection | |
| | • Configurable operating windows (AOC) | |
| | • Autonomous dimming via Integrated DynaDimmer | |
| | • Suitable for central emergency DC operation (DCemDim) | |
| | • Thermal protection for driver (DTL) and LED module (MTP) | |
| | • Constant Light Output (CLO) | |
| | • Adjustable Start-up Time (AST) | |
| | • Adjustable Light Output (ALO) | |
| | • End-Of-Life indicator (EOL) | |
| | • OEM Write Protection (OWP) | |

## Electrical input data

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Rated input voltage range | 202...254 | $V_{ac}$ | Performance range |
| Rated input voltage | 230 | $V_{ac}$ | |
| Rated input frequency range | 47...63 | Hz | Performance range |
| Rated input current | 0.36 | A | @ rated output power @ rated input voltage |
| Max. input current | 0.43 | A | @ rated output power @ minimum performance input voltage |
| Rated input power | 87 | W | @ rated output + Vaux power @ rated input voltage |
| Power factor | 0.98 | | @ rated output power @ rated input voltage |
| Total harmonic distortion | 9 | % | @ rated output power @ rated input voltage |
| Efficiency | 92 | % | @ rated output power @ rated input voltage @ max. Uout |
| Rated input voltage DC range | 186...250 | $V_{dc}$ | Performance range |
| Rated input current DC range | 0.2...0.3 | $A_{dc}$ | Performance range |
| Input voltage AC range | 80...264 | $V_{ac}$ | Safety operational range, see MainsGuard graph |
| Input frequency AC range | 45...66 | Hz | Safety operational range |
| Input voltage DC range | 168...275 | $V_{dc}$ | Safety operational range |
| Standby Power | 0.35 | W | Excl. consumption by sensors connected to the DA bus and/or 24VDC auxiliary supply |
| Isolation input to output | Reinforced | | |

## Electrical output data

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Regulation method | Constant Current | | |
| Output voltage | 35...108 | $V_{dc}$ | |
| Output voltage max. | 150 | V | Maximum voltage at open load |
| Output current | 0.3...1.05 | A | |
| Output current min programmable | 300 | mA | |
| Output current min dimming | 70 | mA | |
| Output current tolerance ± | 5 | % | |
| Output current ripple LF | ≤ 4 | % | Ripple = peak / average @ < 3kHz |
| Output current ripple HF | ≤ 4 | % | |
| Output $P_{st}^{LM}$ | ≤ 0.05 | | In entire operating window |
| Output SVM | ≤ 0.01 | | In entire operating window |
| Output power | 8...75 | W | |

## Electrical data controls input

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Control method | Dynadimmer, SR | Output current amplitude dimming | Please refer to design-in guide at www.philips.com/oem for more controllability details. |
| Dimming range | 10...100 | % | Acc. D4i. See www.digitalilluminationinterface.org/products |
| Isolation controls input to output | Supplementary | | acc. IEC61347-1 |
| SR output voltage max. | 22.5 | V | |
| SR guaranteed current | 52 | mA | |
| SR maximum current | 60 | mA | |

## Wiring and Connections

| Specification item | Value | Unit | Type |
|---|---|---|---|
| Input wire cross-section | 0.5…1.5 / 20…16 | mm² / AWG | solid / stranded wire |
| Input wire strip length | 8.5…9.5 | mm | |
| Output wire cross-section | 0.5…1.5 / 20…16 | mm² / AWG | solid / stranded wire |
| Output wire strip length | 8.5…9.5 | mm | |
| Control wire cross-section | 0.5…1.5 / 20…16 | mm² / AWG | solid / stranded wire |
| Control wire strip length | 8.5…9.5 | mm | |
| Maximum cable length | 1.5 | m | CISPR15: between driver and LED module |
| Maximum NTC output cable length | 0.6 | m | |
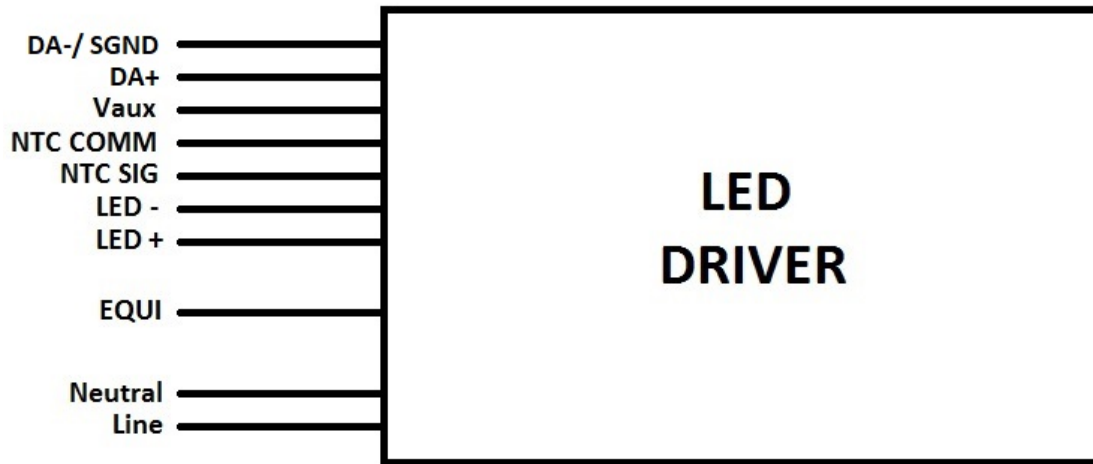


## Insulation

| Insulation per IEC61347-1 | Mains | EQUI | LED + NTC | DA + Vaux |
|---|---|---|---|---|
| Mains | | Reinforced | Reinforced | Reinforced |
| EQUI | Reinforced | | Basic | Supplementary |
| LED + NTC | Reinforced | Basic | | Supplementary |
| DA + Vaux | Reinforced | Supplementary | Supplementary | |

## Dimensions and weight

| Specification item | Value | Unit | Tolerance (mm) |
|---|---|---|---|
| Length (A1) | 150 | mm | |
| Mounting hole distance (A2) | 133.6 | mm | |
| Width (B1) | 90 | mm | |
| Width (B2) | 70 | mm | |
| Height (C1) | 40 | mm | |
| Mounting hole diameter (D1) | 4.5 | mm | |
| Weight | 760 | gram | |
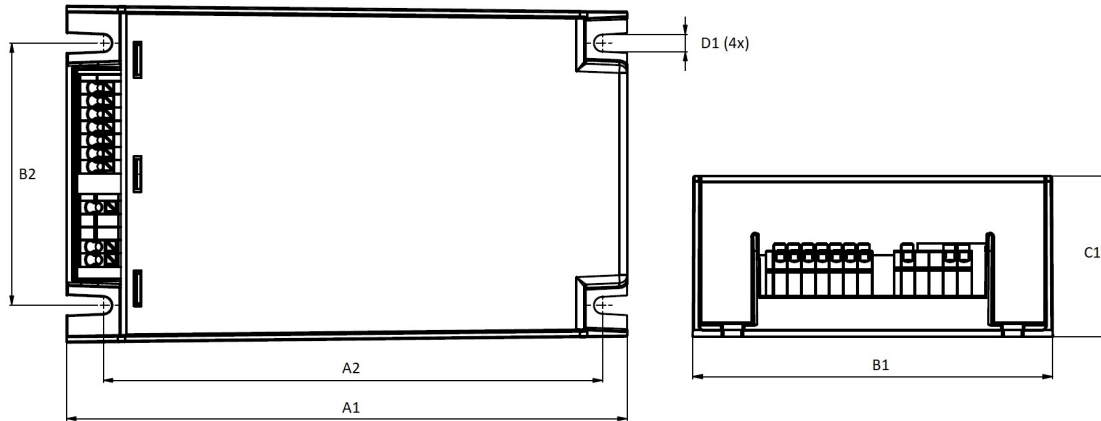
## Logistical data

| Specification item | Value |
|---|---|
| Product name | Xi SR 75W 0.3-1.0A SNEMP 230V C150 sXt |
| EOC | 871951425591300 |
| Logistic code 12NC | 9290 028 08506 |
| EAN1 (GTIN) | 8719514255913 |
| EAN3 (box) | 8719514255920 |
| Pieces per box | 12 |

## 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 | 90 | °C | Maximum temperature measured at $T_{case}$-point |
| Tcase-life | 80 | °C | Measured at $T_{case}$-point |
| Maximum housing temperature | 120 | °C | In case of a failure, inherent by design |
| Relative humidity | 10...90 | % | Non-condensing |

## Lifetime

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Driver lifetime | 100,000 | hours | Measured temperature at Tcase-point is Tcase-life. Maximum failures = 10% |
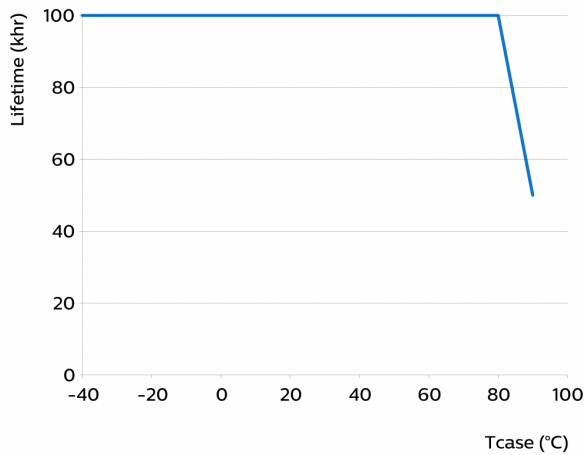


## Storage temperature and humidity

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Ambient temperature | -40...+85 | °C | |
| Relative humidity | 5...95 | % | Non-condensing |

## Programmable features

| Specification item | Available | Default setting | Condition |
|---|---|---|---|
| Set Adjustable Output Current (AOC) | Programmable, SimpleSet | 700 mA | |
| LED Module Temperature Protection (MTP) | Yes | OFF | |
| Driver Temperature Limit (DTL) | Yes | ON | |
| Adjustable Light Output (ALO) | Yes | OFF | |
| Adjustable Light Output (ALO) min level | Yes | OFF | |
| Constant Light Output (CLO) | Yes | OFF | |
| Adjustable Start-up Time (AST) | Yes | 1 s | |
| DALI 253 M | Yes | — | |
| Integrated Dynadimmer | Yes | OFF | 5-step, light turn-off possible |
| Min Dim Level | Yes | 10 % | |
| DC emergency (DCemDim) | Yes | ON | Sensor commands accepted, EOF(x) range: 10 ... 60%. No external DC rated mains fuse required. Internal fuse rating: T5A 250VAC/DC. |
| DALI control supported at DC operation | Yes | OFF | |
| End Of Life indicator (EOL) | Yes | OFF | |
| OEM Write Protection (OWP) | Yes | OFF | |
| SR PSU (DALI part 250) | Yes | ON | |
| Luminaire Info (DALI part 251) | 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 |
| Overtemperature protection | Yes | | Automatic recovering |
| Energy metering (DALI part 252) | Yes | | Accuracy 0.5W at standby, +/-1 % at full power |
| Diagnostics | Yes | | |
| Diagnostics (DALI part 253) | Yes | | |
| +24V Auxiliary Power Supply (DALI part 150) | Yes | | 24VDC |
| Inrush Limiter type | IntelliStart | | |

## Inrush current

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Initial inrush current $I_{peak}$ | 12 | A | Input voltage 230V |
| Initial inrush current $T_{width}$ | 100 | µs | Input voltage 230V, measured at 50% $I_{peak}$ |
| Subsequent inrush current $I_{peak}$ | 4 | A | Input voltage 230V |
| Subsequent inrush current $T_{width}$ | 2.7 | ms | Input voltage 230V, measured at 50% $I_{peak}$ |
| Drivers / MCB 16A type B/C | ≤ 30 | pcs | Indicative value |



| MCB | Rating | Max. recommended number of LED drivers |
|---|---|---|
| B/C | 4A | 7 |
| B/C | 6A | 11 |
| B/C | 10A | 18 |
| B/C | 13A | 24 |
| B/C | 16A | 30 |
| B/C | 20A | 36 |
| B/C | 25A | 46 |
| B/C | 32A | 60 |
| B/C | 40A | 72 |
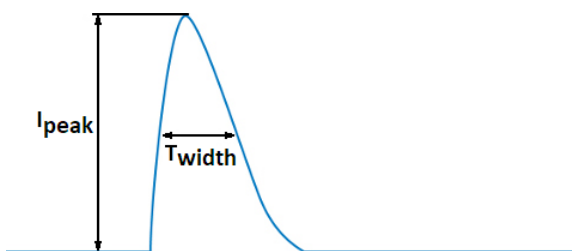
## Driver touch current / protective conductor current

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Typical Touch Current (ins. Class II) | 0.35 | mA peak | Acc. IEC61347-1. LED module contribution not included |
| Typical Protective Conductor Current (ins. Class I) | 0.25 | mA rms | Acc. IEC60598-1. LED module contribution not included |

## Surge immunity

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Mains surge immunity (diff. mode) | 6 | kV | L-N acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 10 | kV | L/N - EQUI 10kV acc. EN61547; 8kV acc. IEC61000-4-5, 12 Ohm 1.2/50us,8/20us |
| Control surge immunity (diff. mode) | 0.03 | kV | DA - DA acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Control surge immunity (comm. mode) | 4 | kV | DA/Vaux - EQUI acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us |
| Control surge immunity (comm. mode) | 4 | kV | DA/Vaux - L/N acc. IEC61000-4-5. 12 Ohm 1.2/50us,8/20us |

## Application Info

| Specification item | Value |
|---|---|
| Approval marks | CCC / CE / D4i / Double-insulated Built-In / EAC / EL / ENEC / SR / WEEE |
| Ingress Protection classification (IP) | 20 |
| Application | Outdoor |
| Mounting Type | Built-in |

## Graphs

## Operating window
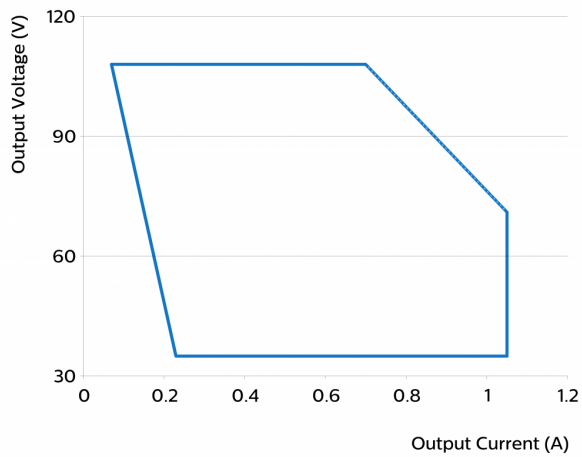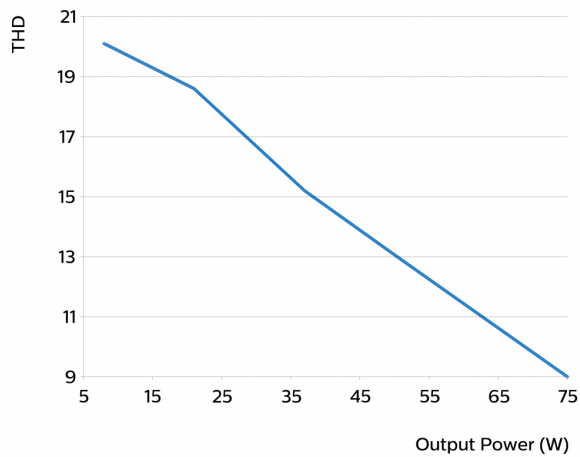
## Thermal Guard
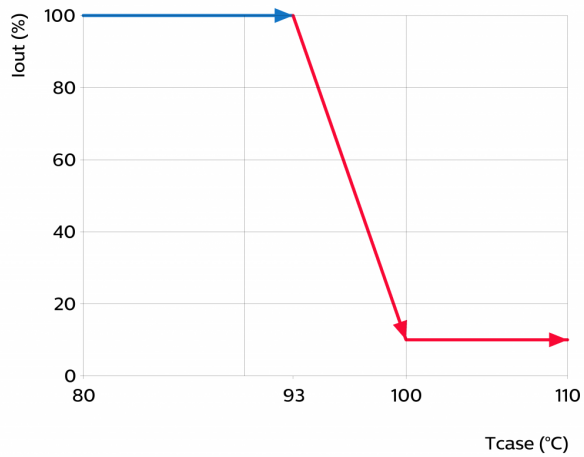


## Mains Guard
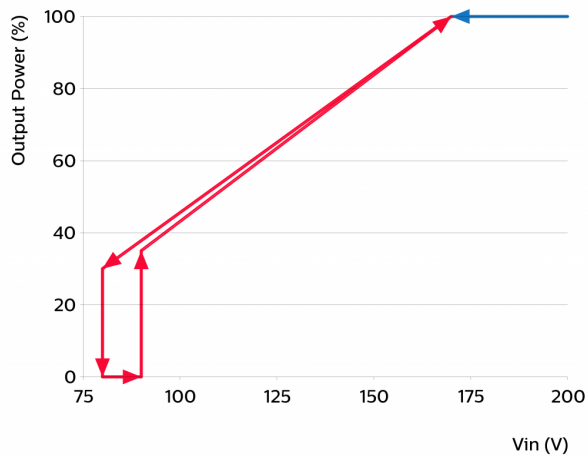


## Power factor versus output power
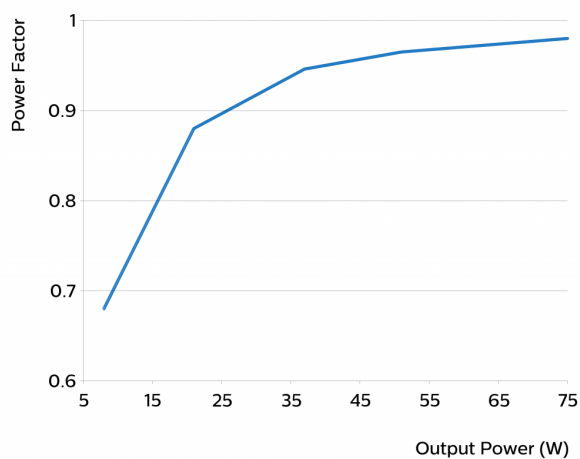
## Efficiency versus output power
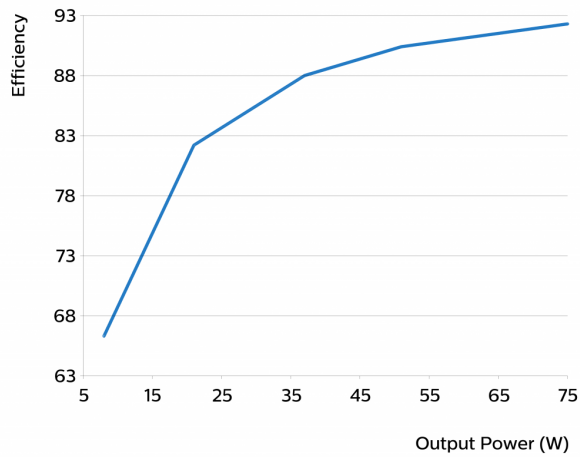


## THD versus output power



## Notes

Important info about dual power supplies:

1: DA power supply and Vaux supply are short-circuit proof.

2: The DA supply is specified with a guaranteed supply current of 52mA and a maximum supply current of 60mA. Voltage is depending on loading and will vary between 12V and 20VDC. The DA supply is turned on by factory default and can be switched off through MultiOne software.

3: Auxiliary supply Vaux supplies 24VDC and is able to deliver 3W average power. Peak power capacity is 10W with 25% duty cycle (T=5.2ms). This supply cannot be switched off.

4: DA supply and Vaux share the same common negative terminal

5: Do not connect multiple Vaux supplies in parallel.

Inrush current & fusing:

1: Driver inrush current is limited by randomly switching on at mains voltage zero crossing (IntelliStart).

2: Max. number of drivers per MCB/melting fuse is based on aggregate steady-state input current.

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