

PHILIPS

CertaDrive

LED driver



Datasheet

CertaDrive LED drivers – Linear HV non-isolated

CertaDrive 60W 360mA 170V 230V

Fixed current/voltage LED drivers for high volume LED propositions

The CertaDrive LED drivers are designed to fulfill the market need for essential lighting. The CertaDrive LED drivers offer basic specifications such as specific current and voltage settings, optimal to operate CertaFlux LED modules. Life time of the driver is set at 50,000 hours. Philips will extend the portfolio of CertaDrive LED drivers to match high volume CertaFlux LED line propositions as well as high volume opportunities of other LED board manufactures.

Benefits

- Design freedom
- Optimized to operate CertaFlux LED lines
- 3-years warranty

Features

- Small dimensions
- Specific current and voltage
- 50,000 hours life time
- Fast Time to Market

Application

- Waterproof luminaires
- Recessed, surface and suspended luminaires in offices
- High bay luminaires

Electrical input data

| Specification item | Value | Unit | Condition |
|---------------------------|-----------|-----------------|---|
| Nominal input voltage | 220...240 | V _{ac} | performance range |
| Nominal input frequency | 50...60 | Hz | |
| Nominal input current | 0.3 | A | @230V @ full load |
| Input voltage | 230 | V _{ac} | |
| Nominal input power | 67 | W | @230V @ full load |
| Power factor | ≥ 0.9 | | @ full load. See graph. |
| Total harmonic distortion | ≤ 20 | % | @ full load. See graph. |
| Efficiency | 93 | % | @230V @ full load |
| Nominal input voltage DC | 186...250 | V _{dc} | |
| Nominal input current DC | 0.3 | A | Input voltage 230 V _{dc} , full load |
| Input voltage AC | 202...254 | V _{ac} | Operational range |
| Input frequency AC | 47.5...63 | Hz | Maximum permissible range |
| Input voltage DC | 186...250 | V _{dc} | Maximum permissible range |
| Isolation Input to Output | Basic | | |

Electrical output data

| Specification item | Value | Unit | Condition |
|--------------------------|------------------|-----------------|-----------------------------|
| Regulation method | Constant Current | | |
| Output voltage | 120...170 | V _{dc} | |
| Output voltage max. | 340 | V | Peak voltage at open load |
| Output current | 0.36 | A | Full output current setting |
| Output current tolerance | ± 8 | % | |
| Output current ripple LF | ≤ 30 | % | Ripple = peak / average |
| Output power | 43...61 | W | Full output |

Electrical data controls input

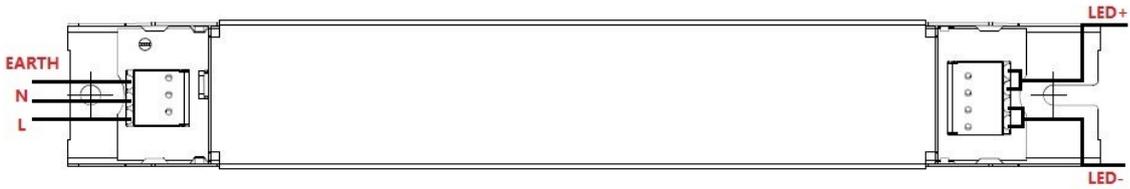
| Specification item | Value | Unit | Condition |
|--------------------|-------|------|-----------|
| Control method | Fixed | | |

Logistical data

| Specification item | Value |
|--------------------|--------------------------------|
| Product name | CertaDrive 60W 360mA 170V 230V |
| Order code | 871869649178200 |
| Logistic code 12NC | 9290 009 75006 |
| EAN3 | 8718696491799 |
| Pieces per box | 20 |

Wiring & Connections

| Specification item | Value | Unit | Condition |
|---------------------------|-----------|-----------------|--|
| Input wire cross-section | 0.5...1.5 | mm ² | WAGO744, solid wire |
| | 16...20 | AWG | WAGO744, solid wire |
| Input wire strip length | 8...9 | mm | |
| Output wire cross-section | 0.5...1.5 | mm ² | WAGO744, solid wire |
| | 16...20 | AWG | WAGO744, solid wire |
| Output wire strip length | 8...9 | mm | |
| Maximum cable length | 600 | mm | Total length of wiring including LED module, one way |

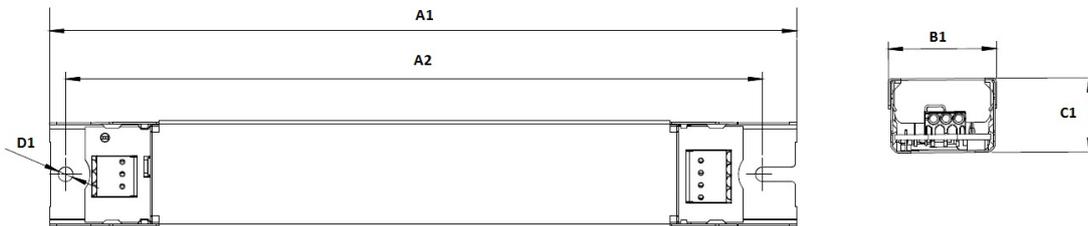


Insulation

| Insulation | input | output |
|------------|-------|--------|
| input | | Non |
| output | Non | |

Dimensions and weight

| Specification item | Value | Unit | Condition |
|---------------------------|-------|------|-----------|
| Length (A1) | 209 | mm | |
| Width (B1) | 30 | mm | |
| Height (C1) | 21.5 | mm | |
| Fixing hole diameter (D1) | 4.1 | mm | |
| Fixing hole distance (A2) | 195 | mm | |
| Weight | 148 | gram | |



Operational temperatures and humidity

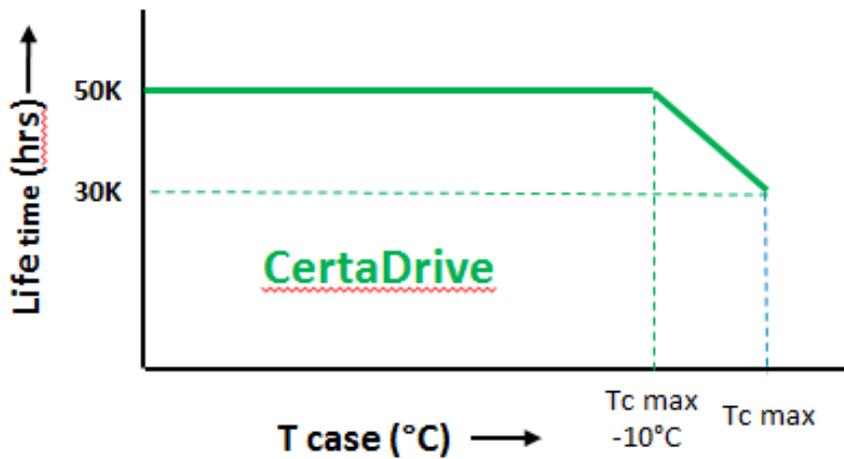
| Specification item | Value | Unit | Condition |
|-----------------------------|-----------|------|--|
| Ambient temperature | -20...+50 | °C | Higher ambient temperature allowed as long as Tcase-max is not exceeded. |
| Tcase-max | 80 | °C | Maximum temperature measured at T _{case} -point |
| Tcase-life | 70 | °C | Measured at T _{case} -point |
| Maximum housing temperature | 110 | °C | In case of a failure |
| Relative humidity | 10...90 | % | Non-condensing |

Storage temperature and humidity

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

Lifetime

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



Programmable features

| Specification item | Value | Remark | Condition |
|---------------------------------------|-------|----------------------|----------------------------------|
| Set output current (AOC) | No | See Design-in guide. | Default output current: ≤ 360 mA |
| LED module temperature derating (MTP) | No | | |
| Constant Lumen Over Lifetime (CLO) | No | | |
| DC emergency dimming (DCemDIM) | No | | |
| Corridor mode | No | | |
| Energy metering | No | | |
| Diagnostics | No | | |

Features

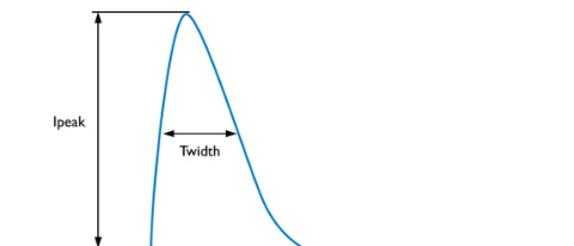
| Specification item | Value | Remark | Condition |
|---|-------|--------|----------------------|
| Open load protection | Yes | | Automatic recovering |
| Short circuit protection | Yes | | Automatic recovering |
| Over power protection | Yes | | Automatic recovering |
| Hot wiring | No | | |
| Suitable for fixtures with protection class | I | | per IEC60598 |

Certificates and standards

| Specification item | Value |
|-----------------------------------|----------------------|
| Approval marks | CB / CCC / CE / ENEC |
| Ingress Protection classification | 20 |

Inrush current

| Specification item | Value | Unit | Condition |
|----------------------------|-----------|---------|--|
| Inrush current I_{peak} | 8 | A | Input voltage 230V |
| Inrush current T_{width} | 60 | μ s | Input voltage 230V, measured at 50% I_{peak} |
| Drivers / MCB 16A type B | ≤ 24 | pcs | |



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

Driver touch current

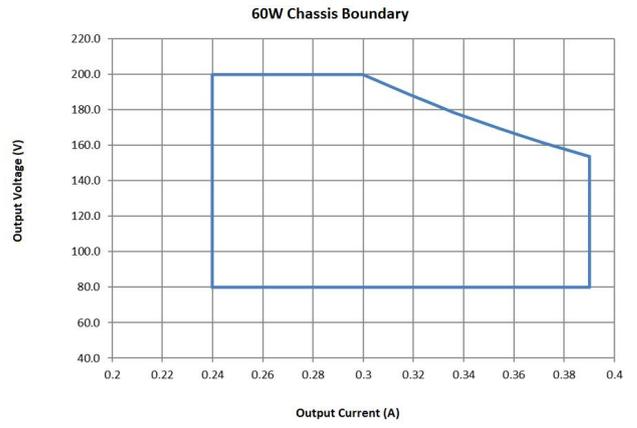
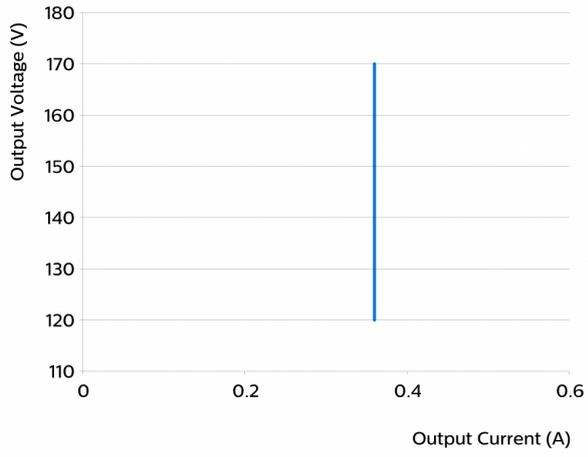
| Specification item | Value | Unit | Condition |
|-----------------------|-------|---------|---|
| Typical touch current | 0.33 | mA peak | Acc. IEC61347-1. LED module contribution not included |

Surge immunity

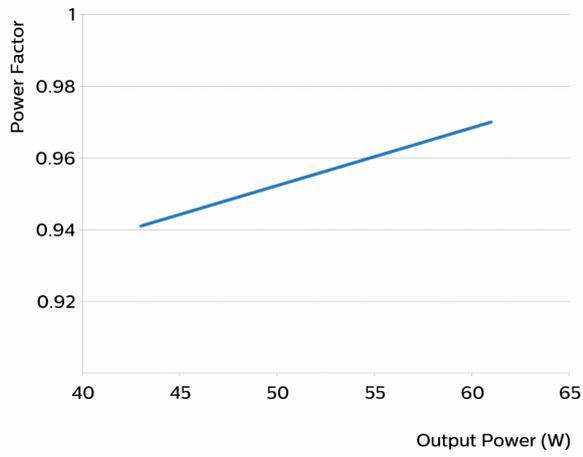
| Specification item | Value | Unit | Condition |
|-----------------------------------|-------|------|---|
| Mains surge immunity (diff. mode) | 1 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 2 | kV | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

Graphs

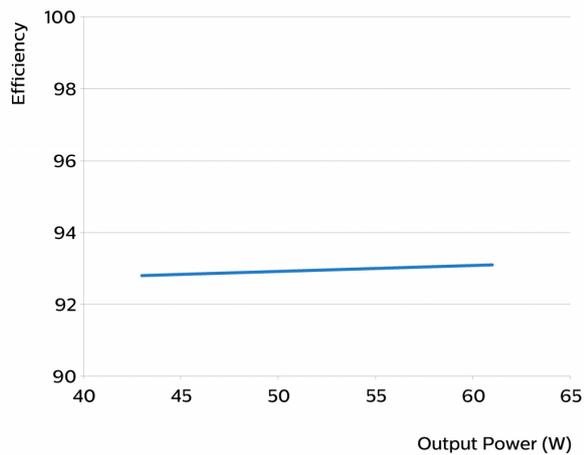
Operating window



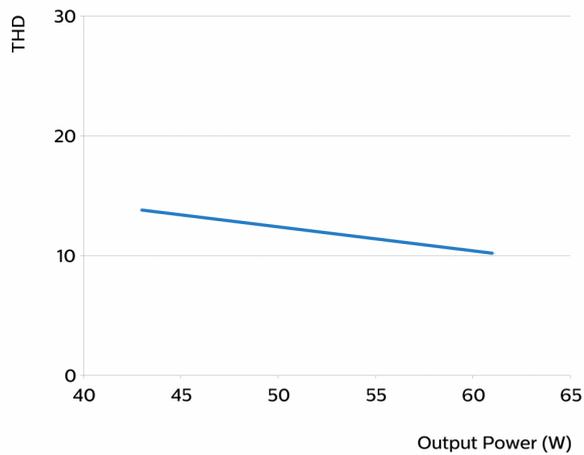
Power factor versus output power



Efficiency versus output power



THD versus output power



©2016 Philips Lighting B.V.

All rights reserved. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice. No liability will be accepted by the publisher for any consequence of its use. Publication thereof does not convey nor imply any license under patent- or other industrial or intellectual property rights. Data subject to change.

Date of release: June 15, 2016

www.philips.com/technology