

# Datasheet

## LED Panel drivers – Low Ripple

### LED Driver 20W 0.5A 40V 230V I G2

### 9290 048 43001

**Single current LED drivers for essential lighting applications.**

LED panel drivers are designed to fulfill the market need for panel lighting with reliable performance. The new generation LED panel drivers offer basic specifications with specific current and voltage settings which are easy to use for high volume applications.

**Features**

- 50,000 hours lifetime @Tc-life
- SELV output for simpler approval process and easy design-in
- Fast Time to Market
- Low ripple output current (4%) Application

**Benefits**

- Various Vout/Iout mix for high volume applications
- Comfort for eyes and assurance of camera-friendly performance
- Easy to design-in with single output current
- Independent-version housing design for stand-alone installations

**Application**

- Panel application for office and public areas
- For luminaires of protection class II

## Logistical data

| Specification item | Value |
|---|---|
| Product name | LED Driver 20W 0.5A 40V 230V I G2 |
| Logistic code 12NC | 9290 048 43001 |
| Pieces per box | 180 |

## 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 | 50…60 | Hz | Performance range |
| Rated input current | 0.11 | A | @ rated output power @ rated input voltage |
| Rated input power | 23.0 | W | @ rated output power @ rated input voltage |
| Power factor | 0.95 | | @maximum output power @ rated input voltage |
| Total harmonic distortion | 20 | % | @ rated output power @ rated input voltage |
| Efficiency | 88.0 | % | @ maximum output power @ rated input voltage |
| Input voltage AC | 198…264 | $V_{ac}$ | Operational range |
| Input frequency AC | 45…66 | Hz | Operational range |
| Isolation input to output | Reinforced | | |

## Electrical output data

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Regulation method | Constant Current | | |
| Output voltage | 30…40 | $V_{dc}$ | |
| Output voltage max. | 60 | V | Maximum output voltage (rms) |
| Output current | 500 | mA | |
| Output current tolerance ± | 8 | % | @full load |
| Output current ripple LF | ≤ 4 | % | Ripple = peak to average, < 3kHz |
| Output current ripple HF | ≤ 15 | % | |
| Output $P_{st}^{LM}$ | ≤ 0.1 | | In entire operating window |
| Output SVM | ≤ 0.1 | | In entire operating window |
| Output power | 15.0…20.0 | W | |

## Control interfaces

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

## Wiring and Connections

| Specification item | Value | Unit | Type |
|---|---|---|---|
| Input wire cross-section | 0.75...1.5 / 18...16 | $mm^2$ / AWG | Type 250, solid / stranded wire. Applicable cable outer jacket diameter： 3mm to 8mm |
| Input wire strip length | 8.5...9.5 | mm | |
| Output wire cross-section | 0.2...1.5 / 24...16 | $mm^2$ / AWG | Type 250, solid / stranded wire. Applicable cable outer jacket diameter： 3mm to 8mm |
| Output wire strip length | 8.5...9.5 | mm | |
| Maximum cable length | 0.6 | m | Total length of wiring including LED module, one way |

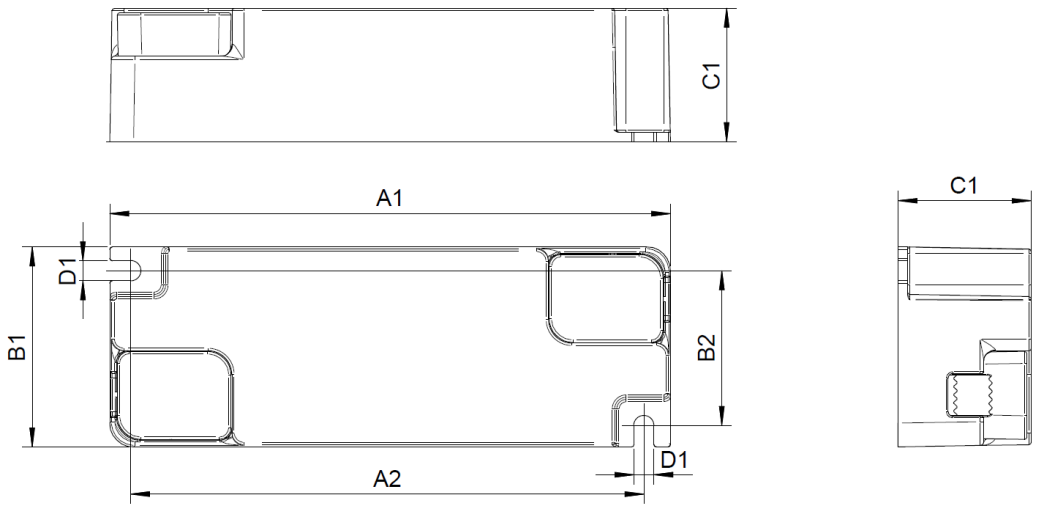



## Isolation

| Insulation per IEC61347-1 | Input | Output | Housing |
|---|---|---|---|
| Input | - | Reinforced | Reinforced |
| Output | Reinforced | - | Basic |
| Housing | Reinforced | Basic | - |

## Dimensions and weight

| Specification item | Value | Unit | Tolerance (mm) |
|---|---|---|---|
| Length (A1) | 118 | mm | ± 0.5 |
| Mounting hole distance (A2) | 108 | mm | ± 0.5 |
| Width (B1) | 42 | mm | ± 0.5 |
| Width (B2) | 32.5 | mm | ± 0.5 |
| Height (C1) | 28 | mm | ± 0.5 |
| Mounting hole diameter (D1) | 4.2 | mm | ± 0.3 |
| Weight | 69 | gram | |
| Housing color | white | | |

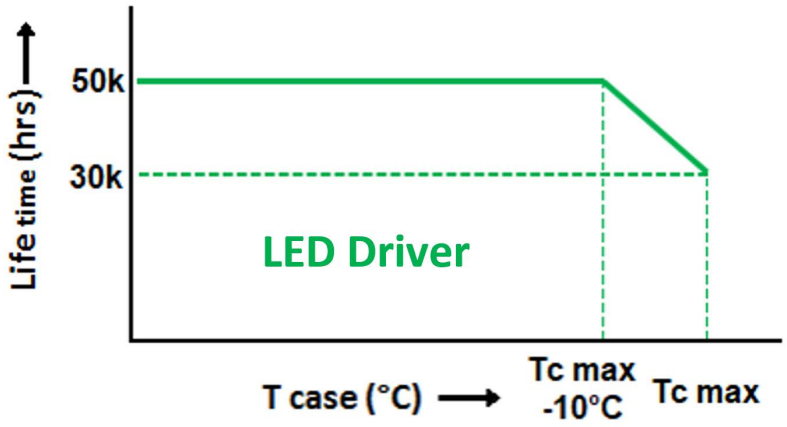



## Operational temperatures and humidity

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Ambient temperature | -20…+40 | °C | |
| Tcase-max | 75 | °C | Maximum temperature measured at $T_{case}$-point |
| Tcase-life | 65 | °C | Measured at $T_{case}$-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 | 30,000 | hours | Measured temperature at Tcase-point is Tcase-max. Maximum failures = 10% |
| Driver lifetime | 50,000 | hours | Measured temperature at Tcase-point is Tcase-max -10 degrees. Maximum failures = 10% |




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

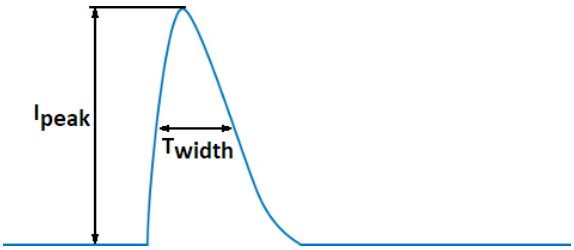
| Specification item | Available | Default setting | Condition |
|---|---|---|---|
| Set Adjustable Output Current (AOC) | No | | |

## Non-programmable 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 |

## Inrush current

| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Inrush current | 27.4 | A | Input voltage 230V |
| Inrush peak width | 97 | µs | Input voltage 230 V, measured at 50% height |
| Drivers / MCB 16A type B @230V AC | ≤ 45 | pcs | Input voltage 230V |




Please refer to the driver design in guide if you use other MCB-types.

If several mini circuit breakers are used directly side-by-side (without distance pieces) a correction factor of 80% has to be applied to the rated current

## Driver touch current / protective conductor current / earth leakage 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

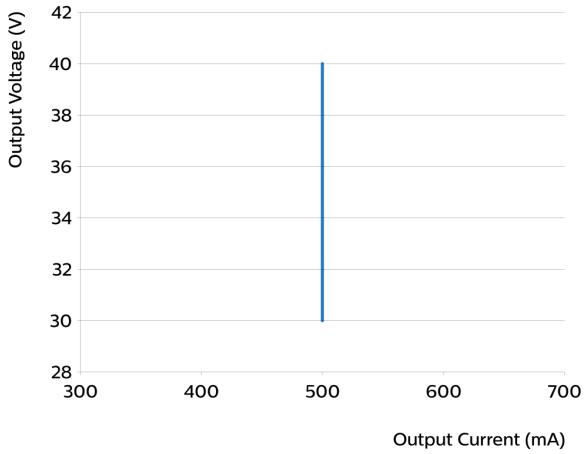
| Specification item | Value | Unit | Condition |
|---|---|---|---|
| Mains surge immunity (diff. mode) | 1 | kV | Acc. IEC61000-4-5. 2 Ohm, 1.2/50us, 8/20us |
| Mains surge immunity (comm. mode) | 2 | kV | Acc. IEC61000-4-5. 12 Ohm, 1.2/50us, 8/20us |

## Application Info (Approbation)

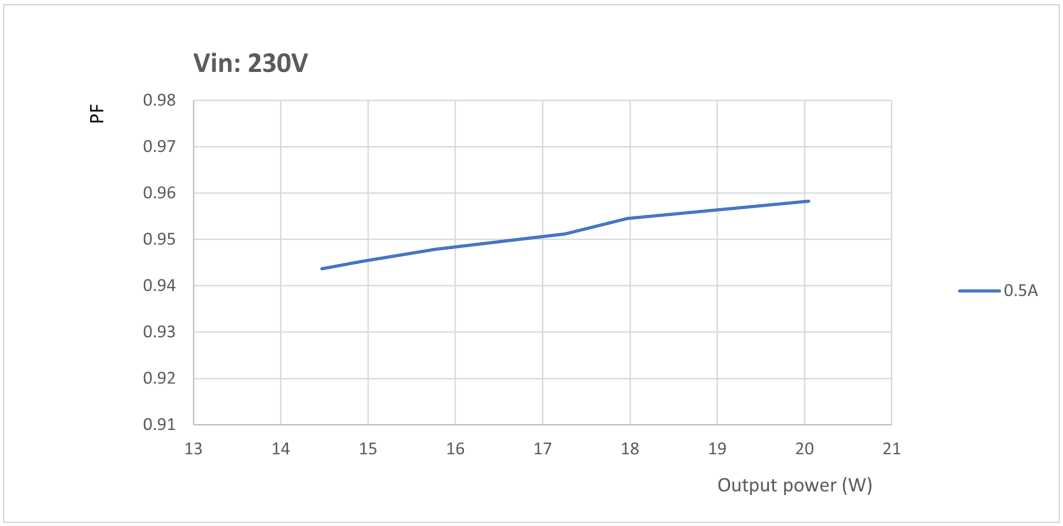
| Specification item | Value |
|---|---|
| Approval marks and Certifications | CB / CE / ENEC / SELV / UKCA |
| Ingress Protection classification (IP) | 20 |
| Noise and hum dB(A) | 20 |
| Application | Indoor Linear |
| Mounting Type | Independent |

## Graphs

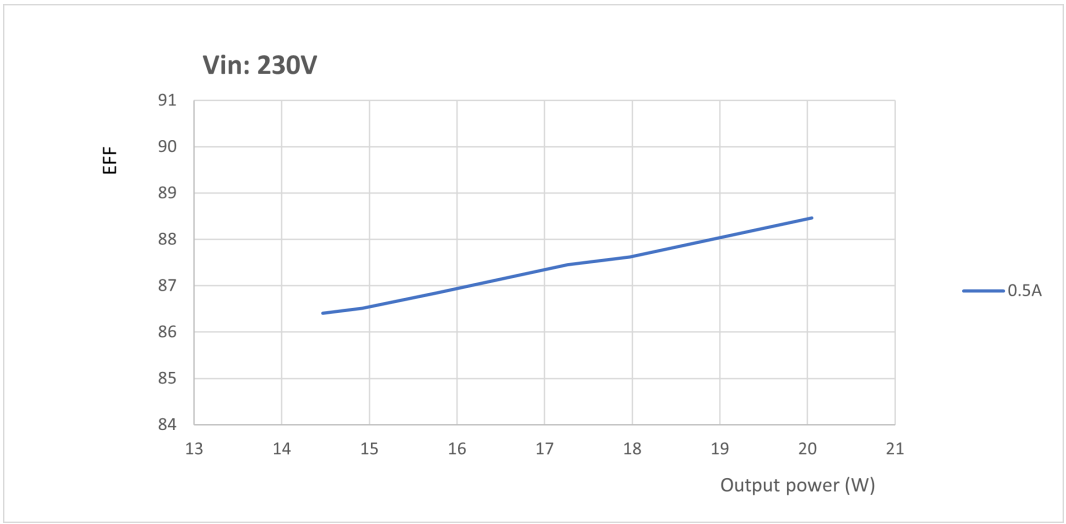
### Operating window



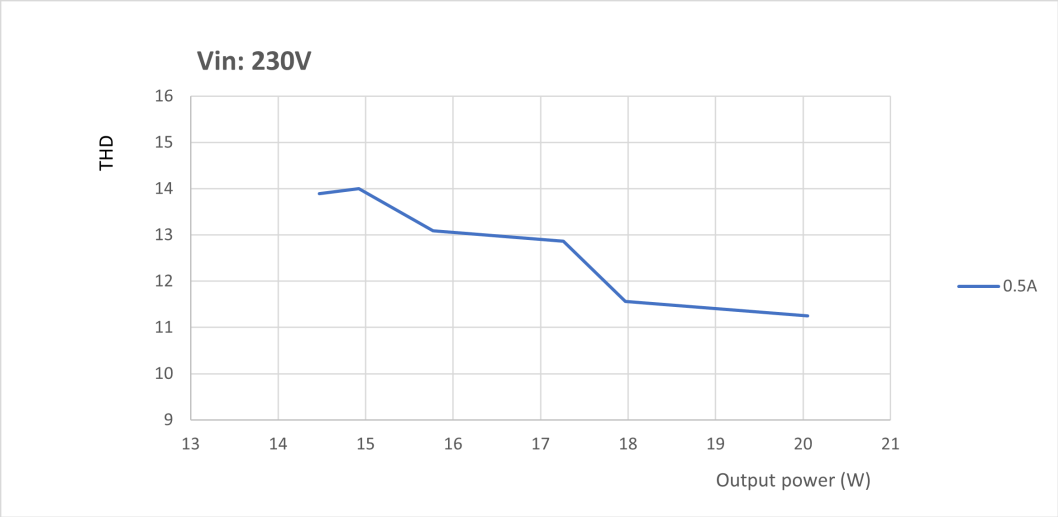

### Power factor versus output power




### Efficiency versus output power



## THD versus output power




## Notes

This driver only can be used with the LED panel,  and refer to the following installation instruction:

