Power Supplies & LED Drivers

LED Drivers

Constant-current and constant-voltage LED drivers, typically 10–200 W.

Rating band: Typically 10–200 W

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An LED driver converts the AC supply into the regulated DC that an LED load needs. Invitrona manufactures constant-current drivers for LED modules and constant-voltage drivers for LED strips, typically from 10 to 200 W, in built-in, independent and sealed formats. The current setting, voltage window, dimming interface and case-temperature limit are agreed for each luminaire or lighting project.

Class summary

Typical values for the class

Rating range
Typically 10–200 W

Output
Constant current or constant voltage

Output current
Typically 0.35–3.5 A (CC)

Dimming
Non-dimming, 0–10 V, DALI or phase-cut

Typical specification

Parameter	Value or range	Conditions and basis
Rating range	Typically 10–200 W	At rated input and case temperature
Input voltage	100–240 V AC nominal; up to 90–305 V AC on selected variants	Single phase, 50 / 60 Hz
Output current (CC)	Typically 0.35–3.5 A	Fixed or set within a programmable range
Voltage window (CC)	Typically 9–56 V DC	Matched to the LED string
Constant-voltage output	12, 24 or 48 V DC	For LED strips and linear modules
Efficiency	Typically 85–92%	At full load, 230 V AC input
Power factor and THD	Power factor typically above 0.9; THD typically below 20%	At full load, 230 V AC input
Dimming interface	Non-dimming, 0–10 V / 1–10 V, DALI, PWM or phase-cut	Only the interface stated for each variant is supported
Dimming range	Typically 10–100%	Down to 1% on selected variants
Protection	Short-circuit, open-circuit (CC), over-voltage and over-temperature	Recovery behaviour stated for each variant
Surge withstand	Typically 2 kV line to line, 4 kV line to earth	Higher levels for outdoor variants by assessment
Temperature limits	Ambient typically -20 to +50 °C; case temperature (tc) typically 70–90 °C	tc point marked on the driver case
Ingress protection	IP20 built-in; IP65 or IP67 sealed	Sealed variants potted in an aluminium case

Figures are typical values for the class and rating band; the quotation states the values for a specific unit.

Parameter	Value or range	Conditions and basis
Mechanical format	Built-in, independent with cord grips, or sealed	Dimensions and cable exits agreed with the luminaire

Selection and application

Features

Feature	What it means in use
Matched to the LED load	Output current and voltage window are set for the LED module, so the driver runs within its rated envelope.
Choice of dimming interface	0–10 V, DALI, PWM and phase-cut variants allow the driver to follow the lighting control system specified.
Thermal limits stated	Ambient and case-temperature limits are given for each variant, with the tc point marked on the case.
Sealed outdoor formats	Potted aluminium-cased drivers with IP65 or IP67 protection suit facade, landscape and street lighting.
Programme continuity	Current settings, cable exits and labelling are controlled across production batches for a luminaire programme.

Selection questions

Question	Answer
Constant current or constant voltage?	LED modules without on-board current control need a constant-current driver set to the module current. LED strips and modules with their own regulation need a constant-voltage driver, usually 12 or 24 V DC.
Will a driver match any LED module?	No. The module current, voltage range at operating temperature, dimming method and protection needs are checked together before a driver is proposed.
Which dimming interface should I choose?	Choose the interface the lighting control system uses: 0–10 V and DALI are common in commercial projects, phase-cut in residential retrofits. Confirm compatibility with the controls during engineering review.
Does a sealed case mean a stated IP rating?	Ingress protection is stated in the specification for each variant, not inferred from appearance. Sealed variants are typically IP65 or IP67.
Which standard applies to LED drivers?	In India, the safety of LED control gear is covered by IS 15885 (Part 2/Section 13). The standards and evidence that apply to a variant are stated in its specification and quotation.

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Typical applications

Application context
Luminaire manufacturing
Architectural and facade lighting
Commercial and office lighting
Street and outdoor area lighting
Retail and display lighting
LED strip and cove lighting

Where the class fits

	Duty or project context
01	OEM lighting products
02	Architectural and project lighting integration
03	Application-specific constant-current requirements

Documents for an agreed scope

	Document
01	Controlled product or programme requirements
02	Outline drawing with tc point and wiring
03	Interface and integration information
04	Validation and revision records for the agreed scope

Information needed for selection

	Input
01	LED load current and voltage range, and the input supply
02	Dimming, control, protection and interface expectations
03	Mechanical, thermal, environmental and installation constraints
04	Validation, production, traceability and change-control responsibilities

How a requirement is handled

	Activity
01	Establish the LED load and operating context
02	Confirm interfaces, thermal conditions and responsibilities
03	Agree validation in the luminaire and release requirements
04	Control settings and revisions across production

Document control

Field	Entry	Field	Entry
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