

Mounting instructions for in-fixture LED drivers

It is recommended to mount eldoLED products in accordance with the IPC-A-610 and IPC-A-620 standards.

The mounting instructions in this document apply to the following in-fixture LED drivers:

- LM-Dot Standard
- LM-Dot Connector
- LM-Dot Pico
- V-Strip Standalone
- V-Strip Network
- V-Strip Power
- L-Dot Standard
- L-Dot Connector
- L-Dot Nano
- L-Dot Pico
- L-Strip Standard
- L-Strip Connector

Heat sink

eldoLED drivers have been designed to operate at temperatures up to 60° Celsius and need to be mounted onto a heat sink to ensure lasting maximum performance.

Use the following rule of thumb to calculate the heat sink's minimum required dissipating capacity:

$$C_h = \Delta T / P \text{ (}^\circ\text{C / Watt)}$$

C_h = capacity of the heat sink ($^\circ\text{C / watt}$)

ΔT = temperature difference between heat sink and ambient temperature ($^\circ\text{C}$)

P = dissipated power (watt)

Typically, an LED driver dissipates 10% of the output power to the LED load. For example, if the connected LED load is 15 watt, the ambient temperature is 25 $^\circ\text{C}$ and the required maximum temperature of the heat sink is 55 $^\circ\text{C}$, then a heat sink is needed with a minimum dissipating capacity of 20 $^\circ\text{C}$ per watt.

When mounting the driver onto a heat sink:

- Use thermally conductive, but electrically insulating sheet material between the PCB and the heat sink (e.g. Bondline300 thermally conductive tape). It is recommended to cut the thermally conductive tape bigger than the PCB surface in order to prevent accidental electrical contact at the PCB edges.
- It is preferable to have the heat sink grounded to earth.
- Ensure that the airflow is sufficient to cool the heat sink.
- Use metal or plastic M2 or M3 screws (UNC 3-56 and 5-40 respectively) to mount the drivers; refer to the driver's datasheet for the exact size. Use a plastic screw when using a non-Class II power supply.

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Cabling

eldoLED recommends that you use insulated cabling with its products that meets the following requirements:

Cabling – in general

- Make sure you strip just enough insulation material away from the cable: if you strip away too little, it can result in a poor contact, if you strip away too much it can cause a short-circuit:
 - o For screw terminals, strip away 3-4 mm.
 - o For soldering pads, strip away no more than the soldering pad's length.
- Use strain reliefs for every wire, to prevent undesirable forces on the terminals or soldering pads.
- To prevent loss of connections, do not use tinned wires in screw terminals, but bootlace ferrules for optimum connections.
- When using an eldoLED product that has soldering pads, pre-tin the wires before soldering them onto the soldering pads.

Power cabling

- The cabling should have an insulating capacity of 100 volts or more.
- The cabling's insulation must be able to withstand temperatures of 85° Celsius or more.
- A minimum of 0.1 mm² for every ampere must be used for the copper cross-sectional area.
- A maximum of 1.3 mm² can be used for the terminal blocks.

DMX cabling

- For DMX data cabling, use CAT5 Shielded Twisted Pair cabling or equivalent.



Due to the integration of slew rate transceivers in eldoLED drivers, Cat5 Twisted Pair cabling yields the same signal quality as more expensive DMX cabling such as Belden 9271. eldoLED recommends using Cat5 Shielded Twisted Pair cabling, although the unshielded version is also acceptable on shorter cable lengths (<10m). On longer cable lengths, EMI might reach undesirable levels.

Enclosure

When mounting the driver in an enclosure, the enclosure must meet the following requirements:

- It must be able to withstand temperatures of 85° Celsius or more.
- Indoor use: the enclosure must meet the IP32 standard or better.
- Outdoor use: the enclosure must meet the IP66 standard or better.



Always make sure that the driver's cabling, housing, way of mounting and installation is in compliance with all applicable regulations, building codes and legislation.

More information, application notes, user manuals and eldoLED's terms and conditions are available at www.eldoLED.com.