Catalina Series LED Lighting Modules

(Models CAT24, CAT12, CAT08, CAT04)

150-000025 ***Installation Instructions***

Rev 2.0

WARNING:

- USE ONLY WITH CLASS 2 OR ISOLATED LOW VOLTAGE LIMITED ENERGY (LVLE) POWER SUPPLIES.
- DO NOT EXCEED ABSOLUTE MAXIMUM RATINGS.
- OBSERVE ALL FEDERAL AND LOCAL CODES AND REGULATIONS
- **ALWAYS DISCONNECT POWER SOURCE BEFORE INSTALLATION**.

CAUTION:

- MODULES MAY GET HOT WHEN POWERED. LET THEM COOL DOWN BEFORE HANDLING.
- MODULES EMIT EXTREMELY BRIGHT LITE. USE PROTECTIVE EYEWARE TO AVOID DAMAGE TO YOUR EYES.

Before installation, make sure that the power source is of a Class 2 or isolated LVLE type, and its rated power (≤96W), voltage (24Vdc) and current (≤4 Amp) are suitable for the intended combination of LED modules.

Mechanical Layout

Select area where CAT modules will be installed. Measure the total length of the expected run. Select longer modules for straight runs, and shorter modules for curved sections or when smaller increments are required to complete a run. Use the actual length of the modules for calculations. Allow 1.5in. to 2in. slack per run to accommodate field wiring connections. In tight places, the end feed may be placed behind the modules, and the wiring gap reduced to 1/4 of an inch.

Select a remote location to install power supplies. A wire run between a power supply and an end feed not to exceed the maximum length indicated in Table 1.

Table 1. Maximum Length of Copper Wire

AWG	Power , W					
	50	60	70	80	90	96
20	23	19	17	14	13	12
18	37	31	26	23	20	19
16	59	49	42	37	33	31
14	93	78	67	58	52	49
12	148	123	106	93	82	77

Electrical Layout

CTL lighting modules are designed to minimize wiring and provide seamless continuous light. For best results a careful electrical layout is required. Please refer to Table 2 for layout constraints.

Table 2. CVL/CTL Layout Constraints

Product Type	Absolute Maximum Run per Class 2 Circuit, ft	Recommended Maximum Run per Class 2 Circuit, ft	Maximum Run per Feed (Surface mount), ft	Maximum Run per Feed (Recessed), ft
CATxx	28	24	14	8

Absolute Maximum Run per Class 2 Circuit is the maximum run of the LED modules limited by power allowed by NEC for a Class 2 circuit. Exceeding this value voids Class 2 certification, and may activate protection features of the power source.
Recommended Maximum Run per Class 2 Circuit is the maximum recommended run of the LED modules for a single Class 2 circuit that ensures long term reliable operation. At this load the power supply operates with a safety margin.
Maximum Run per Feed is the maximum run of LED modules when the modules are powered through each other. The CVL/CTL modules can receive power from the preceding module output. This way the first module connected to the feed carries all the current of the modules connected to its output. Maximum Run per Feed rule ensures long term reliable operation of the system. Note, that due to heat entrapment, run lengths are reduced for recessed applications.

Multiple runs may be connected in parallel to a single Class 2 circuit within the Recommended Maximum Run length as illustrated on Figure 1.

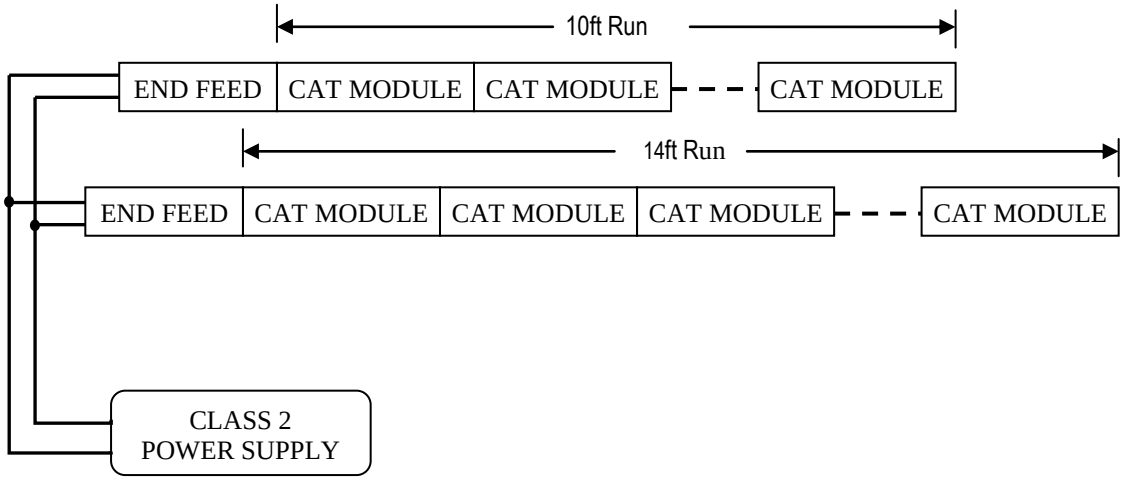

Figure 1. CAT Modules Layout Example.

Mounting and Connecting

Modules shall be mounted to a flat surface using clips provided with each module. The clips allow two types of installation – flat and at a 5º angle as shown on Figure 2 and Figure 3.

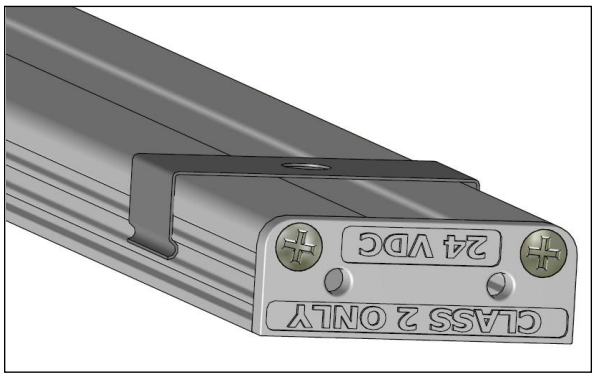

Figure 2. Flat Installation

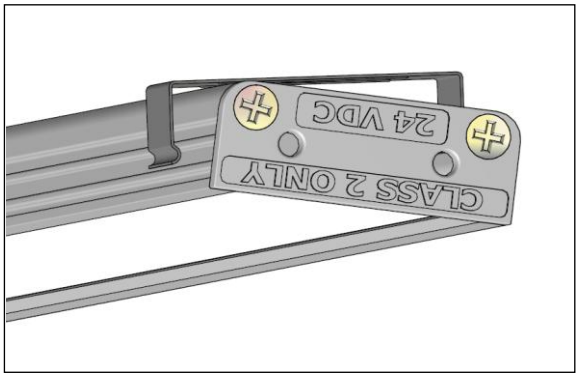

Figure 3. Angled Installation

Please follow the procedure to mount the modules:

1. Draw a line along the center of the desired installation location. Keep the modules at least 1.5 in. away from the closest reflective surface (such as a wall or a ceiling) for uniform illumination.
2. Mark approximate module positions on the center line.
3. Apply two mounting clips for each module at approx. 1in.-3 in. off the module end, and secure each clip with one flat head screw (provided).
4. Snap a module into the clips.
5. To install each additional module in a straight run, insert two connection pins in one end of the module as shown on Figure 4. Make sure the pins are inserted all the way and their exposed ends do not exceed 5/8 of an inch. You may use a block of wood to insert the pins, but do not apply excessive force.
6. Insert the other ends into the end of the installed module, and snap the module into the clips. Make sure there is no gap between module ends.
7. Use longer pieces of solid 18AWG bare copper wire for curved installations, where the gap between the adjacent module ends does not exceed 1 inch. Use the provided 20AWG insulated wires for longer gaps. If the wires are more than 3 inches long, secure them to the installation surface. Make sure the wires do not move upon installation.
8. Strip at 3/8in. at the ends of two pieces

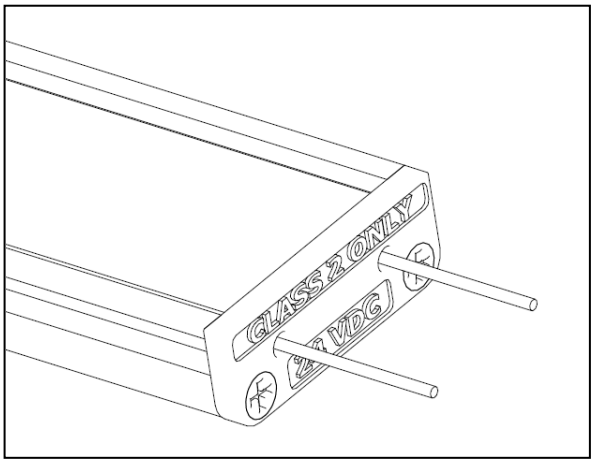

Figure 4. Inserted Pins.

of the stranded 20AWG insulated wire (provided) and insert them into end connectors of the last module.

9. Strip the other ends of the 20AWG insulated wires and splice them with field wiring using provided low profile crimp or twist splices.

10. For under cabinet applications where feed originates at the back wall install provided End Feed Cover as shown on Figure 5 to protect the wire connection, extend the telescoping insert to cover all the wiring up to the nearest wall, and secure the cover with provided #4 screws. Discard the telescoping insert, if the required cover length is 8 in. (***Note:*** *If both left and right End Feed Covers are provided, use the one suitable for the application and discard the other one.*)

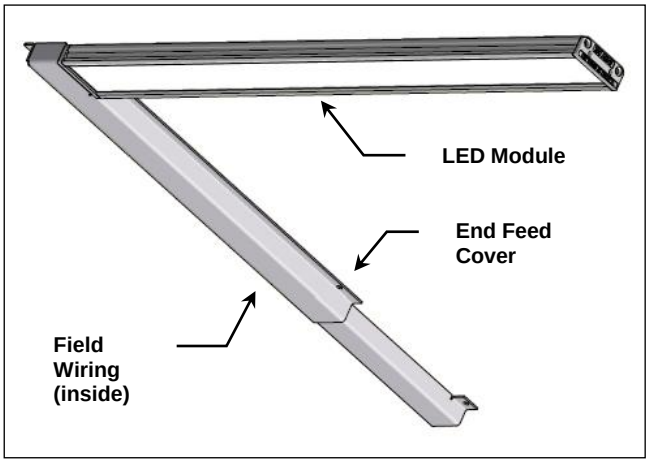

Figure 5. End Feed and Module Installed.

11. For cove lighting applications use a CVLEF End Feed assembly as shown on Figure 6. Install the CVLEF terminal block and secure with two #4 x ¾ Philips screws (provided) . Connect the End Feed with the first module using provided rigid pins (as show) or with provided 18AWG end feed wire. (*Use only the 18AWG top coat stranded wire. Do not substitute the wire type.*) Install a protective cover (not shown) over the end-feed connector, and secure it with the two enclosed #4 x 3/8 flat head screws.

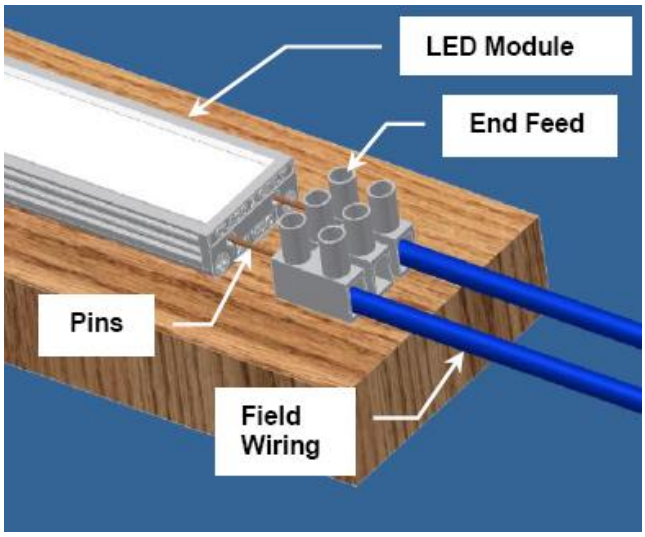

Figure 6. CVLEF End Feed and Module Installed.

IMPORTANT: Do not pull pins or wires from the module connectors. It may damage the connector and will void the warranty.

LD60-24DC-D10-UE
LD100-24DC-D10-UE

Class 2 Dimming(0-10V) Power Supplies

(To operate with CVL and CTL LED Lighting Modules)

Installation Instructions

Rev 1.0

WARNING:

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Specifications

Parameter	LD60-24DC-D10-UE	LD100-24DC-D10-UE
Power Line Voltage	120V-277V, 60Hz	120V-277V, 60Hz
Output Voltage, @100%	24Vdc	24Vdc
Max. Load Power	60W	96W
Max. Load Current	2.5A	4.0A
Dimming	0-10V	0-10V

Installation

IMPORTANT: Drivers must be mounted in a well ventilated area with 4" minimum of air space around driver. When installing multiple drivers provide at least 4" of distance between the drivers.

Refer to Figure 1 and Figure 2 for mounting dimensions. Install drivers on a vertical surface to ensure good air circulation.

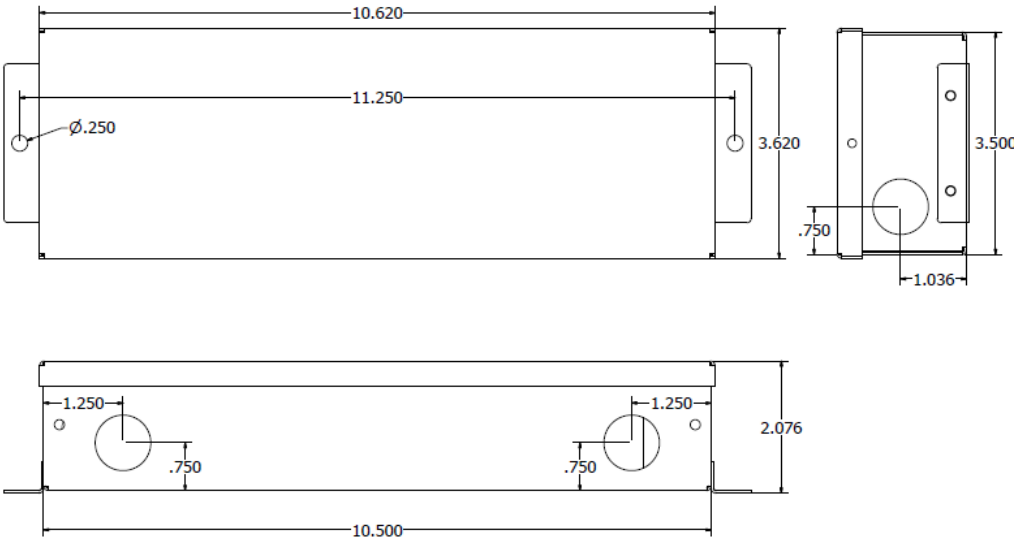

Figure 1. LD60-24DC-D10-UE mounting dimensions.

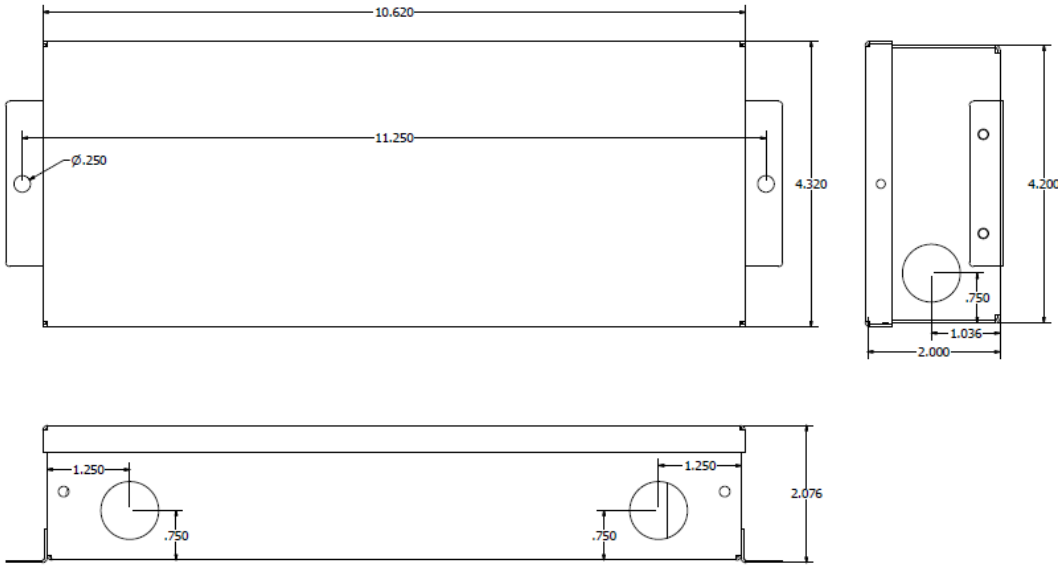

Figure 2. LD100-24DC-D10-UE mounting dimensions.

Wiring

Connect the driver to the 120VAC – 277VAC power line. Refer to Figure 3 for the wiring diagram.

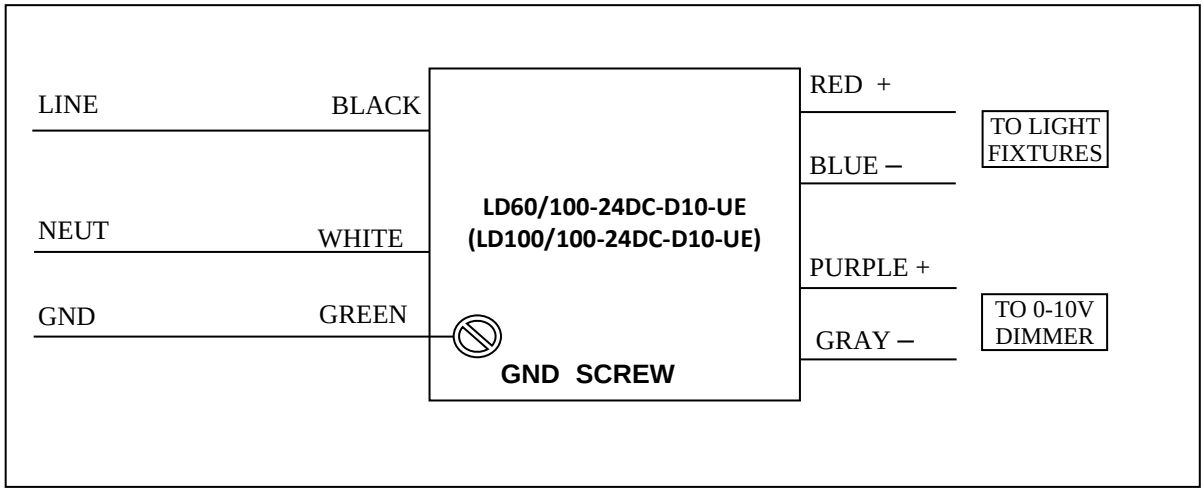

Figure 3. Wiring Diagram.

Use only copper wire for all connections.

Do not use with cut phase dimmers! Using with a cut phase dimmer may damage the dimmer and the power supply, and will void the warranty.

If cut phase dimming function is required, order an appropriate dimmable driver, e.g. LD48-24VDCR, LD100-24VDCR, LD300-24VDCR.