

OELO LIGHTING INSTALLATION MANUAL



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How to use this manual ...

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Consult Oelo for structures that require 150+ linear feet of lighting **970-212-3670**

Below are key installation components you may want to familiarize yourself with before installing.

Control Unit Components



CONTROL UNIT: The Control Unit provides power for up to 300 lights and regulates Oelo's lighting functions (up to 6,000 lights).

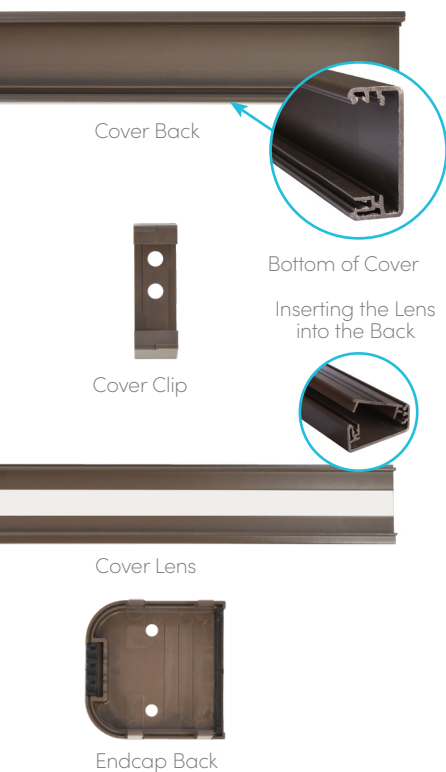
SMALL STRAIN RELIEF: Located on the bottom of the Control Unit box, this Strain Reducer feeds power into the Control Unit.

LARGE STRAIN RELIEF: Also located on the bottom of the Control Unit box, this larger reducer feeds the 3-Core Cable from the Control Unit to the rest of the system.

SCREWS AND ANCHORS: The supplied screws and anchors attach the Control Unit Box to an interior drywall. Note: For exteriors, use 1" wood screws.

Cover Components

Cover: The below components, together, create the Cover, the system's weather-resistant housing for the lighting components. Covers come in 8' lengths; they can be cut down to size with a plastic saw or fine-tooth circular saw.



Cover RUNS: Any series of Covers that run together in one linear line.

Cover BACKS: Snap into the Endcap Backs and Extension Connectors (below) to provide housing for the Light String. The bottom of the Cover Back is thicker than the top.

Cover CLIPS: Are positioned in between the Endcaps and Extension Connectors to hold the Cover in place. For directional purposes, please note that top of the clip has two holes.

Cover LENS: Insert into the Cover Clip and over the Cover Back in the final stages to provide a weather-resistant structure for the lighting.

ENDCAPS: The Endcap is used at the start and end of a run.

ENDCAP BACKS: Screw to the fascia and provide a key locking fixture for the Cover.



Endcap Cover



Endcap Plugs



Extension Connector Back



Extension Connector Cover



Control Box Cord



3-Core Cable



Conductors



Pink Butt Connector



Blue Butt Connector



Light String



Light Clip



Booster Box

ENDCAP COVERS: Snap over the ENDCAP BACK in the final stages to provide a weather-resistant structure for lighting components.

ENDCAP PLUGS: Inserts into any empty port to keep moisture out.

EXTENSION CONNECTORS: The Extension Connectors are used to connect Cover runs that are longer than 8' or smaller Covers (cut to size to complete the run).

EXTENSION CONNECTOR BACKS: Screw to the fascia and provide a key locking fixture for the Cover.

EXTENSION CONNECTOR COVERS: Snap over the EXTENSION BACK in the final stages to provide a weather-resistant structure for lighting components.

Wiring Components

CONTROL BOX CORD: Provides power to the Control Box.

3-CORE CABLE: Provides the system with three-guage wires for positive (+VCC), ground (GND) and signal (S) wiring, used for connecting the Control Box to the light string and jumping sections of light.

CONDUCTORS: Provide a terminal inside the Control Unit Box for the 3-Core Cable positive and ground connections and for the Power Supply Cord. The conductor ports snap open and close.

BUTT CONNECTORS: Provides a waterproof connection for multiple wires via crimping and heat shrinking.

PINK BUTT CONNECTORS: Used for "S" Signal wires; wires can be inserted into each of this narrow butt connector.

BLUE BUTT CONNECTORS: Used for +VCC and GND wires; each wire inserted into each end of this wide butt connector.

LIGHT STRINGS: Each light string is made up of 40 LED lights and equates to roughly 30' linear feet in the system. Light strings can be spliced together for up to 300 lights.

LIGHT CLIPS: Snap onto the LED light and then snap into the Cover to hold the light in place. The top of the light clip has a notch.

BOOSTER BOX: Provides additional power to systems with more than 300 lights.

STEP 1

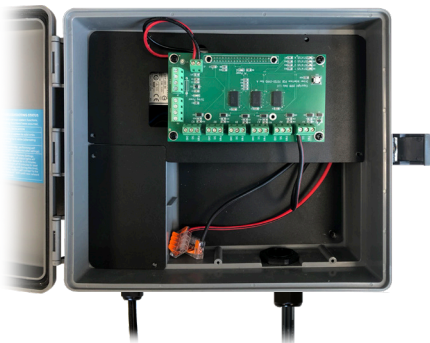
Hanging the Control Unit

Control Unit Closed



Screws and Anchors

Control Unit Upon Arrival

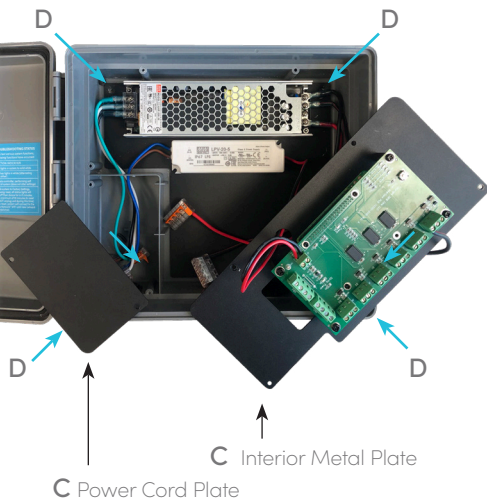


- A. **First, choose the Control Unit location.** The Control Unit can be hung indoors or outdoors but should be placed:
 - i. Near a power source (a standard 110V outlet).
 - ii. Near the start of the lighting Cover.
 - iii. Within range of the property's WiFi (If WiFi is unavailable, the system can be connected to the Internet via an Ethernet connection.)
- B. **Attach the Key Latch to the Control Unit**, sliding it upward in the groove on the right side of the box. Open the Control Unit box, and then ...
- C. **Unscrew the Interior Metal Plate, followed by the Power Cord Plate** to expose the back of the box and the corner screw holes.
- D. **Screw the box to the wall, using:**
 - i. The supplied screws/anchors (in the bubble-wrap bag) for interior drywall
 - ii. Or 1" wood screws for exteriors (or applicable screws).
 - iii. Once the box is hung, screw the Interior Plates back into place.



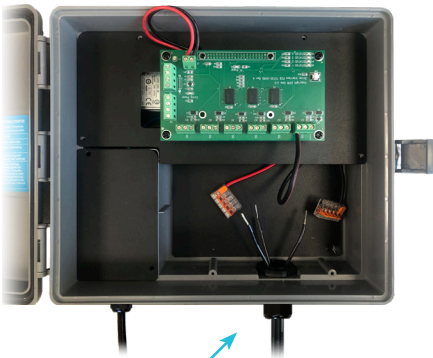
WARNING: Do NOT plug in the system until ALL wiring is complete.

Wiring while the system is live will void warranty.



STEP 2

Feeding/Wiring the 3-Core Cable/Control Unit



A Feed the 3-Core Cable into the Large Strain Relief

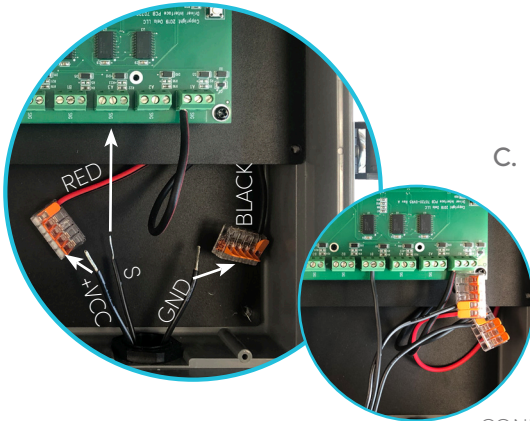
A. Feed the 3-Core Cable into the Large Strain Relief.

- i. The 3-Core Cable powers up to 300 lights.
- ii. Any system with more than 300 lights will require an additional Booster Box; see Step 10.

B. Connect the 3-Core Cable wires, inserting the:

- i. +VCC WIRE into the RED CONDUCTOR (wire is labeled +VCC); close conductor port.
- ii. GND WIRE into the BLACK CONDUCTOR (wire is labeled GND); close conductor port.
- iii. S (Signal) WIRE into any "S" Port on the green board; tighten screw.

C. Run the wires up to the fascia where the lighting Cover will start. Hold off for further wiring instructions (Steps 7-9).

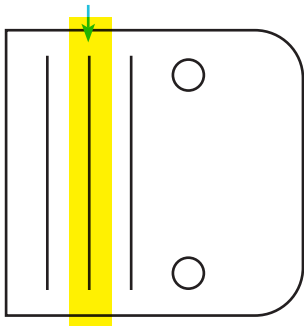


CONNECTED

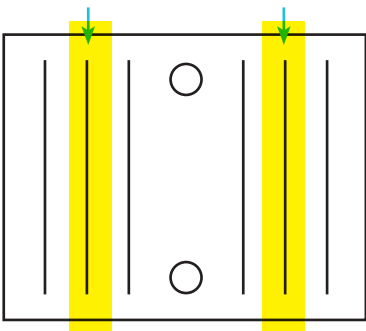
STEP 3

Hanging/cutting the Channel Components

Hang/cut Cover to align with the Endcap Back center line.



Hang/cut Cover to align with the Extension Connector Back center lines.



IMPORTANT: (Don't overtighten the Endcap Backs, Extension Connectors or Cover Clips as parts could become damaged or components will not seal together properly.

A. Hang the Endcap Backs on the structure's fascia using the supplied screws.

Endcap Backs should be mounted as follows:

External corners	1/8" - 1/4" away
Internal corners	About 1/2" away
Below overhang (Gutters or trim pieces)	About 1/8" below
Spacing between Endcap Backs and Extension Connectors	The Cover comes in 8' increments and is designed to grow and shrink with outside temperatures; align the Cover to the center lines indicated on the left diagrams for this shrinkage and/or expansion. The Cover can be cut for shorter distances utilizing these same guides; cut your Cover Back and Cover Lens clipped together to ensure they are cut to the same length.

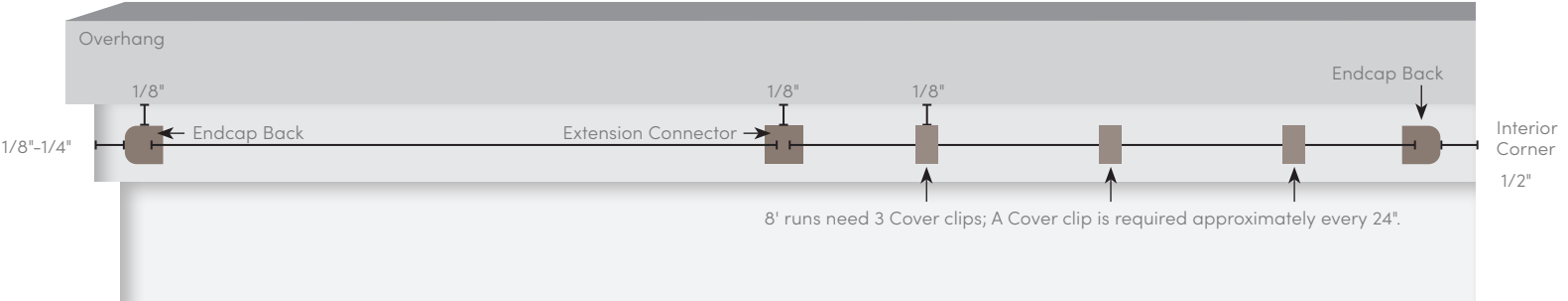
B. Extension Connectors can be added if the channel run is longer than 8'. Screw the Extension Connectors Backs into the fascia using the supplied screws.

Extension Connectors should be mounted as follows:

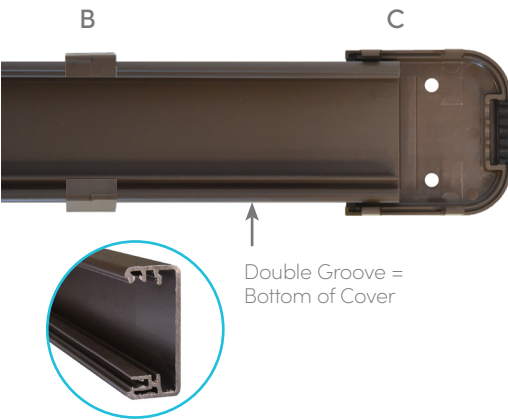
For runs 5' or shorter	Use one Cover clip in the middle of the run
For runs longer than 5'	Use two Cover clips, placed evenly along the run
Below overhang (Gutters or trim pieces)	About 1/8" below

C. Using the supplied screws, hang the Channel Clips, locating the holes at the top. Hang clips approximately every 24". You only need to apply screw(s) in the top hole(s) of the Channel Clips.

External corners	About 1/4" away
Below overhang (Gutters or trim pieces)	About 1/8" below



STEP 4



Inserting the Cover into the Endcap Backs

- Remove the Cover Lens from the Cover.
- Insert the top of the Cover Back into the Cover Clip and push the bottom of the Cover into place. If the Cover Back is difficult to insert, use a flat-head screw driver to bend the bottom lip of the Cover Clip for easier installation.
- Slide the Cover to align with the center line guide(s) (noted in Step 3).
- Continue to mount the Cover pieces using the above steps.

STEP 5



Placing the 3-Core Cable into the Cover

- Insert the 3-Core Cable into the Endcap Back:
 - This cable will supply power and signal up to 300 lights (~250 linear feet of lights). Systems more than 300 lights will require a Booster Box; see Step 10.)

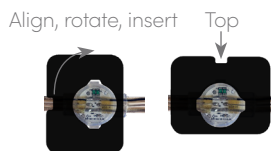
STEP 6



This arrow **MUST** point away from Control Unit.

Inserting the Light String into the Cover

- IMPORTANT:** Locate the small arrow on the back of the Light Strand. The Oelo lighting system has directional input/output, and this arrow MUST be pointing AWAY from the start of the system/Control Unit.
- Align, insert and rotate a Light Clip onto the first light in the Light Strand string, noting that the notched side is the top of the Light Clip. (To insert the light, align the clip/light grooves, then rotate the clip so the notch is located on top.)
- Insert the top of the Light Clip into the top of the Cover and then push the bottom of the Light Clip into the bottom of the Cover.
- Continue adding Light Clip/Lights to the Cover, keeping spacing consistent to maintain a uniform look. If a light ends up inside the Extension Connector Back, twist the wire to reduce the spacing slightly. Create slack in the wire so as not to overstretch the strand.
- Once the run reaches a corner or gap, the Light Strand can run outside of the Cover, or a Jumper Wire can be added to connect Light Strands together for longer distances from one Cover to the next. (See Step 9 for Jumper Wiring.)



Create slack in the wire

Pro Tips:

Additional 3-Core Cables can be used to connect upper levels. Insert addition cables into the Large Strain Relief, following Step 2 to connect the conductors and control board

Note: The Control Unit can only power 300 lights (for all levels), otherwise a Boost Box will be needed. See Step 10.

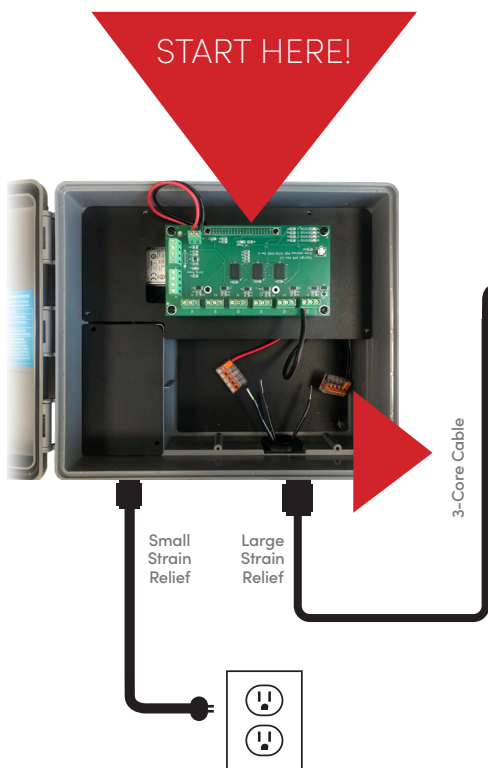
As you hang your Cover, you can wire along the way to reduce the number of times you go up and down a ladder.

UPPER LEVEL

STEP 8 END OF 40-LIGHT STRAND

See Step 8 to connect more lights.

START HERE!



WARNING:

Do NOT plug in the system until ALL wiring is complete. Wiring while the system is live will void Oelo's 5-year warranty.

40 LIGHTS (~30 LINEAR FEET)

STEP 7

MAIN LEVEL

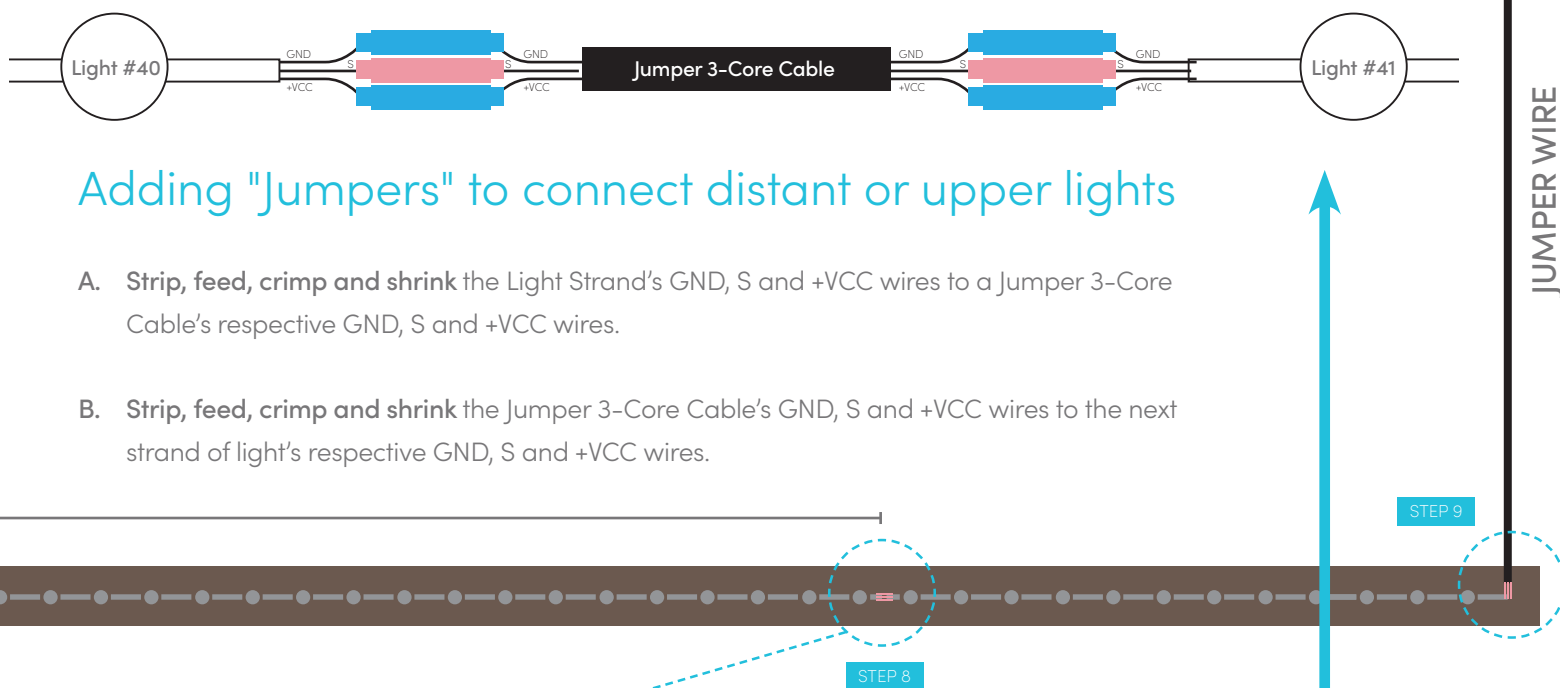
STEP 7



Connecting the 3-Core Cable to Light String 1

- Take note that all wires are labeled with GND, S or +VCC.
- Strip, feed, crimp and shrink the following:
 - Insert the 3-Core Cable's and Light Strand's GND wire into separate ends of a BLUE Butt Connector.
 - Insert the 3-Core Cable's and Light Strand's S wire into separate ends of a PINK Butt Connector.
 - Insert the 3-Core Cable's and Light Strand's +VCC wire into separate ends of a BLUE Butt Connector.

STEP 9



Adding "Jumpers" to connect distant or upper lights

- Strip, feed, crimp and shrink** the Light Strand's GND, S and +VCC wires to a Jumper 3-Core Cable's respective GND, S and +VCC wires.
- Strip, feed, crimp and shrink** the Jumper 3-Core Cable's GND, S and +VCC wires to the next strand of light's respective GND, S and +VCC wires.

STEP 8



Connecting Light Strings together (every 40 lights)

- Each light string is made up of 40 LED lights** and equates to roughly 30 linear feet in the system. Light strings can be spliced together for up to 300 lights. Once you reach the end of a light string, strip, feed, crimp and shrink the end of the strand to a new strand with a BLUE or PINK Butt Connector (shown in diagram above), matching the respective wires:
 - The end of the light strand's GND wire to the new strand's GND wire.
 - The end of the light strand's S wire to the new strand's S wire.
 - The end of the light strand's +VCC wire to the new strand's +VCC wire.

STEP 10

Note: We recommend consulting Oelo on Booster Box strategies for any light systems with more than 300 lights and non-linear structures.



WARNING

Do NOT leave copper wiring exposed.



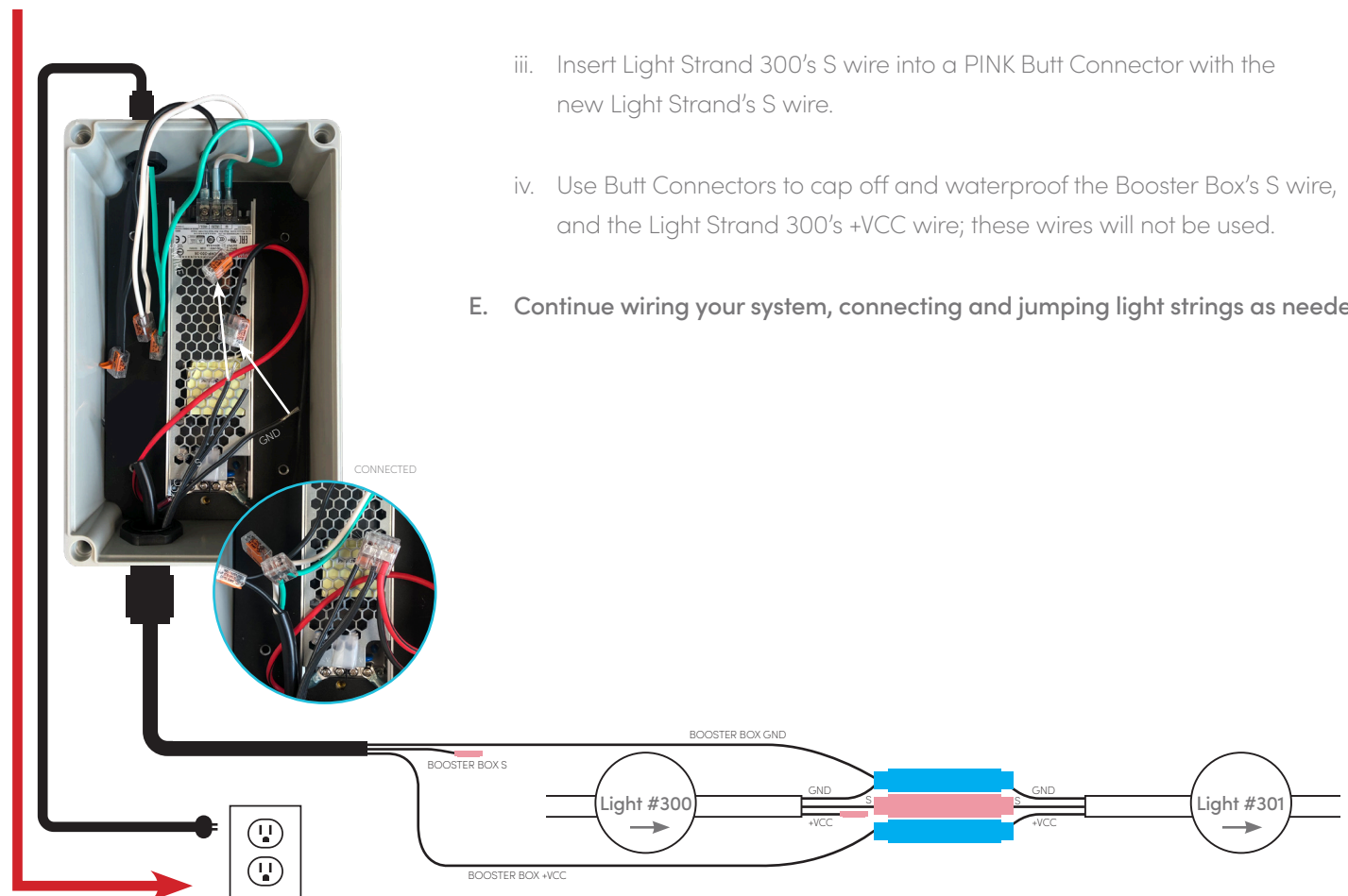
WARNING:

Do NOT plug in the system until ALL wiring is complete. Wiring while the system is live will void Oelo's 5-year warranty.

Adding a Booster Box

The Control Unit can only power 300 lights. If the system is linear (ran in a straight line), you can add a Booster Box after Light #300. This Booster Box can also be added anywhere in the run to help offset non-linear systems. To add:

- A. Hang the box near a nearby power source (a standard 110V outlet).
- B. Insert the 3-Core Cable into the Large Strain Relief.
- C. Connect the 3-Core Cable wires, inserting the:
 - i. +VCC WIRE into the RED CONDUCTOR; close conductor port.
 - ii. GND WIRE into the BLACK CONDUCTOR; close conductor port.
 - iii. The S (Signal) WIRE will not be used inside the box.
- D. Run the 3-Core Cable up to Light #301 and strip, feed, crimp and shrink:
 - i. The Booster Box Cable's GND wire AND Light Strand 300's GND wire TOGETHER in a BLUE Butt Connector; insert the next Light Strand's GND into the other side of the Butt Connector.
 - ii. Insert the Booster Box Cable's +VCC wire in a PINK Butt Connector; insert the next Light Strand's GND into the other side of the Butt Connector.
 - iii. Insert Light Strand 300's S wire into a PINK Butt Connector with the new Light Strand's S wire.
 - iv. Use Butt Connectors to cap off and waterproof the Booster Box's S wire, and the Light Strand 300's +VCC wire; these wires will not be used.
- E. Continue wiring your system, connecting and jumping light strings as needed.



STEP 11

The finishing touches

- A. **Plug in the Control Unit and additional Booster Boxes and test the system.**
(Follow the instructions on Control Panel Door to test or troubleshoot the lights.
For instructions on how to operate the Oelo app, please see the Oelo app instructions.)
- B. **Tuck in all of the wiring into the Cover; make sure the light spacing is even.**
- C. **Snap the Cover Lens on, sliding it into the top of the Cover Clip.**
If the Cover Lens is difficult to insert, use a flat-head screw driver to bend the bottom lip of the Cover Clip for easier installation.
- D. **Snap on the Extension Covers, lining up the tabs.** Add a small dab of glue on each tab. (Do not use too much glue to maintain serviceability of lights.)
- E. **Snap on the Endcap Covers, making sure the wires are tucked into the ports.** Fill unused ports with a Port Plug. Add a small dab of glue on each tab. (Do not use too much glue to maintain serviceability of lights.)
- F. **Admire your stunning work!**



Tag us in your photos and videos please!



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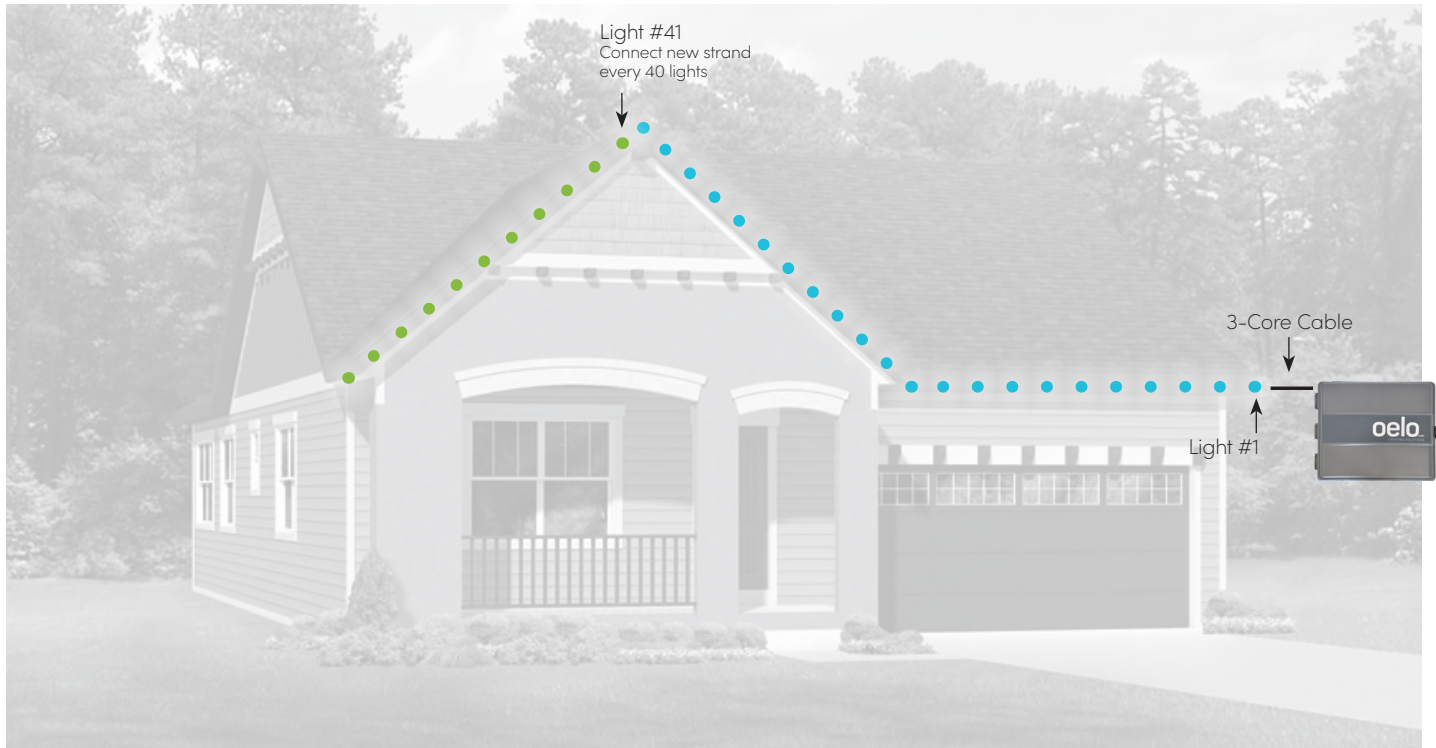


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SAMPLE LIGHTING SCENARIOS

Light Strand #1 = ● ● ●

Light Strand #2 = ● ● ●



50-Foot System ~60 Lights (2 Light Strands)



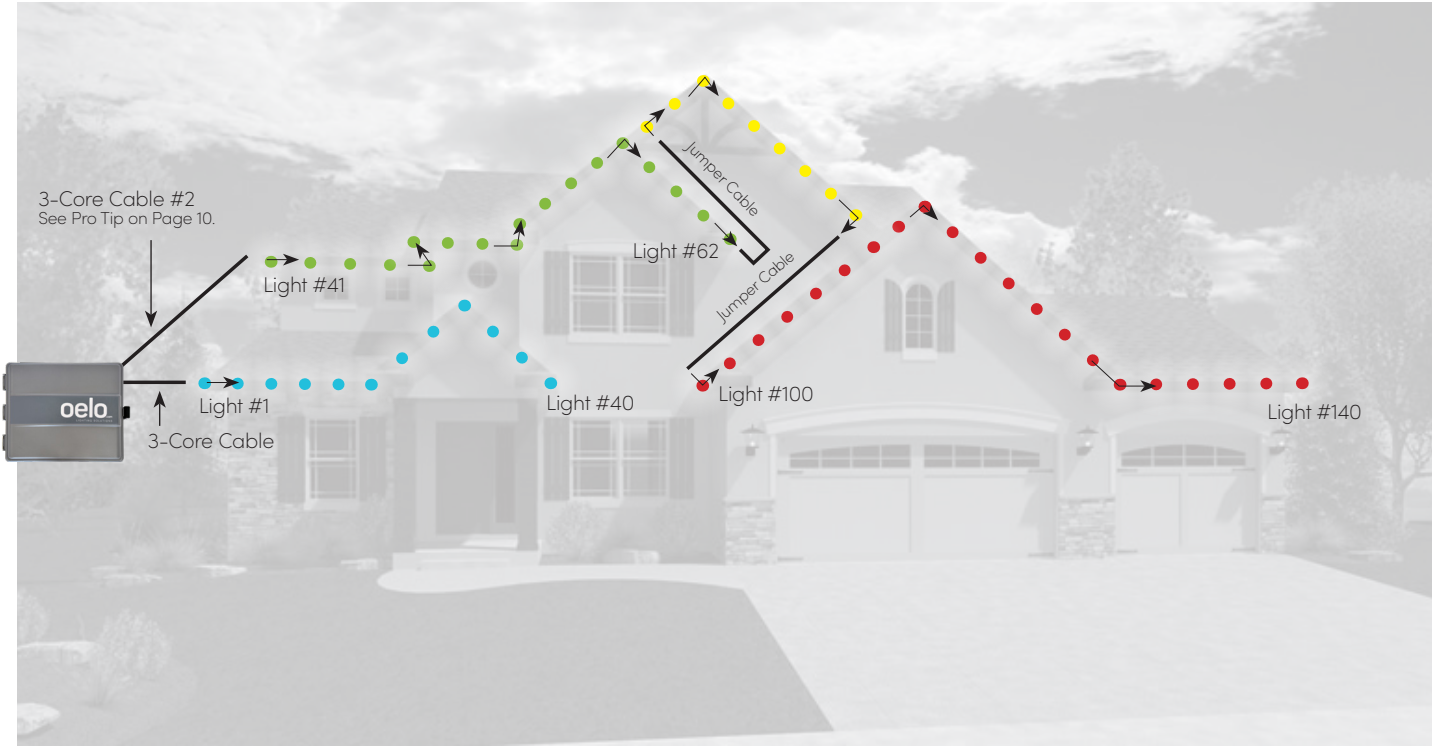
100-Foot System ~120 Lights (3 Light Strands)

Light Strand #3 = ● ● ●

Light Strand #4 = ● ● ●

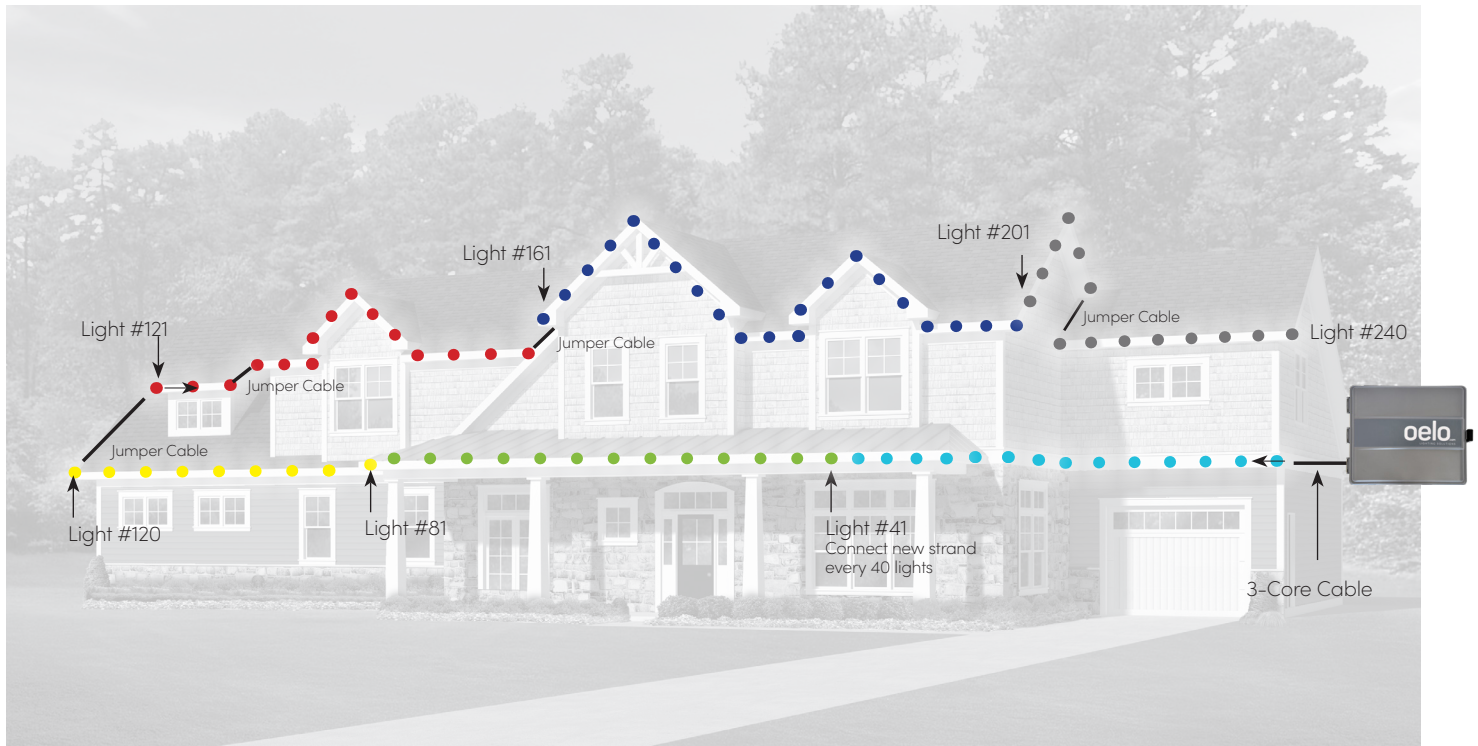
Light Strand #5 = ● ● ●

Light Strand #6 = ● ● ●



150-Foot System ~180 Lights (4 Light Strands)

HOW TO CREATE A JUMPER CABLE For complete "Jumper Cable" instructions, see Page 11.



200-Foot System ~240 Lights (6 Light Strands)

HOW TO INSTALL A BOOSTER BOX For 300+ light homes or non-linear structures, we recommend consulting Oelo; also see Page 12 for Booster Box details.



oelo.com | 3842 Redman Dr., Fort Collins, CO | 970.212.3670

See an Oelo representative or authorized installer for further details. All information in this brochure is the latest available at the time of publication. Printed in the USA. 0521 ©2021 Oelo