



# Quick Slide Handrail - LED Installation Guide



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### Tools & Supplies Needed for this Installation

- Drill
- 1/4" or 5/16" Metal Drill Bit
- Wire Cutters
- Wire Strippers
- Silicone
- Wire Fishing Sticks
- Flat Head Screw Driver



Before you begin, you will need to procure the correct number and capacity of LED Driver/Controllers as well as leader wiring that goes from the LEDs to the LED Driver/Controller. These are not provided by Viewrail, as the number of drivers and individual load capacities and the length and gauge of the wiring is all dependent on your specific installation. There is additional information on pages 2 & 3 for the Driver requirements and the Leader line calculations, respectively.

### Please take the following precautions:

1. Read over the provided material prior to the start of your installation
2. This equipment, like all electrical equipment, should be installed by qualified personnel.
3. Follow all Health and Safety Guidelines and local electrical codes when installing and connecting LED lighting.
4. Do not expose LEDs, dimmers or LED Drivers to intense electro-magnetic fields, including lightning.
5. Ensure the LED driver and all electrical components are protected from moisture and weather exposure.
6. Always observe proper polarity.
7. Use insulated tools and equipment during installation to prevent electrical hazards.

By following these rules, you can effectively install LED lighting on your exterior deck, ensuring both functionality and durability in outdoor conditions



# Notes Before Beginning

- Connecting the AC power leading to the LED Driver (*Not Included*) is recommended to be done by a licensed electrician.
- It will be important to measure all the lengths of the LED strips and the wire “leaders,” making sure to lay out a plan on where each LED Driver will be located and how each strip will be utilized and installed.
- If your LED Driver(s) need to be positioned more than 9 feet from the start of the LED strip, you will need to use thicker wiring (not included) between the strips and the LED Driver/Controller. Follow local electrical codes for guidance on the appropriate wire size. For a cleaner look, the LED Drivers are usually concealed from view.
- Identify and plan for how you would like to run your wire from the LED Driver to the LED strip(s) which will be hidden inside of the handrail. This wire can either be run externally to the handrail, or, some customers choose to run the wire up through a post and drill a hole out the top of the post and lead into the handrail. **(FIG A)**

# Actions to Take Before Beginning

- Determine the required length of LED strips based on the railing dimensions. LED strips are available in 9', 21', and 32' Sections. They are able to be trimmed on site every 2" by using scissors at the dedicated cut lines. **(FIG B)**
- LEDs require 6 watts per foot. Calculate the total wattage required based on the total length of LED strips used.

Strip Length	Wattage Requirement	Wattage Calculation
9 Feet	54W	9 x 6 = 54
21 Feet	126W	21 x 6 = 126
32 Feet	192W	32 x 6 = 192

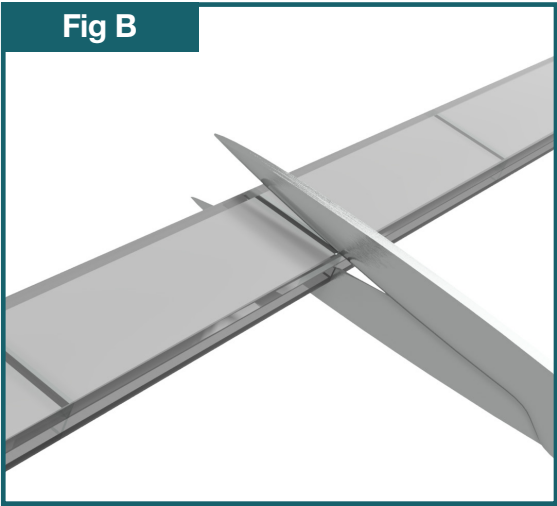
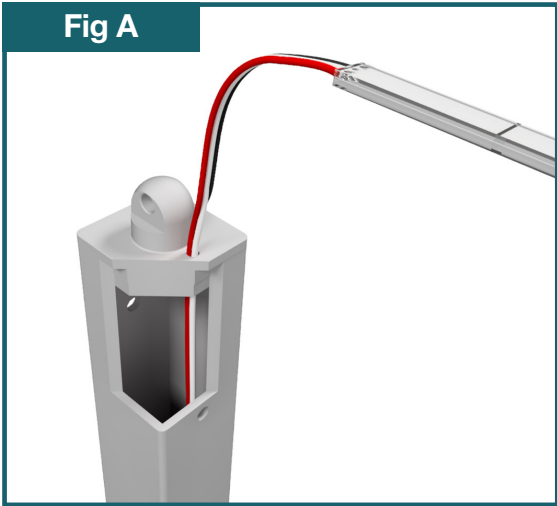
- It's important to pick the correct LED Driver size. Select a 24V DC LED driver that can supply enough power for the total wattage required using no more than 80% of the drivers capacity. Ensure the driver has a sufficient wattage capacity and is suitable for outdoor use. In a lot of cases it may be necessary to use multiple drivers to power different sections of the deck.

**Example:** (1) 32' Strip and (1) 21' strip, cut down to 18', would total 50'. At 6W/ft that totals out to 300W. To calculate what size LED Driver you would need, so that running a 300W system would use 80% of its total capability, do the following where x stands for the overall power rating of the LED Driver.

*LED System Requirement = LED Driver Total Capability x 80%*

$300W = X \times 0.80 \quad \rightarrow \quad X = \frac{300W}{0.80} \quad \rightarrow \quad X = 375W$

Based off the example calculation, you would need to use a LED driver rated for approximately 380W.



# Voltage Drop Chart for Leader Lines

This Voltage Drop Sheet is designed to help you configure what gauge of wire to run to your LED handrail from the power supply to ensure it is brightly and safely lit. Utilize the sheet by following the instructions on the bottom and then purchase the correct gauge wire based on the wattage required for the LED and the length from the LED to the power supply.

	10 Watts	20 Watts	30 Watts	40 Watts	50 Watts	60 Watts	70 Watts	80 Watts	90 Watts	100 Watts	110 Watts	120 Watts
18 AWG	134' (40.8m)	68' (20.7m)	45' (20.7m)	33' (10.1m)	27' (8.2m)	22' (6.7m)	19' (5.8m)	17' (5.2m)	15' (4.5m)	14' (4.3m)	12' (3.6m)	10' (3.1m)
16 AWG	219' (65.5m)	109' (33.2m)	72' (22.0m)	54' (16.5m)	43' (13.1m)	36' (11.0m)	31' (9.5m)	27' (8.2m)	24' (7.3m)	22' (6.7m)	19' (5.8m)	16' (4.9m)
14 AWG	345' (105.2m)	174' (53.0m)	115' (35.1m)	86' (26.2m)	69' (21.0m)	57' (17.4m)	49' (14.9m)	43' (13.1m)	39' (11.9m)	36' (10.1m)	30' (9.1m)	27' (8.2m)
12 AWG	539' (164.3m)	272' (82.9m)	181' (55.2m)	135' (41.2m)	108' (32.9m)	90' (27.5m)	77' (23.5m)	68' (20.7m)	62' (18.9m)	56' (17.1m)	49' (14.9m)	44' (13.4m)
10 AWG	784' (239.0m)	397' (121.0m)	263' (80.2m)	197' (60.1m)	158' (48.2m)	131' (39.9m)	112' (34.1m)	98' (29.9m)	95' (28.9m)	82' (25.0m)	77' (23.5m)	71' (21.6m)

LED Current Draw: 6W per foot

Example: The power supply is 20' from the LED strip. What is the total wattage for each LED, and what wire gauge would eliminate voltage drop?

### Step 1: Calculate Total Load

- Multiply the length of the strip by the LED Current Draw.
- In this case, multiply 20' by 6W, yielding a Total Load of 120W.
- Round to the nearest Load Interval, which would be 120W.



### Step 2: Consult Wire Gauge Chart

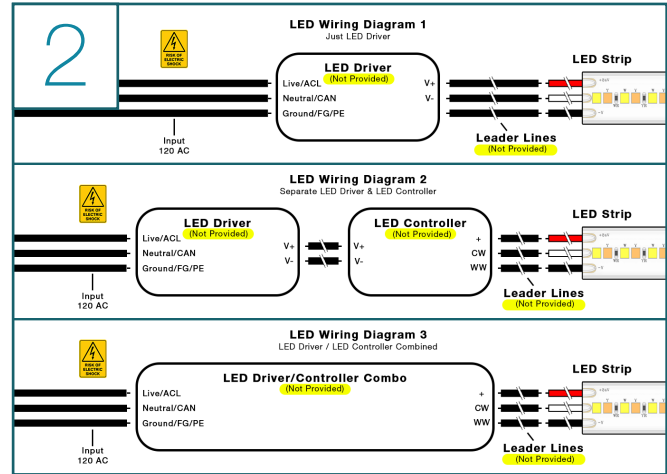
- Under 120W column, please locate the appropriate distance.
- Since our measurement of 20' is in between the two options of 16' & 27', round up to 27'.
- *Never round down!*



### Step 3: Choose Wire Gauge

- Given the previous conditions, it would be recommended to run 14 AWG to eliminate voltage drop.
- Consult a licensed professional for further installation assistance.

## Quick Slide Handrail - LED - Connecting LED Strips to Driver/Controller(s)



### Mounting your LED Driver/Controller (Not Included)

- Typically, for aesthetic purposes, these are hidden out of view
- Run and connect the leader lines from the LED Driver to the correct handrail section

- You can now connect the LEDs strips to the Driver/Controller(s)
- Ensure all connections are waterproof and secure to withstand outdoor conditions
- Conceal wiring where possible to maintain a neat appearance and prevent damage.

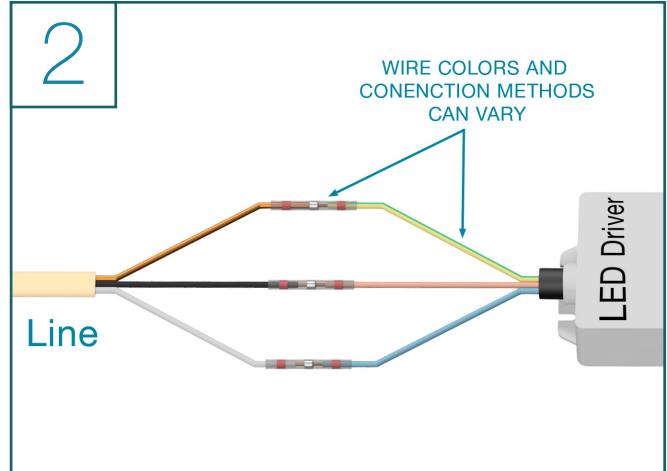
Note:

Your leader lines can either be run externally to the handrail, or some customers choose to run the wire up through a post & drill a hole out the top of the post & lead into the handrail. See FIG A on previous page.

Note:

If additional wire length is needed between the LED Driver/Controller and the LED Strip(s), you can use leader lines (not provided) to make the connections to the LED controller. Please refer to the Voltage Drop Chart above, to use the correct AWG wire - This will ensure your LEDs work properly and stay brightly lit.

### Quick Slide Handrail - LED - Connecting LED Driver/Controller(s) to Structural Power

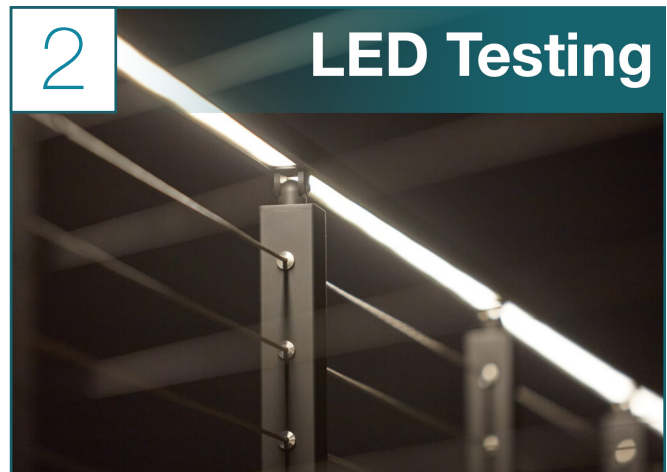
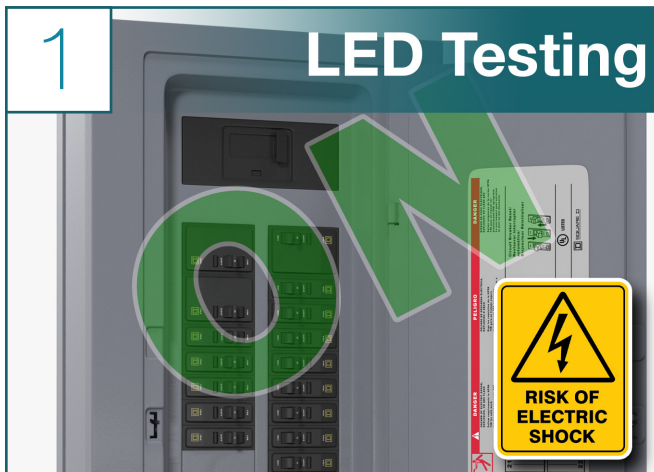


- Before commencing any installation or maintenance work, disconnect power at the breaker box and ensure that it cannot be re-connected inadvertently

- Connect structural power input line(s) to LED Driver AC inputs following the LED Driver manufacturer's instructions
- Ensure all connections are waterproof and secure to withstand outdoor conditions
- Conceal wiring where possible to maintain a neat appearance and prevent damage.

**⚠ A licensed Electrician is required for the following step. Incorrectly connecting the system to power may result in; damage to the components, electric shock, fire or death.**

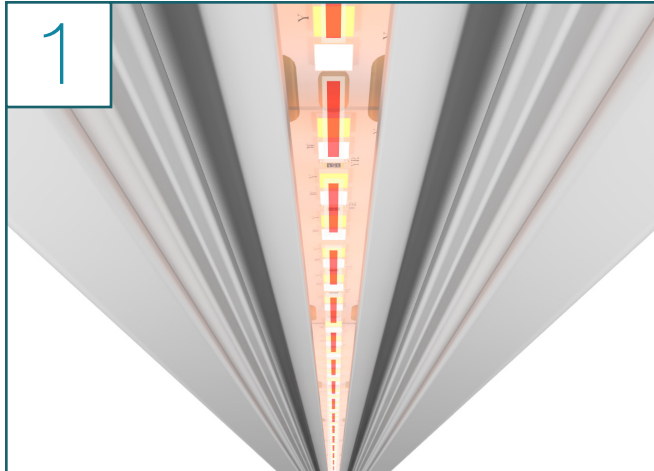
### Quick Slide Handrail - LED - System Testing



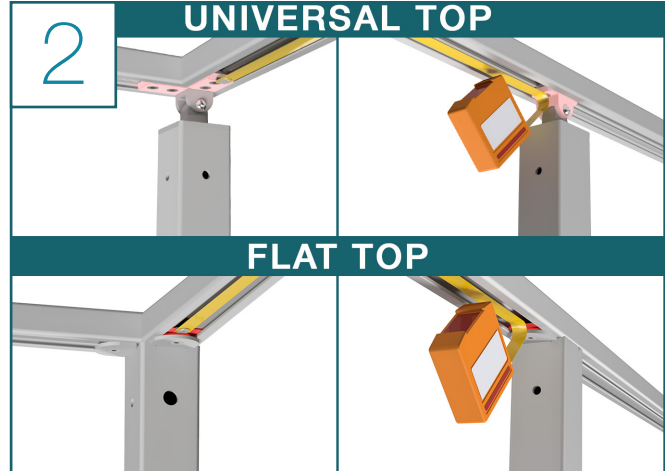
- At this point, check to make sure your new connections are isolated from any source of grounding, and turn the power back on

- Test the LED lighting system after installation to ensure all strips illuminate properly and are evenly distributed
- Make any necessary adjustments to positioning or connections to achieve desired lighting effects

## Quick Slide Handrail - LED - Finishing Up



- Before continuing, and with the LEDs turned on, ensure the alignment of the LED strip in the channel is centered
- This is important to ensuring uniform lighting below the handrail



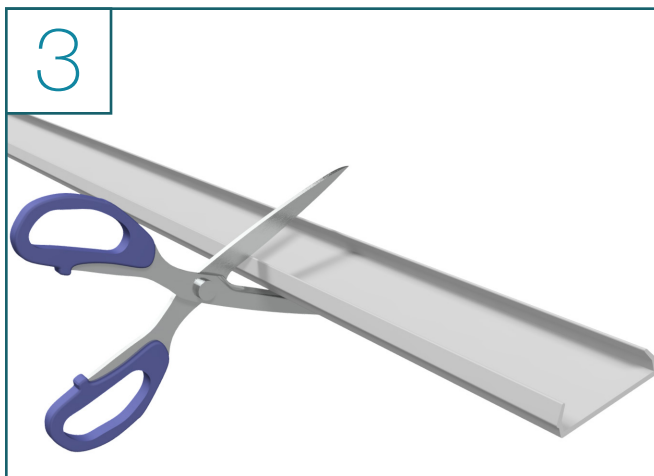
- Measure the length needed for each section of the Quick Slide Channel Covers - These covers will snap into the under side of the Quick Slide handrail and leave a smooth stylish look

### Universal Top

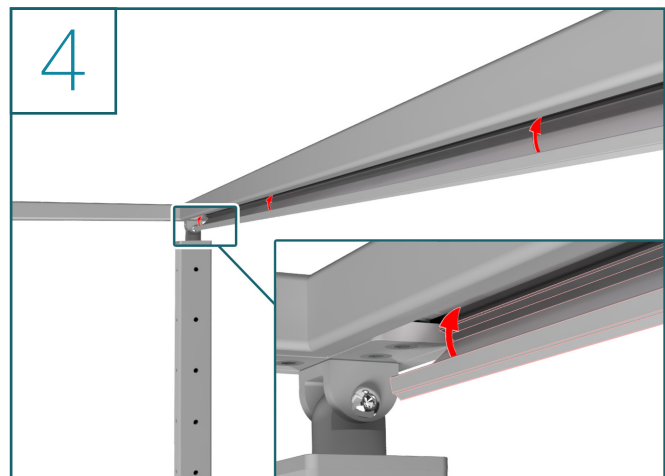
- Looking under the handrail, locate the brackets and measure the distance between them

### Flat Top

- Looking under the handrail, locate the plate nuts and measure the distance between them
- Write these measurements down as there may be some variation depending on post install locations



- Locate the Quick Slide Channel Covers
- Measure and mark where you will make your cuts
- Using a pair of scissors, cut the covers to size



- Clip the cover into space under the handrail as shown

**Congratulations! You're done with this section.**

We'd love to see your work! Snap a few pics with your phone and send them to [pictures@viewrail.com](mailto:pictures@viewrail.com). Thanks for choosing Viewrail. Enjoy your new installation!

# Warning:

## **TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS:**

1. Turn off/unplug before mounting or interconnecting fixtures.
2. Do not look directly into LEDs when lit.
3. Do not operate fixture(s) with missing or damaged parts.
4. Do not install fixture(s) in any unventilated compartment.
5. Use only UL/RU/ETL Listed Class 2 LED Drivers.
6. Use only NSL joiner or extension wires to join fixtures to Class 2 LED Drivers and to interconnect fixtures.
7. Properly dispose of all small parts and packing material. Small parts and packing material may be hazardous to children.
8. Install in accordance with manufacturer's instructions, current local codes, and/or the current National Electric Code.
9. Be careful to no overload your LED Driver(s). Adding too many LEDs may result in premature failure of the LED system.
10. Do not use this product for any other purpose than as described.
11. Do not use this product with unauthorized accessories or parts from other manufacturers.
12. LED lighting is not intended to replace any emergency egress lighting.

In the unlikely event fixture does not illuminate, check wiring first. If this does not work, send LED back for warranty replacement, if applicable.

These products may represent a possible shock or fire hazard if improperly installed or attached in any way. Products should be installed in accordance with the owner's manual, current local codes, and/or the current National Electrical Code (NEC). Products must be installed and wired by a licensed electrician.

**FAILURE TO ADHERE TO THESE WARNINGS AND INSTRUCTIONS CAN RESULT IN FIRE,  
SERIOUS INJURY, ELECTRICAL SHOCK, AND/OR DEATH.**

# Troubleshooting:

## Tools Required:

- Multi-Meter
- Small Flat Head Screwdriver

## Issue: All LEDs Not Turning On

### A. Check the Input Voltage to the LED Driver(s)

- Use a Multi-Meter to test if there is 120V getting to the LED Driver.
- If you are getting 120V to the LED Driver then move to **STEP B**.
- Otherwise, ensure that the breaker hasn't been tripped.
- If there is a light switch on the circuit, make sure it is turned on.
- Check wire connections to ensure there is no open circuit or short.
- If you still are not detecting 120V at the LED Driver inputs, call a certified electrician.

### B. Check the Output Voltage of the LED Driver(s)

- Make sure the driver is at full brightness and is tuned to one specific color temperature and not a mixture of the two. (Dimming and tuning can lower the voltage below 24V DC making diagnosing the issue more difficult)
- Use a multi-meter to check that the LED Driver is outputting 24-25.5V DC to the LED Lights.
- If 24V DC is good move to **STEP C**.
- If no 24V DC power is present replace the low voltage LED Driver.

### C. Check LEDs

- Make sure all LEDs are wired correctly.
- Inspect the LED Strips for any damage

## Issue: Not All LEDs are working

### A. Verify the wiring connections of the LEDs

### B. Test non-working strip with a known working connection

- If the LED strip tests good when connected to a known working harness, then the original wiring is bad and will need to be replaced
- If the LED strip does not work on a known working harness, then the LED strip is bad and will need to be replaced