

Installation Instructions

The following instructions are general guidelines. Installation should be performed by a qualified electrician in accordance with the National Electrical Code and any applicable local codes. Read through the entire instructions before beginning installation. Contact Celestial Lighting for further assistance.

GEM-3000 Multi-Function Step Light are shipped in pre-cut, pre-assembled sections. Obtaining accurate cut lengths for the stairnoses are required as the step stairnose can not be field cut to length. The material needed for installation depends on the layout of the steps.

Stairways Between two Walls

There are two different ways to install step light between two walls. The most common and easiest way is to follow the same procedures as installing step light adjacent to one wall. The second way is described below with illustrations to the right. This will require feeds into each step through the bottom of each step stairnose.

GEM-3000

For stairways between two walls, the stairnose is installed throughout the entire length of each step from wall to wall. Accurate dimensions must be ordered as the stair stairnose can not be field cut. A junction box must be installed before concrete is poured into the step.

Raceway

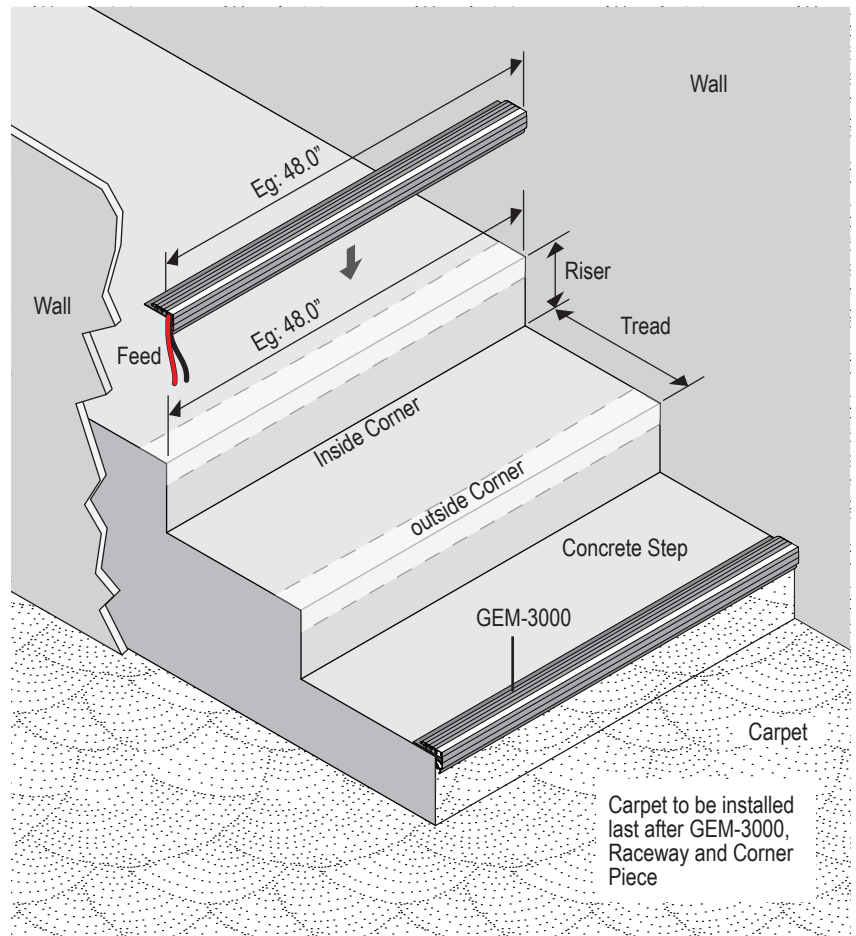
The raceway will not be needed in this type of configuration as the step stairnose will run the entire length of the step from wall to wall.

Wire Harness

The Wire Harness will not be provided for this type of installation as wiring will be entirely provided by the contractor.

End Cap

The corner piece will also not be used as there will be no raceway for the step stairnose to mate into.



Junction box and conduit to be roughed in before concrete is poured into step

Stairways Adjacent to Wall

GEM-3000

For stairways adjacent to a wall, the stairnose is typically installed with one end directly against the wall with the other end mating with the raceway and end cap. The length of each GEM-3000 step light should be the same width of the step including one end cap. Accurate dimensions must be ordered as the stair nosing cannot be field cut.

Raceway

The raceway provides transition from carpet to bare floor and houses the wire harness to power each GEM-3000 step light. Raceway consists of the base and cover and are shipped in 10 feet length to be field cut to length. The raceway are required on both the tread and the riser of each step. To calculate the lengths needed, measure the length of the tread and subtract 1.25 inches and measure the height of the riser and subtract 1.12 inches. The gaps on the outside corner allows for the raceway to mate directly with the corner piece and the GEM-3000 step light. On the inside corner, the tread and riser raceway require miter cuts in order for the two parts to mate seamlessly. Cut both the base and the cover together to ensure alignment.

Wire Harness

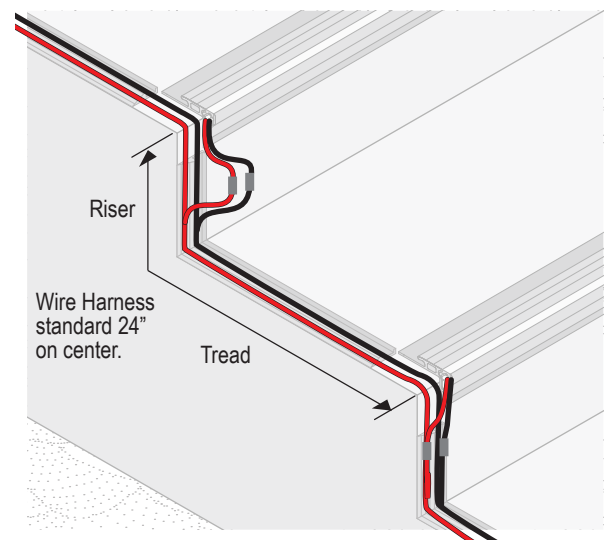
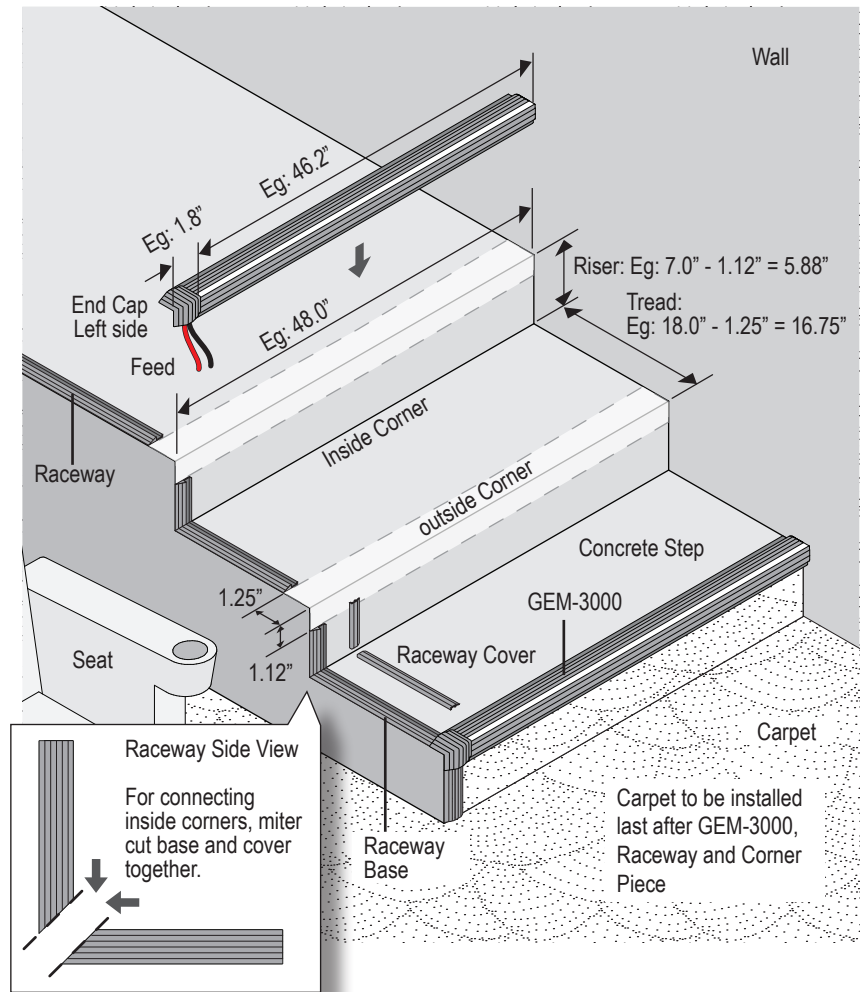
Wire Harness connects the main wire to each step and is available in a single connection and a double connection. A single connection feeds only the lights on the tread and a double connection feeds lights on both the tread and riser. See chart below for models that use a single or double connection.

Single connection	Double connection
GEM-3000-MT	GEM-3000-MR
GEM-3000-FT	GEM-3000-FR
	GEM-3000-FM

The spacing between the wire harness is the distance between each step which is the length of the tread and riser combined. Standard spacing is 24 inches on center. Fold extra cable and tuck inside the the raceway riser before snapping in Raceway cover.

End Cap

The End Cap is used to to connect the GEM-3000 step light and the raceway together. It allows for the power feed into the step light. Left and Right side must be specified for each step and are not interchangeable. Orientation is determined by looking at the steps from the stage or screen.



Stairways Between Seating Areas

GEM-3000

For stairways between seats, the stairnose is installed on stairs that require mating the raceway and corner piece on both sides of each step. The length of each GEM-3000 step light should be the same width of the step including two end caps. Accurate dimensions must be ordered as the stair stairnose can not be field cut.

Raceway

The raceway provides transition from carpet to bare floor and houses the wire harness to power to each step light. Raceway consists of the base and cover and are shipped in 10 feet length to be field cut to length. The raceway are required on both the tread and the riser of each step. To calculate the lengths needed, measure the length of the tread and subtract 1.25 inches and measure the height of the riser and subtract 1.12 inches. The gaps on the outside corner allows for the raceway to mate directly with the end cap and the GEM-3000 step light. On the inside corner, the tread and riser raceway require miter cuts in order for the two parts to mate seamlessly. Cut both the base and the cover together to ensure alignment. Only one side of the raceway will house the wire harness and provide power to each step. The other side will only provide transition from carpet to floor.

Wire Harness

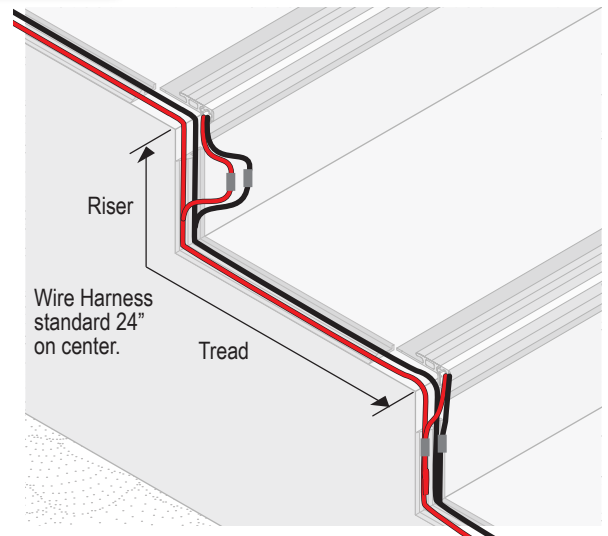
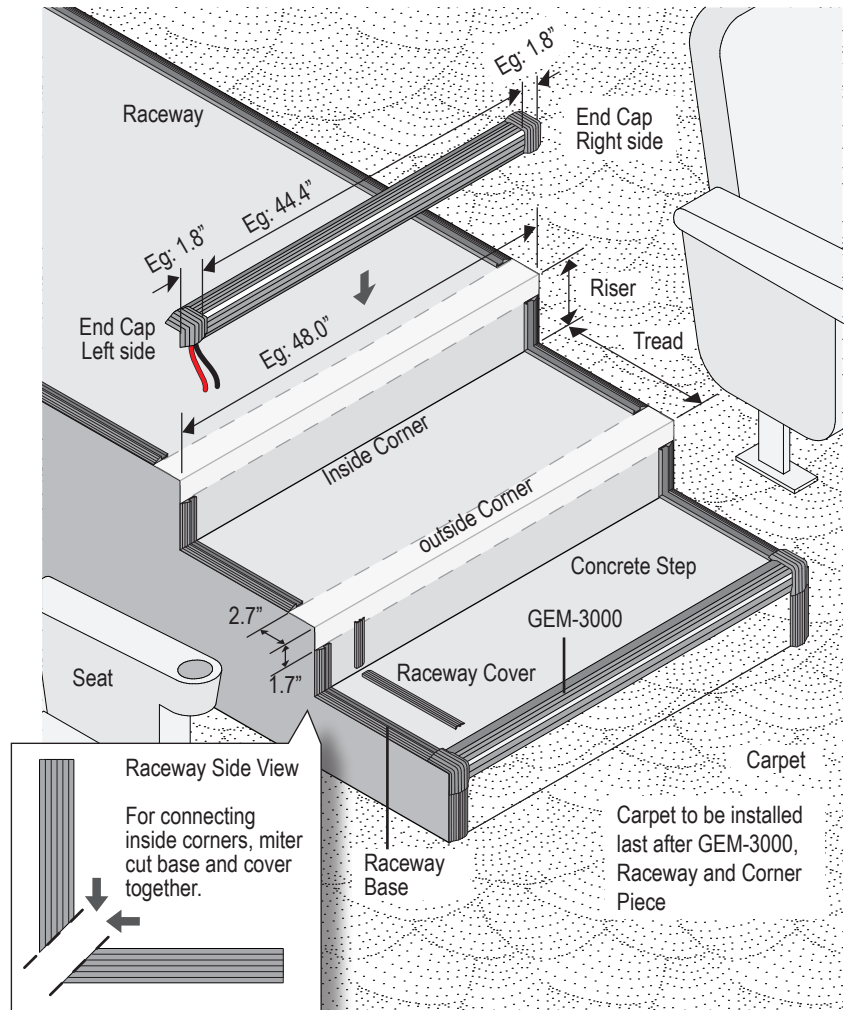
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GEM-3000-FT	GEM-3000-FR
	GEM-3000-FM

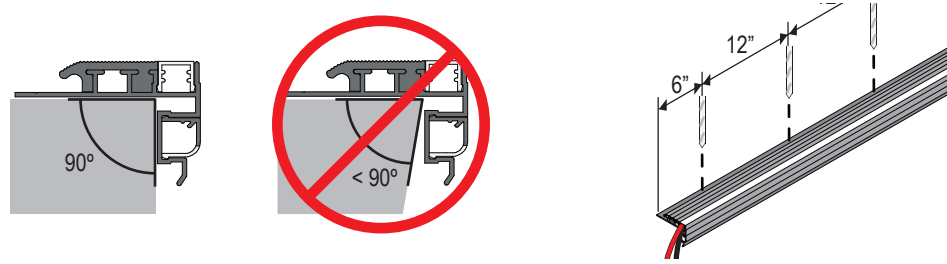
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End Cap

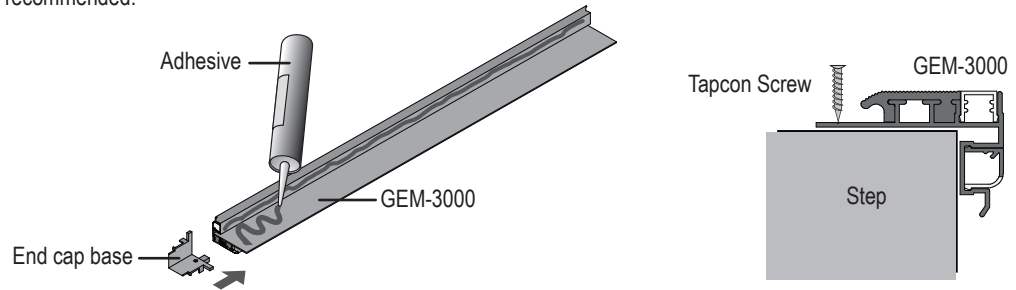
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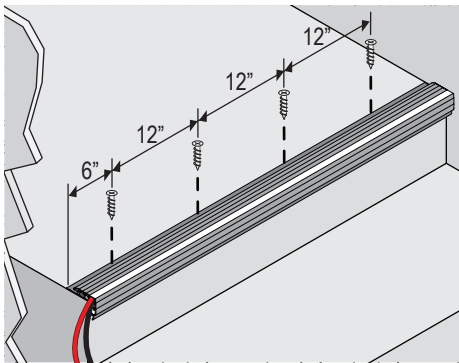
Step 1 Clean surface where the Step Stairnose will be installed making sure surface is free of dust and or debris. Make sure the edge of each step is 90 degrees. Installing the GEM-3000 to steps that are not 90 degrees are not recommended. Pre-drill 5/32 hole on the aluminum GEM-3000 base every 12 inches on center. Adjust the distance of the first hole from the edge of the step light.



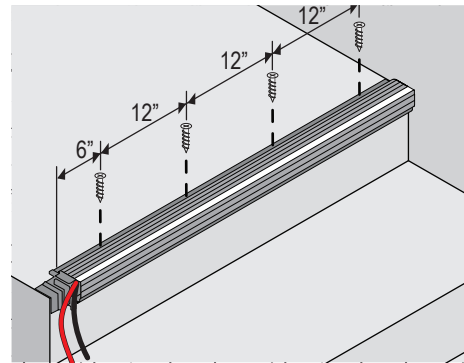
Step 2 The end cap comes in two parts, the base and the cover. Insert the end cap base into the GEM-3000 step stairnose and apply adhesive to the underside of the GEM-3000 aluminum base. Apply one 29 oz. tube up to 15 feet of the step stairnose. Mount to the corner of the step and secure with tapcon screw. One screw per foot recommended.



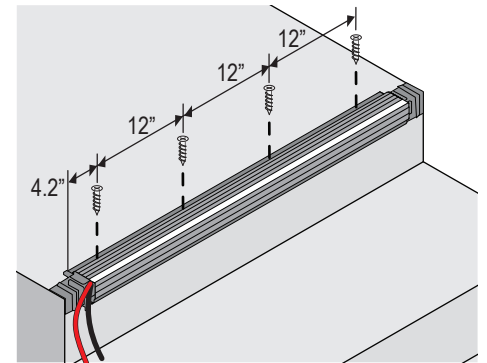
Stairways Between two Walls



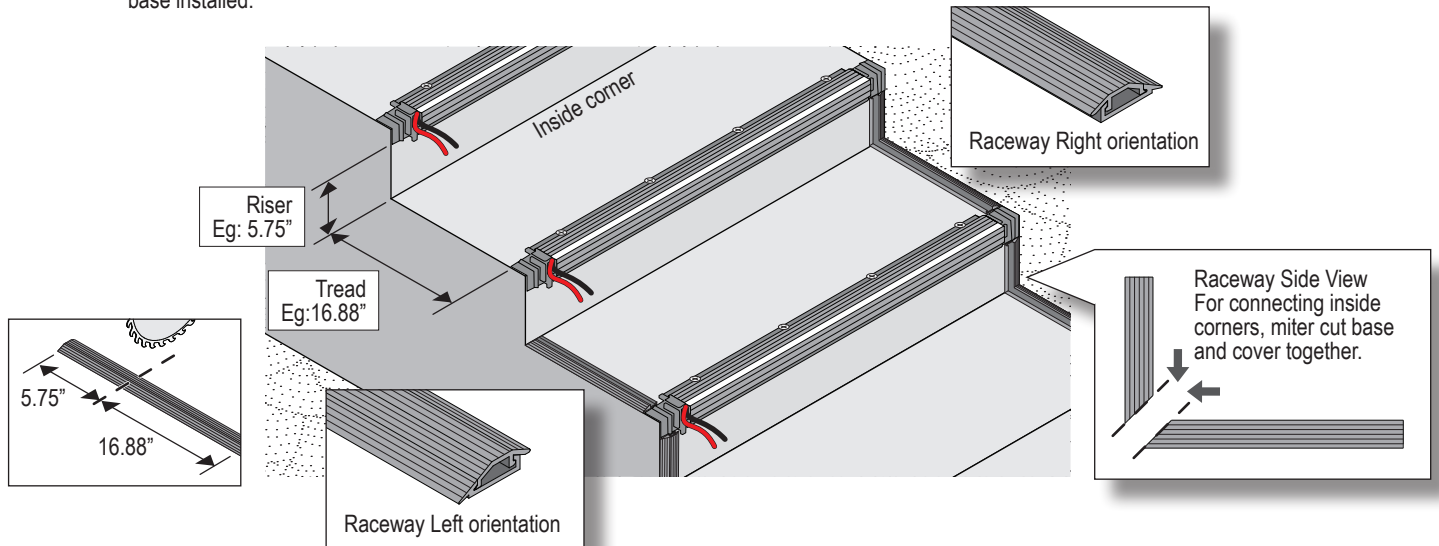
Stairways Adjacent to Wall



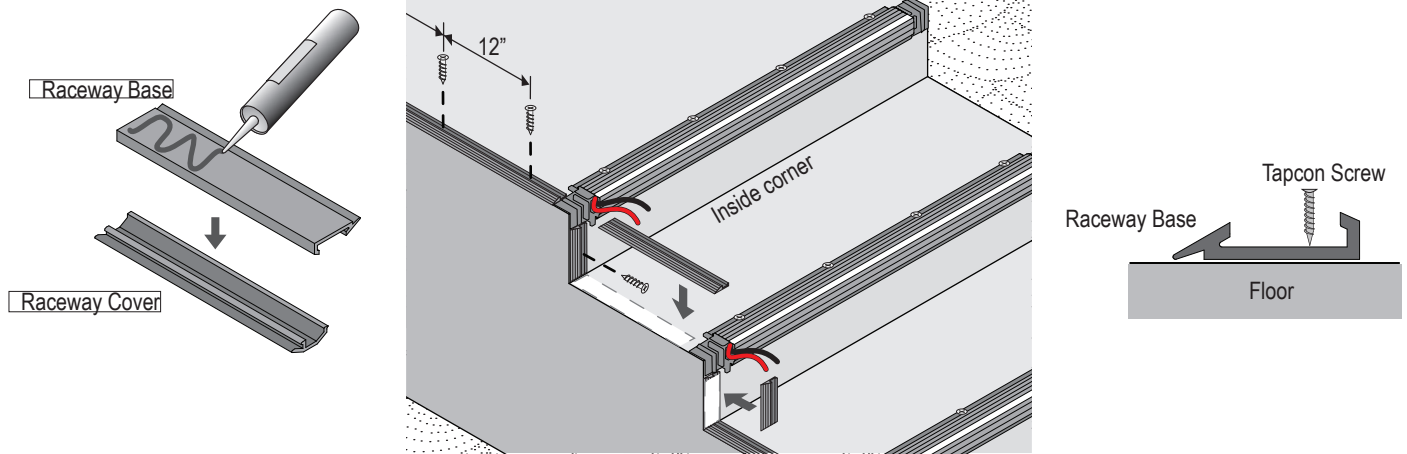
Stairways Between Seating Areas



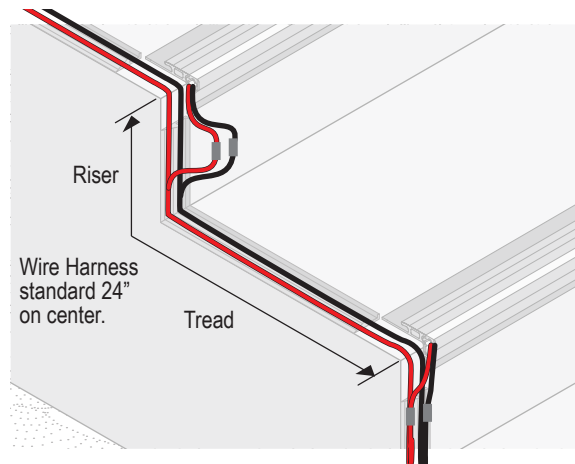
Step 3 Raceway base and cover are shipped in 10 foot lengths and designed to fit on both right and left side of the step. (Interchangeable) Measure the riser for each step starting from the insider corner to the edge of the end cap base. Orient the raceway for the right and left side before cutting the raceway. For the tread, measure from the inside corner to the edge of the end cap base. On the inside corner where the raceway for tread and riser meet, miter cut the raceway riser and tread. Always cut the raceway with the cover and base installed.



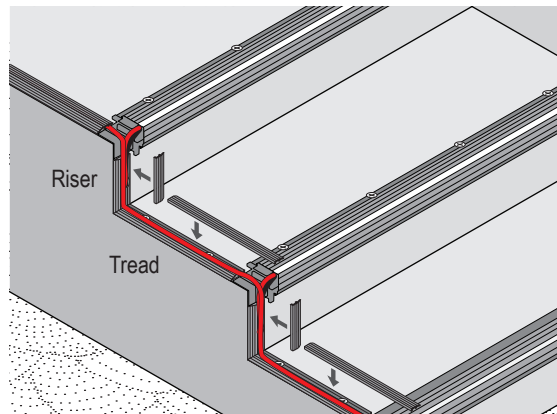
Step 4 After all of the raceway tread and riser sections has been cut and mitered for each step, remove raceway cover and apply adhesive to the underside of the base. One 29 oz. tube should fill up to 90 feet of raceway. Mount to surface without the cover and secure with tapcon screws. (1 screw per foot recommended)



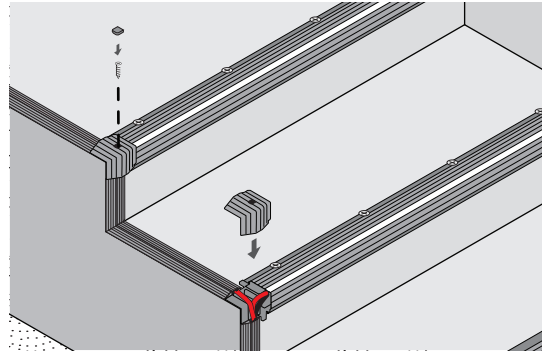
Step 5 After all of the raceway bases have been installed to the tread and riser of each step, lay down the wireharness and connect the power feed from each GEM-3000 step stairnose to the main wire harness cable.



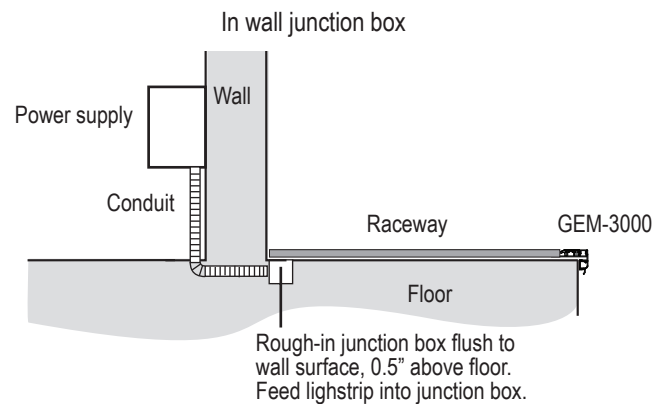
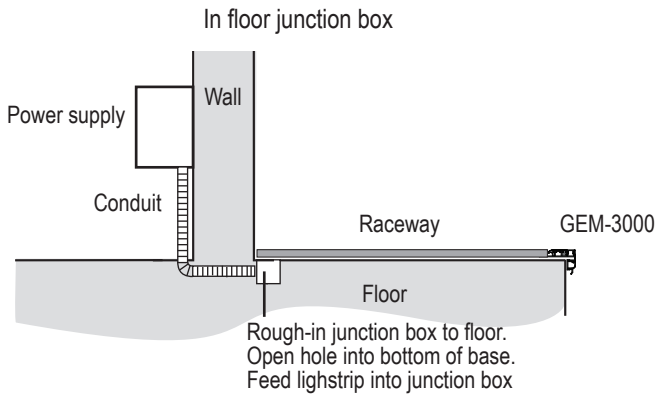
Step 6 Tuck in extra cables into the riser and snap in cover. Snap in cover for the tread.



Step 7 Install end cap cover onto the end cap base where the raceway meets the GEM-3000 step stairnose. Screw down cover using screw provided on the tread. Install the plastic button over the crew to con seal the screw.



Step 8 Make connection from the power supply to the wire harness to power all the GEM-3000 step stairnose. Use the raceway to guide the cable to the junction box. Make sure that each power supply does not exceed the maximum run. Refer to chart below to determine maximum run based on the lamp spacing of the LEDs on the GEM-3000 step stairnose. For runs longer than the maximum run length, a new feed must be fed separately from the power supply.



Max run based on 6" on center lamp spacing

75ft maximum run

75ft max.

60W Power Supply
Feeds up to 150 LEDs
(per 5A output)



300ft total (4 runs of 75ft per 5A output)

240W Power Supply
Feeds up to 600 LEDs total
(150 LEDs per 5A output)

