



SERVICE MANUAL

BOX AWNING LED

RV

SPECIFICATIONS

<i>MOUNTING:</i>	LED light strip is factory mounted in specially designed groove in the lead rail.
<i>LENGTH:</i>	Available for awnings 10' – 21' <i>* Maximum LED strip length is 16' 5". For awnings greater than 18', strip is centered in the lead rail.</i>
<i>POWER:</i>	1A, 12VDC
<i>CONTROLS:</i>	Single pole, single throw switch (SR0101) <i>Note: The Switch kit is ordered separately. Kit includes in-line fuse holder and 2A spade type fuse. For an installer furnished control switch, see notes in "Switch Installation".</i>

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This manual covers basic LED lighting for factory mounted LED strips. For additional information please refer to the appropriate product service manual.

PROPRIETARY STATEMENT

The LED Lighting is a product of Carefree of Colorado, located in Broomfield, Colorado, USA. The information contained in or disclosed in this document is considered proprietary to Carefree of Colorado. Every effort has been made to ensure that the information presented in the document is accurate and complete. However, Carefree of Colorado assumes no liability for errors or for any damages that result from the use of this document.

The information contained in this manual pertains to the current configuration of the models listed on the title page. Earlier model configurations may differ from the information given. Carefree of Colorado reserves the right to cancel, change, alter or add any parts and assemblies, described in this manual, without prior notice.

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SAFETY INFORMATION

⚠ WARNING A WARNING INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY AND/OR MAJOR PROPERTY DAMAGE.

⚠ CAUTION A caution indicates a potentially hazardous situation that may cause minor to moderate personal injury and/or property damage. It may also be used to alert against unsafe practices.

NOTE: A note indicates further information about a product, part, or step.

Tip: A tip provides helpful suggestions.

Safety Notes:

- To avoid shock hazard and/or accidental system shorting, always disconnect battery or power source before working on or around the electrical system.
- Always wear appropriate safety equipment (i.e. goggles).
- Awnings have significant weight. Always use appropriate lifting devices and/or helpers when lifting or holding heavy objects.
- When using fasteners, use care to not over tighten. Soft materials such as fiberglass and aluminum can be "stripped out" and lose the ability to grip and hold.

SWITCH AND FUSE INSTALLATION

NOTE: Installers may choose to furnish the control switch. The installation requires that the power line (+12VDC) be attached to a dedicated 2A circuit breaker or a 2A in-line fuse must be installed between the switch and power source. For easy access, locate the fuse close to the switch.

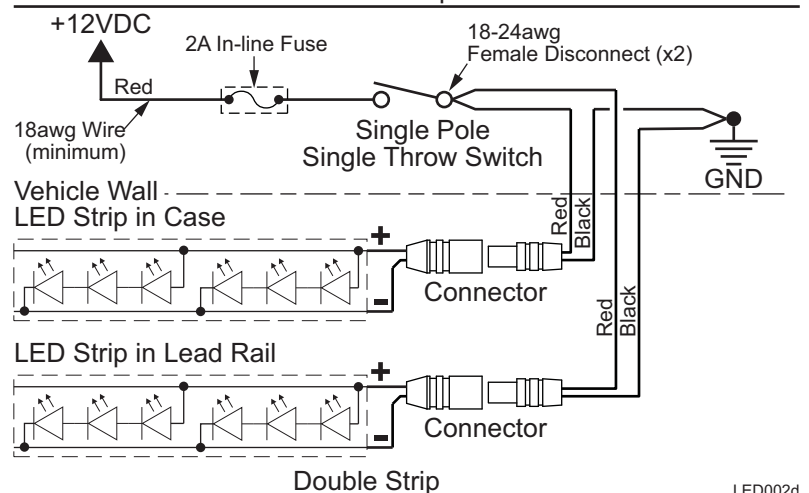
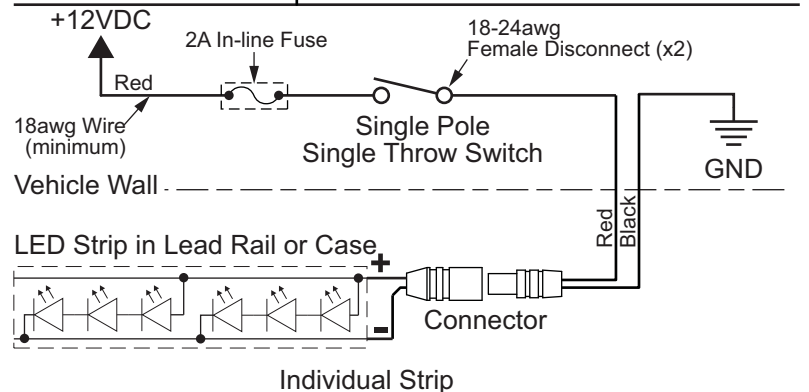
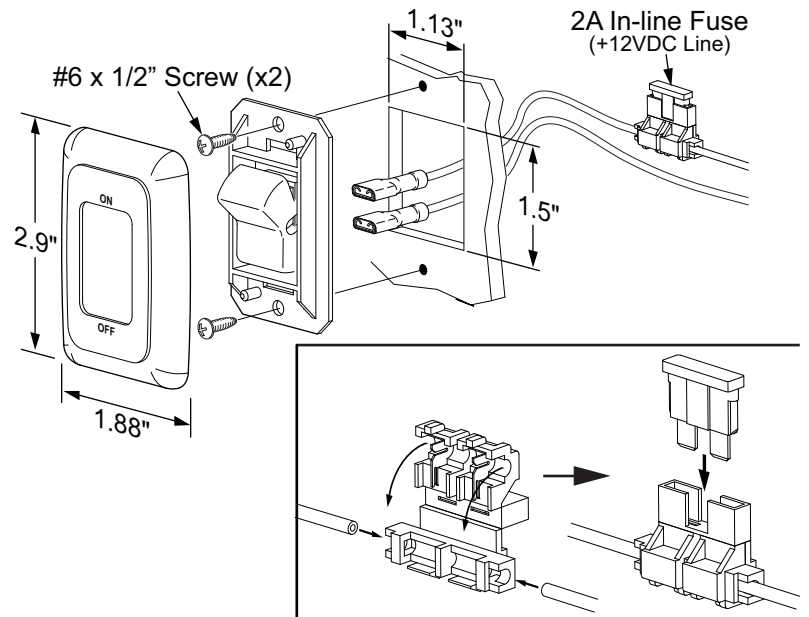
The following steps describe the switch and fuse installation using the switch and fuse kit available from Carefree.

1. Determine the location of the switch.
2. At the switch location, cut a 1 1/8" x 1 1/2" hole.
3. Wire the switch as shown below. Wire terminals at the switch are .187, 18-24 awg female disconnects.

NOTE: Allow adequate slack in the 12VDC power line so that the in-line fuse (installed in step 4) can be accessed from behind the switch.

4. Install the in-line fuse:
 - 4.1. Near the switch, cut the red 12VDC power line to the switch. Do not strip the insulation.
 - 4.2. Insert a wire end into one of the wire channels until it butts up against the stop.
 - 4.3. Fold that half of the connector body over until the element contacts the wire. Use pliers to crimp the connector closed.
 - 4.4. Repeat for the second wire end.
 - 4.5. Slide the fuse into the fuse port. Ensure that is firmly seated.
5. Press the in-line fuse, wires and switch into the mounting hole. Secure the switch using two (2) #6 x 1/2" screws.
6. Snap the switch bezel over the switch frame.

NOTE: The factory installed double strip option is only available on the Paramount.

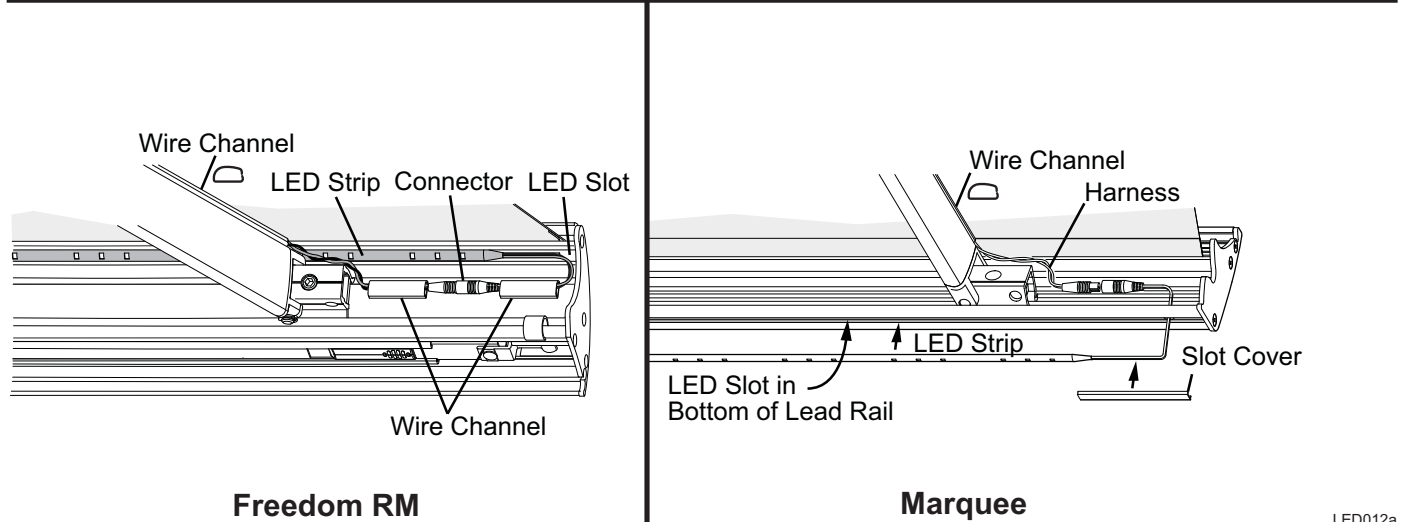
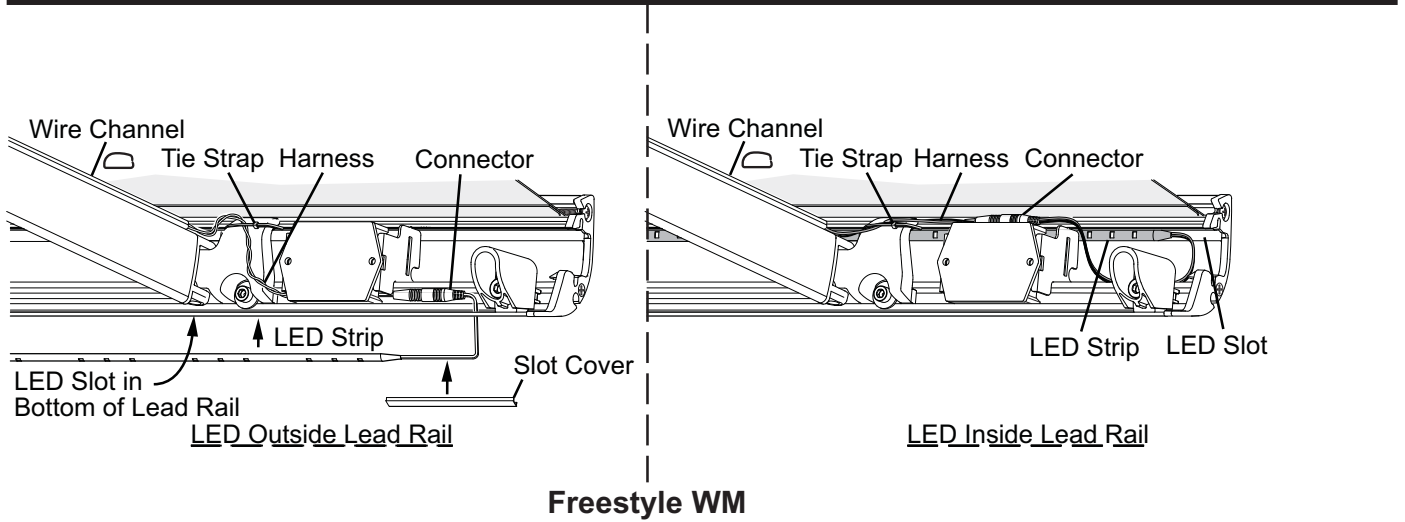
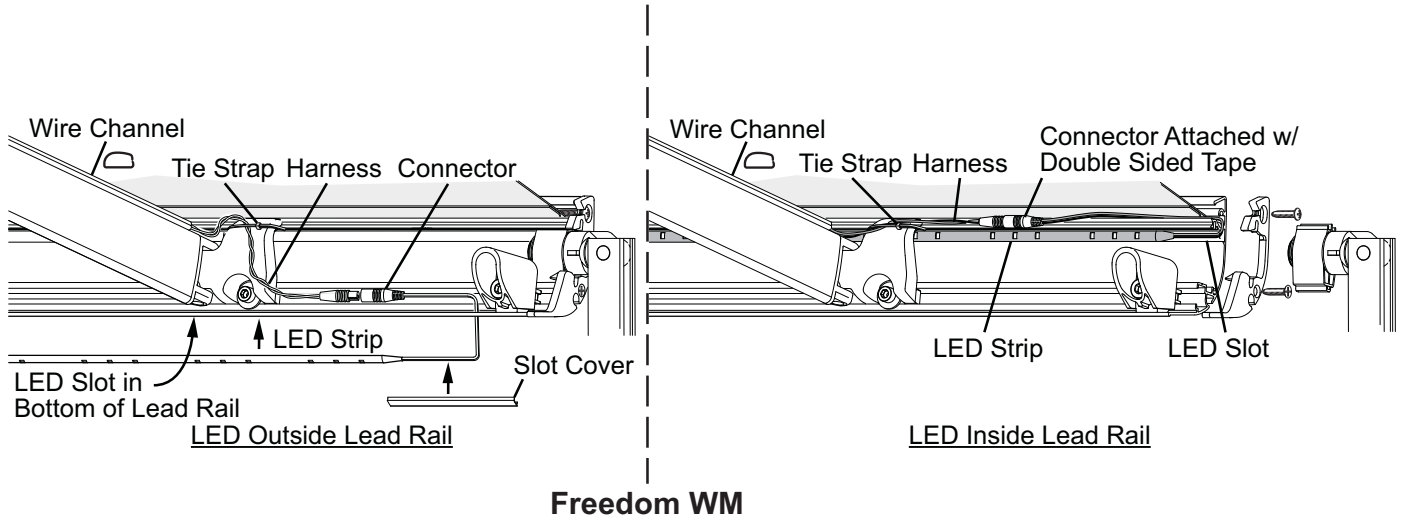


LED002d

AWNING LED LAYOUTS

SMALL BOX AND MARQUEE LED LAYOUTS

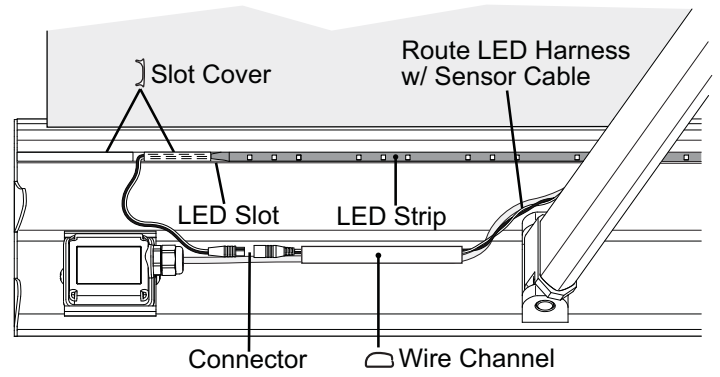
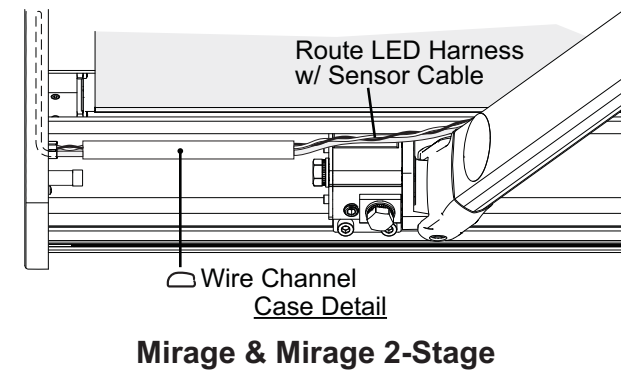
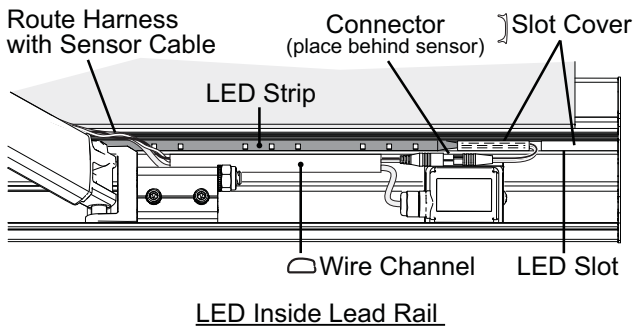
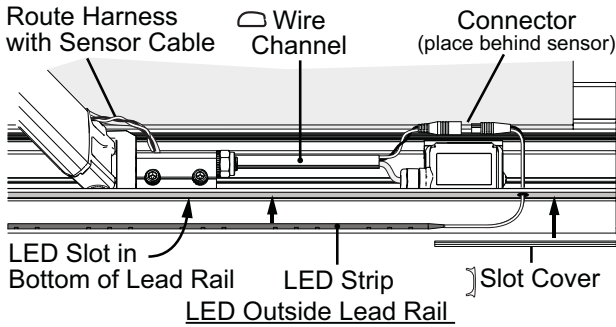
These illustrations show the basic LED layout for the Freedom WM, Freestyle WM, Freedom RM and Marquee. Refer to the next page for big box awnings.



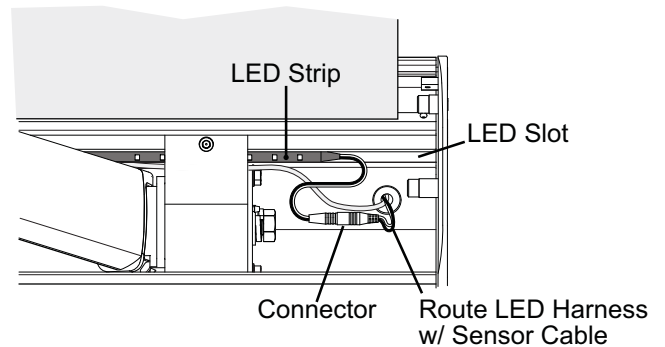
LED012a

BIG BOX LED LAYOUTS

These illustrations show the basic LED layout for the Mirage, Mirage 2-Stage, Apex and Paramount. Refer to the previous page for small box awnings.



Apex & Paramount Lead Rail



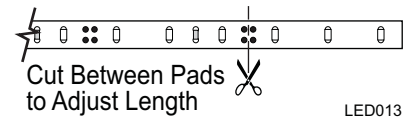
Paramount Case LED

LED012b

REPLACING THE LED STRIP

Refer to the appropriate awning LED layout illustrations on pages 2 and 3.

1. Extend the awning out completely.
2. Disconnect power to the awning and LED strip.
3. Use a non-permanent marker to mark the location of the ends of the LED strip.
4. If installed, remove the slot covers from the ends of the LED strip and set aside.
5. *For Freedom WM with LED's inside the lead rail:* Remove the lead rail end plate and support leg.
6. Disconnect the LED strip connector.
7. Remove the existing LED strip.
8. Clean the slot to remove any dirt and tape residue.
9. *For LED's inside the lead rail:* Thread the LED strip behind the arm/lead rail connectors before pressing the strip into the slot.
10. Starting at the reference mark made previously, remove the release paper from the back of the new strip and press the strip into the LED slot.
11. At the end of the LED slot, cut the LED strip to match the mark made previously. To trim the LED strip, always cut between the 4-pad cluster as shown.



⚠ CAUTION Ensure that power is off to the LED strip. Cutting the strip with power on can short the LED strip.

12. Route the wires as shown and connect LED and harness connectors.
13. Install the slot covers and other parts that were removed previously.
14. Restore power and test.

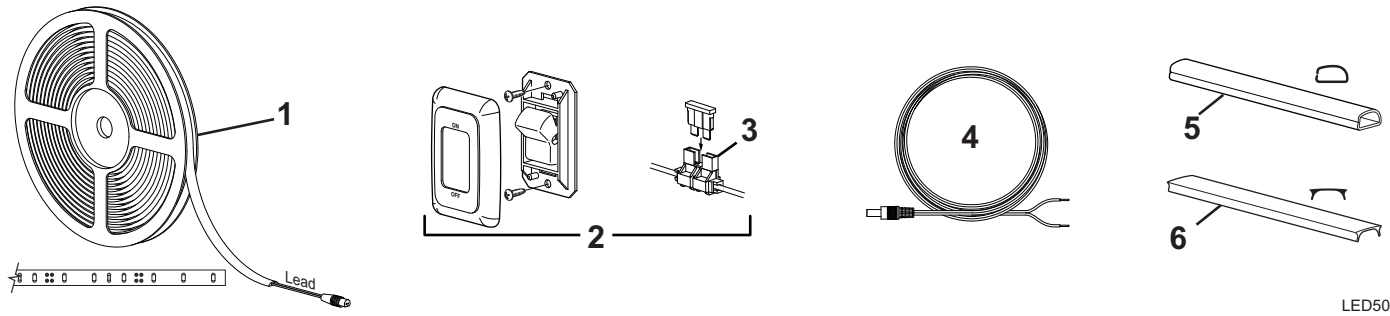
WIRE HARNESS REPLACEMENT

(refer to the illustrations on pages 2 and 3)

1. Extend the awning out to access the inside of the case or lead rail as required.
 2. Disconnect power to the awning and LED.
 3. Separate the LED connectors.
 4. *For lead rail LEDs:*
 - 4.1. The wire is routed along the top of the arm. Remove the harness from the arm channels.
 - 4.2. At the case, clip the harness and clamp the harness at the case to prevent it from falling in the vehicle wall.
 - 4.3. Connect the new harness to the LED strip.
 - 4.4. Route the harness through the wire channel in the arms. At the arm joints, arch the cable slightly to avoid binding.
 5. *For all LEDs:*
 - 5.1. Route the new harness through the case and vehicle wall to the switch.

Tip: Tie the new harness to the old harness that was cut previously. Use the old harness to pull the new harness through the wall to the desired location.
 - 5.2. Seal the entrance hole and harness with a quality silicone sealant.
 - 5.3. Connect the new harness to the switch. Two (2) .187, 18-24 awg female disconnects are provided if connecting to a switch.
 - 5.4. Alternate method: At the wall, splice the new harness to the existing harness using 24 awg butt connectors. Push the connectors into the vehicle wall. Seal the entrance hole and wires with a quality silicone sealant.
- NOTE:** Be sure to allow enough harness from the arm to provide a slack in the harness and adequate length for the connectors to be pushed inside before sealing the hole and harness with a quality silicone sealant.

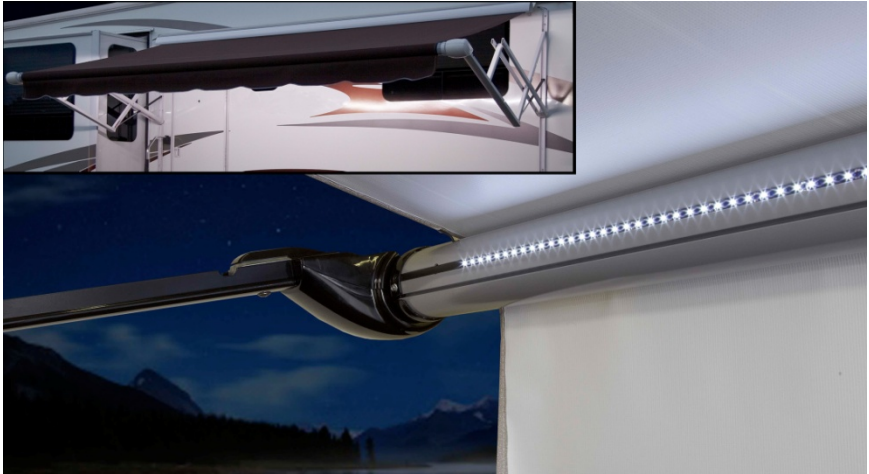
LED COMPONENTS



LED503

Item	Part Number	Description	Notes
1a	R001714	LED Strip, White, 16' Length, 8" Lead	For awnings 18' or less 1
1b	R001715	LED Strip, White, 16' Length, 26" Lead	For awnings 19' or longer 1
1c	R001736	LED Strip, White, 49" Length, 8" Lead	Used w/ Marquee 66" or less 1
2	SR0101	Switch and Fuse Kit (includes item 3)	used with White LED
3	R019493-001	Fuse Kit (includes fuse holder and 2A fuse)	
4a	R060740-001	Harness, Factory Installed LED Roller Assy, 16' Length	
4b	R060718-001	Harness, Factory Installed LED Box Awning, 22' Length	
5	R040616-206	Wire Channel	43" Length
6	R001716	Slot Cover	24" Length

Notes: 1. LED Strips (item 1) are sent on rolls and cut to length during installation.



Product Description

MOUNTING:	<i>LED:</i>	LED light strip mounts on the roller tube.
	<i>Wiring:</i>	Harness and remote control module are removable for storage when the awning is retracted
LENGTH:	Available for awnings 10' – 21' <i>*Maximum LED strip length is 16' 5". Strip is centered on roller tube for units 18' and longer</i>	
POWER:	2A, 12Vdc wired into the vehicle's 12Vdc system. A 110Vac adaptor is furnished to allow the lights to be plugged into a standard 110Vac outlet.	
CONTROL:	The infrared remote control provides: <ul style="list-style-type: none"> • Simple push button on/off • Infinite adjust dimming • 15 color choices + white • Special effects (flash, strobe, fade and smooth) 	

The enclosed directions are for mounting the LED strip on a standard roller tube. The LED strip can be mounted on any flat surface. Follow the directions for cleaning, trimming and wiring for all applications.

INTRODUCTION

From its beginning in the early 70's, Carefree of Colorado has emerged as the premier manufacturer of quality awnings and accessories for Recreational Vehicles (RVs). Our full line of products can provide the accessories that match your life style; no matter what type of RV you own.

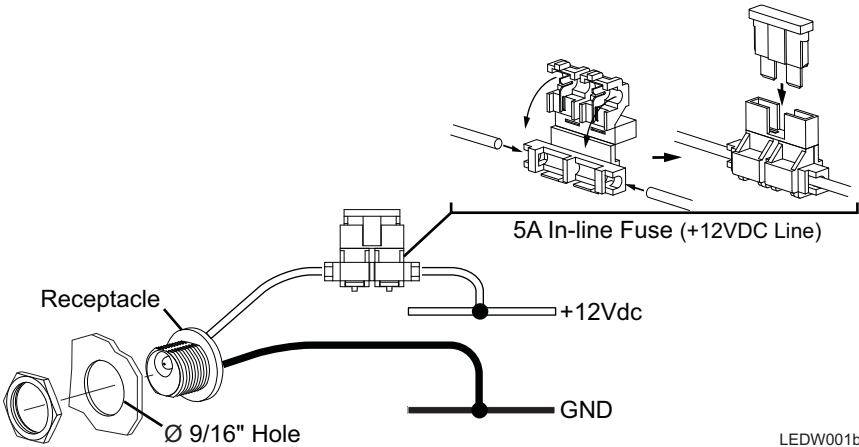
Check with your dealer to discover the products that can make your life more Carefree.

PROVIDING POWER

Power for the LED Lights can be provided through the vehicle's 12Vdc system. An exterior receptacle is used for the power cord plug. Alternately, an 110Vac adaptor is furnished so that the lights may be plugged into a standard 110Vac outlet.

INSTALLING THE 12VDC RECEPTACLE

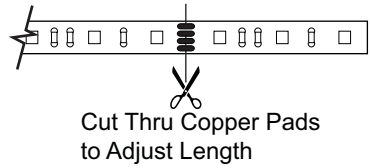
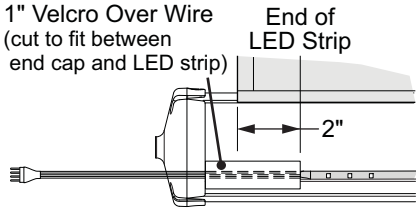
- Determine the location of the receptacle.
 - Locate the receptacle to provide easy access to a 12Vdc power source such as interior overhead cabinet lights or a 12Vdc switch near the door etc.
 - The receptacle location should be comfortably accessible.
 - Position receptacle so that when the cord is plugged in it does not create an obstacle (i.e. headroom for walking under).



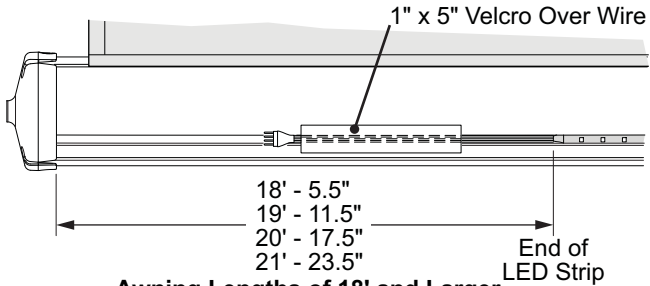
LEDW001b

- At the mounting location, drill an 9/16 inch hole through the mounting surface.
- From inside, insert the receptacle through mounting surface and secure with the supplied nut.
- Route the wires from the receptacle to +12Vdc and ground wires in the vehicle. Receptacle wires are marked (+) for 12Vdc and (-) for ground.
- Splice the receptacle wires to the existing vehicle wires. Ensure that the splices are tight, solid and sealed when completed.
- Install the in-line fuse:
 - Cut the 12Vdc power between the receptacle and the clip. Do not strip the insulation.
 - Insert a wire end into one of the wire channels until it butts against the stop.
 - Fold that half of the connector body over until the element contacts the wire. Use pliers to crimp the connector closed.
 - Repeat for the second wire end.
 - Slide the fuse into the fuse port. Ensure that is firmly seated.

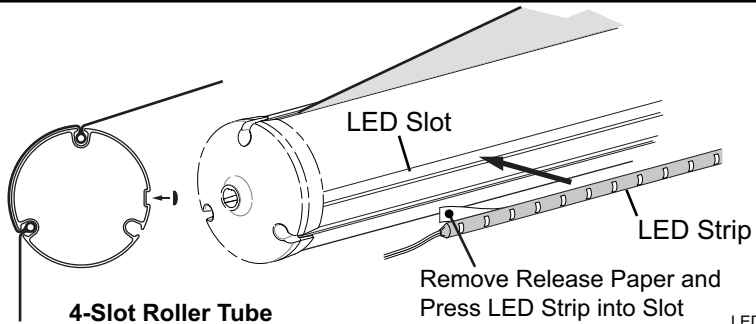
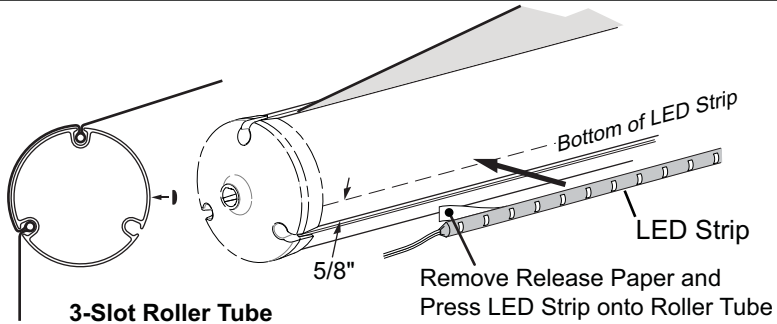
INSTALLING THE LED STRIP



Awning Lengths of 17' or Less



Awning Lengths of 18' and Larger



LEDW002

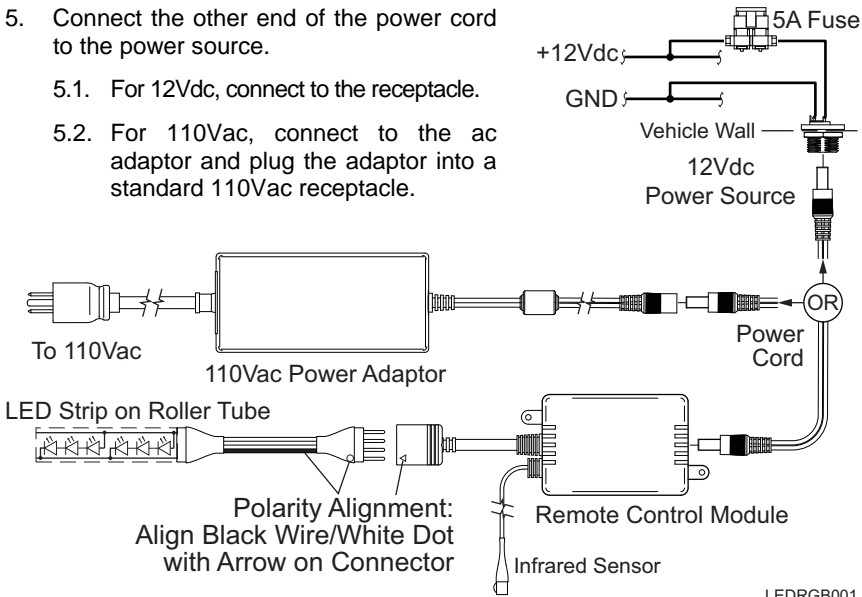
Two types of roller tubes are used on Carefree products. Older roller tubes (3-slot) have a smooth surface between the canopy and the accessory slot. Newer roller tubes (4-slot) have an additional shallow slot for mounting LED strips.

NOTE: The LED strip is sent on a roll and must be cut to length during installation for awnings 17' 6" or less.

1. Open the awning to expose the roller tube.
2. Use the isopropyl wipe included with the kit and thoroughly clean the area where the LED strip is to be mounted on the roller tube.
3. Measure the horizontal position of the strip:
 - 3.1. *For awnings 17' 6" or less:* Mark a vertical line on the roller tube that is 2" inside the edge of the canopy. This will be the start of the LED strip (not including the wire).
 - 3.2. *For awnings 18' or longer:* Mark a vertical line using the distances shown on the diagram. This will be the start of the LED strip (not including the wire).
4. *For 3-slot roller tubes:* Using a non-permanent marker, mark a line 5/8" above the accessory slot.
5. Remove the release paper from the back of the strip.
 - 5.1. *For 3-slot roller tubes:* Align the bottom of the strip with the line made in step 5. Start the strip at the mark made in step 3.
 - 5.2. *For 4-slot roller tubes:* Start the strip at the mark made in step 3. Press the strip into the groove.
6. *For awnings 17' 6" or less:* At the end of the roller tube, cut the LED strip approximately 2" inside the canopy edge. To trim the LED strip, always cut through the 4-pad cluster as shown.
7. Lay the wire harness from the LED strip flat against the roller tube. Secure with the 1" x 5" piece of Velcro furnished with the kit. It may be necessary to trim the Velcro to fit as shown.

OPERATION

1. Open and set the awning per the awning manufacturer's instructions.
2. Connect the wire lead from the control module to the LED strip.
3. Connect the power cord to the control module.
4. Attach the control module using the velcro on the roller tube. Make sure that the infrared sensor is hanging down and exposed.
5. Connect the other end of the power cord to the power source.
 - 5.1. For 12Vdc, connect to the receptacle.
 - 5.2. For 110Vac, connect to the ac adaptor and plug the adaptor into a standard 110Vac receptacle.

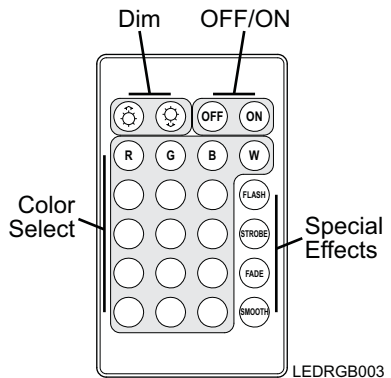


6. To operate the lights use the supplied remote.

The remote control provides:

- Simple push button on/off
- Adjustable dimming
- 15 color choices + white
- Special effects (flash, strobe, fade and smooth)

Important Note: The remote uses an infrared signal to the control module. The top of the remote must be pointed at the infrared sensor on the control module.



⚠ CAUTION Make sure to disconnect and remove the control module before retracting the awning.

Tuck the LED connector under the canopy.

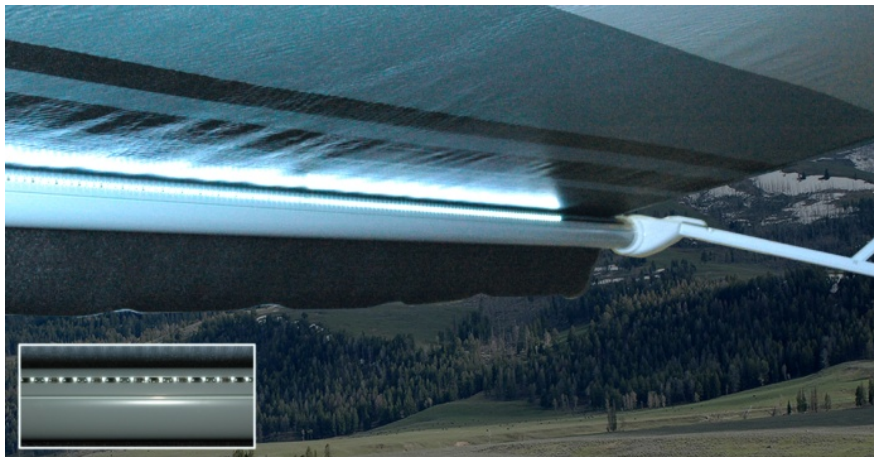
NOTE: Tucking the connector under the canopy will securely hold and protect the connector during storage but may cause minor "dimpling" in the canopy.



RV Accessory

OWNER'S MANUAL
WHITE LED LIGHTING KIT

FOR USE ON STANDARD ROLLER TUBES



Product Description

MOUNTING:	LED:	LED light strip mounts on the roller tube.
	Wiring:	Harness and remote control module are removable for storage when the awning is retracted
LENGTH:	Available for awnings 10' – 21' <i>*Maximum LED strip length is 16' 5". Strip is centered on roller tube for units longer than 18'</i>	
POWER:	2A, 12Vdc wired into the vehicle's 12Vdc system. A 110Vac adaptor is furnished to allow the lights to be plugged into a standard 110Vac outlet.	
CONTROL:	The remote control provides simple push button on/off and infinite adjust dimming.	

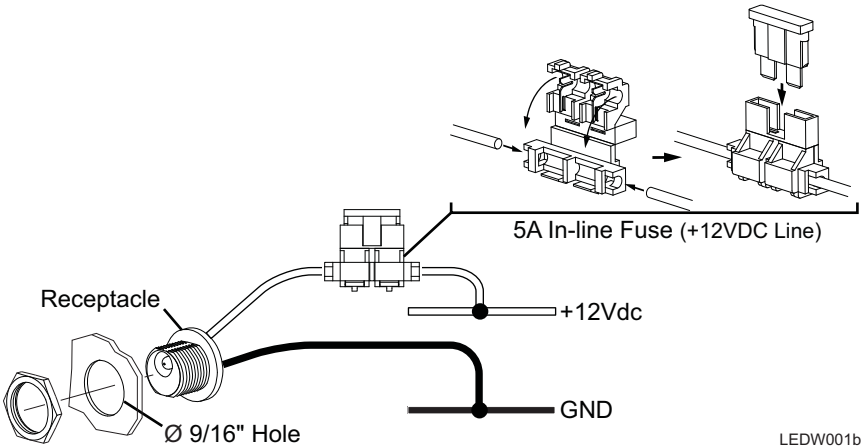
The enclosed directions are for mounting the LED strip on a standard roller tube. The LED strip can be mounted on any flat surface. Follow the directions for cleaning, trimming and wiring for all applications.

PROVIDING POWER

Power for the LED Lights can be provided through the vehicle's 12Vdc system. An exterior receptacle is used for the power cord plug. Alternately, an 110Vac adaptor is furnished so that the lights may be plugged into a standard 110Vac outlet.

INSTALLING THE 12VDC RECEPTACLE

- Determine the location of the receptacle.
 - Locate the receptacle to provide easy access to a 12Vdc power source such as interior overhead cabinet lights or a 12Vdc switch near the door etc.
 - The receptacle location should be comfortably accessible.
 - Position receptacle so that when the cord is plugged in it does not create an obstacle (i.e. headroom for walking under).

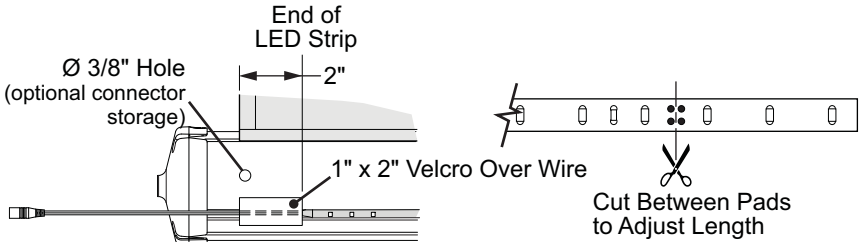


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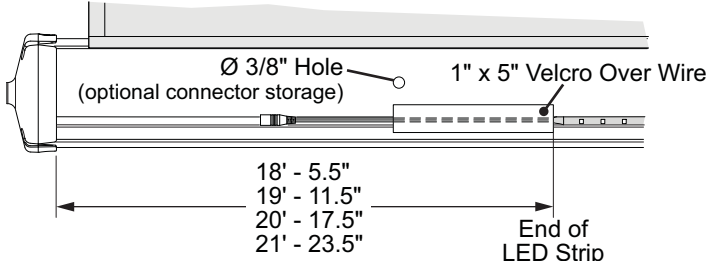
- At the mounting location, drill an 9/16 inch hole through the mounting surface.
- From inside, insert the receptacle through mounting surface and secure with the supplied nut.
- Route the wires from the receptacle to +12Vdc and ground wires in the vehicle. Receptacle wires are marked (+) for 12Vdc and (-) for ground.

NOTE: The vehicle's 12Vdc and ground wires must be a minimum 18awg wire.
- Splice the receptacle wires to the existing vehicle wires. Ensure that the splices are tight, solid and sealed when completed.
- Install the in-line fuse:
 - Cut the 12Vdc power between the receptacle and the clip. Do not strip the insulation.
 - Insert a wire end into one of the wire channels until it butts against the stop.
 - Fold that half of the connector body over until the element contacts the wire. Use pliers to crimp the connector closed.
 - Repeat for the second wire end.
 - Slide the fuse into the fuse port. Ensure that is firmly seated.

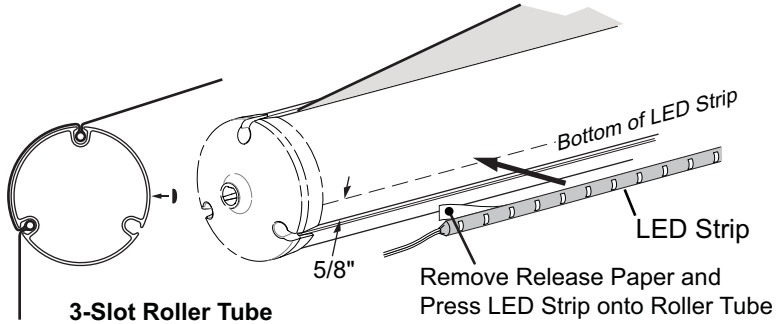
INSTALLING THE LED STRIP



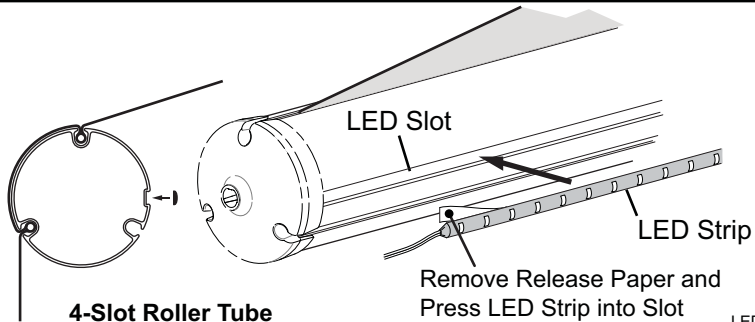
Awning Lengths of 17' or Less



Awning Lengths of 18' and Larger



3-Slot Roller Tube



4-Slot Roller Tube

LEDW002

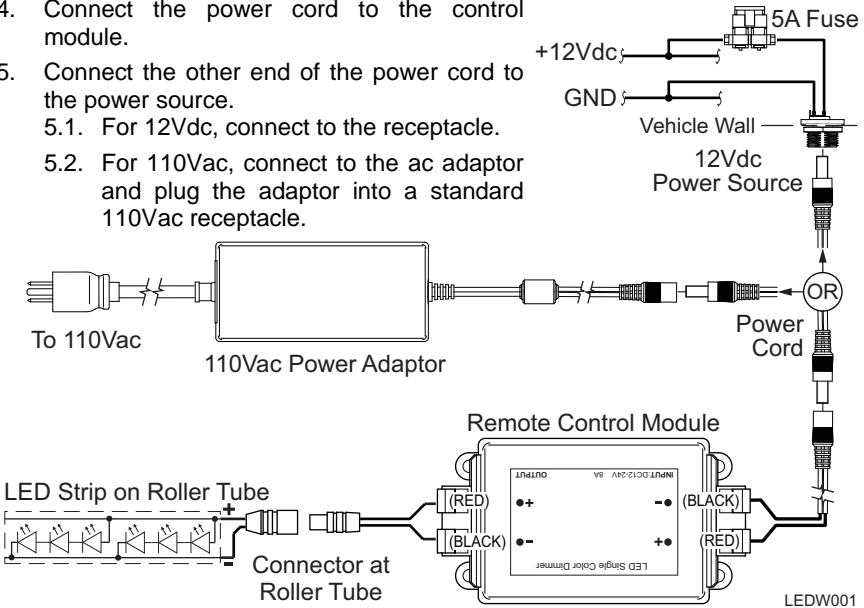
Two types of roller tubes are used on Carefree products. Older roller tubes (3-slot) have a smooth surface between the canopy and the accessory slot. Newer roller tubes (4-slot) have an additional shallow slot for mounting LED strips.

NOTE: The LED strip is sent on a roll and must be cut to length during installation for awnings 17' 6" or less.

1. Open the awning to expose the roller tube.
2. Use the isopropyl wipe included with the kit and thoroughly clean the area where the LED strip is to be mounted.
3. Measure the horizontal position of the strip:
 - 3.1. *For awnings 17' 6" or less:* Mark a vertical line on the roller tube that is 2" inside the edge of the canopy. This will be the start of the LED strip (not including the wire).
 - 3.2. *For awnings 18' or longer:* Mark a vertical line using the distances shown on the diagram. This will be the start of the LED strip (not including the wire).
4. *For 3-slot roller tubes:* Using a non-permanent marker, mark a line 5/8" above the accessory slot.
5. Remove the release paper from the back of the strip.
 - 5.1. *For 3-slot roller tubes:* Align the bottom of the strip with the line made in step 5. Start the strip at the mark made in step 3.
 - 5.2. *For 4-slot roller tubes:* Start the strip at the mark made in step 3. Press the strip into the groove.
6. *For awnings 17' 6" or less:* At the end of the roller tube, cut the LED strip approximately 2" inside the canopy edge. To trim the LED strip, always cut between the 4-pad cluster as shown.
7. Lay the wire harness from the LED strip flat against the roller tube. Secure with the 1" x 5" piece of Velcro furnished with the kit. It may be necessary to trim the Velcro to fit as shown.
8. *Optional LED Connector Storage:* Drill a 3/8" hole into the roller tube. Be sure to clean and deburr the hole. Locate the hole as shown between the LED strip and canopy. This can be used to store the connector out of the way when the awning is retracted.

OPERATION

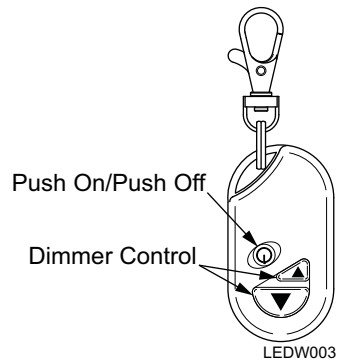
1. Open and set the awning per the awning manufacturer's instructions.
2. Connect the wire lead from the control module to the LED strip.
3. Set the control module in the open arm channel.
4. Connect the power cord to the control module.
5. Connect the other end of the power cord to the power source.
 - 5.1. For 12Vdc, connect to the receptacle.
 - 5.2. For 110Vac, connect to the ac adaptor and plug the adaptor into a standard 110Vac receptacle.



6. To operate the lights use the supplied remote. The remote control provides simple push button on/off and infinite adjust dimming.

Important Note: The module electronics require a power reset periodically. To reset the module, disconnect the power then reconnect. It is recommended to disconnect the power when the LEDs are not in use.

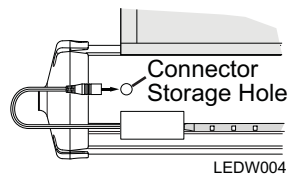
CAUTION Disconnect and remove the control module before retracting the awning. Damage to the control and/or awning can occur.



STORAGE

1. Disconnect and remove the module and power cord.
2. Tuck the LED connector under the canopy or place the LED harness connector into the optional storage hole in the roller tube.

NOTE: Tucking the connector under the canopy will securely hold and protect the connector during storage but may cause minor "dimpling" in the canopy.



3. Retract the awning according to the awning manufacturer's instructions. The LED strip remains on the roller tube when the awning is retracted.