



SpectraLux[™]

Viper[™] S2 Warning Lights



Dual-head light shown

Installation and Maintenance Manual

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Safety Message to Installers and Service Personnel of Warning Light Equipment

⚠ WARNING

People's lives depend on your proper installation and servicing of Federal Signal products. It is important to read and follow all instructions shipped with this product. In addition, listed below are some other important safety instructions and precautions you should follow:

Before Installation or Service

Qualifications

- To properly install or service this equipment, you must have a good understanding of automotive mechanical and electrical procedures and systems, along with proficiency in the installation and service of safety warning equipment. Always refer to the vehicle service manuals when performing equipment installations on a vehicle.

Light Hazards

- To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.
- Do not install the light system in an area that would block, impair or blind the driver's vision. Ensure that the light system is mounted in a position that is outside of the driver's field of vision, so the driver can safely operate the vehicle.
- Federal Signal power supplies and lightheads are designed to work together as a system. Combining lightheads and a power supply from different manufacturers may reduce the warning effectiveness of the lighting system and may damage the components. You should verify or test your combination to ensure the system works together and meets federal, state and local standards or guidelines.

Electrical Hazards

- A light system is a high current system. For the system to function properly, a separate negative (–) connection and positive (+) connection must be made. All negative connections should be connected to the negative battery terminal and a suitable fuse should be installed on the positive battery terminal connection as close to the battery as possible. Ensure that all wires and fuses are rated correctly to handle the device and system amperage requirements.
- Never attempt to install aftermarket equipment that connects to the vehicle wiring without reviewing a vehicle wiring diagram available from the vehicle manufacturer. Ensure that your installation will not affect vehicle operation or mandated safety functions or circuits. Always check the vehicle for proper operation after installation.
- The lighting system components, especially light bulbs, strobe tubes, LEDs, and the outer housing, get hot during operation. Be sure to disconnect power to the system and allow the system to cool down before handling any components of the system.
- Do not mount a radio antenna within 18 inches (45.7 cm) of the lighting system. Placing the antenna too close to the lighting system could cause the lighting system to malfunction or be damaged by strong radio fields. Mounting the antenna too close to the lighting system may also cause the radio noise emitted from the lighting system to interfere with the reception of the radio transmitter and reduce radio reception.
- Do not attempt to wash any unsealed electrical device while it is connected to its power source.

During Installation and Service

- DO NOT get metal shavings inside the product. Metal shavings in the product can cause the system to fail. If drilling must be done near the unit, place an ESD-approved cover over the unit.

Inspect the unit after mounting to be sure there are no shavings present in or near the unit.

- DO NOT connect this system to the vehicle battery until ALL other electrical connections are made, mounting of all components is complete, and you have verified that no shorts exist. If the wiring is shorted to the vehicle body or frame, high current conductors can cause hazardous sparks resulting in electrical fires or flying molten metal.
- DO NOT install equipment or route wiring (or the plug-in cord) in the deployment path of an air bag.
- If a vehicle seat is temporarily removed, verify with the vehicle manufacturer, if the seat needs to be recalibrated for proper airbag deployment.
- Before mounting any components, check the manual to be sure that the component you are installing is suitable for use in that area of the vehicle. Many components are not suitable for use in the engine compartment or other extreme environmental exposure areas.
- Before drilling into a vehicle structure, be sure that both sides of the surface are clear of anything that could be damaged. Remove all burrs from drilled holes. To prevent electrical shorts, grommet all drilled holes through which wiring passes. Also, ensure that the mounting screws do not cause electrical or mechanical damage to the vehicle.
- Refer to the manual packed with the lighting system for proper electrical connections, additional precautions and information.
- Because vehicle roof construction and driving conditions vary, do not drive a vehicle with a magnetically mounted warning light installed. The light could fly off the vehicle causing injury or damage. Repair of damage incurred because of ignoring this warning shall be the sole responsibility of the user.

Installation and Maintenance Instructions

- Locate the light system controls so the VEHICLE and CONTROLS can be operated safely under all driving conditions.

After Installation or Service

- After installation, test the light system to ensure that it is operating properly.
- Test all vehicle functions, including horn operation, vehicle safety functions and vehicle light systems, to ensure proper operation. Ensure that the installation has not affected the vehicle operation or changed any vehicle safety function or circuit.
- Scratched or dull reflectors, mirrors or lenses will reduce the effectiveness of the lighting system. Avoid heavy pressure and use of caustic or petroleum based products when cleaning the lighting system. Replace any optical components that may have been scratched or crazed during system installation.
- Do not attempt to activate or de-activate the light system controls while driving in a hazardous situation.
- You should frequently inspect the light system to ensure that it is operating properly and that it is securely attached to the vehicle.
- After installation and testing are complete, provide a copy of these instructions to instructional staff and all operating personnel.
- File these instructions in a safe place and refer to them when maintaining and/or re-installing the product.

Failure to follow all safety precautions and instructions may result in property damage, serious injury, or death.

Safety Message to Operators of Warning Lights

⚠ WARNING

People's lives depend on your safe use of our products. Listed below are some important safety instructions and precautions you should follow:

- Do not attempt to activate or de-activate the light system control while driving in a hazardous situation.
- Although your warning system is operating properly, it may not be completely effective. People may not see or heed your warning signal. You must recognize this fact and continue driving cautiously.
- Also, situations may occur which obstruct your warning signal when natural and man-made objects are between your vehicle and others, such as raising your hood or trunk lid. If these situations occur, be especially careful.
- All effective sirens and horns produce loud sounds which may cause, in certain situations permanent hearing loss. You and your passengers should consider taking appropriate safety precautions such as wearing hearing protection.
- To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.
- The effectiveness of an interior mounted warning light depends on the clarity, the tinting, and the angle of the glass it is being placed behind. Tinting, dirt defects, and steeply angled glass reduce the light output of the warning light. This may reduce the effectiveness of the light as a warning signal. If your vehicle has dirty, tinted, or steeply angled glass, use extra caution when driving your vehicle or blocking the right of way with your vehicle.

Installation and Maintenance Instructions

- It is important that you fully understand how to safely operate this warning system before use.
- You should only operate your vehicle and its light/sound system in accordance with your department's Standard Operating Procedures.
- If a selected function does not perform properly or if any of the lamps remain illuminated when the control is off, disconnect the power connector from the control unit and contact the nearest service center.
- At the start of your shift, you should ensure that the entire warning light system and the siren system is securely attached and operating properly.
- Suction cup mounting is for temporary applications only. The unit should be removed from the window and stored securely when not in use. Temperature changes and sunlight can cause suction cups to lose holding power. Periodically check the unit to be sure the suction cups have a firm grip on the mounting surface. An improperly secured light could fall off of the vehicle causing injury and damage.
- The holding power of magnetic mounting systems is dependent upon surface finish, surface flatness, and thickness of the steel mounting surface. Therefore, to promote proper magnetic mounting:
 - ✓ Mounting surface and magnets must be kept clean, dry, and free of foreign particles that prevent good surface contact.
 - ✓ Ensure that mounting surface is flat.
 - ✓ A magnet mounting system should not be used on vehicles with vinyl tops.
 - ✓ To prevent sliding of light assembly on mounting surface, quick acceleration and hard stops should be avoided.

Failure to follow these safety instructions and precautions may result in property damage, serious injury, or death.

Unpacking the Your Shipment

After unpacking the product, inspect it for damage that may have occurred in transit. If it has been damaged, do not attempt to install or operate it. File a claim immediately with the carrier, stating the extent of damage. Carefully check all envelopes, shipping labels, and tags before removing or destroying them. Ensure that the parts listed in Table 1 are included in the package. If you are missing any parts, contact Customer Support at 1-800-264-3578, 7 a.m. to 5 p.m., Monday through Friday (CT).

Table 1 Package contents

<i>Single-Head Viper S2</i>		
Qty.	Description	Model/Part Number
1	Model 3291xx-xx Interior LED Light Assy.	3292xx-xx
1	Viper S2 Single-Head Visor	8613118
2	Screw, #6 Plastite 48-2	7011220-05
2	Lockwasher, #10, SS	7075A002
2	Suction Cup	8613121
1	Reflective Decal for Visor (left and right)	8613129
1	Mounting Bracket, Viper S2 Single-Head	8613127

<i>Dual-Head Viper S2</i>		
Qty.	Description	Model/Part Number
1	Model 3292xx-xx Interior LED Light Assy.	3291xx-xx
1	Viper S2 Dual-Head Visor	8613120
2	Screw, #6 Plastite 48-2	7011220-05
2	Lockwasher, #10, SS	7075A002
3	Suction Cup	8613121
1	Reflective Decal for Visor (left and right)	8613129
1	Mounting Bracket, Viper S2 Dual-Head	8613128

An Overview of the SpectraLux Viper S2

The SpectraLux Viper™ S2 LED Series lighthoods are low-current warning lights that are mounted only on the inside of the vehicle. The lighthouse uses Solaris® LED reflector technology to provide a bright and effective secondary warning signal. Viper S2 models have 6, 12, or 18 LEDs that can be ordered in various combinations of amber, blue, red, or white with a clear lens. See Table 2 on page 13 for a list of models and features.

All Viper S2 models are designed for use with all Federal Signal switch controllers. The Viper S2 is supplied with hardware for mounting the lighthouse horizontally on the vehicle deck or dash.

The Viper S2 has an internal flashing circuit with 25 selectable flash patterns, including a steady burn pattern for use with an external flasher. Patterns are selected by briefly pressing a pattern-selection button.

Lighthoods can be set to synchronize, synchro-shift, or both. The synchronize/synchro-shift feature is fully compatible with the Federal Signal Viper S2, Viper EXT and IMPAXX® warning lights. The lighthouse also has several floating-synch pattern sets that are within one flash per minute of each other (Table 4 and 5 on pages 27 and 28). If one light is set at 74 FPM and another at 75 FPM, for example, the lights appear to migrate in and out of synchronization. Viper S2 lights have the ability to have an external switch/controller or controller steady-burn override a single color by applying +BAT to the OPTION wire. This allows a lighthouse to be used as auxiliary steady-burn light when needed as in white area lighting, but also be used as a flashing head when the steady burn is not needed. If more than one color is ordered in a single lighthouse and one of them is white, the Viper S2 can be set to flash white with the pattern.

By default, white is only used as a steady-burn color if there are more than two LED colors in one lighthouse. Instead of controlling a steady-burn color, the OPTION wire can be changed to enable white to flash with another color when +BAT is applied. When +BAT is removed, the light stops flashing white.

Lightheads can also be set to only flash one color.

The lightheads have an operating temperature of -30 °C to +65 °C (-22 °F to +149 °F).

Table 2 SpectraLux Viper S2 models and features

<i>Dual-Color, Single-Head with Wire Leads</i>	
Model	Description
329152-RW	Red/White
329152-RB	Red/Blue
329152-BW	Red/White
329152-AW	Amber/White

<i>Three-Color, Single-Head with Wire Leads</i>	
Model	Description
329153-RWB	Red/White/Blue

<i>Dual-Color, Single-Head with Cigarette Plug</i>	
Model	Description
329102-RW	Red/White
329102-RB	Red/Blue
329102-BW	Blue/White
329102-AW	Amber/White

<i>Dual-Color, Dual-Head with Wire Leads</i>	
Model	Description
329252-RWRW	Red/White - Red/White
329252-RBRB	Red/Blue - Red/Blue
329252-BWBW	Blue/White - Blue/White
329252-AWAW	Amber/White - Amber/White
329252-RWBW	Red/White - Blue White

<i>Three-Color, Dual-Head with Wire Leads</i>	
Model	Description
329253-RWBRWB	Red/White/Blue - Red/White/Blue

<i>Dual-Color, Dual-Head with Cigarette Plug</i>	
Model	Description
329202-RWRW	Red/White - Red/White
329202-RBRB	Red/Blue - Red/Blue
329202-BWBW	Blue/White - Blue/White
329202-AWAW	Amber/White - Amber/White
329202-RWBW	Red/White - Blue White

Installing the Lightheads

WARNING

LIGHT HAZARD—To be an effective warning device, this product produces bright light that can be hazardous to your eyesight when viewed at a close range. Do not stare directly into this lighting product at a close range or permanent damage to your eyesight may occur.

Before installing the lights, read all instructions and plan all wiring and cable routing. To secure and protect the wiring, use grommets, wire ties, looms, and cable mounts (installer-supplied) as needed.

The steps in installing the lights are:

1. Optional: Set a lighthead to control the flash patterns of one or more lightheads in the Viper S2 system (see the next section).
2. Optional: For lightheads with more than one color, one of which is white, select whether the white LEDs flash with the pattern and/or the function of the OPTION wire. See “Configuring Multicolor Lightheads” on page 17.
3. Mount the Viper S2 system to the vehicle. See “Mounting the Lighthead the in a Vehicle” on page 19 or the instructions for the mounting bracket included with the lighthead.

4. Wire the Viper S2 system to the vehicle. See page 23.
5. Select a flash pattern for the controller lighthouse. See page 27.

Converting a Lighthouse from Controller to Follower and Follower to Controller

With the 329152, 329153, 329252, 329253 Series Viper S2, several lighthouses can be controlled with the pattern selected for a single lighthouse. These lighthouses are pre-set at the factory to be in control mode. Before the start of your installation, determine which lighthouse will be the controller and which lighthouse or houses will be followers.

NOTICE

SET ONLY ONE CONTROLLER — When putting together systems of Viper S2 lighthouses ensure there is only one controller lighthouse. If more than one lighthouse in a system is a controller, the follower lighthouses will malfunction.

Converting a Lighthouse from Controller to Follower

To convert a lighthouse to follower:

1. Connect the black wire from the lighthouse to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the lighthouse.
3. Press and hold the pattern-selection button until the lighthouse goes out, and then flashes three times. This procedure takes approximately three seconds to complete. Release the button shortly after the three flashes end. Do not hold the button much longer after the three flashes or you may change a different feature. If the light flashes four times, you have held the button too long. Changing from follower to controller resets all features to the default (See Table 3 on page 17).

The patterns for the lighthouse are now ready to be controlled by another controller lighthouse.

Converting a Lighthead from Follower to Controller

To convert a light to a controller:

1. Connect the black wire from the lighthead to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the lighthead.
3. Press and hold the pattern-selection button until the lighthead goes out, and then flashes three times. This procedure takes approximately three seconds to complete. Release the button shortly after the three flashes end. Do not hold the button much longer after the three flashes or you may change a different feature. If the light flashes four times, you have held the button too long. Changing from follower to controller resets all features to the default (See Table 3 on page 17).

The lighthead has now been placed into Pattern 2 (79 FPM Power Quad). Select subsequent flash patterns by briefly pressing the pattern selection button. For information about available flash patterns, see “Selecting a Flash Pattern” on page 27.

Figure 1 Location of cable and pattern selection button

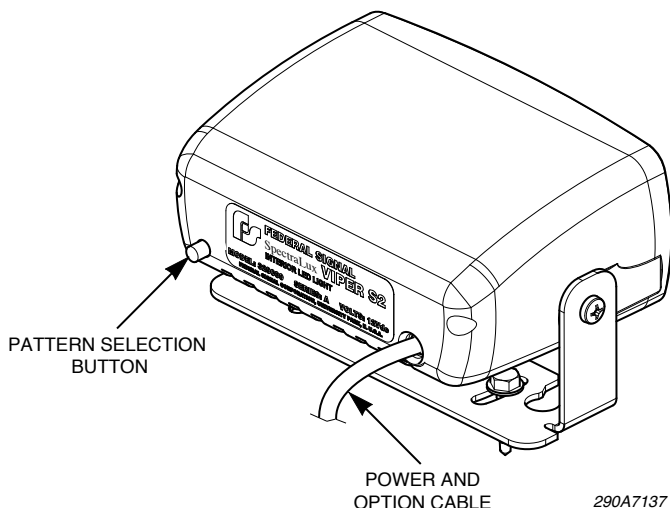


Table 3 Viper S2 controller default settings

Option	Default Setting
Pattern Number	2
OPTION wire mode	Steady burn
White LEDs in multicolor lighthead	Do not flash with pattern
Flashing color(s)	All available

Configuring Multicolor Lighthead

The Viper S2 can be ordered in various color combinations, which flash differently depending on what colors are ordered. By default the OPTION wire is set to steady burn a single color by applying 12 Vdc (+BAT) to it. The OPTION wire can be changed to instead control white LED flashing instead of steady burn. The lighthead can also be setup to always flash white and use the OPTION wire to steady-burn white.

To enable the white LEDs to flash with the pattern:

1. Connect the black wire from the lighthead to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the lighthead.
3. Set the lighthead to be controller or follower. For instructions, see page 15.
4. Apply 12 Vdc (+BAT) to the white wire from the lighthead.
5. Press and hold the pattern-selection button until the lighthead goes out, and then flashes four times. This procedure takes approximately six seconds to complete. Release the button shortly after the four flashes end.

The OPTION wire now enables the white LEDs to flash with the pattern.

Setting the White LEDs to Always Flash

By default white LEDs do not flash; they are only activated by the OPTION wire (steady burn or flash enable). The Model Viper S2 lighthead can be changed to always flash white. To do this you must set the OPTION wire mode for steady burn. If you try to change the Viper S2 to flash always white while the OPTION wire mode is not set for steady burn, the change will be ignored.

To set the white LEDs to always flash:

1. Connect the black wire from the lighthead to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the lighthead.
3. Press and hold the pattern-selection button until the lighthead goes out, and then flashes four times. This procedure will take approximately six seconds to finish. Release the button shortly after the four flashes end.

The lighthead has now been placed into Pattern Number 2, which is 79 FPM Power Quad.

4. Repeat the above procedure to disable white LEDs from always flashing with the pattern

If the OPTION wire is set for steady burn and there is more than one color in a lighthead, you can change which color steady burns when the OPTION wire is active.

Setting the Steady-Burn Color

To change the steady-burn color:

1. Connect the black wire from the lighthead to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the lighthead.
3. Set the lighthead to be controller or follower (see previous section)
4. Apply 12 Vdc (+BAT) to the white wire from the lighthead.

5. Press and hold the pattern-selection button until the lighthead goes out, and then flashes three times. This procedure will take approximately three seconds to finish. Release the button shortly after the three flashes end. The selected steady burn color will flash three times.
6. To select another color, repeat step 3.

Changing the Follower Power-Up Color

To change the power-up color for a follower:

1. Connect the black wire from the lighthead to ground (–GND).
2. Apply 12 Vdc (+BAT) to the red wire from the lighthead.
3. Set the lighthead to be a follower. See page 15.
4. Press and release pattern-selection button to display the color you want on power up. The lighthead flashes three times in the color in which it will power up.

Mounting the Lighthead in the Vehicle

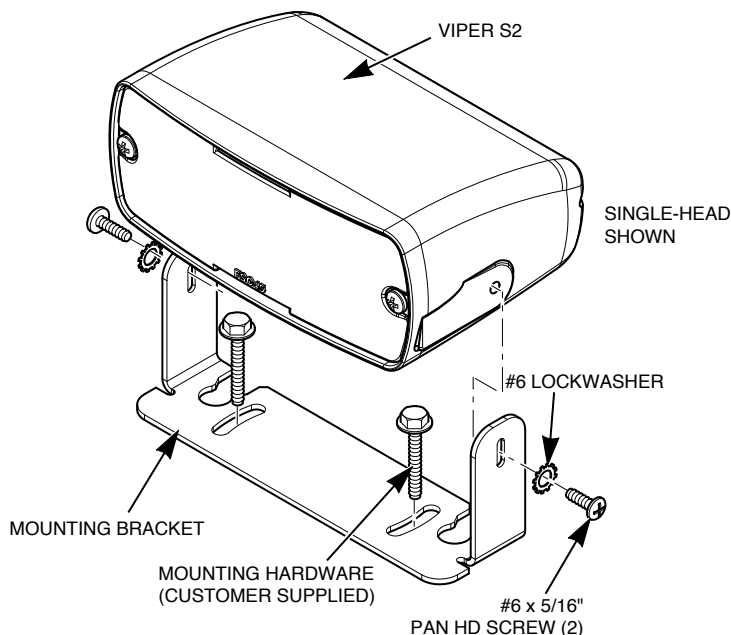
The light is installed using the supplied bracket, screws, or suction cups. Determine the mounting position appropriate for the installation, and then select the applicable mounting method.

Deck Mounting with Bracket

To mount the light using the bracket:

1. See Figure 2 on page 20. Select a mounting location for the light.
2. Attach the bracket to the vehicle using the appropriate user supplied hardware.
3. Attach the light to the bracket with the supplied #6 pan head screws and lockwashers.

Figure 2 SpectraLux Viper S2 mounted with bracket



Dash Mounting with Suction Cups

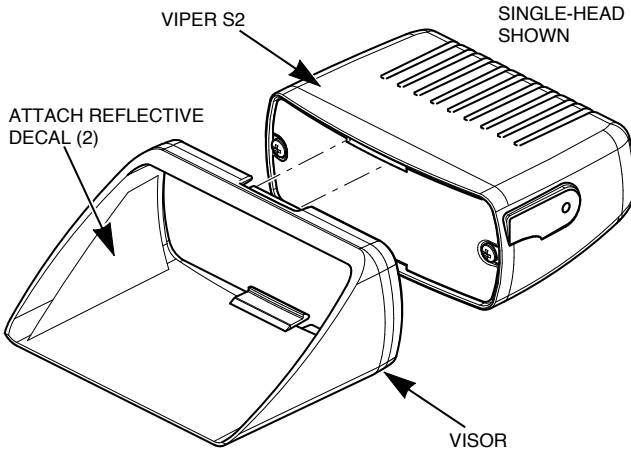
⚠ CAUTION

SUCTION CUP ARE FOR TEMPORARY USE ONLY — *Suction cup mounting is for temporary applications only. This unit should be removed from the vehicle and stored securely when not in use. Temperature changes and sunlight can cause suction cups to lose holding power. Periodically check the unit to be sure the suction cups have a firm grip on the mounting surface. An improperly secured light could fall off the windshield, causing injury and damage.*

1. See Figure 3. Attach the adhesive reflector decals to the visor.
2. Attach the visor to the lighthead. Align the tabs molded into the visor with the slots molded into the lens. Press firmly to snap into place.
3. See Figure 4 on page 22. Attach the suction cups (two for single-head models, three for dual-head models) to the bracket.

4. See Figure 5 on page 22. Attach the bracket to the lighthead using the supplied #6 pan-head screws, and lockwashers.
5. Apply the suction cups to the windshield.

Figure 3 Visor with decals attached to lighthead



2. Attach the visor to the lighthead. Align the tabs molded into the visor with the slots molded into the lens. Press firmly to snap into place.
3. See Figure 4 on page 22. Attach the suction cups (two for single-head models, three for dual-head models) to the bracket.
4. See Figure 5 on page 22. Attach the bracket to the lighthead using the supplied #6 pan-head screws, and lockwashers.
5. Apply the suction cups to the windshield.

Figure 4 Suction cups inserted into bracket

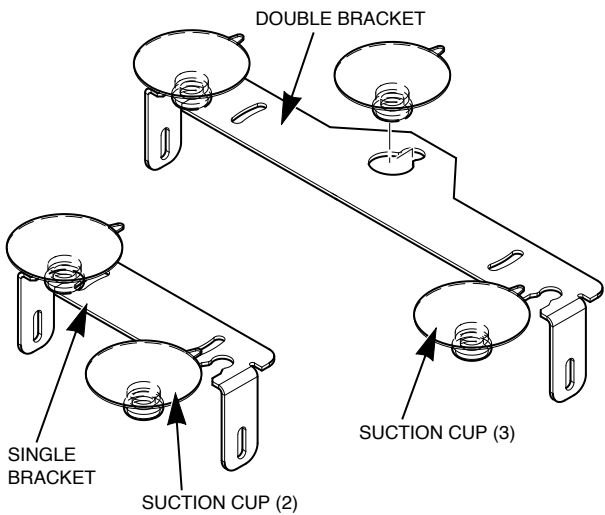
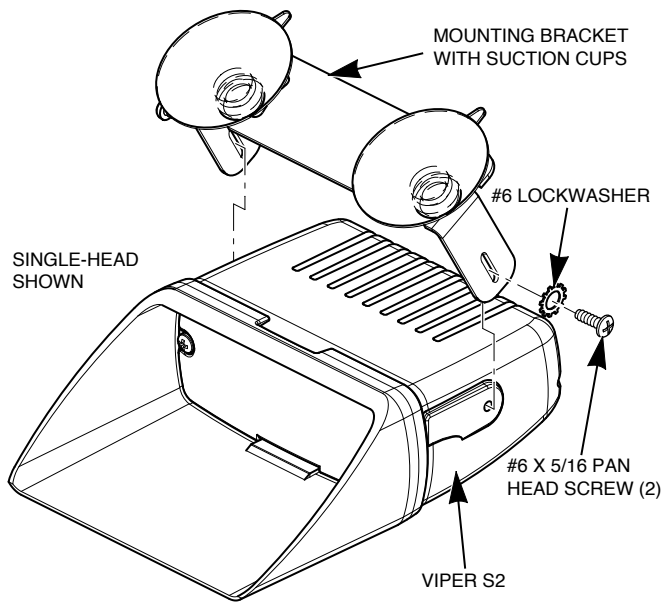


Figure 5 Bracket attached to lighthead



Wiring the Lighthead

NOTICE

WIRING PRECAUTION — *Never attach both the orange wire AND the yellow wire from the CONTROLLER lighthead to the same FOLLOWER lighthead. Connecting both signal wires to the same FOLLOWER will cause the lightheads to malfunction.*

NOTICE

REVERSE POLARITY / MISWIRING — *Reverse polarity or incorrect voltage may damage the light. To avoid damage to the light, ensure that the battery voltage is the same as the voltage rating of the light and that the correct polarity is observed. If you are connecting to a cigarette lighter plug, connect the positive wire to the center terminal and connect the negative wire to the outer terminal.*

NOTICE

FUSE ELECTRICAL SOURCES — *Always fuse current/voltage sources with a fuse connected near the power source. Be sure that the fuse is properly rated to protect the electrical load, the wiring and the connectors used in the circuit. Failure to follow this notice could result in vehicle or equipment damage*

329102 and 329202 Series Viper S2

The 329102 and 329202 Series Viper S2 has a standard accessory plug for power connection and no further wiring is necessary. If you cut the plug from the cable to connect the Viper to the vehicle battery, place a 5 A fuse in line with the power connection.

329152, 329153, 329252, and 329253 Series Viper S2

Make the connections shown in the figures on the next pages. For applications using single lightheads or alternative flashing control, such as a Federal Signal Intelli-Flash®, cut and seal the orange and yellow Viper S2 wires.

IMPORTANT: You must place a fuse in line with the power connection. See the figures on the next pages for the fuse recommendations.

Synching and Alternating Lightheads

If a Viper S2 is set to be a follower and has more than one color, you can change which color it will sync to on power up. This provides a very basic way to sync or alternate colors. When configured as a follower, the Viper S2 changes its color after an off-time of 160 milliseconds. Color syncing works best when the lightheads that are synced together are of the same LED configuration.

Figure 6 Wiring for single-head synchronized lights

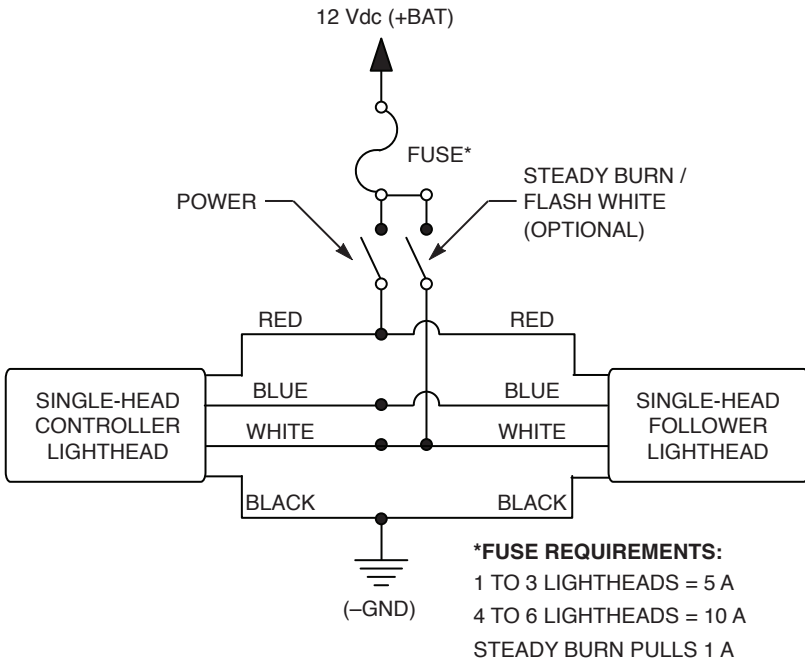


Figure 7 Wiring for dual-head synchronized lights

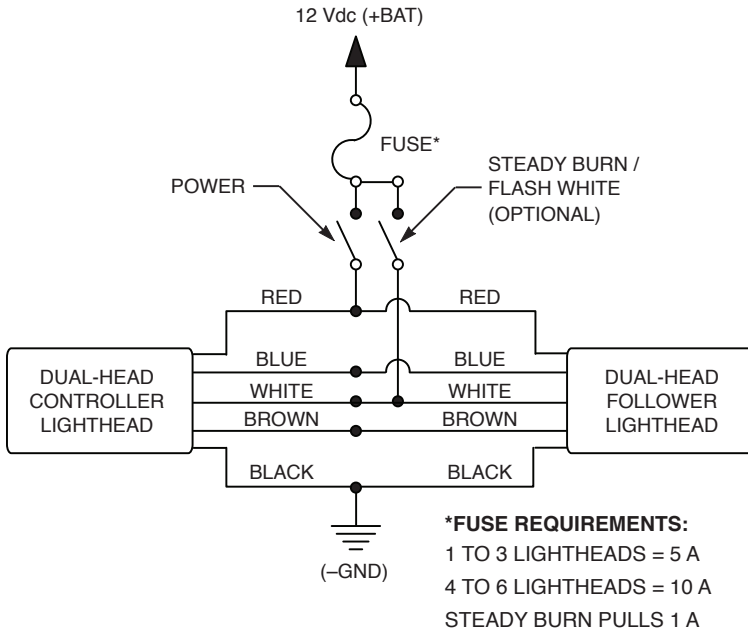
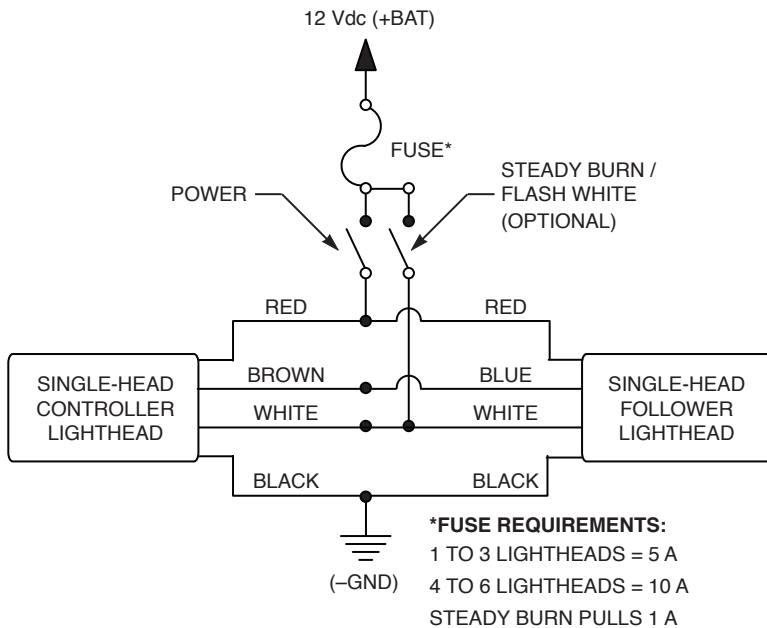
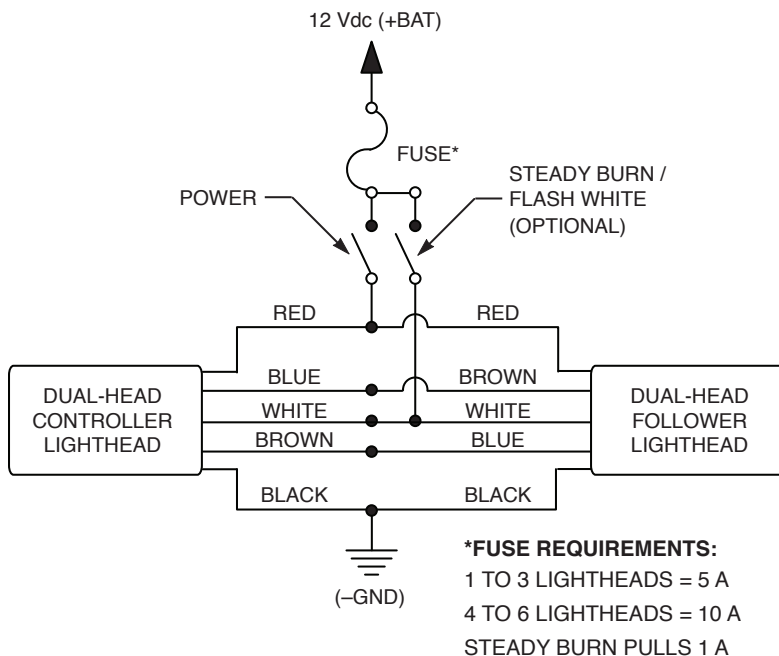


Figure 8 Wiring for single-head alternating lights

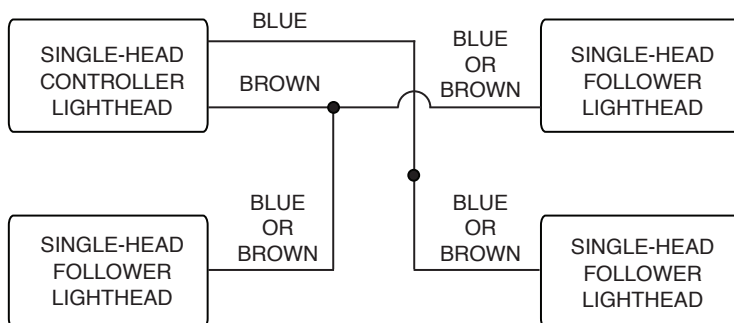




To create an X pattern, set one light as a controller and three lights as followers.

To create an X pattern, set one light as a controller and three lights as followers. Mount and wire the four lights in the configuration shown in Figure 10. For power, ground, and fusing, see Figure 9.

BLUE



Selecting a Flash Pattern

When the lightheads are connected in a configuration, the controller LED lighthead can be used to control the flash pattern of the entire system. See Table 4 for single-head lighta and Table 5 for dual-head lights.

To select a flash pattern:

1. Touch and remove the white pattern-selection wire from the controller light head to +12 Vdc (+BAT) as many times as needed to display the pattern you want.
2. When finished, cut and seal the white wire.

Table 4 Flash patterns for single-head Viper S2

Flash Pattern	Description
1	Null (off)
2	79 FPM Power Quad*
3	150 FPM Single
4	151 FPM Single
5	74 FPM Single*
6	75 FPM Single*
7	240 FPM Single
8	241 FPM Single
9	240 FPM Double
10	241 FPM Double
11	150 FPM Double
12	151 FPM Double
13	74 FPM Double
14	75 FPM Double
15	150 FPM Triple
16	75 FPM Triple
17	5 Single @ 660 FPM, 4 Single @ 60 FPM
18	4 Single @ 771 FPM, 3 Single @ 212 FPM

(continued on next page)

Installation and Maintenance Instructions

Table 4 Flash patterns for single-head Viper S2 *(continued)*

Flash Pattern	Description
19	3 Single @ 345 FPM, 2 Quad @ 75 FPM
20	Progressive (flashes start slow and increase in speed)
21	4 Single @ 154 FPM, 2 Quad @ 75 FPM
22	Random
23	3 quick flashes, then stays in Steady Burn
24	FedPulse 75
25	Steady Burn

**Conforms to CCR Title 13*

Note: *Single, Double, and Quad refer to the number of flashing intervals*

Table 5 Flash] patterns for dual-head Viper S2

Flash Pattern	Description
1	Null (off)
2	79 FPM Power Quad*
3	150 FPM Single
4	151 FPM Single
5	74 FPM Single*
6	75 FPM Single*
7	240 FPM Single
8	241 FPM Single
9	240 FPM Double
10	241 FPM Double
11	150 FPM Double
12	151 FPM Double
13	74 FPM Double
14	75 FPM Double
15	150 FPM Triple
16	75 FPM Triple

(continued on next page)

Table 5 Flash patterns for dual-head Viper S2 (continued)

17	5 Single @ 660 FPM, 4 Single @ 60 FPM	
18	4 Single @ 771 FPM, 3 Single @ 212 FPM	
19	3 Single @ 345 FPM, 2 Quad @ 75 FPM	
20	Progressive (flashes start slow and increase in speed)	
21	4 Single @ 154 FPM, 2 Quad @ 75 FPM	
22	Random	
23	3 quick flashes, then stays in Steady Burn	
24	FedPulse 75	
	Head A	Head B
25	Steady Red	75 FPM
26	Steady Red	120 FPM
27	Steady Red	4 + 2
28	Steady Blue	75 FPM
29	Steady Blue	120 FPM
30	Steady Blue	4 + 2
31	75 FPM	Steady Red
32	120 FPM	Steady Red
33	4 + 2	Steady Red
34	75 FPM	Steady Blue
35	120 FPM	Steady Blue
36	4 + 2	Steady Blue
37	Steady Burn	

*Conforms to CCR Title 13

Note: Single, Double, and Quad refer to the number of flashing intervals

Cleaning the Lightheads

WARNING

CRAZING/CHEMICALS—Crazed, cracked or faded lenses or reflectors reduce the light output and the effectiveness of the lighting system. Lenses or reflectors showing this type of aging must be replaced. Failure to follow this warning may result in bodily injury or death.

⚠ WARNING

USE PROPER CLEANING AGENTS — *Do not use cleaning agents that cause crazing such as strong detergents, solvents, or petroleum products. If crazing of lenses does occur, reliability of the light for emergency signaling may be reduced until lenses are replaced. Failure to follow this warning may result in bodily injury or death.*

Periodically cleaning the Viper S2 lenses using proper procedures and compatible cleaners will prolong their service life.

To clean the lighthead:

1. Use a mild soap and lukewarm water lightly applied on a soft cloth to gently clean the plastic surfaces. To avoid damaging the polycarbonate lenses, do not use heavy pressure or cleaners that are caustic, abrasive, or petroleum-based.
2. To remove fine scratches and haze, use a specialty plastic cleaner/polish and a soft cloth. You can also use a high quality automotive paste cleaner/wax that is non-abrasive.

Getting Technical Support and Service

If you are experiencing problems or need service for the Viper S2, please contact:

Service Department
Federal Signal Corporation
Phone: 1-800-433-9132
Fax: 1-800-343-9706,
Email: empserviceinfo@fedsig.com

Ordering Replacement Parts

To order replacement parts, please contact your local dealer/distributor or:

Customer Support
Federal Signal Corporation
Phone: 1-800-264-3578
(7 a.m. to 5 p.m., Monday through Friday, Central Time)

See page 11 for additional parts.

Table 6 Replacement parts for SpectraLux Viper S2 lights

Description	Part Number
Wire Harness, 5 Conductor	17500002
Wire Harness, Accy. Plug	1751362
Viper S2 PCBA, Single*	20000003
Viper S2 PCBA, Double*	20000004
Viper S2 Lens, Single	8613116
Viper S2 Lens, Double	8613116-01

**Please specify colors when ordering: white, red, blue, amber.*

Returning a Product to Federal Signal

Before returning a product to Federal Signal, call 800-264-3578, 800-433-9132, or 800-824-0254 to obtain a Returned Merchandise Authorization number (RMA number). To expedite the process please be prepared with the following information:

- Your Federal Signal customer or account number.
- The purchase order number under which the items were purchased.
- The shipping method.
- The model or part number of the product being returned.
- The quantity of products being returned.
- Drop ship information as needed.
- Any estimate required.

When you receive your RMA Number:

- Write the RMA number on the outside of the box of returned items.
- Reference the RMA number on your paperwork inside of the box.

Installation and Maintenance Instructions

- Write the RMA number down, so that you can easily check on status of the returned equipment.

Send all material with the issued RMA Number to:

Federal Signal Corporation
2645 Federal Signal Drive
University Park, IL 60484-3167

Attn: Service Department

RMA: # _____

1-800-433-9132

1-708-534-3400

800-343-9706 (fax)

www.fedsig.com



2645 Federal Signal Drive, University Park, IL 60484-3167
Tel.: 1-800-264-3578 • 1-708-534-3400 Fax: (800) 682-8022
www.fedsig.com