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## SAFETY SUMMARY

These lighting products are engineered and manufactured with safety in mind. It is critical that scene lights are installed, maintained, and operated correctly. Read and understand all instructions before installing, performing maintenance, or operating. All components, equipment, and installation procedures shall conform to NFPA 1901, *Standard for Automotive Fire Apparatus* and NFPA 70 *National Electrical Code*.

### SAFETY MESSAGE TO INSTALLERS AND SERVICE PERSONNEL OF WARNING LIGHT EQUIPMENT

**The lives of people 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's service manuals when performing equipment installations on a vehicle.

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 airbag.

When 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.

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.

Do not attempt to activate or de-activate the light system control 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.

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.**

### GENERAL SAFETY PRECAUTIONS

Ensure power is off prior to connecting or disconnecting wires and plugs or performing maintenance.

Scene lighting lampheads are designed for outdoor use and will be extremely hot when operating. Do not use in areas of limited ventilation.

### INSTALLATION SAFETY PRECAUTIONS

**Note:** Do not use Loctite on any screws near the lamphead lens. FRC led lampheads use Lexan lenses that can become brittle and prone to cracking when exposed to Loctite compounds.

Ensure power is off prior to connecting wires or cable to the power source.

Connect only to the type of power source as indicated on the lamphead identification label.

Ensure an appropriate sized circuit protection device is installed (circuit breaker or fuse). Do not use GFI protection with an AC LED light the breaker will trip when the light is powered.

Use a minimum of 16 AWG wire to connect AC lights. Refer to table on page 2 for DC lighting fixtures.

These lights are intended for mounting to a noncombustible surface only. Do not install insulation within 76 mm (3 in) of any part of the light, lighting fixture, or its components.

Install approved rubber or plastic grommets or bushings where wires or cable pass through a surface.

Ensure all wire connectors or terminals provide a positive mechanical and electrical connection.

Electrical connections not enclosed in a box must be covered with an insulation equivalent to that on the conductors.

Lampheads are extremely hot when operating, do not mount such that personnel or equipment could inadvertently come in contact with the lamphead.

Recessed lights require a minimum of 3 inch clearance between wall insulation and the light housing.

### OPERATION SAFETY PRECAUTIONS

Operate portable lighting products only from the power source indicated on the identification label.

During operation use the handle to move the light, the housing will be extremely hot.

Ensure that all lighting components are clear of obstructions when raising telescopic poles.

Ensure that telescopic poles are lowered and stowed before moving the vehicle.

### MAINTENANCE

Use a clean soft cloth, mild soap, and water to clean the lens.

**Note:** These led lampheads use Lexan lenses and cleaning with abrasive materials, solvents, or most chemical cleaners can cause lens surface degradation and reduced performance of the light. Some chemicals will cause the lens to become brittle and prone to cracking.

## Typical Minimum Wire Size for DC LED Lighting Fixtures

The numbers in these tables will vary dependent on the specific wire used.

### Notes on these calculations:

The wire length is a straight run from the power source to the lamphed. It does not take into account losses due to terminal connections, switches, relay contacts, plugs, etc.

The wire size is calculated for 125% of maximum lamphed current and not to exceed a 10% voltage drop.

## 12 VDC LED Lighting Fixtures

### Typical Minimum Wire Size

Typical Wire Size (AWG)	Wire Length (Distance in feet from power source.)														
	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250
COM5K-900 Lamphed	16	16	14	14	12	12	12	10	10	10	10	10	10	10	8
COM15K Lamphed	12	12	12	10	10	8	8	8	8	6	6	6	4	2	2
COM20K Lamphed	10	10	10	8	8	8	6	6	6	4	4	4	4	2	2
COMLC15K Lamphed	12	12	12	10	10	8	8	8	8	6	6	6	4	4	2

## 24 VDC LED Lighting Fixtures

### Typical Minimum Wire Size

Typical Wire Size (AWG)	Wire Length (Distance in feet from power source.)														
	20	30	40	50	60	70	80	90	100	120	140	160	180	200	250
COM5K-900 Lamphed	18	18	18	18	18	16	16	16	16	16	14	14	14	12	12
COM15K Lamphed	18	18	16	16	16	14	14	14	14	12	12	10	10	10	10
COM20K Lamphed	16	16	16	14	14	12	12	12	12	10	10	10	10	8	8
COMLC15K Lamphed	18	18	16	16	16	14	14	14	14	12	12	10	10	10	10

## Typical Current Required and Light Output for LED Lighting Fixtures

Lamphed Style	Voltage	Current	Light Output
COM120-260	120 Volts AC	1.5 Amps	15,000 Lumens
COM120	120 Volts AC	2 Amps	20,000 Lumens
COM240-260	240 Volts AC	0.75 Amps	15,000 Lumens
COM240	240 Volts AC	1 Amp	20,000 Lumens
COM15K	12/24 Volts DC	13/6.5 Amps	15,000 Lumens
COM20K	12/24 Volts DC	18/9 Amps	20,000 Lumens
COM5K-900	12/24 Volts DC	6/3 Amps	5000 Lumens
COMLC8K	12/24 Volts DC	7.5/3.75 Amps	8000 Lumens
COMLC12K	12/24 Volts DC	11/5.5 Amps	12,000 Lumens
COMLC15K	12/24 Volts DC	13/6.5 Amps	15,000 Lumens

**Note:** Do not use GFI protection with an AC LED light, the breaker will trip when the light is powered.

## American Wire Gauge (AWG) to Metric Wire Gauge (mm<sup>2</sup>) Sizes

Closest equivalent cross-section.

AWG	mm <sup>2</sup>
18	1.0
16	1.5
14	2.5
12	4.0
10	6.0
8	10
6	16
4	25
2	32