

# ELO-16 GB FR

**Extra Large Orifice**

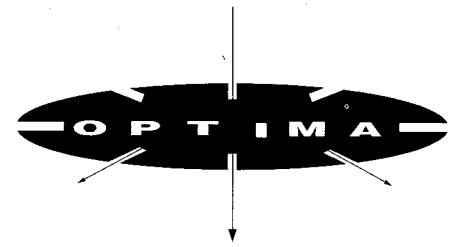
**Quick Response**

**Extended Coverage Light Hazard**

Upright, Pendent and Recessed Pendent Glass Bulb

Automatic Sprinkler

Manufactured by: Central Sprinkler Company  
451 North Cannon Avenue, Lansdale, Pennsylvania 19446



## Product Description

The Central Model ELO-16 GB FR Extra Large Orifice Upright, Pendent and Recessed Pendent Glass Bulb Automatic Sprinklers are designed for Extended Coverage spacing in Light Hazard occupancies per NFPA 13. They are Listed as Quick Response, up to 20' x 20' (6.1 x 6.1 m). The ELO-16 GB FR Sprinklers are Listed by U.L. for installation in LH occupancies having ceiling construction as specified in NFPA 13 under smooth flat ceilings.

The Model ELO-16 GB FR Glass Bulb Sprinklers incorporate a specially designed deflector that provides a much greater area of coverage than most commercial sprinklers. The extra large orifice allows this greater area of coverage, while requiring much lower pressure.

The Model ELO-16 GB FR incorporates the latest in heat-responsive glass bulb technology. The operating mechanism consists of a 3 mm liquid-filled frangible capsule that is only 20 mm in length.

The ELO-16 GB FR sprinklers are Listed by Underwriters Laboratories as Extra Large Orifice Sprinklers. They are intended for use, as all extended coverage sprinklers are, with hydraulically designed systems and using the flows and pressures as shown in this brochure. All spacing is rounded up to the next higher category. For example, 17'-6" x 15'-0" (7.9 x 4.6 m) spacing would be calculated at the Listed 18' x 18' (5.5 x 5.5 m) flow and pressure.

**Operation:** The glass bulb capsule operating mechanism contains a heat-sensitive liquid that expands upon application of heat. At the rated temperature, the frangible capsule ruptures, thereby releasing the orifice seal. The sprinkler then discharges water in a pre-designed spray pattern to control or extinguish the fire.

## Technical Data

Model: ELO-16 GB FR  
Style: Upright, Pendent and Recessed Pendent

Escutcheon: Model ELO 2-piece  
Recessed/Vented Escutcheon

**Note: For the recessed configuration, only the Model ELO 2-piece Recessed/Vented Escutcheon may be used. Substitution of other "recessed" escutcheons may impair the operating sensitivity and distribution pattern. For the pendent version, non-recessed escutcheons such as the Model 401 may be used, but are not required.**

Wrench: ELO/ESLO/ESFR Combination  
(upright and pendent) Part #1073  
ELO Offset (recessed pendent)  
Part #1092

Orifice Size: 0.64" (16.3 mm) (ELO)

K-Factor: 11.4 (163.02 metric)

Thread Size: 3/4" N.P.T. (20 mm)

Temperature Rating & Glass Bulb Color:

Ordinary 135°F/57°C Orange (UL only)

155°F/68°C Red

Intermediate 200°F/93°C Green

High 250°F/121°C Blue

Approvals: U.L., \*FM,  
MEA 466-92-E Vol. II

\* FM Approval is for pendent or upright not recessed pendent. Please consult FM Guidelines for installation criteria.

Maximum Working Pressure:

175 psi (12.1 bar)

Factory Hydro Test:

100% at 500 psi (34.5 bar)

Standard Finishes: brass, chrome plated

Corrosion-Resistant Coatings:

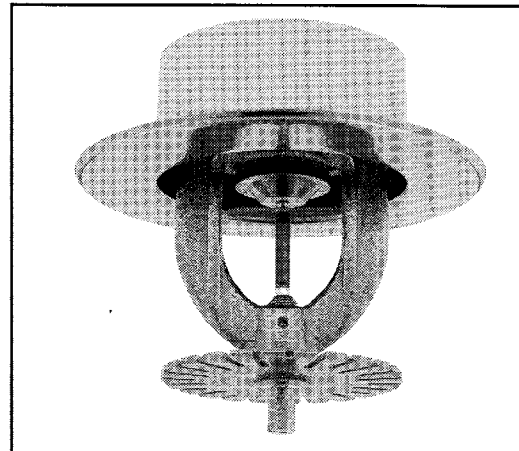
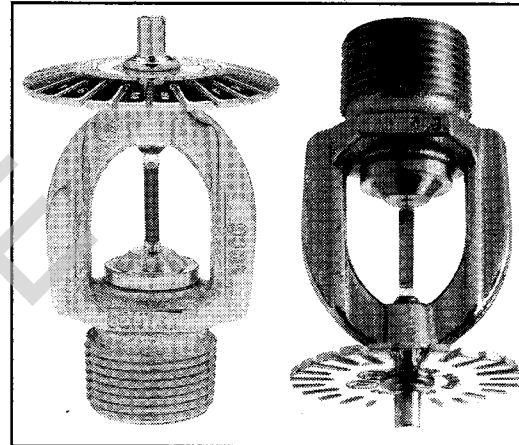
white or black painted (U.L. only)

Escutcheon: brass, chrome plated, white or black painted

Length: 3 1/8" (79.4 mm)

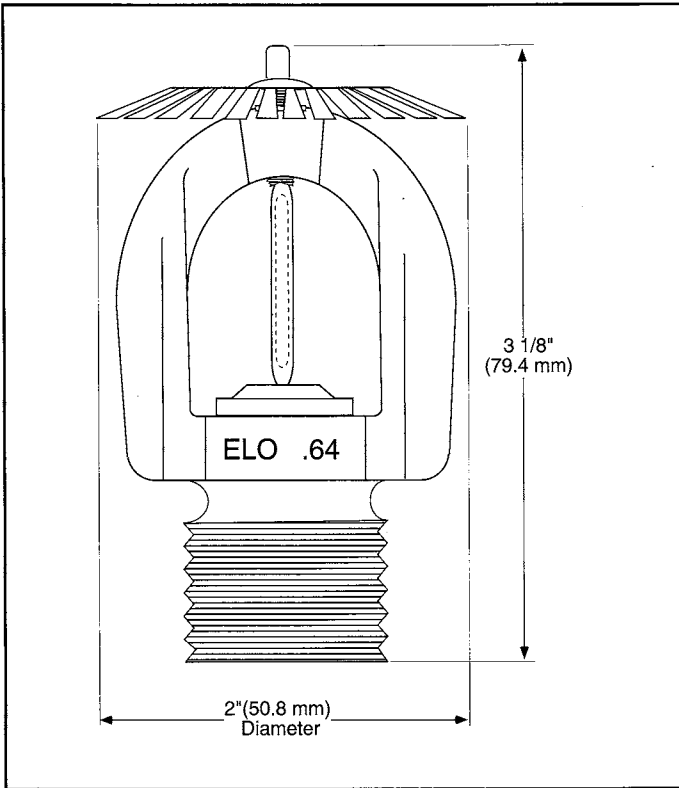
Width: 2" (50.8 mm)

Weight: 5.0 oz. (142 grams)

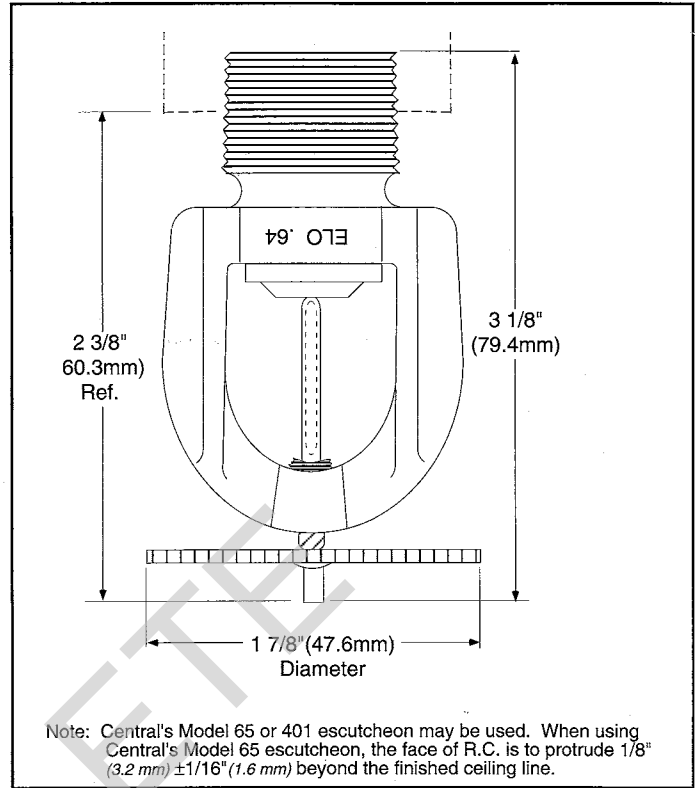


**Quick Response  
Extended  
Coverage Light  
Hazard Upright  
Pendent &  
Recessed  
Pendent Sprinkler**

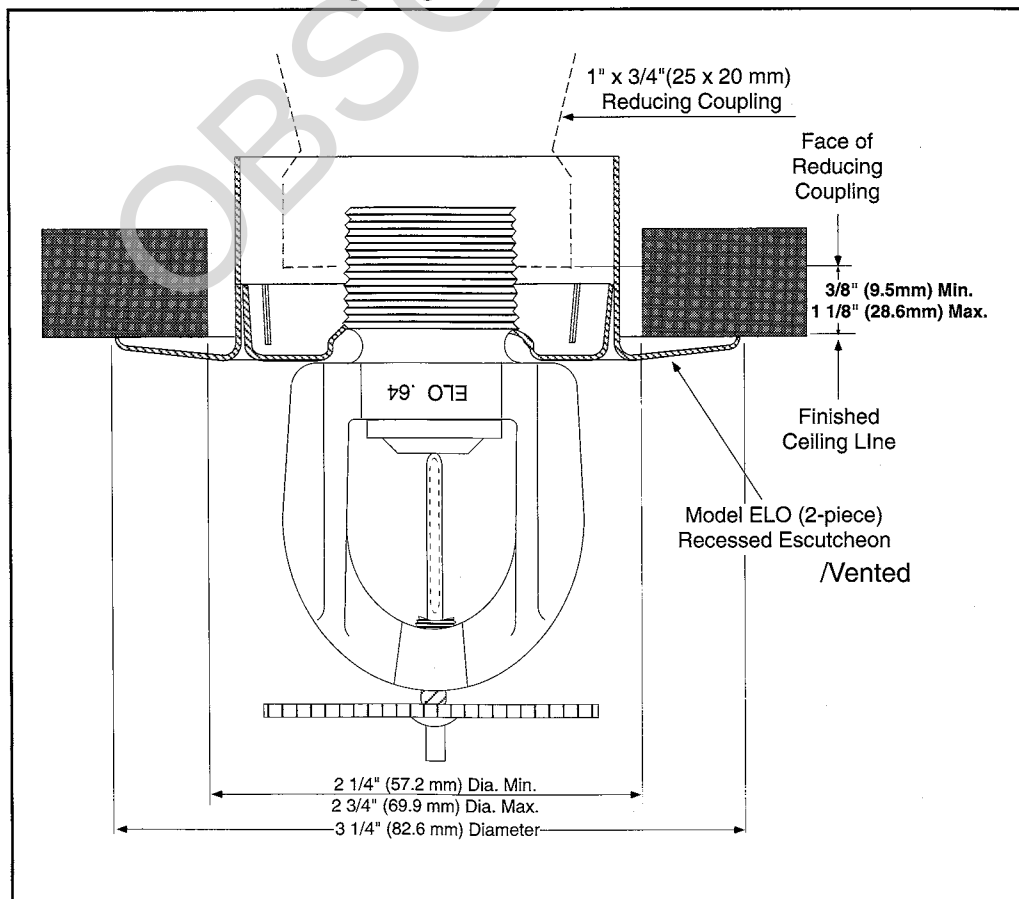
**ELO-16 GB QR Quick Response  
Extended Coverage Light Hazard Upright**



**ELO-16 GB QR Quick Response  
Extended Coverage Light Hazard Pendant**



**ELO-16 GB QR Quick Response  
Extended Coverage Light Hazard Recessed Pendant**





# Design Data



# Installation

## Design Requirements — Upright Light Hazard Extended Coverage Applications

Spacing	Flow/Pressure	Upright Sensitivity	
		135°F (57°C)	155°F, 200°F, & 250°F (68°C), (93°C), & (121°C)
16' X 16' (4.9 x 4.9)	30.2 gpm/7.0 psi (114.5 Lpm / 0.5 bar)	QR	QR
18'x18' (5.5 x 5.5)	33 gpm/8.4 psi (125.1 Lpm / 0.6 bar)	QR	QR
20'x20' (6.1 x 6.1)	40.0 gpm/12.3 psi (151.6 Lpm / 0.8 bar)	QR	STD

**Caution: Minimum spacing between sprinklers is 12' for upright version.**

## Design Requirements — Pendent & Recessed Pendent Light Hazard Extended Coverage Applications

Spacing	Flow/Pressure	Pendent Sensitivity		Recessed Pendent Sensitivity	
		135°F (57°C)	155°F, 200°F, & 250°F (68°C), (93°C), & (121°C)	135°F (57°C)	155°F, 200°F, 250°F (68°C), (93°C), & (121°C)
16' X 16' (4.9 x 4.9)	30.2 gpm/7.0 psi (114.5 Lpm / 0.5 bar)	QR	QR	QR	QR
18'x18' (5.5 x 5.5)	33 gpm/8.4 psi (125.1 Lpm / 0.6 bar)	QR	QR	QR*	STD
20'x20' (6.1 x 6.1)	40.0 gpm/12.3 psi (151.6 Lpm / 0.8 bar)	QR	STD	QR*	STD

\* Use ELO vented support cup assembly, Part #4111 Brass, #4110 Chrome, #4112 White

**Caution: Minimum spacing between sprinklers is 12'-6" (3.81 m) for pendent and recessed pendent versions.**

**Note: All spacings are not listed as quick response. Please check.**

### For FM Projects

FM Approval for the ELO-16 GB FR pendent is subject to the FM installation guidelines. Consult your local FM office for information.

All Central Model ELO-16 GB QR Automatic Glass Bulb Sprinklers must be installed according to current NFPA 13 Standards and these installation instructions. Deviations from these requirements and standards or any alteration to the sprinkler itself will void any warranty made by Central Sprinkler Company. In addition, installation must also meet local government provisions, codes, and standards as applicable.

The system piping must be properly sized to ensure the minimum required flow rate at the sprinkler. Check for the proper model, style, orifice size, and temperature rating prior to installation. Install sprinklers after the piping is in place to avoid mechanical damage; replace any damaged units.

Upon completion of the installation, the system must be tested per recognized standards.

In the event of a thread leak, remove the unit, apply new pipe joint compound or tape, and reinstall.

### Installation Sequence

**Step 1.** For Recessed Pendent Sprinklers, the face of the sprinkler fitting should be installed a nominal 3/4" (19.1 mm) (±3/8" (9.5 mm)) behind the ceiling line. Adjustments are made via the push-on escutcheon.

**Step 2.** Use only a non-hardening pipe joint compound or Teflon\* tape. Apply only to the male threads.

**Step 3.** Hand tighten the sprinkler into the fitting. Use the appropriate Central wrench to tighten the unit into the fitting. A leak-tight joint requires only 7 to 14 ft.-lbs. of torque (9.5 to 19.0 Nm); a tangential force of 14 to 28 lbs. (62.3 to

\*Teflon is a trademark of the DuPont Corp.

124.5 N) delivered through a 6" (150 mm) handle will deliver adequate torque. Torque levels over 21 ft.-lbs. (28.6 Nm) may distort the orifice seal, resulting in leakage.

The upright sprinklers shall be oriented so the frame arms are parallel with the branch line pipe per NFPA.

## Care & Maintenance

Sprinklers must be handled carefully. They must not be transported or stored where ambient temperature may exceed 100°F/38°C. For best results, store them in a dry, cool location in the original shipping package.

Do not install sprinklers that have been dropped or visibly damaged. Sprinklers should never be painted, coated, plated, or altered in any other way from manufactured condition or they may not function properly. Any sprinklers altered in such manner must be replaced.

The owner is responsible for the proper operating condition of all fire protection devices and accessories. The NFPA Standard 25 entitled, "Inspection, Testing and Maintenance of Water-Based Fire Protection System", contains guidelines and minimum maintenance requirements. Furthermore, the local Authority Having Jurisdiction may have additional regulations and requirements for maintenance, testing, and inspection that must be obeyed.

It is advisable to have sprinkler systems inspected regularly by a qualified inspection service. Length of time between such inspections can vary due to accessibility, ambient atmosphere, water supply, and site activity.

Do not attempt to reassembly or otherwise reuse a sprinkler that has operated. Replace any sprinkler exhibiting corrosion or damage; always use new sprinklers of the same type and temperature rating as replacements.

Because the discharge pattern is critical to protection of life and prop-

erty, nothing should be hung or attached to the sprinkler unit that would disrupt the pattern. Such obstructions must be removed. In the event that construction has altered the original configuration, additional sprinklers should be installed to maintain the protection level.

Do not attempt to replace sprinklers without first removing the fire protection system from service. Be certain to secure permission from all Authorities Having Jurisdiction, and notify all personnel who may be affected during system shutdown. A fire watch during maintenance periods is a wise precaution.

To remove the system from service mode, first refer to the system operating guide and valve instruction. Drain the water and relieve pressure in the pipes. Remove the existing unit and install the replacement, using only the special sprinkler wrench. Be certain to match the model, style, orifice, and temperature rating.

A fire protection system that has been shut off after an activation should be returned to service immediately. Inspect the entire system for damage and replace or repair as necessary. Sprinklers that did not operate but were subjected to corrosive elements of combustion or excessive temperatures should be inspected, and replaced if need be. The Authority Having Jurisdiction will detail minimum replacement requirements and regulations.



## Ordering Information

**Ordering Information:** When placing an order, indicate the full product name. Please specify the quantity, model, style, orifice size, temperature rating, type of finish or coating, and sprinkler wrench.

**Availability and Service:** Central sprinklers, valves, accessories, and other products are available throughout the U.S. and Canada, and internationally, through a network of Central Sprinkler distribution centers. You may write directly to Central Sprinkler Company, or call (215) 362-0700 for the distributor nearest you.

**Guarantee:** Central Sprinkler Company will repair and/or replace any products found to be defective in material or workmanship within a period of one year from the date of shipment. Please refer to the current Price List for further details of the warranty.

**Patents:** Patents are pending.

### Conversion Table:

1 inch	= 25.400 mm
1 foot	= 0.3048 m
1 pound	= 0.4536 kg
1 foot pound	= 1.36 Nm
1 psi	= 6.895 kpa
	= 0.0689 bar
	= 0.0703 kg/cm <sup>2</sup>
1 U.S. gallon	= 3.785 dm <sup>3</sup>
	= 3.785 liters

Conversions are approximate.

OPTIMA™ is a registered trademark of Central Sprinkler Company.



### Central Sprinkler Company

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