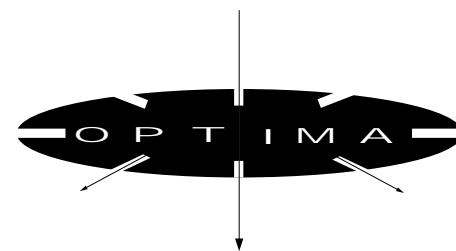


ELO-16 GB FR

Extra Large Orifice
Extended Coverage Ordinary 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 Ordinary Hazard occupancies per NFPA 13 with very low pressure required.

The ELO-16 GB FR (upright and pendent) is the first extended coverage ordinary hazard sprinkler ever Approved by Factory Mutual. As with any project that requires Factory Mutual Approval, always consult the F.M. Guidelines for their specific requirements.

The Model ELO-16 GB FR 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 ELO-16 GB FR 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" (4.4m x 3.8m) spacing would be calculated at the Listed 18' x 18' (5.5m x 5.5m) 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.

Installation Limitations:

- Unobstructed or non-combustible obstructed construction*
- Minimum hydraulic design area of 5 heads or 1500 sq. ft., whichever is greater.
- Minimum spacing between sprinklers is 12' (3.7m) for upright and 12'-6" (3.81m) for pendent.

* WEB members of open WEB trusses must not exceed 1" (25 mm) diameter. Maximum ceiling slope of 2" per foot (158 mm/m).

Technical Data

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

Escutcheon: Model ELO Recessed (2-piece)

Note: For the recessed configuration, only the Model ELO Recessed 2-piece 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: ¾" N.P.T. (20mm)

Temperature Rating & Glass Bulb Color:

Ordinary	155°F/68°C Red
Intermediate	200°F/93°C Green
High	250°F/121°C Blue

Approvals: U.L., **F.M.,
M.E.A. (466-92-E Vol. II)

**Upright & Pendent only, not recessed pendent.

Maximum Working Pressure:

175 psi (12.1 bar)

Factory Hydro Test: 100% at

500 psi (34.5 bar)

Standard Finishes: brass, chrome plated

Decorative Coatings: white or black painted

Coatings: wax, lead, wax-over-lead (FM only)

Corrosion-Resistant Coatings: white or black painted (U.L. only)

Escutcheon: brass, chrome plated, white or black painted

Length: 3 1/8" (7.94 cm)

Width: 2" (5.08 cm)

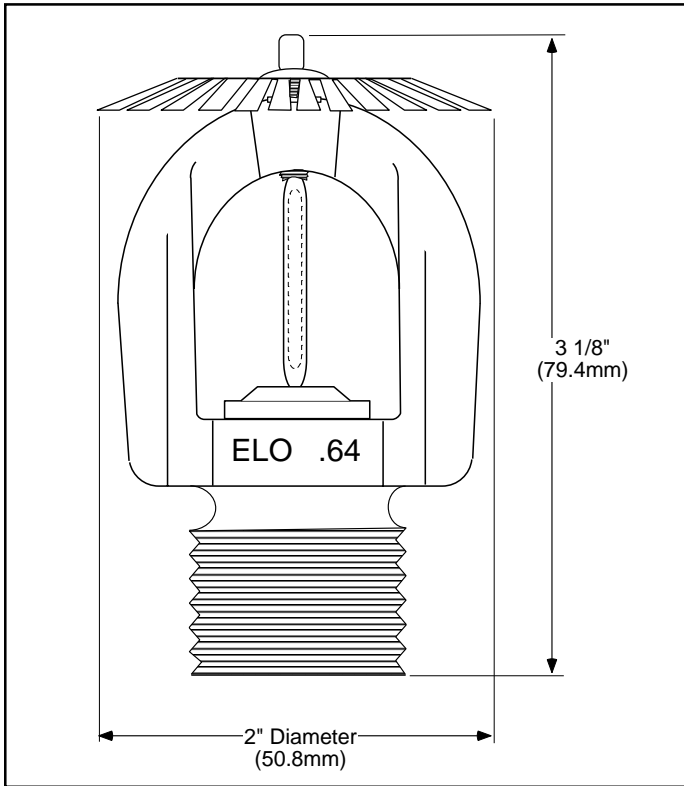
Weight: 5.0 oz. (142 grams)

Response: Standard

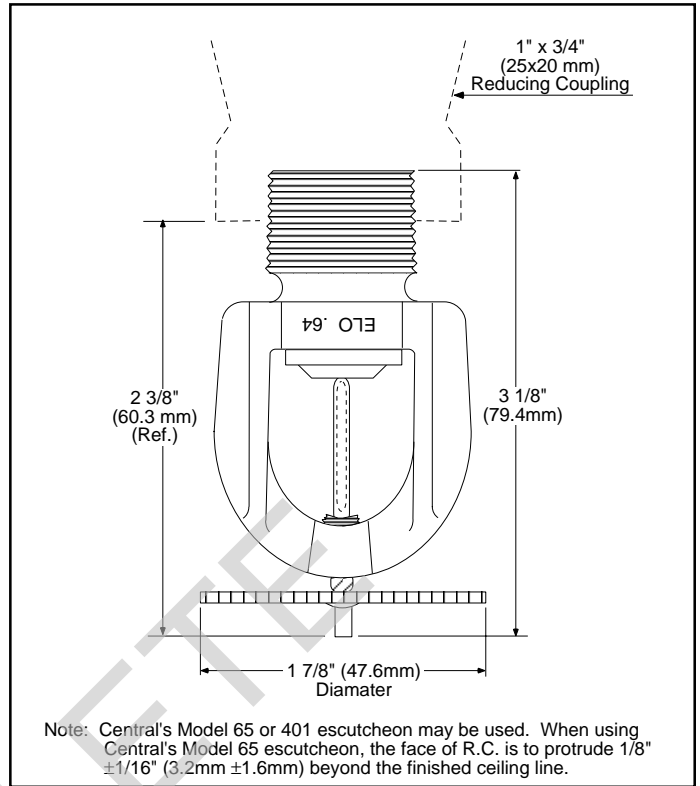


Extended Coverage
Ordinary Hazard
Upright, Pendent
& Recessed
Pendent Sprinkler

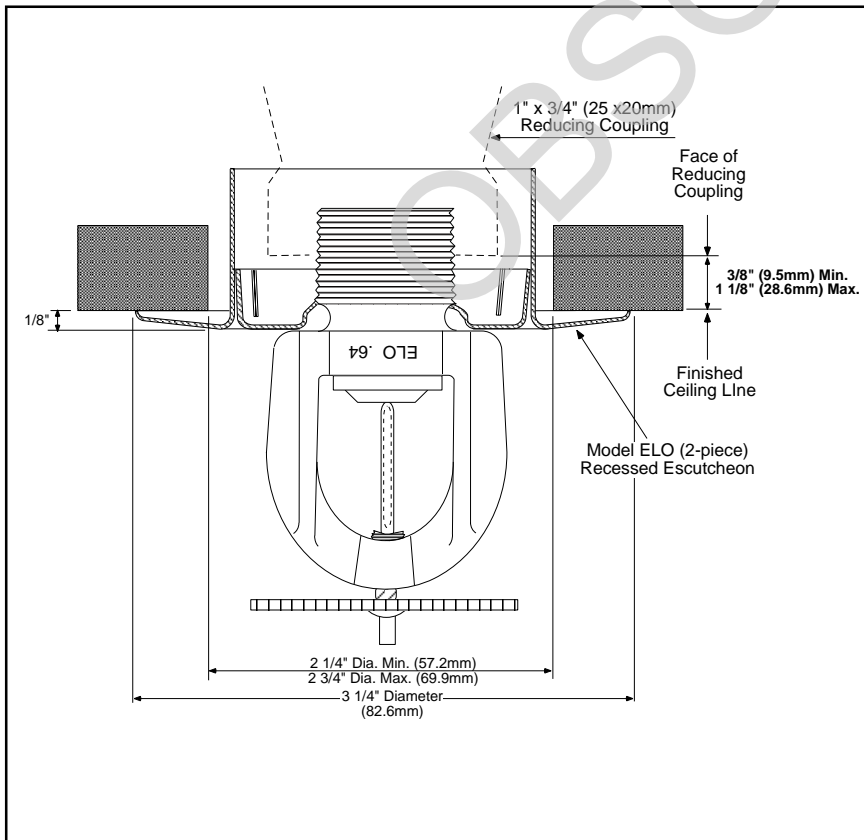
**ELO-16 GB FR Extended Coverage
Ordinary Hazard Upright**



**ELO-16 GB FR Extended Coverage
Ordinary Hazard Pendant**



**ELO-16 GB FR
Extended Coverage Ordinary Hazard Recessed Pendant**



Installation

All Central Model ELO-16 GB FR 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.



Design Data

For FM Projects

Consult the Factory Mutual Guidelines for specific Factory Mutual requirements if Factory Mutual Approval is required.

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Group 1, Density 0.15 GPM/ft² - NFPA 13 1991 and later

Minimum Distance From Deflector to Top of Commodities is 18".

Spacing Between Sprinklers	Maximum Location From Any Wall	Minimum Design Flow per Sprinkler GPM(Lpm)	Minimum Design Pressure per Sprinkler PSI(bar)
14 x 14 feet (196 sq. ft.)/4.3m x 4.3m (18.2m ²)	7 feet (2.1m)	30.2 (114.5)	7.0 (0.5)
16 x 16 feet (256 sq. ft.)/4.9m x 4.9m (23.8m ²)	8 feet (2.4m)	38.4 (145.5)	11.3 (0.8)

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Group 1, Density 0.16 GPM/ft² - NFPA 13 1989 or earlier

Minimum Distance From Deflector to Top of Commodities is 18".

Spacing Between Sprinklers	Maximum Location From Any Wall	Minimum Design Flow per Sprinkler GPM(Lpm)	Minimum Design Pressure per Sprinkler PSI(bar)
14 x 14 feet (196 sq. ft.) /4.3m x 4.3m (18.2m ²)	7 feet (2.1m)	31.4 (111.4)	7.6 (0.5)
16 x 16 feet (256 sq. ft.) /4.9m x 4.9m (23.8m ²)	8 feet (2.4m)	41.0 (145.5)	12.9 (0.9)

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Group 2, Density 0.19 GPM/ft² - NFPA 13 1989 or earlier

Minimum Distance From Deflector to Top of Commodities is 18".

Spacing Between Sprinklers	Maximum Location From Any Wall	Minimum Design Flow per Sprinkler GPM(Lpm)	Minimum Design Pressure per Sprinkler PSI(bar)
14 x 14 feet (196 sq. ft.) /4.3m x 4.3m (18.2m ²)	7 feet (2.1m)	37.2 (141.0)	10.6 (0.7)
16 x 16 feet (256 sq. ft.) /4.9m x 4.9m (23.8m ²)	8 feet (2.4m)	48.6 (184.2)	18.2 (1.3)

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Group 2, Density 0.20 GPM/ft² - NFPA 13 1991 and later

Minimum Distance From Deflector to Top of Commodities is 18".

Spacing Between Sprinklers	Maximum Location From Any Wall	Minimum Design Flow per Sprinkler GPM(Lpm)	Minimum Design Pressure per Sprinkler PSI(bar)
14 x 14 feet (196 sq. ft.) /4.3m x 4.3m (18.2m ²)	7 feet (2.1m)	39.2 (148.6)	11.8 (0.8)
16 x 16 feet (256 sq. ft.) /4.9m x 4.9m (23.8m ²)	8 feet (2.4m)	51.2 (194.0)	20.2 (1.4)

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Group 3, Density 0.21 GPM/ft² - NFPA 13 1989 or earlier

Minimum Distance From Deflector to Top of Commodities is 18".

Spacing Between Sprinklers	Maximum Location From Any Wall	Minimum Design Flow per Sprinkler GPM(Lpm)	Minimum Design Pressure per Sprinkler PSI(bar)
14 x 14 feet (196 sq. ft.) /4.3m x 4.3m (18.2m ²)	7 feet (2.1m)	41.2 (156.1)	13.1 (0.9)
16 x 16 feet (256 sq. ft.) /4.9m x 4.9m (23.8m ²)	8 feet (2.4m)	53.8 (203.9)	22.3 (1.5)

Caution: Minimum spacing between sprinklers is 12' (3.7m) for upright and 12'-6" (3.81m) for pendent.

Installation Sequence

Step 1. For Recessed Pendent Sprinklers, the face of the sprinkler fitting should be installed a nominal $\frac{3}{4}$ " ($\pm\frac{3}{8}$ ")/ 19.1mm (± 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. (9.5 to 19.0 Nm) of torque; a tangential force of 14 to 28 lbs. (62.3 to 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.

*Teflon is a trademark of the DuPont Corp.



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.

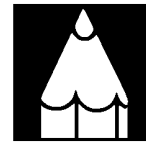
Because the discharge pattern is critical to protection of life and property, nothing should be hung or attached to the sprinkler unit that would disrupt the pattern. Such obstructions must be removed. In the event that construction has altered the original configuration, additional sprinklers should 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 immedi-

ately. 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: The ELO-16 GB FR Optima™ sprinklers are protected under U.S. Patent No. 5,366,022.

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 ²
1 U.S. gallon	= 3.785 dm ³
	= 3.785 liters

Conversions are approximate.

OPTIMA™ is a registered trademark of Central Sprinkler Company.



Central Sprinkler Company

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