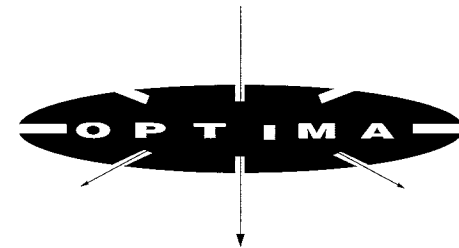


ESLO

Extended Coverage Ordinary Hazard Very Extra Large Orifice

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 ESLO Very Extra Large Orifice Upright, Pendent and Recessed Pendent Glass Bulb Automatic Sprinklers are specifically designed for Extended Coverage Ordinary Hazard for all Groups as defined by NFPA 13. The ESLO is Listed for an 18" (457.2 mm) commodity clearance from the deflector, as standard sprinklers are per NFPA 13.

The ESLO 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 ESLO provides the maximum in design flexibility as it has a minimum separation of only 8'-0" (2.4 m) for upright and 9'-0" (2.7 m) for pendent versions and is Listed for flows and pressures associated with 14' x 14' (4.3 x 4.3 m) and 16' x 16' (4.9 x 4.9 m), as well as 18' x 18' (5.5 x 5.5 m) and 20' x 20' (6.1 x 6.1 m) spacing.

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. For the purpose of determining the correct flow and pressure to use in the hydraulic calculations, all spacing is rounded up to the next higher category. For example, 17'-6" x 15'-0" (5.3 x 4.6 m) spacing would be calculated at the Listed 18' x 18' (5.5 x 5.5 m) flow and pressure.

The advantage of the ESLO is the ability to cover large areas, up to 400 square feet (37.2 m²), with pressures that compare to ½" (15 mm) standard sprinklers spaced at their maximum of 130 square feet (12.09 m²). For example, the ESLO can cover 18' x 18' (5.5 x 5.5 m) spacing or 324 square feet (30.1 m²) with less pressure than is required with ½" (15 mm) sprinklers at 130 square feet (12.09 m²). (20.0 vs. 21.3 psi (0.7 vs. 1.5 bar))

The Model ESLO Sprinkler incorporates a specially designed deflector that provides a much greater area of coverage than standard commercial sprinklers. The two (2) piece recessed escutcheon assembly provides for ¾" (19.1 mm) of field adjustment.

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 the fire.

Technical Data

Model: ESLO
Style: Upright, Pendent & Recessed Pendent

Escutcheon: Model ELO (2-piece)
Recessed

Escutcheon Part #'s:

850 - Brush Brass	853 - White
851 - Bright Chrome	848 - Off White
852 - Bright Brass	849 - Black

Note: In the recessed position, only the Model ELO (2-piece) Recessed Escutcheon may be used. Substitution of other "recessed" escutcheons may impair the operating sensitivity and distribution pattern.

Wrench

Pendent/Upright: Part #1073 ELO/ESLO/
ESFR Combination

Recessed Pendent: Part #1093 ESLO Offset

Orifice Size: 0.70" (17.8 mm) (VELO)

K-Factor: 14.5 (207.35 metric)

Thread Size: ¾" N.P.T. (20 mm)

Temperature Rating: 155°F/68°C Red

200°F/93°C Green

250°F/121°C Blue

Installation Limitations:

- Unobstructed or non-combustible obstructed construction.
- Minimum hydraulic design area of 5 heads or 1500 sq. ft. (139.5 m²), whichever is greater (UL only).
- Minimum spacing between upright sprinklers is 8'-0" (2.4 m). Minimum spacing between pendent and recessed pendent sprinklers is 9'-0" (2.7 m) (UL only).
- Maximum ceiling slope is 2" per foot (50.8 mm/m) per NFPA 13.
- Web member of open web trusses must not exceed 1" (25.4 mm) maximum dimension.

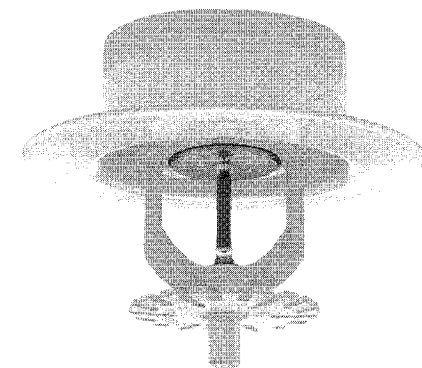
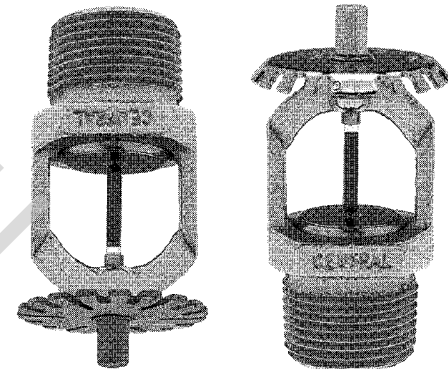
Approvals: U.L., c-UL. *F.M.,
**M.E.A. (466-92-E Vol. II)

* Pendent only, not recessed pendent or upright.

** Pendent and Recessed Pendent only.

Maximum Working Pressure: 175 psi (12.1 bar)

Factory Hydro Test: 100% at 500 psi (34.5 bar)



Extended Coverage Ordinary Hazard Glass Bulb Sprinkler

Standard Finishes:

Sprinkler: brass or chrome plated

Decorative Finishes: white or black painted

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

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

Escutcheon: brass, chrome plated, white or black painted

Length: 2¾" (70 cm)

Width: 1½" (3.80 cm)

Weight: 4.2 oz. (120 grams)

No. 2-2.0
Old Cat. No. 3-4.0

Figure 1
ESLO Extended Coverage Ordinary Hazard Upright

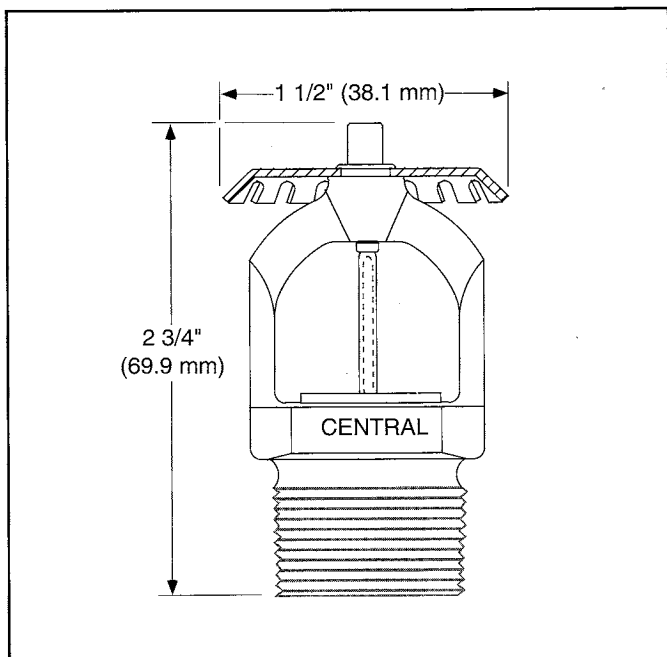
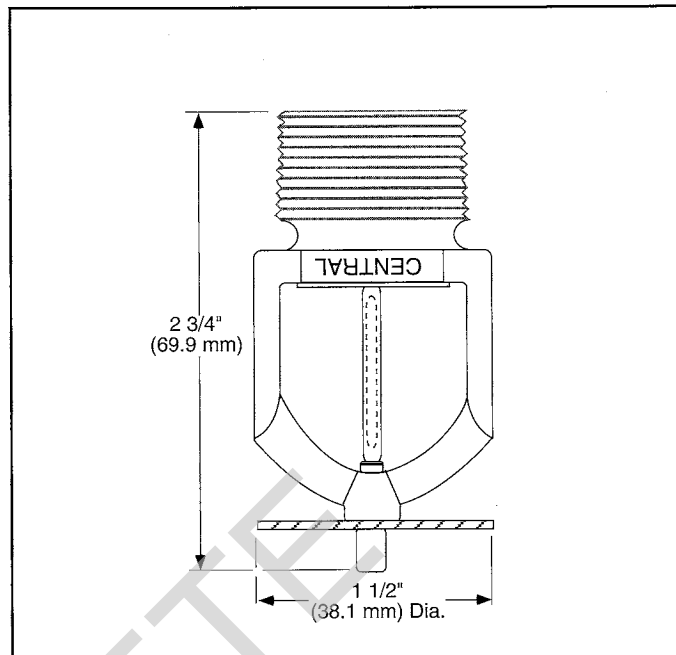


Figure 2
ESLO Extended Coverage Ordinary Hazard Pendent



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



Installation

All Central Model ESLO Upright, Pendent and Recessed Pendent Automatic Sprinklers must be installed according to the current NFPA 13 Standard 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.

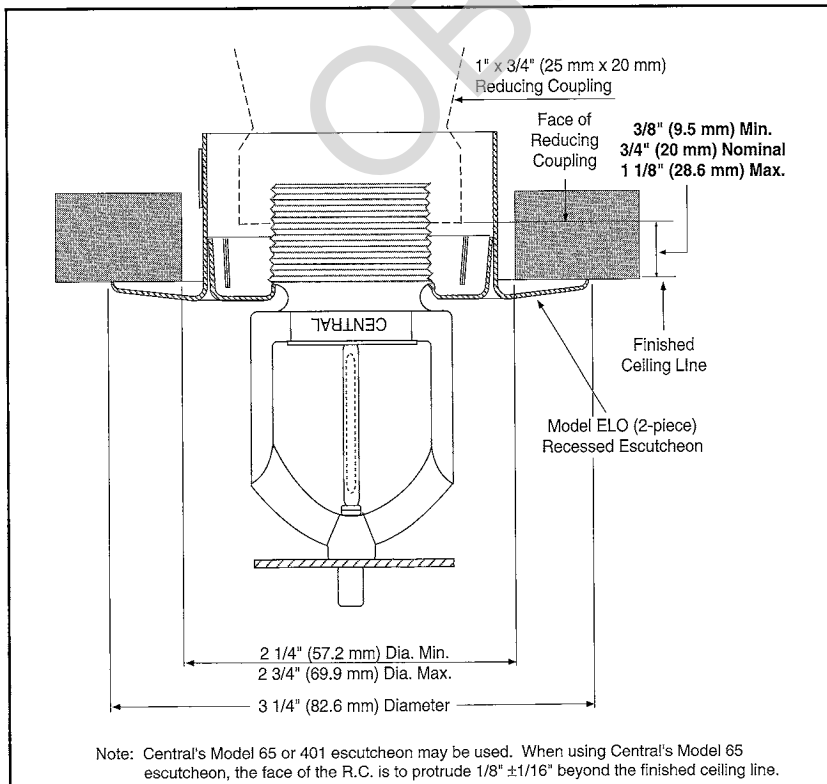
The system piping must be properly sized to ensure the minimum required flow rate at the sprinkler. Check for the proper model, style, orifice size, and temperature rating prior to installation. Install sprinklers after the piping is in place to avoid mechanical damage; replace any damaged units.

Wet pipe systems must be protected from freezing.

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.

Figure 3
ESLO Extended Coverage Ordinary Hazard Recessed Pendent



(Continued on back page)



Design Data

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Density 0.15 GPM/ft² - NFPA 13 1991 and later
Temperature Rating 155°F/68°C, 200°F/93°C and 250°F/121°C

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.) /4.3 x 4.3 m (18.2 m ²)	7 feet (2.1 m)	38.4 (145.5)	7.0 (0.5)
16 x 16 feet (256 sq. ft.) /4.9 x 4.9 m (23.8 m ²)	8 feet (2.4 m)	38.4 (145.5)	7.0 (0.5)
18 x 18 feet (324 sq. ft.) /5.5 x 5.5 m (30.1 m ²)	9 feet (2.7 m)	48.6 (184.2)	11.2 (0.8)
20 x 20 feet (400 sq. ft.) /6.1 x 6.1 m (37.2 m ²)	10 feet (3.0 m)	60.0 (227.4)	17.1 (1.2)

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Density 0.16 GPM/ft² - NFPA 13 1989 and earlier
Temperature Rating 155°F/68°C, 200°F/93°C and 250°F/121°C

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.) /4.3 x 4.3 m (18.2 m ²)	7 feet (2.1 m)	38.4 (145.5)	7.0 (0.5)
16 x 16 feet (256 sq. ft.) /4.9 x 4.9 m (23.8 m ²)	8 feet (2.4 m)	41.0 (155.4)	8.0 (0.6)
18 x 18 feet (324 sq. ft.) /5.5 x 5.5 m (30.1 m ²)	9 feet (2.7 m)	51.8 (196.3)	12.8 (0.9)
20 x 20 feet (400 sq. ft.) /6.1 x 6.1 m (37.2 m ²)	10 feet (3.0 m)	64.0 (242.6)	19.5 (1.3)

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Density 0.19 GPM/ft² - NFPA 13 1989 and earlier
Temperature Rating 155°F/68°C, 200°F/93°C and 250°F/121°C

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.) /4.3 x 4.3 m (18.2 m ²)	7 feet (2.1 m)	38.4 (145.5)	7.0 (0.5)
16 x 16 feet (256 sq. ft.) /4.9 x 4.9 m (23.8 m ²)	8 feet (2.4 m)	48.6 (184.2)	11.2 (0.8)
18 x 18 feet (324 sq. ft.) /5.5 x 5.5 m (30.1 m ²)	9 feet (2.7 m)	61.6 (233.5)	18.0 (1.2)
20 x 20 feet (400 sq. ft.) /6.1 x 6.1 m (37.2 m ²)	10 feet (3.0 m)	76.0 (288.0)	27.5 (1.9)

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Density 0.20 GPM/ft² - NFPA 13 1991 and later
Temperature Rating 155°F/68°C, 200°F/93°C and 250°F/121°C

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.) /4.3 x 4.3 m (18.2 m ²)	7 feet (2.1 m)	39.2 (148.6)	7.3 (0.5)
16 x 16 feet (256 sq. ft.) /4.9 x 4.9 m (23.8 m ²)	8 feet (2.4 m)	51.2 (194.0)	12.5 (0.9)
18 x 18 feet (324 sq. ft.) /5.5 x 5.5 m (30.1 m ²)	9 feet (2.7 m)	64.8 (245.6)	20.0 (1.4)
20 x 20 feet (400 sq. ft.) /6.1 x 6.1 m (37.2 m ²)	10 feet (3.0 m)	80.0 (303.2)	30.4 (2.1)

Design Requirements — Commercial Extended Coverage Applications

Ordinary Hazard, Density 0.21 GPM/ft² - NFPA 13 1989 and earlier
Temperature Rating 155°F/68°C, 200°F/93°C and 250°F/121°C

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.) /4.3 x 4.3 m (18.2 m ²)	7 feet (2.1 m)	41.2 (156.1)	8.1 (0.6)
16 x 16 feet (256 sq. ft.) /4.9 x 4.9 m (23.8 m ²)	8 feet (2.4 m)	53.8 (203.9)	13.8 (1.0)
18 x 18 feet (324 sq. ft.) /5.5 x 5.5 m (30.1 m ²)	9 feet (2.7 m)	68.0 (257.7)	22.0 (1.5)
20 x 20 feet (400 sq. ft.) /6.1 x 6.1 m (37.2 m ²)	10 feet (3.0 m)	84.0 (318.3)	33.6 (2.3)

**Caution: Minimum spacing between upright sprinklers is 8'-0" (2.4 m).
Minimum spacing between pendent or recessed pendent sprinklers is 9'-0" (2.7 m).**

Installation Sequence

Step 1. For Pendent and Recessed Pendent sprinklers, the face of the sprinkler fitting should be installed a nominal $\frac{3}{4}$ " ($\pm\frac{1}{8}$ ") (19.1 mm \pm 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 a Central Sprinkler 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.

*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 must 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 Systems", 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 reassemble 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, the system must be investigated and the protection level maintained.

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 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 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 oper-

ate 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.

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.



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.

Patents: The ESLO 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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