

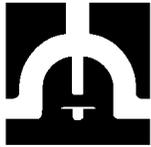
ELO-GB QR

Dry Pendent

Extra Large Orifice

Quick Response

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



Product Description

The Central Model ELO-GB QR Dry Pendent Automatic Glass Bulb Sprinklers are Extra Large Orifice Quick Response Sprinklers are designed for use in special applications such as freezing environments or in conditions where sediment or foreign materials might accumulate in ordinary drop nipples.

They are suited to meet the challenges of flammable liquids and aerosol storage, as well as other high density applications. They provide an advantage where large quantities of water are needed at relatively low water supply pressures.

Their large coefficient of discharge provides a minimum flow of 30 gallons per minute (113.7 Lpm) at the minimum allowable discharge pressure of 7 psi (0.48 bar). This characteristic provides the opportunity to reduce system cost through smaller pipe sizing and under some conditions to eliminate the need for a booster pump and its accessories.

The Model ELO-GB QR Dry Pendent Quick Response Sprinklers incorporate the latest in heat-responsive glass bulb technology. The operating mechanism consists of a liquid-filled 3 mm diameter frangible capsule that is only 2.0 cm in length.

The Model ELO-GB QR Dry Pendent Quick Response Sprinklers are Listed by Underwriters Laboratories as Extra Large Orifice Sprinklers.

The Model ELO GB QR dry pendent may be installed by using the correct

wrench on either the sprinkler wrench boss or the barrel of the dry pendent.

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 tube then drops down slightly allowing the ball bearings to fall out and the plug to drop, thus allowing the water to flow.



Technical Data

Model: ELO-GB QR Dry Pendent
Style: Flush, Recessed and Extended

Wrench:

Offset (*flush & extended*)
Part #1068

Universal (*recessed pendent*)
Part #1069

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

K-Factor: See K-Factor Table on page 2.

Thread Size: 1" (25 mm) N.P.T.

Temp. Rating and Bulb Color:

Ordinary	155°F/68°C	Red
Intermediate	200°F/93°C	Green
High	286°F/141°C	Blue

Approvals: U.L., ULC

Maximum Working Pressure:

175 psi (12.1 bar)

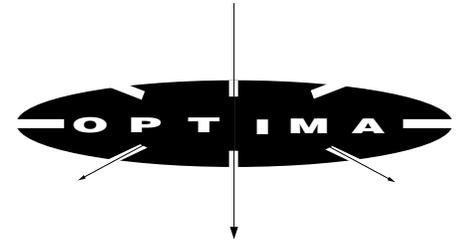
Factory Hydro Test: 100% at
500 psi (34.5 bar)

Standard Finishes: brass, chrome plated

Corrosion-Resistant Coatings:

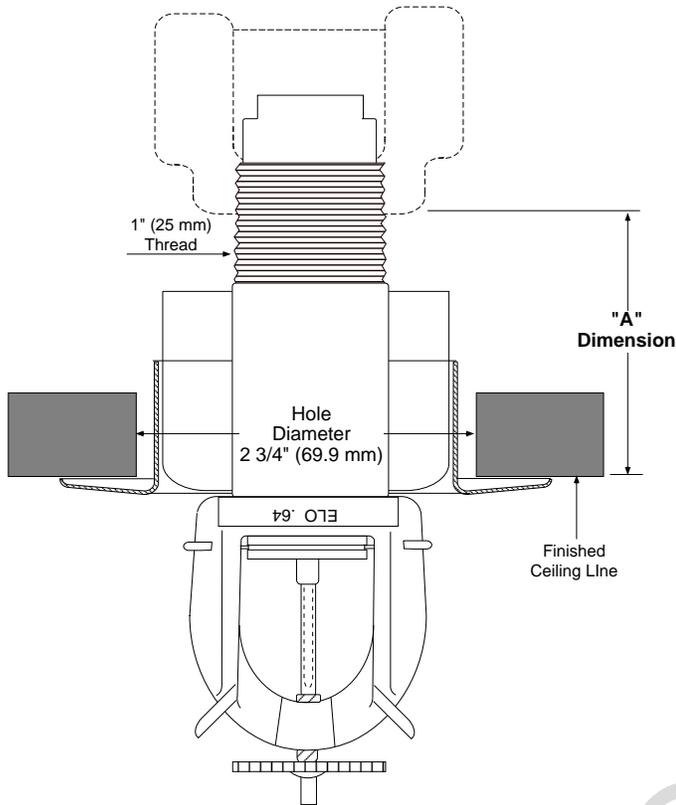
white painted and black painted

Escutcheon: brass, chrome plated,
white or black painted

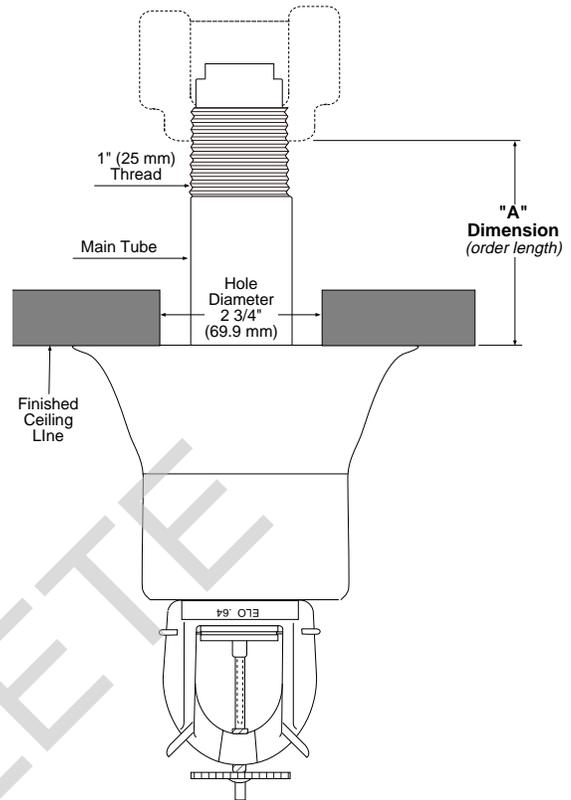


.64" (16.3mm)
Orifice Quick
Response Dry
Pendent
Automatic
Sprinkler

Installation Diagram
ELO GB QR Extended Coverage Ordinary
Hazard Flush and Recessed Dry Pendant



Installation Diagram
ELO GB QR Extended Coverage Ordinary
Hazard Extended Dry Pendant



Ordering Length for Dry Pendant Heads

Flush — The "A" dimension is measured from the face of the tee to the finished ceiling. This is only approximately flush. Order to the nearest 1/4" (6.4 mm). **Minimum "A" dimension is 2" (50.8 mm).**

Recessed — The "A" dimension is measured from the face of the tee to the finished ceiling. **Minimum "A" dimension is 2 1/4" (57.2 mm). Adjustment is ±3/8" (9.5 mm).**

Extended — The "A" dimension is measured from the face of the tee to the finished ceiling.

If this dimension is **less than or equal to 3/4" (82.6 mm)**, total adjustment is 1 1/2" (38.1 mm) (from the mid point of the adjustment range ±3/4" (19.1 mm)). Order to the nearest 1/4" (6.4 mm). **Minimum "A" dimension is 0".**

If this dimension is **greater than 3/4" (82.6 mm)**, the total adjustment is 3" (76.2 mm) (from the mid point of the adjustment range ±1 1/2" (38.1 mm)). Order to the nearest 1/4" (6.4 mm). **Minimum "A" dimension is 3/4" (82.6 mm).**

Caution: See step one of installation sequence for appropriate fitting requirements.

Procedure to Determine the K-Factor

To determine the K-factor, follow these steps:

1. Determine the K-factor length (NOT The "A" DIMENSION). The K-factor length is determined as follows:

Flush - "A" dimension + 5/8" (15.9 mm) = length for K-factor.
Recessed - "A" dimension + 1/4" (6.4 mm) = length for K-factor.
Extended - "A" dimension + 3/4" (82.6 mm) = length for K-factor.

2. Determine the K-factor for that length by using the K-factor table.
3. Use the K-factor at the tee in the branchline for your calculations.

K-Factor Table

Length	K-Factor (metric)
2 1/2" (63.5 mm) to less than 6 3/4" (171.5 mm)	11.2 (161.5)
6 3/4" (171.5 mm) to less than 10 3/4" (273.1 mm)	11.1 (160.1)
10 3/4" (273.1 mm) to less than 15" (381.0 mm)	11.0 (158.6)
15" (381.0 mm) to less than 19" (482.6 mm)	10.9 (157.2)
19" (482.6 mm) to less than 23 1/4" (590.6 mm)	10.8 (155.7)
23 1/4" (590.6 mm) to less than 27 1/4" (692.2 mm)	10.7 (154.3)
27 1/4" (692.2 mm) to less than 31 1/2" (800.1 mm)	10.6 (152.9)
31 1/2" (800.1 mm) to less than 35 1/2" (901.7 mm)	10.5 (151.4)
35 1/2" (901.7 mm) to less than 39 3/4" (1009.7 mm)	10.4 (150.0)
39 3/4" (1009.7 mm) to less than 43 3/4" (1111.3 mm)	10.3 (148.5)
43 3/4" (1111.3 mm) to 48" (1219.2 mm)	10.2 (147.1)



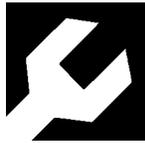
Design Data

The Model ELO-GB QR Quick Response Extra Large Orifice Dry Pendent Sprinklers are intended for standard sprinkler placement and standard flow and pressure requirements as specified in NFPA

It is not intended for use as a “large drop” sprinkler nor as an “ESFR” sprinkler and is not specifically Listed for NFPA 231 and NFPA 231C.

The following parameters must be incorporated into the design of automatic sprinkler systems utilizing Model ELO-GB QR Quick Response Dry Pendent Sprinklers.

1. Minimum sprinkler spacing is 6 feet (1.8 m).
2. Maximum sprinkler spacing is 15 feet (4.6 m).
3. Maximum coverage area for densities below .25 gpm/sq. ft. (10.24 Lpm/m²) is 130 sq. ft. (12.1 m²) The maximum coverage area for densities .25 gpm/sq. ft (10.2 Lpm/m²) and above is 100 sq. ft. (9.3 m²).
4. Automatic sprinkler systems must be hydraulically calculated using the area density curves of NFPA 13 Standards.
5. Minimum sprinkler discharge pressure is 7 psi (0.48 bar) 30 gpm (113.7 Lpm).



Installation

All Central Model ELO-GB QR Dry Pendent sprinklers must be installed according to current NFPA 13 Standards. 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 insure 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.

Installation Sequence

Step 1. The unit must be installed into a threaded, cast iron, ductile iron, or malleable iron tee only. It may be installed into the run or outlet of this tee. Do not install into an elbow or mechanical tee.

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

*Teflon is a trademark of the DuPont Corp.

Step 3. Hand tighten the sprinkler into the fitting. Use a Central Dry Pendent Sprinkler Wrench at the frame wrench boss, or a pipe wrench on the main tube to tighten the dry pendent into the fitting. A leak-tight joint requires only 7 to 14 ft. lbs. (9.5 to 19.0 Nm) of torque. Torque levels over 40 ft. lbs. (54.4 Nm) may twist the head in the main tube, damaging the seal.

Step 4. To install the escutcheon plate, align it with and push it over the sprinkler body and onto the inner portion of the escutcheon until the outer edge of the escutcheon meets the mounting surface. The recessed escutcheon tool may be used to install the escutcheon plate easily from the floor.



Care & Maintenance

Sprinklers must be handled carefully. They should 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, such as a crack in a glass bulb or a loss of liquid from the bulb. 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 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 re-assemble 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.

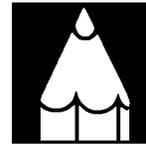
Because the discharge pattern is critical to protection of life and property, nothing should be hung or attached to the sprinkler unit that would disrupt the pattern. Such obstructions must be removed. In the event that construction has altered the original configuration, additional sprinklers should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

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.

Order dry pendants by the "A" dimension to the nearest 1/4" (6.4 mm).

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: 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 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

451 N. Cannon Avenue, Lansdale, PA 19446

Phone (215) 362-0700

FAX (215) 362-5385