

SERIES GL-RES/DC RESIDENTIAL ADJUSTABLE DOME CONCEALED PENDENT K-FACTOR 4.1, 4.9

GENERAL DESCRIPTION

The GL-RES/DC Domed Concealed pendent sprinkler is a decorative fast response glass bulb sprinkler specifically tested and Listed for use in residential applications such as homes, apartments, hotels, and dormitories to provide control of these residential type fires and to improve the chance for occupants to escape. These sprinklers utilize a 3mm frangible glass bulb as its heat sensing operating element. The GL-RES/DC is available with a K-Factor of 4.1 (GL4147) and a K-Factor of 4.9 (GL4947) and offer a further level of aesthetic appeal compared to semi-recessed type sprinklers.

These sprinklers provide a total vertical adjustment of a nominal 1/2". This sprinkler may be installed within dwelling occupancies as allowed by NFPA 13, 13D, 13R and any other related documents as appropriate.

OPERATION

The soldered cover plate drops off the retainer assembly when exposed to heat, as from a fire, that has reached the plate's Listed temperature rating, exposing the sprinkler above. As heat encompasses the glass bulb operating element of the sprinkler, the fluid in the bulb expands, compressing the air bubble within the bulb. When the air bubble can no longer compress, the fluid expansion causes breakage of the glass bulb, resulting in release of the water seal assembly and discharge of water from the sprinkler.

NOTE:

Users should refer to Globe's web site (www.globesprinkler.com) to assure that the most recent technical literature is being utilized.



**SERIES GL-RES/DC
GL4147, GL4947**

TECHNICAL DATA

Approvals

- cULus - EU

Temperature Rating

- Sprinkler: 155°F (68°C)
- Cover Plate: 135°F (57°C)

K-Factor

- GL4147 K4.1 gpm/psi^{1/2} (59.0 lpm/bar^{1/2})
- GL4947 K4.9 gpm/psi^{1/2} (70.6 lpm/bar^{1/2})

Cover Plate Finishes

- Chrome/White Painted/Black Painted/Custom
(For Custom Plates, contact Customer Service)

*Caution: Cover Plates must have factory applied finishes.
Never paint/coat plates in field.*

Thread Size

- 1/2" NPT (15mm)

Length

- 2-7/32" (5.6cm)

Maximum Working Pressure

- 175 psi (12 bar)

Materials of Construction

- Frame - bronze • Deflector - brass • Screw - brass
- Lodgement Wire - stainless steel • Bulb seat - copper
- Spring - nickel alloy • Seal - teflon
- Bulb (3mm) - glass
- Cover Plate - brass • Upper Escutcheon Assy. - carbon-steel

DESIGN CRITERIA

The Globe Series GL-RES/DC Sprinkler is cULus Listed for installation in accordance with this data sheet as well as the applicable installation Standard being utilized.

Globe Residential Sprinkler Installation Guide

When conditions exist that are outside the scope of the provided criteria, refer to the Globe Residential Sprinkler Installation Guide (Document GFS-380) for recommendations that may be acceptable to the authority having jurisdiction.

Hydraulic Design (NFPA 13D and 13R)

For systems designed to NFPA 13D or NFPA 13R, the minimum required sprinkler flow rate is given in Table A for the coverage areas shown. The sprinkler flow rate is the minimum required discharge from each of the total number of "design sprinklers" as specified in NFPA 13D or NFPA 13R.

Hydraulic Design (NFPA 13)

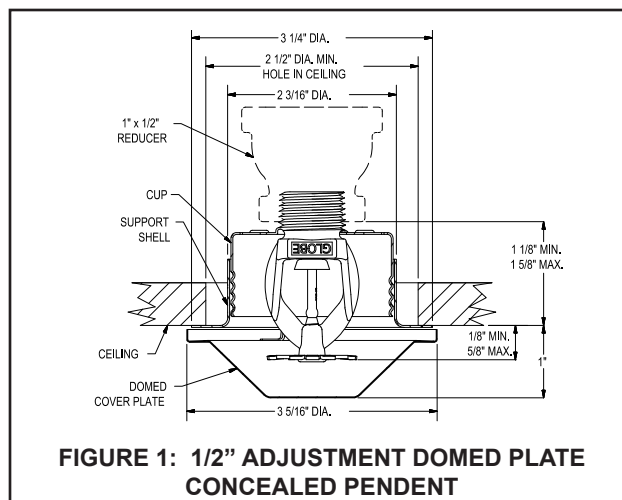
The minimum required discharge from each design area sprinkler shall be the greater of the following:

- (1) In accordance with minimum flow rates indicated in TABLE A.
- (2) In rooms or compartments greater than 800 ft² (74.3 m²), calculated based on delivering a minimum of 0.1 gpm/ft² (4.1 mm/min) over the coverage area of each sprinkler, calculated in accordance with the S x L Rules for density area sprinklers.
- (3) In rooms or compartments 800 ft² (74.3 m²) or less (Defined as "Small Rooms") calculated based on delivering a minimum of 0.1 gpm/ft² (4.1 mm/min) over the room or compartment using the area of the room divided by the number of sprinklers in the room. (7 psi minimum)

**TABLE A: NFPA 13, 13R, AND 13D
HYDRAULIC AND INSTALLATION DESIGN CRITERIA**

SIN	K-FACTOR <i>GPM/PSI^{1/2}</i> <i>(lpm/bar^{1/2})</i>	MAX.AREA OF COVERAGE <i>FEET (m)</i>	MINIMUM PRESSURE <i>PSI (bar)</i>	MINIMUM FLOW <i>GPM (L/min.)</i>	DEFLECTOR TO CEILING/ MOUNTING SURFACE DISTANCE <i>INCHES (mm)</i>	MINIMUM DISTANCE BETWEEN SPRINKLERS <i>FEET (m)</i>
GL4147	4.1 (59)	12 (3.7) x 12 (3.7)	7.2 (.50)	11 (42)	Smooth Ceilings 1/8 (3) to 5/8 (16) Max. Beamed Ceilings - Adjacent Allowed in ceiling. Beamed Ceilings - In Beam 4" Maximum Beam Depth 1/8 (3) to 5/8 (16) Max.	8 (2.4)
		14 (4.3) x 14 (4.3)	13.4 (.92)	15 (57)		
		16 (4.9) x 16 (4.9)	13.4 (.92)	15 (57)		
GL4947	4.9 (70.6)	12 (3.7) x 12 (3.7)	7.0 (.48)	13 (49)		
		14 (4.3) x 14 (4.3)	8.2 (.57)	14 (53)		
		16 (4.9) x 16 (4.9)	8.2 (.57)	14 (53)		
		18 (5.5) x 18 (5.5)	12.0 (.83)	17 (64)		
		20 (6.1) x 20 (6.1)	16.7 (1.15)	20 (76)		

NOTE: Deflector-to-Ceiling Distance Criteria reflects 2019 Edition of NFPA 13D and 13R.



INSTALLATION

NOTICE

Do not install any bulb-type sprinkler if the bulb is cracked or there is loss of liquid from the bulb. Sprinklers should be tightened enough to obtain a leak-tight joint when water pressure is applied and/or hydrostatic test is performed. Sprinklers should not be overtightened as this can result in distortion and subsequent leakage. It is recommended not to exceed 14 ft.-lb. (19.0 Nm) torque for 1/2 inch NPT sprinkler threads.

- Step 1.** Install pendent sprinklers in the pendent position, with the centerline of the sprinkler perpendicular to the mounting surface.
- Step 2.** Remove the Protective Cap.
- Step 3.** With pipe-thread sealant applied to the pipe threads, and using the Concealed Sprinkler Wrench P/N 325391 (FIGURE 2), install and tighten the Sprinkler/Concealed Cup Assembly into the fitting.
- Step 4.** Replace the Protective Cap by pushing it upwards until it bottoms out against the Support Cup. The Protective Cap helps prevent damage to the Deflector and Drop Pins during ceiling installation and/or during application of the finish coating of the ceiling.
NOTICE:
The system is considered Out of Service when the protective caps are in place.
- Step 5.** After the ceiling has been completed with the 2-1/2" (63.2mm) diameter hole, remove and discard the Protective Cap and verify that the Deflector moves up and down freely. If the sprinkler has been damaged or the deflector does not move up and down freely, replace the entire sprinkler assembly. Do not attempt to modify or repair.
- Step 6.** Push on the Cover Plate Assembly until its flange contacts the ceiling. Never attempt to screw on the Cover Plate Assembly such that it lifts a ceiling panel out of its normal position. If the Cover Plate Assembly cannot be engaged with the Mounting Cup or the Cover Plate Assembly cannot be engaged sufficiently to contact the ceiling, the Sprinkler Fitting must be repositioned.

CARE AND MAINTENANCE

Always obtain permission from the proper authorities to shut down the affected fire protection system and notify all personnel who may be affected by this action before closing a fire protection system main control valve for maintenance work on the system that it controls. Sprinklers should only be cleaned by means of gently dusting with a feather duster; otherwise, non-operation in the event of a fire or inadvertent operation may result.

When properly installed, there is a nominal 1/8" (3mm) air gap between the Cover Plate and the ceiling (Figure 1). This air gap is necessary for proper operation of the sprinkler by allowing heat flow from a fire to pass below and above the Cover Plate to help assure appropriate release of the Cover Plate in a fire situation. This annular "gap" must be maintained and should never be sealed or caulked.

Factory painted Cover Plates must not be repainted.

In accordance with NFPA 25, Sprinklers which are found to be leaking or exhibiting visible signs of corrosion must be replaced.

Automatic sprinklers must never be painted, plated, coated, or otherwise altered after leaving the factory.

Care must be exercised to avoid damage to the sprinklers—before, during, and after installation. Sprinklers damaged by dropping, striking, wrench slippage, or similar incidents, must be replaced.

The owner is responsible for the inspection, testing, and maintenance of their fire protection system and devices in compliance with this document, as well as with the applicable standards of the National Fire Protection Association (e.g. NFPA 25), in addition to the standards of any other authorities having jurisdiction.

Refer to Globe's Residential Installation Guide for further Care and Maintenance information.



TABLE B: ESCUTCHEONS

DOMED COVER PLATE SIZE	WHITE 135°F (57°C) P/N	CHROME 135°F (57°C) P/N	BLACK 135°F (57°C) P/N	CUSTOM 135°F (57°C) P/N
3-5/16" DIA.	326048	326046	326048-B	326049

ORDERING INFORMATION

Sprinkler/Cup Assembly

Specify:

Qty. • P/N GL414715501

Qty. • P/N GL494715501

Cover Plate Assembly Finish

Specify:

Qty. • P/N

135°F (57°C) Chrome 326046

135°F (57°C) White 326048

135°F (57°C) Black. 326048-B

135°F (57°C) Custom 326049

Custom Painted: Contact Customer Service

Escutcheons

Specify:

Qty. • P/N

See *Table B*

Sprinkler Wrench

Specify:

Qty. • P/N

Concealed Wrench. 325391

Protective Caps

Specify:

Qty. • P/N 327119

GLOBE® PRODUCT WARRANTY

Globe agrees to repair or replace any of its manufactured products found to be defective in material or workmanship for a period of one year from date of shipment.

For specific details of our warranty please refer to Price List Terms and Conditions of Sale (Our Price List).

