

## SERIES GL-RES RESIDENTIAL PENDENT AND RECESSED PENDENT K-FACTOR: 3.0, 4.1, 4.9, 5.6

### GENERAL DESCRIPTION

The series GL-RES pendent sprinklers are decorative fast response glass bulb sprinklers 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. They utilize a 3mm frangible glass bulb as its heat sensing operating element. The recessed version of each of these Residential Sprinklers is intended for use in areas with finished ceilings. It employs a two-piece Recessed Escutcheon. The Recessed Escutcheon provides a total adjustment of 1/2 inch (12.7mm) from the flush ceiling position or  $\pm 1/4$  inch (6.4mm) of recessed adjustment. The adjustment provided by the Recessed Escutcheon reduces the accuracy to which the pipe drops to the sprinklers must be cut.

This sprinkler may be installed within dwelling occupancies as allowed by NFPA 13, 13D, 13R and any other related documents as appropriate.

The GL3010 is typically utilized when maximum coverages are not needed, thereby reducing flow demands. The GL5610 is typically the sprinkler of choice when utilizing Residential Sprinklers within an NFPA 13 Occupancy. The larger K-factor can be advantageous when needed to conform to the NFPA 13 hydraulic Special Design Approach for Residential Sprinklers.

### OPERATION

Upon exposure to heat such as from a fire, 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 seat assembly, and discharge of water from the sprinkler.

#### NOTE:

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



SERIES GL-RES  
GL3010, GL4110, GL4910, GL5610

### TECHNICAL DATA

#### Approvals

- See TABLE A

#### Maximum Working Pressure

- 175 psi (12 bar)

#### Temperature Rating

- See TABLE A

#### K-Factor

- GL3010 K3.0 gpm/psi<sup>1/2</sup> (43.2 lpm/bar<sup>1/2</sup>)
- GL4110 K4.1 gpm/psi<sup>1/2</sup> (59.0 lpm/bar<sup>1/2</sup>)
- GL4910 K4.9 gpm/psi<sup>1/2</sup> (70.6 lpm/bar<sup>1/2</sup>)
- GL5610 K5.6 gpm/psi<sup>1/2</sup> (80.6 lpm/bar<sup>1/2</sup>)

#### Thread Size

- 1/2" NPT (15 mm)

#### Length

- 2-1/2" (6.3 cm)

#### Materials of Construction

- Frame - bronze • Deflector - brass • Screw - brass
- Lodgement Wire (GL5610 only) - stainless steel • Bulb seat - copper
- Spring - nickel alloy • Seal - teflon
- Bulb - glass with alcohol based solution, 3mm
- Escutcheon Assembly - carbon steel

### FINISHES AND ACCESSORIES

#### Finishes

- Factory Bronze • Chrome • White Polyester
- Black Polyester - *special order*

#### Escutcheons

- Brass • Chrome • White Polyester • Black Polyester

#### Wrenches

- Standard • Recess • 1/2" NPT

# DESIGN CRITERIA

The Globe Residential Pendent Sprinkler Series GL-RES 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 ft<sup>2</sup> (74.3 m<sup>2</sup>), calculated based on delivering a minimum of 0.1 gpm/ft<sup>2</sup> (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 ft<sup>2</sup> (74.3 m<sup>2</sup>) or less (Defined as “Small Rooms”) calculated based on delivering a minimum of 0.1 gpm/ft<sup>2</sup> (4.1 mm/min) over the room or compartment using the area of the room divided by the number of sprinklers in the room. (7psi minimum)

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

SIN	K FACTOR GPM/PSI <sup>1/2</sup> (lpm/bar <sup>1/2</sup> )	TEMPERATURE			MAX.AREA OF COVERAGE FEET (m)	MINIMUM PRESSURE PSI (bar)	MINIMUM FLOW GPM (L/min.)	DEFLECTOR TO CEILING/ MOUNTING SURFACE DISTANCE INCHES (mm)	MINIMUM DISTANCE BETWEEN SPRINKLERS FEET (m)
		155°F (68°C)	175°F (79°C)	200°F (93°C)					
GL3010	3.0 (43.2)	cULus EU <sup>(1)</sup>	cULus	cULus	12 (3.6) x 12 (3.6)	7.1 (.49)	8.0 (30.3)	Smooth Ceilings Recessed 1-1/8 (29) to 1-5/8 (41)  Smooth Ceilings Exposed Max. 4 (101.6)  Beamed Ceilings Adjacent per NFPA 13, 13D, or 13R as appropriate  Beamed Ceilings In Beam 14" Max. Beam Depth 1-1/8 (29) to 1-5/8 (41)	8 (2.4)
		cULus EU <sup>(1)</sup>	cULus	cULus	14 (4.3) x 14 (4.3)	11.1 (.765)	10.0 (37.8)		
GL4110	4.1 (59)	cULus EU <sup>(1)</sup>	cULus EU <sup>(1)</sup>	NA	12 (3.6) x 12 (3.6)	7.2 (.5)	11.0 (42)		
		cULus EU <sup>(1)</sup>	NA	NA	14 (4.3) x 14 (4.3)	8.6 (.59)	12.0 (45)		
		cULus EU <sup>(1)</sup>	cULus	NA	16 (4.9) x 16 (4.9)	11.7 (.81)	14.0 (53)		
GL4910	4.9 (70.6)	cULus EU <sup>(1)</sup>	cULus EU <sup>(1)</sup>	NA	12 (3.6) x 12 (3.6)	7.0 (.48)	13.0 (49)		
		cULus EU <sup>(1)</sup>	cULus EU <sup>(1)</sup>	NA	14 (4.3) x 14 (4.3)	8.2 (.57)	14.0 (53)		
		cULus EU <sup>(1)</sup>	cULus EU <sup>(1)</sup>	NA	16 (4.9) x 16 (4.9)	8.2 (.57)	14.0 (53)		
		cULus EU <sup>(1)</sup>	cULus EU <sup>(1)</sup>	NA	18 (5.5) x 18 (5.5)	12.0 (.83)	17.0 (64)		
		cULus EU <sup>(1)</sup>	cULus EU <sup>(1)</sup>	NA	20 (6.1) x 20 (6.1)	16.7 (1.15)	20.0 (76)		
GL5610	5.6 (80.6)	cULus	NA	NA	12 (3.6) x 12 (3.6)	7.2 (.5)	15.0 (57)		
		cULus	NA	NA	16 (4.9) x 16 (4.9)	11.5 (.79)	19.0 (72)		
		cULus	NA	NA	18 (5.5) x 18 (5.5)	14.1 (.97)	21.0 (79)		
		cULus	NA	NA	20 (6.1) x 20 (6.1)	18.4 (1.27)	24.0 (91)		

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

<sup>(1)</sup>LISTED BY UNDERWRITERS LABORATORIES, INC. FOR USE IN THE U.S., CANADA, AND EUROPEAN UNION.

# 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.

- Step1.** Sprinklers must be properly oriented.
- Step2.** With pipe thread sealant applied to the pipe threads, hand tighten the sprinkler into the sprinkler fitting. *Note: Do not grasp the sprinkler by the deflector.*
- Step3.** Wrench-tighten the sprinkler using only the appropriate wrench. Wrenches are only to be applied to the sprinkler wrench flats or wrench hex as applicable. *Note: Do not apply wrench to frame arms.*

## CARE AND MAINTENANCE

Prior to installation, it is important to read and follow the "Sprinkler Caution" sheet (GFS-840) included within each box of sprinklers. This sheet is available on Globe's web site ([www.globesprinkler.com](http://www.globesprinkler.com)).

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.

Store sprinklers in a cool, dry place. Exposure to extreme heat will damage the thermal sensing element, possibly resulting in premature activation. Avoid direct sunlight.

Replace any sprinkler that shows any corrosion, damage, or loss of liquid from the glass bulb.

Do not attempt to paint or alter the sprinkler's coating in any manner after leaving the manufacturing plant.

Do not attach wiring, ropes, decorations or fixtures to a sprinkler.

Absence of an escutcheon, used to cover a ceiling hole, may delay sprinkler operation in a fire situation.

It is the owner's responsibility for inspection, testing and maintenance of the fire sprinkler system with all components and devices in accordance with the National Fire Protection Association Pamphlet 25 as well as any other requirements as set forth by the local Authority Having Jurisdiction (AHJ).



FIGURE 1: STANDARD WRENCH  
P/N 325390



FIGURE 2: RECESSED WRENCH  
P/N 325391

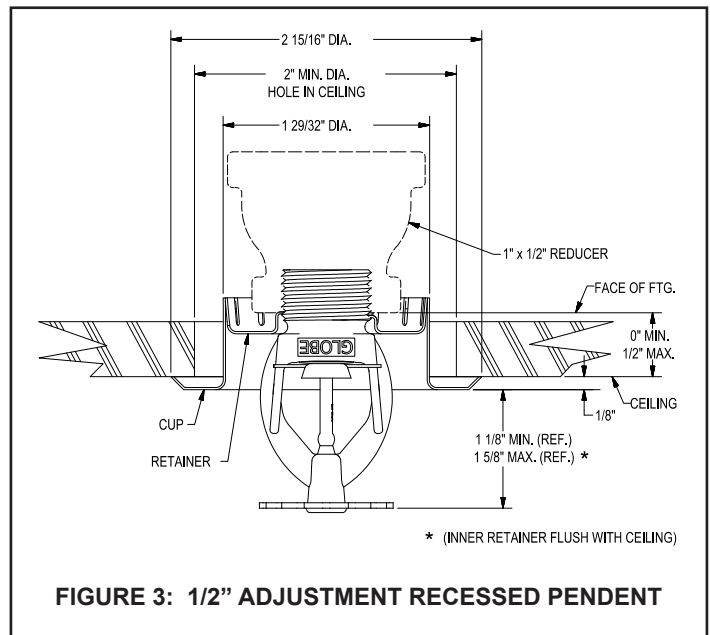


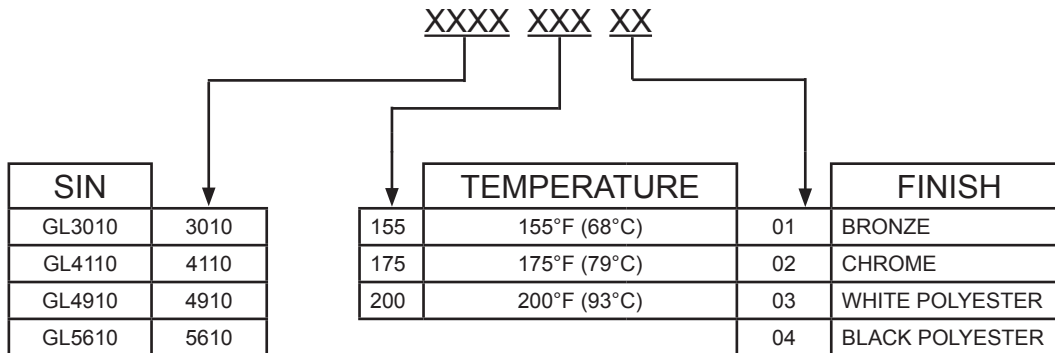
FIGURE 3: 1/2" ADJUSTMENT RECESSED PENDENT



# ORDERING INFORMATION

## TABLE B: PART NUMBER SELECTION

PART NUMBER  
SIN + TEMPERATURE + FINISH



**Note: All combinations may not be available.**  
Refer to TABLE A for available listed combinations

## TABLE C: ESCUTCHEONS

1/2" (13mm) ADJUSTABLE RECESSED ESCUTCHEON		
FINISH	FRICTION FIT 1/2" NPT	THREADED 1/2" NPT
Chrome	332071	329301
White Polyester	332073-W	329303-W
Brass	332072	NA
Black Polyester	332073-B	NA

### SPECIFY:

- SPRINKLER
  - Quantity • SIN • Temperature Rating • Finish
  - Part Number (See TABLE B)
- ESCUTCHEON
  - Quantity • Finish • Part Number (See TABLE C)
- WRENCH
  - Quantity • Part Number
  - 1/2" NPT Standard . . . . . 325390
  - 1/2" NPT Recess . . . . . 325391
- PROTECTIVE CAPS
  - Quantity • Part Number
  - Cap . . . . . 327109-Cap

### 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).