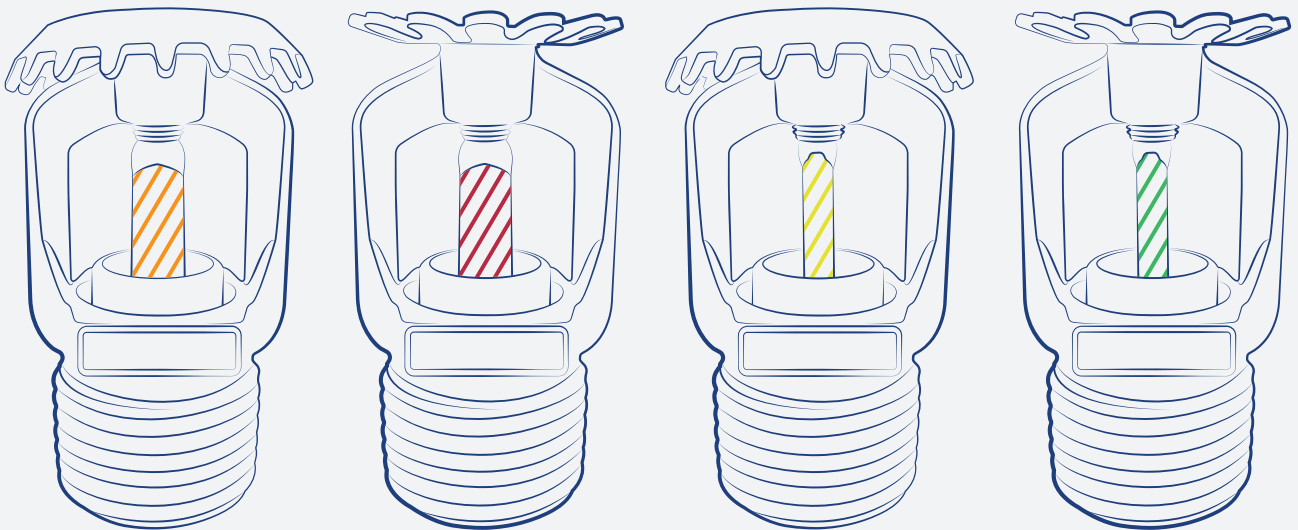


# GLASS BULB SPRINKLERS

**Flameguard**

**TECHNICAL DATA**  
for use by Architects & Engineers

STANDARD AND QUICK RESPONSE, UPRIGHT AND PENDENT GLASS BULB SPRINKLERS







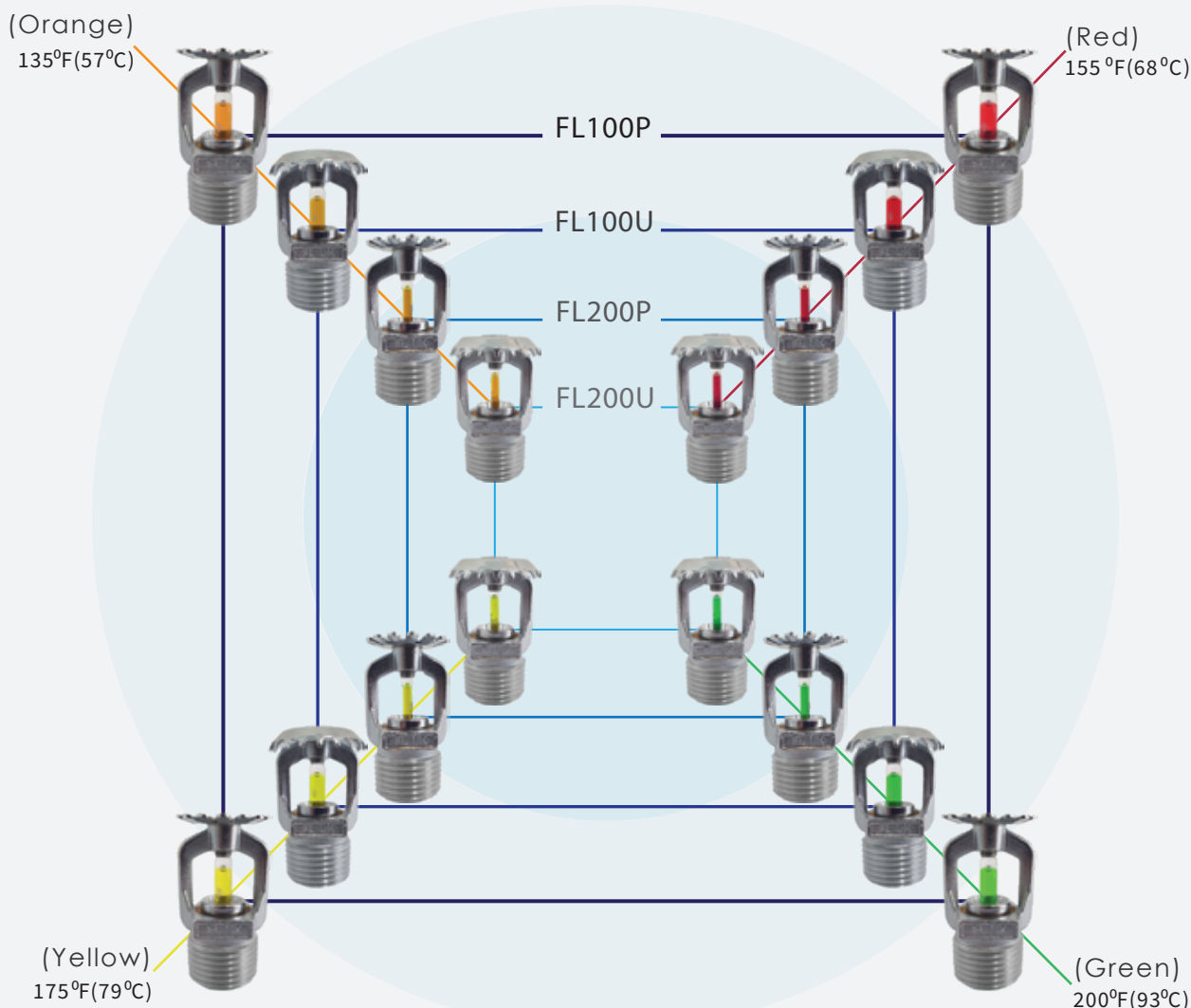
## Product Description

FLAMEGUARD automatic sprinklers FL100U, FL100P, FL200U and FL200P model series incorporate decorative glass bulbs that operate at specific temperatures. These sprinklers are designed to discharge water in an umbrella-shaped spray pattern for use in various commercial application. FL100U, FL100P, FL200U and FL200P model series are available in upright and pendent, standard and quick response, a variety of temperature ratings, nickel chrome and natural finishes to meet a range of design requirements.

## Variations

Standard Response FL100U & FL100P  
Quick Response FL200U & FL200P

	135 °F(57°C)		175 °F(79°C)
	155 °F(68°C)		200 °F(93°C)





## Technical Details

Specifications	
Min. Operating Pressure	7 PSI(0.5bar)
Max. Working Pressure	175 PSI(12.1bar)
Hydrostatic Test Pressure	500 PSI(34.5bar)
Standard Orifice Size	1/2 inch (15 mm)
Thread Size <sup>1</sup>	1/2" NPT(15 mm BSP )
Discharge Coefficient	5.6 GPM/PSI <sup>1/2</sup> (80.7 LPM/bar <sup>1/2</sup> )
Max. Ambient Temperature <sup>2</sup>	135°F (57°C), 155°F (68°C): 100°F (38°C) 175°F (79°C), 200°F (93°C): 150°F (65°C)
Finish Options	Natural Brass, Chrome Plated, Nickel - Chrome Plated
Glass Bulb Size	Standard Response Ø 0.197 inch (5mm)
	Quick Response Ø 0.118 inch (3mm)
Listings and Approvals <sup>3</sup>	UL(United States)/ULC(Canada) <sup>4</sup>

### Footnotes:

- 1) The pipe thread connections accord with ISO7/1.
- 2) Based on NFPA 13. Other limits may apply depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
- 3) This table shows the listings and approvals available at the time of printing. Check with the manufacturer for any additional approvals.
- 4) UL and ULC Listed for both Light-Hazard and Ordinary-Hazard occupancies.

Material Specification	
Deflector	Copper UNS - C11000
Bulb	Glass
Frame	Brass Forging UNS - C48600
Valve Cap	Brass UNS - C48600
Setting Screw	Stainless Steel
Spring Seat	Nickel Beryllium
Seal Seat	Teflon Tape
Glass Bulb	Glass with Glycerin Solution JOB® G5 for Upright/ Pendent JOB® F3 for Upright/ Pendent
White Color Plastic	Standard Escutcheon
Wrench	Standard Sprinkler wrench Type F1

## Installation

**WARNING:** The Flameguard glass bulb sprinkler is manufactured and tested to meet the rigid requirements of approving agencies. The glass bulb sprinkler is designed to be installed in accordance with recognized installation standards. Deviation from the standards or any alteration to the Flameguard glass bulb sprinkler after it leaves the factory including, but not limited to: painting, plating, coating, or modification, may render the device inoperative and would automatically nullify the approval and any guarantee made by The Flameguard Corporation.

Fire Sprinkler Systems should only be designed and installed by those component and completely familiar with automatic Sprinkler system design, installation procedures, and techniques.

Several criteria may apply to the installation and usage of each sprinkler.

Consequently, it is recommended that the sprinkler system designer review and develop a working understanding of the complete list of criteria prior to initiating the design of the sprinkler system.

Questions concerning sprinkler installation and usage criteria, which are not coverage by the following instructions, should be submitted to contact company. Include sketches and technical details as appropriate.

In some instances, the requirements of this document may concern specifications which are more stringent and which take precedence over those specified in NFPA 13, NFPA 13D, NFPA 13R, or by the authority having jurisdiction.

The spray from the sprinkler is distributed radially outward from the sprinkler deflector. Consequently, the sprinklers must be located such that there will not be any blind spaces shielded from spray by partitions, room dividers, overhangs or other parts of the dwelling structure.

The number of sprinklers within each compartment (as defined by NFPA 13, 13D, or 13R) must be kept as few as possible.

Do NOT use more sprinklers than necessary to cover a particular space.

Use only the escutcheon provided with the Model FL100U, FL100P, FL200U and FL200P.

The sprinkler must be secured in position by firmly fastening the sprinkler system piping to the structure. If the sprinkler is not properly secured in position, reaction forces resulting from sprinkler operation could alter its orientation and its water distribution pattern.

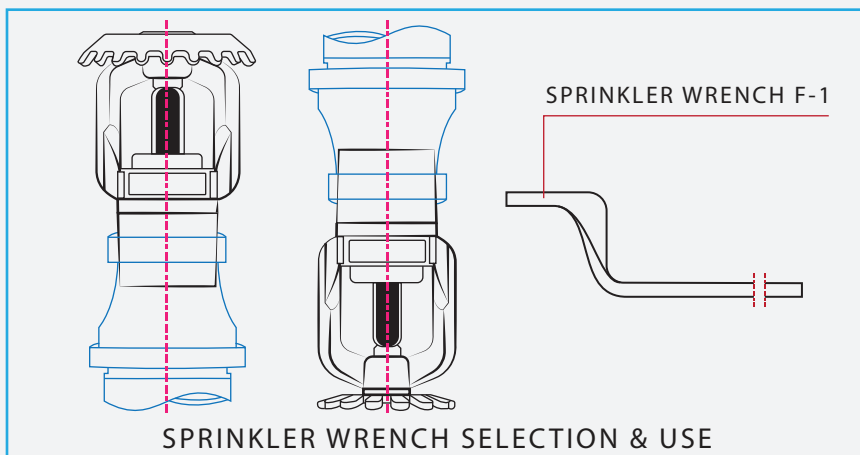
The sprinkler escutcheon cannot be used to hold the sprinkler in position.

1) The Flameguard Glass Bulb Sprinkler is to be installed in accordance with the latest edition of Flameguard technical data, and the applicable installation standards such as the National Fire Protection Association 13(NFPA 13).

2) The Flameguard Glass Bulb Sprinkler must be installed after the piping is in place to prevent mechanical damage. Before installation, be sure the sprinkler has the appropriate temperature rating. Keep sprinkler with glass bulbs contained within the protective shields during installation and testing, and any time the sprinkler is shipped or handled. Apply a small amount of pipe-joint compound to the male threads only, taking care not to allow a build-up of compound inside the orifice.

**NOTE: Sprinklers with glass bulbs must be contained within the protective shields when applying pipe-joint compound or tape. Install the sprinklers on the piping using the special wrench only, while taking care not to damage the operating parts of the sprinkler.**

**Figure 1**



Push on the Sprinkler Wrench, while it is being turned, to ensure that the Wrench recess stays fully engaged with the sprinkler wrench flats.

Carefully remove the Sprinkler Wrench by disengaging it from the sprinkler wrench flats, and then lowering it down over the sprinkler deflector.

**3)** Glass bulb sprinklers must be handled with care. Never install glass bulb sprinklers that have been dropped or damaged in any way. Never install any glass bulb sprinkler if the bulb is cracked or if there is a loss of liquid from the bulb.

**4)** A leak tight 1/2" pipe thread sprinkler joint should be obtained with a torque of 7 to 14 ft.lbs.(9.5 to 19.0 Nm). A maximum of 21 ft.lbs. (28.5 Nm) of torque is to be used to install the sprinkler. Higher levels of torque may distort the sprinkler inlet with consequent leakage or impairment of the sprinkler.

**5)** After installation, the entire sprinkler system must be tested. The test must be conducted to comply with the installation standards.

Make sure the sprinkler has been properly tightened. If a thread leak occurs, normally the sprinkler must be removed, new pipe-joint compound or tape applied, and then reinstalled. This is due to the fact that when the joint seal is damaged, the sealing compound or tape is washed out of the joint.

## Operation

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, releasing the pip cap and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

## Inspection, Test and Maintenance

**NOTICE: The owner is responsible for maintaining the fire-protection system and devices in proper operating condition. For minimum maintenance and inspection requirements, refer to NFPA 25 standard that describes care and maintenance of sprinkler systems. In addition, the Authority Having Jurisdiction may have additional maintenance, testing, and inspection requirements that must be followed.**

**1)** Glass bulb sprinkler must be inspected on a regular basis for corrosion, mechanical damage, obstructions, paint, etc. The frequency of inspections may vary due to corrosive atmospheres, water supplies, and activity around the device. Adequate heat must be maintained around the glass bulb sprinkler and release piping system.

**2)** Glass bulb sprinkler that have been field painted, caulked, or mechanically damaged must be replaced immediately. Any glass bulb sprinkler showing signs of corrosion shall be tested and/or replaced immediately as required. Glass bulb sprinkler that are 20 years old shall be tested and/or replaced immediately as required. Consult accepted installation standards (e.g., NFPA 25), approving agencies, and Authorities Having Jurisdiction, as different minimum testing periods may be required. Glass bulb sprinkler that have operated cannot be reassembled or re-used, but must be replaced. When replacing glass bulb sprinkler, always use new units.

**3)** Nothing should be hung from, attached to, or otherwise obstruct the travel of heat to the glass bulb sprinkler from any point within its listed area of coverage. Immediately remove all obstructions

or, if necessary, install additional glass bulb sprinkler.

**4)** When replacing existing glass bulb sprinkler, the system must be removed from service. Refer to the appropriate system description and/or valve instructions. Prior to removing the system from service, notify all Authorities Having Jurisdiction. Consideration should be given to employment of a fire patrol in the affected area.

**A.** Remove the system from service, relieving all pressure (air, nitrogen, or water) on the sprinkler line piping.

**B.** Drain water from hydraulic sprinkler lines and remove any moisture present in pneumatic sprinkler lines.

**C.** Using the special wrench, remove the old glass bulb sprinkler, and install the new unit. Care must be taken to ensure that the replacement unit has the proper temperature rating. A fully stocked sprinkler equipment cabinet should be provided for this purpose.

**D.** Place the system back in service and secure all valves. Check for and repair all leaks.

**5)** Sprinkler systems that have been subject to fire must be returned to service as soon as possible. The entire system must be inspected for damage and repaired or replaced as necessary. Sprinklers that have been exposed to corrosive products of combustion or high ambient temperatures, but have not operated, should be replaced. Refer to the Authority Having Jurisdiction for minimum replacement requirements.

**6)** Absence of an escutcheon, which is used to cover a clearance hole, may delay the time to sprinkler operation in a fire situation.

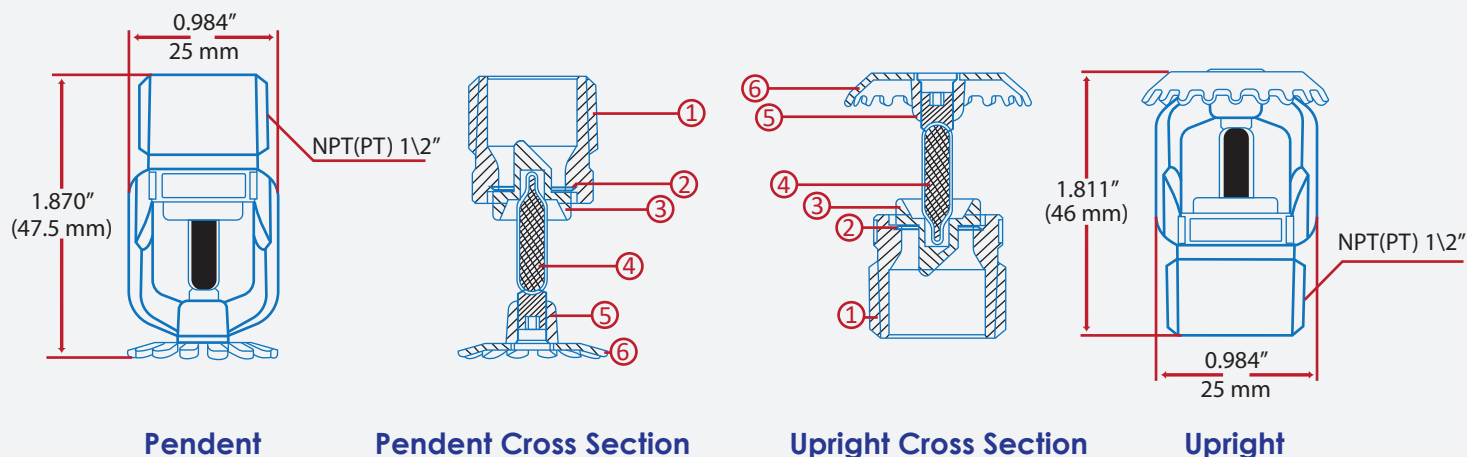
**7)** Before closing a fire protection system control valve for maintenance work on the fire protection system, which it controls, permission to shut down the affected fire protection system must be obtained from the proper authorities and all personnel who may be affected by this action must be notified.

**8)** It is recommended that automatic sprinkler systems be inspected quarterly by a qualified Inspection Service.

**TABLE 1**

AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES			
Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature	Bulb Color
Ordinary	135 °F (57 °C)	100 °F (38 °C)	Orange
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
<b>Cover Plate Finishes:</b> Polished Chrome, Painted White, Painted Ivory, or Painted Black			
<b>Footnotes</b>			
1- The sprinkler temperature rating is stamped on the deflector.			

**Figure 2**



Component No.	Component Name
①	Frame
②	Spring Seat
③	Valve Cap
④	Bulb
⑤	Setting Screw
⑥	Deflector

Upright (FL100U, FL200U) & Pendent (FL100P, FL200P) Sprinkler Dimensions  
K-Factor: 5.6 1/2" NPT

**TABLE 2**

Sprinkler I.D. No. & Model

I.D. No. & Model	Style	Response	Thread Size	Element	Nominal K-Factor		Max. Working Pressure		Approved Temperature Ratings/Bulb Color
					U.S.	METRIC	PSI	BAR	
FL100U	Upright	Standard	NPT 1/2"	Bulb	5.6 (U.S.)	80 (metric)	175 psi	12.1 bar	135 °F(57 °C)/ Orange, 155 °F(68 °C)/ Red, 175 °F(79 °C)/Yellow, 200 °F(93 °C)/Green
FL100P	Pendent	Standard	NPT 1/2"	Bulb	5.6 (U.S.)	80 (metric)	175 psi	12.1 bar	135 °F(57 °C)/ Orange, 155 °F(68 °C)/ Red, 175 °F(79 °C)/Yellow, 200 °F(93 °C)/Green
FL200U	Upright	Quick	NPT 1/2"	Bulb	5.6 (U.S.)	80 (metric)	175 psi	12.1 bar	135 °F(57 °C)/ Orange, 155 °F(68 °C)/ Red, 175 °F(79 °C)/Yellow, 200 °F(93 °C)/Green
FL200P	Pendent	Quick	NPT 1/2"	Bulb	5.6 (U.S.)	80 (metric)	175 psi	12.1 bar	135 °F(57 °C)/ Orange, 155 °F(68 °C)/ Red, 175 °F(79 °C)/Yellow, 200 °F(93 °C)/Green

## TABLE 3

Series (FL100P & FL200P) Pendant and (FL100U & FL200U) Upright Part Number Selection

FL X00X-X-XXX



1	NATURAL
2	CHROME
3	NICKEL CHROME



135	135 °F(57 °C)
155	155 °F(68 °C)
175	175 °F(79 °C)
200	200 °F(93 °C)

Please Refer to Table 2 for I.D. No. & Model.

Installation Wrench Type F-1

### ACCESSORIES

Installation Wrench Type F-1

## Figure 3



Standard Sprinkler Wrench Type F1

### AVAILABILITY

Flameguard products are available through a network of domestic and international distributors. See the Flameguard Web site for your closest distributor or contact The Flameguard.

### GUARANTEE

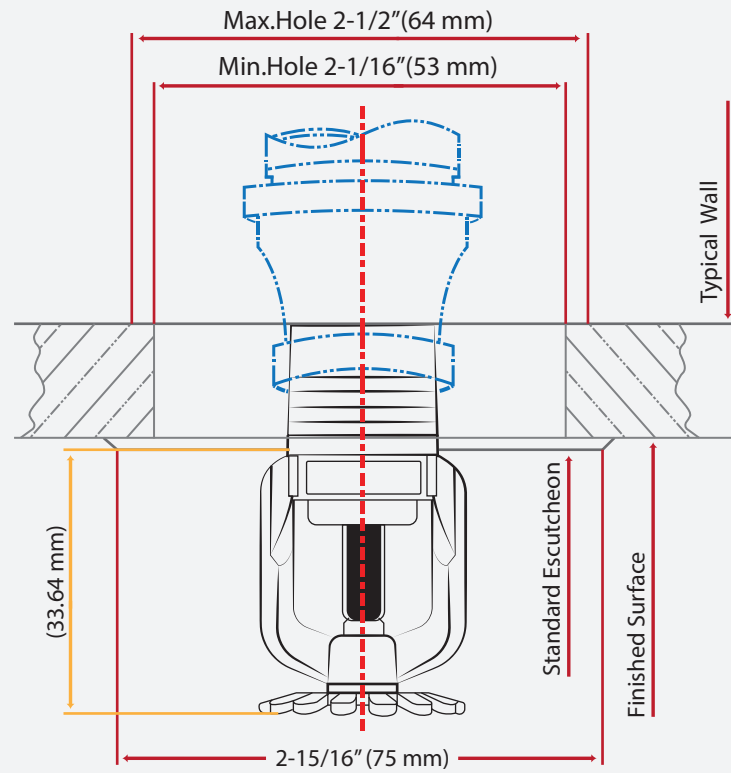
For details of warranty, refer to Flameguard's current price list schedule or contact Flameguard directly.

### Ordering Procedure

Contact your local distributor availability. When placing an order, indicate the full product name and part Number (P/N)

**Flameguard Systems Co. , Ltd.**



**Figure 4****Pendent Sprinkler Installed with a Standard Escutcheon**



## TECHNICAL DATA

for use by Architects & Engineers

Flameguard Systems Co. , Ltd.

Tel: +44 (0)20 3900 0552 - 4

Email: [Sales@flameguarduk.com](mailto:Sales@flameguarduk.com)

Fax: +44 (0)20 3900 0556

Website: [www.flameguarduk.com](http://www.flameguarduk.com)