



## Model F1FR QREC Series K8.0 (115 metric) Quick Response Extended Coverage Sprinklers

**A complete line of UL Listed and FM Approved quick response extended coverage sprinklers for light hazard applications.**

**Horizontal Sidewall Sprinklers are approved for installation 4" - 12" (102mm - 305mm) below the ceiling.**

### Model F1FR QREC Sprinkler Types

- Extended Coverage Pendant
- Extended Coverage Horizontal Sidewall
  - EC-9 Deflector

### Model F1FR QREC Recessed Sprinkler Types

- Recessed Extended Coverage Pendant
- Recessed Extended Coverage Horizontal Sidewall:
  - EC-9 Deflector

For Model F1FR QREC ½" K 5.6 (80) Sprinkler Types refer to Bulletin 028.

### Approval Organizations

1. Underwriters' Laboratories, Inc. (UL)
2. Underwriters Laboratories of Canada (ULC)
3. Factory Mutual Approvals (FM)
4. NYC MEA 258-93-E

### UL Listing Category

Sprinklers, Automatic & Open  
Quick Response Extended Coverage Sprinkler

### UL Guide Number

VNIV

**Note:** Consult appropriate FM Installation Standards regarding limitations of room size, ceiling height and minimum wall fire resistance rating.

### Product Description

Reliable Models F1FR QREC and F1FR QREC Recessed Sprinklers are quick response sprinklers which combine the durability for a standard sprinkler with the attractive low profile of a decorative sprinkler.

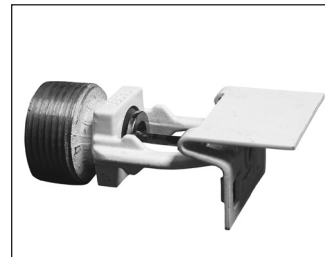
The Models F1FR QREC and F1FR QREC Recessed Automatic Sprinklers utilize a 3.0mm frangible glass bulb. These sprinklers have demonstrated response times in laboratory tests which are five times faster than standard response sprinklers. This quick response enables these sprinklers to apply water to a fire faster than standard response sprinklers of the same temperature rating.



Extended Coverage  
Pendant



Recessed Extended  
Coverage Pendant



Extended Coverage  
Horizontal Sidewall EC-9



Recessed Extended  
Coverage Horizontal Sidewall  
EC-9

The glass bulb consists of an accurately controlled amount of special fluid hermetically sealed inside a precisely manufactured glass capsule. This glass bulb is specially constructed to provide fast thermal response. The balance of parts are made of brass, copper and beryllium nickel.

The temperature rating of the sprinkler is identified by the color of the glass bulb.

### Application

Quick response sprinklers are used in fixed fire protection systems: Wet, Dry, Deluge or Preaction. Care must be exercised that the orifice size, temperature rating, deflector style and sprinkler type are in accordance with the latest published standards of the National Fire Protection Association or the approving authority having jurisdiction. Quick response sprinklers are intended for installation as specified in NFPA 13.

Model F1FR QREC Pendent Sprinkler

Deflector: EC

Installation Wrench: Model W2 Sprinkler Wrench

Approval Type: Quick Response Extended Coverage-Light Hazard Occupancy

Installation Data:

| Nominal Orifice | Thread Size     | Nominal K- Factor |        | Sprinkler Length | Temperature Rating           | Approval Organizations | Sprinkler Identification Number (SIN) |
|-----------------|-----------------|-------------------|--------|------------------|------------------------------|------------------------|---------------------------------------|
|                 |                 | US                | Metric |                  |                              |                        |                                       |
| 17/32" (20mm)   | 3/4" NPT (R3/4) | 8.0               | 115    | 2.2" (56.1mm)    | 135°F (57°C)<br>155°F (68°C) | 1,2,3,4                | R4842                                 |



Model F1FR QREC Recessed Pendent Sprinkler

Deflector: EC

Installation Wrench: Model W4 Sprinkler Wrench

Approval Type: Quick Response Extended Coverage-Light Hazard Occupancy

Installation Data:

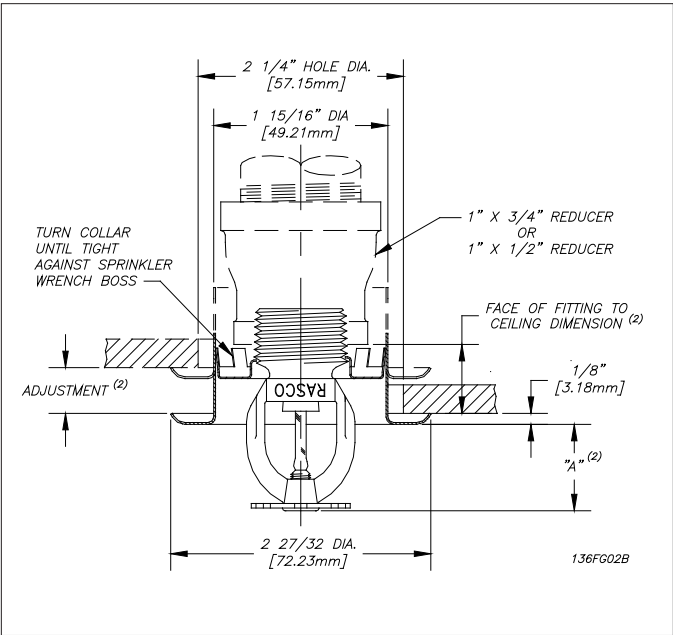
| Nominal Orifice | Thread Size     | Nominal K-Factor |        | Sprinkler Length | Temperature Rating           | Approval <sup>(1)</sup> Organizations | Sprinkler Identification Number (SIN) |
|-----------------|-----------------|------------------|--------|------------------|------------------------------|---------------------------------------|---------------------------------------|
|                 |                 | US               | Metric |                  |                              |                                       |                                       |
| 17/32" (20mm)   | 3/4" NPT (R3/4) | 8.0              | 115    | 2.2" (56.1mm)    | 135°F (57°C)<br>155°F (68°C) | 1, 2, 3, 4                            | R4842                                 |

<sup>(1)</sup> Refer to escutcheon data table for dimensions.

Model F1FR QREC Pendent and Recessed Pendent

| Required Minimum Flow/Pressure |                       |  |
|--------------------------------|-----------------------|--|
| Flow Rate<br>gpm (L/min)       | Pressure<br>psi (bar) | Maximum Coverage Area<br>Width x Length<br>ft. x ft. (m x m) |
| 26 (98.4)                      | 10.6 (0,7)            | 16 x 16 (4.9 x 4.9)  |
| 33 (125.0)                     | 17.0 (1,2)            | 18 x 18 (5.5 x 5.5)  |
| 40 (151.4)                     | 25.0 (1,7)            | 20 x 20 (6.0 x 6.0) <sup>(2)</sup>                           |

<sup>(2)</sup> UL/ULC Listed for both Pendent and Recessed Pendent at 135°F (57°C) only.



## Model F1FR QREC Horizontal Sidewall Sprinkler

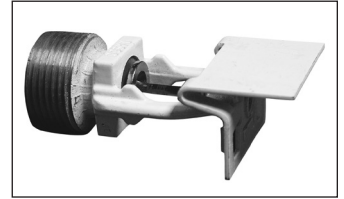
**Deflector:** EC-9

**Installation Wrench:** Model W2 Sprinkler Wrench

**Approval Type:** Quick Response Extended Coverage-Light Hazard Occupancy

### Installation Data

| Nominal Orifice          | Thread Size                            | Nominal K-Factor |        | Sprinkler Length | Approval <sup>(2)</sup> Organizations | Temperature Rating                           | Sprinkler Identification Number (SIN) |
|--------------------------|--|------------------|--------|------------------|---------------------------------------|--|---------------------------------------|
|                          |  | US               | Metric |                  |                                       |  |                                       |
| $\frac{17}{32}$ " (20mm) | $\frac{3}{4}$ " NPT (R $\frac{3}{4}$ ) | 8.0              | 115    | 2.85 (72.4mm)    | 1,2,3,4                               | 135°F (57°C)<br>155°F (68°C)<br>175°F (79°C) | R4862                                 |



## Model F1FR QREC Recessed Horizontal Sidewall Sprinkler

**Deflector:** EC-9

**Installation Wrench:** Model W4 Sprinkler Wrench

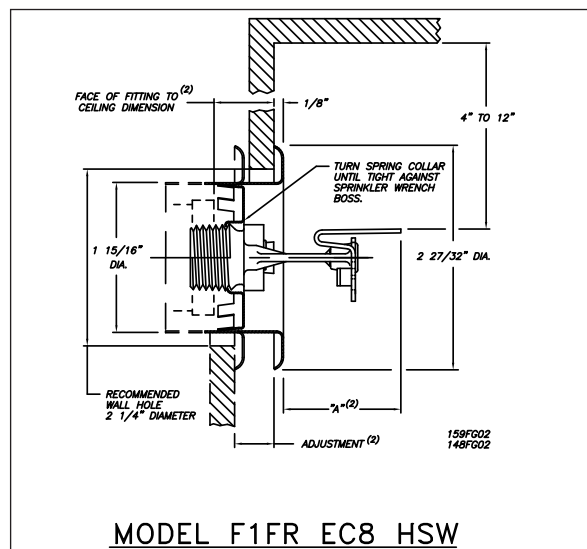
**Approval Type:** Quick Response Extended Coverage-Light Hazard Occupancy

## Model F1FR QREC Horizontal Sidewall and Recessed Horizontal Sidewall

| Required Minimum Flow/Pressure |            |                       |            |  |                                   |                                       |            |   |
|--------------------------------|------------|-----------------------|------------|--|-----------------------------------|---------------------------------------|------------|---|
| Flow Rate<br>gpm (L/min)       |            | Pressure<br>psi (bar) |            | Maximum Coverage Area<br>Width x Length<br>ft. x ft. (m x m) | Temperature Rating <sup>(1)</sup> | Approval <sup>(2)</sup> Organizations |            | Deflector to Ceiling<br>Dimension<br>Min. - Max.<br>Inches (mm) |
| UL                             | FM         | UL                    | FM         |  |                                   | F1                                    | F2         |   |
| 26 (98.4)                      | -          | 10.6 (0,7)            | -          | 16 x 16 (4.9 x 4.9)  | 135°F (57°C)                      | 1, 2, 4                               | 1, 2, 3, 4 | 6 - 12 (153 - 305)  |
| 29 (109.8)                     | 32 (121.1) | 13.1 (0,9)            | 16.0 (1,1) | 16 x 16 (4.9 x 4.9)  | 135°F (57°C)                      |                                       |            | 4 - 12 (102 - 305)  |
| 29 (109.8)                     | 36 (136.3) | 13.1 (0,9)            | 20.2 (1,4) | 16 x 18 (4.9 x 5.5)  | 155°F (68°C)                      |                                       |            | 4 - 12 (102 - 305)  |
| 32 (121.1)                     | 40 (151.4) | 16.0 (1,1)            | 25.0 (1,7) | 16 x 20 (4.9 x 6.0)  | 155°F (68°C)                      |                                       |            | 4 - 12 (102 - 305)  |
| 36 (136.3)                     | 44 (166.6) | 20.2 (1,4)            | 30.2 (2,1) | 16 x 22 (4.9 x 6.7)  | 175°F (79°C)                      |                                       |            | 4 - 12 (102 - 305)  |
| 39 (147.6)                     | 48 (181.7) | 23.8 (1,6)            | 36.0 (2,5) | 16 x 24 (4.9 x 7.3)  | 175°F (79°C)                      | 1, 2                                  | 1, 2       | 4 - 12 (102 - 305)  |
| 33 (124.9)                     | -          | 17.0 (1,2)            | -          | 18 x 18 (5.5 x 5.5)  | 135°F (57°C)                      |                                       |            | 4 - 12 (102 - 305)  |
| 39 (147.6)                     | -          | 23.8 (1,6)            | -          | 14 x 26 (4.3 x 7.9)  | 135°F (57°C)                      |                                       |            | 4 - 6 (102 - 153)   |
| 40 (151.4)                     | -          | 25.0 (1,7)            | -          | 18 x 22 (5.5 x 6.7)  | 135°F (57°C)                      |                                       |            | 4 - 12 (102 - 305)  |
| 46 (174.1)                     | -          | 33.1 (2,25)           | -          | 14 x 26 (4.3 x 7.9)  | 135°F (57°C)                      |                                       |            | 6 - 12 (153 - 305)  |
| 33 (124.9)                     | -          | 17.0 (1,2)            | -          | 18 x 18 (5.5 x 5.5)  | 155°F (68°C)                      |                                       |            | 4 - 12 (102 - 305)  |
| 40 (151.4)                     | -          | 25.0 (1,7)            | -          | 18 x 22 (5.5 x 6.7)  | 155°F (68°C)                      |                                       |            | 4 - 12 (102 - 305)  |
| 46 (174.1)                     | -          | 33.1 (2,25)           | -          | 14 x 26 (4.3 x 7.9)  | 155°F (68°C)                      |                                       |            | 6 - 12 (153 - 305)  |

<sup>(1)</sup> FM Approval of recessed sprinkler - 135°F (57°C) and 155°F (68°C) only.

<sup>(2)</sup> Refer to escutcheon data table for dimensions.



## Installation

Quick response sprinkler are intended for installation as specified in NFPA 13. Quick response sprinklers and standard response sprinklers should not be intermixed.

The Model F1FR QREC Recessed Sprinklers are to be installed as shown. The Model F1 or F2 Escutcheons illustrated are the only recessed escutcheons to be used with the Model F1FR QREC Sprinklers. The use of any other recessed escutcheon will void all approvals and negate all warranties.

When installing Model F1FR QREC Sprinklers, use the Model W2 Sprinkler Wrench. When installing Model F1FR QREC Recessed Pendent or Recessed Sidewall Sprinklers, use the Model W4 Sprinkler Wrench. Any other type of wrench may damage these sprinklers.

Glass bulb sprinklers have orange bulb protectors to minimize bulb damage during shipping, handling and installation. REMOVE THIS PROTECTION AT THE TIME THE SPRINKLER SYSTEM IS PLACED IN SERVICE FOR FIRE PROTECTION. Removal of the protectors before this time may leave the bulb vulnerable to damage. RASCO wrenches are designed to install sprinklers when covers are in place. REMOVE PROTECTORS BY UNDOING THE CLASP BY HAND. DO NOT USE TOOLS TO REMOVE THE PROTECTORS.

## Maintenance

The Models F1FR QREC and F1FR QREC Recessed Sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25. Do not clean sprinklers with soap and water, ammonia or any other cleaning fluids. Remove dust by gentle vacuuming. Replace any sprinkler which has been painted (other than factory applied) or damaged in any way. A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Prior to installation, sprinklers should be maintained in the original cartons and packaging until used to minimize the potential for damage to sprinklers that would cause improper operation or non-operation.

## Temperature Ratings

| Classification | Sprinkler Rating |    | Maximum Ambient Temp. |    | Bulb Color |
|----------------|------------------|----|-----------------------|----|------------|
|                | °F               | °C | °F                    | °C |            |
| Ordinary       | 135              | 57 | 100                   | 38 | Orange     |
| Ordinary       | 155              | 68 | 100                   | 38 | Red        |
| Intermediate   | 175              | 79 | 150                   | 66 | Yellow     |

## Maximum Working Pressure

175 psi (12 bar)

SIN R4842 & R4862 cULus listed for 250 psi (17 bar)

100% Factory tested hydrostatically to 500 psi (34.5 bar)

## Sprinkler Types

Extended Coverage Pendent

Extended Coverage Sidewall

- EC-9 HSW Deflector

Recessed Extended Coverage Pendent

Recessed Extended Coverage Sidewall

- EC-9 HSW Deflector

## Finishes<sup>(1)</sup>

| Standard Finishes <sup>(1)</sup>  |   |
|---|---|
| Sprinkler   | Escutcheon  |
| Bronze<br>Chrome<br>White & Black Polyester <sup>(3)</sup>  | Brass<br>Chrome<br>White  |
| Special Application Finishes  |   |
| Sprinkler <sup>(2)</sup>  | Escutcheon  |
| Electroless Nickel PTFE <sup>(3)</sup><br>Bright Brass<br>Black Plating<br>Black Paint<br>Off White Satin<br>Chrome | Electroless Nickel PTFE<br>Bright Brass<br>Black Plating<br>Black Paint<br>Off White<br>Chrome Dull |

<sup>(1)</sup> Other colors and finishes are available on special order. Consult factory for details.

<sup>(2)</sup> FM Approval limited to bronze, bright and satin chrome plated, and polyester coated only.

<sup>(3)</sup> cULus Listed Corrosion Resistant Sprinkler

## Escutcheon Data

| Escutcheon Model | Adjustment  | "A" Dimension  | Face of Fitting to Ceiling or Wall Dimension |
|------------------|-------------|--|--|
| F1               | 3/4" (19mm) | 3/4" (19mm) <sup>(1)</sup><br>1 3/8" (35mm) <sup>(2)</sup> | 3/16" (5mm) -<br>15/16" (24mm)               |
| F2               | 1/2" (13mm) | 1" (25mm) <sup>(1)</sup><br>1 9/16" (40mm) <sup>(2)</sup>  | 3/16" (5mm) -<br>1 1/16" (18mm)              |

<sup>(1)</sup> EC Pendent

<sup>(2)</sup> EC HSW

## Ordering Information

### Specify:

1. Sprinkler Model: F1FR QREC
2. Sprinkler Type
3. Temperature Rating
4. Sprinkler Finish
5. Thread Type: [3/4" NPT] [ISO 7-1R3/4]
6. Escutcheon Type
7. Escutcheon Finish (where applicable)

**Note:** When Model F1FR Recessed sprinklers are ordered, the sprinklers and escutcheons are packaged separately.

The equipment presented in this bulletin is to be installed in accordance with the latest published Standards of the National Fire Protection Association, Factory Mutual Research Corporation, or other similar organizations and also with the provisions of governmental codes or ordinances whenever applicable.

Products manufactured and distributed by Reliable have been protecting life and property for almost 100 years.

Manufactured by

**Reliable**<sup>®</sup>

### Reliable Automatic Sprinkler Co., Inc.

(800) 431-1588

(800) 848-6051

(914) 829-2042

www.reliablesprinkler.com

Sales Offices

Sales Fax

Corporate Offices

Internet Address



Recycled  
Paper

Revision lines indicate updated or new data.

EG. Printed in U.S.A. 08/21 P/N 9999970142