



## F1FR80 Series Quick Response Extended Coverage QREC Sprinklers

K-factor 8.0 (115)

### Features

- Extended coverage quick-response sprinklers
- cULus 250psi (17.2 bar) rated
- Pendent and horizontal sidewall (EC-9) deflectors
- Low profile, compact design
- Available in a wide variety of finishes

### Product Description

Reliable Model F1FR80 QREC series sprinklers are quick-response extended coverage automatic fire sprinklers utilizing a sensitive 3.0 mm glass bulb thermal element for use in light hazard occupancies.

Pendent and horizontal sidewall sprinklers may be installed exposed or surface mounted using escutcheons such as the Reliable Models B, C, or HB (reference Technical Bulletin 204). When installed recessed or concealed, Model F1FR80 QREC series sprinklers are specifically listed with and may only be installed with listed Reliable recessed escutcheons and cover plates. Refer to the technical information on the following pages for specific listings for recessed and concealed installations and refer to Figures 3 and 4 for dimensional information.

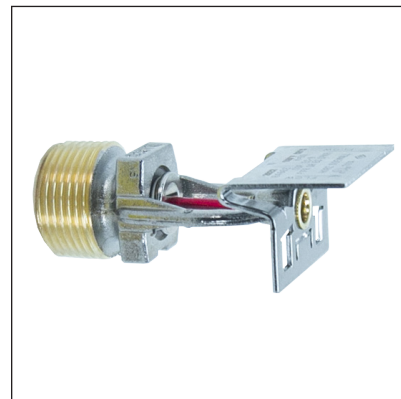
Table A provides a summary of the approvals and availability of specific Model F1 series sprinkler configurations. Additional technical information for each sprinkler model is provided on the following pages.

**Note:** The EC-9 horizontal sidewall deflector is also available on the cULus Listed 300 psi (20.7 bar) Model SWC concealed sidewall sprinkler. Please reference Technical Bulletin 163.

**Important!** Reliable fire sprinklers must be handled, stored, and installed in accordance with the guidelines in Caution Sheet 310 and this bulletin. Failure to follow these instructions may result in unintended operation or nonoperation of the fire protection system.



Model F1FR80 QREC Pendent



Model F1FR80 QREC Sidewall

**Note:** Not all versions of product are shown.

### Sprinkler Summary

Table A

Sprinkler Model	K-Factor gpm/psi <sup>1/2</sup> (lpm/bar <sup>1/2</sup> )	Orientation	Listings & Approvals <sup>(1)</sup>	Max. Working Pressure psi (bar)	Sprinkler Identification Number (SIN)
F1FR80 QREC	8.0 (115)	Pendent	cULus FM <sup>(2)</sup>	250 (17.2) cULus	R4842
		Horizontal Sidewall		175 (12.0) FM	R4862

**Note:**

1. Listed and approved for light hazard occupancies only.
2. When recessed, FM approved with F2 escutcheon only. Concealed pendent (CCP) not approved by FM.

**Technical Specifications****Style:**

Pendent  
Recessed Pendent  
Concealed Pendent

**Threads:** 3/4" NPT or ISO 7-R3/4**Nominal K-Factor:** 8.0 (115)**Max. Working Pressure:**

175 psi (12.0 bar)  
250 psi (17.2 bar)

**Material Specifications****Thermal Sensor:** 3 mm Glass Bulb**Sprinkler Frame:** Brass Alloy**Cap:** Bronze Alloy**Sealing Washer:** Nickel with PTFE**Load Screw:** Copper Alloy**Deflector:** Brass Alloy**Sprinkler Finishes**

(See Table E)

**Sensitivity**

Quick response

**Temperature Ratings**

135°F (57°C)

155°F (68°C)<sup>(1)</sup>**Recessed Escutcheons**

Model F1

Model F2

**Cover Plates**CCP (Conical)<sup>(2)</sup>**Sprinkler Wrenches**

Model W2 (non-recessed)

Model W4 (recessed and concealed)

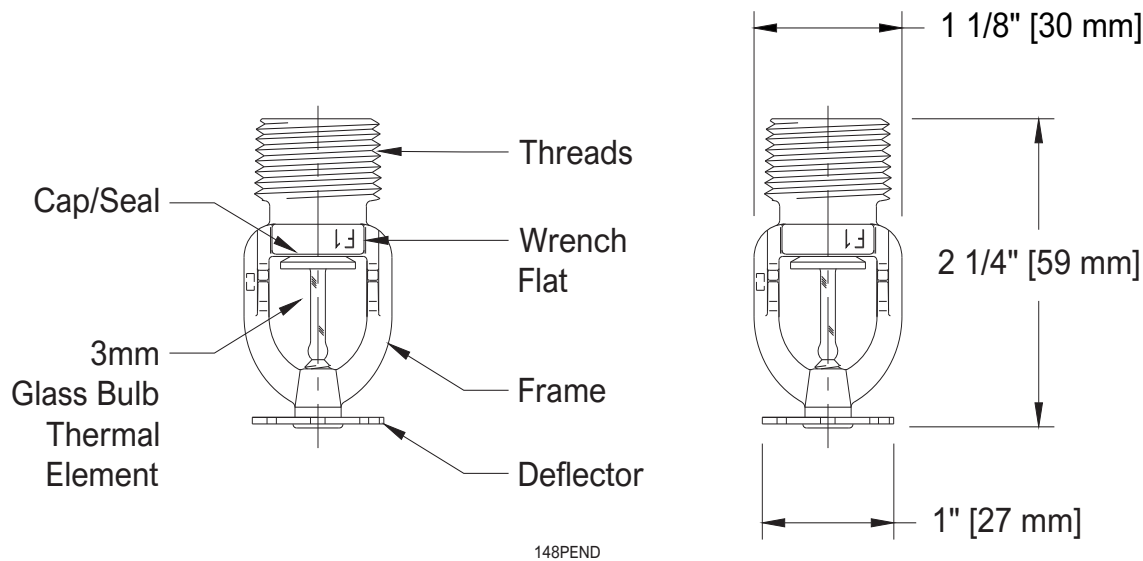
**Listings and Approvals**

cULus

FM

**Notes:**

1. 155°F (68°C) sprinkler is not cULus listed for 20' x 20' (6m x 6m) coverage area.
2. cULus only; 135°F (57°C) cover plate.

**Model F1FR80 QREC Pendent Sprinkler Components and Dimensions****Figure 1****Note:** Please refer to Figure 3 for recessed and concealed installations.**F1FR80 QREC Pendent Required Minimum Flow and Pressure****Table B**

Coverage Area ft x ft (m x m)	Flow gpm (L/min)	Pressure psi (bar)
16 x 16 (4.9 x 4.9)	26 (98.4)	10.6 (0.7)
18 x 18 (5.5 x 5.5)	33 (125.0)	17.0 (1.2)
20 x 20 (6.0 x 6.0) (1)	40 (151.4)	25.0 (1.7)

**Note:** cULus Listing for 20' x 20' (6.0 m x 6.0 m) coverage area is for 135°F (57°C) sprinkler only. 155°F (68°C) sprinkler is not cULus Listed for 20' x 20' (6.0 m x 6.0 m) coverage area.

**Technical Specifications****Style:**

Horizontal Sidewall  
Recessed Horizontal Sidewall

**Threads:** 3/4" NPT or ISO 7-R3/4**Nominal K-Factor:** 8.0 (115)**Max. Working Pressure:**

175 psi (12.0 bar) (FM)  
250 psi (17.2 bar) (cULus)

**Material Specifications****Thermal Sensor:** 3 mm Glass Bulb**Sprinkler Frame:** Brass Alloy**Cap:** Bronze Alloy**Sealing Washer:** Nickel with PTFE**Load Screw:** Copper Alloy**Deflector:** Brass Alloy**Temperature Ratings<sup>(1)</sup>**

135°F (57°C)

155°F (68°C)

175°F (79°C)

**Recessed Escutcheons**Model F1<sup>(2)</sup>

Model F2

**Sprinkler Wrenches**

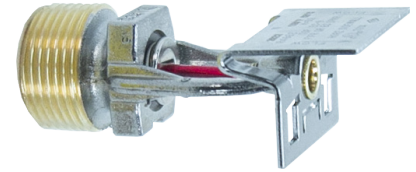
Model W2 (non-recessed)

Model W4 (recessed)

**Listings and Approvals<sup>(3)</sup>**

cULus

FM

**Sprinkler Finishes**

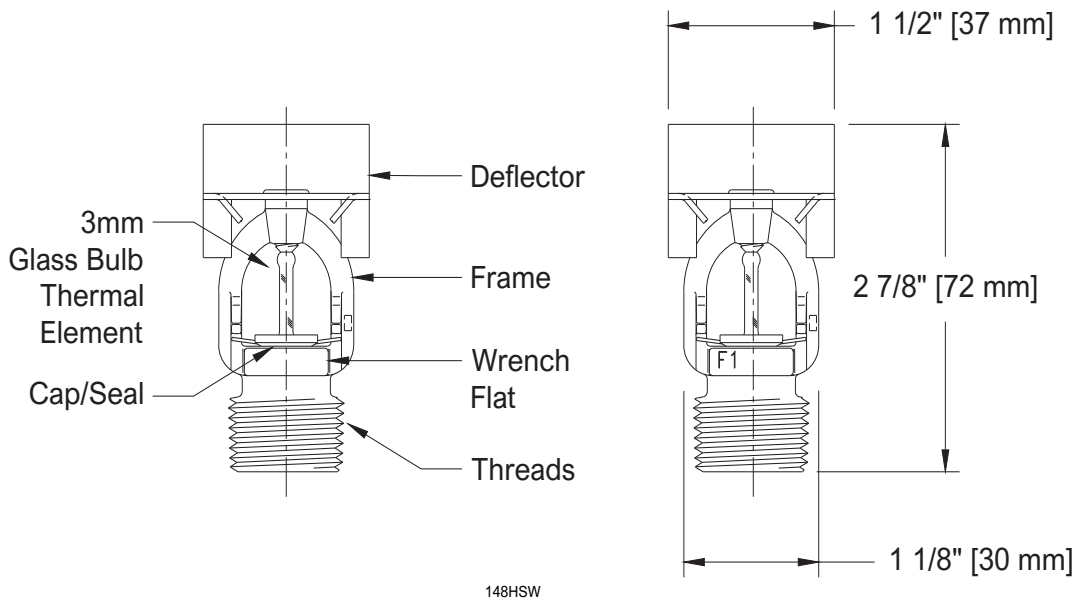
(See Table E)

**Sensitivity**

Quick response

**Notes:**

1. Temperature ratings may vary depending on coverage area selected. See Tables C and D.
2. Not approved by FM for recessed installation; must use Model F2.
3. Approvals may vary depending on coverage area selected. See Tables C and D.

**Model F1FR80 QREC Horizontal Sidewall (EC-9) Components and Dimensions****Figure 2**

148HSW

**Note:** Please refer to Figure 3 for recessed installations.

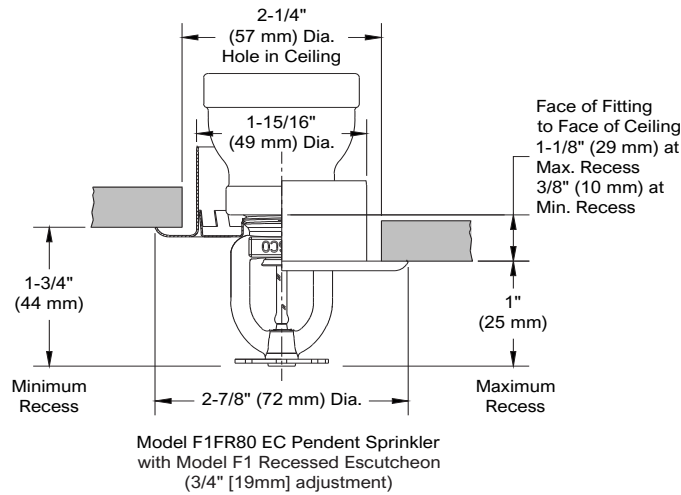
**F1FR80 QREC Horizontal Sidewall Required Minimum Flow and Pressure: cULus****Table C**

Coverage Area ft x ft (m x m)	Deflector Distance Inches (mm)	Temperature Rating	Flow gpm (L/min)	Pressure psi (bar)
14 x 26 (4.3 x 7.9)	4 – 6 (100 – 150)	135°F (57°C)	39 (147.6)	23.8 (1.6)
14 x 26 (4.3 x 7.9)	6 – 12 (150 – 300)	135°F (57°C) 155°F (68°C)	46 (174.1)	33.1 (2.3)
16 x 16 (4.9 x 4.9)	4 – 6 (100 – 150)	All	26 (98.4)	10.6 (0.7)
16 x 16 (4.9 x 4.9)	6 – 12 (150 – 300)	All	29 (109.8)	13.1 (0.9)
16 x 18 (4.9 x 5.5)	4 – 12 (100 – 300)	All	29 (109.8)	13.1 (0.9)
16 x 20 (4.9 x 6.0)	4 – 12 (100 – 300)	All	32 (121.1)	16.0 (1.1)
16 x 22 (4.9 x 6.7)	4 – 12 (100 – 300)	All	36 (136.3)	20.2 (1.4)
16 x 24 (4.9 x 7.3)	4 – 12 (100 – 300)	All	39 (147.6)	23.8 (1.6)
18 x 18 (5.5 x 5.5)	4 – 12 (100 – 300)	135°F (57°C) 155°F (68°C)	33 (124.9)	17.0 (1.2)
18 x 22 (5.5 x 6.7)	4 – 12 (100 – 300)	135°F (57°C) 155°F (68°C)	40.0 (151.4)	25.0 (1.7)

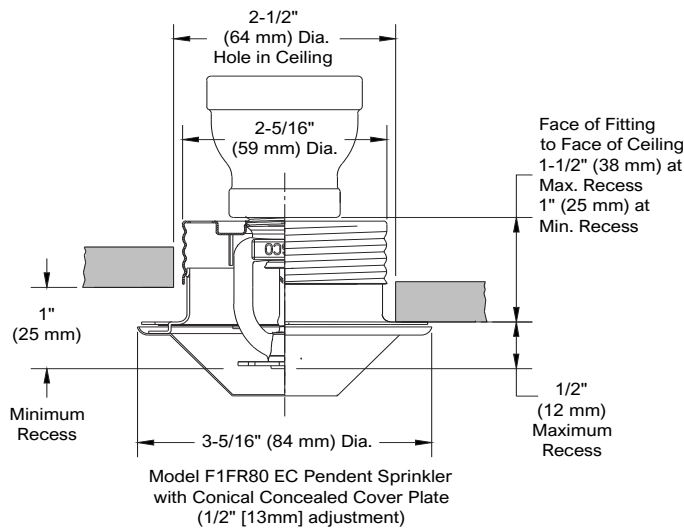
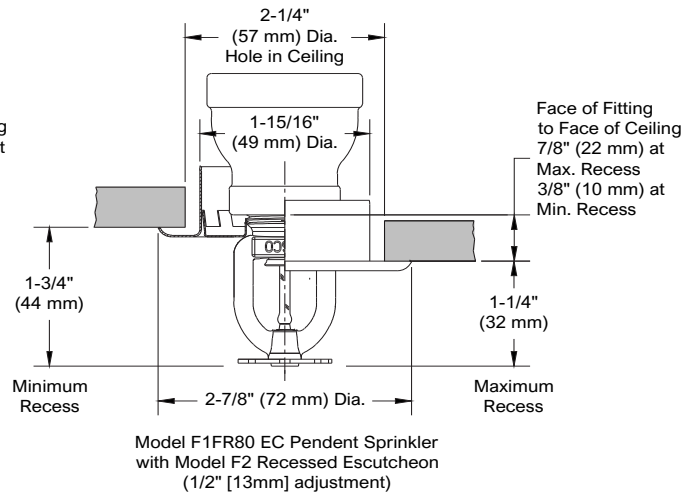
**F1FR80 QREC Horizontal Sidewall Required Minimum Flow and Pressure: FM****Table D**

Coverage Area ft x ft (m x m)	Deflector Distance Inches (mm)	Temperature Rating	Flow gpm (L/min)	Pressure psi (bar)
16 x 16 (4.9 x 4.9)	4 – 12 (100 – 300)	All	32 (121.1)	16.0 (1.1)
16 x 18 (4.9 x 5.5)	4 – 12 (100 – 300)	All	36 (136.3)	20.2 (1.4)
16 x 20 (4.9 x 6.0)	4 – 12 (100 – 300)	All	40 (151.4)	25.0 (1.7)
16 x 22 (4.9 x 6.7)	4 – 12 (100 – 300)	All	44 (166.6)	30.2 (2.1)
16 x 24 (4.9 x 7.3)	4 – 12 (100 – 300)	All	48 (181.7)	36.0 (2.5)

**Note:** 175°F (79°C) temperature rated sprinklers not FM approved for recessed installations.



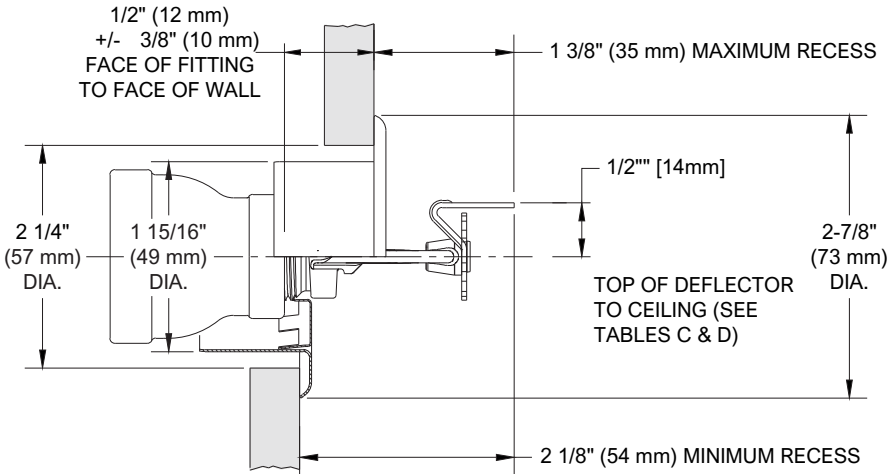
148RECPEND



Pendent with Model F1 Recessed Escutcheon (F2 similar)

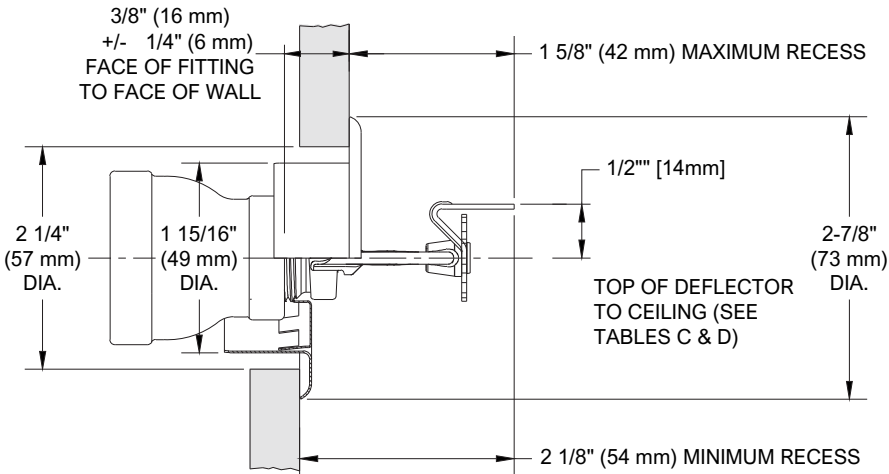


Pendent with Model CCP Cover Plate (Conical)



Model F1FR80 EC Horizontal Sidewall Sprinkler  
with Model F1 Recessed Escutcheon  
(3/4" [19mm] adjustment)

148RECHSW



Model F1FR80 EC Horizontal Sidewall Sprinkler  
with Model F2 Recessed Escutcheon  
(1/2" [13mm] adjustment)



Horizontal Sidewall with Model  
F1 Recessed Escutcheon  
(F2 similar)

## Wrenches



Model W2 (non-recessed)



Model W4 (recessed, concealed)

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

Table E

Standard Finishes			Special Application Finishes		
Sprinkler	F1 and F2 Escutcheons	CCP Cover Plate <sup>(2)</sup>	Sprinkler	F1 and F2 Escutcheons	CCP Cover Plate <sup>(2)</sup>
Bronze	Brass	Chrome	Electroless Nickel PTFE <sup>(3)(4)</sup>	Bright Brass	Bright Brass
Chrome	Chrome	White Paint	Bright Brass	Satin Chrome	Satin Chrome
White Polyester <sup>(3)</sup>	White Polyester		Satin Chrome	Custom Color Polyester	Custom Color Paint
			Custom Color Polyester <sup>(3)</sup>		

### Notes:

1. Paint or any other coating applied over the factory finish will void all approvals and warranties.
2. The CCP assembly consists of a bronze sprinkler mounted in a galvanized steel cup with a finished cover plate.
3. cULus Listed as corrosion resistant.
4. FM Approved as corrosion resistant.

## Installation

Reliable Model F1FR80 QREC series sprinklers must be installed in accordance with NFPA 13 and the requirements of all authorities having jurisdiction using the Reliable sprinkler installation wrench specified in this bulletin. Any other wrench may damage the sprinkler. The Models W2 and W4 wrenches have two sets of jaws. Use the smallest set of jaws that fit on the wrench flats of the sprinkler. A leak free 3/4" (R3/4) sprinkler joint can be obtained with a torque of 14-20 lb-ft (19 - 27 N.m) after applying a thread sealant to the male threads of the sprinkler. Do not tighten sprinklers over the maximum recommended installation torque. Exceeding the maximum recommended installation torque may cause leakage or impairment of the sprinkler.

Glass bulb sprinklers have orange bulb protectors or protective caps to minimize bulb damage during shipping, handling and installation. Reliable sprinkler installation wrenches are designed to install sprinklers with bulb protectors in place. Remove the bulb protector at the time when the sprinkler system is placed in service for fire protection. Removal of the bulb protector before this time may leave the bulb vulnerable to damage. Remove bulb protectors by undoing the clasp by hand. Do not use tools to remove bulb protectors.

## Maintenance

Reliable Model F1FR80 QREC series sprinklers should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any Authorities Having Jurisdiction.

Prior to installation, sprinklers should remain in the original cartons and packaging until used. This will minimize the potential for damage to sprinklers that could cause improper operation or non-operation.

Do not clean sprinklers with soap and water, ammonia liquid or any other cleaning fluids. Remove dust by gentle vacuuming without touching the sprinkler.

Replace any sprinkler which has been painted (other than factory applied). A stock of spare sprinklers should be maintained to allow quick replacement of damaged or operated sprinklers. Failure to properly maintain sprinklers may result in inadvertent operation or non-operation during a fire event.

## Guarantee

For the guarantee, terms, and conditions, visit [www.reliablesprinkler.com](http://www.reliablesprinkler.com).

## Ordering Information

**Specify the following when ordering:**

### Model

- F1FR80 QREC

### Deflector/Orientation

- Pendent
- CCP Pendent
- Horizontal Sidewall (EC-9)

### Temperature Rating

- See sprinkler technical specifications

### Sprinkler Finish

- See Table B

### Recessed Escutcheon

- F1
- F2

### Escutcheon Finish

- See Table E

### Pendent Cover Plate

- CCP (Conical, 135°F [57°C] only)

### Cover Plate Finish

- See Table E

### Sprinkler Wrench

- Model W2 (non-recessed)
- Model W4 (recessed or concealed)