

# Reliable®

## F1FR80 Series Quick-Response Sprinklers

K-factor 8.0 (115)

### Features

- Standard coverage quick-response sprinklers
- Upright and pendent orientations
- Low profile, compact design
- Available in a wide variety of finishes
- Available as Intermediate Level sprinklers

### Product Description

Reliable Model F1FR80 series sprinklers are quick-response standard spray automatic fire sprinklers utilizing a sensitive 3mm glass bulb thermal element.

Pendent 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, the Model F1FR80 series sprinklers are specifically listed with and may only be installed with listed Reliable recessed escutcheons. Refer to the technical information on the following pages for specific listings for recessed installations and refer to Figure 3 for dimensional information.

When fitted with an approved Reliable water shield, these sprinklers may be considered intermediate sprinklers for use in racks, below grated walkways, and other areas where intermediate level sprinklers are required.

Table A provides a summary of the approvals and availability of specific Model F1FR series sprinkler configurations. Additional technical information for each sprinkler model is provided on the following pages.

**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  
Upright Sprinkler



Model F1FR80 Pendent Sprinkler

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

### F1FR80 Series Sprinkler Summary

Table A

Sprinkler Model	K-Factor gpm/psi <sup>1/2</sup> (lpm/bar <sup>1/2</sup> )	Max. Working Pressure psi (bar)	Listings & Approvals	Orientation	Sprinkler Identification Number (SIN)
F1FR80	8.0 (115)	175 (12) 250 (17) (cULus only)	cULus, FM, LPCB, VdS, CE, UKCA	Upright	RA6322
				Pendent	RA6312

**Technical Specifications**

**Style:** Upright  
**Threads:** 3/4" NPT or ISO 7-R3/4  
**Nominal K-Factor:** 8.0 (115)  
**Max. Working Pressure:**  
 175 psi (12 bar)  
 250 psi (17 bar) (cULus only)

**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 B)

**Sensitivity**

Quick response

**Temperature Ratings**

135°F (57°C)  
 155°F (68°C)  
 175°F (79°C)  
 200°F (93°C)  
 286°F (141°C)

**Guards & Shields**

F-1 Guard (cULus, FM)  
 F-2 Guard (FM)  
 F-3 Guard with Shield (cULus, FM)  
 Factory Installed Shield (cULus, FM)

**Sprinkler Wrenches**

Model W2  
 Model W14 (with guard installed)

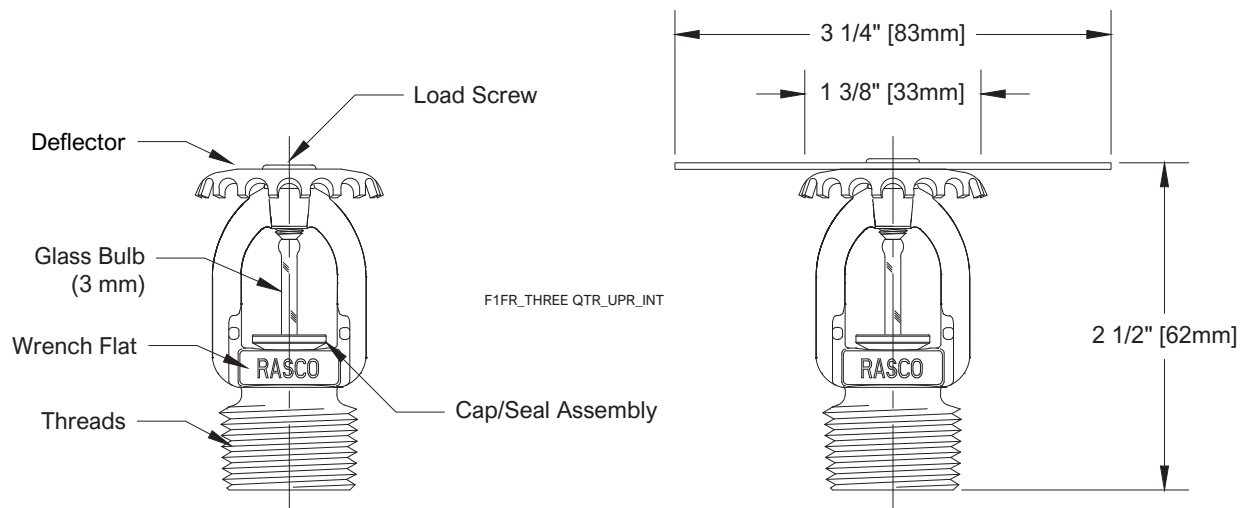
**Listings and Approvals**

cULus  
 FM  
 LPCB  
 VdS  
 CE  
 UKCA: 0832-UKCA-CPR-S5078



**Model F1FR80 Upright Sprinkler Components and Dimensions**

**Figure 1**



Shown with Optional  
 Factory Installed Water Shield  
 ( Intermediate Upright)

**Technical Specifications**

**Style:**  
 Pendent  
 Recessed Pendent  
**Threads:** 3/4" NPT or ISO 7-R3/4  
**Nominal K-Factor:** 8.0 (115)  
**Max. Working Pressure:**  
 175 psi (12 bar)  
 250 psi (17 bar) (cULus only)

**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 B)

**Sensitivity**  
 Quick response

**Temperature Ratings<sup>(1)</sup>**

135°F (57°C)  
 155°F (68°C)  
 175°F (79°C)  
 200°F (93°C)  
 286°F (141°C)

**Recessed Escutcheons**

Model F1 (cULus)  
 Model F2 (cULus, FM)  
 Model FP (cULus)

**Guards & Shields<sup>(2)</sup>**

F-2 Guard (FM)  
 F-6 Guard/Shield Kit (FM)  
 F-7 Guard (cULus)  
 F-8 Guard/Shield Kit (cULus)  
 S-2 Shield (cULus, FM)

**Sprinkler Wrenches**

Model W2 (pendent)  
 Model W4 (recessed)  
 Model W14 (with guard installed)

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

cULus Listed  
 FM Approved  
 LPCB  
 VdS  
 CE  
 UKCA: 0832-UKCA-CPR-S5079

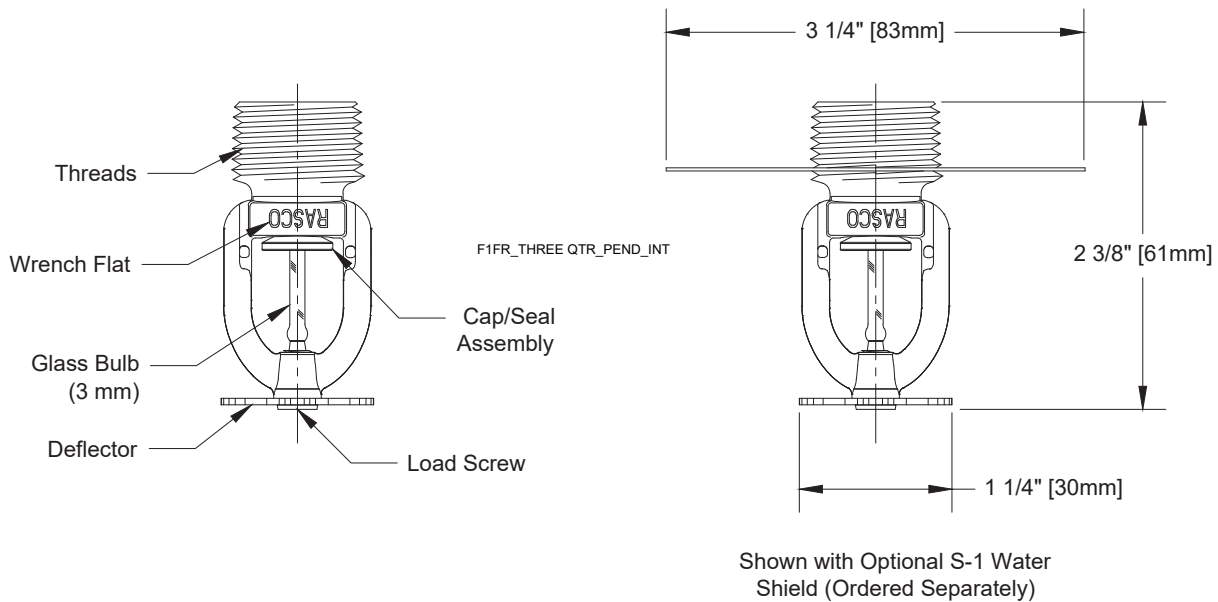


**Notes:**

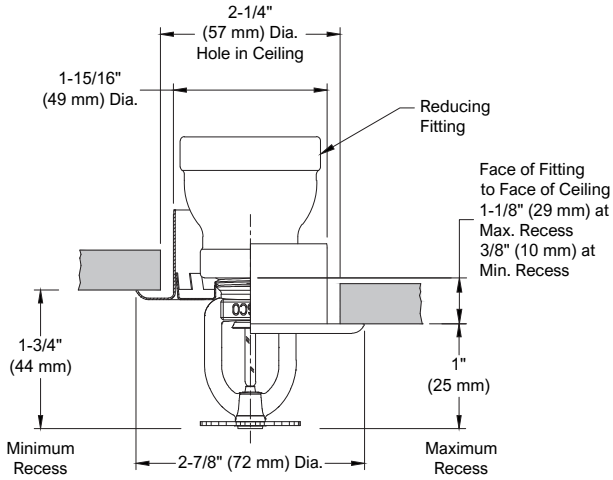
1. 286°F (141°C) temperature rated sprinkler not listed for recessed use.
2. Not suitable for recessed pendent installations.
3. When used surface mounted or exposed. See Recessed Escutcheon section for specific approvals when installed recessed.

**Model F1FR80 Pendent Sprinkler Components and Dimensions**

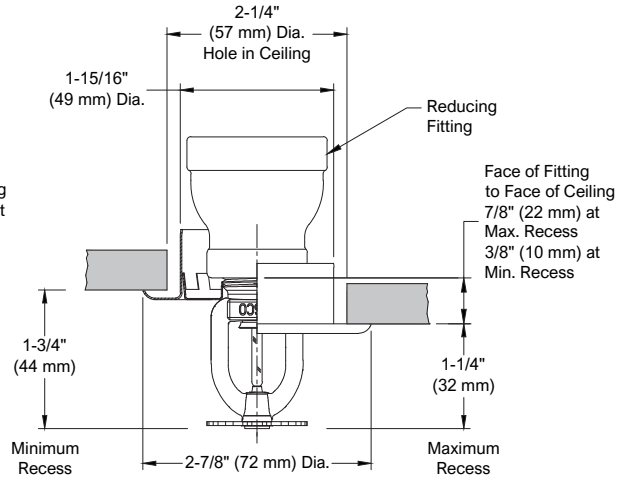
**Figure 2**



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

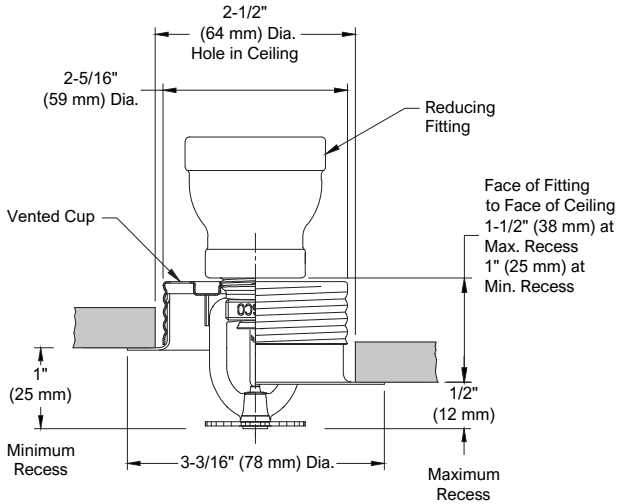


Models F1 & F1FR Pendent Sprinkler with Model F1 Recessed Escutcheon  
3/4" (19mm) Nominal Adjustment



Models F1 & F1FR Pendent Sprinkler with Model F2 Recessed Escutcheon  
1/2" (13mm) Nominal Adjustment

F1\_REC\_PEND



Models F1 & F1FR Pendent Sprinkler with Model FP Recessed Escutcheon  
1/2" (13mm) Nominal Adjustment

Note: Model FP recessed assemblies may not be used where the pressure in the space above the ceiling is positive with respect to the protected area. Ensure that the openings in the Model FP cup are unobstructed following installation.



## Wrenches



Model W2 (upright, pendent)



Model W14 (with guard installed)



Model W4  
(recessed pendent)

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

Table B

Standard Finishes		Special Application Finishes	
Sprinkler	F1, F2 and FP <sup>(2)</sup> Escutcheons	Sprinkler	F1, F2 and FP <sup>(2)</sup> Escutcheons
Bronze	Brass	Electroless Nickel PTFE <sup>(3)(4)</sup>	Bright Brass
Chrome Plated	Chrome Plated	Bright Brass <sup>(5)</sup>	Satin Chrome
White Polyester <sup>(3)</sup>	White Polyester	Satin Chrome	Custom Color Polyester
		Custom Color Polyester <sup>(3)(6)</sup>	

### Notes:

1. Paint or any other coating applied over the factory finish will void all approvals and warranties.
2. Model FP escutcheons utilizes a galvanized steel cup with a finished trim ring.
3. cULus Listed as corrosion resistant.
4. FM Approved as corrosion resistant.
5. For 200°F (93°C) maximum temperature rated sprinklers only.
6. cULus Only.

## Installation

Model F1FR Series sprinklers must be installed in accordance with NFPA13 and the requirements of all applicable authorities having jurisdiction. Model F1FR Series sprinklers must be installed with the Reliable sprinkler installation wrench identified 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 tight sprinkler joint can be obtained with a torque of 8 to 18 lb-ft (11 to 24 N-m). 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 F1FR 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

### Deflector/Orientation

- Upright
- Upright Intermediate
- Pendent

### Temperature Rating

- See sprinkler technical specifications

### Sprinkler Finish

- See Table B

### Recessed Escutcheon

- F1
- F2
- FP

### Escutcheon Finish

- See Table B

### Sprinkler Wrench

- Model W2 (upright and pendent)
- Model W4 (recessed)
- Model W14 (with guard installed)

# Reliable®

## Model KFR56 Series Sprinklers

Quick-response, Standard Spray Fusible Link Sprinklers

K5.6 (80 metric)

cULus Listed, FM Approved, VdS Approved, CE Certified

### Product Description

Model KFR56 series sprinklers are standard spray, quick-response sprinklers with a fusible link operating element. The sprinklers are cULus Listed, FM Approved, VdS Approved, and CE Certified. See Table C for available finishes. All KFR56 sprinklers have a nominal K-factor of 5.6 (80 metric).

Model KFR56 series sprinklers are available in Ordinary (165°F [74°C]) or Intermediate (212°F [100°C]) temperature classification. Model KFR56 Pendent sprinklers are available with Model F1, Model F2, or Model FP recessed escutcheons.

### Application

Model KFR56 series sprinklers are listed and approved for installation in accordance with NFPA 13 and FM Loss Prevention Data Sheets. Follow requirements of NFPA 13 for Quick-response Standard Spray Sprinklers when installing Model KFR56 series sprinklers. FM Approvals classifies Model KFR56 sprinklers as K5.6 QR Non-storage and K5.6 QR In-rack Storage sprinklers.

### Installation

Model KFR56 series sprinklers must be installed in accordance with the requirements of NFPA 13 or FM Property Loss Prevention Data Sheets. The Model F1, F2, and FP escutcheons are the only recessed escutcheons listed and approved for use with Model KFR56 Pendent sprinklers. The use of any other recessed escutcheon will void all approvals and warranties. Do not install Model FP escutcheons in ceilings that are positively pressurized with respect to the occupied space below.

Use only the Model W2 sprinkler wrench for installing Model KFR56 series pendent, upright, and horizontal sidewall sprinklers, and use the Model W1 or W4 wrench for installing Model KFR56 series recessed pendent, conical concealed pendent (CCP), and recessed horizontal sidewall sprinklers. The use of wrenches other than those specified may damage these sprinklers.

Recommended installation torque is 14-20 ft-lbs (19 – 27 N·m). Do not tighten sprinklers over the maximum recommended torque. Exceeding the maximum recommended torque may cause leakage or impairment of the sprinklers.

**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 KFR56 Pendent



Model KFR56 Upright



Model CCP



Model KFR56 HSW

### Listings & Approvals

Listed by Underwriters Laboratories, Inc. and UL Certified for Canada (cULus)

- Sprinklers, Automatic and Open (VNIV)

FM Approved (FM)

- K5.6 QR Non-storage
- K5.6 QR In-rack Storage

VdS Approved and CE Certified to EN12259

UKCA: 0832-UKCA-CPR-S5073, -5074, -5075

### Model KFR Series Sprinkler Summary

Table A

Sprinkler Model	Orientation	Listing or Approval	Max. Working Pressure psi (bar)	Sprinkler Identification Number (SIN)
KFR56 Pendent	Pendent	cULus	250 (17.2)	RA3614
		FM, VdS, CE, UKCA	175 (12)	
KFR56 Upright KFR56 Upright Intermediate	Upright	cULus	250 (17.2)	RA3624
		FM, VdS, CE, UKCA	175 (12)	
KFR56 HSW	HSW	cULus	250 (17.2)	RA3634
		FM, VdS, CE, UKCA	175 (12)	

**Technical Specifications**

**Style:** Pendent, Recessed Pendent, or Conical  
 Concealed Pendent  
**Threads:** 1/2" NPT or ISO7-1R1/2  
**Nominal K-Factor:** 5.6 (80 metric)  
**Max. Working Pressure:**  
 cULus: 250 psi (17.2 bar)  
 FM, VdS, CE: 175 psi (12 bar)

**Material Specifications**

**Thermal Sensor:** Beryllium Nickel  
**Strut and Lever:** Stainless Steel  
**Roto-clip:** Stainless Steel  
**Sprinkler Frame:** Brass Alloy  
**Cap:** Bronze Alloy  
**Sealing Washer:** Nickel with PTFE  
**Load Screw:** Copper Alloy  
**Deflector:** Brass Alloy

**Sprinkler Wrenches**

Model W2 (non-recessed)  
 Model W1 or W4 (recessed & concealed)  
 Model W14 (with guard installed)

**Listings and Approvals**

cULus Listed  
 FM Approved  
 VdS Approved  
 CE Certificate of constancy of performance  
 0786-CPR40313  
 UKCA: 0832-UKCA-CPR-S5074

**Sprinkler Finishes**

(See Table C)

**Sensitivity**

Quick-response

**Temperature Ratings**

165°F (74°C), Gray Link  
 212°F (100°C), White Link

**Recessed Escutcheons/Cover Plates**

Model F1 escutcheon (cULus only)  
 Model F2 escutcheon (cULus, FM)  
 Model FP escutcheon (cULus only)  
 Model CCP cover plate (cULus only)

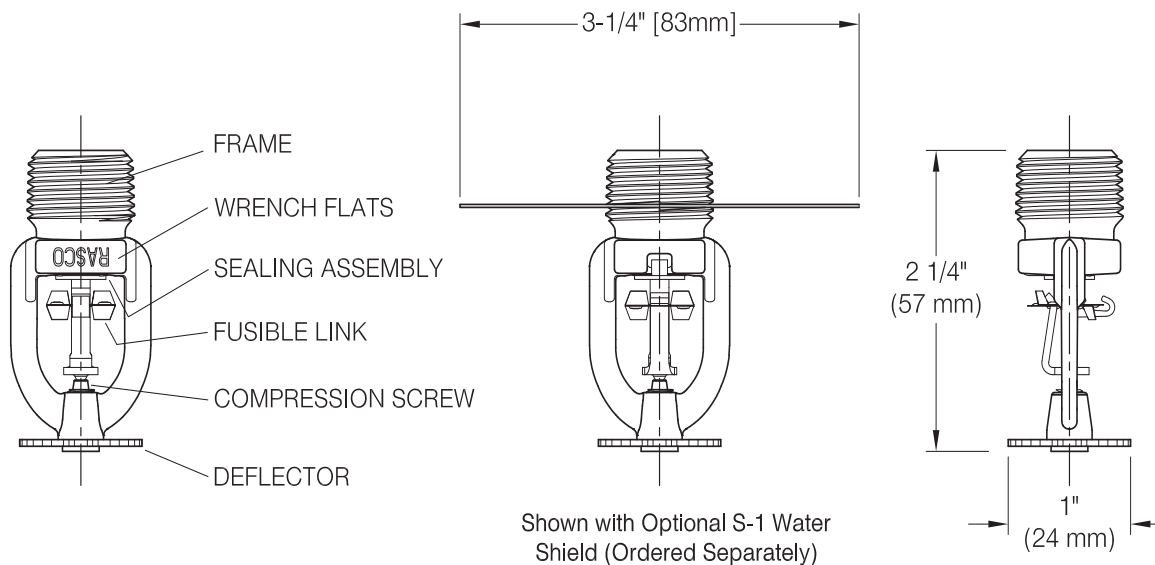
**Guards/Water Shields**

F-7 Guard (cULus)  
 F-1 Guard (FM)  
 F-8 Guard/Water Shield (cULus)  
 F-5 Guard/Water Shield (FM)  
 S-1 Water Shield (cULus, FM)



Model KFR56 Pendent Sprinkler Components and Dimensions

Figure 1





**Technical Specifications**

**Style:** Upright  
**Threads:** 1/2" NPT or ISO7-1R1/2  
**Nominal K-Factor:** 5.6 (80 metric)  
**Max. Working Pressure:**  
 cULus: 250 psi (17.2 bar)  
 FM, VdS, CE: 175 psi (12 bar)

**Material Specifications**

**Thermal Sensor:** Beryllium Nickel  
**Strut and Lever:** Stainless Steel  
**Roto-clip:** Stainless Steel  
**Sprinkler Frame:** Brass Alloy  
**Cap:** Bronze Alloy  
**Sealing Washer:** Nickel with PTFE  
**Load Screw:** Copper Alloy  
**Deflector:** Brass Alloy

**Sprinkler Wrench**

Model W2  
 Model W14 (with guard installed)

**Listings and Approvals**

cULus Listed  
 FM Approved  
 VdS Approved  
 CE Certificate of constancy of performance  
 0786-CPR40314  
 UKCA: 0832-UKCA-CPR-S5075

**Sprinkler Finishes**

(See Table C)

**Sensitivity**

Quick-response

**Temperature Ratings**

165°F (74°C), Gray Link  
 212°F (100°C), White Link

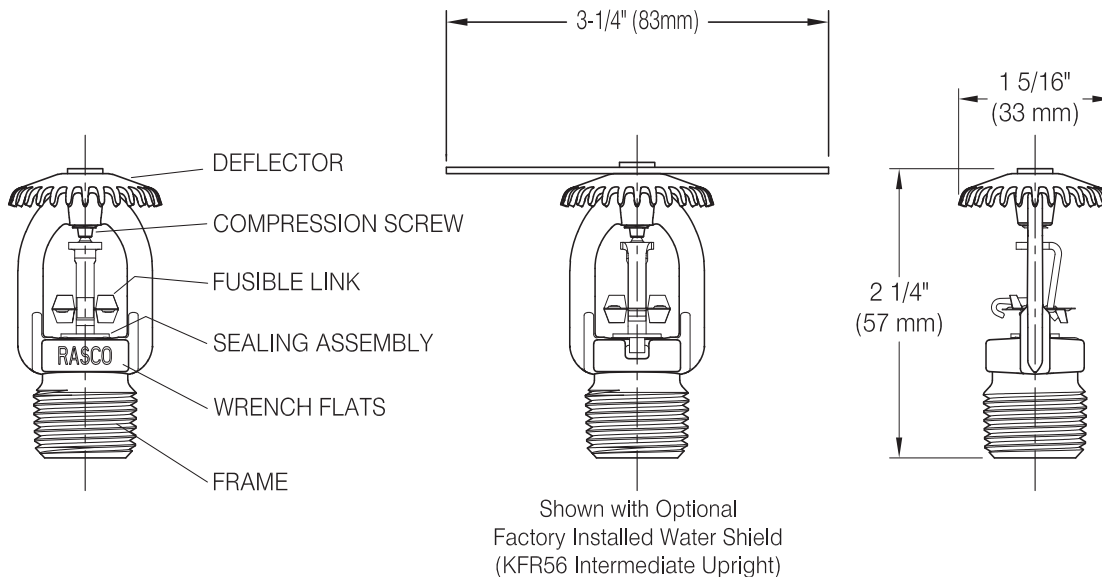
**Guards/Water Shields**

F-1 Guard (cULus, FM)  
 F-3 Guard/Water Shield (cULus, FM)  
 Factory Installed Shield (cULus, FM)



**Model KFR56 Upright Sprinkler Components and Dimensions**

**Figure 2**



**Technical Specifications**

**Style:** HSW or Recessed HSW  
**Threads:** 1/2" NPT or ISO7-1R1/2  
**Nominal K-Factor:** 5.6 (80 metric)  
**Max. Working Pressure:**  
 cULus: 250 psi (17.2 bar)  
 FM, VdS, CE: 175 psi (12 bar)

**Material Specifications**

**Thermal Sensor:** Beryllium Nickel  
**Strut and Lever:** Stainless Steel  
**Roto-clip:** Stainless Steel  
**Sprinkler Frame:** Brass Alloy  
**Cap:** Bronze Alloy  
**Sealing Washer:** Nickel with PTFE  
**Load Screw:** Copper Alloy  
**Deflector:** Brass Alloy

**Sprinkler Wrenches**

Model W2 (non-recessed)  
 Model W1 or W4 (recessed)  
 Model W14 (with guard installed)

**Listings and Approvals**

cULus Listed  
 FM Approved  
 VdS Approved  
 CE Certificate of constancy of performance  
 0786-CPR40312  
 UKCA: 0832-UKCA-CPR-S5073

**Sprinkler Finishes**

(See Table C)

**Sensitivity**

Quick-response

**Temperature Ratings**

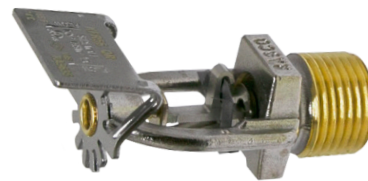
165°F (74°C), Gray Link  
 212°F (100°C), White Link

**Recessed Escutcheons**

Model F1 escutcheon (cULus only)  
 Model F2 escutcheon (cULus, FM)  
 Model FP escutcheon (cULus only)

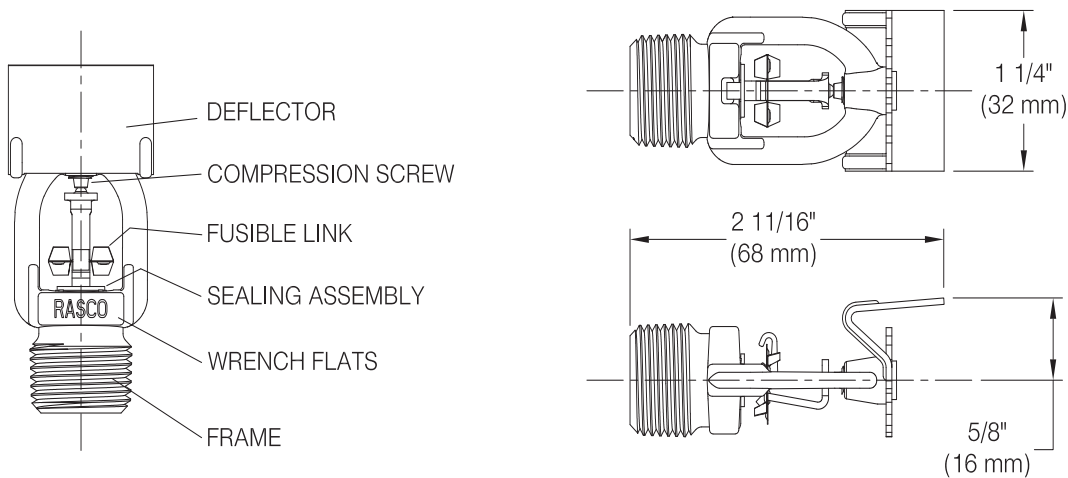
**Guards**

F-7 Guard (cULus)  
 F-4 Guard (FM)



**Model KFR56 HSW Sprinkler Components and Dimensions**

**Figure 3**



Recessed Escutcheon and Conical Concealed Cover Plate Dimensions

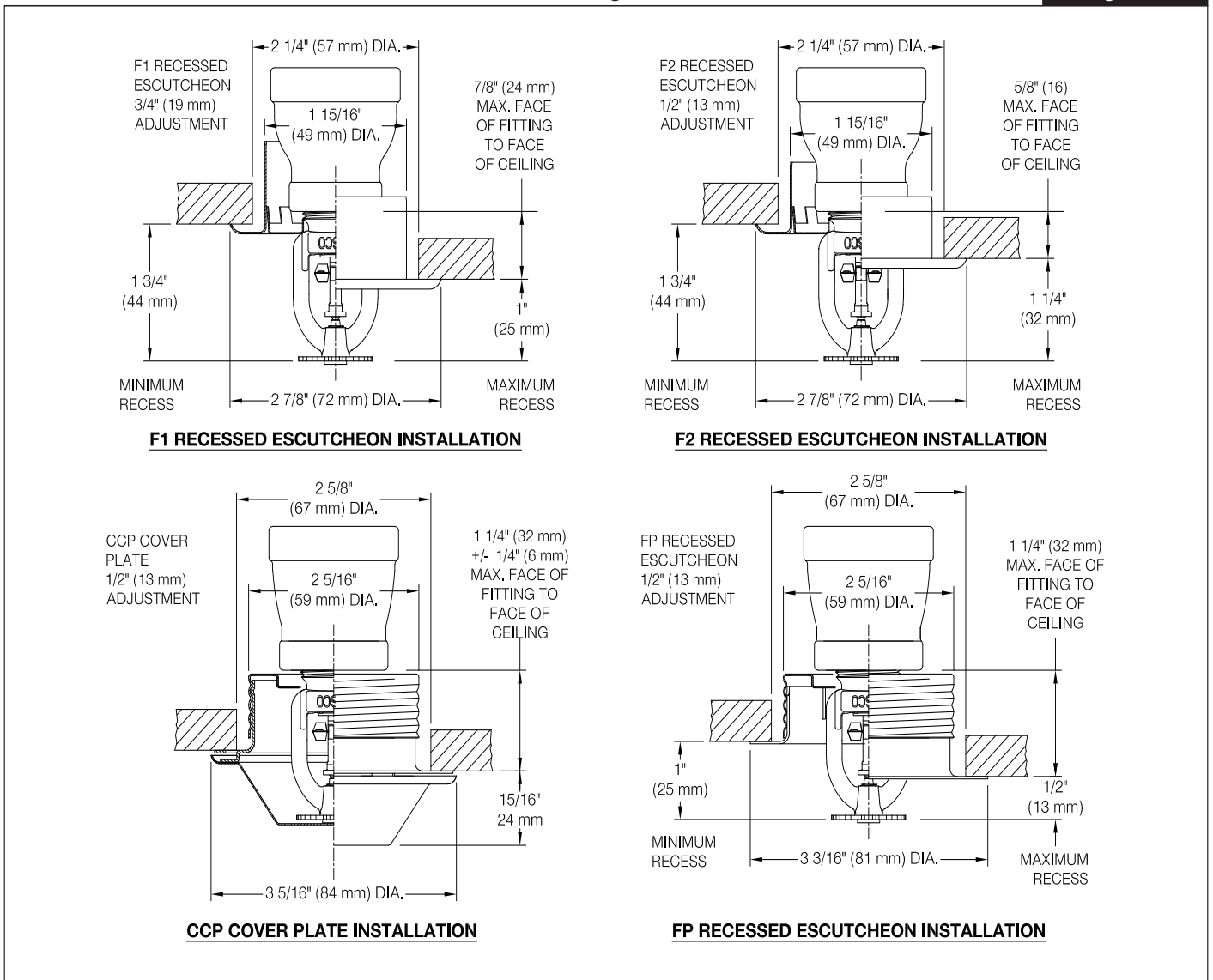
Table B

Type	Adjustment Inch (mm)	Maximum Face of Fitting to Ceiling* Inch (mm)	Minimum Face of Fitting to Ceiling* Inch (mm)	Maximum Deflector Distance Below Ceiling Inch (mm)	Minimum Deflector Distance Below Ceiling Inch (mm)
F1	3/4 (19)	7/8 (24)	1/8 (3)	1-3/4 (44)	1 (25)
F2	1/2 (12)	5/8 (16)	1/8 (3)	1-3/4 (44)	1-1/4 (32)
FP	1/2 (12)	1-1/2 (38)	1 (25)	1 (25)	1/2 (12)
CCP	1/2 (12)	1-1/2 (38)	1 (25)	1 (25)	1/2 (12)

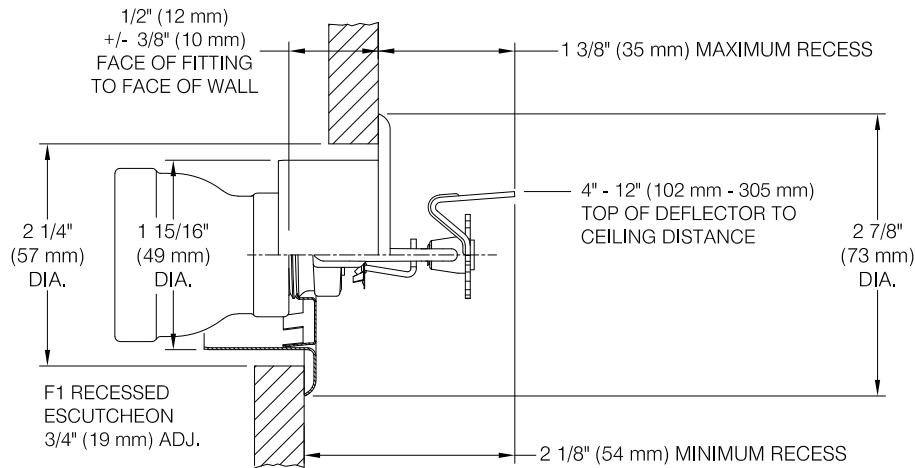
\*Note: Face of fitting to ceiling dimensions are based on nominal thread make up. Verify dimensions based on fitting and thread sealing method prior to installation.

Recessed Escutcheon and Conical Concealed Cover Plate Diagrams

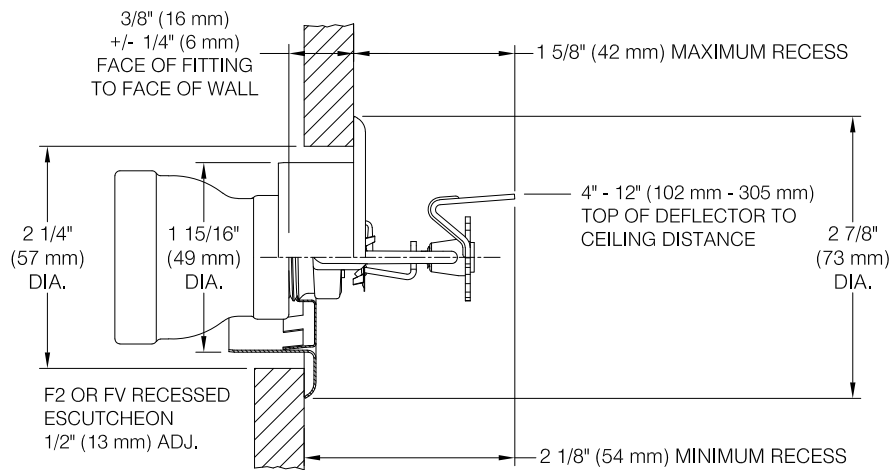
Figure 4



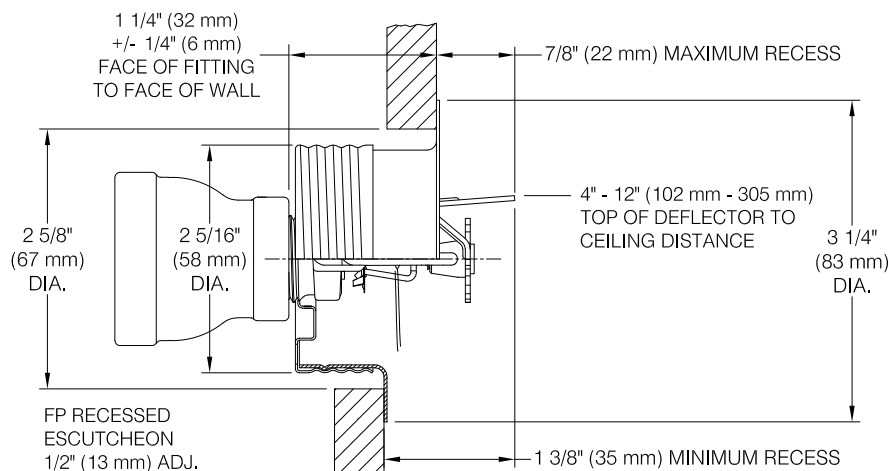
Note: Pendant sprinklers with CCP cover plates or FP recessed escutcheons shall not be installed in locations where the pressure in the ceiling is positive with respect to the pressure below the ceiling. Ensure that the openings in the cup are unobstructed following installation.



**F1 RECESSED ESCUTCHEON INSTALLATION**



**F2 RECESSED ESCUTCHEON INSTALLATION**



**FP RECESSED ESCUTCHEON INSTALLATION**

**Note:** Sidewall sprinklers with FP recessed escutcheons shall not be installed in locations where the pressure in or behind the wall is positive with respect to the pressure in the protected area. Ensure that the openings in the FP cup are unobstructed following installation.

## Sprinkler, Escutcheon, and Cover Plate Finishes<sup>(1)</sup>

Table C

Standard Finishes			Special Application Finishes		
Sprinkler	F1, F2, and FP <sup>(2)</sup> Escutcheons	CCP Cover Plate	Sprinkler	F1, F2, and FP <sup>(2)</sup> Escutcheons	CCP Cover Plate
Bronze	Brass	--	Bright Brass	Bright Brass	Bright Brass
Chrome Plated	Chrome Plated	Chrome Plated	Satin Chrome	Satin Chrome	Satin Chrome
White Polyester	White Polyester	White Paint	Black Polyester	Black Polyester	Black Paint
			Custom Color Polyester	Custom Color Polyester	Custom Color Paint

### Notes:

<sup>(1)</sup> Paint or any other coating applied over the factory finish will void all approvals and warranties.

<sup>(2)</sup> The Model FP escutcheon assembly consists of an unfinished galvanized cup with a finished escutcheon ring.

## Wrench



## Maintenance

Reliable Model KFR56 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 Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit [www.reliablesprinkler.com](http://www.reliablesprinkler.com).

## Ordering Information

Specify the following when ordering.

### Sprinkler

- Model (KFR56 Pendent, KFR56 Upright, KFR56 Upright Intermediate, or KFR56 HSW)
- Temperature Rating [165°F (74°C) or 212°F (100°C)]
- Threads (1/2" NPT or ISO 7-1 R3/4)
- Finish (See Table C)

### Escutcheon or Coverplate

- Type (None, F1, F2, FP, or CCP)
- Finish (See Table C)

### Guards/Water Shields

- See sprinkler information pages in this bulletin

### Sprinkler Wrench

- W2 (Pendent, Upright, & HSW)
- W1 or W4 (Recessed Pendent & HSW, CCP)
- W14 (with guard installed)