PRFS20251125

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11807 North Creek Pkwy S, Suite B111
Bothell, WA 98011
WA CL# WESTESF785LH

FIRE SPRINKLER MATERIAL SUBMITTAL

MULTICARE GOOD SAM

401 15TH AVE SE

PUYALLUP, WA 98372

WSFP Job #KG4806

Reliable®

F1FR56 Series
Quick Response Sprinklers

K-factor 5.6 (80)

Features

- Standard coverage quick-response sprinklers
- Upright, pendent, horizontal sidewall, and vertical sidewall deflectors
- Low profile, compact design
- Available in a wide variety of finishes

Product Description

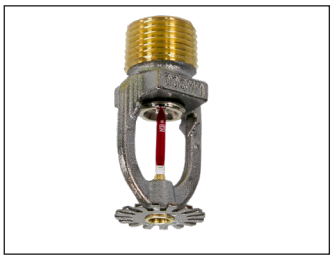
Reliable Model F1FR56 series sprinklers are quick-response standard spray automatic fire sprinklers utilizing a sensitive 3.0 mm glass bulb thermal element.

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, the Model F1FR56 series sprinklers are specifically listed with and may only be installed with listed Reliable 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 5 and 6 for dimensional information.

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

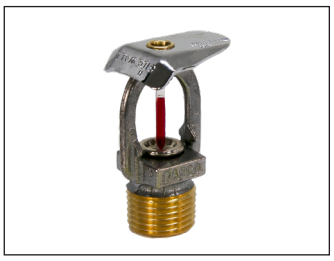
Table A provides a summary of the approvals and availability of specific Model F1FR series sprinkler configurations. Additional technical information for each sprinkler model is provided on the following pages.

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.

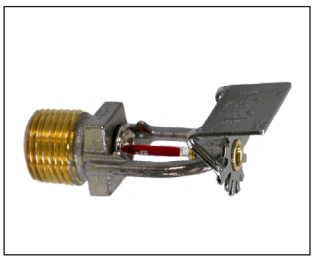


Model F1FR56 Pendent

Model F1FR56 Upright



Model F1FR56 Vertical Sidewall



Model F1FR56
Horizontal Sidewall

Note: Not all versions of the product are shown.

F1FR Series Sprinkler Summary

Table A

Sprinkler Model	K-Factor gpm/psi$^{1/2}$ (lpm/bar$^{1/2}$)	Orientation	Listings & Approvals	Max. Working Pressure psi (bar)	Sprinkler Identification Number (SIN)
F1FR56	5.6 (80)	Upright Intermediate Upright	cULus, FM, LPCB, VdS, EC, WM, UKCA	175 (12) 250 (17) (cULus only)	RA1425
		Pendent	cULus, FM, LPCB, VdS, EC, WM, UKCA	175 (12) 250 (17) (cULus only)	RA1414
		Concealed Pendent	cULus, VdS, EC, WM, UKCA	175 (12) 250 (17) (cULus only)	RA1414
		Horizontal Sidewall	cULus, FM	175 (12)	RA1435
		Vertical Sidewall	cULus, FM, LPCB, UKCA	175 (12)	RA1485

Model F1FR56 Upright Sprinkler

SIN RA1425

Technical Specifications
Style: Upright, Intermediate Upright
Threads: 1/2" NPT or ISO 7-R1/2
Nominal K-Factor: 5.6 (80 metric)
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

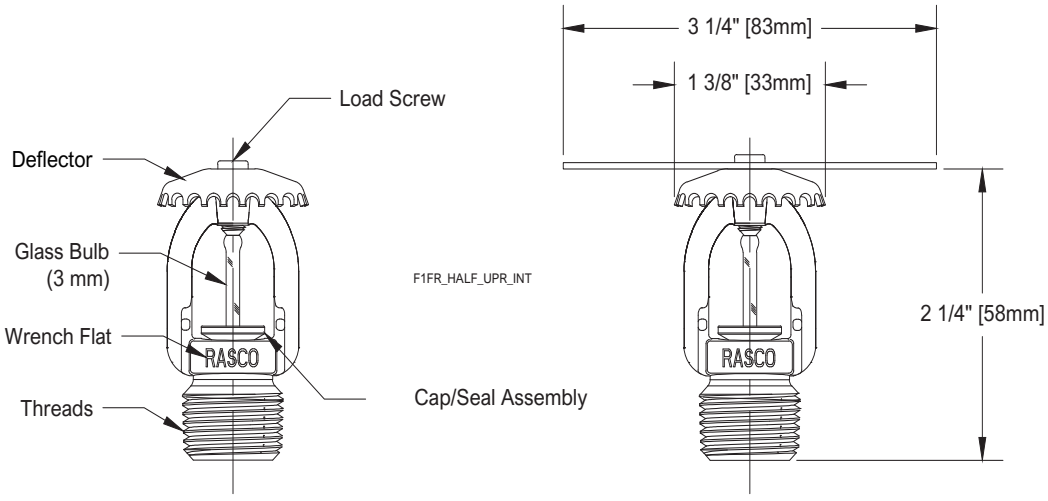
Temperature Ratings
135°F (57°C)
155°F (68°C)
175°F (79°C)
200°F (93°C)
286°F (141°C)

Guards & Shields
Factory Water Shield (cULus, FM)
F-1 Guard (cULus, FM)
F-3 Guard with Shield (cULus, FM)

Sprinkler Wrench
Model W2
Model W14 (with guard installed)

Listings and Approvals
cULus Listed
FM Approved
LPCB
VdS
EC
WM
UKCA: 0832-UKCA-CPR-S5045

Model F1FR56 Upright Sprinkler Components and Dimensions — **Figure 1**



Shown with Optional
Factory Installed Water Shield
(Intermediate Upright)

Model F1FR56 Pendent Sprinkler — SIN RA1414

Technical Specifications

Style:
Pendent
Recessed Pendent
Concealed Pendent

Threads: 1/2" NPT or ISO 7-R1/2

Nominal K-Factor: 5.6 (80 metric)

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[1]
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, LPCB, VdS, CE, WM)
Model F2 (cULus, FM, LPCB, VdS, CE, WM)
Model FP (cULus, VdS, CE, WM)

Cover Plate
Model CCP (cULus, VdS[2], CE[2])

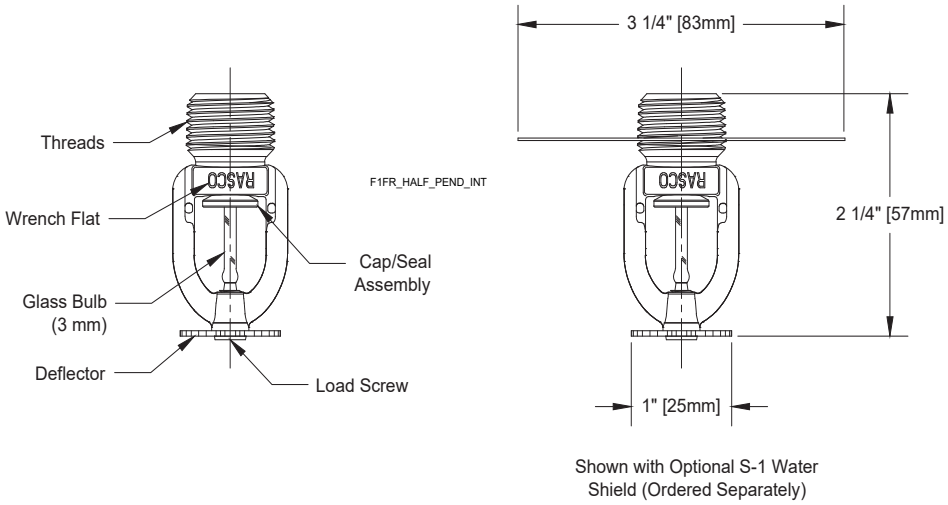
Guards & Shields[3]
F-1 Guard (FM)
F-5 Guard/Shield Kit (FM)
F-7 Guard (cULus)
F-8 Guard/Shield Kit (cULus)
S-1 Shield (cULus, FM)

Sprinkler Wrenches
Model W2 (pendent)
Model W1 (recessed or concealed)
Model W14 (with guard installed)

Listings and Approvals[4]
cULus Listed
FM Approved
LPCB
VdS
EC
WM
UKCA: 0832-UKCA-CPR-S5045, 0831-UK-CA-CPR-5072 (CCP)

Notes:
1. 286°F (141°C) temperature rated sprinkler not listed for recessed or concealed use.
2. VdS and CE approval for CCP concealed use is for 155°C (68°C) sprinkler ONLY.
3. Not suitable for recessed or concealed pendent installations.
4. When used surface mounted or exposed. See Recessed Escutcheon and Cover Plate section for specific approvals when installed recessed or concealed.

Model F1FR56 Pendent Sprinkler Components and Dimensions — **Figure 2**



Shown with Optional S-1 Water Shield (Ordered Separately)

Note: Please refer to Figure 8 for recessed and concealed installation.

Model F1FR56 Horizontal Sidewall Sprinkler — SIN RA1435

Technical Specifications
Style:
Horizontal Sidewall
Recessed Horizontal Sidewall
Threads: 1/2" NPT or ISO 7-R1/2
Nominal K-Factor: 5.6 (80 metric)
Max. Working Pressure:
175 psi (12 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 B)

Sensitivity
Quick response

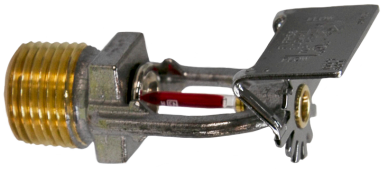
Temperature Ratings [1]
135°F (57°C)
155°F (68°C)
175°F (79°C)
200°F (93°C)
286°F (141°C)

Recessed Escutcheons[2]
Model F1 (cULus)
Model F2 (cULus, FM)
Model FP (cULus)

Guards & Shields[3]
F-4 Guard (FM)
F-7 Guard (cULus)

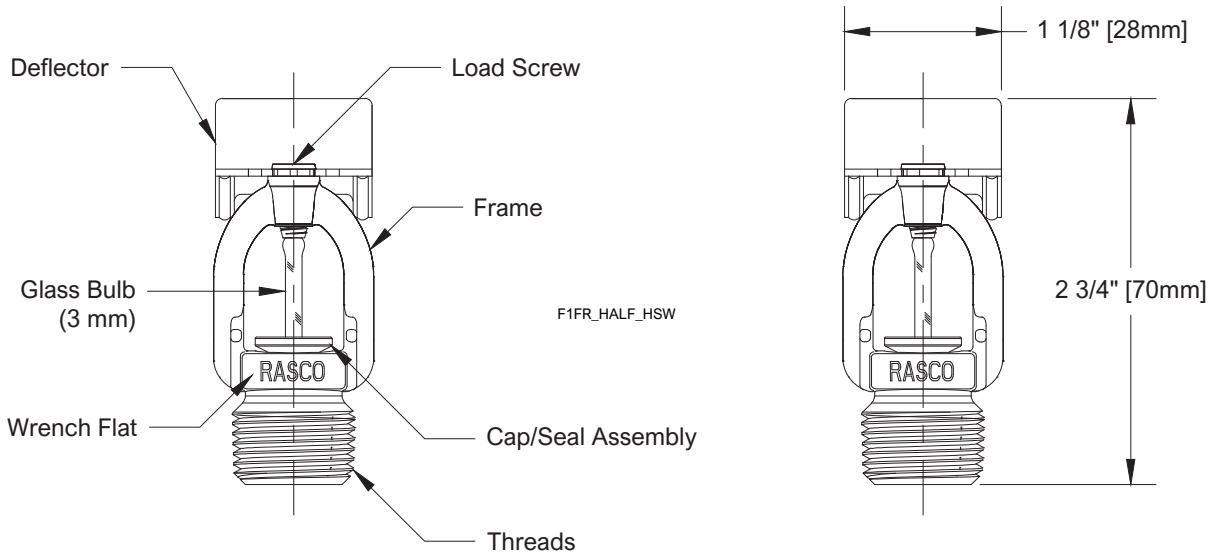
Sprinkler Wrenches
Model W2 (non-recessed)
Model W1 (recessed)
Model W14 (with guard installed)

Listings and Approvals
cULus Listed[4]
FM Approved[5]



Notes:
1. 286°F (141°C) temperature rated sprinkler not listed for recessed use.
2. FM approved recessed installation when used with Model F2 escutcheon ONLY.
3. Not suitable for recessed horizontal sidewall installations.
4. cULus Listed for Light and Ordinary Hazard when installed exposed or surface mounted. Listed for Light Hazard ONLY when installed recessed.
5. FM Approved for Light Hazard ONLY.

Model F1FR56 Horizontal Sidewall Sprinkler Components and Dimensions — **Figure 3**



Note: Please refer to Figure 9 for recessed installation.

Model F1FR56 Vertical Sidewall Sprinkler — SIN RA1485

Technical Specifications
Style:
Upright Vertical Sidewall
Pendent Vertical Sidewall
Threads: 1/2" NPT or ISO 7-R1/2
Nominal K-Factor: 5.6 (80 metric)
Max. Working Pressure: 175 psi (12 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 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)

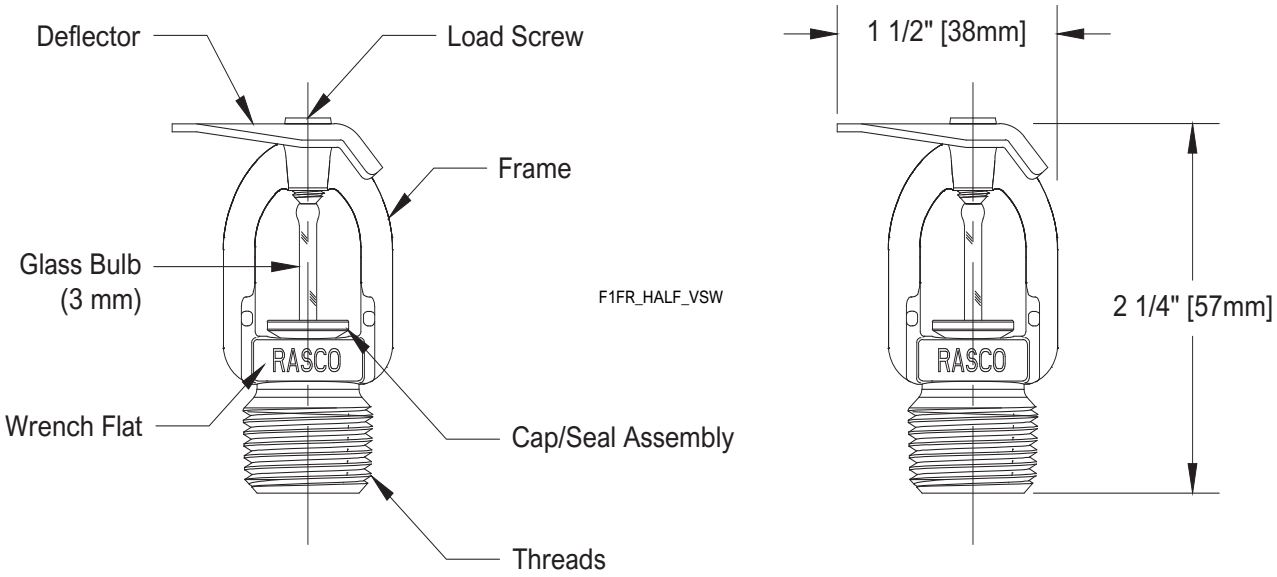
Guards & Shields
F-2 Guard (FM)

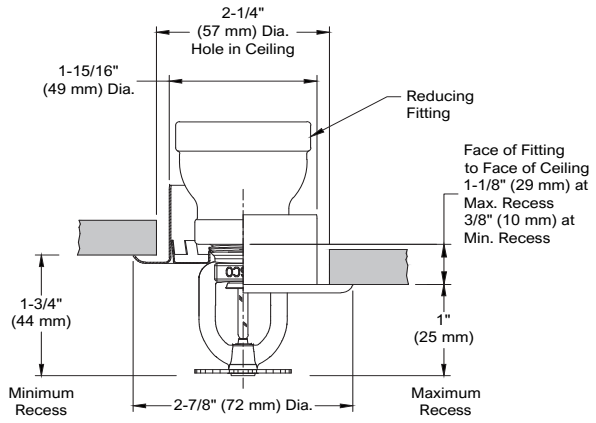
Sprinkler Wrenches
Model W2
Model W14 (with guard installed)

Listings and Approvals[1]
cULus Listed
FM Approved
LPCB[2]
UKCA: 0832-UKCA-CPR-S5045

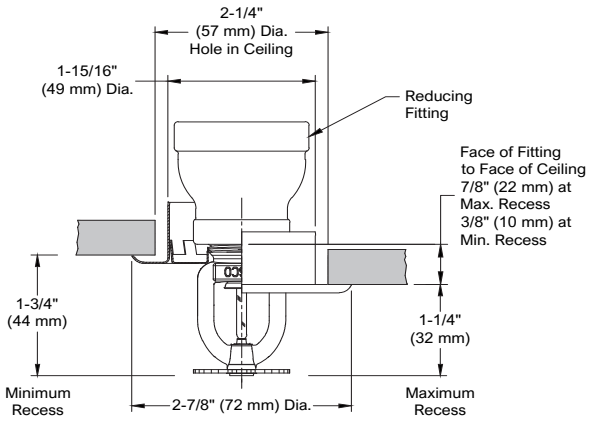
Notes:
1. Listed and approved for Light Hazard ONLY.
2. LPCB approved for use in pendent position ONLY.

Model F1FR56 Vertical Sprinkler Components and Dimensions — **Figure 4**



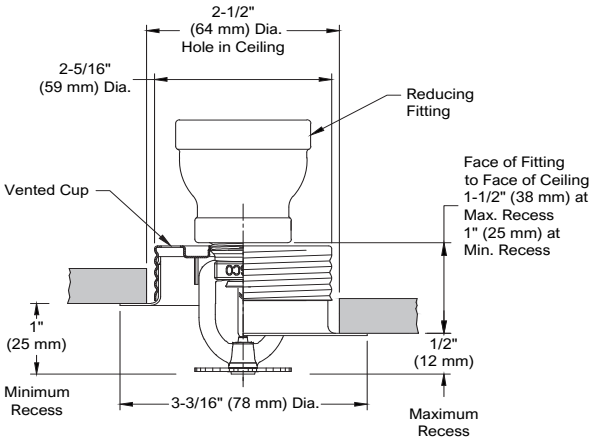


Models F1 & F1FR Pendent Sprinkler
with Model F1 Recessed Escutcheon
3/4" (19mm) Nominal Adjustment



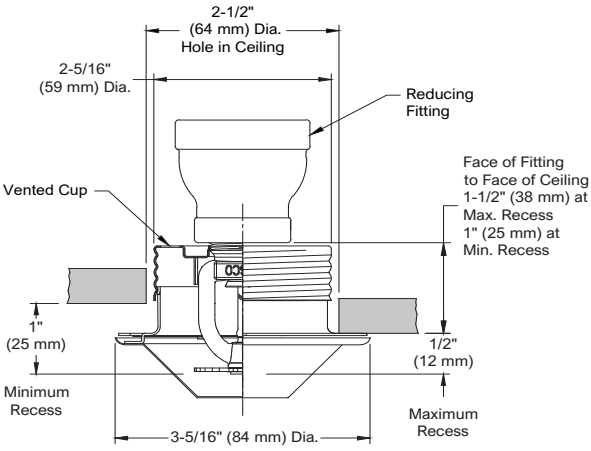
Models F1 & F1FR Pendent Sprinkler
with Model F2 Recessed Escutcheon
1/2" (13mm) Nominal Adjustment

F1_REC_PEND_CCP



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.



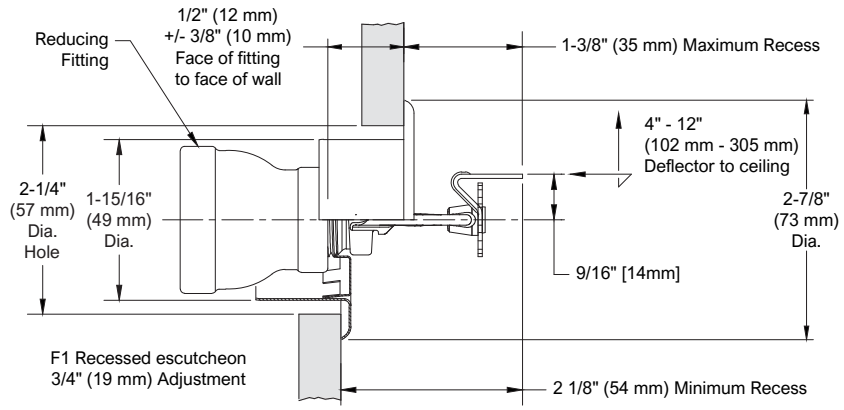
Model F1FR56 CCP Conical Concealed Sprinkler
1/2" (13mm) Nominal Adjustment
(Nominal Cover Plate Projection is 1" (25 mm))

Note: Model CCP concealed 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 CCP cup are unobstructed following installation.

F1 Escutcheon
(F2 Similar)

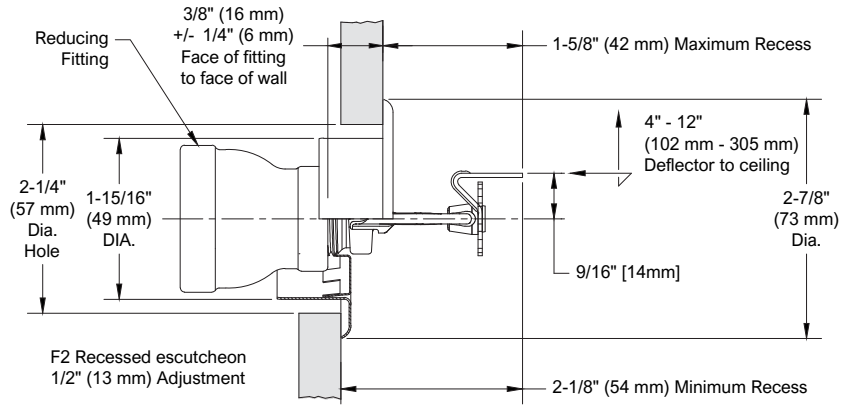
FP Escutcheon

CCP Cover Plate

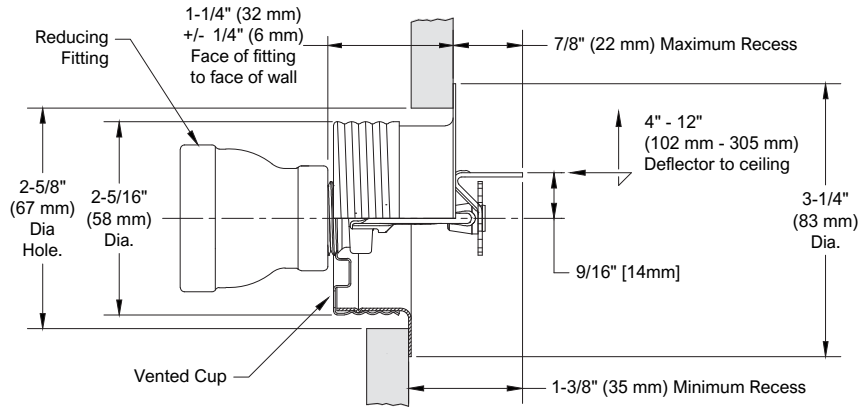


Model F1FR Horizontal Sidewall Sprinkler
with Model F1 Recessed Escutcheon
3/4" (19mm) Nominal Adjustment

F1FR_REC_HSW



Model F1FR Horizontal Sidewall Sprinkler
with Model F2 Recessed Escutcheon
1/2" (13mm) Nominal Adjustment



Model F1FR Horizontal Sidewall 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 behind the sprinkler is positive with respect to the space in 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 W1
(recessed, concealed pendent)

Finishes[1]

Table B

Standard Finishes			Special Application Finishes		
Sprinkler	**F1, F2 and FP[2] Escutcheons**	**CCP Cover Plate[2]**	**Sprinkler**	**F1, F2 and FP[2] Escutcheons**	**CCP Cover Plate[2]**
Bronze	Brass	Chrome	Electroless Nickel PTFE[3][4]	Bright Brass	Bright Brass
Chrome	Chrome	White Paint	Bright Brass[5]	Satin Chrome	Satin Chrome
White Polyester[3]	White Polyester		Satin Chrome	Custom Color Polyester	Custom Color Paint
			Custom Color Polyester[3]		

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

Ordering Information

Specify the following when ordering:

Model
- F1FR56

Deflector/Orientation
- Upright
- Intermediate Upright
- Pendent
- CCP Concealed Pendent
- Horizontal Sidewall
- Vertical Sidewall

Temperature Rating
- See sprinkler technical specifications

Sprinkler Finish
- See Table B

Recessed Escutcheon[1][2]
- F1
- F2
- FP

Escutcheon Finish
- See Table B

CCP Cover Plate Temperature Rating
- 135°F (57°C) [For use with 135°F (57°C) and 155°F (68°C) sprinklers.]
- 165°F (74°C) [For use with 175°F (79°C) and 200°F (93°C) sprinklers.]

CCP Cover Plate Finish
- See Table B

Sprinkler Wrench
- Model W2
- Model W1 (recessed, concealed)
- Model W14 (with guard installed)

Notes:
1. 286°F (141°C) sprinklers are not listed to be used recessed or concealed.
2. For FM, recessed sprinklers must use the Model F2 escutcheon.

P/N 9999970623

Reliable®

Model J112 and JL112 Sprinklers

Extended Coverage Sprinklers for
Light Hazard and Ordinary Hazard

cULus Listed
K11.2 (160 metric)

Product Description

Model J112 and JL112 series sprinklers are cULus Listed extended coverage spray sprinklers intended for installation in accordance with NFPA 13. The sprinklers also have cULus Listed Specific Application Criteria for installation under concrete tee construction in accordance with the requirements documented in this bulletin. Coverage areas up to 400 ft^2 (37 m^2) per sprinkler with a maximum spacing of up to 20 ft by 20 ft (6.1 m by 6.1 m) are permitted for both Light Hazard and Ordinary Hazard occupancies. Listed flows and pressures for each hazard classification and sprinkler spacing are provided in this bulletin. Model J112 and JL112 series sprinkler are cULus Listed as quick-response sprinklers for Light Hazard occupancies. When used in the Ordinary Hazard occupancies, Model J112 and JL112 series sprinklers are cULus Listed as quick-response for spacings up to 14 ft by 14 ft (4.3 m by 4.3 m) and standard-response for other listed spacings up to 20 ft by 20 ft (6.1 m by 6.1 m).

Model J112 Pendent and J112 Upright sprinklers use a glass bulb operating element and are cULus Listed as Corrosion Resistant Sprinklers when ordered with Polyester or Electroless Nickel PTFE (ENT) finish. Model JL112 Pendent and JL112 Upright sprinklers use a fusible link operating element. Model J112 Pendent and Model JL112 Pendent sprinklers are cULus Listed for use with the Model F2 and Model FP recessed escutcheons, which provide up to ½ inch (13 mm) of adjustment. In addition, for Ordinary Hazard occupancies, the Model J112 Pendent and Model JL112 Pendent sprinklers are cULus Listed for use with the Model F1 recessed escutcheon that provides up to ¾ inch (19 mm) of adjustment.

Application

Model J112 and JL112 series sprinklers are intended for installation in Light Hazard and Ordinary Hazard occupancies in accordance with NFPA 13. The sprinklers must be installed in accordance with the requirements of NFPA 13 for extended coverage spray sprinklers and the requirements identified in this bulletin. In addition to the installation requirements of NFPA 13, cULus Listed Specific Application Criteria for installation under concrete tee construction is provided in this bulletin.

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 JL112 Upright


Model J112 Upright


Model JL112 Pendent


Model J112 Pendent


F1/F2 Recessed Escutcheon


FP Recessed Escutcheon

Model J112 and JL112 Series Sprinkler Summary — **Table A**

Model	Orientation	Operating Element	Sprinkler Identification Number (SIN)
J112	Pendent	Glass Bulb	RA7216
JL112	Pendent	Fusible Link	R7216
J112	Upright	Glass Bulb	RA7326
JL112	Upright	Fusible Link	R7326

Model J112 Pendent Sprinkler — SIN RA7216

Technical Specifications
Style: Extended Coverage Pendent
Threads: 3/4" NPT or ISO 7-1R3/4
Nominal K-Factor: 11.2 (160 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Glass Bulb
Cup: Bronze Alloy
Frame: Brass Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Kick Spring: Steel Alloy
Deflector: Brass Alloy

Sprinkler Wrench
Model J1
Model RJ (recessed)

Finishes
(See Table G)

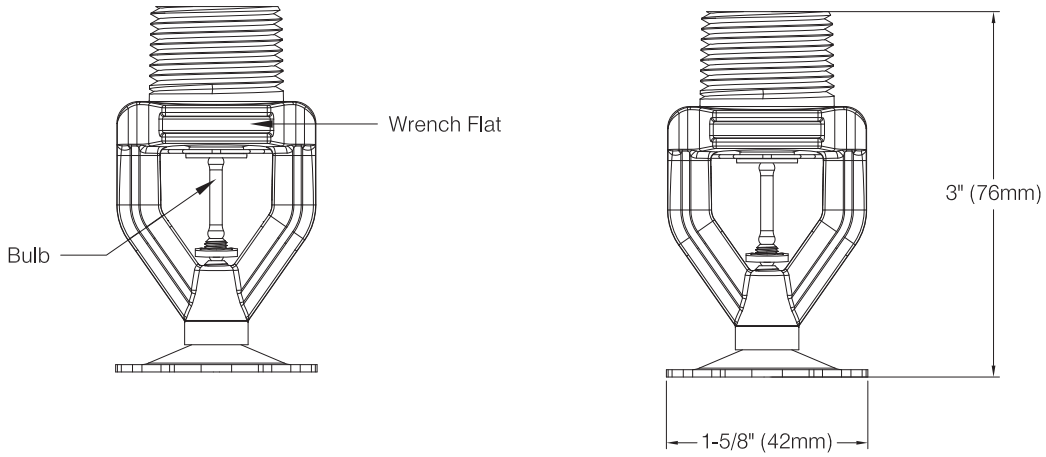
Sensitivity
(See Table B)

Temperature Ratings
155°F (68°C)
200°F (93°C)
286°F (141°C)

Recessed Escutcheons
F1-3/4" (19mm) adjustment (Ordinary Hazard only)
F2-1/2" (13mm) adjustment
FP-1/2" (13mm) adjustment

Listings and Approvals
cULus Listed
cULus Listed as Corrosion Resistant with Polyester and ENT finish only

Model J112 Pendent Sprinkler Components — **Figure 1**



Listed Design Criteria and Sensitivity — **Table B**

Max. Spacing ft. x ft. (m x m)	Light Hazard		Ordinary Hazard Group 1		Ordinary Hazard Group 2	
	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)
12 x 12 (3.7 x 3.7)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
14 x 14 (4.3 x 4.3)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
16 x 16 (4.9 x 4.9)	30 (114) QR	7.2 (0.50) QR	39 (148) SR	12.1 (0.8) SR	51 (193) SR	20.7 (1.4) SR
18 x 18 (5.5 x 5.5)	33 (125) QR	8.7 (0.60) QR	49 (186) SR	19.1 (1.3) SR	65 (246) SR	33.7 (2.3) SR
20 x 20 (6.1 x 6.1)	40 (152) QR	12.8 (0.88) QR	60 (227) SR	28.7 (2.0) SR	80 (303) SR	51.0 (3.5) SR

QR = Quick-response
SR = Standard-response

Model JL112 Pendent Sprinkler — SIN R7216

Technical Specifications
Style: Extended Coverage Pendent
Threads: 3/4" NPT or ISO 7-1R3/4
Nominal K-Factor: 11.2 (160 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Nickel Alloy Solder Link
Frame: Brass Alloy
Levers: Brass Alloy
Cap: Bronze Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Deflector: Brass Alloy
Strut: Copper Alloy

Sprinkler Wrench
Model J1
Model RJ (recessed)

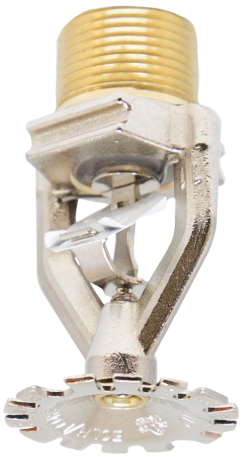
Finishes
(See Table G)

Sensitivity
(See Table C)

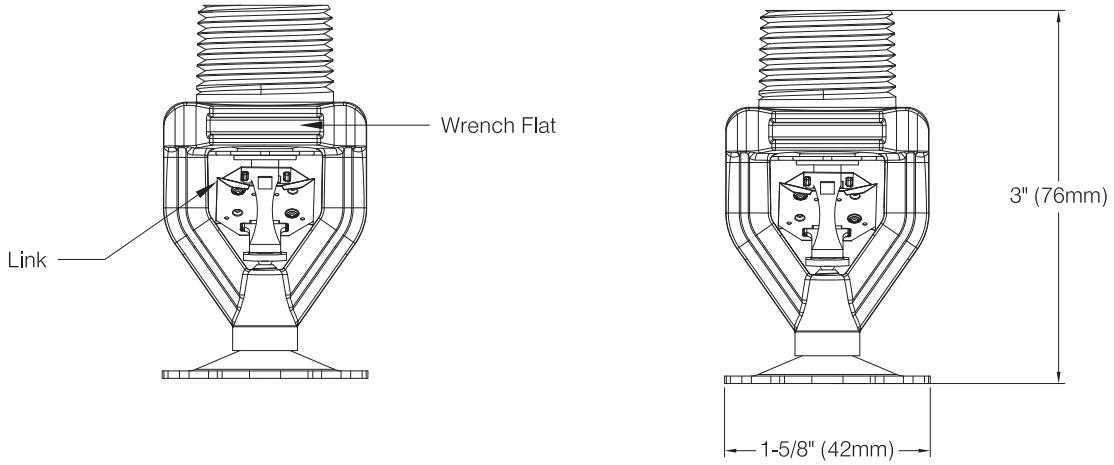
Temperature Rating*
165°F (74°C)
212°F (100°C)

Recessed Escutcheons
F1-3/4" (19mm) adjustment (Ordinary Hazard only)
F2-1/2" (13mm) adjustment
FP-1/2" (13mm) adjustment

Listings and Approvals
cULus Listed



Model J112 Pendent Sprinkler Components — Figure 2



Listed Design Criteria and Sensitivity — Table C

Max. Spacing ft. x ft. (m x m)	Light Hazard		Ordinary Hazard Group 1		Ordinary Hazard Group 2	
	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)
12 x 12 (3.7 x 3.7)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
14 x 14 (4.3 x 4.3)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
16 x 16 (4.9 x 4.9)	30 (114) QR	7.2 (0.50) QR	39 (148) SR	12.1 (0.8) SR	51 (193) SR	20.7 (1.4) SR
18 x 18 (5.5 x 5.5)	33 (125) QR	8.7 (0.60) QR	49 (186) SR	19.1 (1.3) SR	65 (246) SR	33.7 (2.3) SR
20 x 20 (6.1 x 6.1)	40 (152) QR	12.8 (0.88) QR	60 (227) SR	28.7 (2.0) SR	80 (303) SR	51.0 (3.5) SR

QR = Quick-response
SR = Standard-response

Model J112 Upright Sprinkler — SIN RA7326

Technical Specifications
Style: Extended Coverage Upright
Threads: 3/4" NPT or ISO 7-1 R3/4
Nominal K-Factor: 11.2 (160 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Glass Bulb
Cup: Bronze Alloy
Frame: Brass Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Kick Spring: Steel Alloy
Deflector: Brass Alloy

Finishes
(See Table G)

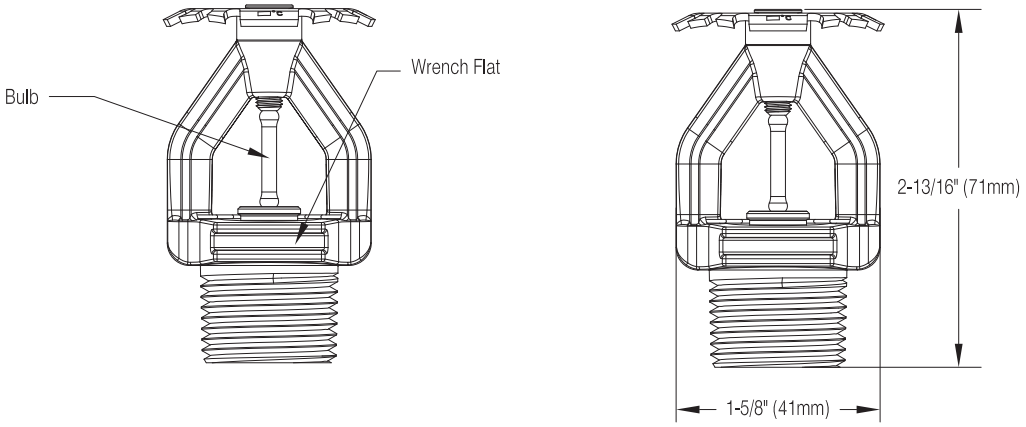
Sensitivity
(See Table D)

Temperature Rating
155°F (68°C)
200°F (93°C)
286°F (141°C)

Sprinkler Wrench
Model J1

Listings and Approvals
cULus Listed
cULus Listed as Corrosion Resistant with Polyester and ENT finish only

Model J112 Upright Sprinkler Components — **Figure 3**



Listed Design Criteria and Sensitivity — **Table D**

Max. Spacing ft. x ft. (m x m)	Light Hazard		Ordinary Hazard Group 1		Ordinary Hazard Group 2	
	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)
12 x 12 (3.7 x 3.7)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
14 x 14 (4.3 x 4.3)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
16 x 16 (4.9 x 4.9)	30 (114) QR	7.2 (0.50) QR	39 (148) SR	12.1 (0.8) SR	51 (193) SR	20.7 (1.4) SR
18 x 18 (5.5 x 5.5)	33 (125) QR	8.7 (0.60) QR	49 (186) SR	19.1 (1.3) SR	65 (246) SR	33.7 (2.3) SR
20 x 20 (6.1 x 6.1)	40 (152) QR	12.8 (0.88) QR	60 (227) SR	28.7 (2.0) SR	80 (303) SR	51.0 (3.5) SR

QR = Quick-response
SR = Standard-response

Model JL112 Upright Sprinkler — SIN R7326

Technical Specifications
Style: Extended Coverage Upright
Threads: 3/4" NPT or ISO 7-1 R3/4
Nominal K-Factor: 11.2 (160 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Nickel Alloy Solder Link
Frame: Brass Alloy
Levers: Brass Alloy
Strut: Brass Alloy
Cap: Bronze Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Deflector: Brass Alloy

Finishes
(See Table G)

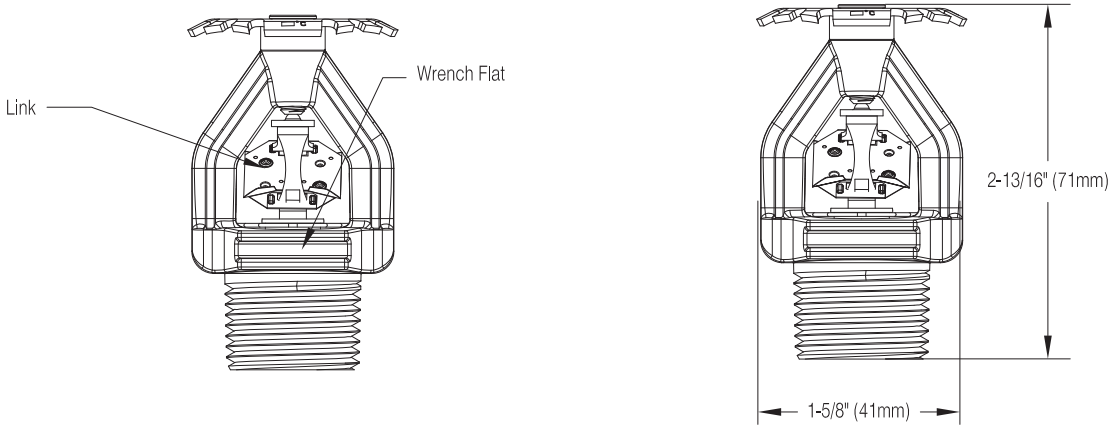
Sensitivity
(See Table E)

Temperature Rating*
165°F (74°C)
212°F (100°C)

Sprinkler Wrench
Model J1

Listings and Approvals
cULus Listed

Model JL112 Upright Sprinkler Components — Figure 4



Listed Design Criteria and Sensitivity — Table E

Max. Spacing ft. x ft. (m x m)	Light Hazard		Ordinary Hazard Group 1		Ordinary Hazard Group 2	
	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)	Flow gpm (l/m)	Pressure psi (bar)
12 x 12 (3.7 x 3.7)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
14 x 14 (4.3 x 4.3)	30 (114) QR	7.2 (0.50) QR	30 (114) QR	7.2 (0.50) QR	39 (148) QR	12.1 (0.8) QR
16 x 16 (4.9 x 4.9)	30 (114) QR	7.2 (0.50) QR	39 (148) SR	12.1 (0.8) SR	51 (193) SR	20.7 (1.4) SR
18 x 18 (5.5 x 5.5)	33 (125) QR	8.7 (0.60) QR	49 (186) SR	19.1 (1.3) SR	65 (246) SR	33.7 (2.3) SR
20 x 20 (6.1 x 6.1)	40 (152) QR	12.8 (0.88) QR	60 (227) SR	28.7 (2.0) SR	80 (303) SR	51.0 (3.5) SR

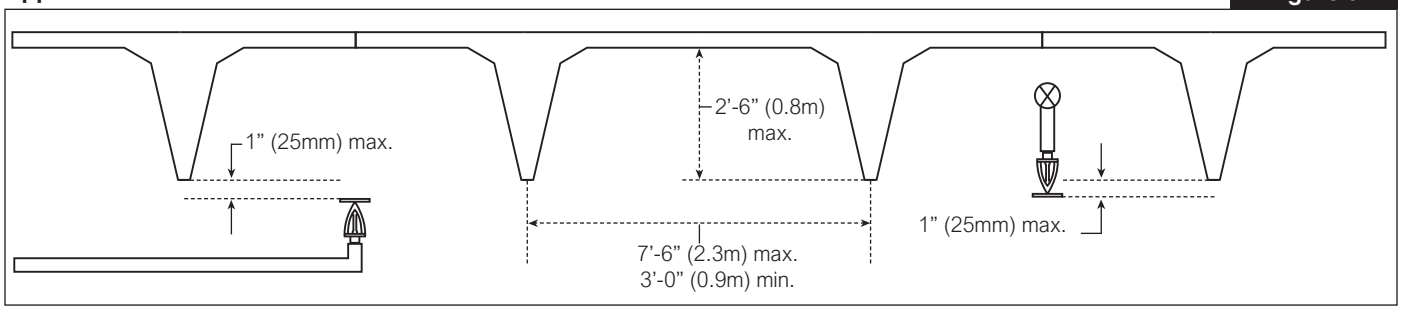
QR = Quick-response
SR = Standard-response

Model J112 and JL112 Specific Application Criteria for Use Under Concrete Tee Construction cULus Listed

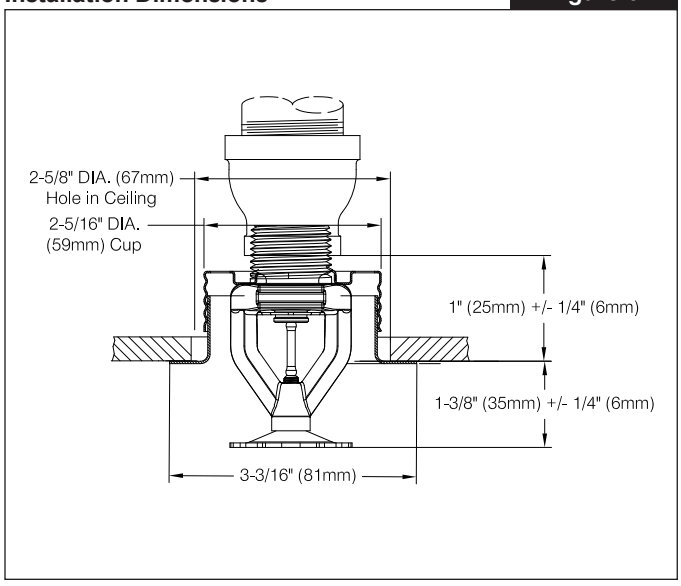
The Model J112 and JL112 pendent and upright sprinklers are cULus Listed for installation under concrete tee construction in accordance with the following specific application criteria:

- Max. Tee Depth: 2'- 6" (0.8m)
- Max. Tee Stem Spacing: 7'- 6" (2.3m)
- Min. Tee Stem Spacing: 3'- 0" (0.9m)
- Max. Tee Length: 32'- 0" (9.8m) or non-conbustible baffles not less than the depth of the tees must be installed so that the longitudinal space between baffles does not exceed 32ft (9.8m) in length.
- Max. Deflector distance below Tee: 1" (25mm)
- Comply with obstructions to the Sprinkler Discharge Pattern Development requirements of the NFPA13 where deflector is located above bottom of tee.

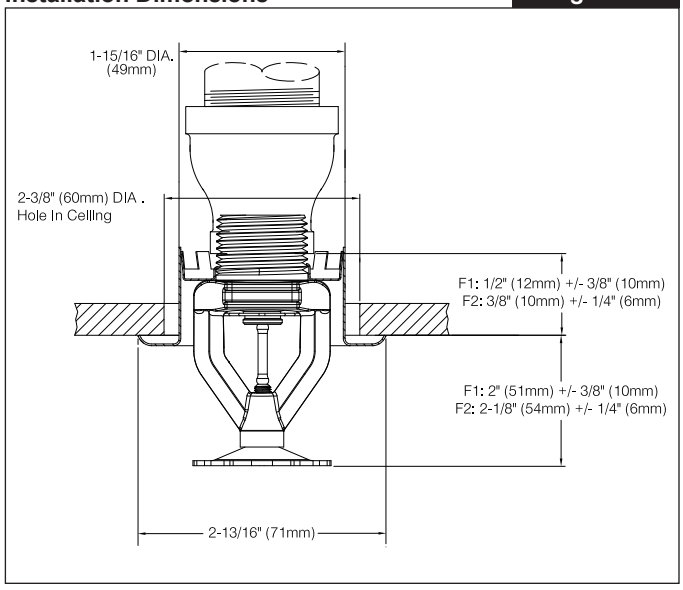
Application and Installation for Use Under Concrete Tee **Figure 5**



Model FP Escutcheon Installation Dimensions **Figure 6**



Model F1/F2 Escutcheon Installation Dimensions **Figure 7**



Note: The Model FP, F1, or F2 may be used for ordinary hazard occupancies. For light hazard occupancies, the Model FP or F2 recessed escutcheon must be used. Model J112 and JL112 sprinklers with Model F1 recessed escutcheon are not listed for use in light hazard occupancies.

Sprinkler & Escutcheon Finishes [1] **Table G**

Standard Finishes		Special Application Finishes	
Sprinkler	**F1, F2, & FP[3] Escutcheons**	**Sprinkler**	**F1, F2, & FP[3] Escutcheons**
Bronze Chrome Plated White Polyester [2]	Brass Chrome Plated White Polyester	Bright Brass Satin Chrome Custom Color Polyester[2] Electroless Nickel PTFE [2] [4]	Bright Brass Satin Chrome Custom Color Polyester Type 316 Stainless Steel

Notes: [1] Paint or any other coating applied over the factory finish will void all approvals and warranties.
[2] cULus Listed Corrosion Resistant when ordered with Model J112 Pendent (RA7216) or Model J112 Upright (RA7326).
[3] The Model FP escutcheon assembly consists of an unfinished galvanized cup with a finished escutcheon ring.
[4] Available with Model J112 Pendent (RA7216) and Model J112 Upright (RA7326) only.

Installation

Glass bulb sprinklers have orange bulb protectors 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.

Models J112 and JL112 series sprinklers must be installed with the Reliable sprinkler installation wrench identified in this bulletin. Any other wrench may damage the sprinkler. Recommended installation torque is 14 to 20 lb.ft (19 to 27 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.

Recessed pendent sprinklers are to be installed as shown in Fig. 6 or Fig 7., as applicable to the specific model being installed. Models J112 and JL112 series recessed pendent sprinklers may only be installed with the Reliable Model F1, Model F2, or Model FP recessed escutcheon. The use of any other recessed escutcheon will void all approvals and negate all warranties. The Reliable Model FP escutcheon may not be used in ceilings having positive pressure with respect to the space below. Ensure that the openings in the Model FP escutcheon/can assembly are unobstructed following installation.

Maintenance

Models J112 and JL112 series 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.

J1 Wrench

RJ Wrench

Listings and Approvals

Listed by Underwriters Laboratories, Inc. and certified by Underwriters Laboratories of Canada (cULus)

UL Listing Category

Sprinklers, Automatic and Open Extended Coverage Sprinklers
UL Guide Number – VNIV.

Ordering Information

Specify:

1. Sprinkler Model: [J112 Pendent] [JL112 Pendent]
   [J112 Upright] [JL112 Upright]
2. Temperature Rating: J112: [155°F (68°C)] [200°F (93°C)]
   [286°F (141°C)]
   JL112: [165°F (74°C)] [212°F (100°C)]
3. Finish: (See Table G)
4. Escutcheon (Pendent Only; for 3/4" threads)
   Model F1 (Ordinary Hazard Only)
   Model F2
   Model FP

P/N 9999970310

Reliable®

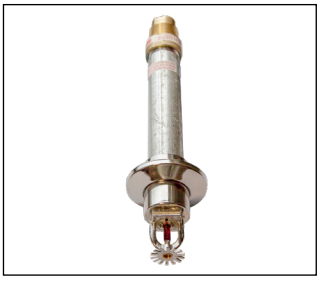
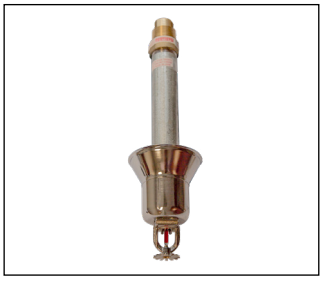
Model F3QR56 Series
Quick-Response Dry Sprinkler

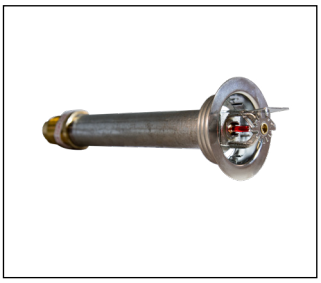
K-factor 5.6 (80 metric)

Features

- Various trim options available
- Sprinklers and trim available in a wide variety of standard and special application finishes
- Listed corrosion resistant combinations of sprinkler and trim available

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.


(**Note**: not all versions of sprinkler shown, please see pages 2 through 13)

Product Description

Model F3QR56 dry sprinklers are Quick-Response, standard coverage sprinklers with a nominal K-factor of 5.6 (80 metric). Available in pendent, horizontal sidewall, and upright configurations, Model F3QR56 dry sprinklers utilize a 3mm glass bulb ordinary, intermediate, or high temperature classification operating element.

Model F3QR56 dry sprinklers are intended for installation on wet pipe, dry pipe, or preaction systems in accordance with NFPA 13, FM Property Loss Prevention Data Sheets, or other applicable installation standards.

Model F3QR56 dry sprinklers are available in a variety of trim options and finish combinations as shown on the following pages. The Reliable escutcheons and cover plates shown are the only escutcheons and cover plates listed for use with the sprinkler. The use of any other escutcheon or cover plate will void all guarantees, warranty, listing, and approvals.

Standard inlet fitting threads are 1" NPT or ISO7-R1 threads. An inlet fitting with 3/4" NPT or ISO7-R3/4 threads (cULus listed only) is also available for select sprinklers for replacement of existing sprinklers.

Table A provides a basic summary of Model F3QR56 dry sprinklers. Additional technical information is provided on the following individual sprinkler pages.

Sprinkler Summary

Table A

Model	K-Factor gpm/psi$^{1/2}$ (lpm/bar$^{1/2}$)	Approvals*	Max. Working Pressure psi (bar)	Sprinkler Identification Number (SIN)
F3QR56 Dry Pendent	5.6 (80)	cULus, FM	175 (12.0) cULus 250 (17.2)	R5714
F3QR56 Dry Horizontal Sidewall	5.6 (80)	cULus, FM	175 (12.0) cULus 250 (17.2)	R5734
F3QR56 Dry Upright	5.6 (80)	cULus	175 (12.0)	R5724

***Note:** Approvals may not apply to all trim, inlet thread, temperature, and/or finish combinations. See pages 2-11 for additional technical information.

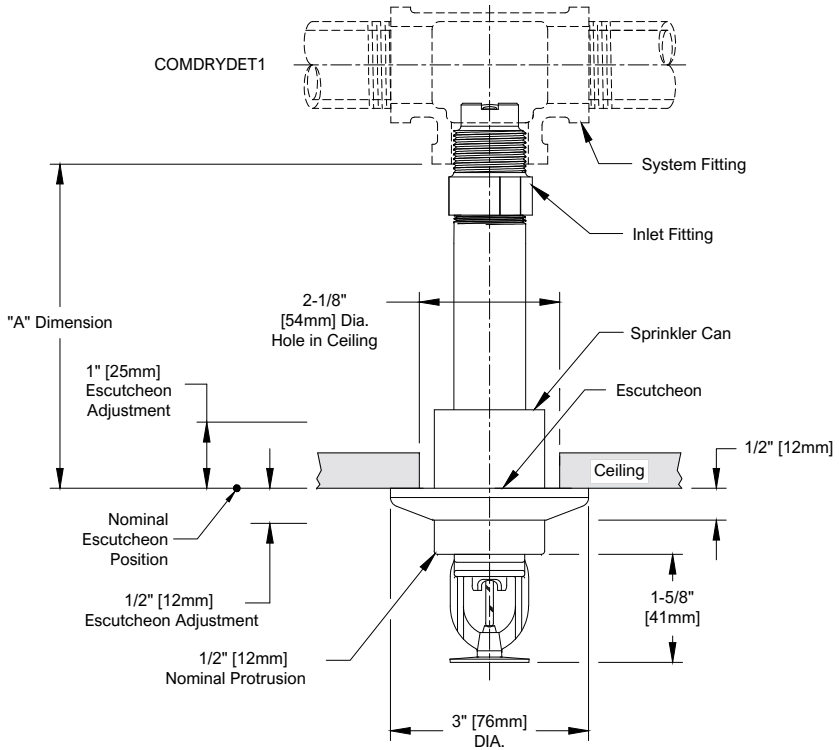
Model F3QR56 Dry Pendent: Standard Escutcheon - SIN R5714

Table B

"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 2" to 36" (51mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	C-2
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus, FM	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Pendent Sprinkler: Standard Escutcheon **Figure 1**



Note: The sprinkler can protrudes 1/2" (12mm) when escutcheon is in nominal position. Escutcheon adjustment provides -1/2" (12mm) to +1" (25mm) "A" dimension adjustment range.

Finish Combinations: Standard Escutcheon	
Sprinkler	**Escutcheon[2][3]**
Bronze	Polished Stainless
Bronze	Laquered Brass
Chrome	Polished Stainless
White Polyester[1]	White Polyester
Black Polyester[1]	Black Polyester
Custom Color Polyester[1]	Custom Color Polyester
Electroless Nickel PTFE[1][4]	Polished Stainless

Notes:
1. UL Listed as Corrosion Resistant.
2. Escutcheons do not carry corrosion resistant listings.
3. Base material is 316 stainless steel unless noted.
4. FM Approved as Corrosion Resistant.

Model F3QR56 Dry Pendent: HB Escutcheon - SIN R5714

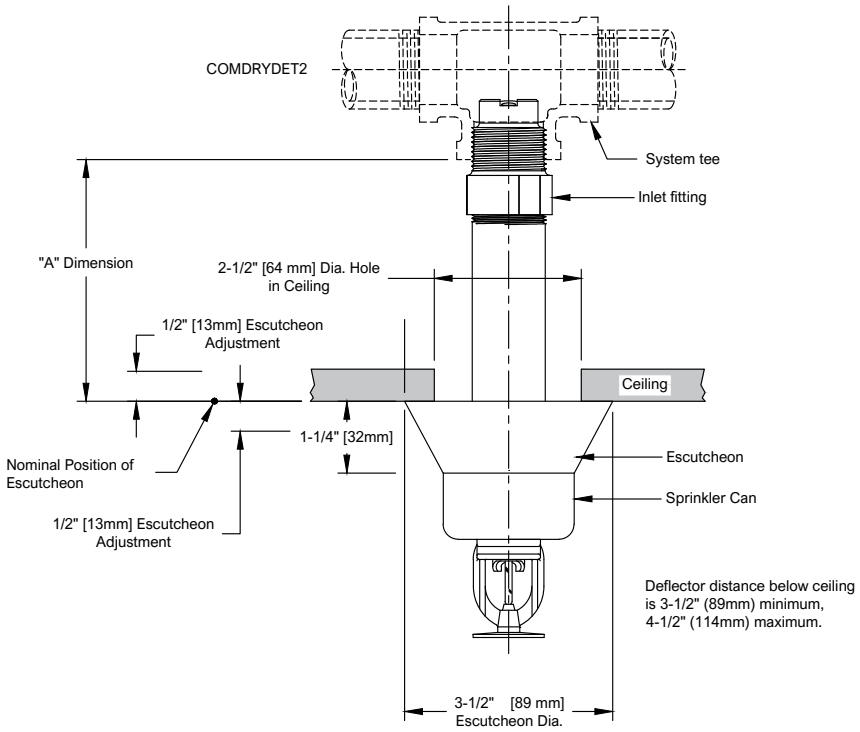
Table C

"A" Dimension in (mm)	Temperature Classification	Temperature Rating F (C)	Glass Bulb Color	Approvals	Sprinkler Guard
3½" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3½" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	C-2
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus, FM	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Pendent Sprinkler: HB Escutcheon

Figure 2



Note: The sprinkler can protrudes 1¼" when escutcheon is in nominal position. Escutcheon adjustment provides -½" (-12.7mm) to +½" (+12.7mm) "A" dimension adjustment range.

Finish Combinations: HB Escutcheon	
Sprinkler	**Escutcheon[2][3]**
Bronze	Chrome
Chrome	Chrome
White Polyester[1]	White Polyester
Black Polyester[1]	Black Polyester
Custom Color Polyester[1]	Custom Color Polyester
Electroless Nickel PTFE[1][4]	Stainless Steel

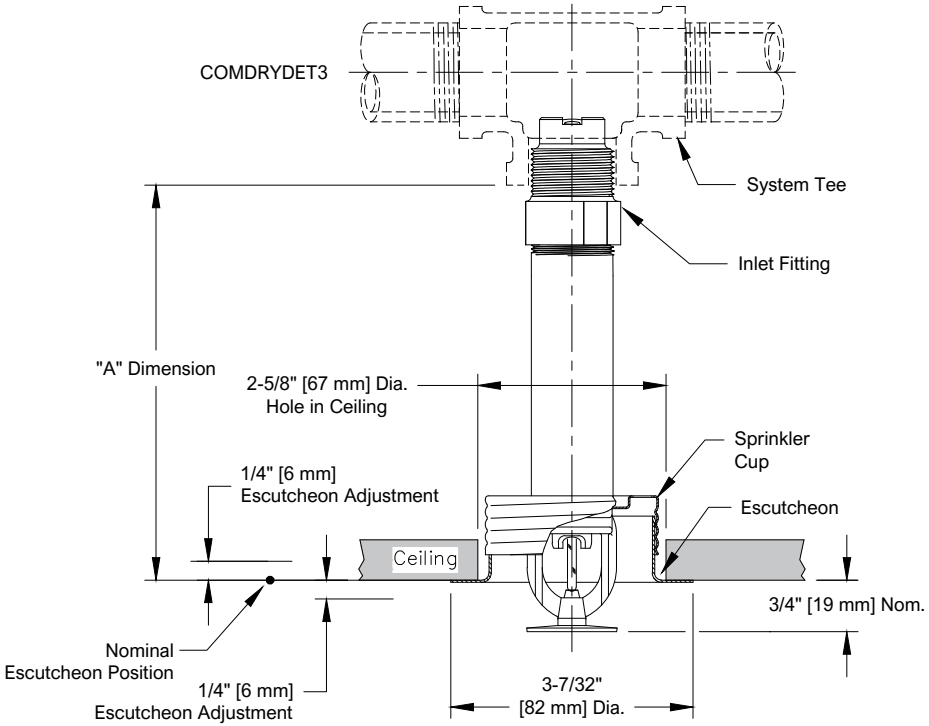
Notes:
1. UL Listed as Corrosion Resistant.
2. Escutcheons do not carry corrosion resistant listings.
3. Base material is cold rolled steel unless noted.
4. FM Approved as Corrosion Resistant.

Model F3QR56 Dry Pendent: FP Escutcheon - SIN R5714 **Table D**

"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
3½" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3½" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	N/A
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Pendent Sprinkler: FP Escutcheon **Figure 3**



Note: Do not install the Model F3QR56 Dry Pendent sprinkler with the Model FP escutcheon in ceilings which have positive pressure in the space above.

Finish Combinations: FP Recessed	
Sprinkler[1]	**Escutcheon[3][4]**
Bronze	Brass
Chrome	Chrome
White Polyester[2]	White Polyester
Black Polyester[2]	Black Polyester
Custom Color Polyester[2]	Custom Color Polyester
Electroless Nickel PTFE[2][5]	Stainless Steel

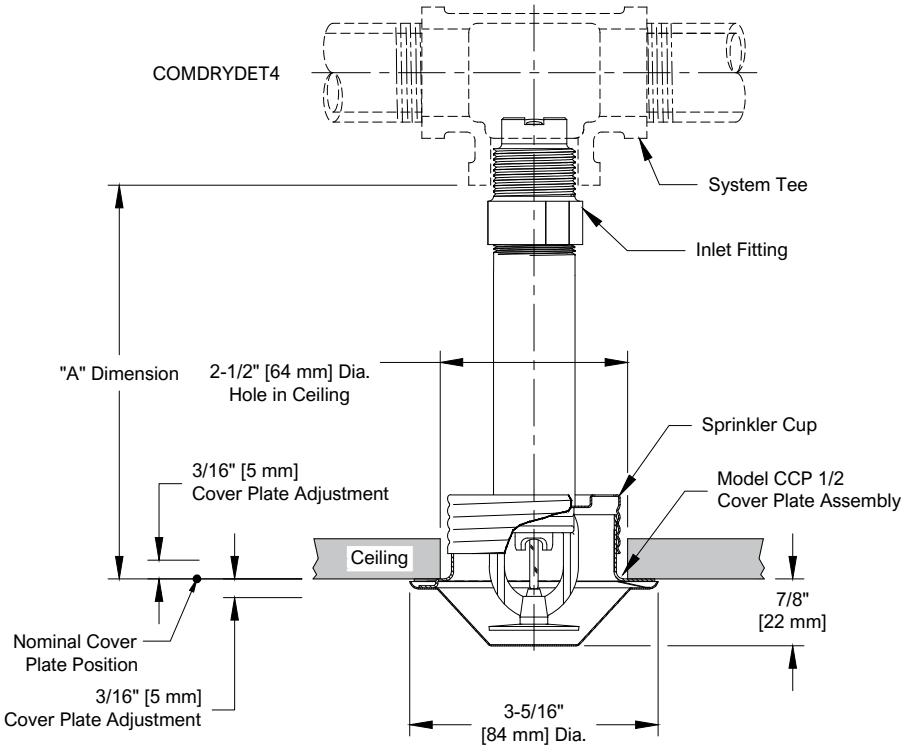
Notes:
1. Cup for FP Recessed is unfinished galvanized steel except electroless nickel PTFE sprinklers which are provided with a stainless steel cup
2. UL Listed as Corrosion Resistant.
3. Escutcheons do not carry corrosion resistant listings.
4. Base material is cold rolled steel unless noted.
5. FM Approved as Corrosion Resistant.

Model F3QR56 Dry Pendent: CCP Cover Plate - SIN R5714 **Table E**

"A" Dimension in (mm)	Temperature Classification	Temperature Rating F (C)	Glass Bulb Color	Approvals	Sprinkler Guard
3½" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3½" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	N/A
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High (See Caution)	286°F (141°C)	Blue	cULus	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Pendent Sprinkler: CCP Cover Plate **Figure 4**



Note: Do not install the Model F3QR56 Dry Pendent sprinkler with the Model CCP cover plate in ceilings which have positive pressure in the space above.

Finish Combinations: CCP Concealed	
Sprinkler[1]	**Cover Plate[2]**
Bronze	White Polyester
	Chrome Bright
	Satin Chrome
	Bright Brass
	Unfinished Bronze
	Black Plate
	Custom Color

Notes:
1. Cup for CCP Concealed is unfinished galvanized steel.
2. Cover plates do not carry corrosion resistant listings.

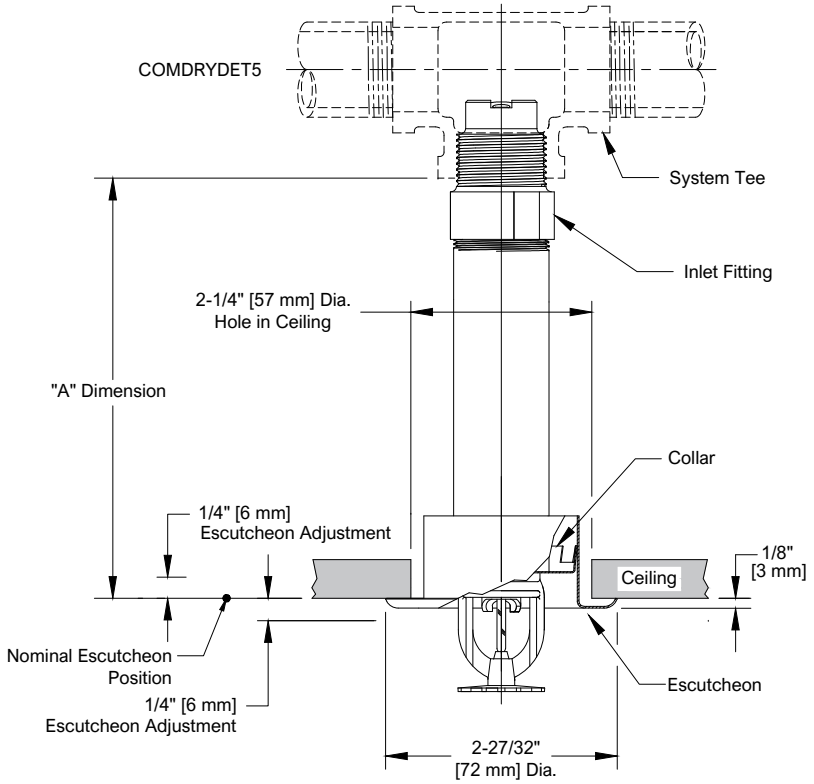
Caution: High temperature CCP sprinklers are provided with a 165°F (74°C) rated cover plate that is suitable for use where the ceiling temperature will not exceed 150°F (66°C). Do not use CCP style sprinklers where the ceiling temperature exceeds 150°F (66°C).

Model F3QR56 Dry Pendent: F1 Escutcheon - SIN R5714 **Table F**

"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
3½" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3½" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections.	Ordinary	155°F (68°C)	Red	cULus, FM	N/A
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Pendent Sprinkler: F1 Escutcheon **Figure 5**



Finish Combinations: F1 Recessed	
Sprinkler	**Escutcheon[2][3]**
Bronze	Brass
Chrome	Chrome
White Polyester[1]	White Polyester
Black Polyester[1]	Black Polyester
Custom Color Polyester[1]	Custom Color Polyester
Electroless Nickel PTFE[1][4]	Stainless Steel

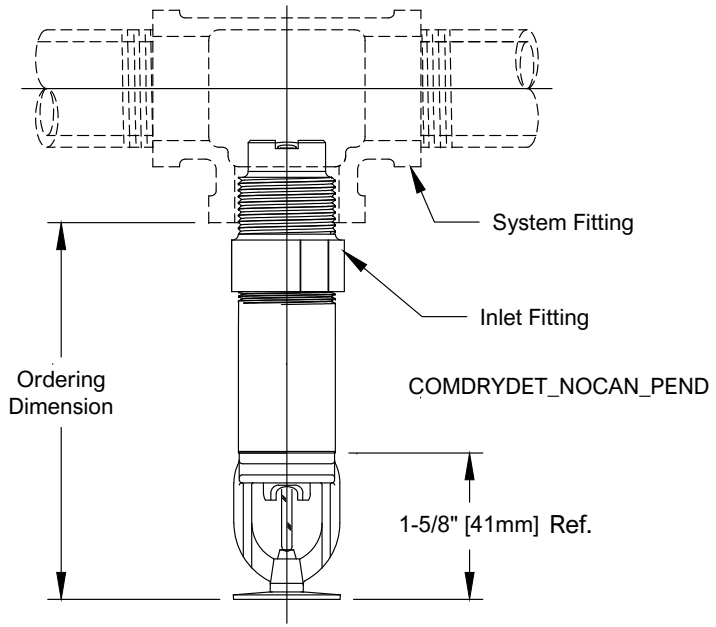
Notes:
1. UL Listed as Corrosion Resistant.
2. Escutcheons do not carry corrosion resistant listings.
3. Base material is cold rolled steel unless noted.
4. FM Approved as Corrosion Resistant.

Model F3QR56 Dry Pendent: No Escutcheon - SIN R5714 **Table G**

Order Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
5" to 48" (127mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 5" to 36" (127mm to 914mm) in 1/4" (6mm) increments for 3/4" connections.	Ordinary	155°F (68°C)	Red	cULus, FM	C-2
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus, FM	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Pendent Sprinkler: No Escutcheon **Figure 6**



Note: Customer is responsible for determining the correct deflector distance from the ceiling or structure above.

Available Finishes: No Escutcheon
Sprinkler
Bronze
Chrome
White Polyester(1)
Black Polyester (1)
Custom Color Polyester (1)
Electroless Nickel PTFE (1)(2)

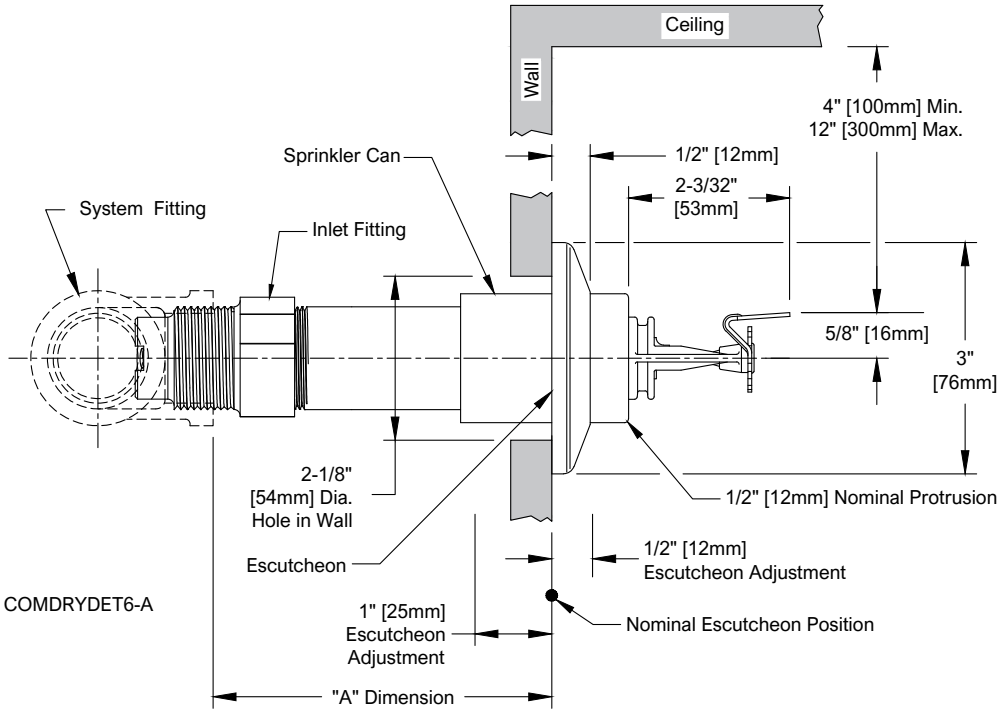
Notes:
1. UL Listed as Corrosion Resistant.
2. FM Approved as Corrosion Resistant.

Model F3QR56 Dry Horizontal Sidewall: Standard Escutcheon - SIN R5734 **Table H**

"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals (Light Hazard/HC-1 Only)	Sprinkler Guard
2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 2" to 36" (51mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	C-2 (FM Only)
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus, FM	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Horizontal Sidewall: Standard Escutcheon **Figure 7**



Note: The sprinkler can protrude 1/2" when escutcheon is in nominal position. Escutcheon adjustment provides -1/2" (-12mm) to +1" (25mm) "A" dimension adjustment range.

Finish Combinations: Standard Escutcheon	
Sprinkler	**Escutcheon[2][3]**
Bronze	Polished Stainless
Bronze	Laquered Brass
Chrome	Polished Stainless
White Polyester[1]	White Polyester
Black Polyester[1]	Black Polyester
Custom Color Polyester[1]	Custom Color Polyester
Electroless Nickel PTFE[1][4]	Polished Stainless

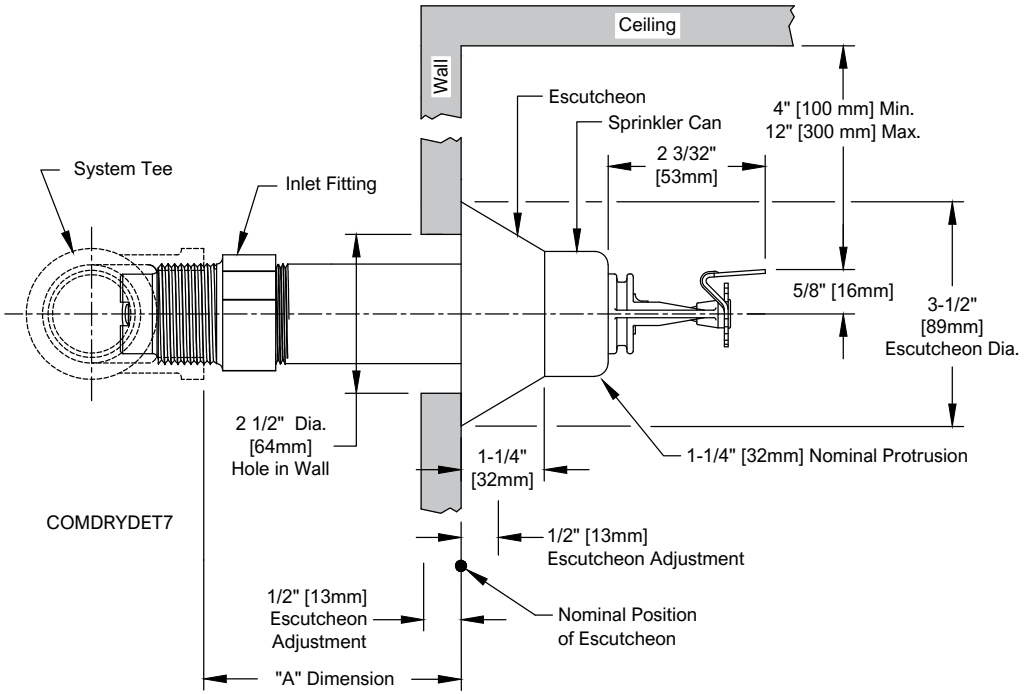
Notes:
1. UL Listed as Corrosion Resistant.
2. Escutcheons do not carry corrosion resistant listings.
3. Base material is 316 stainless steel unless noted.
4. FM Approved as Corrosion Resistant.

Model F3QR56 Dry Horizontal Sidewall: HB Escutcheon - SIN R5734 **Table I**

"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals (Light Hazard/HC-1 Only)	Sprinkler Guard
3½" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3½" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	C-2 (FM Only)
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus, FM	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Horizontal Sidewall: HB Escutcheon **Figure 8**



Finish Combinations: HB Escutcheon	
Sprinkler	**Escutcheon[2][3]**
Bronze	Chrome
Chrome	Chrome
White Polyester[1]	White Polyester
Black Polyester[1]	Black Polyester
Custom Color Polyester[1]	Custom Color Polyester
Electroless Nickel PTFE[1][4]	Stainless Steel

Notes:
1. UL Listed as Corrosion Resistant.
2. Escutcheons do not carry corrosion resistant listings.
3. Base material is cold rolled steel unless noted.
4. FM Approved as Corrosion Resistant.

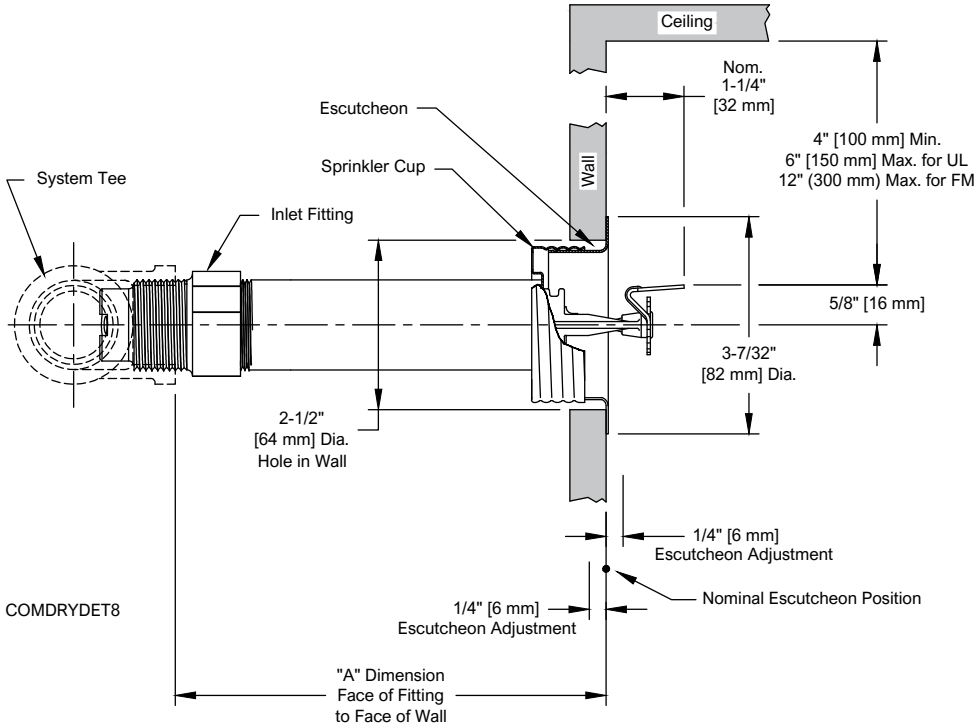
Note: The sprinkler can protrudes 1¼" when escutcheon is in nominal position. Escutcheon adjustment provides -½" (-12.7mm) to +½" (+12.7mm) "A" dimension adjustment range.

Model F3QR56 Dry Horizontal Sidewall: FP Escutcheon - SIN R5734 **Table J**

"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals (Light Hazard/HC-1 Only)	Sprinkler Guard
3½" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3½" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	N/A
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Horizontal Sidewall: FP Escutcheon **Figure 9**



Finish Combinations: FP Recessed	
Sprinkler[1]	**Escutcheon[3][4]**
Bronze	Brass
Chrome	Chrome
White Polyester[2]	White Polyester
Black Polyester[2]	Black Polyester
Custom Color Polyester[2]	Custom Color Polyester
Electroless Nickel PTFE[2][5]	Stainless Steel

Notes:
1. Cup for FP Recessed is unfinished galvanized steel except electroless nickel PTFE sprinklers which are provided with a stainless steel cup
2. UL Listed as Corrosion Resistant.
3. Escutcheons do not carry corrosion resistant listings.
4. Base material is cold rolled steel unless noted.
5. FM Approved as Corrosion Resistant.

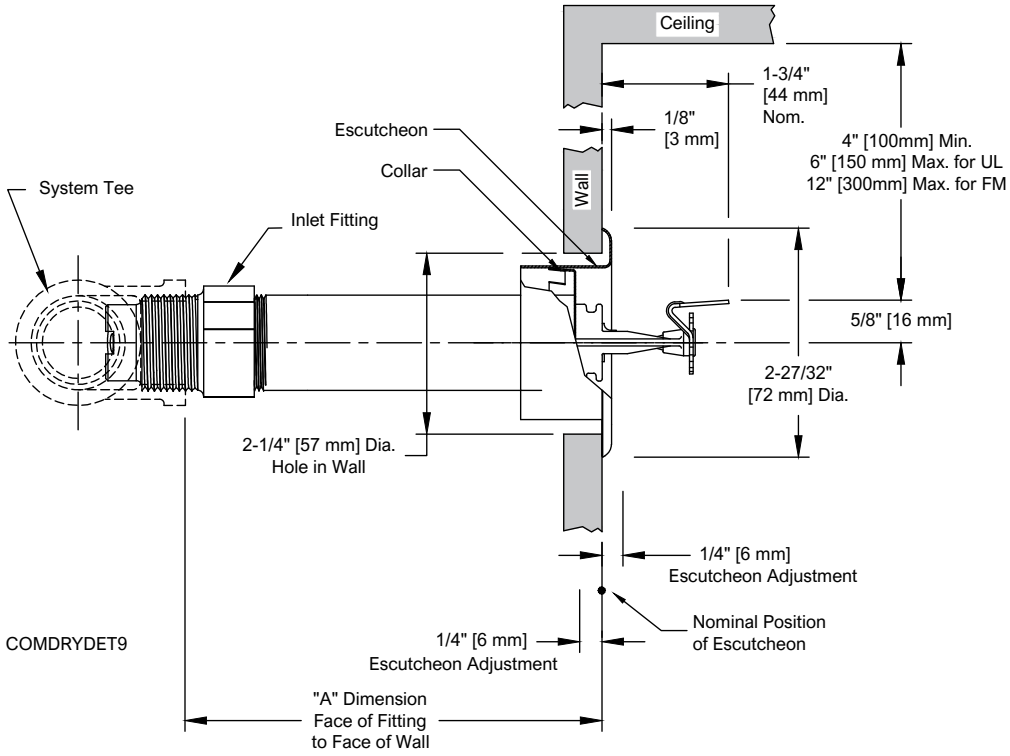
Note: Do not install the Model F3QR56 Dry Horizontal Sidewall sprinkler with the Model FP escutcheon in walls which are positively pressurized with respect to the protected space.

Model F3QR56 Dry Horizontal Sidewall: F1 Escutcheon - SIN R5734 **Table K**

"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals (Light Hazard/HC-1 Only)	Sprinkler Guard
3½" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3½" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	N/A
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Horizontal Sidewall: F1 Escutcheon **Figure 10**



Finish Combinations: F1 Recessed	
Sprinkler	**Escutcheon[2][3]**
Bronze	Brass
Chrome	Chrome
White Polyester[1]	White Polyester
Black Polyester[1]	Black Polyester
Custom Color Polyester[1]	Custom Color Polyester
Electroless Nickel PTFE[1][4]	Stainless Steel

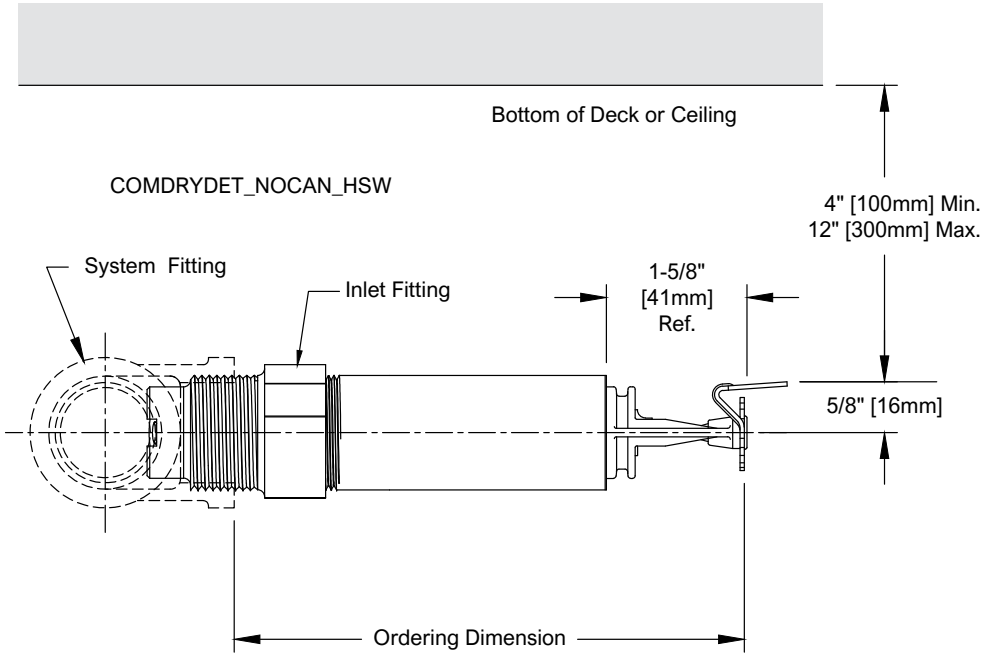
Notes:
1. UL Listed as Corrosion Resistant.
2. Escutcheons do not carry corrosion resistant listings.
3. Base material is cold rolled steel unless noted.
4. FM Approved as Corrosion Resistant.

Model F3QR56 Dry Horizontal Sidewall: No Escutcheon - SIN R5734 **Table L**

Order Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals (Light Hazard/HC-1 Only)	Sprinkler Guard
5" to 48" (127mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 5" to 36" (127mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus, FM	C-2 (FM only)
	Intermediate	175°F (79°C)	Yellow	cULus	
		200°F (93°C)	Green	cULus, FM	
	High	286°F (141°C)	Blue	cULus, FM	

Note: Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

Model F3QR56 Dry Horizontal Sidewall: No Escutcheon **Figure 11**



Note: Customer is responsible for determining the correct distance from the wall to the sprinkler deflector.

Available Finishes: No Escutcheon
Sprinkler
Bronze
Chrome
White Polyester[1]
Black Polyester [1]
Custom Color Polyester [1]
Electroless Nickel PTFE [1][2]

Notes:
1. UL Listed as Corrosion Resistant.
2. FM Approved as Corrosion Resistant.

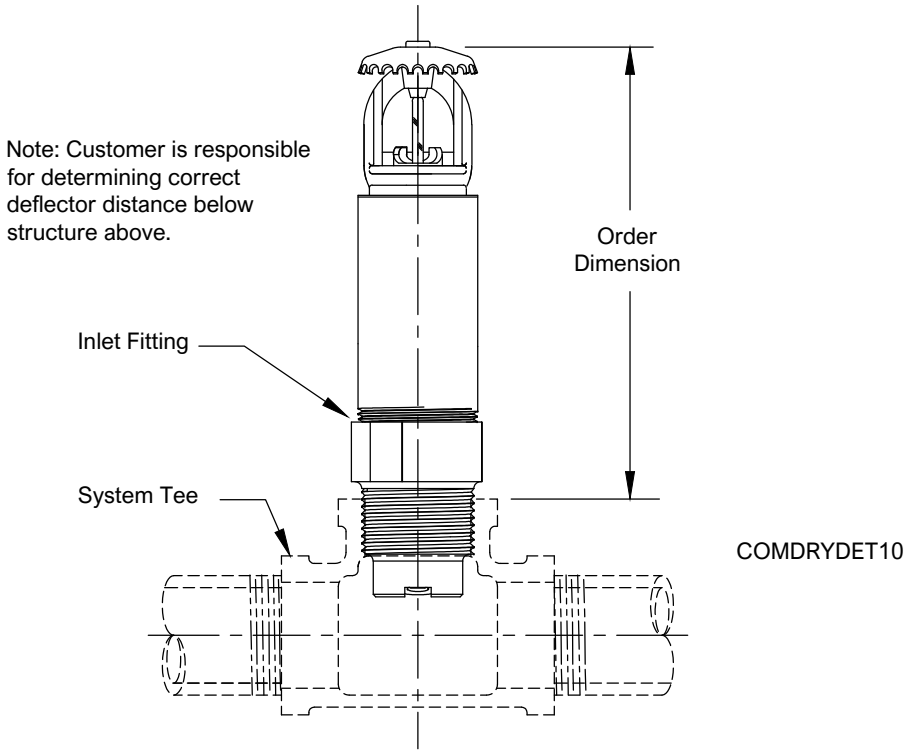
Model F3QR56 Dry Upright - SIN R5724

Table M

Order Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
5” to 48” (127 mm to 1219 mm)	Ordinary	155°F (68°C)	Red	cULus	N/A
	Intermediate	175°F (79°C)	Yellow		
		200°F (93°C)	Green		
	High	286°F (141°C)	Blue		

Model F3QR56 Dry Upright Sprinkler

Figure 12



Finish Combinations: Upright	
Sprinkler	**Escutcheon**
Bronze	NA
Electroless Nickel PTFE(1)	NA

Notes:

1. UL Listed as Corrosion Resistant.

Installation (General)

Dry sprinklers connected to wet pipe systems must be installed as indicated in Figure 14 and as required by NFPA 13 with the Exposed Minimum Barrel Length located in a heated area.

Reliable Model F3QR56 dry sidewall sprinklers may be installed in ductile or malleable cast iron threaded tees, or CPVC tees and adapters upon verification that the sprinkler inlet fitting does not interfere with the interior of the fitting (see Figure 15).

DO NOT install Reliable Model F3QR56 dry sidewall sprinklers into elbows or couplings, welded outlets, mechanical tees, or gasket sealed CPVC fittings.

See Figure 16 for acceptable and unacceptable installation practices.

F3QR56 with Standard Escutcheon

Cut a 2-1/8" (54mm) diameter hole in the wall as shown in Fig. 1. Apply a PTFE based sealant to the sprinkler threads before installing into the fitting. Use the Model F3R installation wrench on the square boss to tighten the sprinkler until it is secured in the sprinkler fitting. Installation is completed by removing the orange glass bulb protector and sliding the escutcheon over the finished sleeve until tight to the finished surface.

F3QR56 with HB Escutcheon

Cut a 2-1/2" (64mm) diameter hole in the wall as shown in Fig. 2. Apply a PTFE based sealant to the sprinkler threads before installing into the fitting. Use the Model F3R installation wrench on the square boss to tighten the sprinkler until it is secured in the sprinkler fitting. Installation is completed by removing the orange glass bulb protector and sliding the skirt over the finished sleeve until tight to the finished suface.

F3QR56 with FP Recessed Escutcheon

Cut a 2-5/8" (67mm) diameter hole in the wall as shown in Fig. 3. Apply a PTFE based sealant to the sprinkler threads before installing into the fitting. Use the Model XLO2 installation wrench (see Fig. 13) on the square boss to tighten the sprinkler until it is secured in the sprinkler fitting. Installation is completed by removing the orange glass bulb protector and pushing (or threading) the FP escutcheon into the threaded cup. Final adjustment is made by turning the FP escutcheon clockwise until the flange makes full contact with the wall surface.

F3QR56 CCP Concealed Cover Plate

Cut a 2-5/8" (67mm) diameter hole in the wall as shown in Fig. 4. Apply a PTFE based sealant to the sprinkler threads before installing into the fitting. Use the Model XLO2 installation wrench (see Fig. 13) on the square boss to tighten the sprinkler until it is secured in the sprinkler fitting. Installation is completed by removing the orange glass bulb protector and pushing (or threading) the SWC cover plate into the threaded cup. Final adjustment is made by turning the cover plate clockwise until the cover plate flange makes full contact with the finished surface.

Note:

1. The Model XLO2 installation wrench for recessed and concealed installations has a open side to accommodate the sprinkler deflector and can only be inserted in one way (see Figure 13). Care must be taken not to damage the deflector during installation.
2. Do not over-tighten sprinklers into fittings. It is recommended that Reliable dry sprinklers be installed using the wrench referenced in this bulletin. A pipe wrench may also be used to install dry sprinklers provided that it only engages the outer tube (steel pipe) of the assembly. Note that a pipe wrench will impart a large amount of torque into the final assembly. This torque will need to be matched or exceeded to remove the sprinkler at a later date. A leak free joint can normally be obtained by installing the sprinkler to a minimum torque of 22 ft-lb (30 N·m) after applying an appropriate thread sealant.
3. Glass bulb sprinklers have orange bulb protectors to minimize bulb damage during shipping, handling, and installation. Reliable installation wrenches are designed to install sprinklers while bulb protectors are in place. REMOVE THE PROTECTORS AT THE TIME THE SPRINKLER SYSTEM IS PLACED INTO SERVICE. Removal of the protectors before this time may leave the glass bulb vulnerable to damage. Remove protectors by undoing the clasp by hand. DO NOT USE TOOLS TO REMOVE THE PROTECTORS.
4. Do not remove the wax fillet in the gap between the cup that supports the bulb and the wrenching boss.

XLO2 Installation Procedure **Figure 13**

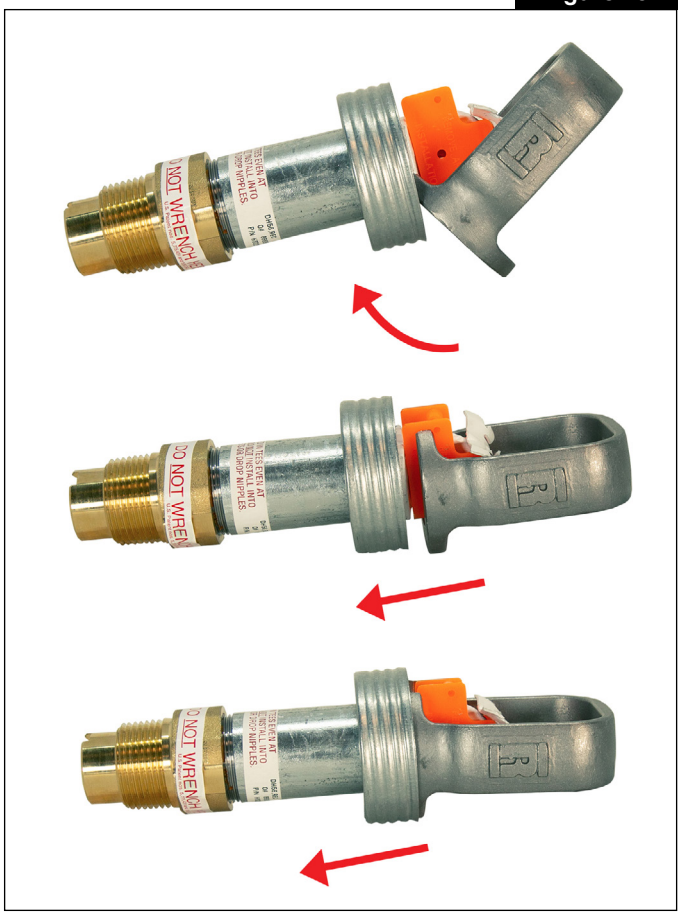


Figure 14

MINIMUM EXPOSED BARREL LENGTH WHEN CONNECTED TO WET PIPE SPRINKLER SYSTEM

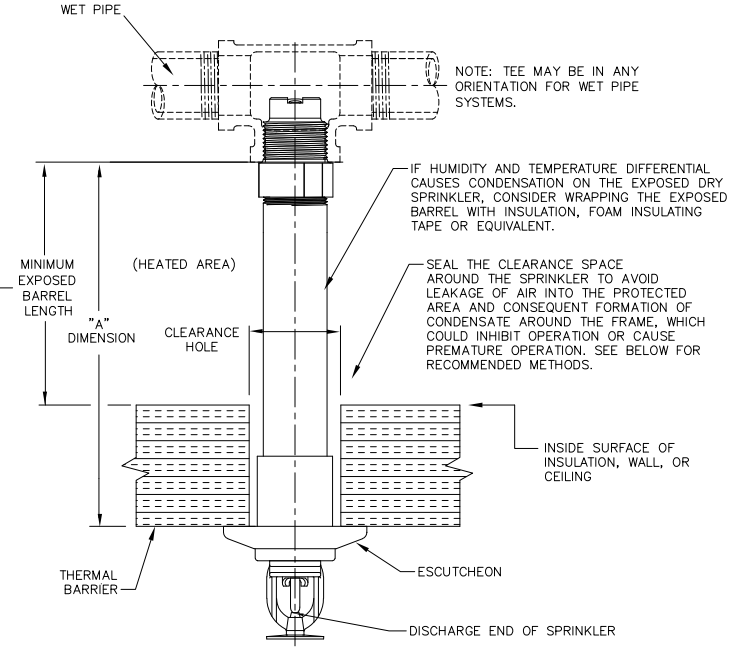
NOTE: STANDARD DRY PENDENT IS SHOWN, HOWEVER, MINIMUM EXPOSED BARREL LENGTH APPLIES TO ALL STYLES OF DRY SPRINKLERS CONNECTED TO A WET PIPE SYSTEM.

AMBIENT TEMPERATURE EXPOSED TO DISCHARGE END OF SPRINKLER*	EXPOSED BARREL AMBIENT TEMPERATURE		
	40°F/4°C	50°F/10°C	60°F/16°C
	EXPOSED MINIMUM BARREL LENGTH** (FACE OF FITTING TO TOP OF CEILING)***		
	IN. (MM)	IN. (MM)	IN. (MM)
40°F (4°C)	0	0	0
30°F (−1°C)	0	0	0
20°F (−7°C)	4 (100)	0	0
10°F (−12°C)	8 (200)	1 (25)	0
0°F (−18°C)	12 (300)	3 (75)	0
−10°F (−23°C)	14 (350)	4 (100)	1 (25)
−20°F (−29°C)	14 (350)	6 (150)	3 (75)
−30°F (−34°C)	16 (400)	8 (200)	4 (100)
−40°F (−40°C)	18 (450)	8 (200)	4 (100)
−50°F (−46°C)	20 (500)	10 (250)	6 (150)
−60°F (−51°C)	20 (500)	10 (250)	6 (150)

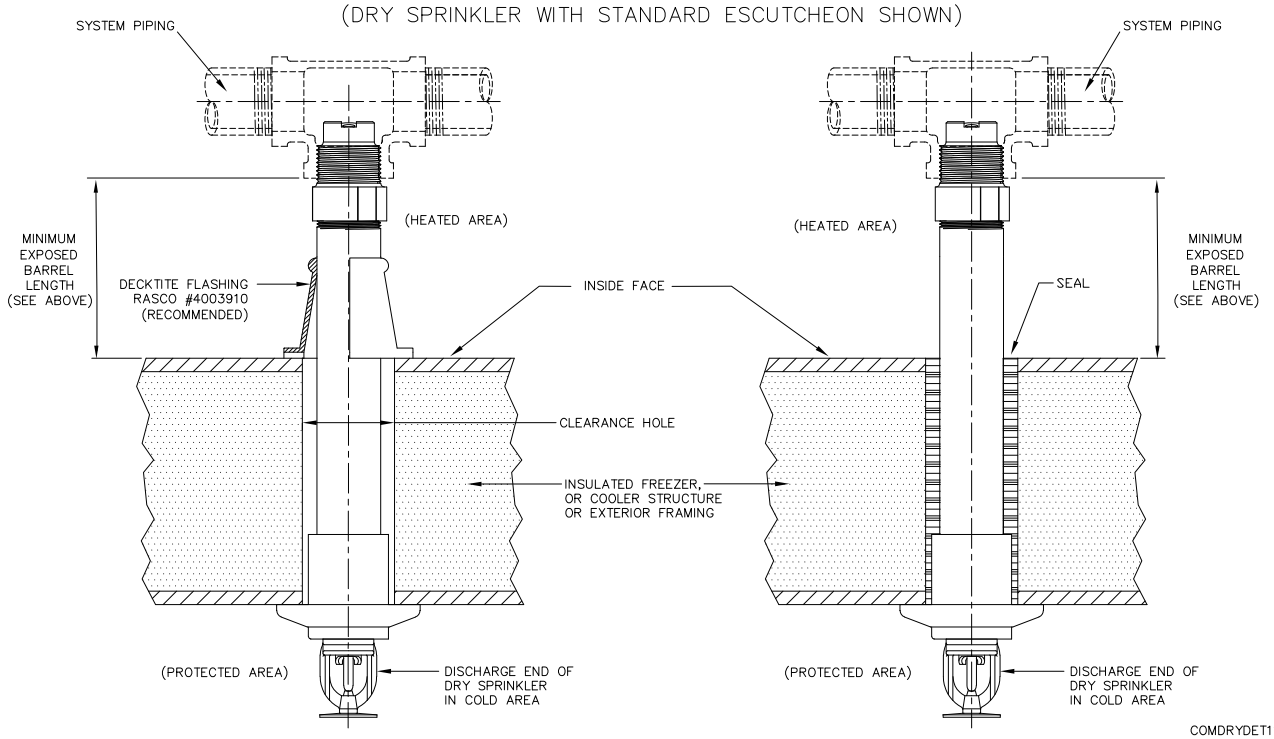
* FOR AMBIENT TEMPERATURES EXPOSED TO THE DISCHARGE END OF THE SPRINKLER THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.

** THE MINIMUM EXPOSED BARREL LENGTH IS NOT THE SAME AS THE "A" DIMENSION. THE MINIMUM EXPOSED BARREL LENGTH IS BASED ON A PROPERLY SEALED PENETRATION WITH A MAXIMUM WIND VELOCITY ON THE EXPOSED SPRINKLER OF 30 MPH (48 KM/H). LONGER EXPOSED BARREL LENGTHS WILL HELP AVOID FREEZING OF THE WET PIPING WHERE HIGHER WIND VELOCITY IS EXPECTED.

*** THE MINIMUM EXPOSED BARREL LENGTH IS MEASURED FROM THE FACE OF THE FITTING TO THE INSIDE FACE OF THE INSULATION, WALL, OR CEILING LEADING TO THE COLD SPACE, WHICHEVER IS CLOSEST TO THE FITTING.



RECOMMENDED DRY SPRINKLER SEAL ARRANGEMENTS
(DRY SPRINKLER WITH STANDARD ESCUTCHEON SHOWN)



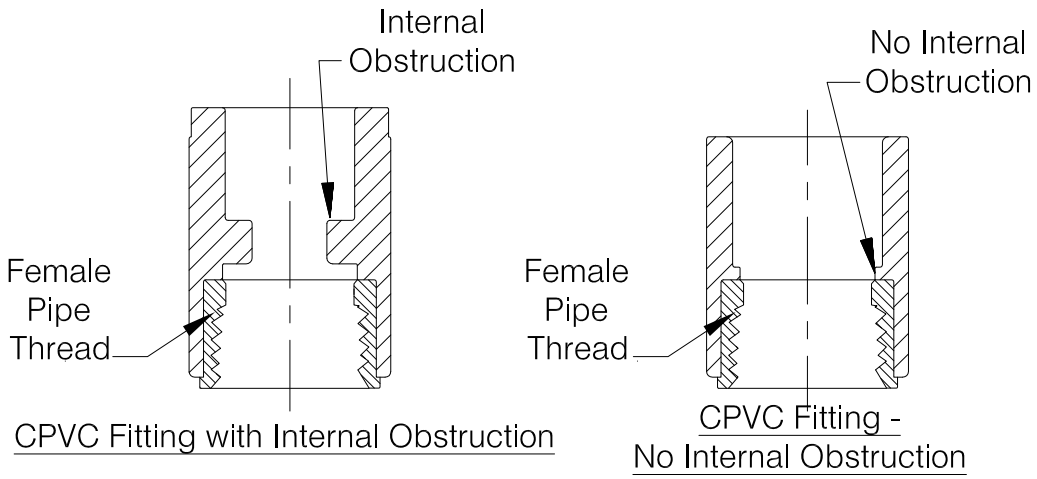
CAUTION

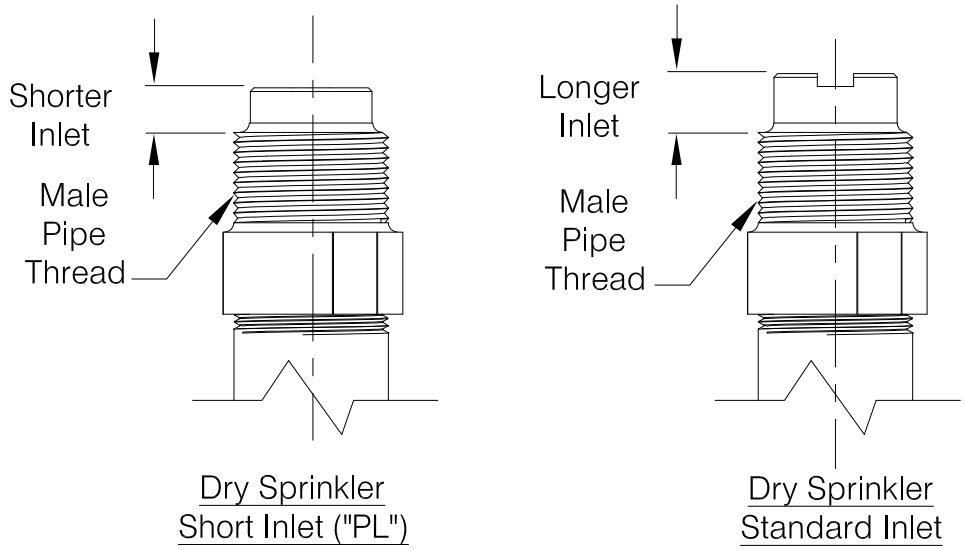
RELIABLE DRY SPRINKLERS MAY BE INSTALLED IN A LISTED CPVC SPRINKLER FITTING, ONLY UPON VERIFICATION THAT THE FITTING DOES NOT INTERFERE WITH THE SPRINKLER'S INLET.

Do not install dry sprinklers with standard inlets into CPVC fittings that have an internal obstruction; this will damage the sprinkler, the fitting, or both.

Short inlet ("PL") versions of Reliable dry sprinklers are available that may or may not be compatible with fittings having internal obstructions in existing installations. Sprinklers with the short inlet ("PL") should only be installed in CPVC fittings of wet-pipe systems.

In all cases, verify sprinkler and fitting dimensions prior to installation to avoid interference.





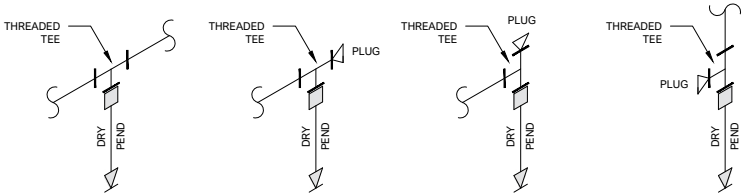
BE SURE TO ORDER THE CORRECT SPRINKLERS FOR YOUR APPLICATION

COMDRYDET2

Acceptable and Unacceptable Installation Practices for Steel Pipe Fittings

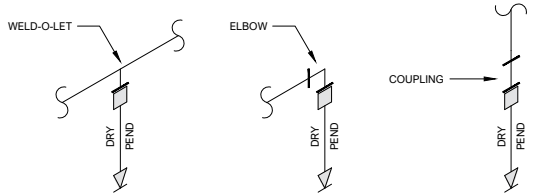
Figure 16

ACCEPTABLE INSTALLATIONS FOR DRY PENDENT SPRINKLERS



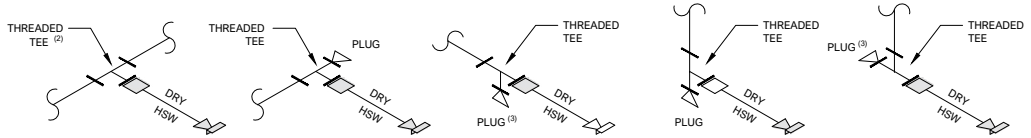
NOTES:
1. EXPOSED LENGTH OF DRY BARREL INSIDE OF CONDITIONED SPACE TO BE IN ACCORDANCE WITH THIS BULLETIN AND NFPA 13.

UNACCEPTABLE INSTALLATIONS FOR DRY PENDENT SPRINKLERS



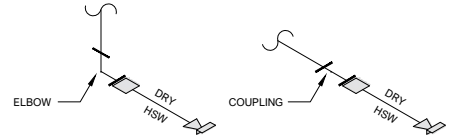
NOTES:
1. IN ADDITION TO THE UNACCEPTABLE INSTALLATIONS ABOVE, DRY PENDENT SPRINKLERS SHALL NOT BE INSTALLED INTO MECHANICAL TEES (SADDLE OR U-BOLT STYLE), OR INTERNALLY GASKETED CPVC FITTINGS.

ACCEPTABLE INSTALLATIONS FOR DRY SIDEWALL SPRINKLERS



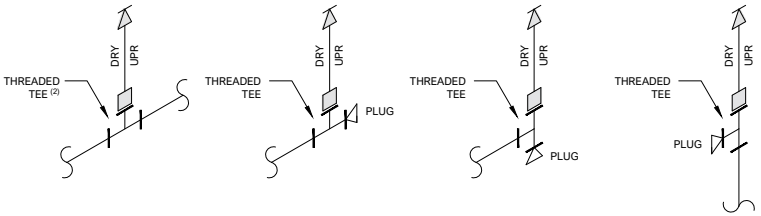
NOTES:
1. EXPOSED LENGTH OF DRY BARREL INSIDE OF CONDITIONED SPACE TO BE IN ACCORDANCE WITH THIS BULLETIN AND NFPA 13.
2. WELD-O-LETS IN COMPLIANCE WITH NFPA 13 REQUIREMENTS ALSO ACCEPTABLE FOR DRY SIDEWALL SPRINKLERS.
3. PREFERRED ORIENTATION OF PLUG IS DOWN.

UNACCEPTABLE INSTALLATIONS FOR DRY SIDEWALL SPRINKLERS



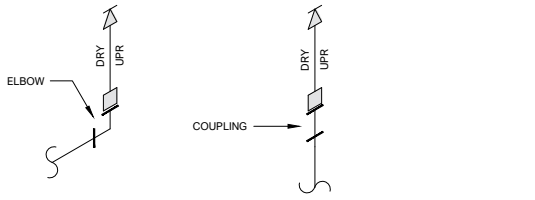
NOTES:
1. IN ADDITION TO THE UNACCEPTABLE INSTALLATIONS ABOVE, DRY SIDEWALL SPRINKLERS SHALL NOT BE INSTALLED INTO MECHANICAL TEES (SADDLE OR U-BOLT STYLE), OR INTERNALLY GASKETED CPVC FITTINGS.

ACCEPTABLE INSTALLATIONS FOR DRY UPRIGHT SPRINKLERS

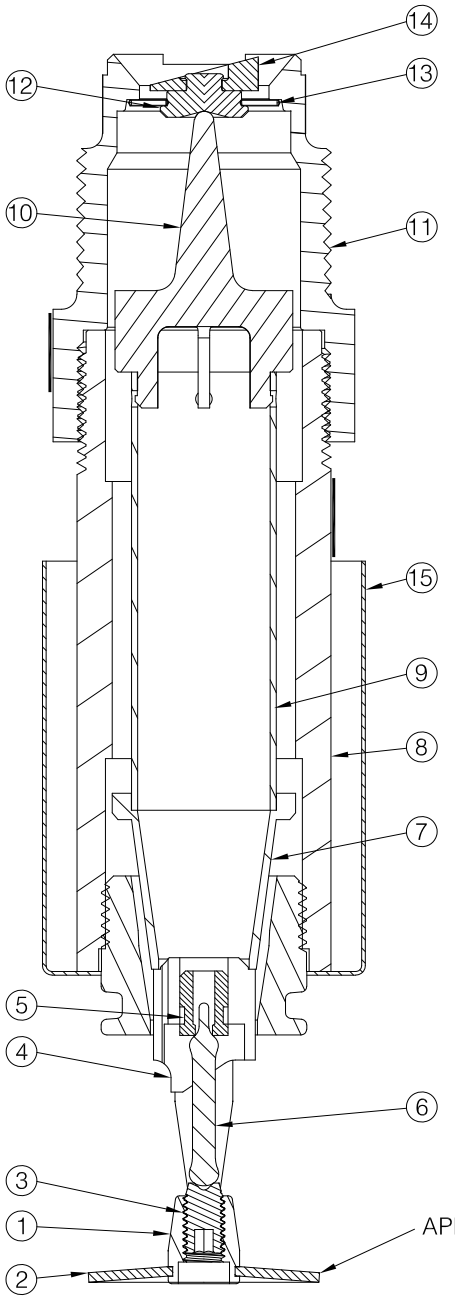


NOTES:
1. EXPOSED LENGTH OF DRY BARREL INSIDE OF CONDITIONED SPACE TO BE IN ACCORDANCE WITH THIS BULLETIN AND NFPA 13.
2. WELD-O-LETS IN COMPLIANCE WITH NFPA 13 REQUIREMENTS ALSO ACCEPTABLE FOR DRY UPRIGHT SPRINKLERS.

UNACCEPTABLE INSTALLATIONS FOR DRY UPRIGHT SPRINKLERS



NOTES:
1. IN ADDITION TO THE UNACCEPTABLE INSTALLATIONS ABOVE, DRY UPRIGHT SPRINKLERS SHALL NOT BE INSTALLED INTO MECHANICAL TEES (SADDLE OR U-BOLT STYLE), OR INTERNALLY GASKETED CPVC FITTINGS.



Item	Description	Material
1	Frame	UNS C83600 Brass
2	Deflector	UNS C51000 Bronze
3	Load Screw	UNS C22000 Brass
4	Seat Adapter	UNS C36000 Brass
5	Bulb Insert	UNS C31400 Copper
6	Glass Bulb	Glass/Glycerin Solution
7	Orifice Adapater	UNS C36000 Brass
8	Outer Tube	Galvanized Steel
9	Inner Tube	UNS C23000 Brass
10	Yoke	UNS C38000 Brass
11	Inlet	UNS C35330 Brass
12	Cap	UNS C54400 Brass
13	Spring Washer/Seal	PTFE Coated Beryllium Nickel
14	Flip Disk	UNS C54400 Brass
15	Can/Escutcheon	Varies (Not used on all models)

NOTE: PIPE WRENCH MAY ONLY BE USED ON
OUTER STEEL BARREL OF SPRINKLER

COMDRYDET13

APPEARANCE OF DEFLECTOR WILL VARY DEPENDING ON MODEL

Wrench Options

F3R Wrench
(Standard, HB, and No Escutcheon trims)

XLO2 Wrench
(FP Recessed, F1 Recessed, and CCP trims)

Maintenance

Reliable Model F3QR56 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.

Patents

US Patent No. 7,841,418

Ordering Information

Specify:

Model F3QR56 Dry Sprinkler
- Upright
- Pendent
- Horizontal Sidewall

Trim Style
- Standard Escutcheon
- HB Escutcheon
- FP Recessed Escutcheon
- F1 Recessed Escutcheon
- CCP Cover Plate (Pendent only)
- No Escutcheon

Temperature Rating
- See available temperatures (depending on trim style and approvals) on pages 2-13

Finish
- See available finish combinations (depending on trim style and approvals) on pages 2-13

Length
- For dry pendent and sidewall sprinklers with trim, “A” dimension is measured from face of fitting to face of finished ceiling or wall in 1/4” (6mm) increments.
- For dry upright sprinklers and sprinklers with no trim, order dimension is from face of fitting to deflector in 1/4” (6mm) increments.

Notes:
1. Lengths are based upon a normally gauged pipe thread “make-up” of .60 inch (15mm) per ANSI B2.1 (approximately 7-1/2 threads).

Installation Wrench
- Model F3R (Standard, HB, and No Escutcheon trims)
- Model XLO2 (FP Recessed, F1 Recessed & CCP trims)

Reliable®

Model RFB RASCOFLEX® Sprinkler Connections

cULus Listed, FM Approved

Product Description

RASCOFLEX® Sprinkler Connections are intended to connect a branch line to a sprinkler using a flexible stainless steel hose assembly. RASCOFLEX® Sprinkler Connections are suitable for use in suspended and hard ceiling applications such as T-Bar ceiling grids, wood, metal stud, or hat furring channel hard lid ceilings. Every package contains one (1) fully assembled stainless steel flexible sprinkler system complete with hose, branch line connection, and sprinkler connection, as well as the pre-assembled bracket assembly to attach to the ceiling.

RASCOFLEX® Sprinkler Connections are designed for use in hydraulically calculated wet, preaction, or dry sprinkler systems per NFPA 13, 13R, 13D, and FM Global Loss Prevention Data Sheets.

Technical Data **Table A**

Maximum Working Pressure		FM: 200 psi (13.8 bar) UL: 175 psi (12.1 bar)
Maximum Working Temperature		300°F (149°C)
Connections	Inlet/Branch Line	1” NPT
	Outlet/Reducer	1/2” or 3/4” NPT
Minimum Allowable Bending Radius		UL: 3” (76 mm) FM: 7” (178 mm)
Maximum Number of Bends		See Friction Loss Chart
Maximum K-Factor	1/2” Outlet	5.6 (80 metric)
	3/4” Outlet	14.0 (200 metric)

Maintenance

RASCOFLEX® Sprinkler Connections should be inspected and the sprinkler system maintained in accordance with NFPA 25, as well as the requirements of any Authorities Having Jurisdiction.

Patents

RASCOFLEX® Sprinkler Connections may be covered by one or more of the following US Patent Nos. 10,173,088 and 10,328,296.

Listings and Approvals

FM Approved Class No. 1637 (FM)
UL Listed and UL Certified for Canada to ANSI/UL 2443 (cULus)

RASCOFLEX® Sprinkler Connections

Ordering Information

Specify:

Model Name
- Model RFB

Nominal Hose Length
- 24” (610 mm)
- 31” (790 mm)
- 40” (1015 mm)
- 48” (1220 mm)
- 60” 1525 mm)
- 72” (1830 mm)

Reducer Outlet: 1/2” NPT or 3/4” NPT

Reducer Type
Standard:
- 6-1/8” (155 mm) straight

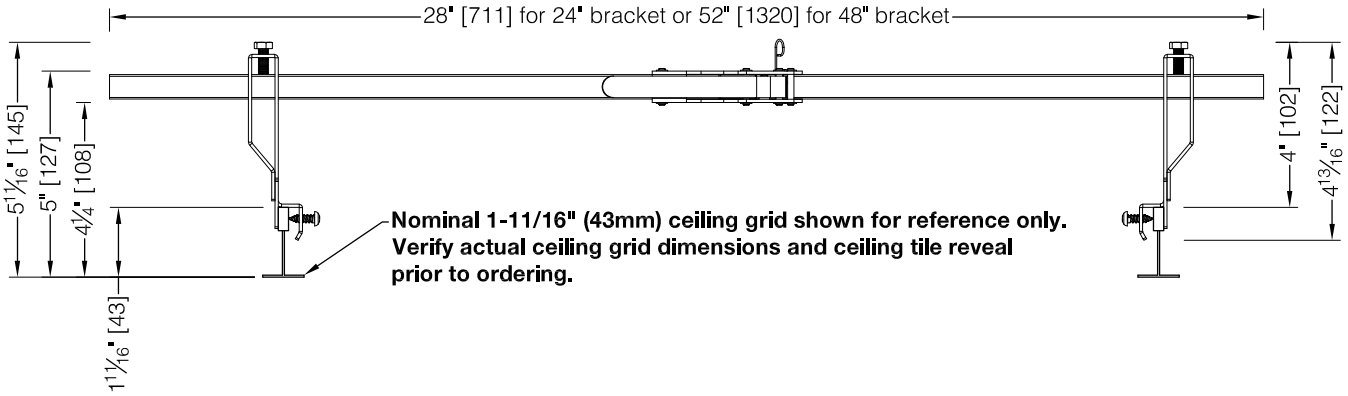
Optional:
- 4-5/16” (110 mm) straight
- 5-5/16” (135 mm) straight
- 11-3/4” (300 mm) straight
- 5-5/8” (143 mm) elbow
- 7-3/8” (187 mm) elbow

Bracket Assembly Length
- 24” (610 mm) standard
- 48” (1220 mm) optional

Accessories
- See Table F

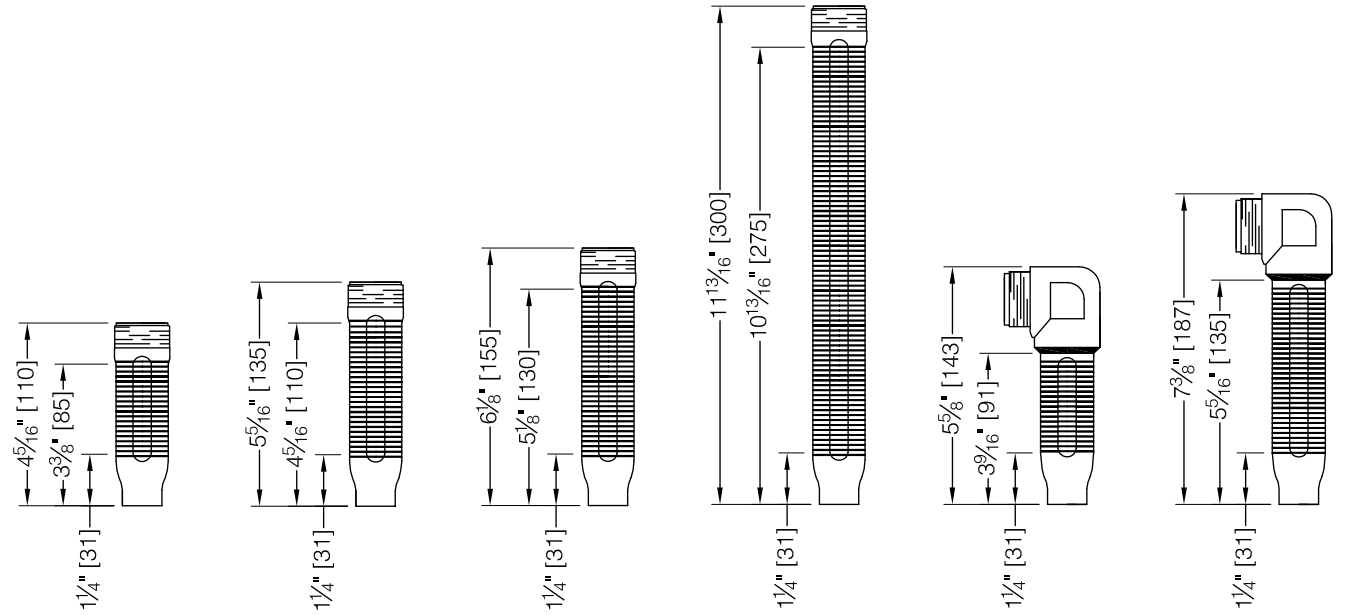
Bracket Dimensions

Figure 1

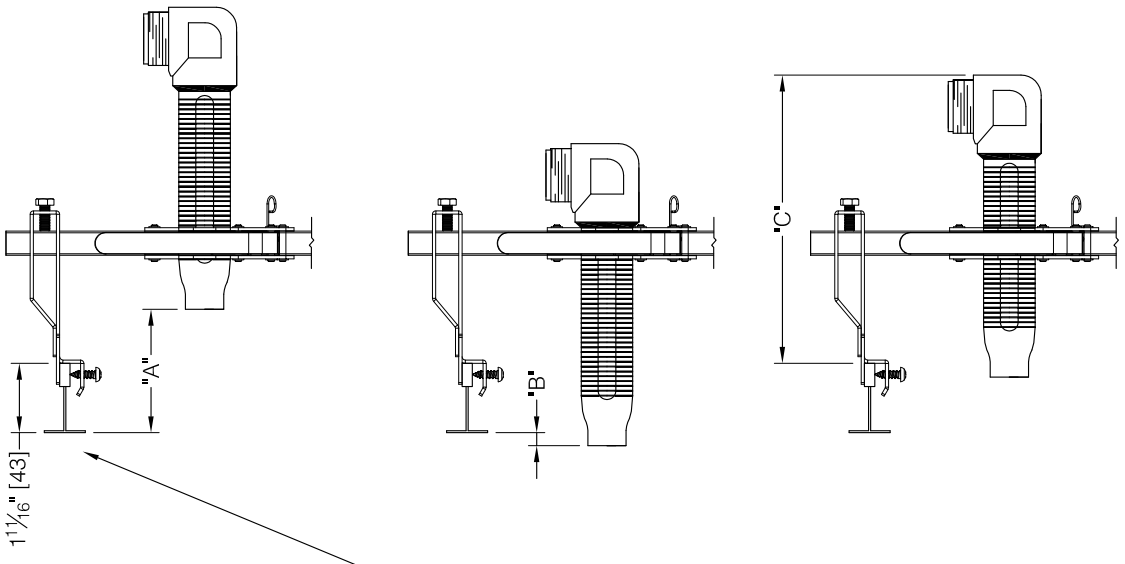


Reducer Dimensions

Figure 2



Installation Dimensions **Figure 3**



Nominal 1-11/16" (43mm) ceiling grid shown for reference only.
Verify actual ceiling grid dimensions and ceiling tile reveal prior to ordering.

Minimum and Maximum Face of Fitting to Bottom of Ceiling Grid for Each Reducer **Table B**

Fitting Distance	6-1/8" (155mm) Straight Standard	4-5/16" (110mm) Straight	5-5/16" (135mm) Straight	11-13/16" (300mm) Straight	5-5/8" (143mm) Elbow	7-3/8" (187mm) Elbow
Max. Face of Fitting Distance Above Bottom of Ceiling Grid	3" (77mm)	3" (7mm)	3" (7mm)	3" (7mm)	3" (7mm)	3" (7mm)
Max. Face of Fitting Distance from Bottom of Ceiling Grid	1/8" (3mm) below	1-5/8" (42mm) above	11/16" (17mm) above	6-3/8" (148mm) below	1-7/16" (36mm) above	5/16" (60mm) below

Note: Based on 1-11/16" (43mm) tall ceiling grid.

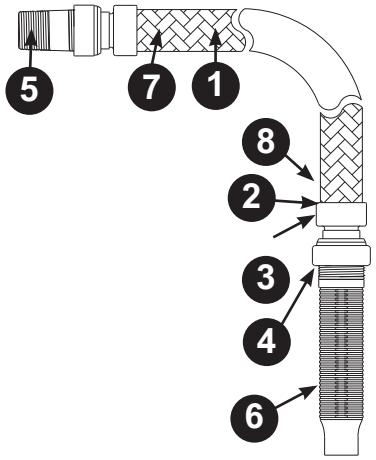
Fig. 3 Dimension C - Clearance Above Ceiling Required at Max. Sprinkler Recess **Table C**

Recessed Escutcheon or Concealed/Flush Sprinkler	Reducer	
	5-5/8" (143mm) Elbow	7-3/8" (187mm) Elbow
F1 recessed escutcheon	NC	5-5/8" (144mm)
F2 or FV recessed escutcheon	NC	5-3/8" (138mm)
FP recessed escutcheon	NC	6-1/4" (160mm)
CCP conical concealed cover plate	NC	6-1/4" (160mm)
G4 series concealed sprinklers	5-5/8" (144mm)	7-3/8" (188mm)
G5 series concealed sprinklers	5-1/4" (134mm)	7" (179mm)
RFC series concealed sprinklers	5-1/4" (134mm)	7" (179mm)
XL commercial flush sprinkler with flat escutcheon	4-7/8" (125mm)	6-5/8" (169mm)
XL commercial flush sprinkler with conical escutcheon	4-3/8" (112mm)	6-1/8" (157mm)

Note: NC - Reducer not compatible with sprinkler adjustment range.
Based on 1-11/16" (43mm) tall ceiling grid and flush ceiling tile.

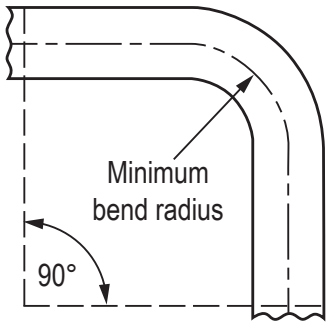
Materials — **Figure 4**

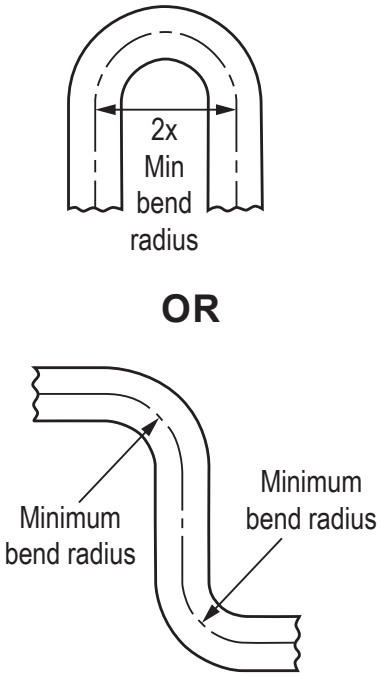
Number	Item Description	Material
1	Flexible Hose/Bellow	AISI Type 304 Stainless Steel
2	Isolation Ring	Nylon 66
3	Gasket	EPDM
4	Nut	Zinc Plated Carbon Steel
5	Branch Line Nipple (1”)	Zinc Plated Carbon Steel
6	Reducer	Zinc Plated Carbon Steel
7	Braid	AISI Type 304 Stainless Steel
8	Welded Collar Fitting	AISI Type 304 Stainless Steel
-	Bar Stock	Zinc Plated SGCC Steel
-	Brackets: Center and Side	Zinc Plated SPCC Steel

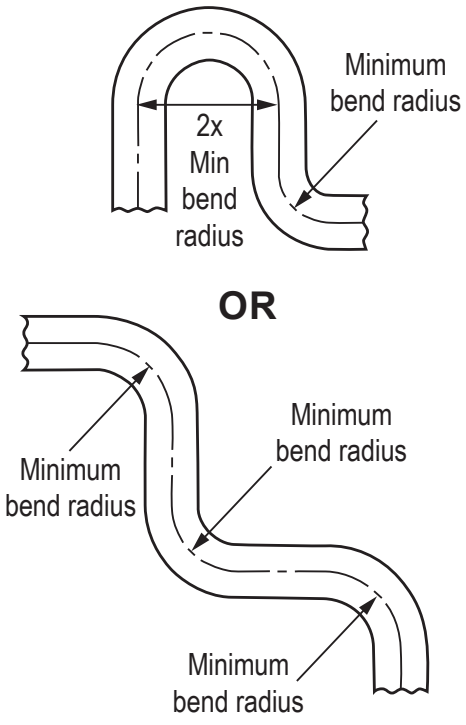


Flexible Hose Number of Bends — **Figure 5**

One Bend	Two Bends	Three Bends







Do NOT install the RASCOFLEX™ straight. Some flexibility in the form of an allowable bend (or bends) must be provided.

cULus Friction Loss Data

Table D

Nominal Length of Flexible Hose in (mm)	Reducer		Maximum Sprinkler K-Factor gpm/psi$^{1/2}$ (lpm/bar$^{1/2}$)	Maximum Number of 90° Bends at 3" (76mm) Bend Radius	Equivalent Length of 1" (33.7mm) Sch. 40 Pipe (C=120), ft (m)
	NPT Threads	Type			
24 (610)	1/2	Straight	5.6 (80)	2	10 (3)
	3/4	Straight	14.0 (200)	2	13 (4)
31 (790)	1/2	Straight	5.6 (80)	3	14 (4.3)
	3/4	Straight	14.0 (200)	3	16 (4.9)
40 (1015)	1/2	Straight	5.6 (80)	4	21 (6.4)
	3/4	Straight	14.0 (200)	4	23 (7)
48 (1220)	1/2	Straight	5.6 (80)	4	24 (7.3)
	3/4	Straight	14.0 (200)	4	26 (7.9)
60 (1525)	1/2	Straight	5.6 (80)	4	25 (7.6)
	3/4	Straight	14.0 (200)	4	30 (9.1)
72 (1830)	1/2	Straight	5.6 (80)	5	36 (11)
	3/4	Straight	14.0 (200)	5	33 (10.1)

UL Notes:

1. Available data for use with 6.1" straight reducers.
2. Sprinkler K-Factor: 5.6 (80 metric) for 1/2-inch reducer and 14.0 (200 metric) for 3/4-inch reducer.
3. RASCOFLEX® Sprinkler Connections have been tested and approved by Underwriter's Laboratories, Inc. for use in wet, preaction, and dry sprinkler systems per NFPA 13, 13D, 13R and UL2443.

Note:

All Reliable RASCOFlex products may be painted provided the paint is compatible with the following materials of construction:

- Stainless steel
- Zinc-plated carbon steel
- Ductile iron

Care should be taken to ensure that the sprinkler and associated escutcheon or cover plate are not painted. Additionally, care should be taken to avoid painting over any manufacturer or product identifying markings or tags on the flexible drop. No paint of any kind should be applied to threads or components / surfaces that comprise a pressure-containing seal.

FM APPROVED

FM Friction Loss Data

Table E

Nominal Length of Flexible Hose in (mm)	Reducer		Maximum Sprinkler K-Factor gpm/psi$^{1/2}$ (lpm/bar$^{1/2}$)	Maximum Number of 90° Bends at 7" 178mm) Bend Radius	Equivalent Length of 1" (33.7mm) Sch. 40 Pipe (C=120), ft (m)
	NPT Threads	Type			
24 (610)	1/2	Straight	5.6 (80)	1	9.7 (2.9)
	1/2	90° Elbow	5.6 (80)	0	11.5 (3.5)
	3/4	Straight	8.0 (115)	1	9.9 (3)
			11.2 (160)	1	9.8 (2.9)
			14.0 (200)	1	9.6 (2.9)
	3/4	90° Elbow	8.0 (115)	0	10.2 (3.1)
			11.2 (160)	0	10 (3)
			14.0 (200)	0	9.8 (2.9)
31 (790)	1/2	Straight	5.6 (80)	2	12.4 (3.8)
	1/2	90° Elbow	5.6 (80)	2	15.8 (4.8)
	3/4	Straight	8.0 (115)	2	13.7 (4.1)
			11.2 (160)	2	12.9 (3.9)
			14.0 (200)	2	12.2 (3.7)
	3/4	90° Elbow	8.0 (115)	2	14.5 (4.4)
			11.2 (160)	2	13.7 (4.1)
			14.0 (200)	2	13 (3.9)
40 (1015)	1/2	Straight	5.6 (80)	2	15.9 (4.8)
	1/2	90° Elbow	5.6 (80)	2	21.6 (6.6)
	3/4	Straight	8.0 (115)	2	18.5 (5.6)
			11.2 (160)	2	17.4 (5.3)
			14.0 (200)	2	16.3 (4.9)
	3/4	90° Elbow	8.0 (115)	2	20 (6)
			11.2 (160)	2	18.9 (5.7)
			14.0 (200)	2	20 (6)
48 (1220)	1/2	Straight	5.6 (80)	3	19.0 (5.8)
	1/2	90° Elbow	5.6 (80)	3	25.9 (7.9)
	3/4	Straight	8.0 (115)	3	22.7 (6.9)
			11.2 (160)	3	21.5 (6.5)
			14.0 (200)	3	20.5 (6.2)
	3/4	90° Elbow	8.0 (115)	3	24.8 (7.5)
			11.2 (160)	3	23.6 (7.2)
			14.0 (200)	3	22.6 (6.8)

FM Friction Loss Data (cont.)

Table E

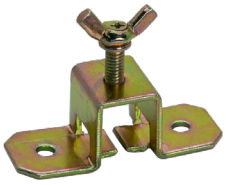
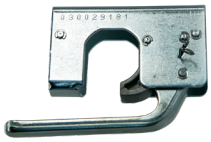
Nominal Length of Flexible Hose in (mm)	Reducer		Maximum Sprinkler K-Factor gpm/psi$^{1/2}$ (lpm/bar$^{1/2}$)	Maximum Number of 90° Bends at 7" (178mm) Bend Radius	Equivalent Length of 1" (33.7mm) Sch. 40 Pipe (C=120), ft (m)
	NPT Threads	Type			
60 (1525)	1/2	Straight	5.6 (80)	4	23.7 (7.2)
	1/2	90° Elbow	5.6 (80)	4	33.1 (10)
	3/4	Straight	8.0 (115)	4	29.1 (8.8)
			11.2 (160)	4	28 (8.5)
			14.0 (200)	4	27 (8.2)
	3/4	90° Elbow	8.0 (115)	4	32.2 (9.8)
			11.2 (160)	4	31.1 (9.5)
			14.0 (200)	4	30 (9.1)
72 (1830)	1/2	Straight	5.6 (80)	4	28.4 (8.6)
	1/2	90° Elbow	5.6 (80)	4	40.4 (12.3)
	3/4	Straight	8.0 (115)	4	35.5 (10.8)
			11.2 (160)	4	34.3 (10.4)
			14.0 (200)	4	33.2 (10.1)
	3/4	90° Elbow	8.0 (115)	4	39.5 (12)
			11.2 (160)	4	38.3 (11.6)
			14.0 (200)	4	37.2 (11.3)

FM Notes:

1. RASCOFLEX® Sprinkler Connections have been tested and approved by FM Approvals for use in wet, preaction, and dry sprinkler systems per FM data sheets 2-0, 2-5, and 2-8 per FM1637.
2. Maximum sprinkler K-Factor: 5.6 (80 metric) for 1/2-inch reducer and 14.0 (200 metric) for 3/4-inch reducer.
3. Differences in equivalent lengths are due to varying test methods, per FM 1637 standards.
4. Above data of friction loss for use with 6.1" straight reducers.

Accessories List

Table F

 5-5/8” (143mm) Elbow Reducer- Short 1/2”: 7M99003303 3/4”: 7M99003305	 7-3/8” (187mm) Elbow Reducer- Long 1/2”: 7M99003302 3/4”: 7M99003304	 4-5/16” (110mm) Straight Reducer 1/2”: 7M99003306 3/4”: 7M99003325
 5-5/16” (135mm) Straight Reducer 1/2”: 7M99003307 3/4”: 7M99003326	 Replacement 6-1/8” (155mm) Standard Straight Reducer 1/2”: 7M99003308 3/4”: 7M99003327	 11-13/16” (300mm) Straight Reducer 1/2”: 7M99003309 3/4”: 7M99003328
 Hat Channel End Bracket- Short 3” (76mm) 7M99003310	 Hat Channel End Bracket- Long 3-3/4” (95mm) 7M99003311	 Metal Stud End Bracket-Short 1-1/2” (38mm) 7M99003312
 Metal Stud End Bracket- Long 2-1/16” (53mm) 7M99003313	 T-Bar End Bracket- Short 2-5/8” (68mm) 7M99003314	 T-Bar End Bracket- Long 4-1/8” (105mm) 7M99003316
 Wood Beam Stud End Bracket 7M99003317	 Replacement Center Bracket 7M99003321	 3” (76 mm) Bend Radius Indicator 7M99004179
 Replacement 1” NPT Inlet Adapter 7M99003322	 #2 Square Drive Bit 7M99004539	 Replacement Gasket 7M99004319
 48” (1220mm) Bracket Assembly 7M99003301		