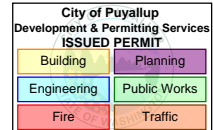




**C O N S T R U C T I O N , I N C**

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# **FIRE SPRINKLER EQUIPMENT SUBMITTAL**

FOR

***Remembrance Gallery TI***

**110 9<sup>th</sup> Ave SW**

**Puyallup, WA 98371**

**Archer Job # S24-069**

# 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

### Product Description

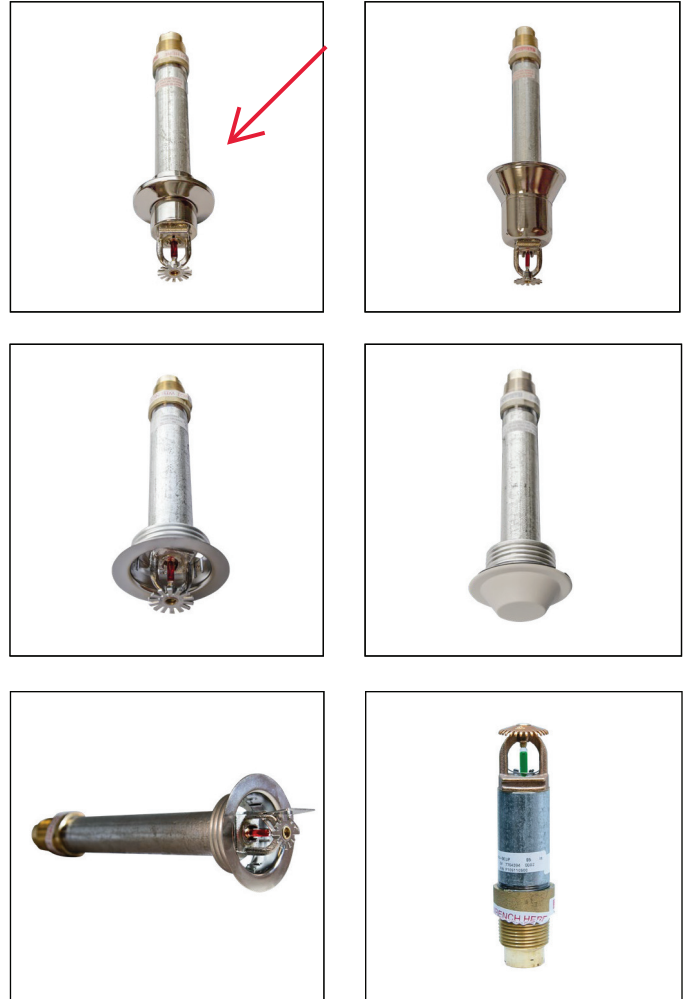
Model F3QR56 dry sprinklers are Quick-Response, standard coverage sprinklers with a nominal K-factor of 5.6 (80 metric). Available in pendent, horizontal sidewall, and upright configurations, Model F3QR56 dry sprinklers utilize a 3mm glass bulb ordinary, intermediate, or high temperature classification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



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

### Sprinkler Summary

Table A

Model	K-Factor gpm/psi <sup>1/2</sup> (lpm/bar <sup>1/2</sup> )	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 Pendant: Standard Escutcheon - SIN R5714**

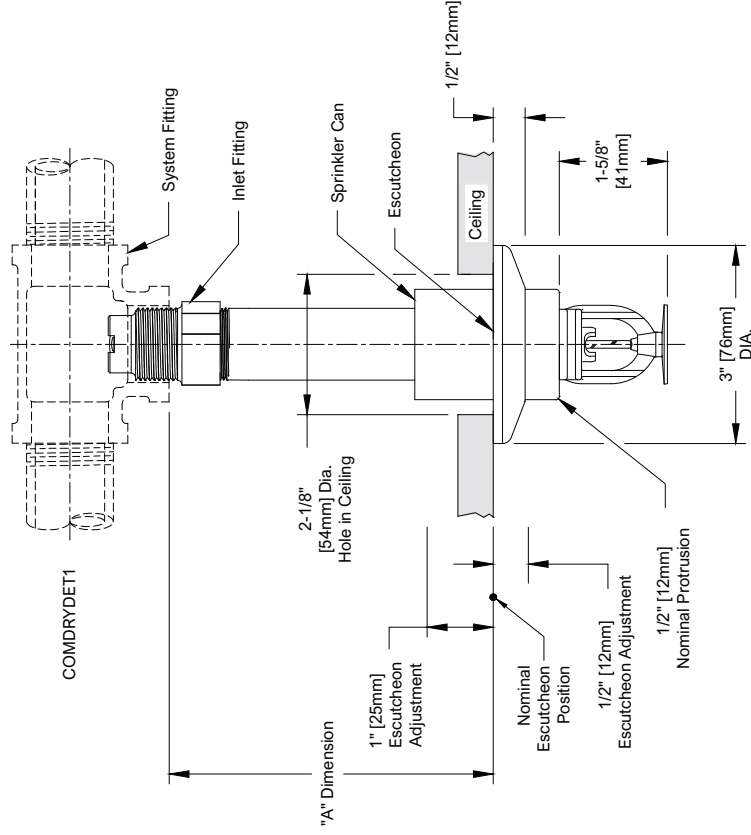
		Table B			
"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
2" to 48" (51mm to 1219mm) in 1/4" (6mm) increments for 1" connections or	Ordinary	155°F (68°C)	Red	cULus FM	C-2
	Intermediate	175°F (79°C)	Yellow		
2" to 36" (51mm to 914mm)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



**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 Pendant 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 <sup>(2)(3)</sup>
Bronze	Polished Stainless
Bronze	Laquered Brass
Chrome	Polished Stainless
White Polyester <sup>(1)</sup>	White Polyester
Black Polyester <sup>(1)</sup>	Black Polyester
Custom Color Polyester <sup>(1)</sup>	Custom Color Polyester
Electroless Nickel PTFE <sup>(1)(4)</sup>	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.

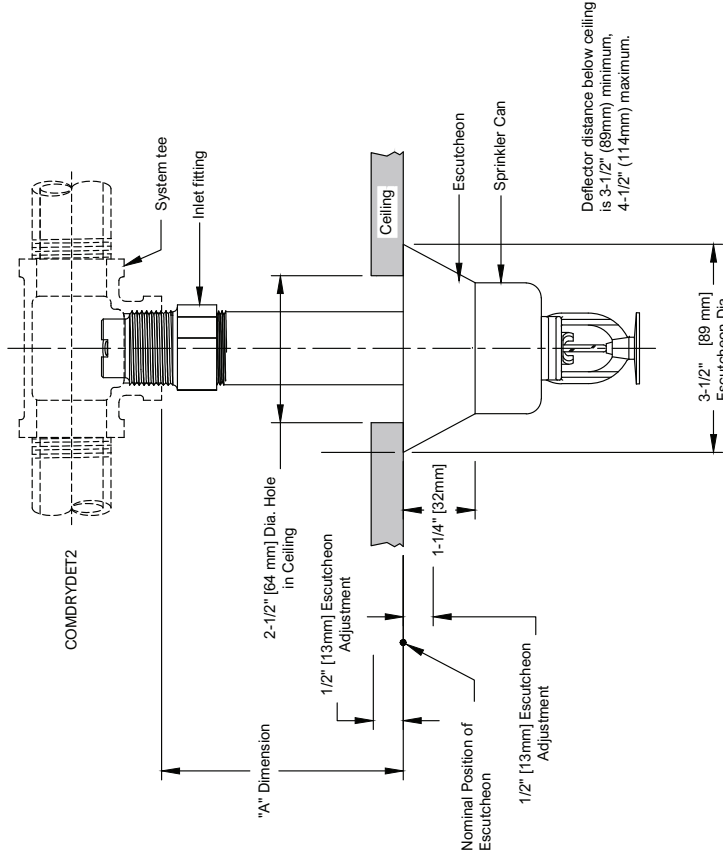
**Model F3QR56 Dry Pendant: HB Escutcheon - SIN R5714**

		Table C			
"A" Dimension in (mm)	Temperature Classification	Temperature Rating F (C)	Glass Bulb Color	Approvals	Sprinkler Guard
3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3 1/2" 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		
High	200°F (93°C)	Green			
		286°F (141°C)	Blue		

**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 Pendant Sprinkler: HB Escutcheon**

**Figure 2**



**Note:** The sprinkler can protrude 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/2" (-12.7mm) to +1/2" (+12.7mm) "A" dimension adjustment range.



Finish Combinations: HB Escutcheon	
Sprinkler	Escutcheon <sup>(2)(3)</sup>
Bronze	Chrome
Chrome	Chrome
White Polyester <sup>(1)</sup>	White Polyester
Black Polyester <sup>(1)</sup>	Black Polyester
Custom Color Polyester <sup>(1)</sup>	Custom Color Polyester
Electroless Nickel PTFE <sup>(1)(4)</sup>	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 Pendant: FP Escutcheon - SIN R5714**

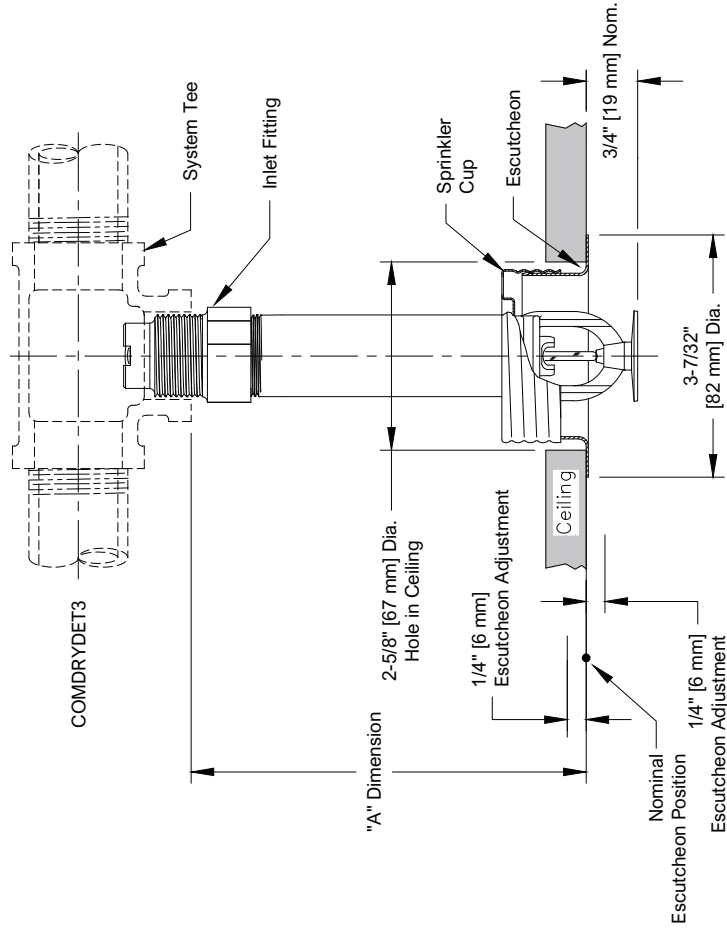
		Table D			
"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or	Ordinary	155°F (68°C)	Red	cULus FM	N/A
	3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Intermediate	175°F (79°C)		
High		200°F (93°C)	Green		
		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 Pendant Sprinkler: FP Escutcheon**

**Figure 3**



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

Finish Combinations: FP Recessed	
Sprinkler <sup>(1)</sup>	Escutcheon <sup>(3)(4)</sup>
Bronze	Brass
Chrome	Chrome
White Polyester <sup>(2)</sup>	White Polyester
Black Polyester <sup>(2)</sup>	Black Polyester
Custom Color Polyester <sup>(2)</sup>	Custom Color Polyester
Electroless Nickel PTFE <sup>(2)(5)</sup>	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 Pendant: CCP Cover Plate - SIN R5714**

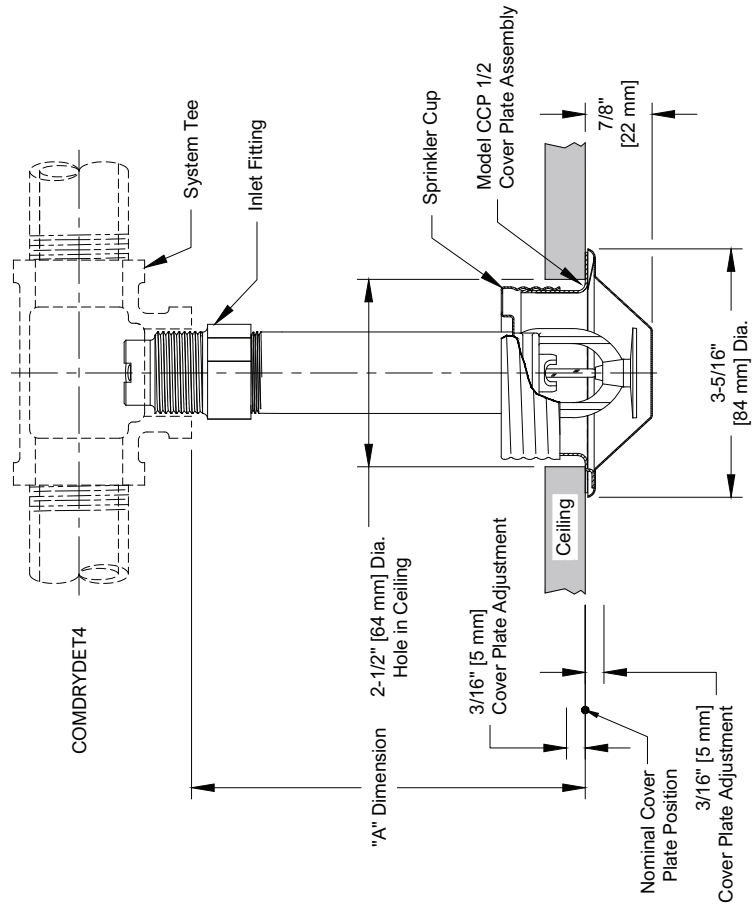
				Table E	
"A" Dimension in (mm)	Temperature Classification	Temperature Rating F (C)	Glass Bulb Color	Approvals	Sprinkler Guard
3/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)	Red	cULus FM	N/A
	Intermediate	175°F (79°C)	Yellow		
		200°F (93°C)	Green		
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 Pendant Sprinkler: CCP Cover Plate**

**Figure 4**



Finish Combinations: CCP Concealed	
Sprinkler <sup>(1)</sup>	Cover Plate <sup>(2)</sup>
Bronze	White Polyester
	Chrome Bright
	Satin Chrome
	Bright Brass
	Unfinished Bronze
	Black Plate
	Custom Color

**Notes:**

- Cup for CCP Concealed is unfinished galvanized steel.
- 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).

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



**Model F3QR56 Dry Pendant: F1 Escutcheon - SIN R5714**

				Table F	
"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3 1/2" 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		
		200°F (93°C)	Green		
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).

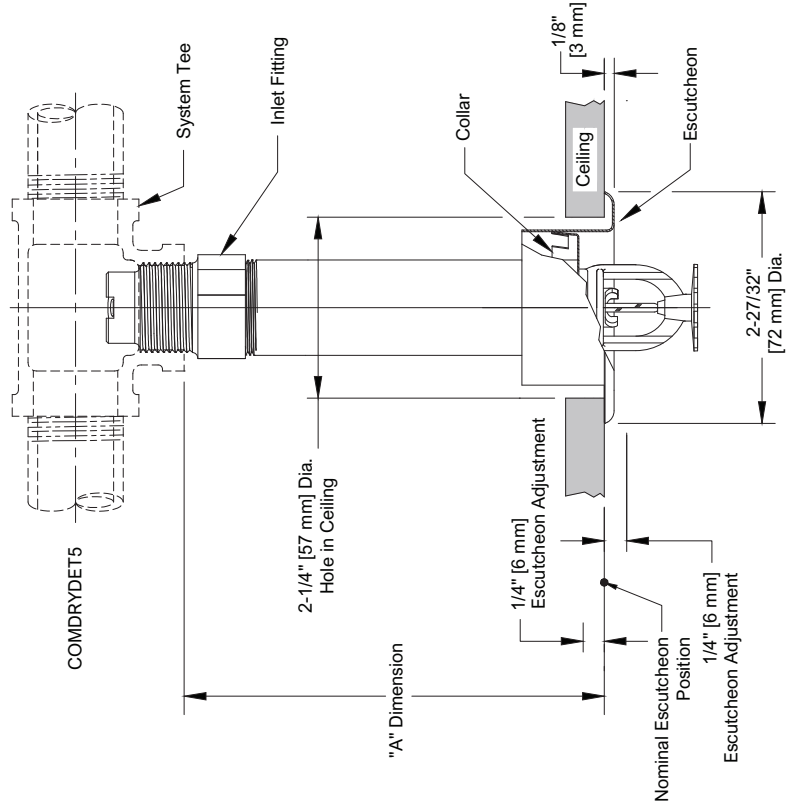
**Model F3QR56 Dry Pendant Sprinkler: F1 Escutcheon**

**Figure 5**

Finish Combinations: F1 Recessed	
Sprinkler	Escutcheon <sup>(2)(3)</sup>
Bronze	Brass
Chrome	Chrome
White Polyester <sup>(1)</sup>	White Polyester
Black Polyester <sup>(1)</sup>	Black Polyester
Custom Color Polyester <sup>(1)</sup>	Custom Color Polyester
Electroless Nickel PTFE <sup>(1)(4)</sup>	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 Pendant: No Escutcheon - SIN R5714**

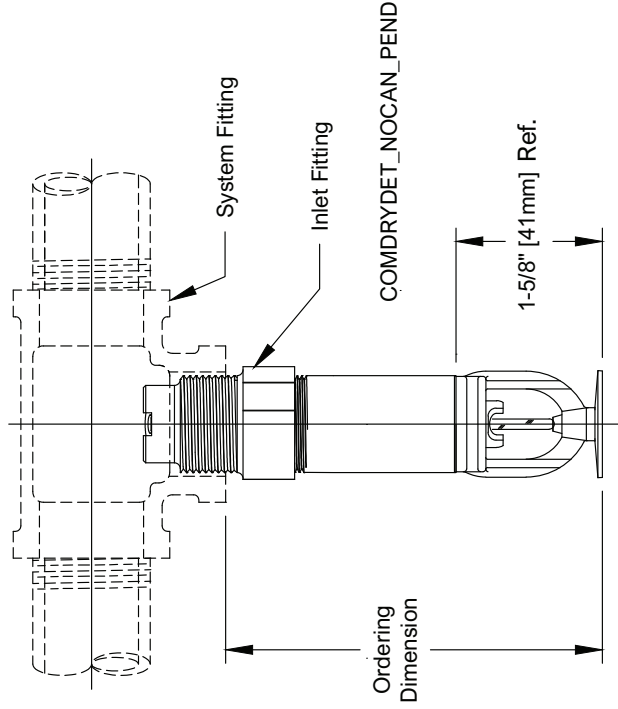
Table G		Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
Order Dimension in (mm) 5" to 48" (127mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 5" to 36" (127mm to 914mm) in 1/4" (6mm) increments for 3/4" connections.	Ordinary	155°F (68°C)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



**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 Pendant Sprinkler: No Escutcheon**

**Figure 6**



Available Finishes: No Escutcheon
<b>Sprinkler</b>
Bronze
Chrome

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



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

		Table H	
"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color
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
	Intermediate	175°F (79°C)	Yellow
		200°F (93°C)	Green
	High	286°F (141°C)	Blue



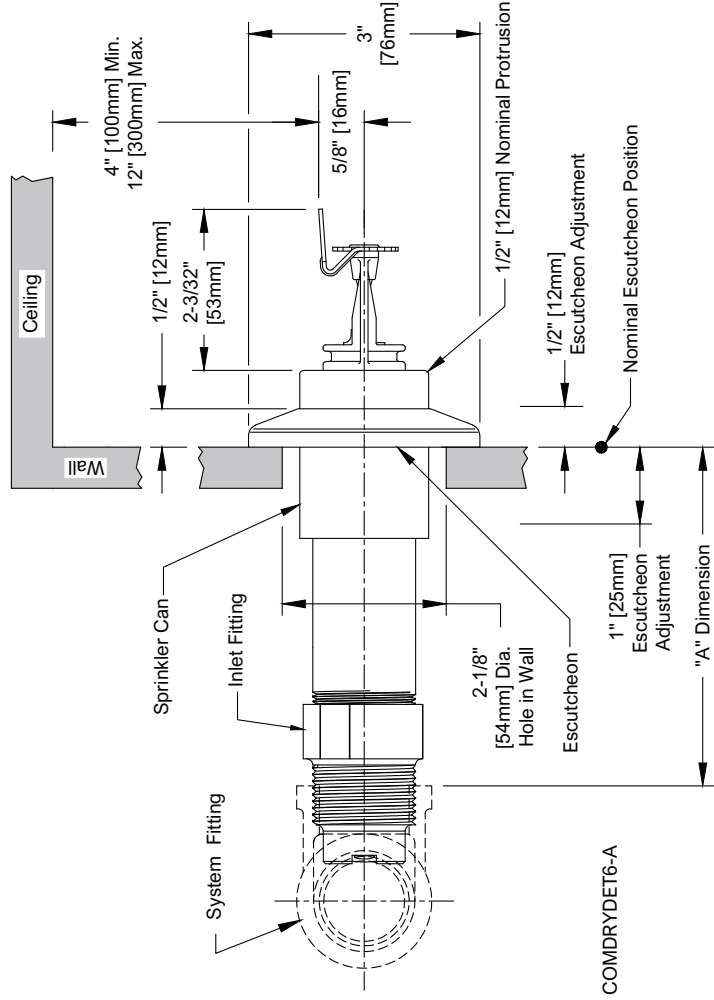
cULus (Light Hazard Only)  
FM (HC-1 Only)

C-2  
(FM Only)

**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**



Finish Combinations: Standard Escutcheon	
Sprinkler	Escutcheon <sup>(2)(3)</sup>
Bronze	Polished Stainless
Bronze	Laquered Brass
Chrome	Polished Stainless
White Polyester <sup>(1)</sup>	White Polyester
Black Polyester <sup>(1)</sup>	Black Polyester
Custom Color Polyester <sup>(1)</sup>	Custom Color Polyester
Electroless Nickel PTFE <sup>(1)(4)</sup>	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.

**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.

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

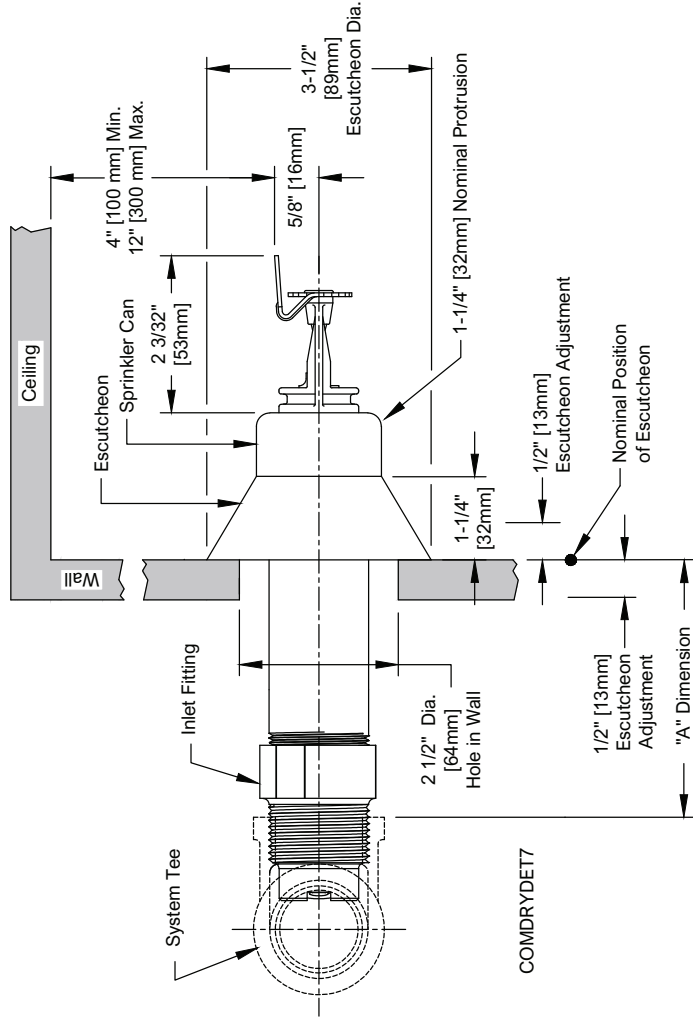
		Table I			
"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F (68°C)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



**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 <sup>(2)(3)</sup>
Bronze	Chrome
Chrome	Chrome
White Polyester <sup>(1)</sup>	White Polyester
Black Polyester <sup>(1)</sup>	Black Polyester
Custom Color Polyester <sup>(1)</sup>	Custom Color Polyester
Electroless Nickel PTFE <sup>(1)(4)</sup>	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 protrude 1/4" when escutcheon is in nominal position. Escutcheon adjustment provides -1/2" (-12.7mm) to +1/2" (+12.7mm) "A" dimension adjustment range.

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

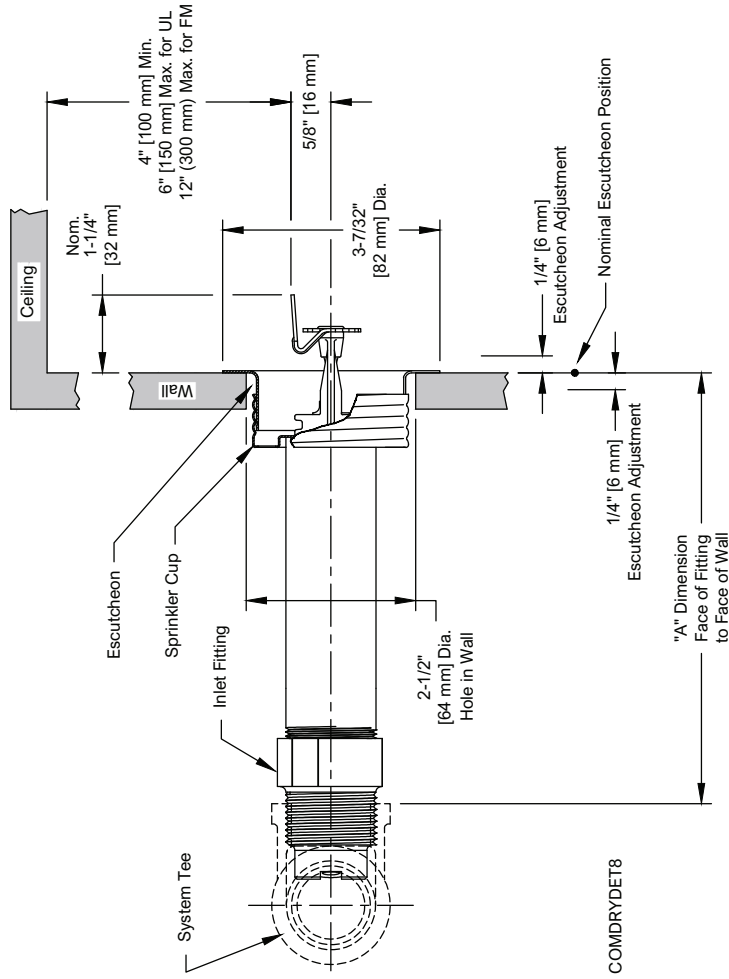
		<b>Table J</b>			
"A" Dimension in (mm)	Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
3 1/2" to 48" (89mm to 1219mm) in 1/4" (6mm) increments for 1" connections or 3 1/2" to 36" (89mm to 914mm) in 1/4" (6mm) increments for 3/4" connections	Ordinary	155°F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



**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**



<b>Finish Combinations: FP Recessed</b>	
<b>Sprinkler<sup>(1)</sup></b>	<b>Escutcheon<sup>(3)(4)</sup></b>
Bronze	Brass
Chrome	Chrome
White Polyester <sup>(2)</sup>	White Polyester
Black Polyester <sup>(2)</sup>	Black Polyester
Custom Color Polyester <sup>(2)</sup>	Custom Color Polyester
Electroless Nickel PTFE <sup>(2)(5)</sup>	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**

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



**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).

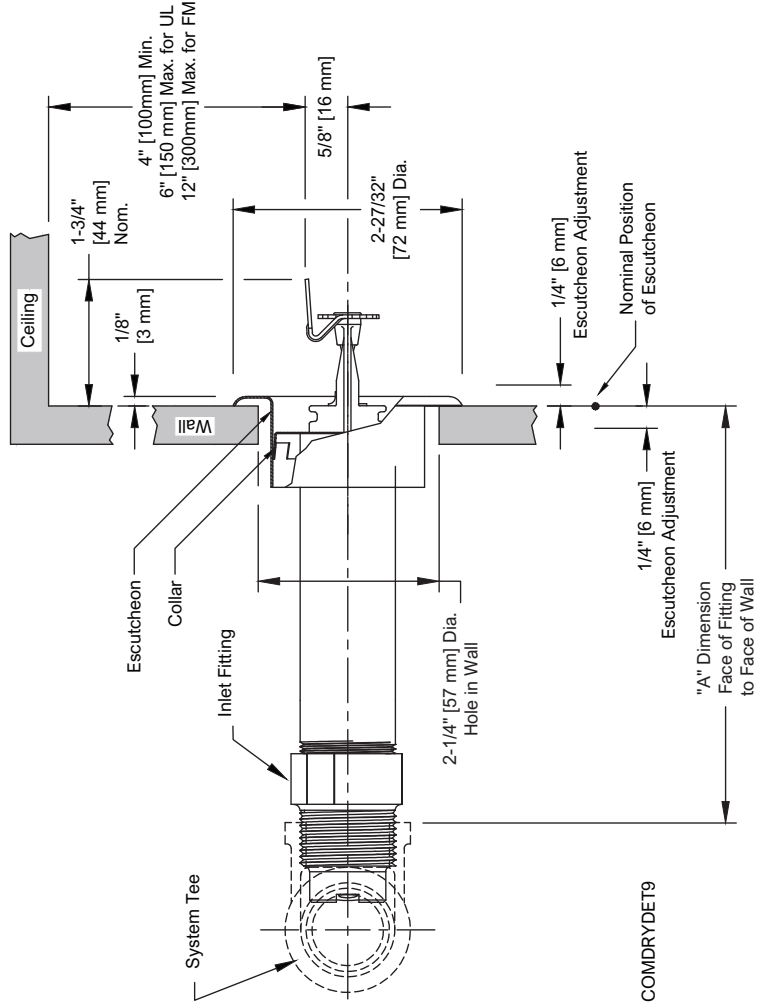
**Model F3QR56 Dry Horizontal Sidewall: F1 Escutcheon**

**Figure 10**

<b>Finish Combinations: F1 Recessed</b>	
Sprinkler	Escutcheon <sup>(2)(3)</sup>
Bronze	Brass
Chrome	Chrome
White Polyester <sup>(1)</sup>	White Polyester
Black Polyester <sup>(1)</sup>	Black Polyester
Custom Color Polyester <sup>(1)</sup>	Custom Color Polyester
Electroless Nickel PTFE <sup>(1)(4)</sup>	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	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 (Light Hazard Only) FM (HC-1 Only)	N/A
	Intermediate	175°F (79°C)	Yellow		
		200°F (93°C)	Green		
		286°F (141°C)	Blue		

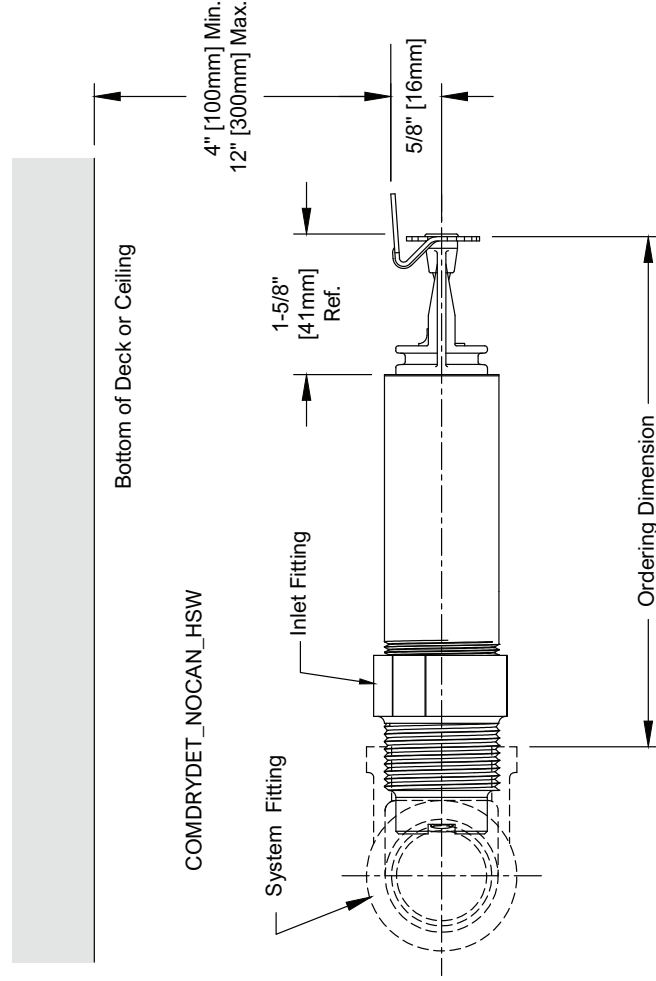


**Note:** Standard inlet fitting threads are 1" NPT or ISO7-R1. Inlet fitting is also available with 3/4" NPT and ISO-R3/4 threads for replacement of existing sprinklers (cULus Listed only).

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

**Figure 11**

Available Finishes: No Escutcheon
Sprinkler
Bronze
Chrome



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

**Model F3QR56 Dry Upright - SIN R5724**

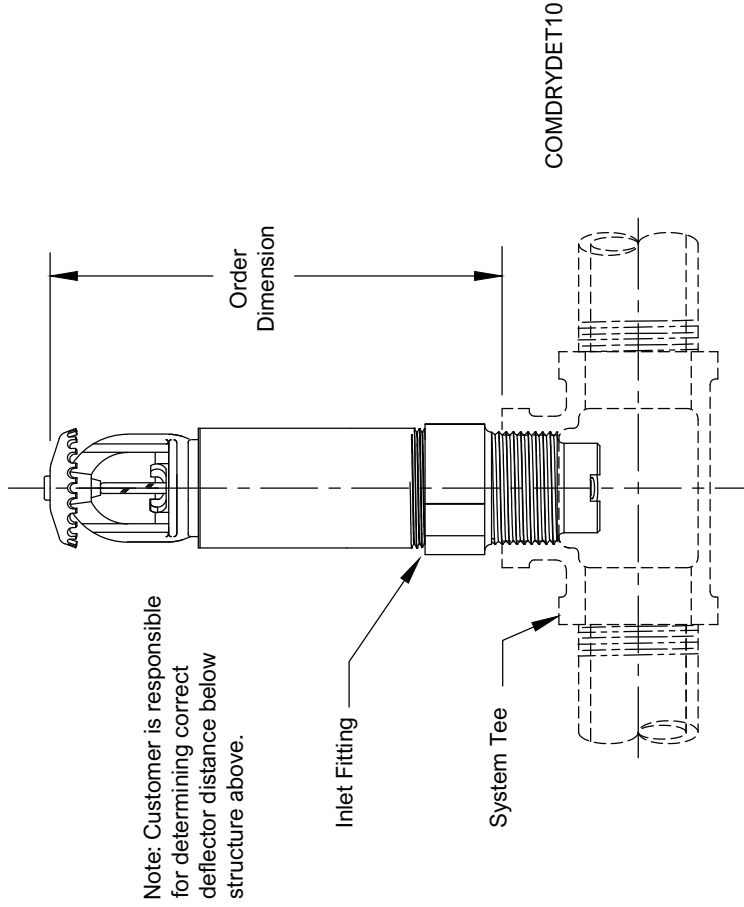
Order Dimension in (mm)		Temperature Classification	Temperature Rating °F (°C)	Glass Bulb Color	Approvals	Sprinkler Guard
5" to 48" (127 mm to 1219 mm)	Ordinary	155°F (68°C)	Red	cULus	N/A	
	Intermediate	175°F (79°C)	Yellow			
	High	200°F (93°C)	Green			
			286°F (141°C)	Blue		

**Table M**



**Model F3QR56 Dry Upright Sprinkler**

**Figure 12**



Note: Customer is responsible for determining correct deflector distance below structure above.

Finish Combinations: Upright	
Sprinkler	Escutcheon
Bronze	NA
Electroless Nickel PTFE <sup>(1)</sup>	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 surface.

### 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

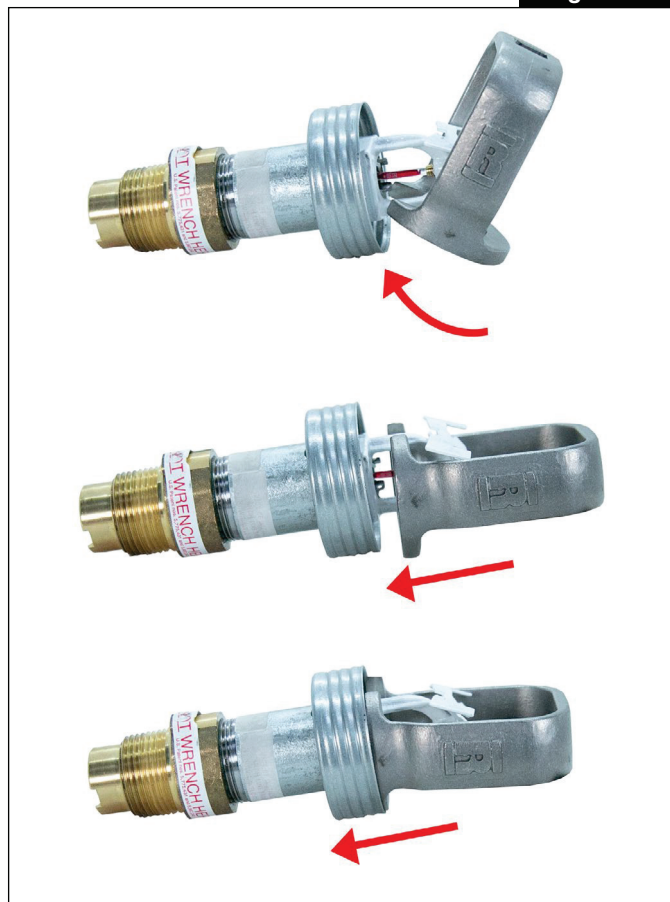
Cut a 2-5/8" (67mm) diameter hole in the wall as shown in Fig. 4. Apply a PTFE based sealant to the sprinkler threads before installing into the fitting. Use the Model XLO2 installation wrench (see Fig. 13) on the square boss to tighten the sprinkler until it is secured in the sprinkler fitting. Installation 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



MINIMUM EXPOSED BARREL LENGTH WHEN CONNECTED TO WET PIPE SPRINKLER SYSTEM

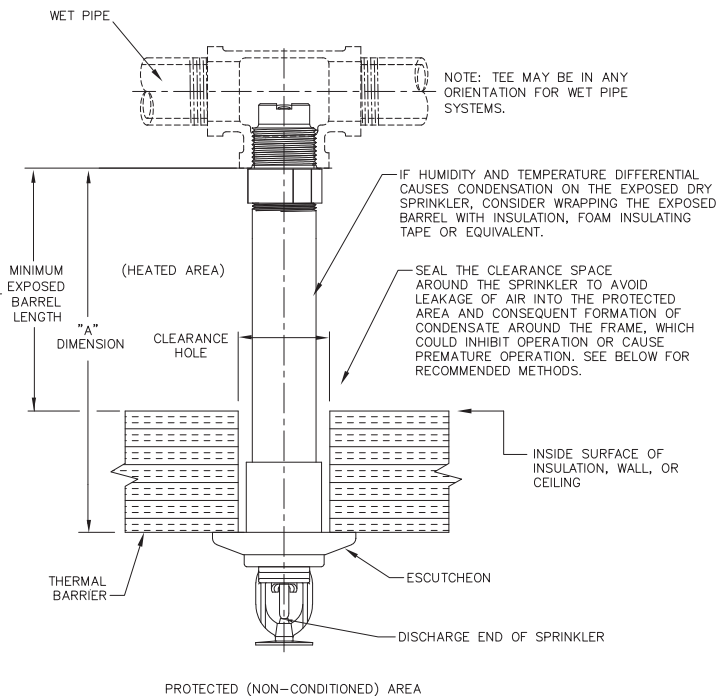
NOTE: STANDARD DRY PENDENT IS SHOWN, HOWEVER, MINIMUM EXPOSED BARREL LENGTH APPLIES TO ALL STYLES OF DRY SPRINKLERS CONNECTED TO A WET PIPE SYSTEM.

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)

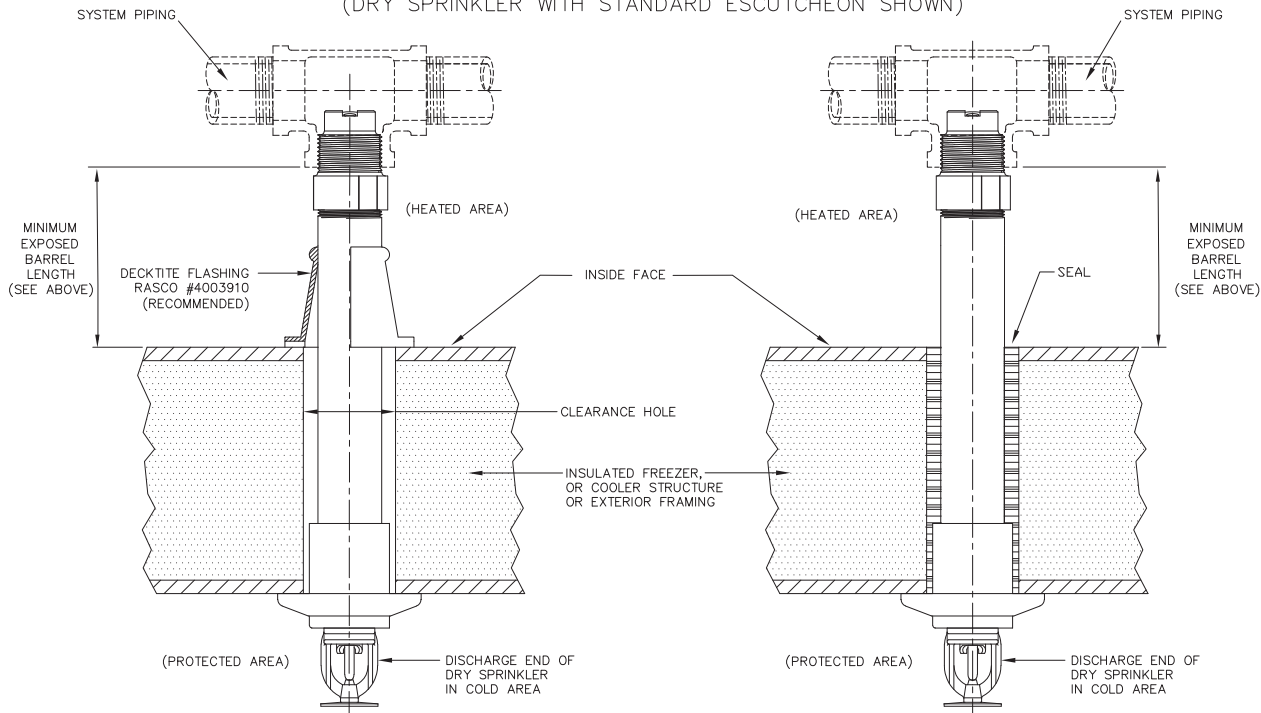
\* FOR AMBIENT TEMPERATURES EXPOSED TO THE DISCHARGE END OF THE SPRINKLER THAT OCCUR BETWEEN THE VALUES LISTED, USE THE NEXT COOLER TEMPERATURE.

\*\* 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)



COMDRYDET11



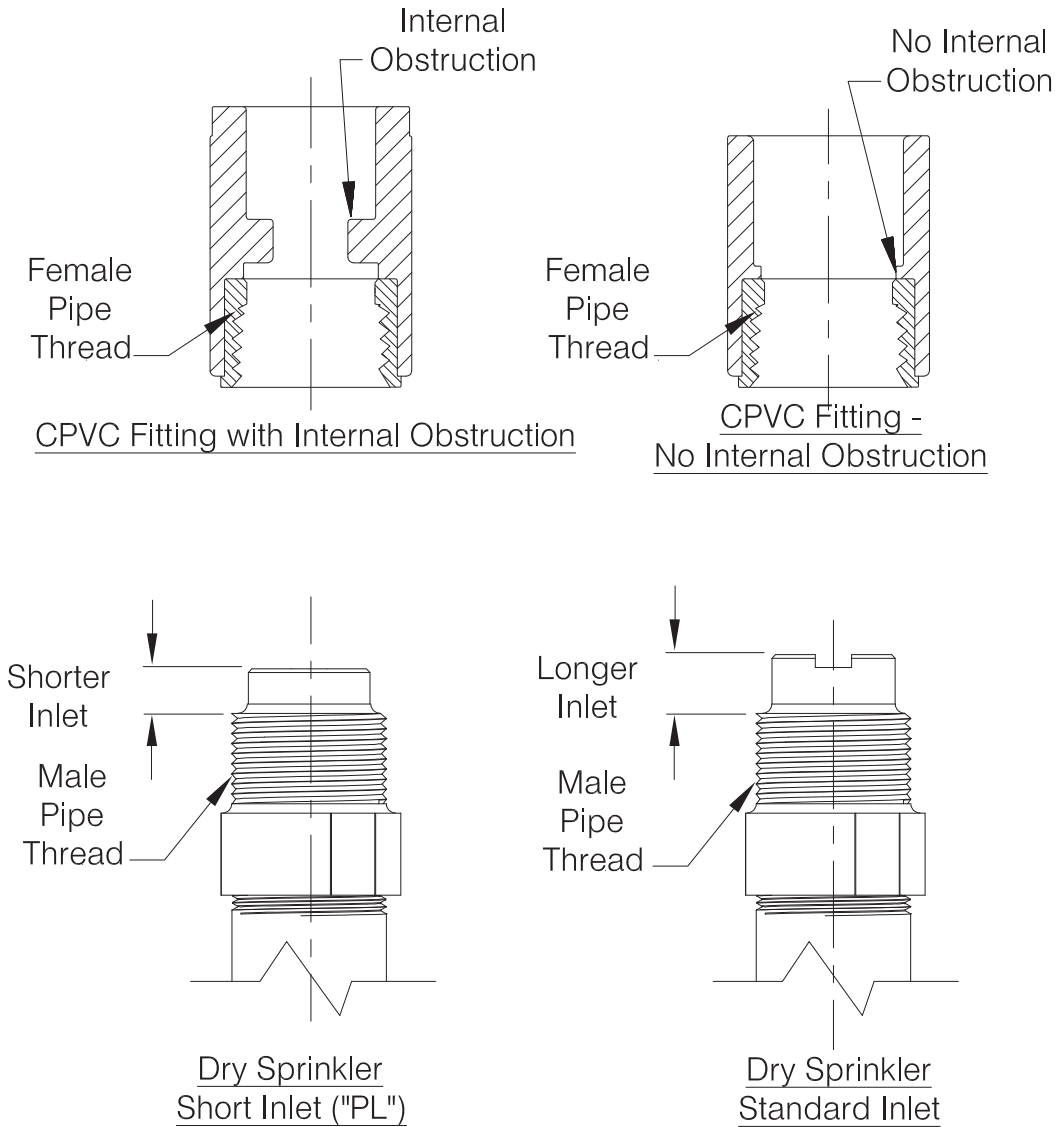
### \*CAUTION\*

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.

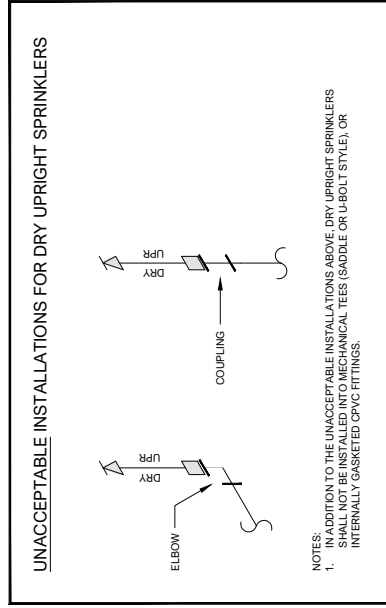
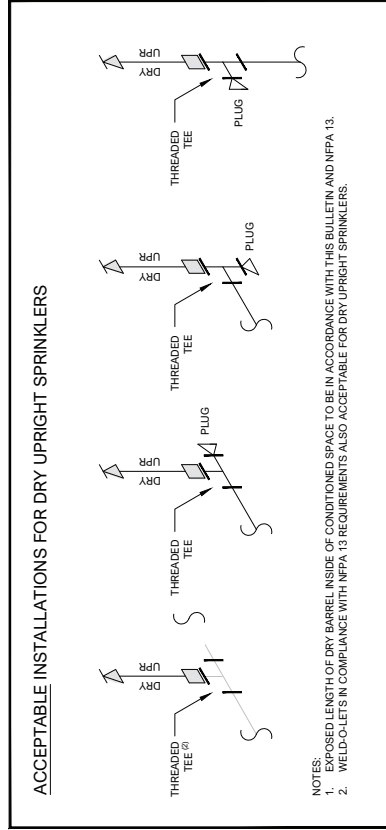
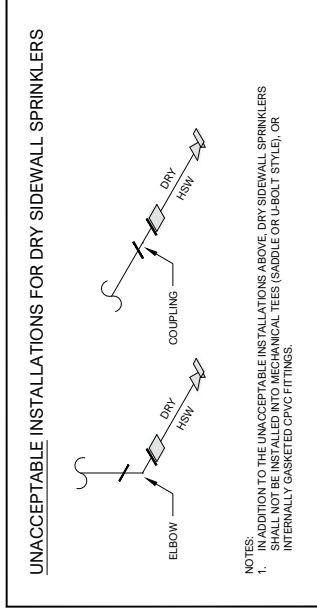
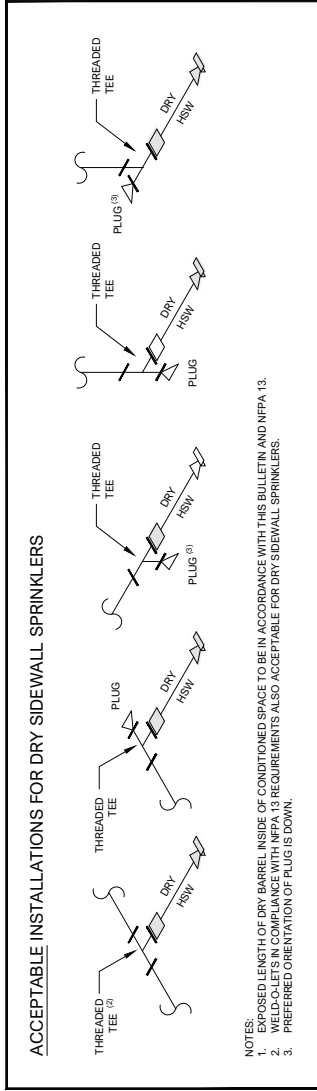
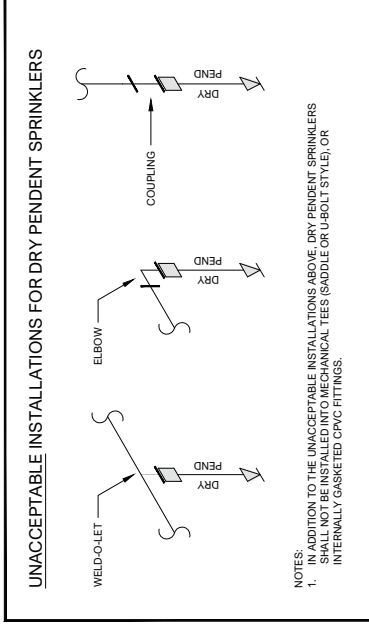
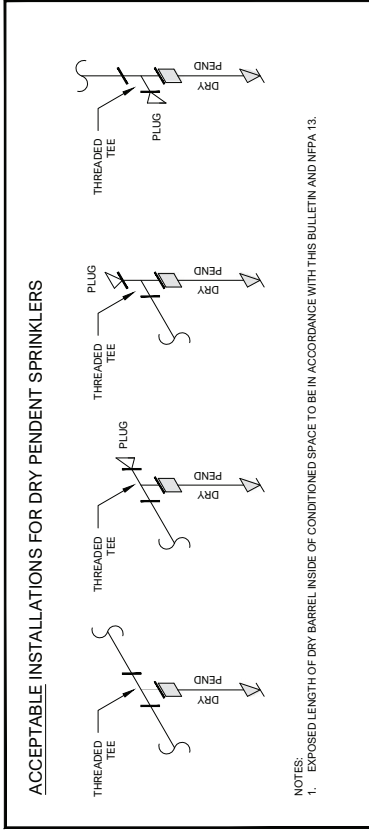
Short inlet ("PL") versions of Reliable dry sprinklers are available that may or may not be compatible with fittings having internal obstructions in existing installations. Sprinklers with the short inlet ("PL") should only be installed in CPVC fittings of wet-pipe systems.

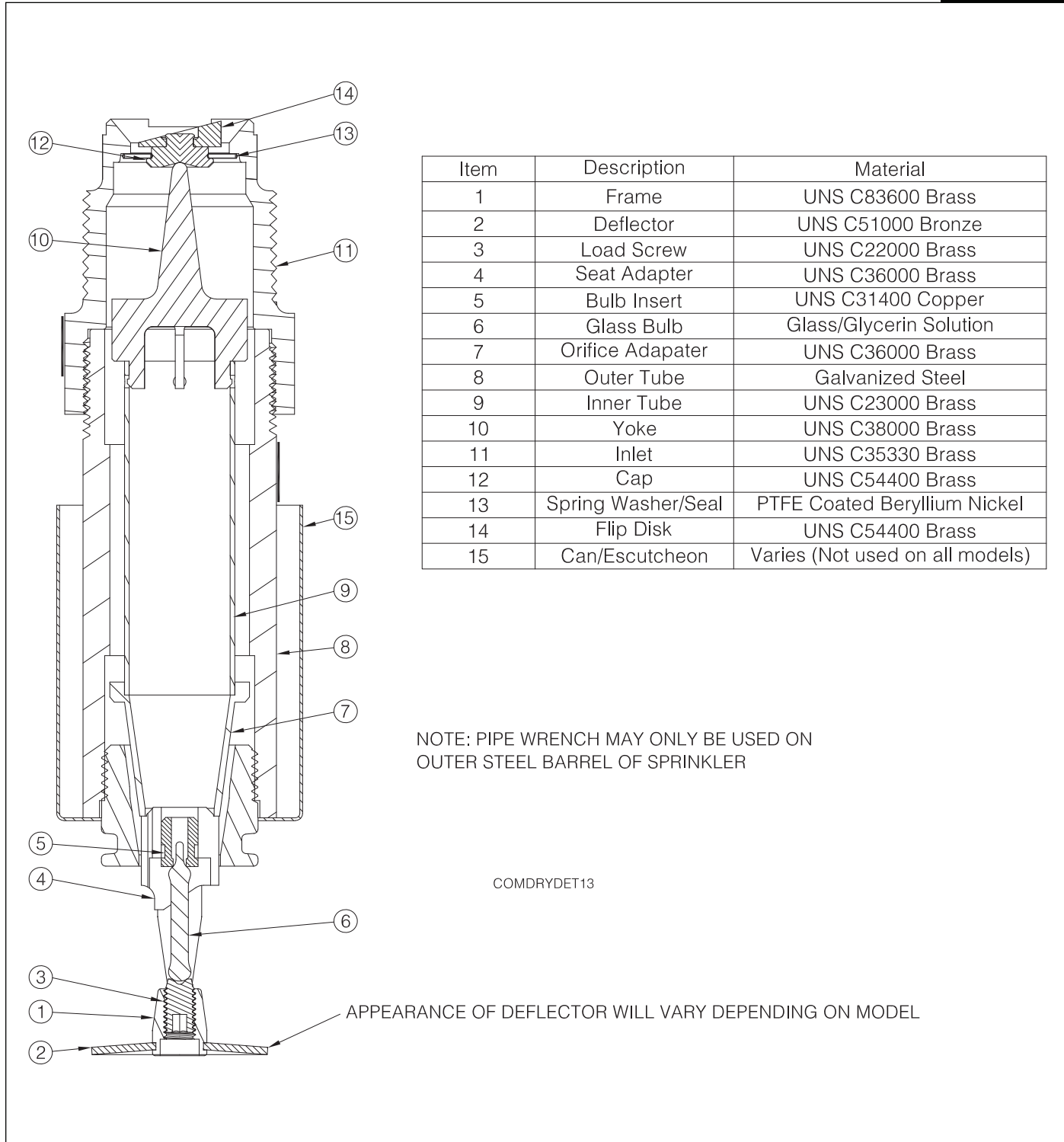
In all cases, verify sprinkler and fitting dimensions prior to installation to avoid interference.



BE SURE TO ORDER THE CORRECT SPRINKLERS FOR YOUR APPLICATION

COMDRYDET2





## 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](http://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)



## 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.

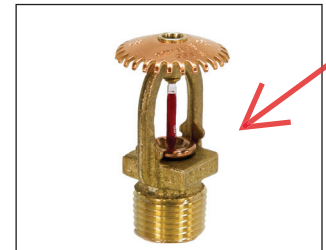
Pendent and horizontal sidewall sprinklers may be installed exposed or surface mounted using escutcheons such as the Reliable Models B, C, or HB (reference Technical Bulletin 204). When installed recessed or concealed, the Model F1FR56 series sprinklers are specifically listed with and may only be installed 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 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.



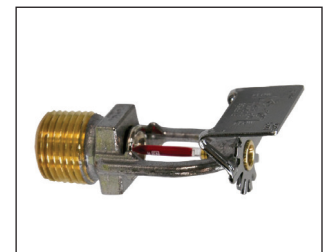
Model F1FR56 Pendent



Model F1FR56 Upright



Model F1FR56 Vertical Sidewall



Model F1FR56 Horizontal Sidewall

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

**Note:** This bulletin may contain information on New and Legacy sprinklers that reflects a dimensional change only. Sprinkler Identification Number (SIN), application, performance, and listings/approval are not otherwise affected. Sprinklers with New frames will include the suffix "N" in the order.

### F1FR Series Sprinkler Summary

Table A

Sprinkler Model	K-Factor gpm/psi <sup>1/2</sup> (lpm/bar <sup>1/2</sup> )	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

**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 (New Frames)**

Factory Water Shield (cULus, FM)

F-1 Guard (cULus, FM)

F-3 Guard with Shield (cULus, FM)

**Guards and Shields (Legacy Frames)**

Factory Water Shield

C-1 Guard (FM)

C-3 Guard with Shield (cULus, FM)

D-1 Guard (cULus)

D-3 Guard with Shield (cULus)

**Sprinkler Wrench**

Model W2

Model J (New frame with guard installed)

Model JD (Legacy frame with guard installed)

**Listings and Approvals**

cULus Listed

FM Approved

LPCB

VdS

EC

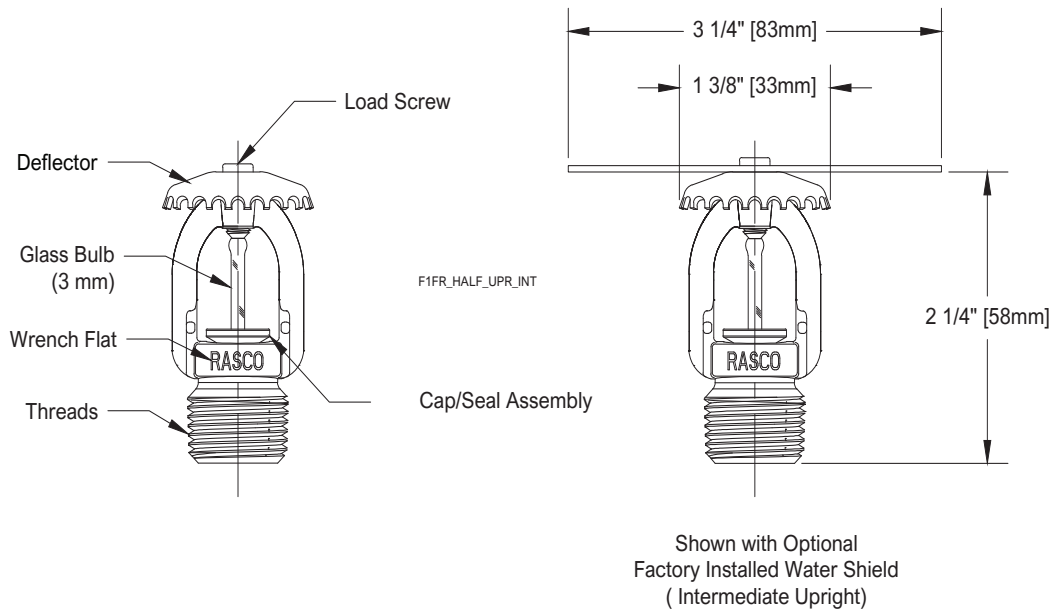
WM

UKCA: 0832-UKCA-CPR-S5045



**Model F1FR56 Upright Sprinkler Components and Dimensions**

**Figure 1**



**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<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, LPCB, VdS, CE, WM)
- Model F2 (cULus, FM, LPCB, VdS, CE, WM)
- Model FP (cULus, VdS, CE, WM)

**Cover Plate**

Model CCP (cULus, VdS<sup>(2)</sup>, CE<sup>(2)</sup>)

**Guards & Shields (New Frames)<sup>(3)</sup>**

- 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)

**Guards & Shields (Legacy Frames)<sup>(3)</sup>**

- C-1 Guard (FM)
- C-5 Guard/Shield Kit (FM)
- D-1 Guard (cULus, FM)
- D-4 Guard/Shield Kit (FM)
- D-5 Guard/Shield Kit (cULus, FM)
- S-1 Shield (cULus, FM)

**Sprinkler Wrenches**

- Model W2 (pendent)
- Model W4 (recessed or concealed)
- Model J (New frame with guard installed)
- Model JD (Legacy frame with guard installed)

**Listings and Approvals<sup>(4)</sup>**

- cULus Listed
- FM Approved
- LPCB
- VdS
- EC
- WM
- UKCA: 0832-UKCA-CPR-S5045, 0831-UKCA-CPR-5072 (CCP)

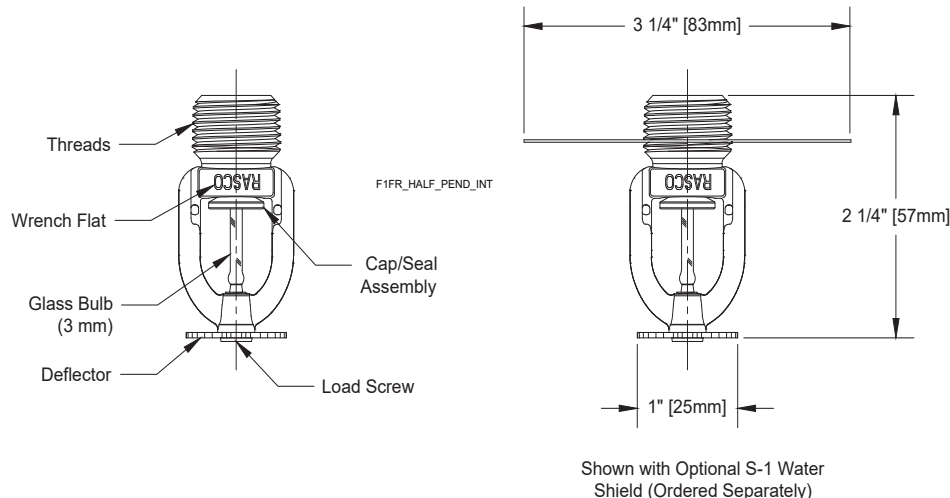


**Notes:**

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**



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

**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 <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<sup>(2)</sup>**

Model F1 (cULus)

Model F2 (cULus, FM)

Model FP (cULus)

**Guards & Shields (New Frames)<sup>(3)</sup>**

F-4 Guard (FM)

F-7 Guard (cULus)

**Guards & Shields (Legacy Frames)<sup>(3)</sup>**

C1 Guard (FM)

D1 Guard (cULus)

**Sprinkler Wrenches**

Model W2 (non-recessed)

Model W4 (recessed)

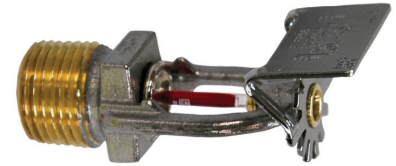
Model J (New frame with guard installed)

Model JD (Legacy frame with guard installed)

**Listings and Approvals**

cULus Listed<sup>(4)</sup>

FM Approved<sup>(5)</sup>

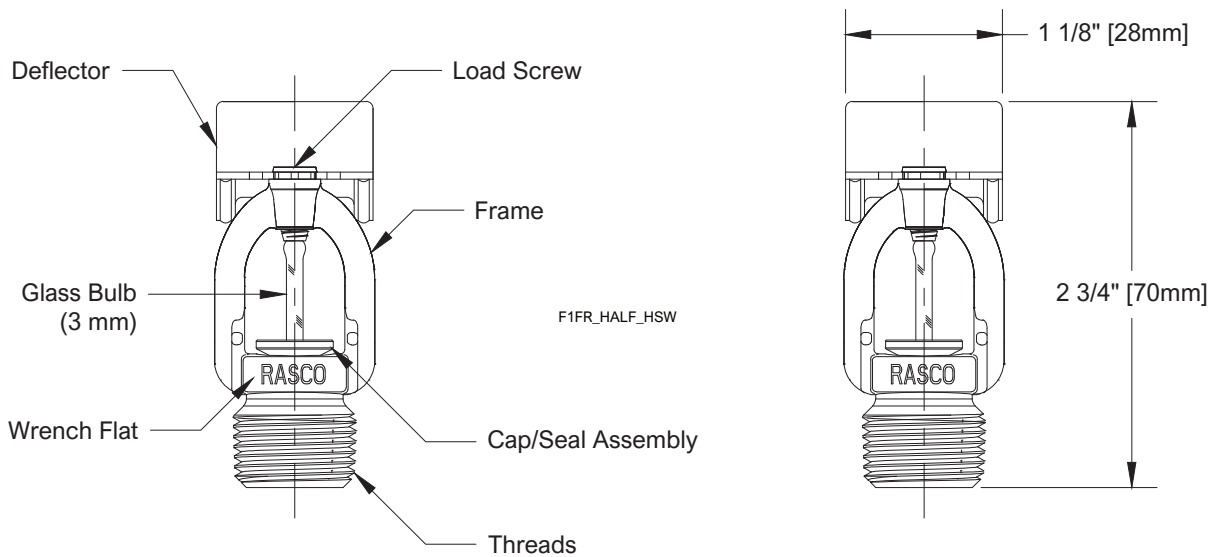


**Notes:**

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.



**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 (New Frames)**

F-2 Guard (FM)

**Guards & Shields (Legacy Frames)**

C1 Guard (FM)

**Sprinkler Wrenches**

Model W2

Model J (New frame with guard installed)

Model JD (Legacy frame with guard installed)

**Listings and Approvals<sup>(1)</sup>**

cULus Listed

FM Approved

LPCB<sup>(2)</sup>

UKCA: 0832-UKCA-CPR-S5045

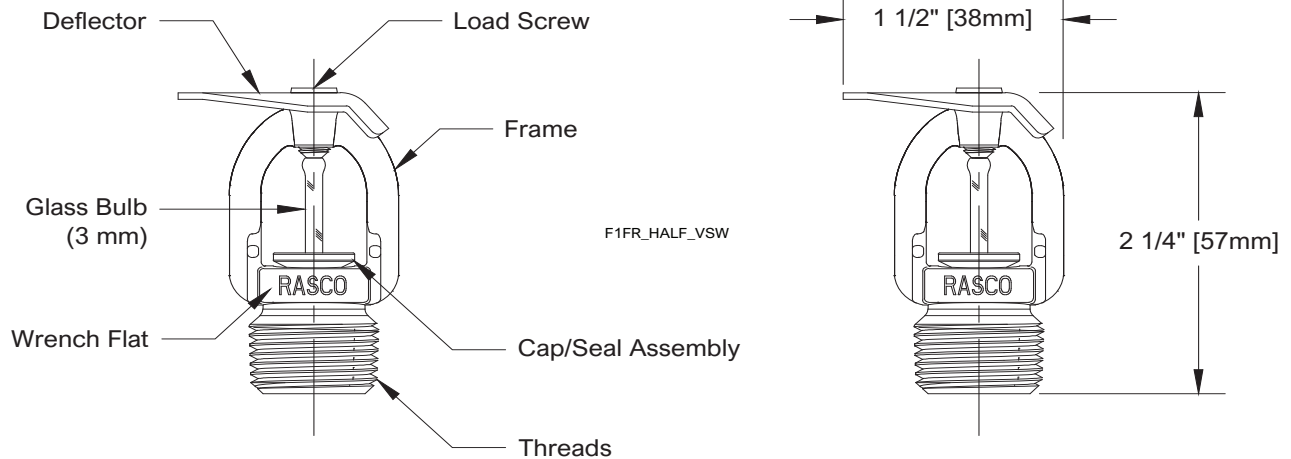


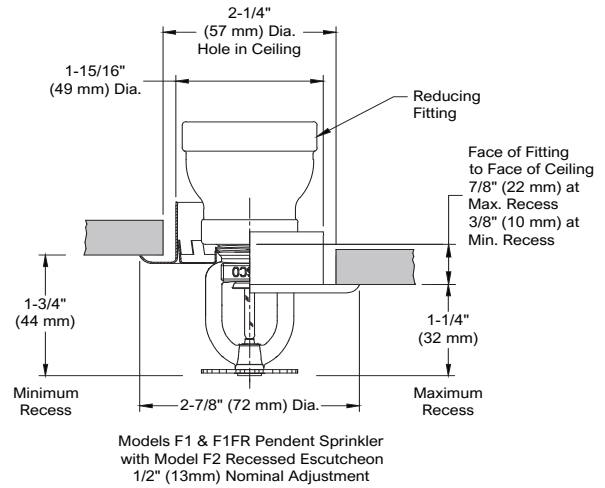
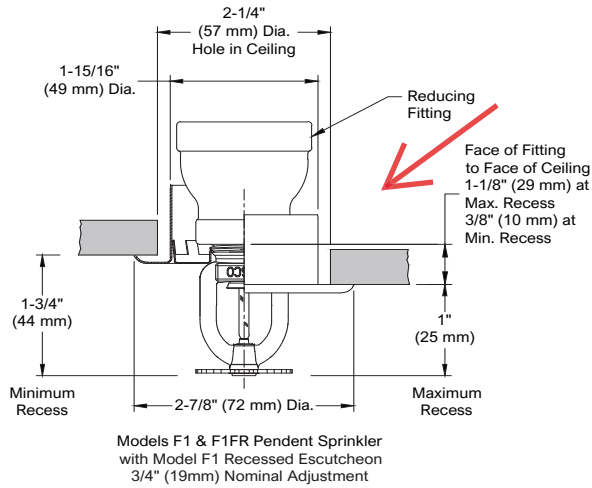
**Notes:**

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

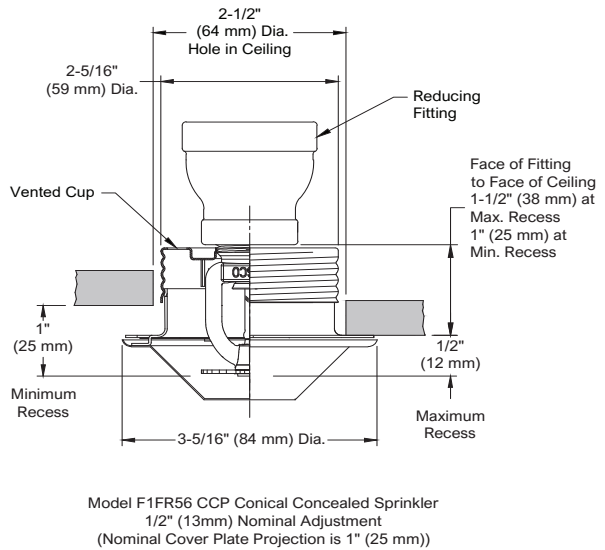
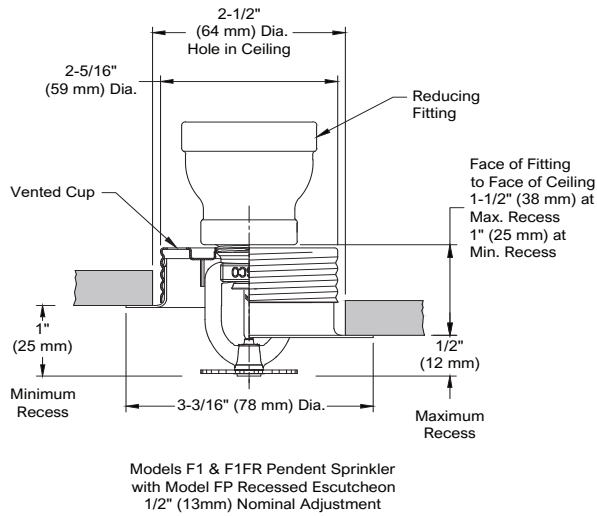
**Model F1FR56 Vertical Sprinkler Components and Dimensions**

**Figure 4**





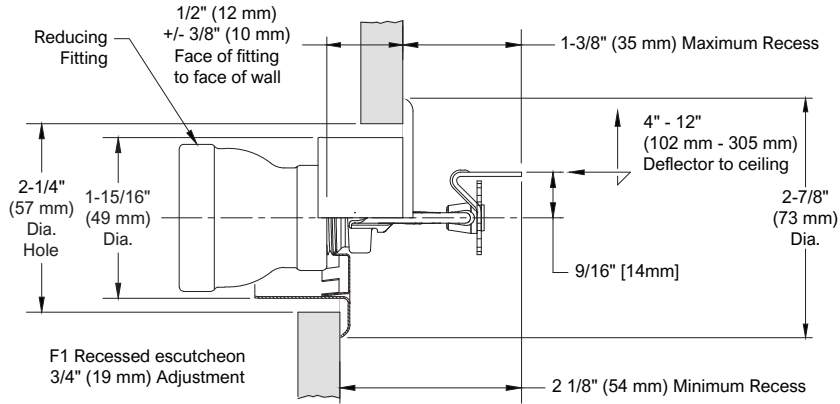
F1\_REC\_PEND\_CCP



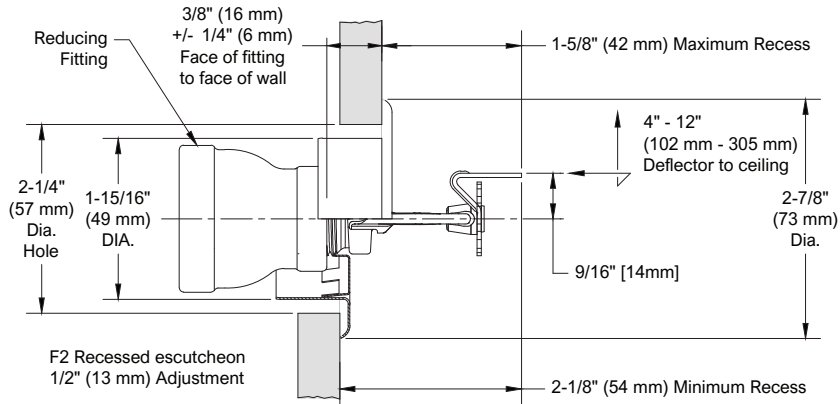
Note: Model FP recessed assemblies may not be used where the pressure in the space above the ceiling is positive with respect to the protected area. Ensure that the openings in the Model FP cup are unobstructed following installation.

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.

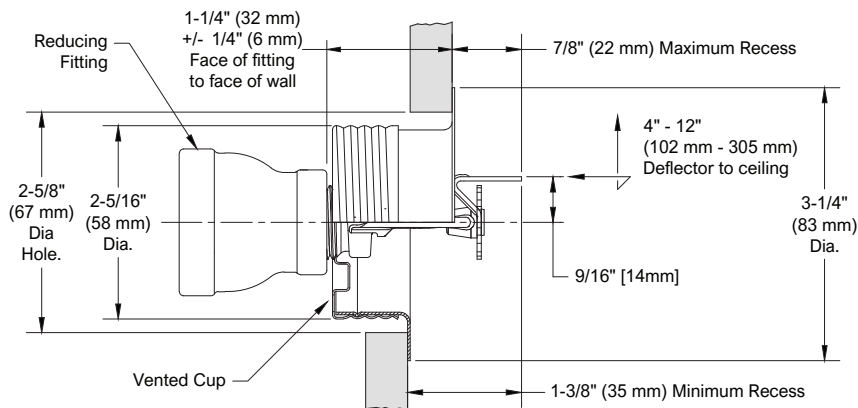




Model F1FR Horizontal Sidewall Sprinkler  
with Model F1 Recessed Escutcheon  
3/4" (19mm) Nominal Adjustment F1FR\_REC\_HSW



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 J (New frame with guard installed)  
Model JD (Legacy frame with guard installed, similar but with zinc finish)



Model W4  
(recessed, concealed pendent)

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

Table B

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

### Notes:

1. Paint or any other coating applied over the factory finish will void all approvals and warranties.
2. 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. 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

- 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<sup>(1)(2)</sup>

- 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 W4 (recessed, concealed)
- Model J (New frame with guard installed)
- Model JD (Legacy frame 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.