Reliable®

Model G5 Series Sprinklers

Standard Spray, Flat Concealed Pendent

Available with Gasketed Cover Plate

Features

- Standard Coverage, Concealed Pendent (K2.8, 4.2, 5.6, & 8.0 [40, 60, 80, & 115 metric])
- Flat concealed cover plate available in a variety of finishes.
- Available with Stainless Steel Clad cover plate (see Table I).
- 3/4-inch (19 mm) cover plate adjustment.
- Cover plate available with optional gasket.

Model G5 Cover Plate

Model G5 Cover Plate with QR Gasket

Model G5 Cover Plate with SR Gasket

Product Description

Model G5 series sprinklers are standard coverage, flat plate concealed sprinklers designed for installation in accordance with NFPA 13 and FM Global Property Loss Prevention Data Sheets. All Model G5 series sprinklers use a fusible-link operating element.

The sprinklers are offered with a standard Model G5 cover plate, a Model G5 cover plate with a quick-response (QR) gasket, or a Model G5 cover plate with a standard-response (SR) gasket. Model G5 sprinklers with a gasketed cover plate are intended for use in dust free environments such as clean rooms.

Model G5 sprinklers must only be used with the Model G5 cover plate listed or approved with the sprinkler. Table A provides a summary of available Model G5 series sprinklers, along with Listing and Approval information for each sprinkler and cover plate combination.

Note: Gasket material is silicone rubber, available in white only.

Model G5 Series Sprinkler Summary — **Table A**

Sprinkler Model	K-Factor gpm/psi$^{1/2}$ (L/min/bar$^{1/2}$)	Cover Plate Model	Listings and Approvals	Sensitivity	Max. Working Pressure psi (bar)	Sprinkler Identification Number (SIN)
G5-28	2.8 (40)	G5	cULus	QR	175 (12)	RA3411
			FM	SR		
		G5 QR Gasket	cULus	QR		
		G5 SR Gasket	cULus, FM	SR		
G5-42	4.2 (60)	G5	cULus	QR	175 (12)	RA3413
		G5 QR Gasket				
		G5 SR Gasket	cULus	SR		
G5-56	5.6 (80)	G5	cULus	QR	250 (17)	RA3415
			FM, LPCB, VdS, CE	SR	175 (12)	
		G5 QR Gasket	cULus	QR	250 (17)	
		G5 SR Gasket	cULus	SR	250 (17)	
			FM	SR	175 (12)	
G5-56 300	5.6 (80)	G5	cULus	QR	300 (21)	RA4014
		G5 QR Gasket				
		G5 SR Gasket	cULus	SR		
G5-80	8.0 (115)	G5	cULus	QR	175 (12)	RA3412
		G5 QR Gasket				
		G5 SR Gasket	cULus	SR		
G5-80F	8.0 (115)	G5	FM	SR	175 (12)	RA3417
		G5 SR Gasket				

Model G5-56 Standard Coverage, Concealed Pendent Sprinkler — SIN RA3415

Technical Specifications
Style: Flat Concealed Pendent
Threads: 1/2" NPT or ISO 7-1 R1/2
Nominal K-Factor: 5.6 (80 metric)
Max. Working Pressure:
175 psi (12 bar)
250 psi (17 bar) (cULus only)

Material Specifications
Fusible Link: Beryllium Nickel
Sprinkler Body: Brass Alloy
Levers: Bronze Alloy
Yoke: Brass Alloy
Sealing washer: Nickel with PTFE
Load Screw: Bronze Alloy
Towers: Copper Alloy
Pins: Stainless Steel
Deflector: Bronze Alloy
Cup: Steel

Sprinkler Temperature Ratings
165°F (74°C)
212°F (100°C) (cULus, FM, LPCB, CE only)

Sensitivity
(See Table D)

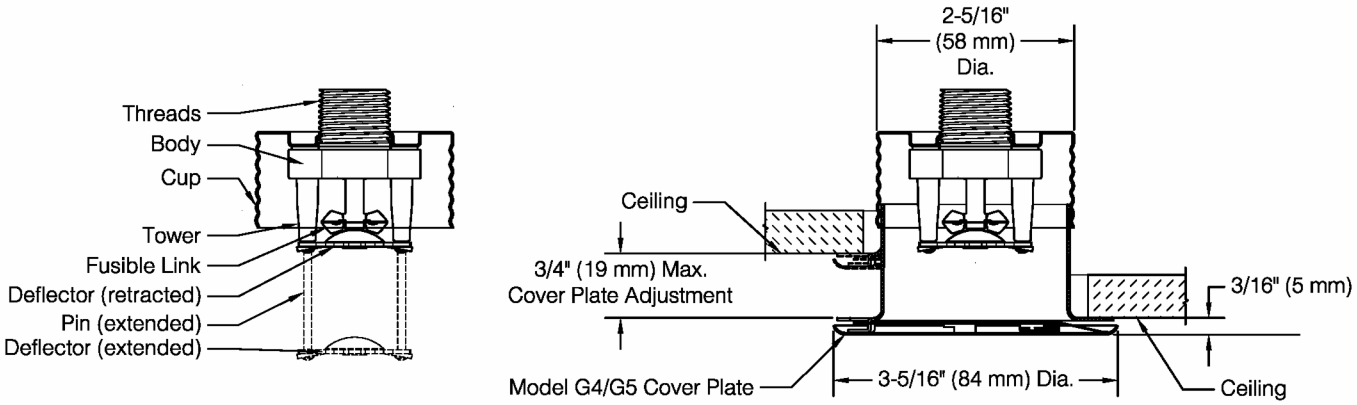
Cover Plates
Model G5
Model G5 QR Gasket (cULus only)
Model G5 SR Gasket (cULus and FM only)

Cover Plate Finishes
(See Table I)

Sprinkler Wrench
Model W3
Model FC

Listings and Approvals
cULus Listed (Light & Ordinary Hazard only)
FM Approved
LPCB Approved
VdS Approved [165°F (74°C) only]
CE Listed (2831-CPR-S2062)

Model G5-56 Sprinkler Components and Dimensions — **Figure 3**



Model G5-56 Sensitivity — **Table D**

Cover Plate Model	Listing or Approval Agency		
	cULus	FM	LPCB, VdS, CE
G5	QR	SR	SR
G5 QR Gasket	QR	--	--
G5 SR Gasket	SR	SR	--

QR: Quick-response
SR: Standard-response

Installation Dimensions and Cover Plate Information — **Table H**

Cover Plate Model	Cover Plate Diameter Inch (mm)	Recommended Hole Diameter in Ceiling Inch (mm)	Cover Plate Adjustment Inch (mm)	Min. to Max. Face of Fitting to Ceiling[1] Inch (mm)	Min. to Max. Dropped Deflector Distance below Ceiling Inch (mm)	Cover Plate Temperature Rating °F (°C)
G5	3-5/16 (84)	2-5/8 (67)	3/4 (19)	1-1/2 to 2-1/4 (38 to 57)	1/4 to 1 (6 to 25)	135°F[3] (57°C) or 165°F[4] (74°C)
G5 QR Gasket[2]	3-11/16 (94)					
G5 SR Gasket[2]	4 (101 mm)					

Notes:

1. Face of fitting to ceiling dimensions are based on nominal thread make up. Verify dimensions based on fitting and thread sealing method prior to installation. A 1/2" x 1/2" brass nipple extension (Reliable P/N 6999991900) is available to assist with replacement of Reliable Model G4A sprinklers.
2. Model G5 QR Gasket and Model G5 SR Gasket cover plates are sold as assembled units including both the cover plate and gasket. Model G5 QR Gasket and Model G5 SR Gasket cover plates and gaskets are not interchangeable.
3. For use with 165°F (74°C) temperature rated sprinklers where the Maximum Ceiling Temperature does not exceed 100°F (38°C).
4. For use with 212°F (100°C) temperature rated sprinklers where the Maximum Ceiling Temperature does not exceed 150°F (66°C).

Cover Plate Finishes[1][2] — **Table I**

Standard Finishes	Special Application Finishes
White Paint	Off-White Paint
Chrome[4]	Black Paint
	Custom Color Paint (Specify)[3]
	Raw Brass (Lacquered)
	Bright Brass[4]
	Finished Bronze [4]
	Black Plated [4]
	Satin Chrome [4]
	Stainless Steel Clad[5]

Notes:

1. Paint or any other coating applied over the factory finish will void all approvals and warranties.
2. Cover plates do not carry corrosion resistant listings or approvals.
3. Custom color paint is semi-gloss unless specified otherwise.
4. Not listed for use with QR sealing gasket.
5. Stainless steel clad cover plates are Type 316 Stainless Steel on the finished side and C102 Copper Alloy on the back side.

Application

Model G5 series sprinklers are standard coverage, flat plate concealed pendent sprinklers. The sprinklers are intended for use in accordance with NFPA 13 and FM Global Property Loss Prevention Data Sheets, as well as the requirements of the applicable approval agencies.

Model G5 series sprinklers are available as either Quick-response (QR) or Standard-response (SR) depending on the approval agency and cover plate selected.

Model G5 series sprinklers use Model G5 flat cover plates. Model G5 QR Gasket and G5 SR Gasket cover plates are available to limit air and dust movement through the ceiling.

Listing & Approval Agencies

Individual Model G5 series sprinkler may be listed or approved by the following agencies:

- Underwriters Laboratories, Inc. and UL Canada (cULus) Listing Category: Sprinklers, Automatic and Open Guide Number: VNIV
- FM Approvals (FM)
- Loss Prevention Certification Board (LPCB)
- VdS Schadenverhütung GmbH (VdS)
- EC-Certificate of Conformity 0832-CPD-2062 (CE)

See Table A and the individual sprinkler data sheets in this Bulletin for listings and approvals applicable to each sprinkler.

Installation

Model G5 series sprinklers are intended to be installed in accordance with NFPA 13, FM Global Property Loss Prevention Data Sheets, and the requirements of applicable authorities having jurisdiction. Model G5 series sprinklers must not be installed in ceilings with positive pressure in the space above. Ensure that the 4 slots in the cup are open and unobstructed following installation.

Model G5 series sprinklers are shipped with a wrench-able protective cap that should remain on the sprinkler until the sprinkler system is placed in service following construction.

Model G5 series sprinklers can be installed without removing the wrench-able protective cap using the Model W3 wrench. Alternatively, Model G5 series sprinklers can be installed using the Model FC wrench by temporarily removing the protective cap during installation of the sprinkler. The use of any other wrench to installed Model G5 series sprinklers is not permitted and may damage the sprinkler.

Wrench

Model FC
For use with Model G5 Series sprinklers without wrench-able cap installed

Model W3
For use with Model G5 Series sprinklers with wrench-able cap installed

Fully insert the Model W3 wrench over the cap until it reaches the bottom of the cup, or the Model FC wrench over the sprinkler until the wrench engages the body. Do not wrench any other part of the sprinkler/cup assembly. The Model W3 and FC wrenches are designed to be turned with a standard 1/2" square drive. Tighten the sprinkler into the fitting after applying a PTFE based thread sealant to the sprinkler's threads. Recommended installation torque is specified in Table J.

Installation Torque — **Table J**

Sprinkler Threads	Recommended Installation Torque (min. – max.)	
	ft.lb	N.m
½" NPT or ISO7-1R1/2	8-18	11-24
¾" NPT or ISO7-1R3/4	14-20	19-27

Do not exceed the maximum recommended torque. Exceeding the maximum recommended torque may cause leakage or impairment of the sprinkler. Use care when inserting or removing the wrench from the sprinkler to avoid damage to the sprinkler.

Install the cover plate by hand, pushing and then turning the cover in the clockwise direction until it is tight against the ceiling. For Model G5 QR Gasket and Model G5 SR Gasket cover plates, the gasket should be attached to the flange of the cover plate skirt only. Do not glue the gasket in place or allow the gasket to overlap both the cover plate and the flange of the skirt.

Maintenance

Reliable Model G5 series sprinkler 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 or cover plate which has been painted (other than factory applied). Properly installed Model G5 cover plates will have an air gap that is required for proper operation, do not seal the gap or paint the cover plates. Model G5 series sprinklers have holes in the cup that must remain unobstructed.

Replace any sprinkler which has been damaged. A stock of spare sprinklers should be maintained to allow quick re-placement 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

Model G5 series sprinklers may be covered by one or more of the following patents:

U.S. Patent 6,554,077, U.S. Patent 7,275,603, U.S. Patent 8,776,903, U.S. Patent 9,248,327

Ordering Information

Specify the following when ordering.

Sprinkler
- Model [G5-28] [G5-42] [G5-56] [G5-56 300] [G5-80] [G5-80F]
- Temperature Rating [165°F (74°C)] [212°F (100°C)]
- Threads [NPT or ISO 7-1]

Cover Plate
- Model [G5, G5 QR Gasket, G5 SR Gasket]
- Finish (See Table I)

Sprinkler Wrench
- Model W3
- Model FC

P/N 9999970421

Reliable®

Model J112 and JL112 Sprinklers

Extended Coverage Sprinklers for
Light Hazard and Ordinary Hazard

cULus Listed
K11.2 (160 metric)

TEMPORARY PROTECTION DURING CONSTRUCTION

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.

Model JL112 Upright

Model J112 Upright

Model JL112 Pendent

Model J112 Pendent

F1/F2 Recessed Escutcheon

FP Recessed Escutcheon

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.

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)

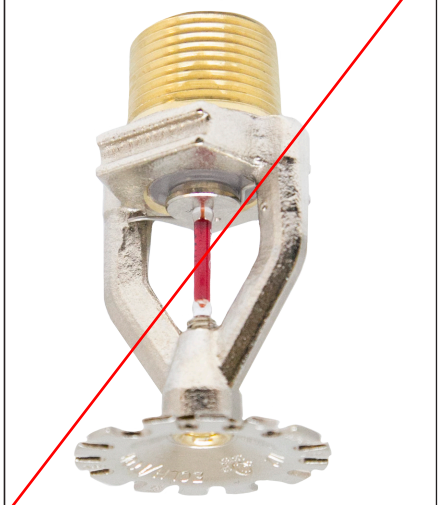
Finishes
(See Table G)

Sensitivity
(See Table B)

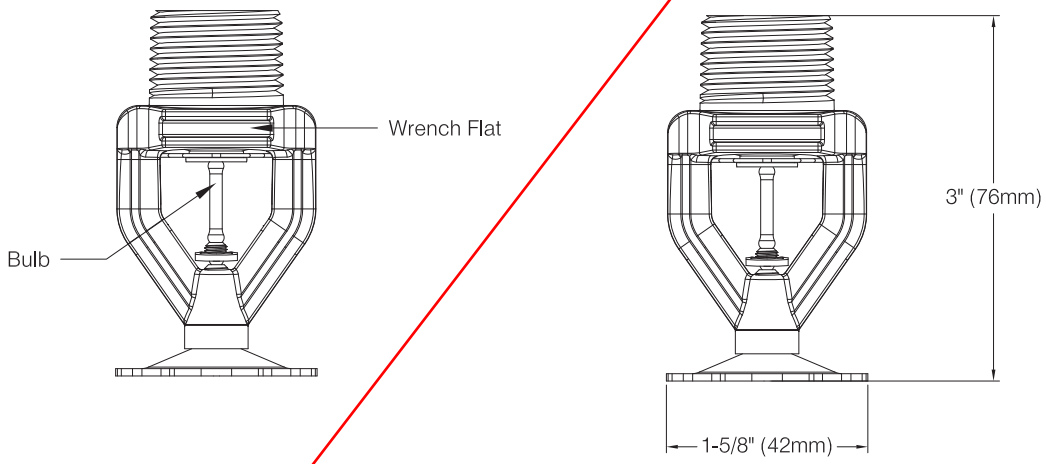
Temperature Ratings
155°F (68°C)
200°F (93°C)
286°F (141°C)

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)

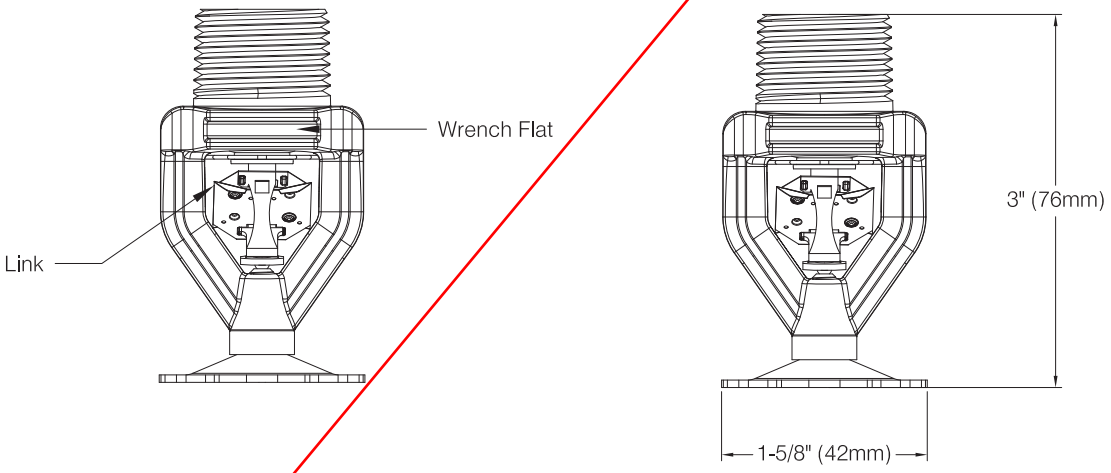
Sensitivity
(See Table C)

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)

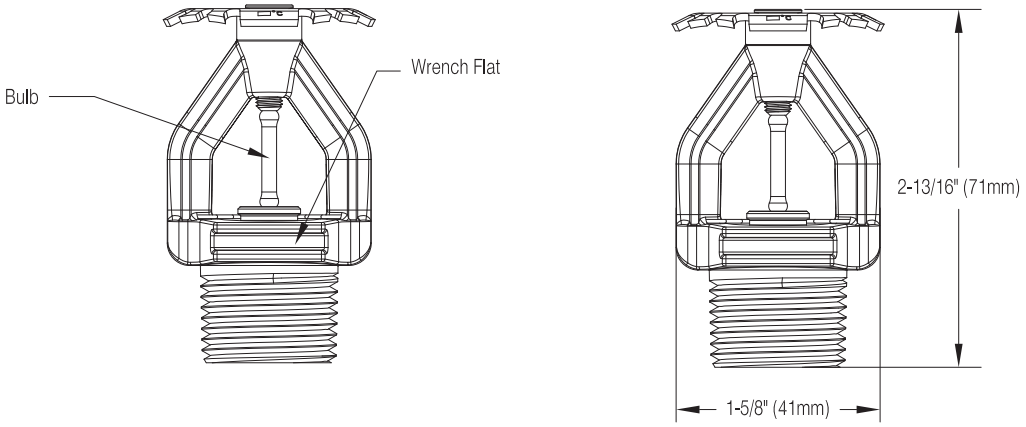
Sensitivity
(See Table D)

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

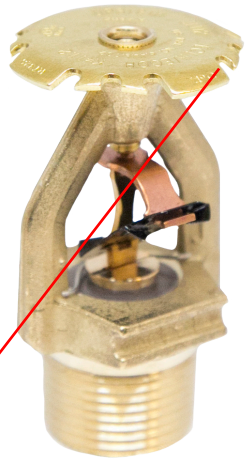
Finishes
(See Table G)

Sensitivity
(See Table E)

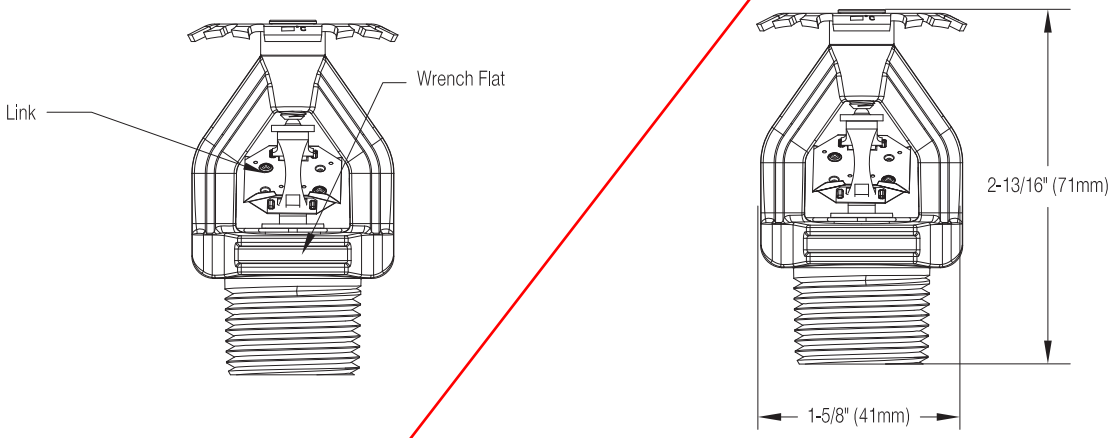
Temperature Rating*
165°F (74°C)
212°F (100°C)

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

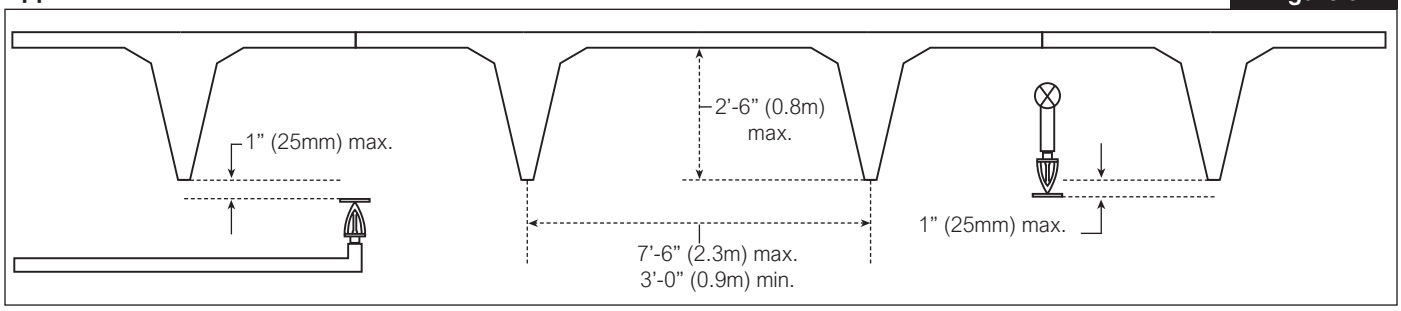
QR = Quick-response
SR = Standard-response

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

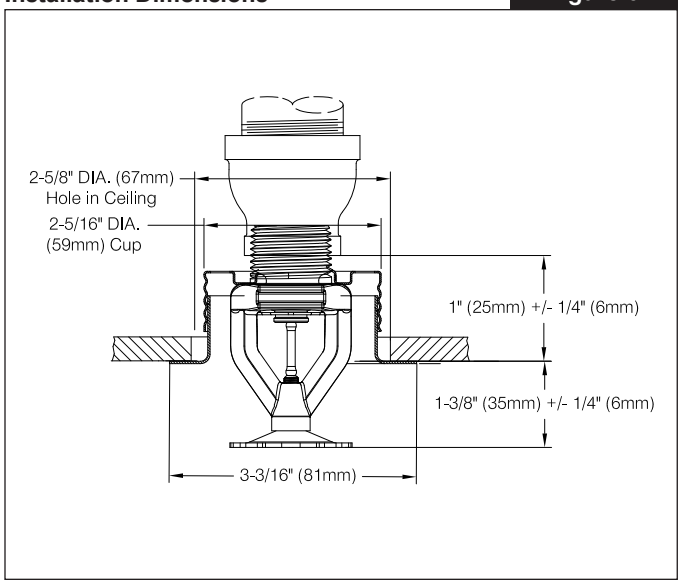
The Model J112 and JL112 pendent and upright sprinklers are cULus Listed for installation under concrete tee construction in accordance with the following specific application criteria:

- 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.

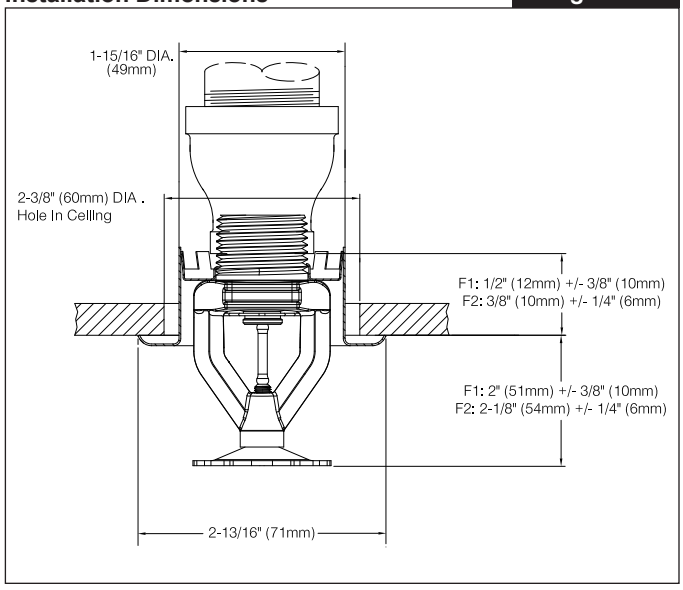
Application and Installation for Use Under Concrete Tee **Figure 5**



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®

RASCOFLEX® Model RFB 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® Model RFB 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

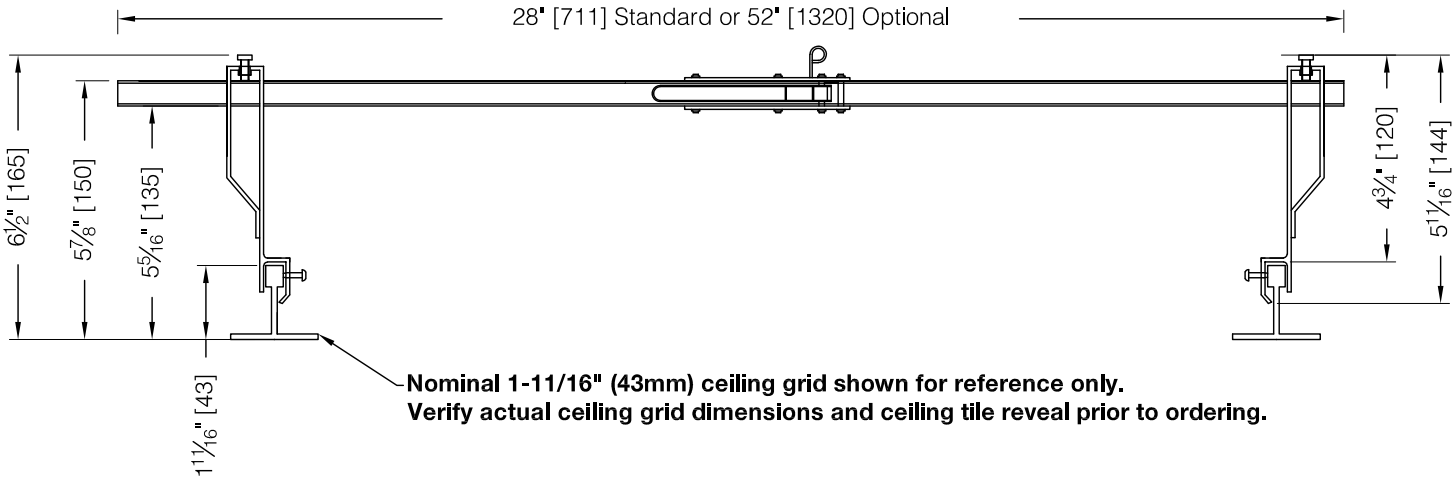
Reducer Type
Standard:
- 7" (178 mm) straight

Optional:
- 11-3/4" (300 mm) straight
- 7-1/4" (184 mm) elbow
- 8-5/16" (211 mm) elbow

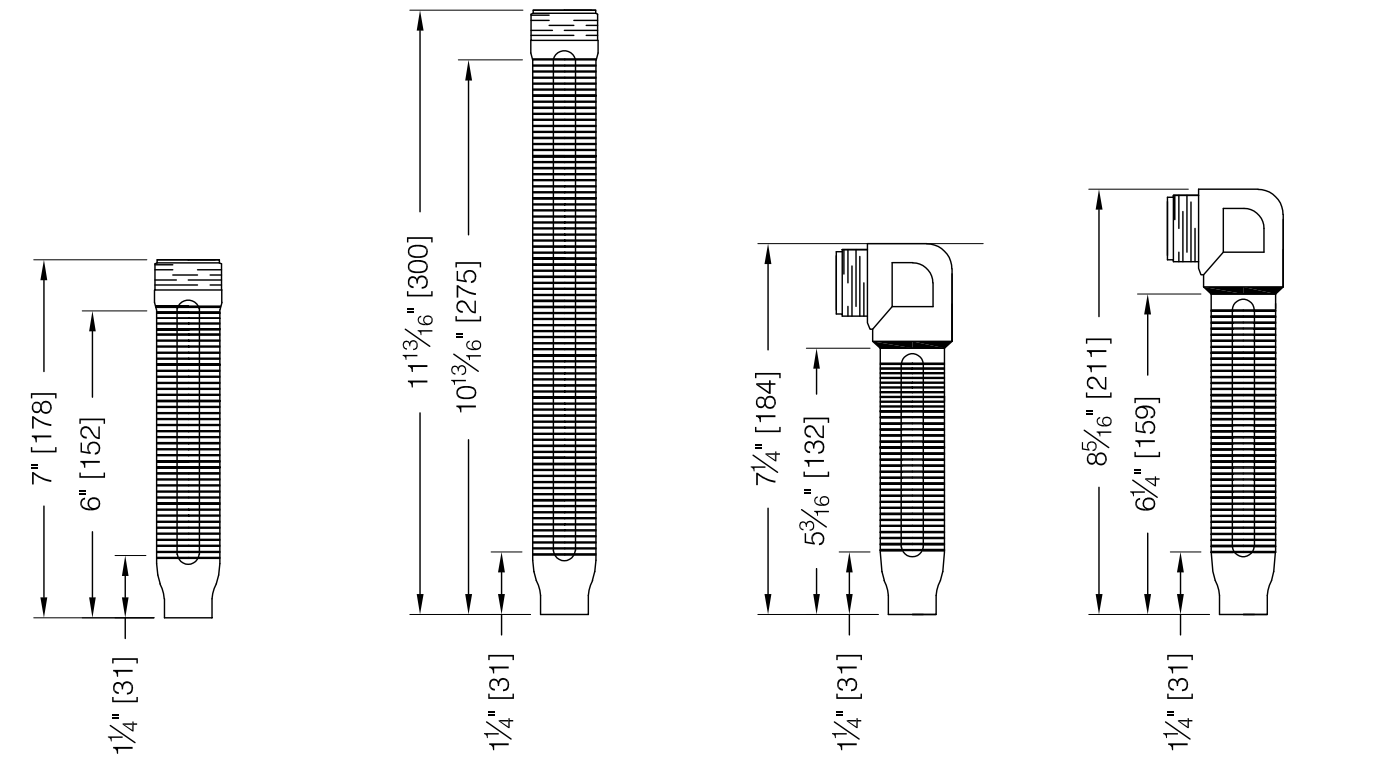
Bracket Assembly Length
- 24" (610 mm) standard
- 48" (1220 mm) optional

Accessories
- See Table F

Bracket Dimensions **Figure 1**



Reducer Dimensions **Figure 2**



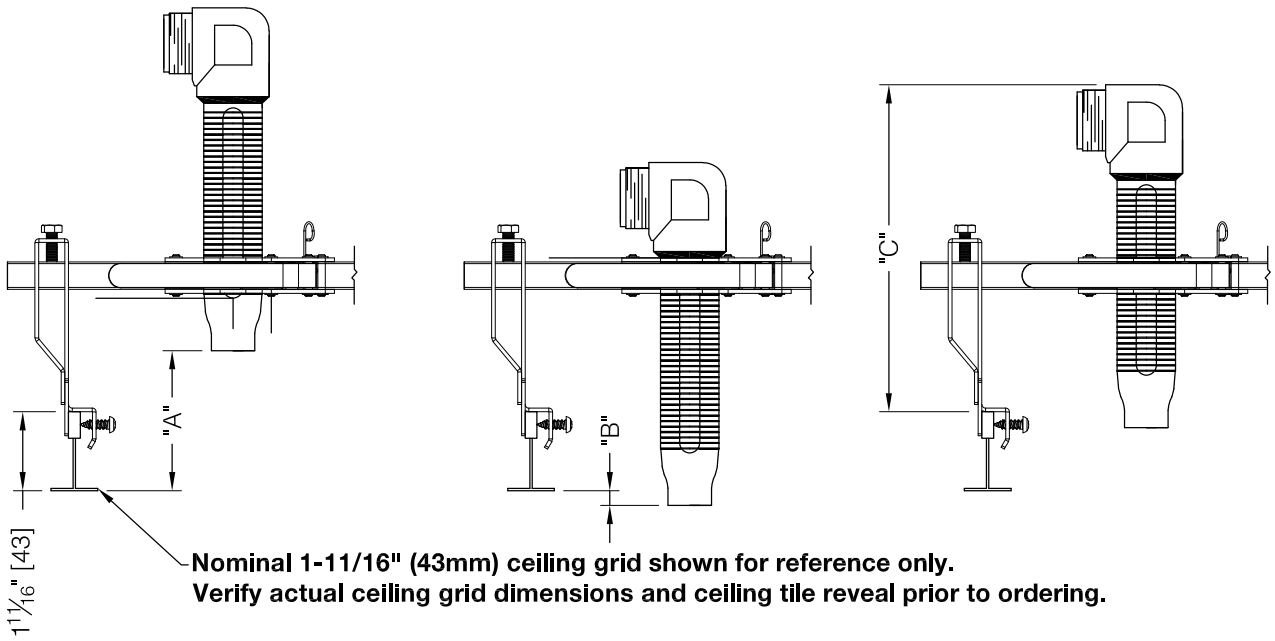
7" (178mm) Straight
Standard

11-13/16" (300 mm) Straight

7-1/4" (184mm) Elbow

8-5/16" (211mm) Elbow

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**

	7" (178 mm) Straight Standard	11-13/16" (300 mm) Straight	7-1/4" (184 mm) Elbow	8-5/16" (211 mm) Elbow
Fig. 3 Dimension A Max. Face of Fitting Distance above Bottom of Ceiling Grid	4" (102 mm)	4" (102 mm)	4" (102 mm)	4" (102 mm)
Fig. 3 Dimension B Max. Face of Fitting Distance from Bottom of Ceiling Grid	1/8" (3mm) below	4-7/8" (124 mm) below	3/4" (19 mm) above	5/16" (60mm) below

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

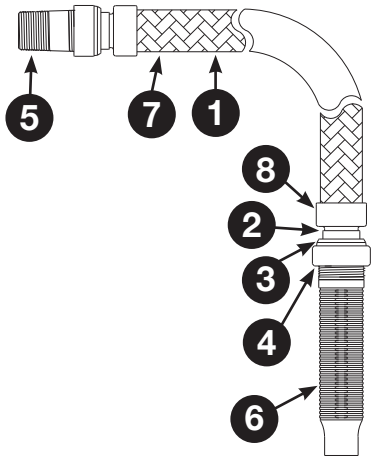
Fig. 3 Dimension C - Clearance Above Ceiling Required at Max. Sprinkler Recess **Table C**

Recessed Escutcheon or Concealed/Flush Sprinkler	Reducer	
	7-1/4" (184 mm) Elbow	8-5/16" (211 mm) Elbow
F1 recessed escutcheon	NC	7-5/8" (194 mm)
F2 or FV recessed escutcheon	NC	7-3/8" (187 mm)
FP recessed escutcheon	7" (179 mm)	8-1/8" (206 mm)
CCP conical concealed cover plate	7" (179 mm)	8-1/8" (206 mm)
G4 series concealed sprinklers	8-1/4" (210 mm)	9-1/4" (235 mm)
G5 series concealed sprinklers	7-3/4" (197 mm)	8-7/8" (225 mm)
RFC series concealed sprinklers	7-1/2" (191 mm)	8-5/8" (219 mm)
XL commercial flush sprinkler with flat escutcheon	7-3/8 (189 mm)	8-1/2" (216 mm)
XL commercial flush sprinkler with conical escutcheon	6-7/8 (176 mm)	8" (203 mm)

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

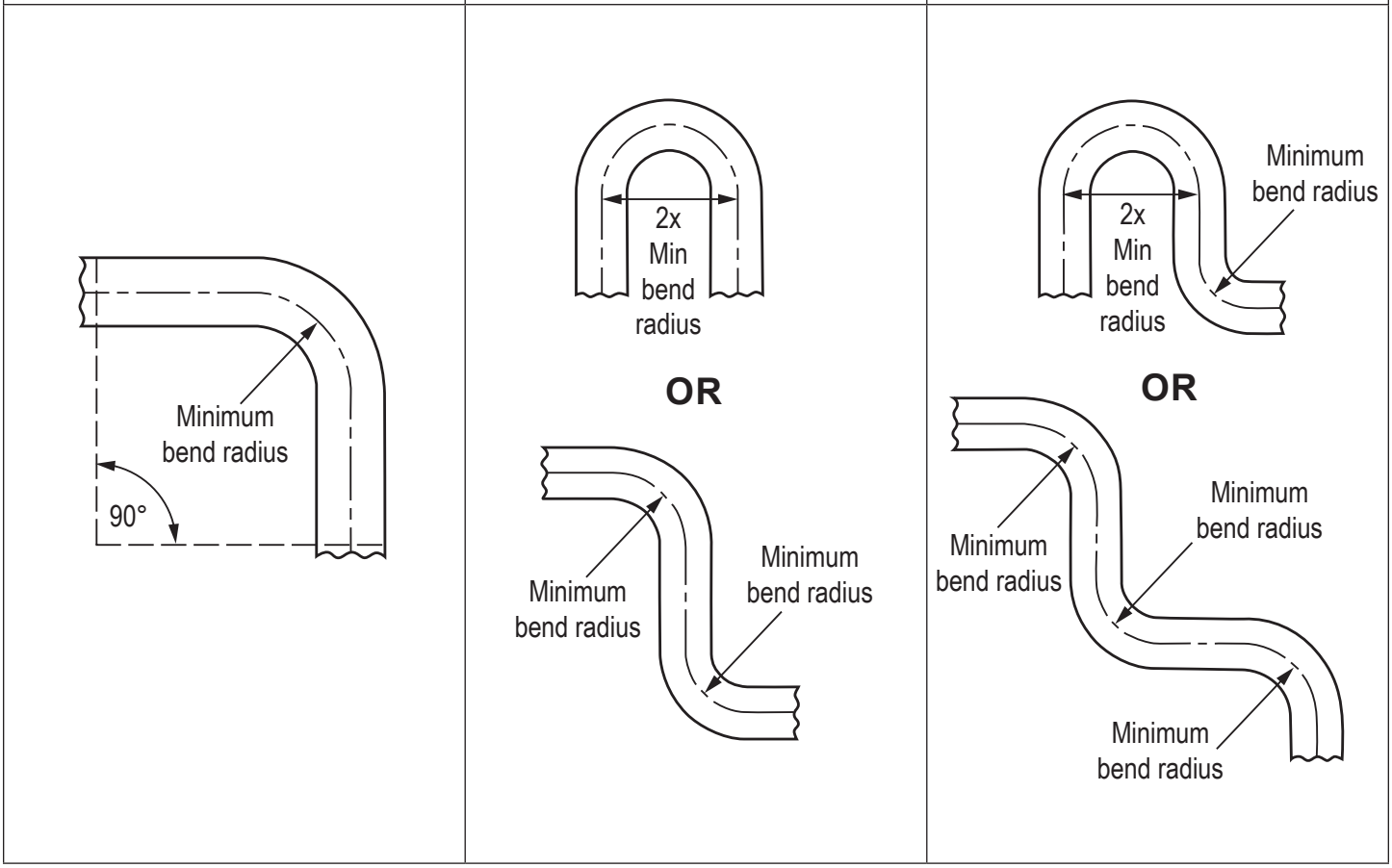
Materials — **Figure 4**

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



Note: Do NOT install the RASCOFLEX™ pulled straight or tight. 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. 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.

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. Differences in equivalent lengths are due to varying test methods, per FM 1637 standards.

3. Above data of friction loss for use with 6.1" straight reducers.

Accessories List

Table F

7-1/4" (184 mm)
Elbow Reducer- Short

1/2": 7M99003303
3/4": 7M99003305

8-5/16" (211 mm)
Elbow Reducer- Long

1/2": 7M99003302
3/4": 7M99003304

Replacement
7" (178 mm)
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

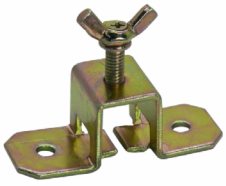
Hat Channel End
Bracket- Long
3-3/4" (95mm)
7M99003311

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
7M99004840

P/N 9999970560