Reliable®

Model RFC Series Residential Sprinklers

Flat Concealed Pendent

cULus Listed

Features

- cULus Listed as Residential Sprinklers
- Push-On cover plate installation
- Low water flow requirements

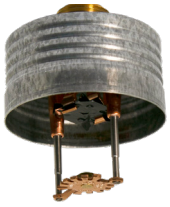
Important! Reliable fire sprinklers must be handled, stored, and installed in accordance with the guidelines in Caution Sheet 310 and this bulletin. Failure to follow these instructions may result in unintended operation or nonoperation of the fire protection system.

Product Description

Model RFC Series residential sprinklers are flat cover plate, concealed pendent sprinklers intended for installation in accordance with NFPA 13, NFPA 13R, or NFPA 13D. The sprinklers are cULus Listed as Residential Sprinklers in accordance with UL 199. In addition, Model RFCLL Series sprinklers are cULus certified for Health Effects to NSF/ANSI/CAN 600, cULus certified less than 0.25% Lead Content to NSF/ANSI 372 Annex G, and Australian WaterMark certified.

Model RFC Series sprinklers are offered with either a 165°F (74°C) or 212°F (100°C) temperature rated fusible-link operating element. Sprinklers with a 165°F (74°C) temperature rating are ordinary temperature classification and are listed for use with a 135°F (57°C) (LPCB recognized as 138°F (59°C)) temperature rated cover plate. Sprinklers with a 212°F (100°C) temperature rating are intermediate temperature classification and are listed for use with a 165°F (74°C) temperature rated cover plate.

Model RFC Series sprinklers are installed with a Model G5 cover plate. Model G5 cover plates are installed by pushing the cover plate into the cup and turning in the clockwise direction until it is tight against the ceiling. Model RFC30, RFC30LL, RFC43, RFC43LL, RFC49 and RFC49LL sprinklers allow 1/2" (13 mm) of cover plate adjustment. Model RFC58 and RFC76 sprinklers allow 3/4" (19 mm) of cover plate adjustment. Model G5 cover plates are available in a variety of finishes as listed in Table H.



Model RFC30 & RFC30LL



Model RFC43 & RFC43LL



Model RFC49 & RFC49LL



Model RFC58



Model RFC76



Model G5 Cover Plate

Table A

Sprinkler Model	Nominal K-Factor gpm/psi$^{1/2}$ (l/min/bar$^{1/2}$)	Max. Coverage Area ft x ft (m x m)	Listings & Approvals	Sprinkler Identification Number (SIN)
RFC30	3.0 (43)	14 x 14 (4.3 x 4.3)	cULus	RA0611
RFC30LL	3.0 (43)	14 x 14 (4.3 x 4.3)	cULus, LL, WMCS	RA3211
RFC43	4.3 (62)	20 x 20 (6.1 x 6.1)	cULus	RA0612
RFC43LL	4.3 (62)	20 x 20 (6.1 x 6.1)	cULus, LL, WMCS	RA3212
RFC49	4.9 (71)	20 x 20 (6.1 x 6.1) 18 X 18 (5.5 X 5.5)	cULus LPCB	RA0616
RFC49LL	4.9 (71)	20 x 20 (6.1 x 6.1)	cULus, LL, WMCS	RA3216
RFC58	5.8 (84)	20 x 20 (6.1 x 6.1)	cULus	RA0613
RFC76	7.6 (109)	20 x 20 (6.1 x 6.1)	cULus	RA0618

cULus: cULus listed for Life Safety to ANSI/UL199
LL: cULus certified for Health Effects to NSF/ANSI/CAN 600
cULus certified less than 0.25% Lead Content to NSF/ANSI 372 Annex G.
WMCS: Australian WaterMark certified, certificate number 23347.

Model RFC30 & RFC30LL Residential Sprinklers

RFC30: SINRA0611
RFC30LL: SINRA3211

Technical Specifications
Style: Flat Concealed Pendent
Threads: 1/2" NPT or ISO 7-1R1/2
Nominal K-Factor: 3.0 (43 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Nickel Alloy Solder Link
Sprinkler Body: Brass Alloy
Levers: Bronze Alloy
Yoke: Brass Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Towers: Copper Alloy
Pins: Stainless Steel
Deflector: Bronze Alloy
Cup: Steel

Cover Plate Finishes
(See Table H)

Sensitivity
Fast-response

Temperature Rating
Ordinary:
165°F (74°C) sprinkler
[135°F (57°C) cover plate]
Intermediate:
212°F (100°C) sprinkler
[165°F (74°C) cover plate]

Cover Plate
Model G5 Cover Plate

Sprinkler Wrench
Model FC (without wrench-able cap)
Model W3 (with wrench-able cap)

Listings and Approvals*
cULus Listed to UL 199



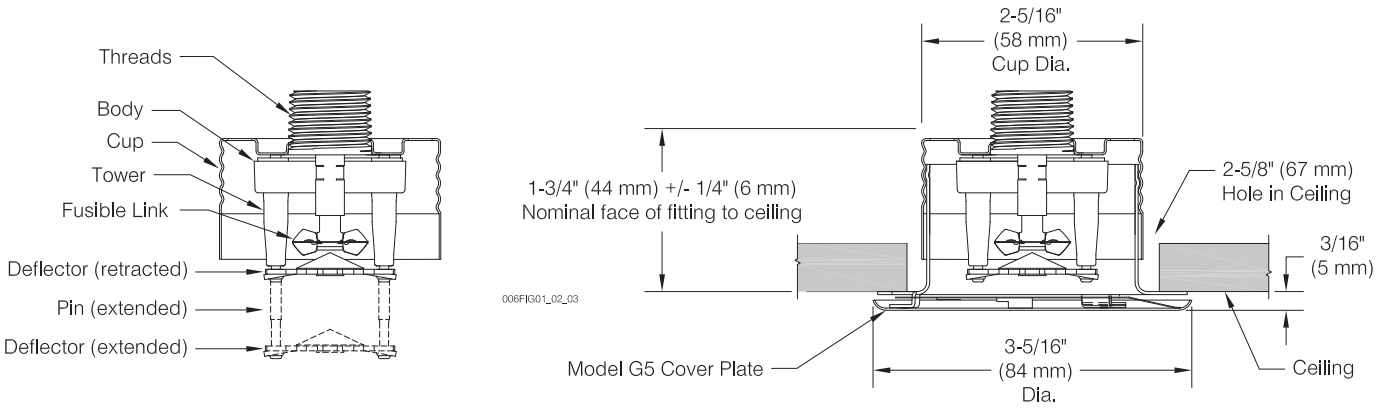


Bottom View

***Note:** RFC30LL is also cULus certified for Health Effects to NSF/ANSI/CAN 600, cULus certified less than 0.25% Lead Content to NSF/ANSI 372 Annex G, and Australian WaterMark certified (certificate number 23347).

Model RFC30 & RFC30LL Sprinkler Components and Dimensions

Figure 1



Model RFC30 and RFC30LL Sprinkler Hydraulic Design Criteria

Table B

Minimum Flow and Residual Pressure [1]				
Max. Coverage Area [2] ft. x ft. (m x m)	Ordinary Temperature		Intermediate Temperature[3]	
	Flow gpm (l/min)	Pressure psi (bar)	Flow gpm (l/min)	Pressure psi (bar)
12 x 12 (3.6 x 3.6)	9 (34)	9.0 (0.62)	9 (34)	9.0 (0.62)
14 x 14 (4.3 x 4.3)	10 (38)	11.0 (0.76)	--	--

Notes:
1. For NFPA 13 installations the flow per sprinkler must be the greater of: (1) the flow listed in Table B above and (2) the flow required to achieve a minimum design density of 0.1 gpm/sq ft over the design area of the sprinkler.
2. For coverage area dimensions less than those listed above, use the minimum required flow for the next larger max. coverage area listed.
3. Intermediate temperature listing applies to SIN RA0611 only; not applicable to low-lead version.

Model RFC43 & RFC43LL Residential Sprinklers

RFC43: SINRA0612
RFC43LL: SINRA3212

Technical Specifications
Style: Flat Concealed Pendent
Threads: 1/2" NPT or ISO 7-1R1/2
Nominal K-Factor: 4.3 (62 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Nickel Alloy Solder Link
Sprinkler Body: Brass Alloy
Levers: Bronze Alloy
Yoke: Brass Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Towers: Copper Alloy
Pins: Stainless Steel
Deflector: Bronze Alloy
Cup: Steel

Cover Plate Finishes
(See Table H)

Sensitivity
Fast-response

Temperature Rating
Ordinary:
165°F (74°C) sprinkler
[135°F (57°C) cover plate]
Intermediate:
212°F (100°C) sprinkler
[165°F (74°C) cover plate]

Cover Plate
Model G5 Cover Plate

Sprinkler Wrench
Model FC (without wrench-able cap)
Model W3 (with wrench-able cap)

Listings and Approvals*
cULus Listed to UL 199



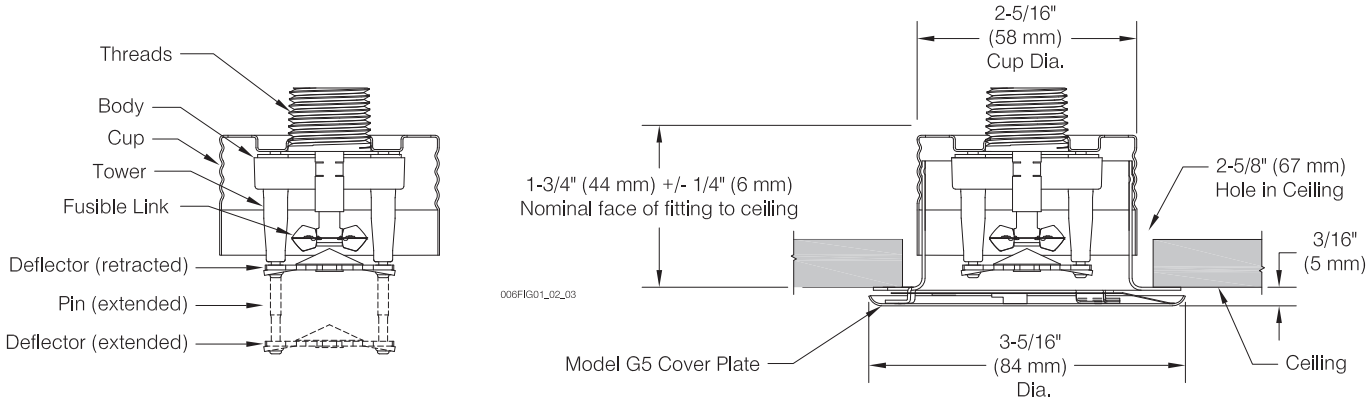


Bottom View

***Note:** RFC43LL is also cULus certified for Health Effects to NSF/ANSI/CAN 600, cULus certified less than 0.25% Lead Content to NSF/ANSI 372 Annex G, and Australian WaterMark certified (certificate number 23347).

Model RFC43 & RFC43LL Sprinkler Components and Dimensions

Figure 2



Model RFC43 & RFC43LL Sprinkler Hydraulic Design Criteria

Table C

Minimum Flow and Residual Pressure [1]				
Max. Coverage Area [2] ft. x ft. (m x m)	Ordinary Temperature		Intermediate Temperature	
	Flow gpm (l/min)	Pressure psi (bar)	Flow gpm (l/min)	Pressure psi (bar)
15 x 15 (4.6 x 4.6)	12 (45)	7.8 (0.54)	12 (45)	7.8 (0.54)
16 x 16 (4.9 x 4.9)	13 (49)	9.1 (0.63)	13 (49)	9.1 (0.63)
18 x 18 (5.5 x 5.5)	18 (68)	17.5 (1.21)	--	--
20 x 20 (6.1 x 6.1)	21 (79)	23.8 (1.64)	--	--

Notes:
1. For NFPA 13 installations the flow per sprinkler must be the greater of: (1) the flow listed in Table C above and (2) the flow required to achieve a minimum design density of 0.1 gpm/sq ft over the design area of the sprinkler.
2. For coverage area dimensions less than those listed above, use the minimum required flow for the next larger max. coverage area listed.

Model RFC49 & RFC49LL Residential Sprinklers

RFC49: SINRA0616
RFC49LL: SINRA3216

Technical Specifications
Style: Flat Concealed Pendent
Threads: 1/2" NPT or ISO 7-1R1/2
Nominal K-Factor: 4.9 (71 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Nickel Alloy Solder Link
Sprinkler Body: Brass Alloy
Levers: Bronze Alloy
Yoke: Brass Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Towers: Copper Alloy
Pins: Stainless Steel
Deflector: Bronze Alloy
Cup: Steel

Cover Plate Finishes
(See Table H)

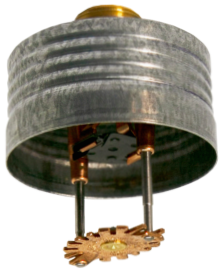
Sensitivity
Fast-response

Temperature Rating
Ordinary:
165°F (74°C) sprinkler
[135°F (57°C) cover plate]
Intermediate:
212°F (100°C) sprinkler
[165°F (74°C) cover plate]

Cover Plate
Model G5 Cover Plate

Sprinkler Wrench
Model FC (without wrench-able cap)
Model W3 (with wrench-able cap)

Listings and Approvals*
cULus Listed to UL 199
LPCB Listed (RFC49 Only)

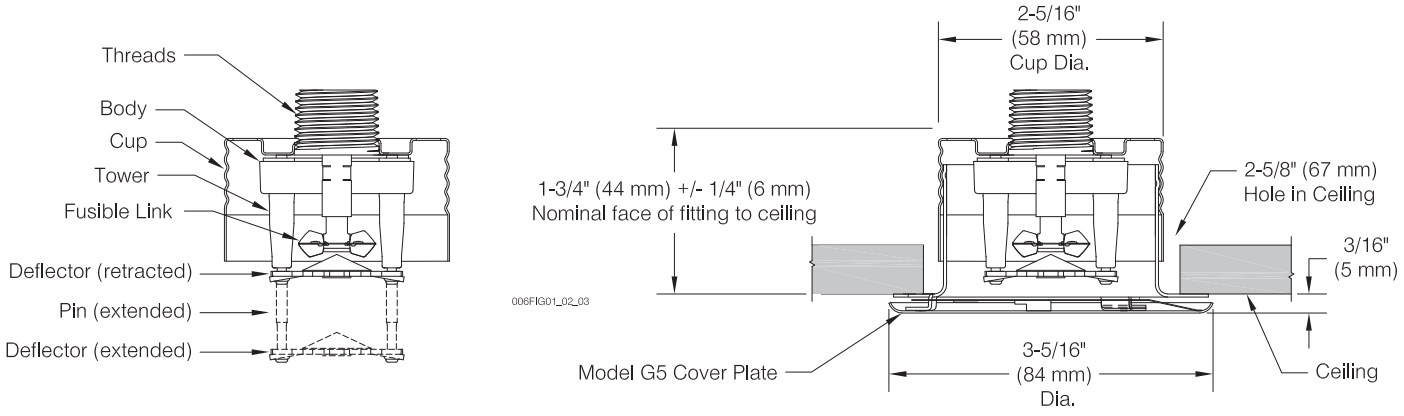


Bottom View



***Note:** RFC49LL is also cULus certified for Health Effects to NSF/ANSI/CAN 600, cULus certified less than 0.25% Lead Content to NSF/ANSI 372 Annex G, and Australian WaterMark certified (certificate number 23347).

Model RFC49 & RFC49LL Sprinkler Components and Dimensions — Figure 3



Model RFC49 & RFC49LL Sprinkler Hydraulic Design Criteria — Table D

Minimum Flow and Residual Pressure [1]				
Max. Coverage Area [2] ft. x ft. (m x m)	Ordinary Temperature		Intermediate Temperature	
	Flow gpm (l/min)	Pressure psi (bar)	Flow gpm (l/min)	Pressure psi (bar)
16 x 16 (4.9 x 4.9)	13 (49.0)	7.0 (0.48)	13 (49.0)	7.0 (0.48)
18 x 18 (5.5 x 5.5)	17 (64.3)	12.0 (0.83)	17 (64.3)	12.0 (0.83)
20 x 20 (6.1 x 6.1)[3]	20 (75.7)	16.7 (1.15)	21 (79.5)	18.4 (1.27)

Notes:
1. For NFPA 13 installations the flow per sprinkler must be the greater of: (1) the flow listed in Table D above and (2) the flow required to achieve a minimum design density of 0.1 gpm/sq ft over the design area of the sprinkler.
2. For coverage area dimensions less than those listed above, use the minimum required flow for the next larger max. coverage area listed.
3. cULus only

Model RFC58 Residential Sprinkler — SIN RA0613

Technical Specifications
Style: Flat Concealed Pendent
Threads: 1/2" NPT or ISO 7-1R1/2
Nominal K-Factor: 5.8 (84 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Nickel Alloy Solder Link
Sprinkler Body: Brass Alloy
Levers: Bronze Alloy
Yoke: Brass Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Towers: Copper Alloy
Pins: Stainless Steel
Deflector: Chrome Plated Bronze Alloy
Cup: Steel

Cover Plate Finishes
(See Table H)

Sensitivity
Fast-response

Temperature Ratings
Ordinary:
165°F (74°C) sprinkler
[135°F (57°C) cover plate]
Intermediate:
212°F (100°C) sprinkler
[165°F (74°C) cover plate]

Cover Plate
Model G5 Cover Plate

Sprinkler Wrench
Model FC (without wrench-able cap)
Model W3 (with wrench-able cap)

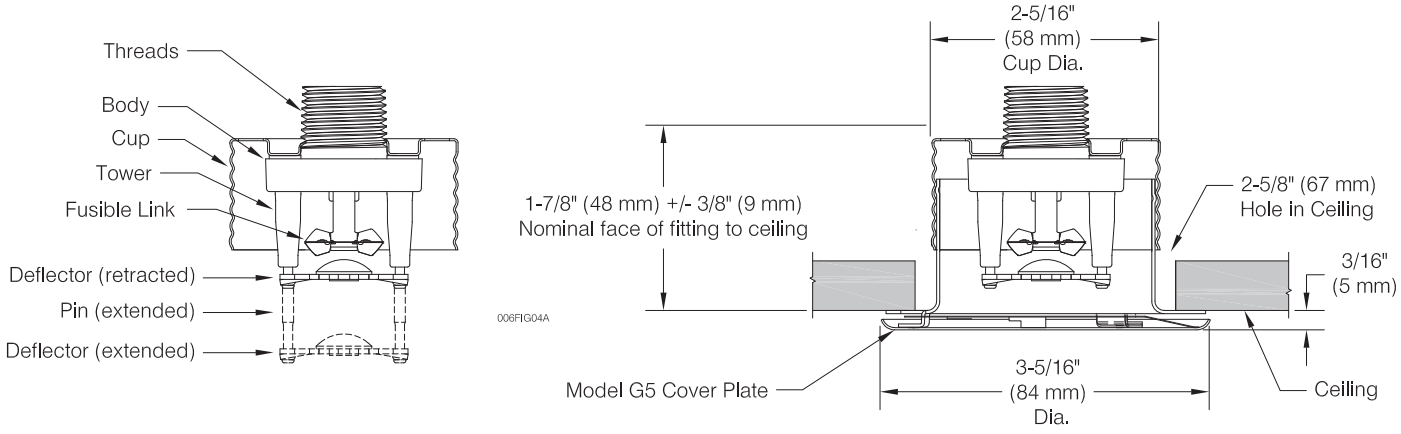
Listings and Approvals
cULus Listed to UL 199



Bottom View



Model RFC58 Sprinkler Components and Dimensions — Figure 4



Model RFC58 Sprinkler Hydraulic Design Criteria — Table E

Minimum Flow and Residual Pressure[1]		
Max. Coverage Area [2] ft. x ft. (m x m)	**Flow gpm (l/min)**	**Pressure psi (bar)**
16 x 16 (4.9 x 4.9)	16 (60.6)	7.6 (0.53)
18 x 18 (5.5 x 5.5)	18 (68.1)	9.6 (0.66)
20 x 20 (6.1 x 6.1)	20 (75.7)	11.9 (0.82)

Notes:
1. For NFPA 13 installations the flow per sprinkler must be the greater of: (1) the flow listed in Table E above and (2) the flow required to achieve a minimum design density of 0.1 gpm/sq ft over the design area of the sprinkler.
2. For coverage area dimensions less than those listed above, use the minimum required flow for the next larger max. coverage area listed.

Model RFC76 Residential Sprinkler — SIN RA0618

Technical Specifications
Style: Flat Concealed Pendent
Threads: 3/4" NPT or ISO 7-1R3/4
Nominal K-Factor: 7.6 (109 metric)
Max. Working Pressure: 175 psi (12 bar)
Min. Spacing: 8 ft. (2.4 m)

Material Specifications
Thermal Sensor: Nickel Alloy Solder Link
Sprinkler Body: Brass Alloy
Levers: Bronze Alloy
Yoke: Brass Alloy
Sealing Assembly: Nickel Alloy with PTFE
Load Screw: Bronze Alloy
Towers: Copper Alloy
Pins: Stainless Steel
Deflector: Bronze Alloy
Cup: Steel

Cover Plate Finishes
(See Table H)

Sensitivity
Fast-response

Temperature Ratings
Ordinary:
165°F (74°C) sprinkler
[135°F (57°C) cover plate]
Intermediate:
212°F (100°C) sprinkler
[165°F (74°C) cover plate]

Cover Plate
Model G5 Cover Plate

Sprinkler Wrench
Model FC (without wrench-able cap)
Model W3 (with wrench-able cap)

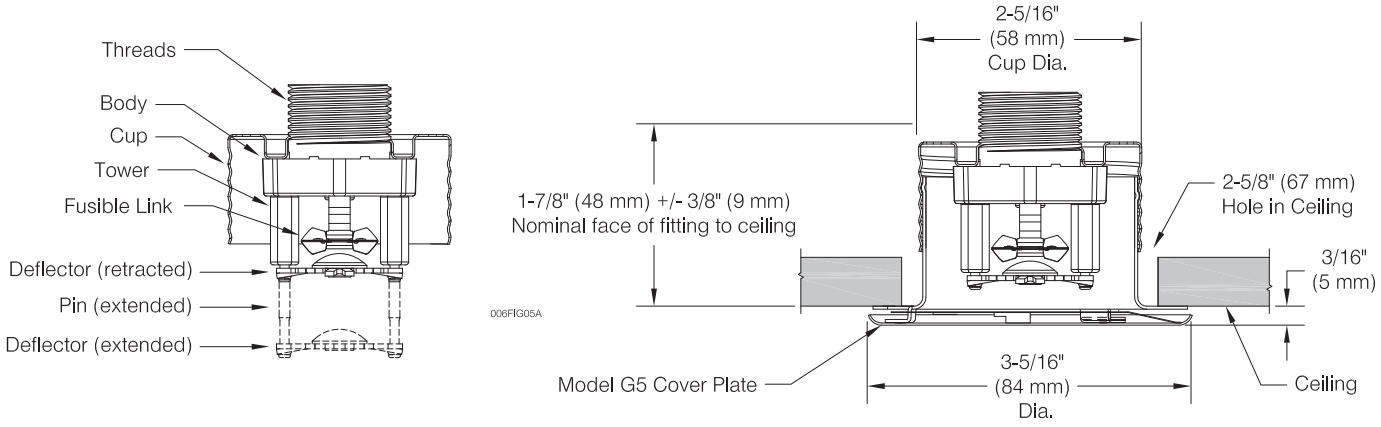
Listings and Approvals
cULus Listed to UL 199



Bottom View



Model RFC76 Sprinkler Components and Dimensions — Figure 5



Model RFC76 Flat Concealed Sprinkler Hydraulic Design Criteria — Table E

Minimum Flow and Residual Pressure[1]		
Max. Coverage Area [2] ft. x ft. (m x m)	**Flow gpm (l/min)**	**Pressure psi (bar)**
16 x 16 (4.9 x 4.9)	21 (79.5)	7.6 (0.52)
18 x 18 (5.5 x 5.5)	24 (90.8)	9.9 (0.68)
20 x 20 (6.1 x 6.1)	34 (128.7)	20 (1.4)

Notes:
1. For NFPA 13 installations the flow per sprinkler must be the greater of: (1) the flow listed in Table E above and (2) the flow required to achieve a minimum design density of 0.1 gpm/sq ft over the design area of the sprinkler.
2. For coverage area dimensions less than those listed above, use the minimum required flow for the next larger max. coverage area listed.

Cover Plate Finishes[1] **Table H**

Standard Finishes	Special Application Finishes		
White Paint	Off White Paint	Black Paint	Raw Brass
Chrome	Bright Brass	Finished Bronze	Custom Color Paint[2]
	Satin Chrome		Custom Printed

Notes:
1. Paint or any other coating applied over the factory finish will void all approvals and warranties.
2. Custom color paint is semi-gloss, unless specified otherwise.

Installation Dimensions **Table J**

Sprinkler Model	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
RFC30, RFC30LL, RFC43, RFC43LL, RFC49, RFC49LL	G5	3-5/16 (84)	2-5/8 (67)	1/2 (13)	1-1/2 to 2 (38 to 51)	1/2 to 1 (13 to 25)	135°F[2][4] (57°C) or 165°F[3] (74°C)
RFC58, RFC76	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[2] (57°C) or 165°F[3] (74°C)

Notes:
1. Face of fitting to ceiling dimensions are based on a 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 where necessary for replacement of existing sprinklers.
2. For use with 165°F (74°C) temperature rated sprinklers where the maximum ceiling temperature does not exceed 100°F (38°C).
3. For use with 212°F (100°C) temperature rated sprinklers where the maximum ceiling temperature does not exceed 150°F (66°C).
4. The 135°F (57°C) coverplate is LPCB recognized as 138°F (59°C).

Installation

Model RFC series sprinklers are intended to be installed in accordance with NFPA 13, NFPA 13R, or NFPA 13D, as well as the requirements of applicable authorities having jurisdiction. Model RFC series sprinklers must not be installed in ceilings with positive pressure in the space above. Model RFC 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 RFC series sprinklers can be installed without removing the wrench-able protective cap using the Model W3 wrench. Alternatively, Model RFC 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 RFC series sprinklers is not permitted and may damage the sprinkler. 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 for iron pipe fittings is 8 to 18 ft-lbs (11 to 24 N-m) for 1/2" thread sprinklers and 14 to 20 ft-lbs (19 to 27 N-m) for 3/4" thread sprinklers.

Note: When used with gasketed fittings, follow fitting manufacturer's installation instructions regarding tightening to achieve a leak-free connection.

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 by pushing the cover plate into the cup and turning the cover in the clockwise direction until it is tight against the ceiling.

Installation Wrenches





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





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

Service/Spare Head Cabinet Wrench



Model W8
High-strength plastic wrench for limited (emergency) use with Model RFC Series sprinklers without wrench-able cap installed. Meets NFPA requirements for sprinkler wrench on premises.

Maintenance

Model RFC 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 cover plate assembly 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.

Guarantee

For the Reliable Automatic Sprinkler Co., Inc. guarantee, terms, and conditions, visit www.reliablesprinkler.com.

Listings and Approvals

cULus Listed for Life Safety to ANSI/UL199

Additional Listings for RFC30LL, RFC43LL, and RFC49LL:

- cULus Certified for Health Effects to NSF/ANSI/CAN 600
- cULus Certified less than 0.25% Lead Content to NSF/ANSI 372 Annex G.
- Australian WaterMark Certified, certificate number 23347.

LPCB Listing for RFC49

Patents

Model RFC30, RFC30LL, RFC43, RFC43LL, RFC49, RFC49LL, RFC58, and RFC76 sprinklers are covered by U.S. Patent No. 9,248,327 and U.S. Patent No. 7,275,603.

Model RFC30, RFC30LL, RFC43 and RFC43LL sprinklers are additionally covered by U.S. Patent No. 8,776,903.

Ordering Information

Specify the following when ordering.

Sprinkler
- Model (RFC30, RFC30LL, RFC43, RFC43LL, RFC49, RFC49LL, RFC58, RFC76)
- Temperature Rating

Cover Plate
- Model G5
- Temperature Rating
- Finish (See Table H)

Sprinkler Wrench
- Model FC
- Model W3
- Model W8 (Limited use)

P/N 999997026I