

# Reliable

## Model RFC Series Residential Sprinklers

Flat Cover Plate, Concealed Pendent Sprinkler

cULus Listed

### Product Features

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

### 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 1626.

Model RFC30, RFC43, and RFC49 sprinklers have a 165 °F (74 °C) temperature rated fusible-link operating element. Model RFC58 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 should be used with a 135 °F (57 °C) temperature rated cover plate. Sprinklers with a 212 °F (100 °C) temperature rating are intermediate temperature classification and should be used with a 165 °F (74 °C) temperature rated cover plate.

Model RFC Series sprinklers are installed with a Model RFC cover plate. Model RFC cover plates may be installed by either pushing or threading the cover plate into the sprinkler cup. Model RFC30, RFC43, and RFC49 sprinklers allow 1/2" (13 mm) of cover plate adjustment. Model RFC58 sprinklers allow 3/4" (19 mm) of cover plate adjustment.

Model RFC cover plates are available in a variety of finishes as listed in Table H. In addition, Model RFC cover plates may be ordered as either traditional solid cover plates or perforated cover plates.



Table A

Sprinkler Model	Nominal K-Factor gpm/psi <sup>1/2</sup> (l/min/bar <sup>1/2</sup> )	Max. Coverage Area ft x ft (m x m)	Sprinkler Identification Number (SIN)
RFC30	3.0 (43.2)	14x14 (4.3x4.3)	RA0611
RFC43	4.3 (62)	20x20 (6.1x6.1)	RA0612
RFC49	4.9 (70.6)	20x20 (6.1x6.1)	RA0616
RFC58	5.8 (84)	20x20 (6.1x6.1)	RA0613

**Technical Specifications**

**Style:** Flat Concealed Pendent  
**Threads:** 1/2" NPT or ISO 7-1 R1/2  
**Nominal K-Factor:** 3.0 (43.2 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**  
 165 °F (74 °C) sprinkler  
 135 °F (57 °C) cover plate

**Cover Plate**  
 Model RFC cover plate

**Sprinkler Wrench**  
 Model FC

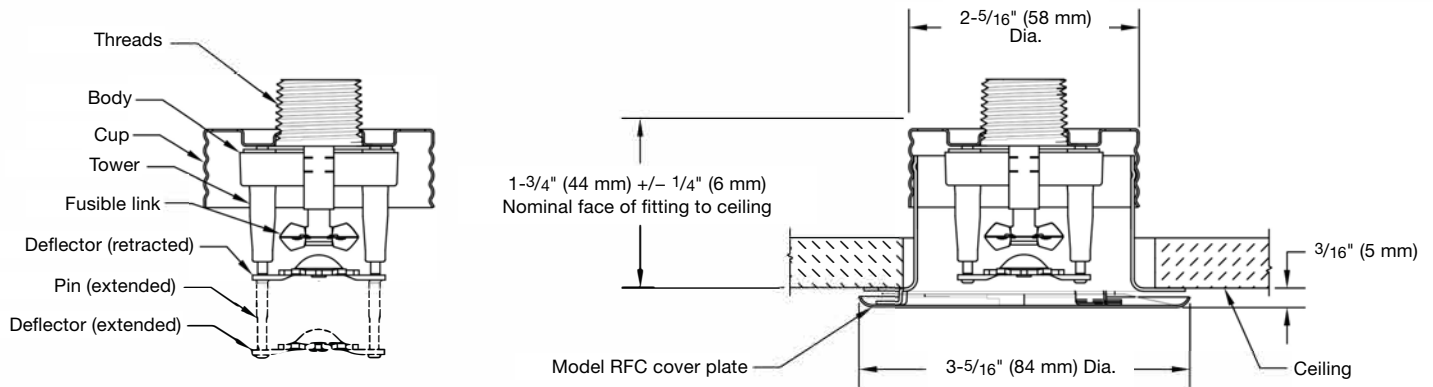
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Bottom View

**Model RFC30 Sprinkler Components and Dimensions**

**Figure 1**



**Model RFC30 Sprinkler Hydraulic Design Criteria**

**Table B**

Minimum Flow and Residual Pressure		
Max. Coverage Area ft. x ft. (m x m)	Flow gpm (l/min)	Pressure psi (bar)
12 x 12 (3.6 x 3.6)	9 (34)	9.0 (0.62)
14 x 14 (4.3 x 4.3)	10 (38)	11.0 (0.76)

**Notes:**

- 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.
- For coverage area dimensions less than those listed above, use the minimum required flow for the next larger max. coverage area listed.

**Technical Specifications**

**Style:** Flat Concealed Pendant  
**Threads:** 1/2" NPT or ISO 7-1 R1/2  
**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**  
 165 °F (74 °C) sprinkler  
 135 °F (57 °C) cover plate

**Cover Plate**  
 Model RFC cover plate

**Sprinkler Wrench**  
 Model FC

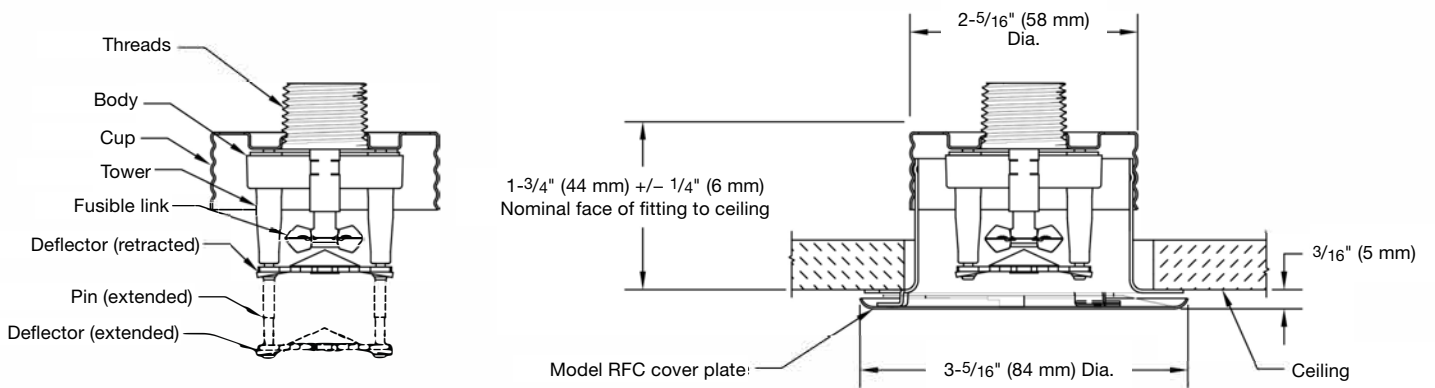
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Bottom View

**Model RFC43 Sprinkler Components and Dimensions**

**Figure 2**



**Model RFC43 Sprinkler Hydraulic Design Criteria**

**Table C**

Minimum Flow and Residual Pressure		
Max. Coverage Area ft. x ft. (m x m)	Flow gpm (l/min)	Pressure psi (bar)
12x12 (3.6x3.6)	12 (45)	7.8 (0.54)
14x14 (4.3x4.3)	13 (49)	9.1 (0.63)
16x16 (4.9x4.9)	13 (49)	9.1 (0.63)
18x18 (5.5x5.5)	18 (68)	17.5 (1.21)
20x20 (6.1x6.1)	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 Residential Sprinkler**

**SIN RA0616**

**Technical Specifications**

**Style:** Flat Concealed Pendent  
**Threads:** 1/2" NPT or ISO 7-1 R1/2  
**Nominal K-Factor:** 4.9 (70.6 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**  
 165 °F (74 °C) sprinkler  
 135 °F (57 °C) cover plate

**Cover Plate**  
 Model RFC cover plate

**Sprinkler Wrench**  
 Model FC

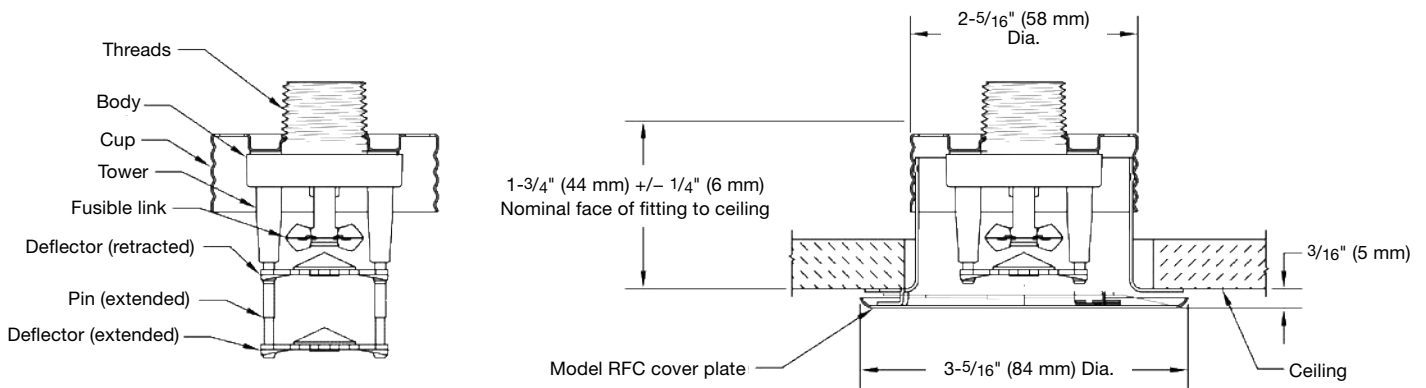
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Bottom View

**Model RFC49 Sprinkler Components and Dimensions**

**Figure 3**



**Model RFC49 Sprinkler Hydraulic Design Criteria**

**Table D**

Minimum Flow and Residual Pressure		
Max. Coverage Area ft. x ft. (m x m)	Flow gpm (l/min)	Pressure psi (bar)
16x16 (4.9x4.9)	13 (49.0)	7.0 (0.48)
18x18 (5.5x5.5)	17 (64.3)	12.0 (0.83)
20x20 (6.1x6.1)	20 (75.7)	16.7 (1.15)

**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.

**Model RFC58 Residential Sprinkler**

**SIN RA0613**

**Technical Specifications**

**Style:** Flat Concealed Pendent  
**Threads:** 1/2" NPT or ISO 7-1 R1/2  
**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 RFC Cover Plate

**Sprinkler Wrench**

Model FC

**Listings and Approvals**

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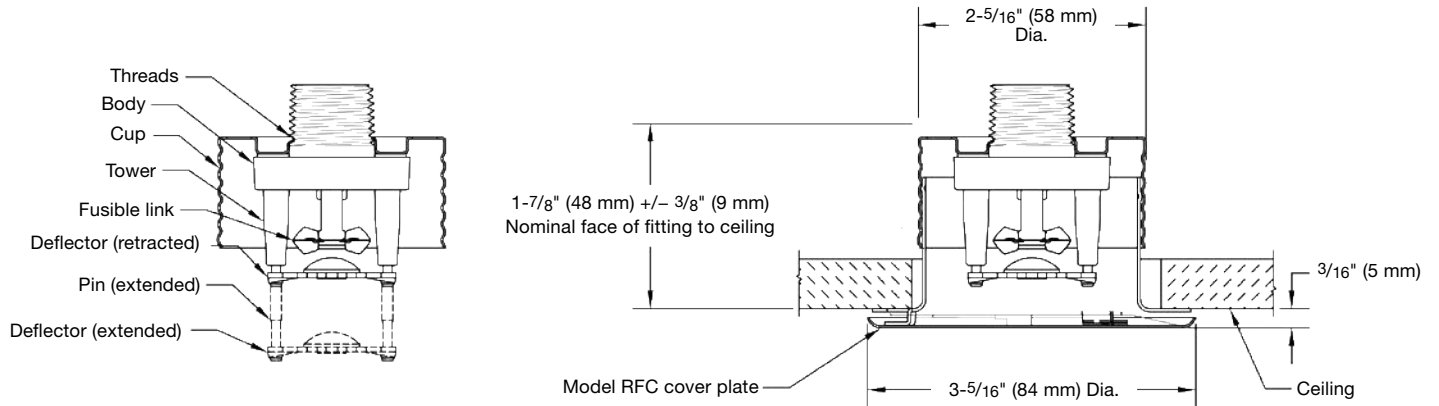


Bottom View



**Model RFC58 Sprinkler Components and Dimensions**

**Figure 4**



**Model RFC58 Sprinkler Hydraulic Design Criteria**

**Table E**

Minimum Flow and Residual Pressure		
Max. Coverage Area <sup>(2)</sup> ft. x ft. (m x m)	Flow gpm (l/min)	Pressure psi (bar)
16x16 (4.9x4.9)	16 (60.6)	7.6 (0.53)
18x18 (5.5x5.5)	18 (68.1)	9.6 (0.66)
20x20 (6.1x6.1)	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.

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

**Table H**

Standard Finishes	Special Application Finishes		
White Polyester	Off White Paint	Black Paint	Raw Brass
Chrome Plated	Bright Brass	Finished Bronze	Black Plated
	Satin Chrome	Stainless Steel Clad <sup>(3)</sup>	Custom Color Paint <sup>(2)</sup>

**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.
3. Stainless steel clad cover plates are Type 316 Stainless Steel on the finished side and C102 Copper Allow on the back side. Cover plates are not listed or approved as corrosion resistant. Stainless steel clad cover plates are not available perforated.

## 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 <sup>(1)</sup> inch (mm)	Min. to Max. Dropped Deflector Distance below Ceiling inch (mm)	Cover Plate Temperature Rating
RFC30 RFC43 RFC49	RFC	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 (57 °C)
RFC58	RFC	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 <sup>(2)</sup> (57 °C) or 165 °F <sup>(3)</sup> (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 with the Maximum Ceiling Temperature does not exceed 150 °F (66 °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. Ensure that the 4 slots in the cup are open and unobstructed following installation. Model RFC series sprinklers are shipped with a protective cap that should remain on the sprinkler until installed. The protective cap should be replaced following installation of the sprinkler and permanently removed only when the cover plate is installed and the sprinkler system is placed in service following construction.

Model RFC series sprinklers are installed with the Model FC wrench. The use of any other wrench to installed Model RFC series sprinklers is not permitted and may damage the sprinkler. Temporarily remove the protective cap during installation of the sprinkler. Insert 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 FC wrench is 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 8 to 18 ft/lb (11 to 24 N-m).

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.

## Application

Model RFC series sprinklers are intended for installation where residential sprinklers are permitted or required by NFPA 13, NFPA 13R, and NFPA 13D. The sprinklers are concealed pendent residential sprinklers.

Model RFC 30, RFC43, and RFC49 sprinklers are available in ordinary temperature classification for installation where the Maximum Ceiling Temperature does not exceed 100 °F (38 °C). Model RFC58 sprinklers are available in either ordinary or intermediate temperature classification for installation where the Maximum Ceiling Temperature does not exceed 100 °F (38 °C) or 150 °F (66 °C), respectively.



## Wrench



Model FC

## 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.

## Listings and Approvals

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

### UL Listing Category

Residential Automatic Sprinkler

### UL Guide Number

VKKW

## Guarantee

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

## Patents

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

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

## Ordering Information

Specify the following when ordering.

### Sprinkler

- Model (RFC30, RFC43, RFC49, RFC58)
- Temperature Rating

### Cover Plate

- Model RFC
- Temperature Rating
- Finish (See Table H)

### Sprinkler Wrench

- Model FC