

Model RFIII – 8.0 K-factor Flat Plate Concealed Horizontal Extended Coverage Quick Response Light Hazard Sidewall Sprinkler

General Description

The TYCO Model RFIII, 8.0 K-factor, Extended Coverage Light Hazard, Concealed Horizontal Sidewall Quick Response Sprinkler is a decorative, link type, sprinkler featuring a unique flat cover designed to conceal the sprinkler within a wall. The sprinkler is the best choice for architecturally sensitive areas such as dormitories, hotel rooms, reception areas, office buildings, banquet facilities, conference rooms, and hospitals.

The flat profile of the cover plate design easily conforms to the surrounding surfaces leaving a very clean look. The plate, while being aesthetically appealing, also helps to prevent objects such as garment bags and clothes hangers from being hung from the sprinkler that may otherwise cause an inadvertent operation.

The Model RFIII ECLH Concealed HSW Sprinklers are designed for installation along a wall or the side of a beam, and beneath a smooth level ceiling. Horizontal sidewall sprinklers are commonly used in lieu of pendent or upright sprinklers because of aesthetics or building construction considerations where piping across the ceiling is not desirable.

The Model RFIII ECLH Concealed HSW Sprinklers are intended to be used in automatic sprinkler systems designed in accordance with standard installa-

tion rules, for example, NFPA 13, for light hazard occupancies. The thermal sensitivity rating of the Model RFIII Sidewall Sprinklers provides for a quick response extended coverage rating up to a 16 ft x 24 ft (4,9 m x 7,3 m) and 18 ft x 22 ft (5,9 m x 6,7 m).

Cover Plate Assemblies are available in a variety of colors and ordered separately. When properly installed, cover plates conceal operational parts of the sprinklers. Together, the sprinkler and cover plate form a complete assembly. The separable two-piece design of the sprinkler provides for 1/4 in. (6,4 mm) horizontal adjustment of the push-on and pull-off cover plate. With sprinklers installed but before cover plates are attached, pressure testing of the fire protection system may be performed prior to completing wall assemblies such as installation of gypsum board over stud framing, and surface finishing such as painting or wallpapering.

The Model RFIII ECLH Concealed HSW Sprinkler is factory assembled and shipped with a Protective Cap. The Protective Cap must remain in place to protect the sprinkler during installation (see Figure 4) and wall installation and finishing. The cap may be temporarily removed to verify proper orientation of the sprinkler deflector as necessary, but must be reinstalled and remain attached until the wall is finished. The cap features a convenient center marking tip. With the sprinkler installed and cap attached (see Figure 3), align the wall covering material with the framing studs and gently press against the cap tip. The indentation left by this action marks the center for cutting a 2-5/8 in. (66,7 mm) diameter clearance hole for the sprinkler. After the wall installation and finishing are complete, the Protective Cap must be removed and the Cover Plate Assembly installed. Removal of the Protective Cap is crucial to ensure proper performance of the sprinkler.



NOTICE

The TYCO Model RFIII, 8.0 K-factor, Extended Coverage Light Hazard, Concealed Horizontal Sidewall Quick Response Sprinkler described herein must be installed and maintained in compliance with this document and with the applicable standards of the NATIONAL FIRE PROTECTION ASSOCIATION (NFPA), in addition to the standards of any authorities having jurisdiction. Failure to do so may impair the performance of these devices.

The owner is responsible for maintaining their fire protection system and devices in proper operating condition. Contact the installing contractor or product manufacturer with any questions.

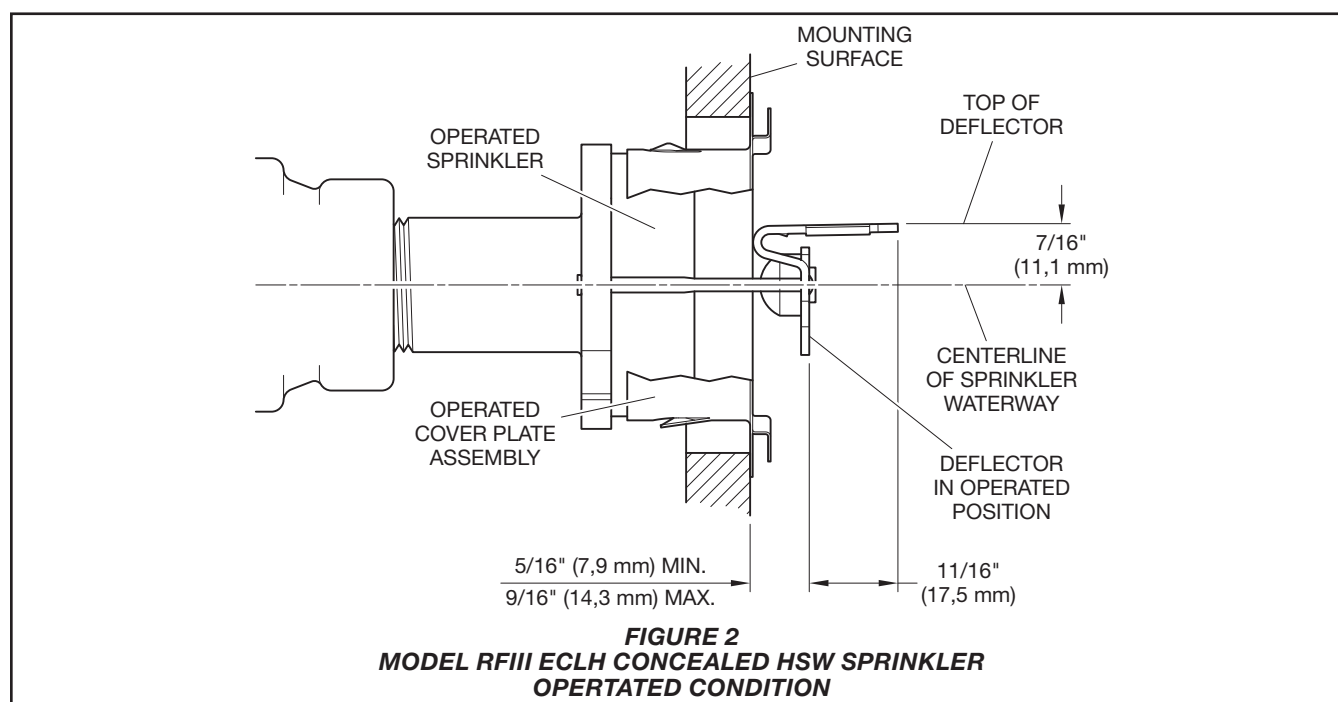
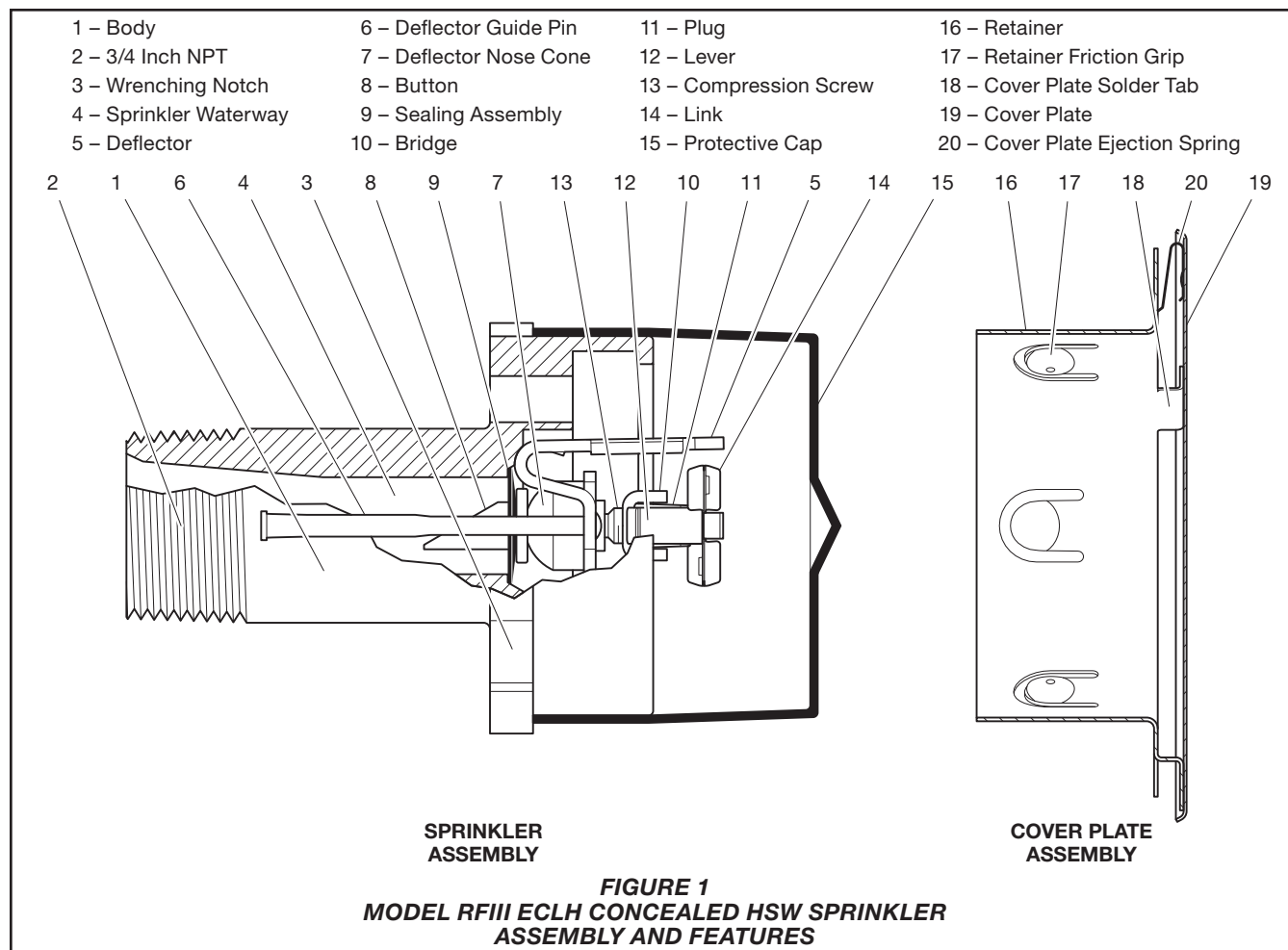
Sprinkler Identification Number

TY4522

IMPORTANT

Refer to Technical Data Sheet TFP2300 for warnings pertaining to regulatory and health information.

Always refer to Technical Data Sheet TFP700 for the "INSTALLER WARNING" that provides cautions with respect to handling and installation of sprinkler systems and components. Improper handling and installation can permanently damage a sprinkler system or its components and cause the sprinkler to fail to operate in a fire situation or cause it to operate prematurely.



Response Rating	Coverage Area ¹ , ft x ft (m x m)	Minimum Flow ² , GPM (LPM)	Minimum Pressure ² , PSI (BAR)	Deflector-To-Ceiling Distance ³ in. (mm)	Sprinkler Temperature Rating°F (°C)	Minimum Spacing ⁴ , ft (m)
Quick	14 x 22 (4,3 x 6,7)	31 (117)	15 (1,03)	4 to 6 (101,6 to 152,4)	160 (71)	8 (2,44)
Quick	14 x 22 (4,3 x 6,7)	36 (136)	20.3 (1,40)	6 to 12 (152,4 to 304,8)	160 (71)	8 (2,44)
Quick	14 x 24 (4,3 x 7,3)	34 (129)	18 (1,24)	4 to 6 (101,6 to 152,4)	160 (71)	8 (2,44)
Quick	14 x 24 (4,3 x 7,3)	38 (144)	22.6 (1,56)	6 to 12 (152,4 to 304,8)	160 (71)	8 (2,44)
Quick	16 x 16 (4,9 x 4,9)	26 (98)	10.6 (0,73)	4 to 6 (101,6 to 152,4)	160 (71)	8 (2,44)
Quick	16 x 16 (4,9 x 4,9)	27 (102)	11.4 (0,79)	6 to 12 (152,4 to 304,8)	160 (71)	8 (2,44)
Quick	16 x 18 (4,9 x 5,5)	29 (110)	13.1 (0,90)	4 to 12 (101,6 to 304,8)	160 (71)	8 (2,44)
Quick	16 x 20 (4,9 x 6,1)	32 (121)	16 (1,10)	4 to 12 (101,6 to 304,8)	160 (71)	8 (2,44)
Quick	16 x 22 (4,9 x 6,7)	36 (136)	20.3 (1,40)	4 to 12 (101,6 to 304,8)	160 (71)	8 (2,44)
Quick	16 x 24 (4,9 x 7,3)	39 (147)	23.8 (1,64)	4 to 12 (101,6 to 304,8)	160 (71)	8 (2,44)
Quick	18 x 18 (5,5 x 5,5)	33 (125)	17 (1,17)	4 to 12 (101,6 to 304,8)	160 (71)	8 (2,44)
Quick	18 x 20 (5,5 x 6,1)	36 (136)	20.3 (1,40)	4 to 12 (101,6 to 304,8)	160 (71)	8 (2,44)
Quick	18 x 22 (5,5 x 6,7)	40 (151)	25 (1,72)	4 to 12 (101,6 to 304,8)	160 (71)	8 (2,44)

NOTES

1. Backwall (where sprinkler is located) by sidewall (length of throw).
2. Requirement is based on minimum flow in GPM from each sprinkler. The indicated residual pressures are based on the nominal K-factor.
3. The centerline of the sprinkler waterway is located 7/16 in. (11,1 mm) below the deflector (see Figure 2).
4. Minimum spacing is for lateral distance between sprinklers located along a single wall. Otherwise adjacent sprinklers (i.e., sidewall sprinklers on an adjacent wall, on an opposite wall, or pendent sprinklers) must be located outside of the maximum listed protection area of the extended coverage sidewall sprinkler being utilized.

TABLE A
MODEL RFIII ECLH CONCEALED HSW SPRINKLER
UL AND C-UL LISTING COVERAGE AND FLOW RATE CRITERIA

Technical Data

Approvals

UL and C-UL Listed

Note: The listings apply only to the service conditions indicated in the Design Criteria section.

The Model RFIII ECLH Concealed HSW Sprinkler is only listed and approved with the LFII/RFIII Concealed Cover Plates having a factory applied finish.

Sprinkler and Cover Plates are separately ordered. See the Ordering Procedure section for more information.

Maximum Working Pressure

175 psi (12,1 bar)

Discharge Coefficient

K=8.0 GPM/psi^{1/2} (115,2 LPM/bar^{1/2})

Temperature Rating

160°F (71°C) Sprinkler with
139°F (59°C) Cover Plate

Horizontal Adjustment

1/4 in. (6,4 mm)

Finishes

See the Ordering Procedure section

Physical Characteristics

Body Brass
Bridge Bronze
Button Bronze
Sealing Assembly . . Beryllium Nickel w/TEFLON
Soldered Link Halves Nickel
Compression Screw Stainless Steel
Deflector Guide Pins Stainless Steel
Plug Polyethylene
Lever Bronze
Retainer Copper Plated Steel
Cover Plate Copper
Cover Plate Ejection Spring Stainless Steel

Operation

When exposed to heat from a fire, the Cover Plate, which is soldered to the Retainer Ring at three points, falls away to expose the Sprinkler Assembly (see Figure 2). The link's solder melts when exposed to heat. When the rated temperature is reached, the melted solder releases the link, activating the sprinkler and allowing water to flow.

Design Criteria

The TYCO Model RFIII, 8.0 K-factor, Extended Coverage Light Hazard, Concealed Horizontal Sidewall Quick Response Sprinkler is UL and C-UL Listed for use in light hazard occupancies, using the design criteria in Table A, in addition to the requirements specified in the current NFPA 13 for extended coverage sidewall sprinklers.