

Technical Data Sheet: MX8680 Quick Response Concealed Horizontal Sidewall Sprinkler K8.0


1. DESCRIPTION

The Quick Response Extended Coverage Concealed Horizontal Sidewall Sprinkler MX8680 is a small high-sensitivity solder link and lever sprinkler designed for installation on concealed pipe systems, where the appearance of a smooth wall is desired. The fast response operating element and special flow shaper characteristics meet the challenges of quick response extended coverage standards.

The sprinkler is hidden from view by a low profile, small diameter cover plate installed flush to the wall. The cover plate is available in several decorative finishes to meet design requirements. The two-piece design allows installation and testing of the sprinkler prior to installation of the cover plate. After the system has been tested and wall finish has been applied, the push-on design of the cover plate assembly allows easy installation of the cover plate with up to 1/4" (6.4 mm) adjustment.



2. LISTINGS AND APPROVALS

 **cULus Listed:** Category VNIV

* Refer the Approval Chart and Design Criteria for cULus Listing requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)
 Maximum Working Pressure: 175 psi (12 Bar).
 Factory tested hydrostatically to 500 psi (34.5 bar).
 Thread size: 3/4" (20 mm) NPT
 Nominal K-Factor: 8.0 U.S. (115.2 metric**)
 Available Cover Plate Horizontal Adjustment: 1/4" (6.4 mm)
 Overall Length (Sprinkler Body): 2" (50.8 mm)
 Patents Pending

**Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

Sprinkler Material Standards:

Sprinkler Body: QM Brass or Brass UNS-C84400
 Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
 Seat: Brass UNS-C31400 or UNS-C31600
 Deflector Ring: Brass UNS-C23000
 Deflector Pins: Stainless Steel UNS-S30200
 Halo: Phosphor Bronze UNS-C51000
 Flow Shaper: Phosphor Bronze UNS-C51000
 Lever Bar Ring: Brass UNS-C84400
 Compression Screw: 18-8 Stainless Steel
 Fusible Link Assembly: Nickel Alloy and Eutectic Solder
 Fusible Link Levers: Stainless Steel UNS-S31600
 Guide Pin: Stainless Steel UNS-S43000
 Shipping Cap: Polyethylene

Cover Assembly Material Standards:

Cover Plate Assembly: Copper UNS-C11000 and Brass UNS-C26800
 Spring: Beryllium Nickel
 Solder: Eutectic

Available Temperature Rating: 165 °F (74 °C) - Ordering Information: See Tables 1 and 2.



WARNING: Cancer and Reproductive Harm-
www.P65Warnings.ca.gov

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass to shatter, releasing the pip cap and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler deflector, forming a uniform spray pattern to extinguish or control the fire.

6. INSPECTIONS, TESTS, AND MAINTENANCE

Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

7. AVAILABILITY

The Model MX8680 Sprinkler is available through a network of domestic and international distributors. See the web site for the closest distributor or contact us.

8. GUARANTEE

For details of warranty, refer to the current list price schedule or contact us directly.

TABLE 1: ORDERING INFORMATION
THE SPRINKLER AND COVER PLATE MUST BE ORDERED SEPERATELY.
Instructions: Using the sprinkler base part number, add the suffix for the desired Temperature Rating.

Sprinkler Part No.	Size	Temperature Ratings			
	NPT Inch	Classification	Nominal Rating	Maximum Ambient Ceiling Temperature ²	Suffix
61351AC	3/4	Ordinary	165 °F (74 °C)	100 °F (38 °C)	C

Accessories

Sprinkler Wrenches (see Figure 1):

- A. Standard (Heavy duty) Wrench: Part Number 16208WR¹.
- B. Head Cabinet Wrench: Part Number 16267¹.

Sprinkler Cabinet:

Part number 61414.

Footnotes

1. Requires a 1/2" ratchet which is not available from Minimax Fire Protection.
2. Based on NFPA 13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

TABLE 2: COVER PLATE ORDERING INFORMATION
Instructions: Using the cover plate base part number,
(1) add the suffix for the desired Finish
(2) add the suffix for the required Cover Plate Nominal Rating.

Cover Plate Base Part Number ⁴	Size Inch (mm)	Style	1: Finishes		Temperature Rating Matrix ^{1,2}			
			Description	Suffix ⁶	Cover Plate Nominal Rating (Required)	Sprinkler Nominal Rating	Sprinkler Max. Ambient Ceiling Temperature ^{2,3}	Suffix
61369	3-5/16 (84)	Round	Polished Chrome	F	135 °F (57 °C)	165 °F (74 °C)	100 °F (38 °C)	A
			Brushed Chrome	F-B				
			Bright Brass	B				
			Antique Brass	B-A				
			Brushed Brass	B-B				
			Brushed Copper	E-B				
			Painted White	M-W				
			Painted Ivory	M-I				
			Painted Black	M-B				

Example: 61369MAW =
135 °F (57 °C) Temperature Rated 3-5/16" (84 mm) Diameter
Round Cover Plate with a Painted White finish.

Footnotes

1. The sprinkler temperature rating is stamped on the deflector.
2. Based on NFPA-13, NFPA 13R, and NFPA 13D. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.
3. Maximum ambient temperature for cover assembly is 100 °F (38 °C).
4. Part number shown is the base part number. For complete part number, refer to current our price list schedule.
5. The corrosion resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Charts. These tests cannot and do not represent all possible corrosive environments. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway. For ENT coated sprinklers, the Belleville spring is exposed.
6. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.



All custom color painted cover plates will have an identifying label affixed to the inside of the cover that indicates the custom color and will have a representative sample (a paint dot) of the paint on the label.

Figure 1: Identification of Custom Paint for Concealed Covers

Sprinkler Base Part Number ¹	Thread Size	Nominal K-factor		Maximum Water Working Pressure	Overall Length (Sprinkler Body)
	NPT Inch	U.S.	metric ²	psi (bar)	Inches
61351AC	3/4	8.0	115.2	175 (12)	2

Approval Chart
QREC Concealed HSW Sprinkler MX8680
For Light Hazard Occupancies Only.
For installation below smooth, flat, horizontal ceilings only.

Maximum Areas of Coverage ⁴ (Width x Throw)	Minimum Water Supply Requirements ⁴	Sprinkler Distance Below the Ceiling	Listings and Approvals ³ (Refer also to Design Criteria.)
			cULus ⁵
14' x 22' (4.3 m x 6.7 m)	31 gpm @ 15.0 psi (117.3 L/min @ 1.04 Bar)	Must be installed with the centerline of the sprinkler 4-3/8" to 12-3/8" (112 to 314 mm) below the ceiling.	AX1
16' x 16' (4.9 m x 4.9 m)	26 gpm @ 10.6 psi (98.4 L/min @ 0.73 Bar)		AX1
16' x 18' (4.9 m x 5.5 m)	29 gpm @ 13.1 psi (109.8 L/min @ 0.91 Bar)		AX1
16' x 20' (4.9 m x 6.1 m)	32 gpm @ 16.0 psi (121.1 L/min @ 1.1 Bar)		AX1
16' x 22' (4.9 m x 6.7 m)	36 gpm @ 20.3 psi (136.3 L/min @ 1.4 Bar)		AX1
18' x 18' (5.5 m x 5.5 m)	33 gpm @ 17.0 psi (124.9 L/min @ 1.2 Bar)		AX1
18' x 20' (5.5 m x 6.1 m)	36 gpm @ 20.3 psi (136.3 L/min @ 1.4 Bar)		AX1
18' x 22' (5.5 m x 6.7 m)	40 gpm @ 25 psi (151.4 L/min @ 1.72 Bar)		AX1
14' x 24' (4.3 m x 7.3 m)	34 gpm @ 18.1 psi (128.7 L/min @ 1.25 Bar)	4-3/8" (112 mm) to 6-3/8" (162 mm)	AX1
16' x 24' (4.9 m x 7.3 m)	39 gpm @ 23.8 psi (147.6 L/min @ 1.64 Bar)		AX1
14' x 24' (4.3 m x 7.3 m)	35 gpm @ 19.2 psi (132.5 L/min @ 1.32 Bar)	6-3/8" (162 mm) to 12-3/8" (314 mm)	AX1
16' x 24' (4.9 m x 7.3 m)	40 gpm @ 25 psi (151.4 L/min @ 1.72 Bar)		AX1
Sprinkler Temperature Rating A - 165 °F (74 °C)	Cover Assembly Temperature Rating X - 135 °F (57 °C) cover 61369 ¹	Cover Plate Finishes 1 - Polished Chrome, Painted White ⁶ , Painted Ivory ⁶ , or Painted Black ⁶	

Footnotes

- Part number shown is the base part number. For complete part number, refer to current price list schedule.
- Metric K-factor measurement shown is when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
- This chart shows the listings and approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals.
- For areas of coverage smaller than shown, use the "Minimum Water Supply Requirement" for the next larger area listed. Flows and pressures listed are per sprinkler.
- Listed by Underwriter's Laboratories, Inc. for use in the U.S. and Canada. cULus Listings are limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only. Always install horizontal sidewall sprinkler MX8680 with the top of the sprinkler element oriented parallel with the ceiling. Refer to Figure 3 on page 4.
- Painted finish consists of Polyester Baked Enamel. Other paint colors are available on request with the same listings as the standard paint colors. Listings and approvals apply for any paint manufacturer. Contact Minimax Fire Protection for additional information.

NOTE: Custom colors are indicated on a label inside the cover assembly. Refer to Figure 1.

Design Criteria

(Also refer to the Approval Chart)

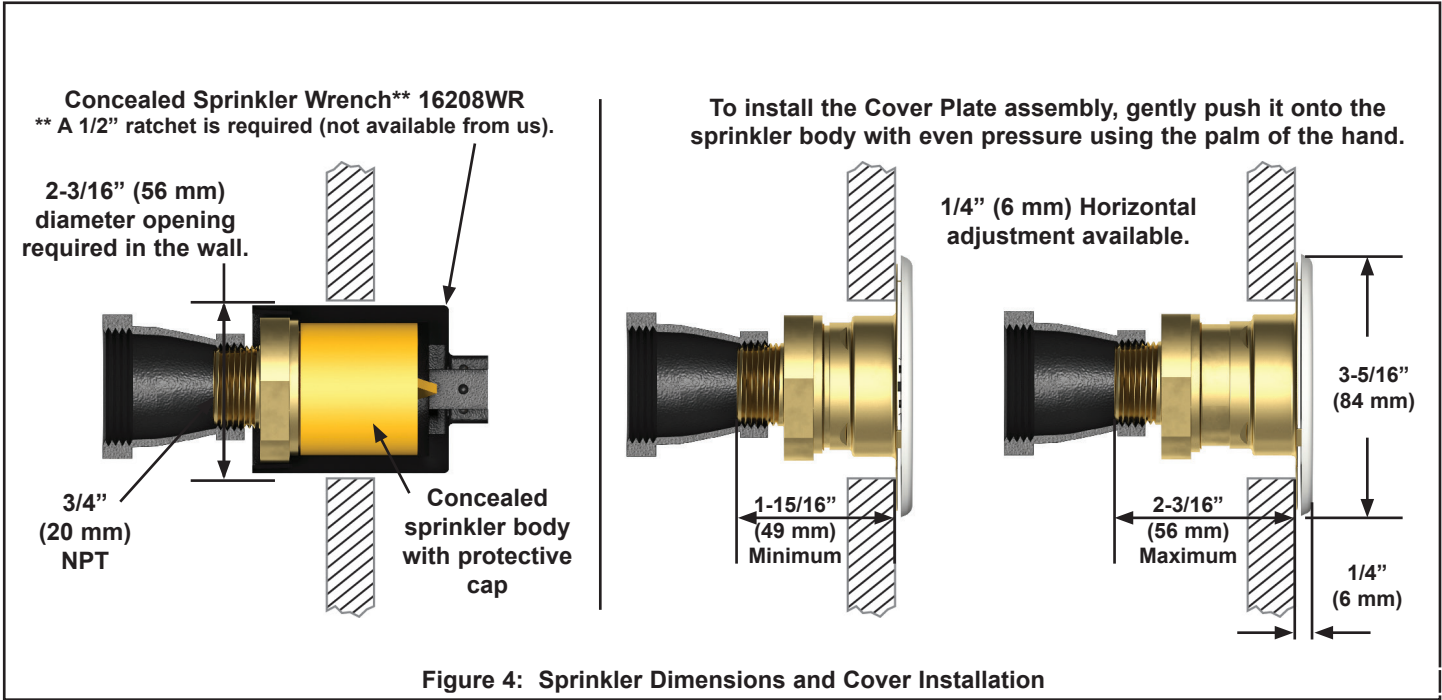
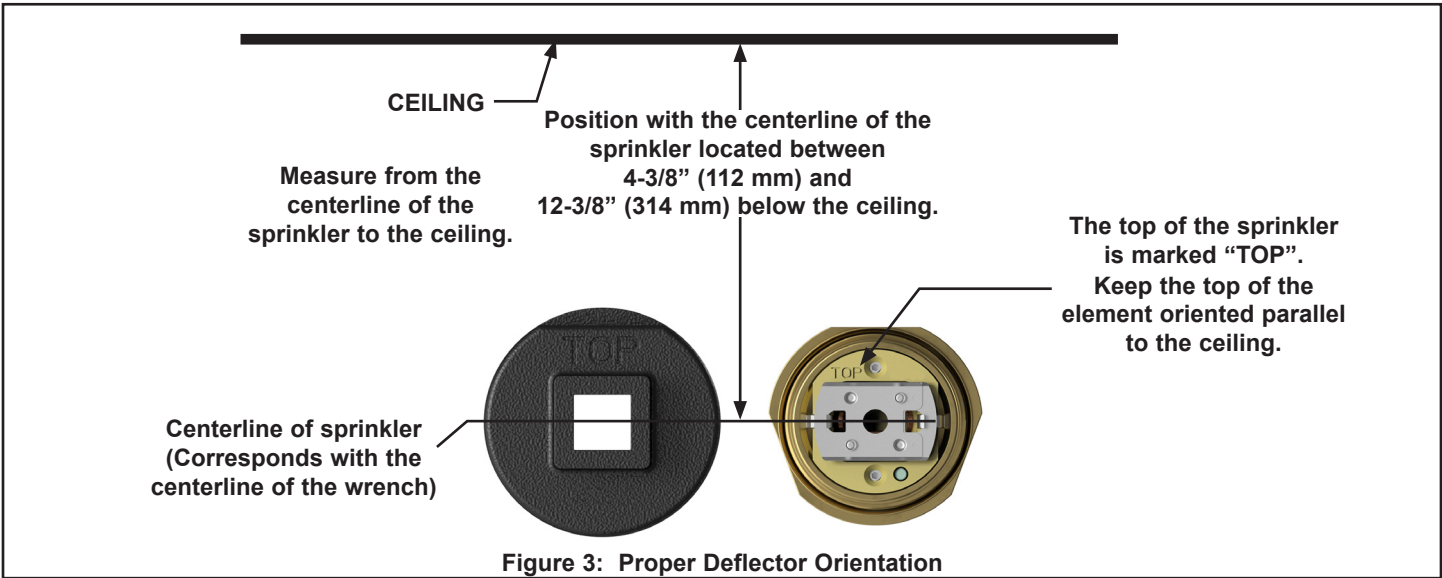
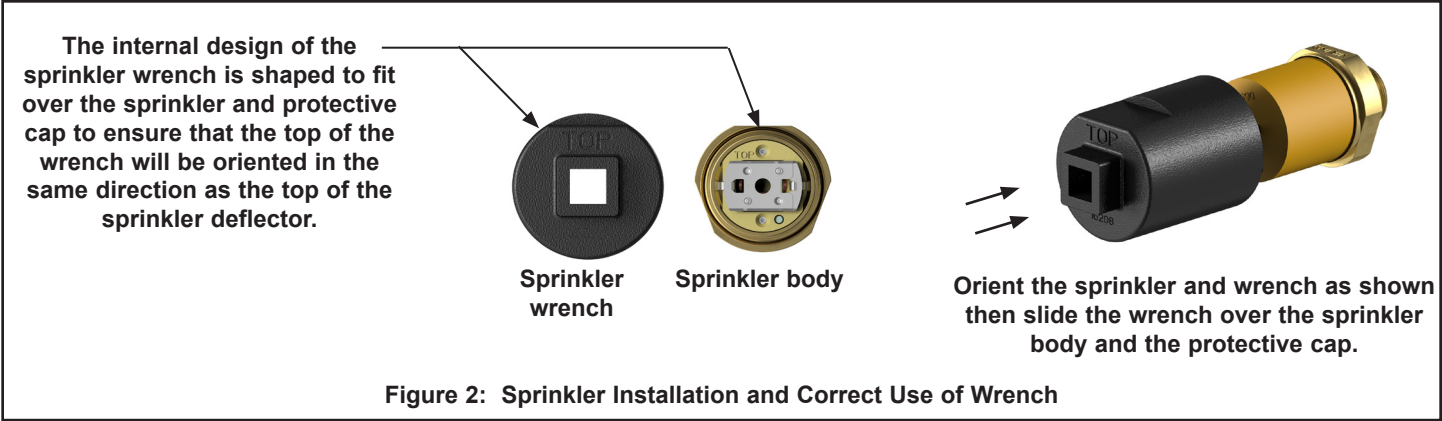
cULus Listing Requirements:

QREC Concealed HSW Sprinkler MX8680 is cULus Listed for installation in accordance with the latest edition of NFPA 13 for extended coverage sidewall spray sprinklers:

- Limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
- Minimum distance between sprinklers: 9 ft. (2.7 m)
- THE TOP OF THE SPRINKLER BODY AND THE TOP OF THE INSTALLATION WRENCH ARE MARKED "TOP"**. Orient the top of the sprinkler element parallel with the ceiling as shown in Figure 3.
- Minimum distance from end walls is 4 in. (102 mm).
- Maximum distance from the end wall shall be no more than one-half of the allowable distance between sprinklers. The distance shall be measured perpendicular to the wall.
- The sprinkler installation and obstruction rules contained in NFPA 13 for extended coverage sidewall spray sprinklers must be followed.

NOTE: Concealed sprinklers must be installed in neutral or negative pressure plenums only.

IMPORTANT: Always refer to Form No. FX_091699 - Care and Handling of Sprinklers. Also refer to Form No. FX_080614 for general care, installation, and maintenance information. Minimax Fire Protection sprinklers are to be installed in accordance with the latest edition of Minimax Fire Protection technical data, the appropriate standards of NFPA or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.



Form No. FX_050611 18.12.20 Rev 18.1