

VIKING**TECHNICAL DATA****HORIZON® MIRAGE®
STANDARD/QR EXTENDED
COVERAGE CONCEALED
PENDENT SPRINKLERS****The Viking Corporation, 210 N Industrial Park Road, Hastings MI 49058****Telephone: 269-945-9501 Technical Services 877-384-5464 Fax: 269-945-4495 Email: techsvcs@vikingcorp.com****1. DESCRIPTION**

Viking Horizon® Mirage® Standard/Quick Response Extended Coverage Concealed Pendent Sprinklers are small, solder link and lever spray sprinklers designed for installation on concealed pipe systems. Equipped with a special deflector, the sprinklers are designed to meet Light Hazard density requirements for specifically listed extended areas of coverage when the required minimum water supply is provided at the sprinkler.

After the sprinkler system has been tested and the ceiling finish applied, the sprinklers are hidden from view by low-profile, small diameter cover plates, installed flush to the ceiling. The cover plates are available in several decorative finishes to meet design requirements. The "push-on", "thread-off" design allows for easy installation of the cover plates, with up to 1/2" (12.7 mm) of vertical adjustment. The "thread-off" feature is designed to prevent unwanted disengagement of the cover assemblies. The cover assemblies can be removed and reinstalled to permit temporary removal of ceiling panels without taking the sprinkler system out of service and removing the sprinkler.

**For Light Hazard Occupancies Only****2. LISTINGS AND APPROVALS**

cULus Listed: Category VNIV

NYC Approved: MEA 89-92-E, Volume 28

Refer to the Approval Chart on page 87c and Design Criteria on page 87d 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 pneumatically to 95 psi (6.55 bar).

Spring: U.S.A. Patent No. 4,570,720

Thread Sizes:

Part Nos. 08498A and 10485A: 1/2" (15 mm) NPT

Part No. 10680A: 3/4" (20 mm) NPT

Nominal K-factors:

Part No. 08498A: 5.6 U.S. (80.6 metric†)

Part Nos. 10485A and 10680A: 8.0 U.S. (115.2 metric†)

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

Overall Length (Sprinkler Body):

Part Nos. 08498A and 10485A: 2-3/8" (60 mm)

Part No. 10680A: 2-1/2" (63.5 mm)

Material Standards:

Sprinkler Body: Brass UNS-C84400

Body Cap: Brass UNS-C26000

Deflector: Copper UNS-C19500

Deflector Pins: Stainless Steel UNS-S30300

Button: UNS-C23000 H55-H80

Screw: Brass UNS-C36000

Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Teflon Tape

Bushing (Sprinkler 10680A): Brass UNS-C31400 or UNS-C31600

Fusible Link Assembly††: Nickel Alloy and Eutectic Solder

††The fusible link of the Extended Coverage Concealed Sprinkler is marked with a yellow stripe or dot for identification purposes only.

Fusible Link Levers: Stainless Steel UNS-S31600

Viking Technical Data may be found on
The Viking Corporation's Web site at
<http://www.vikinggroupinc.com>.
The Web site may include a more recent
edition of this Technical Data Page.



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Lever Bar: Copper Alloy UNS-C72500

Cover Assembly Materials:

Cover Plate Assembly: Brass UNS-C26000

Spring: Nickel Alloy

Solder: Eutectic

Ordering Information: (Also refer to the current [Viking price list](#).)

Viking Horizon® Mirage® Standard and Quick Response Extended Coverage Concealed Pendent Sprinklers and Cover Plate

Assemblies must be ordered separately:

Sprinklers: Base Part No. 08498A, 10485A, or 10680A

Specify sprinkler temperature rating by adding the appropriate suffix for the temperature rating to the base part number:

Temperature Suffix (°F/°C): 165°/74° = C, 220°/104° = F

For example, sprinkler VK625 with a 165 °F/74 °C temperature rating = 08498AC.

Cover Plate Assembly:

Base Part No. 11225, 135 °F/57 °C rated

Base Part No. 09804, 165 °F/74 °C rated

Specify finish and temperature rating of the cover plate assembly by first adding the appropriate suffix for the finish and then the appropriate suffix for the cover temperature rating to the base part number:

Finish Suffix for Cover 09804: Polished Chrome = F, Brushed Chrome = F-/B, Bright Brass = B, Antique Brass = B-/A, Brushed Brass = B-/B, Brushed Copper = E-/B, Painted White = M-/SW1004, Painted Ivory = M-/SW1634, Painted Black = M-/SW1007

Finish Suffix for Cover 11225: Polished Chrome = F

Temperature Suffix (°F/°C): 135°/57° = A, 165°/74° = C

For example, cover 09804 with a Polished Chrome finish and a 165 °F/74 °C temperature rating = 09804FC.

Available Finishes And Temperature Ratings:

Refer to Table 1

Accessories: (Also refer to the "Sprinkler Accessories" section of the Viking data book.)

Sprinkler Wrenches*:

A. Heavy Duty Part Number 08336W/B (available since 1983), or

B. Light Duty Part Number 10366W/B** (available since 1998)

*Requires a ½" ratchet (not available from Viking).

**Ideal for sprinkler cabinets.

Sprinkler Cabinet: Part No. 01731A, Capacity: six (6) sprinklers (available since 1971)

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, when the temperature around the sprinkler approaches its operating temperature, the cover plate detaches. Continued heating of the sprinkler causes the heat-sensitive fusible link to disengage, releasing the deflector and sealing assembly. Water flowing through the sprinkler orifice strikes the 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 Viking Concealed Sprinklers are available through a network of domestic and international distributors. See The Viking Corporation web site for the closest distributor or contact The Viking Corporation.

8. GUARANTEE

For details of warranty, refer to Viking's current list price schedule or contact Viking directly.



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TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²	Temperature Rating of the Required Cover Assembly	Cover Plate Assembly Base Part Number ³
Ordinary	165 °F (74 °C)	100 °F (38 °C)	135 °F (57 °C)	11225
			165 °F (74 °C)	09804
Intermediate	220 °F (104 °C)	150 °F (65 °C)	165 °F (74 °C)	09804

Cover Plate Finishes: For Cover 09804: Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, and Painted Black. For Cover 11225: Polished Chrome

Footnotes

¹ The sprinkler temperature rating is stamped on the sprinkler body.

² Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

³ Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.

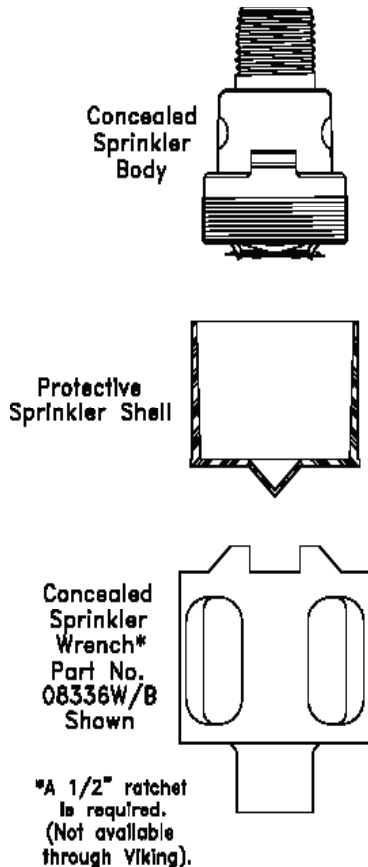


Figure 1:
Sprinkler Installation and
Correct Use of Wrenches

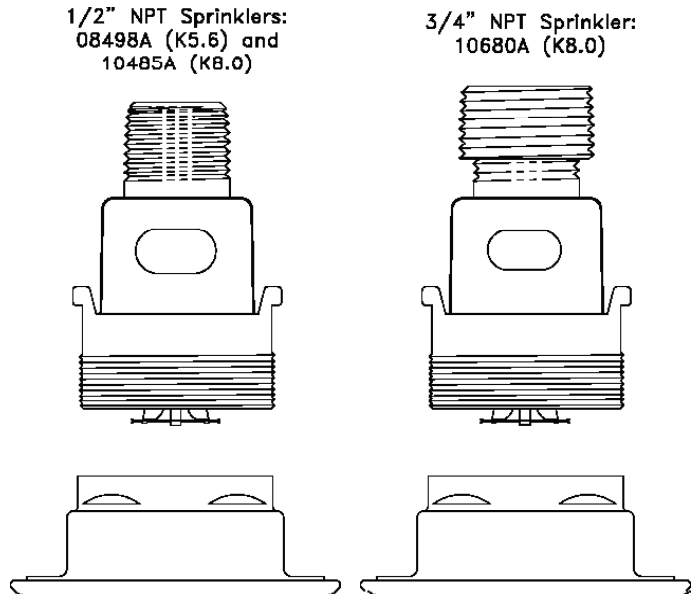



Figure 2:
Concealed Sprinklers and Cover Assemblies

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Approval Chart
 Horizon® Mirage® Standard/Quick Response Extended Coverage
 Concealed Pendent Sprinklers
 For Light Hazard Occupancies Only.
 Maximum 175 PSI (12 Bar) WWP

— Sprinkler Temperature Rating
 * — Cover Plate Temperature Rating
 AW1+ Cover Plate Finish KEY

Sprinkler Base Part Number ¹	SIN	NPT Thread Size		Nominal K-Factor		Maximum Areas of Coverage ⁴ (Length x Width)	Minimum Water Supply Requirements ⁴ Flow/Pressure	Listings and Approvals ³ (Refer also to Design Criteria on page 87e.)		
		Inches	mm	U.S.	metric ²			cULus ⁵	FM	NYC ⁷
Standard Response Applications⁶ Standard Orifice										
08498A	VK625	1/2	15	5.6	80.6	20' x 20' (6.1 m x 6.1 m)	40 gpm @ 51.0 psi (151.4 L/min @ 3.52 Bar)	AY1, AX2	--	AY1, AX2
Large Orifice										
10485A	VK627	1/2	15	8.0	115.2	20' x 20' (6.1 m x 6.1 m)	40 gpm @ 25.0 psi (151.4 L/min @ 1.72 Bar)	AY1, AX2	--	AY1, AX2
10680A	VK627	3/4	20	8.0	115.2					
Quick Response Applications Standard Orifice										
08498A	VK625	1/2	15	5.6	80.6	16' x 16' (4.9 m x 4.9 m)	26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)	AY1, AX2	--	AY1, AX2
08498A	VK625	1/2	15	5.6	80.6	18' x 18' (5.5 m x 5.5 m)	33 gpm @ 34.7 psi (124.9 L/min @ 2.39 Bar)	AY1, AX2	--	AY1, AX2
Large Orifice										
10485A	VK627	1/2	15	8.0	115.2	16' x 16' (4.9 m x 4.9 m)	26 gpm @ 10.6 psi (98.4 L/min @ 0.73 Bar)	AY1, AX2	--	AY1, AX2
10680A	VK627	3/4	20							
10485A	VK627	1/2	15	8.0	115.2	18' x 18' (5.5 m x 5.5 m)	33 gpm @ 17.0 psi (124.9 L/min @ 1.17 Bar)	AY1, AX2	--	AY1, AX2
10680A	VK627	3/4	20							
Sprinkler Temperature Ratings A - 165 °F (74 °C) B - 220 °F (104 °C) ⁸		Cover Assembly Temperature Ratings⁹ X - 135 °F (57 °C) cover 11225 ¹ Y - 165 °F (74 °C) cover 09804 ¹				Cover Plate Finishes¹⁰ 1 - Polished Chrome, Painted White, Painted Ivory, or Painted Black 2 - Polished Chrome				

Footnotes

¹ Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.

² 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.

³ 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.

⁴ 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.

⁵ Listed by Underwriter's Laboratories, Inc. for use in the U.S. and Canada for Light Hazard occupancies with smooth, flat, horizontal ceilings only.

⁶ cULus Listings are limited to Light Hazard occupancies, where allowed by the installation standards being applied

⁷ Accepted for use, City of New York Department of Buildings, MEA Number 89-92-E, Vol. 28.

⁸ Available temperature ratings are 165 °F (74 °C) and 220 °F (104 °C). However, the 220 °F (104 °C) temperature rated sprinkler has no Listings or Approvals at the time of this printing.

⁹ The 135 °F cover has an orange label. The 165 °F cover has a white label.

¹⁰ 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 Viking for additional information.

NOTE: Custom colors are indicated on a label inside the cover assembly. Refer to Figure 3.

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DESIGN CRITERIA
 (Also refer to the Approval Chart on page 87d.)

cULus Listing Requirements: Standard/Quick Response Extended Coverage Concealed Pendent Sprinklers are cULus Listed for installation in accordance with the latest edition of NFPA 13 for extended coverage pendent spray sprinklers:

- Limited to Light Hazard occupancies, where allowed by the installation standards being applied, with smooth, flat, horizontal ceilings only.
- Minimum spacing allowed is 8 ft. (2.4 m) unless baffles are installed in accordance with NFPA 13.
- Minimum distance from walls is 4 in. (102 mm).
- Maximum distance from walls 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 pendent spray sprinklers must be followed.

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

NOTE: Previous Cover Plate Assembly Part Number 08310 may still be used for cULus installations. The correct Horizon® Mirage® Sprinkler can be verified by checking the fusible link for the following identification scheme:

- A. Standard Response: No stripe or dot.
- B. Quick Response: Purple stripe or dot.
- C. EC or QREC: Yellow stripe or dot.

IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to pages EC1-2 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.





FACTORY APPLIED
CUSTOM PAINT COLOR

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

Figure 3: Identification of Custom Paint Color for Concealed Covers



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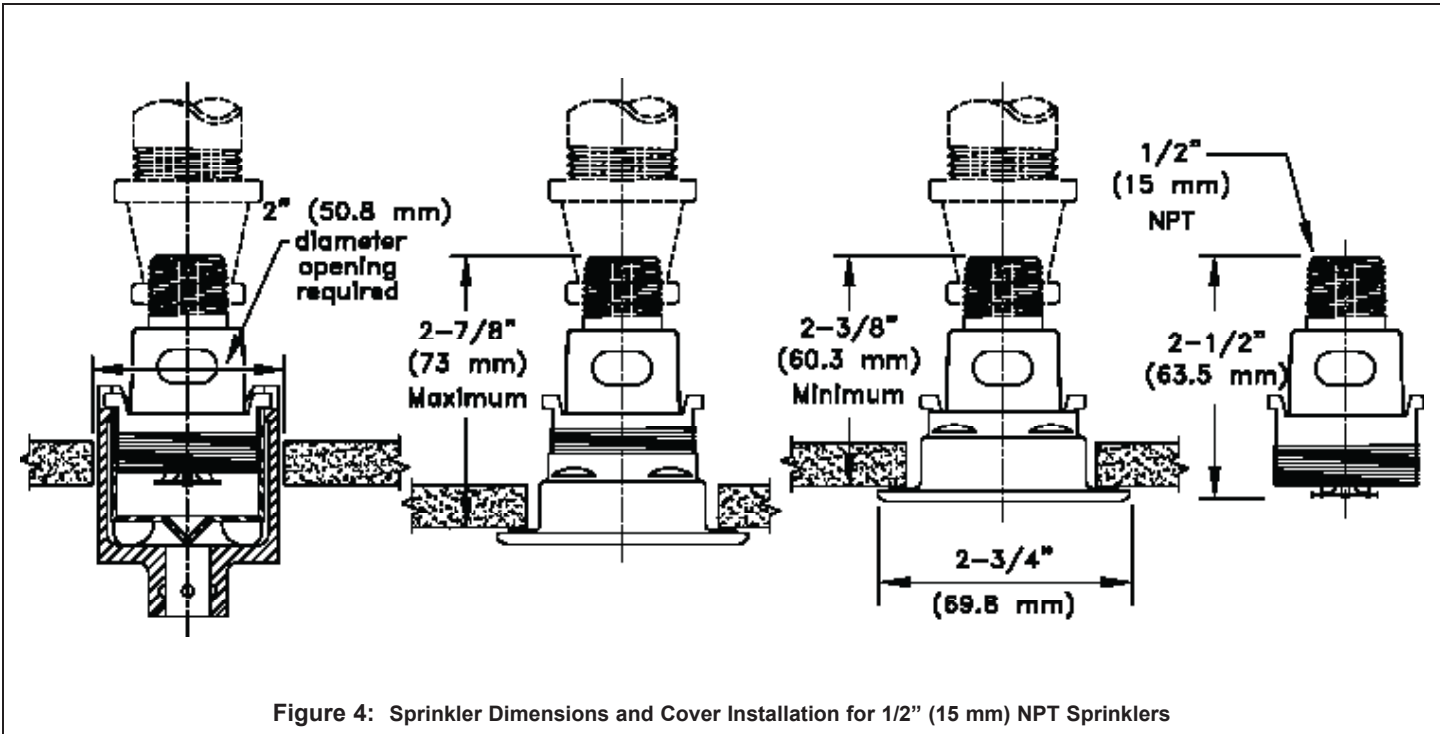


Figure 4: Sprinkler Dimensions and Cover Installation for 1/2" (15 mm) NPT Sprinklers

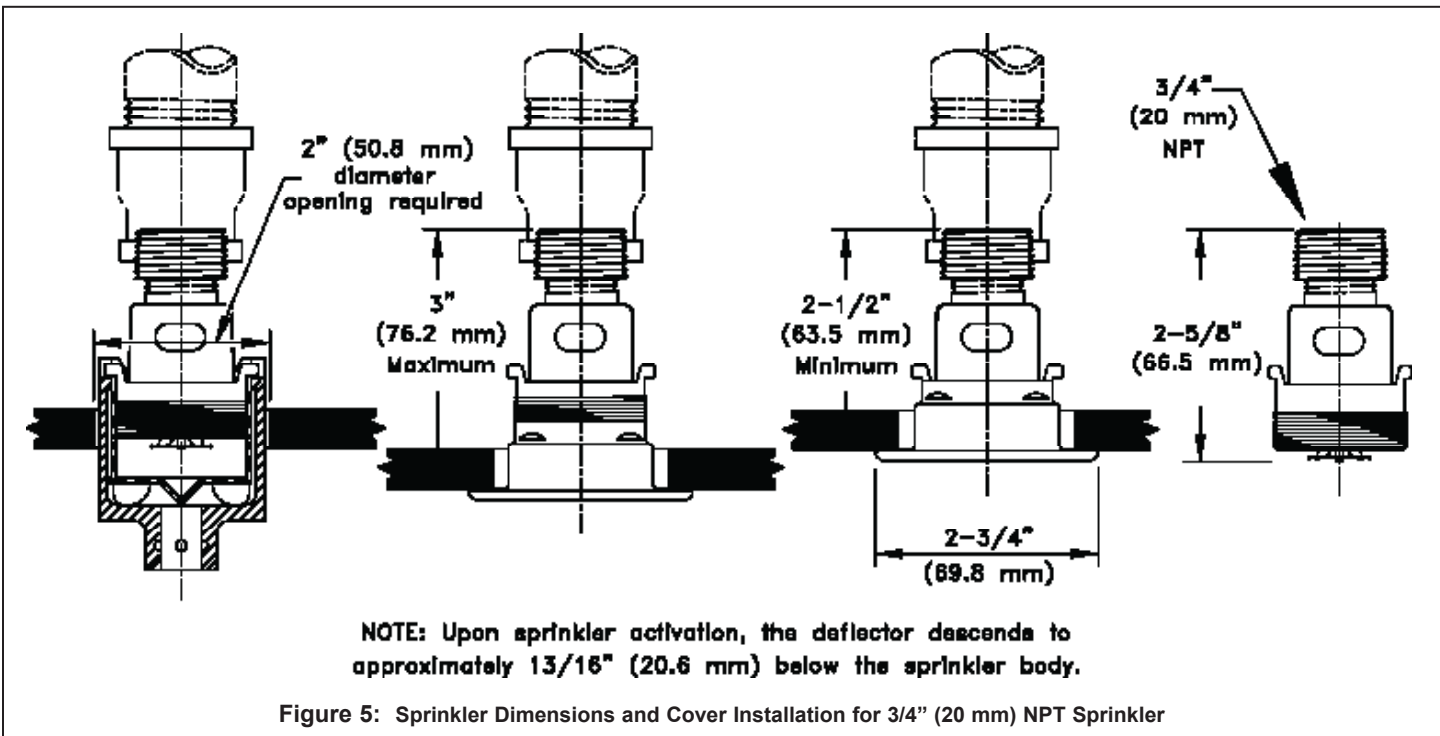


Figure 5: Sprinkler Dimensions and Cover Installation for 3/4" (20 mm) NPT Sprinkler