



## TECHNICAL DATA

### MIRAGE® QR EXTENDED COVERAGE LIGHT HAZARD ELO CONCEALED PENDENT SPRINKLER VK636 (K11.2)

The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058

Telephone: 269-945-9501 Technical Services: 877-384-5464 Fax: 269-818-1680 Email: techsvcs@vikingcorp.com

#### 1. DESCRIPTION

Viking Mirage® Quick Response Extended Coverage Light Hazard ELO Concealed Pendent Sprinkler VK636 is a thermosensitive solder link spray sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired. The 11.2K sprinkler meets Light Hazard density requirements at lower pressures than 5.6K or 8.0K sprinklers. The fusible operating element and special deflector characteristics meet the challenges of quick response extended coverage standards.

The sprinkler is pre-assembled with a threaded adapter for installation with a low-profile cover assembly that provides up to ½" (12.7 mm) of vertical adjustment. The two-piece design allows installation and testing of the sprinkler prior to installation of the cover plate. The "push-on", "thread-off" design of the concealed cover plate assembly allows easy installation of the cover plate after the system has been tested and the ceiling finish has been applied. The cover assembly can be removed and reinstalled, allowing temporary removal of ceiling panels without taking the sprinkler system out of service or removing the sprinkler.



For Light Hazard Occupancies Only

#### 2. LISTINGS AND APPROVALS

**cULus Listed:** Category VNIV

Refer to the Approval Chart on page 89c and Design Criteria on page 89d for cULus Listing requirements that must be followed.

#### 3. TECHNICAL DATA

##### Specifications:

Available since 2010.

Minimum Operating Pressure: 7 psi (0.5 bar).

Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).

Testing: U.S.A. Patent No. 4,831,870

Thread size: 3/4" (20 mm) NPT

Nominal K-Factor: 11.2 U.S. (161.3 metric\*)

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

Patents Pending

##### Material Standards:

Sprinkler Body: Brass UNS-C84400

Deflector: Brass UNS-C23000

Deflector Pins: Stainless Steel

Fusible Element Assembly: Nickel Alloy and Eutectic Solder

Lever and Lever Bar: Stainless Steel

Seat: Bronze UNS-C31400/UNS-C31600

Deflector Carrier: Brass UNS-C84400

Screw: Brass UNS-C36000

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

Cover Adapter: Cold Rolled Steel UNS-G10080, Finish: Clear Chromate over Zinc Plating

##### Cover Assembly Materials:

Cover: Brass UNS-C26800

Base: Cold Rolled Steel UNS-G10060/G10080, Finish: Copper Flash

Springs: Nickel Alloy

Solder: Non-eutectic

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

Viking Mirage® QR ECLH ELO Concealed Pendent Sprinkler VK636 and Cover Plate Assembly must be ordered separately:

**Sprinkler:** Base Part No. 16102A

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

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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Temperature Suffix (°F/°C): 165°/74° = C, 205°/96° = E

For example, sprinkler VK636 with a 165°/74°C temperature rating = 16102AC.

**Cover Plate Assembly:** Base Part No. 15765 (3-5/16" diameter)

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

Finish Suffix: Polished Chrome = F, Painted White = M-/W, Painted Ivory = M-/I, Painted Black = M-/B

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

For example, cover 15765 with a Polished Chrome finish and a 165°/74°C temperature rating = 15765FC.

**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 Wrench Part No. 15467W/B (available since 2009), or

B. Head Cabinet Wrench Part No. 15466\*\*\* (available since 2009)

C. Optional Concealed Cover Plate Installer Tool Part No. 14867 (available since 2007)

\*\*Requires a ½" ratchet (not available from Viking). \*\*\*Also optional for removal of the protective cap. Ideal for sprinkler cabinets.

**Sprinkler Cabinet:** Part No. 01731A (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 exposed sprinkler causes the heat-sensitive fusible element assembly to disengage, releasing seat 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 Viking Model VK636 Sprinkler is 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.

**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Temperature Rating of the Cover Assembly (Required)	Cover Plate Base Part No. <sup>3</sup>
Ordinary	165°F (74°C)	100°F (38°C)	135°F (57°C)	15765
			165°F (74°C)	
Intermediate	205°F (96°C)	150°F (65°C)	165°F (74°C)	

**Cover Plate Finishes:** Polished Chrome, Painted White, Painted Ivory, or Painted Black

#### Footnotes

<sup>1</sup> The sprinkler temperature rating is stamped on the deflector.

<sup>2</sup> 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.

<sup>3</sup> Base part number is shown. For complete part number, refer to Viking's current price list schedule.

	<b>TECHNICAL DATA</b>	<b>MIRAGE® QR EXTENDED COVERAGE LIGHT HAZARD ELO CONCEALED PENDENT SPRINKLER VK636 (K11.2)</b>
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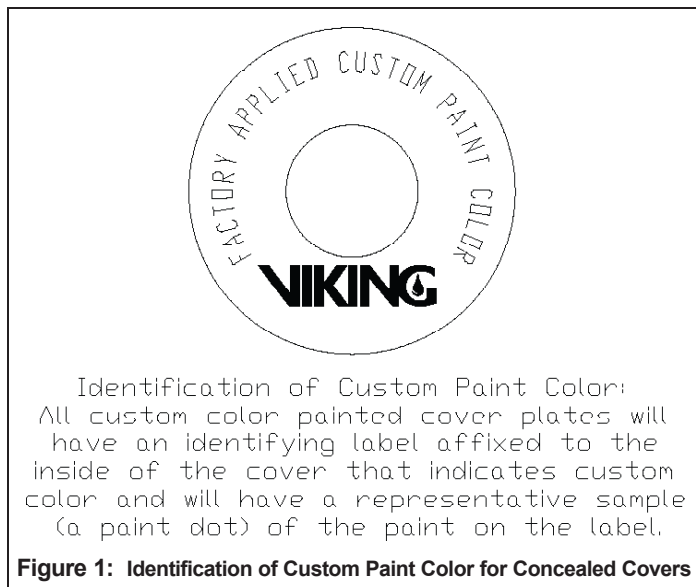
Sprinkler Base Part Number <sup>1</sup>	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length (Sprinkler Body)	
	Inches	mm	U.S.	metric <sup>2</sup>		Inches	mm
16102A	3/4	20	11.2	161.3	175 psi (12 Bar)	2-7/16	61.8

**Approval Chart**  
 Quick Response Extended Coverage Light Hazard ELO  
 Concealed Pendent Sprinkler VK636

Maximum Sprinkler Spacing <sup>4</sup> (Length x Width)	Minimum Water Supply Requirements <sup>4</sup> Flow/Pressure	Maximum Area Per Sprinkler	Listings and Approvals <sup>3</sup> (Refer also to Design Criteria on pg 89d.)		
			cULus <sup>5,6</sup>	FM	NYC
16' x 16' (4.9 m x 4.9 m)	30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)	256 ft. <sup>2</sup> (23.8 m <sup>2</sup> )	AW1, BX1	--	See Footnote 7.
18' x 18' (5.5 m x 5.5 m)	33 gpm @ 8.7 psi (124.9 L/min @ .60 Bar)	324 ft. <sup>2</sup> (30.1 m <sup>2</sup> )	AW1, BX1	--	See Footnote 7.
20' x 20' (6.1 m x 6.1 m)	40 gpm @ 12.8 psi (151.4 L/min @ .88 Bar)	400 ft. <sup>2</sup> (37.2 m <sup>2</sup> )	AW1, BX1	--	See Footnote 7.
<b>Sprinkler Temperature Ratings</b> A - 165°F (74°C) B - 205°F (96°C)		<b>Cover Assembly Temperature Ratings</b> W - 135°F (57°C) or 165°F (74°C) cover 15765 <sup>1</sup> X - 165°F (74°C) cover 15765 <sup>1</sup>		<b>Cover Plate Finishes<sup>8</sup></b> 1 - Polished Chrome, Painted White, Painted Ivory, or Painted Black	

**Footnotes**

- <sup>1</sup> Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.
  - <sup>2</sup> 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.
  - <sup>3</sup> 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.
  - <sup>4</sup> 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.
  - <sup>5</sup> Listed by Underwriter's Laboratories, Inc. for use in the U.S. and Canada.
  - <sup>6</sup> cULus Listings are limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
  - <sup>7</sup> Meets New York City requirements, effective July 1, 2008.
  - <sup>8</sup> 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 1.





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COVERAGE LIGHT HAZARD  
ELO CONCEALED PENDENT  
SPRINKLER VK636 (K11.2)**

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**DESIGN CRITERIA**

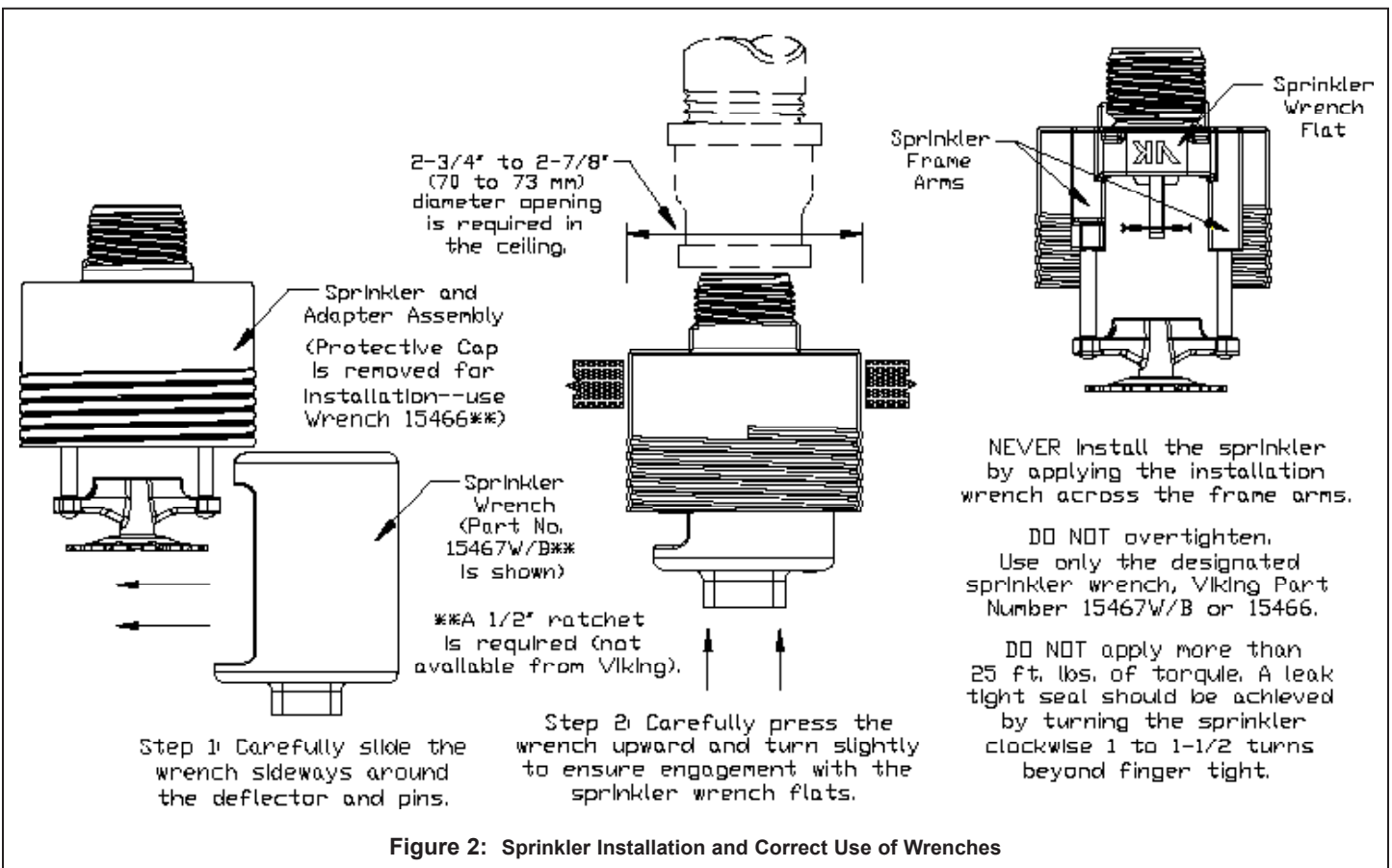
(Also refer to the Approval Chart on page 89c.)

**cULus Listing Requirements:** Quick Response Extended Coverage Light Hazard ELO Concealed Pendent Sprinkler VK636 is cULus Listed for installation in accordance with the latest edition of NFPA 13 for extended coverage pendent spray sprinklers:

- Limited to Light Hazard occupancies 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.**

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to page EC1-3 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.**



**Figure 2: Sprinkler Installation and Correct Use of Wrenches**

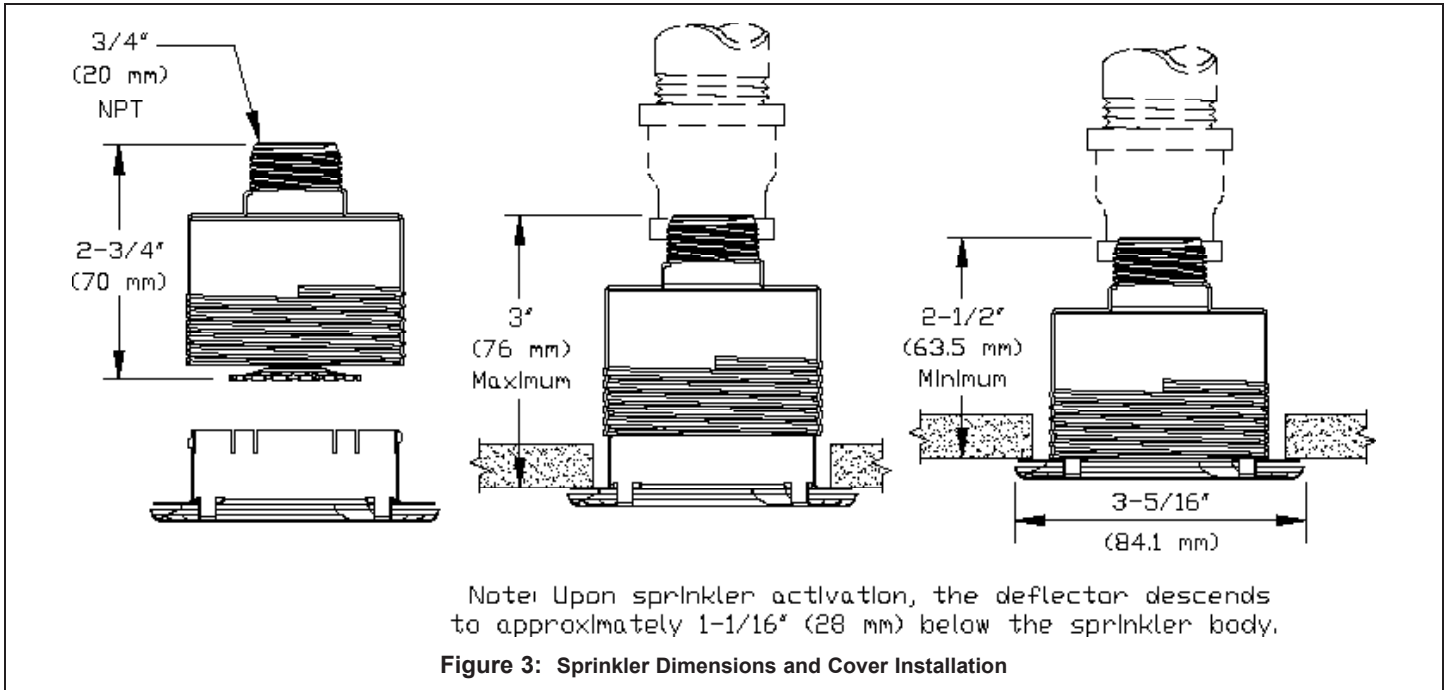


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