



## TECHNICAL DATA

### MIRAGE® STANDARD RESPONSE CONCEALED PENDENT SPRINKLER VK492 (K5.6)

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

Visit the Viking website for the latest edition of this technical data page.

#### 1. DESCRIPTION

Viking Mirage® Standard Response Concealed Pendent Sprinkler VK492 is a thermosensitive glass-bulb spray sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired.

The sprinkler is pre-assembled with a threaded adapter for installation with a low-profile cover assembly that provides up to ½" (13 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" and "thread-on" designs of the concealed cover plate assemblies allow 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.

#### 2. LISTINGS AND APPROVALS



cULus Listed: Category VNIV



FM Approval: Class 2015

Refer to the Approval Charts and Design Criteria listing and approval requirements that must be followed.

#### 3. TECHNICAL DATA

##### Specifications:

Product release: 2016

Pressure: 7 psi (0.5 bar)

**Maximum Working Pressure: 175 psi (12 bar)**

Factory tested hydrostatically to 500 psi (34.5 bar)

Thread size: 1/2" (15 mm) NPT

Nominal K-Factor: 5.6 U.S. (80.6 metric\*)

Glass-bulb fluid temperature rated to -65°F (-55°C)

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.

##### Material Standards:

Sprinkler Body: Brass UNS-C84400

Deflector: Copper UNS-C19500

Deflector Pins: Stainless Steel Alloy

Bulb: Glass, nominal 5 mm diameter

Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Button: Brass UNS-C36000

Screws: 18-8 Stainless Steel

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

Yoke: Phosphor Bronze UNS-C51000

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

##### Cover Assembly Materials:

Cover: Copper UNS-C11000

Base: Brass UNS-C26000 or UNS-C26800

Springs: Nickel Alloy

Solder: Eutectic

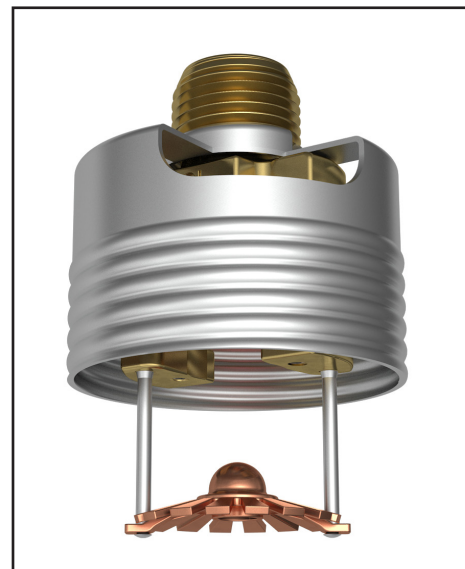
**Ordering Information:** The sprinkler and cover plate must be ordered separately. Refer to Tables 1 and 2.

#### 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 liquid in the glass bulb to expand and the bulb to shatter, releasing the yoke, 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.



**WARNING:** Cancer and Reproductive Harm-  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



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#### 6. INSPECTIONS, TESTS AND MAINTENANCE

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

#### 7. AVAILABILITY

Viking Sprinklers VK492 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.

### TABLE 1: SPRINKLER ORDERING INFORMATION

#### Instructions:

- (1) Select a Sprinkler Base Part Number
- (2) Add the suffix for the desired Finish
- (3) Add the suffix for the desired Sprinkler Temperature Rating
- (4) Order a cover plate (refer to Table 2)

#### Example:

20034AE = 200 °F (93 °C) Temperature Rated Sprinkler with a standard Brass finish.

SIN	Sprinkler Base Part Number	Size		1: Finishes		2: Temperature Ratings				
		NPT Inch	BSPT mm	Description	Suffix	Sprinkler Temperature Classification	Nominal Rating	Bulb Color	Max. Ambient Ceiling Temperature <sup>1</sup>	Suffix
VK492	20034	1/2	--	Brass	A	Ordinary	155 °F (68 °C)	Red	100 °F (38 °C)	B
						Intermediate	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
						Intermediate	200 °F (93 °C)	Green	150 °F (65 °C)	E

#### Accessories

##### Sprinkler Wrenches and tools:


- A. Heavy Duty Part Number: 14047W/B<sup>2</sup> (available since 2006)
- B. Head Cabinet Wrench Part Number: 14031<sup>3</sup> (available since 2006)
- C. Optional Concealed Cover Plate Installer Tool Part Number: 14412<sup>4</sup> (available since 2007)
- D. Optional Large Concealed Cover Plate Installer Tool Part No. 14867<sup>4</sup> (available since 2007)

##### Sprinkler Cabinet:

Holds up to 6 sprinklers: Part number 01731A (available since 1971).

#### Footnotes

1. 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.
2. Requires a 1/2" ratchet (not available from Viking).
3. Also optional for removal of the protective cap. Ideal for sprinkler cabinets.
4. The installer tool is for push-on style cover plates only.

	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<p><b>MIRAGE® STANDARD RESPONSE CONCEALED PENDENT SPRINKLER VK492 (K5.6)</b></p>
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**TABLE 2: COVER PLATE ORDERING INFORMATION**

- Instructions:**
- (1) Select a Cover Plate Base Part Number
  - (2) Add the suffix for the desired Finish
  - (3) Add the suffix for the required Cover Plate Nominal Rating.


**Example:**  
 23190MC/W = 165 °F (74 °C) Temperature Rated, 2-3/4" (70 mm) diameter, Thread-On style Round Cover Plate with a Painted White finish.

1: Select a Cover Plate Base Part Number <sup>3</sup>						2: Select a Finish	
Thread-On Style			Push-On Style			Description	Suffix <sup>5</sup>
Base Part Number	Size Inch (mm)	Type	Base Part Number	Size Inch (mm)	Type		
23190	2-3/4 (70)	Round	23447	2-3/4 (70)	Round	Polished Chrome	F
23174	3-5/16 (84)	Round	23463	3-5/16 (84)	Round	Brushed Chrome	F-/B
23179	3-5/16 (84)	Square	23482	3-5/16 (84)	Square	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

3: Temperature Rating Matrix <sup>1,2</sup>				
Cover Plate Nominal Rating (Required)	Temperature Classification	Sprinkler Nominal Rating	Sprinkler Maximum Ambient Ceiling Temperature <sup>2</sup>	Suffix
135 °F (57 °C) UL 139 °F (59 °C) FM	Ordinary	155 °F (68 °C)	100 °F (38 °C)	<b>A</b>
165 °F (74 °C)	Intermediate	175 °F (79 °C) 200 °F (93 °C)	150 °F (65 °C)	<b>C</b>


**Footnotes**

1. The sprinkler temperature rating is stamped on the deflector.
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.
4. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.
5. Square cover plates 23179 and 23482 cULus Listing is for the 135 °F (57 °C) temperature rated cover plate only. Refer to the Approval Chart.



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**



**Figure 2: Square Cover Assembly**

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Approval Chart							Mirage® Standard Response Concealed Pendent Sprinklers VK492	
Sprinkler Base Part No. <sup>1</sup>	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure <sup>3</sup>	Listings and Approvals <sup>4</sup> (Refer also to Design Criteria)	
		Inch	mm	U.S.	metric <sup>2</sup>		cULus <sup>5</sup>	FM <sup>3</sup>
20034A	VK492	1/2"	15	5.6	80.6	175 psi (12 bar)	AV1, BX1	AW1, BY1
<b>Sprinkler Temperature Ratings</b> A - 155 °F (68 °C) B - 175 °F (79 °C) and 200 °F (93 °C)		<b>Cover Plate Assembly Temperature Ratings<sup>1,6</sup></b> V - 135 °F (57 °C) cover 23190, 23447, or 23174, 23463 (large diameter), or 23179, 23482 (square cover plate) W - 139 °F (59 °C) 23190, 23347, or 23174, 23463 (large diameter), or 23179, 23482 (square cover plate) X - 165 °F (74 °C) cover 23190, 23447 or 23174, 23463 (large diameter) Y - 165 °F (74 °C) cover 23190, 23447 or 23174, 23463 (large diameter), or 23179, 23482 (square cover plate)					<b>Cover Plate Assembly Finishes<sup>7</sup></b> 1 - Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, or Painted Black	
<b>Footnotes</b> 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. The Water Working Pressure rating is stamped on the deflector. 4. 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. 5. Listed by Underwriter's Laboratories for use in the U.S. and Canada. 6. The 135/139 °F cover has an orange label. The 165 °F (74 °C) cover has a white label. 7. 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. <b>NOTE: Custom colors are indicated on a label inside the cover assembly. Refer to Figure 1.</b>								

DESIGN CRITERIA - UL (Also refer to Approval Chart)
<p><b>cULus Listing Requirements:</b></p> <p>Mirage® Concealed Pendent Sprinklers VK492 are cULus Listed as standard response for installation in accordance with the latest edition of NFPA 13 for standard coverage pendent spray sprinklers as indicated below.</p> <ul style="list-style-type: none"> <li>For hazard occupancies including Light Hazard, Ordinary Hazard (Group 1) and Ordinary Hazard (Group 2).</li> <li>Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13. Maximum spacing allowed is 15 ft. (4.6 m).</li> <li>Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.</li> <li>Minimum distance from walls is 4 in. (102 mm).</li> <li>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.</li> <li>The sprinkler obstruction rules contained in NFPA 13 for standard coverage pendent spray sprinklers must be followed.</li> </ul> <p><b>NOTE: Concealed sprinklers must be installed in neutral or negative pressure plenums only.</b></p> <p><b>IMPORTANT: Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to Form No. F_080614 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 or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.</b></p>



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**DESIGN CRITERIA - FM**

(Also refer to Approval Chart)

**FM Approval Requirements:**

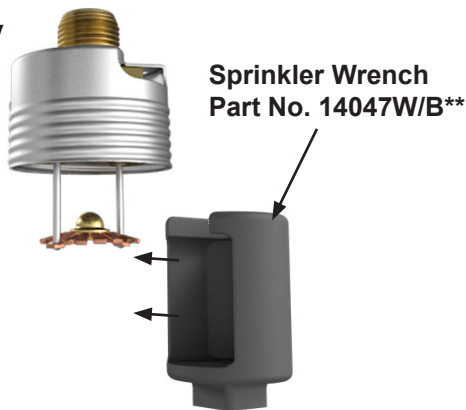
Viking Concealed Pendent Sprinkler VK492 is FM Approved as a standard response **Non-Storage** concealed pendent sprinkler as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0). FM Global Loss Prevention Data Sheets contain guidelines relating to, but not limited to: minimum water supply requirements, hydraulic design, ceiling slope and obstructions, minimum and maximum allowable spacing, and deflector distance below the ceiling.

**NOTE:** The FM installation guidelines may differ from cULus and/or NFPA criteria.

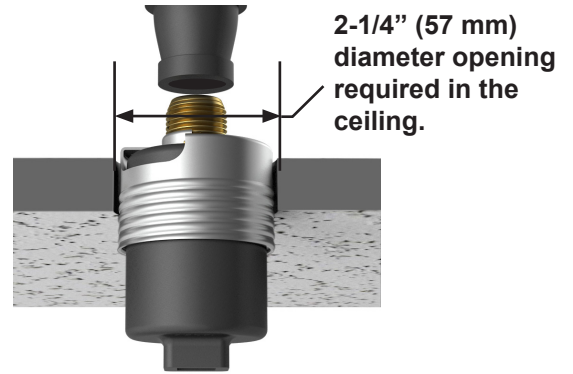
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**Sprinkler and Adapter Assembly**

- Protective cap removed
- Use wrench 14047W/B\*\*

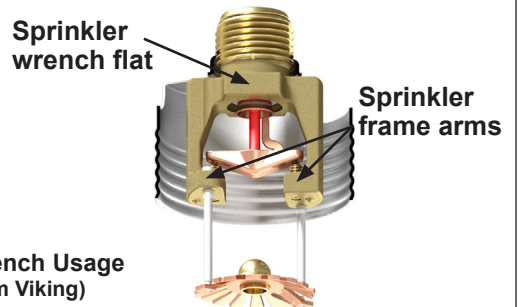


**Step 1:**  
Carefully slide the wrench sideways around the deflector and pins



**Step 2:**  
Carefully press the wrench upward and turn slightly to ensure engagement with the sprinkler wrench flats.

**NEVER** install the sprinkler by applying the installation wrench across the frame arms. **DO NOT** overtighten. Use only the designated sprinkler wrenches, Viking Part Numbers 14047W/B\*\* or 14031\*\*. A leak tight seal should be achieved by turning the sprinkler clockwise 1 to 1-1/2 turns beyond finger tight.



**Figure 3: Sprinkler Installation and Proper Wrench Usage**  
 \*\* A 1/2" ratchet is required (Not available from Viking)



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