1. DESCRIPTION
Viking Mirage® Quick Response Extended Coverage Concealed Pendent Sprinkler VK632 and VK634 are thermosensitive glass-bulb spray sprinklers designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired. The glass bulb 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. The Electroless Nickel PTFE (ENT) coating has been investigated for installation in corrosive environments and is listed and approved as indicated in the Approval Charts. The ENT finish is only available for the sprinkler assembly, the cover plate is not plated.

2. LISTINGS AND APPROVALS
- cULus Listed: Category VNIV
Refer to the Approval Chart and Design Criteria for cULus Listing requirements that must be followed.

3. TECHNICAL DATA
Specifications:
- Available since 2007.
- Minimum Operating Pressure: 7 psi (0.5 bar)
- Factory tested hydrostatically to 500 psi (34.5 bar)
- Thread sizes: VK632: 1/2” (15 mm) NPT; VK634: 3/4” (20 mm) NPT
- Nominal K-Factors: VK632: 5.6 U.S. (80.6 metric*); VK634: 8.0 U.S. (115.2 metric*)
  * Metric K-factor measurement shown is in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
- Glass-bulb fluid temperature rated to -65 °F (-55 °C)
- Patents Pending

Material Standards:
- Sprinkler Body: Brass UNS-C84400
- Deflector: Copper UNS-C19500
- Deflector Pins: Stainless Steel Alloy
- Bulb: Glass, nominal 3 mm diameter
- Pip Cap: Leaded Bronze UNS-C31400 or UNS-C31600, or 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, pin-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
Viking Sprinklers VK632 and VK634 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: SPRINKLER ORDERING INFORMATION**

Instructions: Using the sprinkler base part number,
(1) add the suffix for the desired Finish
(2) add the suffix for the desired Temperature Rating.
(3) Select a cover plate (See Table 2)

<table>
<thead>
<tr>
<th>SIN</th>
<th>Sprinkler Base Part Number</th>
<th>Size</th>
<th>1: Finishes</th>
<th>2: Temperature Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Description</td>
<td>Nominal Rating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>NPT Inch BSPT mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>VK632</td>
<td>14613</td>
<td>1/2</td>
<td>Brass A</td>
<td>135 °F (57 °C)</td>
</tr>
<tr>
<td>VK634</td>
<td>14535^</td>
<td>3/4</td>
<td>ENT 2,3,6 JN</td>
<td>175 °F (79 °C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3/4</td>
<td>ENT 2,3,6 JN</td>
<td>200 °F (93 °C)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1/2</td>
<td>Brass A</td>
<td>155 °F (68 °C)</td>
</tr>
</tbody>
</table>

**Corrosion Resistant Sprinkler Finish: ENT 2,3,6**

Example: 14613JNE = VK632 1/2” NPT, 200 °F (93 °C) Temperature Rated Sprinkler with an Electroless Nickel PTFE (ENT 2,3,6) finish.

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**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. cULus Listed as corrosion resistant.
3. The corrosion resistant and corrosion proofing coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Chart. 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.
4. Requires a ½” ratchet (not available from Viking).
5. Also optional for removal of the protective cap. Ideal for sprinkler cabinets.
6. The ENT finish is NOT available and NOT cULus Listed for 135 °F (57 °C) temperature-rated sprinklers.
7. Part number 14535 (VK634) is not available with ENT finish.
### 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.

<table>
<thead>
<tr>
<th>Cover Plate Base Part Number(^a)</th>
<th>Size Inch (mm)</th>
<th>Style</th>
<th>Description</th>
<th>Suffix(^b)</th>
<th>Temperature Rating Matrix(^1,2)</th>
<th>Sprinkler Nominal Rating / Temperature Classification</th>
<th>Sprinkler Max. Ambient Ceiling Temperature(^2,3)</th>
<th>Suffix</th>
</tr>
</thead>
<tbody>
<tr>
<td>23190</td>
<td>2-3/4 (70)</td>
<td>Round</td>
<td>Polished Chrome</td>
<td>F</td>
<td>135 °F (57 °C) / ORD</td>
<td>100 °F (38 °C)</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>23174</td>
<td>3-5/16 (84)</td>
<td>Round</td>
<td>Brushed Chrome</td>
<td>F-/B</td>
<td>155 °F (68 °C) / ORD</td>
<td>100 °F (38 °C)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23179</td>
<td>3-5/16 (84)</td>
<td>Square</td>
<td>Bright Brass</td>
<td>B</td>
<td>165 °F (74 °C)</td>
<td>175 °F (79 °C) / INT</td>
<td>150 °F (65 °C)</td>
<td>C</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Antique Brass</td>
<td>B-/A</td>
<td></td>
<td>200 °F (93 °C) / INT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brushed Brass</td>
<td>B-/B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Brushed Copper</td>
<td>E-/B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Painted White</td>
<td>M-/W</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Painted Ivory</td>
<td>M-/I</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Painted Black</td>
<td>M-/B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Example:** 23190MC/W = 165 °F (74 °C) Temperature Rated 2-3/4" (70 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 150 °F (65 °C).
4. Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.
5. Where a dash (-) is shown in the Finish suffix designation, insert the desired Temperature Rating suffix. See example above.
6. Square cover plate 23179 cULus Listing is for the 135 °F (57 °C) temperature rated cover plate only. Refer to the Approval Chart.
## Approval Chart

**Mirage® QR Extended Coverage Concealed Pendent Sprinklers**  
For Light Hazard Occupancies Only.  
Maximum 175 PSI (12 Bar) WWP

<table>
<thead>
<tr>
<th>Sprinkler Base Part Number¹</th>
<th>SIN</th>
<th>Part Number</th>
<th>Thread Size</th>
<th>Nominal K-Factor</th>
<th>Maximum Areas of Coverage</th>
<th>Minimum Water Supply Requirements</th>
<th>Listings and Approvals² (Refer also to Design Criteria)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>14613</td>
<td>VK632</td>
<td>1/2</td>
<td>16’ x 16’ (4.9 m x 4.9 m)</td>
<td>26 gpm @ 21.6 psi (98.4 L/min @ 1.49 Bar)</td>
<td>AW1, BX1 -- See Footnote 6.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14613</td>
<td>VK632</td>
<td>1/2</td>
<td>18’ x 18’ (5.5 m x 5.5 m)</td>
<td>33 gpm @ 34.7 psi (124.9 L/min @ 2.39 Bar)</td>
<td>AW1, BX1 -- See Footnote 6.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14613</td>
<td>VK632</td>
<td>1/2</td>
<td>20’ x 20’ (6.1 m x 6.1 m)</td>
<td>40 gpm @ 51.0 psi (151.4 L/min @ 3.52 Bar)</td>
<td>CW1, DX1 -- See Footnote 6.</td>
</tr>
<tr>
<td>Large Orifice</td>
<td></td>
<td>14535¹⁰</td>
<td>VK634</td>
<td>3/4</td>
<td>16’ x 16’ (4.9 m x 4.9 m)</td>
<td>26 gpm @ 10.6 psi (98.4 L/min @ 0.73 Bar)</td>
<td>AW1, BX1 -- See Footnote 6.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14535¹⁰</td>
<td>VK634</td>
<td>3/4</td>
<td>18’ x 18’ (5.5 m x 5.5 m)</td>
<td>33 gpm @ 17.0 psi (124.9 L/min @ 1.17 Bar)</td>
<td>AW1, BX1 -- See Footnote 6.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14535¹⁰</td>
<td>VK634</td>
<td>3/4</td>
<td>20’ x 20’ (6.1 m x 6.1 m)</td>
<td>40 gpm @ 25.0 psi (151.4 L/min @ 1.72 Bar)</td>
<td>CW1, DX1 -- See Footnote 6.</td>
</tr>
</tbody>
</table>

### Sprinkler Temperature Ratings

- A - 135 °F (57 °C)³ and 155 °F (68 °C)³
- B - 175 °F (79 °C)³ and 200 °F (93 °C)³
- C - 135 °F (57 °C)³
- D - 175 °F (79 °C)³

### Cover Plate Temperature Ratings

- W - 135°F (57°C) cover 23190¹, or 23174¹ (large diameter)
- X - 165°F (74°C) cover 23190¹, or 23174¹ (large diameter)

### Cover Plate Finishes⁴

1. Polished Chrome, Brushed Chrome, Bright Brass, Antique Brass, Brushed Brass, Brushed Copper, Painted White, Painted Ivory, and Painted Black

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**Notes:**

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.
7. The 135 °F (57 °C) cover has an orange label. The 165 °F (74 °C) cover has a white label.
8. 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.
9. The ENT finish is NOT available and NOT cULus Listed for 135 °F (57 °C) temperature-rated sprinklers.
10. Part number 14535 (VK634) is not available with ENT finish.

** NOTE:** Custom colors are indicated on a label inside the cover assembly. Refer to Figure 1.
cULus Listing Requirements: Mirage® Quick Response Extended Coverage Concealed Pendent Sprinklers VK632 and VK634 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, 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 Bulletin 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, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

Figure 3: Sprinkler Installation and Proper Wrench Usage

** A 1/2" ratchet is required (Not available from us.)
Figure 4: Sprinkler Dimensions and Cover Installation-VK632

Figure 5: Sprinkler Dimensions and Cover Installation-VK634

NOTE: Upon sprinkler activation, the deflector descends to approximately 13/16” (21 mm) below the sprinkler body.