1. DESCRIPTION
Viking EC/QREC Pendent Sprinkler VK534 is a thermosensitive spray sprinkler available in several different finishes and temperature ratings to meet varying design requirements. The extra-large orifice produces the flows required to meet Light and Ordinary Hazard density requirements at lower pressures than standard orifice or large orifice sprinklers. The glass bulb operating element and special deflector characteristics meet the challenges of quick response extended coverage standards. Pendent Sprinkler VK534 is cULus Listed as standard and quick response. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, ENT coating has been investigated for installation in corrosive atmospheres. See Approval Charts.

2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV
Refer to Approval Chart 1 and Design Criteria cULus Listing requirements.

3. TECHNICAL DATA

Specifications:
- Minimum Operating Pressure: Refer to the Approval Charts.
- Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).
- Factory tested hydrostatically to 500 psi (34.5 bar).
- Thread size: 3/4" (20 mm) NPT
- Nominal K-Factor: 11.2 U.S. (161.3 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)
- Overall Length: 2-3/8" (61 mm)

Material Standards:
- Sprinkler Frame: Brass UNS-C84400
- Deflector: Brass UNS-C26000
- Bulb: Glass, nominal 3 mm diameter
- Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
- Screw: Brass UNS-C36000
- Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
- For Polyester Coated Sprinklers: Belleville Spring-Exposed
- For ENT Coated Sprinkler: Belleville Spring-Exposed, Screw and Pipcap-ENT plated.

Ordering Information: (Also refer to the current Viking price list.)
Order Viking EC/QREC Pendent Sprinkler VK534 by first adding the appropriate suffix for the sprinkler finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.
- Finish Suffix: Brass = A, Chrome = F, White Polyester = M-/W, Black Polyester = M-/B, and ENT = JN
- Temperature Suffix: 135 °F (57 °C) = A, 155 °F (68 °C) = B, 175 °F (79 °C) = D, 200 °F (93 °C) = E, and 286 °F (141 °C) = G
For example, sprinkler VK534 with a Brass finish and a 155 °F (68 °C) temperature rating = Part No. 08340AB

Available Finishes And Temperature Ratings:
Refer to Table 1.

Accessories: (Also refer to the Viking website)

Sprinkler Wrenches:
- A. Standard Wrench: Part No. 05118CW/B (available since 1981)
- B. Wrench for recessed pendent sprinkler: Part No. 11663W/B** (available since 2001)
  **A ½" ratchet is required (not available from Viking).

Sprinkler Cabinets:
- A. Six-head capacity: Part No. 01724A (available since 1971)
- B. Twelve-head capacity: Part No. 01725A (available since 1971)

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
Viking EC/QREC Pendent Sprinkler VK534 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

<table>
<thead>
<tr>
<th>Sprinkler Temperature Classification</th>
<th>Sprinkler Nominal Temperature Rating</th>
<th>Maximum Ambient Ceiling Temperature</th>
<th>Bulb Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary</td>
<td>135 °F (57 °C)</td>
<td>100 °F (38 °C)</td>
<td>Orange</td>
</tr>
<tr>
<td>Ordinary</td>
<td>155 °F (68 °C)</td>
<td>100 °F (38 °C)</td>
<td>Red</td>
</tr>
<tr>
<td>Intermediate</td>
<td>175 °F (79 °C)</td>
<td>150 °F (65 °C)</td>
<td>Yellow</td>
</tr>
<tr>
<td>Intermediate</td>
<td>200 °F (93 °C)</td>
<td>150 °F (65 °C)</td>
<td>Green</td>
</tr>
<tr>
<td>High</td>
<td>286 °F (141 °C)</td>
<td>225 °F (107 °C)</td>
<td>Blue</td>
</tr>
</tbody>
</table>

Sprinkler Finishes: Brass, Chrome, White Polyester\(^3\), Black Polyester\(^3\), and ENT

Corrosion-Resistant Coatings\(^4\): ENT

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 For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester coatings.
4 The corrosion-resistant 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 ENT sprinklers, all exposed surfaces and the waterway are coated, but note that the spring is exposed.

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** A 1/2" ratchet is required (not available from Viking)

Step 1: Carefully slide the wrench sideways around the deflector, ensuring engagement with the sprinkler wrench flats.

Step 2: Carefully press the wrench upward and ensure engagement with the sprinkler wrench flats.

Figure 2: Wrench 11663W/B for Recessed Pendent Sprinkler VK534
## Approval Chart 1 (UL)
SR/QR EC Pendent Sprinkler VK534

<table>
<thead>
<tr>
<th>Sprinkler Base Part Number*</th>
<th>SIN</th>
<th>NPT Thread Size</th>
<th>Nominal K-Factor</th>
<th>Maximum Water Working Pressure</th>
<th>Overall Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>08340 Pendent VK534</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Max. Sprinkler Spacing (L x W)

<table>
<thead>
<tr>
<th>Max. Sprinkler Spacing (L x W)</th>
<th>Minimum Water Supply Requirements</th>
<th>Listings and Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Light Hazard</td>
<td>Ordinary Hazard Group I</td>
</tr>
<tr>
<td></td>
<td>Flow / Pressure</td>
<td>Flow / Pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 ft. x 16 ft. (4.9 m x 4.9 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 ft. x 18 ft. (5.5 m x 5.5 m)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 ft. x 20 ft. (6.1 m x 6.1 m)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Standard Response

<table>
<thead>
<tr>
<th>12 ft. x 12 ft. (3.7 m x 3.7 m)</th>
<th>13 ft. x 13 ft. (4.0 m x 4.0 m)</th>
<th>14 ft. x 14 ft. (4.3 m x 4.3 m)</th>
<th>15 ft. x 15 ft. (4.5 m x 4.5 m)</th>
<th>16 ft. x 16 ft. (4.9 m x 4.9 m)</th>
<th>17 ft. x 17 ft. (5.1 m x 5.1 m)</th>
<th>18 ft. x 18 ft. (5.5 m x 5.5 m)</th>
<th>20 ft. x 20 ft. (6.1 m x 6.1 m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>256 ft² (23.8 m²)</td>
<td></td>
<td>144 ft² (13.4 m²)</td>
<td></td>
<td>196 ft² (18.2 m²)</td>
<td></td>
<td>256 ft² (23.8 m²)</td>
<td></td>
</tr>
<tr>
<td>30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)</td>
<td></td>
<td>30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)</td>
<td></td>
<td>30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)</td>
<td></td>
<td>30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)</td>
<td></td>
</tr>
</tbody>
</table>

### Quick Response

<table>
<thead>
<tr>
<th>12 ft. x 12 ft. (3.7 m x 3.7 m)</th>
<th>13 ft. x 13 ft. (4.0 m x 4.0 m)</th>
<th>14 ft. x 14 ft. (4.3 m x 4.3 m)</th>
<th>15 ft. x 15 ft. (4.5 m x 4.5 m)</th>
<th>16 ft. x 16 ft. (4.9 m x 4.9 m)</th>
<th>17 ft. x 17 ft. (5.1 m x 5.1 m)</th>
<th>18 ft. x 18 ft. (5.5 m x 5.5 m)</th>
<th>20 ft. x 20 ft. (6.1 m x 6.1 m)</th>
</tr>
</thead>
<tbody>
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<td>144 ft² (13.4 m²)</td>
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<td></td>
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<td></td>
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<td></td>
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<tr>
<td>30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)</td>
<td></td>
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<td></td>
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<td></td>
<td>30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)</td>
<td></td>
</tr>
</tbody>
</table>

### Approved Temperature Ratings

- A - 135 °F (57 °C) and 175 °F (79 °C)
- B - 135 °F (57 °C), 155 °F (68 °C), and 175 °F (79 °C)
- C - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)
- D - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)
- E - 155 °F (68 °C) and 200 °F (93 °C)
- F - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)
- G - 175 °F (79 °C)

### Approved Escutcheons

- W - Standard surface-mounted escutcheons only
- Y - Standard surface-mounted escutcheons or the Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Micromatic® Model E-1, E-2, or E-3 Recessed Escutcheon
- Z - Standard surface-mounted escutcheons or the Micromatic Model E-1 Recessed Escutcheon

### Approved Finishes

1. Brass, Chrome, White Polyester, and Black Polyester
2. ENT®

### 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 listings and approvals available at time of printing. Check with the manufacturer for any additional approvals.
4 cULus Listed for use in the U.S. and Canada.
5 To determine “Minimum Water Supply Requirement” for areas of coverage where length and width of actual sprinkler spacing are not equal, select the “Maximum Sprinkler Spacing” from the chart that is equal to or greater than the larger of the actual spacing (length or width) dimensions used. Example: When using 10'-6" x 14'-0" sprinkler spacing, provide the “Minimum Water Supply Requirement” listed in the chart for 14'-0" x 14'-0" spacing. For areas of coverage smaller than shown, use the “Minimum Water Supply Requirement” in the appropriate hazard group for the next larger area listed. The distance from sprinklers to walls shall not exceed one-half the “Maximum Sprinkler Spacing” listed for the “Minimum Water Supply Requirement” used.
6 cULus Listed as corrosion-resistant.
DESIGN CRITERIA - UL
(Also refer to Approval Chart 1.)

cULus Listing Requirements:
EC-EL Pendent Sprinkler VK534 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for extended coverage pendent spray sprinklers as indicated below:

- The minimum water supplies and maximum areas of coverage shown in Approval Chart 1 are designed to provide the following design densities: 0.10 gpm/ft² (4.1 mm/min) for Light Hazard densities; 0.15 gpm/ft² (6.1 mm/min) for Ordinary-Hazard Group I densities; 0.2 gpm/ft² (8.1 mm/min) for Ordinary-Hazard Group II densities.
- The sprinkler installation rules contained in NFPA 13 for extended coverage pendent spray sprinklers must be followed.
- Viking EC-EL Pendent Sprinklers are cULus Listed for use in unobstructed construction, and noncombustible obstructed construction consisting of solid steel and/or concrete beams as defined in the latest edition of NFPA 13.
- Ceiling slope not to exceed 2/12 (9.5°).

Also, Viking ECOH-EL Pendent Sprinkler VK534 is specifically cULus Listed for Ordinary Hazard Occupancies:

- For non-combustible obstructed construction within trusses or bar joists having non-combustible web members greater than 1” (25.4 mm) when applying the 4 times obstruction criteria rule as defined in NFPA 13 under “Obstructions to Sprinkler Discharge Pattern Development”.
- For installation under concrete tees when installed as follows:
  1. The stems of the concrete tee construction must be spaced between 3 ft (0.9 m) and 7 ft-6 in (2.3 m) on center. The depth of the concrete tees must not exceed 30 in (762 mm). The maximum permitted concrete tee length is 32 ft (9.8 m). However, where the concrete tee length exceeds 32 ft (9.8 m), non-combustible baffles, equal in height to the depth of the tees, can be installed so that the space between the tees does not exceed 32 ft (9.8 m).
  2. The sprinkler deflector is to be located in a horizontal plane at or above 1” (25.4 mm) below the bottom of the concrete tee stems.

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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.
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 www.vikinggroupinc.com

Figure 3: Sprinkler Dimensions with a Standard Escutcheon

Figure 4: Sprinkler Dimensions with the Model E-1 and E-2 Recessed Escutcheons