1. DESCRIPTION
The Viking Quick Response Fusible Element ELO Upright Sprinkler VK533 is a thermostsensitive fusible element type spray sprinkler available in several different finishes and temperature ratings to meet design requirements. The special Polyester and PTFE® coatings can be used in decorative applications where colors are desired.

The extra-large orifice provides greater flows at lower pressures than standard orifice or large orifice sprinklers. This feature allows reduced pipe sizing for hydraulically calculated sprinkler systems, which require high densities of water. Viking Quick Response ELO Sprinklers may eliminate the need for a fire pump or reduce the size of the pump if it is required. On existing systems, replacing large orifice sprinklers with extra-large orifice sprinklers may provide the higher densities required to allow an increase in the hazard classification of an occupancy.

2. LISTINGS AND APPROVALS

 cULus Listed: Category VNIV

Refer the Approval Chart and Design Criteria requirements that must be followed.

3. TECHNICAL DATA

Specifications:
Available since 2007.
Maximum Working Pressure: 175 psi (12 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 when pressure is measured in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.

Overall Length: 2-5/16" (58.7 mm)

Material Standards:
Sprinkler Frame: Brass UNS-C84400
Deflector: Brass UNS-C26000
Fusible Element Assembly: Nickel Alloy
Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
Compression Screw: Brass UNS-C36000
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
For PTFE® Coated Sprinklers: Belleville Spring-Exposed, Screw-Nickel Plated, Pip Cap-PTFE® Coated
For Polyester Coated Sprinklers: Belleville Spring-Exposed

Ordering Information: (Also refer to the current Viking price list.)
Order Quick Response Fusible Element ELO Upright Sprinkler VK533 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, Black PTFE® = N
Temperature Suffix: 165 °F (74 °C) = C, 205 °F (96 °C) = E, and 280 °F (138 °C) = G

For example, sprinkler VK533 with a Brass finish and a 165 °F (74 °C) temperature rating = Part No. 13978AC

Available Finishes And Temperature Ratings:
Refer to Table 1.

Accessories: (Also refer to the Viking website.)

Sprinkler Wrenches:
B. Wrench for coated sprinklers: Part No. 11663W/B** (available since 2001)

**A ½" ratchet is required (not available from Viking).

Sprinkler Cabinets:
4. INSTALLATION
Refer to appropriate NFPA Installation Standards.

5. OPERATION
During fire conditions, the heat-sensitive fusible element assembly disengages, releasing the seat and spring assemblies to open the waterway. 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 Quick Response ELO Upright 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

<table>
<thead>
<tr>
<th>Sprinkler Temperature Classification</th>
<th>Sprinkler Nominal Temperature Rating(^1)</th>
<th>Maximum Ambient Ceiling Temperature(^2)</th>
<th>Frame Paint Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ordinary</td>
<td>165 °F (74 °C)</td>
<td>100 °F (38 °C)</td>
<td>None</td>
</tr>
<tr>
<td>Intermediate</td>
<td>205 °F (96 °C)</td>
<td>150 °F (65 °C)</td>
<td>White</td>
</tr>
<tr>
<td>High</td>
<td>280 °F (138 °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 Black PTFE\(^3\)

Footnotes
1 Decorative sprinklers may not be color coded. The 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 and PTFE\(^\circ\) coatings. For PTFE\(^\circ\) coated open sprinklers only, the waterway is coated.

**Approval Chart**

Quick Response Fusible Element Extra-Large Orifice Upright Sprinkler VK533

Maximum 175 PSI (12 Bar) WWP

<table>
<thead>
<tr>
<th>Base Part Number(^1)</th>
<th>SIN</th>
<th>Sprinkler Style</th>
<th>Thread Size</th>
<th>Nominal K-Factor</th>
<th>Overall Length</th>
<th>Listings and Approvals(^3) (Refer also to Design Criteria on pg 70z.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>13978</td>
<td>VK533</td>
<td>Upright</td>
<td>3/4&quot;</td>
<td>20 mm</td>
<td>11.2</td>
<td>161.3 2-5/16 58.7 A1 -- -- cULus(^4,5) FM NYC</td>
</tr>
</tbody>
</table>

Approved Temperature Ratings
A - 165 °F (74 °C), 205 °F (96 °C), 280 °F (138 °C)

Approved Finishes
1 - Brass, Chrome, White Polyester\(^4\), Black Polyester\(^6\), and Black PTFE\(^5\)

Footnotes
1 Base part number shown. For complete part number, refer to Viking's current price 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 table shows the listings and approvals available at the time of printing. Other approvals may be in process.
4 Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.
5 cULus-Listed only for use in wet pipe sprinkler systems (or preaction systems qualifying as wet systems).
6 Other colors are available on request with the same Listings and Approvals as the standard colors.
cULus Listing Requirements:
Quick Response Fusible Element ELO Upright Sprinkler VK533 is cULus Listed for installation in accordance with the latest edition of NFPA 13 for standard upright spray sprinklers:
• Designed for use in hazard occupancies up to and including Ordinary Hazard Group II with a minimum operating pressure of 7 psi (0.5 bar).
• Also Listed for use in High-Piled Storage Occupancies as defined in NFPA 13 with a minimum operating pressure of 7 psi (0.5 bar).
• Listed only for use in wet pipe sprinkler systems (or preaction systems qualifying as wet systems).
• The sprinkler installation and obstruction rules contained in NFPA 13 for standard spray upright sprinklers must be followed.

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.

Figure 3: Wrench 11663W/B for Coated Sprinkler VK533

Sprinkler Wrench
11663WB** for installing coated Sprinkler VK533

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

Step 1: Carefully slide the wrench sideways around the deflector

Step 2: Carefully press the wrench onto the wrench flats.