1. DESCRIPTION

Viking Quick Response Extended Coverage Horizontal Sidewall Sprinkler VK638 is a thermosensitive spray sprinkler available in several different finishes and temperature ratings to meet varying design requirements. The glass bulb operating element and special deflector characteristics meet the challenges of quick response extended coverage standards. The special Polyester and Polytetrafluoroethylene (PTFE) coatings can be used in decorative applications where colors are desired. In addition, these finishes are cULus listed as corrosion resistant as indicated in the Approval Chart.

2. LISTINGS AND APPROVALS

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3. TECHNICAL DATA

Specifications:
Available since 2012.
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: 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)
Overall Length: 2-3/4” (70 mm)
Covered by the following US Patent Nos: 7,854,269; 7,712,218; and 8,662,190

Material Standards:
Sprinkler Frame: Brass UNS-C84400
Flow Shaper: Brass UNS-C23000
Bulb: Glass, nominal 3 mm diameter
Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
Compression Screws: 18-8 Stainless Steel
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
Yoke: Bronze UNS-C51000
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 Sprinkler VK638 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 Black PTFE = N
Temperature Suffix: 135 °F (57 °C) = A, 155 °F (68 °C) = B, 175 °F (79 °C) = D, 200 °F (93 °C) = E
For example, sprinkler VK638 with a Brass finish and a 155 °F (68 °C) temperature rating = Part No. 17375AB.

Available Finishes And Temperature Ratings: Refer to Table 1.
Accessories: (Also refer to the Viking website.)
Sprinkler Wrenches:
A. Standard Wrench: Part No. 21475M/B (available since 2017)
B. Wrench for coated and/or recessed sprinklers: Part No. 13655W/B†† (available since 2006)
††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 bulb to shatter, releasing the yoke, pip cap, and sealing spring assembly. Water flowing through the sprinkler orifice strikes the sprinkler flow shaper, 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 Sprinkler VK638 is available through a network of domestic and international distributors. See The Viking Corporation website 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>
</tbody>
</table>

Available Sprinkler Finishes: Brass, Chrome, White Polyester, Black Polyester, and Black PTFE

Corrosion-Resistant Coatings: White Polyester, Black Polyester, and Black PTFE

**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. The corrosion-resistant coatings have passed standard corrosion tests required by particular approving agencies as 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. The coatings indicated are applied to the exposed exterior surfaces only. For PTFE coated open sprinklers only, the waterway is coated.

**NOTE:** The spring is exposed on sprinklers with PTFE and Polyester coatings.
## TECHNICAL DATA

### QUICK RESPONSE EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER VK638 (K8.0)

- 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

### TECHNICAL DATA

<table>
<thead>
<tr>
<th>Sprinkler Base Part Number¹</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></td>
<td>Inches mm</td>
<td>U.S. mm</td>
<td></td>
<td>Inches mm</td>
</tr>
<tr>
<td>17375</td>
<td>3/4 20</td>
<td>8.0 115.2</td>
<td>175 psi (12 Bar)</td>
<td>2-3/4 70</td>
</tr>
</tbody>
</table>

### Approval Chart

**Quick Response Extended Coverage HSW Sprinkler VK638**

For Light Hazard Occupancies Only.

For installation below smooth, flat, horizontal ceilings only.

<table>
<thead>
<tr>
<th>Maximum Areas of Coverage² (Width x Throw)</th>
<th>Minimum Water Supply Requirements³</th>
<th>Deflector-to-Ceiling Distance</th>
<th>Listings and Approvals⁴ (Refer also to Design Criteria below.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>28' x 12' (8.5 m x 3.7 m)</td>
<td>34 gpm @ 18.1 psi (128.7 L/min @ 1.24 Bar)</td>
<td>4 to 12&quot; (102 to 305 mm)</td>
<td>cULus³  FM  NYC</td>
</tr>
<tr>
<td>28' x 14' (8.5 m x 4.3 m)</td>
<td>40 gpm @ 25.0 psi (151.4 L/min @ 1.73 Bar)</td>
<td>4 to 12&quot; (102 to 305 mm)</td>
<td>A1X  --  See Footnote 6.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Approved Temperature Ratings</th>
<th>Approved Finishes</th>
<th>Approved Escutcheons</th>
</tr>
</thead>
<tbody>
<tr>
<td>A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)</td>
<td>1 - Brass, Chrome, White Poly-ester⁵, Black Polyester⁵, and Black PTFE⁵</td>
<td>X - Standard surface-mounted escutcheon or Recessed with the Viking Micromatic® Model E-1 or E-2 Recessed Escutcheon, or the Model G-1 Recessed Escutcheon.</td>
</tr>
</tbody>
</table>

### 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. 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.
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, Inc. for use in the U.S. and Canada for Light-Hazard occupancies with smooth, flat, horizontal ceilings only.
7. cULus Listed as corrosion resistant.

### DESIGN CRITERIA

(Also refer to the Approval Chart above.)

**cULus Listing Requirements:**

Quick Response Extended Coverage HSW Sprinkler VK638 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for extended coverage sidewall spray sprinklers:

- Limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
- Locate the the deflector 4" to 12" (102 mm to 305 mm) below the ceiling. Install with the leading edge of the deflector oriented parallel to the ceiling and with the sprinkler frame arms oriented perpendicular to the ceiling (see Figure 3). THE TOP SURFACE OF THE DEFLECTOR IS MARKED “TOP”. The sprinkler must be oriented as shown in Figure 3.
- Minimum distance between sprinklers is 12 ft. (3.7 m).
- Minimum distance from end walls is 4 in. (102 mm).
- Maximum distance from the end wall 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 sidewall spray 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, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.
Figure 2:
Installation of Coated and/or Recessed Sprinkler VK638

Figure 3:
Correct Deflector Orientation
Figure 4:
Sprinkler VK638 Installed