1. DESCRIPTION
The Viking Microfast® Quick Response Fusible Element Pendent Sprinkler VK330 is a small, thermosensitive, solder link spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester, Polytetrafluoroethylene (PTFE) and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, the ENT coating has been investigated for installation in corrosive environments and is listed/approved as indicated in the Approval Charts.

2. LISTINGS AND APPROVALS
- **cULus Listed:** Category VNIV
- **FM Approved:** Class Series 2000

Refer to the Approval Charts and Design Criteria for Listing/Approval requirements that must be followed.

3. TECHNICAL DATA
   **Specifications:**
   - Minimum Operating Pressure: 7 psi (0.5 bar)
   - Rated to 175 psi (12 bar) water working pressure
   - Factory tested hydrostatically to 500 psi (34.5 bar)
   - Thread size: 1/2” NPT, 15 mm BSPT
   - Nominal K-Factor: 2.8 U.S. (40.3 metric**)
   - Overall Length: 2-1/4” (58 mm)

   *cULus Listing, FM Approval, and NFPA 13 installs require a minimum of 7 psi (0.5 bar). The minimum operating pressure for LPCB and CE Approvals ONLY is 5 psi (0.35 bar).

   **Material Standards:**
   - Frame Casting: Brass UNS-C84400 or QM Brass
   - Deflector: Brass UNS-C26000
   - Bushing: Brass UNS-C36000
   - Fusible Element Assembly: Nickel Alloy
   - Trigger and Support: Stainless Steel UNS-S31600
   - Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
   - Seat and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400
   - Screw: Brass UNS-C36000

   **For PTFE Coated Sprinklers:** Belleville Spring-Exposed, Screw-Nickel Plated, Pip Cap-PTFE Coated
   **For Polyester Coated Sprinklers:** Belleville Spring-Exposed
   **For ENT Coated Sprinklers:** Belleville Spring-Exposed, Screw and Pip Cap ENT Plated

   **Ordering Information:** (Also refer to the current Viking price list.)
   Order Viking Microfast® Quick Response Fusible Element Pendent Sprinkler VK330 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, and ENT = JN
   **Temperature Suffix:** 165 °F (74 °C) = C, 205 °F (96 °C) = E, and 280 °F (138 °C) = JN

   For example, sprinkler VK330 with a 1/2” NPT thread, Brass finish and a 165 °F (74 °C) temperature rating = Part No. 13959AB

   **Available Finishes And Temperature Ratings:** Refer to Table 1.

   **Accessories:** (Also refer to the Viking website.)
   - Sprinkler Wrenches (See Figure 1):
   - B. Socket Wrench for Recessed Pendent Sprinklers: Part No. 13577W/B** (available since 2006)
   - C. Optional Protective Sprinkler Cap Remover/Escutcheon Installer Tool*** Part No. 15915 (available since 2010)

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

   1. Replaces form F_071014 Rev. 19.2
   2. (Added ENT; updated FM language.)
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 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 Microfast® Quick Response Pendent Sprinkler VK330 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.

Figure 1: Sprinkler Wrenches
### MICROFAST® QUICK RESPONSE FUSIBLE ELEMENT PENDENT SPRINKLER VK330 (K2.8)

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 Temperature Classification</th>
<th>Sprinkler Nominal Temperature Rating</th>
<th>Maximum Ambient Ceiling Temperature</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<sup>5</sup>, Black Polyester<sup>5</sup>, Black PTFE<sup>5</sup>, and ENT<sup>3,4</sup>

**Corrosion Resistant Sprinkler Coatings:** ENT<sup>3,4</sup>

### 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 the standard corrosion test required by the approving agencies indicated in the Approval Chart(s). 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. Note that the spring is exposed on sprinklers with ENT coatings. For ENT coated automatic sprinklers, the waterway is coated.
4. cULus Listed as corrosion resistant.
5. 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 coatings.

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**Sprinkler wrench 13577W/B**

**for recessed pendent sprinklers**

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

**Carefully slide the wrench sideways around the protective cap, ensuring engagement with the sprinkler wrench flats**

**Figure 2: Socket Wrench for Recessed Pendent Sprinklers 13577W/B**
### Approval Chart 1 (UL)

The Viking Microfast® Quick Response Pendent Sprinkler VK330 is UL Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

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### Base Part Number

<table>
<thead>
<tr>
<th>Base Part Number</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</th>
</tr>
</thead>
<tbody>
<tr>
<td>13959a</td>
<td>VK330</td>
<td>Pendent</td>
<td>1/2&quot;</td>
<td>2.8</td>
<td>40.3</td>
<td>2-1/4</td>
</tr>
<tr>
<td>20985</td>
<td>VK330</td>
<td>Pendent</td>
<td>1/2&quot;</td>
<td>2.8</td>
<td>40.3</td>
<td>2-1/4</td>
</tr>
</tbody>
</table>

### Approved Temperature Ratings

A - 165 °F (74 °C), 205 °F (96 °C), and 280 °F (138 °C)

B - 165 °F (74 °C) and 205 °F (96 °C)

### Approved Finishes

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

### Approved Escutcheons

X - Standard surface-mounted escutcheon or recessed with the Viking Micromatic® Model E-1 Recessed Escutcheon

Y - Standard surface-mounted escutcheon or recessed with the Viking Micromatic® Model E-1, E-2, or E-3 Recessed Escutcheon

Z - Standard surface-mounted escutcheon

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### 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. Other colors are available on request with the same Listings and Approvals as the standard colors.
6. The sprinkler orifice is bushed.
7. cULus Listed as corrosion resistant.

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### DESIGN CRITERIA - UL

(Also refer to Approval Chart 1 above.)

### cULus Listing Requirements:

Quick Response Fusible Element Pendent Sprinkler VK330 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for standard spray sprinklers.

- Small orifice sprinklers are limited to Light Hazard where allowed by the installation standards being applied, with hydraulically calculated wet systems only.
- 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).
- Minimum spacing allowed is 6 ft. (1.8 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 rules contained in NFPA 13 for standard spray pendant sprinklers must be followed.

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### 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.
## Approval Chart 2 (FM)
The Viking Microfast® Quick Response Pendent Sprinkler VK330
Maximum 175 PSI (12 Bar) WWP

<table>
<thead>
<tr>
<th>Base Part Number¹</th>
<th>SIN</th>
<th>Sprinkler Style</th>
<th>Thread Size</th>
<th>Nominal K-Factor</th>
<th>Overall Length</th>
<th>FM Approvals³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>NPT  BSPT</td>
<td>U.S.  metric¹</td>
<td>Inches  mm</td>
<td></td>
</tr>
<tr>
<td>13959³</td>
<td>VK330</td>
<td>Pendent</td>
<td>1/2&quot; 15 mm</td>
<td>2.8  40.3</td>
<td>2-1/4 58</td>
<td>A1Y</td>
</tr>
<tr>
<td>20985</td>
<td>VK330</td>
<td>Pendent</td>
<td>1/2&quot; 15 mm</td>
<td>2.8  40.3</td>
<td>2-1/4 58</td>
<td>A1Y</td>
</tr>
</tbody>
</table>

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

### Approved finishes
1 - Brass, Chrome, and ENT

### Approved Escutcheons
Y - Standard surface-mounted escutcheons

### 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 FM Approvals available at the time of printing. Other approvals may be in process.
4. Other colors are available on request with the same Approvals as the standard colors.
5. The sprinkler orifice is bushed.

## DESIGN CRITERIA - FM
(Also refer to Approval Chart 2 above.)

### FM Approval Requirements:
The Viking Microfast® Quick Response Fusible Element Pendent Sprinkler VK330 is FM Approved as quick response **Non-storage** pendent sprinklers 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.

**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: Sprinkler Dimensions with a Standard Escutcheon

Ceiling Opening Size:
- 2-5/16" (59 mm) minimum
- 2-1/2" (64 mm) maximum

Installed with a standard 1/8" surface-mounted escutcheon

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

Ceiling Opening Size:
- 2-5/16" (59 mm) minimum
- 2-1/2" (64 mm) maximum

Installed with a Model E-1 Recessed Escutcheon

Installed with a Model E-2 Thread-on Recessed Escutcheon

(Added ENT; updated FM language.)