1. DESCRIPTION
The Viking Microfast® Quick Response Horizontal Sidewall Sprinkler VK305 is a small thermosensitive glass bulb spray sprinkler available with various finishes and temperature ratings to meet design requirements. The special Polyester and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, these coatings have been investigated for installation in corrosive atmospheres and are listed/approved as corrosion resistant as indicated in Approval Charts.

2. LISTINGS AND APPROVALS
- cULus Listed: Category VNIV
- FM Approved: Class 2020
- CCCF Approved: Approved by the China Certification Center for Fire Products (CCCF)

Refer to Approval Charts and Design Criteria for listing and 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)
- Nominal K-Factor: 5.6 U.S. (80.6 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: 2-3/4” (68 mm)

Material Standards:
- Frame Casting: Brass UNS-C84400 or QM Brass
- Deflector: Copper UNS-C19500
- 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 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 Horizontal Sidewall Sprinkler VK305 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
- For example, sprinkler 12997 with a Brass finish and a 155 °F / 68 °C temperature rating = Part No. 12997AB

Available Finishes And Temperature Ratings: Refer to Table 1.

Accessories:
- (Also refer to the Viking website.)

Sprinkler Wrenches:
- B. Wrench for recessed and/or wax coated 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 fusible link disengages, the pip cap and spring are released, and the waterway is opened. 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 Microfast® Quick Response Horizontal Sidewall Sprinkler VK305 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:
Standard Sprinkler Wrench 21475M/B
### TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

<table>
<thead>
<tr>
<th>Sprinkler Temperature Classification</th>
<th>Sprinkler Nominal Temperature Rating¹</th>
<th>Maximum Ambient Ceiling Temperature²</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, Black Polyester, and ENT

**Corrosion-Resistant Coatings³:** White Polyester, Black Polyester, and 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 The corrosion-resistant coatings have passed the standard corrosion test required by the approving agencies indicated in the Approval Charts. 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 coatings indicated are applied to the exposed exterior surfaces only. For ENT coated sprinklers, the waterway is coated. Note that the spring is exposed on sprinklers with Polyester, and ENT coatings.

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

Sprinkler wrench 13655W/B** must be used for installing wax coated sprinklers.

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

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

**Figure 2:** Wrench 13655W/B for Recessed Sprinklers
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

**MICROFAST® QUICK RESPONSE HORIZONTAL SIDEWALL SPRINKLER VK305 (K5.6)**

**TECHNICAL DATA**

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### Approval Chart 1 (UL)
Microfast® Quick Response Horizontal Sidewall Sprinkler VK305
For Light or Ordinary Hazard Occupancies
Maximum 175 PSI (12 Bar) WWP

Deflector must be located 4” to 12” (102 mm to 305 mm) below the ceiling.

<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>Listings and Approvals²</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>NPT</td>
<td>BSP</td>
<td>Inches</td>
<td>U.S. mm</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>U.S.</td>
<td>metric³</td>
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<td></td>
</tr>
<tr>
<td>12997</td>
<td>VK305</td>
<td>HSW</td>
<td>1/2”</td>
<td>15 mm</td>
<td>5.6</td>
<td>80.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2-11/16</td>
<td>68</td>
<td>A1Y, B1X, C2W, D2Z</td>
</tr>
<tr>
<td>19782</td>
<td>VK305</td>
<td>HSW</td>
<td>1/2”</td>
<td>--</td>
<td>5.6</td>
<td>80.6</td>
<td>2-11/16</td>
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<tr>
<td></td>
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<td>68</td>
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<td></td>
<td>E3</td>
</tr>
</tbody>
</table>

**NOTICE - Product Below - Limited Availability (Contact Local Viking Office)**

<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>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>12121</td>
<td>VK305</td>
<td>HSW</td>
<td>1/2”</td>
<td>15 mm</td>
<td>5.6</td>
<td>80.6</td>
<td>1-11/16</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>68</td>
<td>A1Y, B1X, C2W, D2Z</td>
<td>--</td>
</tr>
</tbody>
</table>

### Approved Temperature Ratings

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

### Approved Finishes

1. Brass, Chrome, White Poly-ester, and Black Polyester
2. EN7
3. Chrome

### Approved Escutcheons

1. Installed with standard surface-mounted escutcheons
2. Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Viking Micromatic® Model E-1, E-2, or G-1 Recessed Escutcheon
3. Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon
4. Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic Model E-1

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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. cULus Listed as corrosion-resistant.
6. Other colors are available on request with the same Listings and Approvals as the standard colors.

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**DESIGN CRITERIA - UL**
(Also refer to Approval Chart 1.)

**cULus Listing Requirements:**

- Quick Response Horizontal Sprinkler VK305 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for sidewall standard spray sprinklers.
- Designed for use in Light and Ordinary Hazard occupancies.
- Locate with the deflector 4” to 12” (102 mm to 305 mm) below the ceiling.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13.
- Minimum spacing allowed is 6 ft. (1.8 m).
- Align the top of the deflector parallel with the ceiling.
- Locate no less than 4” (102 mm) from end walls.
- Maximum distance from end 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 sidewall standard spray sprinklers must be followed.

**IMPORTANT:** Always refer to Bulletin Form No. F_091699 - Care and Handling of Sprinklers. Also refer to 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, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.

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Form No. F_060914   18.10.11   Rev 17.1.P65
Approval Chart 2 (FM)
Quick Response Sidewall Sprinklers
Maximum 175 PSI WWP

<table>
<thead>
<tr>
<th>Base Part Number</th>
<th>SIN</th>
<th>Thread Size</th>
<th>Nominal K-Factor</th>
<th>Overall Length</th>
<th>FM Approvals</th>
</tr>
</thead>
<tbody>
<tr>
<td>12997</td>
<td>VK305</td>
<td>1/2&quot;</td>
<td>15 mm</td>
<td>5.6</td>
<td>80.6</td>
</tr>
<tr>
<td>12121</td>
<td>VK305</td>
<td>1/2&quot;</td>
<td>15 mm</td>
<td>5.6</td>
<td>80.6</td>
</tr>
</tbody>
</table>

**NOTICE - Product Below - Limited Availability (Contact Local Viking Office)**

**Approved Temperature Ratings**

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

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

**Approved Finishes**

1 - Brass

**Approved Escutcheons**

X - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon, or recessed with the Viking Micromatic® Model E-1, E-2, E-3, or G-1 Recessed Escutcheon

Y - Installed with standard surface-mounted escutcheons or the Viking Microfast® Model F-1 Adjustable Escutcheon

**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 Viking vertical sidewall sprinklers may be installed pendent or upright.

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

**FM Approval Requirements:**
Horizontal Sidewall Sprinkler VK305 is FM Approved as a quick response Non-Storage sidewall sprinkler 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 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: Sidewall Sprinkler Dimensions with a Standard Escutcheon and the Model F-1 Adjustable Escutcheon

Wall Opening Size:
2-5/16" (58.7 mm) minimum
2-1/2" (63.5 mm) maximum

Installed with a Standard
1/8” Surface-Mounted Escutcheon

installed with a Microfast
Model F-1 Adjustable Escutcheon

Wall Opening Size:
2-5/16" (58.7 mm) minimum
2-1/2" (63.5 mm) maximum

Figure 4: Sidewall Sprinkler VK305 Dimensions with the Model E-1 and E-2 Recessed Escutcheons

Wall Opening Size:
2-5/16" (58.7 mm) minimum
2-1/2" (63.5 mm) maximum

Installed with the Micromatic Model E-1
Recessed Escutcheon

Installed with the Threaded Model E-2
Recessed Escutcheon

Minimum
1-5/8"
(41 mm)

Maximum
2-1/4" (57 mm)

Minimum
1-3/4"
(45 mm)

Maximum
2-5/8" (67 mm)