1. DESCRIPTION
Viking Standard Response Dry Pendent Sprinklers are thermosensitive spray sprinklers suitable for use in areas subject to freezing. The sprinklers are designed for dry systems and preaction systems where it is necessary to prevent water or condensation from entering the drop nipple before sprinkler operation. They may also be installed in spaces subject to freezing and supplied from a wet system in an adjacent heated area. Viking Standard Response Dry Pendent Sprinklers are available in various finishes and temperature ratings to meet design requirements.

The special Polyester and Electroless Nickel PTFE (ENT) coatings have been investigated for installation in corrosive environments and are listed/approved as indicated in the approval charts.

2. LISTINGS AND APPROVALS
- cULus Listed: Category VNIV
- FM Approved: Classes 2013 and 2015
- NYC Approved: MEA 89-92-E, Volume 37
- LPCB Approved: Ref. No. 096e/06
- CE Certified: Standard EN 12259-1, EC-certificate of conformity 0832-CPR-S0021
- MED Certified: Standard EN 12259-1, EC-certificate 0832-MED-1003
- China Approval: Approved according to China GB Standard

NOTE: Other International approval certificates are available upon request. Refer to Approval Chart 1 and Design Criteria for cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria for FM Approval requirements that must be followed.

3. TECHNICAL DATA
Specifications:
- Available since 1991.
- Minimum Operating Pressure: 7 psi (0.5 bar)*
- Factory tested hydrostatically to 500 psi (34.5 bar)
- Thread size: 1” NPT or 25 mm BSP
- Nominal K-Factor: 5.6 U.S. (80.6 metric**) for all listed and approved lengths.
- Glass-bulb fluid temperature rated to -65 °F (-55 °C)
- Covered by the following U.S. Patents: 8,636,075 and 10,220,231

* 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).

**Metric K-factor measurement shown is when pressure is measured in kPa. When pressure is measured in psi, divide the metric K-factor shown by 10.0.

Material Standards:
- Frame Casting: Brass UNS-C84400
- Deflector: Brass UNS-C26000
- Bulb: Glass, nominal 5 mm diameter
- Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
- Compression Screw: Brass UNS-C36000
- Pip Cap: Brass UNS-C31400 or UNS-C31600
- Pip Cap Adapter: Brass UNS-C36000
- Seat (for Sprinklers VK151, VK155, and VK159 only): Copper UNS-C21000
- Orifice: Copper UNS-C22000 or UNS-C11000 (Copper UNS-C21000 for Sprinklers VK151, VK155, and VK159)
- Gasket (for Sprinklers VK151, VK155, and VK159 only): Buna-N

Form No. F_071591 20.02.19 Rev 20.1
Replaces Form No. F_071591 Rev 19.3
(Revised approval specifications for 20374U.)
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.

Tube: ERW Hydraulic Steel Tube  
Barrel End and Threads (for Sprinklers VK150, VK154, and VK158): QM Brass  
Support (Internal): Stainless Steel UNS-S30400  
Barrel: Steel Pipe UNS-G10260, Electrodeposited Epoxy Base finish  
Sleeve (for Adjustable Standard style only): Brass UNS-C26000 or UNS-C26800

**Escutcheon Materials:**  
Adjustable Standard Dry Escutcheons: Brass UNS-C26000 or UNS-C26800  
Recessed Dry Escutcheons: Cold Rolled Steel UNS-G10080  
ENT Coated Adjustable and Recessed Escutcheons: Stainless Steel UNS-S30400

**Ordering Information:**  
Order Standard Response Dry Pendent Sprinklers by first adding the appropriate suffix for the sprinkler finish, the appropriate suffix for the temperature rating, and then the suffix for the length (“A” dimension) to sprinkler base part number. Order in a specific length noted as the “A” dimension (see Figures 3 through 5). The “A” dimension is the distance from the face of the fitting (tee) to the desired finished surface of the ceiling.

These sprinklers are listed and approved in lengths from 1-1/2” to 45-1/2” (38.1 to 1,156 mm) for the adjustable standard style, 3” to 47” (76.2 to 1,194 mm) for the plain barrel style, and 3-1/4” to 47-1/2” (82.5 to 1,207 mm) for the adjustable recessed style. Lengths exceeding the standard lengths are available, with no approvals, on a “made-to-order” basis: Recessed Dry Pendent up to 65-1/2” (1,664 mm). Adjustable Standard Dry Pendent up to 63-1/2” (1,613 mm). Plain Barrel Dry Pendent up to 65” (1,651 mm). Contact the manufacturer for more information.

Finish Suffix: Brass = A, Chrome = F, White Polyester = M-/W, and ENT = JN  
Temperature Suffix (°F/°C): 155°/68° = B, 175°/79° = D, 200°/93° = E, 286°/141° = G

For example, sprinkler VK154 with 1” NPT Threads, a Chrome finish and a 155 °F/68 °C temperature rating, and “A” length of 10” = Part No. 07740UFB10.

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

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

**Sprinkler Wrenches:**  
A. Standard Wrench: Part No. 07297W/B (available since 1991)  
B. Wrench for recessed sprinklers: Part No. 07565W/B† (available since 1991)  
†A ½" ratchet is required (not available from Viking).

**Sprinkler Guard:** Chrome, with no listings or approvals, for installation on dry pendent sprinklers manufactured after May 1994 only (Part No. 08954).

**Replacement Escutcheons:**  
A. Adjustable Standard Dry Escutcheon: Base Part No. 07741  
B. Recessed Dry Escutcheon Cup: Base Part No. 05459A

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 internal parts 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 Standard Response Dry Pendent 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>Bulb Color</th>
</tr>
</thead>
<tbody>
<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, and ENT

**Corrosion-Resistant Coating\(^3,4\):** White Polyester and ENT in all temperature ratings

### 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 Polyester and ENT 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. Note: These coatings are NOT corrosion proof. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. Polyester and ENT coatings are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester and ENT coatings.
4. When installed in some corrosive environments, the Polyester finish may change color. This natural discoloration over time is not in itself an indication of corrosion and should not be treated as such. All sprinklers installed in corrosive environments should be replaced or tested as described in NFPA 25 on a more frequent basis.

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**Figure 2:** Wrench 07565W/B for Adjustable Recessed Dry Pendent Sprinklers

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*Step 1: Carefully slide the wrench sideways around the sprinkler deflector.

Wrench 07565W/B** must be used for installing recessed dry sprinklers

***3/8" ratchet is required (not available from Viking).*

*Step 2: Carefully press the wrench upward and turn slightly to ensure engagement with the sprinkler wrench flats.*

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The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
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## Approval Chart 1 (UL)

<table>
<thead>
<tr>
<th>Sprinkler Base Part No.¹</th>
<th>SIN</th>
<th>Style</th>
<th>Thread Size</th>
<th>Nominal K-Factor²</th>
<th>Order Length Increment</th>
<th>Listings and Approvals³</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>NPT</td>
<td>BSP U.S. inches</td>
<td>mm</td>
<td>cULus⁴</td>
</tr>
<tr>
<td>07740U VK154</td>
<td></td>
<td>Adjustable</td>
<td>--</td>
<td>5.6 -- 25 mm</td>
<td>1/2&quot; 12.7</td>
<td>A1, A6</td>
</tr>
<tr>
<td>07854U</td>
<td></td>
<td>Standard</td>
<td>--</td>
<td>5.6 -- 25 mm</td>
<td>1/2&quot; 12.7</td>
<td>A1, A6</td>
</tr>
<tr>
<td>09341</td>
<td></td>
<td></td>
<td>--</td>
<td>8.0 -- 1/2&quot;</td>
<td>12.7</td>
<td>--</td>
</tr>
<tr>
<td>06530U VK155</td>
<td></td>
<td>Recessed</td>
<td>--</td>
<td>5.6 -- 25 mm</td>
<td>1/4&quot; 12.7</td>
<td>B3, B7</td>
</tr>
<tr>
<td>07853U</td>
<td></td>
<td>Adjustable</td>
<td>--</td>
<td>8.0 -- 25 mm</td>
<td>1/4&quot; 12.7</td>
<td>B3, B7</td>
</tr>
<tr>
<td>20374U</td>
<td></td>
<td></td>
<td>--</td>
<td>8.0 -- 25 mm</td>
<td>1/4&quot; 12.7</td>
<td>C9</td>
</tr>
<tr>
<td>09342</td>
<td></td>
<td></td>
<td>--</td>
<td>5.6 -- 25 mm</td>
<td>1/4&quot; 12.7</td>
<td>--</td>
</tr>
<tr>
<td>07852U VK150</td>
<td></td>
<td>Plain</td>
<td>--</td>
<td>8.0 -- 25 mm</td>
<td>1/2&quot; 12.7</td>
<td>A4, A8</td>
</tr>
<tr>
<td>07855U</td>
<td></td>
<td>Standard</td>
<td>--</td>
<td>8.0 -- 25 mm</td>
<td>1/2&quot; 12.7</td>
<td>A4, A8</td>
</tr>
<tr>
<td>09343</td>
<td></td>
<td>Barrel</td>
<td>--</td>
<td>6.35 -- 25 mm</td>
<td>1/4&quot; 12.7</td>
<td>--</td>
</tr>
</tbody>
</table>

### Approved Temperature Ratings

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

### Approved Finishes and “A” Dimensions

1. Chrome or White Polyester⁶ sprinkler with a Chrome or White Polyester Sleeve and Escutcheon with “A” dimensions 1-1/2" to 45-1/2" (38.1 mm to 1,156 mm)
2. Chrome with “A” dimensions 1-1/2" to 45-1/2" (38.1 mm to 1,156 mm)
3. Chrome or White Polyester⁶ with “A” dimensions 3-1/4" to 47-1/2" (82.5 mm to 1,207 mm)
4. Chrome, White Polyester⁶, or Brass with “A” dimensions 3” to 47” (76.2 mm to 1,194 mm)
5. Chrome or Brass with “A” dimensions 3” to 47” (76.2 mm to 1,194 mm)
6. ENT³ sprinkler with an ENT³ Sleeve and Escutcheon with “A” dimensions 1-1/2" to 45-1/2" (38.1 mm to 1,156 mm)
7. ENT³ with “A” dimensions 3-1/4" to 47-1/2" (82.5 mm to 1,207 mm)
8. ENT³ with “A” dimensions 3” to 47” (76.2 mm to 1,194 mm)
9. Chrome with “A” dimensions 3-1/4" to 47-1/2" (82.5 mm to 1,207 mm)

### Footnotes

1. Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.
3. 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.
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 for use in the U.S. and Canada.
6. Accepted for use, City of New York Department of Buildings, MEA 89-92-E, Vol. 37.
8. MED Certified, Standard EN 12259-1, EC-certificate 0832-MED-1003.
9. cULus Listed as corrosion resistant.
10. Approved according to China GB Standard.

## Design Criteria - UL

(Also refer to Approval Chart 1 above.)

NOTE: When using CPVC fittings with Viking dry sprinklers, use only new Nibco Model 5012-S-BI tees. When selecting other CPVC fittings, contact Viking Technical Services.

### cULus Listing Requirements:

Standard Dry Pendent Sprinklers are cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for standard spray pendent sprinklers.

- Designed for use in Light, Ordinary, and Extra Hazard occupancies.
- 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) unless baffles are installed in accordance with NFPA 13.
- Locate no less than 4" (102 mm) from walls.
- 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 and obstruction rules contained in NFPA 13 for standard spray pendent 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.

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Form No. F_071591  20.02.19  Rev 20.1
For "A" Dimension:

1. Determine the distance from the face of the tee to the finished ceiling.
2. Round to the nearest 1/2" (12.7 mm) between 1-1/2" and 45-1/2" (381 mm and 1,156 mm).

NOTE: The deflector will be located approximately 3-7/16" (77.8 mm) below the ceiling, with 1" (25.4 mm) upward and 1" (25.4 mm) downward adjustment.

Deflector at minimum distance below ceiling.

Minimum ceiling opening diameter: 1-3/4" (44.5 mm).
Maximum ceiling hole diameter: 2-1/4" (57 mm).

NOTE: To locate the deflector at the minimum distance below the ceiling, with no upward adjustment available, order the dry pendent sprinkler 1" (25.4 mm) shorter than the A dimension.

Figure 3: Adjustable Standard Dry Pendent Sprinkler

For "A" Dimension:

1. Determine the distance from the face of the tee to finished ceiling.
2. Round to the nearest 1/4" (6.35 mm) between 3-1/4" (82.5 mm) and 47-1/2" (1,219 mm).

NOTE: The sprinkler will be recessed approximately 5/16" (7.9 mm) above the finished ceiling, with 5/8" (15.9 mm) vertical adjustment available.

Figure 4: Adjustable Recessed Dry Pendent Sprinkler

For "A" Dimension:

1. Determine distance from face of the tee to the base of the sprinkler.
2. Round up to next higher 1/2" (12.7 mm) increment between 3" (76.2 mm) and 47" (1,194 mm).

Figure 5: Plain Barrel Dry Pendent Sprinkler
The Viking Corporation, 210 N Industrial Park Drive, Hastings MI 49058
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Approval Chart 2 (FM)
Standard Response Standard Orifice Dry Pendent Sprinklers
Maximum 175 PSI (12 bar) WWP

<table>
<thead>
<tr>
<th>Sprinkler Base Part No.</th>
<th>SIN</th>
<th>Style</th>
<th>Thread Size</th>
<th>Nominal K-Factor</th>
<th>Order Length Increment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>NPT</td>
<td>U.S. mm</td>
<td>Inches mm</td>
</tr>
<tr>
<td>07740U</td>
<td></td>
<td>Adjustable</td>
<td>1&quot;</td>
<td>5.6</td>
<td>1/2&quot;</td>
</tr>
<tr>
<td>07854U</td>
<td></td>
<td>Standard</td>
<td>25 mm</td>
<td>80.6</td>
<td>12.7</td>
</tr>
<tr>
<td>06530U</td>
<td></td>
<td>Adjustable</td>
<td>1&quot;</td>
<td>5.6</td>
<td>1/4&quot;</td>
</tr>
<tr>
<td>07853U</td>
<td></td>
<td>Recessed</td>
<td>25 mm</td>
<td>80.6</td>
<td>6.35</td>
</tr>
<tr>
<td>20374U</td>
<td></td>
<td></td>
<td>25 mm</td>
<td>80.6</td>
<td>6.35</td>
</tr>
<tr>
<td>07852U</td>
<td></td>
<td>Plain Barrel</td>
<td>25 mm</td>
<td>80.6</td>
<td>6.35</td>
</tr>
<tr>
<td>07855U</td>
<td></td>
<td></td>
<td>25 mm</td>
<td>80.6</td>
<td>6.35</td>
</tr>
</tbody>
</table>

Approved Temperature Ratings
A - 155 °F (68 °C), 175 °F (79°C), 200 °F (93 °C), and 286 °F (141 °C)
B - 155 °F (68 °C), 175 °F (79°C), and 200 °F (93 °C)
C - 155 °F (68 °C)

Approved Finishes and “A” Dimensions
1 - Brass, Chrome, White Polyester, or ENT® sprinkler with a Brass, Chrome, White Polyester, or ENT® Sleeve and Escutcheon with “A” dimensions 1-1/2" to 45-1/2" (38.1 to 1,156 mm)
2 - Brass, Chrome, White Polyester, or ENT® with “A” dimensions 3-1/4" to 47-1/2" (82.5 to 1,207 mm)
3 - Brass, Chrome, White Polyester, or ENT® with “A” dimensions 3" to 47" (76.2 to 1,194 mm)
4 - Chrome with “A” dimensions 3-1/4" to 47-1/2" (82.5 to 1,207 mm)

Footnotes
1 Part number shown is the base part number. For complete part number, refer to current Viking price list schedule.
2 K-Factor applies for standard lengths (“A” Dimensions indicated above).
3 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.
4 This chart shows the FM Approvals available at the time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals.
5 FM Approved as corrosion resistant.
6 Approved according to China GB Standard.

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

NOTE: When using CPVC fittings with Viking dry sprinklers, use only new Nibco Model 5012-S-BI tees. When selecting other CPVC fittings, contact Viking Technical Services.

FM Approval Requirements:
Standard Dry Pendent Sprinklers in the Approval Chart above are FM Approved as standard response Non-storage standard spray sprinklers as indicated in the FM Approval Guide. For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including 2-0) and Technical Advisory Bulletins. FM Global Loss Prevention Data Sheets and Technical Advisory Bulletins 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, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.
Figure 6: Dry Pendent Sprinkler Required Minimum Barrel Length Based on Ambient Temperature in the Protected Area (Adjustable Standard Dry Pendent Sprinkler is shown)

The ambient temperature is the temperature at the discharge end of the sprinkler. For protected area temperatures that occur between the values listed, use the next cooler temperature.

**The minimum required barrel length is not the same as the "A" dimension. Refer to Figures 3-5 for the "A" dimension.**

Figure 7: Dry Sprinkler Seal (Adjustable Standard Dry Pendent Sprinkler is shown)