



## TECHNICAL DATA

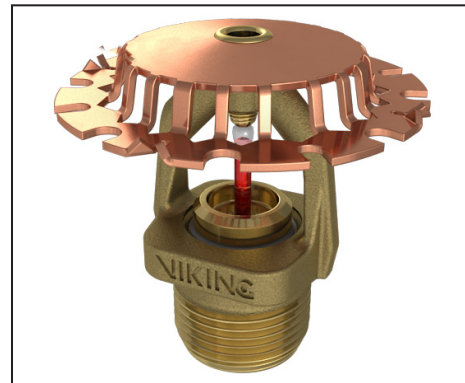
### EC/QREC ORDINARY HAZARD UPRIGHT SPRINKLER VK570 (K14.0)

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

#### 1. DESCRIPTION

Viking Standard/Quick Response Extended Coverage Ordinary Hazard (ECOH) Upright Sprinkler VK570 is a thermosensitive glass bulb spray sprinkler with a 14.0 (202 metric\*) nominal K-Factor. The sprinkler produces the flows required to meet Ordinary Hazard density requirements at lower pressures than 8.0 or 11.2 (115.2 or 161.4 metric\*) K-Factor sprinklers. The glass bulb operating element and special deflector characteristics meet the challenges of quick response extended coverage standards. Viking EC/QREC Ordinary Hazard Sprinklers are available in various finishes and temperature ratings to meet design requirements. The special PTFE, Polyester, and Electroless Nickel PTFE (ENT) coatings can be used in decorative applications where colors are desired. In addition, ENT coating has been investigated for installation in corrosive atmospheres. See Approval Charts. The Viking VK570 Sprinkler may be ordered and/or used as an open sprinkler (glass bulb and pip-cap assembly removed) on deluge systems. Refer to Ordering Instructions on the next page.



#### 2. LISTINGS AND APPROVALS



**cULus Listed:** Category VNIV

**NYC Approved:** MEA 89-92-E, Volume 38

Refer to Approval Chart 1 and Design Criteria on pages 83k-l for cULus Listing requirements.

#### 3. TECHNICAL DATA

##### Specifications:

Available since 2007.

Minimum Operating Pressure: Refer to the Approval Charts.

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: 14.0 U.S. (202 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: 2-7/16" (62 mm)

##### Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Phosphor Bronze UNS-C51000

Bulb: Glass, nominal 3 mm diameter

Pip Cap: Brass UNS-C31400 or UNS-C31600

Compression Screw: Brass UNS-C36000

Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with Teflon Tape

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 Pipcap-ENT plated.

**Ordering Information:** (Also refer to the current Viking price list.)

Order EC/QREC Ordinary Hazard Upright Sprinkler VK570 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 (°F/°C): 155°/68° = B, 175°/79° = D, 200°/93° = E, and 286°/141° = G, OPEN = Z (PTFE only).

For example, sprinkler VK570 with a Brass finish and a 155 °F/68 °C temperature rating = Part No. 13840AB.

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

**Accessories:** (Also refer to the "Sprinkler Accessories" section of the Viking data book.)

Viking Technical Data may be found on  
The Viking Corporation's Web site at  
<http://www.vikinggroupinc.com>.  
The Web site may include a more recent  
edition of this Technical Data Page.



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#### Sprinkler Wrenches:

A. Standard Wrench: Part No. 07297W/B (available since 1991)

#### 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, when the temperature around the sprinkler reaches its operating temperature, the heat-sensitive liquid in the glass bulb expands, causing the bulb to shatter, releasing the pip cap and sealing spring assembly. 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

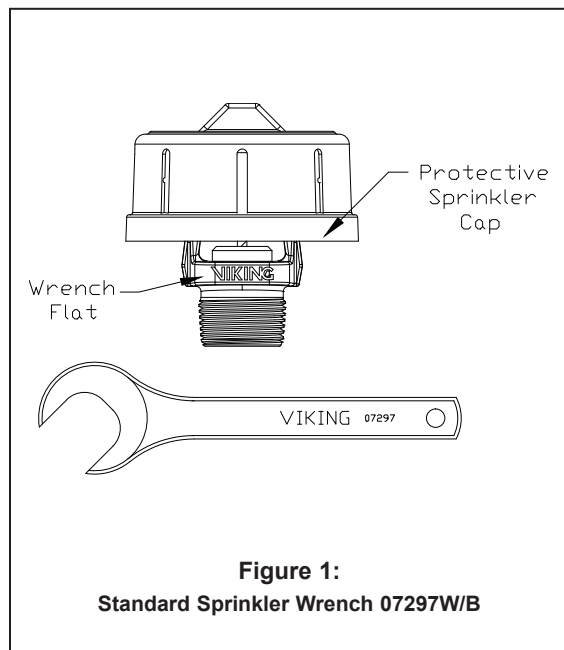
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

#### 7. AVAILABILITY

The Viking Model VK570 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

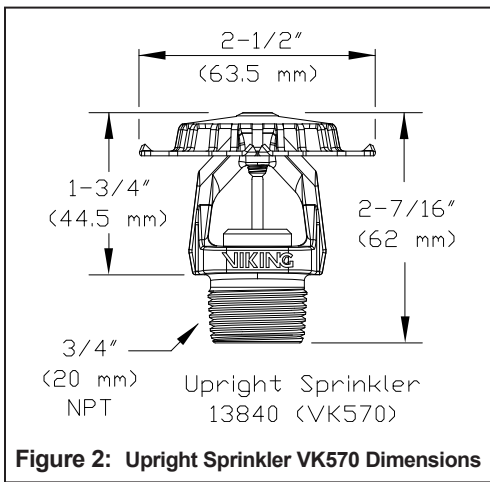
For details of warranty, refer to Viking's current list price schedule or contact Viking directly.



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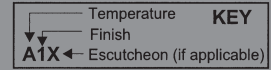
TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES			
Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Bulb Color
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue
<b>Available Sprinkler Finishes:</b> Brass, Chrome, White Polyester <sup>3</sup> , Black Polyester <sup>3</sup> , Black PTFE <sup>3</sup> , and ENT			
<b>Corrosion-Resistant Coatings<sup>4</sup>:</b> ENT			
<b>Footnotes</b>			
<sup>1</sup> The sprinkler temperature rating is stamped on the deflector. <sup>2</sup> 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. <sup>3</sup> The coatings indicated are applied to the exposed exterior surfaces only. The spring is exposed on sprinklers with PTFE and Polyester coatings. For PTFE coated open sprinklers only, the waterway is coated. <sup>4</sup> The corrosion-resistant coatings have passed the standard corrosion test required by the approving agencies 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. For all ENT sprinklers, all exposed surfaces and the waterway are coated, but note that the spring is exposed.			



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<b>Approval Chart 1 (UL)</b> Standard/Quick Response Extended Coverage Upright Ordinary Hazard Sprinkler VK570 (K14.0)								
Sprinkler Base Part Number <sup>1</sup>	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length	
		Inches	mm	U.S.	metric <sup>2</sup>		Inches	mm
13840 Upright	VK570	3/4	20	14.0	202	175 psi (12 bar)	2-7/16	62
Maximum Sprinkler Spacing L x W <sup>5</sup>	Maximum Area per Sprinkler	Minimum Water Supply Requirements (cULus only)					cULus/NYC Listings <sup>3,4,7</sup> (See Design Criteria on pg 83I.)	
		Ordinary Hazard Group I			Ordinary Hazard Group II			
		Flow / Pressure			Flow / Pressure			
Standard Response								
16 ft. x 16 ft. (4.9 m x 4.9 m)	256 ft <sup>2</sup> (23.8 m <sup>2</sup> )	39 gpm @ 7.8 psi (147.6 l/min @ 0.54 bar)			51 gpm @ 13.3 psi (193.1 l/min @ 0.92 bar)		A1, A2	
18 ft. x 18 ft. (5.5 m x 5.5 m)	324 ft <sup>2</sup> (30.1 m <sup>2</sup> )	49 gpm @ 12.3 psi (185.5 l/min @ 0.85 bar)			65 gpm @ 21.6 psi (246.1 l/min @ 1.49 bar)		A1, A2	
20 ft. x 20 ft. (6.1 m x 6.1 m)	400 ft <sup>2</sup> (37.2 m <sup>2</sup> )	60 gpm @ 18.4 psi (227.1 l/min @ 1.27 bar)			80 gpm @ 32.7 psi (302.8 l/min @ 2.25 bar)		A1, A2	
Quick Response <sup>6</sup>								
12 ft. x 12 ft. (3.7 m x 3.7 m)	144 ft <sup>2</sup> (13.4 m <sup>2</sup> )	39 gpm @ 7.8 psi (147.6 l/min @ 0.54 bar)			39 gpm @ 7.8 psi (147.6 l/min @ 0.54 bar)		A1, A2	
14 ft. x 14 ft. (4.3 m x 4.3 m)	196 ft <sup>2</sup> (18.2 m <sup>2</sup> )	39 gpm @ 7.8 psi (147.6 l/min @ 0.54 bar)			39 gpm @ 7.8 psi (147.6 l/min @ 0.54 bar)		A1, A2	
Approved Temperature Ratings		Approved Finishes						
A - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C) <sup>6</sup> B - 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)		1 - Brass, Chrome, White Polyester, Black Polyester, and Black PTFE 2 - ENT <sup>8</sup>						
Footnotes								
<sup>1</sup> Part number shown is the base part number. For complete part number, refer to current Viking price list schedule. <sup>2</sup> 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. <sup>3</sup> This chart shows listings and approvals available at time of printing. Other approvals may be in process. Check with the manufacturer for any additional approvals. <sup>4</sup> cULus Listed for use in the U.S. and Canada. <sup>5</sup> To determine "Minimum Water Supply Requirement" for areas of coverage where length and width of actual sprinkler spacing are not equal, select the "Maximum Sprinkler Spacing" from the chart that is equal to or greater than the larger of the actual spacing (length or width) dimensions used. Example: When using 10 ft 6 in x 13 ft (3.2 m x 4 m) sprinkler spacing, provide the "Minimum Water Supply Requirement" listed in the chart for 14 ft x 14 ft (4.3 m x 4.3 m) spacing. For areas of coverage smaller than shown, use the "Minimum Water Supply Requirement" in the appropriate hazard group for the next larger area listed. The distance from sprinklers to walls shall not exceed one-half the "Maximum Sprinkler Spacing" listed for the "Minimum Water Supply Requirement" used. <sup>6</sup> For Sprinkler VK570 with High Temperature 286 °F rating, UL restricts the QR listing to their use in Ordinary Hazard occupancies to the high temperature zones within a building only. VK570 quick response sprinklers with this temperature rating cannot be used throughout the property. <sup>7</sup> Accepted for use, City of New York Department of Buildings, MEA Number 89-92-E, Vol. 38. <sup>8</sup> cULus Listed as corrosion-resistant.								





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#### DESIGN CRITERIA - UL

(Also refer to Approval Chart 1 on page 83k.)

**cULus Listing Requirements:** ECOH Upright Sprinkler VK570 is cULus Listed as Standard and Quick Response for installation in accordance with the latest edition of NFPA 13 for extended coverage upright sprinklers as indicated below:

- The minimum water supplies and maximum areas of coverage shown in Approval Chart 1 are designed to provide the following design densities: 0.15 gpm/ft<sup>2</sup> (6.1 mm/min) for Ordinary-Hazard Group I densities; 0.2 gpm/ft.<sup>2</sup> (8.1 mm/min) for Ordinary-Hazard Group II densities.
- The sprinkler installation rules contained in NFPA 13 for extended coverage upright spray sprinklers must be followed with the exception that cULus Listing requires the spacing between Viking ECOH Upright Sprinklers to be a minimum of 9 ft. (2.75 m) to prevent cold soldering.
- Viking ECOH Upright Sprinklers are cULus Listed for use in unobstructed construction, and noncombustible obstructed construction consisting of solid steel and/or concrete beams as defined in the latest edition of NFPA 13.
- Ceiling slope not to exceed 2/12 (9.5°).

**Also, Viking ECOH Upright Sprinkler VK570 is specifically cULus Listed for:**

- For non-combustible obstructed construction within trusses or bar joists having non-combustible web members greater than 1" (25.4 mm) when applying the 4 times obstruction criteria rule as defined in NFPA 13 under "Obstructions to Sprinkler Discharge Pattern Development".
- For installation under concrete tees when installed as follows:
  1. The stems of the concrete tee construction must be spaced between 3 ft (0.9 m) and 7 ft-6 in (2.3 m) on center. The depth of the concrete tees must not exceed 30 in (762 mm). The maximum permitted concrete tee length is 32 ft (9.8 m). However, where the concrete tee length exceeds 32 ft (9.8 m), non-combustible baffles, equal in height to the depth of the tees, can be installed so that the space between the tees does not exceed 32 ft (9.8 m).
  2. The sprinkler deflector is to be located in a horizontal plane at or above 1" (25.4 mm) below the bottom of the concrete tee stems.
  3. When the sprinkler deflector is located higher than a horizontal plane 1" (25.4 mm) beneath the bottom of the concrete tee stems, the obstruction to sprinkler discharge criteria requirements of NFPA 13 for extended coverage upright sprinklers applies.

**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to page EC1-3 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.**