



## TECHNICAL DATA

### EXTENDED COVERAGE UPRIGHT SPRINKLER VK595 (K25.2) (CMDA/CMSA)

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](http://www.vikinggroupinc.com)

### 1. DESCRIPTION

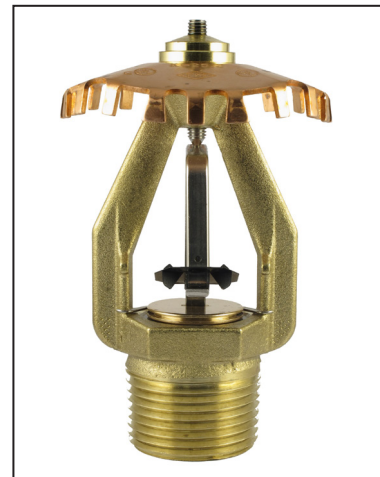
Viking Extended Coverage Upright Sprinkler VK595 is a thermosensitive solder link spray sprinkler with a nominal K-factor of 25.2 for maximum coverage areas of 14 feet by 14 feet (196 sq. ft.). The sprinkler is UL Listed as a standard response extended coverage Control Mode Density Area (CMDA) sprinkler for storage applications. It is also FM Approved as a quick response, extended coverage Control Mode Density Area (CMDA) sprinkler and as a Control Mode Specific Application (CMSA) sprinkler. The VK595 is FM Approved for storage and non-storage applications. It is available with an ordinary or intermediate temperature rating to meet design requirements. The VK595 is especially advantageous as a means of decreasing the number of required sprinklers to protect occupancies requiring an area/density application of water.

### 2. LISTINGS AND APPROVALS

**cULus Listed:** Category VNIV

**FM Approved:** Class 2022-AS, EC Type

**NOTE:** This sprinkler is NOT Listed or Approved as an Early Suppression Fast Response Sprinkler. Refer to Approval Chart 1 and Design Criteria for cULus requirements, and refer to Approval Chart 2 and Design Criteria for FM Approval requirements that must be followed.



**WARNING:** Cancer and Reproductive Harm-  
[www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)

### 3. TECHNICAL DATA

#### Specifications:

Available since 2011.

Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).

Thread Sizes: Base Part No. 16859: 1" NPT

Base Part No. 16885: 25 mm BSP

Nominal K-factor: 25.2 U.S. (363 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: 3-3/4" (95.3 mm)

#### Material Standards:

Sprinkler Frame: Brass

Deflector: Copper

Deflector Nut: Brass

Link Assembly: Solder, Nickel

Sealing Assembly: Beryllium Nickel with Polytetrafluoroethylene (PTFE).

Compression Screw: Stainless Steel

Button: Brass

Hook: Monel

Strut: Monel

Ejection Spring: Inconel

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

Order Extended Coverage Upright Sprinkler VK595 by adding the appropriate suffix for the sprinkler temperature rating to the sprinkler base part number.

Finish Suffix: Brass = A

Temperature Suffix (°F/°C): 165°/74° = C, 212°/100° = E

For example, sprinkler VK595 with 1" NPT threads, a Brass finish, and a 165°F/74 °C temperature rating = Part No. 16859AC.

#### Available Finishes And Temperature Ratings:

Refer to Table 1.

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



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### Sprinkler Wrench:

Part No. 16888M/B (available since 2011)

### Sprinkler Cabinet:

A. Six-head capacity: Part No. 01725A (available since 1971)

## 4. INSTALLATION

Refer to appropriate NFPA or FM Installation Standards.

## 5. OPERATION

During fire conditions, when the temperature around the sprinkler reaches its operating temperature, the heat-sensitive solder melts, and the two link halves separate, allowing the sprinkler to activate. 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 VK595 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**


Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Frame Paint Color
Ordinary	165 °F (74 °C)	100 °F (38 °C)	None
Intermediate	212 °F (100 °C)	150 °F (66 °C)	White

**Available Sprinkler Finish:** Brass

### Footnotes

<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.

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<b>Approval Chart 1 (UL)</b> Standard Response Extended Coverage Upright Sprinkler VK595 (K25.2) Maximum 175 PSI (12 Bar) WWP										
Base Part Number <sup>1</sup>	SIN	Sprinkler Style	Thread Size		Nominal K-factor		Overall Length		Listings and Approvals <sup>3</sup> (Refer also to Design Criteria below.)	
			NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm	cULus <sup>4</sup>	NYC
16859	VK595	Upright	1"	--	25.2	363	3-3/4"	95.3	A1	See Footnote 5.
16885			--	25 mm						
<b>Approved Temperature Ratings</b> A - 165 °F (74 °C) and 212 °F (100 °C)							<b>Approved Finish</b> 1 - Brass			
<b>Footnotes</b>										
<sup>1</sup> Base part number shown. For complete part number, refer to Viking's current price 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 table shows the listings and approvals available at the time of printing. Other approvals may be in process.										
<sup>4</sup> Listed by Underwriters Laboratories Inc. for use in the U.S. and Canada.										
<sup>5</sup> Meets New York City requirements, effective July 1, 2008.										

Temperature Finish A1X ← Escutcheon (if applicable)	<b>KEY</b>
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**DESIGN CRITERIA - UL**  
(Also refer to Approval Chart 1 above.)

**cULus Listing Requirements:**

Sprinkler VK595 is cULus Listed as a standard response extended coverage upright sprinkler for storage protection, for installation in accordance with the latest edition of NFPA 13 and in conjunction with the following guidelines:

- System types: Wet, Dry and Preaction systems are acceptable.
- Suitable for the protection of extra hazard and high-piled storage occupancies where area/density design criteria is provided.
- Suitable for "unobstructed" or "noncombustible obstructed" construction.
- Sprinkler VK595 has been specifically tested and listed for noncombustible obstructed construction and are suitable for use within trusses or bar joists having noncombustible web members greater than 1 inch (25.4 mm) when applying the 4 times obstruction criteria rule defined under "Obstructions to Sprinkler Discharge Pattern Development".
- The maximum area of coverage per sprinkler is 196 sq. ft. (18.2 sq. m). The maximum distance between sprinklers is 14 feet (4.3 m). The minimum distance between sprinklers is 8 feet (2.44 m). For a protection area of 144 sq. ft. (13.3 sq. m), the maximum distance between sprinklers is 15 feet (4.5 m) per NFPA 13, Table 8.8.2.1.2.
- The minimum flow requirement is to be based on the design density applied over the actual area of coverage per sprinkler.
- The minimum clearance between the deflector and the top of storage is 36 inches (0.9 m). For clearances of 36 inches (0.9 m) up to 48 inches (1.21 m), the minimum design pressure is 22 psi (1.52 bar). For clearances of 48 inches (1.21 m) and greater, the minimum design pressure is established by the minimum flow requirement [however, the pressure can never be less than 7 psi (.5 bar)].
- The ordinary and intermediate temperature rated VK595 sprinklers have been investigated for use in high-piled storage occupancies at the hydraulic demand normally associated with high temperature sprinklers. As such, the VK595 sprinklers are listed storage sprinklers having a K-factor greater than 11.2 and having ordinary and intermediate temperature ratings (that is, 165 °F and 212 °F). Consequently, the VK595 Sprinklers, in accordance with the latest edition of NFPA 13, may be used in conjunction with the density curves for high temperature sprinklers specified in the latest edition of NFPA 13.
- Sprinkler VK595 complies with the criterion for the protection of retail stores as described in section 20.3 of NFPA 13.


**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.**

	<h2 style="margin: 0;">TECHNICAL DATA</h2>	<p><b>EXTENDED COVERAGE UPRIGHT SPRINKLER VK595 (K25.2) (CMDA/CMSA)</b></p>
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Approval Chart 2 (FM)								KEY	
Quick Response Extended Coverage Upright Sprinkler VK595 (K25.2)								Temperature	
Maximum 175 PSI (12 Bar) WWP								Finish	
Maximum 175 PSI (12 Bar) WWP								Escutcheon (if applicable)	
Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-factor		Overall Length		FM Approvals <sup>3</sup> (Refer also to Design Criteria below.)	
		NPT	BSP	U.S.	metric <sup>2</sup>	Inches	mm		
16859	VK595	1"	--	25.2	363	3-3/4	95.3	A1	
16885		--	25 mm						
Approved Temperature Ratings A - 165 °F (74 °C) and 212 °F (100 °C)						Approved Finish 1 - Brass			
<b>Footnotes</b>									
<sup>1</sup> Base part number shown. For complete part number, refer to Viking's current price 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 table shows the listings and approvals available at the time of printing. Other approvals may be in process.									

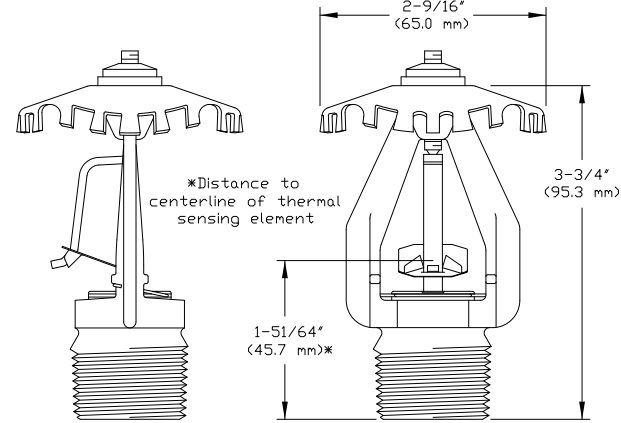
DESIGN CRITERIA- FM
(Also refer to Approval Chart 2 above.)
<b>FM Approval Requirements:</b>
1. Sprinkler VK595 is FM Approved as a quick response extended coverage upright <b>Storage</b> sprinkler as indicated in the FM Approval Guide. <ul style="list-style-type: none"> <li>For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheets 2-0 and 8-9).</li> </ul> 2. Sprinkler VK595 is also FM Approved as a quick response extended coverage upright <b>Non-Storage</b> sprinkler as indicated in the FM Approval Guide. <ul style="list-style-type: none"> <li>For specific application and installation requirements, reference the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0).</li> </ul> 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. <ul style="list-style-type: none"> <li>System type: Wet system ONLY.</li> </ul>
<b>NOTE: The FM installation guidelines may differ from cULus and/or NFPA criteria. For example, FM installation guidelines indicate the minimum spacing for this sprinkler is 10 ft. (3 m) .</b>
<b>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.</b>



**NOTE: Handle the sprinkler only by the frame arms and by using Sprinkler Wrench 16888M/B. DO NOT grip or apply any force to the fusible link assembly. Apply a minimum-to-maximum torque of 20 to 30 ft. lbs. (26.8 to 40.2 Nm).**

**After installation, inspect the link assembly of each VK595 Sprinkler for damage. Verify that the link assembly and hook are positioned as illustrated in Figure 2, and that the link assembly has not been bent, creased, or forced out of its normal position in any way.**

**Figure 1: Sprinkler Wrench 16888M/B**



**Figure 2: Sprinkler VK595 Dimensions**