



TECHNICAL DATA

STANDARD RESPONSE UPRIGHT SPRINKLER VK580 (K16.8) (STORAGE-DENSITY/AREA)

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 Response Upright Sprinkler VK580 is a thermosensitive glass bulb spray sprinkler available in various temperature ratings to meet design requirements. With a 16.8 nominal K-Factor, the sprinkler provides greater flows at lower pressures than sprinklers with smaller K-Factors. This feature allows reduced pipe sizing for hydraulically calculated sprinkler systems, and provides the higher densities required to allow an increase in the hazard classification of an occupancy. Viking Standard Response Sprinkler VK580 was subjected to full-scale high piled storage fire testing and is cULus Listed and FM Approved for use in protecting high-piled storage.



2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

FM Approved: Class 2024

NOTE: This sprinkler is NOT Listed or Approved as a Specific Application Sprinkler.

Refer the Approval Chart on page 13c and Design Criteria on page 13d for cULus and FM approval requirements that must be followed.

3. TECHNICAL DATA

Specifications:

Available since 2004.

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: 16.8 U.S. (242 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.

Glass-bulb fluid temperature rated to -65 °F (-55 °C)

Overall Length: 2-7/16" (62 mm)

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.

Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Phosphor Bronze UNS-C51000

Bulb: Glass, nominal 5 mm diameter

Pip Cap: Brass UNS-C31600 or Brass UNS-C31400

Compression Screw: Brass UNS-C36000

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

Ordering Information: (Also refer to the current [Viking price list](#).)

Order Standard Response Upright Sprinkler VK580 by adding the appropriate suffix for the sprinkler temperature rating to the sprinkler base part number.

Finish Suffix: Brass = A

Temperature Suffix (°F/°C): 155°/68° = B, 175°/79° = D, 200°/93° = E, and 286°/141° = G

For example, sprinkler VK580 with a Brass finish and a 155 °F/68 °C temperature rating = Part No. 12739AB.

Available Finishes And Temperature Ratings:

Refer to Table 1

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

Sprinkler 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)

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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 VK580 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 ¹	Maximum Ambient Ceiling Temperature ²	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

Available Sprinkler Finish: Brass

Footnotes

¹ The sprinkler temperature rating is stamped on the deflector.

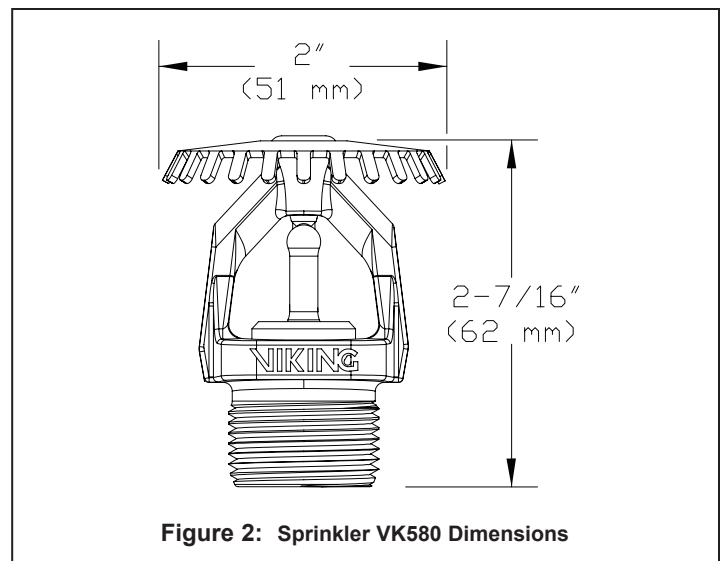
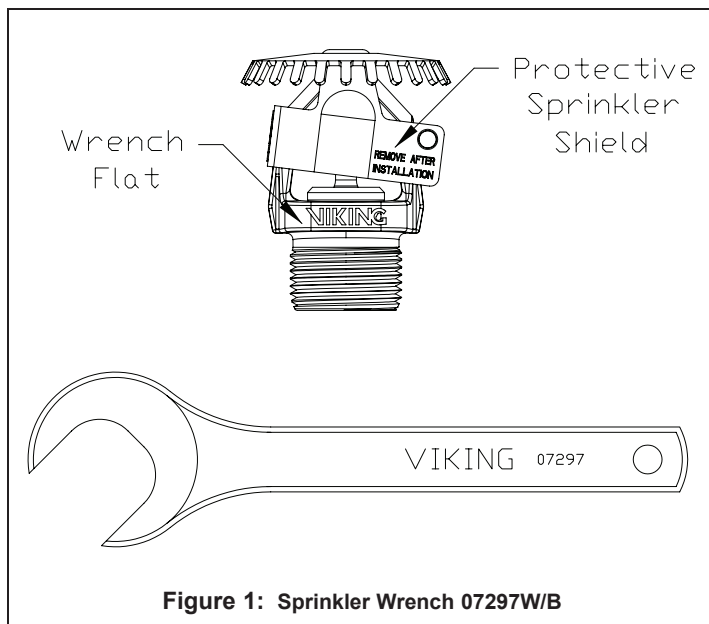
² Based on NFPA-13. Other limits may apply, depending on fire loading, sprinkler location, and other requirements of the Authority Having Jurisdiction. Refer to specific installation standards.

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Approval Chart										
Standard Response Upright Sprinkler VK580 (K16.8)										
Maximum 175 PSI (12 Bar) WWP										
Base Part Number ¹	SIN	Sprinkler Style	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals ³ (Refer also to Design Criteria on pg 13d.)	
			NPT	BSP	U.S.	metric ²	Inches	mm	cULus ⁴	FM
12739A	VK580	Upright	3/4"	20 mm	16.8	242	2-7/16	62	A1	A1
Approved Temperature Ratings A - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C)							Approved Finish 1 - Brass			
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.										

Temperature	KEY
Finish	
A1X ←	Escutcheon (if applicable)





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DESIGN CRITERIA

(Also refer to the Approval Chart on page 13c.)

cULus Listing Requirements:

Standard Response Upright Sprinkler VK580 is cULus Listed for installation in accordance with the latest edition of NFPA 13 for standard upright spray sprinklers:

- Designed for use in hazard occupancies up to and including Extra-Hazard Group II for hydraulically calculated wet or dry systems.
- The sprinkler installation and obstruction rules contained in NFPA 13 for standard spray upright sprinklers must be followed.

Also

Sprinkler VK580 is cULus Listed for use in High-Piled Storage Occupancies as defined in NFPA 13:

- This sprinkler may be used for the protection of solid piled, palletized, rack storage (single, double, multiple-row and portable), bin box, and shelf storage including, but not limited to: encapsulated or unencapsulated Class I-IV and Group A or B plastics, cartoned, expanded or unexpanded, as well as exposed unexpanded.
- For hydraulically calculated wet or dry systems per NFPA 13 with a minimum operating pressure of 7 psi (0.5 bar).
- Use the standard sprinkler positioning requirements and area/density sprinkler protection criteria provided in NFPA 13 for High-Piled Storage Occupancies.

FM Approval Requirements:

Standard Response Upright Sprinkler VK580 is FM Approved as a control mode density/area (CMDA) sprinkler. Refer to the latest applicable FM Loss Prevention Data Sheets (including 2-8N and 8-9) 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 pages SR1-3 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, FM Global, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.