



TECHNICAL DATA

QUICK RESPONSE EXTENDED COVERAGE HORIZONTAL SIDEWALL SPRINKLER VK630 (K8.0)

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

Visit the Viking website for the latest edition of this technical data page.

1. DESCRIPTION

Viking Quick Response Extended Coverage Horizontal Sidewall Sprinkler VK630 is a thermosensitive spray sprinkler available in several different finishes and temperature ratings to meet varying design requirements. The glass bulb operating element and special deflector characteristics meet the challenges of quick response extended coverage standards.

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 the Approval Charts. (Note: **FM Global approves the ENT coating as corrosion resistant.** FM Global has no approval classification for Polyester coatings as corrosion resistant.)

2. LISTINGS AND APPROVALS

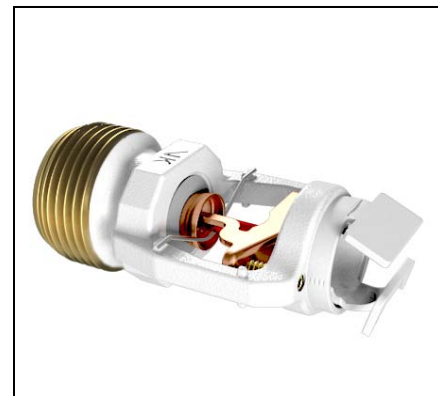
 **cULus Listed:** Category VNIV

 **FM Approved:** Class 2022

NYC Approval: MEA 89-92-E, Volume 32

 **CCC Approved:** Approved by the China Certification Center for Fire Products (CCC)

Refer to Approval Chart 1 and Design Criteria on pages 3-4 for cULus Listing requirements, and refer to Approval Chart 2 and Design Criteria on page 5 for FM Approval requirements that must be followed.



For Light Hazard Occupancies Only

3. TECHNICAL DATA

Specifications:

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: 8.0 U.S. (115.2 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: 2-9/16" (65 mm)

Covered by the following US Patent Nos: 7,854,269 and 7,712,218

Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Bronze UNS-C51000

Bulb: Glass, nominal 3 mm diameter

Pip Cap and Insert Assembly: Copper UNS-C11000 and Stainless Steel UNS-S30400

Compression Screws: 18-8 Stainless Steel

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

Yoke: Bronze UNS-C51000

Ejector Spring: 17-7 Stainless Steel

For Polyester Coated Sprinklers: Belleville Spring-Exposed

For ENT Coated Sprinkler: Belleville Spring-Exposed, Screw, Pipcap, and Yoke-ENT plated.

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

Order Sprinkler VK630 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

Temperature Suffix: 135 °F (57 °C) = A, 155 °F (68 °C) = B, 175 °F (79 °C) = D

For example, sprinkler VK630 with a Brass finish and a 155 °F (68 °C) temperature rating = Part No. 13500AB.

Available Finishes And Temperature Ratings: Refer to Table 1.



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Accessories: (Also refer to the Viking website.)

Sprinkler Wrenches:

- A. Standard Wrench: Part No. 10896W/B (available since 2000)
- B. Wrench for coated and/or recessed 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 liquid in the glass bulb expands, causing the bulb to shatter, releasing the yoke, 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 VK630 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.

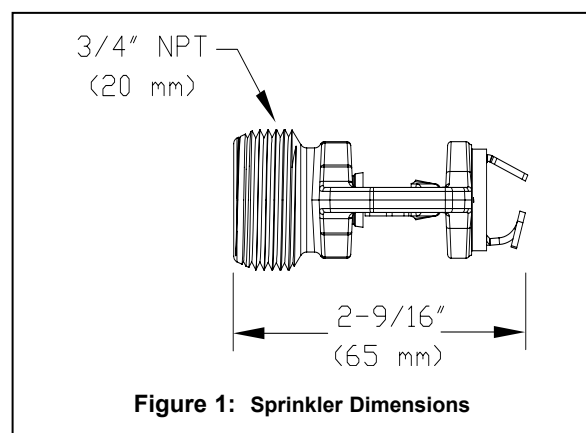


Figure 1: Sprinkler Dimensions

TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating ¹	Maximum Ambient Ceiling Temperature ²	Bulb Color
Ordinary	135 °F (57 °C)	100 °F (38 °C)	Orange
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow

Available 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 standard corrosion tests required by particular approving agencies as 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. The coatings indicated are applied to the exposed exterior surfaces only. For ENT automatic sprinklers, the waterway is coated.

NOTE: The spring is exposed on sprinklers with ENT and Polyester coatings.



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Sprinkler Base Part Number ¹	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length	
	Inches	mm	U.S.	metric ²		Inches	mm
13500	3/4	20	8.0	115.2	175 psi (12 Bar)	2-9/16	65
20238 ⁸	3/4	--	8.0	115.2		2-9/16	65
21359 ⁸	--	20	8.0	115.2		2-9/16	65

Approval Chart 1 (UL)

Quick Response Extended Coverage HSW Sprinkler VK630

For Light Hazard Occupancies Only.

For installation below smooth, flat, horizontal ceilings only.

KEY	
Temperature	Finish
A1X ←	Escutcheon (if applicable)

Maximum Areas of Coverage ³ (Width x Throw)	Minimum Water Supply Requirements ³	Deflector-to-Ceiling Distance	Listings and Approvals ⁴ (See Design Criteria)		
			cULus ⁵	NYC ⁶	CCCF
14' x 24' (4.3 m x 7.3 m)	34 gpm @ 18.1 psi (128.7 L/min @ 1.24 Bar)	4 to 6" (102 to 152 mm)	A1X, A2Z	A1Y	C3
14' x 24' (4.3 m x 7.3 m)	36 gpm @ 20.3 psi (136.3 L/min @ 1.4 Bar)	6 to 12" (152 to 305 mm)	A1X, A2Z	A1Y	C3
14' x 26' (4.3 m x 7.9 m)	38 gpm @ 22.6 psi (144 L/min @ 1.56 Bar)	4 to 6" (102 to 152 mm)	B1X, B2Z	B1Y	C3
14' x 26' (4.3 m x 7.9 m)	46 gpm @ 33.1 psi (174.1 L/min @ 2.28 Bar)	6 to 12" (152 to 305 mm)	B1X, B2Z	B1Y	C3
16' x 16' (4.9 m x 4.9 m)	26 gpm @ 10.6 psi (98.4 L/min @ 0.73 Bar)	4 to 12" (102 to 305 mm)	A1X, A2Z	A1Y	C3
16' x 18' (4.9 m x 5.5 m)	29 gpm @ 13.1 psi (109.8 L/min @ 0.91 Bar)	4 to 12" (102 to 305 mm)	A1X, A2Z	A1Y	C3
16' x 20' (4.9 m x 6.2 m)	32 gpm @ 16.0 psi (121.1 L/min @ 1.1 Bar)	4 to 12" (102 to 305 mm)	A1X, A2Z	A1Y	C3
16' x 22' (4.9 m x 6.7 m)	36 gpm @ 20.3 psi (136.3 L/min @ 1.4 Bar)	4 to 12" (102 to 305 mm)	B1X, B2Z	B1Y	C3
16' x 24' (4.9 m x 7.3 m)	39 gpm @ 23.8 psi (147.6 L/min @ 1.64 Bar)	4 to 12" (102 to 305 mm)	B1X, B2Z	B1Y	C3
18' x 18' (5.5 m x 5.5 m)	33 gpm @ 17.0 psi (124.9 L/min @ 1.2 Bar)	4 to 12" (102 to 305 mm)	B1X, B2Z	B1Y	C3
18' x 20' (5.5 m x 6.2 m)	36 gpm @ 20.3 psi (136.3 L/min @ 1.4 Bar)	4 to 12" (102 to 305 mm)	B1X, B2Z	B1Y	C3
18' x 22' (5.5 m x 6.7 m)	40 gpm @ 25.0 psi (151.4 L/min @ 1.73 Bar)	4 to 12" (102 to 305 mm)	B1X, B2Z	B1Y	C3

Approved Temperature Ratings	Approved Finishes	Approved Escutcheons
A - 135 °F (57 °C), 155 °F (68 °C), and 175 °F (79 °C) B - 135 °F (57 °C) and 175 °F (79 °C) C - 155 °F (68 °C)	1 - Brass, Chrome, White Polyester ⁷ , and Black Polyester ⁷ 2 - ENT ⁷ 3 - Chrome	X - Standard surface-mounted escutcheon or the Viking Microfast [®] Model F-1 Adjustable Escutcheon, or Recessed with the Viking Micromatic [®] Model E-1, E-2, or E-3 Recessed Escutcheon, or the Model G-1 Recessed Escutcheon. Y - Standard surface-mounted escutcheon or the Viking Microfast [®] Model F-1 Adjustable Escutcheon, or Recessed with the Viking Micromatic [®] Model E-1, E-2, or E-3 Recessed Escutcheon Z - Standard surface-mounted escutcheons or the Micromatic Model E-1 Recessed Escutcheon.

Footnotes

- ¹ Part number shown is the base part number. For complete part number, refer to current Viking price list 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 For areas of coverage smaller than shown, use the "Minimum Water Supply Requirement" for the next larger area listed. Flows and pressures listed are per sprinkler.
- 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, Inc. for use in the U.S. and Canada for Light-Hazard occupancies with smooth, flat, horizontal ceilings only.
- ⁶ Accepted for use, City of New York Department of Buildings, MEA Number 89-92-E, Vol. 32.
- ⁷ cULus Listed as corrosion resistant.
- ⁸ Part numbers 20238 and 21359 are only for the CCCF approved sprinklers.



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DESIGN CRITERIA - UL

(Also refer to Approval Chart 1 on page 3.)

cULus Listing Requirements:

Quick Response Extended Coverage HSW Sprinkler VK630 is cULus Listed as indicated in the Approval Chart for installation in accordance with the latest edition of NFPA 13 for extended coverage sidewall spray sprinklers:

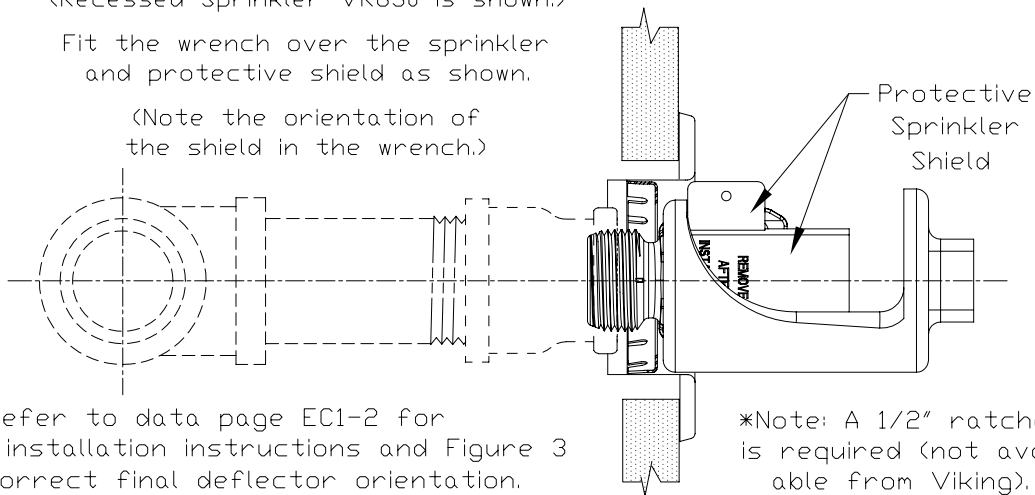
- Limited to Light Hazard occupancies with smooth, flat, horizontal ceilings only.
- Refer to the Approval Chart for required deflector distance below the ceiling. Install with the leading edge of the deflector and sprinkler frame arms oriented parallel to the ceiling (see Figure 3). **THE TOP SURFACE OF THE DEFLECTOR IS MARKED "TOP"**. The sprinkler must be oriented as shown in Figure 3.
- Minimum distance from end walls is 4 in. (102 mm).
- Maximum distance from the end wall 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 extended coverage sidewall 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.

Sprinkler Wrench Part No. 13655W/B* must be used with Coated and/or Recessed Sprinkler VK630. (Recessed Sprinkler VK630 is shown.)

Fit the wrench over the sprinkler and protective shield as shown.

(Note the orientation of the shield in the wrench.)



Refer to data page EC1-2 for complete installation instructions and Figure 3 for correct final deflector orientation.

Figure 2: Installation of Coated and/or Recessed Sprinkler VK630



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Sprinkler Base Part Number ¹	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length	
	Inches	mm	U.S.	metric ²		Inches	mm
13500	3/4	20	8.0	115.2	175 psi (12 Bar)	2-9/16	65

Approval Chart 2 (FM)

Quick Response Extended Coverage HSW Sprinkler VK630

KEY	
Temperature	A1X
Finish	B1Z
Escutcheon (if applicable)	Z

Maximum Areas of Coverage ³ (Width x Throw)	Minimum Water Supply Requirements ³	FM Approvals ⁴ (See Design Criteria below.)
16' x 16' (4.9 m x 4.9 m)	32 gpm @ 16.0 psi (121.1 L/min @ 1.1 Bar)	A1X, B1Z
16' x 18' (4.9 m x 5.5 m)	36 gpm @ 20.3 psi (136.3 L/min @ 1.4 Bar)	A1X, B1Z
16' x 20' (4.9 m x 6.2 m)	40 gpm @ 25.0 psi (151.4 L/min @ 1.73 Bar)	A1X, B1Z
16' x 22' (4.9 m x 6.7 m)	44 gpm @ 30.3 psi (166.6 L/min @ 2.09 Bar)	A1X, B1Z
16' x 24' (4.9 m x 7.3 m)	48 gpm @ 36.0 psi (181.7 L/min @ 2.48 Bar)	A1X, B1Z

Approved Temperature Ratings	Approved Finishes	Approved Escutcheons
A - 135 °F (57 °C), 155 °F (68 °C), and 175 °F (79 °C) B - 155 °F (68 °C), and 175 °F (79 °C)	1 - Brass, Chrome, White Polyester, and Black Polyester, ENT ⁵	X - Standard surface-mounted escutcheon or the Viking Microfast® Model F-1 Adjustable Escutcheon ⁹ , or Recessed with the Viking Micromatic® Model E-1, E-2, or E-3 Recessed Escutcheon, or the Model G-1 Recessed Escutcheon. Z - Standard surface-mounted escutcheons or the Micromatic Model E-1 Recessed Escutcheon.

Footnotes

- ¹ Part number shown is the base part number. For complete part number, refer to current Viking price list 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 For areas of coverage smaller than shown, use the "Minimum Water Supply Requirement" for the next larger area listed. Flows and pressures listed are per sprinkler.
- 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.

DESIGN CRITERIA - FM

(Also refer to Approval Chart 2 above.)

FM Approval Requirements:

QREC Horizontal Sidewall Sprinkler VK630 is FM Approved as a quick response **Non-Storage** extended coverage 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.



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