



## TECHNICAL DATA

### MICROFAST® QUICK RESPONSE HORIZONTAL SIDEWALL SPRINKLER VK305 (K5.6)

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

The Viking Microfast® Quick Response Horizontal Sidewall Sprinkler VK305 is a small thermosensitive glass bulb spray sprinkler available with various finishes and temperature ratings to meet design requirements. 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 Approval Charts.

## 2. LISTINGS AND APPROVALS



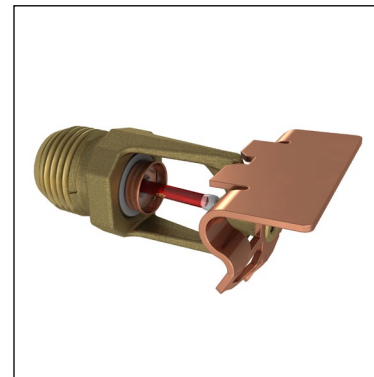
cULus Listed: Category VNIV



FM Approved: Class 2020

China Approval: Approved according to China GB Standard

Refer to Approval Charts and Design Criteria for listing and approval requirements that must be followed.



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

## 3. TECHNICAL DATA

### Specifications:

Minimum Operating Pressure: 7 psi (0.5 bar)

Rated to 175 psi (12 bar) water working pressure

Factory tested hydrostatically to 500 psi (34.5 bar)

Nominal K-Factor: 5.6 U.S. (80.6 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: 2-3/4" (68 mm)

### Material Standards:

Frame Casting: Brass UNS-C84400 or QM Brass

Deflector: Copper UNS-C19500

Bulb: Glass, nominal 3 mm diameter

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

Screw: Brass UNS-C36000

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

For Polyester Coated Sprinklers: Belleville Spring-Exposed

For ENT Coated Sprinklers: Belleville Spring - Exposed, Screw and Pip cap - ENT plated.

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

Order Viking Microfast® Quick Response Horizontal Sidewall Sprinkler VK305 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, 200 °F / 93 °C = E, and 286 °F / 141 °C = G

For example, sprinkler 12997 with a Brass finish and a 155 °F / 68 °C temperature rating = Part No. 12997AB

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

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

### Sprinkler Wrenches:

A. Standard Wrench: Part No. 21475M/B (available since 2017).

B. Wrench for recessed and/or wax coated sprinklers: Part No. 13655W/B\*\* (available since 2006)

\*\*A 1/2" ratchet is required (not available from Viking).



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#### 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 fusible link disengages, the pip cap and spring are released, and the waterway is opened. 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

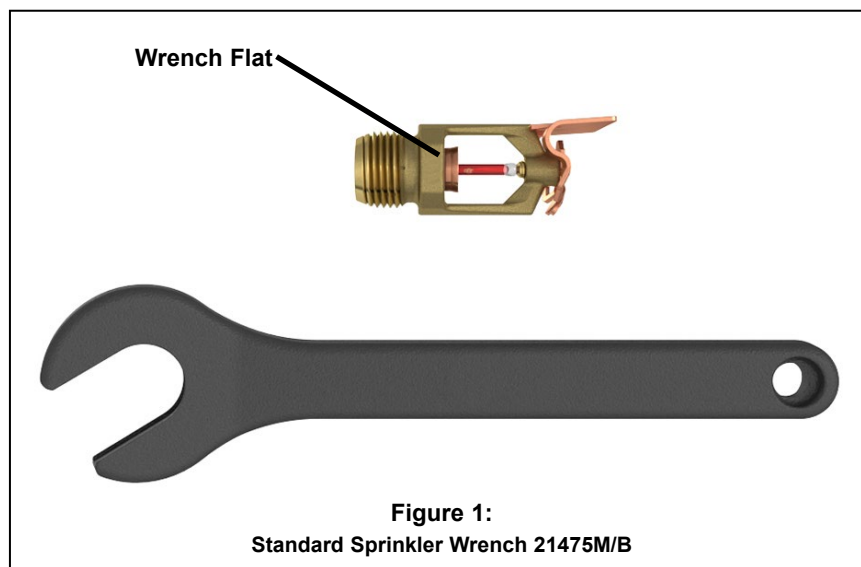
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

#### 7. AVAILABILITY

Viking Microfast® Quick Response Horizontal Sidewall Sprinkler VK305 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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SIDEWALL SPRINKLER  
VK305 (K5.6)**

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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	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
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue

**Sprinkler Finishes:** Brass, Chrome, White Polyester, Black Polyester, and ENT

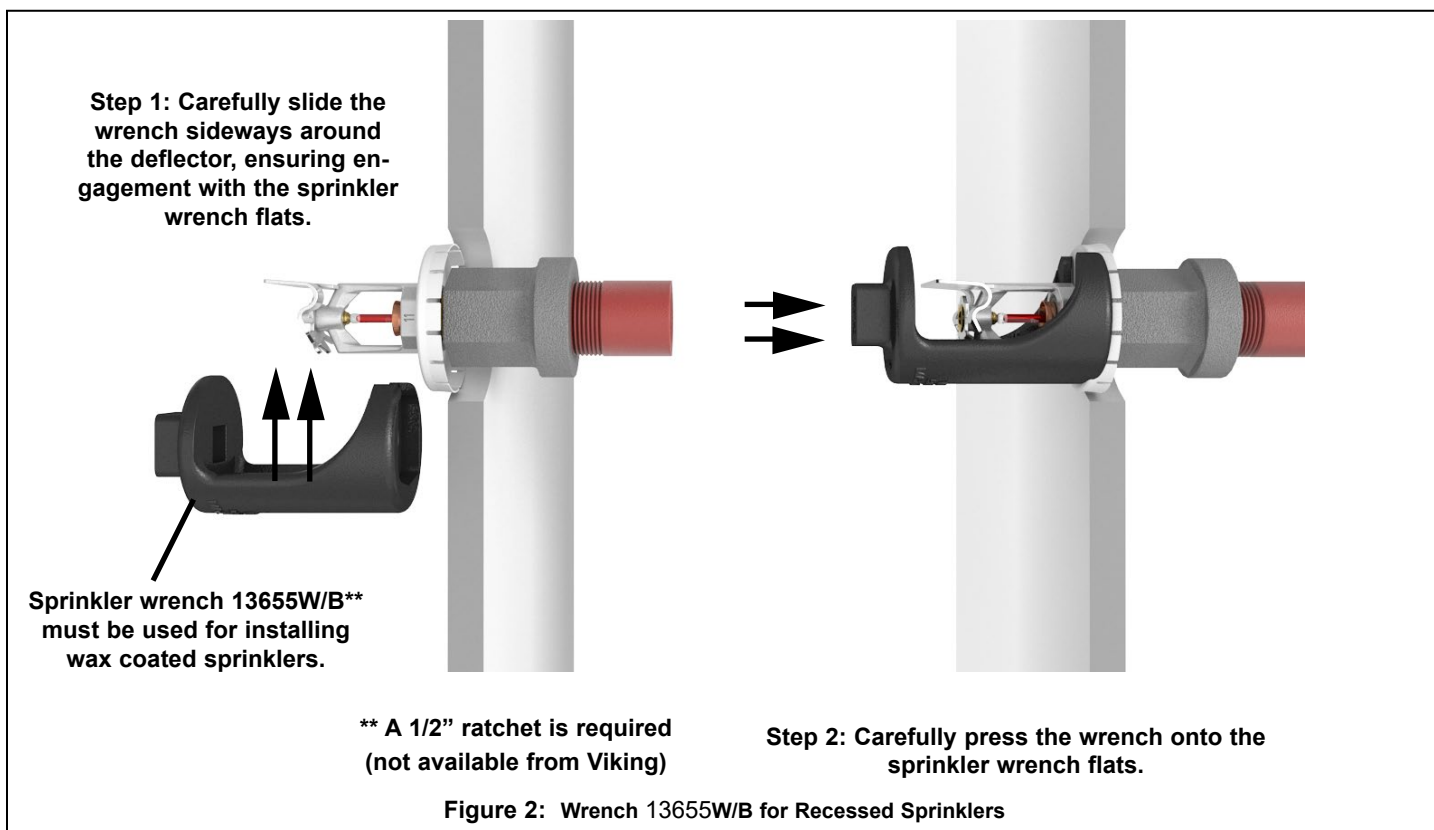
**Corrosion-Resistant Coatings<sup>3</sup>:** White Polyester, Black Polyester, and ENT

**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.

<sup>3</sup> The corrosion-resistant 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. Prior to installation, verify through the end-user that the coatings are compatible with or suitable for the proposed environment. For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. For ENT coated sprinklers, the waterway is coated. Note that the spring is exposed on sprinklers with Polyester, and ENT coatings.





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### Approval Chart 1 (UL)

Microfast® Quick Response Horizontal Sidewall Sprinkler VK305  
 For Light or Ordinary Hazard Occupancies

Maximum 175 PSI (12 Bar) WWP

Deflector must be located 4" to 12" (102 mm to 305 mm) below the ceiling.

KEY	
Temperature	Temperature
Finish	Finish
A1X ←	Escutcheon (if applicable)

Sprinkler Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-Factor		Overall Length		Listings and Approvals <sup>3</sup> (Refer also to UL Design Criteria.)	
		NPT	BSPT	U.S.	metric <sup>2</sup>	Inches	mm	cULus <sup>4</sup>	China Approval
12997	VK305	1/2"	15 mm	5.6	80.6	2-11/16	68	A1W, B1X, C2W, D2Z	--
19782 <sup>7</sup>	VK305	1/2"	--	5.6	80.6	2-11/16	68	E3	E3

#### NOTICE - Product Below - Limited Availability (Contact Local Viking Office)

12121	VK305	1/2"	15 mm	5.6	80.6	2-11/16	68	A1W, B1X, C2W, D2Z	--
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#### Approved Temperature Ratings

- A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C),  
 200 °F (93 °C), and 286 °F (141 °C)  
 B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C),  
 and 200 °F (93 °C)  
 C - 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C),  
 and 286 °F (141 °C)  
 D - 155 °F (68 °C), 175 °F (79 °C), and 200 °F  
 (93 °C)  
 E - 155 °F (68 °C)

#### Approved Finishes

- 1 - Brass, Chrome, White Poly-ester<sup>5,6</sup>,  
 and Black Polyester<sup>5,6</sup>
- 2 - ENT<sup>5</sup>
- 3 - Chrome

#### Approved Escutcheons

- W - Installed with standard surface-mounted escutcheons  
 X - Installed with standard surface-mounted escutcheons  
 or recessed with the Viking Micromatic® Model  
 E-1, E-2, or G-1 Recessed Escutcheon  
 Z - Installed with standard surface-mounted escutcheons  
 or recessed with the Viking Micromatic Model  
 E-1

#### Footnotes

- <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> cULus Listed as corrosion-resistant.
- <sup>6</sup> Other colors are available on request with the same Listings and Approvals as the standard colors.
- <sup>7</sup> Approved according to China GB Standard.

### DESIGN CRITERIA - UL

(Also refer to Approval Chart 1.)

#### cULus Listing Requirements:

Quick Response Horizontal Sprinkler VK305 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for sidewall standard spray sprinklers.

- Designed for use in Light and Ordinary Hazard occupancies.
- Locate with the deflector 4" to 12" (102 mm to 305 mm) below the ceiling.
- 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).
- Align the top of the deflector parallel with the ceiling.
- Locate no less than 4" (102 mm) from end walls.
- Maximum distance from end 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 sidewall standard 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.**



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### Approval Chart 1 (FM)

Microfast® Quick Response Sidewall Sprinklers  
 Maximum 175 PSI WWP

KEY	
Temperature	↓
Finish	↓
A1X ← Escutcheon (if applicable)	←

Sprinkler Base Part Number <sup>1</sup>	SIN	Thread Size		Nominal K-Factor		Overall Length		FM Approvals <sup>3,4</sup> (Refer also to Design Criteria below.)			
		NPT	BSPT	U.S.	metric <sup>2</sup>	Inches	mm				
12997	VK305	1/2"	15 mm	5.6	80.6	2-11/16	68	A1Y, B1X			
<b>NOTICE - Product Below - Limited Availability (Contact Local Viking Office)</b>											
12121	VK305	1/2"	15 mm	5.6	80.6	2-11/16	68	A1W, B1X, C2W, D2Z	--		
<b>Approved Temperature Ratings</b> A - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), 200 °F (93 °C), and 286 °F (141 °C) B - 135 °F (57 °C), 155 °F (68 °C), 175 °F (79 °C), and 200 °F (93 °C)				<b>Approved Finishes</b> 1 - Brass				<b>Approved Escutcheons</b> X - Installed with standard surface-mounted escutcheons or recessed with the Viking Micromatic® Model E-1, E-2, E-3, or G-1 Recessed Escutcheon Y - Installed with standard surface-mounted escutcheons			
<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 FM Approvals available at the time of printing. Other approvals may be in process. <sup>4</sup> Viking vertical sidewall sprinklers may be installed pendent or upright. <sup>5</sup> Approved according to China GB Standard.											

### DESIGN CRITERIA - FM

(Also refer to Approval Chart 2 above.)

#### FM Approval Requirements:

Horizontal Sidewall Sprinkler VK305 is FM Approved as a quick response **Non-Storage** 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.**

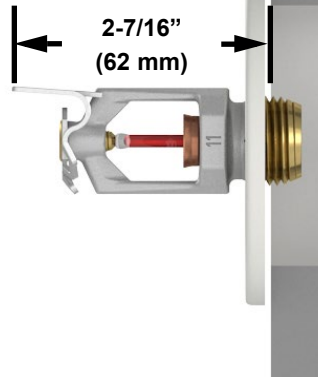
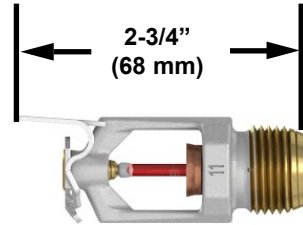
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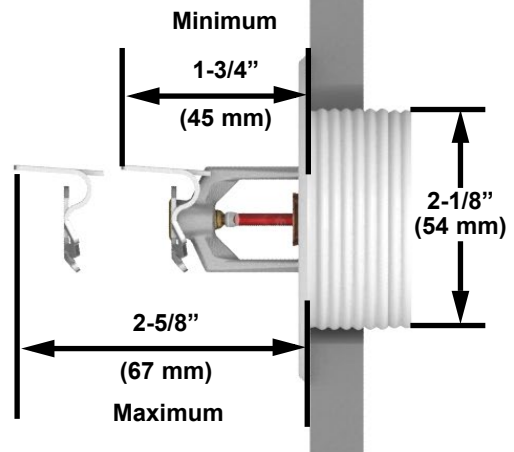
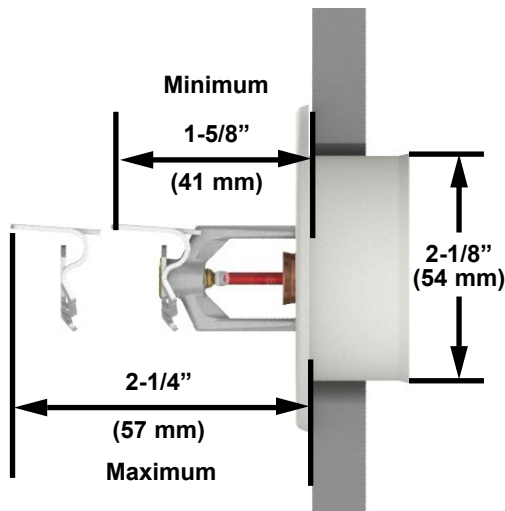
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**Wall Opening Size:**  
 2-5/16" (58.7 mm) minimum  
 2-1/2" (63.5 mm) maximum

**Installed with a Standard  
 1/8" Surface-Mounted  
 Escutcheon**

**Figure 3: Sidewall Sprinkler Dimensions with a Standard Escutcheon**



**Wall Opening Size:**  
 2-5/16" (58.7 mm) minimum  
 2-1/2" (63.5 mm) maximum

**Installed with the  
 Micromatic Model E-1  
 Recessed Escutcheon**

**Installed with the  
 Threaded Model E-2  
 Recessed Escutcheon**

**Figure 4: Sidewall Sprinkler VK305 Dimensions with the Model E-1 and E-2 Recessed Escutcheons**