



## TECHNICAL DATA

## STANDARD/QUICK RESPONSE EXTENDED COVERAGE PENDENT SPRINKLER VK534 (K11.2)

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 EC/QREC Pendent Sprinkler VK534 is a thermosensitive spray sprinkler available in several different finishes and temperature ratings to meet varying design requirements. The extra-large orifice produces the flows required to meet Light and Ordinary Hazard density requirements at lower pressures than standard orifice or large orifice sprinklers. The glass bulb operating element and special deflector characteristics meet the challenges of quick response extended coverage standards. Pendent Sprinkler VK534 is cULus Listed as standard and quick response. The special 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.

### 2. LISTINGS AND APPROVALS



cULus Listed: Category VNIV

Refer to Approval Chart 1 and Design Criteria cULus Listing requirements.

### 3. TECHNICAL DATA

#### Specifications:

Minimum Operating Pressure: Refer to the Approval Charts.

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

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Thread size: 3/4" (20 mm) NPT

Nominal K-Factor: 11.2 U.S. (161.3 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: 2-3/8" (61 mm)

#### Material Standards:

Sprinkler Frame: Brass UNS-C84400

Deflector: Brass UNS-C26000

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

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

Order Viking EC/QREC Pendent Sprinkler VK534 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 VK534 with a Brass finish and a 155 °F (68 °C) temperature rating = Part No. 08340AB

#### Available Finishes And Temperature Ratings:

Refer to Table 1.

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

#### Sprinkler Wrenches:

A. Standard Wrench: Part No. 05118CW/B (available since 1981)

B. Wrench for recessed pendent sprinkler: Part No. 11663W/B\*\* (available since 2001)

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

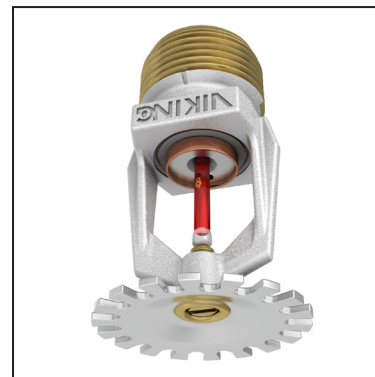
#### Sprinkler Cabinets:

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.



NOTE: As of May 2018 all logos have been removed from the wrench boss.



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



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**5. OPERATION**

During fire conditions, the heat-sensitive liquid in the glass bulb expands, causing the glass 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**

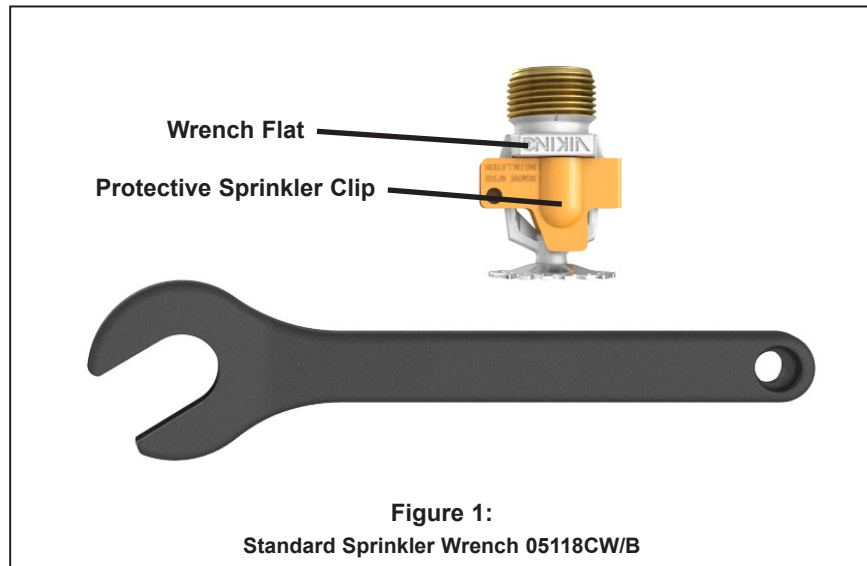
Refer to NFPA 25 for Inspection, Testing and Maintenance requirements.

**7. AVAILABILITY**

Viking EC/QREC Pendent Sprinkler VK534 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:**

**Standard Sprinkler Wrench 05118CW/B**



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**TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES**

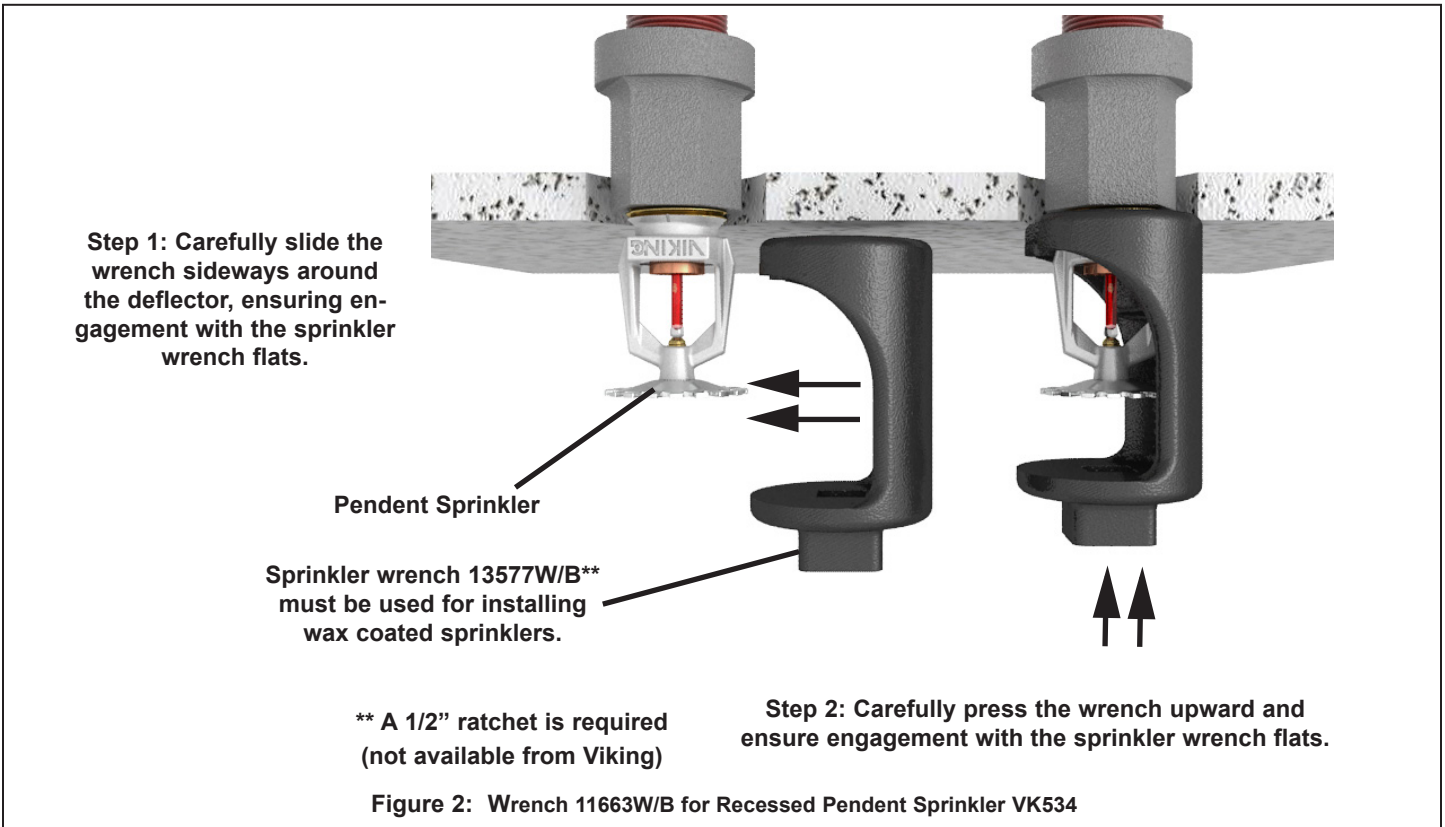
Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating <sup>1</sup>	Maximum Ambient Ceiling Temperature <sup>2</sup>	Bulb Color
Ordinary	135 °F (57 °C)	100 °F (38 °C)	Orange
Ordinary	155 °F (68 °C)	100 °F (38 °C)	Red
Intermediate	175 °F (79 °C)	150 °F (65 °C)	Yellow
Intermediate	200 °F (93 °C)	150 °F (65 °C)	Green
High	286 °F (141 °C)	225 °F (107 °C)	Blue

**Sprinkler Finishes:** Brass, Chrome, White Polyester<sup>3</sup>, Black Polyester<sup>3</sup>, and ENT

**Corrosion-Resistant Coatings<sup>4</sup>:** 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> For automatic sprinklers, the coatings indicated are applied to the exposed exterior surfaces only. Note that the spring is exposed on sprinklers with Polyester coatings.
- <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 ENT sprinklers, all exposed surfaces and the waterway are coated, but note that the spring is exposed.





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Approval Chart 1 (UL)								KEY	
SR/QR EC Pendent Sprinkler VK534								Temperature	Finish
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	
08340 Pendent	VK534	3/4	20	11.2	161.3	175 psi (12 Bar)	2-5/16	59	
Max. Sprinkler Spacing (L x W <sup>7</sup> )	Maximum Area per Sprinkler	Minimum Water Supply Requirements <sup>5</sup>					Listings and Approvals <sup>3</sup> (Refer also to UL Design Criteria)		
		Light Hazard		Ordinary Hazard Group I	Ordinary Hazard Group II				
		Flow / Pressure		Flow / Pressure	Flow / Pressure		cULus <sup>4</sup>		
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> )	--		38 gpm @ 11.5 psi (143.9 L/min @ .79 Bar)		51 gpm @ 20.7 psi (193.1 L/min @ 1.43 Bar)	C1W, D1Y, D2Z, C2W		
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 @ 19.1 psi (185.5 L/min @ 1.32 Bar)		65 gpm @ 33.7 psi (246.1 L/min @ 2.32 Bar)	C1W, D1Y, D2Z, C2W		
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 @ 28.7 psi (227.1 L/min @ 1.98 Bar)		80 gpm @ 51.0 psi (302.8 L/min @ 3.52 Bar)	C1W, D1Y, D2Z, C2W		
Quick Response									
12 ft. x 12 ft. (3.7 m x 3.7 m)	144 ft <sup>2</sup> (13.4 m <sup>2</sup> )	--		30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)		39 gpm @ 12.1 psi (147.7 L/min @ .84 Bar)	E1Y, E2Z		
14 ft. x 14 ft. (4.3 m x 4.3 m)	196 ft <sup>2</sup> (18.2 m <sup>2</sup> )	--		30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)		39 gpm @ 12.1 psi (147.7 L/min @ .84 Bar)	E1Y, E2Z		
16 ft. x 16 ft. (4.9 m x 4.9 m)	256 ft <sup>2</sup> (23.8 m <sup>2</sup> )		30 gpm @ 7.2 psi (113.6 L/min @ .50 Bar)	--		--	B1Y, F2Z		
18 ft. x 18 ft. (5.5 m x 5.5 m)	324 ft <sup>2</sup> (30.1 m <sup>2</sup> )		33 gpm @ 8.7 psi (124.9 L/min @ .60 Bar)	--		--	B1Y, F2Z		
20 ft. x 20 ft. (6.1 m x 6.1 m)	400 ft <sup>2</sup> (37.2 m <sup>2</sup> )		40 gpm @ 12.8 psi (151.4 L/min @ .88 Bar)	--		--	A1Y, G2Z		
Approved Temperature Ratings			Approved Finishes			Approved Escutcheons			
A - 135 °F (57 °C) and 175 °F (79 °C) B - 135 °F (57 °C), 155 °F (68 °C), and 175 °F (79 °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) F - 155 °F (68 °C), and 175 °F (79 °C) G - 175 °F (79 °C)			1 - Brass, Chrome, White Polyester, and Black Polyester 2 - ENT <sup>6</sup>			W - Standard surface-mounted escutcheons only Y - Standard surface-mounted escutcheons or the Microfast <sup>®</sup> Model F-1 Adjustable Escutcheon, or recessed with the Micromatic <sup>®</sup> Model E-1, E-2, or E-3 Recessed Escutcheon Z - Standard surface-mounted escutcheons or the Micromatic Model E-1 Recessed Escutcheon.			
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. 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'-6" x 13'-0" sprinkler spacing, provide the "Minimum Water Supply Requirement" listed in the chart for 14'-0" x 14'-0" 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> cULus Listed as corrosion-resistant.									



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### DESIGN CRITERIA - UL

(Also refer to Approval Chart 1.)

#### cULus Listing Requirements:

EC-ELO Pendent Sprinkler VK534 is cULus Listed as indicated in Approval Chart 1 for installation in accordance with the latest edition of NFPA 13 for extended coverage pendent spray 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: 0.10 gpm/ft<sup>2</sup> (4.1 mm/min) for Light Hazard 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 pendent spray sprinklers must be followed.
- Viking EC-ELO Pendent 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-ELO Pendent Sprinkler VK534 is specifically cULus Listed for Ordinary Hazard Occupancies:

- 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.

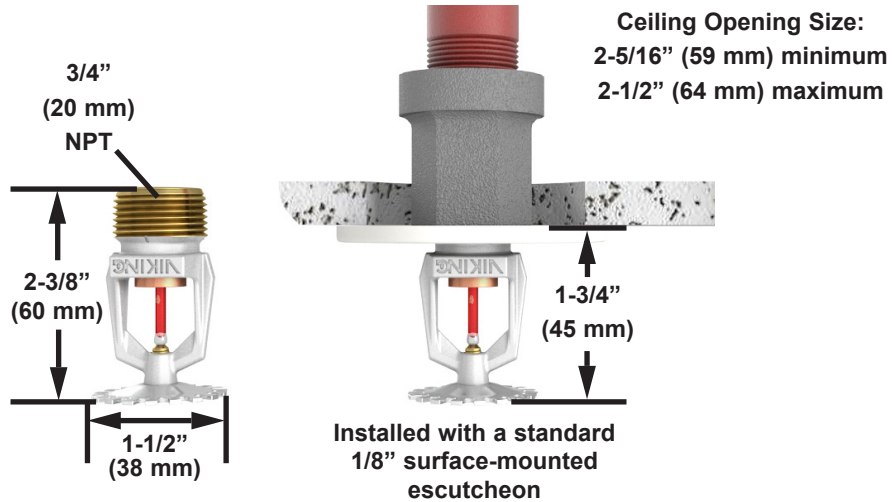
**IMPORTANT: Always refer to Bulletin Form No. F\_091699 - Care and Handling of Sprinklers. Also refer to Form No. F\_080614 for general care, installation, and maintenance information. Viking sprinklers are to be installed in accordance with the latest edition of Viking technical data, the appropriate standards of NFPA, LPCB, APSAD, VdS or other similar organizations, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable.**



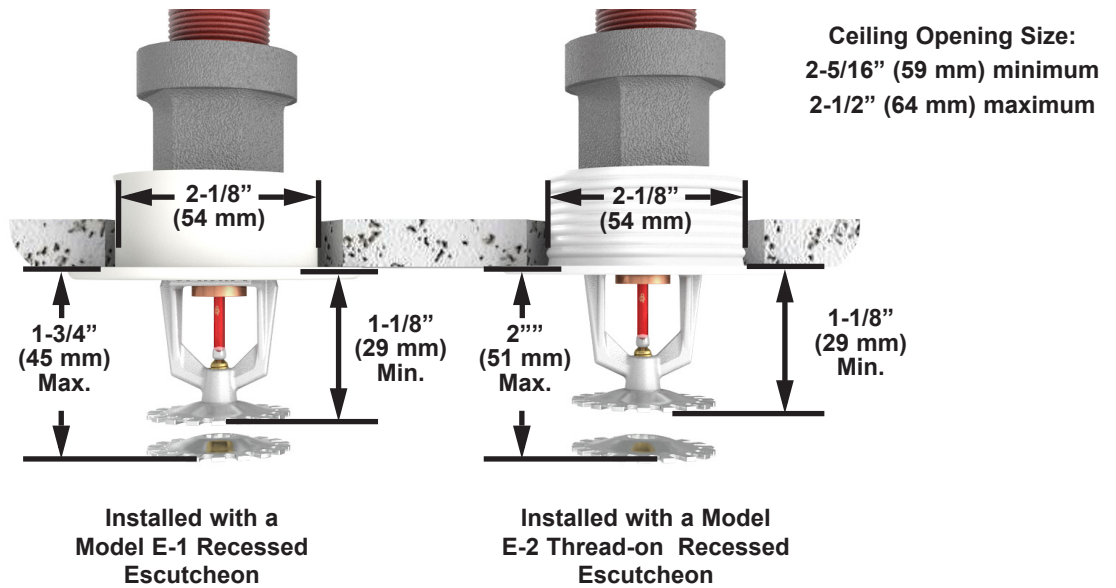
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**Figure 3: Sprinkler Dimensions with a Standard Escutcheon**



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