



TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

1. PRODUCT IDENTIFICATION

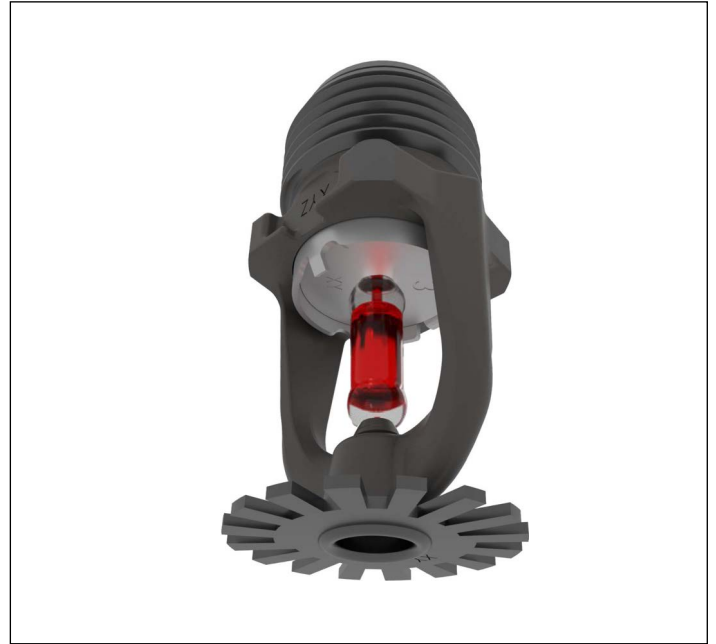
This document covers the following product, hereafter referred to as “sprinkler”:

VK851: Standard Response, Standard Coverage, Pendent, K8.0 (115) Sprinkler.

2. INTENDED USE

The sprinkler is intended to be used in automatic fire sprinkler systems as allowed by applicable approval authorities. The unique frame design allows for installation into ceiling grid structures typically used in cleanroom environments. The sprinkler must be used in accordance with:

1. the sprinkler’s Listings, Approvals, and associated design requirements.
2. the recognized design and installations standards issued. For example: NFPA, FM, EN, VdS, or LPCB.
3. the latest revisions of all applicable manufacturer’s documentation.



Governmental codes, ordinances, and standards may apply and may differ from one another.

WARNING

Cancer and Reproductive Harm www.P65Warnings.ca.gov

3. LISTING AND APPROVALS

Refer to section 5 for details and requirements that must be followed.





TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

4. TECHNICAL SPECIFICATIONS

4.1 Definitions

Standard Pendent Sprinkler: A sprinkler intended to be oriented with the deflector below the frame so water flows downward through the orifice, striking the deflector and forming an umbrella-shaped spray pattern downward. These sprinklers are marked “SP/RP” (Standard Pendent/Recessed Pendent). When a standard pendent sprinkler is used with a recessed escutcheon, it becomes a recessed pendent sprinkler.

Recessed Sprinkler: A spray sprinkler assembly intended for installation with a concealed piping system. The assembly consists of a sprinkler installed in a decorative adjustable recessed escutcheon that minimizes the protrusion of the sprinkler beyond the ceiling or wall without adversely affecting the sprinkler distribution or sensitivity. Refer to the appropriate technical data page for allowable sprinkler models, temperature ratings, and occupancy classifications.

NOTICE: Do not recess any sprinkler not listed or approved for use with the escutcheon. Refer to Section 5.

Corrosion-Resistant Sprinkler: A special service sprinkler with non-corrosive protective coatings, or that is fabricated from non-corrosive material, for use in atmospheres that would normally corrode sprinklers. Sprinklers can be ordered as corrosion-resistant sprinklers and can be used with escutcheons when allowed by the approval body.

4.2 Ratings and Physical Characteristics

Parameter	Value
Minimum operating pressure	7 psi (0.5 bar)
Maximum rated pressure	175 psi (12 bar)
Factory tested pressure	500 psi (35 bar)
Thread size	1/2" NPT
Nominal K-factor	8.0 U.S. (115)
Minimum temperature rating (glass bulb)	-65 °F (-55 °C)



TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

4.3 Markings and Dimensions

NOTE: Images are representative only. Your sprinkler may vary in appearance.

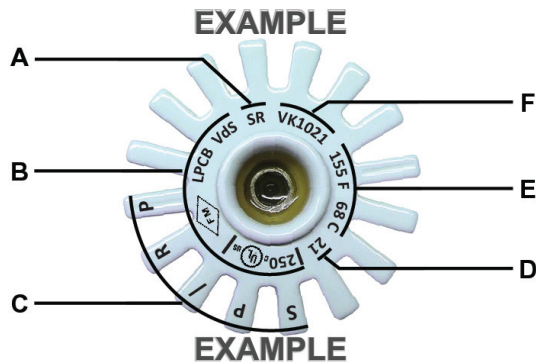


Figure – 1: Markings

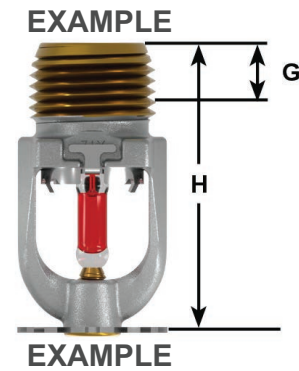


Figure – 2: Dimensions



Figure – 3: Top View

Ref	Description	Value
A	Response type	SR: Standard Response
B	Listings and Approvals	See sections 3 and 5
C	Sprinkler type	SP/RP: Standard Pendent/Recessed Pendent
D	Manufacture date (year)	See marking
E	Nominal temperature rating	See marking
F	Manufacturers Sprinkler Identification Number (SIN)	VK851
G	Nominal pipe engagement	7/16" (11 mm)
H	Height	1-15/16" (49 mm)
I	Deflector diameter	1" (25.5 mm)



TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

4.4 Materials of Construction

NOTICE: Do not disassemble the sprinkler.

NOTE: Images are representative only. Your sprinkler may vary in appearance.

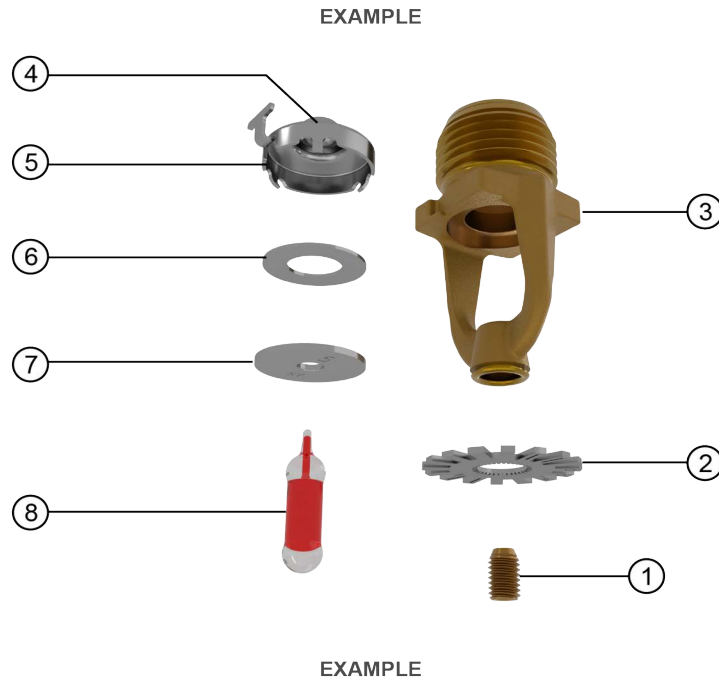


Figure – 4 Sprinkler Components

Ref	Description	Material
1	Compression screw	Brass UNS-C37700, UNS-C36000, UNS-C27200, or UNS-C26000
2	Deflector	Stainless steel UNS S30400
3	Sprinkler body	CW602N
4	Pip cap seal	Polytetrafluoroethylene (PTFE)
5	Pip cap shell	Stainless steel UNS-S44400
6	Belleville spring	Nickel alloy
7	Pip cap disc	Stainless steel UNS-S30100
8	Bulb	Glass, nominal 0.20" (5 mm) diameter



TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

5. LISTING AND APPROVAL DESIGN REQUIREMENTS

5.1 Listing and Approval Specifications

Sprinkler Base Part Number ¹	Thread Size		Approval Specifications		
	NPT	BSPT	cULus	FM	CE
Maximum WWP PSI (bar) →			175 (12)		
28606	1/2"	—	A1, A2X, B3Y	A1, B2X, B3Y	C1, D2X, D3Y
Approval Specification (Temperature Ratings) Key: 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)					
Approval Specification (Finishes) Key: 1 = Brass, white polyester ^{2,3} , and black polyester ^{2,3} , and ENT ^{3,4} 2 = Brass, white polyester ^{2,3} , and black polyester ^{2,3} 3 = ENT ^{3,4}					
Approval Specification (Escutcheons) Key: X = Installed with Viking recessed escutcheons models E-1, E-2, E-3 or Viking Standard surface-mounted escutcheons Y = Installed with Viking recessed escutcheons models E-1 or Viking Standard surface-mounted escutcheons					
1. For complete part number, refer to Viking's current price list. 2. For white polyester and black polyester, other colors are available upon request and will carry the same Listings and Approvals as the standard colors. 3. cULus Listed as corrosion-resistant. 4. FM Approved as corrosion-resistant.					

5.2 cULus Listing Requirements and Details

The sprinkler is cULus Listed (VNIV), as indicated in Table 5.1 for installation, in accordance with the latest edition of NFPA 13 for standard spray sprinklers. This sprinkler is designed for use in light, ordinary, and extra hazard occupancies. Venting is not required.

NOTE: The sprinkler is only UL Listed for retrofit, and not for new installations.

5.3 FM Approval Requirements and Details

The sprinkler is FM Approved (classes 2001, 2015, 2043) as standard response Non-Storage pendent sprinkler, as indicated in the FM Approval Guide. The sprinkler is also approved for use in FM Approved vacuum dry sprinkler systems with a maximum supervisory vacuum pressure of -3 psi (-207 mbar). 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. For specific application and installation requirements, refer to the latest applicable FM Loss Prevention Data Sheets (including Data Sheet 2-0).

NOTE: The sprinkler is only FM Approved for retrofit, and not for new installations.



TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

5.4 Additional Approval Requirements and Details

Refer to Table 5.1 for approved configurations allowed by each of the following approvals.

- CE CPR: Standard EN 12259-1:1999 +A3:2006; Declaration of Performance DOP_VK851.

For specific application and installation requirements, refer to the latest applicable governmental codes, ordinances, and standards for the installation location.

5.5 Corrosion-Resistant Coatings

The corrosion-resistant coatings have passed the standard corrosion tests required by the approving agencies and are listed and approved, as indicated in Table 5.1. These tests do not represent all possible corrosive environments. The Electro-less Nickel PTFE (ENT) finish passed the UL 199 thirty-day corrosion test and is cULus Listed and FM Approved as corrosion-resistant. For automatic sprinklers, the ENT coating is applied to all exposed exterior surfaces, including the waterway.

Prior to installation, verify that the coatings are compatible with, or suitable for, the proposed environment.

NOTE: ENT is not recommended for environments containing ferric chloride, a chemical commonly used in indoor swimming pool areas as a PH level balancer.

5.6 Sprinkler Guards and Water Shields

The sprinkler is approved for use with the Model XG Sprinkler Guard and the Model F-1 water shield. Refer to the Guards and Water Shields for XT1 Sprinklers technical data sheet for more information.

5.7 Escutcheons

The sprinkler is approved for use with various styles of Viking escutcheons. Specific installation dimensions apply that must be observed. Refer to the sprinkler's Handling and Installation instructions for more information.

5.8 Available Temperature Ratings

Viking sprinklers are available in several temperature ratings that relate to a specific temperature classification. Applicable installation rules mandate the use and limitations of each temperature classification. In selecting the appropriate temperature classification, the maximum expected ceiling temperature must be known. When there is doubt as to the maximum temperature at the sprinkler location, a maximum-reading thermometer should be used to determine the temperature under conditions that would show the highest readings to be expected. In addition, recognized installation rules may require a higher temperature classification, depending upon sprinkler location, occupancy classification, commodity classification, storage height, and other hazards. In all cases, the maximum expected ceiling temperature dictates the lowest allowable temperature classification. Sprinklers located immediately adjacent to a heat source may require a higher temperature rating.



TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

6. ORDERING PROCEDURE

6.1 Sprinkler

1. Choose a sprinkler base part number with the required thread size and listing or approval (refer to section 5):
2. Add the suffix for the desired finish.
3. Add the suffix for the desired temperature rating.

NOTE: For Polyester, insert the desired temperature rating suffix where the dash (–) is shown.

EXAMPLE: 28606MB/W = VK851 with white polyester finish and 155 °F (68 °C) nominal temperature rating. This sprinkler is to be installed into an area with a maximum ambient temperature of 100 °F (38 °C).

1. Sprinkler Base Part Number		2. Finish		3. Temperature Rating			
See Section 5		Description	Suffix	Nominal Temperature Rating	Bulb Color	Maximum Ambient Ceiling Temperature	Suffix
28606	1/2" NPT	Brass	A	135 °F (57 °C)	Orange	100 °F (38 °C)	A
		White Polyester	M–/W	155 °F (68 °C)	Red	100 °F (38 °C)	B
		Black Polyester	M–/B	175 °F (79 °C)	Yellow	150 °F (65 °C)	D
		ENT	JN	200 °F (93 °C)	Green	150 °F (65 °C)	E
				286 °F (141 °C)	Blue	225 °F (107 °C)	G
				OPEN	—	—	Z



TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

6.2 Sprinkler Accessories



Figure – 5: Sprinkler Accessories

Image Reference	Part Number	Description
1)	23559MB	Straight wrench: required for proper installation
2)	23560MB	Recessed socket wrench
3)	01724A	Sprinkler cabinet: holds up to 6 sprinklers
4)	01725A	Sprinkler cabinet: holds up to 12 sprinklers (not shown)
5)	06419A	Model E-1 slip-on style recessed escutcheon
	07902	Model E-1 slip-on style recessed escutcheon (stainless steel)
6)	11038	Model E-2 threaded recessed escutcheon
7)	18347	Model E-3 threaded recessed escutcheon (large diameter outer cup)
8)	01960A	Large standard flat surface-mount escutcheon (steel)
	09488	Large standard flat surface-mount escutcheon (stainless steel)
9)	02960A	Small standard flat surface-mount escutcheon (steel)
	07526	Small standard flat surface-mount escutcheon (stainless steel)
10)	01961B	Large standard raised surface-mount escutcheon (brass)



TECHNICAL DATA SHEET

VK851 Standard Response Cleanroom Pendent Sprinkler K8.0

7. CONTACT

The sprinkler and accessories are available through Viking distributors only. Contact your local Viking sales office which can be found on our website:

Americas and Asia: www.vikinggroupinc.com/locations OR Europe, Middle East, Africa (EMEA): www.viking-emea.com/contact

Manufacturer:

The Viking Corporation
5150 Beltway SE
Caledonia, MI 49316
Tel.: (800) 968-9501
Fax: 269-818-1680
Technical Services: 1-877-384-5464
techsvcs@vikingcorp.com

Importer EU:

Viking S.A.
21, Z.I. Haneboesch
L-4562 Differdange / Niederkorn
Tel.: +352 58 37 37 – 1
Fax: +352 58 37 36
vikinglux@viking-emea.com

Asia Pacific (APAC) Main Office:

The Viking Corporation (Far East) Pte. Ltd.
69 Tuas View Square
Westlink Techpark, Singapore 637621
Tel: (+65) 6 278 4061
Fax: (+65) 6 278 4609
vikingAPAC@vikingcorp.com