



TECHNICAL DATA SHEET

CLEANROOM SPRINKLER COVER ASSEMBLIES

1. PRODUCT IDENTIFICATION

This document covers the following product:

Viking Cleanroom Cover Assemblies.

2. INTENDED USE

The Cleanroom Cover Assemblies are low-profile covers that are intended to be used with the Viking Mirage® Concealed Pendent Sprinkler VK462, the MRI sprinkler VK462, the VK464, the MRI VK464, the VK469, VK4621, and the VK4921 for cleanroom environments. The cover assemblies must be used in accordance with:

1. its Listings, Approvals, and associated design requirements.
2. the recognized design and installations standards issued, for example, by 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.P65Warning.ca.gov

3. LISTING AND APPROVALS

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





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4. TECHNICAL SPECIFICATIONS

4.1 Technical Ratings

Refer to the appropriate sprinkler technical datasheet for sprinkler specifications.

4.2 Materials of Construction

NOTICE: Do not disassemble the cover plate assembly.

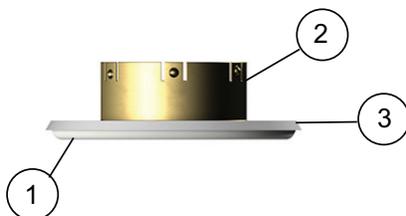


Figure – 1 Cover Plate Components

Ref	Description	Material
1	Cover plate	Copper UNS-C11000 or stainless steel UNS-S30400
2	Base	Brass UNS-C26000 or UNS-C26800
3	Gasket	Silicone
4	Springs (not shown)	Nickel Alloy
5	Solder (not shown)	Eutectic

4.3 Cover Plate Assembly Custom Paint

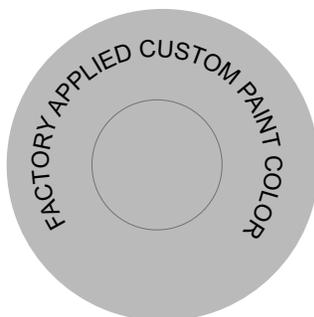


Figure – 2 Custom Paint Identification for Concealed Covers

All custom color painted cover plates will have an identifying label affixed to the cover's inside. The label indicates what the custom color is and will have a custom color representative sample (i.e., a paint dot).


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5. LISTING AND APPROVAL DESIGN REQUIREMENTS
5.1 cULus Listing Requirements and Details

The sprinkler is cULus Listed, 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.

The following sprinklers are Listed as standard response when paired with the cleanroom cover plate assembly:

- VK464 (MRI)
- VK464 (standard)
- VK4921

The following sprinklers are Listed as quick response when paired with the cleanroom cover plate assembly:

- VK462 (standard)
- VK462 (MRI)
- VK4621
- VK469

Additionally, the following conditions must be met:

- Wet systems shall be provided throughout the facility containing cleanrooms and clean zones.
- Sprinklers shall be installed in the plenum and interstitial space above cleanrooms and shall be hydraulically designed for a density of 0.2 gpm (8.15 L/min m²) over a design area of 3000 ft² (278.8 m²).
- Sprinklers installed in duct systems shall be hydraulically designed for a density of 0.5 gpm (1.9 L/min) over an area derived by multiplying the distance between the sprinklers in a horizontal duct by the width of the duct. Minimum discharge shall be 20 gpm (76 L/min) per sprinkler from the five (5) hydraulically most remote sprinklers.
- Sprinklers installed in ductwork shall be spaced a maximum of 20 ft (6.1 m) apart horizontally and 12 ft (3.7 m) apart vertically.
- A separate indicating control valve shall be provided for sprinklers installed in ductwork.
- The sprinklers shall be accessible for periodic inspection and maintenance.

5.2 Listing and Approval Specifications

Sprinkler Base Part Number ¹	Approval Body						
	Thread Size		SIN	Nominal K-Factor		Maximum Working Water Pressure	Approval Specification
	Inch	mm		U.S	Metric ²	PSI (bar)	cULus
Standard Response Sprinklers							
24683A	1/2"	--	VK4921	5.6	80.6	250 PSI (17 bar)	AS1, AU2, BT1, CT1
24683JN	--	15 mm	VK4921	5.6	80.6	250 PSI (17 bar)	AS1, AU2, BT1, CT1
23116A	1/2"	--	VK4921	5.6	80.6	250 PSI (17 bar)	AS1, AU2, BT1, CT1
23116JN	--	15 mm	VK4921	5.6	80.6	250 PSI (17 bar)	AS1, AU2, BT1, CT1
15481A	3/4"	20 mm	VK464 (MRI)	8.0	115.2	175 PSI (12 bar)	AS1, BT1, CT1
13614A	3/4"	20 mm	VK464	8.0	115.2	175 PSI (12 bar)	AS1, BT1, CT1
13614JN	3/4"	20 mm	VK464	8.0	115.2	175 PSI (12 bar)	AS1, BT1, CT1
Quick Response Sprinklers							
13503A	1/2"	15 mm	VK462 ⁵	5.6	80.6	175 PSI (12 bar)	AS1, AU2, BT1, CT1


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Sprinkler Base Part Number ¹	Approval Body						
	Thread Size		SIN	Nominal K-Factor		Maximum Working Water Pressure	Approval Specification
	Inch	mm		U.S	Metric ²	PSI (bar)	cULus
13503JN	1/2"	15 mm	VK462 ⁵	5.6	80.6	175 PSI (12 bar)	AS1, AU2, BT1, CT1
15480A	1/2"	15 mm	VK462 (MRI)	5.6	80.6	175 PSI (12 bar)	AS1, AU2, BT1, CT1
24682A	1/2"	--	VK4621	5.6	80.6	250 PSI (17 bar)	AS1, AU2, BT1, CT1
24682JN	1/2"	--	VK4621	5.6	80.6	250 PSI (17 bar)	AS1, AU2, BT1, CT1
22962A	--	15 mm	VK4621	5.6	80.6	250 PSI (17 bar)	AS1, AU2, BT1, CT1
22962JN	--	15 mm	VK4621	5.6	80.6	250 PSI (17 bar)	AS1, AU2, BT1, CT1
15764A	3/4"	20 mm	VK469	11.2	161.3	175 PSI (12 bar)	DV1, DW1, EW1
15764JN	3/4"	20 mm	VK469	11.2	161.3	175 PSI (12 bar)	DV1, DW1, EW1
Approval Specification (Temperature Ratings) Key:							
A = 155 °F (68 °C) B = 175 °F (79 °C) C = 200 °F (93 °C) D = 165 °F (74 °C) E = 205 °F (96 °C)							
Cover Plate Assembly Temperature Ratings⁴:							
S = 139°F (59°C) cleanroom cover assembly 23174-A/CR or 23463-A/CR ¹ T = 165°F (74°C) cleanroom cover assembly 23174-C/CR or 23463-C/CR ¹ U = 139°F (59°C) cleanroom stainless steel cover assembly 23183A/CR or 23473A/CR ¹ V = 139°F (59°C) cleanroom cover assembly 15765-A/CR or 23495-A/CR ¹ W = 165°F (74°C) cleanroom cover assembly 15765-C/CR or 23495-C/CR ¹							
Approval Specification (Cover Plate Assembly Finishes) Key³:							
1 = Polished chrome, painted white, painted ivory, or painted black 2 = Stainless steel							
Footnotes							
1. For complete part number, refer to Viking's current price list. 2. Metric K-factor measurement shown is when pressure is measured in bar. When the pressure is measured in kPa, divide the metric K-factor shown by 10.0. 3. Standard painted finishes consist of Polyester Baked Enamel. Other paint colors are available upon request with the same listings as the standard paint colors. Listings and approvals apply for any paint manufacturer. Contact Viking for additional information. 4. 139°F (59°C) cover has an orange label. The 165°F (74°C) cover has a white label. NOTE: Custom colors are indicated on a label inside the cover assembly. 5. This Viking sprinkler has limited availability.							



5.3 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.

6. INSTALLATION PROCEDURES

6.1 Pre-Installation Procedures

Verify the following:

⚠ CAUTION

If the installation dimensions are not within the required measurements indicated on the sprinkler's documentation, the piping must be re-cut and installed prior to installing the sprinkler.

1. The sprinkler base is installed in accordance to the relevant sprinkler installation instructions. (Refer to the sprinkler documentation for more details.)
2. All work, such as system tests, inspections, and ceiling installation or painting, has been completed.

6.2 Cleanroom Cover Plate Assembly Installation

⚠ CAUTION

DO NOT modify the sprinkler and cover plate assembly.

NOTICE

The cover plate assembly is fragile. Handle with care.

1. Remove the sprinkler's plastic protective cap.
2. Remove the cleanroom cover plate assembly from its packaging.
3. GENTLY place the cleanroom cover plate over the protruding sprinkler.
4. CAREFULLY push or thread the cleanroom cover plate assembly into the sprinkler's adapter cup.
5. Continue pushing or threading the cleanroom cover plate until the flange fits tightly against the ceiling surface.
6. Verify that the installation dimensions are within the measurements indicated on the sprinkler's documentation. In most cases, the maximum adjustment available is 1/2" (13 mm).



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7. ORDERING PROCEDURE

7.1 Instructions

1. Choose the appropriate sprinkler model (SIN) for the desired application. For specific sprinkler details, such as part numbers, refer to the sprinkler's technical datasheet.
2. Select the cover plate base part number from the table below.

NOTE: The cover plate base part number must be approved for the selected sprinkler SIN.

3. Add the desired temperature rating suffix.
4. If applicable, add the finish suffix. (See available finishes in the finish table below.)

Cover plate base part number	Finish (Chrome)	Cover plate base part number	Finish (Painted white)	Cover plate base part number (Stainless steel)
Example 1	23174 FA /CR	Example 2	23174 MA /W /CR	Example 3
	Temperature rating (139°F/59°C)		Temperature rating (139°F/59°C)	Temperature rating (139°F/59°C)

See the table below for the appropriate ordering part number.

NOTE: The Ordinary temperature classification rating for a sprinkler is 155°F (68°C). The Intermediate temperature classification ratings for a sprinkler are 175°F (79°C) and 200°F (93°C).

Approved Sprinkler SINS	Cover Plate Base Part Number	Available Cover Plate Finishes and Suffixes	Cover Plate Type	Sprinkler Temperature Rating	Required Cover Plate Temperature Rating	Cover Plate Suffix (Temp.)
VK4921 (K5.6)	23174__ /CR	Chrome = F Painted White = M-/W Painted Ivory = M-/I Painted Black = M-/B	Thread-on	155°F (68°C)	139°F (59°C)	A
				175°F (79°C)		
				200°F (93°C)	165°F (74°C)	C
VK4921 (K5.6)	23463__ /CR	Chrome = F Painted White = M-/W Painted Ivory = M-/I Painted Black = M-/B	Push-on	155°F (68°C)	139°F (59°C)	A
				175°F (79°C)		
				200°F (93°C)	165°F (74°C)	C
VK4621 (K5.6)	23174__ /CR	Chrome = F Painted White = M-/W Painted Ivory = M-/I Painted Black = M-/B	Thread-on	155°F (68°C)	139°F (59°C)	A
				175°F (79°C)		
				200°F (93°C)	165°F (74°C)	C
VK4621 (K5.6)	23463__ /CR	Chrome = F Painted White = M-/W Painted Ivory = M-/I Painted Black = M-/B	Push-on	155°F (68°C)	139°F (59°C)	A
				175°F (79°C)		
				200°F (93°C)	165°F (74°C)	C
VK462, VK464 (K5.6, K8.0)	23174__ /CR	Chrome = F Painted White = M-/W Painted Ivory = M-/I Painted Black = M-/B	Thread-on	155°F (68°C)	139°F (59°C)	A
				175°F (79°C)		
				200°F (93°C)	165°F (74°C)	C
VK462, VK464 (K5.6, K8.0)	23463__ /CR	Chrome = F Painted White = M-/W Painted Ivory = M-/I Painted Black = M-/B	Push-on	155°F (68°C)	139°F (59°C)	A
				175°F (79°C)		
				200°F (93°C)	165°F (74°C)	C


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Approved Sprinkler SINS	Cover Plate Base Part Number	Available Cover Plate Finishes and Suffixes	Cover Plate Type	Sprinkler Temperature Rating	Required Cover Plate Temperature Rating	Cover Plate Suffix (Temp.)
VK469 (K11.2)	23495__ /CR	Chrome = F Painted White = M-/W Painted Ivory = M-/I Painted Black = M-/B	Thread-on	165°F (74°C)	139°F (59°C)	A
				165°F (74°C)		
				205°F (96°C)	165°F (74°C)	C
VK469 (K11.2)	15765__ /CR	Chrome = F Painted White = M-/W Painted Ivory = M-/I Painted Black = M-/B	Push-on	165°F (74°C)	139°F (59°C)	A
				165°F (74°C)		
				205°F (96°C)	165°F (74°C)	C
<i>The stainless steel cover plates shown below are not available with any finishes; however, paint can be applied. Contact Viking for details.</i>						
VK462 (K5.6)	23183__ /CR	--	Stainless steel, thread-on	155°F (68°C)	139°F (59°C)	A
VK462 (K5.6)	23473__ /CR	--	Stainless steel, push-on	155°F (68°C)	139°F (59°C)	A
VK4621 (K5.6)	23183__ /CR	--	Stainless steel, thread-on	155°F (68°C)	139°F (59°C)	A
VK4621 (K5.6)	23473__ /CR	--	Stainless steel, push-on	155°F (68°C)	139°F (59°C)	A
VK4921 (K5.6)	23183__ /CR	--	Stainless steel, thread-on	155°F (68°C)	139°F (59°C)	A
VK4921 (K5.6)	23473__ /CR	--	Stainless steel, push-on	155°F (68°C)	139°F (59°C)	A

8. 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

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