TECHNICAL DATA

QUICK RESPONSE FLUSH PENDENT SPRINKLER VK478 (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.

1. DESCRIPTION

Viking Quick Response Flush Pendent Sprinkler VK478 is a small high-sensitivity fusible element sprinkler designed for installation on concealed pipe systems where the appearance of a smooth ceiling is desired.

The two-piece design of the sprinkler and ceiling ring allows installation and testing of the sprinkler prior to ceiling installation. The ceiling ring allows for up to 5/8" (16 mm) of vertical adjustment and can be removed and re-installed, allowing access above removable ceiling panels without shutting down the sprinkler system and removing the sprinkler.

2. LISTINGS AND APPROVALS

cULus Listed: Category VNIV

LPCB Approved

NOTE: Refer to the Approval Chart and Design Criteria on page 3 for cULus Listing requirements that must be followed.

3. TECHNICAL DATA

Specifications:
Available since 2016.
Minimum Operating Pressure: 7 psi (0.5 bar)
Maximum Working Pressure: 175 psi (12 bar). Factory tested hydrostatically to 500 psi (34.5 bar).
Thread size: 1/2" NPT (15 mm BSP)
Nominal K-Factor: 5.6 U.S. (80.6 metric*)
* Metric K-factor measurement shown is in Bar. When pressure is measured in kPa, divide the metric K-factor shown by 10.0.
Overall Length: 2-1/8" (54 mm)

Material Standards:
Sprinkler Body: Brass UNS-C84400
Sprinkler Inlet: QM Brass or Brass UNS-C84400
Deflector Assembly: Copper UNS-C51000
Pin Assembly: Stainless Steel UNS-S30200, C23000, and Brass C36000
Seat Assembly: Brass UNS-C31400 or UNS-C31600
Belleville Spring Sealing Assembly: Nickel Alloy, coated on both sides with PTFE Tape
Fusible Element Assembly: Beryllium Nickel and Eutectic Solder
Element Cover: Copper UNS-C11000
Lever Bar Assembly: Copper Alloy UNS-C72500 and Brass UNS-C36000
Lever Arm: Stainless Steel UNS-S31600
Element Assembly: Copper UNS-C11000 and Nickel Alloy
Ceiling Ring: Cold Rolled Steel UNS-G10080

Ordering Information: (Also refer to the current Viking price list.)
Order Quick Response Flush Pendent Sprinkler VK478 by first adding the appropriate suffix for the sprinkler and ceiling ring finish and then the appropriate suffix for the temperature rating to the sprinkler base part number.
Finish Suffix: Painted White = M-/W, RAL9010 (pure white) = M-/RAL9010
Temperature Suffix: 165ºF (74ºC) = C and 205ºF (96ºC) = E
For example, sprinkler VK478 with a Painted White finish and a 165ºF (74ºC) temperature rating = 19995MC/W.
(Includes protective plastic cap covering the unit, and a ceiling ring)
Available Finishes And Temperature Ratings: Refer to Table 1.
Accessories: (Also refer to the Viking website.)
Sprinkler Wrench:** Heavy Duty Wrench Part No. 15209W/R (available since 2009)
**Requires a ½" ratchet (not available from Viking).
Sprinkler Cabinet: Part No. 01731A, Capacity: five (5) sprinklers (available since 1971)

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Replacement Ceiling Ring (3" diameter)**:** Base Part No. 16580M/-
Specify finish of the ceiling ring by adding the appropriate suffix for the finish to the base part number:
Finish Suffix: Painted White = M/W, RAL9010 (pure white) = M/RAL9010, Custom Color = SW-
For example, ceiling ring 16580 with a painted white finish= 16580M/W.

4. INSTALLATION

Refer to appropriate NFPA Installation Standards.

5. OPERATION

During fire conditions, when the fusible element reaches its operating temperature, the element cover, fusible element and lever assembly fall away. The deflector is suspended below the ceiling. Water flowing through the sprinkler orifice strikes the deflector, forming a uniform spray pattern over a specific area of coverage determined by the water supply pressure at the sprinkler to extinguish or control the fire.

6. INSPECTIONS, TESTS AND MAINTENANCE

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

7. AVAILABILITY

Viking Sprinkler VK478 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.

TABLE 1: AVAILABLE SPRINKLER TEMPERATURE RATINGS AND FINISHES

Sprinkler Temperature Classification	Sprinkler Nominal Temperature Rating[1]	Maximum Ambient Ceiling Temperature[2]	Ceiling Ring Base Part Number[3]
Ordinary	165 °F (74 °C)	100 °F (38 °C)	16580M/-
Intermediate	205 °F (96 °C)	150 °F (65 °C)	16580M/-

Finishes: Painted white, RAL9010 (pure white), custom painted

Footnotes

[1] The sprinkler temperature rating is stamped on the sprinkler inlet.

[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] Part number shown is the base part number for replacement ceiling rings. For complete part number, refer to current Viking price list schedule.

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Approval Chart 1 (UL)

Quick Response Flush Pendent Sprinklers

Sprinkler Base Part No[1]	SIN	NPT Thread Size		Nominal K-Factor		Maximum Water Working Pressure	Overall Length		Listings and Approvals[3] (Refer also to Design Criteria below.)	
		Inch	mm	U.S.	metric[2]		Inches	mm	cULus[4]	LPCB
19995	VK478	1/2"	--	5.6	80.6	175 psi (12 bar)	2-1/8"	54	A1	A1
20112	VK478	--	15	5.6	80.6	175 psi (12 bar)	2-1/8"	54	A1	A1

Sprinkler Temperature Rating
A - 165 °F (74 °C) and 205 °F (96 °C)

Approved Finishes [5]
1 - Painted white, RAL9010 (pure white), custom painted

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] 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.

[4] Listed by Underwriter's Laboratories for use in the U.S. and Canada.

[5] Painted finish consists of Polyester Baked Enamel. Other paint colors are available on request with the same listings as the standard finish colors. Listings and approvals apply for any paint manufacturer. Contact Viking for additional information.

NOTE: Custom colors are indicated on a label on the sprinkler body.

DESIGN CRITERIA

(Also refer to the Approval Chart above.)

cULus Listing Requirements:

Quick Response Flush Pendent Sprinkler VK478 is cULus Listed for installation in accordance with the latest edition of NFPA 13 for standard coverage pendent spray sprinklers as indicated below:

- For hazard occupancies up to and including Ordinary Hazard, Group II according to NFPA.
- Protection areas and maximum spacing shall be in accordance with the tables provided in NFPA 13. Maximum spacing allowed is 15 ft. (4.6 m).
- Minimum spacing allowed is 6 ft. (1.8 m) unless baffles are installed in accordance with NFPA 13.
- Minimum distance from walls is 4 in. (102 mm).
- Maximum distance from 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 standard coverage pendent spray sprinklers must be followed.

LPCB Approval Requirements:

1. LPCB approved as a Quick Response Flush sprinkler for use according to EN12845 and LPC Rules which allow Flush sprinklers to be used in LH and OH risks, including those designated as Life Safety.
2. This sprinkler must not be installed in a ceiling with a positive pressure in the void above.
3. The installation instructions included in this document must be followed. Ensure the slots in the skirt are not obstructed in any way.
4. The protective cap must not be removed until after installation to the range pipe has been completed.

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 and any other similar Authorities Having Jurisdiction, and also with the provisions of governmental codes, ordinances, and standards, whenever applicable. Final approval and acceptance of all residential sprinkler installations must be obtained from the Authorities Having Jurisdiction.

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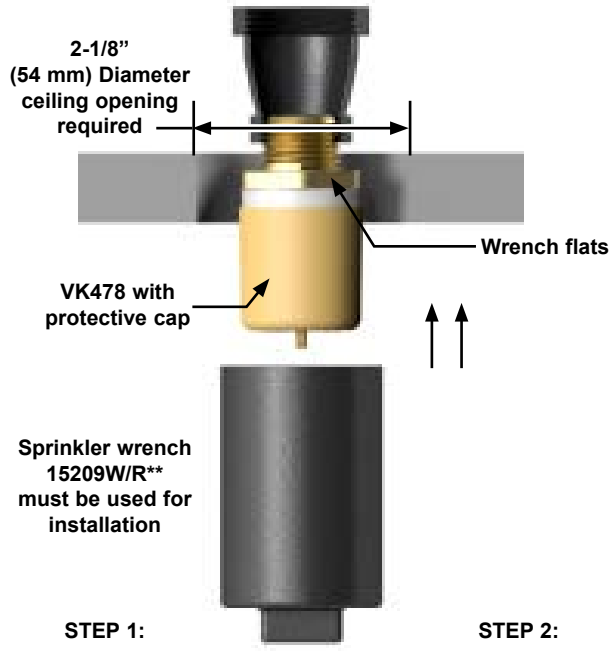
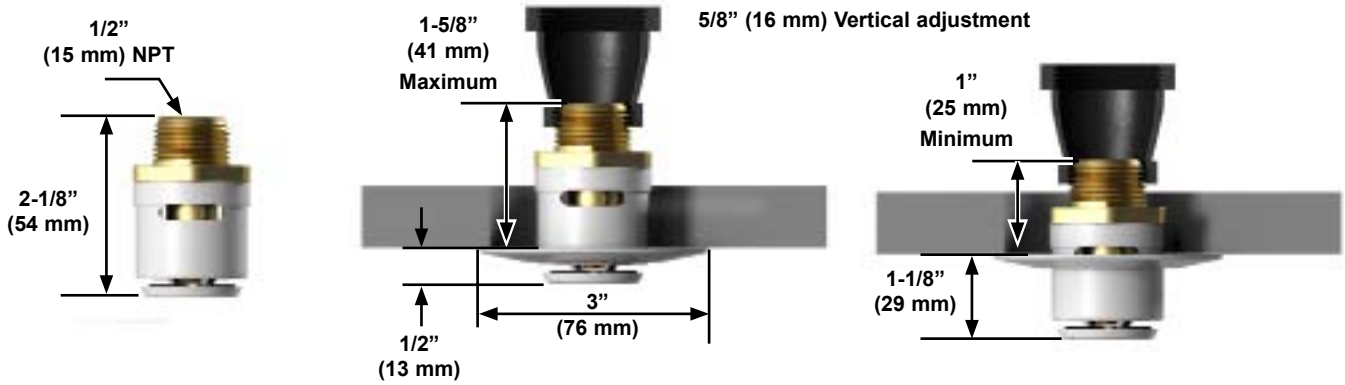


Figure 1: Sprinkler Installation and Correct Use of Wrench
** A 1/2" Ratchet is required (Not available from Viking)



NOTE: Upon sprinkler activation, the deflector descends to approximately 1/2" (12 mm) below the sprinkler body.

Figure 2: Sprinkler Dimensions and Ceiling Ring Installation