



VSF Flame Detector Quote Sheet

Choosing the correct flame detector can sometimes be a complicated task. Viking Integrated Safety is here to help make the decision of choosing a flame detector simple.

Viking Flame Detectors

Viking VSF300 is an explosion-proof intelligent **video flame detector** capable of detecting an n-heptane (gasoline) fire at 200 ft and JP4 (jet fuel) at 300 ft. with FoV = 80° x 120° (VxH).

Viking VSF301 is an explosion-proof intelligent **video flame detector** capable of detecting an n-heptane (gasoline) fire at 144 ft and JP4 (jet fuel) at 200 ft. with FoV = 65° x 90° (VxH). Operates with or without color video output. Micro-SD card slot for on-board recording of pre- and post-fire alarms.

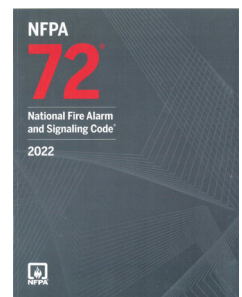
Viking VSF303 is an explosion-proof **multi-spectrum IR flame detector**. The VSF303 has been tested by Factory Mutual (FM) to detect a hydrocarbon fuel pan fire at ~200 feet within 5 seconds and FoV = 90° x 90° (VxH).

Which Viking Flame Detector?

Fire Source	VSF300 & VSF301	VSF303
Gasoline / n-heptane	✓	✓
Diesel Fuel	✓	✓
JP4 / Kerosene	✓	✓
Ethanol	✓	✓
Methanol		✓
Methane	✓	✓
Hydrogen		
Wood stack	✓	✓
Silane	✓	
Suitability in Following Conditions		
Sunlight	✓	✓
Dust/Sand/Oil/Grease	✓	✓
Water	✓	!
Arc Welding	✓	!

NFPA Requirements

When choosing the correct flame detector for the application, it is essential to consult NFPA 72 Section 5.8 Radiant Energy — Sensing Fire Detectors.



5.8.2* Fire Characteristics and Detector Selection

5.8.2.1*

The type and quantity of radiant energy-sensing fire detectors shall be determined based on the performance characteristics of the detector and an analysis of the hazard, including the burning characteristics of the fuel, the fire growth rate, the environment, the ambient conditions, and the capabilities of the extinguishing media and equipment.

5.8.2.2*

The selection of the radiant energy-sensing detectors shall be based on the following:

- (1) Matching of the spectral response of the detector to the spectral emissions of the fire or fires to be detected
- (2) Minimizing the possibility of spurious nuisance alarms from non-fire sources inherent to the hazard area

5.8.3.2.1*

The location and spacing of detectors shall be the result of an engineering evaluation that includes the following:

- (1) Size of the fire that is to be detected
- (2) Fuel involved
- (3) Sensitivity of the detector
- (4) Field of view of the detector
- (5) Distance between the fire and the detector
- (6) Radiant energy absorption of the atmosphere
- (7) Presence of extraneous sources of radiant emissions
- (8) Purpose of the detection system
- (9) Response time required

5.8.3.2.2

The system design shall specify the size of the flaming fire of given fuel that is to be detected.

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5.8.3.2.3*

In applications where the fire to be detected could occur in an area not on the optical axis of the detector, the distance shall be reduced or detectors shall be added to compensate for the angular displacement of the fire in accordance with the manufacturer's documented instructions.

5.8.3.2.4*

In applications in which the fire to be detected is of a fuel that differs from the test fuel used in the process of listing or approval, the distance between the detector and the fire shall be adjusted consistent with the fuel specificity of the detector as established by the manufacturer.




5.8.3.2.5

Because flame detectors are line-of-sight devices, their ability to respond to the required area of fire in the zone that is to be protected shall not be compromised by the presence of intervening structural members or other opaque objects or materials.

Questions for Quoting a VSF Flame Detector Project

1. What is the application/industry?
2. What is the fuel in the hazard?
3. What is the distance between the flame detector(s) and hazard(s)?
4. Are there any obstructions between the flame detector(s) and the hazard(s)?
5. What potential false alarm sources are present and where are they?
6. What is the required response time?
7. Will a fire alarm control panel or releasing panel be required for the application?
8. Are drawings available for this application?



Viking Part	Viking Model	Suffix	Housing	Cable Entry	Description
24597	VSF300 IVFD	-NPT-1	Aluminum	¾" NPT	<ul style="list-style-type: none"> • Explosion-proof video flame detector • Superior range & FoV 
24373	VSF300 IVFD	-M25-2	Aluminum	M25	
24594	VSF300 IVFD	-NPT-SST-1	Stainless Steel	¾" NPT	
24375	VSF300 IVFD	-M25-SST-2	Stainless Steel	M25	
24596	VSF301 IVFD-V	-NPT-1	Aluminum	¾" NPT	<ul style="list-style-type: none"> • Explosion-proof video flame detector • Live video feed • On-board memory slot 
24369	VSF301 IVFD-V	-M25-2	Aluminum	M25	
24593	VSF301 IVFD-V	-NPT-SST-1	Stainless Steel	¾" NPT	
24371	VSF301 IVFD-V	-M25-SST-2	Stainless Steel	M25	
24598	VSF303 MSIR	-NPT-1	Aluminum	¾" NPT	<ul style="list-style-type: none"> • Explosion-proof multi-spectrum IR flame detector 
24365	VSF303 MSIR	-M25-2	Aluminum	M25	
24598	VSF303 MSIR	-NPT-SST-1	Stainless Steel	¾" NPT	
24367	VSF303 MSIR	-M25-SST-2	Stainless Steel	M25	

Viking Design Support

VIS offers complementary expert design, engineering, and consulting services to ensure your fire protection needs are met quickly & efficiently. Each solution can be custom-tailored for your installation, from design to commissioning to deployment and maintenance. Contact us at:

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