



## TECHNICAL DATA

## VSF300

The Viking Corporation, 5150 Beltway Dr. SE, Caledonia, MI 49316  
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 Visit the Viking website for the latest edition of this technical data page. [www.vikinggroupinc.com](http://www.vikinggroupinc.com)

### Intelligent Visual Flame Detector

Designed for hazardous industries where a high-quality, lower cost, long range flame detector is needed.

The Viking VSF300 is an explosion proof, intelligent, visual flame detector (iVFD) capable of detecting an n-heptane fire at 200 feet and JP4 at 300 feet. The device processes live video images to detect the characteristic properties of flames by means of onboard digital signal processing and hardcoded software algorithms.

### Features and Benefits

The VSF300 utilizes flame detection algorithms that have been refined over 30 years from the first generation visual flame detector to the market leading VSF301.

#### Excellent Immunity to False Alarms

The VSF300 consistently demonstrates excellent immunity to false alarms in areas where flare reflections and / or hot CO<sub>2</sub> emissions may cause other technologies to false alarm.

#### No sensitivity loss

The VSF300 has been independently tested to show no sensitivity loss to a fire in the presence of modulated sunlight and modulated black body heat. This key feature means the unit has greater coverage than almost all other detectors in “real world” outdoor conditions.

#### Extended field of view

The VSF300 has a massive 120° horizontal and 80° vertical field of view and unlike conventional flame detectors, the field of view does not reduce at the outer limits. This means one unit covers more area than its conventional flame detector counterpart.



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

- Intelligent visual flame detection (iVFD) principle ensures maximum false alarm immunity and eliminates sensitivity loss in the presence of modulated sunlight and black body heat.
- Continuous optical test, without a reflector
- Verifies operation and improves device up-time
- International hazardous area approvals
- FM / ATEX / IECEx
- Certified performance testing to multiple fuels
- FM 3260
- Spatially aware—single sensitivity detection
- External testing with a long-range flame simulator
- Minimizes the need for scaffolding
- Easy integration using industry standard outputs:
- Alarm and Fault Relays
- 0-20mA



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## Technical Specification

### Environmental

Operating Temp -76°F to +185°F (-60°C to +85°C)  
 Storage Temp -76°F to +185°F (-60°C to +85°C)  
 Humidity 0 to 95% RH non-condensing

### Operating Voltage

24 VDC Nominal – (Range 18 to 32 VDC)

### Power Consumption

2.8 W Nominal at 24 VDC

### Field of View

80° vertical by 120° horizontal

### Speed of Response

<7 seconds (Typical)

### Flame Sensitivity

### Enclosure


Dimensions: 4" Diameter x 8" L 100 mm Dia x 200 mm  
 Material: Copper free aluminum or 316 stainless steel  
 Entry size: 3/4 inch NPT or M25  
 Weight: Aluminum 5.5 lbs (2.5 Kg) Stainless steel 13.2 lbs (6 Kg)

### Outputs

Relay contacts - alarm and fault  
 0-20mA (current source)

### Certification

FM approved  
 Class 1 Div 1, Groups B, C, D T4  
 Class 1 Zone 1 AEx/Ex db IIC T4  
 Ambient -50°C to +85°C

ATEX  II 2 G Ex db IIC T4  
 IECEx Ex db IIC T4  
 Ambient -60°C to +85°C

### Performance approvals

FM 3260

**Ingress** IP66 / NEMA type 4X

### Accessories

Flame Simulator (VSF3008 ITEST)  
 Vertical to Horizontal Mounting Adapter  
 Standard Bracket (spare)  
 Marine Bracket  
 Detector Sealing Kit (Metric)  
 Flame Simulator Charger  
 Sun-shield  
 2", 3" & 4" Pole Mount Bracket



Fuel	Fire Size	Distance
n-Heptane pan fire	1 foot x 1 foot pan	200 feet (60m)
n-Heptane: direct sun-light	1 foot x 1 foot pan	200 feet (60m)
n-Heptane: modulated sunlight	1 foot x 1 foot pan	200 feet (60m)
n-Heptane: modulated black body	1 foot x 1 foot pan	200 feet (60m)
n-Heptane: Arc welding	1 foot x 1 foot pan	200 feet (60m)
n-Heptane: 1000 W lamp	1 foot x 1 foot pan	200 feet (60m)
Gasoline	1 foot x 1 foot pan	200 feet (60m)
JP4	2 foot x 2 foot pan	300 feet (90m)
Tri-ethylene glycol	1 foot x 1 foot pan	50 feet (15m)
Diesel	1 foot x 1 foot pan	165 feet (50m)
Crude oil (heavy fuel)	20 in x 20 in pan	165 feet (50m)
Methane Jet Fire	36" plume	100 feet (30m)
Ethanol	1 foot x 1 foot pan	85 feet (25m)
Silane	24" plume	56 feet (17m)