Flame Detector Selection Guide

Flame Detector Models

IR3

IR3-HD

IR3-H2

IR3-H2-HD

UV-IR

UV-IR-HD

UV-IR-F

UV-IR-F-HD

Detector Model Range and Characteristics

Fike flame detectors offer superior immunity to false alarms and are available either with or without an integral High Definition (HD) video camera.

The HD versions of the detectors provide high-definition (HD) video output of the monitored area with clear imaging of any fire event and personnel at distances up to 100 ft (30m). This allows the rescue team to be aware of the exact situation before entering the hazardous area.

The HD detectors automatically record video of any fire event (1-minute pre- and up to 3 minutes post-alarm initiation). These features, along with the built-in event logger, provide additional means to study the cause and development of fire events. In addition, detectors with video output capabilities can be connected to a Fike Video Analytics® FSM-IP server. The server's proprietary onboard analytics can be used to continuously monitor the video provided by the camera to detect anomalies associated with oil mist, smoke, and reflected flame within the camera's field of view and initiate a warning signal to a video management workstation (VMS) in response.

The following table lists the range of Fike detector models, each with its maximum detection distance and typical response times. All detectors are suitable for indoor and outdoor applications.

Fike Model	Max. Detection distance* ft. (m)	Response Time (Typical)	Description
FIK-IR3	**262 (80)**	**40 msec** – for fast fire burst or explosion **1.5** sec – from 50ft (15m) **4 sec** – from 230ft (70m)	Fast Response Triple IR (IR3). Ideal for hydrocarbon and other organic fires. Offers the highest immunity to false alarms.
FIK-IR3-HD	**262 (80)**		
FIK-IR3-H2	**Hydrogen 100 (30)**	**40 msec** – for fast fire burst or explosion **1.5 sec** – from 65ft (20m) **4 sec** – from 100ft (30m)	Special design, fast response IR3 detector for 'invisible' Hydrogen (H2) flames. Offers the highest immunity to false alarms.
FIK-IR3-H2-HD	**Hydrogen 100 (30)**		
FIK-UV-IR	**100 (30)**	**5 msec** – for fast fire burst or explosion **1.5 sec** – from 50ft (15m) **3 sec** – from 100ft (30m)	Fast Response, dual-band UV/IR. Detects organic and inorganic flames.
FIK-UV-IR-HD	**100 (30)**		
FIK-UV-IR-F	**100 (30)**		Fast Response, dual-band UV/IR designed for organic flames.
FIK-UV-IR-F-HD	**100 (30)**		

***** Maximum detection distances are listed for a 1 ft^2 (0.1 m^2) Heptane pan fire, except for the Fike FIK-IR3-H2-HD and FIK-IR3-H2, for which these are listed for a 0.8m long Hydrogen plume fire.

Comparison of Fike Detector Types

Each of the Fike detectors uses either Triple IR (IR3) or combined Ultraviolet and Infrared (UV-IR) detection technologies. IR3 detectors offer superior immunity to false alarms as well as high sensitivity and speed of response. The UV-IR detectors respond to a broader range of fire types.

When choosing a flame detector for a specific application, one should consider the required detection distance and speed of response for possible fire scenarios. One should also consider the detector's immunity to false alarms, as in some applications, false alarms may cause immense damage. The application's environment should also be considered—namely, possible radiation sources and possible contaminants or objects that may block the detector's view.

Detector Type	Applications	Advantages	Notes
Triple IR (IR3)	**Hydrocarbon fires Indoors and outdoors**	✓ Fast speed of response ✓ Highest sensitivity ✓ Highest false alarm immunity ✓ Unaffected by solar radiation ✓ HD camera model option	Superior in sensitivity, speed of response, and false alarm immunity.
Triple IR (IR3-H2)	**Hydrogen fires only Indoors and outdoors**	✓ Detects invisible Hydrogen flames ✓ Longer detection range ✓ Fast speed of response ✓ Highest false alarm immunity ✓ Unaffected by solar radiation ✓ HD camera as standard	Superior in sensitivity, speed of response, and false alarm immunity.
Dual-Band UV/IR	**Hydrocarbon, Hydrogen, other hydrogen-based fuel, and metal fires Indoors and outdoors**	✓ Fast speed of response ✓ Moderate sensitivity ✓ Low false alarm rate ✓ Unaffected by solar radiation ✓ HD camera model option	Affected by electrical sparks, welding, and corona.
Dual-Band UV/IR-F	**Hydrocarbon, fuel, and metal fires Indoors and outdoors**	✓ Fast speed of response ✓ Moderate sensitivity ✓ Low false alarm rate ✓ Unaffected by solar radiation ✓ HD camera model option	Affected by electrical sparks, welding, and corona. Does not detect Hydrogen fire.

Fire Type and Maximum Detection Distances

The following table lists maximum detection distances for the different Fike Detectors across a range of fuels:

Fuel	Fire size	FIK-IR3 FIK-IR3-HD ft. (m)	FIK-IR3-H2 FIK-IR3-H2-HD ft. (m)	FIK-UV-IR FIK-UV-IR-HD ft. (m)	FIK-UV-IR-F FIK-UV-IR-F-HD ft. (m)
Heptane	1 ft^2 (0.1 m^2) pan fire	262 (80)	x	98 (30)	98 (30)
Gasoline		230 (70)	x	98 (30)	98 (30)
Diesel Fuel		164 (50)	x	75 (23)	75 (23)
JP5		164 (50)	x	75 (23)	75 (23)
Kerosene		164 (50)	x	75 (23)	75 (23)
Ethanol		125 (38)	x	62 (19)	72 (22)
Isopropanol		180 (55)	x	75 (23)	75 (23)
Methanol		131 (40)	59 (18)	52 (16)	59 (18)
Methane	32" (0.8 m) Plume fire	148 (45)	x	59 (18)	59 (18)
LPG		180 (55)	x	75 (23)	75 (23)
Hydrogen		x	98 (30)	66 (20)	x
Polypropylene	1 ft^2 (0.1 m^2) pan fire	115 (35)	x	49 (15)	49 (15)
Office Paper		79 (24)	x	33 (10)	33 (10)

x - not suitable