

Dual-Sensor Flame Detection Unit

UV-IR Optical Detector



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The UV-IR Optical Detector is a dual-spectrum flame detector designed to provide rapid and reliable fire detection in harsh and hazardous environments. By combining Ultraviolet (UV) and Infrared (IR) sensing technologies, the detector ensures superior immunity against false alarms while maintaining high sensitivity to real flame events. The unit is fully compliant with STANAG military standards, making it suitable for defense, aerospace, and industrial safety applications.

Parameter	Specification
Model	UV-IR Optical Detector
Detection Technology	Dual sensor (UV + IR)
Application	Military, petrochemical, and industrial facilities
Compliance	STANAG / MIL-STD compatible

Operating Principle

The detector continuously monitors both the UV and IR spectral bands for flame radiation signatures. Detected signals are processed by an internal microcontroller that applies **spectral correlation and dynamic filtering** algorithms.

An alarm output is only activated when both UV and IR sensors simultaneously confirm flame characteristics, effectively rejecting interference from sunlight, welding arcs, or hot surfaces.

Parameter	Specification
Response Time	< 5 seconds
Field of View	Approx. 90° conical
Detection Range	25–30 m (gasoline or alcohol flame)
False Alarm Protection	Dual-channel verification (UV + IR)

Electrical Characteristics

Engineered for easy integration with control panels and automation systems, the detector offers low power consumption and multiple output options for maximum compatibility.

Parameter	Specification
Supply Voltage	18 – 32 VDC
Power Consumption	< 3 W
Output Options	Relay (NO/NC) and 4–20 mA analog
Built-in Test Feature	Manual and remote self-test capability

Environmental Characteristics

Designed for severe military and industrial conditions, the detector ensures reliable performance across a wide temperature range and in high humidity or dusty environments.

Parameter	Specification
Operating Temperature	-55°C to +120°C
Storage Temperature	-47°C to +85°C
Ingress Protection	IP66 / IP67 (EN 60529)
Enclosure Material	Stainless steel or anodized aluminum
Weight	Approx. 1.5 kg

Mechanical and Installation Features

Compact and rugged construction ensures long-term durability and simplified installation in fixed fire detection systems.

Parameter	Specification
Mounting Type	Wall, ceiling, or bracket mounting
Connector Type	3-pin or 4-pin connector
Cable Entry	M20x1.5 or equivalent thread

The UV-IR Optical Detector provides high-performance flame detection for both military and industrial safety systems. With its dual-sensor verification, robust design, and compliance with international defense standards, it is the ideal choice for explosive environments, fuel storage facilities, and defense infrastructure where reliability is mission-critical.

Standard	Description
MIL-STD-810	Environmental tests
MIL-STD-461	EMI/EMC requirements
MIL-STD-1275	28V DC power specs

