

## Dual-Sensor Flame Detection Unit

**UV-IR Optical Detector**



# UV-IR Optical Detector

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
<b>Model</b>	UV-IR Optical Detector
<b>Detection Technology</b>	Dual sensor (UV + IR)
<b>Application</b>	Military, petrochemical, and industrial facilities
<b>Compliance</b>	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
<b>Response Time</b>	< 5 seconds
<b>Field of View</b>	Approx. 90° conical
<b>Detection Range</b>	25–30 m (gasoline or alcohol flame)
<b>False Alarm Protection</b>	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
<b>Supply Voltage</b>	18 – 32 VDC
<b>Power Consumption</b>	< 3 W
<b>Output Options</b>	Relay (NO/NC) and 4–20 mA analog
<b>Built-in Test Feature</b>	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
<b>Operating Temperature</b>	-55°C to +120°C
<b>Storage Temperature</b>	-47°C to +85°C
<b>Ingress Protection</b>	IP66 / IP67 (EN 60529)
<b>Enclosure Material</b>	Stainless steel or anodized aluminum
<b>Weight</b>	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
<b>Mounting Type</b>	Wall, ceiling, or bracket mounting
<b>Connector Type</b>	3-pin or 4-pin connector
<b>Cable Entry</b>	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
<b>MIL-STD-810</b>	Environmental tests
<b>MIL-STD-461</b>	EMI/EMC requirements
<b>MIL-STD-1275</b>	28V DC power specs



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