



Hawk Series Sensors: Non-Contact Optical Monitoring & Detection for Liquid Hydrocarbons, HABs & CDOM

Patented CFRS™ Technology: Field-Proven Edge/IoT-Ready Remote Sensing for Leaks, Spills & Contamination

Hawk Hydrocarbon Sensors deliver continuous, non-contact monitoring and early detection of oils, fuels, and produced water on solid surfaces, ground, and water. Patented CFRS optical design ensures high sensitivity and reliable detection, helping improve safety and reduce environmental risk across diverse industries.

BlueHawk™ Algae Sensors provide real-time, non-contact monitoring of blue-green (cyanobacteria), green, and select other microalgae in water using algal pigment level measurements.

Hawk sensors operate on complex surfaces and turbulent waters. The long detection range (33+ ft/10+ m) allows installation on nearby and distant platforms, enabling non-intrusive, low-maintenance monitoring with minimal disruption. They can also be deployed on drones, vessels, and vehicles for mobile monitoring.

A pan-tilt mount enables coverage up to 1,600 sq ft (150 m²) from a single point. Rugged, IP68-rated protection, small size, low weight, and low power consumption make Hawks suitable for challenging environments, including battery- or solar-powered applications.

Non-Contact,
Non-Intrusive, Non-
Biofouling Leak,
Spill & Contamination
Detection

Operates on Ground,
Solid Surfaces &
Water

High Sensitivity

Severity Quantification

Detects a Wide Range
of Petroleum Products
& HABs/Algae

Long Detection Range
& Large Coverage

24/7 Operation

Automatic Alarms &
Real-Time Data

Fixed or Mobile

IP68-Rated Protection,
HazLoc/ATEX Optional

Standalone or
Networked Operation

Low Maintenance

APPLICATIONS

- Oil & Gas
- Water Systems
- Ports & Harbors
- Power Generation
- General Industry
- Environmental Monitoring

Multispectral Non-Contact Fluorometric Detection

Hawk sensors project ultraviolet (UV) or visible light pulses onto the monitored surface. When this light interacts with certain hydrocarbons in oils and fuels or photosynthetic pigments in HABs, it causes them to emit fluorescent light. The sensor measures this fluorescence intensity (higher intensity indicates greater presence); exceeding a user-set threshold triggers an alarm or external device and/or transmits a signal via wired/wireless communication. Real-time monitoring data can also be sent to control systems, SCADA, or software applications.

Available Hawk Sensor Models



BlueHawk



BlueHawk HazLoc



TinyHawk



TinyHawk HazLoc

Patented CFRS™ Technology

Versatile Detection with UVA/UVB/Vis: BlueHawk supports UVA, UVB, and visible spectral bands, while TinyHawk uses UVA and UVB. UVA and UVB enable detection of light to heavy oils and colored dissolved organic matter (CDOM); visible light is used for measuring chlorophyll, phycocyanin, phycoerythrin, and other pigments in HABs.

Coaxial Fluorometric Remote Sensing (CFRS): Patented CFRS optical design with large apertures provides high signal strength, sensitivity, and tolerance to varying surface distances and ambient conditions. It also enables use in mobile and pan-tilt installations.

Specifications

Parameter	BlueHawk™	TinyHawk™
Optical Design	Coaxial CFRS	Traditional non-coaxial
Light Source	LED with self-diagnostics	LED
Spectral Bands	UVA / UVB / Vis	UVA / UVB
Monitored Surfaces	Dry & wet surfaces, ground, standing to turbulent waters	Static dry and wet surfaces, ground, still waters
Detectable Hydrocarbons	Light to heavy refined oils and fuels, crude oil, PW, other	Light to heavy refined oils and fuels, crude, PW, other
Detectable Algae & DOM	FW & M cyanobacteria, green, other microalgae, CDOM	N/A
Sensitivity	Sub-µm/sub-ppm, adjustable	Sub-µm/sub-ppm, adjustable
Detection Distance	0.7 to 33+ ft (0.2 to 10+ m)	0.7 to 10.0 ft (0.2 to 3.0 m)
Monitoring Coverage	Up to 1,600 sq ft (150 m²) PT	Ø10" (0.26 m) @ 10 ft (3 m)
Detection Angle	±45° from surface normal	±45° from surface normal
Pulse Rate	Up to 10 Hz, adjustable	Up to 10 Hz, adjustable
Protection (standard/hazloc)	IP68 / Class I/II/III ATEX	IP68 / Class I/II/III ATEX
Size (standard enclosure)	Ø4" × 9.4" (Ø10 cm × 24 cm)	Ø4" × 3.5" (Ø10 cm × 9 cm)
Power	10–36 VDC, 2 W	12–35 VDC, 1.5 W
Interface & Communication	RS-485 (Modbus RTU), USB; 4–20 mA, SPDT relay	RS-485 (Modbus RTU), USB; 4–20 mA / SPDT relay

Specifications subject to change without notice. Trademarks used herein are the property of their respective owners.

Unique Features

UVA/UVB/Vis
Detection for Oils,
Fuels, HABs & CDOM

Detection Range Over
33 ft (10 m)

Coverage Up to
1,600 sq ft (150 m²)

High Tolerance for
Varying Surface
Distances

Wide Detection Angle
& High Pulse Rate for
Complex Surfaces &
Dynamic Waters

IP68-Rated Protection

Fixed or Mobile Use

Compact, Lightweight,
Low Power Use

Patented CFRS Optics
with Self-Diagnostics

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additional information.