PhotonTec™

Smart Sensing for Safer and Cleaner Tomorrow



Hawk Series Sensors

Continuous, Non-Contact Monitoring for Hydrocarbons, Algal Pigments & Dissolved Organics (CDOM)

Powered by Patented CFRS™ Technology

Hawk series sensors provide continuous, non-contact monitoring and early detection of hydrocarbon contamination on water, ground, and solid surfaces, as well as algal pigments and dissolved organic matter in water. Fouling-free operation minimizes maintenance and enables monitoring in challenging locations. Patented optical technology delivers high sensitivity and reliable detection, enhancing safety, environmental protection, and operational efficiency.

Hawk sensors detect hydrocarbons ranging from crude oil and heavy petroleum products to refined fuels, including gasoline and jet fuel. Applications span water systems, oil and gas, industrial facilities, and environmental monitoring. Dedicated configurations also monitor HAB-related algal pigments and colored dissolved organic matter.

Hawk sensors operate on complex surfaces and turbulent waters. Their 30+ ft detection range enables flexible installation, while controlled scanning provides coverage up to 1,600 sq ft from a single location. Low power consumption, solar power compatibility, and wireless communication options support remote installations and mobile platforms such as buoys, vessels, and drones. Rugged, IP68-rated enclosures support operation in demanding environments.

Non-Contact, Fouling-Free Operation

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Detects on Water, Ground & Solid Surfaces

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High Sensitivity & Early Detection

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Quantitative Monitoring

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Monitors Hydrocarbons, Algal Pigments & CDOM

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Long Detection Range & Large Coverage

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24/7 Operation

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Real-Time Data & Automatic Alerts

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Fixed, Mobile, Pan-Tilt

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IP68-Rated Protection, HazLoc/ATEX Optional

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No Consumables or Mandatory Cloud Fees

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Minimal Maintenance

APPLICATIONS

- Water & Wastewater Systems
- Oil & Gas
- Ports & Harbors
- Power Generation
- Industrial Facilities
- Environmental Monitoring

Non-Contact Multispectral Fluorometric Detection

Hawk sensors project ultraviolet (UV) or visible light pulses onto the monitored surface, exciting fluorescent compounds in hydrocarbons, algal pigments, and dissolved organic matter. The sensors measure the resulting fluorescence intensity, enabling quantitative monitoring of target substances. Exceeding a user-set threshold can trigger an alarm, activate safety or process devices, and/or send notifications via wired or wireless communication. Real-time data can also be transmitted to SCADA, control systems, or monitoring networks.

Available Hawk Sensor Models



BlueHawk™



BlueHawk™ HazLoc



TinyHawk™



TinyHawk™ HazLoc

Advanced Optical Detection Technology

Versatile Detection with UVA/UVB/Vis: BlueHawk is available with UVA, UVB, or visible configurations, while TinyHawk offers UVA or UVB. UVA detects hydrocarbons and CDOM, while UVB provides enhanced sensitivity to lighter refined fuels. Visible configurations detect algal pigments including chlorophyll-a, phycocyanin, and phycoerythrin.

Coaxial Fluorometric Remote Sensing (CFRS™): Patented optical technology provides high sensitivity, long detection range, and tolerance to varying surface distances and environmental conditions. Its robust performance supports monitoring of complex surfaces and turbulent waters, as well as mobile and pan-tilt installations.

Specifications

Parameter	BlueHawk™	TinyHawk™
Optical Design	Coaxial CFRS™	Non-coaxial
Light Source	LED with self-diagnostics	LED
Spectral Bands	UVA / UVB / Vis	UVA / UVB
Monitored Surfaces	Water, ground, solid	Level water, ground, solid
Detectable Hydrocarbons	Crude oil; refined oils; others	Crude oil; refined oils; others
Detectable Algal Pigments & Dissolved Organics	Chlorophyll-a; phycocyanin; phycoerythrin; CDOM/fDOM	N/A
Sensitivity	Sub-µm/sub-ppm, adjustable	Sub-µm/sub-ppm, adjustable
Detection Range	0.7 to 33+ ft (0.2 to 10+ m)	0.7 to 10+ ft (0.2 to 3+ 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
Measurement 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
Maintenance	Minimal; non-contact	Minimal; non-contact

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

Unique Features

Hydrocarbon, Algal Pigment & CDOM Detection with UVA/UVB/Vis

Detection Range Over 33 ft (10 m)

Coverage Up to 1,600 sq ft (150 m²)

Tolerates Varying Surface Distances

Wide Detection Angle & High Measurement Rate for Complex Surfaces & Turbulent Waters

IP68-Rated Protection

Fixed, Mobile, Pan-Tilt

Compact, Lightweight, Low Power Use

Patented CFRS™ Technology with Self-Diagnostics

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Contact us to discuss your monitoring application.