

EC-HGIM600

Explosion-Proof OGI PTZ Camera.

Fixed Online Methane Gas-Cloud Imaging and Industrial Safety Monitoring System

**Advanced Gas Visualization.
Maximum Protection.**



EXPLOSION-PROOF

ATEX / IEECx Certified



OGI TECHNOLOGY

Detect. Visualize. Act.



PTZ CONTROL

360° Coverage.
Total Visibility.



BUILT TO PERFORM

Rugged. Reliable.
Ready for the toughest
environments.



EXPLOSION-PROOF
CERTIFIED



REAL-TIME METHANE
GAS IMAGING



360° PTZ
MONITORING



SMART INTEGRATION &
EASY DEPLOYMENT

Methane Monitoring in High-Risk Industrial Environments

Methane leakage is a persistent operational challenge across refineries, petrochemical plants, LNG/LPG facilities, and offshore platforms. The consequences extend beyond immediate safety – uncontrolled emissions impact production continuity, regulatory compliance, and environmental accountability.

Conventional detection approaches present well-understood limitations:

Approach	Limitation
Handheld Inspection Devices	Point-in-time verification only; no continuous coverage; require personnel presence in hazardous zones
Fixed Point Detectors	Limited to sensor location; no visual confirmation of gas cloud behavior
Manual Inspection Rounds	Coverage dependent on route, schedule, and conditions; gaps between rounds allow leaks to develop

These methods remain necessary for certain applications but do not address the need for continuous, visual, remote methane monitoring across wide hazardous areas.



THE SOLUTION — EC-HGIM600

Fixed Online Gas-Cloud Imaging and Monitoring

The EC-HGIM600 is an explosion-proof OGI PTZ camera system designed for continuous methane detection, visualization, localization, and documentation in high-risk industrial environments.

Operational Workflow

1

Detect

TDLAS laser module continuously scans for methane across 0–220 m

5 ppm-m sensitivity.
0.1 s response time.

2

Visualize

IR OGI camera reveals gas clouds in real time; thermal and visible-light fusion

640 × 512 IR.
5 MP visible. Fusion display.

3

Alarm

Concentration exceeds preset threshold → audible/visual alarm; automatic video recording

Timestamped. Traceable.
Playback-supported.

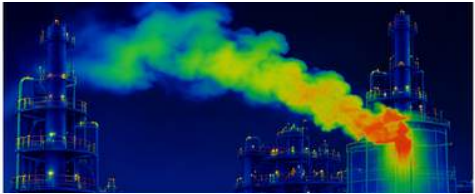
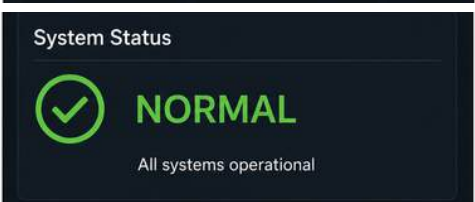
4

Respond

Laser ranging measures distance to leak point; remote assessment; targeted maintenance dispatch

No personnel exposure.
Precise location.

Core Capabilities

Gas-Cloud Visualization	Infrared imaging displays methane cloud shape, diffusion direction, movement, and concentration trend — information not available from conventional detectors	
Quantitative Methane Detection	TDLAS module provides concentration measurement: 0–50,000 ppm·m range, 5 ppm·m static detection limit	
Wide-Area PTZ Monitoring	360° continuous horizontal rotation, –90° to +90° vertical movement, 0.1–20°/s adjustable speed	
Visible + Infrared Fusion	Multiple display modes: visible-light, infrared, picture-in-picture, and fused overlay for contextual interpretation	
Alarm Recording and Traceability	Automatic alarm video recording, concentration logging, timestamping, and playback for incident review and compliance	
Device Self-Check	Built-in fault identification and alarm output for operational reliability	

Technical Specification
Imaging System

Parameter	Specification
IR Detector Type	Uncooled VOx infrared detector
IR Resolution	640 × 512
Frame Rate	25 fps
IR Spectral Range	7.0–8.5 μm
IR Lens	22–115 mm continuous zoom
Visible Sensor	5 MP 1/1.8-inch low-light CMOS
Visible Resolution	2880 × 1620 @ 25 fps
Visible Optical Zoom	33×
Video Export	MP4, MKV, AVI, and other formats

Methane Detection and Ranging

Parameter	Specification
Target Gas	Methane / CH ₄
Detection Principle	TDLAS / Laser Absorption Spectroscopy
Detection Distance	0–220 m
Static Detection Limit	5 ppm·m
Response Time	0.1 s
Measurement Range	0–50,000 ppm·m
Laser Ranging Distance	5–1500 m
Laser Wavelength	905 ± 10 nm
Eye Safety	Class 1, IEC 60825-1

PTZ and Protection

Parameter	Specification
Horizontal Rotation	0°–360° continuous
Vertical Rotation	–90° to +90°
Rotation Speed	0.1–20°/s adjustable
PTZ Accuracy	Step-angle accuracy < 0.06°
Explosion-Proof Rating	Ex d IIC T6 Gb / Ex tb IIIC T80°C Db
Ingress Protection	IP68
Operating Temperature	–40°C to +60°C
Operating Humidity	10%–90%
Operating Voltage	AC 85–260 V / DC 24 V

Application Environments

The EC-HGIM600 is designed for facilities requiring fixed, continuous, visual methane monitoring across wide hazardous areas.

Environment	Monitoring Focus
Refineries and Petrochemical Plants	Pipe racks, pump groups, flange-dense areas, reaction units, tank farms, loading bays, process areas
LNG/LPG Storage and Natural Gas Facilities	Storage tanks, loading arms, compressors, pressure stations, metering areas, gas handling equipment
Oil and Gas Platforms	Wellheads, separators, valve groups, manifolds, corrosion-prone equipment — all-weather operation
Chemical Parks and Industrial Zones	Wide-area monitoring across production units, storage areas, and common utilities
Compressor Stations and Pipeline Nodes	Critical gas pipeline infrastructure where frequent personnel inspection is operationally costly or impractical

EC-HGIM600 vs. Conventional Methods

Requirement	Conventional Point Detector	Manual Inspection	EC-HGIM600
Detection Coverage	Limited to sensor location	Limited to inspection route	Wide-area scanning and fixed-point monitoring
Gas Cloud Visibility	No visual image	Dependent on handheld method	Real-time gas-cloud visualization
Personnel Safety	Fixed installation, limited view	Requires site access	Remote monitoring from safe location
Leak Localization	Alarm point only	Operator-dependent	PTZ angle, video scene, and laser ranging
Event Evidence	Alarm record only	Manual notes / images	Alarm video, concentration, time, and playback
Continuous Operation	Yes, but point-based	No	24/7 unattended monitoring
Large Outdoor Areas	Limited	Labour-intensive	Designed for wide-area industrial monitoring
Methane Concentration Display	Depends on sensor type	Depends on instrument	Real-time ppm-m concentration display



Why Fixed OGI PTZ for Your Facility

Advantage	Operational Value
Explosion-proof PTZ design	Suitable for hazardous industrial areas
Infrared + visible-light fusion	Gas cloud and physical equipment shown together
TDLAS methane detection	Selective methane detection with quantitative concentration
0–220 m gas detection distance	Supports remote monitoring of high-risk zones
360° PTZ rotation	Wide-area scanning from a fixed point
IP68 protection	Suitable for harsh outdoor deployment
Alarm video playback	Supports HSE review and maintenance accountability
Device self-diagnosis	Improves operational reliability and system visibility
Platform integration	Supports monitoring, alarms, records, and reporting workflows

IFRSLAB UAE Support

IFRSLAB supplies and supports the EC-HGIM600 for UAE clients requiring fixed online methane monitoring and explosion-proof gas-cloud imaging.



Technical Support Services:



Technical product selection

Support in identifying the right system configuration based on site conditions, monitoring objectives, and operational risk areas.



Site Application Review

Assessment of intended monitoring zones, detection distances, installation points, and environmental conditions.



After-Sales Technical Consultation

Post-supply technical guidance to support smooth deployment and effective use of the system.



Support for HSE, Maintenance, and Environmental Monitoring Teams

Practical support for teams responsible for safety, asset integrity, fugitive emissions, and environmental performance.



User Orientation and Operator Training

Training support for operating the system, understanding display modes, reviewing alarms, and interpreting gas-cloud visualization.



Monitoring and Alarm Workflow Guidance

Guidance on alarm thresholds, event review, response workflow, and documentation practices.



Coordination for Integration with Client Monitoring Systems

Support for coordination with client-side monitoring, control, reporting, or safety management systems.



Equipment Supply and Configuration Support

Supply support, configuration guidance, and coordination for deployment readiness.

IFRSLAB *Rendering Services for a Sustainable Future*

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**Schedule your
Demo today.**

