



EyeCGas[®] Multi Monitoring System

The gold standard in OGI





OPGAL CORPORATE PROFILE



INTRODUCTION

Opgal is a global leader in environmental solutions based on cutting – edge optical gas imaging technology. Since the development of the first EyeCGas OGI camera over 15 years ago, our product catalog has increased to exceed the market requirements.



MARKETING AND SALES

Opgal is renowned for its foresight in anticipating market needs & developing the necessary technologies, products, & services to meet them. The company strategically positions itself in the global market through a highly professional network of partners and distributors.



R&D / ENGINEERING

Opgal uniqueness and strength is based on the synergy it has developed between technologies and disciplines to create a total corporate capability dedicated to offer the market unique and cutting edge solutions.



PRODUCTION & QUALITY ASSURANCE

OPGAL main development laboratory & production base facility includes a fully equipped, modern manufacturing plant employing a highly skilled & motivated work force dedicated to fast, on time delivery of quality high-tech systems. Opgal holds relevant certifications and maintains the most stringent production and R&D standards.

Sales and support of Opgal's OGI solutions are conducted through a network of over 40 partners and distributors worldwide.

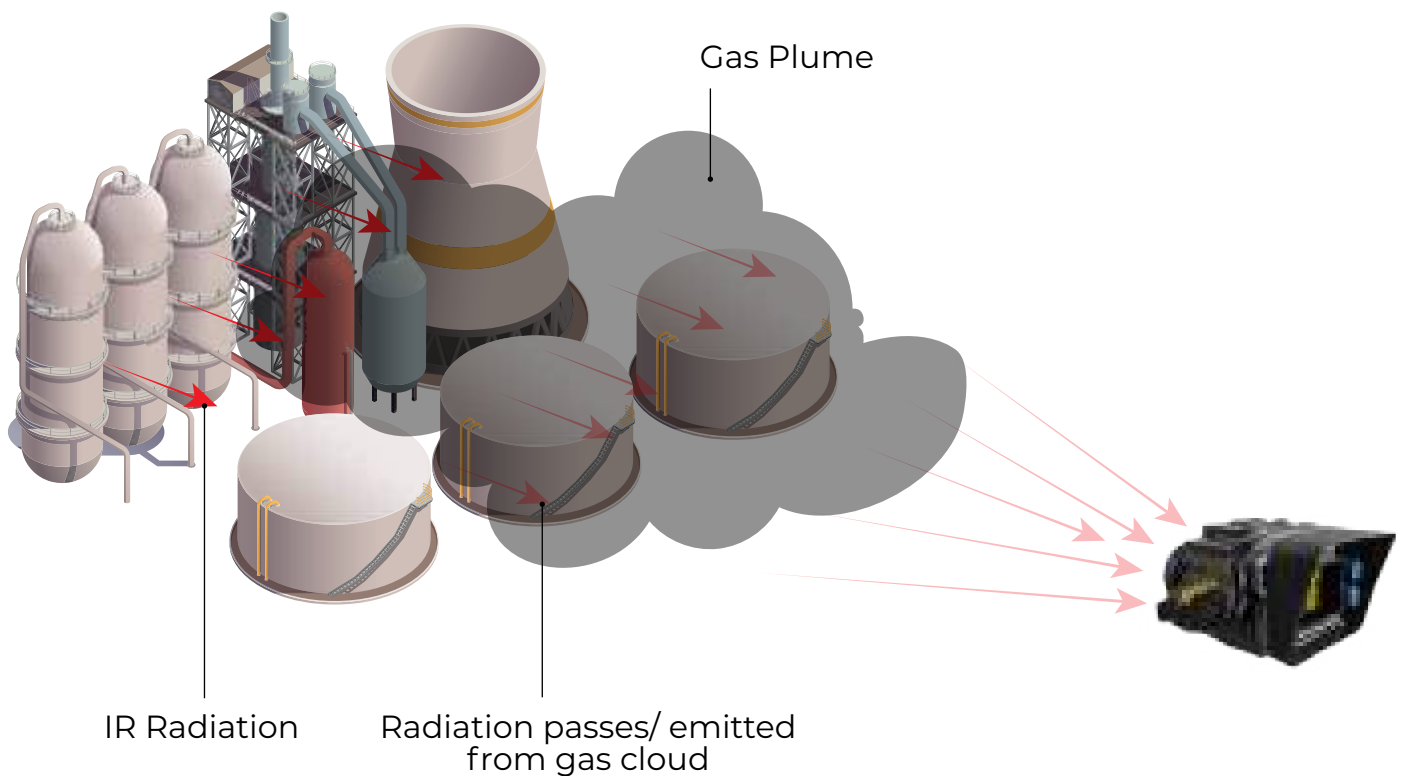




OPTICAL GAS IMAGING (OGI) TECHNOLOGY

The Optical Gas Imaging (OGI) technology is based on a mid-wave infrared (MWIR), cryogenically cooled MCT detector for imaging Volatile Organic Compounds (VOCs). A standard $3.3 \mu\text{m} \pm 0.13 \mu\text{m}$, bandpass hot filter is installed in the OGI camera between the lens and the detector (for long range detection, optional $3.4 \mu\text{m} \pm 0.13 \mu\text{m}$, bandpass hot filter). This filter transmits radiation only in the spectral region where VOCs absorbs or emits thermal radiation. The thermal energy that reached the detector is then transformed into an image.

Thermal energy that passes through a gas plume is changed, causing contrast differences in the generated image. This contrast difference makes the gas plume visible in the image.



EyeCGas® Multi

Opgal's EyeCGas® Multi is a ruggedized, intrinsically safe and the world's most sensitive OGI camera. Built to withstand harsh industry conditions while ensuring safety, this OGI camera quickly detects Methane, CO₂ and over 400 Volatile Organic Compounds (VOC's). Making it your ideal leak detection solution.

EyeCGas Multi enables detection and quantification (built in or via EyeCSite QOGI dedicated software). It is the only OGI camera with a patent multi Spectral interchangeable filters for improved detection. Especially in humid and long range conditions. Stream your inspection in real time, or share your results using the dedicated EyeCGas App.

Receive free software upgrades, which are based on customer feedback, and rest assure that your investment is guaranteed with our exclusive 4-year warranty.



STREAMING

Real-time video streaming and wireless images/videos sharing with the official EyeCGas App.

Key Features

- **Gas Leak Detection**
Quick detection of methane, CO₂ and over 400 VOC's.
- **Thermographic Imaging**
Temperature measurements capabilities and color pallets for better versatility.
- **Wireless Connectivity**
Built-in Wi-Fi, GPS, hotspot and Bluetooth capabilities.
- **Meets Regulatory Compliance**
Complies with the EPA's OOOO'a/b/c regulations. With the broadest Appendix K envelope of performance.
- **Gas Quantification**
Built-in quantification or remotely operated quantification via EyeCSite software and other 3rd party devices.
- **LDAR-Ready Capabilities**
Integrates with various softwares and analyzers.
- **Free Firmware Upgrades**
Receive camera upgardes and improvements free of charge.
- **Intrinsically Safe**
IECEX intrinsically safe Zone II, ANSI, CSA Class I & Class II div.2.
- **Rugged & Sealed**
Especially designed for detecting gas leaks in the harsh conditions of the oil and gas industry.
- **Multi Spectral OGI**
The only OGI camera with replaceable filters enabling improved Methane/VOC & CO₂ detection with the same camera.

Target Audience

EyeCGas Multi® OGI Solutions is ideal for stakeholders within the Oil & Gas industry, including



Operations Managers seeking to enhance safety protocols



Environmental Compliance Officers aiming to meet regulatory standards

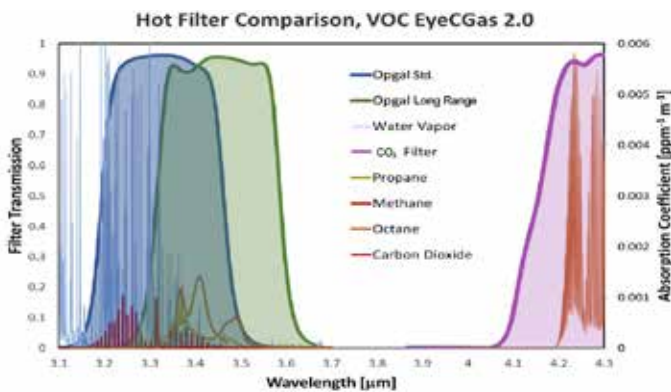


Maintenance Teams requiring efficient monitoring tools



Executives focuses on maximizing operational efficiency and cost savings

The only OGI camera with replaceable hot filters enabling improved Methane/VOC & CO₂ detection all with the same camera.



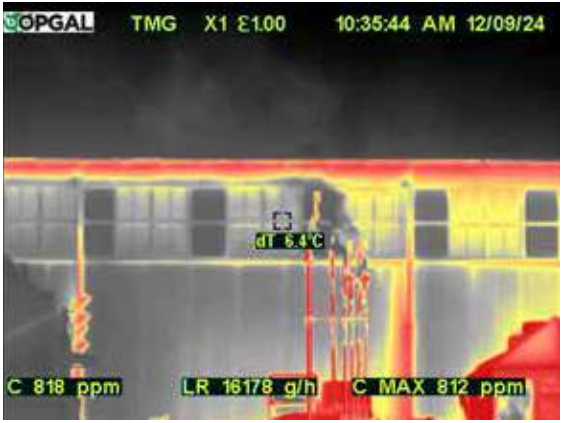
The EyeCGas Multi camera features replaceable filters that enhance its flexibility and performance for detecting various gases. The camera comes with three key filters: a **Standard VOC filter**, a **Heavy alkanes & long-range VOC detection filter**, and a **CO₂ filter**. These filters allow users to monitor a broad spectrum of gases with a single device, making the camera highly adaptable across different industrial applications. Operators can easily switch between filters depending on the target

gas, whether it's volatile organic compounds, heavier alkanes, or carbon dioxide.

This modular system reduces the need for multiple cameras, minimizes downtime, and ensures continuous operation with optimal performance.

The EyeCGas Multi camera is a versatile and cost-effective solution for industries like oil and gas, petrochemicals, and environmental monitoring, offering comprehensive gas detection capabilities in a variety of conditions.

EyeCGas Multi QOGI Quantification Capabilities & Performance



✔ Advanced Optical Gas Imaging (OGI) Technology

Combines qualitative gas leak detection with advanced algorithms for quantitative analysis, offering a dual advantage in one camera system

✔ Real-Time Gas Quantification

EyeCGas cameras enable accurate, real-time quantification of hydrocarbon gases, providing precise leak rate estimations (measured in g/h or ppm-m)

✔ Remote & Long-Distance Quantification

Equipped with telephoto lens options, EyeCGas cameras enable accurate gas quantification from long distances, enhancing safety and allowing monitoring of hard-to-reach areas

✔ Broad Hydrocarbon Gas Detection Range

Capable of detecting and quantifying a wide range of gases, including methane (CH₄), volatile organic compounds (VOCs), and other hydrocarbons

✔ Non-Intrusive and Remote Sensing

Quantification of gas emissions without the need for physical contact, ensuring safe, remote monitoring of hazardous areas

✔ Comprehensive Leak Detection and Repair (LDAR) Programs

Integrates with LDAR programs to not only identify leaks but also quantify their severity, aiding in prioritization for repairs

✔ Optimized for Industrial Applications

Suitable for oil and gas, petrochemical, and chemical industries, EyeCGas QOGI cameras ensure efficient leak detection and management to reduce emissions

✔ Accuracy & Reliability

Delivers accurate and reliable gas concentration data under various environmental conditions, contributing to better decision-making in leak management

✔ Compliance with Regulatory Standards

Helps industries comply with environmental regulations (US, EU and others) by providing measurable gas emission data for reporting and verification

✔ High Sensitivity

Low level emissions are captured and quantified for effective mitigation

EyeCSite® QOGI

EyeCSite is the industry-leading quantification software, offering a wide range of functionalities that detects, and quantifies emissions (in real time or post analysis) in a very simplified and user-friendly interface, without the need for a close contact analyzer.

The EyeCSite kit combined with the EyeCGas Multi camera offers a competitive solution for the OGI based LDAR application



QUANTIFICATION

Calibrated accurately to quantify emissions from a safe distance - in leak rate (e.g. gr/hr) and max concentration (e.g. ppm) values

COLORIZATION

Real time colorization of the gas plume enables easy detection

LOGS & REPORTING

Easily create a report at the end of each inspection with a built-in reporting template

WIRELESS CONNECTION

Wirelessly connects to the EyeCGas 2.0 - enabling quick on the field operation

REAL TIME & POST ANALYSIS

Quantify emissions in real time on site or later on by uploading the videos from the EyeCGas 2.0

MULTIPLE COMPOUNDS

Select from a list of multiple compounds for more accurate quantification reading

USER FRIENDLY INTERFACE

Easy to operate software adapted to the inspection workflow

SAFE & RUGGED TABLET

Strong, portable, powerful and fully certified for hazardous locations



Specifications

IR Resolution	320 x 240 pixels
Focus	Manual Focus
Detector Pitch	30 µm
Gas Sensitivity	NECL @ delta T =10C: Methane- 9 ppm m Propane- 2.8 ppm m Butane- 2.3 ppm m
	Minimum Leak Rate @ delta T =10C: Methane- 0.07 g/h Propane- 0.05 g/h Butane- 0.05 g/h
	Minimum Laboratory Leak Rate: Methane- 0.35 g/h Propane- 0.26 g/h Butane- 0.29 g/h
Thermal Sensitivity/ NETD	<10 mK at 30°C (86°F)
Hazardous Location Compliance	CSA C22.2 No. 213-M1987, Non-Incentive Electrical Equipment for Use in Class I, Division 2, ANSI/ISA-12.12.01 – Class I and II, Division 2, and Class III, ATEX. Intrinsically safe for Zone 2 ratings as: Ex II 3 GD; Ex ic nA nC IIC T6 Gc; Ex ic tc IIIC T85°C DC
Gas leak detection capabilities	WITH SPECTRAL FILTER OF 3.2µM TO 3.4µM FOR VOCs GASES DETECTION: 400+ compounds such as: Methane, Acetic acid, Benzene, Butadiene, Butene, Butane, Dimethyl-Benzene, Ethane, Ethylene, Ethyl benzene, Ethylene oxide, Hexane, Heptane, Isobutylene, Isopropyl alcohol, Isoprene, Methanol, MEK Methyl Ethyl Ketone, Octane, Pentene, Propane, Propanal.
Detector and Optical Data	
Detector Type	Focal plane array (FPA), cooled MCT
Spectral Range	3.1 µm to 4.4 µm
Optical filters	Std. 3.2-3.5 µm; Long range 3.3-3.6 µm; CO ₂ 4.1-4.4 µm
Sensor Cooling	Stirling Microcooler
Digital Image Enhancement	High sensitivity mode (HSM), noise reduction filter
Available Lenses	18° (30 mm); 7.5° (75 mm)
F-Number	1.1
Image Presentation	
Display	3.5" (10" equivalent using glare shield), 640 x 480 pixel, LCD
Image Presentation Modes	IR image, visual image, Normal, Enhanced & Thermography
Color Palettes	6 color palettes (Rainbow, Iron, ISO red, ISO green, Grey Scale and Vivid)
Zoom	x2, x4, x8 and x16 (only for visible camera)
Measurement & Analysis	
Measurement Temperature Range	-20°C to 350°C (-4°F to 662°F)
Accuracy	At Least ± 1 °C (0 – 100 °C), ± 2% (> 100 °C), ± 2°C (-20 – 0 °C)
Gas emission Quantification	Built-in real-time and offline image processing VOC gas quantification for desktop or handheld application (offline/online operation)

Accessories & Apps	
Head up display	Seamless integration including voice commands with Realware® head up display
Mobile APP	Android 10 /IOS 14 and up
Communication interface & Data Storage	
GPS	Included, can be added to any still or video recording
Storage Media	Up to 20 hours and more of video storage over a 64GB solid state memory
Image File Formats	JPG Format (on available modes)
Communication Interfaces	USB: Data transfer, video streaming and video images file transfer Wi-Fi: 2.4 GHz for video streaming and file transfer Bluetooth: Bluetooth 4.2 with other devices: RMLD, TVA2020 LDAR software etc... GPS: Built in or external
Video Out	Digital video recorder build-in generates a .ts format video on all modes.
Video Recording and Streaming	
IR or Visual Video	Digital video recorder build-in generates a .ts format video on all
Radiometric IR Video Streaming	Over Wifi
Environmental & Certifications	
Operating Temperature Range	-20°C to 50°C (-4°F to 122°F)
Storage Temperature Range	-40°C to 70°C (-40°F to 158°F)
Encapsulation	IP65 (Intrinsically safe)
Drop	ASTM-D 4169-06 Schedule A
Vibration	ASTM-D 4169-08 Schedule F Test method D999
HALT	Max temp: 55°C, Min temp: -20°C
Safety	EN60950-1:2006
Additional Information	
Battery Type	Rechargeable Li-ion battery; 7.4 V, charger included
Battery Operating Time	>4.5 hours continuous operation
Battery Charging Time	3 hours to 95% capacity, charging status indicated by LEDs
Camera Size	9" x 4.3" x 5.1" (230 x 110 x 130) mm
Camera Weight	2.6 kg (5.9 lb)
Mounting Interfaces	UNC ¼"-20
Warranty	4 years (Detector & cooler – 2 years; Batteries 1 year)
Box Contents	
Packaging	Infrared camera with lens, Batteries (2), Battery Charger, USB Cable, Neck strap, Glare Shield, Carrying Case, Cleaning Kit.

* Batteries – 1 year warranty

** IR Detector & Cooler – 2 years warranty

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