Kuva

Methane mitigation simplified



SENSIRION
connected solutions

Lead the way in emissions reduction

Improve operations and personnel safety

Kuva reduces the need for manual inspections by delivering remote access to up-to-date site data. Operators can monitor emissions continuously from a safe distance, respond quickly to anomalies, and minimize exposure for field teams. Achieve operational excellence while protecting people, assets, and the environment.

Reduce costs and total emissions

By delivering persistent visibility at the site level, Kuva eliminates the need for routine inspections and guesswork. Operators can reduce truck rolls, cut labor hours, and avoid unnecessary downtime. With fewer unplanned emissions events and faster repair cycles, you'll drive down both emissions intensity and operational expenses.

Comply with regulations and voluntary standards

As emissions regulations grow more demanding, Kuva gives you the tools to stay ahead. Continuous detection, localization, and quantification help operators meet OGMP 2.0 and EPA requirements, and other global frameworks—without waiting for third-party reports or regulatory audits. Compliance becomes integrated, not intrusive.

Detect and qualify super emitters

With Kuva, operators detect high-volume leaks before they become public. Visual confirmation and fast quantification help you respond decisively and stay ahead of third-party reporting. Maintain control of your emissions narrative and reduce the risk of reputational exposure.

Demonstrate your ESG commitment and reach net-zero goals

Kuva transforms invisible emissions into verifiable data. With continuous imaging and transparent reporting, you can credibly show progress toward emissions targets and net-zero goals. Operators gain the evidence needed to support ESG disclosures, validate internal initiatives, and meet voluntary or regulatory standards with confidence.

Attract and retain financial stakeholders

Investors and insurers are backing operators who can prove their emissions reductions—not just promise them. Kuva strengthens your ESG story with hard data and visual proof of action. By improving emissions performance and demonstrating operational excellence, you reduce financial risk and build long-term stakeholder confidence.



Continuous monitoring: A powerful tool for methane mitigation





Kuva provides continuous monitoring of oil and gas sites by visually detecting and quantifying methane emissions at fixed locations. It uses short-wave infrared (SWIR) imaging to capture gas plumes directly at the source and transmits processed data and images to the cloud for root-cause analysis and decision-making. The SWIR imaging system continuously scans a 100-meter radius and delivers time-stamped IR and RGB imagery, enabling visual leak detection, source pinpointing, and rapid root cause analysis.

Continuous emissions monitoring

The SWIR Kuva camera continuously and autonomously monitors your assets using advanced infrared imaging—no manual inspections required. With Sensirion's trusted expertise, you gain clear, high-integrity visual data to support emissions management and operational oversight at scale.

Visual detection, localization, and quantification

Kuva captures methane emissions as they occur and applies image-based analysis to identify the source and quantify the emission rate. Operators benefit from reliable, visual confirmation and targeted insights to support fast, effective response and root-cause identification—without stepping on site.

Fast alerting and remote root-cause analysis

Receive rapid notifications when new emissions are detected or existing ones change. Kuva's dashboard provides rich visual data and contextual insights, enabling operators to remotely assess the situation, identify the root cause, prioritize across assets, and initiate follow-up actions—all from a central location.

How the Kuva solution works

1

Capture

Kuva continuously captures infrared images of your site, visualizing methane emissions directly at the source via stationary-mounted cameras featuring continuous 360° monitoring.

2

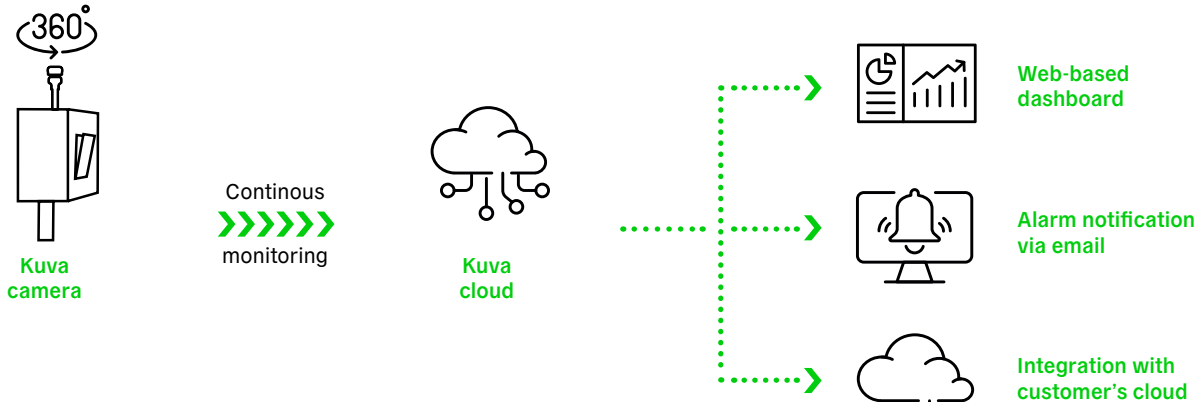
Analyze

Advanced algorithms process image data to detect, localize, and quantify emissions. Visual confirmation and source-level insights replace modeling assumptions with direct evidence.

3

Inform

Automated alerts and visual reports empower operators to assess emission events remotely, prioritize response, and take informed action—eliminating false positives and maximizing operational efficiency.



- Powered by MS Azure IoT Edge
- Over-the-air updates

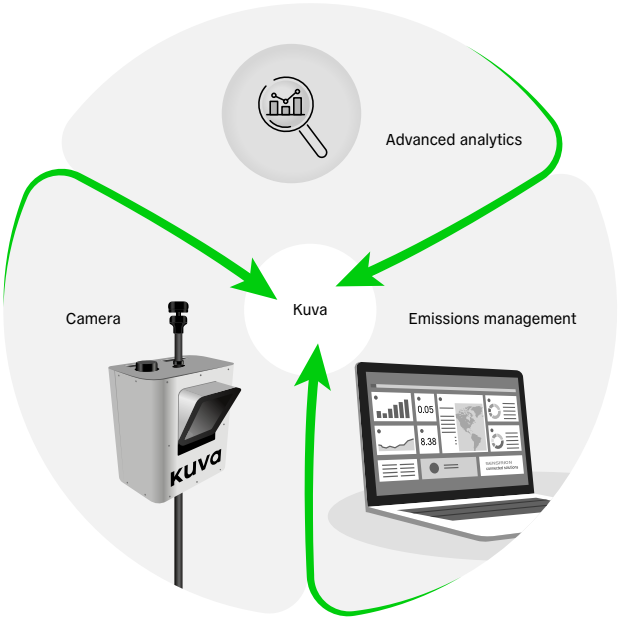
- False positive elimination
- Quantification

- Root cause analysis of emissions (analyzing time-stamped Kuva alarms with process data / SCADA)
- Environmental reporting
- Work order generation

Complete solution for image-based methane emissions monitoring

Advanced analytics

- → Continuous visual detection, localization, and quantification of methane emissions
- → High-frequency image capture and data transmission via via LTE or local LAN connectivity
- → Automated emission alerts with expert validation to eliminate false positives
- → Ongoing system health diagnostics to ensure reliable performance at all times



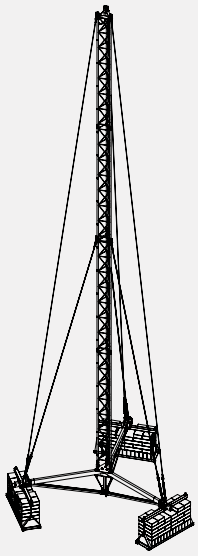
Camera

- → Exceptional price-to-performance ratio—the most cost-efficient continuous optical monitoring solution available
- → Achieves full 360° site coverage in just 3.5 minutes, enabling up to 80,000 scans annually
- → Precisely pinpoints leak sources, including elevated structures like tanks and flares
- → Delivers fast, accurate quantification of methane and VOCs (C1-C6+) for confident operational decisions
- → Built for autonomous, solar-powered or local Power over Ethernet deployments
- → Installs quickly, no in-field calibration needed, streamlining field operations

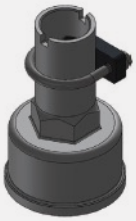
Emissions management

- → Monitor all sites in one dashboard and track emissions performance over time
- → Quickly identify sources requiring urgent attention and follow the repair process remotely
- → Perform remote root-cause analysis using visual data to accelerate response and minimize downtime
- → Set custom alert thresholds and align monitoring with your operational or ESG goals
- → Filter, review, and export historical emissions events and visual evidence with ease
- → Ingest data via API for seamless integration with your existing platforms and workflows

Options
and accessories



Kuva tower
- 40 ft (12.2 m) height
- Patented base
- Typical 3 to 6 hrs install
- No ground penetration required
- Simple hand winch to raise
- Per TIA 222-h @ 120 mph wind



Utility pole mount
- 3” conduit adapter for utility poles
- Leverage existing structures
- Lowers deployment costs at scale



Solar power option
- Just plug and go
- IEEE 802.3bt compatible
- 3-8 days battery backup

Operational process
data integration

- Easily integrates with process historians
- Expert integration assessment at no cost
- RESTful API, EventHub, MQTT



Detect, act and reduce: a real-world example

Detect

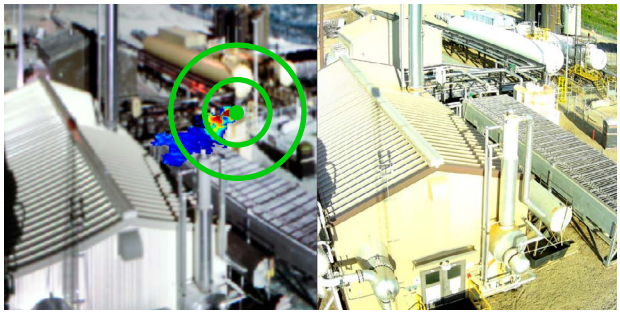
At a gas plant in northern Alberta, Kuva's continuous monitoring system identified persistent, elevated methane emissions. The alert included clear, time-stamped visual evidence showing a consistent plume from the top of a tank. The Kuva camera pinpointed the source in a complex environment with multiple potential leak points—without needing anyone physically onsite.

Act

With Kuva's help, the team localized the leak remotely, dispatched a technician with full context, and resolved the issue efficiently. No guesswork, no blind troubleshooting, and no waiting for the next emission event. Just clear visibility, quick response, and a repaired leak—saving time, emissions, and manpower.

Reduce

Thanks to Kuva's fast detection and visual confirmation, the operator was able to act quickly. The issue was traced to a replacement valve that hadn't been properly secured. Without Kuva, the leak could have gone unnoticed for days or longer—releasing significant volumes of methane and requiring extensive onsite investigation. Instead, the emissions were addressed early, minimizing environmental impact and operational losses.



> *"We would not have been able to ascertain exactly the source of the emission as quickly or precisely without Kuva. We would have needed someone out there with a sniffer to be at the exact right place at the right time of the next emission – if there was going to be one – to be able to determine the source.*

Sensirion Connected Solutions: our heritage, your advantage

Sensor expert

More than 25 years' experience, innovation pioneer, globally leading sensor manufacturer

Quality at heart

ISO 9001 and ISO 27001 certified so you don't need to worry

Manufacturing prowess

Scalable solutions, state-of-the art production facilities with more than 1B produced sensors

Global

Worldwide subsidiaries, supply capability, seamless support and state-of-the-art service offering

Want to be an industry leader?
Reduce your methane emissions. Contact us now.

