



Mapping fugitive emissions using
MIRICO's ORION[®]
Open Path Analyser

ORION[®] CH₄
Open Path
Gas Analyser

Application note for fugitive emissions

Why MIRICO

At MIRICO, we have put together a world-class team of scientists who are focused on delivering the most reliable monitoring technology for gas emissions across multiple industries. In doing so, the impact of emissions can be reduced through monitoring and evaluation, whether you are seeking net zero targets or looking for optimal operational effectiveness.

Introducing the unique Laser Dispersion Spectroscopy (LDS)

At the heart of all MIRICO products is a revolutionary new technology - Laser Dispersion Spectroscopy (LDS) developed by the dedicated scientists at MIRICO.

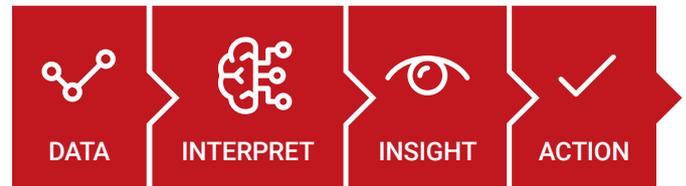
The technology provides real-time monitoring of emissions, operating specifically in the mid infra-red spectral region and enables the collection and interpretation of emissions data in almost all weather conditions.

From this data you are able to gain insights based on accurate continuous reporting, even in fog, rain, snow and particulate affected environments.

This new level of intelligence enables oil and gas installations to be managed more effectively than ever before.

Advantages of Laser Dispersion Spectroscopy

- High resolution covering a wide dynamic range
- Uniquely works in almost all weather conditions, so no data gaps
- Continuous monitoring to maximise returns and future-proof compliance



What sets MIRICO's LDS system apart?

The patented LDS technology delivers large scale monitoring using a bespoke set-up of a strategically positioned ORION[®] and corresponding retroreflectors. With its sweeping laser, which can scan through 360°, the full multi beam analysis provides real-time data on gas emissions in almost all weather conditions - which is key to the delivery of reliable information.

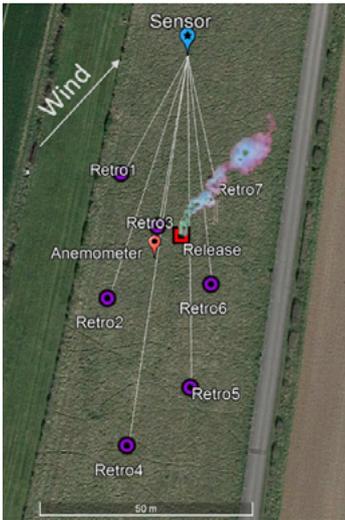
Advantages of ORION[®] range

- Dedicated gas sensitivity providing real-time data
- Easily installed with fully configurable set-up and autonomous operation
- Easy remote monitoring and management



MID
INFRA
RED
INSTRUMENTATION
COMPANY

Monitoring emissions with the ORION[®] CH₄



Simultaneous wind and concentration data were collected across an area of calibrated methane releases. Retroreflectors and a sonic anemometer were placed in an arc around an ORION[®] CH₄ sensor, with path lengths up to 98m. The releases were detected, localised and quantified using a proprietary algorithm.

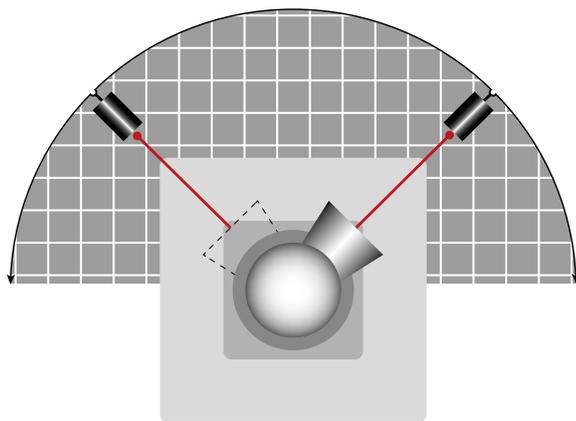
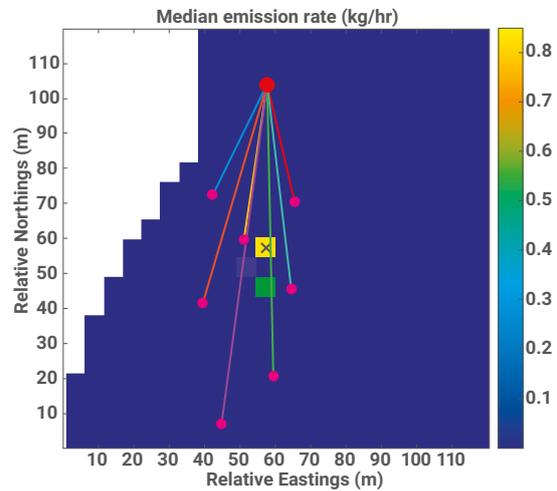
Blind controlled release experiments

- Controlled releases 1.2-1.6 kg/hr of CH₄
- Measured concentrations with 10-20 ppb precision
- 1 second temporal resolution
- Data processed using a Bayesian, Markov chain Monte-Carlo inverse solver

Detection, localisation and quantification

- 100% of leaks detected
- Localisation within 5m
- Quantification within 10%
- Cross equals release location
- Squares represent predicted location
- Colour represents leak rate

Bill Hirst, David Randell, Matthew Jones, Johnny Chu, Arun Kannath, Neil Macleod, Marcella Dean and Damien Weidmann, Geophysical Research Letters 47, 10 (2020) e2019GL086725

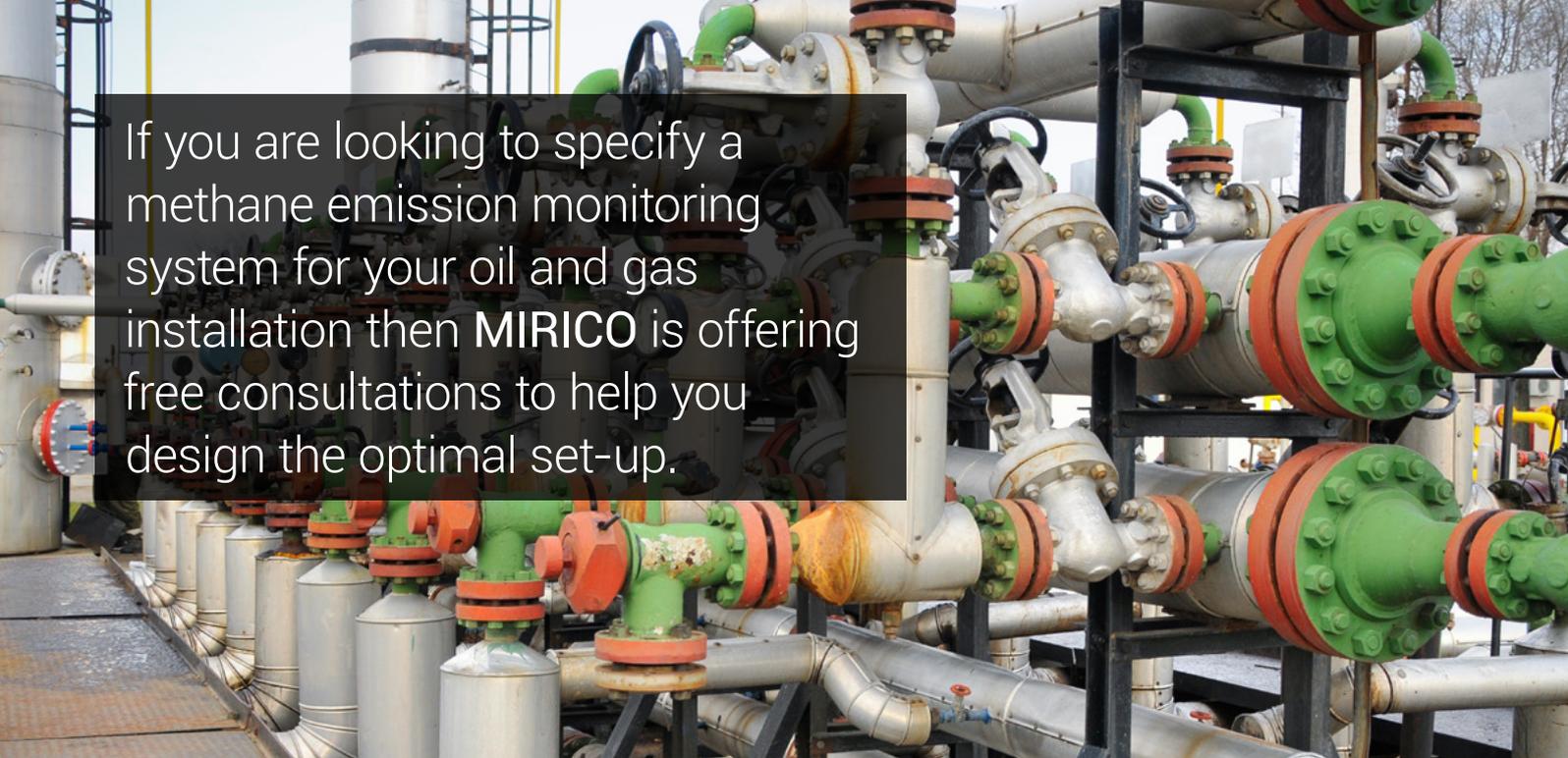


Full rotational scanning provides configurations for different applications

Configurations available for:

- Leak detection, localisation and quantification
- Total facility emissions monitoring
- Fence line monitoring

Transformational Gas Measurement



If you are looking to specify a methane emission monitoring system for your oil and gas installation then **MIRICO** is offering free consultations to help you design the optimal set-up.



MIRICO

Transformational Gas Measurement

Contact Us

Call +44 (0)1235 612 400 or book a session with one of our specialists at www.mirico.com



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