

Improving methane  
emissions monitoring  
of anaerobic digesters

ORION<sup>®</sup> CH<sub>4</sub>  
Open Path  
Gas Analyser

Application note for biomethane producers



# 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 biomethane producers to act to minimise their product losses and reduce the environmental impact from their operations.

### 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<sup>®</sup> 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<sup>®</sup> 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

# Improved insight from continuous monitoring

## Case Study: Monitoring methane emissions from an anaerobic digester

MIRICO measured methane concentrations both upwind and downwind of an anaerobic digester, to enhance the understanding of its emissions.

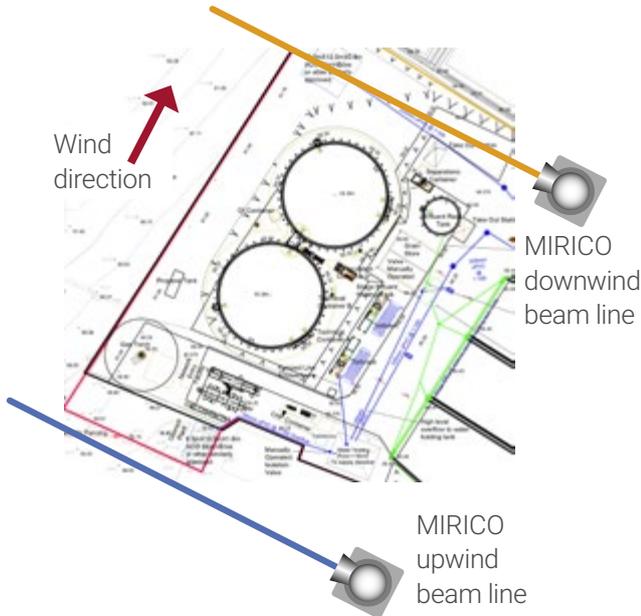


Figure 1: Dual beam approach to monitoring methane emissions

### Key outputs:

- Real time continuous monitoring revealed periodic spikes in CH<sub>4</sub> concentration not detectable by other systems
- No effect on data collection from rain
- Average upwind CH<sub>4</sub> concentration measured at 1.99 ppm
- Average downwind CH<sub>4</sub> concentration measured at 3.69 ppm
- Provided valuable insight into site emissions

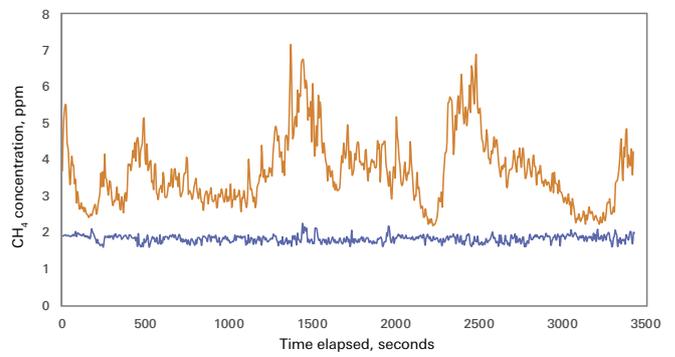


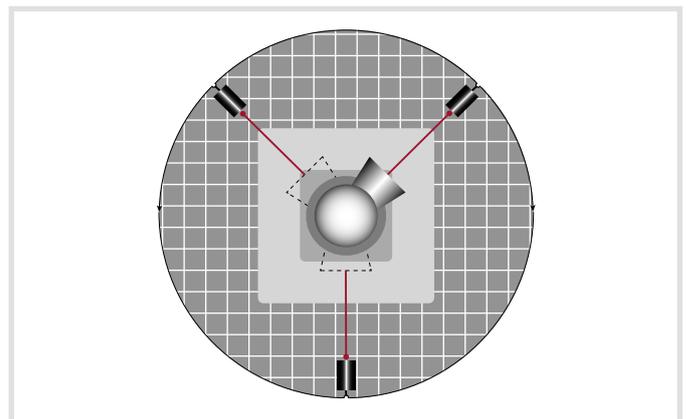
Figure 2: Upwind and downwind CH<sub>4</sub> concentrations

## Full 360° scanning provides flexible configurations for different applications

By working with MIRICO's experts you can design the optimal solution for your particular needs from boundary to full site monitoring.

### Solutions available for:

- Agricultural waste processing
- Food waste processing
- Waste water treatment plants
- Landfill sites



Transformational Gas Measurement

If you are looking to improve your understanding of emissions from biomethane production, **MIRICO** is offering free consultations to help you design the optimal set-up.



Transformational Gas Measurement

## Contact Us

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



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