

LMS Remote Mini

Laser-based Gas Monitoring System



CH4

- Fully automatic. The system can be programmed to scan specific areas
- Detects gas leaks faster than conventional methods (detection speed 0.1 sec)
- The LMS-Remote mini system operates 24/7/365
- The measured methane concentration is displayed in real time and stored for post analysis
- Sensitive only to methane. No false detections
- Panoramic scanning capabilities, no blind zones
- Can be fully integrated with existing facilities
- User-friendly software
- Complete monitoring include database of operation actions. Archive data for the entire period of operation
- Explosion-proof certificate
- Calibration and self-check during operation
- Small size

APPLICATIONS

- Compressor stations
- Gas tanks
- Storage facilities
- Tank farms
- Gas stations
- LNG terminals
- City gates
- Wellheads

OVERVIEW

LMS-System description LMS-Remote mini is a stationary natural gas leak detection system for remote monitoring of elevated methane gas concentrations in ambient air. It is specifically designed for the constant scanning and monitoring of mission-critical areas such as compressor stations, gas tanks, storage facilities, tank farms, gas stations, LNG Terminals, city gates and wellheads.

THE SYSTEM CONSISTS OF 3 COMPONENTS

The optical unit is mounted on a new generation of servo driven pan/tilt head installed at an elevated location such as a facility mast lighting. This component contains the laser, receiving system, HD video camera, control board, heater, reference cell and signal processing board.

The electronic unit includes special instrumentations boxes with communication equipment and DC converter. The operator PC constantly monitors detection alarms, system control, data, video storage and historical data analysis. The system continually records data including coordinates of leaks, sizes of leaks and additional information about system operations. A report about system operations, leak sizes and locations can be made using the included data-processing software.

Maximum measurement distance	50 m
Range of movement	Azimuth n x 360° Elevation - 90 to + 90
Measurement time	0.1 sec
Sensitivity of 0.2 sec measurement time from distance 50 m	20- 20,000 ppm*m
Laser wavelength	1.65 μm
Laser power	10 mW
Power supply	24 V
Total weight	50 kg
Environment protection	IP67
Operating temperature range	- 47° C to +67° C
Video camera	Full 1920 x 1080/30p High Definition; 200 x zoom ratio (20 x zoom/10 x digital);with analyzing / post-processing software
Relative measurement accuracy	1% (but < threshold sensitivity)
Selectivity to other gases	< 10 Exp 4
Service intervals	two year
Explosion proof	The LMS-Remote is NANIO certified

PRINCIPLE OF REMOTE DETECTION

LMS-Remote mini is based on the utilization of laser absorption spectrophotometer of methane gas for gas measurement. The system detects natural gas leaks by emitting a laser at particular wavelength and analyzing the light reflection from an object to determine how much was absorbed by the methane in the natural gas.

The measured gas volume is expressed by methane column density (ppm - m): methane density (ppm) multiplied by thickness (m).

LMS-Remote mini system can be fully integrated into existing structures including interaction with other systems such as fire protection systems, gas emission control systems and SCADA systems.

