

Alma G5

Airborne Laser Methane Assessment

- Airborne device mounted on helicopters and fixed wing aircrafts
- Full automation
- Detects faster than conventional method (detection speed: 0.1 sec)
- Methane-only sensitivity. No false alarm
- User-friendly software
- Automatic and continuously performs

OVERVIEW

ALMA G5 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 a 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 length (m).

ALMA is a system of airborne surveying of natural gas pipelines and storage facilities. The detector operation principle is based on diode-laser spectroscopy, which provides high reliability, accuracy and selectivity.

The device is fully automated and can continuously work without an operator, while storing the results in computer memory. The detector includes a GPS system that determines the flight route coordinates and leak points. Upon leak detection, the operator receives a light and sound signal, and the monitor displays a photo and a Google map of the leak site.

The detectors are designed for operation in temperate and cold climates; they comprise an optical unit and an electronics case.

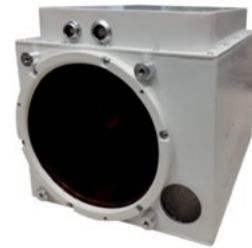
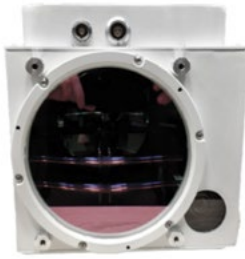
OPTICAL UNIT AND ELECTRONIC UNIT, ALL IN ONE

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APPLICATIONS

- Pipelines
- Fixed wing aircraft
- Underground gas storage
- Gas distribution stations
- Gas processing plant
- Gas storage

Maximum detection distance	150m (30m wide corridor covering when using additional scanning system) 300m (with amplifier)
Sampling rate	0,08 sec
Threshold Sensitivity measuring at 0.08 sec	from 5 ppm×m – 30m from 10 ppm×m – 50m from 40 ppm×m – 100m from 80 ppm×m – 150m
Influence of water vapor	No
Gas inspection Data	Real time / recorded
Correction of the location of the leak to the pipeline according to the GPS channel	±1.5m
Supply voltage	24 V
Operating temperature	from -10 °C to +40 °C
Dimentions	29cm (H) × 25.6cm (L) × 23cm (P)
Weight	6kg
Number of flight operators	One or UAV mode



**2.
D-Box**

Housing the power distribution, Digital Video Recorder (DVR) and electronics.

**1.
Laptop with C-Box
(Control Panel) & GPS**

Is the main computer with user interface for realtime data monitoring, data re-cording, and post inspection data analysis.

**4.
Pilot Monitor**

Helps pilot aim Laser Not pictured below.

**3.
Optical Unit**

Housing the Laser, optics, photo detectors, mirrors, rangefinder, and cameras.

