



ALMA G4^{mini}

for Fixed Wing

REMOTE METHANE DETECTION

ALMA G4 mini — is the solution for aerial pipeline inspections and offers a vital contribution to safety of transmission pipelines.

Our product is based on the **latest generation of laser spectroscopy** and utilizes the most advanced technology, experienced pilots and operators for a dependable pipeline inspection.

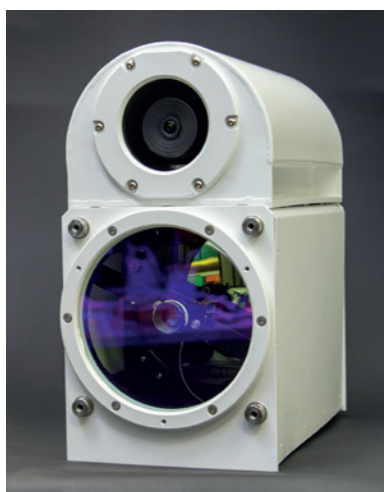
The principle of ALMA is **based on a pulsed beam from a diode laser**, which is pointed at the location to be inspected. The laser wavelength of 1,65 μm corresponds to the first absorption band of methane.

Features and Benefits

- Airborne device mounted on a **fixed wing**
- **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 self-check** to ensure ability to detect gas
- Pilot camera and monitor to aim laser
- **Each leak detection is reported** with time, gas concentration, GPS/GLONASS coordinates, and HD image.

ALMA G4 mini Technical Specifications

Target Gas	Methane (CH ₄) and methane-containing gases (natural gas and similar)
Sensitivity from distance 150 m	80 ppm × m
Response time	0.08 sec
Power supply voltage	24 V
Power consumption	90 W
Working temperature	-10 ... +50 °C
Relative measurement accuracy	1%
Video camera	4K ultra HD camera (3840 × 2160)
Dimensions (L × H × W)	325 × 200 × 383 mm (optical unit) 350 × 360 × 500 mm (electronic unit)
Weight of the full package	15.4 kg



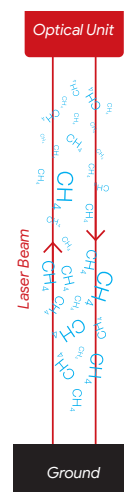
Optical Unit



Installation on **DA-42** aircraft



Installation on **Maule** aircraft



Principle of Remote Gas Detection

ALMA G4 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 a particular wavelength and analyzing the light reflected 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).

