



Falcon Plus

+ SkyHUB

by  **SPH ENGINEERING**
SMART PLANES & HELICOPTERS

Laser Type Remote Gas Leakage Detector



Laser Falcon Plus is a very lightweight laser-type methane gas detector which uses the same measurement principle as the popular Laser Falcon. The Falcon Plus is mounted on a fixed mount and dual-axis gimbal. The sensor has vertical stabilization. The sensor tilts left and right within a range of $\pm 30^\circ$. Revolutionizing aerial methane detection with precision and flexibility.

Feature and benefits

- Vertical stabilization mode (NADIR positioning)
- 12V power cable (XT60 connector)
- 4-channel Ethernet communication cable
- Ultra-fast sensor response time
- **Precision optical sensing technology**
- Robust mounting solutions for various UAV configurations
- Mounting: two-axis gimbal, fixed mount

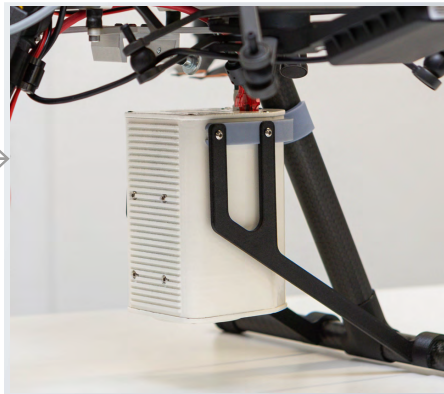


Laser Falcon Plus Technical specifications

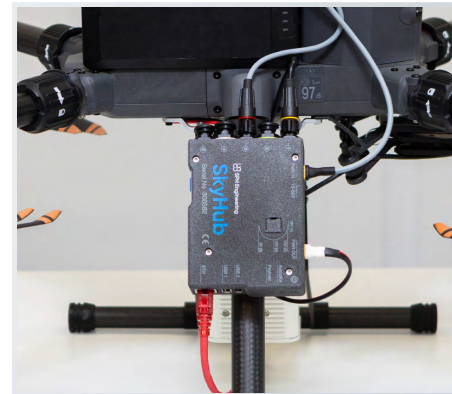
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|--------------------------------------|---|
| Target Gas | Methane (CH ₄) and methane-containing gases (natural gas and similar) |
| Detection Limits | 1 – 99,999 ppm×m |
| Response time | 0.04 s – fast mode; 0.1 s – normal mode |
| Distance | 10-80 m |
| Power Supply | 12VDC |
| Operating Temperature Range | -17 °C ... +50 °C |
| Laser Safety Class | Guide light (Green laser light) : Class 3a Measurement light (infrared laser light) : Class 1 |
| Calibration | Self-calibrating with integrated reference cell |
| Dimensions | Unit – 130x98x98 mm; Unit with gimbal 250x130x235 mm |
| Weight | Unit – 360 gr; Unit with gimbal 570 gr |
| Pergam Software | Standard package includes SkyHUB by SPH Engineering to storage data and GPS-position of the leak + process software to make a report with Google Maps |
| Positioning | Two-axis gimbal, fixed mount |
| Vehicle speed | Up to 100 km/h |
| MDL (minimum detection limit) | 1 g/hr |



Falcon Plus optical unit



Attaching a Falcon Plus unit to a drone



SkyHUB by SPH Engineering

Principle of Remote Gas Detection

Laser Falcon Plus 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).

The Optical Unit (OU) of the Falcon Plus detector could be installed on two-axis gimbal so that the laser beam is continuously directed towards pipelines and other natural gas facilities.

