Leo

Handheld Meter. Precision in your hands.

okolab

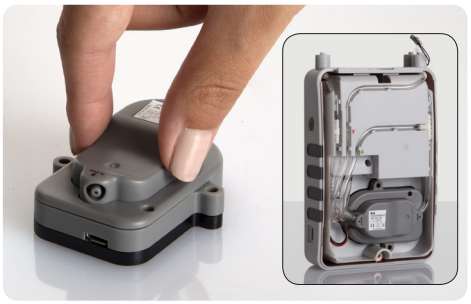
www.oko-lab.com

O_2 CO_2 H_2O CO_2 ppm FLOW

MULTI SENSOR HAND-HELD METER

LEO is a hand-held meter for IVF Applications, allowing measurement of CO2-O2 gas composition, temperature, relative humidity, and gas flow of the high-top and bench-top incubators, by using multiple sensor modules.

The CO2-O2-MODULE is embedded into LEO, and it is included standard. The CO2-O2-MODULE can be easily extracted and sent to Okolab for re-calibration.



Other (external) sensor modules can be connected to LEO's connection ports.

DATA STORAGE

LEO can perform both single measurement and extended time logging, storing the data in its local memory.

LEO allows organization of the stored data, associating a label to each device. You can store up to 40 devices labels. The stored data can be displayed on LEO's screen, organized by date and device.

LEO allows stored data to be downloaded through the micro USB port, and analyzed by using the free ***LEO DATA IMPORT*** Excel Macro.

GAS SAMPLING METHODS

Diffusion Mode: gas flows into LEO through the dedicated diffusion port with icon **IN**. The minimum operating flow rate is 30 ml/min.

Aspiration Mode: gas is actively pulled in via LEO's internal pump through the dedicated aspiration port with icon IN. The pump flow rate can be set in the range 60-260 ml/min.

The Moisture Trap (included with LEO) is used when the measured gas is wet, in order to retain water molecules.

LEO can improve the CO2 and O2 reading accounting for the water content of your incubator by use Wet Mode. The temperature and relative humidity (RH) values of your incubator must be entered.

AVAILABLE SENSOR MODULES

The sensor modules are calibrated by using traceable standards, and store the calibration data in the internal memory. The sensor modules can be delivered with traceable or accredited calibration certificate, and sent to Okolab for re-calibration. Moreover, sensor calibration can be performed by using LEO through intuitive user calibration routines.

INCLUDED

CO2-O2-MODULE

The CO2-O2-MODULE measures the CO2-O2 volume concentration in the unit of %, and CO2-O2 partial pressure in the units of mbar, psi or KPa. CO2-O2-MODULE is temperature and pressure compensated. The CO2-O2-MODULE lifetime is 5 years.

Features - CO2

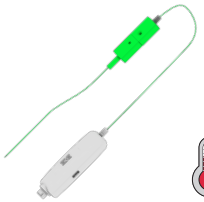
- Sensor: Non Dispersive InfraRed detector (NDIR)
- Measurement range: 0-20%
- Accuracy (in the range 0-10%): ±(1% of Full Scale +2% reading)

Features - O2

- Sensor: Fluorescence-based optical sensor
- Measurement range: 0-25%
- Accuracy (in the range 0-10%): ±(1% of Full Scale +2% reading)

T1-MODULE

Small, flexible, calibrated, and immersible thermocouple. Ideal for measurements in liquids, such as culture media in a dish. T1-MODULE has a negligible diameter (0.13mm) and it can be directly introduced into an incubator, even if it lacks a dedicated temperature measurement port.

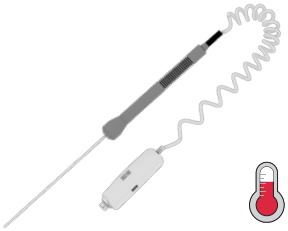


Features

- Sensor: K-type thermocouple
- Measurement range: 0-60°C
- Accuracy: ± 0.1°C from 20 to 50°C

T2-MODULE

Temperature probe, ideal for measurements of incubator temperature when sampling port access is available. T2-MODULE has an external diameter of 2 mm and is suitable for temperature measurements of bench-top and high-top incubators where the temperature monitoring port has a diameter larger than 2 mm.

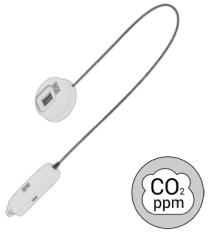


Features

- Sensor: PT1000 RTD Class A
- Measurement range: 0-60°C
- Accuracy: ± 0.1°C from 20 to 50°C

CO2-PPM-MODULE

Designed to measure carbon dioxide at ppm in offices, laboratories, hospitals, and generally, wherever indoor air quality is important for the occupants' comfort and health. The probe is temperature and pressure compensated.

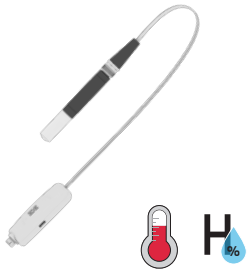


Features

- Sensor: Non-dispersive infrared (NDIR)
- Measurement range: 0-10000 ppm
- Accuracy: ± (50 ppm +3% reading)
- Response time: 2 minutes

HUMIDITY-MODULE

Designed for checking humidity in chambers, incubators, laboratories, and to monitor indoor air quality.



Features - Relative Humidity

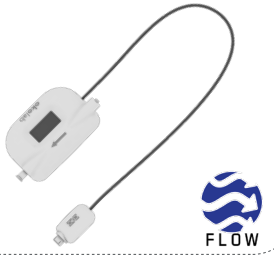
- Sensor: Hygromer HT-1
- Measurement range: 0-100%
- Accuracy at 23°C: ±0.8% RH
- Response time: 18 s

Features - Temperature

- Sensor: Pt100 1/3DIN Class B
- Measurement range: -10 + 100°C
- Accuracy: ±0.2°C from 20 to 40°C

FLOW-RATE-MODULE

Compact and accurate flow meter with short response time, ideal for instantaneous gas flow measurements. The highly compact and lightweight design makes it ideal for many different work environments. The presence of display allows to use the sensor module also as a standalone device.



Features

- Sensor: MEMS
- Measurement range: 0-200 ml/min
- Accuracy: ± (2.0 reading +0.5% full scale)
- Response time: <1 s
- Calibration medium: air

The LEO Hard-case includes:

- LEO
- Moisture Trap
- Calibration Kit
- Gas measurement tubing
- Soda Lime Kit
- Power supply
- USB OTG cable
- Lanyard

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