LEO

- User-friendly touch screen interface
- Compatible with any incubator on the market
- Diffusion or Pump gas sampling modes
- Pump suction rate 100 ml/min
- Sampling tube and de-humidification kit included
- Long term logging
- Micro USB for data download
- Calibration:
  a) Removable sensors can be shipped to certified laboratories to be calibrated. Calibration is stored in sensor on-board memory. Leo reads calibration upon sensor installation
  b) In situ sensor calibration via LEO calibration

LEO is a battery operated, handheld analyzer designed to measure CO_2, O_2, Temperature, VOC, Relative Humidity and pH.

Includes CO_2 and O_2 sensors.

Optional modules: Temperature, Humidity, VOC and pH

CO_2-O_2 Module - Always included

CO_2-O_2 module can be easily extracted from LEO and sent out for calibration.

	Type	Range	Accuracy
CO_2	Non Dispersive InfraRed (NDIR) dual wave length detector with pressure and temperature compensation	0-20%	±(1.0% of full scale +2% scaling) at 6% = ±0.32%
O_2	Fluorescence based optical sensor	0-25%	±(1.0% of full scale) at 6% = ±0.25%

The module stores calibration data in its own memory, that Leo reads when the module is put in place.

CO_2 - O_2 Sampling

Diffusion Mode

For incubator featuring gas sampling port with spontaneous outlet

Gas flows into LEO through a dedicated diffusion inlet.
Suction pump is not activated.

Pump Mode

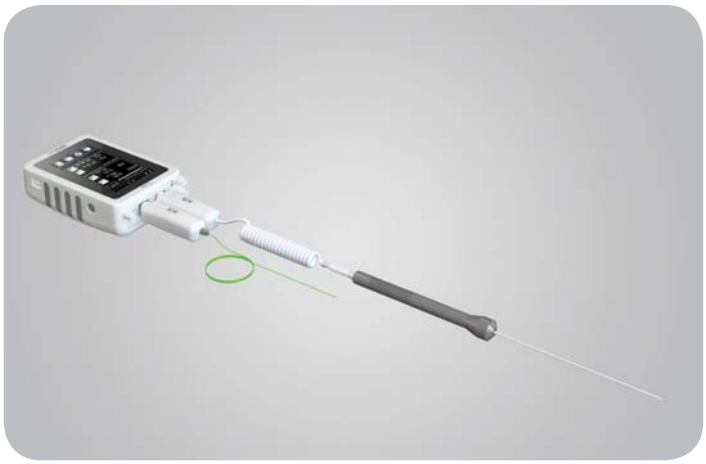
For incubator featuring gas sampling port without a spontaneous outlet

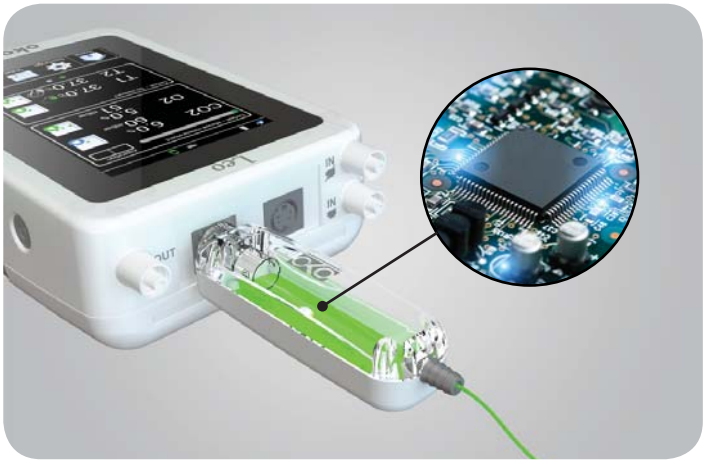
LEO activates its **suction pump** to sample gas from the incubator.
LEO releases the sampled gas through its output port. Gas can be VOC filtered and reinjected into the incubator.

T Modules

Leo features two external temperature modules, which can operate at the same time:

- T1 is a small, flexible immersible thermocouple, ideal for measurements in liquids, such as the culture media in the dish.
- T2 is a thermistor, ideal for measurements of incubator temperature, accessed through the sampling port.



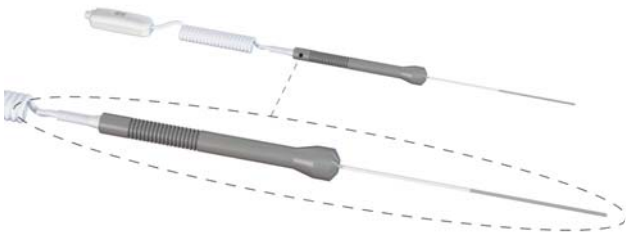


	Type	Range	Accuracy
T1	K-type Thermocouple. PFA-insulated; Length: 2 m; OD: 0.13 mm	20-45°C	± 0.1 °C
T2	PT1000 Probe length: 150 mm; OD: 1.5 mm; Cable length: 1 m	20-45°C	± 0.1 °C

Each sensor module stores calibration data in its own local memory, that LEO reads upon connection.

T1

T2



LEO Technical Specifications

	Type
LEO	Handheld, touch screen, battery operated analyzer. Includes CO_2-O_2 module, sampling tube and de-humidification kit.
CO_2-O_2 module (included in Leo)	CO_2: Non Dispersive InfraRed (NDIR) dual wave length detector LIFETIME : 5 YEARS O_2: Fluorescence based optical sensor LIFETIME : 5 YEARS
T1 module	K-type Thermocouple; OD: 0.13 mm
T2 module	PT1000 Thermoresistance - Probe length: 150 mm; OD: 1.5 mm
CO_2/O_2 calibration kit	6 mm O tygon tube with a calibrated orifice deliveing a flow of 100 ml/min to Leo when connected to a gas source at 1 barg (14.7 psig)
Hard Case (included in Leo)	Hard travel case for Leo and its accessories