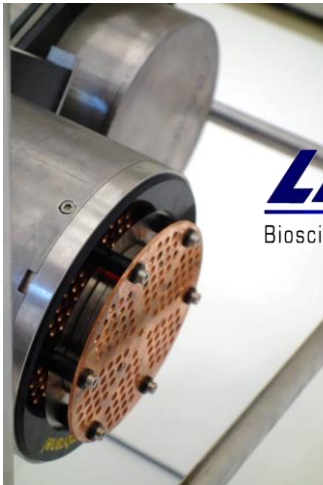


OceanXpert-Sea IR-CO₂

Precise subsea pCO₂ Analyzer



LI-COR[®]
Biosciences **inside**

- ▶ Premium LI-COR[®] analyzer
- ▶ pCO₂ Sea and Air analysis
- ▶ No calibration gases required
- ▶ Low maintenance
- ▶ Robust construction
- ▶ High precision
- ▶ Low investment – low follow up costs
- ▶ Low power
- ▶ Expandable

- ✓ ROV or AUV integration
- ✓ Shallow water or deep sea
- ✓ Profiling
- ✓ Water quality control

- ✓ Monitoring e.g. Offshore Oil+Gas / CCS
- ✓ Monitoring of biological processes
- ✓ Climate studies
- ✓ Environmental monitoring

Features & Benefits:

- It's a LI-COR[®]: highest accuracy due to automatic temperature, pressure and H₂O compensation
- Robust, versatile and compact submergible housing for buoy and marine applications
- Complete, portable and easy to maintain. Easy handling and intuitive design
- High stability with auto calibration, including standard offset zeroing; automatic or manual span gas calibration – low maintenance costs
- Flat membrane equilibrator with anti-fouling protection for long-time deployments
- Internal data logger allows easy integration of additional sensors: CTD/TSG, Oxygen, Fluorometer, Turbidity, Nutrient Analysers, pH, etc.
- Expandable through external modules via RS-485 MODBUS, e.g. for meteorological sensors
- Optional GPS georeferences for all data and position event control
- Optional online telemetry data transfer and alarm services
- Optional external or internal Li-Ion PowerPack



Specifications

Sensor Principle	High performance LI-COR® LI-850x analyzer – exclusively produced by LI-COR Biosciences for SubCtech • Dual-wavelength NDIR detector for CO ₂ and H ₂ O • Silicone flat membrane equilibrator
Range	Standard 0...3000 ppm CO ₂ • up to 20.000 ppm CO ₂ • 0...60 ppt H ₂ O • Units selectable
Resolution	0.1 ppm CO ₂ • 0.001 ppt H ₂ O
Accuracy	Correction for water vapour, pressure and temperature effects • Overall accuracy < 0.5 %
Sample Rate	Output rate typ. 1 Hz with optional averaging • User configurable • Storage rate configurable
Air CO₂	Optional • Automatic analysis on programmed intervals • Air CO ₂ port and external gas inlet
Factory Calibration	Internally stored coefficients • CO ₂ factory calibration with 15 traceable gases to WMO standards • H ₂ O calibration with NIST traceable LI-610 portable dew point generator
User Calibration	Automatic offset correction on programmed intervals • Zeroing reference included for >1 year operation time • Manual or automatic span gas calibration
Temperature	Operating temperature range 0 to +40°C • Optional heater for -20 to +40°C
Analogue Output	Optional • 0...5V / 0...2.5V or 4...20mA • CO ₂ and H ₂ O • Range can be adjusted
Data Interface	RS-232 (RS-485 optional) • simple ASCII NMEA-0183 • Easy integration into existing systems
Data Storage	Internal 8GB SD card • Storage capacity approx. 5 years (depending on sample rate)
External Sensors	GPS • CTD • Meteorological instrumentation • Oceanographic sensors
Analogue Input	Optional 16 Bit data acquisition 0/4-20 mA, ±10V etc.
Anti-fouling	Flat membrane equilibrator with anti-fouling protection for long-time deployments
Housing	Shallow water (max. 50m): POM • 15 kg (2 kg in water) • Φ180mm x 527mm Deep sea (300m; up to 3000m possible): Titanium • 16 kg (4 kg in water) • Φ168mm x 527mm
Power	12...32 VDC • typ. 15 W (@20 °C) • Warming up max. 25 W • Optional Li-Ion PowerPack
Accessories	Li-Ion Batteries • External datalogger • External sensors or analyzers • Intake for air CO ₂ • Pump for faster equilibration time
Service	Recalibration & Service recommended every 12 months • Membrane lifetime up to 10years • Operating time for 24/7 usage typ. 1 year before service (internal micro pump, zero filter)

