

COMPACT OEM TRACE GAS ANALYZER BASED ON QUANTUM CASCADE LASERS AND PHOTOACOUSTICS

FEATURES

EACH MODULE MEASURES 2 GASES (2 QCL LASERS INSIDE)

- ▶ Lower limit of detection: 10's ppb to 1ppm (depending on gas and response time)
- ▶ Heated gas cell (avoid condensation effects)
- ▶ Real time measurement
- ▶ Mid-IR fingerprint region (high sensitivity, high selectivity)
- ▶ No cross-interference (ex: measure 1ppm of NO with few % of H₂O)
- ▶ Modbus protocol and easy to use development software
- ▶ Plug and play OEM integration (standalone FPGA based module)
- ▶ No moving parts, no mirrors, (reduced maintenance, robustness)
- ▶ Simple calibration

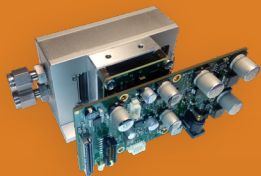
EXAMPLES OF COMPONENTS DETECTABLE IN MID-IR

C₂F₆ Hexafluoroethane
C₂H₄ ethylene
C₂H₅OH Ethanol
C₃H₄O acrolein
CF₄ Tetrafluoromethane
CH₂O (or HCHO) Formaldehyde
C₂H₆ Ethane
CH₄ Methane
Cl₂ Chlorine
CO Carbon monoxide
CO₂ Carbon dioxide
H₂O Water
H₂S Hydrogen Sulfide
H₂SO₄ Sulfuric acid
HCl Hydrogen chloride
HCN Hydrogen cyanide
N₂O Nitrous oxide
NH₃ Ammonia
NO Nitrogen monoxide
NO₂ Nitrogen dioxide
OCS carbonyl sulfide
SF₆ Sulfur Hexafluoride
SO₂ Sulfur dioxide
SO₃ Sulfur Trioxide



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multiSense

QCL-BASED MULTI-GAS SPECTROMETER

GENERAL SPECIFICATIONS

Size (without the control board)	10cm (W) x 7cm (D) x 3cm (H) housing for easy OEM integration
Weight	Approx. 200gr.
Electronics control	External mother board control unit with Built-in driver circuit (10cm (W) x 7cm (D) x 3cm (H) - 200gr.)
Electrical connection	Input voltage : 24V DC. Power transformer included.
Power consumption (Typ.)	< 10W
Interfaces	USB, RS232, RS485* <small>*(other interfaces available upon request)</small>

MEASUREMENT SPECIFICATIONS

Integration time	From ms to sec. e.g. : 1ppm of CO₂ in a few ms 100ppb of CO₂ in < 1sec.
Detection limits	Gas dependent. Typically, from few 10s ppb to ppm level
Dynamic range	> 3 decades
Sample Gas flow rate	< 40ml/min
Cell temperature	+50°C
Inlet Gas conditions	Moisture : below the ambient temperature saturation Dust : 0.1g/m³ or less Pressure : 1bar ±10%
Storage conditions	-20°C to +80°C



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