

Specifications

OPTICAL OXYGEN FLOW-THROUGH CELLS

1 SENSOR SPECIFICATIONS

Only valid in water/gas (typ. air components) for 2-point calibrated sensors at 20°C, 1013mbar absolute pressure, using default measuring parameters/modes!

Specifications are valid for oxygen flow-through cells (item no.: **OXFTC**, **OXFTC2**), combined oxygen and temperature flow-through cells (item no.: **TOFTC2**) and flow-through cells with removable oxygen robust probe (item no.: **OXFTCR**).

1.1 Gas Phase: partial pressure pO₂ (hPa), volume percent pV (% O₂ gas)

For a calibrated sensor, the partial oxygen pressure pO₂ in units of hPa (equivalent to mbar) is the fundamental oxygen unit measured by the oxygen meter (in gas and water phase).

Specifications		
Measuring Range Optimum Maximum (not specified)	% O₂ gas 0-50% O ₂ 0-100% O ₂	hPa 0-500 hPa 0-1000 hPa
Accuracy * at 1% O ₂ /10 hPa at 20% O ₂ /200 hPa	±0.02% O ₂ ±0.2% O ₂	±0.2 hPa ±2 hPa
Resolution at 1% O ₂ /10 hPa at 20% O ₂ /200 hPa	0.01% O ₂ 0.05% O ₂	0.1 hPa 0.5 hPa
Detection Limit	0.02% O ₂	0.2 hPa

* The absolute accuracy of full range sensors depends on the calibration mode. For 1-point calibrated sensors these values increase due to a decreasing accuracy. More details on request.

1.2 Dissolved Oxygen: % air saturation, $\mu\text{mol/L}$, mg/L = ppm , mL/L

Oxygen dissolved in water can be expressed in % air saturation and in concentration units like $\mu\text{mol/L}$, mg/L (ppm), and mL/L . For details on calculation of dissolved oxygen units from partial pressure readings (interpolation formula based on temperature, atmospheric pressure and salinity), please see the respective sensor/oxygen meter manuals.

Specifications		
Measuring Range Optimum Maximum (not specified)	% air saturation (a.s.) 0-250% a.s. 0-500% a.s.	mg/L (ppm) 0-22 mg/L 0-44 mg/L
Accuracy * at 5% a.s./0.44 mg/L at 95% a.s./8.8 mg/L	$\pm 0.1\%$ a.s. $\pm 1\%$ a.s.	± 0.01 mg/L ± 0.1 mg/L
Resolution at 5% a.s./0.44 mg/L at 95% a.s./8.8 mg/L	0.05% a.s. 0.25% a.s.	0.005 mg/L 0.025 mg/L
Detection Limit	0.1% a.s.	0.01 mg/L

* The absolute accuracy of the full range sensors depends on the calibration mode. For 1-point calibrated sensors these values increase due to a decreasing accuracy. More details on request.

1.3 General Characteristics

Response Time (t₉₀) ‡ Gas Water	OXFTC/OXFTC2/TOFTC2 <1 sec <9 sec	OXFTCR <10 sec <20 sec
Tubing Connectors (Luer-Lock)	ID tubing 1.6 or 2.4 mm (item no. OXFTC) ID tubing 3.2 or 4.0 mm (item no. OXFTC2, TOFTC2) ID tubing 3.2 or 4.8 mm (item no. OXFTCR)	
Recommended flow rate for liquids	10-100 mL/min (item no. OXFTC) 20-500 mL/min (item no. OXFTC2, OXFTCR)	
Temperature Range	specified: 0°C (32°F) to 50°C (122°F) (OXFTC, OXFTC2, TOFTC2, OXFTCR)	
Minimum Lifetime	10,000,000 data points	
Calibration Modes	1-point and 2-point calibration; obligatory to calibrate in gas (<i>water</i>) calibration standards for measurements in gas (<i>water</i>) samples	

Application Areas	Laboratory, industry, research. NOT for medical or any safety-critical application. NOT for application in humans. NOT for application in food intended for human consumption.
--------------------------	--

‡ Typical response times for 90% signal change of the oxygen sensor. For liquids: measured for the transition from air into a stirred solution of 1% Na₂SO₃

2 APPLICABILITY AND CROSS-SENSITIVITY

	Applicability	Cross-Sensitivity	NO Cross-Sensitivity
Water/Aqueous solutions	X		
Gas Phase (typ. air components)	X		
Ethanol ¹	short-term only		
Methanol ¹	short-term only		
Isopropanol ¹	short-term only		
Other organic solvents ²		X	
Chlorine gas (Cl ₂), NO ₂ gas, bleach		X	
pH 1-14			X
CO ₂			X
CH ₄			X
H ₂ S			X
Any ionic species			X

¹ Only diluted and after conditioning- contact info@pyroscience.com for more information;

² Includes liquid solvents and solvent vapors

3 CLEANING, STERILIZATION, STORAGE

Cleaning	3% H ₂ O ₂ , Soap solution, short-term Ethanol
Sterilization	short-term 70% Ethanol and 70% Isopropanol
Storage	>3 years in darkness at room temperature

Contact

PyroScience GmbH
Hubertusstraße 35
52064 Aachen
Deutschland

Tel.: +49 (0)241 5183 2210
Fax: +49 (0)241 5183 2299
info@pyroscience.com
www.pyroscience.com