Innovative Solutions for Challenging Problems

Xylem is a vibrant and innovative water technology company with a singular focus on helping to solve the world’s most pressing water challenges. Our success is grounded in more than 100 years of water technology leadership and a proud heritage as a former part of ITT Corporation.

Xylem’s well-known global brands have served the water market for many decades with products sold in more than 150 countries. We listen, learn and adapt to local environments, working in true partnership with our customers.

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Welcome to Xylem Inc.

Company Overview

Xylem Analytics is a leading manufacturer of field, portable, online and laboratory analytical instrumentation. Xylem’s analytical involvement spans right across the laboratory platform, from potable water analysis, through food, beverage, chemical, petrochemical, industrial, pharmaceutical and life science to effluent monitoring and control. Quality control, food safety and efficient processing are paramount at every stage of the industrial manufacturing cycle.

Measured Support for Proven Brands

Xylem Analytics’ products are sold under a range of globally recognized brands. By bringing them into Xylem, the company provides increased focus on the brands and long-term support that customers can rely on. A complete portfolio enables Xylem Analytics to address its customers’ operating and monitoring needs.

Global Support for Proven Brands

Our expertise stretches throughout the cycle of these specific industries, right across the globe. Our products are supplied through a carefully selected and fully trained network of distributors managed by regional offices to ensure customer satisfaction at every point before, during and after a product or service has been supplied. Quality of service and sustainability is paramount, no matter how large or small the requirement. From a simple hand held meter to a fully integrated process system, our aim is to serve the customer as best we can, this time, the next time and every time. To learn more about all of Xylem’s brands, visit any of the websites below:

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Total Solutions to Address Our Customers’ Application Needs

Sold under a range of globally recognized brands, we offer a complete line of monitoring, measuring and analytical instrumentation for use in the field, in the laboratory and online, including meters, electrodes, titrators, spectrophotometers, colorimeters, polarimeters, viscometers, refractometers, temperature equipment and data loggers.

With extensive experience in supplying total solutions for regulated environments, our quality analytical solutions help our customers comply with confidence. Additionally, Xylem offers a complete portfolio of analytical products to address our customers’ operating and monitoring needs.

Optical Analysis
- Refractometer P. 30
- Polarimeter P. 34
- Specrophotometer P. 20
- Photometer P. 18
- Dissolved Oxygen P. 8
- Turbidity P. 16

Chemical Analysis
- Titration P. 22
- Karl Fisher P. 26
- pH Sensor P. 12
- Conductivity Sensor P. 12
- Biochemistry P. 36
- TOC Meter P. 46

Physical Measurement
- Precision Thermometer P. 42
- Temp Data logger P. 38
- Humidity Data logger P. 38
- Pressure Data logger P. 38
- Oil Quality P. 44
- Viscosity Meter P. 28
<table>
<thead>
<tr>
<th>Raw Materials</th>
<th>Process and Packing</th>
<th>Cold Chain</th>
<th>Retail and Catering</th>
<th>Waste Water</th>
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</tbody>
</table>

**Chemical Analysis**
- Titration P. 22
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**Physical Measurement**
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**Auto Sampling**
- Online Capability
- Waste Water
- Retail
- Catering
- Distribution
- Warehousing
- HACCP
- Confectionery
- Bakery
- Meat & Fish
- Canning
- Pure Water
- Edible Oils
- Sugar
- Flavors & Essences
- Wine & Beer
- Soft Drinks
- Fruit & Vegetables
- Livestock & Aquaculture
- Water
Featured Products

**Wireless Sensor with Multi Channel Meters MultiLine® & inoLab®**

- pH, ORP, dissolved oxygen, turbidity parameters meters - Handhelds and Benchtop available
- Galvanic isolation sensors stores reliable signals
- Calibration records and additional information are stored in the sensor
- Smart sensor - self evaluation

**Titrator with Two Measuring Inputs - Multi-functional TitroLine 7800**

- Compatible with IDS digital sensors
- High accuracy with temperature compensated pH electrodes
- Titration & Karl-Fisher switchable
- Conductivity sensor connectable
- Two parameters display

**Latest Benchtop Refractometers - New Interface for Selections**

- Flat sapphire prism surface for easy-cleaning
- 0.01 °Brix accuracy up to 30 Brix (RFM300)
- High precision Peltier temperature controlled (RFM300)
- CFR 21 part 11 compliance with RFID (RFM300)

**Data Logger Series - ebro EBI 12**

- Equipment for process validation in steam sterilizer, H₂O₂, formaldehyde and EtO sterilizer, washer-disinfectors and washer-disinfectors for endoscopes
- Data Logger to measure temperature, pressure, fine vacuum, humidity and conductance
- TÜV certified
OxiTop for BOD Measurement

- Easy evaluation of the quality (TPM%) of frying oil
- Big display with signal lamp auto-evaluating function
- Temperature 50 °C and above can be measured

Refrigerator Thermometer - TRACEbro 3x0 / 4x0

- Min/Max Thermometer with one or two external probes.
- Simultaneous display of current measured value and Min / Max.
- Monitoring of 2 temperature zones
- Channel one for checking refrigerator temperature
- Channel two for checking freezer temperature

Glucose/Lactate Biochemistry Analyzer - YSI 2500

- Cost effective alternative to the 2900D for glucose and lactate measurement
- No special sample preparation required.
- Automation and small footprint for laboratory
- Ideal for simple fermentation process monitoring (Research, Pilot development)
- Analyte-specific results in 60 seconds or less
- Unique fluidics resist clogging
- Automated sample handling

Proven Technique for TOC - Aurora 1080

- Covers the range from ultrapure water (PW, WFI) to rinsed/clean water in cleaning validation.
- Compliance with FDA – 21 CFR Part 11 and IQ/OQ/PQ documentation for GLP/GMP in pharmaceutical
- Auto-sampler for 88 samples
Dissolved Oxygen  DO Measurements

Every species on our planet depends on water and oxygen. For aquatic species, adequate dissolved oxygen is of prime importance to their continued survival. Since dissolved oxygen levels are directly related to good water quality, the two are highly interdependent. Many factors can affect DO levels, and an understanding of these levels in order to make informed decisions concerning wastewater treatment operations, hypoxic zones, aquaculture facilities or large-scale ecosystems is essential.

Benchtop DO Meter  inoLab Oxi 7310

The inoLab® Oxi 7310 is the perfect benchtop meter with secure and convenient menu-controlled operation via a graphic display for the measurement of dissolved oxygen with the proven, galvanic oxygen sensors, the universal CellOx® 325, the self-stirring StirrOx® G for BOD measurements and DurOx® 325 for training purposes. With automatic documentation according to GLP/AQA, it supports the traceability - not only in the environmental lab. For this, the serial number of the sensor can be saved. On request also available with an optional built-in printer.

Wireless Optical IDS Dissolved Oxygen Sensors  FDO® 925-P

The FDO® 925 is especially suited for lab and process thanks to its compact size. The flow-free, easy to clean beveled membrane allows it to be used in containers with low sample volumes. Also, low oxygen concentrations below 1 mg/l can be shown exactly.

WTW’s proven FDO® 925 is now available as sustainable plug head version. The universal plug head fits the sensor with wireless functionality - disturbing cables are no longer required. Furthermore it can be connected to AS/IDS-x cables with lengths of up to 100 m. With this new technology WTW significantly expands the range of applications and the measuring comfort of its optical dissolved oxygen sensors.

Measurement range

| DO Con    | 0.00~20.00 mg/L, 0.0~90.0 mg/L |
| Saturation| 0.0~200.0 %, 0~600 %          |
| Pressure  | 0.0~200.0 hPa, 0~1,250 mbar   |
| Temperature| ±0.1 °C                     |

Accuracy

| DO Con    | Meas value ±0.5 %            |
| Saturation| Meas value ±0.5 %            |
| Temperature| ±0.1 °C                     |

Temperature compensation

Auto Compensation (0 to 40 °C)

Weight & dimensions

240(W) × 190(D) × 80(H) mm
800g (phosphorus N/A)
The HandyLab 680 compact portable multi-parameter instrument with digital IDS pH/ORP Electrodes, dissolved oxygen sensors, conductivity cells. Calibration records and additional information are stored in the sensor. Well laid-out menus make the operation safe and easy. Robust with IP 67 waterproof design. Operate with user administration and traceable results. Sharp Color Display. Data management via USB transfer to PC with bundled software/export data as pdf or CSV to USB flash drive. pH calibration from 1 to 5 point and auto recognize 22 buffer sets. Delivery includes importer software for data acquisition via Excel®.

Dissolved oxygen measurement - really simple: The Oxi 3000 series are an easy to use, robust and waterproof portable meter for the measurement of dissolved oxygen, i.e. in surface waters, in wastewater treatment plants and in fish farming applications. It is suitable for galvanic oxygen sensors of the CellOx® and DurOx® series; the adjustable salinity compensates for the salt content when measuring sea water and allows correct measured values. The results can be displayed either as saturation or concentration.

The meter combines the features for mobile application in the field with the precision and comfort of a laboratory meter with plain text structure menu, integrated data logging system and a rugged watertight IP 65 housing. The meter is the ideal choice for determination of the oxygen content in surface water, sewage and for application in wastewater treatment. The meter in connection with the sensor indicating the mass concentration of dissolved oxygen in aqueous solutions in mg/l and the oxygen saturation index (%-saturation).
Biochemical Oxygen Demand  BOD Measurements/Respiration

WTW’s benchtop meters can safely determine and reliably document the biochemical oxygen demand (BOD). For this, a series of dilutions is prepared depending on the BSB, where the start and end values as well as the value of the dilution water are determined with WTW meters and sensors. With the conventional benchtop meters type inoLab® Oxi 7310 you can measure with the self-stirring StirrOx® G or with the CellOx® 325 and the stirring attachment RZ 300. The optical oxygen sensor FDO® 925 can be used for all digital meters; it will also require the stirring attachment RZ300, just like the CellOx® 325.

Our digital lab and portable meters now offer the choice to measure wirelessly!!

Sensors for the Determination of BOD

BOD determination with galvanized or optical oxygen sensors according to DIN EN 1899-1 and DIN EN 1899-2 - with portable and benchtop devices.

<table>
<thead>
<tr>
<th>Method</th>
<th>Usable sensors</th>
</tr>
</thead>
<tbody>
<tr>
<td>CellOx® Galvanic oxygen sensor</td>
<td>* * *</td>
</tr>
<tr>
<td>StirrOx® Galvanic oxygen sensor</td>
<td>*</td>
</tr>
<tr>
<td>Optical IDS dissolved oxygen sensors</td>
<td>* * * * * *</td>
</tr>
</tbody>
</table>

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Meters for the Determination of BOD  OxiTop Series

WTW OxiTop® systems are easy-to-use meters for BOD for self-monitoring. OxiTop®-IDS measuring systems can execute anaerobic and aerobic examinations across the entire spectrum of biodegradability and evaluate them on the computer.

Complete packages, for 6 or 12 samples, available and ready for immediate use. Also flexible, customisable and scalable. Based on pressure measurement (no mercury). Simplifies handling with dilution series or multiple bottles. Data security with built-in memory – classic 5 measurements/days or up to 360 points and 180 days graphical results with Control systems. Suitable for routine BODs and other special applications - compliant to multiple international methodologies and standards. Incubators, accessories and consumables also available.

OxiTop®-IDS 12-inch (Measuring system: Sensor head, sample container, stirrer, controller)

OxiTop®-i IS12 type (Measuring system: Sensor head, sample container, stirrer)

<table>
<thead>
<tr>
<th>Model</th>
<th>OxiTop®-i IS 6 / IS12</th>
<th>OxiTop®-IDS</th>
<th>B6 / B6M / B6M 2.5</th>
<th>A6 / A12</th>
<th>6 / 12</th>
<th>AN6 / AN12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product image</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Application**

- **BOD measurement**: Sample sealed in vessel for 5 days measuring pressure change
- **Soil respiration**: The soil samples were sealed in, to monitor the change of pressure in the head portion
- **OECD / aerobic applications**: Sample containing a non-biodegradable material, (Max 180 days)
- **Biogas determination**: Biogas determination - monitor the pressure change of the gas produced by the anaerobic decomposition

**Number of samples**

- i IS6: 6
- i IS12: 12
- IS6: 6
- IS12: 12
- B6: 6 (500 ml)
- B6M: 6 (1L)
- B6M 2.5: 6 (2.5 L)
- A6: 6
- A12: 12
- 6: 6
- 12: 12
- AN6: 6
- AN12: 12

**Sample vessel**

- Amber Bottle 510 ml
- Amber Bottle 510 ml
- B6: 500 ml Duran Bottle
- B6M: 1.0 L Duran Bottle
- B6M 2.5: 2.5 L
- Transparent Bottle: 6,000 ml
- Amber Bottle 510 ml
- Transparent bottle: 1,250 ml

**Measuring head**

- OxiTop®-i IS 6 / i IS12
- OxiTop-IDS
- OxiTop-IDS/B
- OxiTop-IDS
- OxiTop-IDS
- OxiTop-IDS

**Stirrer**

- i IS6: 6
- i IS12: 12
- IS6: 6
- IS12: 12
- A6: 6
- A12: 12
- 6: 6
- 12: 12
- AN6: 6
- AN12: 12

**Controller**

- –
- Multi 3620 IDS / Multi 3630 IDS

**Software & cable**

- –
- Multi 3620 IDS / Multi 3630 IDS

**CO₂ absorbent**

- –
- –
- –
- –

**Nitrification inhibitor**

- –
- –
- –
- –

**Overflow flask**

- 164/332 ml
- 164/343 ml
- –
- –
- –

**Stirrer bar**

- i IS6: 6 Pieces
- i IS12: 12 Pieces
- i IS6: 6 Pieces
- i IS12: 12 Pieces
- i IS6: 6 Pieces
- i IS12: 12 Pieces
- i IS6: 6 Pieces
- i IS12: 12 Pieces

**Biochemical Oxygen Demand Test**

When properly used, the BOD test provides a reliable characterization of wastewater. It can be expected to be a standard for regulatory agencies for many years even though its use as a control tool is limited by the 3 or 5 day wait required for the test (and sometimes 20 days!). Various methods (based on short-term monitoring and extrapolation) of quickly estimating the probable results of the BOD test on a sample have been devised and the interested reader is advised to consult appropriate literature but a ‘true’ BOD test requires time and incubation.
Lab 2/3 Channel Instrument  ProLab 2500 series

The ProLab 2500 instruments can accurately measure pH, ORP, conductivity, and DO/BOD in the laboratory. In addition, ISEs can be connected to the ProLab 2500.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Lab 845 pH / ORP / ISE</th>
<th>Lab 845 pH / ORP / ISE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>Lab 845 pH / ORP / ISE</td>
<td>Lab 845 pH / ORP / ISE</td>
</tr>
<tr>
<td>Scale</td>
<td>pH, ORP (mV), DO %, DO mg/L (BOD Probe), Pressure, Conductivity, Sal, TDS, Temp, ISE</td>
<td></td>
</tr>
<tr>
<td>Measurement range</td>
<td>0–200 μS/cm, 0–2,000 μS/cm, 0–500 mS/cm, -10°C–100°C</td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 μS, 1 μS, 0.01 mS, 0.1 mS, 0.1 °C</td>
<td></td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.5% Measurement Value, ±0.5% Measurement Value, ±0.1 °C</td>
<td></td>
</tr>
<tr>
<td>Temp compensation</td>
<td>8 pole Sensor Channel, 4 pole USB Channel</td>
<td></td>
</tr>
</tbody>
</table>

Features
• Heavy duty
• Routine
• General academic research

Ecosense pH/EC/ORP pens  pH10A / EC30A / ORP15A

The Ecosense Pen series is the perfect instrument for economical spot sampling of pH/ORP/EC and temperature in applications such as wastewater, surface water, aquaculture, hydroponics, pools, and education. This ultra-compact instrument even includes a graphic display with on-screen instructions!

<table>
<thead>
<tr>
<th>Model</th>
<th>pH10A</th>
<th>EC30A</th>
<th>ORP15A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scale</td>
<td>pH</td>
<td>0.00~14.00</td>
<td>Conductivity: 0.0 μS~19.90 mS</td>
</tr>
<tr>
<td></td>
<td>Temp</td>
<td>0.0~99.9 °C</td>
<td>Temp: 0.0~99.5 °C</td>
</tr>
<tr>
<td>Accuracy</td>
<td>pH</td>
<td>±0.02, ±1LSD</td>
<td>Conductivity: ±1% FS</td>
</tr>
<tr>
<td></td>
<td>Temp</td>
<td>±0.3 °C</td>
<td>Temp: ±0.5 °C</td>
</tr>
<tr>
<td>Resolution</td>
<td>pH</td>
<td>±0.01</td>
<td>Conductivity: 0.00<del>1990 μS/cm, 5 μS/cm 2.00</del>19.90 mS/cm, 0.05 mS/cm</td>
</tr>
<tr>
<td></td>
<td>Temp</td>
<td>±0.1 °C</td>
<td>Temp: 0.1 °C</td>
</tr>
<tr>
<td>Waterproof</td>
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<td>IP67</td>
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</tr>
<tr>
<td>Memory</td>
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<td>50 Point Memory</td>
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<tr>
<td>Type</td>
<td>pH sensor options</td>
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<tr>
<td>SenTix 41</td>
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<td></td>
<td></td>
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<tr>
<td>SenTix B1</td>
<td></td>
<td></td>
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<td>SenTix L</td>
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<td>SenTix SP</td>
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<td>SenTix HWS</td>
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<td>SenTix Mic/D/B</td>
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<table>
<thead>
<tr>
<th>Scale</th>
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<tr>
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<td>2~13 pH</td>
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<td>0~14 pH</td>
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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>-5~80 °C</td>
<td>0~100 °C</td>
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<tr>
<td>-5~100 °C</td>
<td>0~80 °C</td>
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<tr>
<td>-5~100 °C</td>
<td>-5~100 °C</td>
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<th>Connector</th>
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<tbody>
<tr>
<td>Epoxy</td>
<td>Glass</td>
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<tr>
<td>Glass</td>
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<table>
<thead>
<tr>
<th>Internal solution</th>
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<tbody>
<tr>
<td>Gel</td>
<td>3M KCL (Ag N/A)</td>
</tr>
<tr>
<td>3M KCL (Ag N/A)</td>
<td>Spare chip membrane</td>
</tr>
<tr>
<td>3M KCL (Ag N/A)</td>
<td>3M KCL (Ag)</td>
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<thead>
<tr>
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<tbody>
<tr>
<td>Ceramic</td>
<td>Platinum</td>
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<tr>
<td>Platinum</td>
<td>Pin hole</td>
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<tr>
<td>Sleeve</td>
<td>Platinum</td>
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<table>
<thead>
<tr>
<th>Feature</th>
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</thead>
<tbody>
<tr>
<td>SenTix 41, pH electrode, Single Junction, 3 in 1, Gel electrolyte, Epoxy shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ</td>
<td>SenTix B1, pH electrode, self-flushing platinum single junction, 3 in 1, Refillable, Glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ</td>
</tr>
<tr>
<td>SenTix L, Single Junction, Combination, Spear tip membrane, Epoxy shaft, 1 meter cable, BNC connector</td>
<td>SenTix SP, pH electrode, Double Junction, 3 in 1, Platinum junction, 170 mm length, glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ</td>
</tr>
<tr>
<td>SenTix HWS, pH electrode, Double Junction, 3 in 1, ground joint junction, 170 mm length, glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ</td>
<td>SenTix Mic/B/D, pH electrode, Double Junction, 3 in 1, Platinum junction, 170 mm length, Micro electrode, glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ</td>
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<table>
<thead>
<tr>
<th>Type</th>
<th>pH combination electrode</th>
<th>ORP combination electrodes</th>
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</thead>
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<tr>
<td>SenTix Sur</td>
<td>SenTix MIC-D pH electrode, Single Junction, Combination, Flat glass membrane, Glass shaft, 1 meter cable, BNC Connector</td>
<td>SenTix ORP</td>
</tr>
<tr>
<td>SenTix IC-D</td>
<td>SenTix MIC-D pH electrode, Triple Junction, Iodine/ Iodide reference, 3 in 1, Refillable, Micro electrode, Glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ</td>
<td></td>
</tr>
<tr>
<td>SenTix ORP</td>
<td>SenTix Ag</td>
<td>SenTix Au</td>
</tr>
<tr>
<td>SenTix PBS</td>
<td>SenTix ORP</td>
<td>SenTix ORP</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Scale</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2~13 pH</td>
<td>0~14 pH</td>
</tr>
<tr>
<td>–</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Temperature item</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0~50 °C</td>
<td>-5~100 °C</td>
</tr>
<tr>
<td>0~100 °C</td>
<td>-5~100 °C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass</td>
<td>Glass</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal solution</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Referid®</td>
<td>3M KCL (Ag N/A)</td>
</tr>
<tr>
<td>3M KCL</td>
<td>ELY / ORP / Ag</td>
</tr>
<tr>
<td>3M KCL</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Junction type</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>KPG</td>
<td>Platinum</td>
</tr>
<tr>
<td>Platinum</td>
<td>Platinum</td>
</tr>
<tr>
<td>Silver</td>
<td>Gold</td>
</tr>
<tr>
<td>Gold</td>
<td>Platinum</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Connector</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>DIN-BNC</td>
<td>AS/DIN-BNC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feature</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>SenTix Sur, pH electrode, Single Junction, Combination, Flat glass membrane, Glass shaft, 1 meter cable, BNC Connector</td>
<td>SenTix MIC-D pH electrode, Triple Junction, Iodine/ Iodide reference, 3 in 1, Refillable, Micro electrode, Glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ</td>
</tr>
</tbody>
</table>

The scale is comparable with that of pH measurement. Typical areas of use are the monitoring of the disinfection effect, the determination of ORP potentials in biochemical reactions, measuring in waters of different quality and more. The platinum electrodes can be used universally, the gold electrode is especially suited for strongly oxidizing media without the presence of chloride. The silver electrode is intended for argentometry.

The exactness of the pH measurement is mainly dependent on the accuracy of calibration. This again highly depends on the reliability of the buffer.

Hermetically sealed in the glass ampoule and sterilized with hot steam, same as a pharmaceutical product, the buffer solutions free of preservation agent have an extremely long shelf life and guarantee continuously error-free characteristics.

Buffer solutions in the unique double-end ampoules offer a particularly high degree of reliability and measuring accuracy.

Features
- Reliability and measuring safety
- Extremely long storage times, thanks to hot-steam sterilization
- Without preservative agent
- A maximum of calibration safety

FIOLAX® Ampoule pH Buffer

![FIOLAX® Ampoule pH Buffer](image)

250mLPE bottles:
- pH 4.01, 7.00, 10.01

Features
- Reliability and measuring safety
- Extremely long storage times, thanks to hot-steam sterilization
- Without preservative agent
- A maximum of calibration safety
**Portable Cond/Salinity Meter**  
**LF40 Meter**

The meter combines the features for mobile application in the field with the precision and comfort of a laboratory meter with plain text structure menu, integrated data logging system and a rugged watertight IP 65 housing. The TM 40 has an automatic temperature compensation for the pH measuring as well as an adjustable reference temperature with measurements without temperature sensor. For calibration a manual or automatic two point calibration routine can be used. Other possible applications of the device are the measurements of redox (ORP) or ISE-potential relative to the standard hydrogen electrode to DIN 38404.

### Measurement range

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC</td>
<td>0<del>200 µS/cm; 0</del>2,000 µS/cm; 0<del>20 mS/cm; 0</del>500 mS/cm</td>
</tr>
<tr>
<td>TDS</td>
<td>0<del>200 mg/l; 0</del>2,000 mg/l; 0<del>20 g/l; 0</del>500 g/l</td>
</tr>
<tr>
<td>Salinity</td>
<td>0~70 g/kg</td>
</tr>
<tr>
<td>Temperature</td>
<td>–10~100 °C</td>
</tr>
</tbody>
</table>

**Power supply**

(3 x AA, IEC R6, LR6, 1.5 V)

**Weight & dimensions**

200(W) x 95(H) x 40(D) mm

290 g incl. batteries

---

**Features (Except Lab855)**

- Reliable data storage
- USB data management
- Drive/PC connection or direct printout via built-in printer

---

**Portable Meters (pH • ORP • DO • ISE)**  
**HandyLab® MKII Series**

Our 2nd generation of Handylab devices offers analog or digital options for the measurement of pH, ORP, dissolved oxygen and conductivity in the lab and in the field.

###Scale

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>0.000 ~ 14.000</td>
</tr>
<tr>
<td>ORP</td>
<td>–1200 ~ +1,200 mV</td>
</tr>
<tr>
<td>Temp</td>
<td>–5.0 ~ +105 °C</td>
</tr>
<tr>
<td>Conductivity</td>
<td>0.00 ~ 2,000 mS/cm</td>
</tr>
<tr>
<td>DO</td>
<td>0.00 ~ 20.00 mg/l</td>
</tr>
</tbody>
</table>

**Accuracy**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>pH</td>
<td>±0.004 pH</td>
</tr>
<tr>
<td>ORP</td>
<td>±0.2 mV</td>
</tr>
<tr>
<td>Temp</td>
<td>±0.1°C</td>
</tr>
<tr>
<td>Conductivity</td>
<td>±0.5% Measurement Value</td>
</tr>
<tr>
<td>DO</td>
<td>±0.5% Measurement Value</td>
</tr>
</tbody>
</table>

**Calibration points**

1~5

**Interface**

USB-A, mini USB-B (HL680)

---

**Parameter**

**pH**

- Scale: –2.0~20.0, –2.00~20.00, –2.000~19.999
- Resolution: 0.1, 0.01, 0.001
- Accuracy: ±0.1, ±0.01, ±0.05 (Sample temp 15~35 °C)

**ORP (mV)**

- Scale: –1,200~1,200.0
- Resolution: 0.1, 1.0
- Accuracy: ±0.3, ±1.0 (Sample temp 15~35 °C)

**Temp**

- Scale: –5~+105 °C
- Resolution: 0.1
- Accuracy: ±0.1
Portable Meters for MEMOSENS® Electrodes

HandyLab® 7 Series

The new mobile pH measuring devices by SI Analytics with MEMOSENS® technology offers increased safety and a user-friendly interface.

Function | HL700 | HL 750 | HL 750EX | HL 780
---|---|---|---|---
MEMOSENS® pH, ORP | • | • | • | •
Analog pH, ORP | • | • | • | •
Temp | • | • | • | •
Explosion proof Ex-Zone 0/1 | – | • | – | –
PC Software HandyLab® Pilot | – | • | • | •
Micro USB-B | – | • | • | •
Data logger (Memory) | – | 5,000 | 5,000 | 10,000
Lithium battery | – | • | – | •

Scale
MEMOSENS® pH : -2.000~+16.000 pH, -2,000~+2,000 mV, -50~250 °C
MEMOSENS® ORP : -2,000~+2,000 mV, -50~+250 °C, ΔmV (Offset)
Analog pH : -2~16pH, below 2.3 digit Resolution
Analog ORP : -1,300~+1,300

Temperature
-2 x Ø 0.4 mm
NTC 30 kΩ : -20~+120 °C Pt 1000 : -40~+250 °C
Accuracy/Reproducibility : ±0.3 °C/0.2 °C

Weight & dimensions
132(W) × 156(H) × 30(D) mm
500g

MEMOSENS® Process Electrodes

Our MEMOSENS® program contains pH and redox electrodes. They are compatible to all the market available measuring devices based on the MEMOSENS® protocol.

Features
• Complete galvanic isolation
• Resistant to environmental influences
• Radical improvement in measuring point reliability
• Lifecycle memory makes predictive maintenance possible
• MEMOSENS® is an open system
• All MEMOSENS® sensors and devices from the manufacturers involved are compatible with each other

Model | A7781 | FLA93-MF | PL 83 | SL 83 | Pt 8281 | PL 89 | SL 89
---|---|---|---|---|---|---|---
Parameter | pH, Temp | pH, Temp | pH, Temp | pH, Temp | ORP, Temp | ORP, Temp | ORP, Temp
Length (mm) | 120, 225 | 120, 225 | 120, 225 | 120, 225, 325, 425 | 120 | 120 | 120, 225
Use | General | Low temperature | High temperature | High alkalinity | Autoclave | High temperature | High temperature
| | | | | | | | Autoclave
Temp Item | -5~+80 °C | -30~+100 °C | 0~+130 °C | 0~+140 °C | -5~+100 °C | 0~+130 °C | 0~+140 °C
System | Silamid® | - | Silamid® | Silamid® | Silamid® | Silamid® | Silamid®
Range/material | 0~14pH Ceramic | 0~14pH Platinum | 0~14pH Hole junction | 0~14pH Ceramic | KPG annular gap junction | Ceramic | Ceramic
Max (Bar) | 12 (3 bar pressure variation) | 12 | 12 | 12 | 12 | 12 | 12
ATEX Cert | All MEMOSENS® process electrodes are ATEX certified

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Model | A7781 | FLA93-MF | PL 83 | SL 83 | Pt 8281 | PL 89 | SL 89
---|---|---|---|---|---|---|---
Parameter | pH, Temp | pH, Temp | pH, Temp | pH, Temp | ORP, Temp | ORP, Temp | ORP, Temp
Length (mm) | 120, 225 | 120, 225 | 120, 225 | 120, 225, 325, 425 | 120 | 120 | 120, 225
Use | General | Low temperature | High temperature | High alkalinity | Autoclave | High temperature | High temperature
| | | | | | | | Autoclave
Temp Item | -5~+80 °C | -30~+100 °C | 0~+130 °C | 0~+140 °C | -5~+100 °C | 0~+130 °C | 0~+140 °C
System | Silamid® | - | Silamid® | Silamid® | Silamid® | Silamid® | Silamid®
Range/material | 0~14pH Ceramic | 0~14pH Platinum | 0~14pH Hole junction | 0~14pH Ceramic | KPG annular gap junction | Ceramic | Ceramic
Max (Bar) | 12 (3 bar pressure variation) | 12 | 12 | 12 | 12 | 12 | 12
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Model | A7781 | FLA93-MF | PL 83 | SL 83 | Pt 8281 | PL 89 | SL 89
---|---|---|---|---|---|---|---
Parameter | pH, Temp | pH, Temp | pH, Temp | pH, Temp | ORP, Temp | ORP, Temp | ORP, Temp
Length (mm) | 120, 225 | 120, 225 | 120, 225 | 120, 225, 325, 425 | 120 | 120 | 120, 225
Use | General | Low temperature | High temperature | High alkalinity | Autoclave | High temperature | High temperature
| | | | | | | | Autoclave
Temp Item | -5~+80 °C | -30~+100 °C | 0~+130 °C | 0~+140 °C | -5~+100 °C | 0~+130 °C | 0~+140 °C
System | Silamid® | - | Silamid® | Silamid® | Silamid® | Silamid® | Silamid®
Range/material | 0~14pH Ceramic | 0~14pH Platinum | 0~14pH Hole junction | 0~14pH Ceramic | KPG annular gap junction | Ceramic | Ceramic
Max (Bar) | 12 (3 bar pressure variation) | 12 | 12 | 12 | 12 | 12 | 12
ATEX Cert | All MEMOSENS® process electrodes are ATEX certified

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Model | A7781 | FLA93-MF | PL 83 | SL 83 | Pt 8281 | PL 89 | SL 89
---|---|---|---|---|---|---|---
Parameter | pH, Temp | pH, Temp | pH, Temp | pH, Temp | ORP, Temp | ORP, Temp | ORP, Temp
Length (mm) | 120, 225 | 120, 225 | 120, 225 | 120, 225, 325, 425 | 120 | 120 | 120, 225
Use | General | Low temperature | High temperature | High alkalinity | Autoclave | High temperature | High temperature
| | | | | | | | Autoclave
Temp Item | -5~+80 °C | -30~+100 °C | 0~+130 °C | 0~+140 °C | -5~+100 °C | 0~+130 °C | 0~+140 °C
System | Silamid® | - | Silamid® | Silamid® | Silamid® | Silamid® | Silamid®
Range/material | 0~14pH Ceramic | 0~14pH Platinum | 0~14pH Hole junction | 0~14pH Ceramic | KPG annular gap junction | Ceramic | Ceramic
Max (Bar) | 12 (3 bar pressure variation) | 12 | 12 | 12 | 12 | 12 | 12
ATEX Cert | All MEMOSENS® process electrodes are ATEX certified
Multi-Parameter / Turbidity
Benchtop / Handheld / Sensors & Accessories

Multi-parameter Benchtop Meter  **inoLab Multi 9000 Series**

inoLab® benchtop devices offer the correct solution for pH, ORP, dissolved oxygen and conductivity measurements in the lab.

The new inoLab® Multi 9310 IDS is highly suitable for digital measurements of pH, ORP, dissolved oxygen (optical), BOD, conductivity and turbidity in the lab. Use the new wireless modules together with the new IDS plug head sensors, be independent from cables and measure i.e. conveniently under laboratory hoods or laminar flow benches. The IDS technology allows optimized measurements and efficient documentation in the simplest manner. A USB interface or an optionally installed printer allow the documentation via the computer or directly on the meter.

**Main Features**
- 1 Measurement Channel
- pH, ORP, DO and Conductivity
- High accuracy and stability
- Easy to use and robust design
- Automatic calibration
- Large display for easy reading
- Built-in data logging

**Multi 9310**
- 1 Measurement Channel
- pH, ORP, DO and Conductivity

**Multi 9620**
- 2 Measurement Channel
- pH, mV, ISE, saturation, partial pressure, conductivity, spec. resistance, salinity, TDS, temperature

**Multi 9630**
- 3 Measurement Channel
- pH, mV, ISE, saturation, partial pressure, conductivity, spec. resistance, salinity, TDS, temperature

**Measurement range (dependent on sensor used)**
- pH : 0.000 to 14.000 pH
- ORP : –1,200.0 to 1,200.0 mV
- DO : 0.00 to 20.00 mg/L
- Conductivity : 10 μS/cm to 2,000 mS/cm

Multiparameter Laboratory System  **ProLab 5000**

**Features**
- Up to 4 measurement modules (inputs) in a variety of configurations
- PC software ProLab 5000 Pilot with extensive operating functions
- Coupling of autosampler and burettes for dosing and automated measurements
- Additional modules for current output possible
- Timer function, Alarm/threshold function, access control by password
- Virtual channels to calculate different parameters from the measured value
- Data storage and data recording; data transfer with RS232/USB or Ethernet
- Logbook can store up to 200 entries (GLP function)

Multi-parameter Portable Meter  **MultiLine 3000 Series**

**Main Features**
- High-quality portable digital IDS multi-parameter instrument with a universal measurement input for starting with digital measurement technology.
- The Multi 3510 IDS compact portable multi-parameter instrument for applications with digital IDS pH/ORP electrodes, dissolved oxygen sensors, conductivity cells or turbidity sensors. Calibration records and additional information are stored in the sensor. Well laid-out menus make the operation safe and easy. With a wide range of electrodes almost every application including depth measurement down to 100 m will be covered in the field and in the laboratory.

**Main Features**
- 1 Measurement Channel
- pH, DO, ORP, Conductivity and Turbidity
- 2 Measurement Channel
- pH, mV, ISE, saturation, partial pressure, conductivity, spec. resistance, salinity, TDS, temperature
- 3 Measurement Channel

**Measurement range**
- pH : 0.000 to 14.000 pH
- ORP : –1,200.0 to 1,200.0 mV
- DO : 0.00 to 20.00 mg/L
- Conductivity : 10 μS/cm to 2,000 mS/cm
- Turbidity : 0.0 to 4,000.0 FNU/NTU

**Weight & dimensions**
- 80(W) × 180(D) × 55(H) mm, 400g

**Power Supply**
- 4 x 1,5 V AA (supplied) 4x 1,2 V NiMH-Akku or via USB port
Portable Turbidity Meter  
**Turb® 430 IR / Turb® 430 T**

Portable nephelometric with highest precision according to DIN ISO / US EPA for water analytics, quality control and process monitoring.

<table>
<thead>
<tr>
<th>Measurement ranges</th>
<th>Accuracy</th>
<th>Power supply</th>
<th>Weight &amp; dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTU : 0.02-1100/0-1100</td>
<td>±0.01 NTU or ±2.2 % of the measured value</td>
<td>4x AA batteries for approx. 3,000 measurements</td>
<td>86(W) × 236(D) × 77(H) mm 600g</td>
</tr>
<tr>
<td>FNU : 0.00-1100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reproducibility</td>
<td>&lt;0.5 % of the measured value or 0.01 NTU/FNU</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Economical Portable Turbidity Meter  
Turb® 355 IR / Turb® 355 T**

Small portable turbidity meter as per DIN ISO / US EPA for nephelometric measurements in quality control and environmental monitoring.

<table>
<thead>
<tr>
<th>Measurement ranges</th>
<th>Accuracy</th>
<th>Power supply</th>
<th>Weight &amp; dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>NTU : 0 to 1,100</td>
<td>0 to 500 NTU/FNU ±0.1 NTU/FNU or ±2 % of measured value</td>
<td>4x AAA Alkaline batteries sufficient for more than 1,500 measurements</td>
<td></td>
</tr>
<tr>
<td>FNU : 0 to 1,100</td>
<td>0 to 1,100 NTU/FNU ±3 % of the measured value</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reproducibility</td>
<td>≤1 % of the measured value or ±0.05 NTU/FNU</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resolution</td>
<td>N.0.01 NTU in the range 1 to 9.99 0.1 NTU in the range 10.0 to 99.9 1 NTU in the range 100 to 1,000</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Portable Turbidity Meter  
WQ770-B**

The Global Turbidity Meter is a highly accurate device with a fully submersible sensor for in-situ environmental or process monitoring. The meter is provided with a padded carrying case and 25' of marine grade cable, with lengths up to 100' available upon request.

<table>
<thead>
<tr>
<th>Measurement ranges</th>
<th>Accuracy</th>
<th>Power supply</th>
<th>Weight &amp; dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensor = 0 to 50 NTU and 0-1000 NTU, Meter = 0-50 NTU or 0-1000 NTU selectable</td>
<td>+ 1% of full scale</td>
<td>Standard 9V batteries</td>
<td>Body = (Diameter)3.8 x (Length)21.6 cm 454 g (Sensor), 907 g (Meter+sensor)</td>
</tr>
<tr>
<td>Output</td>
<td>4-20mA (Sensor, both ranges), LED screen (Meter)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cable Length</td>
<td>Sensor = 25 ft standard (optional to 100 ft)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Portable Suspended Solids  
TSS 711**

The Royce Model 711 Portable Suspended Solids/ Interface Level Analyzer is a rugged, waterproof instrument designed for the rigors of remote sampling. The meter provides reliable operation in waste treatment plants, rivers, lakes and other aqueous systems. The meter will read in either grams per liter when in the suspended solids mode or relative density percentage while in the interface level mode of operation.

<table>
<thead>
<tr>
<th>Measurement range</th>
<th>Reproducibility</th>
<th>Accuracy</th>
<th>Power supply</th>
<th>Weight &amp; dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01 to 10 grams per liter (10 to 10,000 mg/L)</td>
<td>±1 % of reading or ±20 mg/L, whichever is greater</td>
<td>±5 % of reading or ±100 mg/L, whichever is greater</td>
<td>Standard 9V batteries</td>
<td>7”(L) x 3.2”(W) x 1.5”(D) Approx 0.45kg</td>
</tr>
</tbody>
</table>
The YSI 9300 and YSI 9500 are economical photometers in small packages for any application. These portable photometers allow you to easily take readings directly in the field for 100+ parameters. Selecting the desired test has never been easier. Simply choose among the list of available tests on the large graphic display and the instrument will walk you through the test procedure—it’s that easy! Simple. Convenient. Accurate.

### Features
- **Direct reading Cons**
- **Waterproof IP-67 rating**
- **Large, backlit graphic display**
- **Sample tube holder automatically adjusts for various diameters**
- **On-screen instructions virtually eliminates reading manuals**
- **100+ test choices**

### Accuracy
- ±0.5 % at 4 % transmittance; ±0.005 at 0.3 AU

### Resolution
- 0.001 AU

### Wavelength
- 450, 500, 550, 575, 600, 650 nm

### Display
- Graphic, backlit LCD with on-screen instructions

### Waterproof
- IP 67

### Power
- 3x AA batteries; the YSI 9500 can also be powered via USB

### Weight & dimensions
- 146(W) × 275(D) × 75(H) mm
- 975g

### 9500 Photometer

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Scale</th>
<th>($250 test) Kit</th>
<th>($250 test) Kit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alkalinity, Total (Alkaphot)</td>
<td>0~500 (CaCO3)</td>
<td>YPM188</td>
<td>YAP188</td>
</tr>
<tr>
<td>Alkalinity-M (Alkaphot M)</td>
<td>0~500 (CaCO3)</td>
<td>YPM250</td>
<td>YAP250</td>
</tr>
<tr>
<td>Alkalinity-P (Alkaphot P)</td>
<td>0~500 (CaCO3)</td>
<td>YPM251</td>
<td>YAP251</td>
</tr>
<tr>
<td>Aluminum</td>
<td>0~0.5</td>
<td>YPM166</td>
<td>YPM166</td>
</tr>
<tr>
<td>Ammonia</td>
<td>0~1.0 (N)</td>
<td>YPM152</td>
<td>YPM152</td>
</tr>
<tr>
<td>Bromine</td>
<td>0~10.0</td>
<td>YPM060</td>
<td>YPM060</td>
</tr>
<tr>
<td>Calcium Hardness (Calicoll)</td>
<td>0~500 (CaCO3)</td>
<td>YPM252</td>
<td>YPM252</td>
</tr>
<tr>
<td>Chloride Chloride (Chloridol)</td>
<td>0~50,000 (NaCl)</td>
<td>YPM268</td>
<td>YPM268</td>
</tr>
<tr>
<td>Chlorine DPD 1</td>
<td>0~5.0</td>
<td>YPM011</td>
<td>YPM011</td>
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<tr>
<td>Chlorine DPD 2</td>
<td>0~5.0</td>
<td>YPM021</td>
<td>YPM021</td>
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<tr>
<td>Chlorine DPD 1&amp;3</td>
<td>0~5.0</td>
<td>YPM031</td>
<td>YPM031</td>
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<tr>
<td>Chlorine DPD 4</td>
<td>0~5.0</td>
<td>YPM041</td>
<td>YPM041</td>
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<tr>
<td>Copper Copper (Coppercol)</td>
<td>0~5.0</td>
<td>YPM186</td>
<td>YPM186</td>
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<tr>
<td>Color (includes turbidity)</td>
<td>10~500</td>
<td>YPM069</td>
<td>N/A</td>
</tr>
<tr>
<td>Air Cyanuric Acid</td>
<td>0~200</td>
<td>YPM087</td>
<td>YPM087</td>
</tr>
<tr>
<td>Florida Fluoride</td>
<td>0~1.5</td>
<td>YPM179</td>
<td>YPM179</td>
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<tr>
<td>Hardness (Hardicol)</td>
<td>0~500 (CaCO3)</td>
<td>YPM254</td>
<td>YPM254</td>
</tr>
<tr>
<td>Hydrazine</td>
<td>0~0.5</td>
<td>YPM103*</td>
<td>YPM103</td>
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<tr>
<td>Hydrogen Peroxide LR</td>
<td>0~2</td>
<td>YPM104</td>
<td>YPM104</td>
</tr>
<tr>
<td>Hydrogen Peroxide HR</td>
<td>0~100</td>
<td>YPM105</td>
<td>YPM105</td>
</tr>
<tr>
<td>Iron LR</td>
<td>0~1.0</td>
<td>YPM155</td>
<td>YPM155</td>
</tr>
<tr>
<td>Iron MR</td>
<td>0~5.0</td>
<td>YPM292</td>
<td>YPM292</td>
</tr>
<tr>
<td>Iron HR</td>
<td>0~10</td>
<td>YPM156</td>
<td>YPM156</td>
</tr>
<tr>
<td>Magnesium (Magnecol)</td>
<td>0~100</td>
<td>YPM193</td>
<td>YPM193</td>
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<tr>
<td>Manganese</td>
<td>0~0.03</td>
<td>YPM173</td>
<td>YPM173</td>
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<tr>
<td>Molybdate LR</td>
<td>0~20</td>
<td>YPM258</td>
<td>YPM258</td>
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<tr>
<td>Molybdate HR</td>
<td>0~100</td>
<td>YPM175</td>
<td>YPM175</td>
</tr>
<tr>
<td>Nickel</td>
<td>0~10</td>
<td>YPM284</td>
<td>YPM284</td>
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<tr>
<td>Nitrate</td>
<td>0~20 (N)</td>
<td>YPM163</td>
<td>YPM163</td>
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<tr>
<td>Nitrite (N)</td>
<td>0~0.5 (N)</td>
<td>YPM109</td>
<td>YPM109</td>
</tr>
<tr>
<td>Sodium Nitrite (NaNO3)</td>
<td>0~1,500 (NaNO3)</td>
<td>YPM260</td>
<td>YPM260</td>
</tr>
<tr>
<td>Organophosphonate (OP)</td>
<td>0~20 (PO4)</td>
<td>YPM262</td>
<td>YPM262</td>
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<tr>
<td>Ozone</td>
<td>0~2.0</td>
<td>YPM056</td>
<td>YPM056</td>
</tr>
<tr>
<td>pH (phenol red)</td>
<td>6.8~8.4</td>
<td>YPM130</td>
<td>YPM130</td>
</tr>
<tr>
<td>Phenol</td>
<td>0~5.0</td>
<td>YPM287</td>
<td>YPM287</td>
</tr>
<tr>
<td>Phosphorus LR</td>
<td>0~4.0</td>
<td>YPM177</td>
<td>YPM177</td>
</tr>
<tr>
<td>Phosphorus HR</td>
<td>0~100</td>
<td>YPM114</td>
<td>YPM114</td>
</tr>
<tr>
<td>Potassium Potassium</td>
<td>0~12</td>
<td>YPM189</td>
<td>YPM189</td>
</tr>
</tbody>
</table>

*Includes 30 tests **Includes 150 tests ***Includes 200 tests 1 Sample may be diluted to lower salt content to help avoid precipitate that can interfere with testing. Results may vary. 2 LR denotes low range 3 HR denotes high range 4 YSI 9500 Photometer Portable multi-parameter water quality analysier

### Contents: 9500 analysis Meter, hard carrying case, the sample tube ×8, for dilution tube ×1, crash bar ×10, cleaning brush, light cap ×1, manual, USB cable

### YPT283

USB power supply

### YPT9500

Portable multi-parameter water quality analysier

### Contents: 9500 analysis Meter, hard carrying case, the sample tube ×8, for dilution tube ×1, crash bar ×10, cleaning brush, light cap ×1, manual

### YPT9300

Portable multi-parameter water quality analysier

### Contents: 9300 analysis Meter, hard carrying case, the sample tube ×8, for dilution tube ×1, crash bar ×10, light cap ×1, manual

### YPT283

USB power supply

### YSI 9500 Photometer

### 9300 • 9500 Photometer

**YSI 9500 Photometer**

The YSI 9300 and YSI 9500 are economical photometers in small packages for any application. These portable photometers allow you to easily take readings directly in the field for 100+ parameters. Selecting the desired test has never been easier. Simply choose among the list of available tests on the large graphic display and the instrument will walk you through the test procedure—it’s that easy! Simple. Convenient. Accurate.
The 910 colorimeter is a rugged, waterproof, single parameter instrument for the measurement of COD (chemical oxygen demand). The EPA-approved COD test is useful for performing rapid, frequent monitoring of treatment plant efficiency, and results allow quick response to changing conditions in the waste stream while the traditional BOD 5 test takes 5 days to determine results.

Features
- Automatic data storage, 16 data-sets with date and time stamp
- Large, backlit LCD display
- IP68 waterproof case; easy to hold or set on benchtop floats
- Resolution can be improved for specific item requirements
- Known interferences can be adjusted for the sample
- Auto shutoff extends battery life
- 2-year warranty

Thermoreactor for COD and thermal digestions of standard parameters with 12 round cuvettes with 8 user defined/fixed programs with quick operation.

900 COD Colorimeter

The 900 colorimeter is a rugged, waterproof, single parameter instrument for the measurement of Total chlorine or Free chlorine. Whether you need to measure chlorine in wastewater, chlorine in groundwater, or in pools, this chlorine tester is waterproof with an easy to read display and will provide readings in minutes.

Features
- Automatic data storage, 16 data-sets with date and time stamp
- Large, backlit LCD display
- IP68 waterproof case; easy to hold or set on benchtop floats
- Innovative light shield avoids moving parts or separate pieces that can easily be broken or lost
- Known interferences can be adjusted for the sample
- 2-year warranty
Spectrophotometry

Benchtop / portable & reagents

Spectrophotometer photoLab®

photoLab® 7100 VIS / photoLab® 7600 UV-VIS

<table>
<thead>
<tr>
<th>Model</th>
<th>photoLab® 7100 (VIS)</th>
<th>photoLab® 7600 (UV-VIS)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wavelength range</td>
<td>320–1,100 nm</td>
<td>190–1,100 nm</td>
</tr>
<tr>
<td>Lamp</td>
<td>Wolfram Halogen</td>
<td>Xenon Flashbulb</td>
</tr>
<tr>
<td>Accuracy/</td>
<td>±1 nm, &lt; 0.5 nm</td>
<td>±1 nm, &lt; 0.5 nm</td>
</tr>
<tr>
<td>reproducibility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scan speed</td>
<td>aprox 13 nm/s</td>
<td>aprox 16 nm/s</td>
</tr>
<tr>
<td>Reagent Free Method</td>
<td>(OptRF)</td>
<td>(OptRF)</td>
</tr>
<tr>
<td></td>
<td>COD, NO₃, NO₂</td>
<td></td>
</tr>
<tr>
<td>Data memory</td>
<td>5,000 measurements, 40 MB for spectrums and kinetics</td>
<td></td>
</tr>
<tr>
<td>Weight &amp; dimensions</td>
<td>404(W) x 314(H) x 197(H) mm, Approx 4.5kg</td>
<td>86(W) x 236(D) x 117(H) mm, 600g</td>
</tr>
</tbody>
</table>

Features
- Easy to use: place cuvette, read measurement value
- More than 250 test programs for water analysis, galvanics and general lab analytics
- Cell and reagent test kits with barcode for automatic program selection
- Automatic cuvette and measurement range detection for rectangular cuvettes
- Top reliability due to menu guided comprehensive Analytical Quality Assurance - AQA
- Measurement “Light” on the road with car battery use
- USB and Ethernet-connections for easy update, print to PDF or printer, storage and data export

Portable Meters for Photometric Meters

pHotoFlex®

pHotoFlex®, portable LED photometer for environmental monitoring and extensive water and routine analytics in (mobile) service labs

pHotoFlex® STD
Absorbance measurement

pHotoFlex® pH
Absorbance measurement + pH measurement (Electrodes type)

pHotoFlex® Turb
Absorbance measurement + pH measurement (Electrodes type) Turbidity

Wavelength nm
436, 517, 557, 594, 610, 690 (+860: Turb only) nm

Measurement range
pH(pHotoFlex® ph/Turb) : 0–16
Turbidity (pHotoFlex® Turb only) : 0–1,100 NTU/FNU

Power supply
1.5V × 4 (Approx 5,000 measurements)

Weight & dimensions
86(W) x 236(D) x 117(H) mm
600g
Selection table titration – piston burettes TITRONIC® and automatic titrators TitroLine®

<table>
<thead>
<tr>
<th>Application</th>
<th>TITRONIC® 300</th>
<th>TITRONIC® 500</th>
<th>TitroLine® 5000</th>
<th>TitroLine® 7000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligent interchangable units</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>(5, 10, 20 and 50 ml)</td>
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<tr>
<td>Manual Titration</td>
<td></td>
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</tr>
<tr>
<td>Dosing</td>
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</tr>
<tr>
<td>Solutions preparation</td>
<td></td>
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<tr>
<td>(manually or automatically with con balance)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Automatic titration (independent with external software)</td>
<td>2</td>
<td>2</td>
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<tr>
<td>pH/mV titrations “aqueous”</td>
<td></td>
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<tr>
<td>(Alkalinity, hydrochloric acid, citric acid, Kjeldahl…)</td>
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<tr>
<td>pH/mV titrations “non aqueous”</td>
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<tr>
<td>(TAN/TBN, FFA, titrations with perchloric acid…)</td>
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<tr>
<td>Redox titrations (iodometry, permanganometry…)</td>
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<tr>
<td>Redox titrations (COD)</td>
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<tr>
<td>Halide titrations (chloride, “salt…”</td>
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<tr>
<td>Hydrogen sulphide and mercaptans</td>
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<tr>
<td>Sulfurous acid in wine and beverages</td>
<td></td>
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<tr>
<td>Bromine number</td>
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<tr>
<td>Conductivity Measurement</td>
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<tr>
<td>(Smart Sensor (IDS®))</td>
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<tr>
<td>pH-stat-applications (enzyme kinetics, soil samples, biotechnology)</td>
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<tr>
<td>Water analysis according to KF Volumetric method (10 ppm – 100 %)</td>
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<tr>
<td>Water analysis according to KF Coulometric method (1 ppm – 5 %)</td>
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<tr>
<td>Sample</td>
<td></td>
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<tr>
<td>TitrSoft</td>
<td></td>
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</tr>
</tbody>
</table>

1) 20–50 mL User selectable cylinder sizes
2) Can be used as titration and dosing burette in automatic titration systems
<table>
<thead>
<tr>
<th>Application</th>
<th>TITRONIC® 300</th>
<th>TITRONIC® 500</th>
<th>TitroLine® 5000</th>
<th>TitroLine® 7000</th>
<th>TitroLine® 7500 KF</th>
<th>TitroLine® 7500 KF trace</th>
<th>TitroLine® 7750</th>
<th>TitroLine® 7800</th>
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</thead>
<tbody>
<tr>
<td>Manual Titration</td>
<td></td>
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<tr>
<td>Dosing</td>
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<tr>
<td>Solutions preparation</td>
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<tr>
<td>Automatic titration</td>
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<tr>
<td>pH/mV titrations &quot;aqueous&quot;</td>
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<tr>
<td>pH/mV titrations &quot;non aqueous&quot;</td>
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<tr>
<td>Redox titrations (iodometry, permanganometry)</td>
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<td>Redox titrations (COD)</td>
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<tr>
<td>Halide titrations (chloride, &quot;salt&quot;)</td>
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<tr>
<td>Hydrogen sulphide and mercaptans</td>
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<tr>
<td>Sulfurous acid in wine and beverages</td>
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<td>Bromine number</td>
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<td>Conductivity Measurement</td>
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<tr>
<td>pH-stat-applications</td>
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<tr>
<td>Water analysis according to KF Volumetric method</td>
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<tr>
<td>Water analysis according to KF Coulometric method</td>
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<tr>
<td>Sample</td>
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<tr>
<td>TitriSoft</td>
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</tbody>
</table>
The new burette TITRONIC® 300 not only allows you to perform dosing operations quickly and easily but also accomplishes manual titrating operations without difficulty. The burette can be used with all dosing liquids, solvents and titrants.

The adjustment of any dosing volume and the dosing speed is made simply by pressing a button. For incremental dosing operations, the entry of the volume and the waiting time between the volume increments can be adjusted just as easily and quickly.

**TITRONIC® Piston Burette TITRONIC® 300**

The TITRONIC® 300 is the perfect piston burette for manual titrations, accurate dosing of small and large volumes and the preparation of solutions.

The TITRONIC® 300 can also be used as automatic dosing (TitroLine® 7000, TitrSoft 3.0) and titration burette (TitrSoft 3.0).

**Features**
- Intelligent exchangeable units with 5, 10, 20 and 50 ml volume
- Connection of printer and analytical balances
- Complete remote control via RS232 or USB-B interface thanks to the two RS232 ports it is possible to connect up to 16 devices on one RS232 or USB port at ones

**Burette capacity**
- 20 ml - 50 ml

**Burette accuracy**
- 20 ml Burette: ±0.15 mL, Reproducibility: ±0.05 mL
- 50 ml Burette: ±0.25 mL, Reproducibility: ±0.07 mL (EN ISO 8655-6)

**Interface**
- 1x USB-A and 1x USB-B, 2x RS-232-C

**Power**
- 100~240 V or more, 50/60 Hz, Power30VA

**Weight & dimensions**
- 2kg (not including stirrer)

**Burette capacity**
- 5 ml, 10 ml, 20 ml, 50 ml

**Burette accuracy**
- Accuracy: ±0.1~0.15 %, Reproducibility: ±0.05~0.07 % (EN ISO 8655-6)

**Display**
- 3.5”-1/4 VGA TFT LCD

**Interface**
- 2x USB-A and 1x USB-B, 2x RS-232-C, 1xLAN

**Power**
- 90~240V or more, 50/60 Hz, Power30VA

**Weight & dimensions**
- 3.5kg (not including stirrer)

### Accessories

- TZ 3880 285220530 Manual controller
- TZ 3883 285220590 1,000 ml
- TM 50 285225840 TITRONIC®300 + TitroLine®5000 stirrer
- TZ 3830 285220420 USB Channel expansion hub
- TZ 3835 285220410 USB Channel expansion hub
- TZ 3865 285220440 DIN A4 Printer
- TZ 3863 285220480 112 mm USB-Thermo printer
- TZ 3864 285220710 Printer paper (5 rolls)

By developing the glass electrode 75 years ago, SCHOTT laid the foundation for the success of electrochemical measurement. With high-performance pH glasses, innovative electrodes and electrochemical measuring instruments such as pH meters, conductivity meters, oxygen measuring instruments, piston burettes and titrators.
**TitroLine® 5000**

This new automatic titrator combines a syringe burette and pH/mV meter plus integrated intelligence. This intelligence carries out the parameterisation of the method for you.

The new TitroLine® 5000 offers even more features than its predecessor and is even more convenient to use.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burette capacity</td>
<td>20ml–50ml</td>
</tr>
<tr>
<td>Burette accuracy</td>
<td>±0.15 mL, Reproducibility: ±0.025 mL</td>
</tr>
<tr>
<td>Interface</td>
<td>1x USB-A, 2x USB-B, 2x RS-232-C</td>
</tr>
<tr>
<td>Power</td>
<td>100–240V, 50/60 Hz, Power: 30VA</td>
</tr>
<tr>
<td>Weight &amp; dimensions</td>
<td>135(W) × 310(H) × 205(D) mm, 2kg (not including stirrer)</td>
</tr>
</tbody>
</table>

**TitroLine® 7000**

TitroLine® 7000 is with its spectrum of benefits the ideal entry into the potentiometric titration and the perfect choice for applications in the field of food, water/waste water and environmental analysis. Thanks to the high-Resolution and precise pH/mV and “dead-stop” measuring interface it is possible to determine a wide range of parameters.

### Features
- High Resolution pH/mV measuring interface and measuring input for temperature measurement
- Measuring interface for polarisable electrodes (“dead-stop”)
- Available standard methods such as FOS/TAC, alkalinity, total acidity in soft drinks
- Linear and dynamic titration to equivalence point
- Titrations to pH, mV and μA end point
- Manual titrations and dosing tasks are also practicable

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burette capacity</td>
<td>5 ml, 10 ml, 20 ml, 50 ml</td>
</tr>
<tr>
<td>Burette accuracy</td>
<td>±0.11–0.15 %, Reproducibility: ±0.05–0.07 % (EN ISO 8655-6)</td>
</tr>
<tr>
<td>Applications</td>
<td>Acid and base numbers in oils, Titrations in glacial acetic acid with perchloric acid, Hydroxyl, NCO (isocyanate) number and further specific values, Determination of the enzyme activity (e.g. Lipase), pH stat elution of soil sample at pH 4, Monitoring of the pH value during chemical synthesis</td>
</tr>
<tr>
<td>User-defined methods</td>
<td>TL 7000, 50x</td>
</tr>
<tr>
<td>Interface</td>
<td>1x USB-A, 2x USB-B, 2x RS232</td>
</tr>
</tbody>
</table>

**TitroLine® 7800 - The Universal Titrator with IDS®**

The TitroLine® 7800 enhanced the universal features of the TitroLine® 7750 with an additional IDS® measurement input. The TitroLine® 7800 is able to perform a range of titrations from potentiometric titrations to Karl Fisher.

The IDS (intelligent digital sensors) automatically store their unique serial number and calibration data. In addition, they also digitally process the measurement signal.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burette capacity</td>
<td>5 ml, 10 ml, 20 ml, 50 ml</td>
</tr>
<tr>
<td>Burette accuracy</td>
<td>±0.11–0.15 %, Reproducibility: ±0.05–0.07 % (EN ISO 8655-6)</td>
</tr>
<tr>
<td>Measurement channel</td>
<td>1. (analog) pH/mV with reference electrode input 2. (IDS) IDS Accuracy +/-1 digit in dependence from the used IDS-electrode</td>
</tr>
<tr>
<td>Interface</td>
<td>1× LAN, 2× USB-A, 1× USB-B, 2× RS232</td>
</tr>
<tr>
<td>Power</td>
<td>90–240V, 50/60 Hz, Power: 30VA</td>
</tr>
<tr>
<td>Weight &amp; dimensions</td>
<td>153(W) × 45(H) × 296(D) mm, 2.3 kg (basic unit), 3.5 kg for complete device incl.</td>
</tr>
</tbody>
</table>
The TitroLine® 7500 KF is the volumetric generalist for a wide range of use.

Features
- Fast, easy and precise
- With standard methods for different applications (titer determination, blank value...)
- High visible full color display, that can be easily viewed from a distance and extreme angles
- Storage of results via USB port (PDF- and CSV-format)
- With intelligent interchangeable modules

Specifications
TitroLine® 7500KF
Application
KF volumetry, dead-stop-titrations (SO2, bromine number)

TitroLine® 7500 KF Trace

The TitroLine® 7500 KF Trace is the specialist for low water contents.

Features
- Fast, easy and precise
- With standard methods for different applications (titer determination, blank value...)
- High visible full color display, that can be easily viewed from a distance and extreme angles
- Storage of results via USB port (PDF- and CSV-format)

Specifications
TitroLine® 7500KF Trace
Application
KF volumetry, trace dead-stop-titrations (SO2, bromine number)

Sample Carousel

TW Alpha plus & TW7400

TW alpha plus sample changer

Now that GLP and ISO 900X have been adopted, the number of samples obtained is constantly rising. The new TW alpha plus from SI Analytics will help you to meet these additional requirements. Our sample changer enables you to titrate in series with automatic sample changing.

Features
- Extremely robust and long-lasting
- Various sample plates from 12–24 positions for standard bechers acc. to DIN
- Sample vessels from 50–400 ml
- Sample plate for CSB vessels acc. to DIN with 24 positions
- Different titration heads
- Connection for cleaning and suction pump but also cleaning in pre-defined vessels or for conditioning of electrodes

Specifications
Model
TW alpha plus
TW7400
Number of samples
24x 50 ml beaker, 16x 150 ml beaker, 12x 250 ml beaker, 24x COD beaker
42x 150 ml–250 ml beaker, 48x 100 ml beaker, 72x 50 ml beaker
Use
Various automatic Measurement Applications (Micro-Titration, COD Titration)
42 Sample: Water quality and environmental
72 Sample: pH of the soil, the alkalinity of the sea Water, beverage, 48 Sample: Wine

The image below shows possible device configurations.
## Titration Electrodes

<table>
<thead>
<tr>
<th>Application</th>
<th>pH Electrode</th>
<th>Temp Electrode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acid-base-titrations</td>
<td>A 7780</td>
<td>A 7780 1M-DIN-ID</td>
</tr>
<tr>
<td>Kjeldahl</td>
<td>A 7780</td>
<td>A 7780 1M-DIN-ID</td>
</tr>
<tr>
<td>Alkalinity</td>
<td>N 62, N 61</td>
<td>A 162 2M-DIN-ID</td>
</tr>
<tr>
<td>Aquous, difficult applications</td>
<td>IL-pH-A120MFL</td>
<td>A 162 2M-DIN-ID</td>
</tr>
<tr>
<td>Low ionic liquids</td>
<td>IL-pH-A120MFL</td>
<td>A 162 2M-DIN-ID</td>
</tr>
<tr>
<td>Titrations with sample changer (100–250 ml vessels/baker)</td>
<td>N 65</td>
<td>A 162 2M-DIN-ID</td>
</tr>
<tr>
<td>Titrations with sample changer (50 ml vessels, micro)</td>
<td>N 5900 A</td>
<td>–</td>
</tr>
</tbody>
</table>

## Non aqueous acid base-titrations

<table>
<thead>
<tr>
<th>Application</th>
<th>pH Electrode</th>
<th>Temp Electrode</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAN (ASTM 664)</td>
<td>N 6480 aeth</td>
<td>–</td>
</tr>
<tr>
<td>OH-No, NCO-No, FFA saponification No.</td>
<td>N 6480 aeth</td>
<td>–</td>
</tr>
<tr>
<td>TBN (ISO 3771/ASTM 2896)</td>
<td>N 6480 aisi</td>
<td>–</td>
</tr>
<tr>
<td>Epoxy value</td>
<td>N 6480 aisi</td>
<td>–</td>
</tr>
<tr>
<td>Titrations with perchloric acid/acetic acid</td>
<td>N 6480 aisi</td>
<td>–</td>
</tr>
</tbody>
</table>

## Precipitation titrations

<table>
<thead>
<tr>
<th>Application</th>
<th>pH Electrode</th>
<th>Temp Electrode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Halogenides (chloride, “salt”)</td>
<td>AgCl 62,AgCl 62 RG</td>
<td>–</td>
</tr>
<tr>
<td>Halogenides, sample changer</td>
<td>AgCl 65,AgCl 62 RG</td>
<td>–</td>
</tr>
<tr>
<td>Pseudo halogenides (cyanide ...)</td>
<td>Ag 6280</td>
<td>–</td>
</tr>
<tr>
<td>Detergents</td>
<td>TEN 1100</td>
<td>–</td>
</tr>
</tbody>
</table>

## Redox titrations

<table>
<thead>
<tr>
<th>Application</th>
<th>pH Electrode</th>
<th>Temp Electrode</th>
</tr>
</thead>
<tbody>
<tr>
<td>General, iodometric permanganometric, cerimetric</td>
<td>Pt 62, Pt 6280</td>
<td>–</td>
</tr>
<tr>
<td>Iodine number, peroxid number</td>
<td>Pt 61</td>
<td>–</td>
</tr>
<tr>
<td>COD</td>
<td>Pt 61</td>
<td>–</td>
</tr>
<tr>
<td>Sample changer, general</td>
<td>Pt 6580</td>
<td>–</td>
</tr>
<tr>
<td>Sample changer, COD</td>
<td>Pt 5901</td>
<td>–</td>
</tr>
<tr>
<td>Dead stop (SO2 bromine no …) general</td>
<td>Pt 1200</td>
<td>–</td>
</tr>
<tr>
<td>Dead stop (SO2 bromine no …) sample changer, general and titration vessels</td>
<td>Pt 1400</td>
<td>–</td>
</tr>
<tr>
<td>Dead stop (SO2 bromine no …) sample changer micro</td>
<td>KF 1100</td>
<td>–</td>
</tr>
<tr>
<td>KF-titrations</td>
<td>KF 1100</td>
<td>–</td>
</tr>
</tbody>
</table>

## Complexometric titrations

<table>
<thead>
<tr>
<th>Application</th>
<th>pH Electrode</th>
<th>Temp Electrode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water hardness (Ca/Mg separated)</td>
<td>Ca 1100 A</td>
<td>–</td>
</tr>
<tr>
<td>Water hardness, total</td>
<td>Cu 1100 A</td>
<td>–</td>
</tr>
</tbody>
</table>

### TitriSoft 3.0+ Optimum Software for Auto Sampler Systems

The TitriSoft 3.0 titration software is the optimum solution for your titration tasks. The software can be used with Windows XP, Vista and 7 and supports your daily work procedures during sample preparation, titration and evaluation of the results. The software has been developed to be clear, logical and user-friendly.

You can connect the titration hardware to any of your PC’s available USB-A or serial interfaces. Each of the interfaces allows different combinations of devices (configurations).

To automate a titration procedure the software may be used to control the TitroLine® 7000 in connection with the TW alpha plus sample changer. For more complex titration tasks with sample preparation you can dose with piston burettes followed by titration with a TitroLine® 7000. Of course, you can also use the software for dosing only.
**ViscoSystem AVS® 370 (PC Compatible)**

The ViscoSystem® AVS® 370 is the first viscosity measuring device, which can be used for both “suction” and “pressure” measurement. This enables simple adjustment of the method of measurement to each sample. This significantly reduces investment costs for measuring stations at which pressure and suction methods are to be used.

In most cases, using the AVS® 370 also achieves noticeable savings. With the ViscoSystem® AVS® 370 we have created a measuring device, which not only measures as precisely and consistently as you expect from SI Analytics, but also offers you maximum flexibility and possibilities for future extensions. Furthermore, it also saves valuable space on the laboratory bench.

**ViscoSystem AVS® 470**

The new ViscoSystem® AVS® 470 from SI Analytics generates not only exact and reproducible measured values, but also offers a high degree of flexibility.

The ViscoSystem® AVS® 470 works according to the glass capillary method – the most accurate method for physically determining the viscosity of Newtonian liquids.

New feature: measurements under vacuum and under pressure with a single instrument, independent of a PC.

**AVS® Pro III – Measuring the viscosity automatically**

The autosampler AVS®Pro III is a fully automatic measuring station for determining the viscosity of Newtonian liquids using capillary viscometers. Despite its high sample throughput, the AVS®Pro III is characterized by its high accuracy and reproducibility.

The AVS®Pro III is simple to use and allows unattended day and night operation. The AVS®Pro III helps to considerably reduce the workload of qualified employees, particularly when working with time-consuming series measurements.

---

**Scale**
- Time: 0~9,999.99 sec, Resolution 0.01 sec
- Viscosity: Pressure: 0.35~1,800 mm²/sec (cSt), Suction: 0.35~5,000 mm²/sec (cSt)

**Measured parameter**
- Flow through time [Sec]
- Accuracy: ± 0.01 %
- Pump Pressure: Automatically controlled
- Preset number of measurements: Up to 10
- Data input/output: Serial EIA RS-232-C

**Power**
- 90-240V (50/60Hz)
- Weight & Dimensions: 255(W) × 320(D) × 205(H) mm, 5.4 kg

---

**Sampling System**
- Sampling Bottles: 100 ml screw type and bottles (16 bottles/Rack)
- Sample Rack: 20 ml round bottom glass pieces (56 pcs. per rack)
- Sample Rack: 100 ml screw type and bottles (temp 135 °C)
- Rack: 20 ml round bottom glass pieces

**Measured value recording**
- Meniscus scanning by means of opto-electronic system or thermal conductivity (TC)

**Power**
- 230V or 115V (50/60Hz)
ViscoClock Plus - Semi-automatic Viscosity Measuring Unit

The ViscoClock Plus is an electronic time-measuring unit used to determine absolute and relative viscosity. It consists of a stand which is used to mount a viscometer or the electronic measuring unit. The two measuring levels are integrated in the stand made of high-quality PPA synthetic material, and the electronic measuring unit is included in a PP casing. The large LCD display allows the measured values to be read off easily.

Data can be stored or exported to a USB drive with sample ID, date, time or printed via optional printer.

Thermostats and Flow-Thru cooler CT 72 Series

The transparent thermostat CT 72 is made of acrylic glass and it is able to take up to two automatic measurement positions or brackets for manual measurements. With its temperature stability of ±0.01 K and a working range up to +60 °C, the CT 72 is a favorably priced alternative for these applications.

Capillary Viscosity Tubes

Ubbelohde viscometers
Viscometers with suspended ball level for determination of absolute and relative kinematic viscosity of liquids with Newtonian flow behavior. The calibrated viscometers are delivered with manufacturer’s certificate in accordance with DIN 55 350, Part 18.

Cannon-Fenske viscometers
Cannon-Fenske routine viscometers comply with standards ISO/DIS 3105, ASTM D 2515, BS 188 with respect to technical measuring specifications.

Ostwald viscometers
Are suitable for measurements of small liquids quantities even extreme formation of foam.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Ubbelohde</th>
<th>Micro Ubbelohde</th>
<th>TC Ubbelohde</th>
<th>Ostwald</th>
<th>Micro Ostwald</th>
<th>Cannon-Fenske Routine</th>
<th>Cannon-Fenske reverse flow</th>
<th>BS/IP-U tube reverse flow</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transparent liquids manual measurement</td>
<td>++</td>
<td>++</td>
<td>±</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Transparent liquids automatic measurement</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Opaque liquids manual measurement</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+²</td>
</tr>
<tr>
<td>Opaque liquids automatic measurement</td>
<td>-</td>
<td>-</td>
<td>+²</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Foaming liquids</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>Liquid mixture with highly volatile components</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Minimum measurement substance and/or rinsing agent quantities</td>
<td>-</td>
<td>++</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>High-temperature or low temperature measurement</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Selection of glass capillary viscometers

use preferably ++ highly suitable + less suitable o less suitable 1) 30,000 mm²/s or less 2) 30,000 mm²/s or more
Digital Handheld Refractometers  OPTi & OPTi+

OPTi refractometers are constructed using the latest manufacturing techniques including stainless steel injection molding to construct the easy clean prism dish, ultrasonic welding to bond the housings and a rubberized switch membrane to further protect against moisture ingress and excess wear.

Stainless steel prism dish rapidly stabilises sample temperature.

Ultrasonically welded ABS case and silicon rubber switch membrane protects against water ingress to IP65.

Simple ZERO calibration requires only water on all models.

Full Resolution display of concentration or temperature.

Certificate of Calibration
- Supplied with a Certificate of Calibration as standard
- All models verified using UKAS Certified Reference Materials in accordance with EN ISO IEC 17025:2005

Handheld Refractometer
Refractometers & reference materials

Digital Handheld Refractometers
OPTi & OPTi+

CRM Certified Reference Materials  AG Fluid and Calibration Oil

CRMs including low range AG Fluids and for higher refractive index measurement, Calibration Oils are available as single value multipacks or now as mixed multi-packs, allowing users to verify the whole measuring range from a single, long life pack covering the refractive index range 1.33 to 1.56 RI, equivalent to 0-90 °Brix.

Specifications - Values

<table>
<thead>
<tr>
<th>Type</th>
<th>Refractive Index</th>
<th>°Brix</th>
</tr>
</thead>
<tbody>
<tr>
<td>AG2.5</td>
<td>1.33659</td>
<td>2.50</td>
</tr>
<tr>
<td>AG5</td>
<td>1.34026</td>
<td>5.00</td>
</tr>
<tr>
<td>AG7.5</td>
<td>1.34401</td>
<td>7.50</td>
</tr>
<tr>
<td>AG10</td>
<td>1.34782</td>
<td>10.00</td>
</tr>
<tr>
<td>AG11.2</td>
<td>1.34968</td>
<td>11.20</td>
</tr>
<tr>
<td>AG12</td>
<td>1.35093</td>
<td>12.00</td>
</tr>
<tr>
<td>AG12.5</td>
<td>1.35171</td>
<td>12.50</td>
</tr>
<tr>
<td>AG15</td>
<td>1.35568</td>
<td>15.00</td>
</tr>
<tr>
<td>AG40</td>
<td>1.39986</td>
<td>40.00</td>
</tr>
<tr>
<td>BSLP</td>
<td>1.46453</td>
<td>69.62</td>
</tr>
<tr>
<td>BSDC</td>
<td>1.51655</td>
<td>89.59</td>
</tr>
<tr>
<td>BSDD</td>
<td>1.56138</td>
<td>---</td>
</tr>
</tbody>
</table>

Mixed CRM Multi-pack - FIVE
Multi-Pack of 5 x 5ml bottles (1 of each value below) including UKAS Certified(5), SDS(5) & disposable pipettes (5)
Eclipse Professional Optical Refractometers

Manufactured in the UK using only the highest quality optical components and the most modern manufacturing practices, the Eclipse refractometer is the ultimate optical hand held refractometer on the market today. A comprehensive choice of scale types offers versatility across a wide application scope from testing fruit ripeness in the field to monitoring industrial fluids in harsh machine shop environments. Eclipse refractometers have a number of unique features not available on many other brands of refractometer and are supplied complete with a foam carry case, instruction manual and a Certificate of Calibration showing traceability to International standards.

Features

- All metal construction
- Rubber hand grip for insulation
- Robust ergonomics for easy handling
- Anti-roll supports
- High precision, clear scale
- Sample ‘drizzle’ feed
- Zero adjust with lock
- Ideal for hot & cold samples
- Serial numbered
- Certificate of Calibration

Food, Beverage, Sugar & General Models

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Range</th>
<th>Scale Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-01</td>
<td>Sugar % (*Brix)</td>
<td>0~15</td>
<td>0.1</td>
</tr>
<tr>
<td>45-02</td>
<td>Sugar % (*Brix)</td>
<td>0~30</td>
<td>0.2</td>
</tr>
<tr>
<td>45-07</td>
<td>Sugar % (*Brix)</td>
<td>0~32</td>
<td>0.2</td>
</tr>
<tr>
<td>45-03</td>
<td>Sugar % (*Brix)</td>
<td>0~50</td>
<td>0.5</td>
</tr>
<tr>
<td>45-08</td>
<td>Sugar % (*Brix)</td>
<td>28~65</td>
<td>0.2</td>
</tr>
<tr>
<td>45-05</td>
<td>Sugar % (*Brix)</td>
<td>45~80</td>
<td>0.2</td>
</tr>
<tr>
<td>45-06</td>
<td>Sugar % (*Brix)</td>
<td>72~95</td>
<td>0.2</td>
</tr>
<tr>
<td>45-22</td>
<td>Wine - °Zeiss (ABV)</td>
<td>10~135</td>
<td>1.0</td>
</tr>
<tr>
<td>45-27</td>
<td>Water-in-Honey (%)</td>
<td>10~30</td>
<td>0.2</td>
</tr>
<tr>
<td>45-41</td>
<td>Refractive Index</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-44</td>
<td>Antifreeze - °C Protection - Battery acid SG</td>
<td>0~40</td>
<td>5 0.05</td>
</tr>
<tr>
<td>45-45</td>
<td>Antifreeze - °F Protection - Battery acid SG</td>
<td>11~135</td>
<td>5 0.05</td>
</tr>
<tr>
<td>45-46</td>
<td>Antifreeze - % Ethylene Glycol - % Propylene Glycol</td>
<td>0~60</td>
<td>2.5 2.5</td>
</tr>
<tr>
<td>45-65</td>
<td>Salinity (% NaCl)</td>
<td>0~28</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Industrial Models

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Range</th>
<th>Scale Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-26</td>
<td>Starch (%)</td>
<td>0~30</td>
<td>0.2</td>
</tr>
<tr>
<td>45-40</td>
<td>Sugar % (*Brix)</td>
<td>0~50</td>
<td>0.5</td>
</tr>
<tr>
<td>45-55</td>
<td>Sugar % (*Brix)</td>
<td>45~80</td>
<td>0.2</td>
</tr>
<tr>
<td>45-65</td>
<td>Sugar % (*Brix)</td>
<td>72~95</td>
<td>0.2</td>
</tr>
<tr>
<td>45-22</td>
<td>Wine - °Zeiss (ABV)</td>
<td>10~135</td>
<td>1.0</td>
</tr>
<tr>
<td>45-27</td>
<td>Water-in-Honey (%)</td>
<td>10~30</td>
<td>0.2</td>
</tr>
<tr>
<td>45-41</td>
<td>Refractive Index</td>
<td></td>
<td></td>
</tr>
<tr>
<td>45-44</td>
<td>Antifreeze - °C Protection - Battery acid SG</td>
<td>0~40</td>
<td>5 0.05</td>
</tr>
<tr>
<td>45-45</td>
<td>Antifreeze - °F Protection - Battery acid SG</td>
<td>11~135</td>
<td>5 0.05</td>
</tr>
<tr>
<td>45-46</td>
<td>Antifreeze - % Ethylene Glycol - % Propylene Glycol</td>
<td>0~60</td>
<td>2.5 2.5</td>
</tr>
<tr>
<td>45-65</td>
<td>Salinity (% NaCl)</td>
<td>0~28</td>
<td>0.2</td>
</tr>
</tbody>
</table>

Alcohol Measurement by Refractometer and Hydrometer

The alcohol content of beer, wine and cider may easily be established by combining the results of two simple test measurements, that of a refractometer (RI-Zeiss) and a hydrometer (SG). We offer a simple Internet calculator that can be accessed via a networked PC or web enabled mobile phone.

Only a few drops of sample are needed to make the refractometer reading, while the S.G. is measured in the usual way with the hydrometer jar. The process takes only a few minutes to carry out and an accuracy of about ±0.5% alcohol can be obtained using reasonable care in ensuring that both readings are made at the same temperature.

Equipment Required

- OPTI or Eclipse refractometer (RI-Zeiss)
- Hydrometer or Saccharometer
- Hydrometer jar
- Pipette or other suitable applicator

Features

- % ABV
- Cava fermentation
- Wine alcohol content
- Cider alcohol content
- Beer alcohol content
- Trading Standards

Example - Light Dry Table Wine

- S.G. = 0.993 & Refractometer reading = 37
- D(S.G. value) = (0.993-1) x 1000 = -7
- R.D = 37 (-7) = 44
- Alcohol content = 10.7% v/v

The alcohol content of beer, wine and cider may easily be established by combining the results of two simple test measurements, that of a refractometer (RI-Zeiss) and a hydrometer (SG). We offer a simple Internet calculator that can be accessed via a networked PC or web enabled mobile phone.

Only a few drops of sample are needed to make the refractometer reading, while the S.G. is measured in the usual way with the hydrometer jar. The process takes only a few minutes to carry out and an accuracy of about ±0.5% alcohol can be obtained using reasonable care in ensuring that both readings are made at the same temperature.

Equipment Required

- OPTI or Eclipse refractometer (RI-Zeiss)
- Hydrometer or Saccharometer
- Hydrometer jar
- Pipette or other suitable applicator

Features

- % ABV
- Cava fermentation
- Wine alcohol content
- Cider alcohol content
- Beer alcohol content
- Trading Standards

Example - Light Dry Table Wine

- S.G. = 0.993 & Refractometer reading = 37
- D(S.G. value) = (0.993-1) x 1000 = -7
- R.D = 37 (-7) = 44
- Alcohol content = 10.7% v/v
RFM700 series refractometers are robust, low cost, fully automatic instruments that are ideally suited to the food, sugar and beverage industries but can also be used in many other non-food applications where temperature control is not required.

**Special application models**

<table>
<thead>
<tr>
<th>Description</th>
<th>RFM712-M</th>
<th>RFM732-M</th>
<th>RFM742-M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scales</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective index</td>
<td>1.32–1.42</td>
<td>1.32–1.54</td>
<td>1.32–1.54</td>
</tr>
<tr>
<td>Sugar (°Brix)</td>
<td>0–50</td>
<td>0–100</td>
<td>0–100</td>
</tr>
<tr>
<td>User defined</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Resolution</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective index</td>
<td>0.00001</td>
<td>0.00001</td>
<td>0.00001</td>
</tr>
<tr>
<td>Sugar (°Brix)</td>
<td>0.1</td>
<td>0.1</td>
<td>0.1</td>
</tr>
<tr>
<td>Accuracy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective index</td>
<td>±0.00005</td>
<td>±0.00005</td>
<td>±0.00005</td>
</tr>
<tr>
<td>Sugar (°Brix)</td>
<td>±0.1</td>
<td>±0.1</td>
<td>±0.04</td>
</tr>
<tr>
<td>Precision (reproducibility)*</td>
<td>±0.000005</td>
<td>±0.00005</td>
<td>±0.00005</td>
</tr>
<tr>
<td>Reflective index</td>
<td>±0.05</td>
<td>±0.05</td>
<td>±0.05</td>
</tr>
<tr>
<td>Sugar (°Brix)</td>
<td>±0.1</td>
<td>±0.1</td>
<td>±0.01</td>
</tr>
<tr>
<td>User scale library</td>
<td>20+ pre-programmed scales including HFCS(3), Sugar(4), Honey, NaCl, Wine Must(5), Urine SG(3), Glycol(2), Urea, FSII and more; plus customer programmable user scales via PC.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Features**
- Classic red or modern color display
- Auto-sense “hands free” measurement
- Simple audit trail (date, time & batch no.)
- Alpha-numeric keypad for easy data entry
- USB connectivity
- Flat sapphire prism surface for easy cleaning
- Simple operation for factory environments

**RFM Flow Series**

<table>
<thead>
<tr>
<th>Cell volume (including nozzle)</th>
<th>ml</th>
<th>0.6</th>
<th>1.2</th>
<th>1.2</th>
<th>0.6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flushing Volume</td>
<td>ml</td>
<td>-</td>
<td>-</td>
<td>50–100</td>
<td>-</td>
</tr>
<tr>
<td>Sample Inlet Tubing Bore</td>
<td>mm</td>
<td>2</td>
<td>4</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Sample Inlet/Waste Nozzle Outer Diameter</td>
<td>mm</td>
<td>3</td>
<td>6</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Sample Waste Tubing Bore</td>
<td>mm</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>Sample Pressure (max.)</td>
<td>bar</td>
<td>2</td>
<td>2</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>Chamber Material</td>
<td>Polyacetyl or PEEK (RFM990)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nozzle Material</td>
<td>316 Stainless Steel</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sealing Ring</td>
<td>Silicon or Chemraz® (RFM990)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connections</td>
<td>Pushfit 1/2&quot; UNF</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Features**
- 4” High definition display with robust push-button keypad for factory use
- Flat prism surface for easy cleaning
- Wide beam scan for non-homogenous samples
- Three decimal place Brix precision* (6 d.p. RI)
- RFID user clearance
- Supports FDA regulation 21 CFR Part 11
- PHR-MEAN Method
- USB & Ethernet connectivity

**RFM 300 Series**

The RFM300-M is identical in features to the recently launched RFM300-T Series in all aspects except for its tactile keypad. Incorporating wide beam optics and one of the flattest prism platforms on the market, RFM300-M Series refractometers are capable of measuring non-homogenous samples such as fruit juice with pulp, opaque chemical compounds and emulsions that are normally difficult to read with optical refractometers or those digital refractometers that do not address the need to measure “difficult samples.”

**Special application models**

<table>
<thead>
<tr>
<th>Description</th>
<th>RFM330-MR</th>
<th>FM340-M</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scales</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective index</td>
<td>1.32–1.58</td>
<td>1.32–1.58</td>
</tr>
<tr>
<td>Sugar (°Brix)</td>
<td>0–100</td>
<td>0–100</td>
</tr>
<tr>
<td>User defined</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Resolution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective index</td>
<td>0.00001</td>
<td>0.000001</td>
</tr>
<tr>
<td>Sugar (°Brix)</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Accuracy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reflective index</td>
<td>±0.00002</td>
<td>±0.00002</td>
</tr>
<tr>
<td>Sugar (°Brix)</td>
<td>±0.0004</td>
<td>±0.0004</td>
</tr>
<tr>
<td>Precision (reproducibility)*</td>
<td>±0.000005</td>
<td>±0.00005</td>
</tr>
<tr>
<td>Reflective index</td>
<td>±0.0001</td>
<td>±0.0001</td>
</tr>
<tr>
<td>Sugar (°Brix)</td>
<td>±0.01</td>
<td>±0.01</td>
</tr>
</tbody>
</table>

**Features**
- 4” High definition display with robust push-button keypad for factory use
- Flat prism surface for easy cleaning
- Wide beam scan for non-homogenous samples
- Three decimal place Brix precision* (6 d.p. RI)
- RFID user clearance
- Supports FDA regulation 21 CFR Part 11
- USB & Ethernet connectivity
RFM300 series refractometers are considered by many leading companies as the ultimate instrument for installation in demanding factory environments, as well as for use as a primary quality control tool. Since its original launch in 1992, over 5,000 models have been installed across the globe, and following a complete re-design, the RFM300 series of refractometers still offers all the original design attributes but with a wider refractive index range, Peltier temperature control and a more versatile software structure.

Food & Beverage Touch Panel Benchtop Refractometers  
RFM330-T / RFM340-T

Pharma & Chemical Benchtop Refractometers  
RFM960-T / RFM970-T

Featuring a new touchscreen display and wide measuring range up to 1.70 RI and capable of measuring to six decimal places, the RFM900-T Series refractometers are ideally suited for use in the chemical, petrochemical, pharmaceutical, flavours and fragrance industries as well as for academic research. The RFM900-T series of refractometers combine the latest opto-electronic principles with durability and ease of use. RFM900-T refractometers feature RFID (Radio Frequency Identification) that allows users to identify themselves by simply swiping a tag across the top of the instrument.

Abbe60 Refractometer

More stringent requirements of quality control and, in some cases, changing legislation, mean that greater accuracy is being demanded of refractometers. The Abbe 60 Direct Reading models, available in two measurement ranges, have been designed to meet these requirements.

The latest designs incorporate an externally mounted LED light source for sample illumination.

Abbe5 Refractometer

The Abbe 5 is an affordable refractometer ideally suited for use where a wide refractive index measurement range is required such as in small contract laboratories or applications where sample throughput is relatively low.
The ADP430 is a dual scale, fully automatic polarimeter designed for use in many applications that require measurement of optical rotation. The instrument is housed in a rugged chemical-resistant case, making it suitable for use in factory environments as well as in the laboratory. Standard, jacketed and flow type tubes may be used, possibly requiring the use of specially suited slotted lids.

Features
- Methods (Specific Rotation, Purity, Inversion etc.)
- ±0.01°A accuracy
- ±0.002°A precision (reproducibility)
- Color 4” (10cm) display
- Continuous and NEW single-shot read modes
- Save & output results
- RFID user clearance

The ADP450+ is a single wavelength, high accuracy polarimeter suitable for use in many applications, and is especially suited for use in pharmaceutical laboratories where compliance with Pharmacopoeia is required.

Features
- Multiple scale
- Highest accuracy (±0.01°A)
- Conforms USP/EP/BP
- MEAN Method
- Full color 4” (10cm) display
- Continuous and NEW single-shot read modes
- PELTIER TEMPERATURE CONTROL (Xylem patented technology)

A Saccharimeter is a polarimeter that has been configured to display the optical rotation in the International Sugar Scale (°Z) for operation in the sugar processing industry as defined by the International Commission for Uniform Methods of Sugar Analysis (ICUMSA). Latest specification opto-electronics allows measurement of samples with low transmittance even at sodium wavelength; however, for applications where the use of lead acetate is prohibited, the near infrared ADS400 NIR series Saccharimeter and Celite® filtrate offers supreme performance.

Features
- ATC or Patented XPC Peltier
- ICUMSA and Tropical Scale ATC
- Funnel package available
- Onboard Purity
- User audit trail
- USB “Back-up & Clone”
- Low maintenance LED
Multi-wavelength Polarimeters  ADP600 Series

Available as single, dual and multiple wavelength derivatives not only covering the visible spectrum, the new ADP600 Series of Peltier temperature controlled polarimeters are capable of measuring optical rotation to four decimal places in the highly sensitive ultra-violet region. This capability makes the instrument particularly suited for use by scientists wishing to measure chiral compounds and other optically active substances in the chemical, pharmaceutical and food sectors as well as for use in academic research.

Features
• Single, dual & multiple wavelength models
• Four decimal place Resolution
• Peltier temperature controlled
• High definition 7.4” touch-screen display

Range (°A)
± 89.355 to +355 via Method selection

Resolution
Optical rotation (°A) : 0.0001°A
Sugar content (°Z) : 0.01°Z (I.S.S.)

Accuracy
± 0.003(°B546 & 589nm) / ± 0.005(°B325, 345, 405 & 436nm)

Temperature Range
15-35°C

Temperature Control / Accuracy
Peltier / ± 0.2°C

Temperature Compensation
None, sugar, quartz, user defined

Methods
Specific Rotation, % Concentration, % Invert Sugar, % Inversion (A-B)

Weight & dimensions
(L) 78cm, (W) 36cm, (H) 32cm, (Weight) 25.5Kg

Polarimeter Tubes  Polarimeter Tubes

Bellingham + Stanley polarimeter tubes are manufactured to high quality standards conforming to ICUMSA recommendations and are compatible with most makes of polarimeter.

Tube ends are precision ground with windows made from specially selected low strain glass in order to achieve highest accuracy optical rotation measurement.

<table>
<thead>
<tr>
<th>Code</th>
<th>Standard Glass - 8mm</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>35-29</td>
<td>Bubble type - to clear bubble from field of view</td>
<td>100</td>
</tr>
<tr>
<td>35-30</td>
<td>Most suited to model D7</td>
<td>200</td>
</tr>
<tr>
<td>35-28</td>
<td>50-200</td>
<td></td>
</tr>
<tr>
<td>35-46</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>35-47</td>
<td>Centre fill - for easy filling and placement of ADP temperature sensor</td>
<td>200</td>
</tr>
<tr>
<td>35-45</td>
<td>50-200</td>
<td></td>
</tr>
<tr>
<td>35-57</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>35-58</td>
<td>Cup - funnel shaped centre fill for viscous samples</td>
<td>200</td>
</tr>
<tr>
<td>35-56</td>
<td>50-200</td>
<td></td>
</tr>
<tr>
<td>35-10</td>
<td>Metal end - centre fill for aggressive chemicals and solvents</td>
<td>100</td>
</tr>
<tr>
<td>35-11</td>
<td>Volume: 5.02ml/100mm</td>
<td>200</td>
</tr>
</tbody>
</table>

Volume: 5.02ml/100mm.

<table>
<thead>
<tr>
<th>Code</th>
<th>Flow &amp; temperature control - 8mm</th>
<th>Lid code</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>36-57</td>
<td>Funnel flow-through tube</td>
<td>37-012</td>
<td>100</td>
</tr>
<tr>
<td>36-58</td>
<td>37-011</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>36-67</td>
<td>Continuous flow-through tube</td>
<td>37-012</td>
<td>100</td>
</tr>
<tr>
<td>36-68</td>
<td>37-011</td>
<td>200</td>
<td></td>
</tr>
<tr>
<td>36-77</td>
<td>Centre fill tube</td>
<td>37-010</td>
<td>100</td>
</tr>
<tr>
<td>36-78</td>
<td>37-009</td>
<td>200</td>
<td></td>
</tr>
</tbody>
</table>

Quartz Control Plates (QCPs)

Bellingham + Stanley offer a choice of Quartz Control Plates (QCP) for verifying and calibrating polarimeters. QCPs are made to the highest standard and may be supplied with an optional Certificate of Calibration, showing traceability to PTB.

Certificate | UKAS (ISO17025) |
---|---|
Best measurement Uncertainty (k=2) | ±0.017°Z ±0.006°A |
Shelf life | Certify Regularly |
Traceability | ICUMSA PTB |
Biochemistry Analyzer

Biosensor technology

The key to generating analyte-specific results in 60 seconds or less is YSI’s innovative biosensor technology. Using the inherent specificity of enzymes for a single target analyte, YSI’s proprietary immobilized enzyme electrodes allow a rapid, accurate, and largely interference-free measurement to be made in about a minute. The unique fluidics and chamber design resist clogging – even at high cell densities.

Fully modular and with a range of upgrades available, the YSI 2900 series feature an intuitive graphical user interface and a touch screen display. This makes 2900 Series analyzers the easiest to use and most cost effective way to measure a wide range chemistries in a number of different applications:

2900 Biochemistry Analyzer

The YSI 2900 features an intuitive graphical user interface, a USB port for data retrieval, and the ability to measure samples from a variety of sample holders including 96 well plates and microcentrifuge tubes, making 2900 Series analyzers the easiest to use and most cost effective way to measure the following chemistries in a wide range of application areas:

- Glucose
- Lactate
- Glutamate
- Xylose
- Ethanol
- Methanol
- Sucrose
- Galactose
- Lactose
- Choline
- Glycerol
- Hydrogen peroxide

2950D Biochemistry Analyzer

YSI has earned a reputation as the Gold Standard in bio-analytical instruments with highly accurate sensors and rapid results. The key to generating analyte-specific results in 60 seconds or less is YSI’s innovative biosensor technology. Using the inherent specificity of enzymes for a single target analyte, YSI’s proprietary immobilized enzyme electrodes allow a rapid, accurate and largely interference free measurement with the capability to measure 6 chemistries.

- Glucose
- Lactate
- Glutamate
- Ammonium
- Potassium
- Ethanol
- Methanol
- Sucrose
- Galactose
- Lactose
- Choline
- Glycerol
- Hydrogen peroxide
Glucose/Lactate Biochemistry Analyzer

YSI 2500 Biochemistry Analyzer

- Cost effective alternative to the 2900D Analyzer
- Analyte-specific results in 60 seconds or less
- Proprietary immobilized enzyme electrodes
- Unique fluids resist clogging
- Trusted measurement technology
- Automated sample handling
- Intuitive graphical user interface
- USB port for data retrieval

YSI 2940 and YSI 2980

- Benchtop: Yes
- Certifications: RoHS, ETL, CE
- Graphic Display: Yes
- Measurement Range: Glucose: 0.05-25 g/L, Lactate: 0.05 to 2.70 g/L
- Operating Temperature: 15 to 35°C
- Precision: Application specific, typical CV <2%
- Parameters Measured: Glucose, Lactate
- Memory: Yes

2940-2980 Multi-Channel Online Monitor

For multiple and parallel bioreactor systems, our 4-channel and 8-channel sampling systems provide many simple and reliable online monitoring and control solutions for your bioreactor processes. Closed-loop monitoring and control capabilities are easily achieved for any scale of operation or type of bioreactor, including single-use systems.

YSI 2940 and YSI 2980

- Automated, aseptic sampling of up to 8 vessels
- Monitor up to 6 chemistries
- Analytical results in 60 seconds for each chemistry
- Simultaneous online monitoring and 96-well plate sampling
- Automated cleaning cycle
- Autoclaveable components
- CIP and SIP compatible
- Touchscreen, icon-driven HMI for easy viewing and menu navigation
- Connectivity options for SCADA, DAS, LIMS and feed-control systems
- Remote access and control via web-based server
- OPC server option

Glucose/Lactate Biochemistry Analyzer

YSI 2500 Biochemistry Analyzer

- Benchtop: Yes
- Certifications: RoHS, ETL, CE
- Graphic Display: Yes
- Measurement Range: Glucose: 0.05-25 g/L, Lactate: 0.05 to 2.70 g/L
- Operating Temperature: 15 to 35°C
- Precision: Application specific, typical CV <2%
- Parameters Measured: Glucose, Lactate
- Memory: Yes
EBI 16 Alternative Bowie & Dick Test

In accordance with DIN EN 285 / ISO 17665 / ISO 11140-4 - The Ebro EBI 16 forms together with the evaluation software Winlog.med an easy to use and reliable electronic measurement system. This allows implementing a comprehensive routine control of steam sterilizers by means of the alternative Bowie&Dick-Test according to EN 285 / DIN EN ISO 17665. In addition to checking the penetration of steam, the relevant sterilization parameters are also checked. A vacuum test can also be carried out with this device.

Features
- High quality stainless steel housing
- Application range from -90 °C to 150 °C
- High temperature accuracy up to 0.05 °C
- Extended temperature measurement range -200 °C to +400 °C
- Pressure measurement up to 4,000 mbar
- Precision pressure measurement 0.1 mbar
- High pressure accuracy up to 0.25 mbar
- Humidity measurement from 0% rH to 100% rH
- Conductivity measurement 1 to 2,000 μS/cm
- Radio mode for real-time monitoring
- ATEX approved
- Full compatibility Interface EBI IF-100, EBI IF-150 and EBI IF-200
- Full compatibility to Winlog software

Operating Temperature and Pressure
- 0°C to 150°C, 1 mbar to 4,000 mbar

Resolution
- 0.01°C, 1 mbar

Accuracy
- ± 0.1°C, ± 15 mbar

Sampling Rate
- 1sec

Calibration
- Factory calibration certificate

Battery
- Lithium cell, 3.6V, user replaceable

Data Memory
- 6,750 measurement values

Weight & Dimensions
- Approx. 500g (incl. battery), D90mm x H150mm

Sensor
- Temperature: Pt 1000
- Pressure: Piezoresistive

EBI 12 Series are Logger systems for Process monitoring, Routine control and Validation. The new generation series are highly accurate temperature, pressure, humidity and conductivity data loggers for thermal process control.

EBI 12 Data Loggers - Temperature/Pressure/Humidity/Conductivity
## EBI 12 Data Loggers - The new generation of data loggers

### EBI 12-T22X

#### Features
- 1 external temperature probe, Ø 1.5 mm
- Needle length 250mm
- Measurement Range
  - EBI 12-T220: -200 °C ... +200 °C
  - EBI 12-T220-EX: -40 °C ... +85 °C
  - EBI 12-T221: -200 °C ... +400 °C
- Data Memory 100,000

### EBI 12-TP231

#### Features
- 1 external temperature probe, Ø 1.5 mm
- 1 internal pressure sensor with Luer-Lock Connection
- Needle length 40mm
- Measurement Range
  - EBI 12-TP231: 0°C to 150°C
  - EBI 12-TP231-EX: 0°C to 85°C
- Data Memory 100,000

---

### General Specifications - EBI 12 T Series (Temperature)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp. accuracy at 20°C</td>
<td>±0.5°C (-200°C to -85°C)</td>
</tr>
<tr>
<td></td>
<td>±0.2°C (-40°C to 0°C)</td>
</tr>
<tr>
<td></td>
<td>±0.1°C (0°C to +120°C)</td>
</tr>
<tr>
<td></td>
<td>±0.05°C (+120°C to +140°C)</td>
</tr>
<tr>
<td></td>
<td>±0.1°C (+140°C to 150°C)</td>
</tr>
<tr>
<td></td>
<td>±0.5°C (+150°C to +250°C)</td>
</tr>
<tr>
<td></td>
<td>±0.8°C (+250°C to +400°C)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.01°C</td>
</tr>
<tr>
<td>Memory</td>
<td>Red line: 100,000</td>
</tr>
<tr>
<td></td>
<td>Blue line: 27,000</td>
</tr>
</tbody>
</table>

### General Specifications - EBI 12 TP Series (Temperature and Pressure)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp. accuracy at 20°C</td>
<td>±1.5°C (0°C to 120°C)</td>
</tr>
<tr>
<td></td>
<td>±0.05°C (120°C to 140°C)</td>
</tr>
<tr>
<td></td>
<td>±0.1°C (140°C to 150°C)</td>
</tr>
<tr>
<td>Accuracy Pressure</td>
<td>±10 mbar (50 mbar to 150 mbar)</td>
</tr>
<tr>
<td></td>
<td>±10 mbar (2,050 mbar to 2,250 mbar)</td>
</tr>
<tr>
<td></td>
<td>±10 mbar (3,000 mbar to 3,250 mbar)</td>
</tr>
<tr>
<td></td>
<td>±15 mbar (for the remaining measurement range)</td>
</tr>
<tr>
<td>Resolution: temperature</td>
<td>0.01°C</td>
</tr>
<tr>
<td>Resolution: pressure</td>
<td>1 mbar</td>
</tr>
<tr>
<td>Data Memory</td>
<td>Max. 100,000 measurements (total)</td>
</tr>
<tr>
<td>Sensor: temperature</td>
<td>Pt 1000, Class A</td>
</tr>
<tr>
<td>Sensor: pressure</td>
<td>Piezoresistive pressure sensor (temperature compensated)</td>
</tr>
</tbody>
</table>

---

**Notes:**
- Deviating specifications can be found in the product descriptions.
- Dimensions and weight may differ depending on the type.
Data Loggers
Temperature / Humidity / Pressure Loggers

Data Logger Applications

FOOD APPLICATIONS
- Autoclaves, sterilizers, pasteurization processes
- Continuous fryers
- Lyophilization
- Hydrostatic retorts
- Refrigerators, freezers, cooling rooms
- Smokehouse
- Cooker, cooler (reel and spiral)

MEDICAL APPLICATIONS
- Steam sterilization
- Washer disinfectors, bedpan washers
- H2O2, LTSF and EtO sterilization
- Depyrogenation, heat tunnel
- Incubators
- Refrigerators, freezers, cooling rooms
- Stability chambers

PHARMACEUTICAL APPLICATIONS
- Steam H2O2, LTSF and EtO sterilization
- Washer disinfectors
- Depyrogenation, heat tunnel
- Incubators
- Refrigerators, freezers, cooling rooms
- Climatic test chambers
- Stability chambers

FEATURED DATA LOGGERS

EBI 12-T100
- For process monitoring during convenience food production
- For routine control in bedpan washers
- For temperature mappings
- For measuring raw material storage

EBI 12-T23X
- Ideal for use in canning for pasteurization control
- Available in various lengths (50mm/75mm/100mm/150mm)

EBI 12-TP231
- Washer disinfectors
- Sterilizers
- EtO sterilizer (ATEX type)

EBI 12-TC230
- In processes like washer disinfectors, the measurement of conductivity in the last dishwasher is required. This is reasonably done in the running process without any interruption

EBI 12-T421
- In oven (protected by Thermal Isolation Box)
- In washer disinfectors

EBI 12-TPX90
- High precision pressure logger
- H2O2 sterile process requires a very precise pressure measurement
- Works with pressures down to 1 mbar
- Not for use in steam sterilizer

Complete Validation Set
For the validation of steam sterilizers according to ISO 17665. This set can individually be expanded or compiled yourself from one or more data loggers (EBI 11 or EBI 12), the appropriate interface and corresponding TÜV certified software. Contact us for more information.

SL 3001 for Benchtop Steam
- 1 x EBI 12-TP453 Temperature / pressure data logger with AL 101 silicone protection box
- EBI IF 200 4-port Interface with USB connection and antenna
- Software Winlog validation
- Carrying case “SYSTAINER”

SL 3111 for Large Steam Sterilizer
- 5 x EBI 12-T441 Temperature data loggers
- 1 x EBI 12-TP 226 Temperature / pressure data logger with AL 101 silicone protection box
- EBI IF 200, 4-port Interface with USB connection and antenna
- Winlog. validation evaluation software
- Carrying case “SYSTAINER”
EBI 11 Mini Data Loggers Series  
EBI-11-T230 · T231 · T233 / EBI-11-T240

For temperature and pressure measurements in tight spaces, ebro offers the EBI-11 mini data loggers. Many configurations are available to suit your application, including data loggers with internal sensors, rigid metal probes, bendable metal probes, Luer-Lock connection or threaded connection versions.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Temp: -30 °C to +150 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>±0.2 °C (30 °C to 0 °C) ±0.1 °C (0 °C to 150 °C)</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.01 °C</td>
</tr>
<tr>
<td>Sample interval</td>
<td>1 sec–24 hrs</td>
</tr>
<tr>
<td>Memory</td>
<td>15,000</td>
</tr>
<tr>
<td>Operation temp range/hours</td>
<td>-30 °C to 150 °C</td>
</tr>
<tr>
<td>Temperature sensor</td>
<td>Pt 1000, Class A</td>
</tr>
</tbody>
</table>

| Measurement mode | • Endless measurement • Measurement start / stop time • Measure upon start time • Start immediately until end of memory |
| Battery | Lithium battery cell 2 x BR123A. 3V, replaceable |
| Dimensions & Weight | (Ø)16.5 mm x (H)22 mm, 45 g |
| Material | Stainless Steel (V4A) |
| Waterproof | IP68 |

EBI 11 Mini Data Loggers  
EBI-11-TP110 / -P100 / -P111

The EBI 11 Mini Data Loggers are suitable not only for validation monitoring but can also be used for routine control monitoring.

Applications
• For tight spaces, e.g. in small steam sterilizers, bottles, cans or bags
• Validation of steam sterilizers and autoclaves
• Validation of washer-disinfectors and washer-disinfectors for endoscopes
• Validation at canning etc.
• Pressure measurement up to 10 bar

<table>
<thead>
<tr>
<th>Scale</th>
<th>Temp: 0 °C to 150 °C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure</td>
<td>0 to 10,000 mbar</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.1 °C</td>
</tr>
<tr>
<td>Resolution</td>
<td>±15 mbar (0 mbar–4,000 mbar) ±20 mbar (4,000 mbar–10,000 mbar)</td>
</tr>
<tr>
<td>Sensor</td>
<td>Pt 1000, Class A</td>
</tr>
<tr>
<td>Max. Operating Pressure</td>
<td>20 bar</td>
</tr>
</tbody>
</table>

Bendable metal probe  
Rigid metal probe  
Integrated (pressure) sensor  
Luer-Lock connection  
M5 thread connection
## Standard Data Loggers  EBI 20-T1 / -TE1 / -TF / -TH1

With a memory capacity of 40,000 measurements the easy to use EBI 20 data loggers are suitable for the continuous documentation and monitoring of temperature and humidity. All EBI 20 data loggers are delivered with a factory calibration certificate and a user replaceable battery. The data loggers are particularly attractive because of their excellent price-performance ratio.

### Features
- Data logger versions for temperature and humidity measurements available
- With internal and external temperature probes
- Very easy to use
- Excellent price-performance ratio

### Resolution
- Temperature: 0.1 °C
- Humidity (EBI 20-TH1): 0.1% rH

### Measurement Range
- EBI 20-T1/TE1: -30°C to 70°C
- EBI 20-TH1: 0% rH to 100%rH

### Accuracy
- EBI 20-T1/TE1: ±0.5 (20°C to 40°C)
- ±0.8 °C for the rest
- EBI 20-TH1: ±0.5 (50°C to 100°C)
- ±1 °C for the rest
- EBI 20-T1/TE1: ±0.5 (20°C to 40°C)
- ±0.8 °C for the rest; ±3% (10% rH to 90% rH)

### Battery lifetime
- Up to 24 months at a sampling rate of 15 minutes at 25°C

### Weight & dimension
- 69(L) x 48(W) x 22(H) mm
- Approximately 45 g

## Wireless Data Logger System  EBI 25-T / -TE / -TX / -TH

The EBI 25 system for wireless monitoring of temperature, humidity and other measurements assures that perishable goods are produced and stored at the right conditions at all times. Other measurements can be integrated using Modbus over IP.

### Features
- Radio data logger system for temperature and humidity measurements
- Other measurements can be integrated using Modbus over IP or other protocols

### Resolution: Temperature
- 0.1 °C (-99°C to 199.9°C)
- 1°C for the rest

### Resolution: Humidity (only humidity data loggers)
- 0.1 % rH

### Total Memory
- Capacity 288 measurement values (per channel)

### Sampling rate
- 1 minute to 24 hours, adjustable

### Measurement Range
- EBI 25-T: -30°C to 60°C
- EBI 25-TE: -40°C to 85°C
- EBI 25-TX: -200°C to 199.9°C
- EBI 25-TH: -30°C to 60°C; 0% rH to 100% rH

### Battery
- 3.6 V lithium (user replaceable)

### Battery lifetime
- Up to 2 years, depending on measurement and transmission rate

### Storage temperature
- -40°C to 85°C

### Operating temperature
- -30°C to 60°C

### Measurement mode
- Endless measurement

### Housing material
- ABS

### Weight
- Approximately 45 g
Multi-Channel Temperature Data Logger  EBI 40-TC

The EBI 40 Multi-Channel Temperature Data Logger records temperatures during process monitoring and validation. Current measurement values and the measurement curve can be read on the multi-colored TFT display. The thermal insulation using the thermo isolation box allows the use of the data logger at very high temperatures. The EBI 40 is suitable for the connection of up to six or twelve thermocouple probes.

### Specifications

- **Measurement range**: -200 to 1,200 °C
- **Accuracy**: ±0.5 °C (at 25 °C)
- **Resolution**: 0.1 °C
- **Channels**: 6 or 12 temperature channels
- **Sampling rate**: Adjustable from 0.1 sec to 24 hrs
- **Sensor**: Thermocouple Type K or Type T / SMP connection
- **Operating temperature**: 0 °C to 60 °C

* The accuracy of the used probe adds to the accuracy of the device. E.g. Probes with class 1 of IEC 584 have ±0.5 °C between -40°C to 125°C

- **Storage temperature**: 0 °C to +70 °C
- **Memory**: 20,000 measurements per channel (max. 240,000 measurements)
- **Measurement mode**: • Endless measurement immediately • Measure immediately until end of memory • Start / stop measurement
- **Display**: TFT-display 3.5” (324 x 240 Pixel)
- **Dimensions**: 140(L) x 118(W) x 35(H) mm
- **Housing material**: ABS + PC
- **Protection class**: IP 40

### Additional Features

- *** Programmable at www.ebi300.com, no special software for programming and readout required**

- **Model**
  - **EBI 300**
    - **Measurement Range**: EBI 300: -30 °C to 70 °C  
      EBI TE: -35 °C to 70 °C (external); -30 °C to 70 °C (internal)  
      EBI TH: -30 °C to 70 °C; 0% rH to 100% rH (humidity)  
    - **Accuracy**: ±0.5 °C (at 20°C to 40°C), ±0.8 for the rest  
    - **Sensor (Temp./Humidity)**: NTC / Capacitive  
    - **Memory**: 40,000 measurements  
    - **LED lamp**: Yes (Red)  
    - **Resolution**: 0.1 °C  
    - **Sampling rate**: 1 minute to 24 hrs
  - **EBI 310**
    - **Measurement Range**: EBI 310: -30 °C to 75 °C  
      EBI 300 TE: -200 °C to 250 °C (external); -30 °C to 75 °C (internal)  
      EBI 300 DI: -45 °C to 50 °C (external), -30 °C to 75 °C (internal)  
    - **Accuracy**: ±0.2 °C (-30°C to 30°C), ±0.5 for the rest  
    - **Sensor (Temp./Humidity)**: PT 1000 / Capacitive  
    - **Memory**: 120,000 measurements  
    - **LED lamp**: Yes (Red, Yellow)  
    - **Resolution**: 0.1 °C  
    - **Sampling rate**: 1 s to 24 hrs

- **Additional Features**
  - Data integrity
  - Conforms with FDA 21 CFR Part 11,
  - DIN EN 12830 and ATP
  - The data loggers help you to comply with GMP and VO (EG) 37/2005
  - Free firmware updates at your place via software

### Multi-use USB Data Logger  EBI-300 / 310

The EBI 300 and EBI 310 PDF data loggers are suitable for multi-use. The easy to use data loggers with USB connection monitor the temperature and/or humidity during transport and storage of sensitive goods like medicine, food, serums etc. Measurement reports are created automatically as PDF files when you connect the logger to a PC.

- **Model**
  - **EBI 300**
    - **Measurement Range**: EBI 300 -30 °C to 70 °C  
      EBI TE: -35 °C to 70 °C (external); -30 °C to 70 °C (internal)  
      EBI TH: -30 °C to 70 °C; 0% rH to 100% rH (humidity)  
    - **Accuracy**: ±0.5 °C (at 20°C to 40°C), ±0.8 for the rest  
    - **Sensor (Temp./Humidity)**: NTC / Capacitive  
    - **Memory**: 40,000 measurements  
    - **LED lamp**: Yes (Red)  
    - **Resolution**: 0.1 °C  
    - **Sampling rate**: 1 minute to 24 hrs
  - **EBI 310**
    - **Measurement Range**: EBI 310: -30 °C to 75 °C  
      EBI 300 TE: -200 °C to 250 °C (external); -30 °C to 75 °C (internal)  
      EBI 300 DI: -45 °C to 50 °C (external), -30 °C to 75 °C (internal)  
    - **Accuracy**: ±0.2 °C (-30°C to 30°C), ±0.5 for the rest  
    - **Sensor (Temp./Humidity)**: PT 1000 / Capacitive  
    - **Memory**: 120,000 measurements  
    - **LED lamp**: Yes (Red, Yellow)  
    - **Resolution**: 0.1 °C  
    - **Sampling rate**: 1 s to 24 hrs

### Additional Features

- Tamper proof
- Un-erasable memory
- Automatic PDF report generation
- Visual indication of alarm status

- **EBI 330-T30**
  - **Single-Use PDF Data Logger available**
FOM Oil Monitor  FOM 330

Food Oil Quality Measurement
FOM 330 Food Oil Quality Set*
Up to 10% oil savings through accurate determination of frying oil quality.

Features
• Determination of the frying oil quality in the range of 0% to 40% TPC
• LED (green/yellow/red) shows the right point of time to change the oil
• Simple one-button operation
• Rugged sensor protection
• Fast cleaning with for example hot water or with a cloth
• Long life user replaceable battery
• Calibration certificate included
• Impact resistant, waterproof housing (IP 67)

Measurement variables
- Total polar materials (% TPM)
- Temp (°C)

Scale
- TPM: 0–40%, Temp: 50 °C to 220 °C

Accuracy
- TPM: ±2%, Temp: ±1 °C

Resolution
- TPM: 0.5%, Temp: 0.1 °C

Temperature range
- 50 °C to 220 °C

Waterproof
- IP67

Weight & dimensions
- 304(W) x 54(D) x 22(H) mm, 200g

SSX210 Salt Meter Set  SSX 210

SSX210 Salt Meter Set with gold-plated electrodes probe.

Product description
• Determines relative salt content of foods
• Meat, sausage, ham, cheese, salad
• Assures constant taste
• Easy handling
• Robust and impact-resistant
• Fixed probe

Scale
- 0–100

Resolution • Accuracy
1, ±1 Digit

Operating temperature
- 10 to 40 °C

Sample rate
- 1 to 15 Sec

Waterproof
- 50 °C to 220 °C

Weight & dimensions
- 100(W) x 46(D) x 25(H) mm
- 200g

Refrigerator Thermometer - TRACEbro 3x0 / 4x0

Min/Max Thermometer with one or two external probes. To monitor the sample temperature in the laboratory, but also in microbiological research facilities, a thermometer with minimum and maximum value display is required. To simplify the process and for easy monitoring in daily use in the field of application, the thermometer simultaneously displays the current measured value and Min / Max. The employee has all the information at a glance and can intervene directly if necessary.

<table>
<thead>
<tr>
<th>Description</th>
<th>TRACEbro310</th>
<th>TRACEbro320</th>
<th>TRACEbro410</th>
<th>TRACEbro420</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurement range: Internal sensor</td>
<td>-0 °C to 50 °C</td>
<td>-0 °C to 50 °C</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Measurement range: External probe</td>
<td>-50 °C to 70 °C</td>
<td>-50 °C to 70 °C</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Resolution</td>
<td>0.1 °C</td>
<td>0.1 °C</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Accuracy</td>
<td>±0.5 °C, ±0.1 °C for the rest</td>
<td>±0.5 °C, ±0.1 °C for the rest</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cable length</td>
<td>3m</td>
<td>3m</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dimensions</td>
<td>100 x 110 x 23 mm</td>
<td>100 x 110 x 23 mm</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Factory calibration certificate</td>
<td>20 °C, 0 °C, 40 °C</td>
<td>20 °C, 0 °C, 40 °C</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Fold-Back Thermometer
TLC 750 NFC, TLC 750i, TLC 750 BT

The TLC 750 NFC has an infrared sensor for surface temperature measurement and a penetration probe for core temperature measurement. The display with backlight can be read from both sides. This combination of features is ideal for incoming goods inspections and storage monitoring. The TLC 750 NFC has a memory for up to 200 measurements. With one walkabout, all measurement locations can be handled. MyCCP is a Digital Food Safety Management System that allows for defining, managing, scheduling and controlling Food Safety processes.

TLC 700
- Wireless data transmission via Bluetooth
- Low Energy
- Detection of locations and users via NFC reader
- Wireless rechargeable battery
- Display with backlight for reading in dark environments
- Display can be upside down for reading from both sides

Measurement Range
-50 °C to 250 °C

Accuracy Infrared
±4°C at -50°C to -30.1°C
±2.5°C at -30°C to -18.1°C
±1.5°C at -18°C to -0.1°C
±1.0°C at 0°C to 65°C
±2.0°C or 2% at 65°C to 250°C

Accuracy Penetration Probe
±0.5°C at -30°C to 99.9 °C
±1°C or 1% for the rest

Resolution
0.1°C

Distance: Spot ratio
8.1

Dimensions
(L)169.5 x (W) 44 x (H) 23 mm (without probe), needle length = 100 mm

Weight
Approx. 140g

TFN 520-EX / 530-EX

On the next pages you will find our re-released EX-thermometers of the TFN 5x0 series, together with accessories. The various probes, specifically examined for their aptitude for EX applications, allow for the measurement of temperature within potentially explosive areas.

Features
- Temperature measurement within potentially explosive areas:
  - II 2G Ex ia IIC T4 Gb
  - II 2G Ex ia IIIB T135 °C Db
  - For environmental temperatures up to +60 °C
  - Process and facility monitoring
  - Examination in laboratories
  - Usage during the production or examination of e.g. solvent-based products, fuels and gases

TFC 422C / TFX 410-1

Due to the new German calibration law which became effective on January 01 2015, we were forced to stop the sales of the TFX 422 Laboratory Thermometer with PTB certification. The so called certification of conformity replaces the calibration by the measurement office. Our new Conformity Certified Laboratory Thermometer TFX 422C is the equivalent successor: same properties, same quality.

Features
- MIN/MAX and hold options
- High precision
- Approximately 5 years battery life time
- Waterproof (IP 67)
The 1080 TOC Analyzer processes aqueous samples for analysis of the total organic carbon (TOC), total inorganic carbon (TIC), and non-purgeable organic carbon (NPOC) content. Supporting USEPA-approved methods, Standard Methods, ASTM, DIN/ISO/CEN, and EU Methods, the 1080 can analyze up to 300 samples per 24-hour period, depending upon the protocol employed, in excess of 100,000 samples per year.

Features
- Wide operational range (2 ppb – 30,000 ppm)
- Supports TC/TIC/TOC/NPOC analysis techniques and standard measurements
- Parallel reaction chamber option available for high-throughput concurrent sample processing
- Patented Smart Slide injector extends o-ring life and reduces maintenance

Operating principle
Heated sodium persulfate oxidation

Measurement Range
10 ppb C - 3,000 ppm C

Accuracy - Reproducibility
±2% FS or 2% relative, whichever is greater, 3.0%

Method compliance
USEPA, CEN, USP, EUP, ASTM, ISO, DIN, STD

Autosampler
Option

Power
115/230V AC, 50/60 Hz, 750VA max
Flow Solution™ FS 3700  FS 3700

The FS 3700 Automated Chemistry Analyzer is an advanced continuous flow analyzer designed to improve laboratory productivity by automating wet chemistry test procedures.

OI Analytical validates the hardware configuration and performance of every method supplied with the FS 3700 analyzer providing users a total analysis solution. Methods for aqueous samples, soil or plant extracts are available to support environmental compliance monitoring, process optimization and research applications.

Interchangeable Chemistry Cartridges
The FS 3700 utilizes interchangeable, pre-assembled chemistry cartridges for maximum versatility and ease of use. Each chemistry cartridge is configured with all of the components needed to perform each validated analysis method. Just attach the pump tubing and detector flow cell and you are ready to go. The FS 3700 runs up to 2 channels simultaneously, each with its own cartridge, with additional channel configurations available. Modular, flexible hardware provides a great platform for research, in-house or proprietary methods.

Plug-in Detector Modules
The FS 3700 comes standard with two detector boards, each capable of supporting photometric, amperometric, ion-selective electrodes and third-party detectors out of the box. This provides additional flexibility to tailor methodology for research or quality control processes while utilizing fluorescence, flame photometric or other detectors. Refinements in detector design have improved signal-to-noise ratio and doubled sensitivity.

FlowView™ Powerful Software Capabilities

The intuitive FlowView software is unparalleled in competitive systems. Designed for 32- or 64-bit Windows® operating systems, FlowView’s improved user interface streamlines scheduling, operation and report generation from the FS 3700. The icon-driven user-interface simplifies navigation and helps new users quickly become proficient.

<table>
<thead>
<tr>
<th>Item</th>
<th>Minimum</th>
<th>Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>OS</td>
<td>Windows 7 Professional, Enterprise-Ultimate (32-bit or 64-bit) (with SP1 or higher)</td>
<td>Windows 8.1 Professional - Enterprise</td>
</tr>
<tr>
<td>Free hard drive space</td>
<td>200 mb</td>
<td>500mb</td>
</tr>
<tr>
<td>Disk drive</td>
<td>CD-ROM</td>
<td>CD-ROM/DVD</td>
</tr>
<tr>
<td>USB channel</td>
<td>Must have an available USB port for each 3700 system</td>
<td>Must have an available USB port for each 3700 system</td>
</tr>
</tbody>
</table>

Certifications
CE Safety EN 61010-1
EMC Immunity & Emissions EN 61326-1:2006
All functions can be viewed and monitored on the large, clear LCD display. The stirrer speed range from 100 to 1000/min and can be set in steps of 10/min. The heating power can be set in 24 steps and reaches an average heating output of 0.9 kW at step 24. If a Pt 1000 temperature sensor is connected which enable a temperature control between 25 °C to 200 °C.

Features
- Optional Pt 1000 temperature sensor
- Controllable stirrer speeds 100-1000 cycle per minute
- The glass-ceramics surface has a high infrared permeability and hence is exceptional economic saving energy and time.
- High-quality, powder-coated and nonsensitive stainless steel casing.
- Indicator LED for residual heat for safe operation.

The compact design with a footprint of 205 x 260 mm allows the use on crowded laboratory tables or under fume hoods.

All three units feature a ceramic coated stainless steel plate highly resistant against strong acids and bases.

The stirrer is equipped with a speed control knob for a range of 60 - 500 rpm.

The heatplate of the SLH and SLHS has maximum power consumption of 500 Watts and is electronically controlled to prevent overcharging.

Two control LEDs on the front plate light up when heating and stirring function are on.
Calibrations Solutions, Multiple Water Quality Sensors

SI Analytics provides a wide range of buffer solutions, electrolytes, bridges and storage solutions, in a variety of vessels including PE Bottle, DURAN® Glass Bottles and Ampoule.

### Solutions for Ammonia Measurements

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 6408</td>
<td>Electrolyte for ammonia combination electrodes</td>
<td>50 ml PE Bottle</td>
</tr>
</tbody>
</table>

### Solutions and Accessories for Conductivity Measurements

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>LF 990</td>
<td>0.001 mol/l (147 µS/cm) KCl Standard Solution</td>
<td>3 x 6 FIOLAX® ampoules à 20 ml, manufacturer certificate</td>
</tr>
<tr>
<td>LF 991</td>
<td>0.01 mol/l (1.41 mS/cm) KCl Standard Solution</td>
<td>3 x 6 FIOLAX® ampoules à 20 ml, manufacturer certificate</td>
</tr>
<tr>
<td>LF 992</td>
<td>0.1 mol/l (12.9 mS/cm) KCl Standard Solution</td>
<td>3 x 6 FIOLAX® ampoules à 20 ml, manufacturer certificate</td>
</tr>
<tr>
<td>LF 995</td>
<td>0.01/0.1/1 mol/l KCl Standard Solution</td>
<td>3 x 6 FIOLAX® ampoules à 20 ml, manufacturer certificate</td>
</tr>
<tr>
<td>LF 1000/ Set</td>
<td>Same as LF 999 / set, in addition platinzing vessel and cable B 1 N</td>
<td>3 x 6 FIOLAX® ampoules à 20 ml, manufacturer certificate</td>
</tr>
<tr>
<td>LF 1024</td>
<td>KCl 0.01 mol/l (1.14 mS/cm) Standard Solution</td>
<td>250 ml PE Bottle</td>
</tr>
<tr>
<td>LF CSKC13</td>
<td>KCl 1.3 µS/cm Standard Solution</td>
<td>250 ml PE Bottle</td>
</tr>
<tr>
<td>LF CSKC5</td>
<td>KCl 5.0 µS/cm Standard Solution</td>
<td>500 ml PE Bottle</td>
</tr>
</tbody>
</table>

### ORP Solutions

<table>
<thead>
<tr>
<th>Model</th>
<th>ORP Pt/ Calomel</th>
<th>Pt/Ag/AgCl</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 4619</td>
<td>180 mV</td>
<td>220 mV</td>
<td>60 FIOLAX 20 ml Ampoules</td>
</tr>
<tr>
<td>L 4643</td>
<td>430 mV</td>
<td>470 mV</td>
<td>60 FIOLAX 20 ml Ampoules</td>
</tr>
<tr>
<td>L 4660</td>
<td>600 mV</td>
<td>640 mV</td>
<td>60 FIOLAX 20 ml Ampoules</td>
</tr>
<tr>
<td>L 4648</td>
<td>180, 430, 600 mV</td>
<td>220, 470, 640 mV</td>
<td>3 x 20 FIOLAX 20 ml Ampoules</td>
</tr>
<tr>
<td>L 430</td>
<td>430 mV</td>
<td>470 mV</td>
<td>1,000 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 4304</td>
<td>430 mV</td>
<td>470 mV</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
</tbody>
</table>

### Electrolyte Solution Organic

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 5014</td>
<td>LiCl saturated in glacial acetic acid</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 5034</td>
<td>LiCl 1.5 mol/l in ethanol</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
</tbody>
</table>

### Solutions for Oxygen Measurements

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 6708</td>
<td>OX 1100/OX 1100+/OX 1101</td>
<td>50 ml PE Bottle</td>
</tr>
<tr>
<td>OX 920</td>
<td>Electrolyte for oxygen electrodes 9009 / 61</td>
<td>50 ml PE Bottle</td>
</tr>
<tr>
<td>OX 921</td>
<td>Cleaning solution for oxygen electrodes 9009 / 61</td>
<td>50 ml PE Bottle</td>
</tr>
<tr>
<td>OX 060</td>
<td>Zero point solution for oxygen electrodes OX 1100 / OX 1100+</td>
<td>60 FIOLAX 20 ml ampoules</td>
</tr>
</tbody>
</table>

### Electrolyte for Reference Electrodes, Bridges and Storage

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
<th>Contents</th>
</tr>
</thead>
<tbody>
<tr>
<td>L 101</td>
<td>1 mol/l KCl</td>
<td>1,000 ml DURAN Glass Bottle (Ster)</td>
</tr>
<tr>
<td>L 1254</td>
<td>0.6 mol/l K₂SO₄</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 200</td>
<td>Low temperature electrolyte (-30°C)</td>
<td>1,000 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 2004</td>
<td>Low temperature electrolyte (-30°C)</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 2114</td>
<td>2 mol/l KNO₃ + 0.001 mol/l KCl</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 2214</td>
<td>2 mol/l KNO₃ + 0.001 mol/l KCl</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 2224</td>
<td>2 mol/l KCl</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 300</td>
<td>3 mol/l KCl</td>
<td>1,000 ml DURAN Glass Bottle (Ster)</td>
</tr>
<tr>
<td>L 3004</td>
<td>3 mol/l KCl</td>
<td>250 ml DURAN Glass Bottle (Ster)</td>
</tr>
<tr>
<td>L 3008</td>
<td>3 mol/l KCl</td>
<td>50 ml PE Bottle</td>
</tr>
<tr>
<td>L 3014</td>
<td>Potassium chloride solution 3 mol/l</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 310</td>
<td>2 mol/l KCl</td>
<td>1,000 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 3104</td>
<td>Potassium chloride solution 2 mol/l</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
<tr>
<td>L 320K</td>
<td>Potassium chloride solution 2 mol/l</td>
<td>1,000 ml DURAN Glass Bottle (Ster)</td>
</tr>
<tr>
<td>L 9114</td>
<td>Storage electrolyte solution, sterilized</td>
<td>250 ml DURAN Glass Bottle</td>
</tr>
</tbody>
</table>

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**Features**

- Reliability and measuring safety
- Extremely long storage times, thanks to hot-steam sterilization
- Without preservative agent
- A maximum of calibration safety

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FIO-LAX® Ampoule pH Buffer

The exactness of the pH measurement is mainly dependent on the accuracy of calibration. This again highly depends on the reliability of the buffer.

Hermetically sealed in the glass ampoule and sterilized with hot steam, same as a pharmaceutical product, the buffer solutions free of preservation agent have an extremely long shelf life and guarantee continuously error-free characteristics.

Buffer solutions in the unique double-end ampoules offer a particularly high degree of reliability and measuring accuracy.
Bellingham + Stanley’s expertise in optical engineering, electronics and software design has enabled us to create instruments that are used extensively throughout the world’s food, drinks, pharmaceutical, chemical and petroleum industries.

Core product lines
- Refractometers
- Polarimeters
- Certified reference materials

Provides temperature measurement and data-logging technologies for the measurement of temperature, pressure, humidity and other physical parameters, primarily serving the food, medical, industrial and chemical industries.

Core product lines
- Temperature/Humidity and pressure dataloggers
- Temperature/Humidity and pressure online and handheld

Offers analytical instruments that detect, measure, analyze and monitor chemicals in liquids, solids and gases and products used to digest, extract and separate components of chemical mixtures.

Core product lines
- TOC, Online/Laboratory
- Purge and Trap
- Flow solutions
YSI’s environmental products provide high quality, high resolution data to better understand and manage our water resources. YSI Life Science and laboratory products are considered the Gold Standard for QC applications. They are used for process control, research and industrial applications by food and beverage, environmental, biofuels, biotech and pharmaceutical customers.

Core product lines
• Life Science analysers
• Water quality sensors and instruments

SI Analytics®
The manufacturer of titrators, viscosity measuring systems, extensive line of glass capillary viscometers, SCHOTT® Instruments high-performance laboratory and process electrodes as well as meters for the measurement of pH, dissolved oxygen and conductivity for food and beverage, pharmaceutical and other demanding markets.

Core product lines
• Titration
• Water quality sensors and monitoring equipment
• Viscometry

WTW Online offers a comprehensive range of Water Quality parameters from the standard Physio-Chemical through to the Optical determination of Carbon and Nitrogen parameters to the range of Chemical Analysers for Nutrient based determination.

Core product lines
• Online and portable water quality instruments
• UV/Vis, spectrophotometers

YSI’s environmental products provide high quality, high resolution data to better understand and manage our water resources. YSI Life Science and laboratory products are considered the Gold Standard for QC applications. They are used for process control, research and industrial applications by food and beverage, environmental, biofuels, biotech and pharmaceutical customers.

Core product lines
• Life Science analysers
• Water quality sensors and instruments
1. The tissue in plants that brings water upward from the roots;
2. A leading global water technology company.

We’re a global team unified in a common purpose: creating innovative solutions to meet our world’s water needs. Developing new technologies that will improve the way water is used, conserved, and re-used in the future is central to our work. We move, treat, analyze, and return water to the environment, and we help people use water efficiently, in their homes, buildings, factories and farms. In more than 150 countries, we have strong, long-standing relationships with customers who know us for our powerful combination of leading product brands and applications expertise, backed by a legacy of innovation.

For more information on how Xylem can help you, go to [www.xylem-analytics.asia](http://www.xylem-analytics.asia)