Xylem Solutions

Instruments for Laboratory & Quality Control

2018-2019

ASIA/201801

xylem

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 www.xyleminc.com

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Application Table

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
Specrophotmeter	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 Themometer	P. 42
Temp Datalogger	P. 38
Humidity Datalogger	P. 38
Pressure Datalogger	P. 38
Oil Quality	P. 44
Viscosity Meter	P. 28

Water
Livestock & Aquaculture
Fruit & Vegetables
Flavors & Essences
Sugar
Edible Oils
Pure Water
Soft Drinks
Wine & Beer
Canning
Dairy

Raw Materials						Process and Packing									Cold Chain		Retail and Catering		Waste Water		
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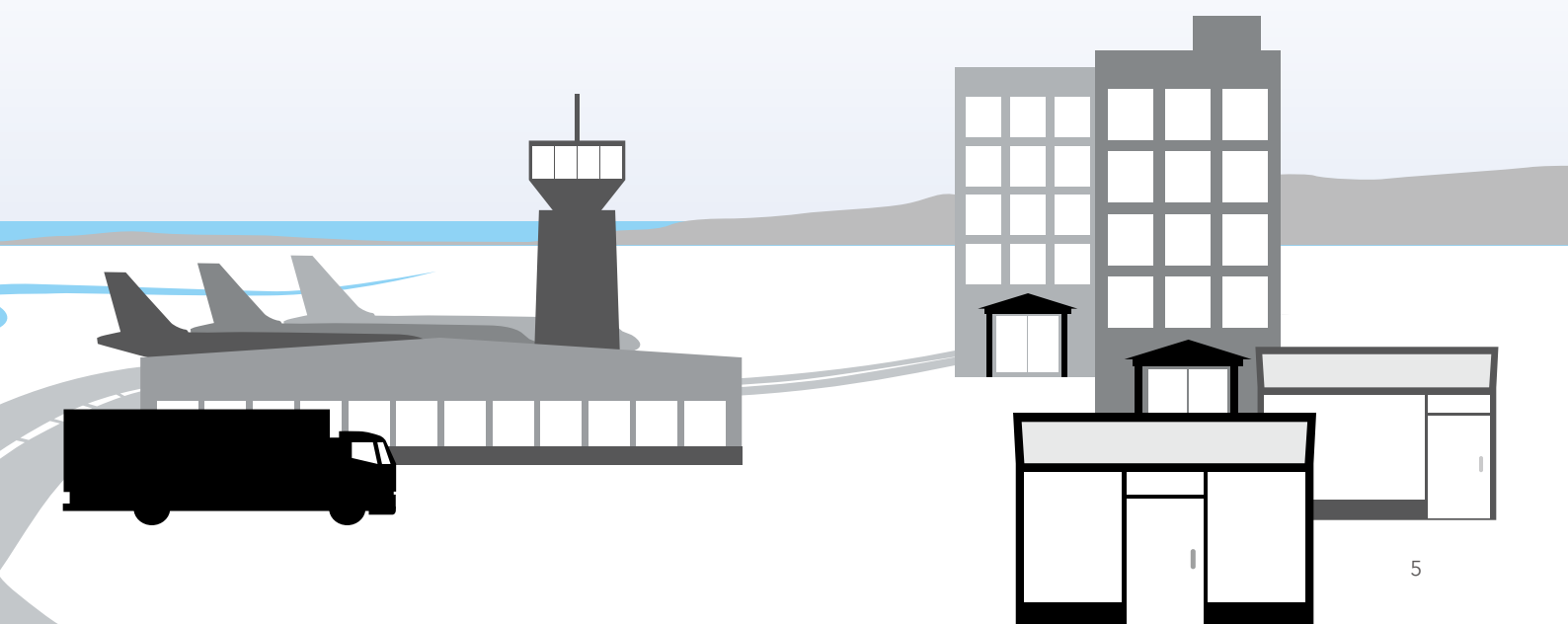
Meat & Fish
Bakery
Confectionery
HACCP
Distribution
Warehousing
Retail
Catering
Waste Water
Online Capability
Auto Sampling



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

MultiLine® & inoLab®

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

IDS electrodes

Titroline 7800

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)

RFM 300-M

RFM 700-M

RFM 300-T

Data Logger Series - ebro EBI 12

- Equipment for process validation in steam sterilizer, H_2O_2-, formaldehyde and EtO sterilizer, washer-disinfectors and washer-disinfectors for endoscopes
- Data Logger to measure temperature, pressure, fine vacuum, humidity and conductance
- TÜV certified

EBI 12
Data Logger Series

Food Oil Monitor – FOM 330

- 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

FOM 330

Handheld Refractometer 0-95 Brix!
Best for Food & Beverages, Farms, Factories!

- Brix% 0-95, jam sweetness, fruit ripeness
- Duo scale capability (RI, saltiness, honey water%)
- Auto Temp. Compensation
- > 50 models available
- Certified CRM available

Standard solution
AG fluid

OPTi Digital Refractometer

Gold Standard Biochemistry Analyzer - YSI 2900D

- Glucose, Lactate, Glutamine, Glutamate, Xylose, Ethanol and etc. Up to 13 parameters
- Analyze specific results in 60 seconds or less
- Auto-calibration, auto-cleaning and auto self maintenance function

Proven Technique for TOC - Aurora 1030W

- 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

Aurora 1030W & 1088
Rotary TOC Autosampler

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

inoLab Oxi 7310

inoLab Oxi 7310P
Built-in printer

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.

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 mbar; 0~1,250 mbar
Temperature	: 0~50.0 °C
Accuracy	
DO Con	: Meas value ±0.5 %
Saturation	: Meas value ±0.5 %
Temperature	: ±0.1 K
Temperature compensation	
Auto Compensation (0~40 °C)	
Weight & dimensions	
240(W) × 190(D) × 80(H) mm	
800g (phosphorus N/A)	

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	
Concentration	: 0.00…20.00 mg/l ±0.5 % of value
Saturation	: 0.0 … 200.0 % ±0.5 % of value
Partial pressure	: 0.0 to 400 hPa ±0.5 % of value
Temperature	: 0 … 50.0 °C ± 0.2 °C

Multi-parameter Portable Meter HandyLab 680

SI Analytics

The HandyLab 680 compact portable multi-parameter instrument for applications 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. 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. The delivery also contains the Importer software for data acquisition via Excel®.

Measurement range

DO Con : 0.00~20.00 mg/L
Saturation : 0.0~200.0 %
Pressure : 0.0~200 hPa
Temperature : 0~50 °C

Power supply

1.5V 4x AA batteries
1.2V NiMH rechargeable battery four (optional)

Weight & dimensions

80(W) × 180(D) × 55(H) mm
400g

Electrode dimensions

Ø15.3 × 150(L) mm

Oxygen Portable Meter ProfiLine Oxi 3000 Series

WTW

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.

Measurement range

DO Con : 0.00~19.99 mg/L; 0.0~90.0 mg/L
Saturation : 0.0~199.9 %; 0~600 %
Temperature : -5.0~105.0 °C

Power supply

Oxi 3205 : N/A
Oxi 3310 : 200 points (Manual) / 500 points (Auto)

Weight & dimensions

80(W) × 180(D) × 55(H) mm
400g

DO Electrodes

WTW

CellOx 325

DurOX

StirrOX G

FDO 925
*JIS K0102

inoLab, ProfiLine series DO electrode specifications

Model	CellOx 325 (Membrane)	DurOX (Membrane)	StirrOx G (Membrane)	FDO 925* (Optical)
Use	General (Spot sampling)	General (Spot sampling)	BOD measurement	General (Spot sampling)
Measurement range	0~50 mg/L	0~50 mg/L	0~50 mg/L	0.00~20.00 mg/L
Features	DO, Saturation, Pressure	Low flow rate (2.5~5 cm/sec)	BOD Built-in stirrer	No calibration No stirring needed

Portable Dissolved Oxygen Meter AM40 Meter

Sensortechnik Meinsberg

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) . With automatic temperature compensation.

Measurement range

DO Con : 0~20 mg/l
Saturation : 0~200 %
Temperature : -10~100 °C
Ambient temperature: : -10~55 °C

Power supply

3x AA, IEC R6, LR6, 1.5 V

Weight & dimensions

200(W) × 95(H) × 40(H) mm
290 g incl. batteries

Biochemical Oxygen Demand BOD Measurements/Respiration

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.

Multiparameter Benchtop Meter inoLab Multi 9000 Series


inoLab Multi 9310 IDS


inoLab Multi 9620 IDS


inoLab Multi 9630 IDS

WTW's benchtop meters can safely determine and reliably document the biochemical oxygen demand (BSB). 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 opticial oxygen sensor FDO® 925 can be used for all digital meters; it will also require the stirring attachment RZ300, just like the CellOx® 325. sensor FDO® 925 can be used for all digital meters; it will also require the stirring attachment RZ300, just like the CellOx® 325.

Multi 9310
1 Measurement Channel DO/BOD, pH, ORP, conductivity and ISE
Multi 9620
2 Measurement Channel
Multi 9630
3 Measurement Channel

Measurement range	
pH	: 0.000~14.000 pH
ORP	: -1,200.0~1,200.0 mV
DO	: 0.00~20.00 mg/L
Conductivity	: 10 µS/cm~2,000 mS/cm

Weight & dimensions	
9310	: 240(W) × 190(D) × 80(H) mm Approx 0.8 kg
9310P	: 290(W) × 190(D) × 80(H) mm Approx 1.0 kg
9620/9630	: 180(W) × 80(D) × 55(H) mm Approx 0.4kg

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.

Method	Usable sensors								
CellOx® Galvanic oxygen sensor							•	•	•
StarrOx® Galvanic oxygen sensor									•
Optical IDS dissolved oxygen sensors	•	•	•	•	•	•			

WTW's benchtop meters can safely determine and reliably document the biochemical oxygen demand (BSB). 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 opticial 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!!

Meters for the Determination of BOD

OxiTop Series

WTW OxiTop® systems are easy-to-use meters for BOD for self-monitoring. OxiTop®-C 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 useAlso flexible, customisable and scalableBased on pressure measurement (no mercury)Simplifies handling no need for dilution series or multiple bottlesData security with built-in memory – classic 5 measurements/days or up to 360 points and 99 days graphical results with Control systemsSuitable for routine BOD5 and other special applications – compliant to multiple international methodologies and standardsIncubators, accessories and consumables also available.

Measurement
Respiration/Biogas Determination
Measurement period
5 days (OxiTop IS) 30 mins~90 days (with OxiTop® Control OC 110)
Measurement range
0~4,000 mg/L 0~400,000 mg/L (Control OC 110)
Pressure mode
500~1,350 hPa (with OxiTop® Control OC 110)

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

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

Model	OxiTop	OxiTop Control				
	IS6 / IS12	6 / 12	B6 / B6M / B6M 2.5	A6 / A12	S6 / S12	AN6 / AN12
Product image						
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 90 days) Biogas determination		Biogas determination monitor the pressure change of the gas produced by the anaerobic decomposition
Number of samples	IS6 : 6 IS12 : 12	C6 : 6 C12 : 12	B6 : 6 B6M : 6 B6M 2.5 : 6	A6 : 6 A12 : 12	S6 : 6 S12 : 12	AN6 : 6 AN12 : 12
Sample vessel	Amber Bottle 510 ml	Amber Bottle 510 ml	B6 : 500 ml Duran Bottle B6M : 1.0 L B6M 2.5 : 2.5 L	Transparent Bottle A6 : 1,000 ml A12 : 250 ml	Amber Bottle 510 ml	Transparent bottle AN6 : 1,000 ml AN12 : 250 ml
Measuring head	OxiTop	OxiTop-C	OxiTop-C	OxiTop-C	OxiTop-C	OxiTop-C
Stirrer	IS6 : IS6 IS12 : IS12	C6 : IS6 C12 : IS12	–	A6 : IS6-Var A12 : IS12	S6 : IS6 S12 : IS12	AN6 : IS6-Var AN12 : IS12
Controller	–	OC100	OC110	OC110	OC110	OC110
Software & cable	–	–	•	•	•	•
CO_2 absorbent	•	•	•	•	•	•
Nitrification inhibitor	•	•	–	•	•	•
Overflow flask	164/432 ml	164/432 ml	–	–	–	–
Stirrer bar	IS6 : 6 Pieces IS12 : 12 Pieces	C6 : 6 Pieces C12 : 12 Pieces	–	A6 : 6 Pieces A12 : 12 Pieces	S6 : 6 Pieces S12 : 12 Pieces	AN6 : 6 Pieces AN12 : 12 Pieces
Stirrer bar remover	•	•	–	•	•	•

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.

Portable pH • ORP • ISE • EC Meter Lab 845 / Lab 945

SI Analytics

User-friendly design for ease of use. The intuitive operation and robust aluminum housing render the Labs 745/845/945 product series perfect for multiple applications.

Model	Lab 845 pH / ORP / ISE
Scale	0~14pH -1,999~1,999mv -10~100 °C ISE: 0~30,000 ppm
Resolution	0.01pH, 1mV, 0.1 °C
Accuracy	±0.01pH, ±0.3mV, ±0.1 °C
Temp	PT 1000TempSensor
Connector	BNC, 4mm BC, 4x USB Channel

Model	Lab 945 EC
Measurement range	0~200µS/cm, 0~2,000µS/cm, 0~20 mS/cm, 0~500 mS/cm, -10~100 °C
Resolution	0.1µS, 1 µS, 0.01 mS, 0.1 mS, 0.1 °C
Accuracy	±0.5% Measurement Value, ±0.1 (~50 °C)
Temp compensation	8 pole Sensor Channel, 4 pole USB Channel
Weight & Dimensions	145(W) × 185(D) × 55(H) 750g (Including Stand)

Model	Lab 845 pH / ORP / ISE
Lab 845 Set/BL 19pH	Lab 845Meter,pH SensorBL19pH, Power, Stand, Solution
Lab 845 Set/BL 25pH	Lab 845 Meter,pH SensorBL 25pH, Power, Stand, Solution
Lab 845 Set/BL 29pH	Lab 845 Meter,pH SensorBL 29pH, Power, Stand, Solution
Lab 945 Set/LF435T	Lab 945 Meter, EC Sensor LF435T, Power, Stand, Test Solution
Lab 945 Set/LF513T	Lab 945 Meter, EC Sensor LF513T, Power, Stand, Test Solution
Lab 945 Set/LF613T	Lab 945 Meter, EC Sensor LF613T, Power, Stand, Test Solution

Lab 2/3 Channel Instrument ProLab 2500 series

SI Analytics

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.

Parameter
pH, ORP (mV), DO %, DO mg/L (BOD Probe), Pressure, Conductivity, Sal, TDS, Temp, ISE
Channel
24010-2, 34010-3
Data storage
Manual: 500 Points Logging: 10,000 Points 4010-2,4010-3)
Interface
Colour graphic display
Connector
Mini USB; USB-A
Temp correction
Yes (except ORP)

Keypad
Antibacterial
Power
Universal power supply
Calibration points
DO, Conductivity = 1; pH = 1~5
Calibration history
Max 10
Calibration reminder
1~999 days user defined
Certifications
CE, cETLus
GLP compliance
Yes

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

YSI

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!

This ultra-compact instrument even includes a graphic display with on-screen instructions!

Model	pH10A	EC30A	ORP15A
Scale	pH : pH0.00~14.00 Temp : 0.0~99.9 °C	Conductivity : 0.0 µS ~ 19.90 mS Temp : 0.0 ~ 99.5 °C	ORP : -1200~1200mV Temp : 0.0~99.9 °C
Accuracy	pH : ±0.02, ±1LSD Temp : ±0.3 °C	Conductivity : ±1% FS Temp : ±0.5 °C	ORP : 1mV, ±1LSD Temp : ±0.3 °C
Resolution	pH : 0.01 Temp : 0.1 °C	Conductivity: 0~1990 µS/cm: 5 µS/cm 2.00~19.90 mS/cm: 0.05 mS/cm Temp: 0.1 °C	ORP : 1mV Temp : 0.1 °C
Waterproof	IP67		
Memory	50 Point Memory		

Type	pH sensor options					
	SenTix 41	SenTix 81	SenTix L	SenTix SP	SenTix HWS	SenTix Mic-D/B
						
Scale	0~14 pH			2~13 pH	0~14 pH	
Temperature item	-5~80 °C	0~100 °C	-5~100 °C	0~80 °C	-5~100 °C	-5~100 °C
Connector	Epoxy	Glass		Epoxy	Glass	
Internal solution	Gel	3M KCL (Ag N/A)	3M KCL (Ag N/A)	Spare chip membrane	3M KCL (Ag N/A)	3M KCl (Ag)
Junction type	Ceremic	Platinum		Pin hole	Sleeve	Platinum
Connector	–			BNC	DIN-BNC	
Feature	SenTix 41, pH electrode, Single Junction, 3 in 1, Gel electrolyte, Epoxy shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ	SenTix 81, pH electrode, self-flushing platinum single junction, 3 in 1, Refillable, Glass shaft, 1 meter cable, BNC connector, 1 banana plug, NTC 30 kΩ	SenTix L, Single Junction, Combination, Spear tip membrane, Epoxy shaft, 1 meter cable, BNC connector	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	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	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
Use	High accuracy	General use	Labratory measurement	Food (Needle type)	Precision measurement	Low volume samples

Type	pH combination electrode		ORP combination electrodes			
	Sentix Sur	SenTix MIC-D	SenTix ORP	SenTix Ag	SenTix Au	SenTix PtR
						
Scale	2~13 pH	0~14 pH	–			
Temperature item	0~50 °C	-5°~100 °C	0~100 °C	-5~100 °C		
Material	Glass		Glass			
Internal solution	Referid®	3M KCL (Ag N/A)	3M KCL	ELY / ORP / Ag	3M KCL	
Junction type	KPG	Platinum	Platinum	Silver	Gold	Platinum
Connector	DIN-BNC		AS/DIN/BNC			
Feature	Sentix Sur, pH electrode, Single Junction, Combination, Flat glass membrane, Glass shaft, 1 meter cable, BNC Connector	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	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.			
Use	General use	Labratory measurement	General use	Argentometry	Oxidisation	General use

FIOLAX® Ampoule pH Buffer

SI Analytics

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

250mlPE bottles:
pH 4.01, 7.00, 10.01

Lab Benchtop EC pH/ORP & ISE Lab 855 • 865 • 875

SI Analytics

Lab 855

Lab 875P

The YSI InoLab line includes the 855 (single channel), 875 and 875P (single channel) instruments providing easy-to-use and calibrate instruments ideal for the laboratory.

Parameter

pH,ORP (mV), ISE (Ammonia,Ammonium, Bromide, Cadmium, Calcium,Chloride, Iodide, Copper, Cyanide, Floride, Lead,Nitrate, Potassium, Silver/Sulfide, Sodium),Temp

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; -2,500~2,500
Resolution : 0.1; 1.0
Accuracy : ±0.3; ±1.0 (Sample temp 15~35 °C)

ISE

mol/l, mmol/l, ppm, %
Scale : 0.000~9.999; 10.00~99.99; 100.0~999.9; 1,000~999,999
Resolution : 0.001; 0.01; 0.1; 1

µmol/l
Scale : 0.000~9.999; 10.00~99.99; 100.0~999.9; 1,000~9,999
Resolution : 0.001;

Temp

Scale : -5~105 °C
Resolution : 0.1, Accuracy: ±0.1

Portable Cond/Salinity Meter LF40 Meter

Sensortechnik Meinsberg

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

Range : EC 0~200 µS/cm; 0~2,000 µS/cm; 0~20 mS/cm; 0~500 mS/cm
TDS : 0~200 mg/l; 0~2,000 mg/l; 0~20 g/l; 0~500 g/l
Salinity : 0~70 g/kg
Temperature : -10~100 °C

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

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

SI Analytics

2 Channel

1 Channel

HandyLab® MKII Measurement Set

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

pH : 0.000~ 14.000
ORP : -1200 ~ +1,200 mV
Temp : -5.0 ~ +105 °C
Conductivity : 0.00~ 2,000 mS/cm
DO : 0.00~ 20.00 mg/l

Accuracy

pH : ±0.004 pH
ORP : ±0.2 mV
Temp : ±0.2 °C
Conductivity : ±0.5% Measurement Value
DO : ± 0.5% Measurement Value

Calibration points

1~5

Interface

USB-A, mini USB-B (HL680)

Function	HL100	HL 250	HL 600	HL 680
Analog	•	•	–	–
IDS Digital	–	–	•	•
1 Channel	•	•	•	–
2 Channel	–	–	–	•
pH/ORP	•	–	•	•
Temp	•	•	•	•
DO	–	–	–	•

Portable Meters for MEMOSENS® Electrodes HandyLab® 7 Series

SI Analytics

The new mobile pH measuring devices by SI Analytics with MEMOSENS® technology offers increased safety and a userfriendly 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) -700~700 mV
Analog pH	: -2~16pH, below 2-3 digit Resolution
Analog ORP	: -1,300~+1,300
Temperature	
Con	: 2 x Ø 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 MEMOSENS® Electrodes

SI Analytics

Our MEMOSENS® program contains pH and redox electrodes. They are compatible to all at 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 Ceremic	0~14pH Platinum	0~14pH Hole junction	0~14pH Ceremic	KPG annular gap junction	Ceremic	Ceremic
Max (Bar)	12	6 (3 bar pressure variation)	12	12	12	12	12
ATEX Cert	All MEMOSENS® process electrodes are ATEX certified						

Multiparameter Benchtop Meter inoLab Multi 9000 Series

inoLab Multi 9310 IDS

inoLab Multi 9620 IDS

inoLab Multi 9630 IDS

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.

Multi 9310

1 Measurement Channel
DO/BOD, pH, ORP, conductivity and ISE

Multi 9620

2 Measurement Channel

Multi 9630

3 Measurement Channel

Measurement range

pH	: 0.000~14.000 pH
ORP	: -1,200.0~1,200.0 mV
DO	: 0.00~20.00 mg/L
Conductivity	: 10 µS/cm~2,000 mS/cm

Weight & dimensions

9310	: 240(W) × 190(D) × 80(H) mm Approx 0.8 kg
9310P	: 290(W) × 190(D) × 80(H) mm Approx 1.0 kg
9620 / 9630	: 180(W) × 80(D) × 55(H) mm Approx 0.4kg

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

MPP930

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.

Multi 3510

1 Measurement Channel
DO/BOD, pH, ORP, conductivity and ISE

Multi 3620

2 Measurement Channel

Multi 3630

3 Measurement Channel

Measurement range

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

Weight & dimensions

80(W) × 180(D) × 55(H) mm, 400g

Portable Turbidity Meter Turb 430T

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

Measurement ranges
NTU : 0~1,100 / 0~1,100
FNU : 0~1,100

Reproducibility
0.01 NTU or < 0.5 % of measured value

Measurement ranges
NTU : 0~1,100
FNU : 0~1,100

Accuracy
±0.01 NTU or ±2 % of the measured value

Power supply
4x AA batteries for approx. 3,000 measurements

Weight & dimensions
86(W) × 236(D) × 77(H) mm
600g

Economical Portable Turbidity Meter Turb 355

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

Measurement ranges
NTU : 0~1,100
FNU : 0~1,100

Reproducibility
0.05 NTU or ±1 % of the measured value

Resolution
N 0.01 NTU in the range 1 … 9.99
0.1 NTU in the range 10,0 … 99,9
1 NTU in the range 100 … 1,000

Accuracy
0~500 NTU/FNU: ±0.1 NTU/FNU or ±2 % of measured value
500~1,100 NTU/FNU: ±3 % of the measured value

Power supply
4x AAA batteries for approx. 1,500 measurements

Portable Turbidity Meter WQ770B

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.

Measurement ranges
Sensor = 0~50 NTU and 0-1000 NTU;
Meter = 0~50 NTU or 0~1000 NTU selectable

Output
4-20mA (Sensor, both ranges), LED screen (Meter)

Cable Length
Sensor = 25 ft standard (optional to 500 ft)

Accuracy
+ 1% of full scale

Operating Voltage
10-36 VDC @ 40 MS (Sensor); Internal 9VDC battery (Meter)

Weight & dimensions
Body = 1 1/2 x 8.5 inches (3.8 x 21.6 cm) (Dia x Length)
1lb (454 g) (Sensor); 2 lbs (907 g) (Meter+sensor)

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.

Measurement range
0.01~10 grams per liter (10 to 10,000 mg/L)

Reproducibility
±1 % of reading or ±20 mg/L, whichever is greater

Accuracy
±5 % of reading or ±100 mg/L, whichever is greater

Power supply
Standard 9V batteries

Weight & dimensions
7"(L) x 3.2"(W) x 1.5"(D)
Approx 1kg

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.

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	
0.001AU	
Wavelength	
450, 500, 550, 575, 600, 650 nm	
Display	
Graphic, backlit LCD with on-screen instructions	
Waterproof	
IP 67	
Power	
3x AA batteries; the 9500 can also be powered via USB	
Weight & dimensions	
146(W) × 275(D) × 75(H) mm 975g	

YPT9500	Portable multi-parameter water quality analysiser
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	
YPT9300	Portable multi-parameter water quality analysiser
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	

50 Pack test kit

250 Pack test kit

Parameter	Scale	Starter pack (50 test) Kit	(250 test) Kit
Alkalinity, Total (Alkaphot)	0~500 ($CaCO_3$)	YPM188	YAP188
Alkalinity-M (Alkaphot M)	0~500 ($CaCO_3$)	YPM250	YAP250
Alkalinity-P (Alkaphot P)	0~500 ($CaCO_3$)	YPM251	YAP251
Aluminum	0~0.5	YPM166	YAP166
Ammonia Ammonia	0~1.0 (N)	YPM152	YAP152
Bromine	0~10.0	YPM060	YAP060
Calcium Hardness (Calcicol)	0~500 ($CaCO_3$)	YPM252	YAP252
Chloride Chloride (Chloridol)	0~50,000 (NaCl)	YPM268	YAP268
Chlorine DPD 1	0~5.0	YPM011	YAP011
Chlorine DPD 2	0~5.0	YPM021	YAP021
Chlorine DPD 1&3	0~5.0	YPM031	YAP031
Chlorine DPD 4	0~5.0	YPM041	YAP041
Copper Copper (Coppercol)	0~5.0	YPM186	YAP186
Color (includes turbidity)	10~500	YPM269	N/A
Air Cyanuric Acid	0~200	YPM087	YAP087
Floride Fluoride	0~1.5	YPM179	YAP179
Hardness (Hardicol)	0~500 ($CaCO_3$)	YPM254	YAP254
Hydrazine	0~0.5	YPM103*	YAP103
Hydrogen Peroxide LR	0~2	YPM104	YAP104
Hydrogen Peroxide HR	0~100	YPM105	YAP105
Iron LR	0~1.0	YPM155	YAP155
Iron MR	0~5.0	YPM292	YAP292
Iron HR	0~10	YPM156	YAP156
Magnesium (Magnecol)	0~100	YPM193	YAP193
Manganese	0~0.03	YPM173	YAP173
Molybdate LR	0~20	YPM258	YAP258
Molybdate HR	0~100	YPM175	YAP175
Nickel	0~10	YPM284	YAP284
Nitrate	0~20 (N)	YPM163	YAP163
Nitrite (N)	0~0.5 (N)	YPM109	YAP109
Sodium Nitrite ($NaNO_2$)	0~1,500 ($NaNO_2$)	YPM260	YAP260
Organophosphonate (OP)	0~20 (PO_4)	YPM262	YAP262
Ozone	0~2.0	YPM056	YAP056
pH (phenol red)	6.8~8.4	YPM130	YAP130
Phenol	0~5.0	YPM287	YAP287
Phosphate LR	0~4.0	YPM177	YAP177
Phosphate HR	0~100	YPM114	YAP114
Potassium Potassium	0~12	YPM189	YAP189
Silica	0~4.0	YPM181	YAP181
Sulphate	0~200	YPM154	YAP154
Sulphide	0~0.5	YPM168	YAP168
Sulphite	0~500 (Na_2SO_3)	YPM266	YAP266
Lead Zinc	0~4.0	YPM148	YAP148

*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

910 COD Colorimeter YSI 910

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

Scale	COD Low Range: 0 to 150 mg/L, COD Mid Range: 0 to 1,500 mg/L, COD High Range: 0 to 15,000 mg/L
Memory	Automatic, 16 data sets with date and time stamp
Unit of measure	mg/L
Display	Graphic, backlit LCD with on-screen instructions
Waterproof	IP68
Power	Approximately 17 continuous hours or 5,000 tests, 4 alkaline AAA batteries
Weight & dimensions	155(L) × 75(W) × 38(H) mm 260g

Thermal Reactor CR 2200/3200/4200 CR4200

CR4200

Thermoreactor for COD and thermal digestions, 2 different temperature blocks for up to 12 reaction cuvettes each, 8 user defined/8 fixed programs, selectable temperature.

CR3200

CR2200

Model	CR4200 : 2x12 cuvette shafts for round cuvettes CR3200 : 2x12 cuvette shafts for round cuvettes CR2200 : 12 cuvette shafts for round cuvettes
Power	AC, 115V
Cuvette shafts	16±2 mm
Temp setting	25 - 170°C freely programmable 100 °C, 120 °C, 148 °C, 150 °C via fixed programs
Reaction time setting	20 min, 30 min, 60 min, 120 min (via fixed programs),
Weight & dimensions	312(D) × 255(W) × 185(H) mm 400g

COD, HR, vial reagent, pack of 150

900 COD Colorimeter YSI 900

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
- Auto shutoff extends battery life
- 2-year warranty

Scale	Chlorine Free : 0.02~2.0 mg/L Chlorine Total : 0.1~8.0 mg/L
Memory	Automatic, 16 data sets with date and time stamp
Unit of measure	mg/L
Waterproof	IP68
Power	4 alkaline AAA batteries, approximately 17 continuous hours or 5,000 tests
Weight & dimensions	155(L) × 75(W) × 38(H) mm 260g

Spectrophotometry
Benchtop / portable & reagents

Spectrophotometer photoLab® photoLab® 7100VIS / photoLab® 7600VIS

photoLab® 7100

photoLab® 7600

Model	photoLab® 7100 (VIS)	photoLab® 7600
Wavelength range	Spectral photometer VIS 320~1,100 nm	Spectral photometer (VIS) 190~1,100 nm
Lamp	Tungsten-Halogen	Xenon
Accuracy/reproducibility	±1 nm; < 0.5 nm	±1 nm; < 0.5 nm
Scan speed	700~2,000 nm/min in 1, 2, 5, 10 nm steps	700~2,000 nm/min in 1, 2, 5, 10 nm steps
Data memory	5,000 measurements, 40 MB for spectrums and kinetics	
Weight & dimensions	404(W) x 314(H) x 197(H) mm, Approx 4.5kg	

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® STD)	: 0~16
Turbidity (pHotoFlex® Turb only)	: 0~1,100 NTU/FNU
Power supply	
1.5V × 4 (Approx 5,000 measurements)	
Weight & dimensions	
86(W) × 236(D) × 117(H) mm 600g	

Reactor CR2200/3200/4200

CR4200

Thermoreactors for the disintegration of COD, total nitrogen and total phosphorus, including brief and self-programmed high temperature disintegration up to 170 °C.

The high reaction temperature over a defined period of time ensures a complete degradation of the sample. The required temperatures and degradation times for the standard parameters are stored in every WTW thermoreactor. In addition, there are different options for self programming and cuvette numbers available.

CR2200
Max 12 Sample 100~150 °C Temperature range
CR3200
Max 24 Sample 25~170 °C Temperature range
CR4200
Max 24 Sample 25~170 °C Temperature range
Weight & dimensions
245(W) × 292(D) × 180(H) mm 3.6kg

Reagents

PhotoLab® Series
photoLab® 7100
photoLab® 7600

pHotoFlex® Series
pHotoFlex® STD
pHotoFlex® pH
pHotoFlex® Turb

Item	Symbol	Measurement range	Measurement method	photoLab® Series	pHotoFlex® Series
Acidity	-	0.40~8.00 mm ol/L	Indicator	•	
Aluminum	Al	0.02~0.50 mg/L	Chromoaznol S	•	
		0.020~1.20 mg/L	Chromoaznol S	•	
		0.05~0.40 mg/L	Chromoaznol S		•
		0.01~0.25 mg/L	Erio Chromium cyan R		•
Ammoniacal Nitrogen	NH_4-N	0.010~2.000 mg/L	Indo phenol blue	•	
		0.20~8.00 mg/L	Indo phenol blue	•	•
		0.5~16.0 mg/L	Indo phenol blue	•	•
		4.0~80.0 mg/L	Indo phenol blue	•	
		0.010~3.00 mg/L	Indo phenol blue	•	
		0.02~1.50 mg/L	Indo phenol blue		•
		2.0~75 mg/L	Indo phenol blue	•	
		5~150 mg/L	Indo phenol blue	•	
		0.00~0.50 mg/L	Salicylic acid		•
		0.00~2.50 mg/L	Salicylic acid		•
		0~50 mg/L	Salicylic acid		•
Adsorptive organic Halogen	AOX	0.05~2.50 mg/L	Iron (III) thiocyanate	•	
Arsenic	As	0.001~0.100 mg/L	Silver diethyl dithiocarbamate	•	
		0.002~0.100 mg/L	Silver diethyl dithiocarbamate		•
BOD	BOD	0.5~3,000 mg/L	Winkler test	•	
Boron	B	0.050~0.800 mg/L	Losothianin	•	
		0.05~2.00 mg/L	Azomethine H	•	
Bromine	Br	0.020~10 mg/L	DPD	•	
Cadmium	Cd	0.025~1.000 mg/L	Cadion derivative	•	•
		0.002~0.500 mg/L	Cadion derivative	•	
		0.010~0.500 mg/L	Cadion derivative		•
Calcium	Ca	1.0~15.0 mg/L	Glyoxal-bis-hydroxyanil	•	
		5~160 mg/L	Glyoxal-bis-hydroxyanil	•	•
		10~250 mg/L	Phthalein Complexone	•	
Chloride	Cl	5~125 mg/L	Iron (III) thiocyanate	•	•
		2.5~25.0 mg/L	Iron (III) thiocyanate	•	
		10~250 mg/L	Iron (III) thiocyanate	•	•
Residual Chloride (Free Total)	Cl_2	0.03~6.00 mg/L	DPD	•	
		0.05~5.00 mg/L	DPD		•
		0.010~6.00 mg/L	DPD	•	
		0.00~2 mg/L	DPD		•
Chlorine Dioxide	ClO_2	0.020~10.00 mg/L	DPD	•	
		0.02~7.50 mg/L	DPD		•
Chromium (Hexavalent)	Cr^{6+}	0.05~2.00 mg/L	Diphenylcarbazide	•	•
		0.01~3.00 mg/L	Diphenylcarbazide	•	
COD	O_2	4.0~40.0 mg/L	Chromium acid sulfate decomposition / Chromium acid	•	
		5.0~80.0 mg/L	Chromium acid sulfate decomposition / Chromium acid	•	
		10~150 mg/L	Chromium acid sulfate decomposition / Chromium acid	•	•
		15~300 mg/L	Chromium acid sulfate decomposition / Chromium acid	•	•
		50~500 mg/L	Chromium acid sulfate decomposition / Chromium acid	•	•
		25~1,500 mg/L	Chromium sulfate decomposition / Chromium (III)	•	•
		300~3,500 mg/L	Chromium sulfate decomposition / Chromium (III)	•	•
		500~10,000 mg/L	Chromium sulfate decomposition / Chromium (III)	•	•
		5,000~90,000 mg/L	Chromium sulfate decomposition / Chromium (III)	•	•
		10~150 mg/L	Heavy Chromium acid / sulfuric acid	•	•
		20~1,500 mg/L	Heavy Chromium acid / sulfuric acid	•	•
		200~15,000 mg/L	Heavy Chromium acid / sulfuric acid	•	•
COD (Mercury free)	O_2	10~150 mg/L	Chromium acid sulfate decomposition / Chromium acid	•	•
		100~1,500 mg/L	Chromium sulfate decomposition / Chromium (III)	•	•
Copper	Cu	0.05~8.00 mg/L	Cuprizone	•	
		0.05~7.50 mg/L	Cuprizone		•
		0.02~6.00 mg/L	Cuprizone	•	
		0.04~6.00 mg/L	Cuprizone		•
		0.00~5.00 mg/L	Bicinchoninic acid		•
Cyanide	CN	0.010~0.500 mg/L	Barbituric acid / pyridinecarboxylic acid	•	
		0.01~0.30 mg/L	Barbituric acid / pyridinecarboxylic acid		•
		0.002~0.500 mg/L	Barbituric acid / pyridinecarboxylic acid	•	
DEHA	DEHA	0.020~0.500 mg/L	Ferrozin	•	
Fluoride	F	0.04~1.00 mg/L	Alizarin Combrexon		•
		0.10~2.00 mg/L	Alizarin Combrexon	•	
		0.10~1.80 mg/L	Alizarin Combrexon	•	
		0.025~0.500 mg/L	Alizarin Combrexon	•	
		1.0~20.0 mg/L	Alizarin Combrexon	•	
Holm Aldehyde	HCHO	0.02~8.00 mg/L	Sulfuric acid / chromotrophic acid	•	
		0.10~8.00 mg/L	Sulfuric acid / chromotrophic acid	•	
		0.10~7.00 mg/L	Sulfuric acid / chromotrophic acid		•
Gold	Au	0.5~12.0 mg/L	Rhodamine B	•	
		0.5~9.0 mg/L	Rhodamine B		•
Hardness (Total)	$CaCO_3$	5~215 mg/L	Phthalein Complexone	•	•
Hydrazine	N_2H_4	0.005~2.00 mg/L	4- (dimethylamino) - Benz Aldehyde	•	
Hydrogen Peroxide	H_2O_2	2~20.0 mg/L	Titanyl sulfate	•	
		0.25~5.00 mg/L	Titanyl sulfate	•	
		0.015~6.00 mg/L	Neocuproine	•	
Iodine	I	0.050~10.00 mg/L	DPD	•	
Iron (II, III)	Fe	0.05~4.00 mg/L	Triazine	•	
		0.05~3.00 mg/L	Triazine		•
		1.0~50.0 mg/L	2,2'-dipyridine	•	
		0.005~5.00 mg/L	Triazine	•	
		0.010~5.00 mg/L	1,10-phenanthroline phosphorus	•	
		0.02~3 mg/L	1,10-phenanthroline phosphorus		•
Iron (Total)	Fe	0.02~1.8 mg/L	TPTZ		•
Lead	Pb	0.01~5 mg/L	4- (2-pyridylazo) -resorcin	•	•
		0.1~5 mg/L	4- (2-pyridylazo) -resorcin	•	
Magnesium	Mg	5.0~75.0 mg/L	O-cresolphthalein derivative	•	•
Manganese	Mn	0.005~2.000 mg/L	PAN	•	
		0.01~10.0 mg/L	Formaldoxime	•	
		0.02~9.0 mg/L	Formaldoxime		•
		0.10~5.00 mg/L	Formaldoxime	•	•
		0.0~20 mg/L	Over Iodine acid oxidation		•

Item	Symbol	Measurement range	Measurement method	photoLab® Series	pHotoFlex® Series
Molybdenum	Mo	0.02~1.00 mg/L	Bromopyrogallollet	•	•
		0.5~45.0 mg/L	Mercaptoacetic acid	•	
		0~35 mg/L	Thioglycolic acid		•
Monochrome Ramin	Cl_2	0.05~10.0 mg/L	Indo phenol blue	•	
Nickel	Ni	0.10~6.00 mg/L	Dimethylglyoxime	•	•
		0.02~5.00 mg/L	Dimethylglyoxime	•	
		0.10~3.80 mg/L	Dimethylglyoxime		•
Nitrate Nitrogen	NO_3-N	0.10~3.00 mg/L	Resorcinol	•	
		0.10~2.70 mg/L	Resorcinol		•
		0.5~25.0 mg/L	2,6-dimethyl Phenol (DMP)	•	
		0.5~18.0 mg/L	Nitrospectral	•	
		0.5~14.5 mg/L	Nitrospectral		•
		1.0~50.0 mg/L	2,6-dimethyl Phenol (DMP)	•	
		23~225 mg/L	2,6-dimethyl Phenol (DMP)	•	
		0.2~17.0 mg/L	Resorcinol	•	
		0.2~13.0 mg/L	Resorcinol		•
		0.2~20.0 mg/L	Nitrospectral	•	
		0.1~25.0 mg/L	2,6-dimethyl Phenol (DMP)	•	
		0~30 mg/L	Chromotrophate		•
Nitrate Nitrogen	NO_2-N	0.010~0.700 mg/L	Grease reaction	•	
		0.00~0.50 mg/L	Grease reaction		•
		0.002~1.00 mg/L	Grease reaction	•	
		0.01~0.50 mg/L	Grease reaction		•
		1.0~90.0 mg/L	Sulfuric acid Iron (II)	•	
		0.03~0.6 mg/L	Sulfanilic acid / naphthylamine		•
		0.3~3 mg/L	Sulfanilic acid / naphthylamine		•
		0.00~0.3 mg/L	Diazotization		•
Total Nitrogen	TN	0.5~15.0 mg/L	After peroxodisulfuric acid decomposition, nitrospectral	•	•
		10~150 mg/L	After peroxodisulfuric acid decomposition DMP	•	
		0.5~15.0 mg/L	After peroxodisulfuric acid decomposition DMP	•	
		0.5~25 mg/L	Persulfate decomposition - Chromotrophic acid		•
		10~140 mg/L	Persulfate decomposition - Chromotrophic acid		•
Volatile organic acid	–	50~3000 mg/L	Hydroxamic acid / Iron (III)	•	
Dissolved Oxygen	O_2	0.5~12.0 mg/L	Winkler test	•	
Ozone	O_3	0.010~4.00 mg/L	DPD	•	
		0.01~3.50 mg/L	DPD		•
Phenol	C6H5OH	0.002~5.000 mg/L	4-aminoantipium phosphorus	•	
		0.10~2.50 mg/L	MBTH	•	•
Orthophosphoric acid	PO_4	0.5~25.0 mg/L	Molybdenum acid vanadium	•	•
		3.0~100.0 mg/L	Phospho molybdenum blue	•	
		1.0~70.0 mg/L	Phospho molybdenum blue		•
		0.01~5.00 mg/L	Phospho molybdenum blue	•	
		0.20~2.50 mg/L	Phospho molybdenum blue		•
		0.5~30.0 mg/L	Molybdenum acid vanadium	•	
		1.0~100.0 mg/L	Phospho molybdenum blue	•	
		1.0~50.0 mg/L	Phospho molybdenum blue		•
		0.00~0.80 mg/L	Ascorbic acid		•
		0.00~1.60 mg/L	Ascorbic acid		•
Total phosphorus	TP	0.05~5.00 mg/L	Phospho molybdenum blue	•	
		0.05~3.00 mg/L	Phospho molybdenum blue		•
		0.5~25.0 mg/L	Phospho molybdenum blue	•	
		0.5~15.0 mg/L	Phospho molybdenum blue		•
		0.00~1.1 mg/L	Persulfate decomposition / Ascorbic acid		•
pH	pH	6.4~8.8	Phenol red	•	
Potassium	K	5.0~50.0 mg/L	Cargignost / turbidity	•	•
		30~300 mg/L	Cargignost / turbidity	•	•
Silica	SiO_2	0.011~1.600 mg/L	Silico molybdenum blue	•	
		0.11~10.70 mg/L	Silico molybdenum blue	•	•
		1.1~1070 mg/L	Silico molybdenum blue	•	•
		0.0~1.6 mg/L	Heteropolive blue		•
		0~100 mg/L	Silicomybdenum acid		•
Silver	Ag	0.25~3.00 mg/L	Eosin / 1,10-phenanthroline phosphorus	•	
		0.25~2.75 mg/L	Eosin / 1,10-phenanthroline phosphorus		•
Sodium	Na	10~300 mg/L	Iron (III) thiocyanate	•	•
Sulfate	SO_4	5~250 mg/L	Barium sulfate / turbidity	•	•
		50~500 mg/L	Barium sulfate / turbidity	•	
		100~1,000 mg/L	Barium sulfate / turbidity	•	
		25~300 mg/L	Tannic acid	•	
		0~70 mg/L	Barium sulfate - turbidity		•
Sulfide	S	0.02~1.50 mg/L	Dimethyl-p-phenylenediamine	•	
Sub Sulfate	SO_3	1.0~20.0 mg/L	Elman reagent	•	
		0.05~3.00 mg/L	Elman reagent	•	
		1.0~60.0 mg/L	Elman reagent	•	
Surfactant (+ Ion)	CTAB	0.05~1.50 mg/L	Dysarfin blue	•	
Surfactant (- Ion)	MSAS	0.05~2 mg/L	Methylene blue	•	•
Surfactant	Triton	0.10~7.50 mg/L	TBPE	•	•
Tin	Sn	0.10~2.50 mg/L	Pyrocatechol bio red	•	
TOC	TOC	5.0~80.0 mg/L	Peroxodisulfuric acid decomposition / Indicator	•	
		50~800 mg/L	Peroxodisulfuric acid decomposition / Indicator	•	
Lead	Zn	0.025~1.000 mg/L	PAR	•	•
		0.20~5.00 mg/L	PAR	•	•

Selection table titration – piston burettes TITRONIC® and automatic titrators TitroLine®




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

1) 20~50 mL User selectable cylinder sizes
2) Can be used as titration and dosing burette in automatic titration systems




	TitroLine® 7500 KF	TitroLine® 7500 KF trace	TitroLine® 7750	TitroLine® 7800
	■	■	■	■
	–	–	■	■
	■	–	■	■
	■	–	■	■
	■	■	■	■
	–	–	■	■
	–	–	■	■
	–	–	■	■
	–	–	■	■
	–	–	■	■
	–	–	■	■
	–	–	■	■
	■	■	■	■
	–	–	–	■
	–	–	■	■
	■	–	■	■
	–	■	–	–
	–	–	■	■
	■	■	■	■

TITRONIC® Piston Burette TITRONIC® 300

SI Analytics

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.

Burette capacity	
20 ml~50 ml	
Burette accuracy	
20mL Burette	: ±0.15 mL, Reproducibility: ±0.05 mL Resolution: 0.005 mL
50mL Burette	: ±0.025 mL, Reproducibility:±0.25 mL Resolution: 0.025 mL (EN ISO 8655-6)
Interface	
1× USB-A and 1× USB-B, 2× RS-232-C	
Power	
100~240 V or more, 50/60 Hz, Power30VA	
Weight & dimensions	
135(W) × 310(H) × 205(D) mm 2kg (not including stirrer)	

TITRONIC® Piston Burette TITRONIC® 500

SI Analytics

The TITRONIC® 500 is the perfect piston burette for manual titrations, accurate dosing of small and large volumes and the preparation of solutions.

The TITRONIC® 500 can also be used as automatic dosing (TitroLine® 7000, TitriSoft 3.0) and titration burette (TitriSoft 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	
5 ml, 10 ml, 20 ml, 50 ml	
Burette accuracy	
Accuracy Reproducibility	: ±0.1~0.15 %, : ±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	
Power	
90~240V or more, 50/60 Hz, Power30VA	
Weight & dimensions	
153(W) × 45(H) × 296(D) mm 3.5kg (not including stirrer)	

Accessories

TZ 3880	285220530
Manual controller	
TZ 3803	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)	

SI Analytics

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® Automatic Titration TitroLine® 5000

SI Analytics

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

Burette capacity

20ml~50ml

Burette accuracy

20mL Burette :±0.15 mL, Reproducibility: ±0.05 mL
50mL Burette :±0.025 mL, Reproducibility: ±0.25 mL

Interface

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

Power

100~240V or more, 50/60 Hz, Power 30VA

Weight & dimensions

135(W) × 310(H) × 205(D) mm
2kg (not including stirrer)

TitroLine® Automatic Titration TitroLine® 7000

SI Analytics

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 is it 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

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)

Applications

- 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 (ex. Lipase)
- pH stat elution of soil sample at pH 4
- Monitoring of the pH value during chemical syntheses

User-defined methods

TL 7000 : 50x

Interface

1×LAN, 2×USB-A, 1×USB-B, 2×RS232

TitroLine® 7800 - The Universal Titrator with IDS®

SI Analytics

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 trirations 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.

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)

Measurement channel

1. (analog) pH/mV with reference electrode input
2. (IDS) IDS Accuracy +/- 1 digit in dependence from the used IDS-electrode

Interface

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

Power

1× LAN, 2× USB-A, 1× USB-B, 2× RS232

Weight & dimensions

153(W) × 45(H) × 296(D) mm
2.3 kg for basic unit
3.5 kg for complete device incl.

Karl Fisher Titration / Samplers

TitroLine® 7500 KF

TitroLine® 7750

SI Analytics

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)

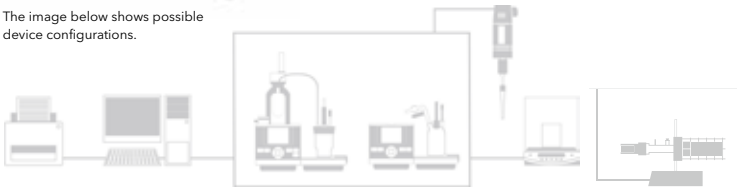
TM 235 KF	285220900
Titriation stand with pump; Scope of delivery: Basic unit with 1 l DURAN ®-reagent bottle TZ 1791, 1 l DURAN®-waste bottle TZ 1792, moisture bottle, tubes and screw threads, power supply TZ 1855 (110 to 240 V)	
TZ 1770	285216677
KF Titration vessel set	
KF 1100	285102030
KF Titration platinum electrode	
TZ 1748	285216560
Stainless Steel support Bar Ø 10 mm	
TZ 1789	285221120
Starter Kit	

TitroLine® 7500 KF Trace

TitroLine® 7500 KF trace

SI Analytics

The image below shows possible device configurations.



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)

Measurement range	
1 pp~5 %	
Titration accuracy	
<0.3 % (1 mg Water)	
Number of method	
50	
Display	
3.5"-1/4 VGA TFT	
Interface	
2× USB-A and 1× USB-B, 2× RS-232-C	
Weight & dimensions	
153(W) × 45(H) × 296(D) mm 2.3 kg (not including stirrer)	

Sampler Carousel

TW Alpha plus & TW7400

SI Analytics

TW alpha plus

TW 7400

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

Model	TW alpha plus	TW 7400
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
Weight & dimensions	143(W) × 620(H) × 475(D) mm Sample rack: 450 × 450 × 65(H) mm 10.3 kg (sample rack not included)	600(W) × 510(H) × 560(D) mm 21 kg

Titration Electrodes

SI Analytics

Application	pH Electrode	Temp Electrode
Acid-base-titrations		
Aqueous, general strong acid and bases	A 7780	A 7780 1M-DIN-ID
Kjeldahl	A 7780	A 7780 1M-DIN-ID
Alkalinity	N 62, N 61	A 162-2M-DIN-ID
Aqueous, difficult applications	IL-pH-A120MF,IL-pH-A170MF	A 162-2M-DIN-ID
Low ionic liquids	IL-pH-A120MF,IL-pH-A170MF	A 162-2M-DIN-ID
Small sample amounts	N 5900 A	A 157-IL-MICRO-pHT-A-DIN-N
Titration with sample changer (100~250 ml vessels) beaker	N 65	A 162-2M-DIN-ID
Titration with sample changer (50 ml vessels, micro) beaker	N 5900 A	–
Non aqueous acid base-titrations		
TAN (ASTM 664)	N 6480 eth	–
OH-No, NCO-No, FFA saponification No. …	N 6480 eth	–
TBN (ISO 3771/ASTM 2896)	N 6480 eis	–
Epoxy value	N 6480 eis	–
Titrations with perchloric acid/acetic acid	N 6480 eis	–
Precipitation titrations		
Halogenides (chloride, "salt")	AgCl 62,AgCl 62 RG	–
Halogenides, sample changer	AgCl 65,AgCl 62 RG	–
Pseudo halogenides (cyanide …)	Ag 6280	–
Detergents	TEN 1100	–
Redox titrations		
General, iodometric permanganometric, cerimetric	Pt 62,Pt 6280	–
Iodine number, peroxid number	Pt 61	–
COD	Pt 61	–
Sample changer, general	Pt 6580	–
Sample changer, COD	Pt 5901	–
Dead stop (SO2 bromine no. …) general	Pt 1200	–
Dead stop (SO2 bromine no. …) sample changer, general and titration vessels	Pt 1400	–
Dead stop (SO2 bromine no. …) sample changer micro	KF 1100	–
KF-titrations	KF 1100	–
Complexometric titrations		
Water hardness (Ca/Mg separated)	Ca 1100 A	–
Water hardness, total	Cu 1100 A	–

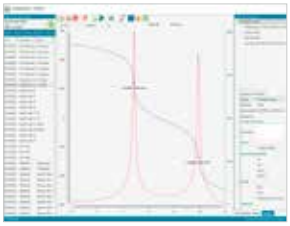
TitriSoft 3.0+ Optimum Software for Auto Sampler Systems

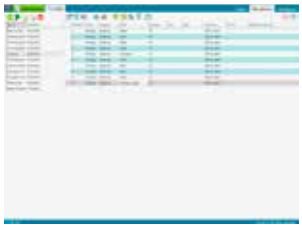
SI Analytics

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.

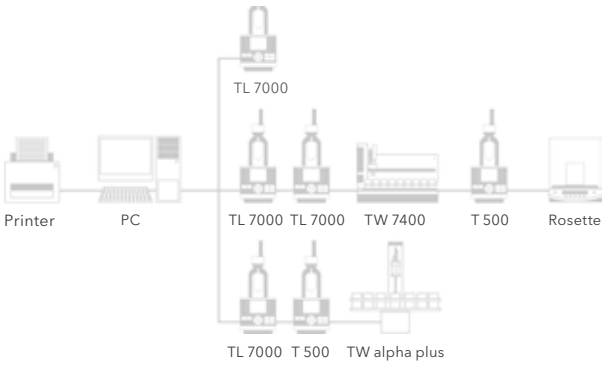
You can connect the titration hardware to any of your PC's available USB-A or serial interfaces. Each of the interfaces allows different combinations of devices (configurations).

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.





The image below shows possible device

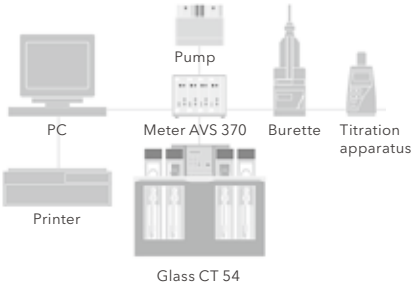


Kinematic Viscosity

ViscoSystem AVS® 370 (PC Compatable)

ViscoSystem® AVS® 370

SI Analytics



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.

Scale

Time : 0 ~9,999.99Sec, 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

Preselectable number of measurements

~10 up to

Data input/output

Serial EIA RS-232-C

Power

100V 50/60 Hz

Weight & Dimensions

255(W) × 320(D) × 205(H) mm
5.4 kg

ViscoSystem® AVS® 470

ViscoSystem® AVS® 470

SI Analytics

*ViscoSystem® AVS® 470:
Perfectly equipped for fully automatic viscosity measurement

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.

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]

Sample interval accuracy

± 0.01 %

Pump pressure (automatically controlled)

suction up to~-160 mbar, pressure up to ~+160 mbar

Preselectable number of measurements

1~99 between

Data input/output

Serial EIA RS-232-C

Power

90~240V

Weight & dimensions

255(W)×320(D)×205(H) mm
5.4 kg

AVS®Pro III – Measuring the viscosity automatically

AVS® Pro III

SI Analytics

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 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. A further advantage is the increased degree of safety that is achieved by the fully automatic measuring procedure when aggressive media such as sulfuric acid are used.

Sampling System

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

Measured value recording

Meniscus scanning by means of opto-electronic system or thermal conductivity (TC)

Number of measurements

1 to 99

Weight & dimensions

1,300(W) × 620(D) × 1,000(H) mm,
70 kg Dependent on the number of measuring positions

ViscoClock – Semi-automatic Viscosity Measuring Unit

SI Analytics

ViscoClock Plus

The Viscoclock 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.

Measuring range

Time : ~999.99 sec, Resolution 0.01
viscosity : 0.35~10,000mm2/s(cSt)

Accuracy

± 0.01 s / ± 1 digit; however no more precise than 0.1 % indicated as measuring uncertainty with a confi dence level of 95 %

Display

LCD grafic display (FSTN) 128x64 pixel, 51x31 mm (w x h)

Power

115V, 50-60 Hz (TZ 1859)

Weight & Dimensions

490(H) × 95(W) × 50(D) mm
~450 g (without viscometer)

Thermostats and Flow-Thru cooler CT 72 Series

CT 72 Series

SI Analytics

The new 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.

Measuring range

Time : ~999.99 sec, Resolution 0.01
viscosity : 0.35~10,000 mm2/s(cSt)

Accuracy

± 0.01 s / ± 1 digit; however no more precise than 0.1 % indicated as measuring uncertainty with a confidence level of 95 %

Display

LCD grafic display (FSTN) 128x64 pixel, 51x31mm (w x h)

Power

115 V, 50-60 Hz (TZ 1859)

Weight & Dimensions

355(H) × 250(W) × 370(D) mm
*CT 72/4 605(H) ×250(W) × 370(D) mm, 5~28 kg

Capillary Viscosity Tubes

SI Analytics

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.

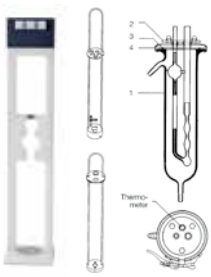
Cannon-Fenske viscometers
Cannon-Fenske routine viscometers comply with standards ISO/DIS 3105, ASTM D 2515, BS 188 with respect to technical measuring specifications

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

Sample	Ubbelohde	Micro Ubbelohde	TC Ubbelohde	Ostwald	Micro Ostwald	Cannon-Fenske Routine	Cannon-Fenske reverse flow	BS/IP-U tube reverse flow
Transparent liquids manual measurement	++	++	–	+	+	+	o	o
Transparent liquids automatic measurement	++	++	+	–	+	+	–	–
Opaque liquids manual measurement	–	–	–	–	–	–	+	++[2)]
Opaque liquids automatic measurement	–	–	++[1)]	–	–	–	–	–
Foaming liquids	o	o	o	+	+	+	o	o
Liquid mixture with highly volatile components	o	o	o	+	+	+	o	o
Minimum measurement substance and/or rinsing agent quantities	–	++	–	–	+	–	–	–
High-temperature or low temperature measurement	+	+	+	o	o	o	o	o

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

Accessories



All brackets and stands are designed to ensure that the viscometers are held vertically. They also protect the viscometers from breakage.

Handheld Refractometer

Refractometers & reference materials

Digital Handheld Refractometers OPTi & OPTi+

There are many different models within in the OPTi family covering not only the commonplace food, beverage and chemical instruments but also life science, automotive, heat transfer and even customer specific applications.

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.

Certificate of Calibration

OPTi refractometers are supplied with a Certificate of Calibration as standard. OPTi refractometers are verifi ed using UKAS Certified Reference Materials manufactured in accordance with EN ISO IEC 17025:2005.

Scale	
Sugar content (Brix)	: Half 0~54Brix, Full 0~95Brix
Refractive Index (RI)	: 1.33~1.42,1.33~1.54
Resolution	
Sugar content (Brix°)	: 0.1
Refractive Index (RI)	: 0.0001
Accuracy	
Sugar content (Brix°)	: ±0.2
Refractive Index (RI)	: ±0.0003
Automatic temperature compensation (ATC)	
ICUMSA, None or Application Specific (model dependent)	
Preselectable number of measurements	
1~99 between	
Working/sample temp Range	
5~40 °C / 5~95 °C	
Relative humidity	
<95 %RH (non condensing)	
Battery life expectation	
10,000 readings minimum	

Features

- Precise digital LCD readout
- Ergonomic IP65 rated design
- Shallow stainless steel prism dish
- Rapid temperature stabilization
- Durable silicon rubber keypad
- Certificate of Calibration
- Half or full Brix range
- Single and Duo scale models
- Over 40 different scale types
- Brix or scale specific c ATC
- Temperature display (°C/F)
- Zero calibration with water
- Unique "AG Fluid Test mode"

CRM Certified Reference Materials AG Fluids

Ideal for use where verification/calibration at the lower end of the Brix or refractive index scale is required. AG fluids are despatched with at least 12-months validity and when purchased as a "multi-pack" offer excellent value for money as the "per bottle shipping cost" is significantly reduced.

Certificate
UKAS (ISO17025)
Uncertainty (k=2) (BSDD)
±0.000074RI, ±0.030 °Brix, (±0.000103RI)
Shelf Life
12-months (minimum)
Storage
Room temperature, keep sealed
Traceability
ICUMSANIST

Features

- Low Brix water based refractometer CRMs
- High value oil based refractometer CRMs
- Sucrose Solution supply contracts
- Quartz Control Plates for Polarimeters
- 12-months validity on most products!

Single 5ml Bottle	Multi-pack of 5 x 5ml Bottles	Multi-pack of 20 x 5ml Bottles	589 nm	Refractive Index[2]	°Brix[3]
90-401	90-501	90-601	AG2.5	1.33659	2.50
90-402	90-502	90-602	AG5	1.34026	5.00
90-403	90-503	90-603	AG7.5	1.34401	7.50
90-404	90-504	90-604	AG10	1.34782	10.00
90-405	90-505	90-605	AG11.2	1.34968	11.20
90-406	90-506	90-606	AG12	1.35093	12.00
90-407	90-507	90-607	AG12.5	1.35171	12.50
90-408	90-508	90-608	AG15	1.35568	15.00
90-418	90-518	90-618	AG40	1.39986	40.00

Eclipse Professional Optical Refractometers Eclipse

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.

Scale
Sugar content (Brix): Half0~54Brix, Full0~95Brix Refractive Index (RI): 1.33~1.42, 1.33~1.54
Resolution
Sugar content (Brix): 0.1 Refractive Index(RI): 0.0001
Automatic temperature compensation (ATC)
ICUMSA, None or Application Specific (model dependent)
Working / Sample Temp Range
5~40 °C / 5~95 °C
Relative humidity
<95%RH (non condensing)
Battery life expectation
10,000 Readings minimum

Features

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

Food, Beverage, Sugar & General Models

Code	Description	Range	Scale Division
45-01	Sugar % (°Brix)	0~15	0.1
45-02	Sugar % (°Brix)	0~30	0.2
45-07	Sugar % (°Brix)	0~32	0.2
45-03	Sugar % (°Brix)	0~50	0.5
45-08	Sugar % (°Brix)	28~65	0.2
45-05	Sugar % (°Brix)	45~80	0.2
45-06	Sugar % (°Brix)	72~95	0.2
45-22	Wine - °Zeiss (ABV)	10~135	1.0
45-27	Water-in-Honey (%)	10~30	0.2
45-81	Low Volume (Nectar <1-micro-litre)	0~50	0.5
45-82	Low Volume (Nectar <1-micro-litre)	45~80	0.2

Industrial Models

Code	Description	Range	Scale Division
45-26	Starch (%)	0-30	0.2
45-41	Refractive Index	1.330~1.420	0.001
45-44	Antifreeze - °C Protection - Battery acid SG	 0 to -40 1.1~1.35	 5 0.05
45-45	Antifreeze - °F Protection - Battery acid SG	 30 to -40 1.1~1.35	 5 0.05
45-46	Antifreeze - % Ethylene Glycol - % Propylene Glycol	 0~60 0~60	 2.5 2.5
45-65	Salinity (% NaCl)	0~28	0.2

*By combining the best available modern manufacturing methods and materials and a good understanding of customer requirements, B+S has achieved a quality instrument at a very competitive price. The Eclipse is both a practical and aesthetically pleasing design.

E-line Economy Optical Refractometers E-Line ATC

The E-Line Automatic Temperature Compensation (ATC) Range of hand-held refractometers offers versatility at a low price. They are ideal for use in many applications including: fruit, beverage, sugar, food and industrial applications where concentration measurements are required within a light industrial environment.

Features

- Low cost model
- All metal construction
- Rubber hand grip for insulation

Code	Description	Scale division
44-801	0~10 Sugar % (°Brix)	0.1
44-802	0~18 Sugar % (°Brix)	0.1
44-803	0~32 Sugar % (°Brix)	0.2
44-804	28~62 Sugar % (°Brix)	0.2
44-805	45~82 Sugar % (°Brix)	0.5
44-812	10~30 Water-in-Honey (%)	0.1

Special application models

Code	Description	Scale
44-808	E-line Aquatic 0~100% Saline 1.000~1.070 Saline (SG)	0.1
44-820	E-line Glycol Heat Transfer 0~70 EG/PG % vol/vol 0 to -50 EG/PG °C Protection	0.1
44-821	E-line Automotive 0 to -50 EG/PG Protection (°C) 1.1 to 1.4 Battery (SG) 0 to -40 Windscreen (°C)	0.2
44-825	E-line Veterinary 1.33~1.360 RI 1.000~1.050 Urine (SG) 0~2 Serum Protein g/100ml	0.2
44-828	1.3330~1.3848 RI	0.0001
44-829	1.435~1.520 RI	0.001

Benchtop Refractometer

Entry Model Benchtop Refractometer (no temperature control) RFM 700 Series

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.

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

Special application models

Description	RFM712-M	RFM732-M	RFM742-M
Scales Refractive index Sugar (°Brix) User defined	 1.32–1.42 0–50 100	 1.32–1.54 0–100 100	 1.32–1.54 0–100 100
Resolution Refractive index Sugar (°Brix)	 0.0001 0.1	 0.0001 0.1	 0.00001 0.01
Accuracy Refractive index Sugar (°Brix)	 ±0.0001 ±0.1	 ±0.0001 ±0.1	 ±0.00005 ±0.04
Precision (reproducibility)* Refractive index Sugar (°Brix)	 ±0.00005 ±0.05	 ±0.00005 ±0.05	 ±0.00001 ±0.01
User scale library	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.		
Reading time	Minimum 4 seconds (dependent on precision required)		
Temperature control	None - Automatic Temperature Compensation (ATC)		
Measuring temperature range	5–40 °C		
Temperature sensor accuracy	±0.03 °C		
Temperature compensation Sucrose (°Brix) AG Fluid User defined	 5–80 °C 5–40 °C Simple coefficient (units/°C) or polynomial function		
Sample Temperature Stability	± 0.05 °C		

Food & Beverage Benchtop Refractomer 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 prismplatforms on the market, RFM300-M Series refractometers arecapable 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."

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

Special application models

Description	RFM330-MR	FM340-M
Scales Reflective index Sugar (°Brix) User defined	 1.32–1.58 0–100 100	 1.32–1.58 0–100 100
Resolution Reflective index Sugar (°Brix)	 0.0001 0.1	 0.000001 (selectable up to 6 d.p.) 0.01/0.001 (selectable up to 3 d.p.)
Accuracy Reflective index Sugar (°Brix)	 ±0.0001 ±0.1	 ±0.00002 (1.32–1.38 RI) ±0.00004 (1.38–1.58 RI) ±0.010 (0–30 °Brix) ±0.030 (30–100 °Brix)
Precision (reproducibility)* Reflective index Sugar (°Brix)	 ±0.00005 ±0.05	 ±0.000005 (6 d.p.) ±0.005 (3 d.p.)
User scale library	20+ pre-programmed scales including HFCS(3), Sugar(4), sucrose SG(3), NaCl, Butyro, Wine Must(5), Urine SG(3), PHR-MEAN and more; plus customer programmable user scales via PC.	
Reading time	Minimum 4 seconds (dependent on precision required)	
Measuring temperature range	0 °C or 10 °C below ambient whichever is greater to 70 °C	
Temperature sensor accuracy	±0.03 °C	

RFM Flow Series

Cell volume (including nozzle)	ml	0.6	1.2	1.2	0.6
Flushing Volume	ml	-	-	50~100	-
Sample Inlet Tubing Bore	mm	2	4	-	2
Sample Inlet/Waste Nozzle Outer Diameter	mm	3	6	6	3
Sample Waste Tubing Bore	mm	2	4	6	2
Sample Pressure (max.)	bar	2	2	-	2
Chamber Material		Polyacetyl or PEEK (RFM990)			
Nozzle Material		316 Stainless Steel			
Sealing Ring		Silicon or Chemraz® (RFM990)			
Connections		Pushfit			¼" UNF
RFM990 Stand Dimensions	Width (mm)	230	230	230	230
	Depth (mm)	330	330	330	330
	Height (mm)	430	430	-	430
	Weight (kg)	2	2	-	2

Food & Bevarage Touch Panel Benchtop Refractometers RFM 330-T / RFM340-T

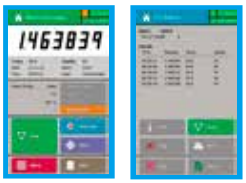
RFM300 series refractometers are considered by many leading companies as the ultimate instrument for installation in demanding factory environments, as well as for use as a primary quality control tool. Since its original launch in 1992, over 5,000 models have been installed across the globe, and following 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. A shallow, easy-to-clean prism dish houses a single sapphire prism optical system protected by a sample presser that may also be used to instigate a measurement without the need to press the read button.

Model	RFM330-T	RFM340-T
Measurement range	Refractive index: 1.32~1.58 Sugar content (°Brix): 0~100 User-defined: 100	1.32~1.58 0~100 100
Resolution	Refractive index: 0.0001 Sugar content (°Brix): 0.1	0.000001 0.01/0.001
Accuracy	Refractive index: ±0.0001 Sugar content (°Brix): ±0.1	±0.00002 (1.32~1.38 RI) ±0.00004 (1.38~1.58 RI) ±0.010 (0~30 °Brix) ±0.030 (30~100 °Brix)
Reproducibility	Refractive index: ± 0.00005 Sugar content (°Brix): ± 0.05	± 0.000005 ± 0.005
Sample interval	Min 4 sec	
Methods	20 or more	
Interface	3×USB(A), 1×USB (B), 1×Ethernet, 1×RS232	
Power	AC100~240V, 50/60Hz	

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.

Model	RFM960-T	RFM340-T
Measurement range	Refractive index: 1.30~1.70 Sugar content (°Brix): 0~100 User-defined: 100	1.30~1.70 0~100 100
Resolution	Refractive index: 0.0001 Sugar content (°Brix): 0.1	0.000001 0.01/0.001
Accuracy	Refractive index: ±0.0001 Sugar content (°Brix): ±0.1	±0.00002 ±0.02
Reproducibility	Refractive index: ± 0.00005 Sugar content (°Brix): ± 0.05	± 0.000005 ± 0.005
Sample interval	Min 4 sec	
Methods	20 or more	
Interface	3×USB(A), 1×USB (B), 1×Ethernet, 1×RS232	
Power	AC100~240V,50/60Hz	



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 measuring 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.

Range	
1.30~1.70 RI	0~95 °Brix
Resolution	
0.0005	0.25 °Brix
Operating Temperature	
5~70 °C	
Temperature Resolution	
0.1 °C	
Temperature Accuracy	
±1 °C	
Storage/Ambient Temperature	
5~40 °C / 5~95 °C	
Power Source	
1 x LR44 alkaline 1.5V button cell. Approx. life 12-months continuous usage	

Polarimeter

Polarimeter (no Peltier control) ADP 430

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
- Alpha-numeric keypad
- Save & output results
- RFID user clearance
- Password protection & audit trails
- Facilitates operation in FDA controlled environments (21 CFR part 11 – electronic signatures)

Scale	
Angular Degrees (°A)	: -355 to +355
Int. Sugar Scale (°Z)	: -225 to +225
User Scales/Methods	: 100
Resolution	
Angular Degrees (°A)	: 0.01/0.001 (selectable)
Accuracy	
Angular Degrees (°A)	: ± 0.010
Int. Sugar Scale (°Z)	: ± 0.030
Temperature Control	
None or external waterbath	
Measuring Range	
5-40 °C	
Sensor Accuracy	
± 0.1 °C	
Stability	
Waterbath dependent	
Stability Checks	
None/delay on single-shot	

Polarimeter (with Peltier control) Temperature control ADS 450+

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)

Scale	
Angular Degrees (°A)	: -355 to +355
Int. Sugar Scale (°Z)	: -225 to +225
User Scales/Methods	: 100
Resolution	
Angular Degrees (°A)	: 0.01/0.001 (selectable)
Accuracy	
Angular Degrees (°A)	: ± 0.010
Int. Sugar Scale (°Z)	: ± 0.030
Temperature Control	
Patented XPC Technology	
Measuring Range	
15-35 °C	
Sensor Accuracy	
± 0.1 °C	
Stability	
± 0.2 °C	
Stability Checks	
None/delay or SMART	

Saccharimeter Meter ADS 420 / ADS 480

A Saccharimeter is a polarimeter that has been configured to display the optical rotation in the International Sugar Scale (ISS – °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 ADS480 Saccharimeter and Celite® filtrate offers supreme performance.

Features

- Single ISS Sugar Scale
- 589nm or NIR
- Conforms to ICUMSA2
- OD indicator
- Simple operation
- Low maintenance LED
- Flow packages
- PURITY package

Scale	
-225 ~ +225 °Z	
Resolution	
0.01°Z	
Accuracy	
ADS420	: ±0.03°Z
ADS480	: ±0.06°Z
Reproducibility	
ADS420	: ±0.02°Z
ADS480	: ±0.03°Z
Output	
RS232C 1 Channel	
Wave length	
589.3 nm	
Power	
90-250v, 50/60Hz	

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 (@546 & 589nm) / ± 0.005 (@325, 365, 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.

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

Volume: 5.02ml/100mm.

Code	Flow & temperature control – 8mm	Lid code	Length
36-57	Funnel flow-through tube	37-012	100
36-58		37-011	200
36-67	Continuous flow-through tube	37-012	100
36-68		37-011	200
36-77	Centre fill tube	37-010	100
36-78		37-009	200

All lengths in millimetres. Volumes in millilitres. All collar sizes 30mm diameter.
For use with ADP/S models, polarimeter tubes figure 5 to 8 require slotted lids.

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

UKAS CALIBRATION
0834

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:

The YSI 2900 Series is a flexible, modular platform with a range of configurations, options, and accessories to meet your lab needs. The base platform is the YSI 2900D. Also available is the YSI 2950 platform, configurable with up to 3 sensor modules capable of measuring up to 6 chemistries. Module 3 may be configured for biosensor or ISE measurements.

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

Benchtop: Yes
Certifications: RoHS, ETL, CE
Compliance: 21 CFR, Part 11 GAMP® 5
Connectivity / Communications: Ethernet, USB
Graphic Display: Yes
Measurement Range: Glucose: 0.05-25 g/L, Lactate: 0.05-2.70 g/L, Glutamate: 15-1460 mg/L, Glutamine: 30-1169 mg/L, Glycerol: 0.75-40 g/L, Xylose: 0.5-30 g/L, Choline: 5-450 mg/L, Hydrogen Peroxide: 3-300 mg/L, Sucrose: 0.1-25 g/L, Ethanol: 0.04-3.2 g/L, Ethanol-HC: 0.5-40 g/L, Methanol: 0.1-2.5 g/L, Lactose: 0.05-25 g/L, Galactose: 0.1-25 g/L
Parameters Measured: Glucose, Lactate, Glutamate, Glutamine, Glycerol, Xylose, Choline, Hydrogen Peroxide, Sucrose, Ethanol, Methanol, Lactose, Galactose
Precision: Application specific, typical CV <2%
Warranty: 1 year

2950D Biochemistry Analyzer

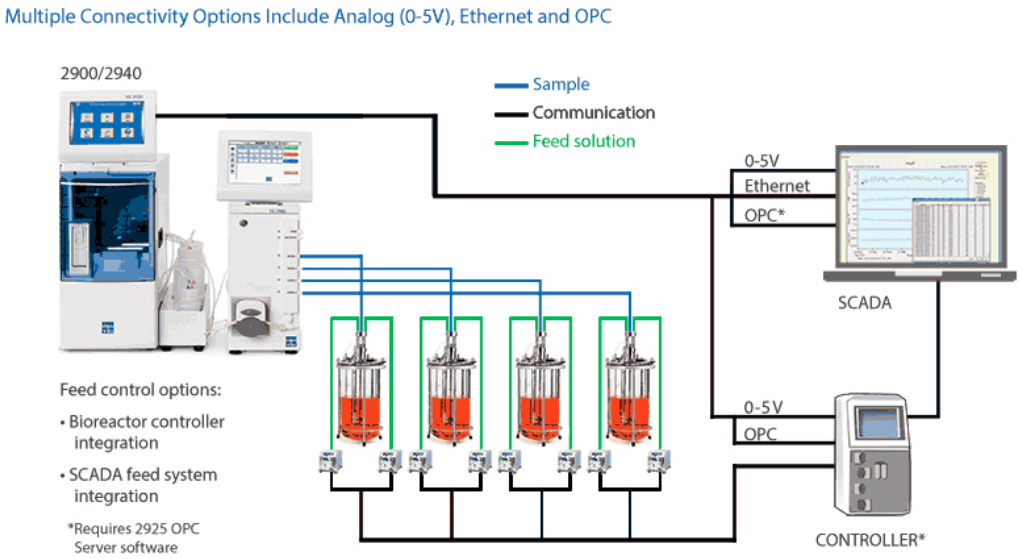
YSI has earned a reputation as the Gold Standard in bio-analytical instruments with highly accurate sensors and rapid results. The key to generating analyte-specific results in 60 seconds or less is YSI's innovative biosensor technology. Using the inherent specificity of enzymes for a single target analyte,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

- Glucose
- Lactate
- Glutamine
- Glutamate
- Ammonium
- Potassium
- Ethanol
- Methanol
- Sucrose
- Galactose
- Lactose
- Choline
- Glycerol
- Hydrogen peroxide

Benchtop: Yes
Certifications: RoHS, ETL, CE
Compliance: 21 CFR, Part 11 GAMP® 5
Connectivity / Communications: Ethernet, USB
Graphic Display: Yes
Measurement Range: Glucose: 0.05-25 g/L, Lactate: 0.05-2.70 g/L, Glutamate: 15-1460 mg/L, Glutamine: 30-1169 mg/L, Glycerol: 0.75-40 g/L, Xylose: 0.5-30 g/L, Choline: 5-450 mg/L, Hydrogen Peroxide: 3-300 mg/L, Sucrose: 0.1-25 g/L, Ethanol: 0.04-3.2 g/L, Ethanol-HC: 0.5-40 g/L, Methanol: 0.1-2.5 g/L, Lactose: 0.05-25 g/L, Galactose: 0.1-25 g/L, Ammonium 10-500mg/L ; Potassium 20-1000mg/L
Parameters Measured: Glucose, Lactate, Glutamate, Glutamine, Glycerol, Xylose, Choline, Hydrogen Peroxide, Sucrose, Ethanol, Methanol, Lactose, Galactose
Precision: Application specific, typical CV <2%
Warranty: 1 year

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

Analog Output:
2940: 4 ports (1 port per vessel)
2980: 8 ports (1 port per vessel)

Antiseptic Cycle:
User defined flow rate (mL/minute) and time (minutes)

Benchtop: Yes

Certifications: RoHS, ETL, CE

Compliance: 21 CFR, Part 11

Ethernet:
TCP/IP 2 ports (additional ports if Ethernet hub is used)

Graphic Display: Yes

Sample Flow Rate:
0.1 - 2.5 mL/minute (user defined)

Sample Size:
0.5 - 2.0mL (user defined)

Sample Interval:
Time Unit: minutes (user defined)

Weight: 16.0lbs (7.26kg)

Wetted Materials:
Pharmed® tubing (peristaltic pump)
C-Flex® and C-Flex Ultra® tubing (sample inlet and waste lines)
PBT (Sample manifold)
Nylon (connectors)

Measurement Range:
Glucose: 0.05-25 g/L, Lactate: 0.05-2.70 g/L, Glutamate: 15-1460 mg/L, Glutamine: 30-1169 mg/L, Glycerol: 0.75-40 g/L, Xylose: 0.5-30 g/L, Choline: 5-450 mg/L, Hydrogen Peroxide: 3-300 mg/L, Sucrose: 0.1-25 g/L, Ethanol: 0.04-3.2 g/L, Ethanol-HC: 0.5-40 g/L, Methanol: 0.1-2.5 g/L, Lactose: 0.05-25 g/L, Galactose: 0.1-25 g/L

Parameters Measured:
Glucose, Lactate, Glutamate, Glutamine, Glycerol, Xylose, Choline, Hydrogen Peroxide, Sucrose, Ethanol, Methanol, Lactose, Galactose

Precision: Application specific, typical CV <2%

Warranty: 1 year

Validation Data Logger Systems

ebro is specialist for measuring systems for flexible and reliable measurement and documentation systems for routine control and validation of various thermal processes in the medical field, the pharmaceutical industry and the food industry.
Our product range covers easy to use data logger of the EBI 10 / EBI 100 series and of the EBI 11 series, which are placed directly in the process. An intuitive, TÜV certified software to routine testing or validation of processes assists to evaluate your process data.
In addition, we offer you the certified EBI 16 system to perform the daily Bowie&Dick-Tests with a clear "fail" or "passed" result.

Routine control requires periodical tests to determine the performance of the validation of equipment. It is the verification that the limits are in accordance to the validation. Reprocessing of medical devices for intended application such as low-germ or sterile ienvironments should be performed. By using the manufacturer's instructions with suitable validated processes and procedures, the success of this procedure is reproducible and limits endangerment to safety and health of patients, users and third parties.

Steam Penetration Test (Bowie Dick test) EBI-16

The EBI 16 Data logger together with the evaluation software Winlog.med is a very reliable and easy-to-use electronic measuring system. A comprehensive routine control of steam sterilizers can be performed by using electronic Bowie&Dick-Test according to ISO 17665 / EN 285. In addition to check steam penetration, also the relevant parameters of sterilization are controlled. A vacuum test can also be performed with this unit.
The EBI 16 is designed so that a usage of 500 cycles or 2 years without calibration or service is guaranteed. The EBI 16 is designed so that a usage of 500 cycles or 2 years without calibration or service is guaranteed.

Bowie Dick Test
The EBI 16 delivers clear results during daily checks of the air evacuation test and steam penetration test according to DIN EN 17665 and DIN EN 285.

Early warning system
The EBI 16 provides early identification of possible failures in steam-sterilizers. Even small quantities of residual air that doesn`t lead to a failed Bowie Dick Test yet, are detected.

Vacuum check
The EBI 16 allows a reasonable vacuum check also for sterilizers without pressure display according to DIN EN 285.

Verification of sterilization parameters
The EBI 16 checks the sterilization parameters such as compensation time, hold time, sterilization temperature and sterilization time according to DIN EN 285

Operating Temperature and Pressure
1°C ... +150°, 0 mbar ... 4.000 mbar
Resolution
0.01°C, 1 mbar
Accuracy
± 0.1°C, ± 15 mbar
Sampling Rate
1sec- 24hours

Battery
Lithium cell, 3.6 V, user replaceable
Memory
36750 measurement values
Weight & dimensions
500 g 90 mm x 150 mm
Temperature sensor
Pt 1000 Class A

EBI 12 – The new data logger generation

New for 2018. A completely redesigned range of Ebro Data loggers, with full stainless steel housing extended temperature, humidity and pressure ranges with ATEX approval and real time monitoring enabled. Welcome to the future of temperature loggers.

To fit each of your specific processes, EBI 12 has a full range of loggers including temperature, pressure and humidity data loggers in many different configurations. from 1 to 4 channels flexible and bendaable probes to rigid steel piecing probes, we have the logger and configuration to fit all your needs

- 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 Logger

-90 °C ... +150 °C (-130 °F ... 302 °F)*

Operating temperature: radio operation

-30 °C ... +150 °C (-22 °F ... 302 °F)

Operating temperature: radio operation

-30 °C ... +150 °C (-22 °F ... 302 °F)

Accuracy

±1.5 °C (-200 °C ... -85 °C)*
±0.5 °C (-85 °C ... -40 °C)*
±0.2 °C (-40 °C ... 0 °C)*
±0.1 °C (0 °C ... +120 °C)*
±0.05 °C (+120 °C ... +140 °C)*
± 0.1 °C (+140 °C ... +150 °C)*
± 0.5 °C (+150 °C ... +250 °C)*
± 0.8 °C (+250 °C ... +400 °C)*

Resolution

0.01 °C

Measurement mode

- Endless measurement
- Start / stop measurement
- Measure upon start temperature
- Start immediately until end of memory

Battery

Lithium cell, 3.6 V, user replaceable

Battery life

25 day (1 sec sampling interval)
42 weeks (1 min sampling interval)
50 weeks (15 min sampling interval)

Weight & dimensions

Approximately 110 g **
48 mm x 24 mm**

Material

Stainless Steel (SUS316L)

Resolution

–30 °C~125 °C
+140 °C 1 hr, +150 °C 30 min

Waterproof

IP68

* Deviating specifications can be found in the product descriptions.
** Dimensions and weight may be differerent depending on the type.

EBI 10 High Wireless Data Loggers EBI-10-T100

To fit each of your specific processes, ebro offers a wide variety of EBI 10 temperature, pressure and humidity data loggers in many different configurations. For example you have the choice of internal sensors, rigid and bendable metal probes, fully flexible cable probes, Luer-lock or tube connection. faulty process.

Scale
-85 °C~150 °C
Accuracy
±0.5 °C (-85~-40°C) ±0.2 °C (-40~0°C)(+140~+150°C) ±0.1 °C (0~140 °C)
Resolution
0.01 °C
Memory
100,000

Integrated sensor | Rigid metal probe | Bendable metal probe | Flexible cable probes | Luer-Lock connection | Tube connection | External humidity sensor

Interface

Programming the Data Loggers

Measurement during the Process

Automatic Data Evaluation

EBI 100 Precision Data Logger

The precision data loggers are available in different versions including temperature or temperature / pressure loggers with and without external probes. They record the temperature and pressure variation over time during the washer-disinfector or sterilizer process and can easily be read out on a computer using the Winlog.med software. This software will make the test evaluation easy, and automatically calculates the A0 value.

Scale
-40~+150 °C (EBI-100-T100) -85~+85 °C(EBI-100-T101)
Accuracy
±0.3 °C
Resolution
0.1 °C
Memory
27,000
Sensor dimentions
T221 φ 1.5mm L = 500 mm T421(2ch) φ 1.5mm L = 500 mm

Bendable Metal Probe
EBI-100-T220 / T241

EBI-100-T221

EBI-100-T421

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.

Scale
–30 °C~ +150 °C

Accuracy
±0.1 °C

Resolution
0.01 °C

Sample interval
1 sec~24 hrs

Memory
15,000

Operation temp range/hours
–30 °C~125 °C
+140 °C 1 hr, +150 °C 30 min

Temperature sensor
Pt 1000

Measurement mode
- Endless measurement
- Measurement start / stop time
- Measure upon start time
- Start immediately until end of memory

Battery
3.0 V (BR1225A×2, lithium battery exchangeable)

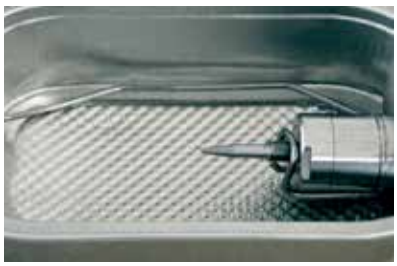
Battery life
25 day (1 sec sampling interval)
42 weeks (1 min sampling interval)
50 weeks (15 min sampling interval)

Weight & dimensions
16.5 x 22 mm, 18.5 g

Material
Stainless Steel (SUS316L)

Resolution
–30 °C~125 °C
+140 °C 1 hr, +150 °C 30 min

Waterproof
IP68/NEMA6



Bendable metal probe

Rigid metal probe

Integrated (pressure) sensor

Luer-Lock connection

M5 thread connection

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 barroutine control monitoring.

Scale
Temp : 0 °C~+150 °C
Pressure : 1mbar~10,000mbar

Accuracy
Temp : 0.1 °C
Pressure : ±15 mbar (0 mbar~4,000 mbar)
: ±20 mbar (4,000 mbar~10,000 mbar)

Resolution
Temp : 0.01 °C
Pressure : 1 mbar

Temperature sensor
Temp : Pt 1,000

Standard Data Loggers EBI 20-T1 / -TE1 / -TF / -TH1

EBI 20-TF

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 (0.2 °F)
Resolution: Humidity (only humidity data loggers)
Endless measurement Start immediately until end of memory Start / stop measurement Start with key press
Operating temperature
-30~+60 °C (-22 °F~+140 °F)
Storage temperature
-40~+70 °C (-40 °F~+158 °F)
Battery
3 V lithium (CR2450), user replaceable
Battery lifetime
ABS
Weight & dimension
69(L) x 48(W) x 22(H) mm Approximately 45 g

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

EBI 25-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

Interface including antenna


EBI IF 400

- Collects and stores the data of all connected EBI 25 data loggers
- Connection of up to 50 loggers per interface possible
- Stores up to 576 measurements per logger
- Direct connection of any number of interfaces to a PC or the network
- Audible alarm (with optional alarm box)

Resolution: Temperature
0.1 °C (0.2 °F)
Resolution: Humidity (only humidity data loggers)
0.1 % rH
Memory
-30~+60 °C (-22 °F ~ +140°F)
Sampling rate
-40~+70 °C (-40 °F~+158 °F)
Radio frequency
868 MHz in EU
Battery
3.6 V lithium (user replaceable)
Battery lifetime
Up to 2 years, depending on measurement and transmission rate
Storage temperature
-40 °C ~ +85 °C (-40 °F~+185 °F)
Operating temperature
-30 °C~+60 °C (-22 °F~+140 °F)
Measurement mode
Endless measurement
Housing material
ABS
Weight
Approximately 45 g

Multi-Channel Temperature Data Logger EBI 40-TC

EBI 40-TC-01

EBI 40-TC-02

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.

Measurement range	-200~1,200 °C (-328 °F ... +2,192 °F)
Accuracy	±0.5 °C (at 25 °C)
Resolution	0.1 °C (0.2 °F)
Channels	6 or 12 temperature channels
Sampling rate	Adjustable from 0.1 sec to 24 hrs
Sensor	Thermocouple Type K / SMP connection
Operating temperature	0 °C~+60 °C (0 °F~+140 °F)
Storage temperature	0 °C~+70 °C (32 °F~158 °F)
Memory	20,000 measurements per channel (max. 240,000 measurements)
Measurement mode	• Endless measurement immediatley • Measure immediatley 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

Multi-use USB Data Logger EBI-300 / 310

The EBI 300 and EBI 310 USB data loggers are multi-use temp dataloggers, the EBI 330 data loggers are single-use versions which can be ordered preconfigured. The EBI300/310 and 330 are ideal for monitoring and recording temperature when storing or shipping temperature dependent merchandise.

Model	EBI 300	EBI 310
Scale	-30 °C~+60 °C	-30 °C~+75 °C
Accuracy	Refractive index: 0.0001 Sugar content (°Brix): 0.1	Refractive index: 0.000001 Sugar content (°Brix): 0.01/0.001
Sensor	Refractive index: ±0.0001 Sugar content (°Brix): ±0.1	Refractive index: ±0.00002 Sugar content (°Brix): ±0.02
Memory	Refractive index: ± 0.00005 Sugar content (°Brix): ± 0.05	Refractive index: ± 0.000005 Sugar content (°Brix): ± 0.005
LED lamp	Yes (Red)	Yes (Red, Yellow)
Resolution	0.1 °C	0.1 °C
Sampling rate	1 min~24 hrs	1 min~24 hrs

Single-use USB Data Logger EBI-330 Series

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 330-T30 (Standard version)
Scale	-30 °C~+60 °C
Accuracy	±0.5 °C (-20 °C...+40 °C) ±0.8 °C for the remaining measuring range
Sensor	NTC
Memory	20,000 points
LED lamp	n/a
Resolution	0.1 C
Measurement interval	1 min~24 hrs

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 varibles
Total polar materials (% TPM) Temp (°C)
Scale
TPM: 0~40%, Temp: +50 °C~+220 °C
Accuracy
TPM: ±2%, Temp: ±1 °C
Resolution
TPM: 0.5%, Temp: 0.1 °C
Temperature range
+50 °C~+200 °C
Waterproof
IP67
Weight & dimensions
304(W) × 54(D) × 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~+40 °C
Sample rate
1~15 Sec
Waterproof
+50 °C~+200 °C
Waterproof
IP54
Weight & dimensions
100(W)×46(D)×25(H) mm 200g

Food Safety Test and Inspection Kits

The food inspection kit contains the required hand held instruments, data loggers and tools for comprehensive food inspections.

Kit comprises

- Frying oil monitor FOM 320
- Laboratory thermometer TFX 422C
- pH meter PHT 810
- Dual infrared thermometer TLC 730
- Temperature data logger EBI 300
- Buffer solutions
- Electrode cleaner
- Knife, tweezers, scissors, magnifying glass, flashlight

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

TFX 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 device has been certified together with the EB 4401 food inspection case (please see page 167)

Fold-Back Thermometer TLC 730 / 700

TLC 730

The device has been certified together with the EB 4401 food inspection case (please see page 167)

TLC 700

The penetration probe is foldable for a secure and convenient storage of the measurement device.

TLC 730

- Double laser pointer
- Including drill for the measurement of frozen food
- Visible and audible alarm upon exceeding/shortfall of limit value

TLC 700

- Small size easily fits in a pocket
- Waterproof housing (IP 65)
- Color ring can be changed in order to assign the device to a person, department or application

Infrared Thermometer TFI 650 / 54

TFI 650

TFI 54

The infrared thermometers are suitable for measurements wherever direct contact is impossible or impractical. ebro also offers models that measure not only the surface temperature but also the relative humidity or the core temperature by means of an external probe.

TFI 650

- Double laser pointer
- Distance:spot ratio = 50:1
- Alarm when MIN/MAX exceeded

TFI 54

- Single laser pointer
- Distance:spot ratio = 12:1
- Replaceable battery

Item	Measurement range	Probe type	Connection	Channels	Distance spot ratio
TFI 54 Infrared Thermometer	-60 °C~+550 °C	Infrared		1	12:1
TFI 650 Infrared Dual Thermometer	-60 °C~+1,500 °C	Infrared and Thermoelement Type K	SMP	2	50:1

Aurora 1030C TOC Analyzer

Aurora 1030C

The Aurora 1030 TOC Analyzer combines OI Analytical's innovative concurrent sampling technique with ACT II combustion to quickly and accurately process aqueous samples. Direct connectivity of the Aurora eliminates the need for a PC in the laboratory and provides remote instrument control from anywhere on the network. A microprocessor within the Aurora regulates temperatures, controls timing sequences, performs data calculations, and provides continuous system diagnostics. The standard electronic pressure control (EPC) automatically adjusts system pressures from method to method, even within a single sequence.

Features

- Wide operational range, 50 ppb C to 30,000 ppm C
- TC/TIC/TOC/NPOC/standard measurements
- Optional analysis module for total nitrogen (TNb)
- ACT II Dual Pack Advanced Combustion Technology reactor (patent-pending) that meets or exceeds requirements of USEPA, ASTM, and Standard Methods
- Reactor design for enhanced performance, reduced maintenance, and extended reactor and catalyst life
- Totally automated system for aqueous and particulated samples

Operating principle	
High temperature (680 °C) catalytic combustion	
Scale	
100 ppb C~30,000ppm C	
Accuracy · reproducibility	
±2 % FS or 2 % relative, whichever is greater, 3.0 %	
Method compliance	
USEPA, CEN, USP, EUP, ASTM, ISO, DIN, STD Method	
Autosampler	
88 position rotary autosampler designed to fit directly underneath Aurora 1030C analyzer	
Power	
100~240 VAC, 50/60 Hz, 950 W	
Weight & dimensions	
430(W) × 460(D) × 610(H) mm 17.2kg, 36.3kg (Auto-sampler)	

Aurora 1030W TOC Analyzer

Aurora 1030W

The Aurora 1030W TOC Analyzer processes aqueous samples for analysis of the total organic carbon (TOC), total inorganic carbon (TIC), and non-purgeable organic carbon (NPOC) content of the samples. Using heated persulfate oxidation technology, samples containing 2 ppb to 30,000 ppm of organic carbon can be analyzed. The supports Aurora 1030W USEPA-approved methods, Standard Methods, ASTM, DIN/ISO/CEN, USP, and EU Methods. Depending upon the protocol employed, up to 300 samples per 24-hour period can be analyzed, and in excess of 100,000 samples per year.

Applications

OI Analytical has been an innovator in TOC instrumentation since 1972. Hundreds of laboratories and industrial facilities rely on our TOC analyzers for their water quality monitoring applications.

- Drinking Water
- Pharmaceutical Cleaning Validation
- Municipal Wastewater
- Ground Water / Surface Water
- Process Water
- Boiler Feed Water & Condensate
- Metal Plating Solutions
- Ultrapure Water

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
- Upgradable allowing performance of combustion and wet heated per sulfate TOC analysis techniques on a single instrument
- Laboratory and at-line configurations available for process monitoring

Operating principle	
Heated sodium persulfate oxidation	
Scale	
2 ppb C~30,000 ppm C	
Accuracy · reproducibility	
±2 % FS or 2 % relative, whichever is greater, 3.0 %	
Method compliance	
USEPA, CEN, USP, EUP, ASTM, ISO, DIN, STD Method	
Autosampler	
88 position rotary autosampler designed to fit directly underneath Aurora 1030C analyzer	
Power	
100~240 VAC, 50/60 Hz, 950W	
Weight & dimensions	
425(W) × 495(D) × 420(H) mm 15.4kg, 34.5kg (Auto-sampler)	

Method	TW alpha plus
Standard method 5310C	Drinking water, Wastewater
USEPA 415.3	Drinking water
USP / EU 2.2.44	Purified water
ASTM D 4779	Ultra purewater
ASTM D 4839	Wastewater, Seawater
ISO 8245	Drinking water, Wastewater
EN 1484	Surface & Ground Waters, Potable Water

Flow Solution™ FS 3700 FS 3700

Analysis module	
	1~2 Channel
Analysis module dimensions	
	787(W) × 444(D) × 266(H) mm FS 3700 (90 Sample) 112(W) mm FS 3700 (360 Sample) 131(W) mm
Photometric detector	
	420-880 nm, with PEEK path lengths of 5-, 10- or 20-mm
Power	
	110VAC / 60 Hz - 230VAC / 50 Hz
Certifications	
	CE Safety EN 61010-1 EMC Immunity & Emissions EN 61326-1:2006

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 confi gured 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.

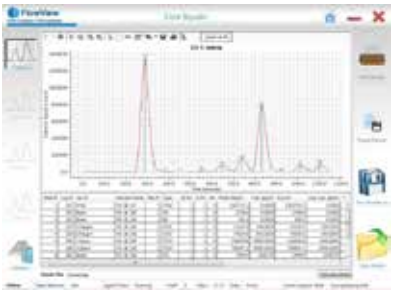
Plug-in Detector Modules

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 FlowView™

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.

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



Hotplate / Stirrer & Accessories

Temperature Controllable Hotplate Stirrer SLR

SI Analytics

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.

Hotplate material	
Glass ceramic	
Temperature sensor connector	
Yes, Pt 1000	
Heater spec	
Power	: 900W
Heated zone	: φ 155 mm
Max temp	: 550 °C
Stirrer spec	
Max. rpm	: 100~1,100 min-1
Setting accuracy	: 10 min-1
Stirring volume	: 10ℓ
Power	
115V,50/60 -230 V, 50/60	
Weight & dimensions	
240(W) × 370(D) × 85(H) mm 3.8 kg	

Ceramic Glass Top Hotplate SLK 12

SI Analytics

SI Analytics hotplates SLK 12 are the optimum solution. The heating power can be adjusted in 9 steps and heats up to 1.7 kW (with extended hotplate step 2 and the 230 V version only).

Features

- The pore-free glass-ceramics surface (easy-to-clean) is highly resistant against chemical influences and temperature fluctuations
- 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

Hotplate material
Glass ceramic
Hot plate area
330 x 300 mm
Heated zone
φ 180 mm
Max Temp
Max 550 °C
Power
AC115V-AC230V
Weight & dimensions
330(W) × 73(D) × 300(H) mm 4.5kg

Labratory Hotplate Strirrer SLH / SLS / SLHS

SI Analytics

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.

Hotplate material
Ceramic coated stainless steel plate
Hot plate area
190 x 190 mm
Stirrer spec
60-1500 rpm
Temp range
5~380 °C
Power
AC115V-AC230V
Weight & dimensions
205(W) × 260(D) × 110(H) mm

Calibrations Solutions, Multiple Water Quality Sensors

SI Analytics

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

Electrolyte for Reference Electrodes Bridges and Storage

Model	Description	Contents
L 101	1 mol/l KCL	1,000 ml DURAN Glass Bottle (Ster)
L 1254	0.6mol/l K_2SO_4	250 ml DURAN Glass Bottle
L 200	Low temperature electrolyte (-30 °C)	1,000 ml DURAN Glass Bottle
L 2004	Low temperature electrolyte (-30 °C)	250 ml DURAN Glass Bottle
L 2114	2 mol/l KNO3 + 0.001 mol/l KCl	250 ml DURAN Glass Bottle
L 2214	2 mol/l KNO3 + 0.001 mol/l KCl	250 ml DURAN Glass Bottle
L 2224	2 mol/l KCL	250 ml DURAN Glass Bottle
L 300	3 mol/l KCL	1,000 ml DURAN Glass Bottle (Ster)
L 3004	3 mol/l KCL	250 ml DURAN Glass Bottle (Ster)
L 3008	3 mol/l KCL	50 ml PE Bottle
L 3014	Potassium chloride solution 3 mol/l,	250 ml DURAN Glass Bottle
L 310	2 mol/l KCL	1,000ml DURAN Glass Bottle
L 3104	Potassium chloride solution 2 mol/l,	250 ml DURAN Glass Bottle
L 320K	Potassium chloride solution 2 mol/l	1,000 ml DURAN Glass Bottle
L 350	3.5 mol/l KCL	1,000 ml DURAN Glass Bottle (Ster)
L 3504	3.5 mol/l KCL	250 ml DURAN Glass Bottle (Ster)
L 420	4.2 mol/l KCL	1,000 ml DURAN Glass Bottle
L 4204	4.2 mol/l KCL	250 ml DURAN Glass Bottle
L 911	Storage electrolyte solution, sterilized	1,000 ml DURAN Glass Bottle
L 9114	Storage electrolyte solution, sterilized	250 ml DURAN Glass Bottle

Solutions for Oxygen Measurements

Model	Description	Contents
L 6708	OX 1100/OX 1100+/OX 1101	50 ml PE Bottle
OX 920	Electrolyte for oxygen electrodes 9009 / 61	50 ml PE Bottle
OX 921	Cleaning solution for oxygen electrodes 9009 / 61	50 ml PE Bottle
OX 060	Zero point solution for oxygen electrodes OX 1100 / OX 1100 +	60 FIOLAX 20ml ampoules

Solutions for Ammonia Measurements

Model	Description	Contents
L 6408	Electrolyte for ammonia combination electrodes	50 ml PE Bottle

Solutions and Accessories for Conductivity Measurements

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

ORP Solutions

Model	ORP Pt/Calomel	Pt/Ag/AgCl	Contents
L 4619	180 mV	220 mV	60 FIOLAX 20 ml Ampoule DIN 38 404-C6
L 4643	430 mV	470 mV	60 FIOLAX 20 ml Ampoule
L 4660	600 mV	640 mV	60 FIOLAX 20 ml Ampoule
L 4648	180, 430, 600 mV	220, 470, 640 mV	3×20 FIOLAX 20ml Ampoule
L 430	430 mV	470 mV	1,000 ml DURAN Glass Bottle
L 4304	430 mV	470 mV	250 ml DURAN Glass Bottle

Electrolyte Solution Organic

Model	Description	Contents
L 5014	LiCl saturated in glacial acetic acid	250 ml DURAN Glass Bottle
L 5034	LiCl 1,5 mol/l in ethanol	250 ml DURAN Glass Bottle

FIOLAX® Ampoule pH Buffer

SI Analytics

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

250mlPE bottles:
pH 4.01, 7.00, 10.01

Bellingham + Stanley®

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

-ebro®

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/Humdity and pressure dataloggers
- Temperature/Humdity and pressure online and handheld

O·I·Analytical

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/Labratory
- Purge and Trap
- Flow solutions

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®

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®

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 qulaiity sensors and instruments

Xylem |'zīləm|

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

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