

Lovibond® Water Testing

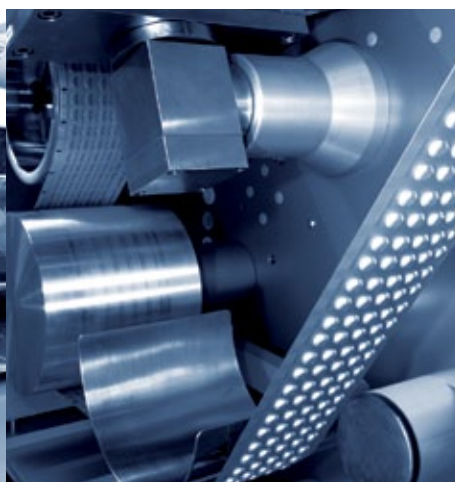
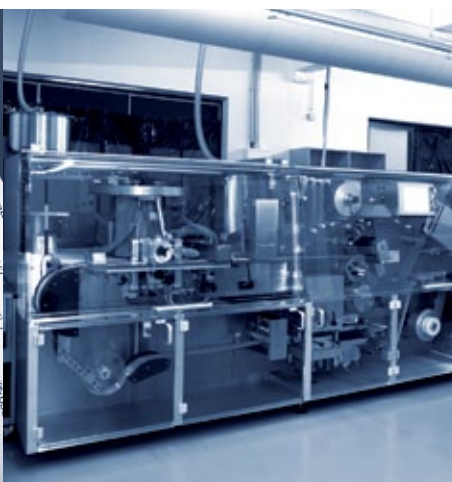
Tintometer® Group



Industrial Water

www.lovibond.com





The Company



The Lovibond® product range is being used to ensure water quality throughout the world.

The company has always specialised in scientific and technological products which make water analysis simple and, most importantly, dependable and reliable.

The trade-name Lovibond® is synonymous with quality, accuracy and reliability. It is known in over 130 countries, where the company offers innovative products for the precise determination of different types of water:

- Drinking water
- Waste water
- Surface and ground water
- Untreated water and effluents
- Cooling water
- Boiler water
- Swimming pools & spas

The product range comprises:

- Electronic instruments providing results in digital format with data storage and computer linkage.
- High quality visual comparators offering precision colour comparison.
- Accurately formulated chemical reagents in either tablet, powder or liquid form.
- Convenient, easy to use microbiological test equipment and media.
- Test parameters ranging from Acidity to Zinc; pH; Temperature; BOD; COD; Turbidity; Biocides; TVC; *E. coli*; and many more.

All products are available stand-alone or as an integrated set, housed in one of the comprehensive Lovibond® engineering kits.

The Lovibond® range presents an accurate and flexible approach to routine water analysis that is simple to use, yet gives reliable results in factories, laboratories and in the field.

Tests use either Lovibond® tablet reagents, with a guaranteed shelf life up to 10 years, VARIO powder reagents or liquid reagents, manufactured to rigorous standards in the Lovibond® factories. As the only reagent producer in the world to offer a complete range of reagent forms, the company is unbiased in its advice of which reagent type best suits the need of the application.

Commitment to quality is fundamental to the company's philosophy. All Lovibond® products are manufactured according to the company's DIN ISO 9001:2008 certification and comply with international standards such as ISO 7393/2 and ISO 15705:2002. All the instruments and chemicals conform to the relevant international safety regulations and EC directives.

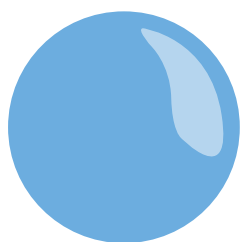
“Water is the basis of life. Water analysis and water purification are fundamental to the quality of life.”

Cay-Peter Voss



Catalogue Navigation

The **Lovibond® Industrial Water Catalogue** has been divided in sections to aid navigation:



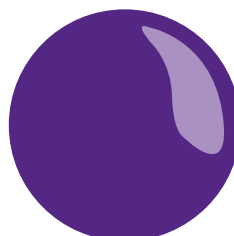
Standard Test Kits or equipment designed for a particular application or purpose



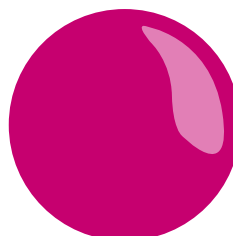
Build Your Own Test Kit:
Customised Test Kits from a selection of the Lovibond® range



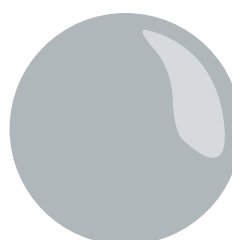
Photometry



Colorimetry



Electrochemistry



Titration

Contents

BUILDING SERVICES

- Cooling Water Kits (open system) Page 8
- Cooling Water Kits (closed system) Page 9
- *Legionella* Compliance Kits Page 10
- Cleaning & Chlorination Kit Page 11
- Boiler Water Kits Page 12
- Refractometers Page 13



PROCESS CONTROL

- Cutting Fluid Kits Page 14
- Laundry Kit Page 15
- Food & Beverage Kits Page 16



WATER CONDITIONING

- Resin Kits Page 18
- Silt Density Index Kit Page 19
- Softener Demonstration Kits Page 20



MICROBIOLOGY

- Dipslide Incubator Page 21
- Dipslides Page 22
- Coliform & *E.coli* Page 23
- Non-Oxidising Biocide Kits Page 24



POTABLE WATER

- Marine Potable Kit Page 25
- Potable Water Kit Page 26
- Turbidity Infra-red Page 27



WASTE WATER

- Turbidity White Light Page 28
- BOD Kit & Cabinets Page 29
- Chemical Oxygen Demand (COD) Equipment Page 32
- Flocculation Jar Testers Page 35



BUILD YOUR OWN TEST KIT

Page 38

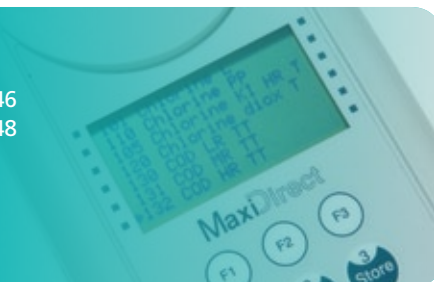


PHOTOMETRY

- MD 100
- MD 600

Page 46

Page 48



COLORIMETRY

- Comparator 2000+
- CHECKIT Comparator

Page 58

Page 62



ELECTROCHEMISTRY

- SD Hand-held Series
- SensoDirect 110 Series
- SensoDirect 150
- SD 300 Series

Page 68

Page 69

Page 71

Page 73



TITRATION

- Burette Titration
- Digital Titration
- Drop Tests
- Test Strips
- Vario Titrator & Photometer Packs

Page 78

Page 79

Page 80

Page 82

Page 83





Lovibond® Standard Test Kits



Cooling Water Test Kits (Open System)

- Monitor parameters quickly, safely and accurately
- Ensures optimum output and efficiency
- Kit 1 for easy, daily analysis
- Enhanced Kit 2 for service engineers

Re-circulating cooling water requires carefully chosen chemical treatments. This helps to minimise microbiological contamination, scaling of critical parts such as heat exchangers and to prevent corrosion.

To be most effective, treatments must be maintained within specific control parameters, as excess inhibitor can have as detrimental an affect as too little.

The Lovibond® range of test kits and equipment for cooling water contain all equipment and test reagents required to optimise treatments and monitor critical control parameters quickly, safely and accurately, ensuring optimum output and efficiency.



56K000301: Cooling Water Test Kit 1:
Ideal for daily checks on critical inhibitor levels.



This kit includes:

Code	Product	Range	Tests/Pack
146280	Bromine CHECKIT® Comparator Disc	0-5mg/l Br ₂	–
511310 BT	DPD 1 Rapid	0-5mg/l Br ₂	100
56R007250	Hardness Yes/No Tablet Count Test	8-20mg/l CaCO ₃	250
194800	SD 50 Hand-held pH meter	pH 0-14.00	-
194802	SD 70 Hand-held conductivity & temperature meter	0-20,000µS, 0-60°C	-

56K000401: Cooling Water Test Kit 2:
For a complete analysis, ideal for service engineers.



This kit includes:

Code	Product	Range	Tests/Pack
56R003790	M Alkalinity Drop Test	50-600mg/l CaCO ₃	100+
146280	Bromine CHECKIT® Comparator Disc	0-5mg/l Br ₂	–
511310 BT	DPD 1 Rapid	0-5mg/l Br ₂	100
56R005090	Chloride Drop Test	20-400mg/l Cl ⁻	100+
56R006290	Hardness (Calcium) Drop Test	5-600mg/l CaCO ₃	100+
56R006690	Hardness (Total) Drop Test	5-600mg/l CaCO ₃	100+
146220	Iron LR CHECKIT® Comparator Disc	0-1mg/l Fe	–
56R020790	Iron LR CHECKIT® Reagent Pack	0-1mg/l Fe	250
56R008350	Phosphonate Drop Test	4-20mg/l HEDP	50
194800	SD 50 Hand-held pH meter	pH 0-14.00	-
194802	SD 70 Hand-held conductivity & temperature meter	0-20,000µS, 0-100°C	-

Cooling Water/LPHW/Chilled Test Kits (Closed System)

- Prevents corrosion and scale
- Accurate inhibitor dosage rates
- Reproducible, accurate results
- Antifreeze/glycol option

Closed water systems are sealed entities, designed to distribute hot or chilled water, often as part of a manufacturing process.

These systems are particularly susceptible to corrosion and scale if not properly treated. Care must be taken when selecting the measurement system/chemistry used as inhibitor dose rates are high making the aqueous environment particularly aggressive. These two closed system test kits have been specifically designed for the application and deliver reproducible and accurate results, even with highly coloured samples.



Two standard test kits are available:

56K000501:

Cooling Water/LPHW/Chilled Test Kit 3:
Ideal for daily checks on nitrite and pH levels.



This kit includes:

Code	Product	Range	Tests/Pack
56R007990	Nitrite Drop Test	10-2000mg/l NaNO_2	100+
56S001190	pH Test Strips	pH 7-14.00	100

56K000601:

Cooling Water/LPHW/Chilled Test Kit 4:
A more complete analysis kit including molybdate, iron & conductivity.



This kit includes:

Code	Product	Range	Tests/Pack
146220	Iron LR CHECKIT® Comparator Disc	0-1mg/l Fe	–
56R020790	Iron LR CHECKIT® Reagent Pack	0-1mg/l Fe	250
56R007590	Molybdate Drop Test	25-400mg/l MoO_4	100+
56R007990	Nitrite Drop Test	10-2000mg/l NaNO_2	100+
194800	SD 50 Hand-held pH meter	pH 0-14.00	-
194802	SD 70 Hand-held conductivity & temperature meter	0-20,000 μS , 0-60°C	-

Antifreeze (Glycol) Measurement:

Add a refractometer to either of the above test kits for quick and easy antifreeze (glycol) determination. Order code **56M000401** (see page 13)



For microbiological testing (dipslides + DI 10 dipslide incubator), see page 21

Legionella Prevention Test Kits

- Conforms to regulatory guidelines
- Weekly and monthly testing
- Chlorine and Bromine options
- Easy-to-use, uncompromised accuracy

Legionella is the causative agent of Legionnaire's disease, a potentially fatal form of pneumonia. Guidelines exist across the world for the control of *Legionella*.

56K000701:
Legionella L8 Test Kit (Weekly)
– Bromine Option

56K000801:
Legionella L8 Test Kit (Weekly)
– Chlorine Option

In 2002, the Health and Safety Executive released guidelines for the control of *Legionella*, known as the L8 guidelines.

These guidelines detail the key parameters that should be tested on a weekly and monthly basis to minimise the risk of *Legionella* proliferating to harmful levels in open water system.

The Lovibond® *Legionella* "L8" Test Kits contain the recommended tests for both weekly and monthly monitoring.



This kit includes:

Code	Product	Range	Tests/Pack
146020 + 517711 BT	Chlorine CHECKIT® Comparator Test	0-4.0mg/l Cl ₂	100
146280 + 511310 BT	Or Bromine CHECKIT® Comparator Test (DPD No.1)	0-5.0mg/l Br ₂	100
56B000310	Dipslides – BT2**	Aerobic Bacteria	10
56S001090	pH Test Strips	pH 4.5-10.0	100
194802	SD 70 Hand-held conductivity & temperature meter	0-20,000µS 0-60°C	-

56K000901:
Legionella L8 Test Kit (Monthly) –
with space to include the DI 10 dipslide incubator



This kit includes:

Code	Product	Range	Tests/Pack
56R003790	M Alkalinity Drop Test	50– 600mg/l CaCO ₃	100+
146280	Bromine CHECKIT® Comparator Disc	0-5mg/l Br ₂	–
511310 BT	DPD 1 Rapid	0-5mg/l Br ₂	100
56R005090	Chloride Drop Test	20-400mg/l Cl ⁻	100+
146020	Chlorine CHECKIT® Comparator Disc	0-4mg/l Cl ₂	–
517711 BT	Chlorine CHECKIT® Reagent Pack	0-4mg/l Cl ₂	100
56B000310	Dipslides – BT2**	Aerobic Bacteria	10
56R006290	Hardness (Calcium) Drop Test	5-600mg/l CaCO ₃	100+
56R006690	Hardness (Total) Drop Test	5-600mg/l CaCO ₃	100+
146220	Iron LR CHECKIT® Comparator Disc	0-1mg/l Fe	–
56R020790	Iron LR CHECKIT® Reagent Pack	0-1mg/l Fe	250
194800	SD 50 Hand-held pH meter	pH 0-14.00	-
194802	SD 70 Hand-held conductivity & temperature meter	0-20,000µS 0-60°C	-

** DI 10 Dipslide incubator (Code 56B000701) is required to perform the aerobic bacteria test, see page 21 for details. The incubator is not supplied as standard in the L8 monthly kit, but can be included if required.



Cleaning/Chlorination Test Kit

- Portable kit for rapid determination
- Control bacterial contamination
- Determine free chlorine levels, assess chemical flow and detect trace levels
- Identify biocide activity

Hot and cold water services require routine cleaning/chlorination in order to maintain effective control of any bacterial contamination, particularly in large buildings with extensive pipe-work. The Cleaning/Chlorination Test Kit is a small portable kit that allows the cleaning engineer to rapidly determine free chlorine levels are correct prior to disinfection, assess the flow through outlets and detect trace levels after the final flush. A pH meter is included to ensure optimum pH and hence biocide activity prior to disinfection.

Code: 56K001001:
Chlorination Test Kit



This kit includes:

Code	Product	Range	Tests/Pack
56R005190	Chlorine (Free) Drop Test	15-300mg/l Cl ₂	100
146020	Chlorine CHECKIT® Comparator Disc	0-4mg/l Cl ₂	100
511310 BT + 511290 BT	DPD 1 and DPD 3	0-4mg/l Cl ₂	100
56S000190	Starch/Iodide Strips – Rapid Test	0-200mg/l Cl ₂	100
194800	SD 50 Hand-Held pH Meter	pH 0-14.00	-

Potassium Iodide Tablets (1g)

1g potassium iodide tablets (pack of 500) are ideal for the rapid detection of chlorine at sentinel outlets during chemical cleaning –

Order code: **56T000197**

Boiler Water Test Kits

- Accurate dosage of corrosion and scale inhibitors
- Drop tests for speed and simplicity
- Kit 1 for daily analysis
- Enhanced Kit 2 for service engineers

Measuring and monitoring treatment levels in boilers and associated conditioning plant is essential to maintaining output efficiency and longevity of plant. The Lovibond® range of test equipment enables personnel to ensure treatments such as corrosion and scale inhibitors are correctly dosed.

Lovibond® test kits contain all equipment and test reagents for every-day boiler water testing, optimising treatments and monitoring critical control parameters.



Two standard test kits are available:

56K000101: Boiler Water Test Kit 1:
Ideal for daily checks on critical inhibitor levels.



This kit includes:

Code	Product	Range	Tests/Pack
56R003990	P+OH Alkalinity Drop Test	0 – 2400 mg/l CaCO ₃	100+
56R004990	Chloride Drop Test	20-12,000mg/l Cl ⁻	100+
56R006690	Hardness (Total) Drop Test	5-60mg/l CaCO ₃	100+
56R009190	Sulphite Drop Test	25-150mg/l Na ₂ SO ₃	100+
56S001190	pH Test Strips	pH 7.0 – 14.0	100

56K000201: Boiler Water Test Kit 2:
For a complete analysis, ideal for service engineers.

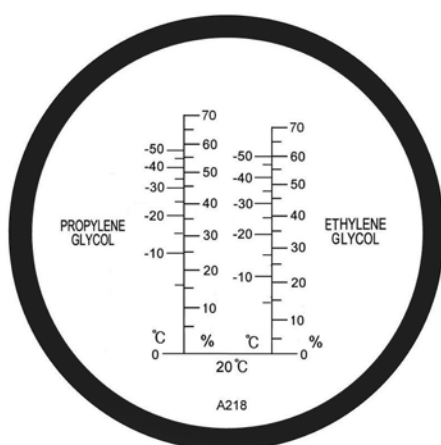


This kit includes:

Code	Product	Range	Tests/Pack
56R003990	P+OH Alkalinity Drop Test	0 – 2400mg/l CaCO ₃	100+
56R004990	Chloride Drop Test	20-12,000mg/l Cl ⁻	100+
56R006690	Hardness Total Drop Test	5-60mg/l CaCO ₃	100+
146250	Phosphate HR CHECKIT® Comparator Disc	0-80mg/l PO ₄ ³⁻	–
511980	Phosphate CHECKIT® Reagent Pack	0-80mg/l PO ₄ ³⁻	100
56R009190	Sulphite Drop Test	0-150mg/l Na ₂ SO ₃	100+
194800	SD 50 Hand-Held pH Meter	pH 0-14.00	-
194802	SD 70 Hand-Held Conductivity & Temperature Meter	0-20,000µS, 0-60°C	-

Refractometers

- Brix and Glycol
- Convenient, fast, accurate
- No mess, instant results
- Automatic temperature compensation
 - No need to measure temperature
 - No need for compensation
- Direct readings of freeze points and concentration (Ethylene Glycol and Propylene Glycol)



Brix

The Lovibond® Brix RHB series of refractometers was developed for working with sugar related liquids (fruit juices, soft drinks, wine) to help monitor and control sugar concentrations in foods and beverages.

They provide critical information to ensure product quality and are commonly used for controlling the concentration of various industrial fluids, cutting lubricants and flux rinsing compounds.

The kit includes a pipette for dropping test fluids onto the prism and a User's Guide.

Glycol

The Lovibond® Glycol Refractometer offers a convenient, fast and accurate way to assess the glycol concentration of engine coolants and other anti-freeze solutions.

This easy-to-use optical instrument provides a no-mess, instant result that is impossible to achieve using traditional hydrometer based methods. Automatic temperature compensation provides immediate, accurate and direct readings without the need to measure temperature or apply a correction factor.

The refractometer scale provides direct readings of freeze points and concentration of Ethylene Glycol and Propylene Glycol.



Ordering Information	
56M000101	0 – 10% Brix Refractometer
56M000201	0 – 18% Brix Refractometer
56M000301	0 – 32% Brix Refractometer

Ordering Information	
56M000401	Case containing: Glycol Refractometer: Sampling Pipette: Instructions

Cutting Fluid Test Kit

- Ensures compliance to regional Health and Safety at Work Procedures
- Optimises cutting fluid performance
- Safely controls microbiological contamination
- Optimised for accurate trend analysis

Cutting fluids are required in metal machining to improve tool life, reduce work piece thermal deformation, enhance surface finish and to flush chips from the cutting zone. These fluids degrade with time due to bacterial growth and contamination with tramp oil.

Testing is essential since health risks exist for lathe operators by both fluid contact (dermatitis) and breathing of the mist/vapour (asthma, extrinsic allergic alveolitis and other breathing problems).

Biocidal additives improve the life of the fluid and reduce the hazard to health. On-going monitoring, inspection and maintenance are required in the UK as part of an employer's obligation under Section 2 of the Health and Safety at Work Act 1974. Similar work related mandates are in force across Europe.

Lovibond® test kits measure the key parameters necessary to optimise cutting fluid performance and enable enumeration and safe control of microbiological contamination. The basic kit is supplied with tests for cutting fluid concentration (refractometer), pH, water hardness, Nitrite/Nitrate and dipslides for monitoring microbiological activity. A deluxe version, incorporating the DI 10 dipslide incubator is also available. A uniform incubation temperature for dipslides allows accurate microbiological trend analysis month on month.



Ordering Information:

56K021401: Basic Cutting Fluid Test Kit

56K021501: Deluxe Cutting Fluid Test Kit (Includes DI 10 Dipslide Incubator)



56R021401: Cutting Fluid Spares Pack: Contains dipslides, hardness test strips, nitrite/nitrate test strips and pH 7 buffer:

Code	Product	Range	Tests/Pack
194800	SD 50 Hand-held pH meter	pH 0-14.00	-
56B000410	Dipslides Combi/RBS	Aerobic/Yeast & Fungi	10
56S000950	Hardness Test Strips	0-500mg/l CaCO_3	50
56S001890	Nitrite/Nitrate Test Strips	10-500mg/l NO_3^- ; 1-80mg/l NO_2^-	100
56M000201	Brix Refractometer	0-18% BRIX	-



DI 10 Dipslide Incubator

Order Code: **56B000701**

For details on the DI 10 dipslide incubator supplied in the deluxe test kit, see page 21



Laundry Test Kit

- Tests chemical additives throughout the wash cycle
- Portable kit for on-site testing
- Easy to use with visual, comparative readings
- Reduces chemical additive needs and costs

A range of test equipment is available for the commercial laundry engineer to enable quick and efficient testing of key chemical additives throughout the wash cycle.

The multi-parameter Lovibond® test kit contains a specific range of tests for the quantification of commercial laundry cleaning products.

A pH meter is also included to enable fast and accurate pH measurement, irrespective of water quality.

56K002501: Laundry Test Kit



This kit includes:

Code	Product	Range	Tests/Pack
194800	SD 50 Hand-held pH Meter	pH 0-14.00	-
56R008190	pH Sour Test (Colour Card)	pH 4-10	100+
56R004190	Alkalinity Total (Wash)	0.25-6.0% NaOH	100+
56R004390	Alkalinity Free (Rinse)	250-6000mg/l NaOH	100+
56R005690	Chlorine Bleach Drop Test Chlorine Bleach (Concentrate)	0.25-15% Cl ₂ 100-2400mg/l Cl ₂	100+ 100+
56K005301	Chlorine Spot Test (Fabric)	Trace	100+
56R006890	Hardness Drop Test	10-300mg/l CaCO ₃	100+
56S000850	Hydrogen Peroxide Test Strips	0-100mg/l H ₂ O ₂	50
56R007490	Iron Spot Test (Fabric)	Trace	100+
56R008090	Oxygen (Available) Drop Test	0-500mg/l O ₂	100+
56S000301	Starch/Iodide Test strip (for chlorine testing)	Presence/Absence	3m reel
56A004401	Pocket Thermometer (Spirit)	5-105°C	-

Food & Beverage Test Kits

- Determination of cleaning or treatment chemicals
- Process machinery and surface sanitisation
- Easy-to-use kits for on-site testing
- Obtain results in just seconds
- Enable historical record keeping and compliance

Dairy producers, food processors and commercial sanitizers all require test equipment for the determination of cleaning or treatment chemicals. Whether it is for the on-going operation of process machinery or for surface sanitisation, the Lovibond® range of test kits provide a quick and easy way to obtain accurate product concentration in seconds.



Individual test kits are available based on simple titration chemistries. Step-by-step instructions guide the user to the final result. Many speciality chemical manufacturers use this range as the basis of a full testing program for their products. Kits are passed through to customers for continued on-site testing/record keeping and compliance.



Alkalinity Hi / Low Test Kit

For caustic and carbonate determinations on gels, foams, conveyor lubricants and caustic CIP and bottle washing products. This versatile test kit is ideal for measuring a wide range of caustic products.



Disinfection (QAC / Cationic) Test Kit & Anionic Test Kit

For the determination of cationic/anionic disinfectants such as QAC's/lauryl sulphate used in the sanitisation of process areas and machinery.



Oxidising Biocides Test Kit

For measuring a wide range of oxidising biocides, including available chlorine, iodine, peracetic acid and hydrogen peroxide. This kit can be used to ensure correct application of terminal disinfectants used extensively throughout the food and beverage industry.



Acidity Test Kit

Acid based cleaners are used extensively in cleaning, for the removal of dirt, deposits and scale. This test kit can be calibrated to measure a wide range of acid based commercial cleaners.



Food & Beverage Test Kits

EDTA / Total Chelant Test Kit

Chelating agents such as EDTA are excellent anti-foam and scale suppression additives, used extensively in commercial formulations.

Warewashing Test Kit

For the determination of key elements in setting up commercial dishwasher systems. Hardness, detergent, starch and caustic tests are included.



Ordering Information:

Code	Product	Range	Tests/Pack
56K002801	Acid Products Drop Test Kit		200+
56R002890	Acid Products Reagent Pack	0.01 – 5.0% H ₂ SO ₄	200+
56K002901	Alkalinity Hi / Low Drop Test Kit		100+
56R002990	Alkalinity Hi/Low Reagent Pack	0.025-6.0% NaOH	100+
56K003001	Anionic Drop Test Kit		100+
56R003090	Anionic Reagent Pack	0-1200mg/l SLS (Sodium Lauryl Sulphate)	100+
56K003101	Disinfection (QAC/Cationic) Drop Test Kit		100+
56R003190	Disinfection (QAC/Cationic) Reagent Pack	60-1800mg/l CTAB (Cetyltrimethylammonium Bromide)	100+
56K003201	EDTA/Total Chelant Drop Test Kit		200+
56R003294	EDTA Reagent Pack and Total Chelant Reagent Pack	100-2000mg/l EDTA 100-2000mg/l EDTA	100+ 100+
56K003301	Oxidising Biocides Drop Test Kit		300+
56R003396	Oxidising Biocides Reagent Pack Contains: Chlorine (Br ₂ + I ₂) Reagent Pack Hydrogen Peroxide Reagent Pack Peracetic Acid Reagent Pack	0-6.0% Cl ₂ 0-75mg/l I ₂ 15-5000mg/l H ₂ O ₂ 15-500mg/l CH ₃ CO ₃ H	100+ 100+ 100+
56K003401	Warewashing (Dishwasher) Drop Test Kit		300+
56R003496	Warewashing Reagent Pack Contains: Hardness Reagent Pack Alkalinity (Detergent) Reagent Pack Starch Detection Reagent Pack	0-300mg/l CaCO ₃ 10-300mg/l CaCO ₃ Trace	100+ 100+ 100+

Resin Test Kits (Softener/Water Conditioning)

- Detects resin damaging iron (ferric) and colloidal organic matter
- Portable solutions for in-situ testing
- Increased efficiency, reduced operational costs
- Optional resin conversion kit

A set of Lovibond® test kits to monitor the condition of ion exchange resin in industrial demineralisation and domestic/industrial water softening plant. Iron fouling, organic fouling and physical bead damage are the three main causes of decreased exchange capacity. Poor condition resin beds promote the growth of micro-organisms and increase possibilities of scale formation, ultimately impacting on efficiency and operational costs.

Test kits are supplied in small, portable carry cases and contain sufficient reagents for between 25 and 100 tests.



56K002001: Resin Fouling Test Kit
For the detection of resin damaging iron (ferric) and colloidal organic matter.



Reagent Ordering Information:

56R002090	Resin Fouling Reagent Pack	Tests/Pack
	Hydrochloric Acid	25
	Alkaline Brine Reagent	25
	Ammonium Thiocyanate Reagent	100
	Ferric Iron Test	100

56K002101: Resin Capacity Test Kit
Measurement of total ion exchange capacity of new resin (H⁺, OH⁻ and Cl⁻) and the operational regeneration capacity of in service resin (H⁺ and OH⁻)



Reagent Ordering Information:

56R002190	Resin Capacity Reagent Pack	Tests/Pack
	Acidity Titration Test	100
	Chloride Test	100
	KN Reagent	100
	Sodium Bicarbonate	100
	Chlorine Titrant Cartridge	100

56K002201: Resin Conversion Test Kit
A complete test kit for the full conversion of 5ml portions of strongly cationic or anionic resin so that resin capacity can be determined using **The Resin Capacity Test Kit**.



Reagent Ordering Information:

56R002290	Resin Conversion Pack	Tests/Pack
	Conversion Acid	25
	Hydrochloric Acid	25
	Ammonia Reagent	25
	Sodium Chloride	25

Hardness Checker (Trade only)

Single or three reagent checkers for softener breakthrough.

MOQ: 1000pcs. Branding available
56K002398 (single)
56K002498 (3 reagent)



Silt Density Index (SDI) Test Kit

- SDI calculations in just 15 minutes
- Ideally suited for reverse osmosis plants
- Enables calculation of membrane fouling time, backwash frequency and membrane lifespan

The Silt Density Index (SDI) is a measure of the solids or particulate content of water and is of specific importance when commissioning reverse osmosis plant. The SDI of the feedwater is required to calculate membrane fouling time, backwash frequency and, ultimately, membrane lifespan. The Lovibond® test kit gives the RO engineer instant SDI values, increasing the speed and effectiveness of the installation.

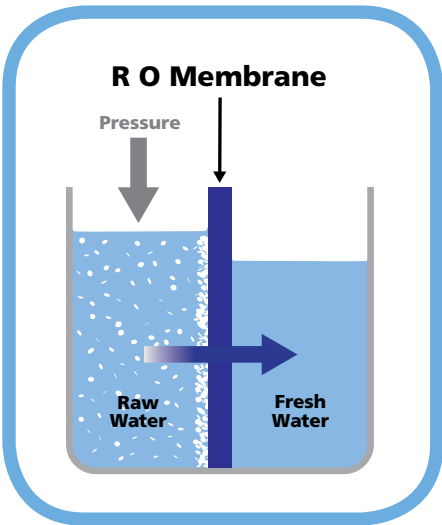
The kit utilises a membrane/flow meter system to enable SDI calculations in just 15 minutes. Sufficient membranes included for 100 tests.

56K001901:
Silt Density Index (SDI) Test Kit



This kit includes:

Code	Product	Tests/Pack
56A007690	0.45µ Filter Circles – 47mm	100
56A007201	On/Off Valve	-
56A007301	Pressure Regulator	-
56A007401	Pressure Gauge	-
56A007501	High Pressure Hose – 1m	-
56A007701	Filter Holder – 47mm	-



Softener Demonstration Test Kits

- Compares physical and chemical attributes
- Compares softened water to raw water
- Shows water softening process
- Standard and deluxe kits available

Designed for demonstration purposes, this test kit contains a range of tests to show the physical and chemical attributes of softened water compared to raw mains water. A mini-softener unit is included to show the water softening process.

The standard kit is supplied with the following tests:

- Hardness level (as calcium carbonate)
- Calcium precipitation test
- Soap test

The deluxe kit is supplied in a larger, robust case, with additional tests for chlorine, nitrite, nitrate and total hardness. The case is specially designed to take a document pack (A4 size – lever arch).



56K021601: Standard Softener Demonstration Test Kit.



Reagent Ordering Information:

56R021601	Product	Tests/Pack
	Standard Demo Softener Reagent Pack	
	Hardness Test Pack (Single Reagent)	100
	Soap Test Pack	50
	Calcium Precipitation Test Pack	50

56K021701: Deluxe Softener Demonstration Test Kit.



Reagent Ordering Information:

56R021701	Product	Tests/Pack
	Deluxe Demo Softener Reagent Pack	
	Hardness Test Pack (3 Reagent)	100
	Soap Test Pack	50
	Calcium Precipitation Test Pack	50
	Nitrite/Nitrate Strips	100
	Chlorine CHECKIT® Comparator Test	100

Microbiology – DI 10 Dipslide Incubator

- Robust design
- Holds up to 12 dipslides or 10 quanti-discs
- Excellent temperature stability
- In-car operation
- Programmable incubation period setting

The Lovibond® DI 10 Incubator is designed for the reliable incubation of bacteriological slides, on-site, in a laboratory or even while mobile in a car or van.

National and European guidelines give practical advice on how to monitor, clean, test and ultimately control harmful legionella bacteria in water systems.

Dipslides provide a crucial part in the testing program, but must be used correctly and regularly as part of a planned regime, week on week to be of any meaningful value.

The incubation period and the incubation temperature should be the same each time the test is performed so that bacteria growth is controlled and consistent each time the test is performed. This allows for week by week comparisons to be made and high counts easier to identify. Dipslides are usually incubated at 30°C for 48 hours, but this can vary depending upon the specific application.

The Lovibond® DI 10 Incubator, when used in conjunction with dipslides, enables effective microbiological monitoring of cooling water in accordance with the many European guidelines. The DI 10 Incubator is also part of the Lovibond® Marine Test Kit for the monitoring of other potable water contaminants, such as *pseudomonas*, *streptococci coliforms* & *E.coli*, see page 25 for more information.



- Low Voltage (12V)
- Wide temperature range – Ambient +5 to 40°C (± 0.5°C)
- Uniform temperature (fan assisted)
- LCD Temperature display with up/down push button control.
- Rapid heating times for fast testing
- External status LEDs
- Universal (100 – 240V) via external power supply
- Includes in-car (12V) power adaptor



56B000701:

DI 10 Dipslide Indicator

Technical Specifications	
Dimensions:	(w)246 x (d)215 x (h)162 mm
Weight:	1.7Kg
Operating Voltage:	12V
Input Voltage:	12V/110V/240V (via external power supply)
Display:	1 x 16 bit Backlit LCD
Capacity:	12 dipslides/10 quanti-discs

Accessories:

Code	Description
56B000801	Dipslide holder
56B000901	Quanti-disc holder



Microbiology – Dipslides

- Determine aerobic and anaerobic bacteria levels
- Early indication of bacteria proliferation
- Results in 48 hours
- Inexpensive
- Easy-to-Use
- Excellent for trend analysis

Guidelines to advise on the correct practices to control *legionella* bacteria in water systems exist worldwide. Suppressing bacteria levels does substantially reduce the possibility of an outbreak of this often fatal disease. Guidelines recommend introducing a monitoring and control program. This program includes the testing of cooling tower waters with dipslides on a regular basis.

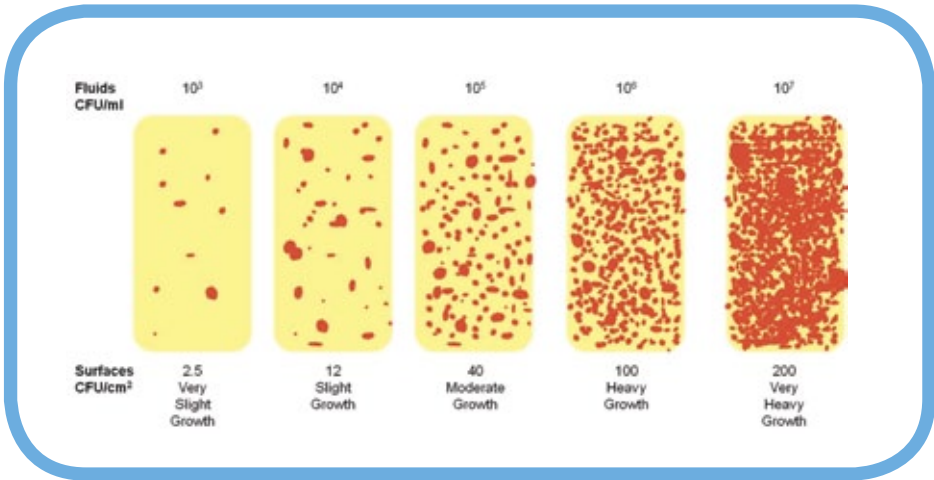


A full range of dipslides is available for semi-quantitative determination of aerobic and anaerobic bacteria populations in industrial and recreational waters. Dipslide accuracy is limited due to the small sample size, but if used correctly and incubated at a constant temperature using the Lovibond® dipslide incubator, they are excellent for trend analysis and can give an early indication of bacteria proliferation.

Dipslides are supplied in a cardboard carton containing 10 slides.

Dipslides have a working shelf life of 6-9 months.

Results are quantified by comparison to a standard density chart



Code	Dipslide	Application
56B000110	Sulphate Reducing	Sulphate reducing bacteria
56B000210	Denitrifying Bacteria	Nitrite Reducing bacteria
56B000310	TTC/BT2	Aerobic bacteria
56B000410	COMBI/RBS	Aerobic bacteria and yeast/fungi (Rose Bengal for yeast/fungi)
56B002610	TP/PT	Aerobic bacterial/ <i>Pseudomonas</i>

23

Non-Oxidising Biocide Kits

- Control microbiological activity
- Measure biocide levels in minutes
- Designed for use by non-technical personnel
- Ensure environmental bleed concentrations are met

Non-oxidising biocides are used across industry to control microbiological activity in a wide range of water systems, often in rotation with oxidising biocides. Biocidal performance is concentration dependant, so it is essential to monitor the activity levels closely in any system to ensure microbiological control.

The Lovibond® non-oxidising biocide test kits are based on novel colorimetric or titrimetric procedures and are designed for use by non-technical persons as a site-based aid. Accurate biocide levels can be measured in minutes to ensure continued system control.

There is also a developing sensitivity to non-oxidising biocide pollution of waterways from industrial waste, particularly from cooling tower bleed. The Lovibond® non-oxidising biocide test kits provide a simple solution to ensure bleed concentrations are in line with environmental consents.



Ordering Information:

Code	Product	Range	Tests/Pack
56K001101	Bronopol Kit (2-bromo-2-nitropropane-1,3-diol)	0-50mg/l	50
56R001150	Bronopol Reagent Pack		50
56K001201	DBNPA Kit (2,2-dibromo-3-nitrilopropionamide)	5-20mg/l	50
56R001250	DBNPA Reagent Pack		50
56K001401	Isothiazoline Kit	0-7.5mg/l	50
56R001450	Isothiazoline Reagent Pack		50
56K001501	MBTC Kit (methylene bis (thiocyanate))	0-5mg/l	50
56R001550	MBTC Reagent Pack		50
56K001601	THPS Kit (tetrakis(hydroxymethyl) phosphonium sulphate)	0-100mg/l	50
56R001650	THPS Reagent Pack		50
56K001701	QUATS/Polyquat/Amine Kit (Lonza Biocides) (Disposable single use kit)	0-320mg/l Bardac 22 0-80mg/l Barquat PQ 0-160mg/l Lonzabac 12.100	100+
56K001801	Bardac 22 Test Kit (Lonza Biocides) (Disposable single use kit)	0-15mg/l	50

Marine Potable Water Kit

- MLC (2006) and ILO178 compliant
- Implements WHO Guide to Ship Sanitation (3rd Edition) recommendations
- Tests potable water supplies on board ship
- Monitors all identified risk points
- Room temperature stable (no refrigeration necessary)
- Simple step-by-step instructions
- Accurate testing in demanding environments

The Maritime Labour Convention (MLC 2006) entered into force in August 2013. Combined with ILO178 and the World Health Organisation Guide to Ship Sanitation (3rd Edition) document, this means a more robust "Water Safety Plan" approach to potable water supplies, distribution and monitoring is in place for the marine industry.

56K002701:

Marine Potable Water Test Kit



This plan includes the identification of potential contamination points, implementation of control measures and regular monitoring.

The Lovibond® Potable Water Test Kit has been developed to provide the ship's engineer with sufficient tools to carry out the required routine testing on all identified risk points.

The kit contains all equipment and reagents, with replacements readily available. Simple step-by-step instructions lead the operator to achieve accurate measurements even in the most demanding environments.

The test equipment and reagents are supplied in a strong, lockable, aluminium storage box. The kit is non-hazardous for transportation.



Reference Material

International Health Regulations, 2005
Maritime Labour Convention (MLC 2006)
ILO178 (2009)
World Health Organisation Guide to Ship Sanitation (3rd Edition)

Health Protection Agency 2003 Guidelines For Water Quality On Board Merchant Ships Including Passenger Vessels

This kit includes:

Code	Product	Range	Tests/Pack
56B008301	Aerobic Bacteria Pack (Plates)	0-2000 CFU/ml	40
56B001825	Microbial Detection Pack – includes <i>P. Aeruginosa</i> test sachets <i>Enterococci</i> test sachets Coliforms/ <i>E.coli</i> test sachets Thio Bags (with Thiosulphate) UV lamp (for <i>E.coli</i> test)	Detects 1 CFU per 100ml Detects 1 CFU per 100ml Detects 1 CFU per 100ml	20 20 25 75 –
56B000701	DI 10 Incubator (bacteria tests)	-	-
146010 + 511310 BT + 511290 BT	Chlorine CHECKIT® Comparator Test	0-1mg/l Cl ₂	100
146020 + 511310 BT + 511290 BT	Chlorine CHECKIT® Comparator Test	0-4.0mg/l Cl ₂	100
146030 + 517721 BT	Chlorine CHECKIT® Comparator Test	10-300mg/l Cl ₂	100
146130 + 515440	pH CHECKIT® Comparator Test	4 – 10 pH	100
56M000801	Digital Thermometer (surface/immersion)	-200 to +600°C	–

Water storage tanks:

1-2mg/l total available chlorine

Potable water outlets:

>0.2mg/l free chlorine

System super-chlorination:

>50mg/l free chlorine

Water network:

<1000 CFU/ml Aerobic bacteria (trend analysis)

Bunkering & water network:

Zero CFU/100ml coliforms/*e.coli*

Zero CFU/100ml *enterococci*

Zero CFU/100ml *pseudomonas (P. Aeruginosa)*

56B006101: Legionella Early Warning Indicative Test

5 tests/kit

For a rapid indication of the presence of *Legionella pneumophila* serogroup 1, the most commonly recorded cause of Legionnaires Disease. This 25 minute test enables routine screening of industrial and potable water systems for the presence of Legionella, inbetween (and not replacing) mandatory laboratory culture tests.



Potable (Water Check) Test Kit

- Enables compliance to WHO guidelines
- Integrated kit to test all required parameters
- Easy-to-follow testing process: no training required
- Suitable for use in rural communities without access to laboratories

In many areas of the third world, drinking water quality cannot be relied upon. It is vital to be able to screen water sources for potability to prevent the spread of water borne infection. The World Health Organisation publishes guidelines for drinking water quality. A section of a summary table included as part of these guidelines is given (below) for the maximum tolerable concentration for both chemical and microbiological contaminants. The Lovibond® potable water check test kit enables an effective screen of water supplies for these key indicators of faecal and agricultural contamination to help in the assessment of general quality and potability.

The tests are simple to use and no operator training is required. However, it is important that the operator carries out all tests in a precise and competent manner, with due consideration for cleanliness at all times. Tests have been carefully chosen so that they can be used in the more rural global locations, where access to laboratory facilities is limited.



Code: 56K002601:

Potable (Water Check) Test Kit



Summary Level

1. Arsenic Limit	0.01 mg/l (10 µg/l)
2. E.coli Limit	0 CFU per 100ml
3. Hardness Ideal	Less than 500 mg/l
4. Nitrate Limit	50 mg/l
5. Nitrite Limit	3 mg/l
6. pH Ideal Range	6.5 to 9.5 pH
7. TDS Ideal	Less than 1500 mg/l

This kit includes:

Code	Product	Range	Tests/Pack
56S002105	Arsenic Colour Card Test	0-100ug/l	5
56B002125	Coliform/E.coli test set - includes	Detects 1 CFU/100ml	25
	56B001425: Coliforms/E.coli test sachets		25
	56B001525: Thio Bags (with Thiosulphate)		25
56B001601	UV lamp (battery operated)	E.coli determination	—
56S000950	Hardness Test Strips	0-500mg/l as CaCO ₃	50
56S001090	pH Test Strips	pH 4.5-10	100
56S001890	Nitrite/Nitrate Test Strips	0-500mg/l NO ₃ ⁻ : 1-80mg/l NO ₂ ⁻	100
56M000501	Total Dissolved Solids (TDS) Meter	0-5,000mg/l TDS	-

TURBIDITY MEASUREMENT

TurbiCheck with Infra-red Light Source (EN ISO 7027)

- Fast, precise, on-site testing
- Range 0.01 – 1100 NTU
- Coloured and colourless liquids
- EN ISO 7027 compliant
- ≥ 600 tests per battery life

The compact Lovibond® infrared turbidity meter TurbiCheck is designed to allow fast, precise on-site testing. The unit measures the scattered light at an angle of 90°, as stipulated in EN ISO 7027.

The wide measuring range from 0.01-1100 TE/F = NTU = FNU makes the instrument suitable for various applications, ranging from drinking water to waste water.

As infrared light is used for measurement purposes, the unit can be used to test both coloured and colourless liquids.

The standards required for calibration of the unit are also supplied. A second adjustment mode allows alternative adjustment with user-defined turbidity standards.



Technical Data	
Measurement cycle	Approx. 8 seconds
Display	Backlit LCD (on keypress)
Optics	Temperature compensated LED ($\lambda = 860 \text{ nm}$) and photosensor amplifier in water proof sample chamber, infrared light
Keypad	Polycarbonate membrane, splash proof
Power supply	9 V power pack battery
Auto - OFF	Automatic switch-off
Storage	Internal ring memory for 16 data sets
Additional feature	Real time clock and date
Range (Auto-range)	0.01 - 1100 NTU
Resolution	0.01 - 9.99 NTU = 0.01 NTU, 10.0 - 99.9 NTU = 0.1 NTU, 100 - 1100 NTU = 1 NTU
Accuracy	$\pm 2,5 \%$ of reading or $\pm 0.01 \text{ NTU}$ (0 - 500 NTU), $\pm 5 \%$ (500 - 1100 NTU)
Housing	ABS
Dimensions (L x W x H)	190 x 110 x 55 mm
Weight (base unit)	Approx. 0.4 kg
Ambient conditions	Temperature: 5 – 40 °C rel. humidity: 30 – 90%
EC-Conformity	CE

Delivery Content

- Instrument in case
- 4 turbidity standards (<0.1, 20, 200 and 800 NTU)
- 9 V battery
- 3 vials ($\varnothing 24 \text{ mm}$) with lids
- Guarantee sheet
- Certificate of Compliance
- Instruction Manual

Order code: 266020

Accessories:

Code	Description
194150	Turbidity standard set T-CAL (<0.1, 20, 200, 800 NTU)
197655	Set of 12 empty sample vials, $\varnothing 24 \text{ mm}$
418951	Vial stand for 6 round vials $\varnothing 24 \text{ mm}$, acrylic glass
197635	Cleaning cloth for vials

TurbiCheck WL with White Light Source (EPA Standard 180.1)

- "White Light" source
- EPA turbidity measurement (standard 180.1)
- Auto-Ranging feature
- Easy-to-use, 5 button operation
- Regulatory monitoring, process control & field use

The TurbiCheck WL allows easy turbidity measurement in either the field or in the laboratory. Using a "white light" source and 90° detection, the TurbiCheck WL meets the specifications for EPA turbidity measurement (EPA Standard 180.1). A power efficient micro-circuit design allows the instrument to yield 5000 tests on alkaline batteries with an estimated 7-10 year bulb life. Integrated diagnostics confirm proper operation and accuracy. The instrument provides an Auto-Ranging feature that automatically selects the correct turbidity range for the sample. Calibration is simple with the included calibration standards. The instrument comes with all required items for testing including the TurbiCheck WL Turbidimeter, sample cuvettes, batteries, calibration set, operators manual and carrying case.



Technical Data	
Display	Large LCD display
Keypad	5 key polycarbonate membrane, splash proof
Power supply	4 AA Alkaline batteries for approx. 20hr continuous operation or up to 3500 tests
Range	0.01 to 1100 NTU
Accuracy	± 2% of value or 0.01 NTU (0-500 NTU) ± 3% of value (500-1100 NTU)
Resolution	0.01 NTU to 99.99 NTU, 0.1 NTU from 100.0 to 999.9 NTU 1.0 NTU from 1000 to 1100 NTU
Housing	ABS
Dimensions (L x W x H)	210 x 95 x 45 mm
Weight (base unit)	approx. 0.45 kg (base unit)
Ambient conditions	Temperature: 0 – 50 °C rel. humidity: 0 – 90%
EC-Conformity	CE

Delivery Content
The TurbiCheck WL comes ready to use in a case with following accessories:
2 sample vials, 3 turbidity standards, 4 batteries, instruction manual and guarantee sheet
Order code: 194200

Accessories:

Code	Description
194280	Set of secondary standards 0.02, 10, 1000 NTU
194290	Set of 3 vials with black lids
197635	Cleaning cloth for vials
418951	Vial stand for 6 round vials 24 mm ø, acrylic glass

Biochemical Oxygen Demand (BOD) – OxiDirect

- Manometric analysis of BOD for accurate, direct display of measurements
- Direct sample selection
- Measuring range 0 – 4000mg/l
- Selectable measuring period: 1 – 28 days
- Inductive stirring system
- Mercury free, environmentally friendly

BOD – Biochemical Oxygen Demand – is an expression for the quantity of oxygen required for biological degradation of organic matter in a waste water sample. BOD measurement is therefore used as a basis for the detection of biologically degradable organic matter in water. The difference between BOD and Chemical Oxygen Demand (COD) is that COD additionally registers biologically non-degradable organic matter.

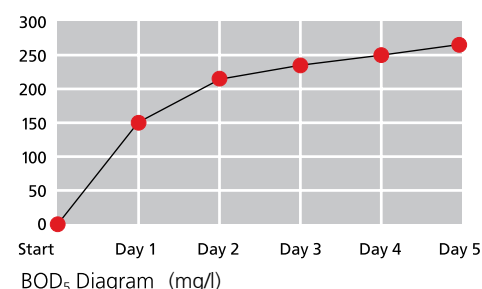
BOD measurement is therefore an important measurement of the effects of domestic and industrial waste water on sewage plants and outflow points.



BOD Range	Sample Volume
0-40mg/l	428ml
0-80mg/l	360ml
0-200mg/l	244ml
0-400mg/l	157ml
0-800mg/l	94ml
0-2000mg/l	56ml
0-4000mg/l	21.7ml

The unit is easy to use and set up using scrolling menus on the LCD display. Results can be monitored throughout the incubation period to ensure accurate analysis. With a selectable automatic start function, variations in sample temperature prior to testing can be eliminated, as the unit will begin the analysis period only when the temperature is constant. Such variations would normally cause errors during manometric measurement.

An inductive stirring unit is also supplied to provide constant mixing of the sample over the analysis period.



The Lovibond® OxiDirect is a Manometric, respirometric BOD measurement system. Manometric respirometers relate oxygen uptake to the change in pressure caused by oxygen consumption while maintaining a constant volume. Thanks to the modern integral pressure sensors, it is no longer necessary to use mercury for pressure measurements.

The unit is a 6 sample system that allows precise measurements of BOD from 1 to 28 days. Data is stored in the individual sensor heads, so it is possible to remove and reposition the bottles without losing vital data. By using different volumes of sample, the OxiDirect is capable of measuring from 0 to 4000mg/l without the need to dilute the sample. Overflow measuring flasks are supplied with the unit, and a full range of flasks are available. BOD CM Tablets, which can be used to verify the validity of results, can also be supplied.

Day	Display
1 Day	150mg/l
2 Day	220mg/l
3 Day	240mg/l
4 Day	250mg/l
5 Day	260mg/l



Thermostatically Controlled Incubators
(see page 31 for details)

Biochemical Oxygen Demand (BOD) – OxiDirect

2444406: OxiDirect BOD
Sensor Suite – 6 place

2444410: OxiDirect BOD
Sensor Suite – 12 place



Ordering Information:

Code	Product	Contents
2444406	Lovibond® OxiDirect, complete unit with 6 sensor heads and control unit with batteries	Complete Unit Inductive stirring unit with power supply 6 sample bottles 6 rubber gaskets 6 magnetic stirring rods 1 overflow flask, 157ml 1 overflow flask, 428ml 1 bottle, 50 ml potassium hydroxide solution 1 bottle, 50 ml nitrification inhibitor solution 1 instruction manual
2444410	Lovibond® OxiDirect, complete unit with 12 sensor heads and control unit with batteries	As above with 12 sample bottles, 12 rubber gaskets and 12 magnetic stirring rods

Accessories:

Code	Product
2444430	Sensor head
418644	BOD sample bottle Brown glass, 500ml
418645	BOD sample bottles Brown glass, 500ml, set of 6 bottles
2444440	Cable for connection to a PC serial 9-pins
2444452	Inductive stirring system for 6 samples, 100-240 V / 50-60 Hz
418637	Stirring rod
418638	Stirring rod remover
418636	Rubber gasket
	Chemicals:
2418634	Potassium hydroxide solution 45%, 50ml
2418642	Nitrification inhibitor (N-ATH) 50ml

Code	Product
418664	Overflow flask, 21.7ml
418655	Overflow flask, 56ml
418656	Overflow flask, 94ml
418657	Overflow flask, 157ml
418658	Overflow flask, 244ml
418659	Overflow flask, 360ml
418660	Overflow flask, 428ml
418654	Complete set Overflow flasks
418328	Test set, BOD CM test tablets, box with 8 tablets

Biochemical Oxygen Demand (BOD) – Thermostatic Cabinets

- 2°C to 40°C
- Adjustable in steps of 0.1°C
- 20°C BOD determination
- 4°C Storage of waste water samples
- 25°C Enzyme activity (TTC test)
- 37°C Colony count
- Backlit Display
- CE approval

The Lovibond® range of incubators are designed for incubation from 2 to 40°C and can be used for a variety of applications including dairies, laboratories or microbiology. Convenient internal power sockets allow stirring units or other electrical equipment to be monitored without opening the door or compromising the temperature.

The digital temperature control unit is adjustable to 0.1°C and has a backlit display for ease of use.

The ET618-4 and ET619-4 can accommodate 3 x Lovibond® OxiDirect BOD units.

A complete range of 8 Lovibond® Thermostatic Cabinets is available to hold up to 12 standard COD systems. For further details, visit www.lovibond.com



Ordering Information:

Code	Product	Contents
2428200	ET 618-4 type 180 – Metal Door	Temperature range: 2°C to 40°C 3 metal racks + 1 bottom grid + 4 sockets Consumption: 1.35 kWh / 24h* I. D. (approx.): 700 H x 515 D x 430 W mm Net capacity: approx. 135 l O. D. (approx.): 850 H x 600 D x 600 W mm with work top 820 H x 600 D x 600 W mm without work top Suitable for built under applications Weight: approx. 39.0 kg
2428210	ET 619-4 type 180 – Glass Door	Temperature range: 2°C to 40°C 3 metal racks + 1 bottom grid + 4 sockets Consumption: 1.77 kWh / 24h** I. D. (approx.): 700 H x 515 D x 443 W mm Net capacity: approx. 140 l O. D. (approx.): 885 H x 600 D x 600 W mm Weight: approx. 50.0 kg

* Ambient temperature 25°C – Target temperature 20°C.

** Ambient temperature 25°C – Target temperature 20°C with interior light switched on (15W).

Temperature Control Unit

The temperature control unit fulfils the EMC requirements according to IEC 61326: Electrical equipment for measurement, control and laboratory use.

Chemical Oxygen Demand (COD) Determination

- Maximum operating reliability and convenience
- Simple button layout
- Robust waterproof design
- Large backlit display
- Small scale, sealed tube
- 3 Ranges:
 - 0-150mg/l (ISO 15705:2002)
 - 0-1500mg/l (ISO 15705:2002)
 - 0-15000mg/l

It is vital that industrial effluents comply with regulatory consents imposed by local water authorities/environment agencies. Discharge maximums are often set for COD and TOC as these are general measurements of discharge water quality. Other consent levels can be set for the process of specific items such as chromium, phosphate and nitrogen. Heavy fines are possible for continued breaches of consent values. The Lovibond® COD system is simple to operate, requires no training and enables industry to rapidly assess effluent quality and remain fully compliant.

COD Chemistry: The Lovibond® sealed tube system is based upon the standard dichromate method and can be considered as an estimate of the theoretical oxygen demand, i.e. the amount of oxygen consumed in total chemical oxidation of the organic constituents present in the water.

276130:

MD 100 COD System (VARIO):

A complete COD system using the dedicated MD 100 COD instrument for photometer determination following digestion.



MD 100 COD System (VARIO):

This kit includes:

Code	Product	Range	Qty
276120	MD 100 COD Photometer	All Range	1
2418940	RD 125 Thermoreactor	100°C, 120°C, 150°C	1
2420720	COD VARIO Tube Tests	0-150mg/l*	1 x 25
2420721	COD VARIO Tube Tests	0-1500mg/l*	1 x 25

*Accurate to $\pm 3.5\%$



Chemical Oxygen Demand (COD) Determination

214040:

MD 600 COD System (VARIO):

A complete COD measurement system using the MD 600 photometer. Additional testing for metals can be incorporated. See the full suite of MD 600 tests available on page 50.



MD 600 COD System (VARIO):

This kit includes:



Code	Product	Range	Qty
214020	MD 600 COD Photometer	Multi Range	1
2418940	RD 125 Thermoreactor	100-150°C	1
2420720	COD VARIO Tube Tests	0-150mg/l*	1 x 25
2420721	COD VARIO Tube Tests	0-1500mg/l*	1 x 25

COD Tube Tests and Reagent Consumables

All Lovibond® VARIO tube tests comprise 16mm diameter tubes and are suitable for use on Lovibond® and HACH® photometers.*

Ordering Information:

Code	Product	Range	Qty
2420710	COD VARIO Tube Tests – Mercury Free	0-150mg/l*	25
2420720	COD VARIO Tube Tests*	0-150mg/l*	25
2420725	COD VARIO Tube Tests*	0-150mg/l*	150
2420711	COD VARIO Tube Tests – Mercury Free	0-1500mg/l*	25
2420716	COD VARIO Tube Tests – Mercury Free	0-1500mg/l*	150
2420721	COD VARIO Tube Tests*	0-1500mg/l*	25
2420726	COD VARIO Tube Tests*	0-1500mg/l*	150
2420712	COD VARIO Tube Tests – Mercury Free	0-15000mg/l*	25
2420722	COD VARIO Tube Tests**	0-15000mg/l*	25
2420727	COD VARIO Tube Tests**	0-15000mg/l*	150
2420803	COD Standard Solution	100mg/l COD	30ml
2420804	COD Standard Solution	500mg/l COD	30ml
2420805	COD Standard Solution	5000mg/l COD	10ml

* Suppression of chloride interference up to 1000mg/l

** Suppression of chloride interference up to 10000mg/l

+ Accurate to ± 3.5%

* HACH® is a registered trademark of Hach Corporation, Loveland, USA. The use of the HACH® trademark does not imply any affiliation with or approval by Hach Company regarding the formulation, testing or suitability of these products for use in HACH® branded spectrophotometers or other systems.

Chemical Oxygen Demand (COD) Determination

Order Code: 2418940

Thermoreactor RD 125

- Tube test digestion of
COD (150°C)
TOC (120°C)
Total Chromium (100°C)
Total Nitrogen (100°C)
Total Phosphate (100°C)
- Three pre-set reaction times (30/60/120 mins)
- 24 vial wells for 16mm diameter vials

A compact digestion unit for tube test analysis on wastewater and effluents. The RD 125 reactor is fitted with 24 x 16mm vial wells for use with the Lovibond® range of tube tests.

Chemical digestion of samples is required for the photometric determination of COD, TOC, total phosphate and total nitrogen. The required temperatures and reaction time can be selected by using the membrane keypad. The unit works at three different temperatures (100 / 120 / 150°C) and three pre-set reaction times 30 / 60 / 120 minutes). When digestion is complete, the reactor automatically switches off and gives a corresponding LED indication with short beep alarm. Suitable to use at 230 V and 115 V.



Technical Data RD 125	
Power supply	230 V / 50-60 Hz or 115 V / 50-60 Hz (user selectable)
Power	550 W
Dimensions	248 x 219 x 171 mm
Weight	3.9 kg
Materials, housing Protection grid Lid Block insert Heating block	ABS PPS PC PBT Aluminium
Vial wells in the aluminium block	24 vial wells, 16.2 mm ± 0.2 mm
Selectable temp.	100 / 120 / 150 °C
Probe type	Pt100 A class

Technical Data RD 125	
Temperature stability	± 1 °C at the Pt100
Selected time	30 / 60 / 120 / min. and continuous operation (∞)
Heating up	from 20°C to 150°C in 12 min.
Regulation	Microprocessor
Protection against overheating	at the alu block at 190 °C
Beeper	max. 88 dB (Piezo Summer)
Environmental conditions	10 – 40 °C max. 85 % rel. humidity
EC-Conformity	CE

Flocculation Equipment (Jar Testers)

- Maximum convenience: minimum maintenance
- Continuously variable stirring speeds
- Four or six stirring places – laboratory use
- Four compact stirring places
- Portable, in-situ use
- Height adjustment during operation

Jar testers are designed for a range of applications – such as testing the efficiency of flocculation or precipitation agents. The ET 740 model with 4 stirring places and the ET 750 model with 6 stirring places are fitted with an illuminated back panel for glare-free observation of the samples and are suitable for laboratory use. The jar tester ET 730 with 4 stirring places is primarily designed for field use.

The 4 stirring points are arranged in a circle around a lamp making it easier to observe the flocculation process. State-of-the-art technology ensures maximum operating convenience and makes the unit maintenance-free. The main features of the laboratory jar testers are the continuously variable stirring speed, the digital display of stirring rpm, the timer function, the illuminated back panel, and the height adjustment option for the stirring blades during operation.

ET 730 requires 1000ml beakers of low form (not included).

ET 740 and **ET 750** require 1500 ml beakers of low or high form (not included).



Ordering Information:

2419155: ET 740

Technical data ET 740 (laboratory)	
Stirring places	Four
Stirring speed control	10 - 300 revolutions per minute
Resolution	1 revolution
Timer	1 - 999 minutes or 0 - 99 hours (continuous)
Power supply	100 – 240 V 50 - 60 Hz
Weight	approx. 13 kg
Dimensions (mm)	645 L x 347 W x 260 H
EC-conformity	CE

2419160: ET 750

Technical data ET 750 (laboratory)	
Stirring places	Six
Stirring speed control	10 - 300 revolutions per minute
Resolution	1 revolution
Timer	1 - 999 minutes or 0 - 99 hours (continuous)
Power supply	100 – 240 V 50 - 60 Hz
Weight	approx. 17 kg
Dimensions (mm)	935 L x 347 W x 260 H
EC-conformity	CE

2419150: ET 730

Technical data ET 730 (portable/field)	
Stirring places	Four
Stirring speed control	20 - 40 - 50 - 100 - 120 revolutions per minute
Timer	1 - 30 minutes (continuous)
Power supply	100 – 240 V 50 - 60 Hz
Weight	approx. 4.8 kg
Dimensions (mm)	250 L x 320 W x 250 H
EC-conformity	CE



Accessories

Code	Description
419165	Measuring Beaker, glass, low form, 1000ml – (Minimum order quantity 10 units)
419166	Measuring Beaker, plastic, low form, 1000ml – (Minimum order quantity 6 units)





Lovibond® Build your own Test Kits

BUILD YOUR OWN

Building your own Test Kit

Lovibond® test kits can be constructed according to specific requirements by using this “Build Your Own” section of the catalogue.

Use the guide/log sheet below to compile all required part numbers for a quotation.

A: STEP 1

For Colorimetric: Reagent packs should be chosen from **one** of the three sections below.
(Remember to include the comparator disc code when choosing from the CHECKIT® or Comparator 2000+ range)

MD 600 Photometer
Select tests from Page 50

Comparator 2000+
Select tests from Page 59

CHECKIT® Comparator
Select tests from Page 63

Add test pack/
disc part N° in
these columns

Hardware

- 214020 :** MD 600 and accessories.
142020: Lovibond® Comparator 2000+ and 2 x 10ml plastic cells.
145560: CHECKIT® Comparator and 2 x 10ml plastic cells.
56A003901: Digital Titrator + and 8 x complete syringette assemblies

Part Number		Yes/No (one)
Hardware: 214020		Yes/No
Hardware: 142020		Yes/No
Hardware: 145560		Yes/No
Parameter	Disc Number	Reagent pack

A: STEP 2

For Titration: Reagent packs should be chosen from **one** of the sections below.

Digital Titration
Select tests from Page 79

Drop Test Titration
Select tests from Page 80

Add test packs

Titration		Yes/No
Hardware: 56A003901		
Parameter	Reagent pack	

A: STEP 3

For Electrochemistry: Select any two instruments from the four sections below.

SD Range
Select from Page 68:
194800 or
194801 or
194802 or
194803

Senso 110
Select from Page 69:
721300 or
722300

Senso 150
Select from Page 71:
724200 or
724210 or
724220 or
724230

SD 300 Series
Select from Page 73:
724611 or
724710

Electrochemistry (maximum 2 meters)	

A: STEP 4

Add additional equipment from either of the following **two** sections.

Refractometer
See page 13 for details

Test Strips
Select from the table on page 82

Additional Items	

B: STEP 5

Select a case from the listings on Pages 39 – 42. Insert the code N° here
(All codes are now on one sheet to obtain a quotation).

Case Code	Equipment Pack
	56A004001
	(required for all portable labs)

Step 5: Select a Case

Test packs and equipment chosen in Section A can be housed in one of two types of case.

Plastic Moulded Portable Laboratory

Plastic Moulded Cases

- Durable and lightweight
- Highly portable
- Include standard foams
- Basic equipment added
- Modular
- Ideal for end-users and service chemists



BUILD YOUR OWN

Aluminium Frame for strength and durability
Elastic straps and clips to hold equipment



Portable Laboratories

Designed for the water treatment professional, these well proven cases are an excellent option for constructing bespoke portable laboratories that feature colorimetric, titration and electro-chemical equipment. Fast becoming an industry standard for the water treatment engineer.

NEW DESIGN FEATURES INCLUDED

- Industry proven hard shell case
- Universal backboard to hold Instrumentation in place
- Storage boxes for tablets & sachets (EQ pack)
- New wide neck 250ml sample bottles (EQ pack)
- 125ml wide neck pH buffer bottles (EQ pack)
- Additional feet for extra stability
- Side document wallet



Standard equipment (EQ) packs comprise a range of basic equipment needed to perform Lovibond® tests. Ensure this pack is included in your portable laboratory.

Equipment (EQ) Pack Part: 56A004001

250ml wide neck sample containers x 4
Titration vessels x 4
20ml, 10ml, 5ml, 2ml, 1ml sampling syringes x 1 each
Stirring/crushing rods x 4
0.45µ and GF/C filtration equipment x 1
25mm filter holder x 1
30ml graduated containers x 2
Plastic storage boxes x 10
150ml conical flask
10ml dilution tubes & wash bottle x 1
125ml pH buffers 4, 7 & 10 + 1413µS standard x 1

Plastic Case Style Options

For small, compact test kits based on comparator and drop test packs, select from the 1001 or 1501 styles below. Possible contents are listed for each format below. If your chosen equipment will not fit into either format, select a larger case.



Lovibond® Medium Grey Case + Foam
(39.5 x 29.5 x 10.6cm), Example configuration

1001 Case Style

Case code: 56A001201

Supplied with foam insert, 20ml syringe, titration jar and crushing rod.

Holds 2 x drop test reagent packs, 2 x SD handheld meters & 2 x CHECKIT® comparator tests.

Case code: 56A001301

Supplied with foam insert, 20ml syringe, titration jar and crushing rod.

Holds 2 x drop test reagent packs, 1 x SD handheld meter & 2 x CHECKIT® comparator tests and pH test strips.



Lovibond® Large Grey Case + Foam
(45 x 36 x 10.6cm), Example configuration

1501 Case Style

Two formats are available:

Comparator 2000+

Case code: 56A001701

Supplied with crushing rod, titration jar and 20ml syringe.

CHECKIT® Comparator

Case code: 56A001801

Supplied with crushing rod, titration jar and 20ml syringe.

Both 1501 formats above have space to add a combination of 8-10 tests from the comparator and drop test reagent pack ranges. 2 SD Handheld meters, a glycol refractometer and 4 test strip packs can be included to complete the kit.

Transfer the relevant Case Code number to page 38

Portable Laboratory Case Options

For professional industry proven test kits, choose from the following four case options.

1. 2001 Book Opening Case

A book opening case with drop down work surface, universal equipment board and external document wallet.



Lovibond® Book Opening Case

(57 x 44 x 22cm)
(57 x 44 x 27cm including document wallet)
Example configuration

Case Code: 56A002201

Additional space to include:

MD 600 (8 reagent packs)

OR

Comparator 2000+ (8 reagent packs)

OR

CHECKIT® Comparator (8 reagent packs)

Plus the following:

Electrochemistry (2 instruments)

Drop Test (8 reagent packs)

OR

Titration (7 reagent packs)

Refractometer

Test Strips

2. 2501 Conventional Opening Case

A conventional opening case with side work station, universal equipment board (lid) and external document wallet.



Lovibond® Conventional Opening Case

(50 x 40 x 22cm)
(50 x 40 x 27cm including document wallet)
Example configuration

All options hold:

Titration/Drop Test (7 reagent packs)

Electrochemistry (2 instruments)

Refractometer & test strips

Choose from the following 3 formats:

Case Code: 56A002601

Additional cut-outs to hold:

MD 600 (8 reagent packs)

OR

Case Code: 56A002701

Additional cut-outs to hold:

Comparator 2000+ (8 reagent packs)

OR

Case Code: 56A002801

Additional cut-outs to hold:

CHECKIT® Comparator (8 reagent packs)

Transfer the relevant Case Code number to page38

Portable Laboratory Case Options

3. 3001 City Case

A smaller conventional opening case designed for city travel. Compact, light weight and with removable wheels. Fitted with side work station, universal equipment board (lid) and external document wallet.



Lovibond® City Case
(45 x 40 x 25cm)
(45 x 40 x 30cm including document wallet)
Example configuration

All options hold:

Titration/Drop Test	(5 reagent packs)
Electrochemistry	(2 instruments)
Refractometer & test strips	

Choose from the following 3 formats:

Case code: 56A003101

Additional cut-outs to hold:

MD 600	(5 reagent packs)
---------------	-------------------

OR

Case code: 56A003201

Additional cut-outs to hold:

Comparator 2000+	(5 reagent packs)
-------------------------	-------------------

OR

Case code: 56A003301

Additional cut-outs to hold:

CHECKIT® Comparator	(5 reagent packs)
----------------------------	-------------------

4. 3501 Dual Compartment Case

A full size engineer's case with separate compartments for electronics and chemicals. Fitted with drop down work station.



Lovibond® Dual Compartment Case
(47 x 34 x 30cm)
Example configuration

All options hold:

Titration/Drop Test	(8 test packs)
MD 600	(8 test packs)

OR

Comparator 2000+	(8 test packs)
-------------------------	----------------

OR

CHECKIT® Comparator	(8 test packs)
Refractometer & test strips	

Choose from the following 3 formats:

Case code: 56A003601

Additional cut-outs to hold:

SensoDirect 110	(2 instruments)
SD Hand-Held Meter	(2 instruments)

Case code: 56A003701

Additional cut-out to hold:

SensoDirect 150	(1 instrument)
------------------------	----------------

Case code: 56A022801

Additional cut-out to hold:

SD 300 Series	(2 instruments)
----------------------	-----------------

Transfer the relevant Case Code number to page 38





Lovibond® Photometry Instruments

PHOTOMETRY



MD 100 Photometer

- Ergonomic, compact, waterproof design for portable testing
- Easy-to-use without compromising accuracy
- Storage and download function for historic reporting
- Tablet, Powder or Liquid Reagents

A highly accurate single/multi-parameter photometer ideally suited to field use, the MD 100's waterproof, lightweight and compact design makes remote testing simple and easy to perform.

The Lovibond® MD 100 uses high quality interference filters with long-life LEDs as a light source without any moving parts. The units provide accurate, reproducible results very quickly. Tests are conducted using either Lovibond® tablet reagents with long-term stability and a guaranteed minimum 5 or 10 year shelf life, VARIO powder reagents or liquid reagents.

The internal memory for storage of up to 16 data sets is enhanced by the optional infrared data transfer module for easy and fast download of results. This unit is supplied with data logging software with additional data manipulation tools to allow the data to be saved as a spreadsheet or text file.

See pages 50-53 for test kits, test ranges and reagent pack options.



MD 100 Technical Data	
Optics	LEDs, interference filters (IF) and photo sensors in transparent sample chamber. Depending on the version, up to 3 different interference filters are used. Wavelength specifications of interference filters: 430 nm $\Delta \lambda = 5$ nm 530 nm $\Delta \lambda = 5$ nm 560 nm $\Delta \lambda = 5$ nm 580 nm $\Delta \lambda = 5$ nm 610 nm $\Delta \lambda = 6$ nm 660 nm $\Delta \lambda = 5$ nm
Wavelength Accuracy	± 1 nm
Photometric Accuracy⁴	3% FS (T = 20°C – 25°C)
Photometric Resolution	0.01 A
Power Supply	4 batteries (AAA), capacity approx. 17 hours or 5000 tests

MD 100 Technical Data	
Auto - OFF	automatic switch-off
Display	backlit LCD (on keypress)
Storage	internal ring memory for 16 data sets
Interfaces	infrared interface for test data transfer
Additional feature	real time clock and date
Calibration	factory calibration and user calibration. Reset to factory calibration possible
Dimensions	155 x 75 x 35 mm (L x W x H)
Weight	basic unit approx. 260g
Environmental conditions	Temperature: 5 – 40°C rel. humidity: 30 – 90%(non condensing)
EC-Conformity	CE

For notes and abbreviations, see page 54

Manufacturers Test Certificate M

Besides the "Certificate of Compliance" which is supplied with the MD 100, manufacturers test certificates M are available at cost on request. Manufacturers test certificates M are individually supplied per instrument and per method. These certificates have to be ordered together with the new instrument and cannot be delivered at a later stage.

N.I.S.T. Traceability

The instrument has a factory calibration, which is related to international standards which are not N.I.S.T. traceable. The instrument may be calibrated by the user in a "user calibration mode" with N.I.S.T. traceable standards. (N.I.S.T. = National Institute of Standards and Technology)

Accessories:

Code	Item	Description
197620	Set of 12 round vials with cap	Height 48 mm, Ø 24 mm
197665	Set of 10 round vials with cap	Height 90 mm, Ø 16 mm
19802190	Adapter for round vials ø 16 mm	
197600	Set of 12 plastic vials (PC), with lid	"Multi"-Type 2, Ø 10 mm
197635	Cleaning cloth for vials	
364100	Plastic stirring rod, 13 cm length	
364109	Plastic stirring rod, 10 cm length	
1950026	4 batteries (AAA)	
214050	Infra-red data transfer module IRiM	
215670	Verification Standard Kit	

Reference Standard Kit for MD 100

The reference standards are designed to check the accuracy and the reliability of the results. It is not possible to calibrate the photometer with the reference standards.

The shelf life of reference standards is two years from the date of production, provided that storage and use are in accordance with the instructions provided.

Membrane filter set

For use when preparing samples for photometric measurements
Content: 25 x 0.45 µm membrane filters and two 20 ml syringes

Order code: 36 61 50

Advantages

- removes turbid materials from samples
- differentiates between dissolved and total substances
- 0.45 µm mesh meets the requirements of the official German unitary procedure for water testing

To prevent the effects of light scatter, it must be ensured that all turbid materials are removed from the sample before photometric measurements are carried out. This can be achieved with the Lovibond® membrane filter set. Where certain methods are employed (e.g., Iron, Manganese, CSB, etc.), a membrane filter set must be used to differentiate samples in terms of dissolved and total substances. The filter mesh size of 0.45 µm is in accordance with the official German unitary procedure for water testing.

Accessories:

Code	Item	Range
275650	Kit Chlorine for instruments with tablet / liquid reagent	0.2* and 1.0* mg/l
275655	Kit Chlorine for instruments with tablet / liquid reagent	0.5* and 2.0* mg/l
275656	Kit Chlorine for instruments with tablet / liquid reagent	1.0* and 4.0* mg/l
275660	Kit Chlorine for instruments with powder reagent (VARIO)	0.2* and 1.0* mg/l
275670	Kit pH for instruments with tablet / liquid reagent	7.45* pH

* Approximate figure, actual figure specified in Certificate of Analysis.

For notes and abbreviations, see page 54

MD 600 Photometer:

- High End Photometer for laboratory or field analysis
- 1 photometer: > 120 Methods
- Automatic wavelength selection
- Uses Tablet, Liquids, Powders or Vials
- Storage of up to 1000 data sets
- Data logging capabilities

The MD 600 is a fully portable 6 LED, multi-parameter photometer. With the ability to store up to 1000 data sets in its internal memory system*, the MD 600 is a completely functional integrated unit designed for the outdoor professional for on-site visits. It is waterproof, easy to handle and contains more than 120 programmed methods.

The modern design of the MD 600 succeeds in combining the mobility of a portable photometer with the characteristics of a modern laboratory photometer. This unit covers all the important parameters of water analysis, from aluminium to zinc. The high level of accuracy of Lovibond® reagents and the user-friendly nature of the instrument guarantee rapid and reliable analysis. Depending on the application, the unit will operate with tablet reagents, powder packs, liquid reagents or tube tests (16 / 13 mm).

* The MD 600 can also be used with the optional infrared data transfer module which is supplied complete with data logging software, providing additional data manipulation tools and allowing the data to be saved as a spreadsheet or text file.



MD 600 Technical Data	
Display	Graphic-display
Interfaces	Infrared interface for test data transfer ¹ , RJ45 socket for Internet updates ²
Optics	LEDs, interference filters (IF) and photo sensor in transparent sample chamber. Wavelength range: 430 nm IF $\Delta \lambda = 5 \text{ nm}$ 530 nm IF $\Delta \lambda = 5 \text{ nm}$ 560 nm IF $\Delta \lambda = 5 \text{ nm}$ 580 nm IF $\Delta \lambda = 5 \text{ nm}$ 610 nm IF $\Delta \lambda = 6 \text{ nm}$ 660 nm IF $\Delta \lambda = 5 \text{ nm}$ IF = interference filter
Wavelength Accuracy	$\pm 1 \text{ nm}$
Photometric Accuracy	2% FS (T = 20°C – 25°C)
Photometric Resolution	0.005 A

MD 600 Technical Data	
Operation	Acid and solvent resistant, touch-sensitive keypad with audible feedback via integrated beeper
Power Supply	4 batteries (Mignon AA/LR6); Operation time: approx. 26 h continuous operation or 3500 tests
Auto-Off	approx. 20 minutes after last keypress with audible signal
Dimensions	approx. 210 x 95 x 45 mm (unit) approx. 395 x 295 x 106 mm (case)
Weight (unit)	approx. 450g
Ambient Conditions	5–40°C at max. 30–90% rel. Humidity (non condensing)
Language Selection	German, English, French, Spanish, Italian, Portuguese, Polish, Indonesian; additional languages via Internet update
Memory Capacity	approx. 1000 data sets
EC-Conformity	CE

1 Option available: IriM (Infrared Interface Module)

2 Option available: Connection cable with integrated electronics (RS232 / RJ-45 plug)

For notes and abbreviations, see page 54

Code	Details
214020	MD 600 Standard Pack - Instrument in carrying case - 4 batteries - 3 Round vials each 24 and 16 mm ø - 1 adapter each for 16 mm and 13 mm vials - Plastic stirring rod 13 cm, brush 11 cm, screwdriver - Guarantee sheet - Certificate of Compliance - Instruction Manual - No reagents supplied (Choose the reagent packs required from the table on pages 50-53)

Accessories:

Code	Item
197620	Set of 12 round vials with cap Height 48 mm, Ø 24 mm
197665	Set of 10 round vials with cap Height 90 mm, Ø 16 mm
19802190	Adapter for round vials ø 16 mm
19802192	Adapter for round vials ø 13 mm
197626	Sealing ring for vial ø 24 mm (12 pc.)
197635	Cleaning cloth for vials
471007	Plastic funnel with handle
364100	Plastic stirring rod, 13 cm length
380230	Cleaning brush, 10 cm
214030	Cable for update for connection to a PC
215640	Verification Standard Kit: The Verification standard kit for the MD 600 is designed to reassure the user about the accuracy and the reliability of the results. The shelf life of the Verification standard kit is two years from the date of production, provided that storage and use are in accordance with the instructions provided.
214050	Infra-red data transmission module IRiM : The IRiM is delivered ready for use, with the following accessories: USB cable, 4 batteries, screwdriver, CD-ROM, operating instructions and guarantee certificate



See the Portable Labs (Build Your Own) section on page 38 to combine the MD 600 with other Instrumentation in a larger test kit case.

Membrane filter set

For use when preparing samples for photometric measurements
 Content: 25 x 0.45 µm membrane filters and two 20ml syringes

Order code: 36 61 50

See Page 47 for further details.

For notes and abbreviations, see page 54

MD 100 and MD 600

Ordering Information

Test Pack

Reagent packs are common to the MD 100 and MD 600. Select from the Reagent Pack column in the table below. Reagent pack codes should be used to "Build Your Own Test Kit", see page 38.

Check out the Portable Labs (Build Your Own Test Kit) section on page 38 to combine the MD 600 with other Instrumentation.

MD100 Kit

MD 100 single parameter test kits are available where an order code exists in the MD 100 Kit column on the table below. The MD 100 Kit is supplied in a plastic case with cells, reagents and instruction booklet.



Test	Range	Wavelength	Method	Reagent Pack	Tests/Pack	MD 100 Kit
Alkalinity-M HR	5-500mg/l	610	Acid/Indicator ^{1, 2}	513240 BT	100	
Alkalinity-M	5-200mg/l	610	Acid/Indicator ^{1, 2, 5}	513210 BT	100	+++
Alkalinity-P	5-300mg/l	560	Acid/Indicator ^{1, 2, 5}	513200 BT	100	
Aluminium VARIO	0.01-0.25mg/l	530	VARIO Eriochrome cyanine R ²	535000	100	
Aluminium	0.01-0.3mg/l	530	Eriochrome cyanine R ²	517601 BT	100	
Ammonia	0.02-1mg/l	610	Indophenol blue ^{2, 3}	517611 BT	100	276060
Ammonia VARIO	0.01-0.8mg/l	660	VARIO Salicylate ²	535500	100	276065
Ammonia VARIO LR**	0.02-2.5mg/l	660	VARIO Salicylate ²	535600	100	
Ammonia VARIO HR	1-50mg/l	660	VARIO Salicylate ²	535650	100	
Ammonia, free VARIO (Part of method monochloramine)	0.01-0.5mg/l	660	Indophenol	535800	100	276070
Boron	0.1-2mg/l	430	Azomethine ³	517681	100	
Bromine	0.05-13mg/l	530	DPD	517900	100	+++
Chloride	0.5-25mg/l	530	Silver nitrate/turbidity	517741 BT	100	
Chloride	0.5-20mg/l	430	Mercuric Thiocyanate/Ferric Nitrate	56R018490	65	
Chlorine ^{a)}	0.02-6mg/l	530	DPD ¹	517711 BT	100	276000
Chlorine HR DPD ^{a)}	0.1-10mg/l		DPD ^{1, 2}	517791 BT	100	+++
Chlorine ^{a)}	0.02-4mg/l	530	DPD ^{1, 2} (Liquid Reagent Set)	471056	100	
Chlorine VARIO ^{a)}	0.02-2mg/l	530	VARIO DPD ^{1, 2}	537700	100	276025
Chlorine HR (KI)**	5-200mg/l	530	KI/Acid ⁵	517721 BT	100	+++
Chlorine dioxide	0.05-11mg/l	530	DPD/Glycine ^{1, 2}	517731 BT	100	276030
Chlorine dioxide VARIO	0.02-3.8mg/l		VARIO DPD ^{1, 2}	530100	100	276035

For notes and abbreviations, see page 54

Test	Range	Wavelength	Method	Reagent Pack	Tests/ Pack	MD 100 Kit
COD LR**^(b) ISO 15705:2002^(b)	0-150mg/l	430	Dichromate / H ₂ SO ₄ ^{1, 2}	2420720 2420710 (Hg free)	25 25	276120
COD MR** ISO 15705:2002^(b)	0-1500mg/l	610	Dichromate / H ₂ SO ₄ ^{1, 2}	2420721 2420711 (Hg free)	25 25	276120
COD HR**^(b)	0-15000mg/l	610	Dichromate / H ₂ SO ₄ ^{1, 2}	2420722 2420712 (Hg free)	25 25	276120
Copper^{a)}	0.05-5mg/l	560	Biquinoline ⁴	517691 BT	100	276080
Copper, free VARIO	0.05-5mg/l	560	VARIO Bicinchoninate	530300	100	276085
Copper, free + total	0-4mg/l	560	Bicinchoninate	56R023355	75	
Cyanide	0.01-0.5mg/l	580	Pyridine-barbituric acid ¹	2418875	200	
Cyanuric acid	0-160mg/l ¹⁾	530	Melamine	511370 BT	100	+++
DEHA	20-500µg/l	560	PPST ³	536000	100	
DEHA VARIO	20-500µg/l	560	VARIO PPST ³	536000	100	
Fluoride	0.05-2mg/l	580	SPADNS	467481	125	56K021301
Hardness, calcium	50-900mg/l	560	Murexide ⁴	515650	100	
Hardness, calcium	0-500mg/l	560	Murexid ⁴	517761 BT	100	+++
Hardness, total	2-50mg/l	560	Metallphthalein ³	515660 BT	100	
Hazen (Pt-Co-units; APHA)	0-500mg/l	430	Direct reading ^{1, 2}	No reagents required		
Hydrazine	0.05-0.5mg/l	430	Dimethylaminobenzaldehyde ³	462910	100	
Hydrazine	0.01-0.6mg/l	430	Dimethylaminobenzaldehyde ³	531200	100	
Hydrazine^{d)}	0.01-0.7mg/l	430	PDMA B Vacu-Vial	380470	30	
Hydrogen peroxide	0.03-3mg/l	530	DPD/Catalyst ⁵	512380 BT	100	
Iodine	0.05-3.6mg/l	530	DPD ⁵	511050 BT	100	
Iron (II, III)	0.02-1mg/l	560	PPST	515370 BT	100	276050
Iron VARIO (II, III)	0.02-3mg/l	530	VARIO 1,10-Phenanthroline	530560	100	276056
Iron LR L	0.03-2.0mg/l	580	Ferrozine/Thioglycolate	56R018990	100	
Iron VARIO, total^{g)}	0.02-1.8mg/l	580	VARIO TPTZ ⁹⁾	530550	100	276055
Iron (Fe²⁺+Fe³⁺)	0-2mg/l	560	Ferrozine/Thioglycolate	56R023490	100	
Iron HR	0-10mg/l	530	Thioglycolate	56R023590	100	
Manganese	0.2-4mg/l	530	Formaloxime	517621 BT	100	276100
Manganese VARIO LR	0.01-0.7mg/l	560	VARIO PAN	535090	100	276105
Manganese VARIO HR	0.1-18mg/l	530	VARIO Periodate oxidation ²	535100	100	276106
Molybdenum LR VARIO	0.03-3mg/l	430	VARIO Mercaptoacetic acid	535450	100	276140
Molybdate	1-50mg/l	430	Thioglycolate ⁴	517631 BT	100	
Molybdate VARIO	0.5-66mg/l	430	VARIO Mercaptoacetic acid	535300	100	
Molybdate HR	0-100mg/l	430	Thioglycolate ⁴	56R023790	100	

For notes and abbreviations, see page 54

MD 100 and MD 600

Ordering Information



Test	Range	Wavelength	Method	Reagent Pack	Tests/ Pack	MD 100 Kit
Monochloramine VARIO	0.04-4.5mg/l	660	VARIO Indophenol	531810	100	276070
Nitrate VARIO**	1-30mg/l	430	Chromotropic acid	535580	100	
Nitrite**	0.01-0.5mg/l	560	N-(1-Naphthyl)-ethylenediamine ^{2, 3}	512310 BT	100	
Nitrite LR VARIO	0.0-0.3mg/l	530	VARIO Diazotation	530980	100	
Nitrogen VARIO** total HR^(b)	0.5-25mg/l	430	VARIO Persulphate digestion method	535550	50	
Nitrogen VARIO** total HR^(b)	5-150mg/l	430	VARIO Persulphate digestion method	535560	50	
Oxygen, active	0.1-10mg/l	530	DPD	511220 BT	100	
Oxygen, dissolved c)**	10-800µg/l	530	Rhodazine D™ Vacu-vial® ⁽ⁱ⁾	380450	30	
PHMB (Biguanide)	2-60mg/l	560	Buffer/Indicator (PHMB Tablet)	516100	100	
Phosphate LR, ortho	0.05-4mg/l	660	Phosphomolybdic acid/Ascorbic acid ²	517651 BT	100	276040
Phosphate HR, ortho	1-80mg/l	430	Vanadomolybdate ² (Tablet)	517661	100	
Phosphate HR, ortho	5-80mg/l	430	Vanadomolybdate ² (Liquid)	56R019090	100	
Phosphate VARIO ortho	0.06-2.5mg/l	660	VARIO Ascorbic acid ²	531550	100	276045
Phosphate VARIO** ortho	0.06-5mg/l	660	VARIO Ascorbic acid ²	535200	50	
Phosphate VARIO**^(b) acid hydrolysable acid hydrolysable total total 0.02-1.1mg/l P 0.06-3.5mg/l PO ₄	acid hydrolysable 0.02-1.6 mg/l P 0.06-5 mg/l PO ₄ total 0.02-1.1mg/l P 0.06-3.5mg/l PO ₄	660	VARIO Acid digestion/Ascorbic acid ² VARIO Acid/persulphate digestion Ascorbic acid ²	535250	50	
Phosphate VARIO** total ^(b)	0.02-1.1mg/l P 0.06-3.5mg/l PO ₄	660	VARIO Acid/persulphate digestion	535210	50	
Phosphate, ortho^(c)	5-40mg/l	430	Vanadomolybdate – Vacu-vial	380460	30	
Phosphate, ortho^(c)	0.05-5mg/l	660	Stannous chloride ² – Vacu-vial	380480	30	
Phosphonate VARIO	0.02-125mg/l	660	VARIO Persulfate UV-Oxidation	535220	100	
pH value	5.2-6.8	560	Bromocresol purple	515700 BT	100	
pH value	6.5-8.4	560	Phenol red (tablet) ⁵	511770 BT	100	+++
pH value	6.5-8.4	560	Phenol red (solution) ⁵	471040	100	+++
pH value	8.0-9.6	560	Thymol blue ⁵	515710	100	
Polyacrylate	0-30mg/l Polyacrylic acid	660	Turbidity	56R019165	65	
Potassium	0.7-12mg/l	430	Tetraphenylborate	515670	100	
Silica	0.05-4mg/l	660	Silicomolybdate ^{2, 3} Silica PR tablets (in presence of PO ₄)	517671 513150	100 100	276110

For notes and abbreviations, see page 54

Test	Range	Wavelength	Method	Reagent Pack	Tests/ Pack	MD 100 Kit
Silica LR VARIO	0.1-1.6mg/l	660	VARIO Heteropolyblue ²	535690	100	276115
Silica HR VARIO	1-90mg/l	430	VARIO Silicomolybdate ^{2, 3}	535700	100	276116
Sodium hypochlorite	0.2-16%	530	Potassium iodide ⁵	517721 BT	100	+++
Sulphate VARIO	5-100mg/l	530	VARIO Bariumsulphate Turbidity ²	532160	100	
Sulphate	5-100mg/l	610	Bariumsulphate Turbidity ²	515450 BT	100	
Sulphide	0.04-0.5mg/l	660	DPD/Catalyst ³	56R019290	100	
Sulphite	0.1-5mg/l	430	DTNB	518020 BT	100	
Suspended solids	5-750mg/l	660	Turbidity/attenuated radiation (no reagents required)			
Tolyltriazole	1-16mg/l as Benzotriazole	430	Catalysed UV photolysis	532200	100	
Turbidity	0-1000	530	Attenuated radiation method (no reagents required)			
Urea	0.1-2.5mg/l	610	Urease/Indophenol	56R019390	100	
Zinc	0.02-1mg/l	610	Zincon ³ /EDTA	517920 BT	100	

MD 100 Multi-Parameter Instruments – Ordering Information

Test	Range	Method	Reagent Pack	Tests/ Pack	MD 100 Kit
MD 100 2in1					278020
Chlorine	0.01-6.0mg/l	DPD ¹	517711 BT	100	
Chlorine	0.1-10mg/l	DPD ^{1, 2}	as above		
pH	6.5-8.4	Phenol red (tablet) ⁵	511770 BT	100	
MD 100 2in1 – VARIO					278030
Chlorine Vario	0.02-2.0mg/l	VARIO DPD ^{1, 2}	537700	100	
Chlorine	0.1-8.0mg/l	DPD (10mm cell)	as above		
pH	6.5-8.4	Phenol red (tablet) ⁵	511770 BT	100	
MD 100 3in1					278000
Chlorine LR	0.01-6.0mg/l	DPD ¹	517711 BT	100	
Chlorine HR	5-200mg/l	KI / Acid ⁵ (16mm round vial)	517721 BT	100	
Chlorine Dioxide	0.02-11mg/l	DPD/Glycine ^{1, 2}	517731 BT	100	
MD 100 6in1					278090
Alkalinity-M	5-200mg/l	Acid/Indicator ^{1, 2, 5}	513210 BT	100	
Bromine	0.05-13.0mg/l	DPD	517900	100	
Calcium Hardness	0-500mg/l	Murexid ⁴	517761 BT	100	
Chlorine	0.01-6.0mg/l	DPD ¹	517711 BT	100	
Cyanuric Acid	0-160 mg/l	Melamine	511370 BT	100	
pH	6.5-8.4	Phenol red (tablet) ⁵	511770 BT	100	

For notes and abbreviations, see page 54

MD 100 and MD 600

Ordering Information (continued)

Notes and abbreviations

- +++ Available as part of a multi-parameter MD100 test kit (not available as a single parameter instrument)
- ** 16mm tube tests (all other tests use standard 24mm glass cells).

MSDS (Material Safety Data Sheets):
www.lovibond.com

For other reagent quantities please see our current price list.

- 1 Deutsche Einheitsverfahren zur Wasser-, Abwasser- und Schlamm- Untersuchung
- 2 Standard Methods for the Examination of Water and Wastewater, 18th Edition; 1992
- 3 Photometrische Analysenverfahren, Schwedt, Wissenschaftliche Verlagsgesellschaft mbH, Stuttgart; 1989
- 4 Photometrische Analyse, Lange/Vejdelek, Verlag Chemie; 1980
- 5 Colorimetric Chemical Analytical Methods, 9th Edition, Lovibond®

- a) Determination of free, combined and total
- b) Reactor is necessary for COD (150°C), TOC (120°C) and total -chromium, - phosphate, -nitrogen, (100°C)
- c) MultiDirect/PoolDirect: Adapter is necessary for Vacu-vials® (Order code 19 20 75)
- d) Spectroquant® is a Merck KGaA Trademark
- e) Alternative reagent, used instead of DPD No.1 in case of turbidity in the water sample caused by high concentration of calcium and/or high conductivity
- f) Additionally required for determination of chlorine dioxide / ozone in the presence of chlorine
- g) Reagent recovers most insoluble iron oxides without digestion
- h) Additionally required for samples with hardness values above 300 mg/l CaCO₃
- i) High range by dilution
- j) Rhodazine D™ and Vacu-vials® are Chemetrics Trademarks

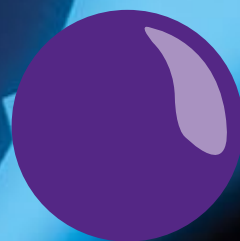








Lovibond® Comparator Solutions



Lovibond® Comparator 2000+

- Visual comparison method
- High precision : High accuracy
- Fade-free glass standards – guaranteed consistency
- > 400 different discs
- Optional lighting unit

The Lovibond® Comparator 2000+ System is an extremely versatile modular system for testing water. It is simple to use yet is uncompromising in terms of precision and reproducibility of results. It is compact and portable making it equally suitable for on-site and laboratory use. The integrated prism brings the glass standards of the test discs and the coloured sample into the same field of view for easy comparison.

Test discs

Glass colour standards used in every Lovibond® Comparator 2000+ discs are fade-free, resistant to chemicals and scratchproof. Every test disc is fitted with guaranteed colour-stable non-fading glass. Lovibond® standards are made from coloured glass filters and comply with international standards, e.g. ISO 7393/2.

Lighting unit

It is recommended to use the battery-operated Lovibond® lighting unit in variable lighting conditions. This guarantees uniform lighting conditions, and ensures greater test accuracy.

Cells

The precision plastic and optical glass cells are manufactured in line with the highest quality standards. The cells ensure high precision and reproducibility of results.



Lovibond®

Comparator 2000+

Ordering information for the Lovibond® Comparator 2000+ range is as follows:

Test Kit

Ordered using the Test Kit code in the table below. The kit is supplied in a plastic case with a Lovibond® Comparator 2000+, disc, 2 x comparator cells and reagent pack.

Or

Reagent Pack

Ordered using the reagent pack code in the table below. The pack is supplied in a cardboard carton containing test reagent only.

Or

Disc

Disc only, supplied with instruction sheet.

Or choose a number of discs and reagent packs with a standard case to create your own multi-parameter kit in the "Build Your Own Test Kit" Section of the catalogue (see page 38).

56A005701:

Comparator Test Kit Case:

A 1501 Compact Plus Case: Supplied with Lovibond® Comparator 2000+, cells, crushing rod and instruction booklet and space to add a combination of 8-10 tests from the Lovibond® Comparator 2000+ and drop test ranges. An SD 50 pH meter and either an SD 70 conductivity or SD 80 TDS unit can be added to complete the kit – simply choose reagent packs and discs from the appropriate tables.

142020:

Lovibond® Comparator 2000+ and two cells.



Test	Disc No. / Range	Chemistry	Test Kit	Disc	Reagent Pack	Test / Pack
Aluminium	3/127A 0-0.5mg/l	Solochrome Cyanine R	56K013001	230205	517601 BT	100
Amine	3/58 1.0-10mg/l	Bromocresol Green	56K013101	235800	511010	100
Amine	3/64 0-2mg/l	Methyl Orange	56K013201	236400	56R013290	100
Ammonia**	3/112 0-0.4mg/l NH ₄	Alkaline Salicylate	56K013301	230060	517611 BT	100
Ammonia	3/113 0-1.0mg/l N	Alkaline Salicylate	56K013401	230070	517611 BT	100
Bromine	3/53A 0.2-2.0mg/l	Buffered DPD	56K013501	235310	517900	100
Bromine	3/53B 1.0-10mg/l	Buffered DPD	56K013601	235320	517900	100
Bromine	3/53C 0.5-6mg/l	Buffered DPD	56K013701	235330	517900	100
Chlorine** free, combined, total	3/40E 0.02-0.3mg/l	Buffered DPD/KI	56K013801	234060	517711 BT	100
Chlorine free, combined, total	3/40A 0.1-1.0mg/l	Buffered DPD/KI	56K013901	234010	517711 BT	100
Chlorine free, combined, total	3/40B 0.2-4.0mg/l	Buffered DPD/KI	56K014001	234020	517711 BT	100
Chlorine free, combined, total	3/40K 0.5-6.0mg/l	Buffered DPD/KI	56K014101	233930	517711 BT	100

** 40mm glass cell required (all other tests use 13.5mm cells)

For further options, please view the Lovibond® General Catalogue or visit www.lovibond.com

Lovibond®

Comparator 2000+



Test	Disc No. / Range	Chemistry	Test Kit	Disc	Reagent Pack	Test / Pack
Chlorine HR** total chlorine only	3/2APH 2-10mg/l	Potassium Iodide	56K014201	232060	517721 BT	100
Chlorine HR total chlorine only	3/2ARP 5.0-50mg/l	Potassium Iodide	56K014301	232070	517721 BT	100
Chlorine HR total chlorine only	3/2IOD 0-250mg/l	Potassium Iodide	56K014401	232090	517721 BT	100
Chlorine dioxide	3/40A 0.19-1.9mg/l	DPD/Glycine	56K014501	292260	517731 BT	100
Chlorine dioxide**	3/40ED 0.04-0.57mg/l	DPD/Glycine	56K014601	297970	517731 BT	100
Copper	3/106 0-1.0mg/l	Zincon	56K014701	230050	512620 BT	100
Copper	3/110 0-4.0mg/l	Zincon	56K014801	230040	512340 BT	100
DEHA**	3/150 16-160µg	DEHA	56K014901	230460	536000	100
Hydrazine	3/126 0-0.5mg	p-dimethylaminobenzaldehyde	56K015001	230190	462910	100
Hydrazine**	3/135 0.02-0.2mg/l	p-dimethylaminobenzaldehyde	56K015101	230290	462910	100
Hydrogen peroxide	3/50A 0.05-0.5mg/l	DPD/Catalyst	56K015201	235000	512380 BT	100
Hydrogen peroxide	3/50B 0.1-3mg/l	DPD/Catalyst	56K015301	235010	512380 BT	100
Iron, total	3/116 0.1-1.0mg/l	Ferrozine/Thioglycolate	56K015401	230100	515370 BT	100
Iron, total	3/117 1.0-10mg/l	Thioglycolate	56K015501	230110	515380	100
Manganese	3/169 0-4.0mg/l	PAN	56K015601	230690	517621	100
Molybdate**	3/162 0-10mg/l MoO ₄	8-hydroxybenzoic acid	56K015701	230620	56R015750	100
Molybdate**	3/137 5 -50mg/l MoO ₄	Thioglycolic acid	56K015801	230320	517631	100
Molybdate	3/138 10-150mg/l MoO ₄	Thioglycolic acid	56K015901	230330	517631	100
Nitrate	3/124 0.1-1.0mg/l NO ₃	NO ₃ > NO ₂ + Diazotisation	56K016001	230170	517910	100
Nitrate	3/142 10-100mg/l NO ₃	Chromotropic Acid	56K016101	230360	517641	100
Nitrite	3/103 0.05-0.5mg/l N	NO ₃ Diazotisation	56K016201	230030	512310 BT	100
Oxygen	3/165 2.0-12mg/l	Sodium azide	56K016301	230650	461140	100
Ozone	3/67 0.1-1.0mg/l	Buffered DPD	56K016401	236700	511220 BT	100
Ozone**	3/67A 0.01-0.1mg/l	Buffered DPD	56K016501	236710	511220 BT	100
Ozone**	3/148 0-0.5mg/l	Ozone-Indigo	56K016601	230440	513170	100
pH	2/1G 5.2-6.8 pH	Bromocresol purple	56K016701	221100	511730	100
pH	2/1H 6.0-7.6 pH	Bromothymol blue	56K016801	221110	511640 BT	100
pH	2/1J 6.8-8.4 pH	Phenol red	56K016901	221130	511750 BT	100
pH	2/1P 4.0-11 pH	Universal (mixed)	56K017001	221220	451771	100

** 40mm glass cell required (all other tests use 13.5mm cells)

Test	Disc No. / Range	Chemistry	Test Kit	Disc	Reagent Pack	Test / Pack
Phosphate	3/133 0-4.0mg/l PO ₄	Molybdenum blue	56K017101	230270	517651 BT	100
Phosphate	3/136 0-40mg/l PO ₄	Molybdenum blue	56K017201	230310	511980	100
Phosphate	3/70 0-100mg/l PO ₄	Phospho-molybdate	56K017301	237000	511980	100
Phosphate	3/60 10-100mg/l PO ₄	Vanadomolybdate	56K017401	236000	56R017490	100
Phosphate	NMD 10-100mg/l PO ₄	Molybdenum blue	56K017501	283950	56R017590	100
QAC (Quaternary** Ammonia Compounds)	3/118 0-20mg/l	Sulphonaphthalein dye	56K017601	230120	515390 BT	100
QAC (Quaternary Ammonia Compounds)	3/119 0-200mg/l	Sulphonaphthalein dye	56K017701	230130	515400	100
Silica	3/139 0.4-4.0mg/l SiO ₂	Molybdenum blue	56K017801	230340	517671	100
Silica	3/147 1.0-10mg/l SiO ₂	Molybdenum blue	56K017901	230420	517671	100
Silica**	3/13 2.5-25mg/l SiO ₂	Silico-Molybdate	56K018001	231300	460241	100
Sodiumhypochlorite	3/2 Hypo 2-16%	Acidified KI	56K018101	232110	517721 BT	100
Zinc	3/151 0-1.0mg/l	Zincon	56K018201	230470	56R018290	100
Zinc	3/102 0-4.0mg/l	Zincon	56K018301	230020	56R018390	100

** 40mm glass cell required (all other tests use 13.5mm cells)

Ordering Information:

Code	Item
142000	Lovibond® Comparator 2000+
142050	Portable lighting unit, battery operated
171010	Daylight Unit for Comparator 2000+, mains operated
170500	Water sampler with two 500 ml bottles and one lid
418957	Cell stand for 10 cells-13.5/16 mm, path length
364110	Glass stirring rod, 12 cm length
364100	Plastic stirring rod, 13 cm length
380230	Brush, 11 cm length
Glass Cells	
354243	5 cells, 13.5 mm path length, calibrated at 2 – 12 ml, with lids (DB424/S)
606890	Cell 40 mm path length, calibrated at 20ml (W 680/40)
Plastic Cells	
145505	5 cells, frosted on two sides, with lid, 13.5mm / 10ml
145500	10 cells, frosted on two sides, with lid, 13.5mm / 10ml
145510	100 cells, frosted on two sides, with lid, 13.5mm / 10ml

Lovibond® CHECKIT® Comparator

- Entry-level visual comparator kit
- Continuous colour scale for easy matching
- Optional variant with mirror optics for increased accuracy of reading
- Kits supplied complete with discs, cells, stirring rod and Lovibond® reagents for 30 tests
- Replacement packs are supplied with 100+ tests

The Lovibond® CHECKIT® comparator is a cost effective means of performing colorimetric testing. The compact comparator unit accommodates a full range of continuous gradient plastic discs to enable a wide range of tests to be performed. Each test kit is supplied in a sturdy plastic case with a CHECKIT® comparator, comparator disc, 2 x 10ml plastic cells and reagent set. The operating instructions provide a step-by-step explanation on how to conduct the water test, ensuring that even "non-chemists" can achieve reliable and accurate measurements in the minimum of time.



Ordering information for the CHECKIT® range is as follows:

Test Kit

Ordered using the Test Kit code in the table opposite. Supplied in a plastic case with CHECKIT® comparator, disc, 2 x 10ml cells and reagent pack, mostly 30 tests per pack.

Or

Reagent Pack

Ordered using the reagent pack code in the table opposite. The pack is supplied in a carton containing test reagents only, typically 100 tests per pack

Or

Disc

Disc only, supplied with instruction sheet

Or combine the disc & reagent pack with a standard case to create your own multi-parameter kit.

Code: 56A000601:

CHECKIT® Comparator Case: A sturdy 501 plastic case capable of housing up to 3 Lovibond® CHECKIT® comparator tests. Supplied with CHECKIT® comparator, cells and crushing rod and full instruction booklet - simply add disc & reagent packs from the table opposite to complete the kit.

Code: 56A005801:

A 1501 Compact Plus Case: Supplied with the same standard equipment but with space to add a combination of 8-10 tests from the CHECKIT® comparator and drop test ranges. An SD 50 pH meter and either an SD 70 conductivity or SD 80 TDS unit can be added to complete the kit – simply choose reagent packs from the appropriate tables.

Code: 145560:

CHECKIT® Comparator with two cells

Code: 145500:

CHECKIT® Comparator Replacement cells (set of 10)

See our Portable Laboratory (Build Your Own Test Kit) section on page 38 for additional case/kit options.



Test	Range	Chemistry	Test Kit	Disc	Reagent Pack	Test / Pack
Aluminium	0-0.3mg/l Al	Solochrome cyanine R	147200	146200	517601 BT	100
Ammonia	0-1mg/l N	Alkaline salicylate	147210	146210	517611 BT	100
Ammonia VARIO	0-0.5mg/l N	Alkaline Salicylate	147211	146211	535500	100
Bromine	0-5mg/l Br	Buffered DPD	147280	146280	511310 BT	100
Chlorine free, combined**, total	0-1mg/l Cl ₂	Buffered DPD/KI	147010	146010	511310 BT + 511290 BT	100
Chlorine free, combined**, total	0-2mg/l Cl ₂	Buffered DPD/KI	147040	146040	511310 BT + 511290 BT	100
Chlorine free, combined**, total	0-4mg/l Cl ₂	Buffered DPD/KI	147020	146020	511310 BT + 511290 BT	100
Chlorine free, combined**, total	0-3.5mg/l Cl ₂	VARIO Buffered DPD/KI	147052	146050	537710	100
Chlorine¹ free, combined**, total	0.02-0.3mg/l Cl ₂	Buffered DPD/KI	147000	146000	517711 BT	100
Chlorine KI, total only	10-300mg/l Cl ₂	Potassium Iodide	147030	146030	517721 BT	100
Chlorine dioxide¹	0.01-0.2mg/l ClO ₂	Buffered DPD/Glycine	147330	146330	517731 BT	100
Copper, free (Cu²⁺)	0-1mg/l Cu	Zincon	147230	146230	512620 BT	100
Copper HR free and total	0-5mg/l Cu	Coppercol	147430	146430	517691 BT	100
Copper HR, free only	0-5mg/l Cu	VARIO Coppercol	147431	146431	530300	100
Copper LR¹	0-1mg/l Cu	Coppercol	147440	146440	517691 BT	100
Copper LR¹ free only	0-1mg/l Cu	VARIO Coppercol	147441	146441	530300	100
DEHA	0-0.5mg/l DEHA	Iron reduction/H ⁺	147370	146370	536000	100
Fluoride	0.2-2mg/l F	SPADNS Reagent	56K020901	146390	467481	62
Iron LR	0-1mg/l Fe	Ferrozine/Thioglycolate	56K020701	146220	56R020790	250
Iron HR	1-10mg/l Fe	Thioglycolate	147320	146320	515380	100
Iron (TPTZ)	0-1.8mg/l Fe	TPTZ	147470	146470	530550	100
Manganese LR	0.1-0.7mg/l Mn	PAN	56K021001	146410	535090	100

** May be calculated by deducting free from total chlorine

¹ Only with CHECKIT® Comparator D55 with mirror optics (path length 55 mm)

For further options, please view the Lovibond® General Catalogue or visit www.lovibond.com

Lovibond® CHECKIT®

Comparator (continued)



Test	Range	Chemistry	Test Kit	Disc	Reagent Pack	Test / Pack
Manganese VLR¹	0.02-0.2mg/l Mn	PAN	56K021101	146420	535090	100
Molybdate HR	0-100mg/l MoO ₄	Thioglycolate	147290	146290	517631 BT	100
Molybdate HR	50-500mg/l MoO ₄	Thioglycolate	147295	146295	517631 BT	100
Molybdate LR¹	0-10mg/l MoO ₄	Thioglycolate	147291	146291	517631	100
Nitrate HR	10-100mg/l NO ₃	Chromotropic Acid	147400	146400	517701	100
Nitrate LR	0-1mg/l N	NO ₃ > NO ₂ + Diazotisation	56K021201	146310	517910	100
Nitrite	0-0.3mg/l N	VARIO NO ₃ > NO ₂ + Diazotisation	147301	146301	530980	100
Ozone (DPD) in the presence of chlorine	0-1.0mg/l O ₃	Buffered DPD	147270	146270	517731	100
pH	5.2-6.8 pH	Bromocresol purple	147110	146110	511730	100
pH	6.0-7.6 pH	Bromothymol blue	147120	146120	511640 BT	100
pH	6.5-8.4 pH	Phenol red (Rapid)*	147100	146100	511790 BT	100
pH-Universal	4-10 pH	Universal (Mixed)	147130	146130	515440	100
Phosphate HR	0-80mg/l PO ₄	Phospho-Molybdate	147250	146250	511980	100
Phosphate LR	0-4mg/l PO ₄	Molybdenum blue	147240	146240	517651 BT	100
Phosphate	0-2.5mg/l PO ₄	VARIO Molybdenum blue	147480	146480	531550	100
Silica LR	0.25-4mg/l SiO ₂	Molybdenum blue	147350	146350	517671	100
Silica HR VARIO	0-100mg/l SiO ₂	VARIO Silico-molybdate	147351	146351	535700	100
Silica VLR	0-1mg/l SiO ₂	Molybdenum blue	147360	146360	517671	100
Sodiumhypochlorite	2-18%	Acidified potassium iodide	147490	146490	517721 BT	100
Sulfite LR	0.5-10mg/l SO ₃	DTNB	147380	146380	518020 BT	100
Total Alkalinity	20-240mg/l CaCO ₃	Alkacheck	147450	146450	513200 BT	100
Zinc LR	0-1mg/l Zn	Zincon	147340	146340	517920 BT	100

* RAPID: fast dissolving tablet

¹ Only with CHECKIT® Comparator D55 with mirror optics (path length 55 mm)

For further options, please view the Lovibond® General Catalogue or visit www.lovibond.com







Lovibond® Electrochemistry Systems



SD Hand-held Series

- Quick, accurate measurements of pH, ORP, Conductivity (EC) and TDS
- Backlit Display
- Durable – waterproof (IP67) and dust tight
- User replaceable electrodes – time and cost savings
- 25 data set storage with date/time stamp

The new Lovibond® SD series comprises a range of compact, easy-to-use, hand-held instruments for the accurate measurement of pH, ORP, Con, TDS or Salt. With robust housing and fully waterproof (IP67) casing, these testers are the ideal solution for in-situ testing in environmental, industrial or pool & spa applications. The intuitive scroll-bar and backlit display enable easy measurement and display of result, temperature date and time. All units are equipped with an automatic switch off and a "Hold" function which freezes the result in the display with a single key press.



Instrument	SD 50 pH	SD 60 ORP	SD 70 Con	SD 80 TDS
Order Code	194800	194801	194802	194803
Range (Auto)	0-14 pH 0-60°C	-1800 – 1800mV 0-60°C	1-1999µS 2.00-20.00mS 0-60°C	1-999mg/l NaCl 1.00-10.00ppt 0-60°C
Resolution	0.01 pH 0.1°C	0.1mV (up to ±1000mV) 1mV (over ±1000mV) 0.1°C	1µS (<=1999µS) 0.01mS (2-20mS) 0.1°C	0.1 mg/l (<=999mg/l) 0.01ppt (1-10ppt) 0.1°C
Accuracy	± 0.05 pH, ± 1°C	± 20mV, ± 1°C	± 1% F/S, ± 1°C	± 1% F/S, ± 1°C
Calibration	1, 2 or 3 point (NIST/IUPAC)	1 point (±150mV adjust)	1413µS 12.88mS	1 or 2 point
Memory	Time and date display / stamp with 25 sets of data storage (non-volatile)			
Display	22 x 22mm LCD with yellow backlight			
Compensation	Automatic			
Operation Temp.	0-60°C			
Battery Capacity	> 25hr continuous use (backlight off) – Low battery warning on LCD			
Auto Off	8 minutes non-use			
Size/Weight	approx. 16.5cm x 3.8cm, 100g			

Conversion table

- 1) 0-20,00 mS/cm = 0-20000µS
- 2) 0-10,00 ppt TDS = 0-10000 mg/l TDS
- 3) 0-10,00 ppt NaCl = 0-10000 mg/l NaCl
- 4) mg/l = Parts per Million (ppm)
- 5) ppt = Parts per Thousand (g/l)
- 6) F/S = Full Scale

Delivery Content

Each SD Hand-held instrument is supplied with batteries, lanyard and instruction manual as a ready to use unit in a sturdy plastic box. The SD 50 also includes 10 x pH 4, 7, & 10 buffer tablets.

SensoDirect 110 Series

- Compact
- Versatile
- Easy-to-use
- Large digital display
- Instruments for:
pH
conductivity

The SensoDirect meters are high quality, portable, battery operated meters, equipped as standard with protective casing and built-in electrode holders. The units are extremely easy to use and are equipped with an LCD screen showing two or three decimal places.

The SensoDirect pH 110 is a high quality, portable, battery operated pH meter. The gel electrode is temperature resistant over the range 0 - 80 °C. It is fitted with a BNC connector as standard.

The SensoDirect Con 110 is equipped with an LC display showing two or three decimal places and a measuring range either of 0.001 – 1.999 or 0.01 – 19.99 mS/cm. As conductivity measurement also depends on temperature, the SensoDirect Con 110 includes an automatic temperature compensation feature. The SensoDirect Con 110 can be calibrated and adjusted using a potentiometer.



pH 110 Technical Data

Range	0 - 14 pH
Resolution	0.01 pH
Temperature compensation	not necessary
Accuracy	± 0.07 pH (pH5-pH9) ± 0.1 pH (pH4-pH10) ± 0.2 pH (pH1-pH3.9) ± 0.2 pH (pH10,1-pH13) Calibrated at 23°C (± 5°C)
Ambient conditions	0-50°C 0-80% rel. humidity (non condensing)
Battery	9 V
Dimensions	208 x 110 x 34 mm (L x W x H)
Weight	approx. 380g
EC-Conformity	CE

Con 110 Technical Data

Range	0.001 - 1.999mS 0.01 - 19.99mS
Resolution	0.001 / 0.01mS
Temperature compensation	0-100°C automatically 2%/K, 25°C
Accuracy	± 3% Full Scale: ± 1 Digit Calibrated at 23°C (± 5°C)
Ambient conditions	0-50°C 0-80% rel. humidity (non condensing)
Battery	9 V
Dimensions	208 x 110 x 34 mm (L x W x H)
Weight	approx. 380g
EC-Conformity	CE

SensoDirect 110 Series

Code	Details	Content
721300	SensoDirect pH 110	SensoDirect pH 110 Battery pH-buffer (4.0 / 7.0) pH plastic electrode-type 110 Case, instruction manual Guarantee sheet
722300	SensoDirect Con 110	SensoDirect Con 110 Battery Conductivity sensor Case, instruction manual Guarantee sheet

SensoDirect pH110 Accessories:

Code	Description
721330*	pH electrode plastic/gel, type pH110
721247*	pH buffer, 4.00 (25°C), 90ml
721248*	pH buffer, 7.00 (25°C), 90ml
721249*	pH buffer, 10.00 (25°C), 90ml
721252	pH buffer, 4.00 (25°C), 1L
721254	pH buffer, 7.00 (25°C), 1L
721256	pH buffer, 10.00 (25°C), 1L

* NIST Traceable



SensoDirect Con110 Accessories:

Code	Description
722320	Conductivity sensor
56L002297	Conductivity calibration solution, 50µS, 500ml
56L001697	Conductivity calibration solution, 1413µS, 500ml
56L049497	Conductivity calibration solution, 2765µS, 500ml
56L001997	Conductivity calibration solution, 12.88mS, 500ml
722250*	Calibration solution, 1413µS, 500ml

* NIST Traceable



SensoDirect 150

- Multi Parameter Hand-held Meter
- Multi Purpose Operation
- Intuitive Interface – Easy-to-use
- Data logger & storage capabilities

The SensoDirect 150 combines the features of several hand-held meters. It is designed for multi-purpose operation and measures pH/Redox, dissolved oxygen and conductivity/TDS.

The SensoDirect 150 incorporates an intuitive user interface, large, easy to read display and is supplied with a sturdy handy case with electrodes, buffer solution and accessories.

- Dissolved Oxygen (O₂) mg/l
- Conductivity/TDS/Temperature
- pH/ORP/Temperature



Technical Data SensoDirect 150	
Display	Large LCD display with contrast adjustment
Measurement	pH: 0 – 14.00 pH ORP: ± 1999mV Conductivity: 200µS / 2mS / 20mS / 200mS TDS (Total Dissolved Solids): Dissolved Oxygen: 0 to 20.0mg/l
Data Logger	Real time data logger
Data Memory	Auto or manual data memory, 16000 data sets
Data Hold	Max, Min
Interface	USB, RS232
Probes	pH, ORP, Conductivity/TDS, Dissolved Oxygen and Temperature
Power off	Auto shut off or manual off
Data Output	RS 232 PC serial interface
Power Supply	DC 1,5 V battery (UM3, AA) x 4 PCs or DC 9V adapter
Dimensions	220 x 120 x 40 mm (L x W x H)
Weight	approx. 625g (unit incl. batteries)
Software	Data acquisition software Data logger software
EC-Conformity	CE
PH/REDOX	
Range	pH 0 – 14 pH mV -1999mV to 1999mV
Resolution	0 - 14 pH, 0.01 pH, 0 - 1999mV, 1mV
Accuracy	0 - 14 pH, ± 0.02 pH + 2 digits 0 - 1999mV, ± 0.5 % + 2 digits
Temperature	manual 0 - 100°C
Compensation	automatic (ATC)
pH	pH 7, pH 4, and pH10,
Calibration	3 point calibration

Technical Data SensoDirect 150	
DISSOLVED OXYGEN	
Range	Dissolved Oxygen 0 to 20.0 mg/l (liter) Oxygen in Air 0 to 100.0% Temperature 0 to 50°C
Resolution	Dissolved Oxygen 0.1mg/l 0.1% O ₂ Temperature 0.1°C
Accuracy (23± 5 °C)	Dissolved Oxygen ± 0.4mg/l Oxygen in Air ± 0.7% O ₂ Temperature ± 0.8°C / 1.5°F
Salinity Correction	0 to 39% Salt
Air Pressure Compensation	0 to 8900 meter
CONDUCTIVITY/TDS	
Range/ Resolution	Conductivity (µS, mS) 0 - 200.0µS / 0.1µS 0.2 - 2.000mS / 0.001mS 2 - 20.00mS / 0.01mS 20 - 200.00mS / 0.1mS TDS (Total Dissolved Solids) 0 - 132mg/l / 0.1mg/l 132 - 1,320mg/l / 1mg/l 1,320 - 13,200mg/l / 10mg/l 13,200 - 132,000mg/l / 100mg/l Temperature 0-60°C / 0.1°C 32-140°F / 0.1°F
Accuracy	± 2% F.S. + 1 digit ± 0.8°C / ± 1.5°F
Function	Conductivity (µS, mS) TDS (Total Dissolved Solids, mg/l) Temperature (°C, °F)

Ordering Information:

The SensoDirect 150 is available in a number of formats, depending upon the sensor combination required.



Code	Description	Content
724200	SensoDirect 150 Set pH / Con / TDS / Oxygen	Instrument, pH electrode, Temperature probe, Conductivity probe Oxygen sensor, pH buffer set 4.00 / 7.00, Electrolyte, Membrane heads Instruction manual, Guarantee Sheet, batteries and case
724210	SensoDirect 150 Set pH / Con / TDS	Instrument, pH electrode, Temperature probe, Conductivity probe pH buffer set 4.00 / 7.00, Instruction manual, Guarantee sheet batteries and case
724220	SensoDirect 150 Set pH / Oxygen	Instrument, pH electrode, Temperature probe, Oxygen sensor pH buffer set 4.00 / 7.00, Electrolyte, Membrane heads Instruction manual, Guarantee sheet, batteries and case
724230	SensoDirect 150 Set pH / Redox	Instrument, pH electrode, Temperature probe, Redox electrode pH buffer set 4.00 / 7.00, Instruction manual, Guarantee sheet batteries and case

Accessories:

Code	Description
721330	Spare electrode, (approx. 1m cable), plastic/gel type BNC-plug
721250*	pH buffer set 4.00/7.00/10.00 (25°C), 3 x 90ml
721247*	pH buffer, 4.00 (25°C), 90ml
721248*	pH buffer, 7.00 (25°C), 90ml
721249*	pH buffer, 10.00 (25°C), 90ml
721252	pH buffer 4.00 (25°C) 1L
721254	pH buffer 7.00 (25°C) 1L
721256	pH buffer 10.00 (25°C) 1L
721242	Redox electrode, (approx. 1m cable), plastic/gel type BNC-plug
195070	Redox calibration solution, 470 mV, 100ml
724400	Conductivity probe (Con / TDS), (approx. 1.2m cable)
722250	Calibration solution 1413µS, 500ml
724410	Oxygen sensor, (approx. 4m cable)
724460	Spare membrane for oxygen sensor

Code	Description
724470	Spare electrolyte for oxygen sensor, 15cc
724420	Temperature probe PT1000 (approx. 1.5 m cable)
724500	RS232 cable, for connection to a computer
724510	USB cable, for connection to a computer
724540	Power supply
725050	Case with foam insert
724520	Data Retrieve Software Software which enables the user to transmit data stored on the instrument to a computer
724530	Data Logger/Acquisition Software Software which enables the user to monitor and log data on a computer (online measurement)
721260	Adapter cable DIN19262 – BNC
721265	Adapter cable DIN19262, S7 plughead
725020	Case with foam insert

* NIST Traceable

SD 300 Series (pH and Conductivity)

- Rugged, water resistant (IP67) design for field use
- Robust testing for on-site applications
- Automatic buffer detection for calibration
- Automatic freezing of measured value
- Data logger and alarm function for Good Laboratory Practice (GLP)
- Clear, concise result reading: easy-to-read backlit LCD display
- Automatic temperature compensation
- PC interface for data download

The SD 300 series provides an alternative, high accuracy choice for the water Testing Engineer. Built to last – these compact, IP67 rated instruments are housed in rubberised shock proof armouring with additional probe housing. Standard features include data storage (1000 sets), Automatic Temperature Compensation (ATC), large backlit display plus additional features such as data logging (automatic storage every time cycle) and enhanced automatic buffer recognition for calibration. PC interface options (USB, serial or analogue).

SD 300 pH delivers accuracy to ± 0.005 , two options for Redox reading and additional rH value calculation.

SD 320 Con is supplied with a 4 pole conductivity cell for enhanced accuracy, repeatability and response. Automatic Temperature Compensation (ATC) via Pt1000 or NTC (10K) probe. User defined cell constants for TDS and salinity measurement. Readings referenced to either 20°C or 25°C.



Delivery Content

724611: SD 300

Instrument with batteries, pH / temperature with plastic electrode type 225, temperature sensor Pt1000, manual and guarantee sheet, supplied in a plastic carry case.

724700: SD 320

Instrument with batteries, conductivity cell LC12 (up to 200mS), manual and guarantee sheet, supplied in a plastic carry case.

Instrument	SD 300 pH	SD 320 Con
Order Code	724611	724700
pH Redox rH Conductivity TDS Salinity	-2.000 – 16.000 pH -2000.0 – 2000.0mV 0.0 – 70.0rH	0 - 200mS, up to 1000mS with optional LC 16 cell 0 – 5000mg/l (depends on cell constant) 0.0 – 70.0 (g salt / kg water equals PSU*)
Temperature	-5.0 - +150°C (Pt1000) +23.0 - +302.0°F	-5.0 - +100°C Pt1000 or NTC (10K)
Accuracy	± 0.005 pH ± 0.05% FS (mV or mVH) ± 0.2°C (-5.0 to +100.0°C) ±0.1 rH	± 0.5% MV. ± 0.1% FS ± 0.2°C (-5.0 to +100.0°C)
Calibration	1, 2 or 3 point (automatic) 1, 2 or 3 point (manual)	1, 2 or 3 point (automatic) 1, 2 or 3 point (manual)
Memory	1000 sets	1000 sets
Display	2 x 4.5 digit, seven segment display (15mm and 12mm)	2 x 4.5 digit, seven segment display (15mm and 12mm)
Compensation	Automatic	Automatic
Battery Capacity	1000 hours	160 hours
Auto Off	Selectable (0 to 120 min) or deactivated	Selectable (0 to 120 min) or deactivated
Size	160 x 86 x 37mm (H x W x D)	160 x 86 x 37mm (H x W x D)
Weight	250g	250g

* PSU = Practical Salinity Unit

Accessories: SD 300

Code	Description
721225BNC	pH electrode plastic/gel-type 225
721240BNC	Redox electrode plastic –type 240
721245	Pt1000 temperature sensor
418609	KCl solution, 3 molar saturated with AgCl, 100ml
721250	pH buffer set 4.00/7.00/10.00 (25°C)
721252	pH buffer 4.00 (25°C) 1L
721254	pH buffer 7.00 (25°C) 1L
721256	pH buffer 10.00 (25°C) 1L
195070	Redox calibration solution, 470mV, 100ml

Accessories: SD 320

Code	Description
19805040	Conductivity cell LC 12, up to 200mS
19805045	Conductivity cell LC 16, up to 1000mS
722250	Calibration solution 1413µS
724620	USB 300 cable
724625	GSOFT 3050 data transmission software with logger for setting, reading and printing of data

Redox Measurement (ORP)

mV: Standard Redox or mV measurement

mVH: Conversion to hydrogen system according to DIN38404 Part 6

rH Measurement

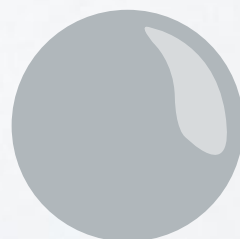
rH: Calculated from a measured Redox value and a manually input pH value.







Lovibond® Titration Systems



Burette Titration

- Highly accurate titrimetric analysis
- Robust packaging to avoid breakage
- Mix and match functionality
- Additional storage capability

Burette Methods have been traditionally used for many years in laboratories for highly accurate titrimetric analysis. However, being delicate glass units, outside of the laboratory they are quite cumbersome and easily broken. The Lovibond® Burette test kit has transformed this by combining 10 ml burettes with 250 ml reservoirs allowing for up to 5 burette systems to be incorporated into one robust carry case. The test packs below can be used to construct specific test kits. A multi-purpose board is included in the right hand side to hold other equipment from the Lovibond® range such as pH, conductivity and comparator tests.

Code: 56A002101:

Burette Test Kit Case: A 2001 book opening case supplied with all equipment required to perform 5 burette tests – simply add reagent packs from the list below to complete the kit. Space for additional equipment on the universal equipment board.



Test Packs

Each pack contains 1 x 250 ml titrant plus appropriate indicators/buffers to perform the analysis.

Reagent Pack	Description	Range	Tests/Pack
56R012050	Acidity Burette Reagent Pack	0.01-5% H ₂ SO ₄	50+
56R012150	Alkalinity (P, M, OH) Burette Reagent Pack	10-2000mg/l CaCO ₃	50+
56R012250	Chloride Burette Reagent Pack	50-2000mg/l Cl ⁻	50+
56R012350	Chlorine (Available) Burette Reagent Pack	100-5000pm Cl ₂	50+
56R012450	Hardness (Calcium & Magnesium) Burette Reagent Pack	10-2000mg/l CaCO ₃	50+
56R012550	Nitrite Burette Reagent Pack	10-2000mg/l NaNO ₂	50+
56R012650	Sulphite Burette Reagent Pack	10-100mg/l Na ₂ SO ₃	50+

Additional Equipment:

Code	Description	Qty/Pack
56A006301	10ml Burette including reservoir, jet and valve	1
56A006401	150ml flask	1
56A006501	Syringe, 20ml, plastic	1
56A006601	Stirring/crushing rod, plastic	1
56A006701	60ml Plastic Titration Jar with Cap	1

Digital Titration

- High accuracy
- Safe and compact for field testing
- Dedicated syringette assembly for accurate dosing
- < 1 ml of reagent per test
- Reduced chemical exposure

Fast and accurate titration tests for the industrial chemist and industrial water treatment engineer. The DIGI Titrator uses a dedicated syringette assembly to deliver accurate doses of titrant to enable high accuracy titration tests to be performed outside of the laboratory in a safe, compact way, using less than a millilitre of reagent per test.

The compact DIGI Titrator is at the heart of the Lovibond® professional range of portable laboratories where several syringettes can be included in one kit for maximum flexibility. One syringette per test type.

See our Portable Laboratory (Build Your Own Test Kit) section on page 38 for case/kit options.



Code: 56A003901

Digital Titrator and set of 8 syringettes



Reagent Packs

All packs include reagents and method sheet (titrator and accessories are purchased separately)

Reagent Pack	Description	Range	Tests/Pack
56R010050	DIGI Acidity Titrator Pack	0.1-50 Acid Value	50
56R010150	DIGI Alkalinity (P, M, OH) Titrator Reagent Pack	10-2000mg/l CaCO ₃	50
56R010250	DIGI Chloride Titrator Reagent Pack	50-2000mg/l Cl ⁻	50
56R010350	DIGI Chlorine Bleach Titrator Pack	10-2000mg/l Cl ₂	50
56R010450	DIGI EDTA (Free) Titrator Pack	75-3000mg/l EDTA	50
56R010550	DIGI Hardness (Total/Calcium) Reagent Titrator Pack	10-2000mg/l CaCO ₃	50
56R010650	DIGI Hardness (Total) Titrator Reagent Pack	10-2000mg/l CaCO ₃	50
56R010750	DIGI Hardness (Calcium) Titrator Reagent Pack	10-2000mg/l CaCO ₃	50
56R010850	DIGI Nitrite Titrator Reagent Pack	20-2000mg/l NaNO ₂	50
56R010950	DIGI Peracetic Titrator Pack	20-800mg/l PAA	50
56R011050	DIGI Phosphonate Titrator Reagent Pack	2-50mg/l HEDP	50
56R011150	DIGI Sulphite Titrator Reagent Pack	10-100mg/l Na ₂ SO ₃	50
56R011250	DIGI Total Chelant Titrator Pack	100-2800mg/l EDTA	50
56R011350	DIGI Zinc (Free Soluble) Titrator Reagent Pack	0.1-10mg/l Zn ²⁺	50
56R011450	DIGI Zinc (Total Complexed) Titrator Pack	0.1-10mg/l Zn ²⁺	50

Ordering Information & Accessories:

Code	Description	Qty/Pack
56A006801	DIGI Titrator	1
56A006972	3 way valves for DIGI Titrator	5
56A007072	2mm Polypropylene Titrator Dispensing Tube	5
56A007101	Tip / Syringe for DIGI Brand Titrator	1
56A006501	Syringe, 20ml, plastic	1
56A006601	Stirring/crushing rod – plastic	1
56A006701	60ml Plastic Titration Jar with Cap	1

Drop Test Titration

The Drop Test technique should be chosen if you require:

- Accuracy to $\pm 10\%$
- Speed
- Simplicity
- Portability

Derived from laboratory burette methods, the Lovibond® drop test range is an established methodology used across industry and which forms an integral part of the analytical program of many a speciality chemical supplier. The reagents are quick to use and give results fast, making the drop test the method of choice for many customers.

A number of the methods have been recently adapted to comply with changes in legislation and hazard awareness. As the Lovibond® solutions have been adapted to address these changes, they have also improved in accuracy with their hazard implications reduced. The procedure has also been simplified as part of the Lovibond® commitment to product development.



Ordering information for the drop test range is as follows:

Test Kit – Ordered using the test kit code in the table below. The kit is supplied with all reagents and equipment to perform the test, housed in a plastic case.

Or

Reagent Pack – Ordered using the reagent pack code in the table below. The pack is supplied in a carton containing test reagents and instruction sheet only.

Or combine reagent packs with a standard case to create your own multi-parameter test kit:

56A001801:

A 1501 Compact Plus Case

Supplied with standard equipment and space to add up to 8 reagent packs – simply choose reagent packs from the list below to complete the kit. See our Portable Laboratory (Build Your Own Test Kit) section on page 38 for additional case/kit options.



Test Kit Code	Reagent Pack	Description	Range	Tests/Pack
56K003501	56R003590	Acidity (P) Drop Test	0-7.5% H ₂ SO ₄	100+
56K003601	56R003690	Alkalinity (M) HR Drop Test	200-2400mg/l CaCO ₃	100+
56K003701	56R003790	Alkalinity (M) LR Drop Test	50-600mg/l CaCO ₃	100+
56K003801	56R003890	Alkalinity (P + M) LR Drop Test	50-600mg/l CaCO ₃	100+
56K003901	56R003990	Alkalinity (P + OH) HR Drop Test	200-2400mg/l CaCO ₃	100+
56K004001	56R004090	Alkalinity (P) HR Drop Test	200-2400mg/l CaCO ₃	100+
56K004101	56R004190	Alkalinity (P) HR Drop Test	0.25-6.0% NaOH	100+
56K004201	56R004290	Alkalinity (P) LR Drop Test	50-600mg/l CaCO ₃	100+
56K004301	56R004390	Alkalinity (P) LR Drop Test	250-6000mg/l NaOH	100+
56K004401	56R004490	Alkalinity (P, M + OH) HR Drop Test	200-2400mg/l CaCO ₃	100+
56K004501	56R004594	Alkalinity (P, M + OH) LR + HR Drop Test	50-2400mg/l CaCO ₃	200+
56K004601	56R004690	Alkalinity (P, M + OH) LR Drop Test	50-600mg/l CaCO ₃	100+
56K004701	--	Alkalinity Total (Disposable)	9-540mg/l CaCO ₃	50+
56K025401	56R025490	Carbon Dioxide Drop Test	10-300mg/l CO ₂	100+
56K004801	56R004890	Chloride HR Drop Test	200-12,000mg/l Cl ⁻	100+
56K004901	56R004990	Chloride LR + HR Drop Test	20-12,000mg/l Cl ⁻	100+
56K005001	56R005090	Chloride LR Drop Test	20-400mg/l Cl ⁻	100+
56K005101	56R005190	Chlorine (Free) HR Drop Test	15-300mg/l Cl ₂	100+
56K005201	56R005290	Chlorine (Free) LR Drop Test	1-30mg/l Cl ₂	100+
56K005301	--	Chlorine Spot Tester Kit (Disposable)	Trace Cl ₂	500+
56K005401	56R005450	Chlorine (Semi-quantitative) Test	0.1-50mg/l Cl ₂	50
56K005501	56R005590	Chlorine (Total Available) HR Drop Test	0.2-15% Cl ₂	100+
56K005601	56R005690	Chlorine (Total Available) LR + HR Drop Test	0.01-15% Cl ₂	100+

Test Kit Code	Reagent Pack	Description	Range	Tests/Pack
56K005701	56R005790	Chlorine (Total Available) LR Drop Test	100-2400mg/l Cl_2	100+
56K005801	56R005890	Chlorine Dioxide HR Drop Test	25-200mg/l ClO_2	100+
56K005901	56R005990	Chlorine Dioxide MR Drop Test	10-150mg/l ClO_2	100+
56K006001	56R006090	Chlorine Dioxide LR Drop Test	0.08-30 mg/l ClO_2	100+
56K006101	56R006190	EDTA (Free) Drop Test	0-2000mg/l EDTA	100+
56K006201	56R006290	Hardness (Calcium) HR Drop Test	50-600mg/l CaCO_3	100+
56K006301	56R006390	Hardness (Calcium) LR Drop Test	5-60mg/l CaCO_3	100+
56K006401	56R006490	Hardness (Total) LR + HR Drop Test	5-600mg/l CaCO_3	100+
56K006501	56R006590	Hardness (Total) HR Drop Test	50-600mg/l CaCO_3	100+
56K006601	56R006690	Hardness (Total) LR Drop Test	5-60mg/l CaCO_3	100+
56K006701	56R006790	Hardness (Total/Calcium) HR Drop Test	50-600mg/l CaCO_3	100+
56K006801	56R006890	Hardness Raw Water Drop Test	50-600mg/l CaCO_3	100+
56K006901	56R006990	Hardness Stop/Go Drop Test	4mg/l CaCO_3	100+
56K007001	--	Hardness (Temporary) Drop Test (Disposable)	9-540mg/l CaCO_3	50+
56K007101	56R007190	Hardness Total/Calcium LR+HR	5-600mg/l CaCO_3	100+
56K007201	56R007250	Hardness Yes/No Test Pack	8-20mg/l CaCO_3	250
56K007301	56R007390	Hydrogen Peroxide Drop Test	15-500mg/l H_2O_2	100+
56K007401	56R007490	Iron Spot Tester Drop Test Pack	Trace Fe	100+
56K007501	56R007590	Molybdate HR Drop Test (New)	25-400mg/l MoO_4	100+
56K007601	56R007690	Molybdate MR Drop Test (New)	10-200mg/l MoO_4	100+
56K007701	56R007790	Molybdate LR Drop Test (New)	5-40mg/l MoO_4	100+
56K007801	56R007890	Molybdate LR Drop Test	2.5-20mg/l MoO_4	100+
56K007901	56R007990	Nitrite Drop Test	10-2000mg/l NaNO_2	100+
56K008001	56R008090	Oxygen (Available) Drop Test	0-500mg/l O_2	100+
56K008101	56R008190	pH (Universal Indicator)	pH 4-10	100+
56K008201	56R008290	Peracetic Acid Drop Test	0-450mg/l $\text{CH}_3\text{CO}_3\text{H}$	100+
56K008301	56R008350	Phosphonate Drop Test	4-20mg/l HEDP	50+
56K008401	56R008490	Phosphonate Drop Test	4-20mg/l HEDP	100+
56K008501	56R008550	Polyacrylate Single Phase HR Drop Test	0-20mg/l PAA**	50+
56K008601	56R008650	Polyacrylate Single Phase LR Drop Test	0-20mg/l PAA**	50+
56K008701	56R008750	Polyacrylate Two Phase HR Drop Test	0-20mg/l PAA**	50+
56K008801	56R008850	Polyacrylate Two Phase LR Drop Test	0-20mg/l PAA**	50+
56K008901	56R008990	Quaternary Ammonium Compounds HR Drop Test	60-1800mg/l C.T.A.B. *	100+
56K009001	56R009090	Quaternary Ammonium Compounds LR Drop Test	40-300mg/l C.T.A.B. *	100+
56K009101	56R009190	Sulphite Drop Test	25-150mg/l Na_2SO_3	100+
56K009201	56R009290	Tannin Drop Test	50-300mg/l Tannin	100+
56K009301	56R009390	Total Chelant Drop Test	0-2000mg/l EDTA	100+
56K009401	56R009490	Total Oxidant Drop Test (Chlorine Dioxide)	0.2-6.0mg/l ClO_2	100+
56K009501	56R009550	Zinc (Free Soluble) Drop Test	1-10mg/l Zn^{2+}	50
56K009601	56R009650	Zinc (Total Complex) Drop Test	1-10mg/l Zn^{2+}	50

* Cetyl trimethyl ammonium bromide ** Polyacrylic Acid

Test Strips

- Hazard free
- Rapid
- Always to hand
- Semi quantitative results

Test strips offer quick, clean results without the fuss of reagents or tablets. Their dip and compare method makes them a popular choice for many applications where speed and simplicity are most important.



Ordering Information:

Code	Description	Range	Tests/Pack	Type
56S000190	Chlorine HR	10-200mg/l Cl_2	100	SQ
56S000290	Chlorine (Starch Iodide)	Presence/Absence	100	Q
56S000301	Chlorine (Starch Iodide)	Presence/Absence	5m reel	Q
56S000450	Chlorine Dioxide LR	0.1-1.6mg/l ClO_2	50	SQ
56S000550	Chlorine Dioxide HR	0.5-100mg/l ClO_2	50	SQ
56S000625	Copper	0.05-5.0mg/l Cu	25	SQ
56S000725	Iron	0.1-5.0mg/l Fe	25	SQ
56S000850	Hydrogen Peroxide	0.5-100mg/l H_2O_2	50	SQ
56S000950	Hardness Total	40-1000mg/l CaCO_3	50	SQ
56S001890	Nitrate/Nitrite	10-500mg/l NO_3^- : 1-80mg/l NO_2^-	100	SQ
56S001990	Nitrite 3000	100-3000mg/l NO_2^-	100	SQ
56S001090	pH (pH Fix)	pH 4.5-10	100	SQ
56S001190	pH (pH Fix)	pH 7-14	100	SQ
56S001290	pH (pH Fix)	pH 0-14	100	SQ
56S001394	pH (Paper)	pH 6.0-8.1	200	SQ
56S001494	pH (Paper)	pH 9.5-12	200	SQ
56S001594	pH (Paper)	pH 8.0-9.7	200	SQ
56S001690	Peracetic Acid	0.05-50mg/l $\text{CH}_3\text{CO}_3\text{H}$	100	SQ
56S001790	Peracetic Acid	100-500mg/l $\text{CH}_3\text{CO}_3\text{H}$	100	SQ
56S002090	Sulphite	10-1000mg/l SO_3^{2-}	100	SQ

Q – Qualitative Papers

Indicator paper supplied in strips or reels. Dipping the strip into a sample will induce a colour change in the paper if the compound of interest is present.

SQ – Semi-quantitative Papers

Supplied in packs of 50 or 100 strips, the pad or set of pads will change colour when dipped into the sample if the compound of interest is present. The intensity of the colour produced is compared to a standard colour scale to determine the approximate concentration of the compound.

VARIO Reagent Systems (also suitable for use in HACH® Systems) *

The Lovibond® VARIO range has been specially formulated to work on both Lovibond® and HACH® equipment allowing companies an extended choice and value for money when restocking reagents for laboratory equipment. Test packs are detailed as follows:



Titration Reagents

Designed and also suitable for use on the HACH® Digital Titrator, the Lovibond® VARIO range of titration cartridges has been calibrated specifically to use the same factors as detailed in the HACH® handbook.

Test	As	Range	Specification	Code	Tests/Pack
Acidity Pack**	CaCO ₃	10 - 4000mg/l	FMA Cartridge 13ml 4.5 Indicator Reagent, 65ml	56R019650	50
Alkalinity (M,P,OH) Pack	CaCO ₃	10 - 4000mg/l	Sulphuric Acid 1.6N 13ml Sulphuric Acid 0.16N 13ml Phenolphthalein Indicator, 65ml 4.5 Indicator Reagent, 65ml Barium Chloride Reagent, 65ml	56R019750	50
Alkalinity HR** (M,P,OH) Pack	CaCO ₃	0 - 12000mg/l	Sulphuric Acid 8.00N 13ml Phenolphthalein Indicator, 65ml 4.5 Indicator Reagent, 65ml Barium Chloride Reagent, 65ml	56R019850	50
Carbon Dioxide Pack	CO ₂	10 - 100mg/l	Sodium Hydroxide 0.3636N, 13ml Phenolphthalein Indicator, 65ml	56R019950	50
Chloride Pack	Cl ⁻	50 - 2000mg/l	Silver Nitrate 1.128N 13ml Potassium Chromate, 65ml Nitric Acid Solution, 65ml	56R020050	50
Hardness (Calcium) Pack	CaCO ₃	10 - 4000mg/l	EDTA 0.8M 13ml EDTA 0.08M 13ml Calcium Hardness Indicator Powder, 20g Calcium Hardness Buffer (NaOH), 65ml	56R020150	50

**Lovibond® methods adapted for use on the HACH® digital titrator.

* HACH® is a registered trademark of Hach Corporation, Loveland, USA. The use of the HACH® trademark does not imply any affiliation with or approval by Hach Company regarding the formulation, testing or suitability of these products for use in HACH® branded spectrophotometers or other systems.

VARIO Reagent Systems (also suitable for use in HACH® Systems)*



Titration Reagents

Test	As	Range	Specification	Code	Tests/Pack
Hardness (Total) Pack	CaCO ₃	10 - 4000mg/l	EDTA 0.8M 13ml EDTA 0.08M 13ml Total Hardness Indicator Powder, 20g Total Hardness Buffer, 65ml	56R020250	50
Nitrite Pack	NaNO ₂	20 - 2500mg/l	Ceric Sulphate 0.5M 13ml Ferroin Indicator, 65ml Sulphuric Acid 50%, 65ml	56R020350	50
Phosphonate Pack**		2 - 50mg/l	Phosphonate Cartridge 13ml Phosphonate Indicator Tablets	56R020450	50
Sulphite Pack	Na ₂ SO ₃	10 - 500mg/l	Sulphate Cartridge 13ml Acid / Starch Indicator, 40g	56R020550	50
Zinc (Free, Complexed) Pack**	Zn ²⁺	1 - 10mg/l	Zinc Cartridge 13ml Zinc Indicator Solvent, 250ml Acetate Buffer, 65ml Dithizone, 0.25g Sodium Thiosulphate, 65ml	56R020650	50

**Lovibond® methods adapted for use on the HACH® digital titrator.

* HACH® is a registered trademark of Hach Corporation, Loveland, USA. The use of the HACH® trademark does not imply any affiliation with or approval by Hach Company regarding the formulation, testing or suitability of these products for use in HACH® branded spectrophotometers or other systems.

Photometers

The following VARIO powder packs have been specially formulated to work on the HACH®* photometer range, including the DR800 and DR2000 series instruments, giving identical results. Calibration for all of the following tests are also programmed into the Lovibond® MD 600 photometer.



Description	Range	Chemistry	Tests/Pack	Code
Aluminium Pack, 20ml, Set	0-0.22mg/l as Al	Cyanine R	100	535000
Ammonia Pack, 10ml, Set	0-0.5mg/l as N	Alkaline Salicylate	100	535500
Ammonia LR, 5ml, Set	0-2.5mg/l as N	Alkaline Salicylate	25	535600
Ammonia HR, 5ml, Set	0-50mg/l as N	Alkaline Salicylate	50	535650
Ammonia (Free), Set	0.01-0.5mg/l as N	Indophenol	100	535800
Chlorine (Free), 5ml	0-3.5mg/l as Cl ₂	Buffered DPD	100	530090
Chlorine (Free), 5ml	0-3.5mg/l as Cl ₂	Buffered DPD	1000	530093
Chlorine (Free), 10ml	0.01-2mg/l as Cl ₂	Buffered DPD	100	530100
Chlorine (Free), 10ml	0.01-2mg/l as Cl ₂	Buffered DPD	1000	530103
Chlorine (Free), 25ml	0-5mg/l as Cl ₂	Buffered DPD	100	530110
Chlorine (Free), 25ml	0-5mg/l as Cl ₂	Buffered DPD	1000	530113
Chlorine (Total), 5ml	0-3.5mg/l as Cl ₂	Buffered DPD	100	530080
Chlorine (Total), 5ml	0-3.5mg/l as Cl ₂	Buffered DPD	1000	530083
Chlorine (Total), 10ml	0.01-2mg/l as Cl ₂	Buffered DPD	100	530120
Chlorine (Total), 10ml	0.01-2mg/l as Cl ₂	Buffered DPD	1000	530123
Chlorine (Total), 25ml	0-5mg/l as Cl ₂	Buffered DPD	100	530130
Chlorine (Total), 25ml	0-5mg/l as Cl ₂	Buffered DPD	1000	530133
Chlorine Dioxide	See Chlorine above			
COD LR	0-150mg/l as O ₂	Dichromate	25	2420720
COD LR	0-150mg/l as O ₂	Dichromate	150	2420725
COD LR (Mercury Free)	0-150mg/l as O ₂	Dichromate	25	2420710
COD MR	0-1500mg/l as O ₂	Dichromate	25	2420721
COD MR	0-1500mg/l as O ₂	Dichromate	150	2420726
COD MR (Mercury Free)	0-1500mg/l as O ₂	Dichromate	25	2420711
COD MR (Mercury Free)	0-1500mg/l as O ₂	Dichromate	150	2420716
COD HR	0-15000mg/l as O ₂	Dichromate	25	2420722
COD HR	0-15000mg/l as O ₂	Dichromate	150	2420727
COD HR (Mercury Free)	0-15000mg/l as O ₂	Dichromate	25	2420712

* HACH® is a registered trademark of Hach Corporation, Loveland, USA. The use of the HACH® trademark does not imply any affiliation with or approval by Hach Company regarding the formulation, testing or suitability of these products for use in HACH® branded spectrophotometers or other systems.

VARIO Reagent Systems (also suitable for use in HACH® Systems)*

Description	Range	Chemistry	Tests/Pack	Code
Copper, 10ml	0-5mg/l as Cu	Bicinchoninate	100	530300
Copper, 10ml	0-5mg/l as Cu	Bicinchoninate	1000	530303
DEHA, 10ml, Set	20-500µg/l as DEHA	PPST	100	536000
Hydrazine, 10ml	0.005-0.6mg/l as N ₂ H ₄	p-dimethylamino- Benzaldehyde	100	531200
Iron (Total), 10ml	0-1.8mg/l as Fe	TPTZ	100	530550
Iron (Total), 10ml	0-3mg/l as Fe	1,10 Phenanthroline	100	530560
Iron (Total), 10ml	0-3mg/l as Fe	1,10 Phenanthroline	1000	530563
Manganese LR, 10ml, Set	0-0.7mg/l as Mn	PAN	50	535090
Manganese HR, 10ml, Set	0-20mg/l as Mn	Periodate Oxidation	100	535100
Molybdate LR, 10ml, Set	0.03-3mg/l as Mo	Ternary Complex	100	535450
Molybdate HR, 10ml, Set	0-35mg/l as Mo	Mercaptoacetic Acid	100	535300
Molybdate HR, 25ml, Set	0-35mg/l as Mo	Mercaptoacetic Acid	100	535400
Monochloramine, 10ml, Set	0.04-4.5mg/l as Cl ₂	Indophenol	100	535800
Nitrate, Tube Test, Set	0-30mg/l as N	Chromotropic Acid	50	535580
Nitrogen, total, LR Tube Test, Set	0-25mg/l as N	Persulphate	50	535550
Nitrogen, total, HR Tube Test, Set	10-150mg/l as N	Persulphate	50	535560
Nitrite LR, 10ml	0-0.3mg/l as N	Diazotisation	100	530980
Nitrite LR, 25ml	0-0.3mg/l as N	Diazotisation	100	530970
Phosphate, 10ml	0-2.5mg/l as PO ₄	Molybdenum Blue	100	531550
Phosphate, Ortho, 10ml, Set	0.06-5mg/l as PO ₄	Molybdenum Blue	50	535200
Phosphate, 10ml Acid Hydrolyzable And Total Tube Test, Set	0.06-5mg/l as PO ₄ 0.06-3.5mg/l as PO ₄	Molybdenum Blue	50	535250
Phosphate Total, 10ml Tube Test, Set	0.06-3.5mg/l as PO ₄	Molybdenum Blue	50	535210
Silica LR, 10ml, Set	0-1.6mg/l as SiO ₂	Heteropoly Blue	100	535690
Silica HR, 10ml, Set	0-100mg/l as SiO ₂	Silicomolybdate	100	535700
Silica UHR, 25ml, Set	0-200mg/l as SiO ₂	Silicomolybdate	100	535900
Sulfate, 10ml	0-70mg/l as SO ₄	USEPA Accepted	100	532160
Sulfate, 25ml	0-70mg/l as SO ₄	for wastewater	100	532150

* HACH® is a registered trademark of Hach Corporation, Loveland, USA. The use of the HACH® trademark does not imply any affiliation with or approval by Hach Company regarding the formulation, testing or suitability of these products for use in HACH® branded spectrophotometers or other systems.



Accessories

Photometers

Code	Description	Qty/Pack
214050	Infra-red data transfer module IRiM	1
197620	Round vials with cap Height 48mm, ø 24mm	12
197626	Sealing ring for round vial ø 24mm	12
197665	Round vials with cap Height 90mm, ø 16mm	10
19802190	Adapter for round vials ø 16mm	1
418951	Vial Stand for 6 round cells	1
197635	Cleaning Cloth for Vials	10
364100	Plastic stirring rod, 13cm length	1
364109	Plastic stirring rod, 10cm length	1
1950026	Batteries (AAA)	4
380230	Cleaning brush, 10cm	1

MD 100

Code	Description	Qty/Pack
215670	Verification Standard Kit	1
197600	Plastic vials (PC), with lid "Multi"-Type 2, ø 10mm	12

MD 600

Code	Description	Qty/Pack
215640	Verification Standard Kit	1
214030	Cable for update for connection to a PC	1
19802192	Adapter for round vials ø 13mm	1
471007	Plastic funnel with handle	1

Comparator

Code	Description	Qty/Pack
142000	Lovibond® 2000+ Comparator	1
142050	Portable Lighting Unit, Battery Operated	1
606890	40mm (20ml) Glass Cell (for Lovibond® 2000+)	1
354253	13.5mm (10ml) Glass Cells (with lids)	5
418957	Vial Stand (for 10 x 13.5mm cells)	1
145000	Lovibond® CHECKIT Comparator	1
145010	Lovibond® CHECKIT Comparator, D55	1
145500	10ml Plastic Cells (with lids)	10

Accessories

Titrator

Code	Description	Qty/Pack
56A006801	Digital Titrator	1
56A007872	Syringette Assembly (Complete)	5

Test Kit Ancillaries

Code	Description	Qty/Pack
56L004291	Buffer Solution - pH 4 (KS6)	125ml
56L000991	Buffer Solution - pH7 (KS9)	125ml
56L000391	Buffer Solution - pH10 (KS3)	125ml
56X000101	Clipboard (A5)	1
56L001691	Conductivity Standard, 1413 μ S (KS16)	125ml
56A006401	Conical Flask, 150ml	1
56A022901	Container Hinged, Plastic, 100ml	1
385130	Dilution Tube, 100ml	1
385132	Dilution tube, 30ml	1
56A020050	Filter Membranes, 0.45 μ , \varnothing 25mm	50
56A019950	Filter Papers, GF/C, \varnothing 25mm	50
56A009101	Filter Holder, \varnothing 25mm	1
145860	Plastic Box For Reagents	1
56A012501	Sample Containers, 250ml, Wide Neck	1
56A006501	Syringe, 20ml	1
56A008601	Syringe, 10ml	1
56A008501	Syringe, 5ml	1
56A008401	Syringe, 2ml	1
56A013501	Syringe, 1ml	1
56A006601	Stirring/crushing rod – plastic	1
56A008101	Titration Jar, Glass, 60ml	1
56A006701	Titration Jar, Plastic, 60ml	1
56A010501	Titration Jar, Plastic, 250ml	1
56A004401	Thermometer (Spirit), 5-105°C	1
AS-K21440	Tube and cap, plastic, graduated, 10ml	1
56A009401	Universal Container, 30ml + Cap	1
56A009001	Wash Bottle	1

Lovibond® Reagents

Lovibond® reagents offer the customer a unique range of in-house manufactured products, including tablets, liquids or powders. In this way the customer can be sure of unbiased advice, since different forms of reagents are often required for different applications. All Lovibond® reagents are available in convenient, state of the art packaging, with full operating instructions and safety data sheets.



Specifications and Certificate of Analysis

To express the high quality standard of Lovibond® tablet reagents, specifications for each type of tablet as well as a "Certificate of Analysis" for each lot is available in the down-load area at **www.lovibond.com**.

Tablet Reagents in Convenient Blister Packaging

In terms of quality, tablet reagents are generally considered the most accurate. Lovibond® test tablets are manufactured under tightly controlled conditions to the highest quality standards, enabling the company to guarantee* some tablet reagents for as long as 10 years. Using convenient blister packaging, each tablet is individually sealed in high-grade, polyethylene-coated aluminium foil, protecting it from challenging environmental conditions. This packaging keeps each tablet in perfect condition, right up until the time it is needed by the user. Reagents in tablet form ensure accuracy in dosing because the user can be sure all of the

reagent is added to the water sample, and in exactly the right quantity. Now aluminium foil blister packaging brings added convenience. The user simply pushes the tablet through the protective foil, straight into the sample. It is simple, time-saving and practical.

Powder Reagents

Some users prefer reagents in powder form, and so Lovibond® powder reagents have been developed to offer the user a wide range of tests, combined with rapid dissolution in the water sample. Powder reagents are packed in aluminium foil to protect them from the environment, and cover a wide range of applications.

VARIO Powder Packs

Easy to use, VARIO Powder Packs are extremely popular for water testing applications in many countries throughout the world.

Lovibond® VARIO Powder Packs are produced to the same high quality standards that have made Lovibond® tablet reagents so successful over several decades.

Parameters from Aluminium and Chlorine through to Sulphate are just some of the well-known tests that are included in the VARIO Powder Pack range. Their chemical properties also enable them to be used with HACH®* Photometer Systems.

* HACH® is a registered trademark of Hach Corporation, Loveland, USA. The use of the HACH® trademark does not imply any affiliation with or approval by Hach Company regarding the formulation, testing or suitability of these products for use in HACH® branded spectrophotometers or other systems.



Liquid Reagents

Liquid reagents are the reagent of choice for many test applications. As a rule, liquid reagents do not consist of a single preparation but comprise several components that need to be added to the sample in a certain order. Liquids have long found favour in certain applications, and offer the user rapid dosing, and almost instant dissolution in the water sample.

Lovibond® liquid reagents are produced to exacting quality standards and the high volume production reassures the user that the reagents are freshly manufactured, and will provide accurate results.

The most popular form of packaging liquid reagents is the dropper bottle, and this is the best option for most applications. For higher accuracy, the Lovibond® range also includes sophisticated titration systems, including digital titrators and convenient cartridges containing the liquid titrant.

Tube Tests

When testing for substances that are hard to detect, such as Total Nitrogen, or the more general parameter Chemical Oxygen Demand (COD), the Lovibond® range offers a tube test system that allows for more “aggressive” sample processing. Lovibond® tube tests enable the user to easily perform highly sensitive and precise water testing. When using tube tests, measurement is considerably faster and easier in comparison with other methods.

The tube tests contain a precise amount of reagent, avoiding problems of excess reagent and optimising test safety. Six different measuring ranges are available. The tubes are made of special optical glass with a 16 mm in diameter. They are supplied in a storage and dispatch box together with digestion or auxiliary reagents. The packs contain 24 or 25 reaction vials and up to 2 zero vials for photometer system calibration.

** Guarantee on Lovibond® reagents is dependent on several factors including, but not restricted to: form of reagent; the environment (presence of sunlight or high temperatures); adherence to storage conditions and handling. Please contact your regional representative for handling information and the guaranteed shelf life on specific reagent formulae.*

With over 30 years' experience in chemical science, manufacturing and packaging, the company is perfectly positioned to advise on Reagents and Formulations.

Notes



Tintometer GmbH

Lovibond® Water Testing
Schleefstraße 8-12
44287 Dortmund
Tel.: +49 (0)231/94510-0
Fax: +49 (0)231/94510-20
sales@tintometer.de
www.lovibond.com

Germany

The Tintometer Limited

Lovibond House
Solar Way, Solstice Park
Amesbury, Wiltshire SP4 7SZ
Tel.: +44 (0)1980 664800
Fax: +44 (0)1980 625412
water.sales@tintometer.com
www.lovibond.com

UK

Tintometer AG

Hauptstraße 2
5212 Hausen AG
Tel.: +41 (0)56/4422829
Fax: +41 (0)56/4424121
info@tintometer.ch
www.tintometer.ch

Switzerland

Tintometer China

Room 1001, China Life Tower,
16 Chaoyangmenwai Avenue,
Beijing, 100020
CHINA
Tel: +86 10 85251111 ext.330
Fax: +86 10 85251001

China

Tintometer South East Asia

Unit B-3-12, BBT One Boulevard,
Lebuh Nilam 2, Bandar Bukit Tinggi,
Klang, 41200, Selangor D.E
Tel.: +60 (0)3 3325 2285/6
Fax: +60 (0)3 3325 2287
lovibond.asia@tintometer.com
www.lovibond.com

Malaysia

Tintometer Inc

6456 Parkland Drive
Sarasota
FL 34243
Tel.: +1 941 758 8671
Fax.: +1 941 727 9654
sales@tintometer.us
www.lovibond.com

USA

Lovibond® & Tintometer® are Registered Trade Marks of The Tintometer Limited. All translations and transliterations of LOVIBOND® & TINTOMETER® are asserted as Trade Marks of The Tintometer Limited. Registered Office: Lovibond House, UK.

Registered in England No. 45024 –
Errors and Omissions Excepted –
Content subject to alterations without notice.
937010_V2_12/13

Windows® is a registered trademark of Microsoft Corporation in the United States and other countries.

* HACH® is a registered trademark of Hach Corporation, Loveland, USA. The use of the HACH® trademark does not imply any affiliation with or approval by Hach Company regarding the formulation, testing or suitability of these products for use in HACH® branded spectrophotometers or other systems.