HACH®

Be Right™

This Combined Document includes a brochure for all the following area for Hach Lange:

- HACH LANGE Water Analysis Power, Heat & Steam Generation
- HACH LANGE Ensuring Water Quality
- HACH LANGE Improving Quality Control for Chemical Production
- HACH LANGE Lab Family for Industrial Quality
- HACH LANGE Laboratory Water Analysis
- HACH LANGE Cuvette Test System
- HACH LANGE Portable Samplers
- HACH LANGE Process Instrumentation
- HACH LANGE Guide for Food Applications
- HACH LANGE Reagents and Standards

Distributed By

Greyhound CHROMATOGRAPHY

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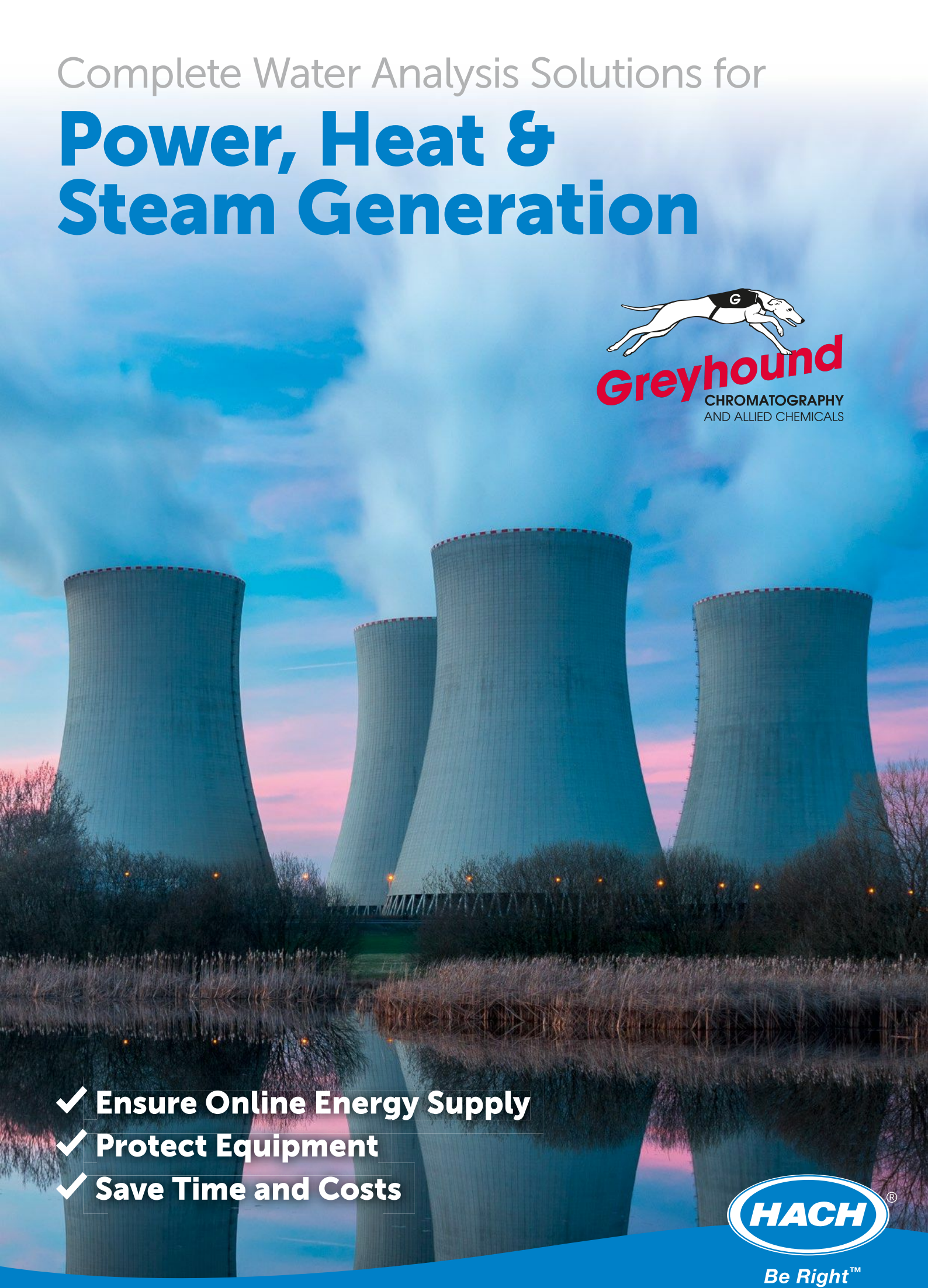
Complete Water Analysis Solutions for

Power, Heat & Steam Generation

Greyhound CHROMATOGRAPHY AND ALLIED CHEMICALS



- ✓ Ensure Online Energy Supply
- ✓ Protect Equipment
- ✓ Save Time and Costs

HACH®

Be Right™

The Water Analysis Experts
for Power & Steam Generation

With more than 60 years as the leading expert in water quality analysis, Hach® provides the knowledgeable and responsive support team you trust to address your unique needs for water and steam applications throughout your entire process.

Hach provides solutions for laboratory, online and portable products whether your application is routine or challenging. We also provide service and training solutions that support you and our products.

Hach has the most comprehensive coverage for all types of water quality from ambient water to ultrapure. Our breadth of product solutions support all power plants whether fossil or nuclear, as well as cogeneration, and heat and steam production.

Influent water treatment
Demineralization
Make-up water
Steam cycle
Cooling Water
Wastewater

Featured water analysis solutions

Silica / Phosphate

Hach 5500sc Silica or Phosphate Analyser

Avoid downtime with the industry's only pressurised reagent delivery system.

- 90 days of continuous runtime
- Predictive diagnostics / maintenance technology
- Intuitive user interface
- Verify easily with Hach lab products so you don't waste time second-guessing

Prognosys® Enabled

Sodium

NA5600sc Analyser

Protect the metallurgy in your system and monitor for leaks at sub ppb. Our newest analyser has the same interface as the 5500sc.

- Automatic calibration
- Automatic electrode reactivation
- Optimum response time in a variety of power applications
- Reagent replenishment only every 90 days

Prognosys® Enabled

Dissolved Gases

Orbisphere K1100 Optical O_2 Sensor

Achieve high accuracy in low ppb range with no membranes.

- Maintenance one time per year
- K1200 available for irradiated water applications, providing real-time data while reducing overall dose
- No interference by magnetite, hydrogen or flow

Orbisphere 510 Multi-Channel Controller

Provides the complete solution in dissolved gas monitoring.

- Accurate, repeatable, trace-level measurements
- Data management
- Complements Orbisphere sensors

Orbisphere Hydrogen TC Sensor

Monitor hydrogen in the power production process.

- Innovative thermal conductivity (TC) sensor
- Continuous measurements
- Gaseous or liquid samples

Orbisphere 3100 Portable Optical O_2 Analyser

Mitigate risk with the most rugged portable O_2 analyser in the power industry.

- Accurate results in seconds; ready to measure right out of the box
- Calibration one time per year
- Internal data storage and export via USB interface

Conductivity / pH / Redox/ORP

9523sc Cationic Conductivity Analyser

Calculate accurate pH measurements without interference from contaminants.

- More contaminant-resistant than traditional pH probes

9525sc Degas Cation Conductivity System

Measure conductivity following the removal of CO_2 gas from the sample stream.

Couple with Hach 9523sc to create a single, integrated system that measures:

- Specific conductivity (SC)
- Cation conductivity (CC)
- Degassed conductivity (DCC)
- Calculated pH

Contacting Conductivity Sensors

A broad range of product options is available to meet your unique needs.

- Robust construction
- 316 stainless steel
- Integrated temperature sensor

SC200 Universal Controller

Deploy the most versatile controller on the market.

- Compatible with a broad range of digital and analog sensors
- Communication module-ready
- Advanced features for ease of use

8362 pH or Redox/ORP Sensor for High Purity Water

High-purity applications require accurate temperature sensitivity and a constant flow of electrolyte to the sample stream.

- Self-pressurising electrode

Total Organic Carbon (TOC)

QBD1200 Laboratory TOC Analyser

- One 90-minute calibration per year
- Low total cost of ownership
- 95% less carryover

BioTector B3500c TOC Analyser

- Maintenance two times per year
- Innovative Two Stage Advanced Oxidation Technology

FP360sc Oil in Water Sensor

- Continuous online monitoring
- Low maintenance
- Easy to clean

Disinfection

CL17 Colorimetric Chlorine Analyser

Take control of challenging water treatment processes with an analyser that resists changes in water quality and demand.

- 15-minute maintenance monthly
- Fewer operator interventions and no special tools
- Reagent-free solutions for chlorine, chlorine dioxide and ozone measurements are also available.

Turbidity & Corrosion Monitoring

TU5 Series Lab and Online Turbidimeters

An innovative optical design delivers the best low-level precision and sensitivity.

- 98% less surface area to clean
- Online and lab results that match

LT200 Reactor Heating Block

Combine LT200 and lab tests with DR3900 and TU5400 online turbidimeter to get a clear view on:

- Iron transport
- Total and dissolved iron
- Ultra low range iron

Photometry

DR3900 VIS and DR6000 UV-VIS Photometers

Trace your sample from collection to preparation, sample analysis, to documentation.

- RFID technology
- Pre-programmed with power industry-specific methods
- Measures chlorine, silica, phosphate, oxygen scavengers, TOC, iron and copper

Meters & Probes

SL1000 Portable Parallel Analyser

Get highly accurate chloramination results, with less opportunity for errors, in a fraction of the time.

- Up to six parameters in parallel
- Automation, internal temperature control, and self-contained chemicals to avoid manual steps

HQD Meters & Intellical Probes

We offer a range of probes for routine and challenging power applications.

- Intuitive user interface

AT1000 Automatic Titrator

Now anyone in the laboratory can perform Potentiometric Titrations that deliver fast, accurate and reliable results.

- One-touch automation
- Pre-set application packs
- Ready-to-use straight from the box

Steam & Water Analysis Systems

SWAS Panel

On-line monitoring for heat and power plants has never been simpler.

- Customisable to your exact application via a standardised process
- Arrives pre-assembled and ready to use in a self-standing rack

Products on this page may not be available in all countries. Please check with your local sales representative for more information.

Service & Support

Online Support

Hach Support Online (HSO) pools more than 85 years of water analysis knowledge into a powerful global community. Flowing directly into our customer and technical support teams, this dynamic resource delivers real-time answers, user-friendly search tools, multiple types of content, and easy ways to connect with Hach experts. With HSO, you get the information you need and together, we can power progress for people around the world.

Technical Training

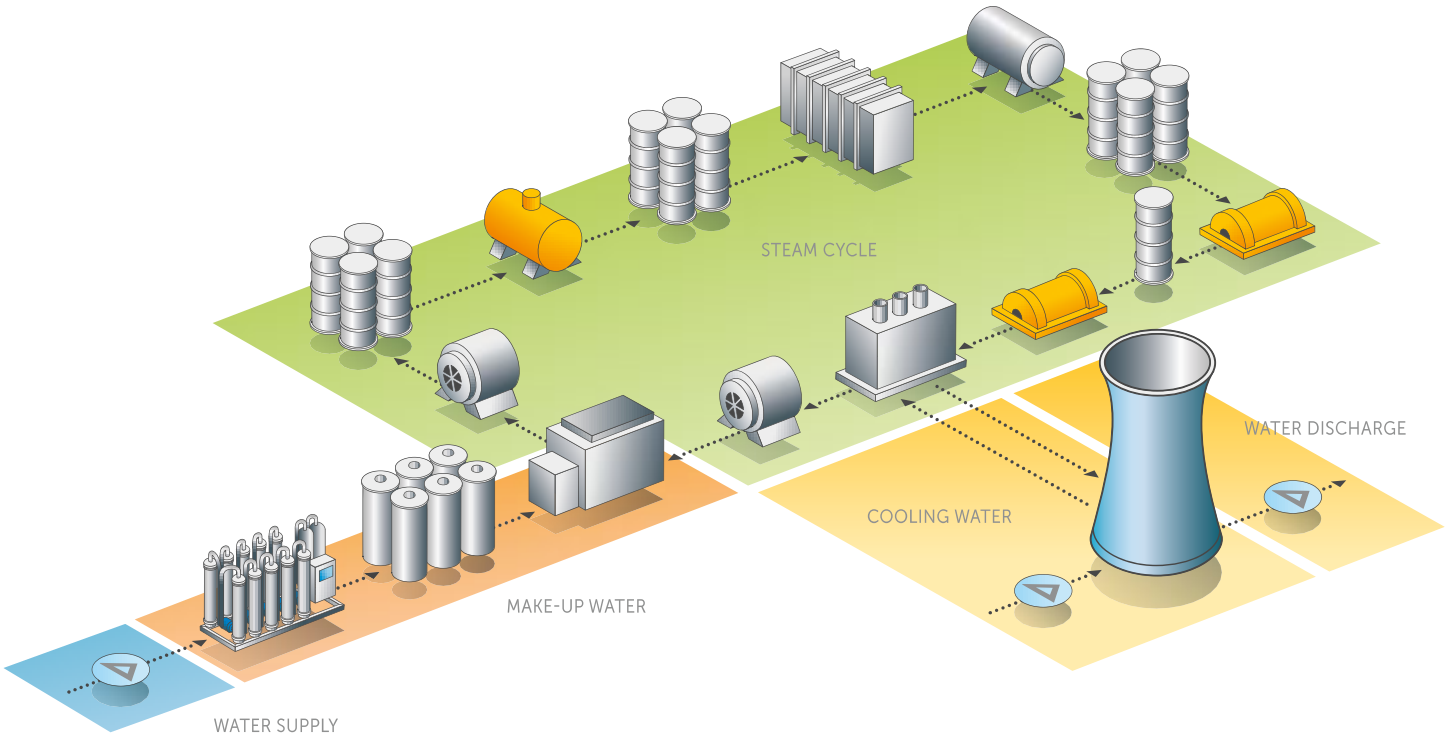
Hach Training Center provides relevant, hands-on training to your team, giving them the experience they need to master various theories and techniques – and produce results you can trust for quality assurance, environmental safety, and regulatory compliance. Hach experts offer a large course catalog of workshop training, personalised training, and digital learning designed to increase proficiency and confidence for plant operators, instrument and field technicians, laboratory personnel, and plant managers and superintendents.

Service

Hach ServicePlus Programs have been developed to help solve your maintenance and support problems. Whether it's a lack of resources or skills, an instrument that is down, compliance concerns or the need for a predictable budget, we have programs to fit the unique challenges you face in your organisation.

Hach Solutions by Parameter

All parameters are available as both process & laboratory solutions.



Water Treatment

- Chloride
- Chlorine
- Chlorine Dioxide
- Conductivity/Total Dissolved Solids (TDS)
- Dissolved Oxygen
- Hardness/Alkalinity
- Hydrazine/Oxygen Scavenger
- Oxidation-Reduction Potential
- Ozone
- pH
- Silica
- Sodium
- Total Organic Carbon (TOC)
- Turbidity and Suspended Solids

Steam Cycle

- Ammonia
- Chloride
- Conductivity/Total Dissolved Solids (TDS)
- Copper
- Dissolved Oxygen
- Hydrazine/Oxygen Scavenger
- Hydrogen
- Iron
- Oxidation-Reduction Potential
- pH
- Phosphate
- Silica
- Sodium
- Total Organic Carbon (TOC)

Cooling Water

- Chloride
- Chlorine/Oxidants
- Chlorine Dioxide
- Conductivity/Total Dissolved Solids (TDS)
- Copper
- Hardness/Alkalinity
- Microbiology
- Molybdate and Other Corrosion Inhibitors
- Oxidation-Reduction Potential
- Ozone
- pH
- Sodium
- Total Organic Carbon (TOC)

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HACH® Be Right™

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ENSURING WATER QUALITY

For people around the world

The worldwide leader in water quality solutions

For over 80 years, Hach®'s water analysis solutions have helped customers of all sizes and industries deliver quality water. With a broad line of analytical solutions, we make water analysis better – faster, simpler, greener, and more informative.

Trust Hach for absolute confidence in the quality of your water with:

Expert Answers

With experience and resources in every corner of the globe, Hach makes it easier for you to be right in your water analysis. Our application expertise across all industries helps you reduce risk, ensure compliance, and increase efficiency. Ongoing training and educational tools available to you provide knowledge and resources to help you deliver unparalleled results.

Outstanding Support

To have confidence in the quality of your water, you need continual, accurate analysis. Our extensive support team, including Field Service Support Technicians, Technical Support Agents, and Customer Service Representatives, provides direct assistance to ensure timely and correct water quality data.

Reliable, Easy-to-Use Solutions

Hach was born from a singular goal – simplifying water analysis. This founding principle inspires us to provide easier, more accurate, and more dependable solutions. As water challenges evolve, our commitment to constant innovation propels our delivery of exceptional solutions that meet your needs.

A broad range of solutions to solve your specific needs

Hach's humble beginnings as a water analytics manufacturer have grown beyond just measurement tools. In crafting our wide portfolio of solutions, operators, engineers, and plant managers are at the forefront of every design and innovation decision – engineering solutions around the unique regulatory and operational challenges your facility faces.

Lab

Lab solutions form the foundation of Hach. We offer regulatory-approved methods for confidence in water quality to municipal and industrial facilities. Delivering simplicity, accuracy, and low maintenance, our lab solutions help operators, engineers, and chemists with water quality analysis.

Process

You know that load levels change. By continuously analysing water levels with a Hach analyser, you can handle unexpected events within your facility, such as peak loads. Optimised operations empower you to lower costs while delivering top water quality.

Real-Time Control Systems

Hach's off-the-shelf Real-Time Control (RTC) Systems continually adjust treatment processes in real time, keeping your facility compliant while reducing treatment costs – making operations easier than ever.

Service

With more than 800 Field Technicians, Technical Support Experts, and Bench Service Technicians across the globe, Hach's Service division makes sure your solutions run smoothly. From startup and maintenance to operation training, we have the ideal program to maximise uptime and achieve the ROI you need.

Commercial Learning

The goal of our Commercial Learning group is to make every operator an expert in Hach solutions. Commercial Learning leverages Hach's 80 years in water quality, combining best-in-class information with digital and hands-on learning tools. Get the expertise you need to leverage our solutions and meet the increasing demands of your industry.

Better water quality – from municipal to industrial

From large municipal facilities to microbreweries, Hach's solutions can be found on every continent in virtually any industry or application where water quality matters. Simply put, where there is water quality analysis, there is Hach.

Municipal

Drinking Water

Hach's drinking water solutions include a complete portfolio for lab, online, field, and service applications. Our experts continue to innovate portable and online analysers to help facilities maintain compliance, cut costs, and streamline operations.

Wastewater

Hach wastewater solutions, including our Real-Time Control Systems, nutrient sensors and analysers, and spectrophotometers, provide the overarching information you need to make compliance and process control improvement easier.

More Municipal

- Education
- Military
- Private Water
- Central Labs

Industrial

Food and Beverage

Our food and beverage portfolio, including lab, online, portable, and integrated solutions, delivers on your top priorities: higher product quality, less product loss, and compliance.

Power Generation

Paired with local field support, online analytics and lab verification cover the comprehensive parameters needed to help ensure maximum uptime and accurate measurement – promoting plant efficiency and compliance.

Chemical

For chemical plants, Hach analytic solutions support environmental performance requirements with online and lab verifications and testing solutions that span all critical parameters.

More Industrial

- Oil and Gas
- Pulp and Paper

Engineering and Consulting

Hach's Engineering Design Tool helps engineering consultants make the best design choices and streamline the design process for faster, reliable project plans.

For more information on our solutions and the industries we serve, visit hach.com.

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Improving Quality Control for Chemical Production with the Hach Lab Family

Problem

A German chemical producer recently expanded their product line. Their central lab was restructured to cover applications related to environmental and product control. They sought to standardise on a set of lab equipment that was accurate, safe, reliable, and easy-to-use.

Solution

The chemical producer chose Hach® and their entire platform of lab products, including instruments, reagents, and service, for quality control, environmental monitoring and boiler/cooling applications. Products include portable and laboratory instruments for photometry, turbidity, titration, e-chem, and colour scale instruments.

Benefits

The customer determined that, after standardising on the Hach Lab Family, error prevention, cost reduction, and failsafe redundancy for operators has improved. Furthermore, the customer has saved money by utilising a Hach service package.

Situation

One of Europe's top-ten producers of ammonia and urea specializes in agrochemical and industrial chemical products. In the field of industrial chemicals, they are a reliable supplier of ammonia, urea, and nitric acid.

This chemical producer has two central labs: R&D and analytical routine, which covers the entire water cycle and production quality control. The analytical routine lab uses a wide range of analytical methods for analysis of chemical products and effluent control.

Water Cycle Monitoring

- Raw water from Elbe river: nitrite, nitrate, ammonium, ortho-phosphate, total phosphorus, COD, hardness, chloride, pH, conductivity, turbidity, colour scale
- Process water: iron, aluminium
- Boiler water: silicate
- Cooling water: chlorine, chlorine dioxide
- Wastewater: nitrate, ammonium, total phosphorus, COD, total nitrogen

Quality Control

- Spectrophotometry in urea production: Biuret, Formaldehyde, Urea, Ammonia
- Colour & Turbidity in Melamin Resins (up to 80 °C):
- Colour Hazen number <10
- Turbidity <3 NTU

Recently, the chemical producer has expanded their product line and restructured their central lab. Satellite production labs merged together. They have been certified by DAkkS (Deutsche Akkreditierungsstelle, the national German accreditation body) for three years by applying high quality and competency standards for operators and shift workers. This certification attests that all operators – including shift workers – are capable of using the instrumentation and methods correctly. Maintaining these quality standards requires a clear strategy.

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Customer Needs

At this chemical plant accuracy, safety, and routine are the keys to success after a significant expansion of products and facilities. With multiple facilities, they understand the importance of consistency and repeatability across labs and employees. For this reason, they took the opportunity to standardise on a set of lab equipment.

The lab manager strives to provide his team with the best package that's safe and easy-to-use, day or night. As such, their central labs required a wide range of analytical technologies, field instruments, automatic samplers and laboratory instruments. Analytical methods required by their central lab include spectrophotometry, colour scale, turbidity, titration, pH, and conductivity.

Strategic Partnership

With so much variety, the lab manager needed to identify a long-term, strategic partnership with an analytics provider that would help them meet the demands of their scaling business.

This chemical producer adopted the Hach Lab Family for three reasons:

- Hach is an expert for "Optical Technologies" and covers several key applications in the environmental sector but also in the quality control lab. Color, turbidity and UV-VIS spectrometry are crucial for their daily business.
- Hach redesigned their entire lab family and applied the same user interface to make handling and measurement much easier for any operator.
- Hach provides an unparalleled service package to guarantee short response times to avoid breakdowns.

Outcomes

Standardising on the Hach Lab Family allowed the chemical producer to:

- Compare results between lab shifts, which is essential for quality control.
- Validate and standardse operating procedures, which made it easier to transfer knowledge between labs.
- Have an internal backup of equipment in cases where instruments need servicing.
- Reduce stock, because instruments cross the lab family utilise the same accessories.
- Save money and ensure quick response times with Hach Service Packages.

The Hach Lab Family

The **DR6000 UV-VIS Spectrophotometer** (successor of DR5000) delivers top performance for both routine laboratory tasks and demanding spectrophotometric applications. It is easy to program for customised methods in quality control and run spectrums over a wider wavelength range.

The **DR1900 Spectrophotometer** provides light and most compact portable spectrophotometry, built with field use in mind.

SL1000 is a portable meter that can handle up to six parameters simultaneously, making testing faster. An excellent solution for boiler water applications. The SL1000 is 75% faster than tests that require powder pillows. There is no competitive alternative to the SL1000.

The LCK Cuvette Test System for safe COD: a package that includes the **DR3900 VIS Laboratory Spectrophotometer**, **HT200S Thermostat**, and **LCK cuvette vials***. By incorporating an internal fan, the HT200S completes COD results in just 30 minutes. During digestion, the HT200S is locked, which prevents accidental burns. In addition to safe digestion, the COD solution includes safety features for handling reagents that prevent contact with chemicals. Reagents are predosed within the LCK cuvettes and cuvette openings prevent spills, even when the cuvette is tilted.

**The US equivalent to LCK cuvettes is TNTplus*

Conclusion

Utilising the Hach Lab Family allowed the chemical producer to take advantage of Hach's industry expertise, such as optical technologies, spectrophotometry, colour measurement, and turbidity, while also preventing errors, saving money and providing failsafe redundancy for lab operators.

The Hach Lab Family allowed the chemical producer to standardise lab equipment, utilise a unified user interface and improve lab processes across environmental and quality control applications.

The **TL23 Laboratory Turbidimeter** provides accurate, stable readings using ratio optical system with self-diagnostic alerts. It continues the successful history of the 2100 Series keeping the same optical properties.

The **Lico 690 Colorimeter** (successor of Lico 500) for colour measurements of liquids carries out exact colorimetric evaluations in conformity with several ISO/ ASTM standards in just one single measurement. A wide range of disposable cuvettes can be inserted which is the ideal solution for toxic and malodorous reagents.

Portable and laboratory **HQD Meters** determine pH, conductivity, dissolved oxygen and ORP. They are connected to smart interchangeable Intellical probes for quick, simple, and reliable measurements.

The **Ganimede P** Automatic Laboratory Analyser for serial laboratory analysis of ortho and total phosphate features a compact analysis unit with integrated digestion.

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Hach's Lab Family for Industrial Quality Control Applications

Quality control procedures are vital to provide sustainable high quality products for customers in every industry. It is key to have accurate measurements, reliable results and easy to use tools. Avoiding breakdowns and human error is crucial to optimising quality control.

THE HACH LAB FAMILY MEETS YOUR REQUIREMENTS

Key Benefits:

- All key parameters available from one source
- User friendly interfaces, easy to use for experts and non-experts alike
- Same user interface for all key instruments allows for ease of use across the Hach® product platform
- Identical accessories to use same sample in different instruments (eg. cuvettes)

Industrial Quality Control made easy:

Quality control is done in line with production which means production staff are carrying out their respective analysis 24 hours a day. To ensure reliability of measurements and results, it is important to make the quality control process as stable as possible. This requires instruments that are easy to reduce human errors. Hach recognised this need and designed it's portfolio to meet these requirements. The intuitive usage limits training needs and analytical expertise while using the instruments.

If you can use one of them – you can use them all.

Greyhound CHROMATOGRAPHY AND ALLIED CHEMICALS

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TURBIDIMETERS & COLORIMETERS

TL23 Series Benchtop Turbidimeter

The new TL23 Series laboratory turbidimeters blend trusted technology of the 2100N/AN and improved features to simplify testing in the most demanding industrial and wastewater applications.

What is the same?

- The TL23 series uses the exact same **optic block** as the legacy 2100N/AN series turbidimeters
- No need for additional validation or evaluation

What is new?

- **Improved and intuitive design:** large full color display with guided procedures for calibration and verification
- **A smart device for more reliable measurements:** the instrument detects sample stability prior to taking a reading
- **Easy to use, easy to be right:** with a USB port for data export, sample identification for traceability and self-diagnostics for quality assurance

To learn more, visit:
www.youtube.com/watch?v=zAYlxe_5DIM

LICO 690/620 Benchtop Spectral Colorimeter

The Standard for colour measuring in liquids.

- Data transfer available via an Ethernet interface
- Measurement process starts automatically when the cuvette is inserted
- Easy to change cuvette compartment facilitates cleaning and/or replacement
- High measurement reliability via a comprehensive set of test aids
- Accurate measurement results thanks to the automatic cuvette identification
- 7" TFT WVGA color touchscreen

PHOTOMETRY – FROM PORTABLE TO ROBOTICS

DR3900 / DR6000 Spectral Photometers

Easy-to-use UV/VIS Photometry.

- 2 in 1 concept (pre-programmed & user specific methods)
- Easy to use intuitive menu, big colour touchscreen
- Put your "in-house-Method" on a standard barcoded cuvette and use auto detection with Barcode and RFID technology (avoid any errors by auto detection)
- Standardised Accessories: Sipper module, UV range – Colour Measurement included
- Use the wide range of ready-to-use Hach LCK cuvette test kits: More than 50 parameters and 90 measuring ranges for all applications in water analysis

To learn more, visit:
www.youtube.com/watch?v=Z-9d9QBAr1I

Portable Photometric Solutions

Quality Analysis at your fingertips, wherever you are.

- Take the control to wherever it's necessary
- Photometric and e-chem analysis combined in one portable instrument
- Streamlined analysis with breakthrough technology: Hach Chemkey
- Up to six parameters, tested simultaneously, reducing manual steps by 50%

To learn more, visit:
www.youtube.com/watch?v=Uyt0lZ6xoT8

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HACH®
Be Right™

Catalogue

Laboratory Water Analysis

Photometric and Electrochemical Instruments, Reagents and Services

Greyhound
CHROMATOGRAPHY
AND ALLIED CHEMICALS

HACH LANGE
UNITED FOR WATER QUALITY

HACH LANGE Photometric and Electrochemical Instruments, Reagents & Services

With high quality products, consumables, accessories and comprehensive services, HACH LANGE is your ideal partner for water analysis. Our laboratory solutions ensure accurate and reliable analysis for all key parameters in the municipal, regulatory and industrial sectors, in the lab and in the field.

Everything from a single supplier

From instrumentation out in the field or in the lab, to sampling, reagents, accessories and consumables. HACH LANGE provides all you need for your water analysis.

For every application

HACH LANGE water analysis is the result of decades of practical experience. We supply you with tailor-made solutions for reliable monitoring of wastewater, drinking water and process water.

Parameters from A–Z

From Ammonium to Zirconium. Consistently user friendly solutions; proven in daily practice. Our customers know they can rely on HACH LANGE for their water analysis; from sample preparation to quality control. In the interest of continuous product improvement, technical specifications are subject to change without prior notice.

HACH LANGE

CONTENT

Photometric System

HACH LANGE offers a perfectly coordinated system of photometers and reagents, required accessories and services. For all key parameters from Ammonium to Zirconium. From a fast screening test to standard comparable analysis, with sample preparation and Quality Assurance.

Systematic quality and efficiency

Only a perfect interaction guarantees highest efficiency and accuracy – starting with the individual components of the spectrophotometer and the ready-to-use chemistry up to the interaction with you and your laboratory equipment. HACH LANGE delivers to you a perfectly coordinated system – as a developer, manufacturer and sales & service partner.

Easy & safe handling

By means of bar-coded cuvettes, the DR spectrophotometer automatically identifies test parameter, range, method, lot number and expiry date. Colour coded cuvettes, packaging, pictograms, and instructions in multiple languages simplify testing. DOSICAP ZIP reagent delivery provides ease of use and eliminates hazardous chemistry handling.

Sustainable & environmentally friendly

Continuous environmental investment is a high priority in the development of the HACH LANGE cuvette tests. Since 1978, we have collected used reagents for proper disposal. Thanks to the special reagent processing techniques applied in the HACH LANGE Environment Centre, more than 75% of all returned test components are fed back into the production and material cycles.

Analysis made simple

LCK cuvette tests - unrivalled analysis

- Safe - Maximum safety for users, thanks to the closed cuvette system and low amounts of reagents. Complete labelling of the individual cuvettes, including barcode label for automatic recognition in the photometer.
- Easy - Convenient and error-free dosing of the reagents without pipetting and reagent contact, thanks to DOSICAP and DOSICAP ZIP: cuvette caps containing an exactly pre-dispensed amount of freeze-dried reagent.
- Approved - HACH LANGE cuvette tests are officially approved for legally required consent limits. With the help of standard solutions and round-robin test solutions, they provide the assurance you need.
- Versatile - 50 parameters and more than 100 measuring ranges for all applications in water analysis - from extremely polluted industrial wastewater to trace analysis in drinking water.

IBR+ increases reliability

During the rotating ten times measurement process using the IBR+ Integrated Barcode Reader, the DR spectrophotometer immediately picks up all the information on the cuvette, also including lot number and expiry date. Both are documented with the measurement value. In case of exceeding the expiry date you automatically get an alarm.

RFID for traceability and rapid data updates

By means of RFID (Radio-Frequency Identification) technology you can trace your samples completely back to the sampling point. All important data like sampling point, operator, date and time are stored on an RFID tag on the sample bottle. In addition, Certificates of Analysis (CoA) can be retrieved immediately from the RFID tag on the packaging. In the laboratory, all this information will be transferred via RFID identification to the DR spectrophotometer in a matter of seconds.

Never before has updating or programming of methods into the spectrophotometer been so easy and quick. You simply hold the cuvette test box in front of the DR's RFID module, wait for the acoustic signal and that's it. The measurement starts instantly - with the correct calibration data leading to the right result.

Analytical Quality Assurance (AQA)

Quality assurance and analysis are completely interlinked. QA procedures can be easily defined and documented within the instrument without additional software. Results are only dependable in conjunction with AQA. HACH LANGE offers classic single standard solutions as well as practical multi-standard solutions in application-oriented combinations. In addition the comprehensive ADDISTA AQA system for cuvette tests contains two round-robin solutions which entitle you to participate in external round-robin tests free of charge.

Alignment of laboratory and process analysis

Compare your online value with your laboratory reference value directly in the spectrophotometer - via LINK2SC connection between SC controller and DR 3900/DR 6000. The exchange of data works bidirectional, which means that you can do a matrix correction of your process probe straight from the laboratory.

Photometric Tests

HACH LANGE offers a family of prepared reagents designed to streamline your testing and save your time. Whether you are using Cuvette Tests, Powder Pillows, TEST'N'TUBEs, Liquid Reagents, or ACCUVACs, our reagents deliver the quality and convenience you expect from us.

Focus on quality

To make sure you receive high-quality reagents, HACH LANGE conducts stringent quality control checks throughout the entire manufacturing process. Several in-process control steps take place as well as comprehensive inspections of the finished products. Documentation of the final quality checks is carried out on our Certificates of Analysis (CoA).

Reagents tailored to your needs

Lot after lot, HACH LANGE prepares reagents providing accurate results, enhanced stability, repeatable results, and extended shelf life. Especially suitable for photometric measurements under difficult conditions are Powder Pillows and ACCUVACs. For demanding analysis the cuvette tests with their outstanding precision are just what is needed.

Everything for your security

It goes without saying that safety comes first. Hazard code information can be found on product labels, packages, Safety Data Sheets AND, what's more, in this catalogue! Safety at a glance: in accordance with Article 48 of the CLP regulation (EC) No. 1272/2008, the following tables provide EU and/or GHS hazard codes of our laboratory chemicals.

Which LCK cuvette tests for my photometer?

Quick reference guide

LCK - Outstanding precision and handling

Our cuvette tests cover all water analysis applications. They satisfy the most demanding tasks, e.g. monitoring consent limits as an equivalent alternative to time-consuming reference methods. The 2D barcode also details the lot number and the expiry date of the reagents. The Certificate of Analysis (CoA) is directly available via RFID tag on the packaging.

Article number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR 3900	DR 6000	EU hazard code	GHS hazard code
LCK362	Acid capacity	0.5 - 8.0 mmol/L	HACH LANGE Method			25		■	■	-	-
LCK300	Alcohol	0.01 - 0.12 g/L	Alcohol Oxidase (Enzymatic)			24		■	■	-	-
LCK301	Aluminium	0.02 - 0.5 mg/L Al	Chromazurol S		LCA702	24		■	■	T	GHS02, GHS05, GHS07, GHS08
LCK302	Ammonium	47 - 130 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA705	25		■	■	Xn, N	GHS05, GHS07, GHS09
LCK303	Ammonium	2 - 47 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA703	25	■	■	■	Xn, N	GHS05, GHS07, GHS09
LCK304	Ammonium	0.015 - 2.0 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA700	25	■	■	■	Xn, N	GHS05, GHS07, GHS09
LCK305	Ammonium	1 - 12 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA704	25	■	■	■	Xn, N	GHS05, GHS07, GHS09
LCK390	AOX	0.05 - 3.0 mg/L AOX	Digestion + Iron(III)-Thiocyanate	DIN EN ISO 9562	LCA390	24		■	■	T, C, F	GHS02, GHS06, GHS08
LCK391	AOX	0.005 - 0.5 mg/L AOX	Digestion + Iron(III)-Thiocyanate	DIN EN ISO 9562	LCA390	12		■	■	T, C, F	GHS02, GHS05, GHS06, GHS08
LCK241	Bitter units	≥ 2 BU	Analogous MEBAK-Method	MEBAK II		25			■	Xn, F, N	GHS02, GHS05, GHS07, GHS08, GHS09
LCK554	BOD_5	0.5 - 12 mg/L O_2	Dilution Method	EN 1899-1		20		■	■	Xi	GHS05. GHS07
LCK555	BOD_5	4 - 1650 mg/L O_2	Dilution Method	EN 1899-1	LCA555	39		■	■	Xi	GHS05. GHS07

PC II: Single Parameter Colorimeter, DR 3900: VIS Spectrophotometer, DR 6000: UV-VIS Spectrophotometer

Please note: Some methods require reagent blanks. For these, the number of tests varies.

*: GHS hazard code will be available in the future

-: product is not subject to classification

Hazard code descriptions: see page 19

Which LCK cuvette tests for my photometer?

Article number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR 3900	DR 6000	EU hazard code	GHS hazard code
LCK307	Boron	0.05 - 2.50 mg/L B	Azomethine-H	DIN 38405-D17	191442	25		■	■	-	GHS07
LCK308	Cadmium	0.02 - 0.3 mg/L Cd	Cadion		LCA702	25		■	■	T, N	GHS02, GHS05, GHS06, GHS07, GHS08, GHS09
LCK388	Carbonate/ carbon dioxide	55 - 550 mg/L CO_2	pH Indicator			25		■	■	-	-
LCK311	Chloride Chloride	1 - 70 mg/L Cl 70 - 1000 mg/L Cl	Iron(III)-Thiocyanate		LCA700, LCA703, LCA704, LCA705	24	■	■	■	T, C	GHS02, GHS05, GHS06
LCK410	Chlorine, free	0.05 - 2.0 mg/L Cl_2 free/ClO_2	DPD	ISO 7393-1-2-1985, DIN 38408 G4-2	LCA310	24		■	■	-	GHS07
LCK310	Chlorine/ Ozone/ Chlorine dioxide	0.05 - 2.0 mg/L Cl_2	DPD	ISO 7393-1-2-1985, DIN 38408 G4-2	LCA310	24	■	■	■	-	GHS07
LCK213	Chromic acid	0.5 - 5.0 g/L CrO_3	Intrinsic Baths Colour			25		■	■	Xi	GHS07
LCK313	Chromium	0.03 - 1.0 mg/L Cr (VI)	Diphenylcarbazide	EN ISO 11885, DIN 38405-D24	LCA702	25		■	■	Xi, Xn	GHS05, GHS07, GHS08
LCS313	Chromium, trace	0.005 - 0.25 mg/L Cr (VI)	Diphenylcarbazide	EN ISO 11885, DIN 38405-D24	LCA702	25		■	■	Xn	GHS05, GHS07, GHS08
LCI400	COD	0 - 1000 mg/L O_2	Dichromate	ISO 15705	LCA703	24		■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCI500	COD	0 - 150 mg/L O_2	Dichromate	ISO 15705	LCA704	24		■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK014	COD	1000 - 10000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA705	25	■	■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK1014	COD	100 - 2000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA708	25		■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK114	COD	150 - 1000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA703	25	■	■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK314	COD	15 - 150 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA704	25	■	■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK414	COD	5.0 - 60 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA700	24		■	■	T, C	GHS05, GHS06, GHS08, GHS09

PC II: Single Parameter Colorimeter, DR 3900: VIS Spectrophotometer, DR 6000: UV-VIS Spectrophotometer

Please note: Some methods require reagent blanks. For these, the number of tests varies.

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Hazard code descriptions: see page 19

Which LCK cuvette tests for my photometer?

Article number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR 3900	DR 6000	EU hazard code	GHS hazard code
LCK514	COD	100 - 2000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA708	25		■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK614	COD	50 - 300 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA709	25	■	■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK714	COD	100 - 600 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	1218629	25		■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK914	COD	5 - 60 g/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44		25		■	■	T, C	GHS05, GHS06, GHS08, GHS09
LCK214	COD, mercury free	100 - 1000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41	1218629	25		■	■	T, C	GHS05, GHS08, GHS09
LCK329	Copper	0.1 - 8.0 mg/L Cu	Bathocuproine Disulphonic Acid		LCA701	25		■	■	-	-
LCK229	Copper	2 - 100 g/L Cu	Intrinsic Bath Colour			25		■	■	Xi	GHS05
LCK529	Copper, trace	0.01 - 1.0 mg/L Cu	Bathocuproine Disulphonic Acid		LCA706	20		■	■	-	-
LCK315	Cyanide	0.01 - 0.6 mg/L CN	Babituric Acid-Pyridine	ISO 6703-1-2-3-1984, DIN 38405 D13		25		■	■	C, Xn	GHS05, GHS07, GHS08
LCK319	Cyanide	0.03 - 0.35 mg/L CN	HACH LANGE Method			24		■	■	Xi, N	GHS05, GHS07, GHS09
LCK323	Fluoride	0.1 - 2.5 mg/L F	SPADNS		29153	25		■	■	-	GHS05
LCK325	Formaldehyde	0.5 - 10 mg/L H_2CO	Acetylacetone			24	■	■	■	-	GHS07
LCS325	Formaldehyde, trace	0.01 - 1.0 mg/L H_2CO	Acetylacetone			24		■	■	-	GHS07
LCK320	Iron	0.2 - 6.0 mg/L Fe	1.10-Phenanthroline	DIN 38405-D17	2833649	24		■	■	Xi	GHS07
LCK321	Iron	0.2 - 6.0 mg/L Fe	1.10-Phenanthroline	ISO 6332-1988, DIN 38406 E1-1	LCA701	25		■	■	-	-
LCK521	Iron, trace	0.01 - 1.0 mg/L Fe	1.10-Phenanthroline	ISO 6332-1988, DIN 38406 E1-1	LCA706	20		■	■	-	
LCK306	Lead	0.1 - 2.0 mg/L Pb	PAR		LCA701	25		■	■	T+, N, Xn	GHS06, GHS07, GHS09
LCK326	Magnesium	0.5 - 50 mg/L Mg	Metalphthalein		1479442	25		■	■	-	-
LYW185	Menthol	0.5 - 15 mg/100 mL Menthol	p-Dimethylaminobenzaldehyde			25		■	■	C	GHS05
LCK330	Molybdenum	3 - 300 mg/L Mo	Thioglycolic Acid			24		■	■	T	GHS05, GHS06
LCK337	Nickel	0.1 - 6.0 mg/L Ni	Dimethylglyoxime	DIN 38406-E11	LCA701	25		■	■	C	GHS05, GHS07, GHS08
LCK237	Nickel	5 - 120 g/L Ni	Intrinsic Baths Colour			25		■	■	Xi	GHS05
LCK537	Nickel, trace	0.05 - 1.0 mg/L Ni	Dimethylglyoxime		LCA706	20		■	■	C, O	GHS05, GHS07, GHS08
LCK339	Nitrate	0.23 - 13.5 mg/L NO_3-N	2.6-Dimethylphenol	ISO 7890-1-2-1986, DIN 38405 D9-2	LCA703	25		■	■	C	GHS02, GHS05, GHS07

Which LCK cuvette tests for my photometer?

Article number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR 3900	DR 6000	EU hazard code	GHS hazard code
LCK340	Nitrate	5 - 35 mg/L NO_3-N	2.6-Dimethylphenol	ISO 7890-1-2-1986, DIN 38405 D9-2	LCA704	25		■	■	C	GHS02, GHS05
LCK341	Nitrite	0.015 - 0.6 mg/L NO_2-N	Diazotisation	EN ISO 26777, DIN 38405 D10	LCA707	25		■	■	Xi	GHS07
LCK342	Nitrite	0.6 - 6.0 mg/L NO_2-N	Diazotisation	EN ISO 26777, DIN 38405 D10	LCA 709	25		■	■	Xi	GHS07
LCK541	Nitrite, trace	0.0015 - 0.03 mg/L NO_2-N	Diazotisation	EN ISO 26777, DIN 38405 D10	2340249	50		■	■	-	GHS07
LCK138	Nitrogen total (LATON)	1 - 16 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA709	25		■	■	T, C, Xi, Xn	GHS02, GHS05, GHS07, GHS08
LCK238	Nitrogen total (LATON)	5 - 40 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA700	25		■	■	T, C, Xi, Xn	GHS02, GHS05, GHS07, GHS08
LCK338	Nitrogen total (LATON)	20 - 100 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA708	25		■	■	T, C, Xi, Xn	GHS02, GHS05, GHS07, GHS08
LCK365	Organic acids	50 - 2500 mg/L as Acetic Acid	Esterification			25		■	■	C	GHS05, GHS07, GHS08, GHS09
LCK345	Phenols	0.05 - 5 mg/L Phenols	4-Nitroaniline			24		■	■	Xn	GHS05, GHS07, GHS09
LCK346	Phenols	5 - 200 mg/L Phenols	4-Aminoantipyrine	ISO 6439-1990, DIN 38409 H16		24		■	■	Xn, O	GHS03, GHS07, GHS08
LCK049	Phosphate, ortho	1.6 - 30 mg/L PO_4-P	Vanadate-Molybdate		LCA703	25		■	■	C	GHS05
LCK348	Phosphate, ortho + total	0.5 - 5.0 mg/L PO_4-P	Phosphormolybdenum Blue	EN ISO 6878-1-1986, DIN 38405 D11-4	LCA700, LCA707	25	■	■	■	C	GHS05, GHS07, GHS08
LCK349	Phosphate, ortho + total	0.05 - 1.5 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA704, LCA709	25	■	■	■	C	GHS05, GHS07, GHS08
LCK350	Phosphate, ortho + total	2 - 20 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA703, LCA708	25	■	■	■	C, Xn	GHS05, GHS07, GHS08
LCS349	Phosphate, ortho + total	0.01 - 0.5 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA704, LCA709	25		■	■	C	GHS05, GHS07, GHS08
LCK240	Photometric Iodine sample (PIS)	> 0.2 Iodine value	MEBAK Method	MEBAK II		25			■	F	GHS02, GHS05
LCK228	Potassium	5 - 50 mg/L K	Kalignost		LCA700	25		■	■	-	GHS05, GHS06, GHS07, GHS08
LCK328	Potassium	8 - 50 mg/L K	Kalignost		LCA700	24		■	■	Xn	GHS06
LCK354	Silver	0.04 - 0.8 mg/L Ag	HACH LANGE Method		1461342	25		■	■	F	GHS02, GHS07, GHS08
LCK355	Silver	5 - 400 mg/L Ag (I)	HACH LANGE Method		1461342	24		■	■	C	GHS05

PC II: Single Parameter Colorimeter, DR 3900: VIS Spectrophotometer, DR 6000: UV-VIS Spectrophotometer

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Hazard code descriptions: see page 19

Which LCK cuvette tests for my photometer?

Article number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR 3900	DR 6000	EU hazard code	GHS hazard code
LCK318	Sludge activity	5 - 200 µg Formazan (SA)	Colorimetric	DIN 38409-H7				■	■	F	GHS02
LCK357	Starch	2 - 150 mg/L Starch	HACH LANGE Method			25		■	■	-	-
LCK153	Sulphate	40 - 150 mg/L SO_4	Barium Sulphate		LCA704	25		■	■	T	GHS06
LCK353	Sulphate	150 - 900 mg/L SO_4	Barium Sulphate		LCA701, LCA702, LCA703	25		■	■	T	GHS06
LCK653	Sulphide	0.1 - 2.0 mg/L S^{2-}	Dimethyl-p-phenylenediamine	ISO 10530-1991, DIN 38405-D26		25		■	■	C	GHS05
LCK654	Sulphite	0.1 - 5.0 mg/L SO_3	HACH LANGE Method			25		■	■	-	-
LCK332	Surfactants, anionic	0.05 - 2.0 mg/L	Methylene Blue (MBA)	ISO 7875-1-2-1984, DIN 38409-H 23-1		25		■	■	Xn	GHS07, GHS08
LCK331	Surfactants, cationic	0.2 - 2.0 mg/L	Bromophenol Blue			25		■	■	Xn, F	GHS02, GHS07, GHS08
LCK333	Surfactants, nonionic	0.2 - 6.0 mg/L as TRITON x 100	TBPE	DIN 38409-H23-2	LCA333	25		■	■	Xn	GHS02, GHS08
LCK334	Surfactants, nonionic	0.1 - 20 g/L	CTAS	DIN 38409-H23-2		25		■	■	Xn	GHS07, GHS08
LCK433	Surfactants, nonionic	6 - 200 mg/L as TRITON x 100	TBPE	DIN 38409-H23-2		25		■	■	Xn	GHS02, GHS08
LCK359	Tin	0.1 - 2.0 mg/L Sn	Pyridinfluoron (PYF)			24		■	■	T, O	GHS02, GHS03, GHS07, GHS08
LCK380	TOC	2 - 65 mg/L C	Difference Method (TOC is determined as the difference between the TC and TIC values), Persulphate Digestion	DIN 38409-H3	2833249	25		■	■	Xn, Xi, O	GHS03, GHS07, GHS08
LCK381	TOC	60 - 735 mg/L C	Difference Method (TOC is determined as the difference between the TC and TIC values), Persulphate Digestion	DIN 38409-H3	2833149	25		■	■	Xn, O	GHS03, GHS07, GHS08
LCK385	TOC	3 - 30 mg/L C	Purging Method, Persulphate Digestion	EN 1484 ,DIN 38409-H3	LCA704	25		■	■	Xn	GHS07, GHS08
LCK386	TOC	30 - 300 mg/L C	Purging Method, Persulphate Digestion	EN 1484, DIN 38409-H3	LCA703	25		■	■	Xn	GHS07, GHS08
LCK387	TOC	300 - 3000 mg/L C	Purging Method, Persulphate Digestion	EN 1484, DIN 38409-H3	LCA705	20		■	■	Xn	GHS07, GHS08
LCK242	Vicinal diketones (VDK)	0.015 - 0.5 mg/kg Diacetyl	Analogous MEBAK-Method	MEBAK II		25			■	T, N	GHS05, GHS06, GHS08, GHS09
LCK327	Water hardness	1 - 20 °dH	Metalphthalein		2833449	25		■	■	-	-
LCK427	Water hardness, residual	0.02 - 0.6 °dH	Metalphthalein		2833449	24		■	■	Xi	-
LCK360	Zinc	0.2 - 6.0 mg/L Zn	PAR		LCA701	24	■	■	■	Xn	GHS07
LCS360	Zinc, trace	0.02 - 0.8 mg/L Zn	PAR		LCA701	24		■	■	Xn	GHS07
LCK364	Zirconium	10 - 60 mg/L Zr	SurTec/HACH LANGE Method			12 - 24	■	■	■		GHS05

Which Powder Pillows for my photometer?

Quick reference guide

Powder Pillows - low-price methods with long shelf life

Powder Pillows are available for a large number of parameters and measuring ranges. Hermetically sealed in aluminium foil pillows, the PERMACHEM reagents have a shelf life of many years. The reagent is simply poured into the measuring cuvette together with the sample. The evaluation can be carried out visually, e.g. with a colour disk, or with a HACH LANGE photometer.

Article number	Parameter	Measuring range	Method	Quality control	Number of tests	PC II	DR 900	DR 3900	DR 6000	EU hazard code	GHS hazard code
2242000	Aluminium	0.008 - 0.800 mg/L Al	Aluminon	1417442	100	■	■	■	■	Xi	*
2603700	Aluminium	0.002 - 0.250 mg/L Al	Eriochrome Cyanine R	1417442	100			■	■	F, Xn	*
2653299	Ammonia	0.01 - 0.50 mg/L NH_3-N	Salicylate	189149	100	■	■	■	■	Xn	*
2668000	Ammonia	0.01 - 0.50 mg/L NH_3-N	Salicylate	15349	100	■	■	■	■	Xn	*
2459200	Ammonium compounds, quaternary	0.2 - 5.0 mg/L as CTAB	Direct Binary Complex		100			■	■	Xi	GHS07
1206499	Barium	2 - 100 mg/L Ba	Turbidimetric	1461142	100			■	■	Xi	*
2141299	Benzotriazole, Tolyltriazole Benzotriazole, Tolyltriazole	1.0 - 20.0 mg/L Tolyltriazole 1.0 - 16.0 mg/L Benzotriazole	UV Photolysis		100		■	■	■	Xn	*
1417099	Boron	0.2 - 14.0 mg/L B	Carmine		100			■	■	-	*
2802246	Chloramine, mono	0.04 - 4.50 mg/L Cl_2	Indophenol		50	■	■	■	■	C, Xn	*
2105569	Chlorine, free	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	100	■	■	■	■	-	*
1407099	Chlorine, free	0.1 - 10.0 mg/L Cl_2	DPD		100	■	■	■	■	-	*
2105528	Chlorine, free, Chlorine dioxide	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	1000	■	■		■	-	*
2105628	Chlorine, total	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	1000	■	■		■	-	*
2105669	Chlorine, total, Bromine, Iodine	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	100	■	■	■	■	-	*
2770900	Chlorine dioxide	0.04 - 5.00 mg/L ClO_2	DPD/Glycine		100	■	■	■	■	-	*
1271099	Chromium	0.010 - 0.700 mg/L Cr (VI)	1,5-Diphenylcarbohydrazide	1425610	100	■	■	■	■	Xi	*
2242500	Chromium, total	0.01 - 0.70 mg/L Cr	Alkaline Hypobromite Oxidation	1425610	100		■	■	■	T, C	*
2651600	Cobalt, Nickel	0.01 - 2.00 mg/L Co	PAN	2150342, 1417642	100	■		■	■	T, Xi	*
2105869	Copper	0.04 - 5.00 mg/L Cu	Bicinchoninate	12842	100	■	■	■	■	-	GHS07
2603300	Copper	2 - 210 µg/L Cu	Porphyrin	12842	100		■	■	■	Xn	*
2430200	Cyanide	0.002 - 0.240 mg/L CN	Pyridine-Pyrazalone		100		■	■	■	-	*
246066	Cyanuric acid	5 - 50 mg/L	Turbidimetric		50		■	■		-	*
2544800	Iron	0.01 - 1.80 mg/L Fe	FerroMo	1417542	100		■	■	■	-	*
2105769	Iron	0.02 - 3.00 mg/L Fe	FerroVer	1417542	100	■	■	■	■	Xn	*

PC II: Single Parameter Colorimeter, DR 900: Multi-Parameter Colorimeter, DR 3900: VIS Spectrophotometer, DR 6000: UV-VIS Spectrophotometer

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Hazard code descriptions: see page 19

Which Powder Pillows for my photometer?

Article number	Parameter	Measuring range	Method	Quality control	Number of tests	PC II	DR 900	DR 3900	DR 6000	EU hazard code	GHS hazard code
2608799	Iron	0.012 - 1.800 mg/L Fe	TPTZ	1417542	100	■	■	■	■	Xn	*
230166	Iron	0.009 - 1.400 mg/L Fe	FerroZine	1417542	50		■	■	■	T	*
103769	Iron, ferrous	0.02 - 3.00 mg/L Fe (II)	1,10 Phenanthroline	1417542	100		■	■	■	Xn, N	*
2430000	Manganese	0.1 - 20.0 mg/L Mn	Periodate Oxidation	1279142	100	■	■	■	■	Xi, O	*
2604100	Molybdenum	0.3 - 40.0 mg/L Mo	Mercaptoacetic Acid	1426510	100		■	■	■	Xn	*
2449400	Molybdenum, Molybdate	0.02 - 3.00 mg/L Mo	Ternary Complex	1426510	100	■	■	■	■	-	*
2243500	Nickel	0.02 - 1.80 mg/L Ni	Heptoxime	1417642	50			■	■	Xn	*
2106169	Nitrate	0.3 - 30.0 mg/L NO_3-N	Cadmium Reduction	30749	100	■	■	■	■	T, N	*
2429800	Nitrate	0.01 - 0.50 mg/L NO_3-N	Cadmium Reduction	30749	100		■	■	■	T, Xi, N	*
2107169	Nitrite	0.002 - 0.300 mg/L NO_2-N	Diazotisation	2340249	100		■	■	■	Xi	*
2107569	Nitrite	2 - 250 mg/L NO_2	Ferrous Sulphate		100		■	■	■	Xi	*
2446600	Oxygen scavengers	5 - 600 g/L Carbohydrazide	Iron Reduction		100		■	■	■	C	*
2243900	Phenols	0.002 - 0.200 mg/L Phenol	4-Aminoantipyrine		100			■	■	Xn	*
2106069	Phosphate, ortho	0.02 - 2.50 mg/L PO_4	Ascorbic Acid	256949	100	■	■	■	■	Xi	*
212528	Phosphate, ortho	0.02 - 2.50 mg/L PO_4	Ascorbic Acid	256949	1000	■		■	■	Xi	*
2106028	Phosphate, ortho	0.02 - 2.50 mg/L PO_4	Ascorbic Acid	256949	1000	■	■	■	■	Xi	*
2429700	Phosphonates	0.02 - 2.50 mg/L	Persulfate UV Oxidation		100	■	■	■	■	O, Xi, N	*
2459100	Potassium	0.1 - 7.0 mg/L K	Tetraphenylborate	2240442	100			■	■	F, T, Xi	*
2429600	Silica	1 - 100 mg/L SiO_2	Silicomolybdate	110649	100	■	■	■	■	Xn	GHS07
2459300	Silica	0.010 - 1.600 mg/L SiO_2	Heteropoly Blue	110649	100		■	■	■	Xn	*
2296600	Silver	0.02 - 0.70 mg/L Ag	Colorimetric	1461342	50			■	■	T, Xi	*
2106769	Sulphate	2 - 70 mg/L SO_4	SulfaVer 4, turbidimetric	257849	100	■	■	■	■	T	*
2495300	Total Kjeldahl Nitrogen (TKN)	1 - 150 mg/L TKN	Nessler		250		■	■	■	T+, C, N	*
2429300	Zinc	0.01 - 3.00 mg/L Zn	Zincon	237842	100	■	■	■	■	T, N	*

Which SWIFTESTs for my photometer?

Quick reference guide

The right amout of DPD with the SWIFTEST

The SWIFTEST is a powder dispenser that releases the correct amount of DPD (N,N-diethyl-p-phenylenediamine) at the press of a button. It contains enough reagent for 250 chlorine tests (free or total chlorine). As a practical, attractively priced alternative, the SWIFTEST is ideal for laboratories with a high sample throughput, and for analysis in the field.

Article number	Product description	Measuring range	Method	Quality control	Number of tests	PC II	DR 900	DR 3900	DR 6000	EU hazard code	GHS hazard code
2802400	SWIFTEST DPD Total chlorine reagent dispenser and reagent vial	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	250	■	■	■	■	-	GHS07
2802300	SWIFTEST DPD Free chlorine reagent dispenser and reagent vial	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	250	■	■	■	■	-	*
2105660	DPD Total chlorine, SWIFTEST dispenser reagent (refill)	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	250	■	■	■	■	-	GHS07
2105560	DPD Free Chlorine, SWIFTEST dispenser reagent (refill)	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	250	■	■	■	■	-	-

PC II: Single Parameter Colorimeter, DR 900: Multi-Parameter Colorimeter, DR 3900: VIS Spectrophotometer, DR 6000: UV-VIS Spectrophotometer

*: GHS hazard code will be available in the future

-: product is not subject to classification

Hazard code descriptions: see page 19

Which ACCUVACs for my photometer?

Quick reference guide

ACCUVAC - analysing without pipetting

The secret of the ACCUVAC is the vacuum in the sealed glass cuvette containing a measured amount of reagent. The test is carried out by immersing the tip of the ACCUVAC in the sample, then breaking it by applying moderate pressure. The vacuum draws the sample into the cuvette, whilst ensuring thorough mixing. The resulting colour is measured visually or photometrically.

Article number	Parameter	Measuring range	Method	Quality control	Number of tests	PC II	DR 900	DR 3900	DR 6000	EU hazard code	GHS hazard code
2502025	Chlorine, free, Chlorine dioxide	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	25	■	■	■	■	-	*
2503025	Chlorine, total, Bromine, Iodine	0.05 - 4.50 mg/L Br_2	DPD	2630020	25	■	■	■	■	-	*
2503025	Chlorine, total, Bromine, Iodine	0.07 - 7.00 mg/L I_2	DPD	2630020	25	■	■	■	■	-	*
2503025	Chlorine, total, Bromine, Iodine	0.02 - 2.00 mg/L Cl_2	DPD	2630020	25	■	■	■	■	-	*
2505025	Chromium	0.010 - 0.700 mg/L Cr (VI)	1,5-Diphenylcarbohydrazide	1425610	25	■	■	■	■	Xi	*
2504025	Copper	0.04 - 5.00 mg/L Cu	Bicinchoninate	2833649	25	■	■	■	■	Xn	*
2506025	Fluoride	0.02 - 2.00 mg/L F	SPADNS	29153	25	■	■	■	■	C	*
2507025	Iron	0.02 - 3.00 mg/L Fe	FerroVer	1417542	25	■	■	■	■	Xn	*
2510025	Iron	0.012 - 1.800 mg/L Fe	TPTZ	1417542	25	■	■	■	■	Xn	*
2514025	Iron	0.02 - 3.00 mg/L Fe (II)	1,10 Phenanthroline	2833649	25		■	■	■	Xn, N	*
2511025	Nitrate	0.3 - 30.0 mg/L mg/L NO_3-N	Cadmium Reduction	30749	25	■	■	■	■	T+, N	*
2512025	Nitrite	0.002 - 0.300 mg/L NO_2-N	Diazotisation	2340249	25		■	■	■	Xi	*
2501025	Oxygen, dissolved	6 - 800 µg/L O_2	Indigo Carmine		25		■	■	■	-	*
2515025	Oxygen, dissolved	0.3 - 15.0 mg/L O_2	HRDO		25	■	■	■	■	Xn, N	*
2516025	Ozone	0.01 - 0.25 mg/L O_3	Indigo		25	■	■	■	■	Xn	*
2517025	Ozone	0.01 - 0.75 mg/L O_3	Indigo		25	■	■	■	■	Xn	*
2518025	Ozone	0.01 - 1.50 mg/L O_3	Indigo		25		■	■	■	Xn	*
2508025	Phosphate	0.02 - 2.50 mg/L PO_4	Ascorbic Acid	256949	25	■	■	■	■	Xi	*
2525025	Phosphate, ortho	0.3 - 45.0 mg/L PO_4	Molybdovanadate	256949	25		■	■	■	C	*
2509025	Sulphate	2 - 70 mg/L SO_4	SulfaVer 4	257849	25	■	■	■	■	T	*

PC II: Single Parameter Colorimeter, DR 900: Multi-Parameter Colorimeter, DR 3900: VIS Spectrophotometer, DR 6000: UV-VIS Spectrophotometer

*: GHS hazard code will be available in the future

-: product is not subject to classification

Hazard code descriptions: see page 19

Which liquid reagent tests for my photometer?

Quick reference guide

Reagent solutions, economic liquid reagent tests and rapid liquid systems

Reagent tests for the determination of numerous parameters required in drinking, waste and process water applications as well as product control and monitoring. A cost-effective solution for your high-volume testing and serial analysis.

Article number	Parameter	Measuring range	Method	Quality control	Number of tests	PC II	DR 900	DR 3900	DR 6000	EU hazard code	GHS hazard code
2458200	Ammonia	0.02 - 2.50 mg/L NH_3-N	Nessler		250		■	■	■	T+, N	*
2242200	Cadmium	0.7 - 80 µg/L Cd	Dithizone	1402442	60 - 100			■	■	T+, C, N	*
2556900	Chlorine	0.02 - 2.00 mg/L Cl_2	DPD	1426810, 2630020	450			■	■	Xn, N	*
2557000	Chlorine	0.02 - 2.00 mg/L Cl_2	DPD	2630020, 1426810	450			■	■	C, Xn, N	*
HPT310	Chlorine	0.02 - 2.00 mg/L Cl_2	DPD	2630020, 1426810	100	■	■	■	■	Xi	*
HPT210	Chlorine, free	0.02 - 2.00 mg/L Cl_2	DPD	2630020, 1426810	100	■	■	■	■	Xi	*
LCW510	Chlorine/Ozone	0.1 - 1.5 mg/L Cl_2 / O_3 (round cuvette)	DPD					■	■	-	GHS07
2242300	Chlorine dioxide	0.01 - 1.00 mg/L ClO_2	Chlorophenol Red		100			■	■	Xi	*
HPT240	Chlorine dioxide	0.02 - 0.50 mg/L ClO_2	Amaranth Method		100			■	■	-	*
2651600	Cobalt, Nickel	0.01 - 2.00 mg/L Co	PAN	2150342, 1417642	100	■		■	■	T, Xi	*
44449	Fluoride	0.02 - 2.00 mg/L F	SPADNS	29153	125	■	■	■	■	C	*
2257700	Formaldehyde	3 - 500 µg/L CH_2O	MBTH		100			■	■	Xn	*
2603100	Hardness	8 - 1000 µg/L $CaCO_3$	Chlorophosphonazo	2833449	100			■	■	Xn,	*
2319900	Hardness, Ca and Mg	0.05 - 4.00 mg/L Ca as $CaCO_3$	Calmagite Colorimetric	218710	100		■	■	■	C	*
179032	Hydrazine	4 - 600 µg/L N_2H_4	p-Dimethylaminobenzaldehyde		100		■	■	■	C	*
LCW025	Hydrazine	0.01 - 2.0 mg/L N_2H_4	4-Dimethylaminobenzaldehyde		60			■	■	-	GHS05
LCW058	Hydrogen peroxide	1 - 10 g/L H_2O_2	Peroxomolybdate		40			■	■	-	GHS05
230149	Iron	0.009 - 1.400 mg/L Fe	FerroZine	1417542	500 - 1000			■	■	T	*
LCW021	Iron	0.005 - 0.25 mg/L Fe	Iron(II) ions react with FerroZine to form a violet complex compound		50			■	■	C	GHS05
2375000	Lead	5 - 150 µg/L Pb	LeadTrak	1426210	20	■		■	■	C	*

PC II: Single Parameter Colorimeter, DR 900: Multi-Parameter Colorimeter, DR 3900: VIS Spectrophotometer, DR 6000: UV-VIS Spectrophotometer

Please note: Some methods require reagent blanks. For these, the number of tests varies.

*: GHS hazard code will be available in the future

-: product is not subject to classification

Hazard code descriptions: see page 19

Which liquid reagent tests for my photometer?

Article number	Parameter	Measuring range	Method	Quality control	Number of tests	PC II	DR 900	DR 3900	DR 6000	EU hazard code	GHS hazard code
2651700	Manganese	0.006 - 0.700 mg/L Mn	PAN	1279142	50	■	■	■	■	T, N	*
LCW532	Manganese	0.005 - 0.5 mg/L Mn	1-(2-pyridylazo)-2-naphthol (PAN)		50			■	■	T, C, N, Xi	GHS02, GHS05, GHS06, GHS08, GHS09
LCW032	Manganese	0.2 - 5 mg/L Mn (round cuvette or 10 mm rectangular cuvette)	Formaldoxime	LCA706	50					T	GHS05, GHS06, GHS07, GHS08, GHS09
2658300	Mercury	0.1 - 2.5 µg/L Hg	Cold Vapour Concentration	1419542	25			■	■	O, T, C	*
2076032	ortho Phosphate	0.3 - 45.0 mg/L PO_4	Molybdovanadate	2109210	50		■	■	■	C	*
2657512	pH	6.5 - 8.5 pH	Colorimetric Phenol Red		50	■	■			-	*
2076049	Phosphate	0.3 - 45.0 mg/L PO_4	Molybdovanadate	2109210	250			■	■	C	*
2244100	Phosphate	0.23 - 30.00 mg/L PO_4	Amino Acid	2109210	100		■	■	■	T	*
LCW250	Reducing agent	0.02 - 1.0 mg/L DEHA	Iron Reduction Method		100			■	■	C	
2553500	Silica	3 - 1000 µg/L SiO_2	Heteropoly Blue	110649	100			■	■	Xi	*
2581400	Silica	3 - 1000 µg/L SiO_2	Heteropoly Blue	110649	40			■	■	Xi	*
2678500	Silica	3 - 1000 µg/L SiO_2	Heteropoly Blue	110649	250			■	■	Xn	*
LCW028	Silica	0.01 - 0.8 mg/L SiO_2	Molybdenum Blue		50			■	■	Xi, Xn	
2244500	Sulphide	5 - 800 µg/L S^{2-}	Methylene Blue		100		■	■	■	C, T	*
LCW053	Sulphide	0.1 - 2.0 mg/L S^{2-}	Dimethyl-p-phenylenediamine		25 - 49			■	■	C	
HPT430	Sulphite	0.1 - 5.0 mg/L SO_3	HACH LANGE Method	2267410	100			■	■	-	*
LCW054	Sulphite	0.1 - 5.0 mg/L SO_3	HACH LANGE Method	2267410	100			■	■	-	GHS07
2244600	Tannin & Lignin	0.1 - 9.0 mg/L as Tannic Acid	Tyrosine		100		■	■	■	-	*
2790800	Trihalomethanes	10 - 600 µg/L $CHCl_3$	THM Plus		50 - 99			■	■	T, C	*
2244700	Volatile acids	27 - 2800 mg/L HOAc	Esterification		100		■	■	■	C, Xn, N	*

Which TEST‘N‘TUBEs for my photometer?

Quick reference guide

TEST‘N‘TUBEs - Safe and convenient testing

TEST‘N‘TUBE cuvette tests are completely equipped with all premeasured reagents, optimised for reliable measuring results and easy handling. Capped 16 mm vials provide a self-contained package for mixing and measurement. All necessary reagents and vials are contained in the package.

Article number	Parameter	Measuring range	Method	Quality control	Number of tests	DR 900	EU hazard code	GHS hazard code
2604545	Ammonia	0.02 - 2.50 mg/L NH_3-N	Salicylate	189149, 15349	25 - 50	■	C, Xn	*
2606945	Ammonia	0.4 - 50.0 mg/L NH_3-N	Salicylate	189149, 15349	25 - 50	■	C, Xn	*
2105545	Chlorine	0.09 - 5.00 mg/L Cl_2	DPD	1426810, 2630020	50		-	*
2125851	COD	3 - 150 mg/L O_2	Dichromate	1218629, 1218649, 2253929	25	■	C	GHS05, GHS06, GHS08, GHS09
2125951	COD	20 - 1500 mg/L O_2	Dichromate	1218629, 1218649, 2253929	25	■	T, C	GHS05, GHS06, GHS08, GHS09
2345852	COD	25 - 150 mg/L O_2	Dichromate without mercury	1218629, 1218649, 2253929	25	■	C	GHS05, GHS09
2345952	COD	0 - 1500 mg/L O_2	Dichromate without mercury	1218629, 1218649, 2253929	25	■	T, C	GHS05, GHS06, GHS08, GHS09
2415851	COD	0.7 - 40 mg/L O_2	Dichromate	1218629, 1218649, 2253929	25	■	C	GHS05, GHS08, GHS09
2415951	COD	200 - 15000 mg/L O_2	Dichromate	1218629, 1218649, 2253929	25	■	T, C	GHS05, GHS06, GHS08, GHS09
2623451	COD	20 - 1000 mg/L O_2	Manganese (III)	1218629, 1218649, 2253929	25	■	C	*
2605345	Nitrate	0.2 - 30.0 mg/L NO_3-N	Chromotropic Acid	30749	50	■	C	GHS05, GHS07
2608345	Nitrite	0.003 - 0.500 mg/L NO_2-N	Diazotization	2340249	50	■	Xi	*

DR 900: Multi-Parameter Colorimeter

Please note: Some methods require reagent blanks. For these, the number of tests varies.

*: GHS hazard code will be available in the future

-: product is not subject to classification

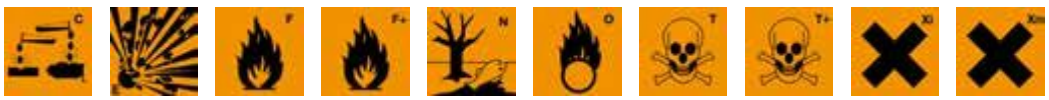
Hazard code descriptions: see page 19

Which TEST'N'TUBEs for my photometer?

Article number	Parameter	Measuring range	Method	Quality control	Number of tests	DR 900	EU hazard code	GHS hazard code
2672245	Nitrogen, total	0.5 - 25.0 mg/L N	Persulphate Digestion	189149, 15349, 2406549	25 - 50	■	C, O	GHS03, GHS05, GHS07, GHS08
2714100	Nitrogen, total	10 - 150 mg/L N	Persulphate Digestion	15349, 2406549	25 - 50	■	C, O	GHS03, GHS05, GHS07, GHS08
2742545	Phosphate	0.06 - 5.00 mg/L PO_4	Ascorbic Acid	2109210	25 - 50	■	Xi	GHS07
2742745	Phosphate	0.06 - 5.00 mg/L PO_4	Ascorbic Acid	2109210	25 - 50	■	C, O	GHS03, GHS05, GHS07, GHS08
2767345	Phosphate, ortho	1.0 - 100.0 mg/L PO_4	Molybdovanadate	256949	25 - 50	■	Xi	*
2742645	Phosphate, total	0.06 - 3.50 mg/L PO_4	PhosVer 3 with Acid Persulfate Digestion	2109210	25 - 50	■	C, O	GHS03, GHS05, GHS07, GHS08
2767245	Phosphate, total	1.0 - 100 mg/L PO_4	Molybdovanadate with Acid Persulfate Digestion	256949	25 - 50	■	C, O	GHS03, GHS05, GHS07, GHS08
2760345	TOC	0.3 - 20.0 mg/L C	Direct		25 - 50	■	O, C, Xn	GHS03, GHS05, GHS07, GHS08
2760445	TOC	100 - 700 mg/L C	Direct		25 - 50	■	O, C, Xn	GHS03, GHS05, GHS07, GHS08
2815945	TOC	15 - 150 mg/L C	Direct		25 - 50	■	O, C, Xn	GHS03, GHS05, GHS07, GHS08

EU hazard codes

C: E: F: F+: N: O: T: T+: Xi: Xn:



GHS hazard codes

GHS01: GHS02: GHS03: GHS04: GHS05: GHS06: GHS07: GHS08: GHS09:

Standard Solutions - Multi-parameter for Analytical Quality Assurance

The comprehensive ADDISTA AQA system for HACH LANGE cuvette tests contains a standard solution plus two round-robin solutions which allow the user to participate in analysis checking free of charge.
Lot number, expiry date and target values by parameter are delivered via RFID tag on the packaging.

Article number	For the following cuvette tests / parameters
LCA700	- LCK304 Ammonium, 0.015-2.0 mg/L NH_4-N - LCK311 Chloride, 1-70 mg/L Cl - LCK228 Potassium, 5-50 mg/L K - LCK328 Potassium, 8-50 mg/L K - LCK348 Phosphate (ortho), 0.5-5.0 mg/L PO_4-P - LCK414 COD, 5-60 mg/L O_2 - LCK238 LATON, 5-40 mg/L TN_b
LCA701	- LCK306 Lead, 0.1-2.0 mg/L Pb - LCK321 Iron, 0.2-6.0 mg/L Fe - LCK329 Copper, 0.1-8.0 mg/L Cu - LCK337 Nickel, 0.1-6.0 mg/L Ni - LCK353 Sulphate, 150-900 mg/L SO_4 - LCK360 Zinc, 0.2-6.0 mg/L Zn
LCA702	- LCK301 Aluminium, 0.02-0.5 mg/L Al - LCK308 Cadmium, 0.02-0.3 mg/L Cd - LCK313 Chromium (VI), 0.03-1.0 mg/L Cr - LCK313 Chromium (total), 0.03-1.0 mg/L Cr - LCS313 Chromium trace, 0.005-0.25 mg/L Cr - LCK353 Sulphate, 150-900 mg/L SO_4
LCA703	- LCK049 Orthophosphate, 1.6-30 mg/L PO_4-P - LCK114 COD, 150-1000 mg/L O_2 - LCI400 COD, 0-1000 mg/L O_2 - LCK303 Ammonium, 2-47 mg/L NH_4-N - LCK311 Chloride, 1-70 mg/L Cl - LCK339 Nitrate, 0.23-13.5 mg/L NO_3-N - LCK350 Phosphate (ortho), 2-20 mg/L PO_4-P - LCK353 Sulphate, 150-900 mg/L SO_4 - LCK386 TOC, 30-300 mg/L C
LCA704	- LCK153 Sulphate, 40-150 mg/L SO_4 - LCK305 Ammonium, 1-12 mg/L NH_4-N - LCK311 Chloride, 1-70 mg/L Cl - LCK314 COD, 15-150 mg/L O_2 - LCK340 Nitrate, 5-35 mg/L NO_3-N - LCK349 Phosphate (ortho), 0.05-1.5 mg/L PO_4-P - LCK385 TOC, 3-30 mg/L C

Article number	For the following cuvette tests / parameters
LCA705	- LCK014 COD, 1000-10000 mg/L O_2 - LCK302 Ammonium, 47-130 mg/L NH_4-N - LCK311 Chloride, 1-70 mg/L Cl - LCK387 TOC, 300-3000 mg/L C
LCA706	- LCK521 Iron trace, 0.01-1.0 mg/L Fe - LCK529 Copper trace, 0.01-1.0 mg/L Cu - LCK537 Nickel trace, 0.05-1.0 mg/L Ni - LCW032 Manganese, 0.02-5.0 mg/L Mn
LCA707	- LCK341 Nitrite, 0.015-0.6 mg/L NO_2-N - LCK614 COD, 50-300 mg/L O_2 - LCK348 Phosphate (total), 0.5-5.0 mg/L PO_4-P
LCA708	- LCK338 LATON, 20-100 mg/L TN_b - LCK514 COD, 100-2000 mg/L O_2 - LCK350 Phosphate (total), 2-20 mg/L PO_4-P
LCA709	- LCK138 LATON, 1-16 mg/L TN_b - LCK614 COD, 50-300 mg/L O_2 - LCK349 Phosphate (total), 0.05-1.5 mg/L PO_4-P - LCK342 Nitrite, 0.6-6.0 mg/L NO_2-N
2833149	- Ammonia 15 mg/L NH_3-N - Nitrate 10 mg/L NO_3-N - COD 500 mg/L O_2 - Phosphate 10 mg/L PO_4 - Sulphate 400 mg/L SO_4 - TOC 161 mg/L C
2833249	- Ammonia 2.0 mg/L NH_3-N / 2.1 mg/L NH_4-N - Nitrate 4.0 mg/L NO_3-N - Phosphate 2.0 mg/L PO_4 - COD 25 mg/L O_2 - Sulphate 50 mg/L SO_4 - TOC 8 mg/L C

Standard Solutions - Single parameter for Analytical Quality Assurance

Regular use of standard solutions can ensure laboratory process control, increase your confidence, and help provide evidence of performance to inspectors, regulators, and clients. Single parameters are available in a variety of analytes and concentrations for proof of accuracy.

Parameter	Article number	Product description	Concentration	EU hazard code	GHS hazard code
Alkalinity	2349732	Sulphuric acid standard solution, 0.035 N, 100 mL MDB	0.035 N	-	*
Alkalinity	20353	Sulphuric acid standard solution, 0.020 N, 1 L	0.020 N	-	*
Ammonia	15349	Ammonia standard solution, 10 mg/L NH_3-N, 500 mL	10 mg/L NH_3-N	-	*
Ammonia	189149	Ammonia standard solution, 1mg/L NH_3-N, 500 mL	1 mg/L NH_3-N	-	*
Ammonia	2406549	Ammonia standard solution, 100 mg/L NH_3-N, 500 mL	100 mg/L NH_3-N	-	*
AOX	LCA390	ADDISTA Mono standard for AOX cuvette test LCK390	Lot specific concentration	-	*
BOD	LCA555	ADDISTA Mono standard for BOD cuvette test LCK555	200 mg/L O_2	Xn, O	GHS03, GHS07
BOD	1486510	BOD standard solution, 300 mg/L O_2 (NIST), 10 mL, 16 pcs.	300 mg/L O_2	-	*
BOD	1486610	BOD standard solution, 3000 mg/L O_2 (NIST), 10 mL, 16 pcs.	3000 mg/L O_2	-	*
Chlorine	LCA310	ADDISTA Mono standard for chlorine cuvette test LCK310	25 - 30 mg/L Cl_2	-	*
Chlorine	1426810	Chlorine standard solution, 50-75 mg/L Cl_2 (NIST)	50 - 75 mg/L Cl_2	-	*
Chlorine	2630020	Chlorine standard solution, 25-30 mg/L Cl_2 (NIST), 20 pcs.	25 - 30 mg/L Cl_2	-	*
Chlorine	2635300	SpecCheck Gel secondary standard kit-LR chlorine, DPD	0 - 2.0 mg/L Cl_2	-	*
COD	1218629	COD standard solution, 300 mg/L O_2 (NIST), 200 mL	300 mg/L O_2	-	*
COD	2253929	COD standard solution, 1000 mg/L O_2 (NIST), 200 mL	1000 mg/L O_2	-	*
COD	1218649	COD standard solution, 300 mg/L O_2 (NIST), 500 mL	300 mg/L O_2	-	*
Colour	141453	Colour standard solution, 500 Pt Co Units, 1 L	500 Pt Co units	T	*
Colour	2602853	Colour standard solution, 15 Pt Co Units, 1L	15 Pt Co units	T	*
Conductivity	1440042	Sodium chloride standard solution, 1000 µS/cm (NIST), 100 mL	1000 µS/cm	-	*
Conductivity	1440049	Sodium chloride standard solution, 1000 µS/cm (NIST), 500 mL	1000 µS/cm	-	*
Conductivity	210553	Sodium chloride standard solution, 1990 µS/cm (NIST), 1 L	1990 µS/cm	-	*
Conductivity	2971849	Sodium chloride standard solution, 100 µS/cm (NIST), 500 mL	100 µS/cm	-	*
Conductivity	2972249	Sodium chloride standard solution, 10000 µS/cm (NIST), 500 mL	10000 µS/cm	-	*
Iron	1417542	Iron standard solution 100.0 mg/L Fe (NIST), 100 mL	100 mg/L Fe	-	*
Nitrite	2340249	Nitrite standard solution, 250 µg/mL NO_2-N, APHA, 500 mL	250 mg/L NO_2-N	-	*
Phosphate	1424342	Phosphate standard solution, 15 mg/L PO_4, 100 mL	15 mg/L PO_4	-	*
Phosphate	17149	Phosphate standard solution, 50 mg/L PO_4 (NIST), 500 mL	50 mg/L PO_4	-	*
Phosphate	256949	Phosphate standard solution, 1 mg/L PO_4 , 500 mL	1 mg/L PO_4	-	*
Silica	110649	Silica standard solution, 1 mg/L SiO_2 (NIST), 500 mL	1 mg/L SiO_2	-	*
Sulphate	2175749	Sulphate standard solution, 1000 mg/L SO_4 (NIST), 500 mL	1000 mg/L SO_4	-	*
Sulphate	257849	Sulphate standard solution, 50 mg/L SO_4 (NIST), 500 mL	50 mg/L SO_4	-	*
Surfactants, non-ionic	LCA333	ADDISTA Surfactants standard for LCK333 1g/L TRITON x 100	1 g/L TRITON x 100	-	*
Varies	244932	Sulphuric acid standard solution, 5.25 N, 100 mL	5.25 N	C	*
Varies	20253	Sulphuric acid standard solution, 0.100 N, 1 L	0.100 N	-	*
Varies	2332453	Sodium hydroxide standard solution, 6 N, 1 L	6.0 N	C	*
Varies	2339349	Sulphuric acid 0.04 N, 500 mL	0.04 N	-	*
Varies	28249	Potassium hydroxide standard solution, 8.00 N, 500 mL	8.00 N	C	*

*: GHS hazard code will be available in the future

-: product is not subject to classification

Sample Preparation

A selection of sample preparation accessories to photometric analysis for the purpose of digestion, filtration, homogenisation, and dilution.

Product description	Article number	EU hazard code	GHS hazard code
Dilution water, organic free, 500 mL	2641549	-	*
Chloride test strips, low range, 30 - 600 mg/L, 40 pcs	2744940	-	*
Chloride test strips, 300 - 6000 mg/L, 0.05 - 1.0 % NaCl , 40 tests	2751340	-	*
CRACK SET Reagent set for metal digestions	LCW902	Xn, C, O	GHS03, GHS05, GHS07, GHS08
Calcium separation set	LCW903	-	GHS07
Membrane filtration set with 50 membrane filters 1.2 µm	LCW904		
Screening test for organic complexing agents	LCW907	-	GHS05
Digestion solution for chloride in concrete	LCW908	C	GHS05
Total Kjeldahl nitrogen, reagents for digestion	LCW909	C	GHS05
Nitrification inhibitor for BOD_5, acc. DIN 38409-51, 35g	LCW910	-	*
Powder dispenser	LCW912		
Membrane filtration set with 50 membrane filters 0.45 µm	LCW916		
CleanUp set for cyanide cuvette test LCK319	LCW923	Xn	GHS08
Chloride elimination set	LCW925	C, O	GHS03, GHS05
Set for digestion of total silver	LCW954	Xn, O	GHS03, GHS07, GHS08
Magnetic stirrer rods, 3 pieces	LYW064		
Chromium digestion for highly loaded samples	LYW513	Xn, O	GHS03, GHS07, GHS08
Magnetic stirrer, 0 - 1500 rpm	LYW854		
Timer clock	LZC902		

*: GHS hazard code will be available in the future

-: product is not subject to classification

Hazard code descriptions: see page 19

Accessories for Cuvette Tests

A selection of accessories for determination of AOX, BOD, cyanide, organic acids, phenols, sludge activity, surfactants and TOC.

TOC Shaker for purging the inorganic carbon (TIC) to determine TOC with LCK385, LCK386 and LCK387.

Product description	Article number
AOX	
CARBODISK Active carbon disks for the AOX reference analysis	LZC910
Magnetic stirrer, 0 - 1500 rpm	LYW854
BOD	
BioKit for BOD_5 cuvette test, as inoculation mat., 20 tests	LZC555
BOD_5 dilution water set	LZC901
Set of reaction glasses with caps, 60 pieces	LZC924
AquaKit for BOD_5 dilution water set	LZC955
Reaction vessels with screw caps, 20 mm diameter, 5 pieces	LZP065
Funnel	EBT006
Beaker 150 mL	HBG011
Magnetic stirrer, 0 - 1500 rpm	LYW854
LT 20 BOD_5 thermostat	LTV073
Cyanide, organic acids and phenols	
MICRO DIST Block, digital, complete	MDI001
MICRO DIST Digestion tubes, user-fill, 10 pieces	A17017
MICRO DIST Digestion tubes, user-fill, 100 pieces	A17117
MICRO DIST Digestion tubes, user-fill, 50 pieces	A17517
MICRO DIST Cap press	17023L
Rack collector 24 positions	17012
Sample rack, 60 positions for 16 mm tubes - AI & ASX-500 samplers	21302
Sludge activity	
Accessory kit sludge activity	LZC918
Membrane filtration set with 50 membrane filters 1.2 µm	LCW904
Surfactants	
LS 120 Shaker for surfactant analysis	LQV148.99.10001
TOC	
Powder dispenser	LCW912
Membrane filtration set with 50 membrane filters 0.45 µm	LCW916
TOC-X5 TOC Shaker for purging method	LQV148.99.00001

Accessories

A selection of cuvette consumables, glass vessels, pipettes, pipette tips, and safety accessories.

Just comfortable: TENSETTE plus electronic pipette complete with rack, storage battery and power supply, 0.2 - 5.0 mL volume.

Product description	Article number
Cuvette consumables	
Rack for 16 HACH LANGE round cuvettes or rectangular cuvettes 10 mm	LYW915
Rack for 8 reaction vessels	LYW918
Rack for 7 cuvettes with layer thickness of 50 mm	ETS016
Cooling rack for 8 tubes (COD tubes, 16 mm)	1864100
Rack, test tube, Polyethylene, 30 mm (O.D.), 21 holes	2497904
Stopper, Neoprene, solid, size 2, 12 pieces	1480802
Stopper for 18 mm glass viewing tube, 6 pieces	173106
Disposable paper tissues, white, 200 pieces	EZZ073
Blank value cuvette set	LCW919
Glass vessels	
Beaker 150 mL	HBG011
Reaction vessels with screw caps, 20 mm diameter, 5 pieces	LZP065
Volumetric flask 50 mL, class A wide neck, NS12/21 PP-stopper, 2 pieces	LZP141
Volumetric flask 100 mL, class A, NS 14/23, PP-stopper, 2 pieces	LZP142
Graduated cylinder 50:1 mL, tall form, class B, 2 pieces	LZP143
Graduated cylinder 100 mL: 1 mL, tall form, class B, 2 pieces	LZP144
Set of reaction glasses with caps, 60 pieces	LZC924
Pipettes, pipette tips	
Pipette tips 1.0-5.0 mL for variable volume pipette, 75 pieces	BBP068
Rack for 5 pipettes	LYW964
TENSETTE plus electronic pipette	BBP087
Pipette, fixed volume, 1.0 mL	BBP163
Pipette, fixed volume, 2.0 mL	BBP164
Pipette, fixed volume, 0.1 mL	LYW785
Pipette, fixed volume, 0.2 mL	LYW790
Pipette tips 0.2-1.0 mL	BBP079
Pipette tips 0.2-5.0 mL for electronic pipette, 10 pieces	LYW250
Pipette tips 0.1 and 0.2 mL	LYW786
Pipette tips 1.0-5.0 mL	LYW787
Pipette tips 0.2-1.0 mL	LYW788
Pipette, variable, volume 1.0-5.0 mL	BBP065
Pipette, variable, volume 0.2-1.0 mL	BBP078
Set of 2 pipettes, variable volume, incl. tips	LZP320
Pipette validation kit	LCA722
Safety accessories	
Safety goggles, transparent, DIN 582, suitable for spectacle wearers	EZZ031
Safety goggles Uvex according DIN 58211, green / purple	EZZ042
Adhesive tape width 75 mm, for transportation of hazardous materials	HYB008
Protective gloves size L, blue, nitrile, powder-free, 50 pieces	SM743L
Protective gloves size 7 (M), blue, nitrile, powder-free, 50 pieces	SM743M
Single use latex gloves size 7 (M), powder-free, green, 100 pieces	SM995417
Single use latex gloves size L, powder-free, green, 100 pieces	SM995418

Photometers

HACH LANGE photometers consistently break innovation barriers to deliver top performance for both routine laboratory tasks and demanding photometry applications. Our photometers are engineered to achieve exceptional analytical accuracy in a simple testing format.

Fully automated water analysis

Including sample preparation, the laboratory robot AP 3900 even processes the critical parameters of COD, total P and total N in parallel.

Spectrophotometers for the lab

The high-performance VIS and UV-VIS spectrophotometers DR 3900 & DR 6000 deliver reliable and traceable measurement results for both routine laboratory analysis and user applications. With RFID technology, IBR+, AQA+ and LINK2SC. Detailed explanations can be found on page 5.

Portable colorimeters for field testing

Designed for use in the field, the handheld outdoor colorimeters DR 900 and POCKETs with battery operation are pre-programmed, easy to use and have a rugged construction.

Benchtop Photometer Finder

Quick reference guide

NEW

	DR 6000 UV-VIS spectrophotometer with RFID technology	DR 3900 Spectrophotometer with RFID technology
IBR+	Automatic test recognition, lot control and expiry date check	
Specific technology	RFID for easy method update, sample ID and Certificate of Analysis	
LINK2SC	Data exchange with SC 1000 controller	
Quality assurance	Function to schedule and document QA with pass/fall indication	
Pre-programmed methods	> 240	> 220
Cuvette compatibility	Rectangular: 10, 20, 30, 50 mm, 1 inch; round: 13 mm, 1 inch Optional 100 mm rectangular cell with additional adapter	Rectangular: 10, 20, 30, 50 mm, 1 inch; round: 13 mm, 1 inch
Display	7" TFT WVGA colour touchscreen	
Operating mode	Transmittance (%), Absorbance and Concentration, Scanning	
Wavelength range	190 - 1100 nm	320 - 1100 nm
Photometric measuring range	± 3 Abs (wavelength range 340 to 900 nm)	
Photometric accuracy	5 mAbs at 0.0 to 0.5 Abs	
	1 % at 0.50 to 2.0 Abs	
Wavelength resolution	0.1 nm	1 nm
Spectral bandwidth	2 nm	5 nm
Optical system	Reference beam, spectral	
Source lamp	Tungsten (VIS), Deuterium lamp (UV)	Tungsten (VIS)
Printer compatibility	Supports most office deskjet printers	
Data storage	5000 measured values (Result, Date, Time, Sample ID, Operator ID)	2000 measured values (Result, Date, Time, Sample ID, Operator ID)
Interfaces	USB type A (2), USB type B, Ethernet, RFID module	
Power supply	Power cord, 100 - 240 V, 50 - 60 Hz	External power supply, 100 - 240 V, 50 - 60 Hz
Dimensions (H x W x D)	215 mm x 500 mm x 460 mm	151 mm x 350 mm x 255 mm
Weight	11 kg	4.2 kg
	Detailed description on pages 30 and 31	**Detailed description on pages 32 and 33**

Portable Photometer Finder

Quick reference guide

NEW

	DR 900 Multi-parameter colorimeter	POCKET Colorimeter II Single parameter colorimeter
Supported chemistry	HACH tests	HACH tests and HACH LANGE cuvette tests
Operating mode	Transmittance (%), Absorbance and Concentration	
Source lamp	Light Emitting Diode (LED)	
Wavelength range	420, 520, 560, 610 nm	varies with model
Photometric measuring range	0 - 2 Abs	
Wavelength accuracy	± 1 nm	Fixed wavelength ± 2 nm varies with model
Spectral bandwidth	15 nm filter bandwidth	
Photometric accuracy	± 0.005 Abs @1.0 ABS Nominal	
Photometric linearity	± 0.002 Abs (0 - 1 Abs)	
Wavelength selection	Automatic	Fixed wavelength
Stray light	< 1.0 % at 400 nm	
Display	Graphical display 240 x 160 pixel (Backlit)	LCD, backlit
User programmes	10	Custom programming 1
Data storage	500 measured values (result, date, time, sample ID, user ID according to GLP)	10 measured values + time
Cuvette compatibility	1 inch round / 16 mm round (with adapter)	1 inch round / 13 mm round /1cm square (with optional adapter)
Dimensions (H x W x D)	231 mm x 96 mm x 48 mm	155 mm x 61 mm x 35 mm
Weight	0.6 kg with battery	0.23 kg
Environmental conditions: temperature	10 - 40 °C	
Environmental conditions: relative humidity	max. 90 % relative humidity (non-condensing)	
Battery requirements	4 AA size batteries	4 AAA size batteries
Battery life	6 months (typical) at 5 readings a day / 5 day week without backlight (backlight usage will decrease battery life)	2000 tests * backlight will decrease battery life
Interface	USB type Mini IP67	None
Enclosure waterproof rating	IP67	IP67 (excludes battery compartment)
User interface	English, French, German, Italian, Spanish, Portuguese, Bulgarian, Chinese, Czech, Danish, Dutch, Finnish, Greek, Hungarian, Japanese, Korean, Polish, Romanian, Russian, Slovenian, Swedish, Turkish	Numeric
Includes	DR 900 Colorimeter, two 1-inch glass sample cells marked at 10, 20 and 25 mL, two 1 cm plastic sample cells, 1 x 16-mm COD/ TEST'N'TUBE adapter, 4 AA alkaline batteries, instrument manual multilingual printed, instrument and procedure manuals on CD; USB Mini to USB cable, European CE mark.	PC II, sample cells, manual, carry case. Reagents included: 100 tests each for low range or 50 tests each for high range.
	Detailed description on pages 34 and 35	**Detailed description on pages 36 and 37**

AP 3900: Laboratory robot for fully automated water analysis

Laboratory robot for water analysis including sample preparation. Modular concept. Basic version contains COD, total P, total N, Ammonium, Nitrate and Nitrite.

NEW

- Saves time and costs
- Increases productivity and flexibility
- Highest precision and accuracy due to automated procedures
- Parallel execution of different samples and methods
- Reliable by complete traceability of results
- Uses DR 3900 as detector
- Cost effective for 30 or more tests per day

This unique product processes the critical parameters of COD, total P and total N in parallel using our well established, pre-programmed cuvette tests. The control software ensures the optimal sequence for processing all samples to minimise total time to results through sample preparation, digestion of complex samples, waiting times and measurement. Additional samples can be added at any time, even when the sequence is running and the current status of the analysis is accessible any time with a simple mouse click. Rapid yet simple even untrained users are able to enter all necessary information to the system due to the easy-to-use software.

AllPhred demonstrates laboratory automation with AP 3900: The QR code leads you to an animation.

Technical data

Number of cuvette positions 160	**Dosing system (reagent)** Reagent - pipette tips	**Compressed air pressure** 5 bar
Number of heating positions 2 x 24 (optional 2 x 48)	**Calibration** Range 0.2 - 2.0 mL	**Power requirements (Hz)** 50/60 Hz
Number of reagent positions 12	**Measurement method** Automatic HACH LANGE cuvette test (13 mm test tube); 10 times measurement and 2D barcode	**Power requirements (Voltage)** 230 V AC
Number of sample positions 24 (optional 48); 50 mL sample volume	**Detector** DR 3900	**Dimensions (H x W x D)** 950 mm x 1290 mm x 840 mm
Dispenser Calibrated Hamilton Dispenser 2.5 mL	**Photometric accuracy** 1% at 0.5 - 2.0 E	**Temperature** Selectable 40°C, 100°C, 110°C, 148°C and 150°C
Dosing system (sample) Sample - PTFE sheathed needle, ID 2 mm Stirrer with 9 mm paddle	**Photometric linearity** < 0.5 % - 2 E	Subject to change without notice.

Specially designed for AP 3900

APC chemistry - exclusively suitable for the laboratory robot

Article number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	EU hazard code	GHS hazard code
APC303	Ammonium	2 - 47 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA703	100	Xn, N	GHS05, GHS07, GHS09
APC304	Ammonium	0.015 - 2.0 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA700	100	Xn, N	GHS05, GHS07, GHS09
APC114	COD	150 - 1000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA703	100	T, C	GHS05, GHS06, GHS08, GHS09
APC314	COD	15 - 150 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA704	100	T, C	GHS05, GHS06, GHS08, GHS09
APC500	COD	0 - 150 mg/L O_2	Dichromate	ISO 15705	LCA704	100	T, C	GHS05, GHS06, GHS08, GHS09
APC400	COD	0 - 1000 mg/L O_2	Dichromate	ISO 15705	LCA703	100	T, C	GHS05, GHS06, GHS08, GHS09
APC339	Nitrate	0.23 - 13.5 mg/L NO_3-N	2.6-Dimethylphenol	ISO 7890-1-2-1986, DIN 38405 D9-2	LCA703	100	C	GHS02, GHS05, GHS07
APC340	Nitrate	5 - 35 mg/L NO_3-N	2.6-Dimethylphenol	ISO 7890-1-2-1986, DIN 38405 D9-2	LCA704	100	C	GHS02, GHS05
APC341	Nitrite	0.015 - 0.6 mg/L NO_2-N	Diazotisation	EN ISO 26777, DIN 38405 D10	LCA707	100	Xi	GHS07
APC342	Nitrite	0.6 - 6.0 mg/L NO_2-N	Diazotisation	EN ISO 26777, DIN 38405 D10	LCA709	100	Xi	GHS07
APC138	Nitrogen total (LATON)	1 - 16 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA709	50	T, C	GHS02, GHS05, GHS07, GHS08
APC238	Nitrogen total (LATON)	5 - 40 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA700	50	T, C	GHS02, GHS05, GHS07, GHS08
APC338	Nitrogen total (LATON)	20 - 100 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA708	50	T, C	GHS02, GHS05, GHS07, GHS08
APC348	Phosphate	0.5 - 5.0 mg/L PO_4-P	Phosphormolybdenum Blue	EN ISO 6878-1-1986, DIN 38405 D11-4	LCA700, LCA707	100	C	GHS05, GHS07, GHS08
APC349	Phosphate	0.05 - 1.5 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA704, LCA709	100	C	GHS05, GHS07, GHS08
APC350	Phosphate	2 - 20 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA703, LCA708	100	C	GHS05, GHS07, GHS08

APC chemistry was specially developed for the AP 3900 laboratory robot and only runs on this instrument.
Please note: APC400 and APC500 require reagent blanks. For these, the number of tests varies.
Hazard code descriptions: see page 19

Order information

Article number	Product description	
SMAP3900-MULTI	AP 3900 Multi laboratory robot standard configuration	Laboratory robot for water analysis including sample preparation. Modular concept. Basic version contains COD, total P, total N, Ammonium, Nitrate and Nitrite.
SMUPGRADE-24F	AP 3900 Filtration upgrade incl. software (24 pos)	
SMUPGRADE-48S	AP 3900 Upgrade kit to 48 sample positions	
SMUPGRADE-96H	AP 3900 Heater upgrade incl. software (2 x 48 pos)	
LZX521	Compressor with connection kit, 2 x fitting 1/4'' outer ø, 5 m tubing	

DR 6000: Combining quality and efficiency in the professional laboratory

The UV-VIS spectrophotometer delivers top performance for both routine laboratory tasks and demanding photometry applications.

NEW

- Improved laboratory efficiency - more than 240 pre-programmed methods directly available
- Comparable and reliable results - with the approved HACH LANGE cuvette tests
- Transparent working processes in every situation - with access to all raw data
- Integrated Quality Assurance - with function for scheduling, evaluation, documentation
- Optimised data management, LIMS compatible
- Traceability back to the sampling point by means of RFID technology

The new UV-VIS spectrophotometer is engineered and manufactured in Germany to deliver in fourth generation exceptional analytical accuracy. The Czerny-Turner monochromator design reduces aberrations and guarantees a minimal spectral bandwidth. The output coupler mirror optimally aligns the measurement beam.

Four sequential band-pass filters reduce internal scattered light. The reference beam technology compensates for signal fluctuations in the instrument. Two low-noise silicon detectors ensure high selectivity and basic stability of the measurement signal.

The UV-VIS spectrophotometer unites reliable results with efficiency. The intuitive menu navigation with colour touch screen allows you to enter and calibrate your own methods in just a few simple steps. The instrument provides a wide range of pre-programmed methods. Application packages, e.g. for enzymology and colorimetry, open up further application opportunities including drinking water and brewery analysis.

Application software available for drinking water, breweries and food industry.

HACH LANGE

Technical data

IBR+
Automatic test recognition, lot control and expiry date check

Specific technology
RFID for easy method update, sample ID and Certificate of Analysis

LINK2SC
Data exchange with SC 1000 controller

Quality assurance
Function to schedule and document QA with pass/fall indication

Pre-programmed methods
> 240

Cuvette compatibility
Rectangular: 10, 20, 30, 50 mm, 1 inch;
round: 13 mm, 1 inch
Optional 100 mm rectangular cell with additional adapter

Display
7" TFT WVGA colour touchscreen

Operating mode
Transmittance (%), Absorbance and Concentration, Scanning

Wavelength range
190 - 1100 nm

Photometric measuring range
± 3 Abs (wavelength range 340 to 900 nm)

Photometric accuracy
5 mAbs at 0.0 to 0.5 Abs
1 % at 0.50 to 2.0 Abs

Wavelength resolution
0.1 nm

Spectral bandwidth
2 nm

Optical system
Reference beam, spectral

Source lamp
Tungsten (VIS), Deuterium lamp (UV)

Printer compatibility
Supports most office deskjet printers

Data storage
5000 measured values (Result, Date, Time, Sample ID, Operator ID)

Interfaces
USB type A (2), USB type B, Ethernet, RFID module

Power supply
Power cord, 100 - 240 V, 50 - 60 Hz

Dimensions (H x W x D)
215 mm x 500 mm x 460 mm

Weight
11 kg

Subject to change without notice.

Order information

Article number	Product description	
LPV441.99.00011	DR 6000 UV-VIS spectrophotometer with RFID technology	The UV-VIS spectrophotometer delivers top performance for both routine laboratory tasks and demanding photometry applications.
LQV156.99.10011	LOC 100 RFID set for sample identification	The set contains: 1 RFID locator LOC 100, 15 sample RFID tags in 5 colours, 5 location RFID tags and 2 operator RFID tags.
LQV157.99.30001	SIP 10 Sipper set for DR 6000 with 1 cm quartz cell	Sipper set for flow through applications in UV range. 1 cm flow through cell, quartz.
LQV157.99.20001	SIP 10 Sipper set for DR 6000 with 1 inch round cell	Sipper for pour through applications with spectrophotometer DR 6000. With dual path length 1 inch/cm round cell, USB cable and pump tubing.
TSE-CC-DR6000	Comfort contract for DR 6000	Service Package 2.2: Comfort maintenance contract for spectrophotometer DR 6000. Excludes travel and wear parts. Includes warranty extension.
TSE-BC-DR6000	Basic contract for DR 6000	Service Package 2.1: Basic maintenance contract for spectrophotometer DR 6000. Excludes travel and wear parts.
TSE-MC-DR6000	One-off inspection for DR 6000	Service Package 1: One-off inspection for spectrophotometer DR 6000. Excludes travel and wear parts.
TSE-IQOQ-DR6000	Equipment qualification IQOQ for DR 6000	Equipment qualification IQOQ for UV-VIS spectrophotometer DR 6000. Installation and operational qualification. Including required documents, excluding travel and standards.
LZV935	DR 6000 application software for drinking water analysis	The drinking water analysis software LZV935 is a compilation of all spectrophotometric applications that are relevant for drinking water analysis.
LZV936	DR 6000 application software for brewery analysis	The additional brewery analysis software LZV936 is a compilation of all spectrophotometric applications that are relevant for brewery analysis.
LZV937	DR 6000 application software for enzymatic food analysis	The additional software LZV937 is a compilation of enzymology tests manufactured by R-Biopharm AG, Darmstadt that can be performed with spectrophotometer DR 6000 and carousel insert LZV902.99.00001.
LZV938	Remote operating software photometer	The operating software for the photometer allows the instrument to be controlled remotely using a PC.
LZV902.99.00001	Carousel holder 1 cm for DR 6000	Cell holder with 7 positions to measure mini series or enzymatic methods.

DR 3900:
Accuracy from start to finish

High-performance VIS spectrophotometer with RFID technology for reliable and traceable measurement results of routine analysis and user applications.

- Traceability starts with sampling
  Samples are encoded and identified with RFID
- IBR+ increases the reliability of your measurement values
  A 2D barcode on the cuvette delivers lot number and expiry date
- Rapid data updates
  The RFID labeling allows a touchless data transfer
- Quality assurance made easy with AQA+
  Definition and documentation of QA procedures, retrieval of Certificates of Analysis
- Alignment of laboratory and process analysis
  LINK2SC - adjustment of process on-line value and lab reference
- Data transfer is simple via USB or Ethernet

Compact and reliable VIS spectrophotometer with reference beam technology. Samples are traced back to sample location due to RFID technology. Lot number and expiry date information of reagents are now included on the 2D barcode. The RFID module reads out all batch specific information like factors, updated methods and the current batch certificate from cuvette test box. All information can be retrieved immediately on the spectrophotometer and printed out. Process results can be compared to laboratory reference values in the photometer via LINK2SC connection between SC controller and photometer. Data can be exchanged bi-directionally via Ethernet, i.e. matrix corrections of process probes can be done directly from the laboratory.

During the rotating ten times measurement process using the IBR+ barcode reader, the DR 3900 immediately picks up all the information on the cuvette.

HACH LANGE

IBR+ RFID Q+ LINK2SC LIMS

Technical data

IBR+
Automatic test recognition, lot control and expiry date check

Specific technology
RFID for easy method update, sample ID and Certificate of Analysis

LINK2SC
Data exchange with SC 1000 controller

Quality assurance
Function to schedule and document QA with pass/fail indication

Pre-programmed methods
> 220

Cuvette compatibility
Rectangular: 10, 20, 30, 50 mm, 1 inch; round: 13 mm, 1 inch

Display
7" TFT WVGA colour touchscreen

Operating mode
Transmittance (%), Absorbance and Concentration, Scanning

Wavelength range
320 - 1100 nm

Photometric measuring range
± 3 Abs (wavelength range 340 to 900 nm)

Photometric accuracy
5 mAbs at 0.0 to 0.5 Abs
1 % at 0.50 to 2.0 Abs

Wavelength resolution
1 nm

Spectral bandwidth
5 nm

Optical system
Reference beam, spectral

Source lamp
Tungsten (VIS)

Printer compatibility
Supports most office deskjet printers

Data storage
2000 measured values (Result, Date, Time, Sample ID, Operator ID)

Interfaces
USB type A (2), USB type B, Ethernet, RFID module

Power supply
External power supply, 100 - 240 V, 50 - 60 Hz

Dimensions (H x W x D)
151 mm x 350 mm x 255 mm

Weight
4.2 kg

Subject to change without notice.

Order information

Article number	Product description	
LPV440.99.00001	DR 3900 Spectrophotometer with RFID technology	High-performance VIS spectrophotometer with RFID technology for reliable and traceable measurement results of routine analysis and user applications.
LPV440.99.10001	DR 3900 RFID spectrophotometer / LOC 100 kit	High-performance VIS spectrophotometer with RFID technology for reliable and traceable measurement results of routine analysis and user applications; sample identification set included.
LQV156.99.10011	LOC 100 RFID set for sample identification	The set contains: 1 RFID locator LOC 100, 15 sample RFID tags in 5 colours, 5 location RFID tags and 2 operator RFID tags.
LQV157.99.10001	SIP 10 Sipper set for DR 3900 with 1 inch round cell	Sipper for pour through applications with spectrophotometer DR 3900. With dual path length 1 inch/cm round cell, USB cable and pump tubing.
TSE-CC-DR3900	Comfort contract for DR 3900	Service Package 2.2: Comfort maintenance contract for spectrophotometer DR 3900. Excludes travel and wear parts. Includes warranty extension.
TSE-BC-DR3900	Basic contract for DR 3900	Service Package 2.1: Basic maintenance contract for spectrophotometer DR 3900. Excludes travel and wear parts.
TSE-MC-DR3900	One-off inspection for DR 3900	Service Package 1: One-off inspection for laboratory spectrophotometer DR 3900. Excludes travel and wear parts.
TSE-IQOQ-DR3900	Equipment qualification IQOQ for DR 3900	Equipment qualification IQOQ for VIS spectrophotometer DR 3900. Installation and operational qualification. Including required documents, excluding travel and standards.

DR 900:
Robust outdoor handheld Colorimeter

Portable and robust, micro-processor-controlled colorimeter with power-saving LED technology. Pre-programmed with 90 HACH Methods.

NEW

- ▶ Rugged construction
  Dustproof, waterproof, shockproof
- ▶ Designed for use in the field
  True handheld analysis for use anywhere
- ▶ Easy to use
  Menu driven, step-by-step analysis
- ▶ Reliable results without a main connection
  Improved user interface allowing quick selection of tests
- ▶ Configured for immediate use
  Pre-programmed, ready to use out of the box

The handheld colorimeter saves time in the field by allowing quick and easy access to the most used testing methods in less than four clicks. This colorimeter is waterproof, dustproof, shock resistant, and has been drop tested for greater quality assurance.

This instrument comes with an intuitive user interface, a large data store and a built-in USB port for easy transferring of information. The handheld colorimeter also helps satisfy core testing needs by offering at least 90 of the most common testing methods.

Combining all of these features with a push button backlit display for use in low light areas, you have a handheld colorimeter which is field ready in every possible way, and makes testing in harsh field environments a little less challenging.

DR 900 with opened cover and sample cells

Technical data

Operating mode
Transmittance (%), Absorbance and Concentration

Source lamp
Light Emitting Diode (LED)

Wavelength range
420, 520, 560, 610 nm

Photometric measuring range
0 - 2 Abs

Wavelength accuracy
± 1 nm

Spectral bandwidth
15 nm filter bandwidth

Photometric accuracy
± 0.005 Abs @1.0 ABS Nominal

Photometric linearity
± 0.002 Abs (0 - 1 Abs)

Wavelength selection
Automatic

Stray light
< 1.0 % at 400 nm

Display
Graphical display 240 x 160 pixel (Backlit)

User programmes
10

Data storage
500 measured values (result, date, time, sample ID, user ID according to GLP)

Supported chemistry
HACH tests

Cuvette compatibility
1 inch round / 16 mm round (with adapter)

Dimensions (H x W x D)
231 mm x 96 mm x 48 mm

Weight
0.6 kg with battery

Environmental conditions: temperature
10 - 40 °C

Environmental conditions: relative humidity
max. 90 % relative humidity (non-condensing)

Battery requirements
4 AA size batteries

Battery life
6 months (typical) at 5 readings a day / 5 day week without backlight (backlight usage will decrease battery life)

Interface
USB type Mini IP67

Enclosure waterproof rating
IP67

User interface
English, French, German, Italian, Spanish, Portuguese, Bulgarian, Chinese, Czech, Danish, Dutch, Finnish, Greek, Hungarian, Japanese, Korean, Polish, Romanian, Russian, Slovenian, Swedish, Turkish

Includes
DR 900 Colorimeter, two 1-inch glass sample cells marked at 10, 20 and 25 mL, two 1 cm plastic sample cells, 1 x 16-mm COD/TEST'N'TUBE adapter, 4 AA alkaline batteries, instrument manual multilingual printed, instrument and procedure manuals on CD; USB Mini to USB cable, European CE mark.

Subject to change without notice.

Order information

Article number	Product description	
9385200	DR 900 Robust portable datalogging colorimeter	Portable and robust, micro-processor-controlled colorimeter with power-saving LED technology. Pre-programmed with 90 HACH Methods.
4942500	Case assy, DR 800 and DR 900 colorimeter	Suitcase for keeping and transport of colorimeter, accessories and reagents.
2722000	Case, soft 11.5 H x 2.5 D x 11.5 W	Instrument carrying case, soft-sided with shoulder strap
2763900	DR/Check absorbance standard kit	Standard set (4 pcs) for checking of the photometric accuracy
TSE-MC-DR900	One-off inspection for DR 900	Service Package 1: One-off inspection for spectrophotometer DR 900. Excludes travel and wear parts.
TSE-CC-DR900	Comfort contract for DR 900	Service Package 2.2: Comfort maintenance contract for spectrophotometer DR 900. Excludes travel and wear parts. Includes warranty extension.
TSE-BC-DR900	Basic contract for DR 900	Service Package 2.1: Basic maintenance contract for spectrophotometer DR 900. Excludes travel and wear parts.

POCKET Colorimeter II: Small in size, big on waterproof analysis

Portable colorimeter programmed for the determination of one or two parameters. In carrying case, complete with reagents, cuvettes and operating instructions.

- Simple: all functions are available via only four keys
- Powerful: battery operation for up to 2000 tests
- Clear display: a backlit display and large readout for difficult conditions
- Reliable results any place due to battery operation
- Rugged construction yet lightweight
- Waterproof to IP 67: for watertight results!

Technical data

Source lamp Light Emitting Diode (LED)	**Data storage** 10 measured values + time	**Battery requirements** 4 AAA size batteries
Wavelength range varies with model	**Supported chemistry** HACH tests and HACH LANGE cuvette tests	**Battery life** 2000 tests * backlight will decrease battery life
Photometric measuring range 0 - 2 Abs	**Cuvette compatibility** 1 inch round / 13 mm round /1cm square (with optional adapter)	**Enclosure waterproof rating** IP67 (excludes battery compartment)
Wavelength accuracy Fixed wavelength ± 2 nm varies with model	**Dimensions (H x W x D)** 155 mm x 61 mm x 35 mm	**User interface** Numeric
Spectral bandwidth 15 nm filter bandwidth	**Weight** 0.23 kg	**Includes** PC II, sample cells, manual, carry case. Reagents included: 100 tests each for low range or 50 tests each for high range.
Wavelength selection Fixed wavelength	**Environmental conditions: temperature** 10 - 40 °C	
Display LCD, backlit	**Environmental conditions: relative humidity** max. 90 % relative humidity (non-condensing)	
User programmes Custom programming 1		Subject to change without notice.

Order information

Article number	Parameter	Method	Range	Number of tests
Colorimeter for HACH LANGE cuvette tests*				
5953000V.01	Ammonium (suitable for LCK303, 304, 305)	Indophenol Blue	2.0 - 47.0 mg/L / 0.015 - 2.0 mg/L / 1.0 - 12.0 mg/L NH_4-N	25
5953000V.02	Chlorine (suitable for LCK310)	DPD	0.05 - 2.0 mg/L Cl_2 0.09-3.8 mg/L ClO_2 0.05-2.0 mg/L O_3	24
5953000V.03	COD LR (suitable for LCK314, 614)	Dichromate	15 - 150 mg/L O_2 / 50 - 300 mg/L O_2	25
5953000V.04	COD HR (suitable for LCK014, 114)	Dichromate	1000 - 10000 mg/L O_2 / 150 - 1000 mg/L O_2	25
5953000V.05	Phosphate (suitable for LCK348, 349, 350)	Phosphormolybdenum Blue	0.5 - 5.0 mg/L / 0.05 - 1.5 mg/L / 2.0 - 20.0 mg/L PO_4-P	25
5953000V.06	Zinc (suitable for LCK360)	PAR	0.2 - 6.0 mg/L Zn	24
5953000V.07	Chloride (suitable for LCK311)	Iron(III)-Thiocyanate	1 - 70 mg/L / 70 - 1000 mg/L Cl	24
5953000V.08	Formaldehyde (suitable for LCK325)	Acetylacetone	0.5 - 10.0 mg/L H_2CO	24
Kits for HACH tests				
5870025	Aluminum	Aluminon	0.02 - 0.80 mg/L Al	100
5870026	Chloramine, Mono and Free Ammonia	Indophenol	0.02 - 0.50 mg/L NH_3-N / 0.04 - 4.50 mg/L Cl_2	50 - 100
5870040	Ammonia	Salicylate	0.01 - 0.80 mg/L NH_3-N	100
5870001	Bromine	DPD	0.05 - 4.50 / 0.2 - 10.0 mg/L Br_2	50 - 100
5870051	Chlorine Dioxide	DPD	0.05 - 5.00 mg/L ClO_2	100
5870000	Chlorine, low range - as free & total Cl_2	DPD	0.02 - 2.00 / 0.1 - 8.0 mg/L Cl_2	50 - 100
5870012	pH, and high range Chlorine	DPD	0.1 - 10.0 Cl_2 / 6.0 - 8.5 pH	100
5870023	Chlorine, free, SWIFTEST dispenser	DPD	0.02 - 2.00 mg/L Cl_2 / 0.1 - 8.0 mg/L Cl_2	125 - 250
5870024	Chlorine, total, SWIFTEST dispenser	DPD	0.02 - 2.00 / 0.1 - 8.0 mg /L Cl_2	125 - 250
5870017	Chromium, low range - as Cr (VI)	1,5 Diphenylcarbohydrazide	0.01 - 0.70 mg/L Cr	100
5870019	Copper - as free Cu	Bicinchoninate	0.04 - 5.00 mg/L Cu	100
5870005	Fluoride	SPADNS	0.1 - 2.0 mg/L F	50
5870016	Iron, low range	TPTZ	0.01 - 1.70 mg/L Fe	50 - 100
5870022	Iron, medium range	FerroVer	0.02 - 5.00 mg/L Fe	100
5870021	Lead	LeadTrak Fast Column Extraction	5 - 150 µg/L Pb	20
5870015	Manganese	Periodate Oxidation	0.2 - 20.0 mg/L Mn	100
5870018	Manganese	PAN	0.01 - 0.70 mg/L Mn	50
5870010	Molybdate - as Molybdenum	Ternary Complex	0.02 - 3.00 / 0.1 - 12.0 mg/L Mo	100
5870020	Nickel & Cobalt	PAN	0.01 - 1.00 mg/L Ni / 0.02 - 2.00 mg/L Co	100
5870002	Nitrate-Nitrogen	Cadmium Reduction	0.4 - 30.0 mg/L NO_3-N	100
5870003	Dissolved Oxygen (DO)	HRDO	0.2 - 10.0 mg/L DO	25
5870004	Ozone	Indigo Trisulfonate	0.01 - 0.25 mg/L O_3	25
5870006	Phosphate, ortho	Ascorbic Acid	0.02 - 3.00 mg/L PO_4	100
5870007	Phosphonates	Persulfate UV Oxidation	0.1 - 2.5/1 - 125 mg/L PO_4	100
5870034	Silica, high range	Silicomolybdate	1 - 100 mg/L SiO_2	100
5870029	Sulphate	Turbidimetric	2 - 70 mg/L SO_4	100
5870009	Zinc	Zincon	0.02 - 3.00 mg/L Zn	100
Kits for special applications				
5870042	Fixed wavelength 420 nm			
5870045	Fixed wavelength 450 nm			
5870050	Fixed wavelength 500 nm			
5870052	Fixed wavelength 528 nm			
5870055	Fixed wavelength 550 nm			
5870058	Fixed wavelength 580 nm			
5870060	Fixed wavelength 600 nm			
5870065	Fixed wavelength 655 nm			

*: HACH LANGE cuvette tests must be ordered separately.

Subject to change without notice

HT 200S: Fast and cost effective digestion in 15 minutes

Heating block with HSD technology (High Speed Digestion) for extremely fast digestion of samples

- Saves time in the analysis of COD, TN_b, P_{tot} and heavy metals
- Automatic fast cooling
- Variable digestion time and temperature for special digestions
- COD results in just 35 minutes

Technical data

Heating programmes Pre-programmed for 100°C, HT and COD mode and freely selectable 40-170°C, 5-240 min	**Max. operating humidity** 90 %	**Power supply** 230 V +5%/-15%, 50 Hz, 1300 VA
User programmes 9 free temperature/time	**Number of cuvettes** 12 x 20 mm diameter	**Dimensions (H x W x D)** 330 mm x 300 mm x 430 mm
Heating rate from 20 °C - 148 °C in 8 minutes	**Display size** 2 x 16 characters	**Weight** 12 kg
Temperature stability ± 1 °C in conformity with EN, ISO, EPA methods	**Display type** LCD	
Operating temperature range 10 - 45 °C	**User interface** English, French, German, Italian, Spanish, Dutch, Swedish, Polish, Danish	Subject to change without notice.

Order information

Article number	Product description	
LTV077	HT 200S High temperature thermostat	Heating block with HSD technology (High Speed Digestion) for extremely fast digestion of samples
OHA104	Reduction insert for 13 mm cuvettes	
TSE-MC-HT200	One-off inspection for HT 200S	Service Package 1: One-off inspection for laboratory high temp. thermostat HT 200S. Excludes travel and wear parts.
TSE-CC-HT200	Comfort contract for HT 200S	Service Package 2.2: Comfort maintenance contract for high temp. thermostat HT 200S. Excludes travel and wear parts. Includes warranty extension.
TSE-BC-HT200	Basic contract for HT 200S	Service Package 2.1: Basic maintenance contract for high temp. thermostat HT 200S. Excludes travel and wear parts.

LT 200: Thermostat for standard and special digestions

Pre-programmed for all standard digestions and freely programmable for user specific digestions

- ▶ Great flexibility
- ▶ Excellent reproducibility
- ▶ Simple to use

Technical data, dual block version

Heating programmes Pre-programmed for 40°C, 100°C, 148°C and freely selectable from 37-150°C, 1-480 min	**Max. operating humidity** 90 %	**Power supply** 115 V - 230 V +5%/-15%, 50 - 60 Hz, 900 VA max
User programmes 6 free temperature/time	**Number of cuvettes** 21 x 13 mm diameter 4 x 20 mm diameter	**Dimensions (H x W x D)** 145 mm x 250 mm x 310 mm
Heating rate from 20 - 148 °C in 10 minutes	**Display size** 2 x 16 characters	**Weight** 2.8 kg
Temperature stability ± 1 °C in conformity with EN, ISO, EPA methods	**Display type** LCD	
Operating temperature range 10 - 45 °C	**User interface** English, French, German, Italian, Spanish, Dutch, Swedish, Polish	Subject to change without notice.

Order information

Article number	Product description	
LTV082.99.21002	LT 200 Dry thermostat with 2 blocks, 15 x 13 mm, 6 x 13 mm / 4 x 20 mm	- Illuminated digital display for remaining time / temperature and operator guidance - 3 pre-programmed and 6 freely programmable storage spaces - Temperature settings between 37 °C and 150 °C in 1 °C steps, time setting between 1 and 480 min
LTV082.99.10002	LT 200 Dry thermostat with 1 block, 9 x 13 mm / 2 x 20 mm	
LTV082.99.23002	LT 200 Dry thermostat with 2 blocks, 15 x 13 mm, 15 x 13 mm	
LTV082.99.51002	LT 200 Dry thermostat with 2 blocks, 6 x 13 mm and 4 x 20 mm per block	
LZT144	Adapter sleeve LT 200 for MICRO DIST	

Which cuvettes for my photometer?

Quick reference guide

Article number	Optical path length	Material	Volume / Package size	PC II	DR 900	DR 3900	DR 6000
LCW906	13 mm round	Glass	25 pcs 7 mL, with rubber caps			■	■
LZP045	10 mm rectangular	Glass	1 pcs 3.5 mL			■	■
LZP169	50 mm rectangular	Glass	1 pcs 7 mL, semi-micro				■
LZP269	50 mm rectangular	Glass	1 pcs 7 mL, semi-micro			■	■
2095100	10 mm rectangular	Glass	2 pcs 3.5 mL, matched pair, with caps			■	■
2122800	1 inch round	Glass	1 pcs 10 mL, with cap	■	■	■	■
2401906	25 mm round	Glass	6 pcs 25 mL, with caps	■	■	■	■
2427606	1 inch round	Glass	6 pcs 10 mL, with caps	■	■	■	■
2495402	1 inch square	Glass	2 pcs matched pair			■	■
2612602	1 inch square	Glass	2 pcs 25 mL, matched pair, with caps			■	■
2629250	50 mm rectangular	Glass	1 pcs 17,5 mL, with cap			■	■
2665902	1 inch square	Glass	2 pcs 25 mL, matched pair			■	■
LCW919	11 mm round	Glass	5 pcs blank value cuvette set, 7 mL, rubber caps			■	■
LZP167	50 mm rectangular	Optical glass	1 pcs 20 mL			■	■
LZP331	20 mm rectangular	Optical glass	1 pcs 7 mL				■
5940506	1 inch round	Plastic	6 pcs 25 mL, 10 mm & 1 dual pathlength, with cap	■	■	■	■
LZP341	50 mm rectangular	PMMA	10 pcs 7 mL, semi-micro, with caps			■	■
EBK019	10 mm rectangular	Polystyrene	1000 pcs 3.5 mL			■	■
2410212	1 inch rectangular	Polystyrene	12 pcs 25 mL, with caps			■	■
2629500	10 mm rectangular	Polystyrene	100 pcs 1.5 mL,			■	■
4864302	1 inch round	Polystyrene	2 pcs 10 mL, with caps	■	■	■	■
LZP332	10 mm rectangular	Quartz glass	1 pcs 3.5 mL				■
LZP333	50 mm rectangular	Quartz glass	1 pcs 17.5 mL				■
A24209	10 mm rectangular	Quartz glass	1 pcs 160 µL, pour through cell, CH = 10 mm				■
LZV510	10 mm rectangular	Quartz glass	1 pcs 450 µL, pour through cell, CH = 10 mm				■
LZV649	50 mm rectangular	Quartz glass	1 pcs 370 µL, flow through cell				■
2624450	50 mm rectangular	Quartz glass	1 pcs 17.5 mL, with cap				■
2624410	10 mm square	Quartz glass	1 pcs 3.5 mL, with cap				■

PC II: Single Parameter Colorimeter, DR 900: Multi-Parameter Colorimeter, DR 3900: VIS Spectrophotometer, DR 6000: UV-VIS Spectrophotometer

Portable water quality laboratories, BOD laboratory measurement stations

CELs - Factory-configured laboratories for several applications: Colorimeter, reagent sets, required apparatus, additional instruments and all items needed to conduct field testing.	Article number	Product description
	251231	Portable colorimeter laboratory for water conditioning
	251232	Portable colorimeter lab for environmental water quality
	251233	Portable colorimeter laboratory for aquaculture
	251234	Basic portable colorimeter laboratory for drinking water
	251235	Advanced portable colorimeter laboratory for drinking water
	251236	Basic portable colorimeter laboratory for wastewater
	251237	Advanced portable colorimeter laboratory for wastewater
	251238	Portable colorimeter lab for professional water treatment
	251239	Advanced portable colorimeter/pH/conductivity laboratory

DRELs - Factory-configured laboratories for professional water analysis: Photometer with batteries and cuvettes, instrument case, reagent & apparatus case, reagent set, and instrument set.	Article number	Product description
	LZV729	DREL Complete water lab
	LZV735	DREL Industrial water lab

BOD Direct - Respirometric BOD laboratory measurement station, control unit and stirrer with electronic pressure sensors for up to 6 bottles.	Article number	Product description
	LQV158.98.00001	BOD Direct Respirometric BOD apparatus

BOD TRAK II - Manometric BOD(n) laboratory measurement station, control unit and stirrer with pressure sensors for 6 bottles.	Article number	Product description
	2952400	BOD TRAK II Manometric BOD apparatus with accessories

Instrument quality assurance and documentation

Product description	Article number
Quality assurance	
Test solution set for spectrophotometers	LZV810
Validation filter kit for spectrophotometer	LZV537
Pipette validation kit	LCA722
Documentation	
USB-A4-Printer for spectrophotometer	LYW368
USB barcode hand-scanner for spectrophotometers	LZV566
USB keyboard QUERTY	LZV582

Turbidity instruments

The HACH LANGE turbidity range comprises portable and benchtop instruments in accordance with DIN EN ISO. The available models for specific requirements can be found on our website.

Check out our web portal now!

Benchtop 2100 series

2100 series laboratory turbidimeters are engineered to provide superior accuracy and sensitivity in any application. Since the first laboratory turbidimeter was introduced more than 40 years ago, the system has evolved to include advances in optics, signal processing, and software.

Portable 2100Q series

The 2100Q portable turbidimeter offers a unique combination of advanced features, such as easy calibration and simplified data transfer, and measurement innovation for rapidly settling samples, giving you confidence you are getting accurate results every time.

Further information

Find out more on our website, keywords:
- 2100N
- 2100AN
- 2100Q

Technical specifications, data sheets, manuals, recommended accessories as well as optional service contracts can be retrieved online!

HACH LANGE

www.hach-lange.com

Electrochemistry

The HACH LANGE electrochemistry portfolio provides the right solution for your testing needs, backed by years of innovation and technical support. Whether you require a simple, dedicated pH meter and electrode or an advanced, expandable, multi-parameter system, HACH LANGE has your answer.

Accurate

You don´t just need an answer, but the right one, and fast. Optimised stabilisation algorithms in HACH LANGE meter platforms eliminate operator guesswork and reduce inaccurate measurements. Many electrodes work specifically to deliver accurate results and the quickest response, even in challenging environments.

Easy to use

Now, more than ever, you are looking for new ways to stretch your budget and resources. Skip studying complicated user manuals and spend your time measuring, thanks to HACH LANGE innovative menu designs and simple keypads for truly intuitive operation.

LDO - the best method to measure oxygen

Luminescence based LDO technology is an established HACH LANGE innovation launched in 2003. The INTELLICAL LDO is a drift-free sensor providing error-free and accurate results at high and low O_2 concentrations with minimum effort. There is no calibration and no replacement of electrolyte. Since it was launched, LDO has proved itself everywhere where O_2 is measured!

HQD Meters and INTELLICAL Probes

Easy to use – no matter where you put them to work

HQD's user-friendly meters allow even new operators to produce accurate measurements while reducing possible errors – saving you time and hassle. Additionally, the durable design is built to handle the toughest conditions – in both the field and the lab.

- ▶ Automatically detect the testing parameter and calibration history
- ▶ Large graphic display makes the results easy to read, even in difficult light conditions
- ▶ Mix and match of electrodes and meters ensures reliability and flexibility
- ▶ HQD meters communicate clearly in 13 languages

INTELLICAL smart probes

INTELLICAL digital probes provide ultimate traceability of calibration history. The probes can be moved between meters without the need to recalibrate or re-enter measurement settings.

- ▶ Minimises errors
- ▶ Minimises setup time

Break-through technology

Breakthrough HACH LANGE Luminescent Dissolved Oxygen (LDO) technology, now the standard for measuring dissolved oxygen, eliminates the numerous reliability and maintenance concerns inherent in older DO membrane instruments.

- ▶ No membranes
- ▶ No electrolyte to replace or anode to polish
- ▶ Infrequent calibrations
- ▶ 1-year sensor cap life

SENSION+ Meters and Probes

Comes complete with everything you need to start testing

Each portable and benchtop kit comes complete with everything you need to start testing.

- SENSION+ Field Kits work as complete mobile measurement stations, which include meter, probe, robust carrying case and all supporting chemistries.
- Portable instruments offer real one-hand operation with ergonomic and lightweight design and IP67 protection. Screw-on calibration tubes simplify on-site calibration and minimize buffer consumption.
- SENSION+ Laboratory Stations include meter, probe, integrated probe stand, instrument controlled magnetic stirrer and supporting chemistries.
- The SENSION+ laboratory portfolio covers all application requirements from a basic pH meter up to the multi-channel GLP system for pH, ORP, Conductivity and ISE with data management and full PC driven options.

Simple and fast measurements

A guided navigation menu allows you to follow simple prompts to set up your measurements, reducing the time necessary to start testing, and improving the accuracy of measurements.

- Guided menu makes navigation easy
- Simple prompts to ease set-up
- Keypads designed for truly intuitive operation
- Accurate results with fast response, even in challenging environments

Available for a wide variety of applications

The portfolio of high quality probes built for SENSION+ means that you have the right option for nearly every testing environment.

- pH
- Conductivity
- Dissolved Oxygen
- Multi sensors for pH, ORP and Conductivity
- and much, much more!

For laboratory instruments you may also choose red rod pH electrodes or other high end probes from our large Radiometer probe portfolio - ask for Radiometer probes dedicated to SENSION+.

NEW: SENSION+ Portable Data Logger versions

All-in-one systems - now making testing and data management fast and simple: interval measurements, 500 data point memory and wireless data transfer to your PC. Data management is as fast and simple as can be.

HACH LANGE

HQD Benchtop Meters

All the benefits of the digital HQD system, with simplified data transfer and easy-to-read results on a large, backlit screen.

Parameter	HQ411D DEDICATED pH/mV BENCHTOP METER	HQ430D SINGLE INPUT MULTI-PARAMETER BENCHTOP METER	HQ440D DUAL INPUT MULTI-PARAMETER BENCHTOP METER
Temperature	■	■	■
pH Glass Non-glass (ISFET)	■	■	■
mV	■	■	■
Conductivity		■	■
TDS		■	■
Salinity		■	■
Resistivity		■	■
Dissolved Oxygen Luminescent (LDO) BOD Sensor (with LDO)		■ ■	■ ■
ORP/Redox	■	■	■
Ammonia		■	■
Ammonium		■	■
Chloride		■	■
Fluoride		■	■
Nitrate		■	■
Sodium		■	■

Specifications	HQ411D DEDICATED pH/mV BENCHTOP METER	HQ430D SINGLE INPUT MULTI-PARAMETER BENCHTOP METER	HQ440D DUAL INPUT MULTI-PARAMETER BENCHTOP METER
Casing IP Rating	IP54	IP54	IP54
Internal result storage capacity	500*	500*	500*
Inputs	M12 digital (1) for INTELLICAL probes	M12 digital (1) for INTELLICAL probes	M12 digital (2) for INTELLICAL probes
Outputs	USB to PC / flash stick	USB to PC / flash stick	USB to PC / flash stick
Resolution	0.1/ 0.01/ 0.001	0.1/ 0.01/ 0.001	0.1/ 0.01/ 0.001
Interface languages	13**	13**	13**
Warranty	3 years	3 years	3 years
Compliance	CE.WEEE	CE.WEEE	CE.WEEE
GLP features	■	■	■
PC data transfer software	included	included	included
Backlight	■	■	■
Battery requirements	4, AA	4, AA	4, AA
AC and USB operation	■	■	■
Article number	**HQ411D.98.00002**	**HQ430D.98.00002**	**HQ440D.98.00002**

HQD Portable Meters

Now offering a complete water analysis portfolio of testing parameters with standard and rugged options. HACH LANGE's HQD system gives maximum measurement flexibility and ease of operation with interchangeable probes and automatic parameter recognition.

Parameter	HQ11D DEDICATED pH/mV PORTABLE METER	HQ14D DEDICATED CONDUCTIVITY PORTABLE METER	HQ30D SINGLE INPUT MULTI-PARAMETER PORTABLE METER	HQ40D DUAL INPUT MULTI-PARAMETER PORTABLE METER
Temperature	■	■	■	■
pH Glass Non-glass (ISFET)	■		■	■
mV	■		■	■
Conductivity		■	■	■
TDS		■	■	■
Salinity		■	■	■
Resistivity		■	■	■
Dissolved Oxygen Luminescent (LDO) BOD Sensor (with LDO)			 ■ ■	 ■ ■
ORP/Redox	■		■	■
Ammonia			■	■
Ammonium			■	■
Chloride			■	■
Fluoride			■	■
Nitrate			■	■
Sodium			■	■

Specifications	HQ11D DEDICATED pH/mV PORTABLE METER	HQ14D DEDICATED CONDUCTIVITY PORTABLE METER	HQ30D SINGLE INPUT MULTI-PARAMETER PORTABLE METER	HQ40D DUAL INPUT MULTI-PARAMETER PORTABLE METER
Casing IP Rating	IP67	IP67	IP67	IP67
Internal result storage capacity	500*	500*	500*	500*
Inputs	M12 digital (1) for INTELLICAL probes	M12 digital (1) for INTELLICAL probes	M12 digital (1) for INTELLICAL probes	M12 digital (2) for INTELLICAL probes
Outputs	USB to PC / flash stick	USB to PC / flash stick	USB to PC / flash stick	USB to PC / flash stick
Resolution	0.1/ 0.01/ 0.001	0.1/ 0.01/ 0.001	0.1/ 0.01/ 0.001	0.1/ 0.01/ 0.001
Interface languages	13**	13**	13**	13**
Warranty	3 years	3 years	3 years	3 years
Compliance	CE.WEEE	CE.WEEE	CE marking	CE marking
Benchtop	with stand	with stand	with stand	with stand
GLP features	■	■	■	■
PC data transfer software	included	included	included	included
Backlight	■	■	■	■
Battery requirements	4, AA	4, AA	4, AA	4, AA
AC and USB operation	Optional	Optional	Optional	Included
Article number	**HQ11D.99.000000**	**HQ14D.99.000000**	**HQ30D.99.000000**	**HQ40D.99.000000**

*Expanded storage with external USB storage device. **English, German, Spanish, Portuguese, French, Italian, Dutch, Turkish, Polish, Danish, Swedish, Russian, Czech

HQD INTELLICAL Probes





Specifications	DO Luminescent Dissolved Oxygen	DO Luminescent Dissolved Oxygen	BOD Luminescent Dissolved Oxygen	Conductivity	Conductivity
Special feature	LDO technology. No membranes.	LDO technology. No membranes.	LDO technology. Designed for BOD applications. No membranes.		
Electrode type	Laboratory Luminescent Dissolved Oxygen	Rugged Luminescent Dissolved Oxygen	Laboratory	Laboratory	Rugged Outdoor
Measuring range	0.05 - 20.00 mg/L	0.05 - 20.00 mg/L	0.05 - 20.00 mg/L	Cond.: 0.01 µS/cm - 200 mS/cm TDS: 0 - 50000 mg/L as NaCl Salinity: 0 - 42 g/kg or Resist.: 2.5 Ωcm - 49 MΩcm	Cond.: 0.01 µS/cm - 200 mS/cm TDS: 0 - 50000 mg/L as NaCl Salinity: 0 - 42 g/kg or Resist.: 2.5 Ωcm - 49 MΩcm
Accuracy	±0.1 from 0 - 8 mg/L ±0.2 for greater than 8 mg/L	±0.1 from 0 - 8 mg/L ±0.2 for greater than 8 mg/L	±0.05 from 0 - 10 mg/L ±0.1 for greater than 10 mg/L	Cond: ±0.5% of range TDS: ±0.5% ±1 digit Salinity: ±0.1, ±1 digit	Cond: ±0.5% of range TDS: ±0.5% ±1 digit Salinity: ±0.1, ±1 digit
Temperature range	0 - 50 °C	0 - 50 °C	0 - 50 °C	-10 - 110 °C	-10 - 110 °C
Dimensions (D x L)	15 mm x 200 mm	45 mm x 250 mm	15.875 mm x 200 mm	14 mm x 200 mm	45 mm x 250 mm
Sensor type	Lumiphore	Lumiphore	Lumiphore	4-pole graphite, k = 0.40 cm^{-1}	4-pole graphite, k = 0.40 cm^{-1}
Material	Sensor Body: Polycarbonate / Abs	Sensor Body: Polycarbonate / Abs with Stainless Steel	Sensor Body: Polycarbonate / Abs	Sensor Body: Noryl	Sensor Body: Noryl with Stainless Steel
Article number	**LDO10101**	**LDO10105**	**LBOD10101**	**CDC40101**	**CDC40105**





Specifications	pH Ultra Refillable Combination	pH Gel-filled Combination	pH Gel-filled Combination	pH Refillable Combination	pH Gel-filled Combination
Special feature	Fast response time	Wastewater and difficult samples	General purpose. Clean water samples.		Low maintenance
Electrode type	Laboratory	Laboratory	Laboratory	Laboratory	Rugged Outdoor
Measuring range	0 - 14 pH	2 - 14 pH	0 - 14 pH	0 - 14 pH	2 - 14 pH
Accuracy	±0.02 pH	±0.02 pH	±0.02 pH	±0.02 pH	±0.02 pH
Temperature range	0 - 80 °C	0 - 50 °C	0 - 80 °C	0 - 80 °C	0 - 50 °C
Dimensions (D x L)	12 mm x 200 mm	12 mm x 200 mm	12 mm x 200 mm	12 mm x 200 mm	45 mm x 250 mm
Sensor type	Glass	Glass	Glass	Glass	Glass
Reference	Ag/AgCl (double junction)	Ag/AgCl (double junction)	Ag/AgCl (double junction)	Ag/AgCl (double junction)	Ag/AgCl (double junction)
Electrode junction	Open	Open	Ceramic pin	Ceramic pin (x2)	Open
Material	Sensor Body: Zeonor	Sensor Body: Epoxy	Sensor Body: Epoxy	Sensor Body: Zeonor	Sensor Body: Zeonor with Stainless Steel
Filling solution	2965026	Non-refillable solid gel	Non-refillable gel	2841700	Non-refillable solid gel
Article number	**PHC28101**	**PHC10101**	**PHC20101**	**PHC30101**	**PHC10105**

HQD INTELLICAL Probes





Specifications	ORP/Redox Combination Gel-filled	ORP/Redox Combination Refillable	ORP/Redox Combination Gel-filled	Ammonia Combination ISE	Ammonium Combination ISE
Special feature	Flat disc sensor for easy cleaning. Low maintenance.	Flat disc sensor for easy cleaning.	Flat disc sensor for easy cleaning.	Easy-to-replace membrane modules.	Dry storage & fast response time. No replacement membranes.
Electrode type	Laboratory	Laboratory	Rugged Outdoor	Laboratory Combination ISE	Laboratory Combination ISE
Measuring range	± 1200 mV	± 1200 mV	± 1200 mV	0.01 mg/L ($5x10^{7}$ M) - 14,000 mg/L (1 M) NH_3-N	0.018 mg/L (10^{-6} M) - 9,000 mg/L (0.5 M) NH_4^+-N
Accuracy	±0.02mV or 0.05%, whichever is greater	±0.02mV or 0.05%, whichever is greater	±0.02mV or 0.05%, whichever is greater	±0.02mV or 0.05%, whichever is greater	±0.02mV or 0.05%, whichever is greater
Temperature range	0 - 80 °C	0 - 80 °C	0 - 80 °C	0 - 50 °C	0 - 50 °C
Dimensions (D x L)	12 mm x 200 mm	12 mm x 200 mm	45 mm x 250 mm	12 mm x 220 mm	12 mm x 220 mm
Sensor type	Platinum disc	Platinum disc	Platinum disc	Gas sensing: glass w/ replaceable NH_3 sensitive membrane	Solid-state PVC membrane
Reference	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl
Electrode junction	Open	Ceramic pin	Open	Porous Teflon Annular Ring	Porous Teflon Annular Ring
Material	Sensor Body: Epoxy	Sensor Body: Epoxy	Sensor Body: Zeonor with Stainless Steel	Sensor Body: Epoxy	Sensor Body: Epoxy
Filling solution	Non-refillable gel	2841700	Non-refillable gel	4447226	Non-refillable Dritek gel
ISA required				4447169	2980699
Article number	**MTC10101**	**MTC30101**	**MTC10105**	**ISENH318101**	**ISENH418101**




Specifications	Chloride Combination ISE	Fluoride Combination ISE	Nitrate Combination ISE	Sodium Combination ISE
Special feature	Dry storage & fast response time. No replacement membranes.	Dry storage & fast response time. No replacement membranes.	Dry storage & fast response time. No replacement membranes.	Fast response time
Electrode type	Laboratory Combination ISE	Laboratory Combination ISE	Laboratory Combination ISE	Laboratory Combination ISE
Measuring range	0.1 mg/L ($3x10^{-6}$ M) - 35,500 mg/L (1 M) Cl^-	0.01 mg/L ($5x10^{-7}$ M) - 19,000 mg/L (1 M) F^-	0.1 mg/L ($7x10^{-6}$ M) - 14,000 mg/L (1 M) NO_3^--N	0.023 mg/L ($1x10^{-6}$ M) - 23,000 mg/L (1 M) Na^+
Accuracy	±0.02mV or 0.05%, whichever is greater	±0.02mV or 0.05%, whichever is greater	±0.02mV or 0.05%, whichever is greater	±0.02mV or 0.05%, whichever is greater
Temperature range	5 - 50 °C	5 - 50 °C	0 - 50 °C	0 - 50 °C
Dimensions (D x L)	12 mm x 220 mm	12 mm x 220 mm	12 mm x 220 mm	12 mm x 220 mm
Sensor type	Solid-state crystal membrane	Solid-state crystal membrane	Solid-state PVC membrane	Glass
Reference	Ag/AgCl	Ag/AgCl	Ag/AgCl	Ag/AgCl
Material	Sensor Body: Epoxy	Sensor Body: Epoxy	Sensor Body: Epoxy	Sensor Body: Zeonor
Filling solution	Non-refillable Dritek gel	Non-refillable Dritek gel	Non-refillable Dritek gel	2965126
ISA required	2318069	258999	2984799	4451569
Article number	**ISECL18101**	**ISEF12101**	**ISEN0318101**	**ISENA38101**

HQD Meter & Probe Accessories

Meter Stand

Article number	Description
4754900	Perfect for use in the laboratory or other applications where hands-free meter operation is desired. Black molded plastic is durable and easy to clean.

Universal Probe Stand for Standard Electrode Sizes

Article number	Description
8508850	Also supports HACH LANGE INTELLICAL and SENSION+ probes.

Protective Glove

Article number	Description
5828700	Provides added impact protection that field use requires. Wrist and neck straps keep the meter secure. Two probe holders (not included in kit) can slide onto glove.

HQD Field Meter Protective Caps

Article number	Description
9345200	Further protect your HQD meter from harsh (corrosive) field environments. For use with HQD Meter Protective Glove kit (5828700)

Probe Holder (Standard INTELLICAL Probes Only)

Article number	Description
5829400	For use with the Protective Glove. Simply wrap 1- or 3-meter cables around the holder and slide probe into protective sheath. Protective Glove can hold one or two Probe Holders.

Field Kit

Article number	Description
5825800	Includes protective glove and (5) 120 mL sample cups. Carry your HQD system anywhere. Custom inserts organise and securely position your meter and probes. NOTE: probes and meter not included.

Rugged Field Case for Two Probes with 5 m Cables

Article number	Description
8505500	Includes: Empty case and insert for meter and probe storage; (4) Containers for sample collection; 500 mL Wash Bottle.

Rugged Field Case for Three Probes with 5 m Cables

Article number	Description
8505501	Includes same accessories as case 8505500.

HQD Meter & Probe Accessories

Colour Coded Probe Clips

Article number	Description
5818400	Clip a colour-coded band to each end of your probe cable for identification. Ten clips of five different colors per package. NOTE: One package of clips included with each probe.

Probe Cable Depth Markers

Article number	Description
5828610	Taking readings at specific depths with rugged probes is a snap with these Depth Markers. Visually identify the depth of your probe by attaching Depth Marker securely on cable at points to meet your needs. Five Depth Markers per package. NOTE: For use with rugged probes only.

Replacement Stirrer Assembly for INTELLICAL LBOD Probe

Article number
5850800

Replacement Shroud Kit for Rugged Probes

Article number	Description
5825900	Includes protective bell and locking ring. The rugged shroud absorbs the impact from rough wear and tear. NOTE: probe not included.

Replacement LDO Sensor Cap

Article number	Description
5811200	Includes i-button and sensor cap.

Replacement LBOD Sensor Cap

Article number
5838000

Replacement Membranes for INTELLICAL ISENH3181 Ammonia ISE

Article number	Description
5812711	Pack of 3 replacement membrane modules designed for the INTELLICAL ISENH3181 Ammonia ISE.

HQD Meter USB and AC Power Adapter Kit

Article number	Description
5834100	Provides A/C power in the lab. The USB adapter can be used to transfer data from the meter to a PC, memory stick, or printer. Included with HQ40D meter systems.

SENSION+ Portable Meters

SENSION+ Portable instruments offer real one-hand operation with ergonomic and lightweight design and IP67 protection. Screw-on calibration tubes simplify on-site calibration and minimize buffer consumption.

Parameter	PH1 BASIC PORTABLE pH METER	MM110 PORTABLE pH/ORP MULTI-SENSOR METER[1]	EC5 PORTABLE CONDUCTIVITY METER	DO6 PORTABLE DISSOLVED OXYGEN METER	MM150 PORTABLE MULTI-METER[2]
Temperature	■	■	■	■	■
pH	■	■			■
Conductivity			■		■
Salinity			■		■
TDS			■		■
Dissolved Oxygen				■	
ORP/Redox	■	■			■

Specifications	PH1 BASIC PORTABLE pH METER	MM110 PORTABLE pH/ORP MULTI-SENSOR METER[1]	EC5 PORTABLE CONDUCTIVITY METER	DO6 PORTABLE DISSOLVED OXYGEN METER	MM150 PORTABLE MULTI-METER[2]
Casing IP Rating	IP67	IP67	IP67	IP67	IP67
Internal result storage capacity	—	—	—	—	—
Resolution	0.01 pH 0.1 mV (±199.9 mV range)	0.01 pH 1 mV	EC: 0.01 µS/cm - 1 mS/cm TDS: 1mg/L - 1g/L depending on range Salinity: 0.1 mg/L - 0.1 g/L depending on range	0.01 mg/L	pH: 0.01 ORP: 1 mV EC: 0.01 µS/cm - 1 mS/cm depending on range TDS: 1 mg/L - 1 g/L depending on range
Inputs	MP5	MP8	MP5	MP5	MP8
Output	—	—	—	—	—
Interface languages	Icon based, no language needed	Icon based, no language needed	Icon based, no language needed	Icon based, no language needed	Icon based, no language needed
Warranty	2 years	2 years	2 years	2 years	2 years
Compliance	CE.WEEE	CE.WEEE	CE.WEEE	CE.WEEE	CE.WEEE
Measurement method	Auto stabilisation, manual	Auto stabilisation, manual	Auto stabilisation, manual	Auto stabilisation, manual	Auto stabilisation, manual
PC data transfer software	—	—	—	—	—
Backlight	■	■	■	■	■
Battery requirements	3, AA	3, AA	3, AA	3, AA	3, AA
Article number	**LPV2500.98.0002**	**LPV2600.98.0002**	**LPV3500.98.0002**	**LPV4500.98.0002**	**LPV4000.98.0002**

[1]pH and ORP/Redox simultaneously with one multi electrode. [2]Parameter measured depends on electrode selected.

Call us for information on complete field kit solutions!

SENSION+ Portable Data Logger Meters

HACH LANGE's SENSION+ Data Logger, an all-in-one system - now making testing and data management fast and simple. Interval measurements, 500 data point memory and wireless data transfer to your PC. Data management as fast and simple as it can be.

Parameter	pH1 DL PORTABLE DATA LOGGER pH METER	MM110 DL PORTABLE DATA LOGGER MULTI-METER[1]	EC5 DL PORTABLE DATA LOGGER CONDUCTIVITY METER	DO6 DL PORTABLE DATA LOGGER DISSOLVED OXYGEN METER	MM150 DL PORTABLE DATA LOGGER MULTI-METER[2]
Temperature	■	■	■	■	■
pH	■	■			■
Conductivity			■		■
Salinity			■		■
TDS			■		■
Dissolved Oxygen				■	
ORP/Redox	■	■			■

Specifications	pH1 DL PORTABLE DATA LOGGER pH METER	MM110 DL PORTABLE DATA LOGGER MULTI-METER[1]	EC5 DL PORTABLE DATA LOGGER CONDUCTIVITY METER	DO6 DL PORTABLE DATA LOGGER DISSOLVED OXYGEN METER	MM150 DL PORTABLE DATA LOGGER MULTI-METER[2]
Casing IP Rating	IP67	IP67	IP67	IP67	IP67
Internal result storage capacity	500 results	500 results	500 results	500 results	500 results
Resolution	0.01 pH 0.1 mV (±199.9 mV range)	0.01 pH 1 mV	EC: 0.01 µS/cm - 1 mS/cm TDS: 1mg/L - 1g/L depending on range Salinity: 0.1 mg/L - 0.1 g/L depending on range	0.01 mg/L	pH: 0.01 ORP: 1 mV EC: 0.01 µS/cm - 1 mS/cm depending on range TDS: 1 mg/L - 1 g/L depending on range
Inputs	MP-5	MP-8	MP-5	MP-5	MP-8
Output	Wireless to USB	Wireless to USB	Wireless to USB	Wireless to USB	Wireless to USB
Interface languages	Icon based, no language needed	Icon based, no language needed	Icon based, no language needed	Icon based, no language needed	Icon based, no language needed
Warranty	2 years	2 years	2 years	2 years	2 years
Compliance	CE; RTTE directive see NB opinion statement; FCC approval	CE; RTTE directive see NB opinion statement; FCC approval	CE; RTTE directive see NB opinion statement; FCC approval	CE; RTTE directive see NB opinion statement; FCC approval	CE; RTTE directive see NB opinion statement; FCC approval
Measurement method	Interval, auto stabilisation, manual	Interval, auto stabilisation, manual	Interval, auto stabilisation, manual	Interval, auto stabilisation, manual	Interval, auto stabilisation, manual
PC data transfer software	Yes	Yes	Yes	Yes	Yes
Backlight	■	■	■	■	■
Battery requirements	3, AA	3, AA	3, AA	3, AA	3, AA
Article number	**LPV2500DL.98.02**	**LPV2600DL.98.02**	**LPV3500DL.98.02**	**LPV4500DL.98.02**	**LPV4000DL.98.02**

[1]pH and ORP/Redox simultaneously with one multi electrode. [2]Parameter measured depends on electrode selected.

Call us for information on complete field kit solutions!

SENSION+ Benchtop Meters

SENSION+ benchtop meters are developed as complete work stations, delivered with integrated magnetic stirrer, probe holder and consumables.

Parameter	PH3 BASIC BENCHTOP pH METER	PH31 GLP BENCHTOP pH METER	EC7 BENCHTOP CONDUCTIVITY METER	EC71 GLP BENCHTOP CONDUCTIVITY METER	MM340 GLP BENCHTOP MULTI-PARAMETER METER	MM374 GLP BENCHTOP MULTI-PARAMETER METER
Temperature	■	■	■	■	■	■
pH	■	■			■	■
mV	■	■			■	■
Conductivity			■	■		■
Salinity			■	■		■
TDS				■		■
ORP/Redox	■	■			■	■
Ammonia					■	■
Nitrate					■	■
Fluoride					■	■
Sodium					■	■
Chloride					■	■
Ammonium					■	■

Specifications	PH3 BASIC BENCHTOP pH METER	PH31 GLP BENCHTOP pH METER	EC7 BENCHTOP CONDUCTIVITY METER	EC71 GLP BENCHTOP CONDUCTIVITY METER	MM340 GLP BENCHTOP MULTI-PARAMETER METER	MM374 GLP BENCHTOP MULTI-PARAMETER METER
Internal result storage capacity	—	330	—	400	330	330
Resolution	pH: 0.01 ORP: 1 mV	pH: 0.001 ORP: 0.1 mV	EC: 0.01 µS/cm - 1 mS/cm depending on range Salinity: Dependent on range	EC: 0.01 µS/cm - 1 mS/cm depending on range TDS: 1 mg/L - 1 g/L Salinity: Dependent on range	pH: 0.001 ORP 0.1 mV	pH: 0.001 pH ORP: 0.1 mV EC: 0.01 µS/cm - 1 mS/cm depending on range TDS: 1 mg/L - 1 g/L Salinity: Dependent on range
Inputs	BNC, ref, Pt1000	BNC, ref, Pt1000	E.C. cell, Pt1000	E.C. cell, Pt1000	2 BNC, 2 ref, Pt1000	2 BNC, 2 ref, 1 E.C.
Outputs		RS232* (two-way), USB		RS-232* (two-way), USB	RS-232* (two-way), USB	RS-232* (two-way), USB
Interface languages	6**	6**	6**	6**	6**	6**
Warranty	2 years	2 years	2 years	2 years	2 years	2 years
Compliance	CE.WEEE	CE.WEEE	CE.WEEE	CE.WEEE	CE.WEEE	CE.WEEE
GLP features	—	■	—	■	■	■
PC data transfer software	■	■	■	■	■	■
Backlight	■	■	■	■	■	■
AC and USB operation	■	■	■	■	■	■
Article number	**LPV2000.98.0002**	**LPV2100.98.0002**	**LPV3010.98.0002**	**LPV3110.98.0002**	**LPV2200.98.0002**	**LPV4110.98.0002**

*USB compatibility with optional adapter. **English, German, Spanish, French, Italian, and Portuguese

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SENSION+ Probes for Portable Meters





Specifications	pH Combination Gel-filled	pH Combination Solid Gel Wastewater	pH Combination Low Conductivity High Temperature	ORP/Redox Combination Gel-filled	Dissolved Oxygen Polarographic
Special feature		With Working Protector. Solid gel for high solids content.	With Working Protector. For low ionic strength and/or high temperature.		
Measuring range	0 - 14 pH	2 - 14 pH	0 - 14 pH	± 2000 mV	0.03 mg/L to saturation
Accuracy	0.02 pH with pH1 Meter	0.02 pH with pH1 Meter	0.02 pH with pH1 Meter	1 mV with pH1 Meter	±0.5 mg/L
Temperature range	0 - 80 °C	0 - 80 °C	0 - 100 °C	0 - 80 °C	0 - 50 °C
Thermistor	Pt1000	Pt1000	Pt1000	-	Integrated 30kohm NTC
Dimensions (D x L)	12 mm x 85 mm	12 mm x 85 mm	12 mm x 85 mm	12 mm x 85 mm	12 mm x 120 mm
Sensor type	Glass	Glass	Glass	Platinum annular ring	Replaceable PTFE membrane; Pt cathode; Ag anode
Electrode junction	Ceramic pin	Open	Porous annular PTFE	Ceramic pin	
Material	Sensor Body: Polycarbonate	Sensor Body: Glass	Sensor Body: Glass	Sensor Body: Polycarbonate	Probe body: ABS & Delrin (nylon)
Filling solution	Non-refillable gel	Non-refillable solid polymer	Non-refillable gel	Non-refillable gel	2759123
Article number	**LZW5050T.97.002**	**LZW5051T.97.002**	**LZW5052T.97.002**	**LZW5055.97.0002**	**LZW5130.97.0002**





Specifications	Conductivity	Conductivity	Multi-Combination**	Multi-Combination*	Multi-Combination**
Special feature		For harsh samples	pH, Conductivity, ORP	pH, ORP	pH, Conductivity
Measuring range	0.2 µS/cm - 200 mS/cm	5 µS/cm - 50 mS/cm	pH: 0 - 14 pH Conductivity: 20 µS/cm - 200 mS/cm ORP:± 2000 mV	pH: 0 - 14 pH ORP: ± 2000 mV	pH: 0 - 14 pH Conductivity: 20 µS/cm - 200 mS/cm
Accuracy	0.50% with EC5 Meter	0.50% with EC5 Meter	0.02 pH with MM150 Meter 1 mV with MM150 Meter 0.50% EC with MM150 Meter	0.02 pH with MM110 Meter 1mV with MM110 Meter	0.02 pH with MM150 Meter 0.50% EC with MM150 Meter
Temperature range	0 - 80 °C	0 - 80 °C	0 - 80 °C	0 - 80 °C	0 - 80 °C
Thermistor	Pt1000	Pt1000	Pt1000	Pt1000	Pt1000
Dimensions (D x L)	12 mm x 85 mm	12 mm x 85 mm	12 mm x 85 mm	12 mm x 85 mm	12 mm x 85 mm
Sensor type	3-pole Platinum, k = 1.0 cm^{-1}	2-pole Titanium, k = 0.3 cm^{-1}	pH: Glass ORP: Platinum Conductivity: Platinum	pH: Glass ORP: Platinum	pH: Glass Conductivity: Platinum
Electrode junction			Ceramic	Ceramic	Ceramic
Material	Sensor Body: Outside: Polycarbonate; Inside: Glass	Sensor Body: Titanium	Sensor Body: Polycarbonate	Sensor Body: Polycarbonate	Sensor Body: Polycarbonate
Filling solution			Non-refillable gel	Non-refillable gel	Non-refillable gel
Article number	**LZW5060.97.0002**	**LZW5062.97.0002**	**LZW5048.97.0002**	**LZW5045.97.0002**	**LZW5059.97.0002**

*Only for use on MM110 Meter. **Only for use with MM150 Meter.

SENSION+ Probes for Benchtop Meters




Specifications	pH Combination Gel-filled	pH Combination Refillable	pH Combination Gel-filled Wastewater	pH Combination Refillable
Special feature		TRIS compatible	Solid gel for high solids content	Clog-free Sleeve Junction for low ionic strength.
Measuring range	0 - 14 pH	0 - 14 pH	2 - 14 pH	0 - 14 pH
Accuracy	0.02 pH with pH3 Meter 0.002 pH with pH31 Meter 0.002 pH with MM340 Meter 0.002 pH with MM374 Meter	0.02 pH with pH3 Meter 0.002 pH with pH31 Meter 0.002 pH with MM340 Meter 0.002 pH with MM374 Meter	0.02 pH with pH3 Meter 0.002 pH with pH31 Meter 0.002 pH with MM340 Meter 0.002 pH with MM374 Meter	0.02 pH with pH3 Meter 0.002 pH with pH31 Meter 0.002 pH with MM340 Meter 0.002 pH with MM374 Meter
Temperature range	0 - 80 °C	-10 - 100 °C	0 - 80 °C	0 - 60 °C
Thermistor	Pt1000	Pt1000	Pt1000	Pt1000
Dimensions (D x L)	12 mm x 130 mm	12 mm x 130 mm	12 mm x 130 mm	12 mm x 130 mm
Sensor type	Glass	Glass	Glass	Glass
Electrode junction	Ceramic pin	2 x Ceramic pin	Open	Open with sleeve
Material	Sensor Body: Polycarbonate	Sensor Body: Glass	Sensor Body: Glass	Sensor Body: Glass
Filling solution	Non-refillable gel	LZW9500.99	Non-refillable solid polymer	LZW9500.99
Prod. No.	**LZW5010T.97.002**	**LZW5014T.97.002**	**LZW5011T.97.002**	**LZW5021T.97.002**



Specifications	Conductivity	ORP Gel-filled Combination	ORP Refillable Combination
Special feature			
Measuring range	0.2 µS/cm - 200 mS/cm	± 2000 mV	± 2000 mV
Accuracy	0.50% EC & TDS	1mV with pH3 Meter 0.2mV with pH31 Meter 0.2mV with MM340 Meter 0.2mV with MM374 Meter	1mV with pH3 Meter 0.2mV with pH31 Meter 0.2mV with MM340 Meter 0.2mV with MM374 Meter
Temperature range	0 - 80 °C	0 - 80 °C	0 - 80 °C
Thermistor	Pt1000	—	—
Dimensions (D x L)	12 mm x 130 mm	12 mm x 130 mm	12 mm x 130 mm
Sensor type	3-pole Platinum, k = 0.7 cm^{-1}	Platinum	Platinum
Electrode junction	—	Ceramic pin	Ceramic pin
Material	Sensor Body: Outside: Polycarbonate; Inside: Glass	Sensor Body: Glass	Sensor Body: Glass
Filling solution	—	Non-refillable gel	LZW9500.99
Prod. No.	**LZW5070.97.0002**	**LZW5056.97.0002**	**LZW5057.97.0002**

SENSION+ ISE Probes




Specifications	Sodium ISE	Chloride Combination ISE	Fluoride Combination ISE	Nitrate Combination ISE
Special feature	Indicator only; requires a reference electrode.	Combination electrode Maintenance free: No electrolyte or spare membranes needed	Combination electrode Maintenance free: No electrolyte or spare membranes needed	Combination electrode Maintenance free: No electrolyte or spare membranes needed
Measuring range	0.05 - 23,000 mg/L Na	0.1 mg/L - 35,500 mg/L Cl	0.01 mg/L - 19,000 mg/L F	0.1 mg/L - 14,000 mg/L NO_3
Accuracy	±0.02 mV or 0.05%, whichever is greater (application dependent)	±0.02 mV or 0.05%, whichever is greater (application dependent)	±0.02 mV or 0.05%, whichever is greater (application dependent)	±0.02 mV or 0.05%, whichever is greater (application dependent)
Temperature range	0 - 60 °C	5 - 50 °C	5 - 50 °C	0 - 50 °C
Dimensions (D x L)	12 mm x 120 mm	12 mm x 120 mm	12 mm x 120 mm	12 mm x 120 mm
Sensor type	Sodium Selective Glass Membrane	Solid-state crystal membrane	Solid-state crystal membrane	Solid-state PVC membrane
Electrode junction	—	Porous Teflon Annular Ring	Porous Teflon Annular Ring	Porous Teflon Annular Ring
Material	Sensor Body: Glass	Sensor Body: Epoxy	Sensor Body: Epoxy	Sensor Body: Epoxy
Filling solution	—	Non-refillable Dritek gel	Non-refillable Dritek gel	Non-refillable Dritek gel
ISA required	4451569	2318069	258999	2984799
Prod. No.	**LZW9650.97.0002**	**LZW9652C.97.002**	**LZW9655C.97.002**	**LZW9662C.97.002**



Specifications	Ammonium Combination ISE	Ammonia Combination ISE	Reference Electrode
Special feature	Combination electrode. Maintenance free: No electrolyte or spare membranes needed	Gas Sensing Electrode	Double junction reference electrode for ISEs, large ceramic diaphragm
Measuring range	0.018 mg/L - 9,000 mg/L NH_4	0.06 mg/L - 17,000 mg/L NH_3	
Accuracy	±0.02 mV or 0.05%, whichever is greater (application dependent)	±0.02 mV or 0.05%, whichever is greater (application dependent)	
Temperature range	5 - 50 °C	0 - 50 °C	0 - 60 °C
Dimensions (D x L)	12 mm x 120 mm	12 mm x 149 mm	12 mm x 120 mm
Sensor type	Solid-state PVC membrane	Gas sensing: glass with replaceable NH_3 sensitive membrane	
Electrode junction	Porous Teflon Annular Ring	Porous Teflon Annular Ring	Ceramic
Material	Sensor Body: Epoxy	Sensor Body: ABS	Sensor Body: Glass
Filling solution	Non-refillable Dritek gel	4447226	LZW9901.00
ISA required	2980699	4447169	
Prod. No.	**LZW9663C.97.002**	**5192700**	**LZW5044.97.0002**

SENSION+ Accessories

LZW2598.99.0002

Article number	Description
Accessories for SENSION+ Portable Instruments & Electrodes	
LZW9137.98	3 x 10 mL printed tubes for portable pH calibration
LZW9161.99	Electrode Storage Protector, Polypropylene
LZW9162.99	Electrode Measurement Protector, Polypropylene
LZW5123.99	Protector-calibration flask for DO probe LZW5130
5196800	Service Kit for 5130 DO Probe (contains 2 Membrane Modules and DO Filling Solution)
LZW2598.99.0002	PORTCOM Kit for SENSION+ Data Logger (USB dongle and CD-ROM with PORTCOM software)

5192711

Accessories for SENSION+ Benchtop Instruments	
LZW8997.99	LABCOM Easy PC Software for SENSION+ GLP instruments
LZW8999.99	LABCOM PC Software for SENSION+ GLP instruments
LZW9008.99	Power Supply for SENSION+ Benchtop instruments, 230-115VAC
LZW9110.98	3x50 mL printed flasks for pH calibration, Benchtop instruments
LZW9111.99	3x50 mL printed flasks for benchtop conductivity calibration
LZW9118.99	Pyrex glass chamber, continuous flow measurements
LZW9321.99	Three-probe holder for SENSION+ Benchtop instruments
LZW9325.99	Radiometer probe holder for SENSION+ Benchtop instruments
LZW9325.99.T014	Radiometer probe holder kit for SENSION+ with X31T014 adapter
LZW9325.99.T031	Radiometer probe holder kit for SENSION+ with X31T031 adapter
LZW9319.99	Second Magnetic stirrer with probe holder for SENSION+ Multi Meters
5192711	Ammonia Membrane Replacement Kit, 5 pieces

LZW9325.99

Standards	
LZW9463.99	pH buffer solution 4.01, 250 mL
LZW9464.97	pH buffer solution 7.00, 250 mL
LZW9471.99	pH buffer solution 10.00, 250 mL
LZW9700.99	Conductivity Standard 147 µS/cm, 250 mL
LZW9710.99	Conductivity Standard 1413 µS/cm, 250 mL
LZW9720.99	Conductivity Standard 12.88 mS/cm, 250 mL
LZW9500.99	Electrolytic solution, KCl 3M, 250 mL (GHS07)

POCKET PRO Testers

Take the guesswork out of your measurements. The large LCD display, intuitive user interface, and standard AAA batteries make POCKET PRO the easiest to use tester for your application. POCKET PRO's superior probe and calibration diagnostics deliver confidence in your results.

NEW

Specifications	POCKET PRO pH	POCKET PRO ORP	POCKET PRO TDS $_{LR}$	POCKET PRO TDS $_{HR}$
Parameter	pH, Temp	ORP, Temp	TDS, Temp	TDS, Temp
Operating temperature range	0 - 50 °C	0 - 50 °C	0 - 50 °C	0 - 50 °C
Range	0.0 - 14.0 pH	-999 to +999 mV	0 - 1999 ppm	0 - 10.00 ppt
Accuracy	0.1 pH	± 2 mV	1% FS	2% FS
Resolution	0.1 pH	1 mV	1 ppm	0.01 ppt
TDS factor			adjustable; 0.71 default	adjustable; 0.71 default
Battery requirements	4, AAA	4, AAA	4, AAA	4, AAA
Casing IP rating	IP67	IP67	IP67	IP67
Backlight	No	No	No	No
Article number	**9531000**	**9531100**	**9531200**	**9531300**

Specifications	POCKET PRO Conductivity $_{LR}$	POCKET PRO Conductivity $_{HR}$	POCKET PRO Salt	POCKET PRO Temperature
Parameter	Conductivity, Temp	Conductivity, Temp	Salinity, Temp	Temperature
Operating temperature range	0 - 50 °C	0 - 50 °C	0 - 50 °C	0 - 50 °C
Range	0 - 1990 µS/cm	0.0 - 19.99 mS/cm	0 - 10.00 ppt	-15 - 170°C
Accuracy	1% FS	2% FS	1% FS	1°C
Resolution	1 µS/cm	0.01 mS/cm	0.01 ppt	0.1°C
TDS factor				
Battery requirements	4, AAA	4, AAA	4, AAA	4, AAA
IP rating	IP67	IP67	IP67	IP67
Backlight	No	No	No	No
Article number	**9531400**	**9531500**	**9531600**	**9531700** 9531701 is replacement sensor for POCKET PRO Temp

POCKET PRO+ Testers

The POCKET PRO+ series offers all the benefits of the POCKET PRO standard testers, plus convenient backlight and replaceable sensors. Have confidence in your results with superior probe and calibration diagnostics.

NEW

Specifications	POCKET PRO+ pH	POCKET PRO+ ORP	POCKET PRO+ Multi 1	POCKET PRO+ Multi 2
Parameter	pH, Temp	ORP, Temp	Conductivity, TDS, Salinity, Temp	pH, Conductivity, TDS, Salinity, Temp
Operating temperature range	0 - 50 °C	0 - 50 °C	0 - 50 °C	0 - 50 °C
Range	0.00 - 14.00 pH	-999 to +999 mV	Cond: Auto-ranging (0.0 - 199.9 µS/cm; 200 - 1999 µS/cm; 2.00 - 19.99 mS/cm) TDS: Auto-ranging (0.0 - 99.9 ppm; 100 - 999 ppm; 1.00 - 10.00 ppt) Sal: Auto-ranging (0.00 - 10.00 ppt; 0.00 - 1.00%) Temp: 0.0 - 50°C	pH: 0.00 - 14.00 Cond: Auto-ranging (0.0 - 199.9 µS/cm; 200 - 1999 µS/cm) TDS: Auto-ranging (0.0 - 99.9 ppm; 100 - 999 ppm; 1.00 - 10.00 ppt) Sal: Auto-ranging (0.00 - 10.00 ppt; 0.00 - 1.00%) Temp: 0.0 - 50°C
Accuracy	± 0.01 pH	2 mV	Cond: ± 1% TDS: ± 1% Sal: ± 1% Temp: ± 0.5°C	pH: ±0.01 pH Cond: ±1% TDS: ±1% Sal: ±1% Temp: ±0.5 °C
Resolution	0.01 pH	1 mV	Cond: 0.1 µS/cm from 0.0 - 199.9 µS/cm; 1 µS/cm from 200 - 1999 µS/cm; 0.01 mS/cm from 2.00 - 19.99 mS/cm TDS: 0.1 ppm from 0.0 - 99.9 ppm; 1 ppm from 100 - 999 ppm; 0.01 ppt from 0.00 - 10.00 ppt Sal: 0.01 ppt from 0.00 - 10.00 ppt; 0.01% from 0.00 - 1% Temp: 0.1°C	pH: 0.01 pH Cond: 0.1 µS/cm from 0.0 - 199.9 µS/cm; 1 µS/cm from 200 - 1999 µS/cm; 0.01 mS/cm from 2.00 - 19.99 mS/cm TDS: 0.1 ppm from 0.0 - 99.9 ppm; 1 ppm from 100 - 999 ppm; 0.01 ppt from 0.00 - 10.00 ppt Sal: 0.01 ppt from 0.00 - 10.00 ppt; 0.01% from 0.00 - 1% Temp: 0.1°C
TDS factor			adjustable; 0.71 default	adjustable; 0.71 default
Battery requirements	4, AAA	4, AAA	4, AAA	4, AAA
Casing IP rating	IP67	IP67	IP67	IP67
Backlight	Yes	Yes	Yes	Yes
Article number	**9532000** 9532001 is replacement sensor for POCKET PRO+ pH Tester	**9532100** 9532101 is replacement sensor for POCKET PRO+ ORP Tester	**9532700** 9532701 is replacement sensor for POCKET PRO+ Multi 1 Tester	**9532800** 9532801 is replacement sensor for POCKET PRO+ Multi 2 Tester

pH Buffer and Conductivity Standard Solutions

pH Standard Solutions

Description	Article number
Certified pH standard solutions. IUPAC range. Supplied in airtight sealed can, guaranteed shelf life, with DKD certificate, and traceable to standard reference materials with given tolerances.	
pH 1.679 ±0.010 at 25°C, 500 mL	S11M001
pH 4.005 ±0.010 at 25°C, 500 mL	S11M002
pH 6.865 ±0.010 at 25°C, 500 mL	S11M003
pH 7.000 ±0.010 at 25°C, 500 mL	S11M004
pH 7.413 ±0.010 at 25°C, 500 mL	S11M005
pH 9.180 ±0.010 at 25°C, 500 mL	S11M006
pH 10.012 ±0.010 at 25°C, 500 mL	S11M007
pH 12.45 ±0.05 at 25°C, 500 mL	S11M008
Quality buffer solutions. Ready-to-use buffer solutions in bottles, with and without colour coding	
pH 4.01 Red, 500 mL	2283449
pH 7.00 Yellow, 500 mL	2283549
pH 10.01 Blue, 500 mL	2283649
pH 4.01 No colour code, 500 mL	1222349
pH 7.00 No colour code, 500 mL	1222249
pH 10.01 No colour code, 500 mL	1222149
pH 1.09 Technical buffer solution (DIN 19267)	S11M009
pH 4.65 Technical buffer solution (DIN 19267)	S11M010
pH 9.23 Technical buffer solution (DIN 19267)	S11M011
SINGLET buffer solutions. Buffer solutions in individually sealed airtight pouches, colour coded, 25 mL/pouch	
SINGLET Single use pH buffer solution, pH 4.01, 20 pcs	2770020
SINGLET Single use pH buffer solution, pH 7.00, 20 pcs	2770120
SINGLET Single use pH buffer solution, pH 10.01, 20 pcs	2770220

Conductivity Standard Solutions

Description	Article number
SINGLET buffer solutions. Buffer solutions in individually sealed airtight pouches, colour coded, 25 mL/pouch	
SINGLET Single use conductivity standard, 147 µS/cm, 20 pcs	2771320
SINGLET Single use conductivity standard, 1413 µS/cm, 20 pcs	2771420
SINGLET Single use conductivity standard, 12.88 mS/cm, 20 pcs	2771520

Conductivity Standard Solutions

Description		Volume / Package size	Article number
Certified conductivity standard solutions. Supplied in airtight sealed can, guaranteed shelf life, with certificate and traceable to standard reference materials			
KCl 1 D	111.3 mS/cm ±0.5%	500 mL	S51M001
KCl 0.1 D	12.85 mS/cm ±0.35%	500 mL	S51M002
KCl 0.01 D	1408 µS/cm ±0.5%	500 mL	S51M003
NaCl 0.05%	1015 µS/cm ±0.5%	500 mL	S51M004
NaCl solutions			
491 mg/L as NaCl	1000 ±10 µS/cm	100 mL	1440042
85.47 mg/L as NaCl	180 ±10 µS/cm	100 mL	2307542
1 000 mg/L as NaCl	1990 ±20 µS/cm	100 mL	210542
10 246 mg/L as NaCl	18000 ±50 µS/cm	100 mL	2307442
Molar KCl solutions			
KS 910 KCl 0.1 M	12.88 mS/cm	500 mL	C20C250
KS 920 KCl 0.01 M	1.413 mS/cm	500 mL	C20C270
KS930 KCl 0.001 M	146.9 µS/cm	500 mL	C20C280

HACH LANGE Services

With HACH LANGE, you receive instruments, reagents and services from a single source - offering expertise from development to consulting. Our experienced team can provide you with expert advice to ensure your application satisfies all your requirements.

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Parameter Index

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HACH LANGE

UNITED FOR WATER QUALITY

HACH LCK CUVETTE TEST SYSTEM

Hach® offers a perfectly coordinated system of photometers and reagents, required accessories and services. For all key parameters from Ammonium to Zirconium.

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Only a perfect interaction guarantees highest efficiency and accuracy – starting with the individual components of the spectrophotometer and the ready-to-use chemistry up to the interaction with you and your laboratory equipment. Hach delivers to you a perfectly coordinated system – as a developer, manufacturer and sales & service partner.

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By means of bar-coded cuvettes, the DR spectrophotometer automatically identifies test parameter, range, method, lot number and expiry date. Colour coded cuvettes, packaging, pictograms, and instructions in multiple languages simplify testing. Dosicap zip reagent delivery provides ease of use and eliminates hazardous chemistry handling.

Sustainable & environmentally friendly

Continuous environmental investment is a high priority in the development of the LCK cuvette tests. Since 1978, we have collected used reagents for proper disposal. Thanks to the special reagent processing techniques applied in the Hach Environment Centre, more than 75% of all returned test components are fed back into the production and material cycles.

LCK Cuvette Tests

LCK - Outstanding precision and handling

Our cuvette tests cover all water analysis applications. They satisfy the most demanding tasks, e.g. monitoring consent limits as an equivalent alternative to time-consuming reference methods. The 2D barcode also details the lot number and the expiry date of the reagents. The Certificate of Analysis (CoA) is directly available via RFID tag on the packaging.

Part number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR1900	DR3900	DR6000	GHS hazard code
LCK362	Acid capacity	0.5 - 8.0 mmol/L	Hach Method			25		■	■	■	-
LCK300	Alcohol	0.01 - 0.12 g/L	Alcohol Oxidase (Enzymatic)			24		■	■	■	-
LCK301	Aluminium	0.02 - 0.5 mg/L Al	Chromazurol S		LCA702	24		■	■	■	GHS02, GHS05, GHS07, GHS08
LCK302	Ammonium	47 - 130 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA705	25		■	■	■	GHS05, GHS07, GHS09
LCK303	Ammonium	2 - 47 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA703	25	■	■	■	■	GHS05, GHS07, GHS09
LCK304	Ammonium	0.015 - 2.0 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA700	25	■	■	■	■	GHS05, GHS07, GHS09
LCK305	Ammonium	1 - 12 mg/L NH_4-N	Indophenol Blue	ISO 7150-1, DIN 38406 E5-1	LCA704	25	■	■	■	■	GHS05, GHS07, GHS09
LCK390	AOX	0.05 - 3.0 mg/L AOX	Digestion + Iron(III)-Thiocyanate	DIN EN ISO 9562	LCA390	24		■	■	■	GHS02, GHS03, GHS05, GHS06, GHS08
LCK391	AOX	0.005 - 0.50 mg/L AOX	Digestion + Iron(III)-Thiocyanate	DIN EN ISO 9562	LCA390	12		■	■	■	GHS02, GHS05, GHS06, GHS08
LCK241	Bitter units	≥ 2 Bitter units	Analogous MEBAK-Method	MEBAK II		25				■	GHS02, GHS05, GHS07, GHS08, GHS09
LCK554	BOD_5	0.5 - 12 mg/L O_2	Dilution Method	EN 1899-1		20		■	■	■	GHS05, GHS07
LCK555	BOD_5	4 - 1650 mg/L O_2	Dilution Method	EN 1899-1	LCA555	39		■	■	■	GHS05, GHS07
LCK307	Boron	0.05 - 2.50 mg/L B	Azomethine-H	DIN 38405-D17	191442	25		■	■	■	GHS07

PC II: Single Parameter Colorimeter, DR1900: Portable VIS Spectrophotometer, DR3900: Benchtop VIS Spectrophotometer, DR6000: Benchtop UV-VIS Spectrophotometer

Please note: Some methods require reagent blanks. For these, the number of tests varies.

-: product is not subject to classification

Hazard code descriptions: see page 6

LCK Cuvette Tests

Part number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR1900	DR3900	DR6000	GHS hazard code
LCK308	Cadmium	0.02 - 0.3 mg/L Cd	Cadion		LCA702	25		■	■	■	GHS02, GHS05, GHS06, GHS07, GHS08, GHS09
LCK388	Carbonate/ carbon dioxide	55 - 550 mg/L CO_2	pH Indicator			25		■	■	■	-
LCK311	Chloride Chloride	1 - 70 mg/L Cl 70 - 1000 mg/L Cl	Iron(III)-Thiocyanate		LCA700, LCA703, LCA704, LCA705	24	■	■	■	■	GHS02, GHS05, GHS06, GHS08
LCK410	Chlorine, free	0.05 - 2.0 mg/L Cl_2 free/ClO_2	DPD	ISO 7393-1-2-1985, DIN 38408 G4-2	LCA310	24		■	■	■	GHS07
LCK310	Chlorine/ Ozone/ Chlorine dioxide	0.05 - 2.0 mg/L Cl_2	DPD	ISO 7393-1-2-1985, DIN 38408 G4-2	LCA310	24	■	■	■	■	GHS07
LCK213	Chromic acid	0.5 - 5.0 g/L CrO_3	Intrinsic Baths Colour			25		■	■	■	GHS07
LCK313	Chromium	0.03 - 1.0 mg/L Cr (VI)	Diphenylcarbazide	EN ISO 11083, DIN 38405-D24	LCA702	25		■	■	■	GHS05, GHS07, GHS08
LCS313	Chromium, trace	0.005 - 0.25 mg/L Cr (VI)	Diphenylcarbazide	EN ISO 11885, DIN 38405-D24	LCA702	25		■	■	■	GHS05, GHS07, GHS08
LCI400	COD	0 - 1000 mg/L O_2	Dichromate	ISO 15705	LCA720	24		■	■	■	GHS05, GHS06, GHS08, GHS09
LCI500	COD	0 - 150 mg/L O_2	Dichromate	ISO 15705	LCA721	24		■	■	■	GHS05, GHS06, GHS08, GHS09
LCK014	COD	1000 - 10000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA705	25	■	■	■	■	GHS05, GHS06, GHS08, GHS09
LCK1014	COD	100 - 2000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA708	25		■	■	■	GHS05, GHS06, GHS08, GHS09
LCK114	COD	150 - 1000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA703	25	■	■	■	■	GHS05, GHS06, GHS08, GHS09
LCK314	COD	15 - 150 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA704	25	■	■	■	■	GHS05, GHS06, GHS08, GHS09
LCK1414	COD	5.0 - 60 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA700	25		■	■	■	GHS05, GHS06, GHS08, GHS09
LCK514	COD	100 - 2000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA708	25		■	■	■	GHS05, GHS06, GHS08, GHS09
LCK614	COD	50 - 300 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	LCA709	25	■	■	■	■	GHS05, GHS06, GHS08, GHS09
LCK714	COD	100 - 600 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44	1218629	25		■	■	■	GHS05, GHS06, GHS08, GHS09

LCK Cuvette Tests

Part number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR1900	DR3900	DR6000	GHS hazard code
LCK914	COD	5 - 60 g/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41-H44		25		■	■	■	GHS05, GHS06, GHS08, GHS09
LCK214	COD, mercury free	100 - 1000 mg/L O_2	Dichromate	ISO 6060-1989, DIN 38409-H41	1218629	25		■	■	■	GHS05, GHS08, GHS09
LCK329	Copper	0.1 - 8.0 mg/L Cu	Bathocuproine Disulphonic Acid		LCA701	25		■	■	■	-
LCK229	Copper	2 - 100 g/L Cu	Intrinsic Bath Colour			25		■	■	■	GHS05
LCK529	Copper, trace	0.01 - 1.0 mg/L Cu	Bathocuproine Disulphonic Acid		LCA706	20			■	■	-
LCK315	Cyanide	0.01 - 0.6 mg/L CN	Babituric Acid-Pyridine	ISO 6703-1-2-3-1984, DIN 38405 D13		25		■	■	■	GHS05, GHS07, GHS08
LCK319	Cyanide	0.03 - 0.35 mg/L CN	Hach Method			24		■	■	■	GHS05, GHS07, GHS09
LCK323	Fluoride	0.1 - 2.5 mg/L F	SPADNS		29153	25		■	■	■	GHS05
LCK325	Formaldehyde	0.5 - 10 mg/L H_2CO	Acetylacetone			24	■	■	■	■	GHS07
LCK425	Formaldehyde	0.5 - 10 mg/L H_2CO	Acetylacetone	ISO12460		25		■	■	■	-
LCS325	Formaldehyde, trace	0.01 - 1.0 mg/L H_2CO	Acetylacetone			24			■	■	GHS07
LCS425	Formaldehyde (trace)	0.05 - 3.0 mg/L H_2CO	Acetylacetone	ISO12460		25			■	■	-
LCK320	Iron	0.2 - 6.0 mg/L Fe	1.10-Phenanthroline	DIN 38405-D17	2833649	24		■	■	■	GHS07
LCK321	Iron	0.2 - 6.0 mg/L Fe	1.10-Phenanthroline	ISO 6332-1988, DIN 38406 E1-1	LCA701	25		■	■	■	GHS09
LCK521	Iron, trace	0.01 - 1.0 mg/L Fe	1.10-Phenanthroline	ISO 6332-1988, DIN 38406 E1-1	LCA706	20			■	■	-
LCK306	Lead	0.1 - 2.0 mg/L Pb	PAR		LCA701	25		■	■	■	GHS06, GHS07, GHS09
LCK326	Magnesium	0.5 - 50 mg/L Mg	Metalphthalein		1479442	25		■	■	■	-
LYW185	Menthol	0.5 - 15 mg/100 mL Menthol	p-Dimethylaminobenz-aldehyde			25		■	■	■	GHS05
LCK330	Molybdenum	3 - 300 mg/L Mo	Thioglycolic Acid			24		■	■	■	GHS05, GHS06
LCK337	Nickel	0.1 - 6.0 mg/L Ni	Dimethylglyoxime	DIN 38406-E11	LCA701	25		■	■	■	GHS05, GHS07, GHS08
LCK237	Nickel	5 - 120 g/L Ni	Intrinsic Baths Colour			25		■	■	■	GHS05
LCK537	Nickel, trace	0.05 - 1.0 mg/L Ni	Dimethylglyoxime		LCA706	20			■	■	GHS05, GHS07, GHS08
LCK339	Nitrate	0.23 - 13.5 mg/L NO_3-N	2.6-Dimethylphenol	ISO 7890-1-2-1986, DIN 38405 D9-2	LCA703	25		■	■	■	GHS02, GHS05, GHS07
LCK340	Nitrate	5 - 35 mg/L NO_3-N	2.6-Dimethylphenol	ISO 7890-1-2-1986, DIN 38405 D9-2	LCA704	25		■	■	■	GHS02, GHS05
LCK341	Nitrite	0.015 - 0.6 mg/L NO_2-N	Diazotisation	EN ISO 26777, DIN 38405 D10	LCA707	25		■	■	■	GHS07
LCK342	Nitrite	0.6 - 6.0 mg/L NO_2-N	Diazotisation	EN ISO 26777, DIN 38405 D10	LCA709	25		■	■	■	GHS07

PC II: Single Parameter Colorimeter, DR1900: Portable VIS Spectrophotometer, DR3900: Benchtop VIS Spectrophotometer, DR6000: Benchtop UV-VIS Spectrophotometer

Please note: Some methods require reagent blanks. For these, the number of tests varies.

-: product is not subject to classification

Hazard code descriptions: see page 6

LCK Cuvette Tests

Part number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR1900	DR3900	DR6000	GHS hazard code
LCK541	Nitrite, trace	0.0015 - 0.03 mg/L NO_2-N	Diazotisation	EN ISO 26777, DIN 38405 D10	2340249	50			■	■	GHS07
LCK138	Nitrogen total (Laton)	1 - 16 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA709	25		■	■	■	GHS02, GHS05, GHS07, GHS08
LCK238	Nitrogen total (Laton)	5 - 40 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA700	25		■	■	■	GHS02, GHS05, GHS07, GHS08
LCK338	Nitrogen total (Laton)	20 - 100 mg/L TN_b	Koroleff Digestion (Peroxodisulphate), and Photometric Detection with 2.6-Dimethylphenol	EN ISO 11905-1	LCA708	25		■	■	■	GHS02, GHS05, GHS07, GHS08
LCK365	Organic acids	50 - 2500 mg/L as Acetic Acid	Esterification			25		■	■	■	GHS05, GHS07, GHS08, GHS09
LCK345	Phenols	0.05 - 5 mg/L Phenols	4-Nitroaniline			24		■	■	■	GHS05, GHS07, GHS09
LCK346	Phenols	5 - 150 mg/L Phenols	4-Aminoantipyrine	ISO 6439-1990, DIN 38409 H16		24		■	■	■	GHS03, GHS07, GHS08
LCK049	Phosphate, ortho	1.6 - 30 mg/L PO_4-P	Vanadate-Molybdate		LCA703	25		■	■	■	GHS05
LCK348	Phosphate, ortho + total	0.5 - 5.0 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA700, LCA707	25	■	■	■	■	GHS05, GHS07, GHS08
LCK349	Phosphate, ortho + total	0.05 - 1.5 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA704, LCA709	25	■	■	■	■	GHS05, GHS07, GHS08
LCK350	Phosphate, ortho + total	2 - 20 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA703, LCA708	25	■	■	■	■	GHS05, GHS07, GHS08
LCS349	Phosphate, ortho + total	0.01 - 0.5 mg/L PO_4-P	Phosphormolybdenum Blue	ISO 6878-1-1986, DIN 38405 D11-4	LCA704, LCA709	25			■	■	GHS05, GHS07, GHS08
LCK240	Photometric Iodine sample (PIS)	Iodine value > 0.2	MEBAK Method	MEBAK II		25				■	GHS02, GHS05
LCK228	Potassium	5 - 50 mg/L K	Kalignost		LCA700	25		■	■	■	GHS05, GHS06, GHS07, GHS08
LCK328	Potassium	8 - 50 mg/L K	Kalignost		LCA700	24		■	■	■	GHS06
LCK354	Silver	0.04 - 0.8 mg/L Ag	Hach Method		1461342	25		■	■	■	GHS02, GHS07, GHS08
LCK355	Silver	5 - 400 mg/L Ag (I)	Hach Method		1461342	24		■	■	■	GHS05
LCK318	Sludge activity	5 - 200 µg Formazan (SA)	Colorimetric	DIN 38412-3				■	■	■	GHS02
LCK357	Starch	2 - 150 mg/L Starch	Hach Method			25		■	■	■	-
LCK153	Sulphate	40 - 150 mg/L SO_4	Barium Sulphate		LCA704	25		■	■	■	GHS06
LCK353	Sulphate	150 - 900 mg/L SO_4	Barium Sulphate		LCA701, LCA702, LCA703	25		■	■	■	GHS06
LCK653	Sulphide	0.1 - 2.0 mg/L S^{2-}	Dimethyl-p-phenylenediamine	ISO 10530-1991, DIN 38405-D26		25		■	■	■	GHS05

LCK Cuvette Tests

Part number	Parameter	Measuring range	Method	According to standard	Quality control	Number of tests	PC II	DR1900	DR3900	DR6000	GHS hazard code
LCK654	Sulphite	0.1 - 5.0 mg/L SO_3	Hach Method			25		■	■	■	-
LCK332	Surfactants, anionic	0.05 - 2.0 mg/L	Methylene Blue (MBA)	ISO 7875-1-2-1984, DIN 38409-H 23-1		25		■	■	■	GHS07, GHS08
LCK432	Surfactants, anionic	0.1 - 4.0 mg/L	Methylene Blue (MBA)	ISO 7875-1-2-1984, DIN 38409-H 23-1		25		■	■	■	GHS06, GHS08
LCK331	Surfactants, cationic	0.2 - 2.0 mg/L	Bromophenol Blue			25		■	■	■	GHS02, GHS07, GHS08
LCK333	Surfactants, nonionic	0.2 - 6.0 mg/L as TRITON x 100	TBPE		LCA333	25		■	■	■	GHS02, GHS08
LCK334	Surfactants, nonionic	0.1 - 20 g/L	CTAS	DIN 38409-H23-2		25		■	■	■	GHS07, GHS08
LCK433	Surfactants, nonionic	6 - 200 mg/L as TRITON x 100	TBPE			25		■	■	■	GHS02, GHS08
LCK359	Tin	0.1 - 2.0 mg/L Sn	Pyridinfluoron (PYF)			24		■	■	■	GHS02, GHS03, GHS07, GHS08
LCK380	TOC	2 - 65 mg/L C	Difference Method (TOC is determined as the difference between the TC and TIC values), Persulphate Digestion	DIN 38409-H3	2833249	25		■	■	■	GHS03, GHS07, GHS08
LCK381	TOC	60 - 735 mg/L C	Difference Method (TOC is determined as the difference between the TC and TIC values), Persulphate Digestion	DIN 38409-H3	2833149	25		■	■	■	GHS03, GHS07, GHS08
LCK385	TOC	3 - 30 mg/L C	Purging Method, Persulphate Digestion	EN 1484, DIN 38409-H3	LCA704	25		■	■	■	GHS07, GHS08
LCK386	TOC	30 - 300 mg/L C	Purging Method, Persulphate Digestion	EN 1484, DIN 38409-H3	LCA703	25		■	■	■	GHS07, GHS08
LCK387	TOC	300 - 3000 mg/L C	Purging Method, Persulphate Digestion	EN 1484, DIN 38409-H3	LCA705	20		■	■	■	GHS07, GHS08
LCK242	Vicinal diketones (VDK)	0.015 - 0.5 mg/kg Diacetyl	Analogous MEBAK-Method	MEBAK II		25				■	GHS05, GHS06, GHS08, GHS09
LCK327	Water hardness	1 - 20 °dH	Metalphthalein		2833449	25		■	■	■	-
LCK427	Water hardness, residual	0.02 - 0.6 °dH	Metalphthalein		2833449	24		■	■	■	-
LCK360	Zinc	0.2 - 6.0 mg/L Zn	PAR		LCA701	24	■	■	■	■	GHS07
LCS360	Zinc, trace	0.02 - 0.8 mg/L Zn	PAR		LCA701	24		■	■	■	GHS07
LCK364	Zirconium	10 - 60 mg/L Zr	SurTec/Hach Method			12 - 24	■	■	■	■	GHS05

GHS hazard codes

GHS01 GHS02 GHS03 GHS04 GHS05 GHS06 GHS07 GHS08 GHS09

Standard Solutions - Multi-parameter for Analytical Quality Assurance

The comprehensive Addista AQA system for Hach LCK cuvette tests contains a standard solution plus two round-robin solutions which allow the user to participate in analysis checking free of charge. Lot number, expiry date and target values by parameter are delivered via RFID tag on the packaging.

Part number	For the following cuvette tests / parameters
LCA700	LCK304 Ammonium, 0.015-2.0 mg/L NH_4-N LCK311 Chloride, 1-70 mg/L Cl LCK228 Potassium, 5-50 mg/L K LCK328 Potassium, 8-50 mg/L K LCK348 Phosphate (ortho), 0.5-5.0 mg/L PO_4-P LCK1414 COD, 5-60 mg/L O_2 LCK238 Total Nitrogen, 5-40 mg/L TN_b
LCA701	LCK306 Lead, 0.1-2.0 mg/L Pb LCK321 Iron, 0.2-6.0 mg/L Fe LCK329 Copper, 0.1-8.0 mg/L Cu LCK337 Nickel, 0.1-6.0 mg/L Ni LCK353 Sulphate, 150-900 mg/L SO_4 LCK360 Zinc, 0.2-6.0 mg/L Zn
LCA702	LCK301 Aluminium, 0.02-0.5 mg/L Al LCK308 Cadmium, 0.02-0.3 mg/L Cd LCK313 Chromium (VI), 0.03-1.0 mg/L Cr LCK313 Chromium (total), 0.03-1.0 mg/L Cr LCS313 Chromium trace, 0.005-0.25 mg/L Cr LCK353 Sulphate, 150-900 mg/L SO_4
LCA703	LCK049 Orthophosphate, 1.6-30 mg/L PO_4-P LCK114 COD, 150-1000 mg/L O_2 LCI400 COD, 0-1000 mg/L O_2 LCK303 Ammonium, 2-47 mg/L NH_4-N LCK311 Chloride, 1-70 mg/L Cl LCK339 Nitrate, 0.23-13.5 mg/L NO_3-N LCK350 Phosphate (ortho), 2-20 mg/L PO_4-P LCK353 Sulphate, 150-900 mg/L SO_4 LCK386 TOC, 30-300 mg/L C
LCA704	LCK153 Sulphate, 40-150 mg/L SO_4 LCK305 Ammonium, 1-12 mg/L NH_4-N LCK311 Chloride, 1-70 mg/L Cl LCK314 COD, 15-150 mg/L O_2 LCK340 Nitrate, 5-35 mg/L NO_3-N LCK349 Phosphate (ortho), 0.05-1.5 mg/L PO_4-P LCK385 TOC, 3-30 mg/L C
LCA705	LCK014 COD, 1000-10000 mg/L O_2 LCK302 Ammonium, 47-130 mg/L NH_4-N LCK311 Chloride, 1-70 mg/L Cl LCK387 TOC, 300-3000 mg/L C
LCA706	LCK521 Iron trace, 0.01-1.0 mg/L Fe LCK529 Copper trace, 0.01-1.0 mg/L Cu LCK537 Nickel trace, 0.05-1.0 mg/L Ni LCW032 Manganese, 0.02-5.0 mg/L Mn

Part number	For the following cuvette tests / parameters
LCA707	LCK341 Nitrite, 0.015-0.6 mg/L NO_2-N LCK614 COD, 50-300 mg/L O_2 LCK348 Phosphate (total), 0.5-5.0 mg/L PO_4-P
LCA708	LCK338 Total Nitrogen, 20-100 mg/L TN_b LCK514 COD, 100-2000 mg/L O_2 LCK350 Phosphate (total), 2-20 mg/L PO_4-P
LCA709	LCK138 Total Nitrogen, 1-16 mg/L TN_b LCK614 COD, 50-300 mg/L O_2 LCK349 Phosphate (total), 0.05-1.5 mg/L PO_4-P LCK342 Nitrite, 0.6-6.0 mg/L NO_2-N
LCA720[1)]	LCI400 COD (ISO 15705), 0-1000 mg/L O_2 APC400 COD (ISO 15705), 0-1000 mg/L O_2 APC114 COD, 150-1000 mg/L O_2 APC303 Ammonium, 2-47 mg/L NH_4-N APC338 Total Nitrogen, 20-100 mg/L TN_b APC340 Nitrate, 5-35 mg/L NO_3-N APC350 Phosphate, 2-20 mg/L PO_4-P **Traceable to SRM from NIST.**
LCA721[1)]	LCI500 COD (ISO 15705), 0-150 mg/L O_2 APC500 COD (ISO 15705), 0-150 mg/L O_2 APC314 COD, 15-150 mg/L O_2 APC304 Ammonium, 0.015-2.0 mg/L NH_4-N APC138 Total Nitrogen, 5-40 mg/L TN_b APC339 Nitrate, 0.23-13.5 mg/L NO_3-N APC349 Phosphate, 0.05-1.5 mg/L PO_4-P **Traceable to SRM from NIST.**
2833149	Ammonia 15 mg/L NH_3-N Nitrate 10 mg/L NO_3-N COD 500 mg/L O_2 Phosphate 10 mg/L PO_4 Sulphate 400 mg/L SO_4 TOC 161 mg/L C
2833249	Ammonia 2.0 mg/L NH_3-N / 2.1 mg/L NH_4-N Nitrate 4.0 mg/L NO_3-N Phosphate 2.0 mg/L PO_4 COD 25 mg/L O_2 Sulphate 50 mg/L SO_4 TOC 8 mg/L C

[1)] Standard only, without round robin test solutions

Analysis made simple

LCK cuvette tests - unrivalled analysis

- Safe - Maximum safety for users, thanks to the closed cuvette system and low amounts of reagents. Complete labelling of the individual cuvettes, including barcode label for automatic recognition in the photometer.
- Easy - Convenient and error-free dosing of the reagents without pipetting and reagent contact, thanks to Dosicap and Dosicap zip: cuvette caps containing an exactly pre-dispensed amount of freeze-dried reagent.
- Approved - Hach LCK cuvette tests are officially approved for legally required consent limits. With the help of standard solutions and round-robin test solutions, they provide the assurance you need.
- Versatile - 50 parameters and more than 100 measuring ranges for all applications in water analysis - from extremely polluted industrial wastewater to trace analysis in drinking water.

IBR+ increases reliability

During the rotating ten times measurement process using the IBR+ Integrated Barcode Reader, the DR spectrophotometer immediately picks up all the information on the cuvette, also including lot number and expiry date. Both are documented with the measurement value. In case of exceeding the expiry date you automatically get an alarm.

RFID for traceability and rapid data updates

Never before has updating or programming of methods into the spectrophotometer been so easy and quick. You simply hold the cuvette test box in front of the DR's RFID module, wait for the acoustic signal and that's it. The measurement starts instantly - with the correct calibration data leading to the right result. In addition, Certificates of Analysis (CoA) can be retrieved immediately from the RFID tag on the packaging.

Analytical Quality Assurance (AQA)

Quality assurance and analysis are completely interlinked. QA procedures can be easily defined and documented within the instrument without additional software. Results are only dependable in conjunction with AQA. Hach offers classic single standard solutions as well as practical multi-standard solutions in application-oriented combinations. In addition the comprehensive Addista AQA system for cuvette tests contains two round-robin solutions which entitle you to participate in external round-robin tests free of charge.

Alignment of laboratory and process analysis

Compare your online value with your laboratory reference value directly in the spectrophotometer - via Link2sc connection between SC controller and DR3900/DR6000. The exchange of data works bidirectional, which means that you can do a matrix correction of your process probe straight from the laboratory.

DOC032.52.20203.Sep15

AS950
PORTABLE SAMPLERS

Applications

- Wastewater
- Collections
- Industrial Pretreatment
- Environmental Monitoring
- Stormwater

Sampling has never been this easy.

The AS950 Portable Sampler makes programming, data transfer and operation more intuitive and virtually error-free.

Easiest and Most Intuitive Operation

The large full color display and intuitive programming give you access to all your programmable criteria on a single screen - eliminating scrolling through menus and supporting error-free operation.

Most Convenient Data Transfer and Programming Available

The AS950 is the only sampler that utilizes a USB drive to upload and download data and copy programs from one sampler to another.

Confidence in Your Sampling Process

The program status screen instantly communicates alarms, missed samples and program progress for quick and easy troubleshooting.

Field Convertible for Compact or Discrete Sampling

Weighing only 28 pounds (12.7 kg), the AS950 Portable Sampler is designed for accuracy and convenience. Quickly switch between composite and discrete sampling in the field. Configurable for single- or multiple-bottle applications, it is specifically designed for use in 18-inch manholes.

Easy Maintenance at Low Cost

Spring-mounted rollers provide long tubing life keeping maintenance costs low. The desiccant and pump tubing can easily be accessed; the replacement is possible without any tools. The rugged see-through pump cover is made for a quick visual inspection.

Greyhound CHROMATOGRAPHY AND ALLIED CHEMICALS

HACH® Be Right™

Specifications*

Sampling Features

Dual Programs
Up to 2 sample programs can be run sequentially, in parallel, or according to day of week scheduling; enabling a single sampler to function like multiple samplers

Sampling Modes
Pacing:
Time Weighted, Flow Weighted, Time Table, Flow Table, Event

Distribution:
Single bottle composite, multi-bottle composite, multi-bottle discrete, bottles per sample, samples per bottle or a combination of bottles per sample and samples per bottle

Run Modes
Continuous or non-continuous

Status Screen
Communicates what program is running, if there are any missed samples, when the next sample will be taken, how many samples remain, number of logged channels, time of last measurement, memory available, number of active channels, if alarms were triggered, when alarms were triggered, active sensors and cabinet temperature

Alarms
Configurable alarms that show on status screen and are recorded in diagnostics alarm logs. Alarms can be set for system diagnostics and logging such as program end, sample complete, missed samples and full bottle. Channel alarms are setpoint alarms for the recorded measurements (channels), such as pH, level and power supply voltage.

Manual Sample
Initiates a sample collection independent of program in progress

Automatic Shutdown
Multiple Bottle Mode: After complete revolution of distributor arm (unless Continuous Mode is selected)

Composite Mode: After preset number of samples have been delivered to composite container, from 1 to 999 samples, or upon full container.

Sample Volume
Programmable in 10-mL (0.34 oz) increments from 10 to 10,000 mL (3.38 oz to 2.6 gal)

Interval Between Samples
Selectable in single increments from 1 to 9,999 flow pulses (momentary contact closure 25 ms or 5 to 12 Vdc pulse; 4-20 mA interface optional), or 1 to 9,999 minutes in one minute increments

Set Point Sample Trigger
When equipped with flow sensor or pH/temperature sensor or peripheral monitoring options, sampling can be triggered upon an upset condition when field selectable limits are exceeded

Datalogging
SAMPLE HISTORY
Stores up to 4000 entries for sample time stamp, bottle number and sample status (success, bottle full, rinse error, user abort, distributor error, pump fault, purge fail, sample timeout, power fail and low main battery)

MEASUREMENTS
Stores up to 325,000 entries for selected measurement channels in accordance with the selected logging interval

EVENT LOG
Stores up to 2000 entries. Records Power On, Power Fail, Firmware Updated, Pump Fault, Distributor Arm Error, Low Memory Battery, Low Main Battery, User On, User Off, Program Started, Program Resumed, Program Halted, Program Completed, Grab Sample, Tube Change Required, sensor communication errors, cooling failed, heating failed, thermal error corrected

Diagnostics
View event and alarm logs as well as maintenance diagnostics

**Subject to change without notice.*

Specifications*

AS950 Portable Sampler

Sampler Housing	Impact resistant ABS plastic, 3-section construction Double-walled base with 1 in. (2.54 cm) insulation, direct ice contact with bottles
Temperature	Operating: 0 to 49 °C (32 to 120°F Liquid Crystal Display (LCD): -10 to 70°C (-14 to 158°F) Storage: -40 to 60°C (-40 to 140°F)
Power Requirements	12 Vdc supplied by optional a/c power converter or battery. Average current with pump running: 2.25 amps dc
AC Power Backup (Pump Controller Only)	Rechargeable 6 amp-hour gel lead acid battery takes over automatically with AC line power failure. Integral trickle charger maintains battery as full charge (factory installed option)
Solar Power Panel/Backup	12 Vdc regulated supply voltage, 5 watts minimum; optional 12 Vdc lead-acid or gel-electrolyte battery backup
Dimensions	Standard Base: 50.5 cm x 69.4 cm (19.9 x 27.3 in.) Compact Base: 44.1 x 61 cm (17.4 x 24 in.) Composite Base: 50.28 x 79.75 cm (19.8 x 31.4 in.)
Weight	Standard: 15 kg (35.6 lb.) with (24) 1-L polyethylene bottles; 14.8 kg (32.6 lb.) with 10 L (2.5gal) polyethylene bottle Compact Base: 12.2 kg (27 lb.) with (24) 575-mL polyethylene bottles; 12.9 kg (28.3 lb.) with 10 L (2.5-gal) polyethylene bottle Composite Base: 15 kg (36 lb.) with (1) 21 L (5.5 gal) polyethylene bottle

AS950 Controller

Housing	PC/ABS blend, NEMA 4X, 6, IP68, corrosion and ice resistant
Graphics Display	1/4 VGA, Color; self-prompting/ menu-driven program
User Interface	Membrane switch keypad with 2 multiple function soft keys
Program Languages	Chinese, English, French, German, Italian, Spanish, Portuguese, Turkish, Hungarian, Czech, Polish, Romanian, Croatian, Greek, Slovenian, Slovak, Finnish, Russian, Japanese, Korean
Program Lock	Access code protection prevents tampering
Memory	Sample history: 4000 records; Data log: 325,000 records; Event log: 2000 records
Communications	USB and optional RS485 (Modbus)
AUX port inputs	One 0/4-20 mA input for flow pacing
Certifications	CE, UL

Sample Containers

Standard Base Capacity
(24) 1 L (0.26 gal) polyethylene or
(24) 350-mL (11.83 oz) glass bottles

(8) 2.3 L (0.6 gal) polyethylene or
(8) 1.9 L (0.5 gal) glass bottles

(4) 3.8 L (1 gal) polyethylene or
(4) 3.8 L (1 gal) glass bottles

(2) 3.8 L (1 gal) polyethylene or
(2) 3.8 L (1 gal) glass bottles

(1) 21 L (5.5 gal) polyethylene composite bottle or
(1) 15 L (4 gal) polyethylene composite bottle or
(1) 20 L (5.25 gal) polyethylene or
(1) 10 L (2.5 gal) polyethylene or
(1) 10 L (2.5 gal) glass

Compact Base Capacity
(24) 575 mL (19.44 oz) polyethylene bottles
(8) 950 mL (32.12 oz) glass bottles
(1) 10 L (2.5 gal) polyethylene bottle
(1) 10 L (2.5 gal) glass bottle

Composite Base
(1) 21 L (5.5 gal) polyethylene bottle

Ice Capacity
Compact Base: 3.9 kg (8.5 lb.) with (24) 575 mL PE bottles
Standard Base: 14.5 kg (32 lb.) with (24) 350 mL glass bottles

**Subject to change without notice.*

Specifications*

Sample Pump and Strainer

Sample Pump
High-speed peristaltic, dual roller, with 0.95 ID x 0.16 OD cm (3/8 ID x 5/8 in. OD) pump tube

Pump Body
IP37, polycarbonate cover

Vertical Lift
8.5 m (28 ft) using 8.8 m (29 ft) maximum of 3/8-in vinyl intake tube at sea level at 20 to 25 °C (68 to 77 °F)

Tubing
Pump tubing:
9.5 mm ID x 15.9 OD mm (3/8-in ID x 5/8-in. OD) silicone

Intake tubing: 1.0 to 4.75 m (3.0 to 15.5 ft) minimum length, ¼-in. or 3/8-in. ID vinyl or 3/8-in. ID PTFE-lined polyethylene with protective outer cover (black or clear)

Sample Volume Repeatability (typical)
±5% of 200 mL sample volume with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8- in vinyl intake tube, single bottle, full bottle shut-off at room temperature and 1524 m (5000 ft) elevation

Sample Volume Accuracy (typical)
±5% of 200 mL sample volume with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8- in. vinyl intake tube, single bottle, full bottle shut-off at room temperature and 1524 m (5000 ft) elevation

Transfer Velocity (typical)
0.9 m/s (2.9 ft/s) with: 4.6 m (15 ft) vertical lift, 4.9 m (16 ft) of 3/8-in. vinyl intake tubing, 21 °C (70 °F) and 1524 m (5000 ft) elevation

Pump Flow Rate
4.8 L/min (1.25 gpm) at 1 m (3 ft) vertical lift with 3/8-in intake tube typical

Internal Clock
±1 second per day at 25 °C (77 °F)

Intake
Strainers: Choice of PTFE and 316 stainless steel construction, or all 316 stainless steel in standard size, high velocity, and low profile for shallow depth applications

Purge: Air purged automatically before and after each sample; duration automatically compensates for varying intake line lengths

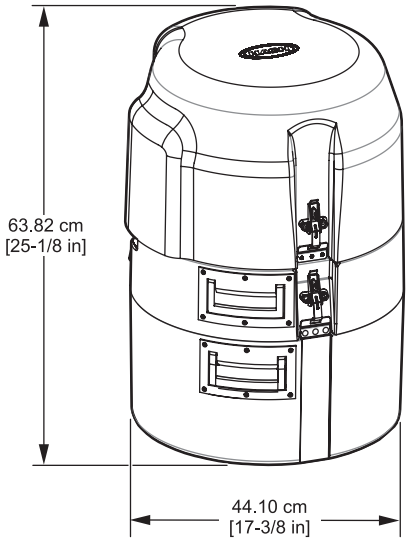
Rinse: Intake line automatically rinsed with source liquid prior to each sample, from 1 to 3 rinses

Retries or Fault: Sample collection cycle automatically repeated from 1 to 3 times if sample not obtained on initial attempt

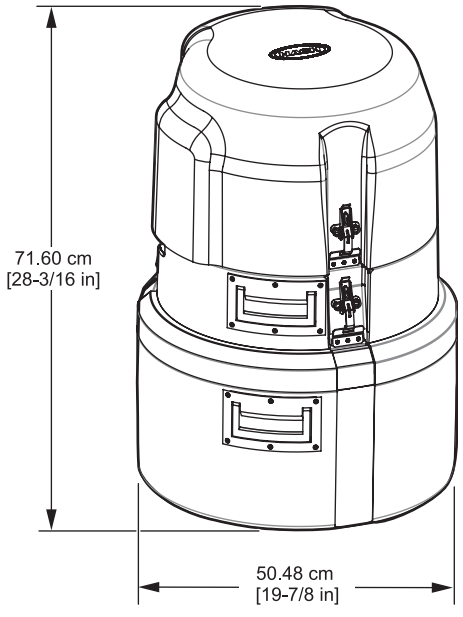
**Subject to change without notice.*

Dimensions

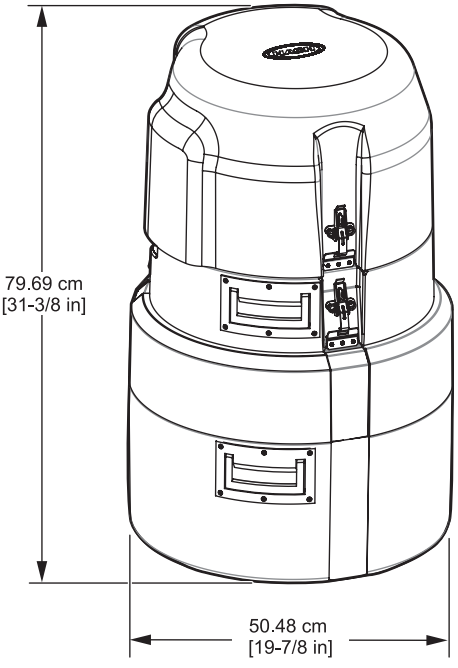
The AS950 Portable Sampler is designed for indoor or outdoor use. No secondary enclosure is required when operated within the specified temperature range. The sampler consists of three main sections—the top cover, the center control system, and the bottle/base section held together by stainless steel latches which serve as the connection point for the optional suspension harness. The lockable top cover protects the controller from extreme weather and unauthorized use.



Compact Base



Standard Base



Composite Base

Ordering Information

AS950 Portable Sampler Bundles

Includes portable base,12V battery, sample bottle(s), vinyl intake tubing (25 ft.), and PTFE/stainless steel strainer. To order different combinations, please contact Hach Company.

ASP.CXXXC121XX
Portable Compact Sampler with AS950 controller, (1) 2.5 gal polyethylene bottle

ASP.CXXXC161XX
Portable Compact Sampler with AS950 controller, (24) 575 mL polyethylene bottles and distributor arm

ASP.CXXXS121XX
Portable Standard Sampler with AS950 controller, (1) 2.5 gal polyethylene bottle

ASP.CXXXS141XX
Portable Standard Sampler with AS950 controller, (24) 1 L polyethylene bottles and distributor arm

Controller and Base Options

8975 Compact Insulated Base
8976 Standard Insulated Base
8561 Composite Insulated Base

Bottle Options

6559 2.5 Gallon Glass, with PTFE-lined cap
1918 2.5 Gallon Polyethylene, with cap
6494 5.5 Gallon Polyethylene, with cap
2214 Set of (2) 1 Gallon Glass, with PTFE lined caps
2215 Set of (2) 1 Gallon Polyethylene, with caps
2216 Set of (4) 1 Gallon Glass, with PTFE lined caps
2217 Set of (4) 1 Gallon Polyethylene, with caps
2348 Set of (8) 950 mL Glass, with PTFE lined caps
1369 Set of (24) 575 mL Polyethylene, with caps
737 Set of (24) 1 Liter Polyethylene, with caps

Bottle Accessories

2620 Retainer for (12) 950 mL Glass Bottles
2189 Retainer for (24) 350 mL Glass Bottles
1422 Retainer for (8) Glass, (8) Poly, (24) 575 mL Poly, and (24) 1 Liter Poly Bottles
2347 Retainer for (8) 950 mL Glass Bottles
2190 Retainer for 1 Gallon Glass and 1 Gallon Polyethylene Bottles
1502 Container Support
8996 Retainer/Full Container Shut-off

Distributors

8582 Distributor with Arm for 24 Bottle, Standard Base and 12 Bottle Compact Base
8580 Distributor with Arm for 24 Bottle Compact Base
8584 Distributor with Arm for 2, 4 and 8 Bottle Standard Base and 8 Bottle Compact Base

Intake Tubing and Strainers

920 25 ft. Vinyl Intake Tubing, 3/8-in ID
922 25 ft. PTFE Lined Polyethylene Tubing, 3/8-in. ID (requires Prod. No. 2186 Connection Kit)
926 Strainer; PTFE/Stainless Steel
2070 Strainer, 316 stainless steel
2071 Strainer, for shallow depth applications, 316 stainless steel
2186 Connector Kit, for PTFE lined polyethylene tubing
4652 Strainer, high velocity and shallow depth

Pump Tubing

4600-15 Pump Tubing, 15 ft.
4600-50 Pump Tubing, 50 ft.
8964 Pump Tube Insert
9501400 Pump tube insert, non-contact liquid detect

Factory Installed Options (contact sales representative)

Two Sensor Ports
Accepts Hach digital Differential pH, Hach digital AV9000 analyzer with submerged area velocity flow and/or Hach digital US9000 ultrasonic level sensors

Rain/RS485 Port
Accepts Hach Rain Gauge (not included) or can be used as RS485 communications

Non-Contact Liquid Detect
Sample volume accuracy for applications that require complete tubing replacement

Inputs/Outputs

9494500 IO9001 Module (connects through auxiliary port) single relay (high voltage)
9494600 IO9004 Module (connects through auxiliary port) includes multiple 0/4–20 mA outputs and inputs for recorded measurements and to receive measurements from external instruments, four low voltage, contact closure, and four relays controlled by alarm events

Accessories

1355 Suspension Harness (suspends the sampler)
9542 Manhole Support Bracket/Spanner, 18 to 28 in.
9557 Manhole Support Bracket/Spanner, 28 to 48 in.
5713000 Manhole Support Bracket, 18 to 27 in.
6987 Weatherguard Fiberglass Enclosure, 89 x 89 x 86 cm (35 x 35 x 34 in.)
6992 Weatherguard Fiberglass Enclosure, 91 x 66 x 135 cm (36 x 26 x 53 in.)
8713200 Solar Module, with 10 W panel and 12 Vdc regulator
8713300 Solar Module, with 20 W panel and 12 Vdc regulator
8713400 Solar Module, with 30 W panel and 12 Vdc regulator
8713500 Solar Module, with 40 W panel and 12 Vdc regulator
8713600 Solar Module, with 50 W panel and 12 Vdc regulator
8754400 Battery, 12 volt, Lead Acid
8753500 US Charger, 115V, Lead Acid
8754500 US Power Supply, 100-120V, US plug
9504700 USB Cable, A to A

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Greyhound CHROMATOGRAPHY AND ALLIED CHEMICALS

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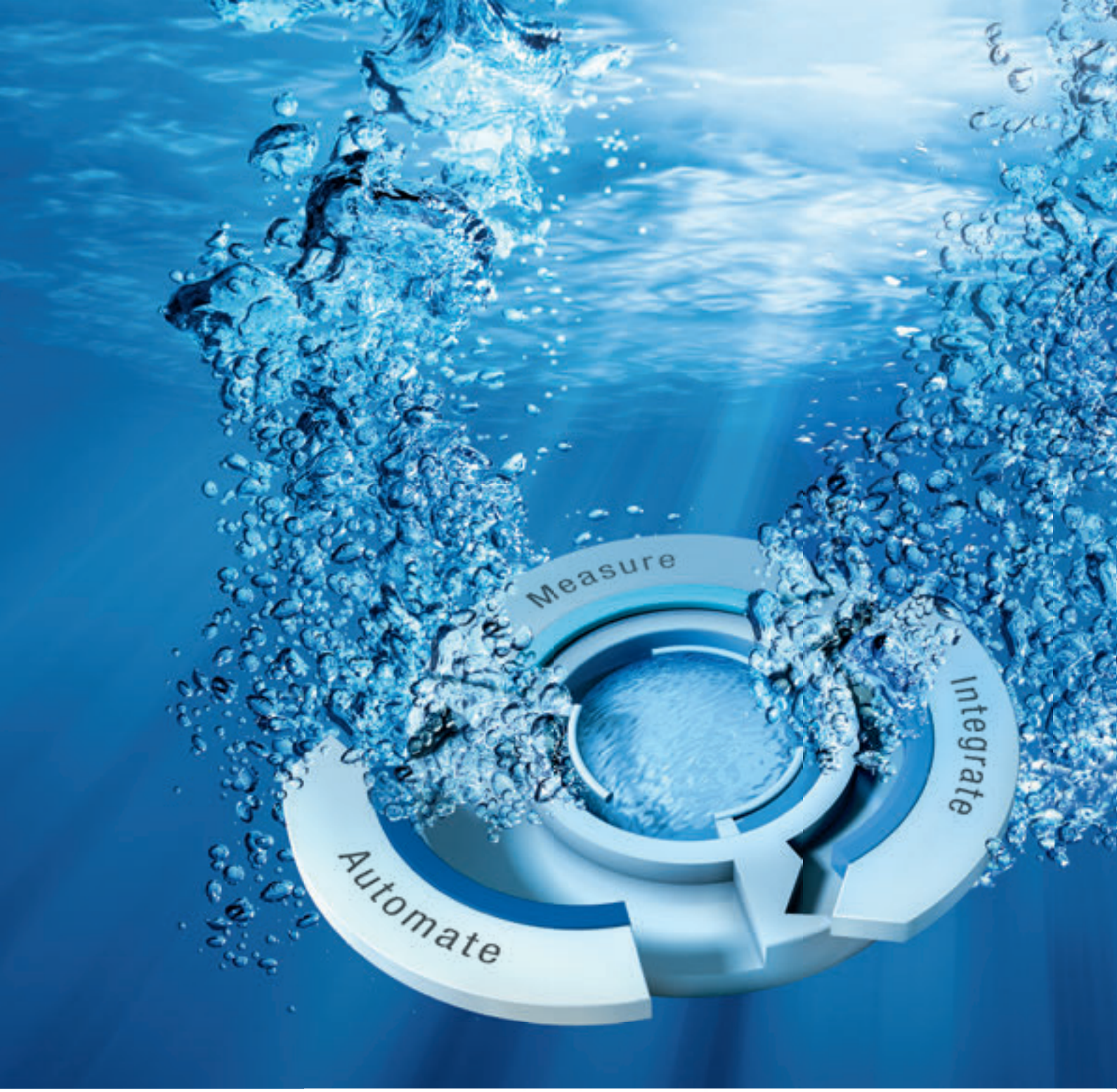


Process Instrumentation

Products & services for drinking water and wastewater

Greyhound
CHROMATOGRAPHY
AND ALLIED CHEMICALS

HACH LANGE
UNITED FOR WATER QUALITY

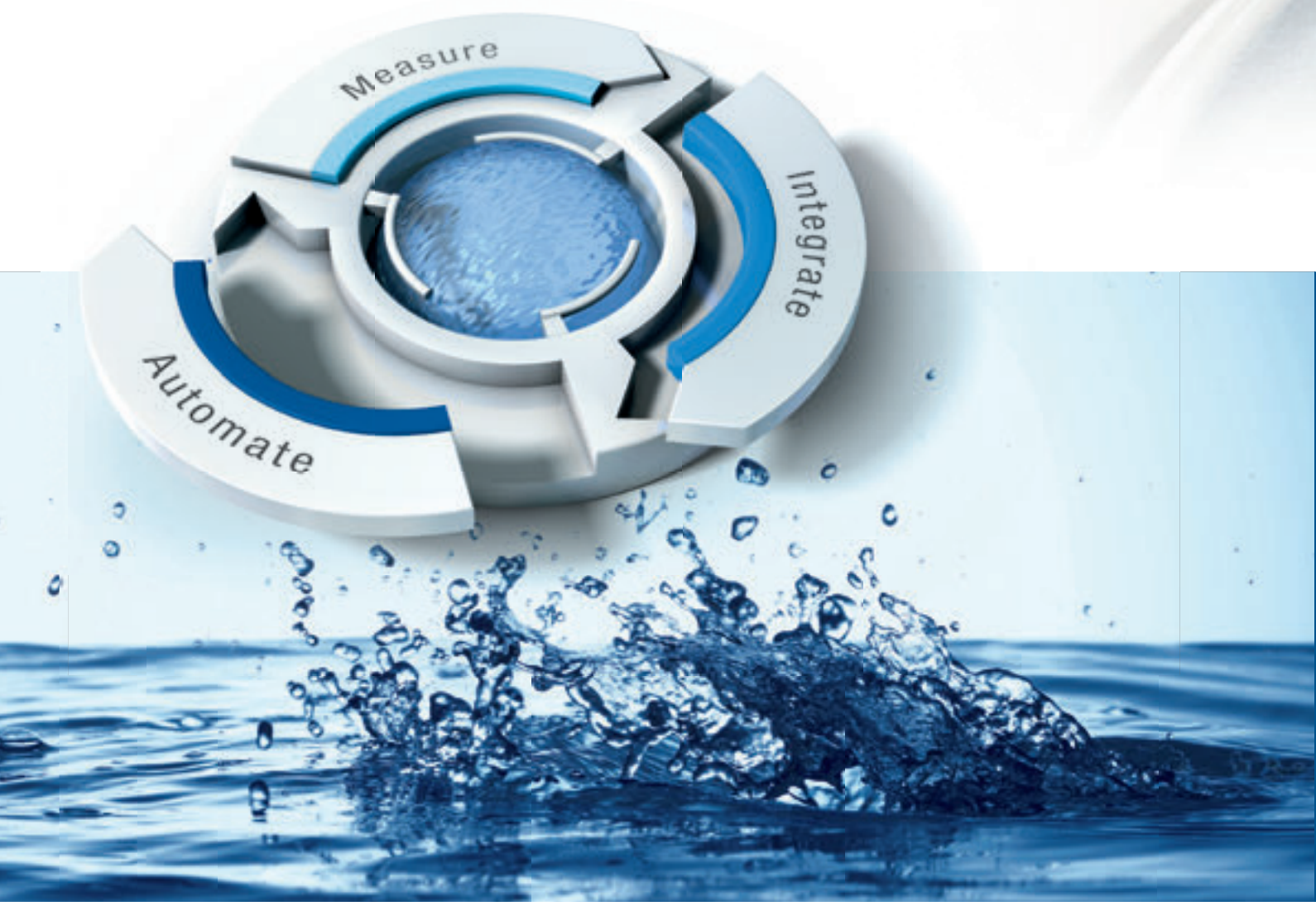
Instrumentation, solutions and service all from a single manufacturer

With high quality products, consumables/accessories and comprehensive services, HACH LANGE is your ideal partner for water analysis. Providing cost-effective solutions for all your process needs.

HACH LANGE provides a complete suite of analytical online measurement instrumentation and integrated networked solutions.

Whether you are responsible for multi-parameter online instrumentation or simply need to measure single parameters, we have the solution for you.

We believe the future of test and measurement lies in reliable, future-proof modular instruments, providing solutions that are tailored to your needs.



Content

Parameters & products

Measure accurately, measure digitally

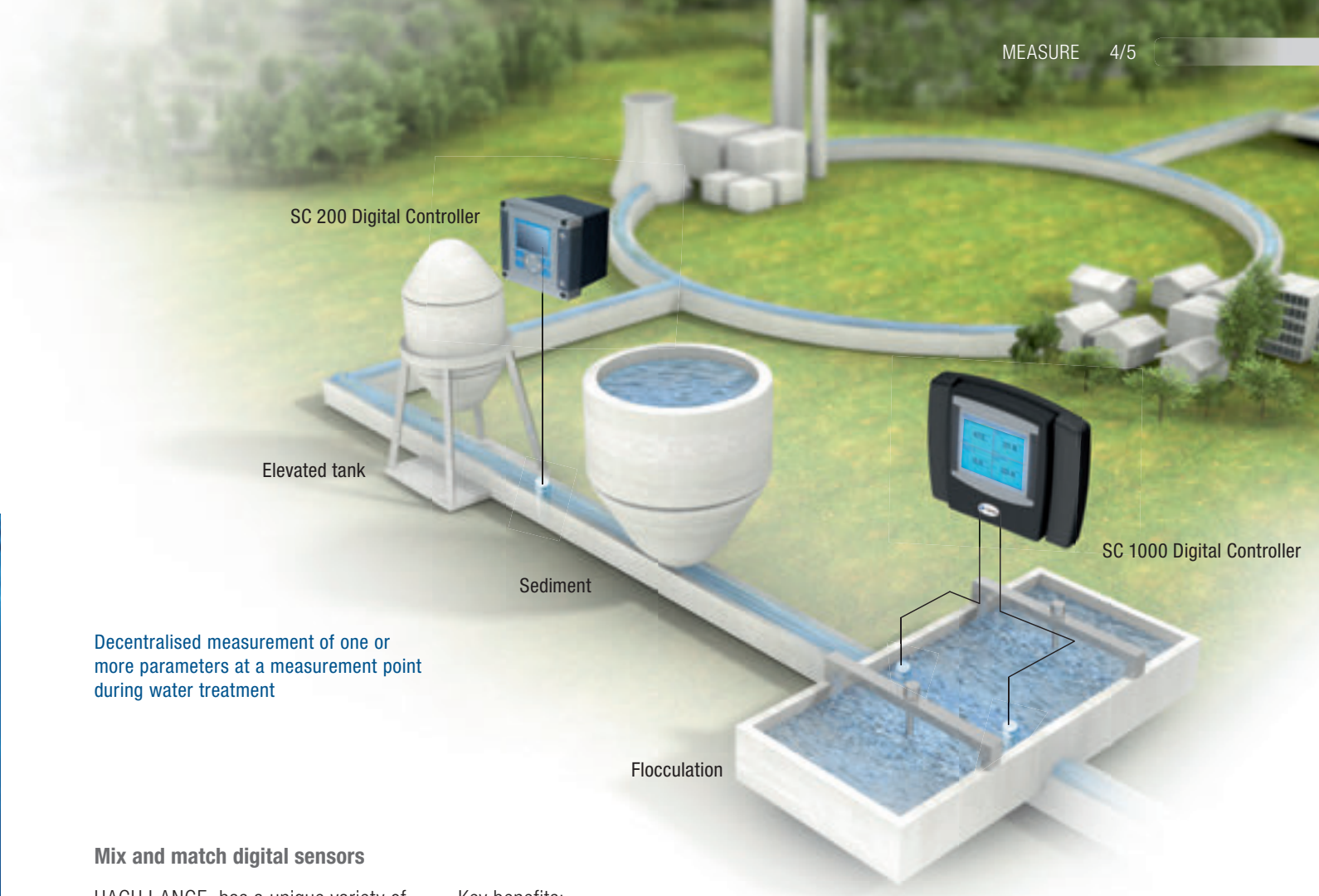
Optimisation begins with measuring the right value with the right products. With HACH LANGE, you have access to a large product range. From digital sc probes and analysers to stand alone or networked digital controllers.

LDO sc oxygen probe

The best method to measure oxygen

You need reliable measurement values. With the optical LDO sc probe, you can measure cost effectively and accurately. The measurement technique, introduced by HACH LANGE in 2003 as a world first, provides a long service life with a minimum amount of maintenance.

The LDO sc is calibration and drift-free, without need for flow and without interference from H_2S. Measurement values are the solid basis for your open and closed loop control. Now with a 3 year warranty for extra reliability.



Decentralised measurement of one or more parameters at a measurement point during water treatment

Mix and match digital sensors

HACH LANGE, has a unique variety of digital sensors with built-in intelligence, which allow the probes to store calibration data and configuration information.

The sensors communicate with the SC Digital Controllers. They are connected and commissioned very easily via Plug & Play.

Key benefits:

- Standard controllers for all probes and analysers
- Easy handling/operation
- Up to 8 sensors connected to one controller
- Can be used as stand alone instrument or in a network
- Future-proof/modular system, upgradeable at any time

Plug & Play: new sensors are detected immediately by the SC Controller.

Measure with HACH LANGE

"I receive the right information at my measurement points."

- SC Controller Page 12
- LDO sc probe Page 18
- Instrument service Page 40–41

Integrate intelligently, integrate digitally

Our SC Controllers are a standard platform for all probes and analysers. They integrate easily in your plant: via 4–20 mA output, SC 1000 bus, PROFIBUS or other field bus systems. For the active use of measurement results for open and closed loop control.

AN-ISE sc probe for ammonium and nitrate

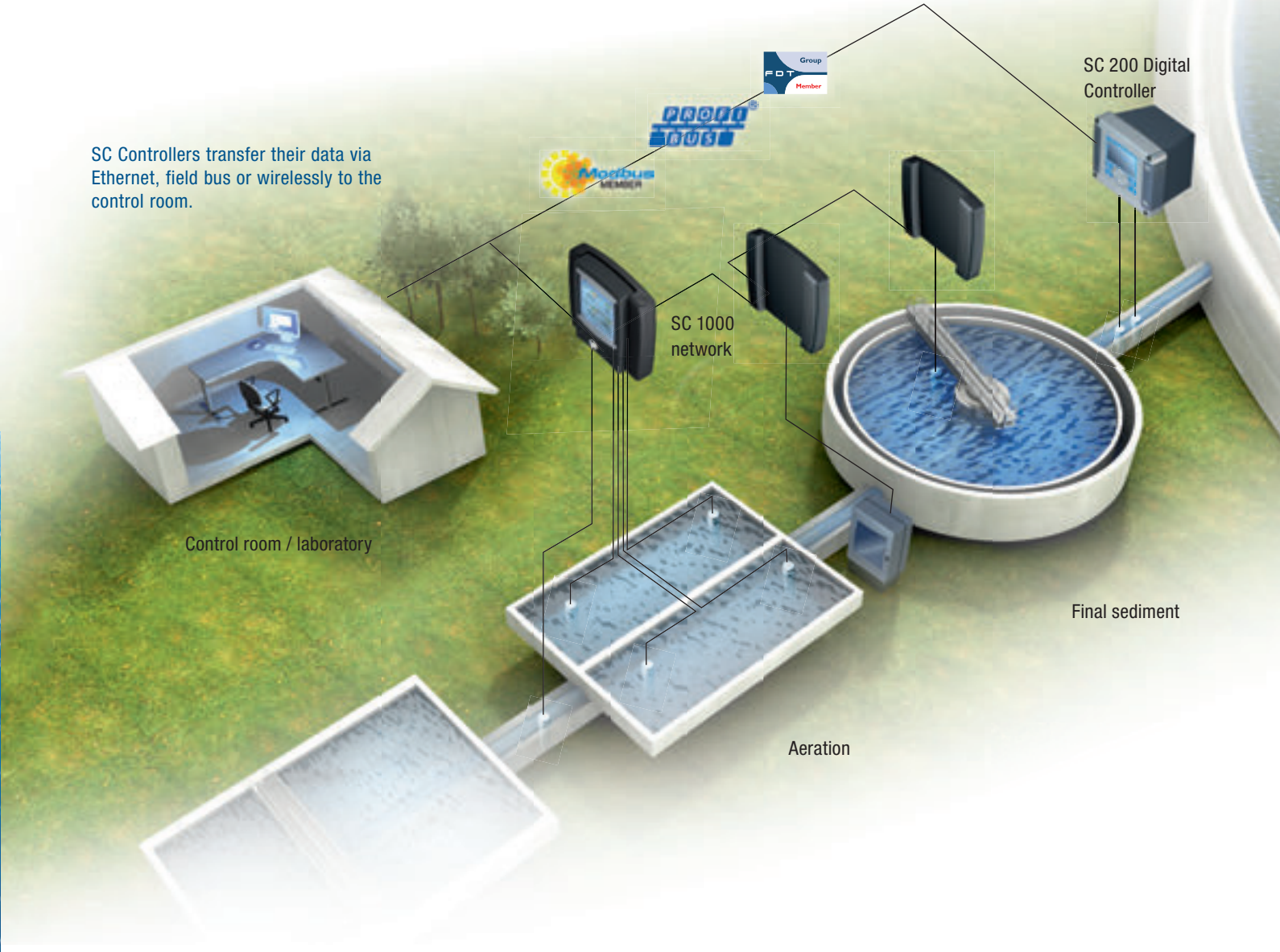
Verified measurement values

Each SC sensor features detailed self diagnosis. It permanently monitors the plausibility of its signals and the reliability of the results.

Verified measurement values are the basis for optimal and reliable process control. Thanks to LINK2SC technology, the verification of the process probe with the laboratory values is reliable and user friendly.

LINK2SC connects the laboratory photometer to the SC Digital Controller and probe.

You can obtain a direct comparison between laboratory and process results. The process probe is recalibrated by the laboratory photometer.



Digital reliability and integration

With the Digital SC Controllers, you quickly build up an analysis network. The SC 1000 bus greatly simplifies installation and wiring, saving on costs whilst achieving improved signal quality.

A variety of communication options and standards ensure that the instrumentation is perfectly suited to your infrastructure.

Automation components and field instrumentation from other manufacturers are integrated just as easily into the open system as analogue sensors.

Integrate with HACH LANGE

"The data is integrated in my control system. I can simply connect new sensors via Plug & Play."

- ▶ Nutrient sensors From page 22
- ▶ Network service Page 41
- ▶ Laboratory analysis Page 42–43

NITRATAX sc optical nitrate probe, e. g. for the closed loop control of denitrification times

PHOSPHAX sc phosphate analyser, e. g. for the closed loop control of precipitant dosage

Automate future-proof, automate digitally

HACH LANGE can help you automate your processes, whatever its size and requirements. At the same time, allowing you to retain your ability to act and intervene in your processes and upgrade at any time.

NEW

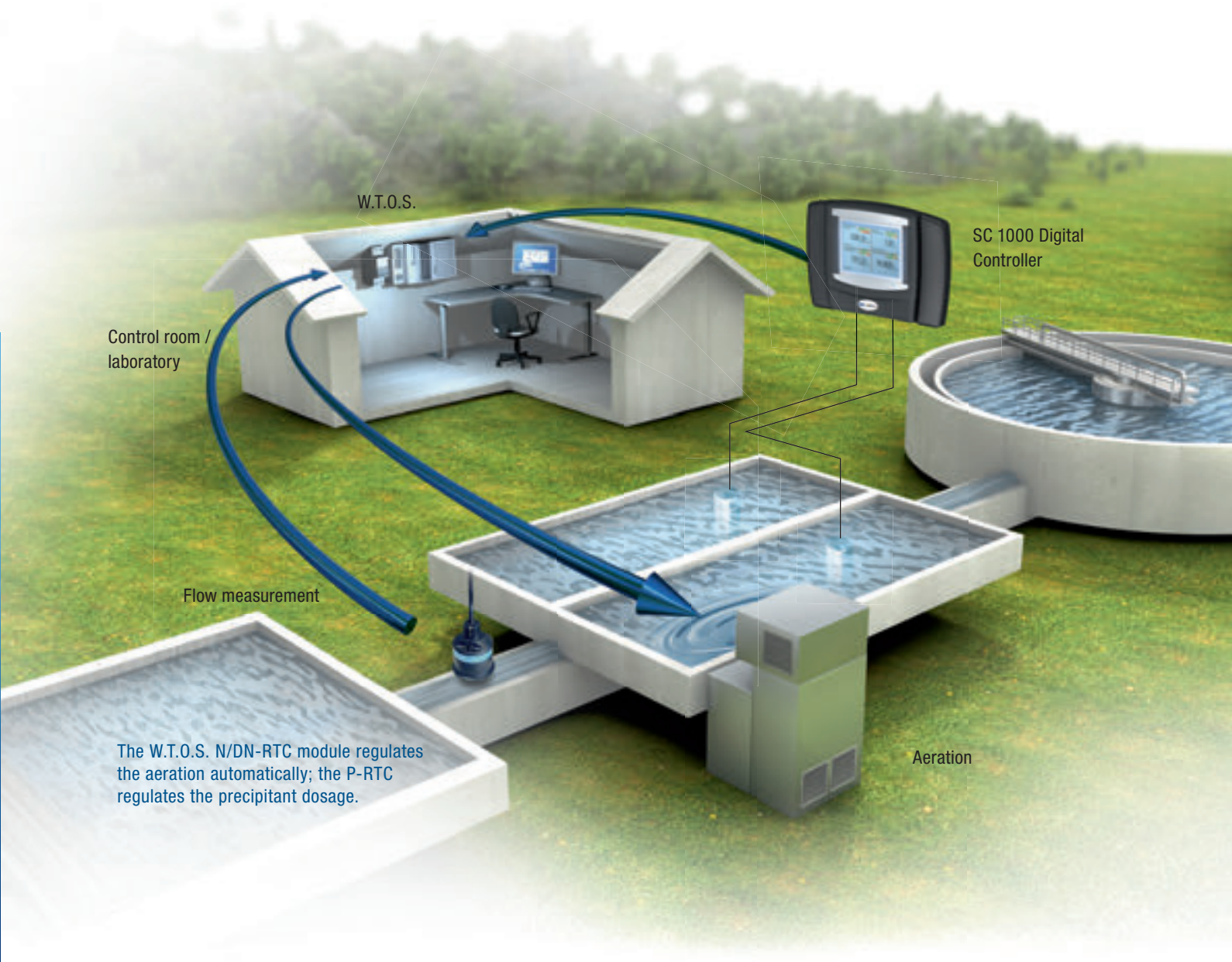
Transparent measurement values

The PROGNOSYS software in the SC 1000 Digital Controller monitors the measurement value quality and indicates the time remaining to the next maintenance task.

Each sensor is shown in the display. Messages indicate upcoming maintenance, such as the cleaning of the sensor or the refilling of reagents. The same applies to service tasks that require an engineer.

All messages have a programmable advance warning function. So you can call a service engineer or order in good time.

The consistent, timely performance of the tasks guarantees a long term increase in measurement value quality and sensor availability.



The W.T.O.S. N/DN-RTC module regulates the aeration automatically; the P-RTC regulates the precipitant dosage.

Automate with HACH LANGE

"I have confidence in my effluent values. I have recovered my costs quickly."

- ▶ W.T.O.S. modules Page 30–31
- ▶ Instrument service Page 40–41

Cost-effective process optimisation with W.T.O.S.

The standardised W.T.O.S. (Water Treatment Optimisation Solutions) open and closed loop control modules enable you to quickly optimise your wastewater treatment plant. W.T.O.S. can be easily integrated with existing structures.

The P-RTC module for chemical phosphate elimination regulates the dosage of the precipitant according to the load.

This can save up to 28% precipitant and thus greatly reduces the amount of served measurement value for total P in the effluent!

The N/DN-RTC module, on the other hand, aims for minimum total nitrogen with as little energy consumption as possible.

W.T.O.S. leads to stable effluent values even at load peaks. An investment that pays off, even for small plants!

Value added services

Personal contact with the developer, manufacturer and supplier of sophisticated measurement systems is important. Our experienced team can provide you with expert advice to ensure your application satisfies all your requirements.

The close customer relationship begins with expert advice before the purchase and continues over the entire lifetime of the products to ensure:

Consultants & system integrators:

- Are supported during planning.
- Are given a fixed contact partner for the entire course of the project.

Decision makers & operators:

- Have all relevant information in their local language.
- Have access to an application specialist about measuring instrumentation.

Users:

- Receive basic instruction directly at the instrument, with the focus on operation and maintenance.
- Benefit from regular training and technical support.

▶ HACH LANGE SERVICES

Experts on hand
Technical support, workshops/seminars and training

Quality assurance
Certified buffers and standards, instrument checks and round robin tests

Environmental
Legal/environmental compliance via the recycling/disposal of used reagents

Information
Phone, brochures, website, user manuals, application reports, safety data sheets and regular industry news

Instrument service
Inspection and maintenance services, on site or carried out at our service centre

Focus on sustainability

We strive to protect the environment and preserve natural resources:

- Economical use of reagents during analysis
- Recyling and correct processing of used reagents in the Environmental Centre
- Winners of several awards for sustainability
- Reduced use of precipitation and flocculation agents
- Reduced energy consumption due to optimised open and closed loop control concepts

Working with HACH LANGE

"I have strengthened my business working with a reliable and competent company."

- Controllers + transmitters Page 12–13
- Probes + analysers From page 14
- Samplers Page 32–33
- Flow + level From page 34
- System solutions Page 38–39
- Instrument service Page 40–41
- Laboratory analysis Page 42–43

We have subsidiaries in over 20 countries across Europe, with qualified teams of sales consultants, service technicians, technical support and order processing.

DIGITAL CONTROLLERS

**The SC platform:
Reliable and cost-effective;
today and for the future**

As a stand alone instrument or integrated into a network, the controllers are the uniform interface between you as the operator and your plant.

Digital signals between the SC Controller and attached sensors assure data integrity and immunity from signal interference.

The probes and analyser are detected automatically by the SC Controller (Plug & Play). The SC concept provides you with all the advantages of a common platform:

- ▶ High degree of reliability and minimum training due to uniform, easy handling
- ▶ Future-proof system that can be upgraded with additional sensors at any time.
- ▶ Cost-effective operational assurance

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

Product	SC 1000	SC 200
	 NEW	 NEW
Description	Digital universal controller for up to 8 sensors, upgradable to a network	Digital Controller for up to 2 sensors
Benefits	▶ Expandable to an SC network ▶ Reliable data transfer over large distances with minimum wiring ▶ Security at all times for unmanned plants with GPRS ▶ Intuitive operation via touch-screen with brilliant colour graphics and trend function ▶ Existing sensors can be integrated ▶ Transparent measurement value quality with PROGNOSYS software (optional)	▶ Versatile application due to the combination of analogue and digital sensors ▶ Software update and data logger via SD card, easy handling ▶ Control panel installation possible
Parameters	pH value, redox potential, conductivity, oxygen, nutrient parameters, organic load, disinfection parameters, turbidity, solids, sludge	pH value, redox potential, conductivity, oxygen, nutrient parameters, organic load, disinfection parameters, turbidity, solids, sludge, flow
Communication	Up to 12 outputs 0/4–20 mA, certified PROFIBUS DP/V1, MODBUS TCP/IP, RTU RS485/RS232; GPRS quad band, OpenVPN client (optional); industrial Ethernet port; built in web server; 24 languages; email/SMS dispatch	Up to 5 outputs 0/4–20 mA, certified PROFIBUS DP/V1 slave, MODBUS RTU RS485/RS232; supports EDD and DTM technology
Protection class	IP 65	IP 66/NEMA 4X
Display type	Glass/glass touchscreen, TFT colour graphics	LCD with LED backlight
Measurement data and event archiving	SD card	SD card
Power supply	100 ... 240 V AC, 24 V DC (optional)	100 ... 240 V AC, 24 V DC (optional)

*Applied for

ANALOGUE TRANSMITTERS

	SI792	SI794	SI6XX
			
	Analogue transmitter for 1 sensor, EX version available	Analogue transmitter for 1 sensor, with relay contact	Analogue transmitter for 1 sensor
	▶ 2 wire transmitter ▶ Automatic self diagnosis for reliable operation ▶ ATEX certified version (optional)	▶ 4 wire transmitter ▶ Flexible power supply ▶ PID process controller via relay contacts	▶ ON/OFF closed loop control ▶ With three relays for programming as a limit value or for the activation of automatic cleaning ▶ Variants for wall or control panel installation
	pH value, redox potential, conductivity, oxygen	pH value, redox potential, conductivity, oxygen	pH value, redox potential, conductivity
	1 output 4–20 mA, HART, PROFIBUS PA (optional), FOUNDATION FIELDBUS H1 (optional)	2 outputs 4–20 mA	1 output 4–20 mA
	IP 65/NEMA 4X	IP 65/NEMA 4X	IP 54/IP 65
	LCD	LCD	LCD
	10 ... 30 V DC, bus supply 9 ... 17.5 DC FISCO	20 ... 253 V AC/DC, 45 ... 65 Hz VariPower	230 V AC, 115 V AC, 24 V AC

PARAMETERS

TURBIDITY, SOLIDS, SLUDGE

From ultra-clear water to sludge

In drinking water treatment and wastewater purification, undissolved substances in water demand special attention.

Clear water requires consistent filter management in order to guarantee operational reliability as cost effectively as possible.

Continuous turbidity analysis supplies you with the requisite data for this. Sludge generating processes also require continuous monitoring in order to keep both operational reliability and the costs for sludge dewatering and disposal under control.

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

Product	SOLITAX sc family	TSS sc family
		
Description	Digital process probes for the determination of turbidity and solids in drinking water and wastewater in accordance with DIN EN ISO, ideal for municipal and industrial wastewater mCERTS Sira MC 120214/00	Digital special probes for determining turbidity and suspended solids in aqueous, and also aggressive, media, particularly in an industrial context, in accordance with DIN EN ISO Ex
Benefits	▶ Broad application spectrum due to very large measuring range for turbidity and solids ▶ Reliable sludge analysis via unique colour independent solids measurement ▶ Long-term stable factory calibration for turbidity measurement ▶ Low maintenance due to self-cleaning wiper device ▶ Available as immersion and inline probes	▶ Ideal probes for high temperatures and pressures, for hygienically pure environments, for corrosive media ▶ Reliable results in difficult industrial applications due to special optics ▶ Robust materials, e. g. titanium ▶ Diverse mounting devices, e. g. TRICLAMP and VARIVENT fittings ▶ ATEX-certified version (optional)
Measuring range	**t-line sc:** 0.001 ... 4,000 FNU **ts-line sc/inline sc:** 0.001 ... 4,000 FNU, 0.001 ... 50 g/L **hs-line sc/highline sc:** 0.001 ... 4,000 FNU, 0.1 ... 500 g/L	0.001 … 4,000 FNU 0.001 … 500 g/L
Method	Infrared duo scattered light method; turbidity in accordance with DIN EN ISO 7027; solids equivalent to DIN 38414	Combined multiple-beam/ alternating light method with IR diode system and beam focusing; turbidity in accordance with DIN EN ISO 7027
Application area	Raw water and well water, surface water, drinking water, process water, municipal and industrial wastewater, sludge dewatering, sludge recirculation	In process monitoring e. g. in chemical, pharmaceutical, paper, food and drink industries, industrial wastewater, seawater

	TURBIDITY		
SONATAX sc	**SS7 sc**	**ULTRATURB plus sc**	**1720E sc**
 NEW			
Digital ultrasonic probe for the continuous determination of the sludge level or the sludge height	Digital turbidity bypass sensor for contact free measurement of medium to high turbidities, also optional for hot and/or corrosive liquids	Digital turbidity bypass sensor in accordance with DIN EN ISO for ultra-clear to moderately turbid media	Digital turbidity bypass sensor in accordance with USEPA for fine turbidities
▶ Simple, fast commissioning and configuration due to new probe software ▶ Low maintenance due to magnetically coupled wipers ▶ Graphic display of sludge profile on SC 1000 Controller ▶ Precise measurement due to automatic temperature compensation ▶ Various mounting devices, including for chain scrapers	▶ Due to the robust construction, an ideal sensor for aggressive sample flows with high solids content ▶ Low maintenance, as the optics have no contact with sample ▶ Simple verification with formazine and/or solids standard	▶ Stable results due to self-cleaning measuring chamber and compensation of air bubbles ▶ Versatile application due to the large measuring range ▶ Robust design and materials, suitable e. g. for seawater ▶ Simple verification with long-term stable STABL CAL standards	▶ Air bubble elimination via bubble trap for reliable measurement values ▶ Simple verification with solids standard or long-term stable STABL CAL standards
0.2 … 12.0 m sludge level	0.01 … 9,999 NTU (FNU, TE/F)	0.0001 … 1,000 FNU (NTU, TE/F)	0.0001 … 100 NTU (FNU, TE/F)
Ultrasonic measurement	90° scattered light method (white light)	90° scattered light method in accordance with DIN EN ISO 7027 (infrared pulse)	90° scattered light method in accordance with USEPA 180.1 (white light)
Primary settling/final sedimentation (automatic sludge extraction, avoidance of sludge loss), thickener, SBR reactor	In-process monitoring, industrial water with high turbidity, high temperatures, aggressive media, wastewater containing starches, oils and fats	Raw water and well water, filtration management, filter monitoring, recording of filter breaches, drinking water, seawater	Well water, drinking water, filtration management, filter monitoring, recording of filter breaches

PARAMETERS

	ULTRA-FINE TURBIDITY	
Product	**FILTERTRAK 660 sc**	**ARTI**
		
Description	Digital turbidity bypass sensor in accordance with USEPA for ultra-fine turbidities and for detecting particles <0.1 µm in ultra-clear liquids	Analogue particle counter for evaluating the water quality by number and size of particles
Benefits	▶ Air bubble elimination via bubble trap for reliable measurement values ▶ Very low measuring range with highly sensitive laser technology ▶ Quick reaction to changes in the sample, early detection of filter breaches via statistical evaluation of measurement data ▶ Simple verification with long-term stable STABL CAL standards	▶ Autoscan measures seven particle sizes over time ▶ Universal application, as particle sizes can be determined via eight channels in two configurations ▶ Easy cleaning and reliable operation due to external counting chamber
Measuring range	0.001 … 5,000 mNTU	1.3 … 100 µm
Method	90° scattered light method in accordance with USEPA 10133 (laser nephelometry)	Light blocking
Application area	Drinking water, ultra-pure water, filtration management, filter monitoring, recording of filter breaches, effluent of membrane filtration	Drinking water, ultra-pure water, filter monitoring, effluent of membrane filtration

Modular systems for the perfect solution

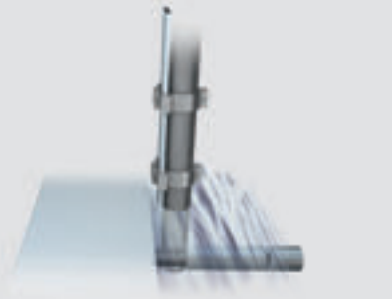
For the installation of process probes, we have designed a modular system. Standardised, coordinated systems and sensors for application specific components which complement each other perfectly.

Only comprehensive measurement systems from a single source guarantee you maximum compatibility and application diversity.

- ▶ Installation in the tank, bypass, pipes or in containers
- ▶ Secure mount for light pH probes to complete analysers
- ▶ Movable, self adjusting suspension or stable attachment
- ▶ Devices made from stainless steel, plastic or special materials

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

MOUNTING HARDWARE



Pole mounts

- For installation on the tank edge (wall, floor or rail)
- For probes (incl. various mounting brackets). Can also be rotated and swivelled, adjustable depth of immersion
- For analysers and sample preparation systems
- For controllers (with protective cover)

Chain mounts

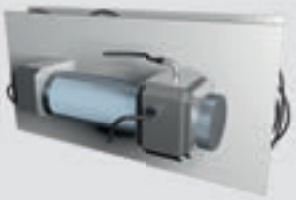
- For installation on the floor or rail
- With immersion tube made of stainless steel or CPVC

Ball floats

- For installation on the tank edge or rail
- For varying water levels, e.g. in SBR mode
- Can be rotated and swivelled
- With immersion tube made of stainless steel or CPVC

Immersion and inline mounts

- For open and closed tanks
- Wall mounting, flange connection or chain mount
- Flexible depth of immersion due to adjustable flange



Bypass mounts

- For applications in the bypass
- For complex structural requirements

Inline mounts and retraction fittings

- For installation in pipes with ball valve mount, welding connector or measuring tube (XL or VARIVENT, TSS only)
- For applications in pressure lines

PARAMETERS

Control is essential

The reliable measurement of pH, oxygen and conductivity forms the basis for process control in many applications.

With the continuous measurement of dissolved oxygen, the innovative optical oxygen sensors unlock significant, often untapped savings potential e. g. energy intensive aeration control at wastewater treatment plants.

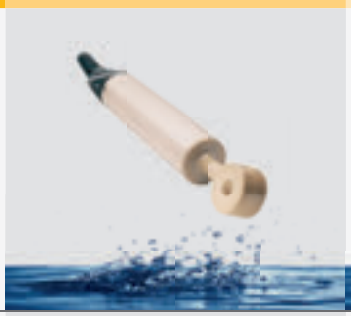
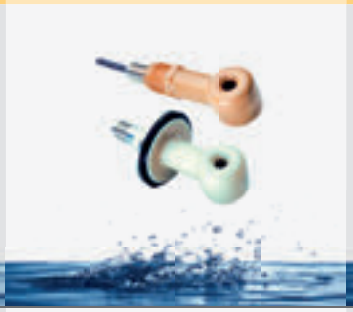
Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

	OXYGEN	
Product	**LDO sc**	**5740 sc**
	 NEW	
Description	Digital, calibration-free, optical oxygen probe	Digital, galvanic oxygen probe
Benefits	▶ Minimal maintenance thanks to the sensor cap: no membrane, no electrolyte, no calibration ▶ Cost-effective aeration control via the drift-free optical measurement method ▶ Superior accuracy due to factory, temperature controlled 3D calibration ▶ 3 year warranty on probe	▶ Easy replacement of sensor head ▶ Low acquisition and operating costs ▶ Robust construction ▶ Can be used with chlorine dioxide disinfectant ▶ Can be used with rapid changes in concentration
Measuring range	0 … 20.0 mg/L O_2 1 … 200% saturation	0 … 40 mg/L O_2
Method	Optical via luminescence	Galvanic, Clark (nickel/lead)
Application area	Surface water, fish farming, drinking water, biological wastewater treatment, seawater	Surface water, drinking water, biological wastewater treatment

	PH/REDOX POTENTIAL		
EVITA OXY	**pHD-S sc**	**1200-S sc**	**pH value / redox potential electrodes**
			
Analogue, galvanic oxygen probe	Digital differential probe for pH value or redox potential with salt bridge mCERTS Sira MC 120214/00	Digital combination probe for pH value or redox potential with gel electrolyte for contaminated media	Analogue glass electrodes, 12 mm diameter, also for high temperatures and pressures Ex
▶ Automatic calibration via tilting of the sensor ▶ Quick to replace Clark electrode with long service life ▶ High precision and immunity to interference ▶ Self cleaning design	▶ Particularly long service life due to protected reference system, separated from the measurement medium ▶ Less cleaning and calibration required	▶ High quality combination electrode ▶ Dirt tolerant due to solid electrolyte and perforated membrane ▶ Low maintenance	▶ Large selection of electrodes with gel, liquid or polymer electrolyte ▶ Various diaphragms for a diverse range of applications ▶ Installation in retraction fittings, in the bypass or as an immersion sensor ▶ Electrodes for high pressures and temperatures ▶ ATEX certified version (optional)
0 … 50 mg/L O_2 0 … 500% saturation	0 … 14 pH ±2,000 mV	0 … 14 pH ±1,500 mV	0 … 14 pH ±2,000 mV
Galvanic, Clark (gold/silver)	Potentiometric	Potentiometric	Potentiometric
Surface water, drinking water, biological wastewater treatment	Biological wastewater treatment, influent and effluent of wastewater treatment plants	Drinking water, process water, wastewater	Drinking water, ultra-pure water, process water, influent and effluent of wastewater treatment plants, sewer network monitoring

PARAMETERS

CONDUCTIVITY

Product	3798-S sc	37xx	34xx
			
Description	Digital, inductive conductivity probe for contact free measurement in heavily contaminated or aggressive media	Analogue, inductive conductivity probes for contact free measurement in heavily contaminated or aggressive media	Analogue, conductive conductivity probes for pure media or high temperatures and pressures with a low measuring range
Benefits	▶ Long service life even in polluted media due to contact free measurement method ▶ For high measurement values ▶ Resistant against aggressive media due to the PEEK housing	▶ Long service life even in polluted media due to contact free measurement method ▶ For high measurement values ▶ Resistant against aggressive and corrosive media due to housing made of PP, PVDF, PEEK or PFA Teflon ▶ Various process connections for selection	▶ High degree of accuracy and sensitivity for low measuring range ▶ Suitable for high temperatures and pressures ▶ Broad application spectrum due to numerous versions, e. g. in graphite or stainless steel ▶ Determination of cell constants in accordance with ISO 7888/ ASTM D 1125
Measuring range	250 µS/cm … 2,500 mS/cm	0.1 … 2,000 mS/cm	0 … 2,000 µS/cm
Method	Inductive measurement	Inductive measurement	Conductive measurement
Application area	Polluted surface water, process monitoring, influent of wastewater treatment plants	Polluted surface water, process monitoring, heavily contaminated or aggressive media, influent of wastewater treatment plants	Raw water, drinking water, ultra-pure water, demineralisation, reverse osmosis, ion exchanger, cooling water and boiler water, process water

PARAMETERS

For use in special applications

The end result is crucial when treating for the assurance of processes and consent limits. Failure to comply comes at a high price.

We have a large selection of solutions for different applications. E.g. hardness in drinking water, chloride and silica in water treatment etc.

	HARDNESS	HARDNESS, ALKALINITY, FLUORIDE
Product	**SP 510**	**POLYMETRON 8810**
		
Description	Analogue hardness monitor with alarm contact	Analogue analyser for hardness, alkalinity or fluoride
Benefits	▶ Robust simple measuring instrument with long service life for limit value monitoring ▶ With relay output for alarm messages when the specified limit value is exceeded ▶ For automatic, demand controlled regeneration systems for water softeners ▶ Reliable monitoring via analysis every two minutes	▶ Versatile application due to numerous parameters and equipment variants ▶ Can be retrofitted at any time due to the modular structure ▶ Automatic temperature compensation for a high degree of accuracy ▶ Sample flow switching for multiple sample flows (optional) ▶ With 2 power outputs and 3 alarm relays
Measuring range	Alarm trigger points 0.3 … 100 mg/L Total hardness as $CaCO_3$	**Total hardness:** 1 … 500 mg/L $CaCO_3$ **Alkalinity:** 1 … 500 mg/L $CaCO_3$ **Fluoride:** 0.1 … 1,000 mg/L More on request
Method	Colorimetric	**Hardness:** complexometric titration **Alkalinity:** potentiometric pH titration **Fluoride:** ion-selective electrode
Application area	Effluent from water softeners, detection of hardness breaches	Water treatment, surface water, drinking water, wastewater

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

PARAMETERS

AMMONIUM

Control, regulate and monitor nutrient parameters

Ammonium, nitrate and phosphate are key measured variables in advanced wastewater treatment. Reliably recording them forms the basis for all open and closed loop control concepts at municipal and industrial wastewater treatment plants.

Nutrient parameters also play a central role in the monitoring of surface water or in drinking water treatment. We deliver the optimal solution for your requirements with instrumentation that can be installed in-situ, or on-site.

Product	AMTAX sc	AMTAX inter2
		
Description	Digital on-site analyser with gas sensitive electrode for the high precision determination of ammonium concentration directly at the tank	Analogue analyser for the high precision determination of ammonium concentration in accordance with DIN EN ISO
Benefits	▶ High degree of accuracy due to selective GSE instrumentation ▶ Minimal supervision due to automatic cleaning, calibration and self diagnosis ▶ Ideal for installation directly on the tank edge, for fast reaction times in the closed loop control ▶ Weather proof housing for outdoor setup; transparent door for indoor setup (optional) ▶ Easy handling, analysis accessible at all times	▶ High precision for limit value monitoring ▶ Automatic cleaning and calibration for easy handling ▶ MODBUS, PROFIBUS (optional)
Measuring range	0.02 … 1,000 mg/L NH_4-N	0.02 … 80 mg/L NH_4-N
Method	Gas sensitive electrode (GSE) Sample preparation via FILTRAX or filter probe (refer to page 25)	Photometric with indophenol blue, derived from DIN 38406 E5 Sample preparation via FILTRAX (refer to page 25)
Application area	Surface water, drinking water, wastewater, activated sludge	Surface water, drinking water, wastewater, activated sludge, limit value monitoring in the effluent

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

	AMMONIUM, NITRATE	NITRATE	
AISE sc	**AN-ISE sc**	**NISE sc**	**NITRATAX sc family**
 NEW	 NEW	 NEW	
Digital, ion-selective probe for the determination of ammonium concentration directly in the medium	Digital, ion-selective probe for the simultaneous determination of the ammonium and nitrate concentration directly in the medium	Digital, ion-selective probe for the determination of nitrate concentration directly in the medium	Digital, optical probes for the high precision determination of nitrate concentration directly in the medium
▶ Calibration-free probe with automatic potassium compensation ▶ Easy handling and low maintenance due to CARTRICAL sensor cartridge ▶ Particularly cost-effective in terms of installation and operation, even for small wastewater treatment plants	▶ Calibration-free combination probe with automatic and simultaneous compensation of potassium and chloride ▶ Easy handling and low maintenance due to CARTRICAL PLUS sensor cartridge with five electrodes ▶ Secure data transfer during commissioning with RFID technology ▶ Particularly cost-effective in terms of installation and operation, even for small wastewater treatment plants	▶ Calibration-free probe with automatic chloride compensation ▶ Easy handling and low maintenance due to CARTRICAL sensor cartridge ▶ Particularly cost-effective in terms of installation and operation, even for small wastewater treatment plants	▶ High degree of accuracy due to direct UV measurement, without cross sensitivities, ideally suited to statutory limit value monitoring ▶ Broad application spectrum, e. g. in sludge due to turbidity compensation and self cleaning ▶ Minimal operating costs due to reagent-free method, without electrode ▶ Minimal maintenance due to factory calibration
0 … 1,000 mg/L NH_4-N	0 … 1,000 mg/L NH_4-N 0 … 1,000 mg/L NO_3-N	0 ... 1,000 mg/L NO_3-N	**NITRATAX plus sc:** 0.1 ... 100 mg/L NO_3-N **NITRATAX clear sc:** 0.5 ... 20 mg/L NO_3-N **NITRATAX eco sc:** 1.0 ... 20 mg/L NO_3-N
Potentiometric with ion-selective electrodes (ISE)	Potentiometric with ion-selective electrodes (ISE)	Potentiometric with ion-selective electrodes (ISE)	UV absorption measurement
Municipal wastewater, monitoring of nutrient elimination, open loop control of intermittent nitrification	Municipal wastewater, simultaneous nitrification/denitrification process, intermittent process, SBR processes	Municipal wastewater, monitoring of nutrient elimination, open loop control of the dosage of external carbon sources and intermittent nitrification	Drinking water, wastewater, effluent denitrification tank, effluent aeration tank, effluent of wastewater treatment plants, activated sludge

PARAMETERS

	ORTHOPHOSPHATE	TOTAL PHOSPHORUS, ORTHOPHOSPHATE
Product	**PHOSPHAX sc**	**PHOSPHAX sigma**
		
Description	Digital on-site analyser with weather proof housing for the high precision determination of ortho-phosphate concentration directly at the tank	Analogue analyser for the high precision determination of total phosphorus concentration and orthophosphate concentration in accordance with DIN EN ISO
Benefits	▶ High degree of accuracy due to precision photometric instrumentation ▶ Minimal reagent consumption ▶ Ideal for installation directly at the tank edge, for fast reaction times in the closed loop control ▶ Weather proof housing for outdoor setup; transparent door for indoor setup (optional) ▶ Easy handling, analysis accessible at all times ▶ Reliable results due to comprehensive self diagnosis	▶ High precision instrumentation including digestion for the limit value monitoring of total phosphorus ▶ Versatile application as total phosphorus and orthophosphate measurement are provided in one instrument ▶ Rapid availability of measurement values within 10 minutes incl. digestion ▶ MODBUS (optional), PROFIBUS (optional)
Measuring range	0.05 … 50.0 mg/L PO_4-P	0.01 … 5.0 mg/L P_{tot} 0.01 … 5.0 mg/L PO_4-P
Method	Photometric with vanadate-molybdate (yellow method) Sample preparation via FILTRAX or filter probe (refer to page 25)	Photometric with phosphor-molybdenum blue, derived from DIN 38405 D11 Sample preparation via SIGMATAX 2 (refer to page 25)
Application area	Drinking water, wastewater	Drinking water, cooling water, wastewater, limit value monitoring in the effluent

Well prepared

Correct sampling and low maintenance sample preparation are essential requirements for the reliable operation of your process instruments.

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

SAMPLE PREPARATION

	AMMONIUM, NITRATE, PHOSPHATE		TOTAL PHOSPHORUS, TOC
Product	**FILTRAX / FILTRAX eco**	**Filter probe**	**SIGMATAX 2**
			
Description	Automatic sampling and sample preparation system for supplying up to three process instruments with a solid free sample	Self cleaning membrane filter probe for SC analysers	Sampling probe and control unit for sample delivery and homogenisation
Benefits	▶ Supplies 1–3 instruments ▶ For all AMTAX, PHOSPHAX or NITRATAX in the bypass ▶ Low maintenance in-situ sample filtration with automatic air bubble cleaning	▶ For AMTAX sc and PHOSPHAX sc analysers ▶ Low maintenance in-situ membrane filtration with air bubble cleaning ▶ Installation in tanks or channels	▶ For PHOSPHAX sigma and TOCTAX analysers ▶ Enables the reliable measurement of the representative original sample incl. solids
Measuring range	⁄	⁄	⁄
Method	Membrane filtration	Membrane filtration	Homogenisation with ultrasound
Application area	Surface water; influent, effluent, aeration of municipal or industrial wastewater treatment	Surface water; influent, effluent, aeration of municipal or industrial wastewater treatment	Effluent from biological wastewater treatment, particle sizes <0.5 mm

PARAMETERS

TOC

Overview of sum parameters

Water and wastewater flows generally contain an abundance of substances. The individual analysis of each substance is not possible.

You need to determine the organic load with the help of sum parameters such as COD, BOD, TOC and SAC254 (spectral absorption coefficient).

TOC in accordance with EN 1484 and SAC in accordance with DIN 38404 C3 are ideal for the continuous measurement of the organic load.

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

Product	BIOTECTOR B7000	TOCTAX
	 NEW	
Description	Analogue analyser for the determination of the total organic carbon via oxidation in water with particles up to 2 mm in size	Analogue analyser for the determination of the total organic carbon in accordance with DIN EN ISO standard by means of the expulsion method in water with particles up to 0.5 mm in size
Benefits	▶ Ideal for heavily polluted sample flows, for high particle concentrations, fat and oil contents and salt loads ▶ Monitors up to six sample flows ▶ Sample preparation not required ▶ Determination of total nitrogen (optional) or total phosphorus (optional) ▶ ATEX-certified version (optional)	▶ Ideal for effluent monitoring of municipal wastewater treatment plants ▶ Low maintenance due to integrated self cleaning ▶ MODBUS (optional), PROFIBUS (optional) ▶ Precise measurement values due to ultrasonic homogenisation with SIGMATAX 2 (refer to page 25)
Measuring range	0 µg/L … 100 g/L C 0 mg/L … 100 g/L N (optional) 0 mg/L … 100 g/L P (optional)	1.0 … 100 mg/L C
Method	**TOC:** infrared measurement of CO_2 following oxidation; **TN:** photometric determination of NO_3 following oxidation; **TP:** photometric with vanadate-molybdate method (yellow method)	Infrared measurement of CO_2 following wet chemical digestion, equivalent to DIN EN 1484
Application area	Surface water; industrial process water; influent of wastewater treatment plants; effluent of seawater desalination plants	Cooling water and wastewater incl. solids up to 0.5 mm in size; effluent measurement in municipal wastewater treatment plants with SIGMATAX 2 homogenisation

	SAC254	OIL IN WATER
	UVAS plus sc	**FP 360 sc**
		 NEW
	Digital UV probe for the reagent-free determination of the organic load via the spectral absorption coefficient (SAC) in the medium or in the bypass	Digital UV fluorescence probe for the reagent-free determination of mineral oil impurities directly in the medium or in the bypass
	▶ Reliable measurement values immediately available due to direct UV measurement ▶ SAC254 as a measure for the organic load, correlatable to COD or TOC ▶ Easy handling ▶ Self cleaning probe, even for difficult environmental conditions ▶ Particularly low operating costs as reagent-free and low maintenance	▶ Detects even the smallest traces of oil ▶ Long-term stable and reliable ▶ Easy to clean, optionally with compressed air cleaning nozzle ▶ Robust probes made of stainless steel or titanium, also for aggressive media
	0.01 … 3,000 m^{-1} SAC254	0 … 5,000 µg/L (PAH*) 0.1 … 150 mg/L (oil*) *based on calibration standard
	UV absorption measurement (2 beam method)	UV fluorescence measurement method for polycyclic aromatic hydrocarbons (PAH)
	Raw water, drinking water, process monitoring, influent and effluent of wastewater treatment plants	Surface water; process water in oil refineries, influent and effluent of wastewater treatment plants

PARAMETERS

CHLORINE FREE/TOTAL

Successful disinfection

Chlorine, ozone and chlorine dioxide are common agents used for, the disinfection of drinking water, hygiene in swimming pools and for industrial cleaning processes. They destroy pathogenic bacteria, fungi and viruses and permanently prevent them from multiplying.

Careful analysis is not only advisable for financial reasons, but it also essential due to the considerable potential for danger posed by the disinfectants. HACH LANGE has a complete range of products for disinfection analysis.

Product	CL17	CLF-10 sc / CLT-10 sc
		 NEW
Description	Analogue, photometric analyser for the determination of free or total chlorine in accordance with DIN EN ISO	Digital, amperometric sensors for the reagent-free determination of free or total chlorine
Benefits	▶ Precise, automatic measuring instrument with minimal maintenance ▶ Maximum possible acceptance and reliability due to photometric DPD method in accordance with DIN 38408 ▶ Factory calibrated, no re-calibration required in dynamic processes	▶ Measurement in real time to allow fast response ▶ Integrated pH compensation without additional pH electrode ▶ Very stable 3 electrode sensor ▶ Full accessories, e.g. automatic cleaning system and acidification unit (optional)
Measuring range	0.03 … 5 mg/L Cl_2	0.03 … 10 mg/L Cl_2
Method	Photometric with DPD (N,N-diethyl-p-phenylenediamine) in accordance with DIN 38408	Amperometric
Application area	Drinking water treatment, food and drink industry, industrial feed and process water, heating and cooling systems, filter systems, swimming pools	Drinking water treatment, food and drink industry, heating and cooling systems, swimming pools, wastewater

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

	CHLORINE FREE	CHLORINE DIOXIDE	OZONE
	9184 sc	**9187 sc**	**9185 sc**
			
	Digital, amperometric sensor for the reagent-free determination of free or active chlorine	Digital, amperometric sensor for the reagent-free determination of chlorine dioxide	Digital, amperometric sensor for the reagent-free determination of ozone
	▶ Low operating costs due to reagent-free determination ▶ Broad application spectrum due to large measuring range and low detection limit ▶ Reliable methodology without interferences with chloramines ▶ Adaptable: pH compensation for the determination of total free chlorine (optional), automatic cleaning system (optional), acidification unit (optional)	▶ Low operating costs due to reagent-free determination ▶ Ideal for the sensitive detection of low loads via the low detection limit ▶ Reliable results independently of the pH value of the medium thanks to direct determination of chlorine dioxide due to the selective membrane ▶ No interferences with chlorine, bromine and hydrogen peroxide	▶ Low operating costs due to reagent-free determination ▶ Independent of pH value, suitable for the sensitive detection of low loads via the low detection limit ▶ Ideal for samples with low conductivity ▶ No interferences with bromine, chloramine, chlorine dioxide and hydrogen peroxide
	0.005 … 20 mg/L as HOCl	0.005 … 2 mg/L ClO_2	0.005 … 2 mg/L O_3
	Amperometric	Amperometric	Amperometric
	Drinking water treatment, chlorination applications, desalination systems, cooling water	Drinking water treatment	Drinking water treatment

NEW

OPTIMISATION SOLUTIONS

NITROGEN ELIMINATION

Automation in wastewater treatment plants

Requirements for the cost efficient and resource conserving operation of your wastewater treatment plant are growing constantly.

It has long been the case at many sites, that open or closed loop control is also carried out in addition to measurement. The trend is towards forward looking, automated operation.

With W.T.O.S. (Water Treatment Optimisation Solutions), you receive standardised loop control components for municipal wastewater treatment plants. The real time controllers (RTC) offer a reliable closed/open loop control based on verified measurement values. Parameterisation is performed via the SC 1000 Digital Controller, your control system or remotely via GPRS on request.

Product	W.T.O.S. N/DN-RTC	W.T.O.S. N-RTC
		
Description	**Nitrification / denitrification:** Open and closed loop control unit for the load dependent setting of nitrification and denitrification times	**Nitrification:** Open and closed loop control unit for the ammonium load dependent setting of oxygen concentration
Benefits	▶ Reliable compliance with nitrogen effluent values with optimal energy use due to exact, load dependent aeration ▶ Based on verified ammonium and nitrate values ▶ The W.T.O.S. N/DN-RTC can be optionally equipped with an additional closed loop controller for setting the dissolved oxygen concentration in the aeration tank.	▶ Reliable compliance with nitrogen effluent values with optimal energy use due to exact, load dependent aeration ▶ Based on verified ammonium values ▶ The W.T.O.S. N-RTC can be optionally equipped with an additional closed loop controller for setting the dissolved oxygen concentration in the aeration tank.
Input	Ammonium, nitrate, dissolved oxygen	Ammonium, dissolved oxygen, flow volume
Output	Aeration time, aeration intensity	Aeration intensity, target oxygen value
Application area	Wastewater treatment plants with intermittent aeration or in sequencing batch reactor mode (SBR)	Wastewater treatment plants with continuously aerated aeration tanks, e. g. with upstream denitrification

Control room: refer to illustration on page 9

	PHOSPHATE ELIMINATION	SLUDGE MANAGEMENT		
	W.T.O.S. P-RTC	**W.T.O.S. SRT-RTC**	**W.T.O.S. ST-RTC**	**W.T.O.S. SD-RTC**
				
	Phosphate elimination: Open and closed loop control unit for load dependent, chemical phosphate elimination based on the flow volume and the ortho-phosphate concentration	**Sludge age:** Open and closed loop control unit for setting the sludge age depending on the temperature and wastewater load	**Sludge thickening:** Open and closed loop control unit for the optimisation of polymer dosage in mechanical sludge thickening	**Sludge dewatering:** Open and closed loop control unit for the optimisation of polymer dosage in mechanical sludge dewatering
	▶ Reliable compliance with phosphate effluent values with sparing use of precipitants via precise, load dependent dosage ▶ The W.T.O.S. P-RTC real time controller is used for both open and closed loop control of precipitant dosage. Depending on the situation, it observes current measurement values or retrieves stored hydrographs.	▶ Reliable compliance with required sludge age based on verified measurement values ▶ Automatic setting of the optimal sludge age depending on the load and the temperature	▶ Reliable compliance with required dry matter content in the thickened sludge due to load dependent polymer dosage and adjustment of influent volume	▶ Reliable compliance with required dry matter content in the dewatered sludge due to load dependent polymer dosage and adjustment of influent volume
	Orthophosphate, flow volume	Dry matter content of recycled sludge of aeration tank, flow volume, temperature, turbidity of effluent	Dry matter content influent and effluent, volume flows	Dry matter content influent, centrate, flow volumes
	Precipitant volume	Sludge extraction	Polymer volume, influent volume of sludge thickening	Polymer volume, influent volume sludge dewatering
	Wastewater treatment plants with chemical-physical phosphorus elimination	Continuously flowed through wastewater treatment plants with suspended biomass	Wastewater treatment plants with mechanical sludge thickening	Wastewater treatment plants with sludge dewatering

PARAMETERS

Precise analysis begins with accurate sampling

The automatic sampler is the key connection between the measurement point and the laboratory. With the implementation of the ISO 5667 standard, representative samples became indispensable for exact analysis and reporting to authorities.

Choose from: portable or stationary samplers; plastic and stainless steel housings; pressure-vacuum and peristaltic principals and numerous container options in plastic and glass.

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

	PORTABLE SAMPLERS	
Product	**BÜHLER 2000**	**SIGMA SD900**
		
Description	Portable sampler with pressure-vacuum principle for precise sampling, in accordance with ISO 5667	Portable sampler with peristaltic principle for routine sampling, in accordance with ISO 5667
Benefits	▶ Maximum volume accuracy ▶ Robust housing made of PE ▶ Insulated container for passive sample cooling; active independently regulated compressor cooling (optional) ▶ Easy to clean ▶ Flexible for changing monitoring tasks due to numerous bottle options ▶ Remote access to programming and data storage (optional)	▶ Reduced maintenance due to spring loaded peristaltic pump ▶ Reliable sample conservation via active compressor cooling ▶ Intuitive user guidance, fast programming and updates via computer ▶ SDI 12 connection for triggering the sampling control (optional)
Sample volume	20 … 350 mL	10 … 10,000 mL
Method	Pressure-vacuum principle; time, volume or event proportional sampling	Peristaltic principle; time, volume or event proportional sampling
Application area	Monitoring of drinking water, surface water and indirect dischargers, sewers, rainwater and overflow tanks, influent and effluent of wastewater treatment plants	Monitoring of drinking water, surface water and indirect dischargers, sewers, rainwater and overflow tanks, influent and effluent of wastewater treatment plants

*Applied for

STATIONARY SAMPLERS

BÜHLER 4010	SIGMA SD900 AWRS
	
Stationary sampler with pressure-vacuum principle for maximum volume accuracy, in accordance with ISO 5667	Stationary sampler with peristaltic principle for standard applications, in accordance with ISO 5667
▶ Maximum volume accuracy ▶ High performance cooling system (MCERTS certified) ▶ Particularly flexible due to a variety of bottle variants, housing materials and dosage options; up to double door measuring station with SC 1000 Controller ▶ PROFIBUS, MODBUS and GSM modem (optional) ▶ Water rinsing (optional)	▶ Suitable for very low and very high ambient temperatures ▶ Reduced maintenance due to spring loaded peristaltic pump ▶ Intuitive user guidance, fast programming and updates via computer ▶ SDI 12 connection for triggering sampling control (optional)
20 … 350 mL (optional: up to 500 mL)	10 … 10,000 mL
Pressure-vacuum principle; time, volume, flow or event proportional sampling	Peristaltic principle; time, volume or event proportional sampling
Monitoring of drinking water, surface water and indirect dischargers, sewers, rainwater and overflow tanks, influent and effluent of wastewater treatment plants	Monitoring of drinking water, surface water and indirect dischargers, sewers, rainwater and overflow tanks, influent and effluent of wastewater treatment plants

NEW

PARAMETERS

FLOW

Flow measurement

Flow is a key reference variable in water management:

- As a planning basis for new plant facilities and structures in the sewer network
- As an assessment basis for wastewater charges
- For open and closed loop control
- For plant optimisation
- For detecting faults

Flow measurements are performed in fully filled pipes and partly filled Venturi flumes.

We have a comprehensive range of technical options and the right solution for your application.

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

Product	**Flow measurement via water level with Venturi fittings**
	
Description	Flow measurement via cross section constriction and flow transition
Benefits	▶ Broad range of Venturi fittings ▶ Ready-made Venturi flumes ▶ Venturi throat ▶ Trapezoidal throated flumes for broad measuring range dynamics ▶ Sole plate for deposit free measurement sections ▶ In accordance with DIN EN ISO
Measuring range	From 1 L/s Max. 9 m^3/h
Method	Sub critical to super critical flow transition is enforced by defined constriction.
Application area	All liquid media
Measurement point	Partly filled Venturi flumes in all applications without backwater

APPLICATIONS

FLOW

Measurement technique	Venturi	Weir	Ultrasonic reflection measurement (Doppler)	Magnetic inductive measurement	Clamp-on measurement	Runtime difference measurement (transit time)	Magnetic sensor
							
Sewer network[1]	●	○	●	○	○	●	○
Wastewater treatment plant[2]	●	●	●	●	●	●	●
Roads[3]	●	●	●	○	○	●	●
Drinking water[4]	○	●	○	●	●	●	●
Calculating charges[5]	●	●	○	●	●	●	○
Backwater[6]		○	●	●	●	●	●
Open channel[7]	●	○	●			●	●
Fully filled pipe[8]			●	●	●	●	●
Volumes <5 L/s[9]	●	●	○	●	●	○	○
Local calibration[10]			●				●
Remote data transmission, protocols	●	●	●	●	●	●	●

● Suitable ○ Suitable for specific applications

[1] Mostly part filled Venturi flumes, particularly low maintenance instrumentation, no facilitation of deposits, high measuring range dynamics

[2] Fully and partly filled Venturi flumes, clean water, fats, sludge

[3] Partly filled Venturi flumes, sometimes with backwater, little calibration possibility, fewer solids, high measuring range dynamics

[4] Fully and partly filled Venturi flumes, clean water, few reflection particles, frequent backwater

[5] High degree of accuracy, low interference sensitivity

[6] Records the flow velocity

[7] Variable flowed through area, with recording of water level

[8] Dependent on the flow velocity

[9] Exact detection of even the smallest quantities

[10] Calibration to the local hydraulic situation

NEW

PARAMETERS

LEVEL

Level measurement

Level is the most common measurement variable in water management.

We have a comprehensive range of technical options and the right solution for your application.

		Ultrasound	Radar	Vibration fork	Float	Pressure cable sensor
Measurement technique						
Applications	Sewer network	●	●	●	○	○
	Wastewater treatment plant	●	●	●	●	●
	Roads	●	●	●	●	●
	Drinking water	●	●	●	●	●
Media	Liquid	●	●	●	●	●
	Foam		○			●
	Sludge	●	●	●	○	●

Would you like to know more? Simply call or click! You can find out where and how on the back of this catalogue.

					WEATHER		OTHER	
Pressure screw sensor	Bubbler	Capacitive	Conductive	Magneto resistive	Rain gauge	Weather station	Temp-erature	Air volume
								
○	●	●	○		●	●	●	
●	●	●	●	●	●	●	●	●
●	●	●	●	●	●	●	●	
●	●	●	●	●	●	●	●	
●	●	●	●	●			●	
●	●	●					○	
●		●	○				●	

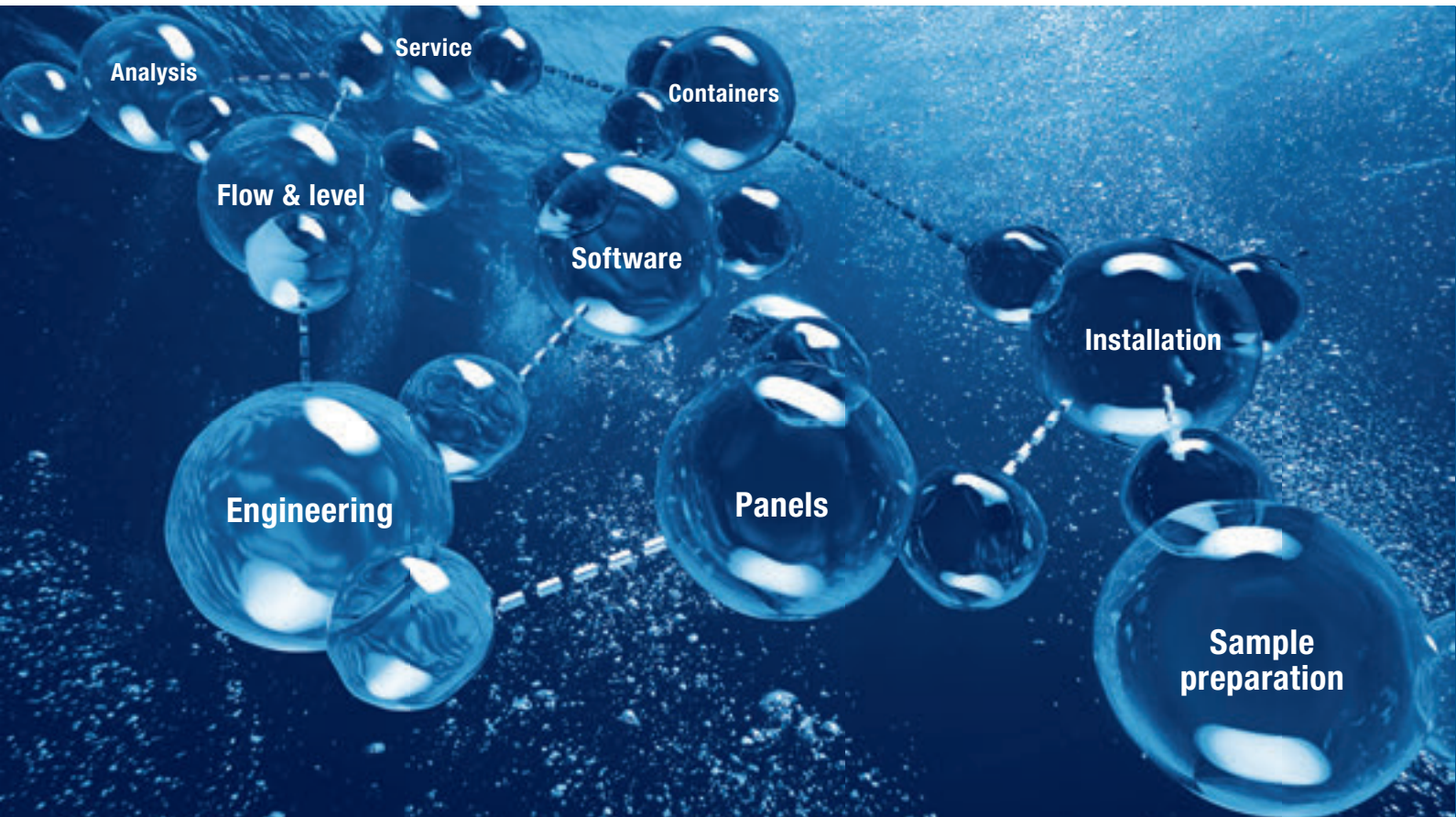
● Suitable ○ Suitable for specific applications

System solutions:
Connect and start measuring!

Do you want to construct, upgrade or modernise a plant? Our experienced engineers will find the right solution and will be available throughout the project phase.

With HACH LANGE, you have access to a high performance network: dedicated subsidiaries throughout Europe and co-operation with strong partners. You have an expert by your side during every project phase:

- In determining the right measurement points
- In choosing the right instruments for your application
- In planning feed lines, hardware, cabling, flow unit etc.
- In formulating the requirements profile for the application, parameter and instrument
- In deciding on the optimal communication and energy supply
- In choosing the right design; cabinet panel, wall panel, mobile panel, control house, container, transporter or trailer



Sample panels for drinking water and wastewater, monitoring of surface water, desalination plants and sewer network management etc.

Construct with HACH LANGE

"I now have systems that are adapted to my needs. I have set contacts to liaise with, who advise me during the various project phases."

- ▶ Instrument service Page 40–41
- ▶ Laboratory analysis Page 42–43

Do you have specific requirements? Ask us about a solution.

Mounted on a panel, in a trailer, in a container or as a turn-key monitoring station. With system solutions from HACH LANGE, we provide you with co-ordinated components. Your system is individually planned and constructed. The equipment covers all your required parameters.

Your project is safe in our hands, whether it be a local or international project. Your complete system is mounted on a panel and tested thoroughly. At the target site, you just connect the panel and start measuring!

Your instrumentation deserves the best care

We understand increased uptime and predictable costs are important to you. With our various service options, you can benefit from decades of practical experience and a qualified team of service engineers (certified DIN EN 13306).

We commission the instrumentation and train your employees thoroughly. However, in the event of a fault, you can contact our qualified service engineers. You will receive prompt assistance via remote diagnostics or a visit on-site.

We offer various service options: from one off inspections or service packages with a warranty extension, to a complete tailored service. Whatever you choose, you will always receive an inspection report in accordance with DIN ISO!

Test service for field bus networks

Optimise your field bus or SC 1000 network with the help of our qualified experts. Special instruments test every interface, regardless of instrument type and manufacturer.

The current network performance along with all instrument addresses are documented in the inspection report. HACH LANGE Service Engineers can train the operators on the network (if required) and inform them of the opportunities for optimisation.

Reliable operation with HACH LANGE

"I can request a service visit on my site. I chose the service option that suited me. I am kept informed about the status of my plant at all times."

► SC Controller
Page 12

The SC 1000 Digital Controller notifies the operating personnel via email or text message. Status, warning and error messages can be sent to the HACH LANGE service centre for remote diagnostics.

Co-ordination in the laboratory and in the process

With HACH LANGE, you receive laboratory analysis and process instrumentation from a single source – offering expertise from development to consulting. Our focus is on user safety, user friendly instrumentation and most importantly on quality.

Laboratory and process instruments use the same methods. Values are directly comparable with each other. The online sensors are checked by the laboratory instruments. Saving time, money and providing additional reliability.

Behind the success of HACH LANGE laboratory systems is a clear concept: water analysis as a complete solution. From sampling and sample preparation to measurement, documentation and quality control.

The sophisticated systems are comprised of instrumentation, consumables, reagents, and accessories for over 100 parameters.

Proven reagents, pre-dosed with high precision, greatly simplify the analysis. The simple handling rules out several error sources from the start.

RFID technology, the latest innovation, brings a new level of reliability to laboratory analysis for the traceability of samples and quality control.

LINK2SC: bi-directional communication (wireless or via cable) between photometer and controller for transparent analysis.

Practical solutions for use in the laboratory and in the field

- From a portable single parameter colorimeter or the spectrophotometer; to the laboratory robot for serial analysis
- Reagents for all important parameters from ammonium to zinc; from rapid screening tests to standard compliant analysis; with sample preparation and quality assurance
- Electrochemical instruments, electrodes and standard solutions
- Turbidity instruments in accordance with DIN EN ISO or USEPA, long-term stable prepared standards
- Fully equipped portable environmental laboratories

Confidence from HACH LANGE

"I obtain competent solutions for process and laboratory analysis from a single source. I save on training costs thanks to the standardised, intuitive operation of the instruments. I obtain verified results for my business."

Turbidity instruments in accordance with DIN EN ISO or USEPA, benchtop or portable

Single and multi-parameter instruments for pH, conductivity, oxygen, redox and many more

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UNITED FOR WATER QUALITY

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HACH LABORATORY QUICK GUIDE FOR FOOD APPLICATIONS

From process monitoring to quality control to wastewater, Hach® has the right tool for your challenging or routine applications. The comprehensive selection of Hach chemistries, spectrophotometers, electrochemistry meters and probes, and benchtop analysers provides the broadest range of analyses in the industry.

DR3900 Spectrophotometer and Chemistries

DR-Series Spectrophotometers and Hach chemistries are built on over 7 decades of water quality innovation to provide the most accurate and reliable results. Hach's integrated instrument-chemistry techniques are the industry standard.

Titralab AT1000

The Titralab Analyser is a one touch automatic titrator. Application packages cover a range of common food manufacturing parameters including pH, alkalinity, conductivity, and hardness. The AT1000 makes titration an easy and reliable analysis for any user.

HQ440D Meter

Hach HQD meters and versatile assortment of Intellical probes bring simplicity and consistency to electrochemical measurements. From pH, to DO, to ORP, to ISE – Hach electrochemical products deliver the highest quality results in an exceptionally sturdy package.

TL23 Turbidimeter

Turbidity measurement has never been easier. The TL23 Turbidimeter is the standard for demanding industrial turbidity applications. With tungsten or LED light sources and proven optics, no other instruments deliver more reliable, accurate, and stable measurements.

AS950 Automatic Sampler

The portable AS950 Automatic Sampler makes sampling easy and reliable. The rugged design ensures minimal maintenance and maximum uptime. The AS950 is configurable for almost any sampling scheme: fixed or portable, single or multi-bottle, composite or discrete.

Greyhound CHROMATOGRAPHY AND ALLIED CHEMICALS

HACH®

Be Right™

Spectrophotometric Measurements

Parameter	Platform	Product Number	Range*
Chemical Oxygen Demand	DR-Series Spectrophotometer	LCI400/LCI500/ LCK014/114/314/514/ 614/714/914/1014/1414	0 - 60,000 mg/L O_2
Nitrate	DR-Series Spectrophotometer	LCK339/340	0.23 - 35 mg/L NO_3-N
Phosphate	DR-Series Spectrophotometer	LCK348/349/350/049	0.05 - 30,0 mg/L PO_4-P
Ammonium	DR-Series Spectrophotometer	LCK302/303/304/305	0.015 - 130 mg/L NH_4-N
Total Nitrogen	DR-Series Spectrophotometer	LCK138/238/338	1 - 100 mg/L TN_b
Nitrite	DR-Series Spectrophotometer	LCK341/342	0.015 - 6,0 mg/L NO_2-N
Chloride	DR-Series Spectrophotometer	LCK311	1 - 1,000 mg/L Cl
Organic Acids	DR-Series Spectrophotometer	LCK365	50 - 2,500 mg/L CH_3COOH
Chlorine	DR-Series Spectrophotometer	LCK310/410	0.05 - 2.0 mg/L Cl_2
Iron	DR-Series Spectrophotometer	LCK320/321/521	0.01 - 6.0 mg/L Fe
Sulphate	DR-Series Spectrophotometer	LCK153/353	40 - 900 mg/L SO_4
Anionic Surfactants	DR-Series Spectrophotometer	LCK332/432	0.1 - 4.0 mg/L
Cationic Surfactants	DR-Series Spectrophotometer	LCK331	0.2 - 2.0 mg/L
Nonionic Surfactants	DR-Series Spectrophotometer	LCK333/334/433	0.2 - 2,0000 mg/L TRITONx100
Total Organic Carbon	DR-Series Spectrophotometer	LCK385/386/387	3 - 3,000 mg/L C
Hardness	DR-Series Spectrophotometer	LCK327/427	0.02 - 20 °dH

**Ranges reflect multiple chemistries. See www.hach.com for details.*

Electrochemical Measurements

Parameter	Platform	Electrode	Range
pH	HQD-Series Meter	PHC201	0 - 14 pH
Conductivity	HQD-Series Meter	CDC401	0.01 - 20,0000 µS/cm
BOD	HQD-Series Meter	LBOD101	0.1 - 20.00 mg/L O_2
DO	HQD-Series Meter	LDO101	0.1 - 20.00 mg/L O_2
ORP	HQD-Series Meter	MTC101	±1,200 mV
Ammonia	HQD-Series Meter	ISENH3181	0.01 - 14,000 mg/L NH_3-N
Sodium	HQD-Series Meter	ISENA381	0.023 - 23,000 mg/L Na
Chloride	HQD-Series Meter	ISECL181	0.1 - 35,500 mg/L Cl

Analysers

Parameter	Platform	Method	Range
pH	AT1000	Potentiometric	0 - 14 pH
Alkalinity	AT1000	Potentiometric Titration	40 - 2,000 mg/L $CaCO_3$
Conductivity	AT1000	Potentiometric	0.01 - 200,000 µS/cm
Hardness (ISE)	AT1000	Potentiometric Titration	20 - 720 mg/L $CaCO_3$
Moisture (Karl Fischer)	AT1000	Volumetric Titration	0 - 100% H_2O
Chloride	AT1000	Potentiometric Titration	5 - 400 mg/L Cl
Acidity	AT1000	Potentiometric Titration	2 - 24.3 mg/L $C_6H_8O_7$
Chlorine (Total)	AT1000	Amperometric Titration	0.003 - 5 mg/L Cl_2
Salt Content	AT1000	Potentiometric Titration	0.1 - 5% NaCl
Turbidity	TL23 Nephelometer	Nephelometric	0.01 - 10,000 NTU
Total Organic Carbon	QBD1200 Analyser	UV/Persulfate	0.4 - 100 mg/L TOC

Microbiological Measurements

Parameter	Platform	Method	Range
Yeast and Mold	Paddle Test	DOC316.53.01223	10^2 - 10^6 CFU
Total Aerobic Bacteria	Paddle Test	DOC316.53.01223	10^2 - 10^7 CFU

DOC062.52.20231.Apr16

HACH CHEMISTRIES, REAGENTS AND STANDARDS

Hach® has more than 60 years of history dedicated to formulating and packaging high-quality reagents for water analysis. We understand your applications and formulate our reagents to ensure exceptional performance and deliver results you can trust, time after time. Our expertise extends beyond chemistry formulation to the complete reagent system. Hach chemistries are rigorously tested in combination with our packaging and instruments to ensure the highest possible system performance. No other company can offer these advantages.

Greyhound
CHROMATOGRAPHY
AND ALLIED CHEMICALS

HACH®
Be Right™

Powder Pillows

Powder Pillows - low-price methods with long shelf life

Powder Pillows are available for a large number of parameters and measuring ranges. Hermetically sealed in aluminium foil pillows, the Permachem reagents have a shelf life of many years. The reagent is simply poured into the measuring cuvette together with the sample. The evaluation can be carried out visually, e.g. with a colour disk, or with a Hach photometer.

Part number	Parameter	Measuring range	Method	Method number	Quality control	Number of tests	PC II	DR900	DR1900	DR3900	DR6000	GHS hazard code
2242000	Aluminium	0.008 - 0.800 mg/L Al	Aluminon	8012	1417442	100	■	■	■	■	■	GHS05, GHS06, GHS07
2603700	Aluminium	0.002 - 0.250 mg/L Al	Eriochrome Cyanine R	8326	1417442	100			■	■	■	GHS02, GHS07, GHS08
2668000	Ammonia	0.01 - 0.50 mg/L NH_3-N	Salicylate	8155	15349	100	■	■	■	■	■	GHS05, GHS07
2459200	Ammonium compounds, quaternary	0.2 - 5.0 mg/L as CTAB	Direct Binary Complex	8337		100			■	■	■	GHS07
1206499	Barium	2 - 100 mg/L Ba	Turbidimetric	8014	1461142	100			■	■	■	GHS08
2141299	Benzotriazole, Tolyltriazole	1.0 - 20.0 Tolyltriazole 1.0 - 16.0 mg/L Benzotriazole	UV Photolysis	8079		100		■	■	■	■	GHS05, GHS07
1417099	Boron	0.2 - 14.0 mg/L B	Carmine	8015		100			■	■	■	GHS07
2802246	Chloramine, mono	0.04 - 4.50 mg/L Cl_2	Indophenol	10171		50	■	■	■	■	■	GHS05, GHS07
2105569	Chlorine, free	0.02 - 2.00 mg/L Cl_2	DPD	8021	1426810, 2630020	100	■	■	■	■	■	GHS07
1407099	Chlorine, free	0.1 - 10.0 mg/L Cl_2	DPD	8021		100	■	■	■	■	■	GHS07
2105528	Chlorine, free, Chlorine dioxide	0.02 - 2.00 mg/L Cl_2	DPD	8021	1426810, 2630020	1000	■	■	■		■	GHS07
2105628	Chlorine, total	0.02 - 2.00 mg/L Cl_2	DPD	8167	1426810, 2630020	1000	■	■	■		■	GHS07
2105669	Chlorine, total, Bromine, Iodine	0.02 - 2.00 Cl_2	DPD	8167	1426810, 2630020	100	■	■	■	■	■	GHS07
2770900	Chlorine dioxide	0.04 - 5.00 mg/L ClO_2	DPD/Glycine	10126		100	■	■	■	■	■	GHS07
1271099	Chromium	0.010 - 0.700 mg/L Cr (VI)	1,5-Diphenylcarbohydrazide	8023	1425610	100	■	■	■	■	■	GHS07, GHS08
2242500	Chromium, total	0.01 - 0.70 mg/L Cr	Alkaline Hypobromite Oxidation	8024	1425610	100		■	■	■	■	GHS05, GHS07, GHS08
2651600	Cobalt, Nickel	0.01 - 2.00 mg/L Co	PAN	8078	2150342, 1417642	100	■		■	■	■	GHS05, GHS07, GHS08, GHS09
2105869	Copper	0.04 - 5.00 mg/L Cu	Bicinchoninate	8506	12842	100	■	■	■	■	■	GHS07
2603300	Copper	2 - 210 µg/L Cu	Porphyrin	8143	12842	100		■	■	■	■	GHS02, GHS07
2430200	Cyanide	0.002 - 0.240 mg/L CN	Pyridine-Pyrazalone	8027		100		■	■	■	■	GHS07
246066	Cyanuric acid	5 - 50 mg/L	Turbidimetric	8139		50		■	■	■		GHS07
2544800	Iron	0.01 - 1.80 mg/L Fe	FerroMo	8365	1417542	100		■	■	■	■	GHS05, GHS07, GHS08

PC II: Single Parameter Colorimeter, DR900: Multi-Parameter Colorimeter, DR1900: Portable VIS Spectrophotometer, DR3900: Benchtop VIS Spectrophotometer, DR6000: Benchtop UV-VIS Spectrophotometer

-: product is not subject to classification

Hazard code descriptions: see page 9

Powder Pillows

Part number	Parameter	Measuring range	Method	Method number	Quality control	Number of tests	PC II	DR900	DR1900	DR3900	DR6000	GHS hazard code
2105769	Iron	0.02 - 3.00 mg/L Fe	FerroVer	8008	1417542	100	■	■	■	■	■	GHS05, GHS07, GHS08
2608799	Iron	0.012 - 1.800 mg/L Fe	TPTZ	8112	1417542	100	■	■	■	■	■	GHS05, GHS07, GHS08
230166	Iron	0.009 - 1.400 mg/L Fe	FerroZine	8147	1417542	50		■	■	■	■	GHS05, GHS06, GHS08
103769	Iron, ferrous	0.02 - 3.00 mg/L Fe (II)	1,10 Phenanthroline	8146	1417542	100		■	■	■	■	GHS07, GHS09
2430000	Manganese	0.1 - 20.0 mg/L Mn	Periodate Oxidation	8034	1279142	100	■	■	■	■	■	GHS02, GHS06, GHS07
2604100	Molybdenum	0.3 - 40.0 mg/L Mo	Mercaptoacetic Acid	8036	1426510	100		■	■	■	■	GHS05, GHS07, GHS08
2449400	Molybdenum, Molybdate	0.02 - 3.00 mg/L Mo	Ternary Complex	8169	1426510	100	■	■	■	■	■	GHS07
2243500	Nickel	0.02 - 1.80 mg/L Ni	Heptoxime	8037	1417642	50			■	■	■	GHS07, GHS08
2106169	Nitrate	0.3 - 30.0 mg/L NO_3-N	Cadmium Reduction	8039 HR	30749	100	■	■	■	■	■	GHS06, GHS07, GHS08, GHS09
2429800	Nitrate	0.01 - 0.50 mg/L NO_3-N	Cadmium Reduction	8192	30749	100		■	■	■	■	GHS07, GHS08, GHS09
2107169	Nitrite	0.002 - 0.300 mg/L NO_2-N	Diazotisation	8507	2340249	100		■	■	■	■	GHS07
2107569	Nitrite	2 - 250 mg/L NO_2	Ferrous Sulphate	8153		100		■	■	■	■	GHS07
2446600	Oxygen scavengers	5 - 600 µg/L Carbohydrazide	Iron Reduction	8140		100		■	■	■	■	GHS05, GHS07
2243900	Phenols	0.002 - 0.200 mg/L Phenol	4-Aminoantipyrine	8047		100			■	■	■	GHS07, GHS08
2106028	Phosphate, ortho	0.02 - 2.50 mg/L PO_4	Ascorbic Acid	8048	256949	1000	■	■	■	■	■	GHS07
2106069	Phosphate, ortho	0.02 - 2.50 mg/L PO_4	Ascorbic Acid	8048	256949	100	■	■	■	■	■	GHS07
212528	Phosphate, ortho	0.02 - 2.50 mg/L PO_4	Ascorbic Acid	8048	256949	1000	■		■	■	■	GHS07
2429700	Phosphonates	0.02 - 2.50 mg/L PO_4	Persulfate UV Oxidation	8007		100	■	■	■	■	■	GHS03, GHS07, GHS08
2459100	Potassium	0.1 - 7.0 mg/L K	Tetraphenylborate	8049	2240442	100			■	■	■	GHS05, GHS06, GHS07, GHS08
2429600	Silica	1 - 100 mg/L SiO_2	Silicomolybdate	8185	110649	100	■	■	■	■	■	GHS07
2459300	Silica	0.010 - 1.600 mg/L SiO_2	Heteropoly Blue	8186	110649	100		■	■	■	■	GHS05, GHS07, GHS08
2296600	Silver	0.02 - 0.70 mg/L Ag	Colorimetric	8120	1461342	50			■	■	■	GHS07, GHS08
2106769	Sulphate	2 - 70 mg/L SO_4	SulfaVer 4, turbidimetric	8051	257849	100	■	■	■	■	■	GHS07
2495300	Total Kjeldahl Nitrogen (TKN)	1 - 150 mg/L TKN	Nessler	8075		250		■	■	■	■	GHS02, GHS05, GHS06, GHS07, GHS09
2429300	Zinc	0.01 - 3.00 mg/L Zn	Zincon	8009	237842	100	■	■	■	■	■	GHS02, GHS06, GHS07, GHS08, GHS09

Swiftests

The right amout of DPD with the Swiftest

The Swiftest is a powder dispenser that releases the correct amount of DPD (N,N-diethyl-p-phenylenediamine) at the press of a button. It contains enough reagent for 250 chlorine tests (free or total chlorine). As a practical, attractively priced alternative, the Swiftest is ideal for laboratories with a high sample throughput, and for analysis in the field.

Part number	Product description	Measuring range	Method	Method number	Quality control	Number of tests	PC II	DR900	DR1900	DR3900	DR6000	GHS hazard code
2802300	Swiftest DPD Free chlorine reagent dispenser and reagent vial	0.02 - 2.00 mg/L Cl_2	DPD	8021	1426810, 2630020	250	■	■	■	■	■	GHS07
2105660	DPD Total chlorine, Swiftest dispenser reagent (refill)	0.02 - 2.00 mg/L Cl_2	DPD	8167	1426810, 2630020	250	■	■	■	■	■	GHS07, GHS09
2105560	DPD Free chlorine, Swiftest dispenser reagent (refill)	0.02 - 2.00 mg/L Cl_2	DPD	8021	1426810, 2630020	250	■	■	■	■	■	GHS07
2802400	Swiftest DPD Total chlorine reagent dispenser and reagent vial	0.02 - 2.00 mg/L Cl_2	DPD	8167	1426810, 2630020	250	■	■	■	■	■	GHS07, GHS09

PC II: Single Parameter Colorimeter, DR900: Multi-Parameter Colorimeter, DR1900: Portable VIS Spectrophotometer, DR3900: Benchtop VIS Spectrophotometer, DR6000: Benchtop UV-VIS Spectrophotometer

-: product is not subject to classification

Hazard code descriptions: see page 9

Accuvacs

Accuvac - analysing without pipetting

The secret of the Accuvac is the vacuum in the sealed glass cuvette containing a measured amount of reagent. The test is carried out by immersing the tip of the Accuvac in the sample, then breaking it by applying moderate pressure. The vacuum draws the sample into the cuvette, whilst ensuring thorough mixing. The resulting colour is measured visually or photometrically.

Part number	Parameter	Measuring range	Method	Method number	Quality control	Number of tests	PC II	DR900	DR1900	DR3900	DR6000	GHS hazard code
2502025	Chlorine, free, Chlorine dioxide	0.02 - 2.00 mg/L Cl_2	DPD	8021	1426810, 2630020	25	■	■	■	■	■	GHS07
2503025	Chlorine, total Bromine Iodine	0.02 - 2.00 mg/L Cl_2 0.05 - 4.50 mg/L Br_2 0.07 - 7.00 mg/L I_2	DPD	8167 Chlorine	2630020	25	■	■	■	■	■	GHS07
2505025	Chromium	0.010 - 0.700 mg/L Cr (VI)	1,5-Diphenylcarbohydrazide	8023	1425610	25	■	■	■	■	■	GHS07
2504025	Copper	0.04 - 5.00 mg/L Cu	Bicinchoninate	8026	2833649	25	■	■	■	■	■	GHS07
2506025	Fluoride	0.02 - 2.00 mg/L F	SPADNS	8029	29153	25	■	■	■	■	■	GHS05, GHS07
2507025	Iron	0.02 - 3.00 mg/L Fe	FerroVer	8008	1417542	25	■	■	■	■	■	GHS05, GHS07, GHS08
2510025	Iron	0.012 - 1.800 mg/L Fe	TPTZ	8112	1417542	25	■	■	■	■	■	GHS05, GHS07, GHS08
2514025	Iron	0.02 - 3.00 mg/L Fe (II)	1,10 Phenanthroline	8146	2833649	25		■	■	■	■	GHS07, GHS09
2511025	Nitrate	0.3 - 30.0 mg/L NO_3-N	Cadmium Reduction	8039	30749	25	■	■	■	■	■	GHS06, GHS08, GHS09
2512025	Nitrite	0.002 - 0.300 mg/L NO_2-N	Diazotisation	8507	2340249	25		■	■	■	■	GHS07
2501025	Oxygen, dissolved	6 - 800 µg/L O_2	Indigo Carmine	8316		25		■	■	■	■	GHS05, GHS08
2515025	Oxygen, dissolved	0.3 - 15.0 mg/L O_2	HRDO	8166		25	■	■	■	■	■	GHS05, GHS07, GHS08, GHS09
2516025	Ozone	0.01 - 0.25 mg/L O_3	Indigo	8311		25	■	■	■	■	■	GHS07
2517025	Ozone	0.01 - 0.75 mg/L O_3	Indigo	8311		25	■	■	■	■	■	GHS07
2518025	Ozone	0.01 - 1.50 mg/L O_3	Indigo	8311		25		■	■	■	■	GHS07
2508025	Phosphate, ortho	0.02 - 2.50 mg/L PO_4	Ascorbic Acid	8048	256949	25	■	■	■	■	■	GHS07
2525025	Phosphate, ortho	0.3 - 45.0 mg/L PO_4	Molybdovanadate	8114	256949	25		■	■	■	■	GHS05
2509025	Sulphate	2 - 70 mg/L SO_4	SulfaVer 4	8051	257849	25	■	■	■	■	■	GHS07

PC II: Single Parameter Colorimeter, DR900: Multi-Parameter Colorimeter, DR1900: Portable VIS Spectrophotometer, DR3900: Benchtop VIS Spectrophotometer, DR6000: Benchtop UV-VIS Spectrophotometer

-: product is not subject to classification

Hazard code descriptions: see page 9

Liquid Reagent Tests

Reagent solutions, economic liquid reagent tests and rapid liquid systems

Reagent tests for the determination of numerous parameters required in drinking, waste and process water applications as well as product control and monitoring. A cost-effective solution for your high-volume testing and serial analysis.

Part number	Parameter	Measuring range	Method	Method number	Quality control	Number of tests	PC II	DR900	DR1900	DR3900	DR6000	GHS hazard code
2458200	Ammonia	0.02 - 2.50 mg/L NH_3-N	Nessler	8038		250		■	■	■	■	GHS05, GHS06, GHS09
2242200	Cadmium	0.7 - 80 µg/L Cd	Dithizone	8017	1402442	60 - 100			■	■	■	GHS06, GHS07, GHS08, GHS09
2556900	Chlorine, free	0.02 - 5.00 mg/L Cl_2	DPD	10059	1426810, 2630020	450			■	■	■	GHS07
HPT210	Chlorine, free	0.02 - 2.00 mg/L	DPD		2630020, 1426810	100	■	■	■	■	■	GHS05
HPT310	Chlorine, free + total	0.02 - 2.00 mg/L Cl_2	DPD	RS	2630020, 1426810	100	■	■	■	■	■	GHS05
2557000	Chlorine, total	0.02 - 5.00 mg/L Cl_2	DPD	8370	2630020, 1426810	450			■	■	■	GHS05, GHS07
LCW510	Chlorine/Ozone	0.1 - 1.5 mg/L Cl_2 / O_3 (round cuvette)	DPD			100				■	■	GHS07
2242300	Chlorine dioxide	0.01 - 1.00 mg/L ClO_2	Chlorophenol Red	8065		100			■	■	■	GHS05, GHS07
HPT240	Chlorine dioxide	0.02 - 0.50 mg/L ClO_2	Amaranth Method			100			■	■	■	-
2651600	Cobalt, Nickel	0.01 - 2.00 mg/L Co	PAN	8078	2150342, 1417642	100	■		■	■	■	GHS05, GHS07, GHS08, GHS09
44449	Fluoride	0.02 - 2.00 mg/L F	SPADNS	8029	29153	125	■	■	■	■	■	GHS05, GHS07
2257700	Formaldehyde	3 - 500 µg/L CH_2O	MBTH	8110		100			■	■	■	GHS05, GHS07
2603100	Hardness	8 - 1000 µg/L $CaCO_3$	Chlorophosphonazo	8374	2833449	100			■	■	■	GHS05, GHS06, GHS07
2319900	Hardness, Ca and Mg	0.05 - 4.00 mg/L Ca as $CaCO_3$	Calmagite Colorimetric	8030	218710	100		■	■	■	■	GHS05, GHS07
179032	Hydrazine	4 - 600 µg/L N_2H_4	p-Dimethylaminobenz-aldehyde	8141		100		■	■	■	■	GHS05
LCW025	Hydrazine	0.01 - 2.0 mg/L N_2H_4	4-Dimethylaminobenzal-dehyde			60				■	■	GHS05
LCW058	Hydrogen peroxide	1 - 10 g/L H_2O_2	Peroxomolybdate			40				■	■	GHS05
230149	Iron	0.009 - 1.400 mg/L Fe	FerroZine	8147	1417542	500 - 1000			■	■	■	GHS05, GHS06, GHS08

PC II: Single Parameter Colorimeter, DR900: Multi-Parameter Colorimeter, DR1900: Portable VIS Spectrophotometer, DR3900: Benchtop VIS Spectrophotometer, DR6000: Benchtop UV-VIS Spectrophotometer

-: product is not subject to classification

Hazard code descriptions: see page 9

Liquid Reagent Tests

Part number	Parameter	Measuring range	Method	Method number	Quality control	Number of tests	PC II	DR900	DR1900	DR3900	DR6000	GHS hazard code
LCW021	Iron	0.005 - 0.25 mg/L Fe	Iron(II) ions react with FerroZine to form a violet complex compound			50				■	■	GHS05
2375000	Lead	5 - 150 µg/L Pb	LeadTrak	8317	1426210	20	■		■	■	■	GHS05, GHS07, GHS08
2651700	Manganese	0.006 - 0.700 mg/L Mn	PAN	8149	1279142	50	■	■	■	■	■	GHS05, GHS06, GHS08, GHS09
LCW532	Manganese	0.005 - 0.5 mg/L Mn	1-(2-pyridylazo)-2-naphthol (PAN)			50				■	■	GHS02, GHS05, GHS06, GHS08, GHS09
LCW032	Manganese	0.2 - 5 mg/L Mn (round cuvette or 10 mm rectangular cuvette)	Formaldoxime		LCA706	50				■	■	GHS05, GHS06, GHS07, GHS08, GHS09
2658300	Mercury	0.1 - 2.5 µg/L Hg	Cold Vapour Concentration	10065	1419542	25			■	■	■	GHS03, GHS05, GHS06, GHS07, GHS08, GHS09
2657512	pH	6.5 - 8.5 pH	Colorimetric Phenol Red			50	■	■				-
2076049	Phosphate, ortho	0.3 - 45.0 mg/L PO_4	Molybdovanadate	8114	2109210	250			■	■	■	GHS05, GHS07
2244100	Phosphate, ortho	0.23 - 30.00 mg/L PO_4	Amino Acid	8178	2109210	100		■	■	■	■	GHS05, GHS08
2076032	Phosphate, ortho	0.3 - 45.0 mg/L PO_4	Molybdovanadate	8114	2109210	50		■	■	■	■	GHS05, GHS07
LCW250	Reducing agent	0.05 - 1.0 mg/L DEHA	Iron Reduction Method			100				■	■	-
2553500	Silica	3 - 1000 µg/L SiO_2	Heteropoly Blue	8282	110649	100			■	■	■	GHS05, GHS08
2581400	Silica	3 - 1000 µg/L SiO_2	Heteropoly Blue	8282	110649	40			■	■	■	GHS05, GHS08
2678500	Silica	3 - 1000 µg/L SiO_2	Heteropoly Blue	8282	110649	250			■	■	■	GHS05, GHS07, GHS08
LCW028	Silica	0.01 - 0.8 mg/L SiO_2	Molybdenum Blue			50				■	■	-
2244500	Sulphide	5 - 800 µg/L S^{2-}	Methylene Blue	8131		100		■	■	■	■	GHS05, GHS08
LCW053	Sulphide	0.1 - 2.0 mg/L S^{2-}	Dimethyl-p-phenylenediamine			25 - 49				■	■	-
HPT430	Sulphite	0.1 - 5.0 mg/L SO_3	Hach Method		2267410	100			■	■	■	GHS07
LCW054	Sulphite	0.1 - 5.0 mg/L SO_3	Hach Method		2267410	100				■	■	-
2244600	Tannin & Lignin	0.1 - 9.0 mg/L as Tannic Acid	Tyrosine	8193		100		■	■	■	■	GHS05, GHS07, GHS08
2790800	Trihalomethanes	10 - 600 µg/L $CHCl_3$	THM Plus	10132		50 - 99			■	■	■	GHS05, GHS06, GHS07
2244700	Volatile acids	27 - 2800 mg/L HOAc	Esterification	8196		100		■	■	■	■	GHS05, GHS07, GHS08

Test 'N Tubes

Test 'N Tubes - Safe and convenient testing

Test 'N Tube cuvette tests are completely equipped with all premeasured reagents, optimised for reliable measuring results and easy handling. Capped 16 mm vials provide a self-contained package for mixing and measurement. All necessary reagents and vials are contained in the package.

Part number	Parameter	Measuring range	Method	Method number	Quality control	Number of tests	DR900	GHS hazard code
2604545	Ammonia	0.02 - 2.50 mg/L NH_3-N	Salicylate	10023	189149, 15349	25 - 50	■	GHS05, GHS07
2606945	Ammonia	0.4 - 50.0 mg/L NH_3-N	Salicylate	10031	189149, 15349	25 - 50	■	GHS05
2105545	Chlorine	0.09 - 5.00 mg/L Cl_2	DPD	10102	1426810, 2630020	50	■	GHS07
2125851	COD	3 - 150 mg/L O_2	Dichromate	8000	1218629, 1218649, 2253929	25	■	GHS05, GHS06, GHS08, GHS09
2125951	COD	20 - 1500 mg/L O_2	Dichromate	8000	1218629, 1218649, 2253929	25	■	GHS05, GHS06, GHS08, GHS09
2345852	COD	25 - 150 mg/L O_2	Dichromate without mercury (not approved for USEPA reporting purposes)	8000	1218629, 1218649, 2253929	25	■	GHS05, GHS09
2345952	COD	0 - 1500 mg/L O_2	Dichromate without mercury (not approved for USEPA reporting purposes)	8000	1218629, 1218649, 2253929	25	■	GHS05, GHS08, GHS09
2415851	COD	0.7 - 40 mg/L O_2	Dichromate	8000	1218629, 1218649, 2253929	25	■	GHS05, GHS06, GHS08, GHS09
2623451	COD	20 - 1000 mg/L O_2	Manganese (III)	10067	1218629, 1218649, 2253929	25	■	GHS05
2605345	Nitrate	0.2 - 30.0 mg/L NO_3-N	Chromotropic Acid	10020	30749	50	■	GHS05, GHS07
2608345	Nitrite	0.003 - 0.500 mg/L NO_2-N	Diazotization	10019	2340249	50	■	GHS07
2672245	Nitrogen, total	0.5 - 25.0 mg/L N	Persulphate Digestion	10071	189149, 15349, 2406549	25 - 50	■	GHS03, GHS05, GHS07, GHS08

DR900: Multi-Parameter Colorimeter

Please note: Some methods require reagent blanks. For these, the number of tests varies.

-: product is not subject to classification

Hazard code descriptions: see page 9

Test 'N Tubes

Part number	Parameter	Measuring range	Method	Method number	Quality control	Number of tests	DR900	GHS hazard code
2714100	Nitrogen, total	10 - 150 mg/L N	Persulphate Digestion	10072	15349, 2406549	25 - 50	■	GHS03, GHS05, GHS07, GHS08
2742545	Phosphate, ortho	0.06 - 5.00 mg/L PO_4	Ascorbic Acid	8048	2109210	25 - 50	■	GHS07
2742745	Phosphate, ortho + total	0.06 - 5.00 mg/L PO_4	Ascorbic Acid	8180	2109210	25 - 50	■	GHS03, GHS05, GHS08, GHS07
2767345	Phosphate, ortho	1.0 - 100.0 mg/L PO_4	Molybdovanadate	8114	256949	25 - 50	■	GHS05
2742645	Phosphate, total	0.06 - 3.50 mg/L PO_4	PhosVer 3 with Acid Persulfate Digestion	8190	2109210	25 - 50	■	GHS03, GHS05, GHS08, GHS07
2767245	Phosphate, total	1.0 - 100 mg/L PO_4	Molybdovanadate with Acid Persulfate Digestion	10127	256949	25 - 50	■	GHS03, GHS05, GHS08, GHS07
2760345	TOC	0.3 - 20.0 mg/L C	Direct	10129		25 - 50	■	GHS03, GHS05, GHS08, GHS07
2760445	TOC	100 - 700 mg/L C	Direct	10128		25 - 50	■	GHS03, GHS05, GHS08, GHS07
2815945	TOC	15 - 150 mg/L C	Direct	10173		25 - 50	■	GHS03, GHS05, GHS08, GHS07

GHS hazard codes

GHS01 GHS02 GHS03 GHS04 GHS05 GHS06 GHS07 GHS08 GHS09

Standard Solutions - Single parameter for Analytical Quality Assurance

Regular use of standard solutions can ensure laboratory process control, increase your confidence, and help provide evidence of performance to inspectors, regulators, and clients. Single parameters are available in a variety of analytes and concentrations for proof of accuracy.

Parameter	Part number	Product description	Concentration	GHS hazard code
Alkalinity	2349732	Sulphuric acid standard solution, 0.035 N, 100 mL MDB	0.035 N	GHS05
Alkalinity	20353	Sulphuric acid standard solution, 0.020 N, 1 L	0.020 N	GHS05
Ammonia	15349	Ammonia standard solution, 10 mg/L NH_3-N, 500 mL	10 mg/L NH_3-N	-
Ammonia	189149	Ammonia standard solution, 1mg/L NH_3-N, 500 mL	1 mg/L NH_3-N	-
Ammonia	2406549	Ammonia standard solution, 100 mg/L NH_3-N, 500 mL	100 mg/L NH_3-N	-
AOX	LCA390	Addista Mono standard for AOX cuvette test LCK390	Lot specific concentration	-
BOD	LCA555	Addista Mono standard for BOD cuvette test LCK555	200 mg/L O_2	GHS03, GHS07
BOD	1486510	BOD standard solution, 300 mg/L O_2, 10 mL, 16 pcs.	300 mg/L O_2	-
BOD	1486610	BOD standard solution, 3000 mg/L O_2, 10 mL, 16 pcs.	3000 mg/L O_2	-
Chlorine	LCA310	Addista Mono standard for chlorine cuvette test LCK310	25 - 30 mg/L Cl_2	-
Chlorine	1426810	Chlorine standard solution, 50-75 mg/L Cl_2 (NIST)	50 - 75 mg/L Cl_2	-
Chlorine	2630020	Chlorine standard solution, 25-30 mg/L Cl_2 (NIST), 20 pcs.	25 - 30 mg/L Cl_2	GHS05
Chlorine	2635300	SpecCheck Gel secondary standard Kit, LR chlorine, DPD, 0-2.0 mg/L Cl_2	0 - 2.0 mg/L Cl_2	-
COD	1218629	COD standard solution, 300 mg/L O_2 (NIST), 200 mL	300 mg/L O_2	-
COD	2253929	COD standard solution, 1000 mg/L O_2 (NIST), 200 mL	1000 mg/L O_2	-
COD	1218649	COD standard solution, 300 mg/L O_2 (NIST), 500 mL	300 mg/L O_2	-
Colour	141453	Colour standard solution, 500 Pt Co Units, 1 L	500 Pt Co units	GHS05
Colour	2602853	Colour standard solution, 15 Pt Co Units, 1 L	15 Pt Co units	GHS05
Conductivity	1440042	Sodium chloride standard solution, 1000 µS/cm (NIST), 100 mL	1000 µS/cm	-
Conductivity	1440049	Sodium chloride standard solution, 1000 µS/cm (NIST), 500 mL	1000 µS/cm	-
Conductivity	210553	Sodium chloride standard solution, 1990 µS/cm (NIST), 1 L	1990 µS/cm	-
Conductivity	2971849	Sodium chloride standard solution, 100 µS/cm (NIST), 500 mL	100 µS/cm	-
Conductivity	2972249	Sodium chloride standard solution, 10000 µS/cm (NIST), 500 mL	10000 µS/cm	-
Iron	1417542	Iron standard solution 100.0 mg/L Fe (NIST), 100 mL	100 mg/L Fe	GHS05
Nitrite	2340249	Nitrite standard solution, 250 mg/L NO_2-N, APHA, 500 mL	250 mg/L NO_2-N	GHS08
Phosphate	1424342	Phosphate standard solution, 15 mg/L PO_4, 100 mL	15 mg/L PO_4	-
Phosphate	17149	Phosphate standard solution, 50 mg/L PO_4 (NIST), 500 mL	50 mg/L PO_4	-
Phosphate	256949	Phosphate standard solution, 1 mg/L PO_4 , 500 mL	1 mg/L PO_4	-
Silica	110649	Silica standard solution, 1 mg/L SiO_2 (NIST), 500 mL	1 mg/L SiO_2	-
Sulphate	2175749	Sulphate standard solution, 1000 mg/L SO_4 (NIST), 500 mL	1000 mg/L SO_4	-
Sulphate	257849	Sulphate standard solution, 50 mg/L SO_4 (NIST), 500 mL	50 mg/L SO_4	-
Surfactants, non-ionic	LCA333	Addista Surfactants standard for LCK333 1g/L TRITON x 100	1 g/L TRITON x 100	-
Varies	244932	Sulphuric acid standard solution, 5.25 N, 100 mL	5.25 N	GHS05
Varies	20253	Sulphuric acid standard solution, 0.100 N, 1 L	0.100 N	GHS05
Varies	2332453	Sodium hydroxide standard solution, 6 N, 1 L	6.0 N	GHS05
Varies	2339349	Sulphuric acid 0.04 N, 500 mL	0.04 N	GHS05
Varies	28249	Potassium hydroxide standard solution, 8.00 N, 500 mL	8.00 N	GHS05, GHS07

-: product is not subject to classification

Hazard code descriptions: see page 9

Hach Spectrophotometers and Colorimeters

DR6000 UV-VIS Spectrophotometer

DR3900 VIS Spectrophotometer

DR1900 Portable VIS Spectrophotometer

DR900 Multi-Parameter Colorimeter

Pocket Colorimeter II Single Parameter Colorimeter

SL1000 PORTABLE PARALLEL ANALYSER (PPA)

Water quality testing. Dramatically streamlined.

The new Hach® SL1000 Portable Parallel Analyser (PPA) performs common water tests with less than half the manual steps. It produces highly accurate results with less opportunity for errors in a fraction of the time and allows for up to six parameters to be tested simultaneously.

Less variability

Avoid manual steps that can introduce variability, even when performed by experienced testers. Automation and internal temperature control make the entire process consistent and repeatable, while applying the same processes and reagents as current Hach methods.

Less headache

A single instrument combines colorimetric and electrochemical testing in a field kit that requires fewer bulky accessories. There are no powder pillows or glass vials to handle. All chemicals and processes are entirely contained inside the Chemkey.

Faster testing

Perform up to four colorimetric and two probe-based measurements in parallel, and complete the entire test suite in 25% of the time. Improve efficiency by completing more tests on site with faster results.

Chemkey technology

Chemkey reagents contain the same chemicals and execute the same process steps that you have trusted for decades - now delivered in a simple, self-contained package. EPA-approved for reporting of Free and Total Chlorine in drinking water applications.

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