

INFORMATION
LABORATORY ANALYSIS
UV-VIS SPECTROPHOTOMETER
DR 5000

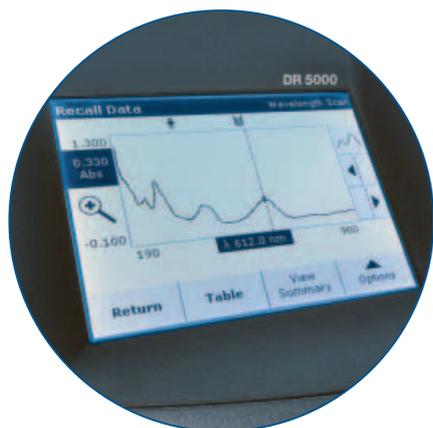


Simply more

DR 5000 UV-VIS Spectrophotometer

More than a Photometer

The DR 5000 UV-VIS Spectrophotometer embodies decades of experience from photometer manufacturers HACH and LANGE: with high-precision optics, fast scans, user-friendly menus and an ergonomic design, the DR 5000 is more than just a "normal" spectrophotometer. The combination of our proven test reagents from HACH and LANGE and their wide range of methods and parameters make the DR 5000 a unique flexible measuring system.



Precision scans in just seconds



Self-explanatory menus for greater reliability

Quality is the top priority

The DR 5000 is a high-precision UV-VIS spectrophotometer, with everything that is needed in the everyday routine of the laboratory. Whether in operation, control or research laboratories, top quality optical components ensure exact results and a long service life. The directly driven grating enables the wavelength to be set very quickly and precisely.

The deuterium and halogen lamps have their own cooling system, guaranteeing long operating times and excellent stability.

Data transfer via USB

Stored measurement data is transferred simply to the PC by means of a USB stick. No supplementary software is needed. In the reverse direction updates and new test data, which are available round the clock on the Internet are transferred to the DR 5000. A PC keyboard and a printer can also be connected through USB ports.

Very easy to operate

The large, backlit graphic display is touch-screen, making operation extremely easy. Clearly arranged menus guide the user to his or her desired goal, and user methods can be quickly programmed. Errors are excluded from the very start —a short introduction is enough. The ergonomic lid automatically triggers the measurement when it closes. More than 200 pre-programmed user-friendly HACH and LANGE tests are available.



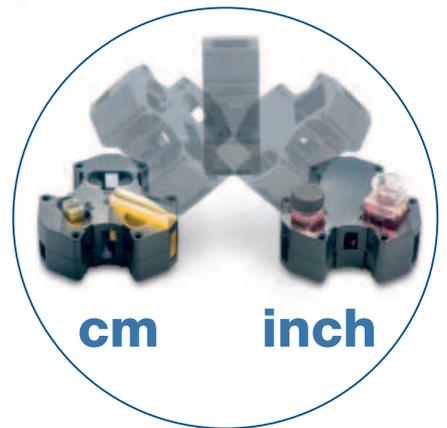


Fast data transfer with a USB stick

**Ingeniously simple—
simply ingenious**

The multi-cell holder in the DR5000 helps to keep the laboratory tidy. 10, 20 or 50 mm rectangular cells, or 1-inch round and rectangular ones are immediately at hand. This makes analysis more flexible. A changer module for up to seven 10 mm rectangular cells and a sipper module for pour-through measurement are separately available on request. If a specific temperature is required, a Peltier module ensures exact values between 15 and 50 °C.

The DR 5000 also has a holder for LANGE cuvette tests. A laser identifies the inserted cuvette from its barcode (IBR = Integrated Barcode Reading System). The DR 5000 starts the measurement automatically and displays the result in mg/l. The user does not even have to press a button!



Multi-cell holder for round and rectangular cells

More methods, more parameters

The world's biggest range of parameters, directly from the manufacturer

- Suitable solutions for every need
- Measuring instruments and reagents from a single source

Choice of numerous reagent variants

- Made-to-measure solutions for all requirements
- Flexible for the challenges of the future

Favorite Programs	
9	Aluminium ECR
78	Chlor Diox, Amaranth
76	Chlor Diox, DPD
120	Color 455nm
125	Color 465nm
025	Hydrazine
021	Iron 50 mm
032	Manganese
290	Manganese LR PAN
385	N Ammonia Salic.
	0.250 mg/l
	500 µg/l
	5.00 mg/L
	500 units
	500 units
	2.00 mg/l
	0.250 mg/l
	1.00 mg/l
	0.700 mg/l
	0.50 mg/l

Cancel	Select by Number	Remove Program	Start
	Surfactants		
	Bitter units		
	Oxygen		
	Chloride		
	Sulfite		
	Organic acids		
	Silica		
	Molybdate		
	And many more		

Ammonium
Nitrate
Phosphate
Nitrite
TNb
COD
TOC
ADK
Chlorine
Ozone
Chlorine dioxide
Iron
Manganese
Hardness
Hydrazine
DEHA
Reducing agents
Cadmium
Lead
Copper
Zinc

Discovering diversity

Cuvette tests from LANGE, PERMACHEM powder pillows and ACCUVACS from HACH—for the first time a photometer can measure the whole spectrum of ready-to-use reagents! Each user selects the test that is best suited to his daily routine. For example, chlorine:

- Fast and inexpensive with the SWIFTEST powder dispenser— one click dispenses the necessary amount of reagent.
- Standard-based and reliable with the cuvette test—exactly the right amount of reagent is present in the cuvette. Simply add the sample and evaluate—finished.



(1)

(2)



(4)

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(3)

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(9)

Cuvette test for standard-based results and simple handling



Reagents for water analysis and quality control

- (1) SWIFTEST for powder dispensing
- (2) PERMACHEM powder pillows
- (3) ACCUVAC
- (4) Evaluation in 1-inch round and rectangular cells
- (5) Liquid reagents
- (6) Trace analysis with 50 mm cells
- (7) ADDISTA system for quality assurance
- (8) DOSICAP ZIP cuvette lids with pre-portioned reagents
- (9) Cuvette tests with barcode and color coding

Mix-ups excluded—safety first

Analysis could not be simpler or safer. Cuvette tests are ready for immediate use anywhere and are officially approved. The DR 5000 calls up the correct test data itself after reading the barcode. The cuvette is rotated, and is read 10 times during a single rotation. Soiling on the cuvette is immediately recognised and its effects are automatically eliminated when the result is calculated.

All components of the cuvette test system can be checked with the practical ADDISTA multi-standard solutions.

Innovations, such as DOSICAP ZIP simplify the addition of exactly the right amount of solid reagent, without any aids. The cuvettes are a transport, reaction and measurement vessel in one and are recycled by HACH LANGE after use.

More options

Easy to program

→ **Quickly adjustable to new methods**

Easily changeable cell modules

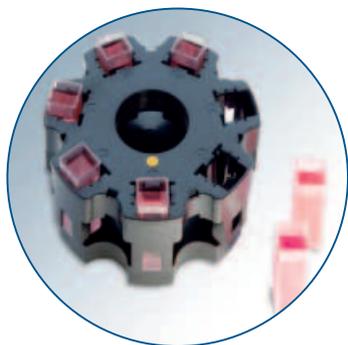
→ **Flexible response to changing requirements**

Self-explanatory operating menus

→ **Productive, thanks to avoidance of errors and loss of time**

Data transfer via USB stick

→ **Fast data storage and updating**



Seven in one in the changer module



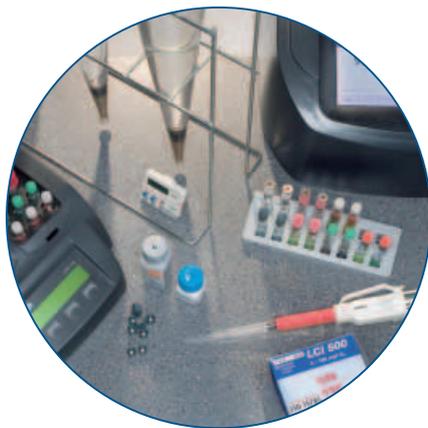
Ports for keyboard, printer or USB stick

Practical solutions for user applications

Users who need to evaluate large numbers of 10 mm rectangular cells will appreciate the changer module. It can accommodate up to seven cells. Ideal for enzymatic analysis in food laboratories, for example.

Operations and monitoring laboratories often analyse the same parameter in a lot of samples. This is where the sipper module excels; it quickly measures one sample after the other, without any

need to change the cell. The touch-screen makes entering the specific pump, waiting and purging times easy. Since large number of cell sizes can be accommodated, individual methods can be used. Alternatively, there is a manual pour-thru module without a sipper motor.



Reliable water supply

The thorough analysis of drinking water, raw and process water is an indispensable aid to avoiding disruption of operations and saving costs. In drinking water plants and industry, the DR 5000 monitors numerous treatment steps and process flows.

Demonstratable cleaning

Increasingly strict demands are made on the wastewater treatment sector. Time considerations and cost pressures make efficient working a necessity. With HACH LANGE reagents and instruments, this is not a problem. All components of the system are perfectly attuned to each other.

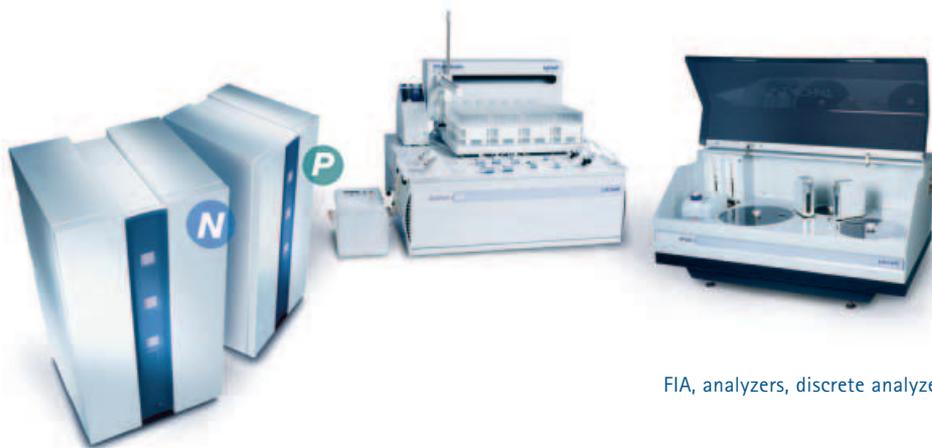
Sector-specific applications

Companies such as breweries need made-to-measure analysis for the quality assurance of raw materials and products. Outstanding flexibility and simple programming make the DR 5000 an ideal measuring instrument for these monitoring tasks.

Technical data

DR 5000 UV-VIS Spectrophotometer	Model no. LPV408 (including multi-cell holder)
Operating modes	Absorbance ($\pm 3 \text{ A}$), transmittance (%), concentration
Wavelength range	190–1,100 nm
Wavelength accuracy	$\pm 1 \text{ nm}$ in the range 200–900 nm
Wavelength reproducibility	$< 0.5 \text{ nm}$
Wavelength resolution	0.1 nm
Scan rate	1,200 nm/min in 1 nm steps
Spectral width	2 nm
Photometric accuracy	5 mAbs at 0.0–0.5 Abs; 1 % at 0.5–2.0 Abs
Photometric linearity	$< 0.5 \%$ at 2 Abs; A1 % at $> 2 \text{ Abs}$
Stray light	$< 0.05 \%$
Reference beam technology	To compensate for lamp ageing and network fluctuations
IBR barcode reading system	For automatic recognition of LANGE cuvette tests incl. 10-fold rotary measurement and error elimination
Cell module	Standard: Multi-cell holder for rectangular cells (10 mm, 20 mm, 50 mm, 1-inch) and round cells (1-inch) Optional: Changer module for up to seven rectangular cells (10 mm) Peltier module (15–50 °C) for rectangular cells (10 mm) Automatic sipper module for pour-thru cells Manual pour-thru module without sipper motor
Display	Backlit, high-resolution LCD display (320x240 pixel), touchscreen
Data storage	Up to 1,000 measured values, 20 wavelength scans, 20 time scans
Ports	1 USB port for a PC, 2 USB ports for printer, keyboard, USB stick
Protection class	IP 31
Power requirement	100–120 V; 200–240 V; 50/60 Hz; automatic switching
Dimensions	20 x 50 x 45 cm (H x D x W)
Weight	15.5 kg

More efficiency through laboratory automation



FIA, analyzers, discrete analyzer

Analyse more samples in less time with less effort—the DR 5000 belongs to a top-quality instrument family, which easily handles large series of samples. One product of this family is the QC 8500, a system for continuous flow injection analysis. With practical ready-to-use reagents, it analyses up to 120 samples per hour in accordance with USEPA, ISO and DIN standards. The AP 300 DISCRETE ANALYSER carries out up to 300 analyses per

hour, thanks to its dual pipette system. With top-quality ready-to-use reagents, it analyses water samples in batch and random mode. The GANIMEDE analysers are the specialists for parameters such as TN_b and total phosphate, which involve a digestion step. The patented fast digestion yields results within a few minutes. GANI CHEM, the ready-to-use reagents, saves time and money in the laboratory.

HACH LANGE Services



Ordering, information and advice:
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EU: +49 (0) 211 52 88-0



On-site support by our technical field staff.



Assurance of legal compliance, together with environmental protection through collection of used reagents.



Extended warranty with inspection contract.



www.hach-lange.com up to date and secure, with downloads, information and shop.



Regular customer information by post and email.

HACH LANGE—the specialists for water analysis

Everything from a single supplier

Whether field or laboratory analysis, samplers or process measurement technology, HACH LANGE stands for the total spectrum of water analysis—from visual methods to comprehensive systems of reagents, measurement technology and accessories.

For every application

Solutions from HACH LANGE are tailor-made for wastewater, drinking water or process water—for reliable control of operational processes and monitoring of legally prescribed limit values.

Parameters from A to Z

From ammonium to zinc—consistently user friendly and proven in daily practice. Regulatory bodies and industry know they can rely on HACH LANGE solutions for everything from sample preparation to quality control.

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