

Photometers, WTW

photoLab® series

Precise thanks to the high-quality lens system and fast thanks to barcode test recognition with automatic cuvette detection system. These instruments require little maintenance thanks to their exceptional photometric stability and wear-free design. Extensive on-board AQS/IQK guarantees reliable results during measurement and documentation. Values can be read off as concentration, extinction or transmission. More than 200 programmed methods with all essential settings for test sets are available for downloading and updating at any time from the Internet. The methods include all common parameters for CSB, analysis of sewage and drinking water, also for sea water and for pisciculture and fish farming. Users are thus provided with both a high-quality and economical solution for everything from routine measurements to laboratory analysis. All photometers feature date and time and come with an RS 232 interface. 2 years warranty.

	photoLab® S6	photoLab® S12
Applications	Routine measurements in waste and drinking water, battery version optional	Routine measurements in waste and drinking water, comprehensive laboratory tests, battery version optional
Wavelengths	6 wavelengths: 340,445, 525, 550, 605, 690 nm	12 wavelengths: 340, 410, 445, 500, 525, 550, 565, 605, 620, 665, 690, 820 nm
Own methods	no	50
Cuvettes	Round 16 mm	Round 16 mm; rectangular 10, 20, 50 mm
Extinction range	0.3 to 3.2	0.3 to 3.2
Measured value memory	500	500

Article	Order No.
① Photometer photoLab S 6 for routine measurements with the convenient cuvette tests	80 81 32013

Article	Order No.
② Photometer photoLab S12 - round and rectangular cuvettes for measuring also low concentrations and for using the more economical reagent tests 50 own method places for convenient measuring of own analyses - kinetics function - economical allround photometer in each laboratory through 12 wavelengths	80 81 32024



Spectrophotometers VIS and UV/VIS: photoLab® 6000 series

The combination of systematic and spectral analysis:

For the analysis of standard parameters, such as for sewage and drinking water, in combination with the functions for extensive spectral measurements and stepless scan setting of 190 / 320 – 1100 nm. Spectra, multiple wavelength measurements and kinetics tests can conveniently be done, as well as routine measurements!

Spectral analysis from 190 – 1100 nm

- Absorption spectra
- Kinetics measurements
- Multiple wavelength measurements incl. special methods and ADMI colorimetry
- 20 user profiles (each) and calculation methods (max. 50) can be saved

Systematic analysis with commercial test records

- Over 200 methods for standard parameters in analysis on sewage and drinking water, with CSB-determination, direct methods such as SAK at 354 nm and reagent-free methods such as colouring
- Bar code recognition for test records in round and rectangle cuvettes
- Automatic cuvette recognition for 16, 10, 20 and 50 mm without adapter change
- 100 user-defined methods
- Timer, up to 3 parallel

AQS:

- Multi-step AQS with user administration and extensive test means for photometer and used test records. The AQS-functions can be retrieved directly via function keys in the respective measurement mode.
- Calibration intervals for device and test records (time or number of measurements)
- Photo check: user-guided check of the zero point, bar code reading facility, 3 wavelengths at 4 measurement points (linearity)
- Grey filter
- UV/VIS-standard solutions (e.g. holmium oxide solution)
- Specifications for control standard for standard parameters including tolerance specifications
- Matrix check and increase procedure with measurement value calculation and retrieval rates

Batch certificates ensure the quality of each individual test batch and help with saving the plausibility of results.

Data management

2 USB interfaces provide data exchange (by USB-stick or via USB-hub in a bigger PC environment). The exchange is bi-directional and makes simple handling for saving and updating possible:

- Measurement data records and PDF files
- Spectra and kinetics data
- Software updates
- Method updates
- PC-software for data management

By means of a bar code reader, also uncoded tests and sample names can be read. In addition, an RS 232 interface provides another connection to peripheral devices.

User-friendly operation

- User guidance on the screen
- Function keys F1-F4 for quick working with menu-dependent function assignment
- Frequent functions in direct access (Print, Save)
- Automatic list of favourites for test record
- Selection lists
- Data filter for selective data editing



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④

Article	Order No.
③ photoLab® 6100 VIS Spectral photometers for systematic and spectral analysis from 320-1100 nm (specify power supply)	10 81 20201
④ photoLab® 6600 UV-VIS Spectral photometers for systematic and spectral analysis from 190-1100 nm (specify power supply)	10 81 20202



⑤ Mobile colorimeters: the pHotoFlex® series

The colorimeters of this series convince by their sophisticated technology for use on site, comprising an optional LabStation for easy evaluation and execution of laboratory tasks. A large illuminated graphic display guides the user through all functions. A laboratory station with battery and charging function is available as an accessory for the the basic battery-operated model (4 AA batteries). Routine data measurement and evaluation can then be performed even more conveniently with an external scanner and evaluation software.

pHotoFlex®STD

For all those who only need photometry functions: more than 150 methods.

pHotoFlex®pH

Colorimeter with electrochemical pH and redox option. Additional methods for ammonia and carbon dioxide.

pHotoFlex®Turb

Same as pHotoFlex pH, plus turbidity measurement from 0 to 1100 NTU / FNU.

Photometer functions

- 6 wavelengths: 436, 517, 557, 594, 610, 690 nm, LEDs with filter, accuracy < 2 nm
- Extinction range: 0 – 2 E
- 2 cuvette sizes for a large range of concentration: 28 mm, 16 mm; variable cuvette height from 91 to 104 mm for the 16 mm cuvette
- Up to 200 method-related data for a large number of test sets, extendible over the Internet, for drinking- and waste water analytics, CSB determination
- Data memory for 1000 measurements
- 100 own methods
- Coloring measurement according to EN ISO 7887 (exactly 436 nm, 517 nm, 610 nm)

pH functions

- pH meter with temperature compensation and 3-point calibration
- pH -2.00 to 16.00 (+/- 0.01), temperature: -5.0 to 100.0 °C
- Automatic buffer recognition: TEC / NIST

Turbidity functions

- IR LED according to DIN 27027/ISO 7027
- Measuring range: 0-1100 NTU / FNU
- Resolution: 0-9.99 NTU: 0.01; 10-99 NTU: 0.1; 100-1100 NTU: 1.0
- 3-point calibration with standards (0.02 – 10 – 1000 NTU)

Article	Order No.
pHotoFlex STD, incl. batteries (4 AA)	10 81 21105
pHotoFlex pH pocket photometer, incl. batteries (4 AA)	80 81 51100
pHotoFlex Turb pocket photometer, incl. batteries (4 AA)	80 81 51110

Accessories

Article	Order No.
pHotoFlex rechargeable battery	80 81 51300
Rechargeable battery + mains plug for all pHotoFlex models	
LabStation	80 81 51301
Laboratory station with pHotoFlex software for all pHotoFlex models, incl. rechargeable battery and mains cable, laboratory interface cable (9-pole)	
• simplified operation for routine measurements	
• more functionality (barcode support)	
• better input and output of data through pHotoFlex software	
Interface cable AK540/B	80 81 52842
Unit/PC (6-pole) via RS232	

Accessories pH

Article	Order No.
pH combination electrode SenTix 41	61 81 21635
pH combination electrode SenTix 41-3	61 81 21636
pH buffer TPL4	61 81 21800
pH buffer TPL7	61 81 28802



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⑥ Reagents for photoLab® and photoFlex® series

Article	Model	Measuring range	Order No.	PU pc/Pack
Al aluminium RT ¹⁾	14825	0.020-1.20 mg/l Al	80 81 25425	300
NH ⁴ ammonium RT ¹⁾	14752	0.010-3.00 mg/l NH ⁴ -N	80 81 25426	500
NH ⁴ ammonium KT	A6	0.20-8.00 mg/l NH ⁴ -N	10 81 25072	25
Pb lead RT ¹⁾	09717	0.010-5.00 mg/l Pb	80 81 25034	50
Cadmium RT ¹⁾	01745	0.002-0.500 mg/l Cd	80 81 25051	55
Cadmium KT	14834	0.025-1.000 mg/l Cd	80 81 25314	25
Chlorine KT free	00595	0.03-6.00 mg/l Cl ₂	80 81 25419	200
Chlorine KT free + total	00597	0.03-6.00 mg/l Cl ₂	80 81 25420	200
Chlorine dioxide RT ¹⁾	00608	0.020-10.00 mg/l ClO ₂	80 81 25017	200
Chromate KT	14552	0.05-2.00 mg/l Cr	80 81 25341	25
Cyanide KT	14561	0.010-0.500 mg/l CN	80 81 25344	25
Cyanide RT ¹⁾²⁾	09701	0.002-0.500 mg/l CN	80 81 25492	100
COD KT	C3	10-150 mg/l CSB	10 81 25070	25
COD KT	C4	25-1500 mg/l CSB	10 81 25071	25
Iron RT ¹⁾	14761/1	0.005-5.00 mg/l Fe	80 81 25435	1000
Iron RT ¹⁾	14761/2	0.005-5.00 mg/l Fe	80 81 25439	250
Fluoride RT ¹⁾²⁾	14598	0.10-20.0 mg/l F	80 81 25048	100
Total hardness KT	00961	0.7-30.1 °d	80 81 25039	25
Copper RT ¹⁾	14767	0.02-6.00 mg/l Cu	80 81 25441	250
Magnesium KT	00815	5.0-75.0 mg/l Mg	80 81 25043	25
Manganese KT	00816	0.01-10.0 mg/l Mn	80 81 25035	25
Manganese RT ¹⁾	14770/1	0.10-5.00 mg/l Mn	80 81 25442	500
N total KT	14537	0.5-15.0 mg/l N _{total}	80 81 25358	25
Nitrate KT	14542	0.5-18.0 mg/l NO ₃ -N	80 81 25410	25
Nitrate RT ¹⁾²⁾	14773	0.2-20.0 mg/l NO ₃ -N	80 81 25444	100
Nitrite RT ¹⁾	14776/1	0.005-1.000 mg/l NO ₂ -N	80 81 25445	1000
Nitrite RT ¹⁾	14776/2	0.005-1.000 mg/l NO ₂ -N	80 81 25440	335
Nitrate KT ²⁾	N2	0,5-25 mg/l NO ₂ -N	10 81 25073	25
Nitrite KT	N5	0,01-0,7 mg/l NO ₂ -N	10 81 25074	25
Ozone RT ¹⁾	00607/1	0.010-4.00 mg/l O ₃	80 81 25016	200
Ozone RT ¹⁾	00607/2	0.010-4.00 mg/l O ₃	80 81 25054	1200
Phosphate RT ¹⁾	14842	0.5-30,0 mg/l PO ₄ -P	80 81 25447	400
Phosphate RT ¹⁾	14848/1	0.01-5.00 mg/l PO ₄ -P	80 81 25446	420
Phosphate KT (Ptotal)	P6	0,05-5,00 mg/l PO ₄ -P 0,05-1,50 mg/l Pges	10 81 25075	25
Phosphate KT	P7	0.3-15.0 mg/l PO ₄ -P 0.3-15.0 mg/l Pges	10 81 25076	25
Sulfate KT	14548	5,0-250 mg/l SO ₄	80 81 25414	25
Zinc RT ¹⁾²⁾	14832	0.05-2.50 mg/l Zn	80 81 25451	90

Other tests on request, method data can be updated from the Internet.

1) not for photoLab S6

2) not for pHotoFlex®

