

# Photometer AL200



Designed to meet the latest technical requirements, the AL200 photometer can be used in practically every area of water analysis.

The high-precision optics with its top-quality interference filters uses long-term stable LEDs as light-source. Because there are no moving parts, the entire measurement device requires absolutely no maintenance.

Precise and reproducible analysis results are obtained in a short time. The units impress with their user-friendliness, ergonomic design, compact dimensions and easy handling.

The tests are conducted using either AQUALYTIC® tablet reagents with long-term stability and a guaranteed minimum 5 or 10 year shelf life or using liquid reagents.

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## Highlights

- Drift-free results through high quality interference filter
- Scroll Memory
- Infra-red interface
- Real-Time-Clock and Date
- Calibration Mode
- Backlit Display
- Storage Function
- One Time Zero (OTZ)
- Waterproof<sup>\*)</sup>

<sup>\*)</sup> as defined in IP 68, 1 hour at 0.1 meter

## Scroll Memory (SM)

For multi-parameter instruments, the order of the various methods is determined. To avoid unnecessary scrolling for the required test method, the instrument memorizes the last method used before switching off the instrument. When the instrument is switched on again, the scroll list comes up with the last used test method first. This allows for faster access to favored methods.

## Zero Setting (OTZ)

It is not necessary to zero the instrument each time. The zero setting is held in memory until the device is turned off (One Time Zero - OTZ). The zero setting can be confirmed whenever it is useful.

## Manufacturers Test Certificate M

Besides the "Certificate of Compliance" which is supplied with the AL100, manufacturers test certificates M are available at cost on request. Manufacturers test certificates M are individually supplied per instrument and per method.

The manufacturers test certificate M has to be ordered together with the new instrument and cannot be delivered at a later stage.

➔ Reagents (order codes), please see pages 40 onwards

## Technical data

<b>Optics</b>	LEDs, interference filters (IF) and photo sensor in transparent sample chamber. Depending on the version, up to 3 different interference filters are used. Wavelength specifications of interference filters: 430 nm $\Delta\lambda = 5$ nm 530 nm $\Delta\lambda = 5$ nm 560 nm $\Delta\lambda = 5$ nm 580 nm $\Delta\lambda = 5$ nm 610 nm $\Delta\lambda = 6$ nm 660 nm $\Delta\lambda = 5$ nm
<b>Wavelength Accuracy</b>	$\pm 1$ nm
<b>Photometric Accuracy<sup>4)</sup></b>	3% FS (T = 20°C – 25°C)
<b>Photometric Resolution</b>	0.01 A
<b>Power Supply</b>	4 batteries (AA), capacity approx. 53 hours or 15000 tests (continuous operation without display lighting)
<b>Auto - OFF</b>	automatic switch-off
<b>Display</b>	backlit LCD (on keypress)
<b>Storage</b>	internal ring memory for 16 data sets
<b>Interface</b>	infrared interface for test data transfer to IRiM
<b>Additional feature</b>	real time clock and date
<b>Calibration</b>	factory calibration and user calibration. Reset to factory calibration possible
<b>Dimensions</b>	190 x 110 x 55 mm (L x W x H)
<b>Weight</b>	basic unit approx. 455 g (with batteries)
<b>Environmental conditions</b>	temperature: 5–40°C rel. humidity: 30–90% (non condensing)
<b>Approval</b>	CE

<sup>4)</sup> tested with standard solutions

## Accessories

Item	Code
Set of 12 round cuvettes with lid Height 48 mm, Ø 24 mm	197620
Set of 5 round cuvettes with lid Height 48 mm, Ø 24 mm	197629
Adapter for round cuvettes ø 16 mm	19802190
Membrane filter set for use when preparing samples, 25 membrane filters, 0,45 µm, 2 syringes 20 ml	366150
Cuvette stand for 6 round cuvettes Ø 24 mm, acrylic glass	418951
Cuvette stand for 10 cuvettes (Ø 16 mm or □ 13,5 mm), acrylic glass	418957
Cleaning cloth for cuvettes	197635
Set of 12 sealing rings for round cuvette ø 24 mm 197626	
4 batteries (AA)	1950025
Battery lid	19802241
Measuring beaker, volume 100 ml	384801
Plastic stirring rod, 13 cm length	364100
Plastic stirring rod, 13 cm length, (10 pc.)	364120
Plastic stirring rod, 10 cm length	364109
Plastic stirring rod, 10 cm length, (10 pc.)	364130
Infra-red data transfer modul IRiM	4214050



## Delivery Content

Each AL200 is supplied in a sturdy plastic case with 4 batteries (AA), 3 round cuvettes (glass) with lids, 1 stirring rod, 1 brush & 1 syringe, tablet reagents and/or liquid reagents, warranty information, certificate (Certificate of Compliance) and instruction manual.

You can find updated information on parameters and measuring ranges on our website at [www.aqualytic.de](http://www.aqualytic.de)

# Photometer AL200

## Single-Parameter

Test	Code
<b>COD</b> , tube tests, without reagents 3 - 150 mg/l O <sub>2</sub> (ø 16 mm) 15 - 300 mg/l O <sub>2</sub> (ø 16 mm) <span style="background-color: red; color: white; padding: 2px;">soon available!</span> 20 - 1500 mg/l O <sub>2</sub> (ø 16 mm) 200 - 15000 mg/l O <sub>2</sub> (ø 16 mm)	42892502

## 2in1

Test	Code
<b>Chlorine, pH</b> , tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH	42889402
<b>Chlorine, pH</b> , liquid reagents 0.02 - 4 mg/l Cl <sub>2</sub> / 6.5 - 8.4 pH	42889412
<b>Copper, pH</b> tablet reagents 0.05 - 5 mg/l Cu / 6.5 - 8.4 pH	42872102
<b>Hydrogen peroxide, pH</b> (no OTZ) liquid reagents 1 - 50 mg/l H <sub>2</sub> O <sub>2</sub> / 40 - 500 mg/l H <sub>2</sub> O <sub>2</sub> 6.5 - 8.4 pH	42888102

## 3in1

Test	Code
<b>Chlorine, pH, Bromine</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0.05 - 13 mg/l Br	42861802
<b>Chlorine, pH, Cyanuric acid</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0 - 160 mg/l cyanuric acid	42860102
<b>Chlorine, pH, Cyanuric acid</b> liquid reagents for chlorine and pH 0.02 - 4 mg/l Cl <sub>2</sub> / 6.5 - 8.4 pH 0 - 160 mg/l cyanuric acid	42882002
<b>Chlorine, pH, Acid capacity KS4.3</b> , tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0.1 - 4 mmol/l	428 89 012

<b>Chlorine, pH, Acid capacity KS4.3</b> liquid reagents for chlorine and pH 0.02 - 4.0 mg/l Cl <sub>2</sub> / 6.5 - 8.4 pH 0.1 - 4 mmol/l	428 89 202
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<b>Chlorine, pH, Alkalinity-M</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 5 - 200 mg/l CaCO <sub>3</sub> (TA)	42889002
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<b>Chlorine, pH, Alkalinity-M</b> liquid reagents for chlorine and pH 0.02 - 4 mg/l Cl <sub>2</sub> / 6.5 - 8.4 pH 5 - 200 mg/l CaCO <sub>3</sub> (TA)	42889302
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## 4in1

Test	Code
<b>Chlorine, pH, Cyanuric Acid, Acid capacity KS4.3</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0 - 160 mg/l cyanuric acid	428 60 512

0,1 - 4 mmol/l

<b>Chlorine, pH, Cyanuric Acid, Acid capacity KS4.3</b> liquid reagents for chlorine and pH 0.02 - 4 mg/l Cl <sub>2</sub> / 6.5 - 8.4 pH 0 - 160 mg/l cyanuric acid / 0.1 - 4 mmol/l	428 60 522
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<b>Chlorine, pH, Cyanuric acid, Alkalinity-M</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0 - 160 mg/l cyanuric acid 5 - 200 mg/l CaCO <sub>3</sub> (TA)	42860502
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<b>Chlorine, pH, Cyanuric acid, Alkalinity-M</b> liquid reagents for chlorine and pH 0.02 - 4 mg/l Cl <sub>2</sub> / 6.5 - 8.4 pH 0 - 160 mg/l cyanuric acid / 5 - 200 mg/l CaCO <sub>3</sub> (TA)	42860542
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<b>Chlorine, pH, Urea, Acid capacity KS4.3</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0 - 160 mg/l cyanuric acid 0.1 - 4 mmol/l / 0.1 - 2.5 mg/l Urea 0.2 - 5 mg/l Urea (diluted)	428 62 912
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<b>Chlorine, Chlorine dioxide, pH, Acid capacity KS4.3</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.02 - 11 mg/l ClO <sub>2</sub> 6.5 - 8.4 pH / 0.1 - 4 mmol/l	428 63 802
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## 5in1

Test	Code
<b>Chlorine, pH, Cyanuric acid, Alkalinity-M, Calcium hardness</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0 - 160 mg/l cyanuric acid 5 - 200 mg/l CaCO <sub>3</sub> (TA) / 0 - 500 mg/l CaCO <sub>3</sub> (CaH)	42861202

<b>Chlorine, pH, Alkalinity-M, Cyanuric Acid, Calcium hardness</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0 - 160 mg/l cyanuric acid 5 - 200 mg/l CaCO <sub>3</sub> (TA) / 0 - 500 mg/l CaCO <sub>3</sub> (CaH)	428 61 202
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## 6in1

Test	Code
<b>Chlorine, Bromine, pH, Acid capacity KS4.3, Cyanuric Acid, Calcium hardness</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 0.05 - 13 mg/l Br <sub>2</sub> / 6.5 - 8.4 pH 0 - 160 mg/l cyanuric acid / 0.1 - 4 mmol/l 0 - 500 mg/l CaCO <sub>3</sub> (CaH)	428 61 912

<b>Chlorine, Bromine, pH, Cyanuric acid, Alkalinity-M, Calcium hardness</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 0.05 - 13 mg/l Br / 6.5 - 8.4 pH 0 - 160 mg/l cyanuric acid / 5 - 200 mg/l CaCO <sub>3</sub> (TA) 0 - 500 mg/l CaCO <sub>3</sub> (CaH)	42861902
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<b>Chlorine, pH, Cyanuric acid, Alkalinity-M, Copper, Iron</b> tablet reagents 0.01 - 6.0 mg/l Cl <sub>2</sub> / 0.1 - 10 mg/l Cl <sub>2</sub> * 6.5 - 8.4 pH / 0 - 160 mg/l cyanuric acid 5 - 200 mg/l CaCO <sub>3</sub> (TA) / 0.05 - 5 mg/l Cu 0.02 - 1 mg/l Fe <sup>2+/3+</sup>	42862102
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\* Delivery without reagents for measuring range 0.1 - 10 mg/l Cl<sub>2</sub>

### Verification Standard Kit

The verification standard kit for the AL200 is designed to assure the user of the accuracy and the reliability of the results. The kit contains one zero standard, 6 different cuvettes for checking 6 different wave lengths and allows checking the complete range of AL200 photometers. The shelf life of the verification standard kit is two years from the date of production, provided that storage and use are in accordance with the instructions provided. Measurements are taken in mAbs.

**Verification Standard Kit** 4215670



### Reference Standard Kits for AL200

The reference standards are designed to check the accuracy and the reliability of the results.

It is not possible to calibrate the photometer with the reference standards.

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

**Kit Chlorine** for instruments with tablet / liquid reagent 0.2\* and 1.0\* mg/l 4275650

**Kit Chlorine** for instruments with tablet / liquid reagent 0.5\* and 2.0\* mg/l 4275655

**Kit Chlorine** for instruments with tablet / liquid reagent 1.0\* and 4.0\* mg/l 4275656

**Kit pH** for instruments with tablet / liquid reagent 7,45\* pH 4275670

\* Approximate figure, actual figure specified in certificate of analysis enclosed

