

# Photometer AL250



The AL250 models each offer one test method, while the AL250+ units are programmed for a number of different parameters. The units supply accurate, reproducible results very quickly. Other major advantages include ease of operation, ergonomic design, compact dimensions and safe handling.

The calibration and software-based adjustment options mean that the AL250 is also suitable for use as a testing instrument.

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

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## Highlights

- Waterproof
- Automatic Switch-Off
- Real-Time-Clock and Date
- Calibration Mode
- Backlit Display
- Storage Function
- Suitable for use as a testing instrument

## Scroll Memory (SM)

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.

## N.I.S.T Traceability

The instruments have a factory calibration, which is related to internal standards which are not N.I.S.T traceable. The instrument may be calibrated by the user in a "user calibration mode" with N.I.S.T traceable standards.

(N.I.S.T. = National Institute of Standards and Technology)

## Manufacturers Test Certificate M

Besides the "Certificate of Compliance" which is supplied with the AL250, 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.

## Delivery Content

Each AL250 is supplied in a case complete with 9 V battery, 3 round vials with lids, 1 stirring rod, 1 brush, 1 syringe, tablets and/or liquid reagents or VARIO Powder Packs, accessories, instruction manual, guarantee sheet and a certificate of compliance.

➔ **Reagents (order codes),  
please see pages 32 onwards**

## Technical data

<b>Optics</b>	temperature-compensated LEDs and photosensor amplifier in water proof sample chamber
<b>Power supply</b>	9 V powerpack battery providing 40 hours operation
<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>Additional feature</b>	real time clock and date
<b>Calibration</b>	factory calibration and user calibration. Reset to factory calibration possible
<b>Dimensions (W x D x H)</b>	190 x 110 x 55 mm
<b>Weight</b>	0.4 kg (base unit)
<b>Environmental conditions</b>	Temperature: 5–40 °C rel. humidity: 30–90% (non condensing)
<b>CE-conformity</b>	

## Reference Standard Kit for AL250

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

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.

<b>Kit Chlorine Tablet/Liquid Test</b> 0.2* and 1.0* mg/l	4205600
<b>Kit Chlorine Tablet/Liquid Test</b> 0.5* and 2.0* mg/l	4205605
<b>Kit Chlorine Tablet-/Liquid Test</b> 1.0* and 4.0* mg/l	4205606
<b>Kit Chlorine Powder Reagent Test (VARIO)</b> 0.2* and 1.0* mg/l	4205640
<b>Kit pH Tablet/Liquid Test</b> 7.45 pH	4205610
<b>Kit Cyanuric acid Tablet test</b> 80 mg/l	4205620

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

## Accessories

Item	Code
Set of 12 round vials with cap Height 48 mm, Ø 24 mm	197620
Set of 5 round vials with cap Height 48 mm, Ø 24 mm	197629
Set of 12 round vials with cap Height 90 mm, Ø 16 mm	197665
Adapter for round vials Ø 16 mm	19801094
Lid for adapter	19801100
Cleaning cloth for vials	197635
Cleaning set for sample chamber	124060
Measurement beaker, 100 ml	384801
Plastic funnel with handle	471007
Cleaning brush, 11 cm length	380230
Plastic stirring rod, 13 cm length	364100
Plastic stirring rod, 10 cm length	364109
Battery lid with accessories	19801163
9 V-battery	1950012



## Applications

- Water Treatment
- Waste Water
- Cooling/Boiler Water
- Pool-Water
- Beverage Industry
- Laboratory and Field Testing

# Photometer AL250

Each AL250 is programmed for one test method



➔ Reagents (order codes), please see pages 32 onwards

## Test Methods AL250

Test	$\lambda$ (nm)	Formula	Range	Reagent	Code
Aluminium	528	Al <sup>3+</sup>	0.05–0.3 mg/l	ALUMINIUM No.1 / No.2	4206400
Ammonia	660	NH <sub>4</sub> <sup>+</sup>	0.02–1 ; 0.2–10 mg/l*	AMMONIA No.1 / No.2	4206500
Chlorine DPD <sup>1)</sup> free, combined, total	528	Cl <sub>2</sub>	0.01–6 mg/l	DPD No.1 / No.3	4266900
Chlorine DPD <sup>2)</sup> free, combined, total	528	Cl <sub>2</sub>	0.01 – 4 mg / l	DPD Liquid Reagents	4267000
Chlorine PP <sup>4)</sup> free, combined, total	528	Cl <sub>2</sub>	0.01–2 mg/l	VARIO DPD Powder Chlorine FREE-DPD/F10 Chlorine TOTAL-DPD/F10	4269950
Chlorine HR (KI)	470	Cl <sub>2</sub>	5–200 mg/l	ACIDIFYING GP CHLORINE HR (KI)	4267100
Chloride	528	Cl <sup>-</sup>	0.5–25 ; 5–250 mg / l*	CHLORIDE T1 / T2	4206800
COD <sup>3)</sup>	430 605 605	O <sub>2</sub> O <sub>2</sub> O <sub>2</sub>	0 – 150 mg / l 0– 1500 mg / l 0 – 15 000 mg / l	Supplied without tube tests and reactor	4269250
COD	430 605 605	O <sub>2</sub> O <sub>2</sub> O <sub>2</sub>	0– 150 mg / l 0– 1500 mg / l 0 – 15 000 mg / l	Supplied with tube tests (2 ranges) and reactor	4269240
Copper	528	Cu	0.05–5 mg/l	COPPER No.1 / No.2	4267200
Copper / Zinc	580	Cu/ Zn	0.02–1 mg / l	COPPER / ZINC LR / EDTA	4207210
DEHA	528		0.02 – 0.5 mg / l	DEHA-Reagents	4209700
Fluoride	580	F <sup>-</sup>	0.05 – 2.0 mg / l	SPADNS-Reagent Solution <sup>6)</sup>	4209300
Hardness, total	528	CaCO <sub>3</sub>	50–500 mg / l*	HARDCHECK P	4208010
Hazen	470	Pt-Co Units	0 - 500 mg Pt/l	No reagents required	4207240
Hydrazin	470	N <sub>2</sub> H <sub>4</sub>	0.05 - 0.5 mg/l	HYDRAZINE TEST POWDER <sup>7)</sup>	4207300
Hydr.Peroxide	528	H <sub>2</sub> O <sub>2</sub>	0.05–3 mg / l	HYDROGEN PEROXIDE LR	4208600
Iron (II, III)	528	Fe	0.02–1 ; 0.2–10 mg / l*	IRON LR	4207400
Manganese	430	Mn	0.05 – 4 mg / l	MANGANESE LR 1 / LR 2	4209400
Nitrite LR	528	NO <sub>2</sub>	0.02–0.5 mg / l	NITRITE LR	4207600
Ozone (Indigo)	605	O <sub>3</sub>	0.05–0.5 mg / l	OZONE	4207700
Phosphate LR	660	PO <sub>4</sub>	0.05–4 mg / l	PHOSPHATE LR No.1 / No.2	4207900
Phosphate HR	470	PO <sub>4</sub>	10–100 mg / l	PHOSPHATE HR No.1 / No.2	4207800
Silica	580	SiO <sub>2</sub>	0.05–4 mg / l	SILICA No.1 / No.2/ PR	4208100
Suspended Solids	605		5–750 mg / l	No reagents required	4209270
Turbidity <sup>5)</sup>	860		0.01–1100 NTU (FNU, TE/F)	No reagents required	4266020
Urea	660	CH <sub>4</sub> N <sub>2</sub> O	0.1–2.5 ; 0.2–5 mg / l*	UREA-Reagent 1/2 AMMONIA No.1 / No.2	4268500

Zinc, see Copper/Zinc

\* High range by dilution ; <sup>1)</sup> Kit with tablet reagents ; <sup>2)</sup> Kit with liquid reagents ;

<sup>3)</sup> AL250 basic unit COD only ; <sup>4)</sup> PP = VARIO Powder Packs ;


<sup>5)</sup> Turbidity; see pages 64 to 69 ; <sup>6)</sup> without reagents, must be ordered separately

<sup>7)</sup> required accessories for filtration are not included

# Photometer AL250

Each AL250+ is programmed for several test methods



 Reagents (order codes), please see pages 32 onwards

Test	$\lambda$ (nm)	Range	Reagent	Resolution
<b>Alkalinity-m (total)</b>	605	5–200 mg/l CaCO <sub>3</sub>	Alka M-Photometer	1 mg/l CaCO <sub>3</sub>
<b>Bromine</b>	528	0.02 – 13 mg/l	DPD No.1	0.01 mg/l
<b>Calcium Hardness</b>	528	0 – 500 mg/l	Calcio H No.1 / No.2	1 mg/l CaCO <sub>3</sub>
<b>Chlorine</b> free, combined**, total Tablet Reagents	528	0.01 – 6 mg/l	DPD No.1 / No.3	0.01 mg/l
<b>Chlorine</b> free, combined**, total	528	0.01 – 4 mg/l	DPD Liquid Reagents	0.01 mg/l
<b>Chlorine</b> free, combined**, total Free/Total Chlorine***	528	0.01 – 2 mg/l	VARIO DPD Powder	0.01 mg/l
<b>Chlorine HR (KI)</b>	470	5 – 200 mg/l	Acidifying GP/Chlorine HR	1 mg/l
<b>Chlorine Dioxide</b>	528	0.02 – 11 mg/l	DPD No.1	0.01 mg/l
<b>Copper (Biquinoline)</b>	528	0.05 – 5 mg/l	Copper No.1/No.2	0.01 mg/l
<b>Copper (Zincon)</b>	580	0.02 – 1 mg/l	Copper/Zinc LR / EDTA	0.01 mg/l
<b>Cyanuric Acid</b>	528	2 – 160 mg/l*	Cyanuric Acid	1 mg/l
<b>Iron</b>	528	0.02 – 1 mg/l	Iron LR	0.01 mg/l
<b>pH-value</b>	528	6.5 – 8.4 pH	Phenol Red Photometer	0.01 mg/l
<b>Urea</b>	660	0.1 – 2.5 mg/l 0.2 – 5.0 mg/l*	Urease 1/2 AMMONIA No.1/No.2	0.1 mg/l

\* by 1:1 sample dilution, \*\* may be calculated by deducting free from total chlorine

\*\*\* VARIO DPD-Powder is also suitable for use with Hach-Photometers

## 2in1

Item	Test	Code
2 in 1	<b>Chlorine, pH-value</b> with tablet reagents	4268940
2 in 1	<b>Chlorine, pH-value</b> with VARIO DPD Free/Total Chlorine (Powder)	4269960
2 in 1	<b>Copper<sup>1)</sup>, pH-value</b>	4207230

## 3in1

Item	Test	Code
3 in 1	<b>Chlorine, pH-value, Bromine</b>	4266180
3 in 1	<b>Chlorine Dioxide, Chlorine LR, HR</b>	4268800
3 in 1	<b>Chlorine, pH-value, Alkalinity, total (M)</b> with tablet reagents	4268900
3 in 1	<b>Chlorine, pH-value, Alkalinity, total (M)</b> with liquid reagents for Chlorine and pH	4268930
3 in 1	<b>Chlorine, pH-value, Cyanuric Acid</b> with tablet reagents for Chlorine and pH	4266010
3 in 1	<b>Chlorine, pH-value, Cyanuric Acid</b> with liquid reagents for Chlorine and pH	4268200

<sup>1)</sup> Zincon

## 4in1

Item	Test	Code
4 in 1	<b>Chlorine, pH-value, Cyanuric Acid, Alkalinity, total (M)</b> with tablet reagents for Chlorine and pH	4266050
4 in 1	<b>Chlorine, pH-value, Cyanuric Acid, Alkalinity, total (M)</b> with liquid reagents for Chlorine and pH	4266054
4 in 1	<b>Chlorine, pH-value, Cyanuric Acid, Urea</b>	4269220
4 in 1	<b>Chlorine, pH-value, Alkalinity, total (M), Urea</b>	4266290

## 5in1

Item	Test	Code
5 in 1	<b>Chlorine, pH-value, Cyanuric Acid, Alkalinity, total (M), Calcium Hardness</b>	4266120
5 in 1	<b>Chlorine, pH-value, Cyanuric Acid, Alkalinity, total (M), Iron</b>	4206240

## 6in1

Item	Test	Code
6 in 1	<b>Chlorine, Bromine, pH-value, Cyanuric Acid, Alkalinity, total (M), Calcium Hardness</b>	4266190
6 in 1	<b>Chlorine, pH-value, Cyanuric Acid, Alkalinity, total (M), Copper<sup>2)</sup>, Iron</b>	4206210

<sup>2)</sup> Biquinoline