Photometer AL100

Precise Water Analysis in High-Quality Design

The AL100 uses high quality interference filters with long-life LEDs as a light source without any moving parts in a transparency sample chamber.

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 AL100 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.

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.

Zero Setting (OTZ)

For certain versions of the instrument it is not necessary to zero the instrument each time. The zero setting is held in memory (**O**ne **T**ime **Z**ero - **OTZ**). The zero setting can be confirmed whenever it is usefull.

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.

N.I.S.T Traceability

The instrument has a factory calibration, which is related to international 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)

Reagents (order codes), please see pages 34 onwards

Highlights

- Scroll Memory
- Automatic Switch-Off
- Real-Time-Clock and Date
- Calibration Mode
- Backlit Display
- Storage Function
- One Time Zero (OTZ)
- Waterproof *)

*) as defined in IP 68, 1 hour at 0.1 meter

Photometer AL100

Technical Data

Optics	LEDs, interference filters (IF) and photo sensors in transparent sample chamber. Depending on the version, up to 3 different interfernce filters are used. Wavelength specifications of interference filters: 430 nm Δλ = 5 nm 530 nm Δλ = 5 nm 560 nm Δλ = 5 nm 580 nm Δλ = 5 nm 610 nm Δλ = 6 nm 660 nm Δλ = 5 nm
Wavelength Accuracy	± 1 nm
Photometric Accuracy[4)]	3% FS (T = 20°C – 25°C)
Photometric Resolution	0.01 A
Power Supply	4 micro batteries (AAA), capacity approx. 17 hours or 5000 tests
Auto - OFF	automatic switch-off
Display	backlit LCD (on keypress)
Storage	internal ring memory for 16 data sets
Interfaces	Infrared interface for test data transfer
Additional feature	real time clock and date
Calibration	factory calibration and user calibration. Reset to factory calibration possible
Dimensions	155 x 75 x 35 mm (L x W x H)
Weight	basic unit approx. 260 g
Environmental conditions	Temperature: 5–40 °C rel. humidity: 30–90% (non condensing)
CE-Conformity	

[4)] tested with standard solutions

Reference Standard Kits for AL100

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 Chlorine for instruments with powder reagent (VARIO) 0.2* and 1.0* mg/l	4275660
Kit pH for instruments with tablet / liquid reagent 7,45* pH	4275670

* Approximate figure, actual figure specified in Certificate of Analysis

Verification Standard Kit

The verification standard kit for the AL100 is designed to assure the user of the accuracy and the reliability of the results. The kit contains one zero standard, 6 different vials for checking 6 different wave lengths and allows checking the complete range of AL100 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.

Verification Standard Kit	4215670

Accessories

Item	Code
Set of 12 round vials with lid Height 48 mm, Ø 24 mm	197620
Set of 5 round vials with lid Height 48 mm, Ø 24 mm	197629
Set of 10 round vials with lid Height 90 mm, Ø 16 mm	197665
Adapter for round vials ø 16 mm	19802220
Set of 12 plastic vials (PC), with lid "**Multi"-Type 2**, Ø 10 mm	197600
Mixing cylinder, 25 ml, with stopper required accessory for molybdenum LR test with AL100 (4276140)	19802650
Membrane filter set for use when preparing samples, 25 membrane filters, 0,45 µm, 2 syringes 20 ml	366150
Cleaning cloth for vials	197635
Set of 12 sealing rings for round vial ø 24 mm	197626
4 micro batteries (AAA)	1950026
Measuring beaker, volume 100 ml	384801
Plastic funnel with handle	471007
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 AL100 is supplied in a sturdy plastic case with 4 micro batteries (AAA), 3 round vials (glass) with lids, 1 stirring rod & 1 syringe, tablet reagents and/or liquid reagents or VARIO powder reagent, guarantee sheet, certificate (Certificate of Compliance) and instruction manual.

You can find updated information on parameters and measuring ranges on our website at www.aqualytic.de

Data transfer

The optional available IRiM (infra-red interface modul) uses modern infra-red technology to transmit measurement data from the AL100 photometer to one of 3 optional interfaces. These interfaces can be used to connect to a PC, a USB printer[1)] or alternative a serial printer[2)].

The unit is supplied complete with data logging software providing easy and rapid transfer of data to the PC. As an option the data can be saved as an Excel sheet or a .txt file.

Measurement data can quickly be printed out, using a specified[1)] USB or alternative a printer with a serial plug-in connected to the IRiM.

Applicable for the following operating systems: Windows XP, Windows Vista and Windows 7.

[1)] USB printer: HP Deskjet 6940 ; [2)] each ASCII printer

Further information to the IRiM, see page 23

Photometer AL400

Modern, mobile photometer for rapid, reliable water testing

With the modern design of the AL400 we have succeeded in combining the mobility of a portable photometer with the characteristics of a modern laboratory photometer.

This new unit covers all the important parameters of water analysis, from aluminium to zinc. The high level of accuracy of AQUALYTIC® reagents and the user-friendly nature of the instrument guarantee rapid and reliable analysis of your water samples. Depending on the application, the unit will operate with tablet reagents, powder packs, liquid reagents or tube tests (16 / 13 mm).

The AL400 operates with 6 interference filters and uses long-life LEDs as a light-source. No moving parts are involved.

Of course, the AL400 has a memory, in which up to 1000 data sets can be stored. The infra-red interface* enables data to be transmitted to a computer or printer (RS 232 / USB).

* available as an option : IRIM (infra-red interface module)

Highlights

- Automatic wavelength selection
- Easy handling
- User interface in German, English, French, Spanish & Italian
- Storage
- more than 70 methods
- 10 user defined methods
- Infrared interface
- Waterproof
- Mobile

N.I.S.T. Traceability

The instrument has 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)

New methods

Test methods are regularly updated to suit market requirements. You can find software updates for new methods and additional languages on our website at www.aqualytic.com.

Polynomials

With the help of an external mathematical program, the corresponding polynomial is created from data pairs (concentration/absorption). A known polynomial may also be used. 25 order polynomials ($y = A+Bx+Cx^2+Dx^3+EX^4+FX^5$) can be stored together with user-specific parameters such as wavelength, measuring range, unit and number of decimals.

Concentration

This function can be used to measure 2 to 14 known standards. On the basis of the concentrations/absorption pairs obtained, the photometer will calculate a linear interpolation between the measured points. Up to 10 methods can be stored for further sample measurements.

Delivery Content

The instrument is supplied complete and ready-to-use incl. 4 batteries, 3 vials ø 24 mm, 3 vials ø 16 mm, 1 adapter each for 16 mm and 13 mm vials, carrying case with water resistance foam, **but without reagents**.

Order code: 4214010

Please specify the reagents or parameters required at time of order.

You can find updated information on parameters and measuring ranges on our website at www.aqualytic.com

Please see pages 32 onwards for tests, ranges and reagents

Applications

- Waste Water
- Drinking Water
- Industrial Process Water
- Scientific & Research
- Governmental and Private Laboratories
- Mobile Application

Photometer AL400

Technical Data

Display	Graphic-display
Interfaces	Infrared interface for test data transfer[1], RJ45 socket for Internet updates[2]
Optics	LEDs, interference filters (IF) and photo sensor in transparent sample chamber Wavelength range: 1 = 530 nm IF Δλ = 5 nm 2 = 560 nm IF Δλ = 5 nm 3 = 610 nm IF Δλ = 6 nm 4 = 430 nm IF Δλ = 5 nm 5 = 580 nm IF Δλ = 5 nm 6 = 660 nm IF Δλ = 5 nm IF = interference filter
Wavelength Accuracy	± 1 nm
Photometric Accuracy*	2% FS (T = 20°C – 25°C)
Photometric Resolution	0,005 A
Operation	Acid and solvent resistant, touch-sensitive keypad with audible feedback via integrated beeper
Power Supply	4 batteries (Mignon AA/LR6); Operation time: approx. 26 h continuous operation or 3500 tests
Auto-Off	approx. 20 minutes after last keypress with audible signal
Dimensions	approx. 210 x 95 x 45 mm (unit) approx. 395 x 295 x 106 mm (case)
Weight (unit)	approx. 450 g
Ambient Conditions	5–40°C bei max. 30–90% rel. Feuchtigkeit (nicht kondensierend)
Language Selection	German, English, French, Spanish, Italian,Portuguese, Polish; additional languages via Internet update
Memory Capacity	approx. 1000 data sets
CE Test Certificates	EN 61326 1997, A1:1998, A2:2001, A3:2003 Class B EN 61000-4-3:1996 EN 61000-4-2:1995 A1:1998, A2:2001

[1] optional available: IRIM (Infrarot Interface Modul)

[2] optional available: connection cable with integrated electronics (RS 232 / RJ-45-Buchse)

* tested with standard solutions

Please see pages 32 onwards for tests, ranges and reagents

Accessories

Item	Code
Set of 12 round vials with cap Height 48 mm, Ø 24 mm	197620
Set of 10 round vials with cap Height 90 mm, Ø 16 mm	197665
Adapter for round vials ø 16 mm	19802220
Adapter for round vials ø 13 mm	19802221
Sealing ring for vial ø 24 mm (12 pc.)	197626
Cleaning cloth for vials	197635
Plastic funnel with handle	471007
Plastic stirring rod, 13 cm length	364100
Cleaning brush, 10 cm	380230
Verification Standard Kit	4215640
Cable for update for connection to a PC	4214030
Infra-red data transmission modul IRIM	4214050

Verification Standard Kit

The Verification standard kit for the AL400 is designed to re-assure the user about the accuracy and the reliability of the results.
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.

Verification Standard Kit **4215640**

Infra-red data transmission modul IRiM

The IRiM (infra-red interface modul) uses modern infra-red technology to transmit measurement data from the AL400 photometer to one of 3 optional interfaces. These interfaces can be used to connect to a PC, a USB printer[1)] or alternative a serial printer[2)]. The interface which is selected is displayed by an LED function indicator. The user can switch between the interfaces using the „Select" button.

The unit is supplied complete with data logging software providing easy and rapid transfer of data to the PC. As an option the data can be saved as an Excel sheet or a .txt file.

Measurement data can quickly be printed out, using a specified[1)] USB or alternative a printer with a serial plug-in connected to the IRiM.

[1)] USB printer: HP Deskjet 6940 ; 2) each ASCII printer

Delivery content

The IRiM is delivered ready for use, with the following accessories :

USB cable, 4 batteries, screwdriver, CD-ROM, operating instructions and guarantee certificate

Order code: 4214050