

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)

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Highlights

- Automatic wavelength selection
- Easy handling
- User interface in German, English, French, Spanish, Italian, Portuguese (BR), Polish & Indonesian
- Storage
- more than 70 methods
- 35 user defined methods
- Infrared interface
- Waterproof^{*)}
- Mobile

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

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, stirring rod 13 cm, brush 11 cm, screw driver, guarantee sheet, certificate of compliance, instruction manual, 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

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



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 $\Delta\lambda = 5$ nm 2 = 560 nm IF $\Delta\lambda = 5$ nm 3 = 610 nm IF $\Delta\lambda = 6$ nm 4 = 430 nm IF $\Delta\lambda = 5$ nm 5 = 580 nm IF $\Delta\lambda = 5$ nm 6 = 660 nm IF $\Delta\lambda = 5$ 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, Indonesian; additional languages via Internet update
Memory Capacity	approx. 1000 data sets
CE-Conformity	

¹ optional available: IRIM (Infrarot Interface Modul)

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

* tested with standard solutions

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



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 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.

Measurements are taken in mAbs.

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 printer¹⁾ or alternative a serial printer²⁾. 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 specified¹⁾ 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

Technical Data

System requirements Processor: Pentium 4/M or equivalent
RAM: 512 MB
Screen resolution: 1280 x 1024 pixels
Operating system: Windows XP
Disc space: 90 MB

Interfaces SUB-D9 port
USB-A port
USB-B port

Baud rate 1200 ; 2400 ; 4800 ; 9600
RS232 interface 19200 ; 38400 ; 57600

Protocol XON/XOFF
RS232 interface RTS/CTS ; XON/XOFF & RTS/CTS
DTR/DSR ; XON / XOFF & DTR/DSR

Dimensions 132 x 95 x 43 mm (L x W x H)

Weight 315 g incl. 4 AA cells

Batteries 4 x AA cells