exaqua

photometer reinvented

www.exaqua.com

Exaqua redefines the idea of photometer

Exaqua®

For many years, portable photometers have proved themselves as workhorses of water parameter testing. The Exaqua project team's main objective was to overcome the numerous shortcomings of devices currently available on the market. This includes improving the ease of use, compactness, connectivity, as well as new functions such as innovative photometrically aided titration methods. The foremost feature of Exaqua is a groundbreaking new mechanism that allows for unparalleled ambient light resistance: Rayject. This unique system allows for uncovered samples to be accurately measured in any light conditions.

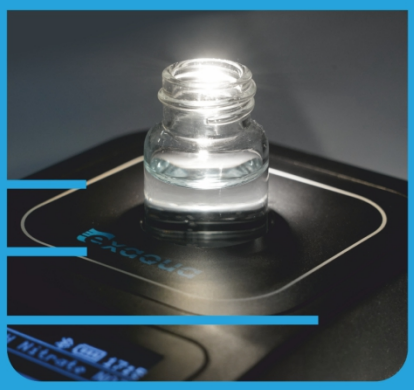
exatitr

Exaqua also features the Exatitr system, which makes titration measurement easy, convenient, and accurate. Made possible through Rayject technology, Exatitr allows for live readings, includes an end-point indication system that improves titration accuracy. Exatitr methods like GH (general hardness), CH (carbonate hardness/alkalinity), and Ca/Mg (calcium/magnesium concentration) also benefit from Exaqua's test guidance system and the convenient calculation function of the measured value.

rayject®

PATENT PENDING

Exaqua is equipped with Rayject - a unique technology that gives the photometric engine ultimate resistance to ambient light. Exaqua is the only photometer on the market with this capability. As a result, there is no need to cover the sample vial during measurement. Tests can be conducted in field conditions, or in a bright laboratory, all while keeping an eye on the sample so you can forget about keeping an easy-to-lose sample cover.



More unique exaqua features

TestGuide

The entire analysis process is assisted by a guide system which offers step-by-step instructions. For all the built-in methods, the system dictates which reagent to use, in what amount, and keeps track of time parameters when relevant to a measurement.

Upgradable

Exaqua is equipped with many photometric methods and functions. However, new methods and functionalities are sure to come. Exaqua's software can easily be upgraded by the user whenever a software update is released. Additionally, some methods can be unlocked with license keys.

Eco-friendly

Most photometers require a 10 ml water sample treated with reagents to perform an analysis. Exaqua requires only 5 ml. This means reagent consumption is halved, and the analysis process is more eco-friendly.

Exaqua's power system is also eco-friendly. The instrument has very low power consumption and is equipped with a rechargeable Li-ion battery that can be charged using any micro-USB cable. Just 1 - 2 hours of charging can provide approximately 10 hours of continuous operating time.

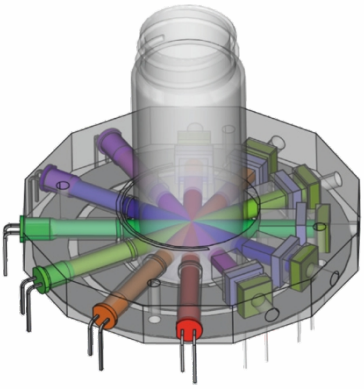
Create your own method

With Exaqua you can use one of many built-in methods or create your own. User-created methods are transferable, so you can easily install them on any other Exaqua. User methods can be used to implement your own set of reagents, and experiments results from such methods can easily be shared with other Exaqua users as well.

Inside Exaqua

User interface

The highly intuitive user interface means you can make your first measurements within minutes of getting your device. From the Main Screen to the guidance system, the interface is designed to be understood from the moment you power on your device.



Exceptional photometric engine

Exaqua's photometric engine is in a class of its own. It is precisely crafted with spectrally controlled LEDs capable of measuring in up to 6 different wavelengths and large area detectors. Combined with high precision interference filters, the photometric engine can produce accurate readings, even when faced with small impurities of a vial or a sample. The engine also has an extremely wide linear range of recorded absorbances (3,5 A guaranteed, typically >4 A).

Connectivity

Exaqua is equipped with two communication interfaces - USB and Bluetooth LE 5.1.
These can be used to transfer recorded results to a spreadsheet application, or to generate a measurement report. You can also back up all user data stored in the memory.

Long working time

Exaqua is fitted with a Li-ion battery that allows for up to 10 hours of continuous usage. The device has an auto-shutoff function that greatly extends the usage time, as in the sleep mode the instrument consumes virtually no power. Exaqua can be charged by any typical USB power source (charger, computer etc).

Bright OLED display

Exaqua has a bright, infinitive contrast OLED display with exceptionally wide viewing angle set behind reinforced glass. This makes outdoor use easy even in bright sunlight. The 16-button keyboard found below makes using the screen and entering data convenient and rapid.

Solid design

Exaqua is very robust, both splashproof (IP65) and shockproof in addition to being exceptionally ergonomic. You can have complete peace of mind using Exaqua in wet environments such as fish farms, or under damp or dusty conditions when testing parameters of lake water. The instrument is lightweight (approximately 250 g) and can easily fit in a larger pocket or small bag.

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Method	Parameter name	No of tests per set	Product code
Z010F/Z010M	Alkalinity KH Fresh | Marine	40	8010
Z020	Total hardness GH	25	8020
Z030	pH 4,5 – 6	40	8030
Z040	pH 6- 8,5	40	8040
Z050F/Z050M	pH 4,5 - 9 Fresh | Marine	100	8050
Z210H/Z210L	Nitrate NO_3 High | Low range	85	8210
Z220H/Z220L	Nitrite NO_2 High | Low range	50	8220
Z230	Ammonium NH_4 Fresh	55	8230
Z231	Ammonium NH_4 Marine	35	8231
Z240F/Z240M	Phosphate PO_4 Fresh | Marine	35	8240
Z410	Iron Fe	30	8410
Z420	Manganese Mn	35	8420
Z430F/Z430M	Copper Cu Fresh | Marine	70	8430
Z440	Silicon Si	55	8440
Z450H/Z450L	Potassium K High | Low range	25	8450
Z460	Magnesium Mg Marine To be used along with the set Z461, Calcium Ca marine product no 8461	20	8460
Z461	Calcium Ca Marine	20	8461
Z470	Magnesium Mg Fresh To be used along with the set Z471, Calcium Ca fresh product no 8471	30	8470
Z471	Calcium Ca Fresh	30	8471
Z610F/Z610M	Sulphate SO_4 Fresh | Marine	70	8610

NOTE: Methods are available accordingly to installed licenses

Exaqua portability

The reagent transportation case
can accomodate up to 28 bottles/containers together whith syringes, vials and other accessories.

Standard exaqua transportation case
- protects the instrument and accomodates basic accessories - power supply with USB cable, vials, syringes and other accessories.

Technical specification

Photometry

- Photometric channels
  - up to 6 optical channels
  - model Pro3: 470 nm, 520 nm, 610 nm
  - model Pro6: 430 nm, 470 nm, 520 nm, 560 nm, 610 nm, 650 nm
- Bandpass filters
  - hard coated interference filters, accuracy ± 1 nm, FWHM - 8 nm
- Detectors - large area PIN photodiodes
- Light sources - selected LEDs with controlled spectral profile, temperature compensated
- Absorbance max. displayed values range - 4.000 to 4.000 ABS
- Absorbance resolution - 0.001 ABS
- Photometric accuracy@1 ABS - ± 2 mABS
- Rayject photometric engine
  - full protection for interfering ambient light, max. constant illuminance 30000 LUX, overload indication
- Cuvette - round, diameter 24 mm
- Minimum sample volume - 4 ml

Power supply

- Charging source - USB , type micro connector
- Battery capacity - 1050 mAh Li-ion cell
- Working time - typically 8 h of continues operation, adjustable shut-off function for extending working time

User interface

- Display - OLED type, high brightness, infinite contrast, resolution 128x64
- Keyboard -16-button keyboard with reinforced display window

Communication

- USB 2.0 - access to: results log; tags and users list, user's methods configuration files
- Bluetooth 5.1 - access to: results log; tags and users list, user's methods configuration files and remote control of the instrument (under development)

Software features

- selection of built-in methods with guide
- Exatitr - photometer aided titration methods
- up to 4 user methods with up to 10 reference points. User methods are transferable to other Exaqua units.
- selection of 5 user names
- selection of 10 user editable tags
- data logger - max. 2000 entries available in the log file, last 100 entries can be viewed and sorted in the instrument

Environmental

- Operating temperature range - 10 to 40 °C
- Enclosure rating - IP65
  - dust and splash proof
- USB interface - USB type micro IP67

Mechanical

- Dimensions - 86x200x37 mm
- Weight- approx. 250 g

Mobile application

'Exaqua reporter' is an application that allows a user to collect and process data acquired with Exaqua photometers. Recorded results (log files) can be collected from any devices and then displayed in a graphs exported as a report document (.pdf format), or in the form of a data file which can be imported to a spreadsheet. Results can be filtered using several criteria (e.g. parameter name or date span) to select data of interest.

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