

# Photometer MD 600 & MD 610

Modern, mobile photometer  
for rapid, reliable water testing



## Highlights

- Highest/reproducible precision with interference filter
- Display with background lighting
- More than 120 pre-programmed methods
- Automatic selection of wavelength
- User guidance in German, English, French, Spanish, Italian, Portuguese (BR), Polish, and Indonesian.
- Buffer for 1000 data records (MD 600), 500 data records (MD 610)
- More than 35 user-specific methods possible
- **Bluetooth®** interface for connection to smart phones and tablets (only with MD 610)\*
- iOS® and Android™ app for data management and email delivery (only with MD 610)\*
- Infrared interface (only with MD 600)
- Waterproof housing\*
- Handheld format, portable

\*) analog IP 68, 1 Stunde bei 0,1 Meter

The MD 610 and MD 600 give you mobile instruments in a modern design with the analytical features of laboratory photometers.

All important water analysis parameters from A(luminium) to Z(inc) are covered by these two instruments. Combined with the high precision of Lovibond® reagents, a reliable and quick analysis of water samples is guaranteed. Reagent tablets, powder reagents, liquid reagents, or cuvette tests are used depending on the method.

Six long-lasting LEDs serving as a light source in combination with interference filters guarantee the highest precision. The instruments are designed without moving optical parts and thus maintenance are free measuring units. Up to 1,000 data records can be stored in the MD 600 (500 data records in the MD 610).

For stationary use, the set of PC software and **Bluetooth®** dongle available as an accessory can alternatively be used for data transfer to a Windows-based PC.

In both cases, the data management allows the analysis in the respective application as well as the export to Excel or as a CSV file.

The proven MD 600 photometer uses the classic infrared interface with which data can be transferred by means of the IRIM module to the PC or laptop.



## N.I.S.T. Traceability

The device is factory pre-adjusted to international standards. The user can set the instrument in "user calibration mode" with standards traceable to N.I.S.T. adjust.

(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.lovibond.com](http://www.lovibond.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.

## Verification Standard Kit

The verification standard kit for the MD 600 / 610 is designed to assure the user of the accuracy and the reliability of the results related to the integrated wave lengths.

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 21 56 40**

 **Please see pages 88 onwards for reagents (order codes)**

## Delivery Content

- Instrument in carrying case
- 4 batteries
- 3 Round vials each 24 and 16 mm ø
- 1 adapter each for 16 mm and 13 mm vials
- Plastic stirring rod 13 cm, Brush 11 cm, screw driver
- Warranty information
- Certificate of Compliance
- Instruction Manual

Order codes (without reagents)

MD 600: 21 40 20

MD 610: 21 40 25

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.lovibond.com](http://www.lovibond.com)

## Applications

- Waste Water
- Drinking Water
- Industrial Process Water
- Science & Research
- Governmental and Private Laboratories
- Mobile Applications



**Bluetooth®** is a wireless technology subject to regional approval. The use of the MD 610 with **Bluetooth®** is currently only permitted within Europe, the USA, and in Canada. The use of the MD 610 will also be possible in other regions in the future. For current regions and further information, visit: [www.lovibond.com/bluetooth](http://www.lovibond.com/bluetooth)  
Regions in which the MD 610 with **Bluetooth®** can currently be used (status: 01/2015):  
within Europe (according R&TTE Directive 1999/5/EC); USA (according to FCC part 15, comprised in FCC ID QOQB113); Canada (comprised in IC 5123A-BGTBLE113)

# Photometer MD 600 & MD 610



## Technical Data

<b>Display</b>	Backlit graphic-display	<b>Photometric Resolution</b>	0.005 A	<b>Language Selection</b>	German, English, French, Spanish, Italian, Portuguese, Polish, Indonesian ; additional languages via Internet update
<b>Interfaces</b>	Infrared <sup>1</sup> (MD 600), <b>Bluetooth® 4.0</b> (MD 610) RJ45 socket for Internet updates <sup>2</sup>	<b>Operation</b>	Acid and solvent resistant, touch-sensitive keypad with audible feedback via integrated beeper	<b>Memory Capacity</b>	approx. 1000 data sets (MD 600) approx. 500 data sets (MD 610)
<b>Optics</b>	LEDs, interference filters (IF) and photo sensor in transparent sample chamber Wavelength range: 430 nm IF $\Delta \lambda = 5$ nm 530 nm IF $\Delta \lambda = 5$ nm 560 nm IF $\Delta \lambda = 5$ nm 580 nm IF $\Delta \lambda = 5$ nm 610 nm IF $\Delta \lambda = 6$ nm 660 nm IF $\Delta \lambda = 5$ nm IF = interference filter	<b>Power Supply</b>	4 batteries (Mignon AA/LR6); Operation time: approx. 26 h continuous operation or 3500 tests	<b>CE-Conformity</b>	
<b>Wavelength Accuracy</b>	$\pm 1$ nm	<b>Auto-Off</b>	approx. 20 minutes after last keypress with audible signal	<sup>1</sup> optional available: IRIM (Infrared Interface Modul)	
<b>Photometric Accuracy*</b>	2 % FS (T = 20 °C – 25 °C)	<b>Dimensions</b>	approx. 210 x 95 x 45 mm (unit) approx. 395 x 295 x 106 mm (case)	<sup>2</sup> optional available: connection cable with integrated electronics (RS 232 / RJ-45 plug)	
		<b>Weight (unit)</b>	approx. 450 g	* tested with standard solutions	
		<b>Ambient Conditions</b>	5–40 °C at max. 30–90 % rel. humidity (non condensing)		

**➔ Please see pages 88 onwards for reagents (order codes)**

## Accessories

Item	Code
Set of 12 round vials with lid Height 48 mm, Ø 24 mm	19 76 20
Set of 10 round vials with lid Height 90 mm, Ø 16 mm	19 76 65
Adapter for round vials ø 16 mm	19 80 21 90
Adapter for round vials ø 13 mm	19 80 21 92
Set of <b>multi vials-3</b> with lids path length 10 mm, 10 ml volume Height 48 mm, Ø 24 mm (12 pc.)	19 76 05
Vial stand for 6 round vials Ø 24 mm, acrylic glass	41 89 51
Vial stand for 10 vials (Ø 16 mm or □ 13,5 mm), acrylic glass	41 89 57
Sealing ring for vial ø 24 mm (12 pc.)	19 76 26
Battery, 1,5 V, AA-Alkali-Mangan (4 pc.)	19 50 025
Cleaning cloth for vials	19 76 35
Plastic funnel with handle	47 10 07
Plastic stirring rod, 13 cm length	36 41 00
Plastic stirring rod, 13 cm length, (10 pc.)	36 41 20
Plastic stirring rod, 10 cm length	36 41 09
Plastic stirring rod, 10 cm length, (10 pc.)	36 41 30
Cleaning brush, 10 cm	38 02 30
Verification Standard Kit	21 56 40
Cable for update for connection to a PC	21 40 30
Data transmission modul IRiM	21 40 50
Bluetooth Dongle Set incl. PC Software	24 44 480



### Verification Standard Kit

The verification standard kit for the MD 600 / 610 is designed to assure the user of the accuracy and the reliability of the results related to the integrated wave lengths.

The kit contains one zero standard, 6 different vials for checking 6 different wave lengths and allows for checking the complete range of MD 600 / 610 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.

**Verifications Standard Kit 21 56 40**

**➔ Please see pages 88 onwards for reagents (order codes)**

**Bluetooth®** is a wireless technology subject to regional approval. The use of the MD 610 with **Bluetooth®** is currently only permitted within Europe, the USA, and in Canada.

The use of the MD 610 will also be possible in other regions in the future. For current regions and further information, visit: [www.lovibond.com/bluetooth](http://www.lovibond.com/bluetooth)

Regions in which the MD 610 with **Bluetooth®** can currently be used (status: 01/2015):

within Europe (according R&TTE Directive 1999/5/EC); USA (according to FCC part 15, comprised in FCC ID QOQBT113); Canada (comprised in IC 5123A-BGTBLE113)