

MD 600 Photometer



Modern, mobile photometer
for rapid, reliable water testing



Highlights

- Automatic wavelength selection
- Easy handling
- Backlit display
- User interface in German, English, French, Spanish, Italian, Portuguese (BR), Polish & Indonesian
- Storage
- More than 120 methods
- 35 user defined methods
- Infrared interface
- Waterproof*)
- Mobile

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

With the modern design of the MD 600 we have succeeded in combining the mobility of a portable photometer with the characteristics of a modern laboratory photometer.

This unit covers all the important parameters of water analysis, from aluminium to zinc. The high level of accuracy of Lovibond® 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 MD 600 operates with 6 interference filters and uses long-life LEDs as a light-source. No moving parts are involved.

The illuminated display allows comfortably reading of the measurement results even in low light conditions.

Of course, the MD 600 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 : IRIIM (infra-red interface module)

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)

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.

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.



Applications

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

 Please see pages 78 onwards for reagents (order codes)

Infra-red data transmission modul IRiM



The IRiM (infra-red interface modul) uses modern infra-red technology to transmit measurement data from the MD 600 photometer to one of 3 optional interfaces. These interfaces can be used to connect to a PC, a USB printer¹⁾ or alternatively 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 alternatively 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

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: 21 40 50

MD 600 Photometer



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
- Guarantee sheet
- Certificate of Compliance
- Instruction Manual

but without reagents

Order code: 21 40 20

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 multy vials-3 with lids path length 10 mm, 10 ml volume Height 48 mm, Ø 24 mm (12 pc.) | 19 76 05 |
| 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 |
| Infra-red data transmission modul IRiM | 21 40 50 |



Please see pages 78 onwards for reagents (order codes)



Verification Standard Kit

The verification standard kit for the MD 600 is designed to assure the user of 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

21 56 40



Technical Data

| | |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Display | Backlit 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: 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 |
| 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 at max. 30–90% rel. humidity (non condensing) |
| 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 (Infrared Interface Modul)

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

* tested with standard solutions