

# Lovibond® Water Testing Tintometer® Group



## MD 110 Chlorine, Bromine, pH, Cyanuric acid, Alkalinity-m, Calcium hardness, tablet reagents

Photometer with **Bluetooth®** Technology



- **Bluetooth®** -Interface
- Scroll Memory
- Automatic switch-off
- Calibration mode indicator

Part Number: 2980902

The MD 110 has several key features that make it a favorite among users.

### Waterproof Design

The IP 68 design of this instrument ensures that the MD 110 remains water tight for up to 1 hour at 0.1 meter. Don't worry about dropping the instrument into a body of water - it floats!

### Accurate, Reproducible Results

The optical system of the MD 110 utilizes LEDs and interference filters which quickly gives you results that you can be confident in.

### User Calibration Mode

A one-point calibration is possible. Additionally, all MD 110 instruments have the ability to display readings directly in ABS or %T units.

### One-time-Zero Function

Don't waste time waiting for your instrument to Zero after each test. When testing a new sample, zero the instrument once and all subsequent tests of that sample do not require you to re-zero the instrument.

### Automatic Data Storage with Transfer Capabilities

The MD 110 automatically stores the last 16 readings with time and date stamp. These results can be transferred to a spreadsheet using the IRiM accessory.

### Ergonomic Design

Whether you're using the MD 110 out in the field or in the lab, the design of the instrument makes it easy to handle and view the display. If you're using the instrument in the lab, the rubber feet on the bottom of the housing eliminates the need for two hand operation or to chase your instrument around the workbench.

### Factory Programmed

All MD 110 instruments are supplied ready to use with up to 14 calibration curves. All you need to do is select the test you need, prepare your sample and test!

### Scroll Driven Menu System

The simple interface allows you to quickly reach the test you need. When the instrument is turned on, it will automatically display the last test used.

### 2-Year Warranty

## Industry

Marine Industry | Municipalities | Pool Public | Pool Services

## Application

Boiler Water | Cooling Water | Disinfection Control | Drinking Water Treatment | Pool Water Control | Pool Water Treatment | Raw Water Treatment | Waste Water Treatment

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## Bluetooth® function

All MD 110 photometers have a **Bluetooth®** function. To make the most of it, Tintometer offers an app for mobile devices as well as a PC software with dongle. The measurement results are transmitted to external devices via the **Bluetooth®** interface for quick evaluation and processing so that all data can be evaluated and assigned directly on site.

## App AqualX®

The free app AqualX® is ideally designed for use in on-site measurements. Compatible with IOS®- and Android®-based smartphones and tablets, it enables uncomplicated data transmission. It maps all measured values as an illustrative graphic with minimum and maximum limits and supports the export of the data as an Excel®-compatible CSV file.

## PC Software

The PC software makes it possible to import data directly from the photometer to the Windows-based PC. As a stationary solution, it facilitates the transfer of data through a quickly established, permanently wireless connection. Further processing of the results can be done both in the software itself and by exporting the data to Excel or as a CSV file.

The set of software and **Bluetooth®** dongle is available as a separate accessory under item no. 2444480 available.

## Measuring Range

| Test Name              | Measuring Range                               | Chemical Method  |
|------------------------|---|------------------|
| Alkalinity-m T         | 5 - 200 mg/L CaCO <sub>3</sub>                | Acid / Indicator |
| Bromine T              | 0.05 - 13 mg/L Br <sub>2</sub>                | DPD              |
| Chlorine HR T          | 0.1 - 10 mg/L Cl <sub>2</sub> <sup>a)</sup>   | DPD              |
| Chlorine L             | 0.02 - 4.0 mg/L Cl <sub>2</sub> <sup>a)</sup> | DPD              |
| Chlorine T             | 0.01 - 6.0 mg/L Cl <sub>2</sub> <sup>a)</sup> | DPD              |
| CyA T                  | 10 - 160 mg/L CyA                             | Melamine         |
| Hardness Calcium (B) T | 20 - 500 mg/L CaCO <sub>3</sub>               | Murexide         |
| pH value L             | 6.5 - 8.4 pH                                  | Phenol Red       |
| pH-value T             | 6.5 - 8.4 pH                                  | Phenol Red       |

## Technical Data

|                                 |  |
|---------------------------------|--|
| <b>Optics</b>                   | LEDs, interference filters (IF) and photo sensor in transparent sample chamber. Depending on the version, up to 3 different interference filters are used.<br>Wavelength specifications of interference filters:<br>430 nm Δλ = 5 nm<br>530 nm Δλ = 5 nm<br>560 nm Δλ = 5 nm<br>580 nm Δλ = 5 nm<br>610 nm Δλ = 6 nm<br>660 nm Δλ = 5 nm |
| <b>Wavelength Accuracy</b>      | ± 1  |
| <b>Photometric Range</b>        | -2500 - 2500 mAbs  |
| <b>Photometric Accuracy</b>     | 3 % FS (T = 20 °C – 25 °C)   |
| <b>Suitable Vials</b>           | Round Cuvettes 24 mm   |
| <b>Display</b>                  | backlit LCD (on keypress)  |
| <b>Interfaces</b>               | Bluetooth  |
| <b>Operation</b>                | Foil keypad  |
| <b>Auto – OFF</b>               | Yes  |
| <b>Calibration</b>              | factory calibration and user calibration. Reset to factory calibration possible  |
| <b>Internal Storage</b>         | internal ring memory for 125 data sets   |
| <b>Power Supply</b>             | 4 micro batteries (AAA)  |
| <b>Battery Life Time</b>        | approx. 17 hours   |
| <b>Clock</b>                    | Real Time Clock and Date   |
| <b>Portability</b>              | Portable   |
| <b>Environmental Conditions</b> | temperature: 5 - 40 °C rel. humidity: 30 - 90 % (non condensing)   |
| <b>Protection Class</b>         | IP 68  |
| <b>Compliance</b>               | CE   |
| <b>Dimensions</b>               | 155 x 75 x 35 mm   |

## Delivery Scope

- Instrument in plastic case with 4 micro batteries (AAA)
- 100 tablet reagents DPD No. 1
- 100 tablet reagents DPD No.3 Evo
- 100 tablet reagents Phenol Red Photometer
- 100 tablet reagents CyA-Test
- 100 tablet reagents Alka-M Photometer
- 100 tablet reagents Calcio-H No.1
- 100 tablet reagents Calcio-H No.2
- 3 Round vials (glass) with lid and sealing rings
- 1 Stirring rod
- 1 Brush
- 1 Syringe (5 ml)
- Instruction manual
- Manual of Methods
- Certificate (COC)
- Warranty information

## Accessories

| Title   | Part Number |
|---|-------------|
| Water sampler, AF 631   | 170500      |
| Micro batteries (AAA), set of 4   | 1950026     |
| Multy cuvette-2, set of 12  | 197600      |
| Round cuvette 24 mm, set of 12  | 197620      |
| Sealing ring for round vials 24 mm, set of 12   | 197626      |
| Round cuvette 24 mm, set of 5   | 197629      |
| Cleaning cloth  | 197635      |
| Round cuvette 16 mm, set of 10  | 197665      |
| Adapter for round cuvettes 16 mm  | 19802190    |
| Mixing cylinder, 25 ml  | 19802650    |
| Fixed price service package for MD100/MD110/MD200   | 19802701    |
| Service plan - 3 years for MD100/MD110/MD200  | 19802801    |
| Verification Standard Kit MD 100 / 200  | 215670      |
| Kit of BT data transfer software and Bluetooth Dongle   | 2444480     |
| Reference Standard Kit Chlorine - 0.2 and 1.0 mg/l (MD 100/110/200)                               | 275650      |
| Reference Standard Kit Chlorine - 0.5 and 2.0 mg/l (MD 100/110/200)                               | 275655      |
| Reference Standard Kit Chlorine - 1.0 and 4.0 mg/l (MD 100/110/200)                               | 275656      |
| Reference Standard Kit pH - 7.45 (MD 100/110/200)   | 275670      |
| Stirring rod, 13 cm length  | 364100      |
| Stirring rod, 10 cm length  | 364109      |
| Stirring rod, 13 cm length, set of 10   | 364120      |
| Stirring rod, 10 cm length, set of 10   | 364130      |
| Membrane filter set for use when preparing samples, 25 membrane filters 0.45 µm, 2 syringes 20 ml | 366150      |
| 500 ml bottle, AF 631   | 375069      |
| Brush, 11 cm length   | 380230      |
| Measuring beaker, 100 ml  | 384801      |
| Cuvette stand for 6 round cuvettes Ø 24 mm  | 418951      |
| Cuvette stand for 10 round cuvettes Ø 16 mm   | 418957      |

| Title  | Part Number |
|--|-------------|
| Plastic funnel with handle (white)                             | 471007      |
| ValidCheck Chlorine 1,5 mg/l                                   | 48105510    |
| Factory calibration certificate ISO 9001 for MD100/MD110/MD200 | 999750      |
| Additionally for each method                                   | 999855      |

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