



Photometer MD 100, MD 110 & MD 200



Bluetooth® - Interface (MD 110)

One Time Zero, sales time

Illuminated display

Waterproof*

Measurements using high quality interference filters with long-life LEDs as a light source in a transparent sample chamber.

The units provide accurate, reproducible results very quickly. Other major advantages include ease of operation, ergonomic design, compact dimensions and safe handling.

Using an internal ring memory, the last 16 data sets (MD 100, MD 200) and 125 data sets (MD 110) are stored automatically with date, time, parameter and measurement value.

The tests are conducted using either Lovibond® tablet reagents with long-term stability, VARIO powder reagents or liquid reagents.

Bluetooth® is a wireless technology subject to regional approval. The use of the MD 110 with **Bluetooth®** is currently only permitted within Europe, the USA, Japan and in Canada. The use of the MD 110 will also be possible in other regions in the future. For current regions and further information, visit: bluetooth.lovibond.com Regions in which the MD 110 with **Bluetooth®** can currently be used (status: 01/2019): 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), Japan (includes CAB ID 007-AB0103)

* analog IP 68 1 hour at 0,1 m

Scroll Memory (SM)

To avoid unnecessary scrolling for the required test method, the instrument memorizes the last method used before switching off the instrument. When the instrument is switched on again, the scroll list comes up with the last used test method first.

Zero Setting (OTZ)

For certain versions of the instrument it is not necessary to zero the instrument each time. The zero setting is held in memory until the instrument is turned off. (One Time Zero - OTZ). The zero setting can be confirmed whenever it is required.

Manufacturers Test Certificate M

Besides the "Certificate of Compliance" the manufacturers test certificates M is available at cost on request. Manufacturers test certificates M are individually supplied per instrument and per method.

The manufacturers test certificate M has to be ordered together with the new instrument and cannot be delivered at a later stage.

N.I.S.T Traceability

The instrument 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)

Data Transfer

The optional available IRiM (infrared interface module) uses modern infrared technology to transmit measurement data from the **MD 100** and **MD 200** 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 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.

The **MD 110** photometers have a **Bluetooth®** feature.

Via the **Bluetooth®** interface, the measurement results are transmitted to external instruments for prompt assessment and processing, so that all data can be evaluated and collated directly on site. In order to get the best use out of this, Tintometer offers an app for mobile instruments and PC software with a dongle.

The free app **AquaLX®** is ideally designed for use in on-site measurements. Compatible with iOS®- and Android® TM-based smartphones and Tablets, it enables fuss-free data transfer. It maps all measured values as descriptive graphs with minimum and maximum limits and supports export of the data as an Excel®-compatible CSV file.

With the aid of the complimentary **Bluetooth®** dongle, 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 fast established, permanent wireless connection. Further processing of the results can be processed 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 offered as separate accessories under item no.:

Code 2444480

For more information please see: www.bluetooth.lovibond.com



Verification Standard Kit

The verification standards serve to verify the photometric accuracy and reproducibility of the results at the different wavelengths. The absorbance value is stated.

The kit contains one zero standard, six different vials for checking six different wave lengths and allows checking the complete range of MD 100 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.

Verification Standard Kit 21 56 70
(MD 100, MD 110 & MD 200)



Reference Standard Kit for MD 100, MD 110 and MD 200

The reference standards are designed to check the accuracy and the reliability of the results.

It is not possible to calibrate the photometer with the reference standards.

The shelf life of reference standards is two years from the date of production, provided that storage and use are in accordance with the instructions provided.

Kit Chlorine for instruments 27 56 50
with tablet / liquid reagent 0.2* and 1.0* mg/l

Kit Chlorine for instruments 27 56 55
with tablet / liquid reagent 0.5* and 2.0* mg/l

Kit Chlorine for instruments 27 56 56
with tablet / liquid reagent 1.0* and 4.0* mg/l

Kit Chlorine for instruments 27 56 60
with powder reagent 0.2* and 1.0* mg/l

Kit pH for instruments 27 56 70
with tablet / liquid reagent 7.45* pH

* Approximate figure, actual figure specified in Certificate of Analysis

Primary standard chlorine

Ideal for validating the chlorine method. This standard is easy to handle and will meet the requirements of US EPA 334.0.



ValidCheck Chlorine 1,5 mg/l
Code.: 48 10 55 10

Please see pages 88 onwards for reagents (order codes)

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Single-Parameter MD 100 / MD 110 / MD 200

| Instrument with Parameter | OTZ* | Range | Method name Handbook / Display | usable reagent form | delivery content incl. reagents | | | |
|---------------------------|--|--|--------------------------------|---------------------|--|--------------------|---------|---------|
| | | | | | | MD 100 | MD 110 | MD 200 |
| Aluminium | | 0,01 - 0,3 mg/l Al | M40 /AL Tablet | Tablet | ✓ | 276200 | - | - |
| | | 0,01 - 0,25 mg/l Al | M50 /AL Powder | Powder | ✓ | 276205 | - | - |
| Ammonia | | 0,02 - 1,0 mg/l N | M60 /A Tablet | Tablet | ✓ | 276060 | - | - |
| | | 0,01 - 0,8 mg/l N | M62 /A Powder | Powder | ✓ | 276065 | - | - |
| Chlorine Tablet | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or | ✓ | 276000 | - | - |
| | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Liquid | ✓ | 276005 | - | - |
| | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | | - | - | - |
| Chlorine DUO | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or | ✓ | 276020 | - | - |
| | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Liquid | | | | |
| | | 0,1 - 10 mg/l Cl ₂ ** | M 103 / CL10 | Tablet | | | | |
| | | 0,02 - 2,0 mg/l Cl ₂ | M 110 / CL2 | Powder | ✓ | 276025 | - | - |
| | 0,1 - 8,0 mg/l Cl ₂ (10 mm multi vial-2) | M 111 / CL8 | Powder | ✓ | | | | |
| Chlorine Powder | | 0,02 - 2,0 mg/l Cl ₂ | M 110 / CL2 | Powder | ✓ | 276010 | - | - |
| | | 0,1 - 8,0 mg/l Cl ₂ (10 mm multi vial-2) | M 111 / CL8 | Powder | ✓ | | | |
| Chlorine HR (KI) | | 5 - 200 mg/l Cl ₂ | M105 / CLHr | Tablet | ✓ | 276170 | - | - |
| Chlorine dioxide | | 0,02 - 11 mg/l ClO ₂ | M120 / CLO2 | Tablet | ✓ | 276030 | - | - |
| | | 0,04 - 3,8 mg/l ClO ₂ | M122 / CLO2 | Powder | ✓ | 276035 | | |
| Chloride | | 0,5 - 25 mg/l Cl ⁻ | M90 / CL-1 | Tablet | ✓ | 276180 | - | - |
| | | 5 - 250 mg/l Cl ⁻ (by dilution) | M93 / CL-2 | | | | | |
| COD | | 3 - 150 mg/l O ₂ | M130 / Lr | Tubes | without reagents | 276120 | 2961202 | 2892502 |
| | | 15 - 300 mg/l O ₂ | M133 / MLr | | | | | |
| | | 20 - 1500 mg/l O ₂ | M131 / Mr | | | | | |
| | | 200 - 15000 mg/l O ₂ | M132 / Hr | | | | | |
| Iron | | 0,02 - 1,0 mg/l Fe | M220 / FE | Tablet | ✓ | 276050 | - | - |
| | | 0,02 - 1,8 mg/l Fe TPTZ | M223 / FE2 | Powder | ✓ | 276055 | - | - |
| | | 0,02 - 3,0 mg/l Fe | M222 / FE1 | Powder | ✓ | 276056 | - | - |
| Fluoride | | 0,05 - 2,0 mg/l F ⁻ | M170 / F | Liquid | without reagents | 276090 | - | - |
| Hardness total | | 2 - 50 mg/l CaCO ₃ | M200 / th1 | Tablet | ✓ | 276190 | - | - |
| | | 20 - 500 mg/l CaCO ₃ (by dilution) | M201 / th2 | | | | | |
| Urea | | 0,1 - 2,5 mg/l Urea | M390 / Ur1 | Tablet and Liquid | ✓ | 276210 | - | - |
| | | 0,2 - 5 mg/l Urea (by dilution) | M391 / Ur2 | | | | | |
| Hazen | | 10 - 500 mg/l Pt-Co | M 204 / PtCo | without | without reagents | 276160 | - | - |
| Copper | | 0,05 - 5,0 mg/l Cu | M150 / Cu | Tablet | ✓ | 276080 | - | - |
| | | 0,05 - 5,0 mg/l Cu | M153 / Cu | Powder | ✓ | 276085 | - | - |
| Manganese | | 0,2 - 4,0 mg/l Mn | M240 / Mn | Tablet | ✓ | 276100 | - | - |
| | | 0,01 - 0,7 mg/l Mn | M242 / Mn1 | Powder | ✓ | 276105 | - | - |
| | | 0,1 - 18 mg/l Mn | M243 / Mn2 | Powder | ✓ | 276106 | - | - |
| Molybdenum | | 0,03 - 3,0 mg/l Mo | M251 / Mo1 | Powder | ✓ mixing cylinder (not included) | 276140 19802650 | - | - |
| | | 0,3 - 40 mg/l Mo | M252 / MO2 | Tablet | ✓ | 276141 | - | - |
| | | 0,6 - 30 mg/l Mo | M250 / Mo3 | Tablet | ✓ | 276142 | - | - |
| Ozone (DPD) | | 0,02 - 2,0 mg/l O ₃ | M300 / O3 | Tablet | ✓ | - | - | 2899802 |



Green Chemistry

* OTZ (zero adjustment applies to all methods of the measuring instrument)

** Delivery without reagents



Please see pages 88 onwards for reagents (order codes)

Single-Parameter MD 100 / MD 110 / MD 200

| Single-Parameter | Instrument with Parameter | OTZ* | Range | Method name Handbook / Display | usable reagent form | delivery content incl. reagents | | | |
|------------------|---------------------------|------|----------------------------------|--------------------------------|---------------------|---------------------------------|--------|--------|--------|
| | | | | | | | MD 100 | MD 110 | MD 200 |
| Phosphate | | | 0,05 - 4,0 mg/l PO ₄ | M320 / PO4 | Tablet | ✓ 276040 | - | - | |
| | | | 0,06 - 2,5 mg/l PO ₄ | M323 / PO4 | Powder | ✓ 276045 | - | - | |
| Silica | | | 0,05 - 4,0 mg/l SiO ₂ | M350 / Si | Tablet | Tablets 276110 | - | - | |
| | | | 0,1 - 1,6 mg/l SiO ₂ | M351 / SiLr | Powder | ✓ 276115 | - | - | |
| | | | 1 - 90 mg/l SiO ₂ | M352 / SiHr | Powder | ✓ 276116 | - | - | |
| Suspended solids | | | 10 - 750 mg/l TSS | M384 / SuS | without | without reagents 276150 | - | - | |

| 2in1 | Instrument with Parameter | OTZ* | Range | Method name Handbook / Display | usable reagent form | delivery content incl. reagents | | | |
|---|---------------------------|--------|---|--------------------------------|---------------------|---|------------|--|---------|
| | | | | | | | MD 100 | MD 110 | MD 200 |
| Chlorine Tablet | ✓ | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or Liquid | Tablets for Chlorine, pH 278020 | - | - | |
| | | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | | | | | |
| | | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | Liquid reagents for Chlorine, pH 278025 | - | - | |
| pH | | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | |
| | | | Chlorine Powder | | | 0,02 - 2,0 mg/l Cl ₂ | M110 / CL2 | Powder reagents for Chlorine, Tablets for pH 278030 | - |
| 0,1 - 8,0 mg/l Cl ₂ (10 mm multi vial-2) | M111 / CL8 | Powder | | | | | | | |
| pH | | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | |
| Copper | ✓ | | 0,05 - 5,0 mg/l Cu | M150 / Cu | Tablet | Tablets for Cu und pH - | - | - | 2872102 |
| | | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | |
| Hydrogen-peroxide | | | 1 - 50 mg/l H ₂ O ₂ | M213 / HP1 | Liquid | Liquid reagents for H ₂ O ₂ and pH - | - | - | 2888102 |
| | | | 40 - 500 mg/l H ₂ O ₂ | M214 / HP2 | | | | | |
| pH | | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | |

| 3in1 | Instrument with Parameter | OTZ* | Range | Method name Handbook / Display | usable reagent form | delivery content incl. reagents | | | | | |
|------------------------------------|---------------------------|---------------|----------------------------------|--------------------------------|---------------------|---|------------|--|--|---|---------|
| | | | | | | | MD 100 | MD 110 | MD 200 | | |
| Chlorine | ✓ | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or Liquid | Tablets for Chlorine, pH, CyA 278010 | 2980102 | 2860102 | | | |
| | | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Liquid | Tablets CyA 278015 | 2980152 | 2882002 | | | |
| | | | 0,1 - 10 mg/l Cl ₂ ** | M 103 / CL10 | Tablet | Liquid reagents for Chlorine, pH | | | | | |
| | | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | | | |
| Cyanuric acid | | | 0 - 160 mg/l CyA | M160 / CyA | Tablet | | | | | | |
| | | | Chlorine | ✓ | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or Liquid | Tablets for Chlorine, pH, Alka-M 278060 | - | 2889002 |
| 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Liquid | | | | Tablets Alka-M 278065 | - | 2889302 | | | |
| 0,1 - 10 mg/l Cl ₂ ** | M 103 / CL10 | Tablet | | | | Liquid reagents for Chlorine, pH | | | | | |
| 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | | | | | | |
| pH | | | 5 - 200 mg/l CaCO ₃ | M30 / tA | Tablet | | | | | | |
| | | | Chlorine | | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablets for Chlorine, pH, Chlorine dioxide 278000 | - | - | |
| 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | | | | | | | | | | |
| 5 - 200 mg/l Cl ₂ | M105 / CLHr | Tablet | | | | | | | | | |
| Chlorine HR (KI) | | | 0,02 - 11 mg/l ClO ₂ | M120 / CLO2 | Tablet | | | | | | |
| | | | Chlorine | ✓ | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablets for Chlorine, pH, Bromine - | - | - | 2861802 |
| 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | | | | | | | | | | |
| 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | | | | | | |
| 0,05 - 13 mg/l Br ₂ | M80 / Br | Tablet | | | | | | | | | |
| Brome | | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or Liquid | | | | | | |
| | | | Chlorine | ✓ | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Tablets for Chlorine, pH, Acid capacity - | - | - | 2889012 |
| 0,1 - 10 mg/l Cl ₂ ** | M 103 / CL10 | Liquid | | | | Tablets Acid capacity - | 2889202 | | | | |
| 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | Liquid reagents for Chlorine, pH | | | | | |
| 0,1 - 4,0 mmol/l KS _{4,3} | M20 / S:4.3 | Tablet | | | | | | | | | |

* OTZ (zero adjustment applies to all methods of the measuring instrument)

** Delivery without reagents

Green Chemistry



4in1

| Instrument with Parameter | OTZ* | Range | Method name Handbook / Display | usable reagent form | delivery content incl. reagents | MD 100 | MD 110 | MD 200 |
|---------------------------------|------------|------------------------------------|--------------------------------|---------------------|---|--------|---------|---------|
| Chlorine | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or | Tablets for Chlorine, pH, CyA, Alka-M Tablets for CyA, Alka-M Liquid reagents for Chlorine and pH | 278070 | 2980702 | 2860502 |
| | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Liquid | | | | |
| | | 0,1 - 10 mg/l Cl ₂ ** | M 103 / CL10 | Tablet | | | | |
| | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | |
| | | 0 - 160 mg/l Cya | M160 / CyA | Tablet | | | | |
| | | 5 - 200 mg/l CaCO ₃ | M30 / tA | Tablet | | | | |
| pH | | | | | | | | |
| Cyanuric Acid | | | | | | | | |
| Alkalinity-m | | | | | | | | |
| Chlorine DUO | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet | Powder reagents for Chlorine, Tablets for Chlorine, pH, CyA, Alka-M | 278160 | - | - |
| | | 0,02 - 3,5 mg/l Cl ₂ | M113 / CL2 | Powder | | | | |
| | | 5 - 200 mg/l Cl ₂ ** | M105 / CLHr | Tablet | | | | |
| | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | |
| | | 5 - 200 mg/l CaCO ₃ | M30 / tA | Tablet | | | | |
| | | 0 - 500 mg/l CaCO ₃ | M191 / CAH | Tablet | | | | |
| pH | | | | | | | | |
| Alkalinity-m | | | | | | | | |
| Hardness, Calcium | | | | | | | | |
| Chlorine | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or | Tablets for Chlorine, pH, CyA and Acid Capacity Tablets for CyA and Acid Capacity Liquid reagents for Chlorine and pH | - | - | 2860512 |
| | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Liquid | | | | |
| | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | | | | |
| | | 6,5 - 8,4 pH | M330/331 / pH | Tablet/Liquid | | | | |
| | | 0 - 160 mg/l Cya | M160 / CyA | Tablet | | | | |
| | | 0,1 - 4,0 mmol/l KS _{4,3} | M20 / S:4.3 | Tablet | | | | |
| pH | | | | | | | | |
| Cyanuric Acid | | | | | | | | |
| Acid Capacity | | | | | | | | |
| Chlorine | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or | Tablets for Chlorine, pH, Acid Capacity, Urea (add. Liquid) | - | - | 2862912 |
| | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Liquid | | | | |
| | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | | | | |
| | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | |
| | | 0,1 - 4,0 mmol/l KS _{4,3} | M20 / S:4.3 | Tablet | | | | |
| | | 0,1 - 2,5 mg/l Urea | M390 / Ur1 | Tablet/Liquid | | | | |
| 0,2 - 5 mg/l Urea (by dilution) | M391 / Ur2 | | | | | | | |
| pH | | | | | | | | |
| Acid Capacity | | | | | | | | |
| Urea | | | | | | | | |
| Chlorine | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or | Tablets for Chlorine, Chlorine dioxide, pH, Acid Capacity | - | - | 2863802 |
| | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | Liquid | | | | |
| | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | | | | |
| | | 0,02 - 11 mg/l ClO ₂ | M120 / CLO2 | Tablet | | | | |
| | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | | |
| | | 0,1 - 4,0 mmol/l KS _{4,3} | M20 / S:4.3 | Tablet | | | | |
| Chlorine dioxide | | | | | | | | |
| pH | | | | | | | | |
| Acid Capacity | | | | | | | | |

* OTZ (zero adjustment applies to all methods of the measuring instrument)
** Delivery without reagents



Please see pages 88 onwards for reagents (order codes)



| | Instrument with Parameter | OTZ* | Range | Method name Handbook / Display | usable reagent form | delivery content incl. reagents | MD 100 | MD 110 | MD 200 |
|--------|---------------------------|------|----------------------------------|--------------------------------|---------------------|--|--------|---------|---------|
| 5in1 | Chlorine | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or Liquid | Tablets for Chlorine, pH, CyA, Alka-M, CaH | 278080 | - | 2861202 |
| | | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | | | | | |
| | | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | | | | |
| | pH | | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | |
| | Cyanuric Acid | | | 0 - 160 mg/l Cya | M160 / CyA | Tablet | | | |
| | Alkalinity-m | | | 5 - 200 mg/l CaCO ₃ | M30 / tA | Tablet | | | |
| 6in1 | Chlorine | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or Liquid | Tablets for Chlorine, pH, CyA, Alka-M, CaH | 278090 | 2980902 | 2861902 |
| | | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | | | | | |
| | | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | | | | |
| | Bromine | | | 0,05 - 13 mg/l Br ₂ | M80 / Br | Tablet | | | |
| | pH | | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | |
| | Cyanuric Acid | | | 0 - 160 mg/l Cya | M160 / CyA | Tablet | | | |
| 6in1 | Chlorine | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or Liquid | Tablets for Chlorine, Bromine, pH, CyA, Acid Capacity, CaH | - | - | 2861912 |
| | | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | | | | | |
| | | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | | | | |
| | Bromine | | | 0,05 - 13 mg/l Br ₂ | M80 / Br | Tablet | | | |
| | pH | | | 6,5 - 8,4 pH | M330 / M331 / pH | Tablet/Liquid | | | |
| | Cyanuric Acid | | | 0 - 160 mg/l Cya | M160 / CyA | Tablet | | | |
| 6in1 | Chlorine | ✓ | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 | Tablet or Liquid | Tablets for Chlorine, Bromine, pH, CyA, Alka-M, Copper, Iron | - | - | 2862102 |
| | | | 0,02 - 4 mg/l Cl ₂ | M101 / CL6 | | | | | |
| | | | 0,1 - 10 mg/l Cl ₂ ** | M103 / CL10 | Tablet | | | | |
| | pH | | | 6,5 - 8,4 pH | M330/331 / pH | Tablet/Liquid | | | |
| | Cyanuric Acid | | | 0 - 160 mg/l Cya | M160 / CyA | Tablet | | | |
| | Alkalinity-m | | | 5 - 200 mg/l CaCO ₃ | M30 / tA | Tablet | | | |
| Copper | | | 0,05 - 5,0 mg/l Cu | M150 / Cu | Tablet | | | | |
| Iron | | | 0,02 - 1,0 mg/l Fe | M220 / FE | Tablet | | | | |

* OTZ (zero adjustment applies to all methods of the measuring instrument)

** Delivery without reagents





Delivery Content

- Instrument in carrying case
- **MD 100 & MD 110**
4 micro batteries (AAA)
- **MD 200**
4 micro batteries (AA),
- 3 round vials (glass) with lids
- 1 stirring rod & 1 brush & syringe
- Reagents (see tables)
- Warranty information
- Certificate (Certificate of Compliance)
- Instruction Manual

| | Instrument with Parameter | OTZ* | Range | Method name Handbook / Display | usable reagent form | delivery content incl. reagents | MD 100 | MD 110 | MD 200 |
|---------------|---------------------------|------|---|--------------------------------|---------------------|---------------------------------|--------|---------|--------|
| Boiler Water | Aluminium | | 0,01 - 0,25 mg/l Al | M50 / AL (PP) | Powder | without reagents | 276230 | 2962302 | - |
| | Iron | | 0,03 - 2 mg/l Fe ^{2+/β+} | M225 / FE (L) | Liquid | | | | |
| | Copper | | 0,3 - 5,0 mg/l Cu | M150 / Cu (T) | Tablet | | | | |
| | Silica | | 1 - 90 mg/l SiO ₂ | M352 / SiHr (PP) | Powder | | | | |
| | Chloride | | 0,5 - 20 mg/l Cl ⁻ | M92 / CL- (L) | Liquid | | | | |
| | Phosphate | | 5 - 80 mg/l PO ₄ | M335 / PO4 (L) | Liquid | | | | |
| | Oxygen (dissolved) | | 10 - 800 µg/l O ₂ | M292 / O2 | Vacu-vials | | | | |
| | DEHA | | 20 - 500 µg/l DEHA | M167 / DEHA (PP) | Powder | | | | |
| | Hydrazine | | 50 - 500 µg/l N ₂ H ₄ | M205 / Hydr (P) | Powder | | | | |
| | Polyacrylates | | 1 - 30 mg/l Polyacrylates | M338 / POLY (L) | Liquid | | | | |
| Cooling Water | Bromine | | 0,05 - 13 mg/l Br ₂ | M80 / Br (T) | Tablet | without reagents | 276240 | 2962402 | - |
| | Chlorine | | 0,01 - 6,0 mg/l Cl ₂ | M100 / CL6 (T) | Tablet | | | | |
| | Chlorine HR (KI) | | 5 - 200 mg/l Cl ₂ | M105 / CLHr (T) | Tablet | | | | |
| | Chlorine dioxide | | 0,02 - 11 mg/l ClO ₂ | M100 / CL6 (T) (Factor 1,9) | Tablet | | | | |
| | Ozone | | 0,02 - 2 mg/l O ₃ | M300 / O3 (T) | Tablet | | | | |
| | Aluminium | | 0,01 - 0,25 mg/l Al | M50 / AL (PP) | Powder | | | | |
| | Iron | | 0,03 - 2 mg/l Fe ^{2+/β+} | M225 / FE (L) | Liquid | | | | |
| | Iron in Mo | | 0,01 - 1,8 mg/l Fe | M224 / FEM(PP) | Powder | | | | |
| | Copper | | 0,3 - 5,0 mg/l Cu | M150 / Cu (T) | Tablet | | | | |
| | Zinc | | 0,1 - 2,5 mg/l Zn | M405 / Zn (L) | Liquid | | | | |
| | Sulfate | | 5 - 100 mg/l SO ₄ | M360 / SO4 (PP) | Powder | | | | |
| | Molybdenum | | 0,03 - 3 mg/l Mo | M251 / Mo1 (PP) | Powder | | | | |
| | | | 0,6 - 60 mg/l Mo | M254 / Mo2 (L) | Liquid | | | | |
| | Triazoles | | 1 - 16 mg/l Benzotriazoles | M388 / tri (PP) | Powder | | | | |
| | Polyacrylates | | 1 - 30 mg/l Polyacrylates | M338 / POLY (L) | Liquid | | | | |

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 5 round vials with lid height 48 mm, Ø 24 mm | 19 76 29 |
| Satz à 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 |
| Set of 12 plastic vials (PC), with lid "Multi"-Type 2, □ 10 mm | 19 76 00 |
| Vial stand for 6 round vials Ø 24 mm, acrylic glass | 41 89 51 |
| Vial stand for 10 vials (Ø 16 mm), acrylic glass | 41 89 57 |
| Mixing cylinder, 25 ml, with stopper required accessory for molybdenum LR test with MD 100 (276140) | 19 80 26 50 |
| Membrane filter set for use when preparing samples, 25 membrane filters, 0.45 µm, 2 syringes 20 ml | 36 61 50 |
| Cleaning cloth for vials | 19 76 35 |
| Set of 12 sealing rings for round vial Ø 24 mm | 19 76 26 |
| 4 micro batteries (AAA) MD 100, MD 110 | 19 50 026 |
| 4 batteries (AA) MD 200 | 19 50 025 |
| Battery lid MD 100, MD 110 | 19 80 26 17 |
| Battery lid MD 200 | 19 80 22 41 |
| Measuring beaker, volume 100 ml | 38 48 01 |
| Plastic funnel with handle | 47 10 07 |
| Plastic stirring rod, 13 cm length | 36 41 00 |
| Plastic stirring rod, 13 cm length, (10 pcs.) | 36 41 20 |
| Plastic stirring rod, 10 cm length | 36 41 09 |
| Plastic stirring rod, 10 cm length, (10 pcs.) | 36 41 30 |
| Infrared data transfer module IRiM (MD 100, MD 200 only) | 21 40 50 |
| Bluetooth-Dongle and Software (MD110 only) | 24 44 480 |

| Technical Data | MD 100 | MD 110 | MD 200 |
|--|---|--|--|
| Interface for data transfer | Infrared interface (IRiM needed) | Bluetooth® -interface | Infrared interface (IRiM needed) |
| Storage | internal ring memory for 16 data sets | internal ring memory for 125 data sets | internal ring memory for 16 data sets |
| Power Supply | 4 micro batteries (AAA), capacity approx. 17 hours or approx. 5000 tests in continuous operation with the display lighting switched off | 4 micro batteries (AAA), capacity approx. 17 hours or approx. 5000 tests in continuous operation with the display lighting and Bluetooth® Function switched off | 4 batteries (AA), capacity approx. 53 hours or 15000 tests (continuous operation without display lighting) |
| Dimensions | 155 x 75 x 35 mm (L x W x H) | | 190 x 110 x 55 mm (L x W x H) |
| Weight | basic unit ca. 260 g | | basic unit ca. 455 g (batteries incl.) |
| Optics | LEDs, interference filters (IF) and photo sensor in transparent sample chamber. Depending on the version, up to 3 different interference filters are used. Wavelength specifications of interference filters: 430 nm Δλ = 5 nm 530 nm Δλ = 5 nm 560 nm Δλ = 5 nm 580 nm Δλ = 5 nm 610 nm Δλ = 6 nm 660 nm Δλ = 5 nm | | |
| Wavelength Accuracy | ± 1 nm | | |
| Photometric Accuracy⁴⁾ | 3 % FS (T = 20 °C - 25 °C) | | |
| Photometric Resolution | 0,01 A | | |
| Absorption range | -2600 to 2600 m Abs | | |
| Auto - OFF | automatic switch-off | | |
| Display | backlit LCD (on keypress) | | |
| Time | real time clock and date | | |
| Calibration | factory calibration and user calibration. Reset to factory calibration possible | | |
| Environmental conditions | temperature: 5 - 40 °C rel. humidity: 30 - 90 % (non condensing) | | |
| Conformity | CE | | |

⁴⁾ tested with standard solutions

Tintometer GmbH

Lovibond® Water Testing
Schleefstraße 8-12
44287 Dortmund
Tel.: +49 (0)231/94510-0
Fax: +49 (0)231/94510-30
verkauf@tintometer.de
www.lovibond.com
Germany

The Tintometer Limited

Lovibond House
Sun Rise Way
Amesbury, SP4 7GR
Tel.: +44 (0)1980 664800
Fax: +44 (0)1980 625412
water.sales@tintometer.com
www.lovibond.com
UK

Tintometer AG

Hauptstraße 2
5212 Hausen AG
Tel.: +41 (0)56/4422829
Fax: +41 (0)56/4424121
info@tintometer.ch
www.tintometer.ch

Switzerland

Tintometer China

Room 1001, China Life Tower
16 Chaoyangmenwai Avenue,
Beijing, 100020
Tel.: +86 10 85251111 App. 330
Fax: +86 10 85251001
chinaoffice@tintometer.com
www.lovibond.com/zh

China

Tintometer South East Asia

Unit B-3-12, BBT One Boulevard,
Lebuh Nilam 2, Bandar Bukit Tinggi,
Klang, 41200, Selangor D.E
Tel.: +60 (0)3 3325 2285/6
Fax: +60 (0)3 3325 2287
lovibond.asia@tintometer.com
www.lovibond.com

Malaysia

Tintometer Brazil

Caixa Postal: 271
CEP: 13201-970
Jundiaí – SP
Tel.: +55 (11) 3230-6410
sales@tintometer.com.br
www.lovibond.com.br

Brazil

Tintometer Inc.

6456 Parkland Drive
Sarasota, FL 34243
Tel: 941.756.6410
Fax: 941.727.9654
sales@tintometer.us
www.lovibond.com

USA

Tintometer Indien Pvt. Ltd.

Door No: 7-2-C-14, 2nd, 3rd & 4th Floor
Sanathnagar Industrial Estate,
Hyderabad, 500018 Telangana
Tel: +91 (0) 40 23883300
Toll Free: 1 800 599 3891/ 3892
indiaoffice@tintometer.com
www.lovibondwater.in

India

Tintometer Spain

Postbox: 24047
08080 Barcelona
Tel.: +34 661 606 770
sales@tintometer.es
www.lovibond.com

Spain

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novatech
INTERNATIONAL

sales@novatech-usa.com

www.novatech-usa.com

Tel: (866) 433-6682

Fax: (866) 433-6684

Tel: (281) 359-8538

Fax: (281) 359-0084



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