Lovibond® Water Testing

Tintometer® Group

MD 640

Modern, mobile photometer for rapid, reliable water testing

- PTSA and Fluorescein testing capabilities
- All of the colorimetric tests a Boiler or Cooling Water Technician would need - in one device
- Rugged, but lightweight, it is ideal for use out in the field

Part Number: 214140

Easy Access to new testing parameter and ranges

Never have an outdated instrument again! As additional test methods become available, the new software update is available as a free download on our website.

On-screen access to important test information

Using the correct reagent and sample cell for a preprogrammed calibration curve is essential to achieving accurate results. With the push of a button, it's easy to confirm what is required for the test. The method information will also show which conversion factors can be automatically applied to a method, so results are displayed in the required reporting units.

No Need to memorize method numbers to access a testing method

The scroll-driven menu system allows you to navigate to the test you need without the need to memorize the test method number. In addition, a Users Favorite Menu can be defined so that the instrument displays only the testing methods you want to see,

Data Storage and Transfer Capabilities

Store up to 1,000 readings with location ID, time and date stamp. Test data stored on the instrument can be easily exported using the IRiM accessory, which uses an infrared connection to export data directly to an Excel or .txt file.

Choice of Reagent Platforms

With over 120 pre-programmed testing methods on one instrument, many parameters offer the choice of using Tablet, Powder Pack or Liquid reagents.

Create User-Defined Calibration Curves

Have a proprietary testing method or a requirement to conform to a specific governmental or organizational standard method? Tired of converting ABS or %T values into meaningful values? It's easy to create and store as many as 35 user-defined methods on the MD 600 series. Up to a 25 order polynomial along with test parameters such as wavelength, measuring range, unit type and number of decimals displayed can be defined and implemented.

Accurate, Reproducible Results

The optical system of the MD 600 series operates with six unique wavelengths. By utilizing LEDs and interference filters, the instrument quickly gives you results that you can be confident in.

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.

Industry

Chemical Industry | Food and Beverage Industry | Industries Others | Marine Industry | Municipalities | NGO | Oil and Gas | Pharmaceutical Industry | Power and Energy

Application

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

MD 640

Featuring the ability to measure PTSA and Fluorescein, over 120 pre-programmed photometric tests and a **Bluetooth®** interface for data transfer, the MD 640 is the ultimate testing device for testing the water quality of a Boiler or Cooling Tower system.

Measuring Range

Test Name	Measuring Range	Chemical Method
Alkalinity-m HR T	5 - 500 mg/l $CaCO_3$	Acid / Indicator
Alkalinity-m T	5 - 200 mg/l $CaCO_3$	Acid / Indicator
Alkalinity-p T	5 - 300 mg/l $CaCO_3$	Acid / Indicator
Aluminium PP	0.01 - 0.25 mg/l Al	Eriochrom Cyanine R
Aluminium T	0.01 - 0.3 mg/l Al	Eriochrom Cyanine R
Ammonia HR TT	1.0 - 50 mg/l N	Salicylate
Ammonia LR TT	0.02 - 2.5 mg/l N	Salicylate
Ammonia PP	0.01 - 0.8 mg/l N	Salicylate
Ammonia T	0.02 - 1 mg/l N	Indophenole Blue
Boron T	0.1 - 2 mg/l B	Azomethine
Bromine PP	0.05 - 4.5 mg/l Br_2	DPD
Bromine T	0.05 - 13 mg/l Br_2	DPD
Chloride L (A)	0.5 - 20 mg/l Cl^-	Mercury Thiocyanate / Iron Nitrate
Chloride T	0.5 - 25 mg/l Cl^-	Silver Nitrate / Turbidity
Chlorine dioxide PP	0.04 - 3.8 mg/l ClO_2	DPD
Chlorine dioxide T	0.02 - 11 mg/l ClO_2	DPD / Glycine
Chlorine HR (KI) T (105)	5 - 200 mg/l Cl_2	KI / Acid
Chlorine HR PP	0.1 - 8 mg/l Cl_2 [a)]	DPD
Chlorine HR T	0.1 - 10 mg/l Cl_2 [a)]	DPD
Chlorine L	0.02 - 4.0 mg/l Cl_2 [a)]	DPD
Chlorine PP	0.02 - 2 mg/l Cl_2 [a)]	DPD
Chlorine PP	0.02 - 3.5 mg/l Cl_2 [a)]	DPD
Chlorine T	0.01 - 6.0 mg/l Cl_2 [a)]	DPD
Chromium PP	0.02 - 2 mg/l Cr[b)]	Diphenylcarbazide
COD HR TT	200 - 15000 mg/l COD[b)]	Dichromate / H_2SO_4
COD LR TT	3 - 150 mg/l COD[b)]	Dichromate / H_2SO_4
COD MR TT	20 - 1500 mg/l COD[b)]	Dichromate / H_2SO_4
Copper L	0.05 - 4 mg/l Cu[a)]	Bicinchoninate
Copper PP	0.05 - 5 mg/l Cu	Bicinchoninate
Copper T	0.05 - 5 mg/l Cu[a)]	Biquinoline
Cyanide L	0.01 - 0.5 mg/l CN^-	Pyridine-barbituric Acid
CyA T	10 - 160 mg/l CyA	Melamine
DEHA PP	0.02 - 0.5 mg/l DEHA	PPST
DEHA T (L)	0.02 - 0.5 mg/l DEHA	PPST
Fluorescein	10 - 300 ppb	Fluorescence
Fluorescein	10 - 400 ppb	Fluorescence
Fluoride L	0.05 - 2 mg/l F^-	SPADNS
H_2O_2 HR L	40 - 500 mg/l H_2O_2	Titanium Tetrachloride / Acid
H_2O_2 LR L	1 - 50 mg/l H_2O_2	Titanium Tetrachloride / Acid
H_2O_2 T	0.03 - 3 mg/l H_2O_2	DPD / Catalyst
Hardness Calcium (B) T	0 - 500 mg/l $CaCO_3$	Murexide
Hardness Calcium (B) T	50 - 900 mg/l $CaCO_3$	Murexide
Hardness total HR T	20 - 500 mg/l $CaCO_3$ [i)]	Metallphthaleine
Hardness total T	2 - 50 mg/l $CaCO_3$	Metallphthaleine
Hazen 24	10 - 500 mg/l Pt	(APHA) Platinum Cobalt Standard Method
Hydrazine C	0.01 - 0.7 mg/l N_2H_4 [c)]	PDMAB
Hydrazine L	0.005 - 0.6 mg/l N_2H_4	Dimethylaminobenzaldehyde
Hydrazine P	0.05 - 0.5 mg/l N_2H_4	Dimethylaminobenzaldehyde
Hypochlorite T	0.2 - 16 % NaOCl	Potassium Iodide
Iron (TPTZ) PP	0.02 - 1.8 mg/l Fe	TPTZ
Iron HR L	0.1 - 10 mg/l Fe	Thioglycolate
Iron in Mo PP (224)	0.01 - 1.8 mg/l Fe	TPTZ
Iron LR L (A)	0.03 - 2 mg/l Fe	Ferrozine / Thioglycolate
Iron LR L (B)	0.03 - 2 mg/l Fe	Ferrozine / Thioglycolate
Iron PP	0.02 - 3 mg/l Fe[g)]	1,10-Phenanthroline
Iron T	0.02 - 1 mg/l Fe	Ferrozine / Thioglycolate
$K_{S4.3}$ T	0.1 - 4 mmol/l $K_{S4.3}$	Acid / Indicator
Iodine T	0.05 - 3.6 mg/l I	DPD
Manganese HR PP	0.1 - 18 mg/l Mn	Periodate Oxidation
Manganese L	0.05 - 5 mg/l Mn	Formaldoxime
Manganese LR PP	0.01 - 0.7 mg/l Mn	PAN
Manganese T	0.2 - 4 mg/l Mn	Formaldoxime
Molybdate HR L	1 - 100 mg/l MoO_4	Thioglycolate
Molybdate HR PP	0.5 - 66 mg/l MoO_4	Mercaptoacetic Acid
Molybdate LR PP	0.05 - 5 mg/l MoO_4	Mercaptoacetic Acid
Molybdate T	1 - 50 mg/l MoO_4	Thioglycolate
Nickel L	0.2 - 7 mg/l Ni	Dimethylglyoxime
Nickel T	0.1 - 10 mg/l Ni	Nioxime
Nitrate DMP HR	1.2 - 35 mg/l N	2,6-Dimethylphenole
Nitrate T	0.08 - 1 mg/l N	Zinc Reduction / NED
Nitrate TT	1 - 30 mg/l N	Chromotropic Acid
Nitrite PP	0.01 - 0.3 mg/l N	Diazotation
Nitrite T	0.01 - 0.5 mg/l N	N-(1-Naphthyl)-ethylendiamine
Oxygen active T	0.1 - 10 mg/l O_2	DPD
Oxygen dissolved C	10 - 800 µg/l O_2 [c)]	Rhodazine D TM
Ozone T	0.02 - 2 mg/l O_3	DPD / Glycine
PHMB T	2 - 60 mg/l PHMB	Buffer / Indicator
Phosphate h. TT	0.02 - 1.6 mg/l P[b)]	Phosphomolybdenum Blue
Phosphate HR C	5 - 40 mg/l P[c)]	Vanadomolybdate
Phosphate HR L	5 - 80 mg/l P	Vanadomolybdate
Phosphate HR T	1 - 80 mg/l P	Vanadomolybdate
Phosphate LR C	0.05 - 5 mg/l P[c)]	Stannous Chloride
Phosphate LR L	0.1 - 10 mg/l P	Phosphomolybic Acid / Ascorbic Acid
Phosphate LR T	0.05 - 4 mg/l P	Phosphomolybdenum Blue
Phosphate PP	0.06 - 2.5 mg/l P	Phosphomolybdenum Blue
Phosphate t. TT	0.02 - 1.1 mg/l P[b)]	Phosphomolybdenum Blue
Phosphate TT	0.06 - 5 mg/l P	Phosphomolybdenum Blue
Phosphonate PP	0.2 - 125 mg/l P	Persulfate UV Oxidation Method
pH-value HR T	8.0 - 9.6	Thymol Blue
pH value L	6.5 - 8.4	Phenol Red
pH-value LR T	5.2 - 6.8	Bromocresolpurple
pH-value T	6.5 - 8.4	Phenol Red
Polyacrylate L	1 - 30 mg/l Polyacryl	Turbidity
Potassium T	0.7 - 16 mg/l K	Tetraphenylborat Turbidity
PTSA	10 - 400 ppb	Fluorescence
PTSA	10 - 1000 ppb	Fluorescence
Silcate T	0.05 - 4 mg/l SiO_2	Silicomolybdenum Blue
Silicate HR PP	1 - 90 mg/l SiO_2	Silicomolybdate
Silicate L	0.1 - 8 mg/l SiO_2	Heteropolyblue
Silicate LR PP	0.05 - 1.6 mg/l SiO_2	Heteropolyblue

Test Name	Measuring Range	Chemical Method
Sulphate PP	5 - 100 mg/l SO_4^{2-}	Bariumsulphate Turbidity
Sulphate T	5 - 100 mg/l SO_4^{2-}	Bariumsulphate Turbidity
Sulphide T	0.04 - 0.5 mg/l S^{2-}	DPD / Catalyst
Sulphite T	0.1 - 5 mg/l SO_3	DTNB
Surfactants M. (anion.) TT	0.05 - 2 mg/l SDSA	Methylene Blue
Surfactants M. (cation.) TT	0.05 - 1.5 mg/l CTAB	Disulphine Blue
Surfactants M. (not ionic) TT	0.1 - 7.5 mg/l Triton X-100	TBPE
Suspended solids 24	10 - 750 mg/l TSS	Turbidity / Attenuated Radiation Method
TN HR TT	5 - 150 mg/l N[b)]	Persulphate Digestion
TN LR TT	0.5 - 25 mg/l N[b)]	Persulphate Digestion
TOC HR M. TT	50 - 800 mg/l TOC[b)]	H_2SO_4 / Persulphate / Indicator
TOC LR M. TT	5 - 80 mg/l TOC[b)]	H_2SO_4 / Persulphate / Indicator
Triazole PP	1 - 16 mg/l Benzotriazole or Tolyltriazole	Catalyzed UV Digestion
Turbidity 24	10 - 1000 FAU	Attenuated Radiation Method
Urea T	0.1 - 2.5 mg/l Urea	Indophenol / Urease
Zinc L	0.1 - 2.5 mg/l Zn	Zincon / EDTA
Zinc T	0.02 - 1 mg/l Zn	Zincon

Technical DataTechnical Data

Optics	LEDs, interference filters (IF) and photo sensor in transparent sample chamber Wavelength range: 430 nm IF Δλ = 5 nm 530 nm IF Δλ = 5 nm 560 nm IF Δλ = 5 nm 580 nm IF Δλ = 5 nm 610 nm IF Δλ = 6 nm 660 nm IF Δλ = 5 nm IF = interference filter
Wavelength Accuracy	± 1 nm
Photometric Accuracy	2 % FS (T = 20 °C – 25 °C)
Operation	Acid and solvent resistant, touch-sensitive keypad with audible Feedback via integrated beeper
Display	Backlit graphic-display
Interfaces	Bluetooth
Updates	Software updates via Internet
Internal Storage	approx. 500 data sets
Power Supply	4 batteries (Mignon AA/LR6)
Battery Life Time	approx. 26 h
Auto – OFF	Yes
Beeper	existing
Portability	Benchtop
Environmental Conditions	Temperature: 5 - 40 °C rel. humidity: 30 - 90 % (non condensing)
Compliance	CE
Protection Class	IP 68
Languages User Interface	German, English, French, Spanish, Italian, Portuguese, Polish, Indonesian
Dimensions	95 x 45 x 210 mm
Weight	450 g

Delivery Scope Text

- In case
- 4 Batteries (AA)
- 3 Vials 24 mm ø
- 3 Vials 16 mm ø
- 1 Adapter each (16 mm and 13 mm cuvettes)
- Plastic stirring rod 13 cm
- Brush 11 cm
- Screw driver
- Instruction manual
- Certificate
- Warranty information
- Without reagents
- Please name the required reagent set or parameter in your order

Accessory

Title	Part Number
Water sampler, AF 631	170500
Batteries (AA), set of 4	1950025
Multy cuvette-3, set of 12	197605
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
Sample cuvettes with black lid, Height 48 mm, ø 24 mm, set of 12	197657
Round cuvette 16 mm, set of 10	197665
Adapter for round cuvettes 16 mm	19802190
Adapter for round cuvettes 13 mm	19802192
Rubber seal cap	19802223
Mixing cylinder, 25 ml	19802650
Update cable	214030
Verification Standard Kit MD 600	215640
Standard Solution Ammonia, 1.3 mg/l NH_4 = 1.0 mg/l N	2420800
Standard Solution Ammonia, 5.2 mg/l NH_4 = 4.0 mg/l N	2420801
Standard Solution Ammonia, 26 mg/l NH_4 = 20 mg/l N	2420802
Standard Solution COD 100 mg/l	2420803
Standard Solution COD 500 mg/l	2420804
Standard Solution COD 5000 mg/l	2420805
Standard Solution Nitrate, 40 mg/l NO_3 = 9.0 mg/l N	2420806
Standard Solution Nitrate, 5 mg/l NO_2 = 1.5 mg/l N	2420807
Standard Solution Phosphate, 4.6 mg/l PO_4 = 1.5 mg/l P	2420808
Standard Solution Phosphate, 20 mg/l PO_4 = 6,5 mg/l P	2420809
Kit of BT data transfer software and Bluetooth dobgle	2444480
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
Lid, AF 631	375068
500 ml bottle, AF 631	375069
Brush, 11 cm length	380230

Title	Part Number
Measuring beaker, 100 ml	384801
UV Pen Lamp, 254 nm	400740
Cuvette stand for 6 round cuvettes Ø 24 mm	418951
Cuvette stand for 10 round cuvettes Ø 16 mm	418957
PTSA standard addition solution, 200 ppb	461200
PTSA standard addition solution, 1000 ppb	461210
Fluoresceine standard addition solution, 400 ppb	461230
Fluoresceine standard, 0 ppb	461235
Fluoresceine calibration set (0, 200, 1000 ppb)	461240
PTSA calibration set (0, 200, 1000 ppb)	461245
Plastic funnel with handle (white)	471007
Manufacturer´s test certificate M for MD 600 series	999770

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