

Lovibond® Water Testing

Tintometer® Group



XD 7000 (VIS)



- Premium optical system with reference beam
- Automatic test recognition with internal barcode reader
- Automatic cuvette type detection
- Support of analytical quality assurance

Part Number: 71307000

Latest technology

The XD 7000 and XD 7500 spectrophotometers are equipped with VIS and UV / VIS reference beam technology.

Automatic test recognition

Each of the more than 150 pre-programmed Lovibond® methods is recognized by barcode as well as the cuvette type.

Analytical quality assurance

Standard procedures for analytical quality assurance support the verification of the photometer, the overall system (including the chemical methodology) and the verification of matrix effects.

Built-in security levels

The devices support the assignment of passwords and the assignment of up to three different levels of rights.

Additional functions

Measurement of transmission and absorption, spectral scan, kinetics analysis, as well as the creation of user-defined methods.

Interfaces for data processing

You want to process your data? With Ethernet, USB B, USB A for external memory, keyboard, barcode scanner and printer different versions are available.

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

XD 7000 (VIS)

The XD 7000 and XD 7500 are state-of-the-art spectrophotometers. Due to many technical subtleties, such as The automatic test recognition via barcode or over 150 pre-programmed Lovibond® methods makes it ideal for routine or spectral analysis.

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 T | 0.01 - 0.3 mg/l Al | Eriochrom Cyanine R |
| Aluminium VARIO PP | 0.01 - 0.25 mg/l Al | Eriochrom Cyanine R |
| Ammonia T | 0.02 - 1 mg/l N | Indophenole Blue |
| Ammonia VARIO HR TT | 1.0 - 50 mg/l N | Salicylate |
| Ammonia VARIO LR TT | 0.02 - 2.5 mg/l N | Salicylate |
| Ammonia VARIO PP | 0.01 - 0.8 mg/l N | Salicylate |
| Arsenic | 0.02 - 0.6 mg/l As | Silver Diethyldithiocarbamate |
| Boron T | 0.1 - 2 mg/l B | Azomethine |

| Test Name | Measuring Range | Chemical Method |
|------------------------------------|---|--|
| Bromine 10 T | 0.1 - 3 mg/l Br ₂ | DPD |
| Bromine 50 T | 0.05 - 1 mg/l Br ₂ | DPD |
| Bromine T | 0.05 - 6.5 mg/l Br ₂ | DPD |
| Bromine VARIO PP | 0.05 - 4.5 mg/l Br ₂ | DPD |
| Cadmium M. TT | 0.025 - 0.75 mg/l Cd | Cadion |
| Chloride L (A) | 0.5 - 20 mg/l Cl ⁻ | Mercury Thiocyanate / Iron Nitrate |
| Chloride L (B) | 5.00 - 60 mg/l Cl ⁻ | Iron(III)-thiocyanate |
| Chloride T | 0.5 - 25 mg/l Cl ⁻ | Silver Nitrate / Turbidity |
| Chlorine 10 T | 0.1 - 6 mg/l Cl ₂ | DPD |
| Chlorine 50 T | 0.02 - 0.5 mg/l Cl ₂ ^{a)} | DPD |
| Chlorine dioxide 50 T | 0.05 - 1 mg/l ClO ₂ | DPD / Glycine |
| Chlorine dioxide T | 0.05 - 2.5 mg/l ClO ₂ | DPD / Glycine |
| Chlorine dioxide VARIO PP | 0.04 - 3.8 mg/l ClO ₂ | DPD |
| Chlorine HR 10 T | 0.1 - 10 mg/l Cl ₂ ^{a)} | DPD |
| Chlorine HR (KI) T (105) | 5 - 200 mg/l Cl ₂ | KI / Acid |
| Chlorine L | 0.02 - 3 mg/l Cl ₂ ^{a)} | DPD |
| Chlorine PP | 0.02 - 2 mg/l Cl ₂ ^{a)} | DPD |
| Chlorine T | 0.02 - 6.0 mg/l Cl ₂ ^{a)} | DPD |
| Chlorine VARIO PP | 0.02 - 3.5 mg/l Cl ₂ ^{a)} | DPD |
| Chlorite T | 0.03 - 2.5 mg/l ClO ₂ ⁻ | DPD |
| Chromium 50 PP | 0.005 - 0.5 mg/l Cr ^{b)} | Diphenylcarbazide |
| Chromium PP | 0.02 - 2 mg/l Cr ^{b)} | Diphenylcarbazide |
| COD HR VARIO TT | 200 - 15000 mg/l COD ^{b)} | Dichromate / H ₂ SO ₄ |
| COD LMR TT | 15 - 300 mg/l COD ^{b)} | Dichromate / H ₂ SO ₄ |
| COD LR VARIO TT | 3 - 150 mg/l COD ^{b)} | Dichromate / H ₂ SO ₄ |
| COD MR VARIO TT | 20 - 1500 mg/l COD ^{b)} | Dichromate / H ₂ SO ₄ |
| Copper 50 T | 0.05 - 1 mg/l Cu ^{a)} | Biquinoline |
| Copper L | 0.05 - 4 mg/l Cu ^{a)} | Bicinchoninate |
| Copper T | 0.5 - 5 mg/l Cu ^{a)} | Biquinoline |
| Copper VARIO PP | 0.05 - 5 mg/l Cu | Bicinchoninate |
| Cyanide 50 L | 0.005 - 0.2 mg/l CN ⁻ | Pyridine-barbituric Acid |
| Cyanide L | 0.01 - 0.5 mg/l CN ⁻ | Pyridine-barbituric Acid |
| CyA T | 5 - 200 mg/l CyA | Melamine |
| CyA T | 10 - 160 mg/l CyA | Melamine |
| DEHA T (L) | 0.02 - 0.5 mg/l DEHA | PPST |
| DEHA VARIO PP | 0.02 - 0.5 mg/l DEHA | PPST |
| Fluoride L | 0.05 - 2 mg/l F ⁻ | SPADNS |
| Formaldehyde 10 M. L | 1.00 - 5.00 mg/l HCHO | H ₂ SO ₄ / Chromotropic acid |
| Formaldehyde 50 M. L | 0.02 - 1.00 mg/l HCHO | H ₂ SO ₄ / Chromotropic acid |
| Formaldehyde M. TT | 0.1 - 5 mg/l HCHO | H ₂ SO ₄ / Chromotropic acid |
| H ₂ O ₂ 50 T | 0.01 - 0.5 mg/l H ₂ O ₂ | DPD / Catalyst |
| H ₂ O ₂ HR L | 40 - 500 mg/l H ₂ O ₂ | Titanium Tetrachloride / Acid |
| H ₂ O ₂ LR L | 1 - 50 mg/l H ₂ O ₂ | Titanium Tetrachloride / Acid |
| H ₂ O ₂ T | 0.03 - 1.5 mg/l H ₂ O 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 ^{h)} | Metallphthaleine |
| Hardness total T | 2 - 50 mg/l CaCO ₃ | Metallphthaleine |
| Hazen | 10 - 500 mg/l Pt | (APHA) Platinum Cobalt Standard Method |
| Hazen | 10 - 500 mg/l Pt | (APHA) Platinum Cobalt Standard Method |
| Hydrazine C | 0.01 - 0.7 mg/l N ₂ H ₄ ^{c)} | PDMAB |

| Test Name | Measuring Range | Chemical Method |
|----------------------------|--|--------------------------------|
| Hydrazine P | 0.05 - 0.5 mg/l N ₂ H ₄ | Dimethylaminobenzaldehyde |
| Hydrazine VARIO L | 0.005 - 0.6 mg/l N ₂ H ₄ | Dimethylaminobenzaldehyde |
| Hypochlorite T | 0.2 - 16 % NaOCl | Potassium Iodide |
| Iron 10 T | 0.05 - 1 mg/l Fe | Ferrozine / Thioglycolate |
| Iron 50 T | 0.01 - 0.5 mg/l Fe | Ferrozine / Thioglycolate |
| Iron HR L | 0.1 - 10 mg/l Fe | Thioglycolate |
| Iron in Mo VARIO 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 T | 0.1 - 1 mg/l Fe | Ferrozine / Thioglycolate |
| Iron VARIO PP | 0.1 - 3 mg/l Fe ^{g)} | 1,10-Phenanthroline |
| Iron VARIO PP | 0.02 - 1.5 mg/l Fe ^{g)} | 1,10-Phenanthroline |
| Ks _{4,3} T | 0.1 - 4 mmol/l Ks _{4,3} | Acid / Indicator |
| Lead 10 | 0.1 - 5 mg/l Pb | 4-(2-Pyridylazo)-resorcin |
| Lead TT (A) | 0.1 - 5 mg/l Pb | 4-(2-Pyridylazo)-resorcin |
| Lead TT (B) | 0.1 - 5 mg/l Pb | 4-(2-Pyridylazo)-resorcin |
| Iodine T | 0.05 - 3.6 mg/l I | DPD |
| Manganese HR VARIO PP | 0.1 - 18 mg/l Mn | Periodate Oxidation |
| Manganese L | 0.05 - 5 mg/l Mn | Formaloxime |
| Manganese LR VARIO PP | 0.01 - 0.7 mg/l Mn | PAN |
| Manganese T | 0.2 - 4 mg/l Mn | Formaloxime |
| Molybdate HR L | 1 - 100 mg/l MoO ₄ | Thioglycolate |
| Molybdate HR VARIO PP | 0.5 - 66 mg/l MoO ₄ | Mercaptoacetic Acid |
| Molybdate LR VARIO PP | 0.05 - 5 mg/l MoO ₄ | Mercaptoacetic Acid |
| Molybdate T | 1 - 30 mg/l MoO ₄ | Thioglycolate |
| Nickel 50 L | 0.02 - 1 mg/l Ni | Dimethylglyoxime |
| 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 LR TT | 0.5 - 14 mg/l N | 2,6-Dimethylphenole |
| Nitrate T | 0.08 - 1 mg/l N | Zinc Reduction / NED |
| Nitrate VARIO TT | 1 - 30 mg/l N | Chromotropic Acid |
| Nitrite HR TT | 0.3 - 3 mg/l N | Sulfanilic / Naphthylamine |
| Nitrite LR TT | 0.03 - 0.6 mg/l N | Sulfanilic / Naphthylamine |
| Nitrite T | 0.01 - 0.5 mg/l N | N-(1-Naphthyl)-ethylenediamine |
| Nitrite VARIO PP | 0.01 - 0.3 mg/l N | Diazotation |
| Nitrogen total HR VARIO TT | 5 - 150 mg/l N ^{b)} | Persulphate Digestion |
| Nitrogen total LR VARIO TT | 0.5 - 25 mg/l N ^{b)} | Persulphate Digestion |
| 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 50 T | 0.02 - 0.5 mg/l O ₃ | DPD / Glycine |
| Ozone PP | 0.015 - 2 mg/l O ₃ | DPD / Glycine |
| Ozone T | 0.02 - 1 mg/l O ₃ | DPD / Glycine |
| Phenol T | 0.1 - 5 mg/l C ₆ H ₅ OH | 4-Aminoantipyrine |
| PHMB T | 2 - 60 mg/l PHMB | Buffer / Indicator |
| Phosphate g. VARIO TT | 0.02 - 1.1 mg/l P ^{b)} | Phosphomolybdenum Blue |
| Phosphate h. VARIO 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 |

| Test Name | Measuring Range | Chemical Method |
|-------------------------------|--|--|
| Phosphate HR TT | 3 - 60 mg/l P | Vanadomolybdate |
| Phosphate LR C | 0.05 - 5 mg/l P ^(a) | 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 total HR TT | 1.5 - 20 mg/l P ^(b) | Phosphomolybdenum Blue |
| Phosphate total LR TT | 0.07 - 3 mg/l P ^(b) | Phosphomolybdenum Blue |
| Phosphate VARIO PP | 0.06 - 2.5 mg/l P | Phosphomolybdenum Blue |
| Phosphate VARIO TT | 0.02 - 1.6 mg/l P | Phosphomolybdenum Blue |
| Phosphonate VARIO 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 | 1 - 10 mg/l K | Tetraphenylborat Turbidity |
| SAC 436 nm | 0.5 - 50 m ⁻¹ | Direct Reading EN ISO 7887:1994 |
| SAC 525 nm | 0.5 - 50 m ⁻¹ | Direct Reading EN ISO 7887:1994 |
| SAC 620 nm | 0.5 - 50 m ⁻¹ | Direct Reading EN ISO 7887:1994 |
| Selenium | 0.05 - 1.6 mg/l Se | 3,3'-Diaminobenzidine in Toluene |
| Silcate 10 T | 0.05 - 4 mg/l SiO ₂ | |
| Silcate T | 0.05 - 4 mg/l SiO ₂ | Silicomolybdenum Blue |
| Silicate HR VARIO PP | 1 - 100 mg/l SiO ₂ | Silicomolybdate |
| Silicate L | 0.1 - 8 mg/l SiO ₂ | Heteropolyblue |
| Silicate LR VARIO PP | 0.05 - 1.6 mg/l SiO ₂ | Heteropolyblue |
| Sulphate T | 5 - 100 mg/l SO ₄ ²⁻ | Bariumsulphate Turbidity |
| Sulphate VARIO PP | 5 - 100 mg/l SO ₄ ²⁻ | Bariumsulphate Turbidity |
| Sulphide T | 0.04 - 0.5 mg/l S ²⁻ | DPD / Catalyst |
| Sulphite 10 T | 0.1 - 10 mg/l SO ₃ | DTNB |
| Sulphite T | 0.05 - 4 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 | 10 - 750 mg/l TSS | Turbidity / Attenuated Radiation Method |
| Suspended solids | 10 - 750 mg/l TSS | Turbidity / Attenuated Radiation Method |
| TN HR TT | 5 - 140 mg/l N ^(b)1) | 2,6-Dimethylphenole |
| TN LR TT | 0.5 - 14 mg/l N ^(b) | 2,6-Dimethylphenole |
| TOC HR M. TT | 50 - 800 mg/l TOC ^(b) | H ₂ SO ₄ / Persulphate / Indicator |
| TOC LR M. TT | 5 - 80 mg/l TOC ^(b) | H ₂ SO ₄ / Persulphate / Indicator |
| Total iron VARIO PP | 0.1 - 1.8 mg/l Fe | TPTZ |
| Triazole VARIO PP | 1 - 16 mg/l Benzotriazole or Tolyltriazole | Catalyzed UV Digestion |
| Turbidity | 5 - 500 FAU | Attenuated Radiation Method |
| Turbidity | 10 - 1000 FAU | Attenuated Radiation Method |
| Urea T | 0.1 - 2 mg/l Urea | Indophenol / Urease |
| Zinc L | 0.1 - 2.5 mg/l Zn | Zincon / EDTA |

| Test Name | Measuring Range | Chemical Method |
|-----------|---------------------|-----------------|
| Zinc T | 0.02 - 0.05 mg/l Zn | Zincon |

| Technical Data | |
|--------------------------------------|--|
| Light Source | Tungsten halogen lamp |
| Optics | Grid monochromator with reference beam and beam splitter after exit slit |
| Measurement | Concentration, single and multi-wavelength measurement of absorbance and % transmission, kinetics, spectra |
| Wavelength Range | 320 - 1100 nm (rango de exploración) |
| Wavelength Resolution | 1 nm |
| Wavelength Accuracy | ± 1 nm on all Holmium peaks |
| Wavelength Reproducibility | better than 0,5 nm |
| Spectral Scope | 4 nm |
| Photometric Range | -3,3 - +3,3 Abs |
| Photometric Resolution | Absorption: 0.001 ; Transmission: 0.1 % |
| Photometric Accuracy | 0.003 Abs below 0.6 Abs ; 0.5 % from 0.6 to 2.0 Abs |
| Photometric Reproducibility | 0.003 Abs below 0.6 Abs ; 0.5 % from 0.6 to 2.0 Abs |
| Photometric Linearity | < 1 % up to 2.0 Abs between 340 to 900 nm |
| Scan Speed | 700 - 2000 nm/min. |
| Stray Light | > 0.1 % Transmission at 340 and 408 nm |
| Drift | < 0.005 Abs per hour after 15 minutes heat up time |
| Operation | Membrane Keyboard |
| Display | 7" high contrast colour graphic-display |
| Suitable Vials | Rectangular Cuvettes 10 mm Rectangular Cuvettes 20 mm Rectangular Cuvettes 50 mm Round Cuvettes 13 mm Round Cuvettes 16 mm Round Cuvettes 24 mm |
| Automatic Cuvette Recognition | Round cuvettes: 13, 16 and 24 mm ; Rectangular cuvettes: 10, 20 and 50mm |
| Test Recognition | via internal barcode reader |
| Interfaces | Ethernet USB B USB A for External Memory Keypad Barcode-Scanner PCL Compatible Printer |
| Auto-Check | Self-test at each switch-on: test of memory, processor, internal interface, filter lamp and additional calibration of each wavelength |
| LIMS Compatibility | ASCII, .csv-files |
| Internal Storage | approx. 5000 data sets (method, user ID, date, result), autostorage function / manual storage function |
| Security | Password protection possible: 3 different user levels (guest, user, admin) |
| Power Drain | 100 - 240 V, 50/60 Hz |
| Power Supply | Buffer batteries (4 x AA), power supply unit with cable |
| Auto - OFF | Yes |
| Portability | Benchtop |
| Environmental Conditions | +10 °C to 35 °C (41 °F to 95 °F), ≤ 75 % average humidity within one year 95 %, max. 30 days/year, 85 % all other days |
| Stock Conditions | -25 °C to +65 °C (-13 °F to 268 °F) |
| Compliance | CE |
| Protection Class | IP 30 |
| IP Protection Class | EN 60529 |
| Interference Emission | Class B |
| Interference Immunity | IEC 61000-4-3 |

| | |
|------------------------------------|---|
| Tolerance Extension | 0.008 E |
| Meter Safety | EC Directive 2014/35/EC EN 61010-1:2010 |
| Languages User Interface | German, English, French, Spanish, Italian, Portuguese, Polish, Indonesian, Russian, Chinese, Japanese, Dutch, Swedish, Norwegian, Czech, Romanian, Macedonian, Slovenian, Hungarian, Turkish, Korean, Vietnamese, Thai, Serbian, Malaysian, Danish, Bulgarian |
| Languages Quick Start Guide | German, English, French, Spanish, Italian, Portuguese, Polish, Indonesian, Russian, Chinese, Japanese, Dutch, Swedish, Norwegian, Czech, Romanian, Macedonian, Slovenian, Hungarian, Turkish, Korean, Vietnamese, Thai, Serbian, Malaysian, Danish, Bulgarian |
| Languages Full User Manual | German, English, Spanish, French, Italian, Portuguese, Chinese, Japanese |
| Dimensions | 422 x 195 x 323 mm |
| Weight | 4.5 kg |

Delivery Scope Text

- 4 batteries (AA)
- 1 power supply cable
- 4 round cuvettes with lid and 1 zero cuvette XD 7x00 (ø 24 mm)
- 1 zero cuvette (ø 16 mm)
- Quickstart guide in 24 languages
- Full user manual in 8 languages

Accessory

| Title | Part Number |
|---|-------------|
| Batteries (AA), set of 4 | 1950025 |
| Round cuvette 24 mm, set of 12 | 197620 |
| Round cuvette 24 mm, set of 5 | 197629 |
| Cleaning cloth | 197635 |
| Round cuvette 16 mm, set of 10 | 197665 |
| Zero cuvette ø 16 mm for XD 7000/7500 | 215661 |
| Zero cuvette ø 24 mm for XD 7000/7500 | 215662 |
| Verification Standard Kit XD 7000/7500 | 215663 |
| USB cable 3 m | 2444482 |
| 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 |
| Pipette tips*, 1-5 ml (white) 100 pc. | 419066 |
| Pipette tips**, 0,1-1 ml (white), 1000 pc. | 419073 |
| Automatic pipette*, 1-5 ml | 419076 |
| Automatic pipette**, 0,1-1 ml | 419077 |
| W100/OG/10MM Rectangular cell, optical glass | 601040 |
| W100/OG/20MM Rectangular cell, optical glass for determination of arsenic | 601050 |
| W100/OG/50MM Rectangular cell, optical glass | 601070 |
| W110/UV/10MM Rectangular cell, Quartz UV | 661130 |
| W110/UV/20MM Rectangular cell, Quartz UV | 661140 |
| W110/UV/50MM Rectangular cell, Quartz UV | 661160 |
| Secondary standard set VIS | 711160 |
| Potassium Dichromate Secondary Standard Set UV | 711161 |
| Light source replacement XD 7000 | 71310000 |
| Carrying case for XD 7000/7500 | 71310010 |
| 12 V-plug connector for XD 7000/7500 | 71310020 |
| Barcode Hand-held Scanner | 71310030 |
| Semimicro cell, 50 mm with lid | 71310045 |