Lovibond® Water Testing

Tintometer® Group

Spectrophotometer XD 7000 (VIS)

Simplify your Work - Save Time and Money!



- 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 respectively 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 | Food and Beverage | Galvanization | Others | Pool-Water Control | Pool Water Treatment | Raw Water Treatment | Waste Water Treatment

Spectrophotometer XD 7000 (VIS)

The XD series instruments are ideal for routine and spectral analysis. As true all-rounders, the XD 7000 and XD 7500 facilitate work routines, especially with automatic method recognition using barcodes, automatic cell recognition and more than 150 pre-programmed methods. In addition to analytical quality control, they also support Good Labor Practice (GLP). The instruments are available together with bar-coded test tubes and a wide range of accessories from a single source - which is also easy on your wallet. High-quality reference beam optics, usability, easy handling and multilingual global applicability round off the versatility of the VIS and UV/VIS spectrophotometers, which are also equipped for flexible on-site use.

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 - 500 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
Arsenic	0.02 - 0.6 mg/L As	Silver Diethyldithiocarbamate
Bromine 10 T	0.1 - 3 mg/L Br_2	DPD
Bromine 50 T	0.05 - 1 mg/L Br_2	DPD
Bromine PP	0.05 - 4.5 mg/L Br_2	DPD
Bromine T	0.05 - 13 mg/L Br_2	DPD
Cadmium M. TT	0.025 - 0.75 mg/L Cd	Cadion
Chloramine (M) PP	0.02 - 4.5 mg/L NH_2Cl as Cl_2	Indophenole method
Chloride L (A)	5.00 - 60 mg/L Cl^-	Iron(III)-thiocyanate
Chloride L (B)	0.5 - 20 mg/L Cl^-	Mercury Thiocyanate / Iron Nitrate
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 (free) and Monochloramine	0.02 - 4.50 mg/L Cl_2	Indophenole method
Chlorine dioxide 50 T	0.05 - 1 mg/l ClO_2	DPD / Glycine
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 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 - 4.0 mg/L Cl_2 [a]	DPD
Chlorine MR PP	0.02 - 3.5 mg/L Cl_2 [a]	DPD
Chlorine PP	0.02 - 2 mg/L Cl_2 [a]	DPD
Chlorine T	0.01 - 6.0 mg/L Cl_2 [a]	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 TT	200 - 15000 mg/L COD[b]	Dichromate / H_2SO_4
COD LMR TT	15 - 300 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
COD VLR TT	2.0 - 60.0 mg/L COD[b]	Dichromate / H_2SO_4
Copper 50 T	0.05 - 1 mg/L Cu[a]	Biquinoline
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
CyA HR T	10 - 200 mg/L CyA	Melamine
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	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
Fluoride L	0.05 - 2 mg/L F^-	SPADNS
Formaldehyde 10 M. L	1.00 - 5.00 mg/L HCHO	H_2SO_4 / Chromotropic acid
Formaldehyde 50 M. L	0.02 - 1.00 mg/L HCHO	H_2SO_4 / Chromotropic acid
Formaldehyde M. TT	0.1 - 5 mg/L HCHO	H_2SO_4 / Chromotropic acid
H_2O_2 50 T	0.01 - 0.5 mg/L H_2O_2	DPD / Catalyst
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 Ca and Mg L	0.05 - 4 mg/L $CaCO_3$	Calmagite
Hardness Ca and Mg MR TT	10 - 360 mg/L $CaCO_3$	Calmagite
Hardness Calcium (B) T	20 - 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
Hazen 50	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	5 - 600 µg/L N_2H_4	Dimethylaminobenzaldehyde
Hydrazine P	0.05 - 0.5 mg/L N_2H_4	Dimethylaminobenzaldehyde
Hypochlorite T	0.2 - 17 % NaOCl	Potassium Iodide
Iron 10 T	0.05 - 1 mg/L Fe	Ferrozine / Thioglycolate
Iron 50 PP	0.01 - 1.5 mg/L Fe[g]	1,10-Phenanthroline
Iron 50 T	0.01 - 0.5 mg/L Fe	Ferrozine / Thioglycolate
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
Lead 10	0.1 - 5 mg/L Pb	4-(2-Pyridylazo-)-resorcine
Lead (A) TT	0.1 - 5 mg/L Pb	4-(2-Pyridylazo-)-resorcine
Lead (B) TT	0.1 - 5 mg/L Pb	4-(2-Pyridylazo-)-resorcine
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	0.3 - 40 mg/L Mo	Mercaptoacetic Acid
Molybdate LR PP	0.03 - 3 mg/L Mo	Ternary Complex
Molybdate T	1 - 50 mg/L MoO_4	Thioglycolate
Nickel 50 L	0.02 - 1 mg/L Ni	Dimethylglyoxime
Nickel L	0.2 - 7 mg/L Ni	Dimethylglyoxime
Nitrate HR	1.2 - 35 mg/L N	2,6-Dimethylphenole
Nitrate LR2 TT	0.2 - 15 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 TT	1 - 30 mg/L N	Chromotropic Acid
Nitrite HR PP	2 - 250 mg/L NO_2^-	Ferrous Sulfate Method
Nitrite HR TT	0.3 - 3 mg/L N	Sulfanilic / Naphthylamine
Nitrite LR TT	0.03 - 0.6 mg/L N	Sulfanilic / Naphthylamine
Nitrite PP	0.01 - 0.3 mg/L N	Diazotation

Test Name	Measuring Range	Chemical Method
Nitrite T	0.01 - 0.5 mg/L N	N-(1-Naphthyl)-ethylen-diamine
Nitrite VHR L	25 - 2500 mg/L NO_2^-	Ferrous Sulfate Method
Oxygen active T	0.1 - 10 mg/L O_2	DPD
Oxygen dissolved C	10 - 1100 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 - 2 mg/L O_3	DPD / Glycine
Phenol T	0.1 - 5 mg/L C_6H_5OH	4-Aminoantipyrine
PHMB T	2 - 60 mg/lLPHMB	Buffer / Indicator
Phosphate h. TT	0.02 - 1.6 mg/L P[b)]	Phosphomolybdenum Blue
Phosphate HR C	1.6 - 13 mg/L P[c)]	Vanadomolybdate
Phosphate HR L	5 - 80 mg/L PO_4	Vanadomolybdate
Phosphate HR T	0.33 - 26.09 mg/L P	Vanadomolybdate
Phosphate HR TT	0.98 - 19.57 mg/L P	Vanadomolybdate
Phosphate LR C	0.016 - 1.6 mg/L P[c)]	Stannous Chloride
Phosphate LR L	0.1 - 10 mg/L PO_4	Phosphomolybic Acid / Ascorbic Acid
Phosphate LR T	0.016 - 1.305 mg/L P	Phosphomolybdenum Blue
Phosphate PP	0.02 - 0.815 mg/L P	Phosphomolybdenum Blue
Phosphate t. TT	0.02 - 1.1 mg/L P[b)]	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 TT	0.02 - 1.63 mg/L P	Phosphomolybdenum Blue
Phosphonate PP	0.02 - 125 mg/L PO_4	Persulfate UV Oxidation Method
pH-value HR T	8.0 - 9.6 pH	Thymol Blue
pH value L	6.5 - 8.4 pH	Phenol Red
pH-value LR T	5.2 - 6.8 pH	Bromocresolpurple
pH-value T	6.5 - 8.4 pH	Phenol Red
Polyacrylate L	1 - 30 mg/L Polyacryl	Turbidity
Potassium T	0.7 - 16 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 - 2 mg/L Se	3,3'-Diaminobenzidine in Toluene
Silcate T	0.05 - 4 mg/L SiO_2	Silicomolybdenum Blue
Silicate HR PP	1 - 100 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
Silica VLR PP	0.005 - 0.5 mg/L SiO_2	Heteropolyblue
Sulphate HR PP	50 - 1000	Bariumsulphate Turbidity
Sulphate PP	5 - 100 mg/L SO_4^{2-}	Bariumsulphate Turbidity
Sulphate T	5 - 100 mg/L SO_4^{2-}	Bariumsulphate Turbidity
Sulphide L	8 - 1400 µg/L S^{2-}	Methylene Blue
Sulphide T	0.04 - 0.5 mg/L S^{2-}	DPD / Catalyst
Sulphite 10 T	0.1 - 12 mg/L SO_3	DTNB
Sulphite T	0.1 - 6 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
Suspended solids 50	10 - 750 mg/L TSS	Turbidity / Attenuated Radiation Method
Tannin L	0.5 - 20 mg/L Tannin	
TN HR 2 TT	5 - 140 mg/L N[b) i)]	2,6-Dimethylphenole
TN HR TT	5 - 150 mg/L N[b)]	Persulphate Digestion
TN LR 2 TT	0.5 - 14 mg/L N[b)]	2,6-Dimethylphenole
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 50	5 - 500 FAU	Attenuated Radiation Method
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 Data

Optics	Grid monochromator with reference beam and beam splitter after exit slit
Light Source	Tungsten halogen lamp
Measurement	Concentration, single and multi-wavelength measurement of absorbance and % transmission, kinetics, spectra
Wavelength Range	320 - 1100 nm
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 Reproducability	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.
Drift	< 0.005 Abs per hour after 15 minutes heat up time
Stray Light	< 0.1 % Transmission at 340 and 408 nm
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
Display	7“ high contrast colour graphic-display
Interfaces	Ethernet USB B USB A for External Memory Keypad Barcode-Scanner PCL Compatible Printer
Operation	Membrane Keyboard

Automatic Cuvette Recognition	Round cuvettes: 13, 16 and 24 mm ; Rectangular cuvettes: 10, 20 and 50mm
Auto – OFF	Yes
Test Recognition	via internal barcode reader
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
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)
Protection Class	IP 30
Compliance	CE
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

Delivery Scope

- 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
- Warranty information

Accessories

Title	Part Number
Adapter (13 mm) MultiDirect for Vacu-vial	192075
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
Adapter for round cuvettes 13 mm	19802192
Mixing cylinder, 25 ml	19802650
Inspection and calibration package for XD7000	19802707
Zero cuvette ø 16 mm for XD 7000/7500	215661
Zero cuvette ø 24 mm for XD 7000/7500	215662
Thermoreactor RD 125	2418940
USB cable 3 m	2444482
Pipette, 1000 µl	365045
Measuring spoon, 1 g	384930
UV Pen Lamp, 254 nm	400740
UV protection glasses, orange	400755
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
Screw caps TOC	420757
Measuring spoon no. 8, black	424513
Universal Container - Cap	424648
Plastic funnel with handle (white)	471007
ValidCheck Chlorine 1,5 mg/l	48105510
Stirring rod and spoon	56A006601
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
Energy station XD series/SpectroDirect	711051
Secondary standard set VIS with DAkkS calibration certificate	711160
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
Factory calibration certificate ISO 9001 for XD7000	999754

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