New

VIS / UV-VIS Spectrophotometer XD 7000 / 7500

Highlights

- Economic system solution consisting of premium spectrophotometer and barcoded reagents
- Direct method selection via barcode recognition
- Versatile application via 150 pre-pro grammed, ready to use methods
- 8-language methodology handbook, 24-language device software, 27-language user manual
- Comprehensive support of analytical quality assurance

Please see pages 88 onwards for reagents (order codes)

The company Tintometer has a decades-long heritage of standing for in-house produced high quality reagents and devices.
With the XD series, the portfolio is supplemented by an equally first-class spectrophotometer that fulfils even the highest demands in water analysis.

The Lovibond® UV-VIS and VIS spectrophotometers XD 7500 and XD 7000 combine the latest reference beam technology with high user-friendliness and flexibility.

All from one provider

The XD devices offer over 150 preprogrammed methods, which are based on the proven Lovibond® reagents. The combination of Photometer and Lovibond® reagents gives the user a complete system for immediate work input.
There are no issues to do with the compatibility of reagent and device.
This means that the user gets not only uncomplicated equipment of his working area at all times but also competence in after-sales service.

Quality at an affordable price

The outstanding price/performance ratio of the XD 7000 and XD 7500 is maintained with the diverse range of Lovibond® reagents. So the user can be sure when purchasing the device to also have a low-priced solution for consumables in future.

Method selection made simple

The barcoded cuvette tests allow the user an immediate access to the respective method:
the insertion of the 16mm cuvettes into the light-shielded duct is sufficient.

Likewise for any other of the more than 150 parameters, the external barcode reader provides direct method selection. By adopting these barcodes into customer documents, such as work instructions, the correct operation is significantly streamlined.

Global deployment desirable

With its 24-language device software, a 27-language user manual and a methodology handbook written in 8 languages, the XD 7000/7500 series qualifies for global applicability.

Through the self-explanatory pictograms the methodology handbook gives the user a quick and reliable overview of the path to the measurement result.

Straightforward user guidance

The brilliant colour display and the tidy menu navigation allow every user fast access to the device and the functions.

Diversity assured

In addition to the pre-installed Lovibond® methods the user also benefits from the various cuvette sizes of 16 and 24mm round cuvettes, as well as 10, 20 and 50mm rectangular cuvettes. These are all automatically recognised, without exception, and the user acquires a wide variety of methods.

The possibility of using a 13mm cuvette by use of an adapter further enhances the method portfolio.

Always up to date

The latest software updates are always available for registration-free download at our website www.lovibond.de.

This allows users to keep their own XD device at the cutting edge with new methods, functions or languages.

Extensive features inclusive

The XD 7000/7500 series offers a comprehensive set of features for versatile use in the analysis of water-based solutions:

- Preprogrammed Lovibond® methods
- The creation of user-defined methods using multiple wavelengths.
- Measurement of transmission and absorption
- Spectral scan
- as well as kinetics analysis

Well secured

Backup of own data is becoming increasingly important, not just for the maintenance of Good Laboratory Practice (GLP). For this purpose, the user can set up to 3 user levels: Administrator, user and guest (sometimes with password protection).

Guidelines and quality standards that call for such security will be handled in accordance with respective requirements.

Analytical quality assurance

In many application areas, beyond the GLP guidelines, reliable assurance of correct and precise measurement results is both a condition and a challenge.

The XD 7000 and XD 7500 devices meet this requirement with 3 selectable functions:

PCheck

The complete photometer is checked by means of the Verification Standard Kit, which can be ordered separately.

MCheck

The photometer is checked in conjunction with the method.

The required standards are called application-related ValidCheck® multistandards and ValidCheck® single parameter standard solutions offered.

SCheck

The SCheck checks whether the photometric determination of other ingredients in the sample is disturbed.

Each of the mentioned check options includes capabilities for defining inspection time intervals, indicating verified results and issuing a test report.

Spectrophotometer XD 7000
Order Code: 71307000

Spectrophotometer XD 7500
Order Code: 71307500

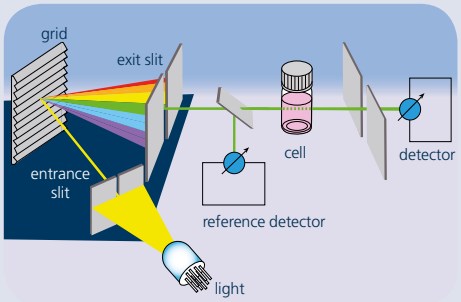
Delivery Content

- **Spectrophotometer**
- **Set of 4 round vial with lid + zero vial XD7x00 (24mm)**
- **zero via 16 mm for XD 7000 / XD 7500**
- **4 batteries AA**
- **power supply unit 100 - 240 V / 50-60 Hz / 12 V DC Output**
- **power cable**
- **Quickstart-Guide in 27 languages**
- **Full User-Manual in 8 languages (digital)**
- **Handbook of Methods (digital)**
- **Calibration record in shipping box**

Technical data	XD 7000	XD 7500
Wavelength range	320 – 1100 nm (scan range)	190 – 1100 nm (scan range)
Light source	Tungsten-halogen-lamp	Xenon flash lamp (500 millionen flashes possible)
Optical system	grid monochromator with reference beam and beam splitter after exit slit	
Measurement	concentration, single and multi-wavelength measurement of absorbance and % transmission, kinetics, spectra	
Supported cuvettes	"round: 13 with adaptor,	
Automatic cuvette detection	automatic recognition: 16 and 24mm round cuvettes and 10, 20 and 50mm rectangular cuvettes"	
Test recognition	via internal or external barcode reader (depending on the method)	
Dimensions (W x H x D)	422 x 195 x 323 mm	
Weight	approx. 4.5 kg	
Power supply	Backup batteries (4 x AA), power supply with connection cable	
Display	7" high contrast colour graphic-dislay	
Protection class	IP30	
Keyboard	1 x ethernet RJ45, 1 x USB A for external memory, keyboard, mouse, barcode-scanner and 1x USB B for PC and PCL compatible printer	
Interfaces	4nm	
Spectral scope	1 nm	
Wavelength accuracy	+/- 1nm on all Holmium peaks	
Wavelength reproducibility	better than 0.5nm	
Photometric range	-3.3 to +3.3 Abs	
Photometric resolution	Abs.: 0.001 Transmission: 0.1%	
Photometric accuracy	0.003 Abs below 0.6 Abs	
Photometric reproducibility	0.5% from 0.6 to 2.0 Abs	
Photometric linearity	<1% up to 2.0 Abs between 340 to 900 nm	
Drift	"approx. 5000 data sets (method, user, ID, date, result)	
Internal storage	autostorage function/ manual storage function"	
Programmability	up to 100 user programs, 20 user profiles	

Accessories

Item	Code
Replacement lamp for XD 7000	71310000
Transport case for XD Spectrophotometer	71310010
12 Volt Connection cable for XD Spectrophotometer	71310020
Barcode Scanner USB	71310030
Cleaning cloth for cuvettes	197635
USB-cable for PC-Connection, 3 m length	2444482
Batteries (AA), 4er pack	1950025
round cuvette with lid, 12er-pack height 48 mm; diameter 24 mm	197620
round cuvette with lid, 5er-pack height 48 mm; diameter 24 mm	197629
round cuvette with lid, 10er-pack, 12er-pack height 90 mm; diameter 16 mm	197665
cuvette stand for 6 vials 24 mm acrylic glass with laser engraving Lovibond	418951
cuvette stand for 10 vials 16 mm acrylic glass with laser engraving Lovibond	418957
W100/OG/10 mm rectangle cuvette opt. glass	601040
W100/OG/20 mm rectangle cuvette opt. glass	601050
W100/OG/50 mm rectangle cuvette opt. glass	601070
W110/UV/10 mm rectangle cuvette quartz UV	661130
W110/UV/20 mm rectangle cuvette quartz UV	661140
W110/UV/50 mm rectangle cuvette quartz UV	661160
Secondary standard set VIS with DAkkS calibration	711160
Secondary standard set VIS with UV mit DAkkS calibration	711161
Automatic pipette 1-5 ml with stepless volume adjustment (digital)	419076
Pipette tips 1-5 ml, white (Pckg with 100 pc)	419066
Automatic pipette 0,1-1 ml with stepless volume adjustment (digital)	419077
Pipette tips 0,1-1 ml , blue (Pckg with 100 pc)	419073
Zero vial 16 mm for XD 7000/XD 7500	215661
Zero vial 24 mm for XD 7000/XD 7500	215662
Verification Standard KIT XD 7000/XD7500	215663
Handbook of Methods, german	003864401
Handbook of Methods, english	003864402
Manuel des Méthodes, french	003864403
Manuale di Metodi, italian	003864404
Handbook de Métodos, spanish	003864405
Manual de Métodos, portuguese	003864406
Metotlar el Kitabi, turkish	003864407
Handbook of Methods, chinese (simplified)	003864408



The optical system

Using reference beam technology, the spectrophotometers achieve maximum accuracy in the visual and non-visual wavelength range.

The light source varies by model and consists of a tungsten-halogen lamp in the XD 7000, while the XD 7500 is equipped with a xenon flash lamp. With an output of up to 500 million flashes, the UV light source is designed to last the life of the device and is not an expensive expendable part, as is the case with the usual deuterium lamps.

By means of a grating monochromator and beam splitter behind the exit slit, the respective required wavelength is precisely demarcated and allows a wave length accuracy of +/- 1 nm.

The principle in detail

The light emitted by the light source falls through the entrance slit on the monochromator and is deflected by the grating situated thereon towards the exit slit. By this mechanism, as well as by the limitation after the exit slit, the selected wavelength is accurately reproduced.
The semi-transparent mirror sees to the reference beam while allowing the light beam to pass through the sample in the cuvette.
The photodiodes act as detectors and transmit these signals to the microprocessor. The result is calculated and issued as a value in the display.

ValidCheck Standardsolutions

Quality management of analytical methods is a fundamental prerequisite for reliable water analysis. With the new ValidCheck standard solutions, ready-to-use solutions are available to the user. The precisely adjusted concentrations are modified to each particular application case. The dilution is omitted.

With the ValidCheck Multistandards, the user can immediately check all important analysis methods of an application with one product: Anions and metals in the drinking water analysis or in the analysis of the wastewater treatment plant inflow and outflow. In addition, the Multistandards contain a stocking solution, by which influences of the sample matrix on the analysis results can be reliably determined.

ValidCheck Standardsolutions

Single standards

Item	Analyte	Analyte concentration
ValidCheck Aluminium 0,05 mg/l 250 ml	Al	0,05 mg/l
ValidCheck Aluminium 0,2 mg/l 250 ml	Al	0,2 mg/l
ValidCheck Ammonium 0,1 mg/l 250 ml	NH_4	0,1 mg/l NH_4-N
ValidCheck Ammonium 0,5 mg/l 250 ml	NH_4	0,5 mg/l NH_4-N
ValidCheck Chlorine 1,5 mg/l 97 + 3 ml	Cl_2	1,5 mg/l Cl_2
ValidCheck Fluoride 0,3 mg/l 250 ml	F-	0,3 mg/l
ValidCheck Fluoride 1 mg/l 250 ml	F-	1 mg/l
ValidCheck Iron 0,1 mg/l 250 ml	Fe	0,1 mg/l
ValidCheck Iron 0,3 mg/l 250 ml	Fe	0,3 mg/l
ValidCheck Manganese 0,05 mg/l 250 ml	Mn	0,05 mg/l
ValidCheck Manganese 0,3 mg/l 250 ml	Mn	0,3 mg/l
ValidCheck Nitrate 10 mg/l 250 ml	NO^{3-}	10 mg/l NO^{3-}
ValidCheck Nitrate 50 mg/l 250 ml	NO^{3-}	50 mg/l NO^{3-}
ValidCheck Nitrite 0,1 mg/l 250 ml	NO^{2-} -N	0,1 mg/l
ValidCheck Nitrite 0,4 mg/l 250 ml	NO^{2-} -N	0,4 mg/l

Multi-Standards inclusive Stocking Solution

Item	Analyt	Analyte concentration of the standards
ValidCheck DW Metals	Al	0,15 mg/l.
Multi-Standard Al/Fe/Cu/Mn/K	Cu	2 mg/l.
	Fe	0,3 mg/l.
	K	10 mg/l.
	Mn	0,3 mg/l.
ValidCheck DW Anions	Cl^-	250 mg/l.
	NO^{3-}	50 mg/l.
	PO_4^{3-}	2 mg/l.
	SO_4^{2-}	500 mg/l.
ValidCheck WW Influent	CSB/COD/ TOC	500 mg/l O_2.
Multi-Standard NH_4-N/COD/TOC/NO_3-N/PO_4-P/TP	NH_4	20 mg/l NH_4-N.
	NO^{3-} -N	2 mg/l.
	PO_4^{3-} -P	10 mg/l.
ValidCheck WW Effluent	CSB/COD/ TOC	40 mg/l O_2.
Multi-Standard NH_4-N/COD/TOC/NO_3-N/PO_4-P/TP	NH_4	5 mg/l NH_4-N.
	NO^{3-} -N	10 mg/l.
	P (total)	1 mg/l.

soon available!

	Container sizes	Code
	250 ml	48131125
	250 ml	48131325
	250 ml	48201125
	250 ml	48201225
	97+3 ml	48105510
	250 ml	48321225
	250 ml	48321325
	250 ml	48151125
	250 ml	48151225
	250 ml	48161225
	250 ml	48161425
	250 ml	48211325
	250 ml	48211625
	250 ml	48221225
	250 ml	48221425

Analyte concentration Stocking Solution	Container sizes	Code
1 mg/l 10 mg/l 2 mg/l 30 mg/l 2 mg/l	102 ml Stocking solution + 21 ml Stocking solution	48399212
1500 mg/l 250 mg/l NO^{3-} 10 mg/l 3000 mg/l	102 ml Stocking solution + 21 ml Stocking solution	48399312
2500 mg/l O_2 150 mg/l NH_4-N 10 mg/l 50 mg/l	102 ml Stocking solution + 21 ml Stocking solution	48399712
200 mg/l O_2 40 mg/l NH_4-N 50 mg/l 5 mg/l	102 ml Stocking solution + 21 ml Stocking solution	48399612

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