Technical data

System parameters	
Optical principle	Powerful diode array spectrophotometer for the UV VIS range
Optical system	Polychromator system
Light source	Xenon flash lamp
Wavelength range	190 – 720 nm (in steps of 0.5 nm)
Measuring time	Minimal 1 sec
Longterm stability	0,003 A/h
Sample temperature control	Approximately 4 – 90 °C optional
Control	HID-Pro 320 or PC
Software	ASpect Nano or WinAspect for ScanDrop®

Application parameters	
Scan application	Simultaneous
Mode	Energy, absorbance, transmittance

Cuvettes	Standard cuvette	CHIPCUVETTE®		
Pathlength	Up to 10 mm	0.1 mm	1.0 mm	Both
Sample volume	2 ml (min. 1.7 ml)	Min. 0.3 µl	Min. 2.0 µl	Min. 4.0 µl

Other technical data	
Instrument dimensions (W × H × D)	240 × 170 × 200 mm
Instrument weight	Approx. 5 kg
Electrical requirements	110 – 220 V ± 10 %, 50 – 60 Hz
Instrument operation	+ 15 °C to 35 °C, rel. humidity max. 90 % at 30 °C
PC interface	USB or RS 232
Warranty	2 years

Your contact

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ScanDrop® | Nano-volume spectrophotometer

- Combination of two of spectrophotometer including 10 mm standard position
- Measurement of microliter volumes down to 0.3 µl
- 16 channels per CHIPCUVETTE® with fully automated measuring of up to 32 positions at path lengths of 0.1 or 1.0 mm

Life Science unlimited

ScanDrop® | Nano-volume spectrophotometer

New generations of spectrophotometer

The ScanDrop® combines easy measurement of microliter volumes down to 0.3 µl with a standard measuring position for 10 mm cuvettes. This feature results in an exceptionally versatile instrument for routine work. The modular system is available as a single microliter instrument, as a standard 10 mm position instrument or as a combination of both. Unlike other systems, no warm up time is necessary. The instrument is ready to use almost as soon as it is switched on thanks to a long-life xenon flash lamp. One additional highlight is the new portable HID-Pro 320 user interface with a 5.7" color touch-screen, which turns the ScanDrop® into a fully functional and space-saving stand-alone system.

Reliable, versatile and robust

The ScanDrop® uses an unique patented CHIPCUVETTE®, which allows the user to easily measure sample volumes even as small as an impressive 0.3 µl. The CHIPCUVETTE® provides consistent measuring conditions, such as path lengths, which leads to enhanced reproducibility compared to other available "open drop" or "microliter" systems. It also provides optimum user and sample protection, utterly eliminating sample evaporation and the risk of cross-contamination or carryover effects. This new chip technology makes it easy to recover or simply store the sample after measurement.

The CHIPCUVETTE® provides 16 separate micro channels and is suitable for multichannel pipettes. Its technology ensures precise UV VIS absorption measurements between 190 nm and 720 nm.

CHIPCUVETTE®

Features

- Combination of two generations of spectrophotometer
- Measurement of microliter volumes down to 0.3 µl
- 16 channels per CHIPCUVETTE® with fully automated measuring of up to 32 positions at path lengths of 0.1 or 1.0 mm
- Automated sample positioning (CHIPCUVETTE®)
- Measuring position for 10 mm standard cuvettes
- Maintains best user and sample protection
- No evaporation
- No cross-contamination
- No carryover effects
- Easiest sample recovery
- Sample storable in the CHIPCUVETTE®
- Suitable for multi-channel pipettes
- Powered by SPECORD® technology
- High-precision optics with aberration-corrected grating

Fully automated measurement

The CHIPCUVETTE® is convenient and easy to use thanks to fully automatic movement and measurement of predefined measuring positions. Up to 32 measurements can be performed during one run at which a double determination of one sample at two different pathlenght can be performed. This feature offers a matchless advantage especially if sample concentrations are unknown.

High-precision optics – powered by SPECORD® technology

The polychromator system, designed to work without any movable components, is the heart of ScanDrop®. Its high-precision optics consists of an aberration-corrected grating, a mechanical slit and a diode array detector. Encased in a rugged quartz-ceramic body, it is permanently adjusted, fixed and insensitive to external influences.

The formula module

Mathematical functions such as:

- Addition
- Subtraction
- Multiplication
- Division
- Factor
- Square
- Square root
- Sine
- Cosine
- Logarithm ln
- Binomial theorems

Method module – wide selection

The following preprogrammed methods are available:

- Absorbance 260 nm
- DNA purity (A260 nm/A280 nm)
- ssDNA concentration (A260 nm × factor 33)
- RNA concentration (A260 nm × factor 40)
- DNA concentration (A260 nm × factor 50)
- Absorbance 280 nm
- Absorbance 280 nm, factor 1.38
- Kalb and Bernlohr
- Warburg-Christian formula for DNA
- Warburg-Christian formula for proteins
- Whitaker and Granum
- Kalckar and Shaffran
- and more...

PC controlled or stand alone

The ScanDrop® is controlled either by PC or by a new portable user interface with a touchscreen, and includes the corresponding measurement and analysis software. This software provides several modules meeting the needs of every user. The method module allows users to select any preprogrammed nucleic acid and protein analysis method. The formula module allows users to compile, store and reuse customized computation formulas; the quantification module automatically calculates unknown concentrations by creating a calibration curve containing standard samples. A number of typical methods are preprogrammed. The formula module mathematically combines up to six fixed wavelengths and the quantification module chooses between two calibration curves: one measured with a 0.1 mm and one measured with a 1.0 mm path length.

External user-interface HID-Pro 320

The new portable HID-Pro 320 user interface eliminates the need for a PC and makes the system exceptionally easy to operate. Its extra large 5.7" color touchscreen eliminates the need for a keyboard or mouse. The software, which is based on Windows CE, offers typical Windows functions and operating environment, as well as an intuitive menu bar.

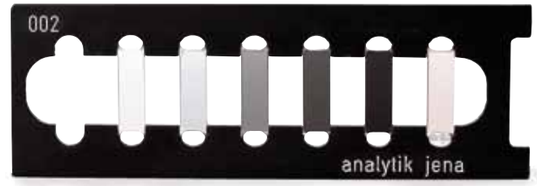
Portable and versatile user interface HID-Pro 320 with a 5.7" touchscreen, USB and LAN port

The HID-Pro 320 consists of a LAN and USB port for optimum connectivity and is also compatible with other instruments from Analytik Jena | Life Science, such as the SpeedCycler[2] thermal cycler or InnuPure®C16 extraction automate.

ScanDrop® software

Methods can be stored individually and organized in user-defined directories. Users may also select a quick-start menu for frequently used methods. An USB and LAN port allows users to exchange methods to other systems and export analysis data. The operating language can be easily changed at the touch of a button.

Validation CHIPCUVETTE®



WG280 NG1 NG4 NG3 NG9 Holmium oxide glass

The Validation CHIPCUVETTE® is used for revising the following device parameters, particularly those affecting to the CHIPCUVETTE® measuring position:

- Zero transmission
- Baseline variation
- Baseline noise (RMS)
- Long-term stability

Validation CHIPCUVETTE® external certified by Hellma

The validation of VIS photometry is done with the aid of the neutral glass filters NG1, NG4, NG3 and NG9. A holmium oxide glass filter is also used for checking wavelength accuracy. WG280 glass is necessary as reference filter.