

# Maximum Flexibility in UV/Vis Spectrophotometry

## ScanDrop<sup>2</sup>



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The ScanDrop<sup>2</sup> from Analytik Jena is the second generation of microvolume spectrophotometers, combining flexibility and reliability with innovative technology and modern design all in a single instrument.

As a flexible, easy-to-use platform for measuring small volumes of 0.3  $\mu\text{L}$  or more, the new ScanDrop<sup>2</sup> and its familiar walkaway principle allow users to process samples either individually or in a series of up to 16.

The ability to record the entire spectrum from 190 nm to 1,000 nm in only four seconds makes the system the ideal choice for UV/Vis applications, particularly for protein and nucleic acid determinations.

The ScanDrop<sup>2</sup> raises the bar when it comes to design and user-friendliness: All you have to do is switch it on and start your measurements. Thanks to its long-life xenon flash lamp, the system is ready immediately with no warm-up phase required. A number of measurement adapters are available to supplement the built-in test position for 10 mm cuvettes: These include an adapter that accommodates the patented CHIPCUVETTE (with 16 channels for measurements at up to 32 positions), an eight-position cuvette changer for standard cuvettes (up to 10 mm), and a Butterfly Cuvette for testing nine samples with no consumables. The system automatically moves the adapters into their defined positions with exceptional precision.

A 10" tablet with a high-resolution color touchscreen allows users to operate the ScanDrop<sup>2</sup> without an additional PC, while FlashSoftPro, an easy-to-use software system that has been optimized for use in this way, opens up unlimited opportunities for UV/Vis applications.





#### Efficient, robust UV/Vis spectrophotometer

- **Precise:** UV/Vis absorption measurements between 190 nm to 1,000 nm
- **Optimum:** CCD detector for optimized resolution  $\geq 1.5$  nm
- **Powerful:** Only  $< 2$  s per spectrum/sample for fast results
- **Long-lasting:** Highly precise optical system combined with a powerful xenon flash lamp

#### Innovative design for reliable handling

- **Simple:** Easy handling – just pipette the sample and take your measurement
- **Intelligent:** Rotating mechanism opens instrument for optimum access and view of the 10" tablet PC
- **Brilliant:** 2D scanning area adaptable to different center heights
- **Versatile:** Interchangeable adapters prevent contact between samples and the optical system

#### Flexibility for adapting to a variety of demands

- **Compatible:** Interchangeable adapters available for microliter measurement cells and standard cuvettes
- **Versatile:** Highly precise measurements with or without consumables
- **Practical:** Walkaway principle applies to everything from individual samples to simple series of samples
- **Reliable:** Entirely eliminates evaporation, cross-contamination and sample carryover effects

#### Reliable data capture and simple evaluation

- **Modern:** Stand-alone operation from an integrated 10" tablet and/or PC
- **Convenient:** No charge for software licenses or updates
- **Universal:** A variety of modules and preinstalled methods for customized data processing
- **Multilingual:** Available in multiple languages

## ScanDrop<sup>2</sup>

Maximum Flexibility in UV/Vis Spectrophotometry

## Efficient, Robust Spectrophotometer

This flexible, precise spectrophotometer raises the bar for UV/Vis measurements at wavelengths ranging from 190 nm to 1,000 nm, making it ideal for protein and nucleic acid applications.

The ScanDrop<sup>2</sup> is a versatile, robust instrument that is user-friendly without sacrificing measurement reliability. Optimized for the UV/Vis range, its symmetrical Czerny-Turner design with a linear CCD detector ensures excellent stability and reproducible results while offering a high level of resolution ( $\geq 1.5$  nm).

Its long-lasting xenon flash lamp, which, unlike other systems, requires no warm-up phase, means that the ScanDrop<sup>2</sup> is immediately ready to use. At  $10^9$  flashes (approx. 100,000 hours), the product life of this lamp exceeds that of conventional light sources by quite some way, delivering fast results and measurements that only take less than 2 s per spectrum. The heart of the ScanDrop<sup>2</sup> is the polychromator system, which uses no moving components. The settings are permanent, and the system is fixed in place and resistant to external influencing factors, eliminating the need for calibration.

- Symmetrical Czerny-Turner design with a linear CCD detector has been optimized for the UV/Vis range (190 nm to 1,000 nm)
- Users may select any desired wavelength along the UV/Vis spectrum in increments of 0.5 nm
- Measurements take  $< 2$  s per spectrum; at  $\geq 1.5$  nm, resolution is high
- Long-lasting xenon flash lamp
- Polychromator with highly precise



## Innovative Design for Reliable Handling

Clever design: Measurements with the ScanDrop<sup>2</sup> are very easy and reliable, thanks to how the instrument opens and automatically positions samples in the path of the beam.

The instrument opens automatically at the front with a 180° rotation, which offers both right and left handed users an optimal access to sample positioning. This also guarantees an unobstructed view of the adapted 10" tablet PC used for operating the instrument. In addition, this eliminates the need for opening the instrument manually in order to introduce the samples, making the ScanDrop<sup>2</sup> fast and easy to use.

- Rotating mechanism for opening the instrument
- Optimum sample access and unobstructed view of the tablet
- Adapters identified and positioned automatically
- 2D scanning area adaptable to different center heights

Interchangeable adapters accommodate samples in a variety of cuvettes, while users can also introduce samples directly without the use of consumables. The adapters used are then moved to their defined measurement positions inside the instrument. Because the 2D scanning area of the ScanDrop<sup>2</sup> accommodates sample detection at a variety of center heights (ranging from 8.5 to 15 mm), testing does not depend on the type of cuvette, the manufacturer or the fill level of the solution. In addition, the sample cannot come into contact with the instrument's optical system, eliminating the need for cleaning after testing.

Rotating mechanism for opening the instrument





## Flexible Adaptation to Meet a Variety of Demands

Designed around a successful walkaway principle, the ScanDrop<sup>2</sup> is a powerful, versatile UV/Vis spectrophotometer for testing either individual samples or simple series of samples. In addition to working as a standard photometer with a 10 mm cuvette position, the ScanDrop<sup>2</sup> also accommodates various adapters that allow it to run multiple samples in parallel.

### CHIPCUVETTE

The ScanDrop<sup>2</sup> utilizes the unique, patented CHIPCUVETTE, which allows the user to test samples ranging in volume from 0.3  $\mu$ L to 4  $\mu$ L. At the same time, CHIPCUVETTE includes 16 individual microchannels, each with two different path lengths (0.1 mm and 1.0 mm). This feature entirely eliminates sample evaporation, cross-contamination and carryover effects. Up to 32 measurements can be taken per run, with the option of performing double determinations at two different path lengths. This feature offers an unbeatable advantage when the sample concentrations are not known, as it eliminates the need for an additional sample dilution in many cases.

- Sixteen microchannels, each with two path lengths for up to 32 sample positions
- Sample volumes of between 0.3  $\mu$ L and 4  $\mu$ L
- Automatic evaluation of the ideal result



### Standard Cuvette Adapter

An adapter for the ScanDrop<sup>2</sup> is also available that can accommodate up to eight different 10 mm cuvettes. Automatic sample positioning based on previously defined center heights makes it possible to use 10 mm cuvettes with different center heights (8.5 mm, 12 mm, or 15 mm).

- Measurement series of up to eight 10 mm cuvettes
- Automatic positioning for different center heights



### Butterfly Cuvette

The innovative Butterfly Cuvette with 9 measuring positions in the microlitre range completely eliminates the need for consumables. Test preparation in the ScanDrop<sup>2</sup> is as easy as pipetting the sample or reference solution into the positions of the Butterfly Cuvette adapter. Just insert the adapter, pipette the sample, and start your measurement. As another user-friendly feature, the cuvette flips open and shut automatically with no manual intervention required.

- UV/Vis measurements with no consumables
- Up to nine measuring positions
- Cuvette flips open and closed automatically for easy use



## Reliable Data Capture and Simple Evaluation

The FlashSoftPro control and analysis software, which is available in a standard PC version and in a version optimized for tablets with touchscreens, incorporates features and analysis modules that exceed all expectations.

The integrated 10" tablet PC turns the ScanDrop<sup>2</sup> into a compact, stand-alone system based on Windows 10 IoT that can be operated with no peripherals. The ScanDrop<sup>2</sup> can also be operated from a standard PC or laptop. In addition to its easy-to-use, uncluttered menu interface, the software also comes with a series of preinstalled methods for analysing nucleic acids and proteins, thus entirely satisfying the demands of life-science customers. The quickstart menu offers a fast, uncomplicated way of calling up frequently used methods. The use of a mathematical module allows users to create, save, and reuse specific formulas. With the aid of the quantification module, users can automatically analyze samples of unknown concentration and create a calibration curve using standard samples. The UV/Vis module can be used for cyclic or kinetic sample measurements.

Users can transfer the data they generate directly to a USB stick. Another extraordinarily convenient feature is the optional barcode reader, which can be used for scanning in sample information and for tracking and documenting sample processing.

- Comprehensive software package for intuitive operation
- Preprogrammed methods for a quick start
- Modern 10" tablet PC with Windows 10 IoT and color touchscreen
- User administration with three levels of authorization
- No license; free updates





# Technical Data

Spectral photometer data			
Wavelength precision	±1.0 nm	Absorbance range	10 mm cuvette: 0.005–2.5 Abs (10 mm layer thickness) CHIPCUVETTE: 0.01–1.5 Abs (1 mm layer thickness) Butterfly Cuvette: 0.01–1.5 Abs (0.5 mm layer thickness)
Spectral resolution	≥1.5 nm (toluene / hexane: A @ 269 nm / A @ 266 nm) (20 °C–30 °C)	Wavelength reproducibility	±0.05 nm
Photometric accuracy	Min. ±0.025 Abs (546 nm)	Photometric reproducibility	±0.005 A (546 nm)
Optics			
Measuring principle	Polychromator system with symmetric Czerny-Turner	Read-out time	from 1.6 s per spectrum
Light source	Xenon Flash Lamp	Wavelength range	190 nm to 1,000 nm (0.5 nm steps)
Detector	Linear CCD detector optimized to UV/Vis		
Sample parameter			
Number of samples	1 to 16 sample @ 2 path length parallel	Sample amount	0.3 µL up to 2 mL
Sample handling	<ul style="list-style-type: none"> <li>▪ Measurement of samples by using cuvettes (10 mm or CHIPCUVETTE)</li> <li>▪ Optional: measurements without consumables by Butterfly Cuvette</li> </ul>		
Application UV/Vis			
Cuvette	Path length	Volumen	Virtual dilution
Standard Cuvette	Up to 10 mm	Up to 2.0 mL	-
Butterfly Cuvette	0.5 mm	2.0–4.0 µL	1:20
CHIPCUVETTE	0.1 mm	Min. 0.3 µL	1:100
	1.0 mm	Min. 2.0 µL	1:10
	Both	Min. 4.0 µL	1:10 and 1:100
Control			
Control	PC or stand-alone (optional)	Display	Optional: 10" tablet, colored, touch, WIN 10 IoT
Features	<ul style="list-style-type: none"> <li>▪ Preinstalled methods for easy access</li> <li>▪ Module for setup of own formulas</li> <li>▪ Quantification by standards</li> <li>▪ Automatic evaluation of results</li> <li>▪ Broad range of data analysis</li> <li>▪ 2D scanning area for different centre height of 8.5 to 15 mm</li> </ul>		

## Technical Data

Dimensions	
Weight	Approx. 10 kg
Dimension (W x H x L)	290 mm x 384 mm (incl. tablet) x 370 mm
Additional technical data	
Interface	<ul style="list-style-type: none"> <li>▪ PC connection: USB</li> <li>▪ Tablet: USB for data transfer, barcode reader</li> </ul>
Warranty	2 warranty on device system

## Order Information

Order Number	Description
844-00203-2	<b>ScanDrop<sup>2</sup></b> Device combination for usage of different adapters and 10 mm cuvette measurement position, without PC, incl. control unit and software FlashSoftPro
844-00204-2	<b>ScanDrop<sup>2</sup></b> Device combination for usage of different adapters and 10 mm cuvette measurement position, without PC and without control unit, incl. software FlashSoftPro
844-00220-0	<b>Butterfly Cuvette for ScanDrop<sup>2</sup></b> Flip-top cuvette incl. adapter for UV/Vis measurements without consumables, 9 positions with 0.5 mm path length each
844-00221-0	<b>CHIPCUVETTE Adapter for ScanDrop<sup>2</sup></b> Adapter for CHIPCUVETTE and UV/Vis measurements using ScanDrop <sup>2</sup> , double determination of 1 to 16 sample at 0.1 mm and 1.0 mm path length
844-00222-0	<b>Standard Cuvette Adapter for ScanDrop<sup>2</sup></b> Adapter for up to 8 Standard Cuvettes (10 mm) and UV/Vis measurements using ScanDrop <sup>2</sup>

#### Headquarters

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