

DS5

Dual Beam UV-Vis Spectrophotometer



The DS5 UV-Vis Spectrophotometer is a high performance dual beam instrument suitable for many analytical applications where accurate measurements are key to your results.

Developed and designed in the UK, the DS5 measures absorption and transmission as a function of wavelength and provides a modern, user-friendly and accurate spectrophotometer for a wide range of sample types and measurements.

Utilising a dual lamp and Czerny-Turner configuration monochromator, the DS5 features a compact, reliable and high throughput optical system which ensures impressive spectral performance. It can be configured with PC control software or as a standalone instrument using the touchscreen included in every DS5 unit.

- > User selectable variable bandpass options at 0.5, 1.0, 1.5, 2.0 or 4.0 nm
- > Fast scanning – up to 6,000 nm/min to aid sample analysis throughput
- > Automatic accessory recognition connected to the DS5
- > Optional Visacle® software for PC control
- > Modern touchscreen interface with intuitive menus and functions to ensure ease of use for standalone control
- > USB, SD card and internal data storage for convenient retrieval of methods and results



SAMPLE ACCESSORIES



STANDARD CELL HOLDER

The standard cell holder is 2-position and holds traditional 10 mm path length cells. A micro-volume cell holder option for 50 μ l cells is also available.



LONG PATH CELL HOLDER

Designed for low concentrations or absorbance, the long path cell holder holds two rectangular cells with an optical path length of 10 mm to 100 mm.



GLASS FILTER HOLDER

Designed for measuring the transmittance/absorbance of glass samples or filters. Sample dimensions up to 55 mm x 100 mm with 5 mm thickness can be accepted.



FILM HOLDER

Designed for measuring the transmittance/absorbance of thin-film samples. Sample dimensions up to 25 mm x 50 mm can be measured.



STANDARD CELL HOLDER - THERMOSTATIC

Designed for incubation or temperature stabilisation from room temperature to +40°C. Temperature stability $\pm 0.3^\circ\text{C}$.



6-POSITION CELL HOLDER

Mount up to 6 standard 10 mm path length cells with auto-changeover of sample. A temperature controlled version is also available.



AUTO SIPPER

Designed for rapid and automatic measurement of multiple or large amounts of liquid sample without changing cells.



MICRO FLOW CELL

Designed for continuous measurement of trace samples. Flow cell capacity of 70 μ l, 10 mm path length with Teflon tubing.

NAME

DESCRIPTION

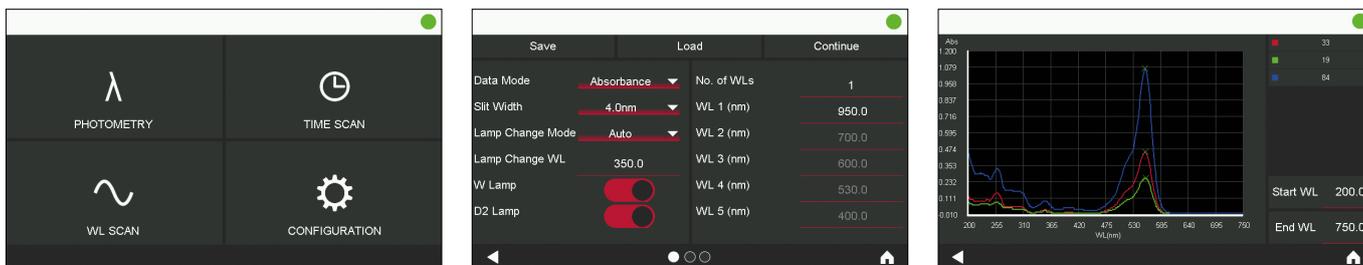
Standard Cell Holder	2-Position cell holder for standard 10 mm cells
Standard Cell Holder - Thermostatic (TCH)	Standard cell holder with temperature control from room temperature up to +40°C
Long Path Cell Holder (RLPH)	Holds two rectangular cells with an optical path length of 10 mm to 100 mm
Glass Filter Holder (GSH)	Holds glass samples/filters for transmittance/absorbance measurements
Film Holder (FSH)	Holds thin-film samples for transmittance/absorbance measurements
6-Position Cell Holder (SCC)	Holds up to six 10 mm cells in a carousel with auto-rotation into the sample beam
6-Position Cell Holder - Thermostatic (SCCT)	6-position cell holder with temperature control up to +40°C
Auto Sipper (SS)	For multiple or large amounts of liquid samples without manual washing or changing of cells
Micro Flow Cell (MFU)	Continuous measurement by injection with syringe or other device for volumes up to 70 μ l
Micro Cell Holder (MCH)	Holds micro cells for measuring micro-volumes of 50 μ l



USER INTERFACE FUNCTIONS

Choose between touchscreen or software operation

The standard DS5 is operated via a touchscreen included with every instrument. Visacle® PC-controlled software is offered for laboratories wishing to control their instrument from a computer or manage their experiment database. FDA 21 CFR Part 11 compliance is also available.



Measurement parameters, acquisition and analysis on DS5 touchscreen

MEASUREMENT MODES

- > **Wavelength scan:** Measure absorbance, transmission or detector signal selecting the spectral range, scan speed, wavelength increment, bandwidth as well as advanced instrumental parameters
- > **Time scan:** Perform kinetic measurements for time periods ranging from 1 minute to >27 hours
- > **Photometry mode:** Quantitative analyses in either absorbance or transmittance modes, from single up to 10 different individual wavelengths
- > **Quantitation:** Calibration curves including second order and multi-wavelength data points
- > **Application wizards:** Protein, nucleic acid, hexavalent chromium

DATA HANDLING

- > Rescaling, data readout, spectrum overlay, peak & trough analysis, arithmetic, smoothing, differentiation, area & rate calculating
- > Report generation and file output in CSV format
- > Internal memory, external USB, SD card

VALIDATION FUNCTIONS & AUTOMATION

- > Self-diagnosis and user calibration
- > GLP/GMP feature for analysis requiring validation and auditing
- > Import and export measurement parameters

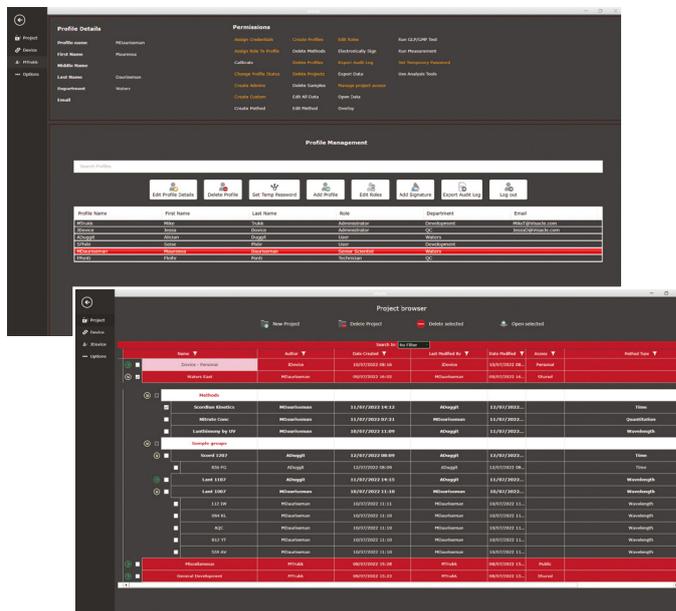
VISACLE® PC-CONTROLLED SOFTWARE

Visacle® offers all control, validation, data analysis and reporting functionality for DS5 in one PC-operated software package. Collected data is stored in a secure database, where it can then be organised and analysed, as well as exported in .TXT, .CSV or PDF format

Visacle® can be purchased as a CFR Part 11 compliant package for users requiring additional security.

Visacle-CFR features include:

- > Configurable user profiles with secure login and e-signatures
- > Audit trail logging of all actions taken
- > Permission system to restrict actions and data access to authorised users



Visacle® project browser and user profile management in CFR version



SPECIFICATIONS

Optics	Czerny-Turner, Dual Beam Monochromator
Wavelength Range	190 nm - 1100 nm
Spectral Bandwidth	0.5 nm, 1 nm, 1.5 nm, 2 nm and 4 nm
Stray Light	≤0.10% (220 nm NaI, 340 nm NaNO ₂)
Wavelength Accuracy	±0.1 nm
Wavelength Repeatability	±0.1 nm
Photometric Range	Absorbance: -3.4 to +3.4, %T: 0 to 300, Concentration: 0,000 to 9,999
Photometric Accuracy	±0.002 Abs (0 - 0.5 Abs), ±0.004 Abs (0.5 - 1.0 Abs), ±0.008 Abs (1.0 - 2.0 Abs), ±0.3% T
Photometric Reproducibility	±0.0003 Abs (0-0.5 Abs), ±0.0005 Abs (0.5-1 Abs), ±0.001 Abs (1.0-2 Abs)
Wavelength Scan Speed	10, 100, 200, 400, 800, 1200, 2400, 3600, 6000 nm/min
RMS Noise	≤0.00003 Abs (0 Abs, 500nm)
Baseline Stability	0.0002 Abs/hr (500 nm, 2 hour lamp warm-up period)
Baseline Flatness	±0.0006 Abs (200 nm - 950 nm)
Light Source	Tungsten-Halogen and Deuterium Lamps
Light Source Switching	Automatic switching selectable for 325 nm - 370 nm range
Detector	Silicon Photodiode
Display	7" Touchscreen
Software	Touchscreen operation, PC-controlled software or CFR compliant PC-controlled software
Dimensions	500 mm (W) × 475 mm (D) × 250 mm (H)
Net Weight	20 Kg (approx)
Power Supply	100 - 240V, 50/60 Hz, 150VA
Ambient Temperature	10°C - 35°C
Output Device	USB flash drive, SD card
Interface	USB PC interface



Customer support is available worldwide

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