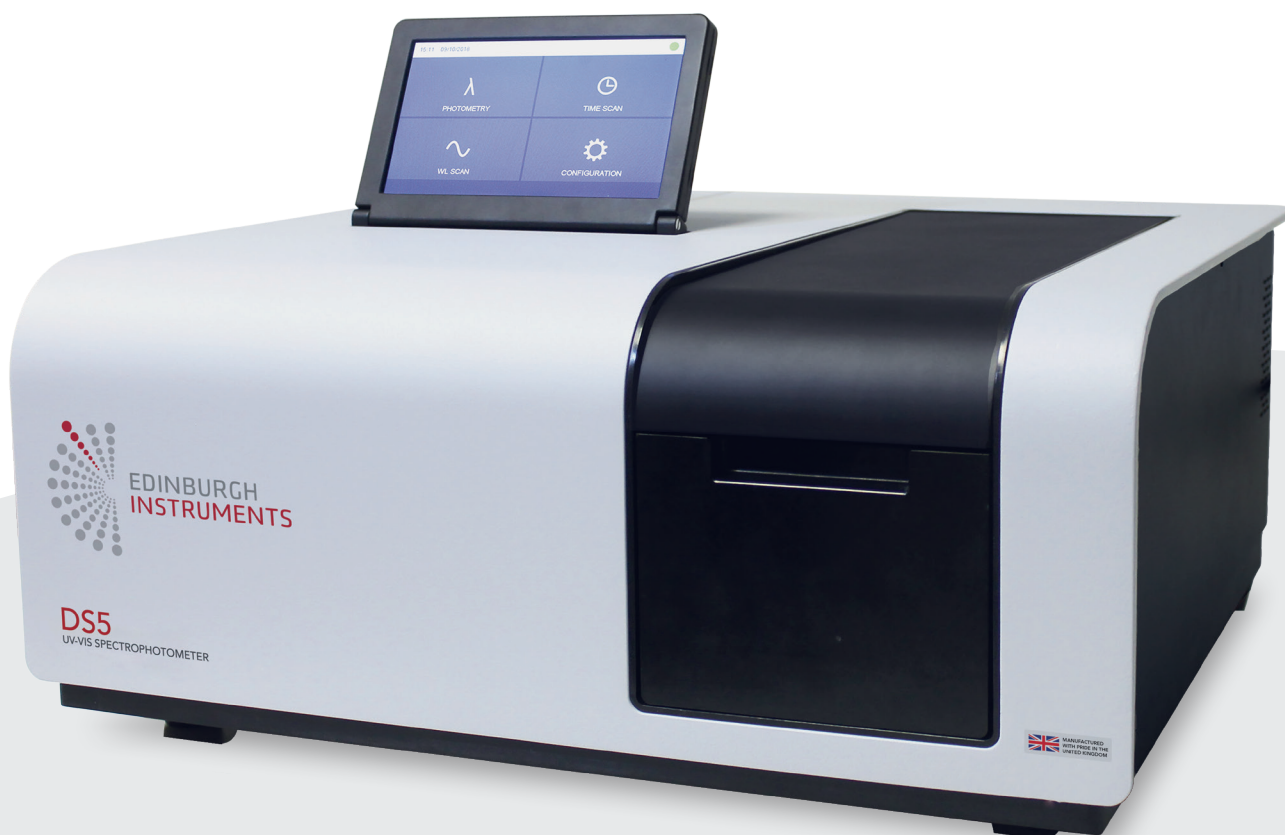


# DS5

Dual Beam UV-Vis Spectrophotometer



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

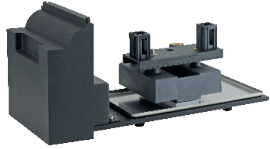
Developed and designed in the UK, the DS5 measures absorption and transmission as a function of wavelength and provides a modern, user-friendly and accurate spectrophotometer for a wide range of sample types and measurements.

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. Additional benefits include stray light, baseline flatness, wavelength and photometric accuracy and reproducibility.

- > 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
- > 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
- > Compact footprint to maximise available bench space in the laboratory



## 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 µl cells is also available.



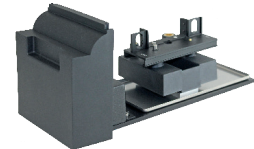
### LONG PATH CELL HOLDER

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.



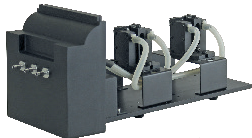
### GLASS FILTER HOLDER

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

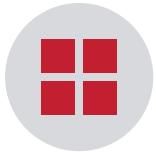
Designed for rapid and automatic measurement of multiple or large amounts of liquid sample without changing cells. A temperature controlled version is also available.



### MICRO FLOW CELL

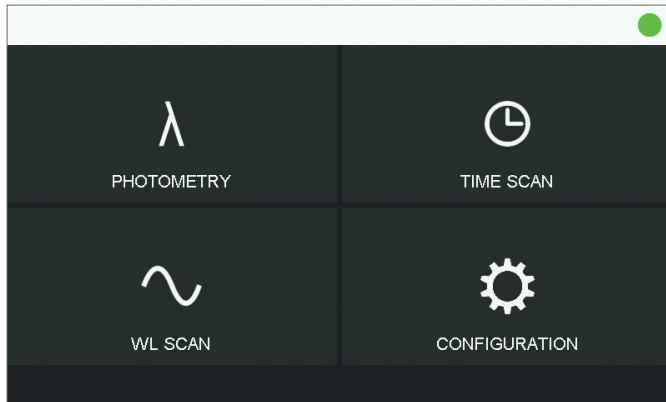
Designed for continuous measurement of trace samples. Flow cell capacity of 70 µl, 10 mm path length with Teflon tubing. A temperature controlled version is also available.

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

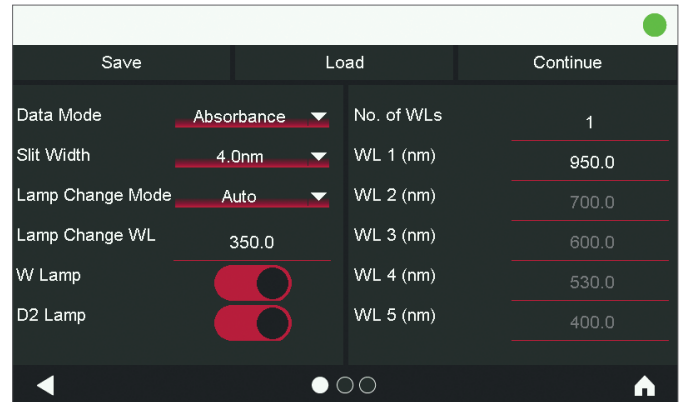


# USER INTERFACE FUNCTIONS

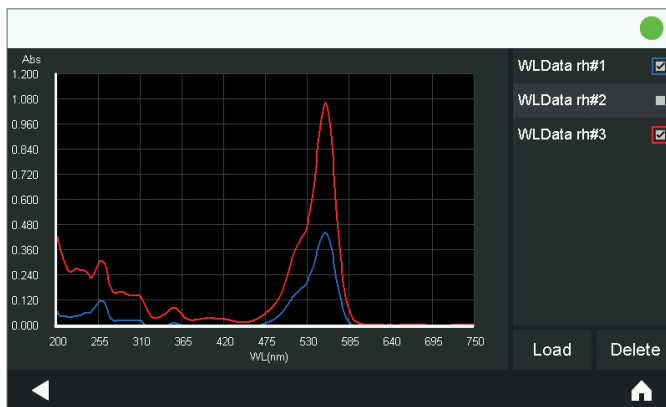
## HOME SCREEN



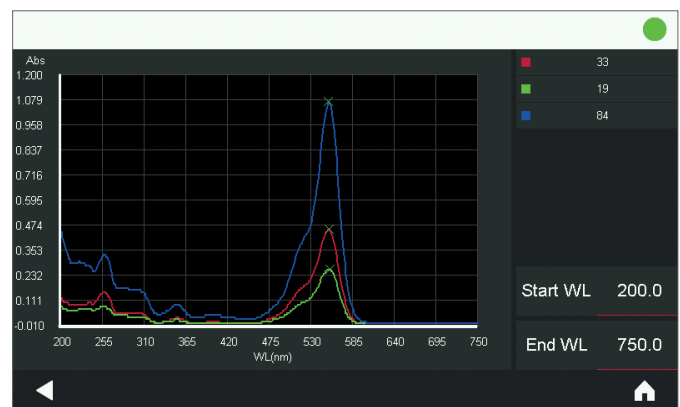
## MEASUREMENT SETUP



## SPECTRUM OVERLAY



## AREA CALCULATION



## MEASUREMENT MODES

**Photometry Mode:** Perform quantitative analyses in either absorbance or transmittance modes. Select from single up to 5 different individual wavelengths, nucleic acid/protein A260/A280 ratios and set up calibration curves for concentration measurements.

**Time Scan:** Perform kinetic measurements for time periods ranging from 1 minute to >27 hours. Measurement intervals are factory preset and automatically selected when the scan time is set.

**Wavelength scan:** Perform a full spectral scan from 190 nm - 1100 nm at any of 9 incremental and preset selectable scan speeds starting from a high resolution 10 nm/min up to a maximum scan speed of 6,000 nm/min. Data is displayed as a graphical spectrum on which data analysis can be performed through the touchscreen interface with zoom, peak-valley, smoothing and other functions available through the easy to use menu interface.

- > Concentration measurement
- > Absorbance/Transmittance measurement
- > Hexavalent Chromium, Nucleic acid measurement (nucleic acid purity, nucleic acid concentration, protein concentration calculation)
- > Wavelength scan
- > Time change
- > Single and multi-wavelength photometry

## VALIDATION FUNCTIONS

To ensure optimum instrument performance, self-diagnosis incorporating a number of parameters and wavelength calibration are automatically initiated upon start-up. Furthermore, the DS5 is equipped with a GLP/GMP feature for analyses requiring validation and auditing. Parameters such as wavelength accuracy, wavelength reproducibility, bandpass, baseline flatness, baseline stability and noise level can all be validated.

## DATA HANDLING

- > Scale changing, Trace, Spectrum overlay, Peak & trough detection, Smoothing, Differentiation, and Area & rate calculating
- > Internal memory, External USB, SD card
- > File output in CSV format



# SPECIFICATIONS

<b>Optics</b>	Czerny-Turner, Dual Beam Monochromator
<b>Wavelength Range</b>	190 nm - 1100 nm
<b>Spectral Bandwidth</b>	0.5 nm, 1 nm, 1.5 nm, 2 nm and 4 nm
<b>Stray Light</b>	≤0.10% (220 nm NaI, 340 nm NaNO <sub>2</sub> )
<b>Wavelength Accuracy</b>	±0.1 nm
<b>Wavelength Repeatability</b>	±0.1 nm
<b>Photometric Range</b>	Absorbance: -3.4 to +3.4, %T: 0 to 300, Concentration: 0,000 to 9,999
<b>Photometric Accuracy</b>	±0.002 Abs (0 - 0.5 Abs), ±0.004 Abs (0.5 - 1.0 Abs), ±0.008 Abs (1.0 - 2.0 Abs)
<b>Photometric Reproducibility</b>	±0.001 Abs (0 - 0.5 Abs), ±0.002 Abs (0.5 - 1.0 Abs), ±0.004 Abs (1.0 - 2.0 Abs)
<b>Wavelength Scan Speed</b>	10, 100, 200, 400, 800, 1200, 2400, 3600, 6000 nm/min
<b>Baseline Stability</b>	0.0003 Abs/hr (500 nm, 2 hour lamp warm-up period)
<b>Baseline Flatness</b>	±0.0009 Abs (200 nm - 950 nm)
<b>Light Source</b>	Tungsten-Halogen and Deuterium Lamps
<b>Light Source Switching</b>	Automatic switching selectable for 325 nm - 370 nm range
<b>Detector</b>	Silicon Photodiode
<b>Display</b>	7" Touchscreen
<b>Dimensions</b>	500 mm (W) × 475 mm (D) × 250 mm (H)
<b>Net Weight</b>	20 Kg (approx)
<b>Power Supply</b>	100 - 240V, 50/60 Hz, 150VA
<b>Ambient Temperature</b>	10°C - 35°C
<b>Output Device</b>	USB flash drive, SD card
<b>Interface</b>	LAN, USB PC interface



Customer support is available worldwide

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