

The First Diode Array Spectrophotometer with a 16 way Cell Changer and Integrated Advanced Fibre Optic Technology.....



- Excellent reproducibility
- Optical systems without any moving parts
- Ultra fast scanning capabilities
- Integrated 16 way UV cell changer

Reproducible measurements...

As regulatory pressures on laboratories increase, chemists have searched for methods which generally offer better quality information and a greater degree of security with respect to analytical results.

In UV measurements, one such method is diode array detection. This is the only technology which allows real time data acquisition of complete spectra at very high speeds, e.g. in 12 mS.

The spectral information obtained can be used to check on the purity of the materials or components under observation.

Measurements at discrete wavelengths are usually used (e.g., in dissolution studies) for quantification, but the presence of contaminants with overlapping signals (absorption at or near the same wavelength) can go undetected.

No moving parts in the optical path...

The use of fibre optic light transmission allows an optical system design without moving parts.

A fibre optic beam coupler eliminates the requirement for mirror switching at the light source (change from D₂ to Tungsten lamp) as found in conventional spectrometers.

The overall result is improved reliability and long term system stability.

Ultra fast scanning...

The specially developed fibre optic technology used in the SA 500 is combined with a unique diode array detection module to give a unit which features very low energy losses compared with conventional optical systems.

These higher energy levels permit more rapid scanning of the array than is found in more conventional detectors resulting in a much faster scanning capability for a given signal to noise ratio.

UV Cell Changer...

The SA 500 has a built in 16 way UV cell changer. The cell changer compartment is not covered and is therefore easy to access. Thanks to the cell holder design, all of the installed UV cells are correctly positioned in the light path.



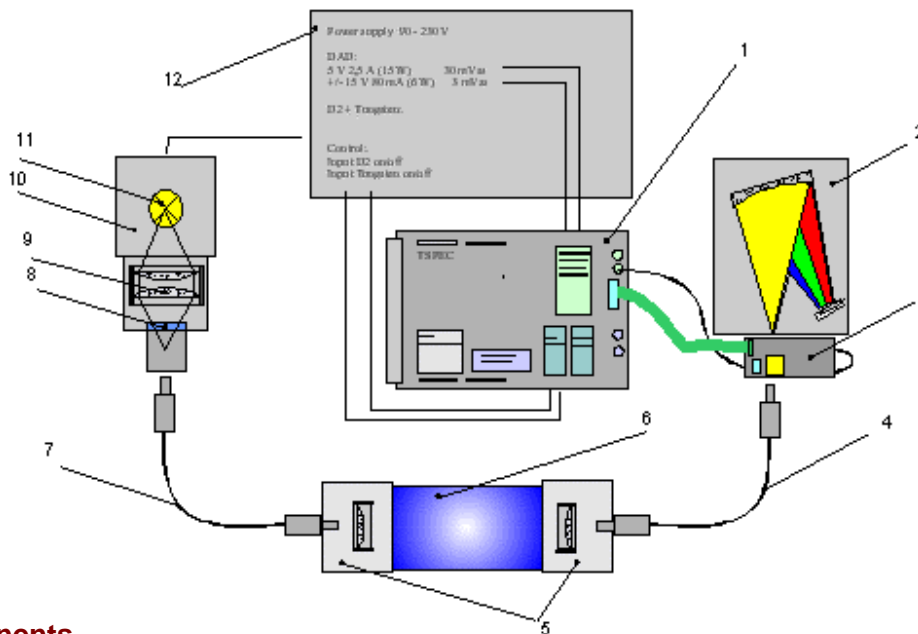
Accessories...

The unit is designed to operate with a standard 10 x 10mm flow through cell with a centre axis of 7.5mm. As the access to the cell changer carousel is open, attachment of the flow cell tubing (either PTFE or FEP) is straightforward. All tubing lines are clearly visible and the operator is able to check out the entire tubing installation at a glance.

Technical DataOptical System

Light Source	D ₂ and Tungsten lamps
Lifetime:	D ₂ lamp has a life of approx. 1500 hours
Wavelength Range	190 - 1020 nm
Maximum measurement speed	12 mS / Spectrum
Number of Diodes	1024
Optical Grating	248L/mm
Spectral Resolution	0.8 nm/Pixel
Spectral Bandwidth	1.6 nm
Wavelength Accuracy	0.3 nm
Wavelength Precision	± 0.07nm
Noise (at 580nm)	± 2.5 x 10 ⁻⁵ AU
Baseline Drift	5 x 10 ⁻⁴ AU
Temperature Drift	< 0.005nm / °C
Scattered light:	< 0.1% @ 340nm (D ₂ lamp)
Data Integration:	Data integration time approximately 100ms per channel
Flow cell compensation:	Work with either absolute or baseline corrected absorption data
Communication Port	Ethernet

Setup



Components

- | | |
|-------------------------------------|-------------------|
| 1 Digital Electronic 16 Bit, 100 Hz | 7 Fibre |
| 2 Polychromator | 8 Filter |
| 3 Analogue Electronic | 9 Condensor Optic |
| 4 Fibre | 10 Lamp housing |
| 5 Optical adapters | 11 Lamp |
| 6 Measuring head, e.g. cell changer | 12 Power supply |

Electronic system

The SA 500 uses a very fast RISC Processor and processes the raw spectral data within the unit. All data storage and post processing is then via an external PC.

Control Software

The SA 500 is supplied together with a control software program which offers the following measurement capabilities:

- | | | |
|-----------------|-------------------|--------------------|
| Absorbance | Transmission | Absorbion |
| Counts | Concentration | Multi-calibration |
| Auto-Rate Assay | Muti-wavelength | Spectral smoothing |
| Derivatives | Macro programming | |

Use the SA 500 as part of your Dissolution Test System

The SA 500 Diode Array Spectrometer is specially designed for use with a dissolution test system. The electronic components and the associated technologies have been time and field tested for some years now, for example in the TIDAS II from J&M. The same technology is employed and built into the IDS 1000 In Situ and the fully integrated DTS 800 Dissolution Testers.

The built in 16 way UV cell changer allows easy connection to other dissolution testers in the Pharma Test range, e.g., the DT8, the PTWS 310 / 600 / 610 / 1210 and even 12 vessel units. For fluid transport, an Ismatec 8 or 16 way peristaltic pump can be installed. All system components can be integrated and controlled using the **WINDISS32** software program.

The 16 cell configuration allows the SA 500 to be used with a second dissolution bath or to be connected to a 12 position dissolution tester. There are adequate cell positions for 2 blanks and 2 standard solutions.

IQ, OQ, PQ Requirements and Documentation

As with all other Pharma Test products each instrument is delivered with full IQ, OQ paperwork, as well as an instrument log book, free of charge.

Our technically qualified staff are able to supply local PQ support and perform system suitability tests using USP Calibrator Tablets.