



The **SA 500** is the first (PDA) Diode Array Spectrophotometer with a 16- or 8-way Cell Changer and Integrated Advanced Fibre Optic Technology, specially designed for the use inside a fully automated Dissolution Testing System

#### **Features...**

- Excellent reproducibility
- Optical systems without any moving parts
- Ultra fast scanning capabilities
- Integrated 16 way UV cell changer for 10x10 mm flow-cells or 8 way UV cell changer for max 20x10 mm cells offering a path length of 20 mm

#### **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.

## Fibre Optic Diode Array Spectrophotometer - Type SA 500

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 D<sup>2</sup> 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 8- or 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.



In Dissolution Testing the 16 way UV cell changer allows the connections of either 2 Dissolution Baths or a 12 vessel instrument. The maximum path length of the UV cells is 10mm while the smallest is 0.1mm.

The 8 way UV cell changer can hold 8 UV cells of a maximum path length of 20mm but also all others as mentioned before.

### ***Accessories...***

The unit is designed to operate with a standard 10 x 10mm (or also 20 x 10 mm 8-cell changer) QS 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.

PHARMA TEST AG  
Siemensstrasse 5  
D-63512 Hainburg (GER)



+49 6182 9532-600  
+49 6182 9532-650  
email@pharma-test.de  
www.pharma-test.com



Technical Data

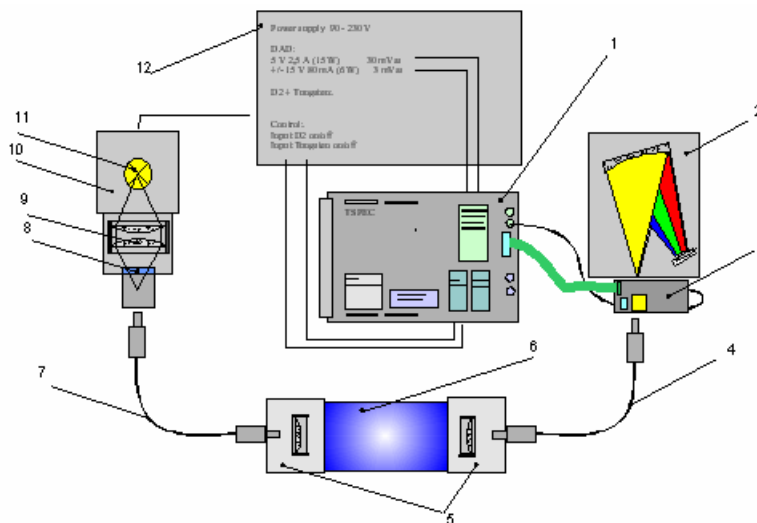
**Optical System**

Light Source	D2 and Tungsten lamps
Lifetime:	D2 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	better 2 nm
Wavelength Accuracy	0.3 nm
Wavelength Precision	± 0.07nm
Noise (at 580nm)	± 2.5 x 10 <sup>-5</sup> AU
Baseline Drift	5 x 10 <sup>-4</sup> AU
Temperature Drift	< 0.005nm / °C
Scattered light:	< 0.1% @ 340nm (D2 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 for data transmission RS232 to control the cell changer

Weights and Dimensions

Net weight:	25 kg
Gross weight:	40 kg
Packing:	61 x 55 x 30 cm

**Setup**



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## Components

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

## Options

- 8 way changer for UC flow cells 10x10 or 20x10 mm, 7.5 mm centre height

## 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 the **TIDAS DAQ** control software program which offers the following measurement capabilities:

Absorbance  
Counts

Transmission  
Concentration

Absorption  
Multi-calibration

Auto-Rate Assay  
Derivatives

Multi-wavelength  
Macro programming

Spectral smoothing

## Use the SA 500 as part of your Dissolution Test System



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## Fibre Optic Diode Array Spectrophotometer - Type SA 500

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- or 8 way UV cell changer allows easy connection to other dissolution testers in the Pharma Test range, e.g., the DT70, the PTWS 100 / 310 / 600 / 610 and even 12 vessel units like the PTWS 1210 or PTWS D610. 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.

We reserve the right to make technical changes without any prior notice