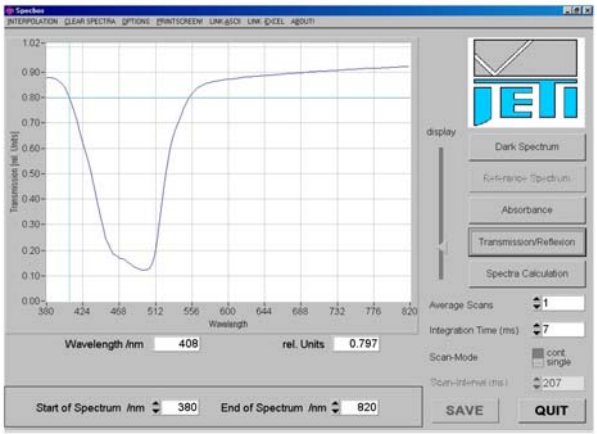
Spectrophotometer with Internal Light Source

Specbos 2001

The **Specbos 2001** is a fiber-coupled VIS spectrophotometer which includes a small light source and a miniaturized spectrograph. The unit can be equipped with customer specific fiber probes for reflection or transmission measurements. It has a USB (virtual COM port) interface for ease of installation. Powered off the USB port, the instrument needs no separate power source.



Transmission spectrum of a Rhodamin G solution

The **Specbos 2001** is operated using JETI's intuitive measuring software. (For demo version see www.jeti.com.) It is ideally suited for spectra acquisition and ransmission / reflection, absorbance and first or second derivative calculations. Single and continuous measurement modes and averaging are possible. The data obtained can be exported to Excel™ spreadsheets and to ASCII text files.

Furthermore, it is possible to incorporate the instrument into individual applications using the virtual COM port, utilizing the following methods:

- DLL
- Virtual Instruments for LabView
- Serial commands

Advantages:

- Compact instrument with included light source
- Easy installation and operation
- USB powered
- Start of measurement with external trigger
- DLL and Virtual Instruments (LabView) included

Input fibers (standard length 1 m) and collimating / focusing optics are available. Send your specification to us. The Specbos 2001 can be supplied with SMA or ST fiberoptic connectors.

Specifications

Applications	Measurement of reflection and transmission spectra, e.g. of solid surfaces, filters and liquids
Optical parameters	
Spectral range	400 nm ... 780 nm
Optical input	100 µm fiber, NA 0.22
Connector	SMA (optional ST)
Optical resolution	9 nm (optional 5 nm) FWHM
Calculated wavelength step	1 nm
Digital resolution	15-bit ADC
Measuring ranges and accuracies	
Wavelength accuracy	± 0.7 nm (ASTM E275, filter BG 20, 2 mm, λ = 528.7 nm / 684.3 nm)
Wavelength reproducibility	± 0.2 nm (ASTM E275, filter BG 20, 2 mm, λ = 528.7 nm / 684.3 nm)
Photometric precision	± 0.002 AU (ASTM E275, D = 1, λ = 550 nm)
Photometric accuracy	± 0.005 AU (ASTM E275, D = 0.46, λ = 550 nm)
Photometric range	0 ... 2.6 AU (ASTM E275, ND filters, λ = 550 nm)
Stray light	$< 10^{-3}$ (ASTM E387, GG495, 4 mm, λ = 420 nm / 630 nm)
Sensitivity	typ. $1.3 \cdot 10^{14}$ counts/Ws (550 nm)
Integration time	10 msec ... 60 sec
Other technical data	
Light source	Krypton lamp (lifetime > 10,000 hours)
Spectrometer	Imaging grating (flat field)
Light receiving element	Photodiode array 1024 or 2048 pixel
Power supply	USB powered
Interfaces	USB 2.0 full speed
Dimensions	120 mm x 58 mm x 34 mm
Weight	200 g
Operating conditions	Temperature 10 ... 40 °C Humidity < 85 % relative humidity at 35 °C
Accessories (included)	JETI Specbos software for Windows 2000/XP DLL, LabView Virtual Instruments USB cable and trigger connector Operating instructions Transport box

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