JETI Technische Instrumente

Spectrometric Solutions from Components to Systems

Versa PS2000/ PS2000 NIR

Process Spectrometer

The process spectrometer **Versa PS 2000 and PS 2000 NIR** were developed for online transmission/ reflexion measurements of optical layers during production in vacuum chambers. They can be used for other tasks too, e.g. for color monitoring of moving films.

The advantages of **Versa PS 2000/ PS 2000 NIR** are:

- Fast measurement (integration time down to 10 µs) and fast read out
- Easy adaption to specific applications
- Variety of interfaces
- Read out of an external position sensor
- High reliability

The firmware of the device allows to preprocess the measuring data. So it is possible to calculate process specific data such as reflectivity or layer thickness.

Versa PS 2000/ PS 2000 NIR are also available with an internal light source (halogen lamp or xenon flash lamp).

Applications

- Online spectral measurement
- Process control of vacuum deposition
- Thickness measurement of thin layers
- Analytical instrumentation
- Multichannel spectrometric systems

Interfaces

- USB (high or full speed)
- Ethernet or RS 422/ 485
- RS 232

Features

- Storage of reference data
- Preprocessing of data, dark signal correction
- Internal calculations like averaging, interpolation, transmission, reflexion, absorption
- DLL based SDK and SCPI compatible control syntax
- Software and hardware trigger

Specifications

Optical parameters

Spectral range	200 nm ... 1000 nm (NIR 900 nm … 1690 nm)
Spectrometer	flat field holographic grating, aberration correction mirror
Optical bandwidth	≤ 4.0 nm FWHM (100 µm slit) ≤ 2.5 nm FWHM (50 µm slit) ≤ 2.0 nm FWHM (30 µm slit)
Asymmetry factor	0.7 ... 1.3
Optical input	F-SMA 905 connector for a 200 µm fiber
Wavelength accuracy	≤ 0.2 nm (HgAr linesource)
Wavelength reproducibility	≤ 0.02 nm (HgAr linesource)
Stray light	< 0.2 % (ASTM E387, GG495) λ = 420 nm/ 600 nm)
Dynamics	depends on detector
Detector	25 mm BTCCD, CMOS, NMOS

Electronical parameters

Digital resolution	16 bit
AD-noise	2 counts RMS
Sampling speed	up to 4 MS/ s
Transfer speed	up to 40 Mb/ s (via High Speed USB)
Integration time	0.01 ... 64 999 ms
Trigger delay	10 µs
Jitter	≤ 2 µs
Interfaces	USB Ethernet or RS 422/485 RS 232
Power supply	84 … 250 V AC 50/60 Hz <0.5 A or PoE (if Ethernet is used)

Mechanical parameters

Dimensions (total)	25 cm x 26 cm x 15 cm
Weight	3 kg

Scope of delivery

Basic unit, PC software VersaSpec, power supply cable, JETI SDK, operation manual