



OEM Spectrometer DE50

200 ... 1050 nm

The new JETI broadband OEM spectrometer **DE50** is a flat field spectrograph combined with powerful processing electronics. It is available in two versions: **DE50 basic** and **DE50 expert**.

Main characteristics of DE50:

High optical resolution over the whole spectral range

• High sensitivity in UV, Vis and NIR spectral ranges

- High dynamic range
- Compact design
- Easy integration into customer systems
- In-built mechanical shutter

Applications:

- Ellipsometry
- Plasma physics
- Colorimetry/ Spectroradiometry
- Biochemistry
- Analytical instrumentation
- Thickness measurement
- Online analyzer
- Fluorescence spectroscopy
- In process measurement of interference layers

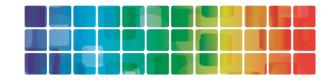
Controller functions:

- Internal storage of wavelength-pixel relation
- Preprocessing of data, dark signal correction, absolute calibration
- · Internal calculations like averaging, interpolation, transmission, reflexion, absorption, color coordinates
- Dedicated control syntax (SCPI compliant)

Advantages:

- Very low astigmatism
- Low stray light
- Processing of spectral calculations
- Onboard Ethernet Interface (DE50 expert)
- Hard- and software trigger





Specifications

Optical parameters

Spectral range 350 nm ... 1050 nm (DE50 basic)

200 nm ... 1050 nm (DE50 expert)

Optical bandwidth (FWHM) better 4 nm (50 µm slit)

Optionally: better 2 nm (20 µm slit), other slit sizes on request

Optical input F-SMA connector

Wavelength error \pm 0.3 nm (HgAr line source) Wavelength repeatability \pm 0.02 nm (HgAr line source)

Stray light < 0.1 % (ASTM E387, GG495, λ = 420 nm/ 600 nm)

Spectrometer holographic imaging grating, flat field

Detector Hamamatsu S11639 (DE50 basic), S11155 (DE50 expert)

Electronic parameters

Digital resolution 16 bit

Dynamics 3 000 : 1 (dark signal @ 100 ms)

Typical sensitivity (200 µm fiber) 4*10¹⁵ counts/ Ws @ 250 nm (DE50 basic)

6*10¹⁵ counts/ Ws @ 250 nm (DE50 expert)

 $7*10^{15}$ counts/ Ws @ 500 nm $4*10^{15}$ counts/ Ws @ 750 nm $2*10^{15}$ counts/ Ws @ 1000 nm

Sampling speed up to 4 MS/s

Line rate > 200 full spectra/ s (via High Speed USB)

Integration time 0.01 ... 65 535 ms

Power supply USB powered (DE50 expert alternatively 6 ... 28 V DC)

Interfaces DE50 basic USB-C, TTL UART (up to 3 Mb/s), 3 programmable I/O, 2 analog input/

output (0 ... 3.3 V)

DE50 expert USB-C, 10/100 Mb/s Ethernet LAN (optionally PoE), SPI (up to 50MHz),

TTL UART (up to 25 Mb/s), RS485/ RS422, I2C, 8 GPIOs

Temperature sensor input (NTC), 3 Analog inputs 12 bit (0 ... 3.3 V)

Mechanical parameters

Dimensions (L x B x H) 78 mm x 62 mm x 35 mm

Weight approx. 150 g

Accessories (included) USB cable, PC software VersaSpec for Windows 10/11,

operating instructions and software development kit on USB

flash drive, wavelength fit protocol

E-Mail: sales@jeti.com