

SPECTRE *an ultra-broadband spectrometer*

SPECTRE is an innovative spectrometer, capable of measuring ultra-broadband spectra, from NIR-IR to MID-IR spectral region.

It is based on a novel technology that combines fast acquisition times and high spectral resolution with extremely broad spectral coverage.

Key Features

- Wide spectral coverage (0.8-4.2 μm)
- High resolution (down to 3 nm)
- High sensitivity
- Easy to align
- No focusing required
- Free space coupling (no fiber needed)
- Compact and lightweight
- Fast data processing
- Suitable for coherent and incoherent light sources



Applications

- Recognition of materials
- Thickness measurements
- Light sources characterization
- Biology
- Agriculture and Food
- Pharmaceuticals
- Petrochemicals
- Art Conservation
- Forensics

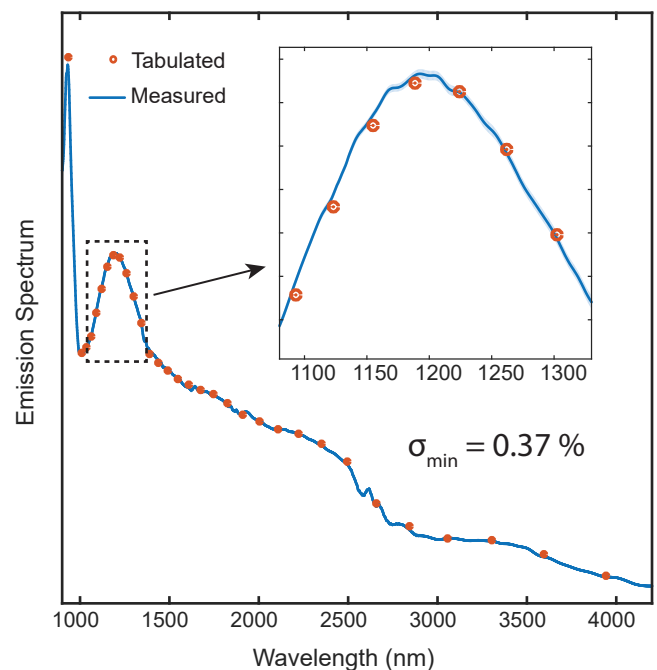


Figure 1. Emission spectrum of incoherent light source. The blue area is the tolerance range within 1 standard deviation σ in 1 second measurement time, indicating high accuracy of SPECTRE.

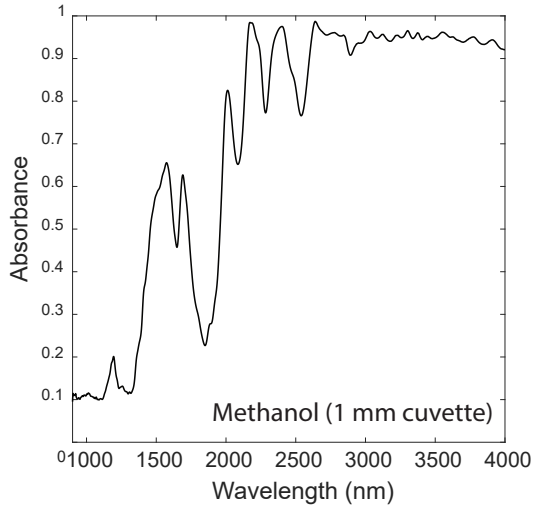


Figure 2. Absorbance of methanol in 1 second measurement time.

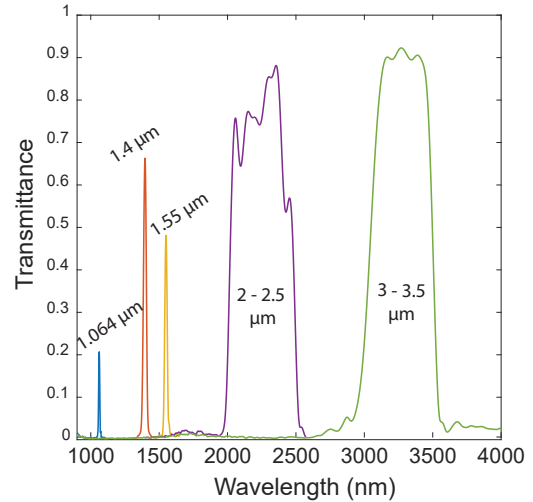


Figure 3. Transmittance of various filters in 1 second measurement time.

Technical specifications

Spectral range	0.8-4.2 μm^*
Spectral resolution	3 nm @ 1 μm 60 nm @ 4.2 μm
Acquisition time	1 s/spectrum (HR mode)** <170 ms/spectrum (LR mode)
Dynamic range***	> 1:30'000
A/D converter	16 bit
Software interface	USB 2.0
Dimensions	31 x 16 x 8 cm
Weight	2 kg

*** ratio between dark signal and peak intensity produced by single wavelength laser at 1030nm.

** Spectre has two operating modes:

HR – high resolution. The main mode, resulting the most accurate results.

LR – low resolution. Mode for quick measurements.

*Customization:

The main limiting factor for spectral coverage of spectrometer is the choice of detectors. SPECTRE has InGaAs and PbSe detectors inside, which allow to reach exceptional spectral coverage of 0.8-4.2 μm using the same FTIR technology for both detectors. Wavelength range can be customized according to customer needs.