

# Spectra series

## High-Resolution Laser Spectrum Analyzers



WIDE Spectra

Characterizing the spectrum of a laser emission at a resolution of a few pm is necessary when addressing high precision laser based measurement such as metrological applications based on interferometry or other physical phenomena such as the Raman effect or atom cooling. These usually require pure spectra or, at the very least, good knowledge of the true spectral characteristics.

Laser users and integrators often have a huge choice of laser sources but with limited information on their laser spectrum unless they use an intrinsically pure laser. This can lead to serious difficulties in understanding the results of metrological setups or industrializing products. And here lies the need to evaluate source quality, the true operating range or component uniformity.

Characterizing the spectrum of a laser with high resolution is also a necessity when developing new and innovative lasers.



MICRO Spectra



ZOOM Spectra

Thanks to SWIFTS™ technology, our laser spectrum analyzers and wavelength meters are the ideal solution for laser analysis and control in the range from 630 to 1100 nm. They can display a laser line profile up to a spectral resolution of 1.5 GHz. In addition, a high data rate measurement capability (up to 30 kHz) and several trigger mode options offer a unique configuration for testing pulsed lasers. Furthermore, their user interface includes an automatic peak detection feature and a real time visualization of the peaks stability over time.

### Key features

- High spectral resolution: down to 1.5 GHz
- Excellent absolute accuracy: down to 600 MHz
- Wavelength range: 630 - 1100 nm
- Suitable to pulsed (>20 ps) and CW lasers
- Simultaneous bandwidth from few nm to 130 nm
- High measurement rate capability: up to 30 kHz
- Compact size
- Robust long-life factory calibration
- User-friendly SpectraResolver software



SpectraResolver software



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### SPECIFICATIONS Spectra Series

	ZOOM Spectra	MICRO Spectra	WIDE Spectra
Wavelength range <sup>(1)</sup>	630 - 1100 nm		
Optical Spectral Resolution <sup>(2)</sup>			
Max	8 GHz <sup>(3)</sup>	10 GHz	
Typical	6 GHz <sup>(3)</sup>	8 GHz	
Min	3 GHz <sup>(3)</sup>	5 GHz	
Absolute accuracy <sup>(4)</sup>	1 - 2 pm / 600 MHz	8 - 24 pm / 6 GHz	12 - 40 pm / 10 GHz
Maximum linewidth of a mode <sup>(5)</sup>	100 GHz		300 GHz
Wavelength bandwidth one measurement	5 nm (@ 630 nm) 14 nm (@ 1100 nm)	3.5 nm (@ 630 nm) 10 nm (@ 1100 nm)	30 - 130 nm
Best dynamic range	1:200		1:20
Maximum measurement rate	30,000 Hz	10 Hz	
Integration time	320 ns to 500 ms (32 ns step)	1 ms - 30 s	
Input power range <sup>(6)</sup>	10 nW - 1 mW		
Optical input <sup>(7)</sup>	FC/APC PM singlemode fiber N.A. 0.12		
Power consumption	11 W - 450 mA @ 24 VDC	500 mW max (USB power supply)	
Communication	Gigabit Ethernet	USB 3.0	
Dimensions	8.3 x 9.1 x 12.6 cm	Ø 9.2 x 2 cm	10 x 9 x 6 cm

### FUNCTIONALITIES with SpectraResolver software

	ZOOM Spectra	MICRO Spectra	WIDE Spectra
Compatibility	Windows 7, 8 & 10		
Recording	Continuous, multiframe or triggered	Continuous or multiframe	
Dark measurement	Manual and wizard modes		
Multi-wavelength meter function	Automatic peak(s) detection		
Standard graphical utilities	Zoom, markers and peak(s) detection over time		
Trigger option	TriggerBox and adjustable trigger delay	NA	
Unit change	nm (vacuum and standard air) / cm <sup>-1</sup> / THz		
Software development kit	C/C++, DotNet, VIs libraries		

<sup>(1)</sup> Factory calibration of 3 bands or more on this range, see wavelength bandwidth above

<sup>(2)</sup> Full Width at Half Maximum (FWHM) of singlemode unresolved laser

<sup>(3)</sup> Down to 1.5 GHz on demand

<sup>(4)</sup> T<sup>+</sup> calibrated on 10-40°C, no recalibration needed

<sup>(5)</sup> For single and multimode lasers

<sup>(6)</sup> Coupled in PM singlemode fiber

<sup>(7)</sup> Multimode on demand

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