

# Laser Spectrum Analyzer

SAPlus™ Series



## Most precise spectral analysis available

- High resolution with finesse greater than 300
- Choice of FSR for optimum resolution
- Interchangeable mirrors for operation from 450 nm to 1.8  $\mu\text{m}$
- UltraBand™ wavelength ranges of more than 250 nm
- Optional fiber-optic coupling



EXFO's SAPlus™ Laser Spectrum Analyzer combines high performance CW laser spectral characterization and user-friendly design for the utmost precision, ease of use and convenience. The SAPlus Laser Spectrum Analyzer is the best system available to measure the linewidth, longitudinal mode structure and frequency stability of narrow band lasers.

Fiber-optic test,  
measurement, monitoring  
and automation solutions

**EXFO**

## Highest finesse available

The SA<sup>Plus</sup> Laser Spectrum Analyzer employs a piezoelectrically scanned confocal mirror Fabry-Perot interferometer to provide the finesse necessary to achieve high resolution measurements. For wavelengths greater than 1000 nm, the SA<sup>Plus</sup> is the only laser spectrum analyzer of its kind to guarantee a finesse of over 300. At shorter wavelengths, a finesse greater than 200 can be expected. The free spectral range of the SA<sup>Plus</sup> system can be configured for either 2 or 8 GHz, depending on the application. Reconfigure the system by simply changing the mirror set.

## Unique interchangeable mirrors with UltraBand™ wavelength ranges

The SA<sup>Plus</sup> Laser Spectrum Analyzer easily adapts to changing or expanding spectral regions. Its unique mirror sets are easily replaced for operation anywhere between 450 nm and 1.8 μm. With EXFO's UltraBand wavelength ranges, it may not be necessary to change mirror sets at all. Because these ranges provide wavelength coverage that is greater than 250 nm (more than twice that of other laser spectrum analyzers) only one mirror set is necessary, in most cases, resulting in exceptional convenience at a lower cost.

The confocal mirrors of the SA<sup>Plus</sup> System are supplied in Invar cells. Mounting is easy and requires no special tools. A high reflectivity (nominally 99.7%) multi-layer dielectric coating is applied to the concave surface of the mirrors. Hard coatings are used to maintain peak performance over the lifetime of the mirrors.

## Easy to use

The most exacting customers want optimal performance and ease of use. The SA<sup>Plus</sup> Laser Spectrum Analyzer meets these standards with unique features that provide precise measurements with easy, straightforward adjustments. Accurate alignment is simplified using a four-axis (X, Y, θ, φ) mount to position the interferometer's optical axis to the incoming beam. In addition, a convenient adjustment precisely sets the mirrors to their confocal separation, with the system completely assembled, so that finesse can be optimized by viewing the output signal. Features like these provide maximum performance within minutes, even after changing mirror sets.

## Optional fiber-optic coupling

The SA<sup>Plus</sup> Laser Spectrum Analyzer can be further enhanced with fiber-optic input that simplifies the coupling of a laser beam into the interferometer.

## SA<sup>Plus</sup> Specifications

Cavity Design	Confocal Mirror Geometry
Free Spectral Range (FSR)	2 GHz or 8 GHz
Finesse	> 200 (for λ < 1000 nm) or > 300 (for λ ≥ 1000 nm)
Minimum Resolvable Bandwidth	FSR/Finesse
Wavelength Range	Standard ranges from 450 nm to 1.8 μm
Mirror Reflectivity	99.7 % Nominal
Transmission	> 10%
Input Aperture	1 mm
PZT Scan Distance	1.2 μm/1000 V
PZT Non-Linearity	< 1 %
Scan Non-Linearity*	< 0.1 %
Construction	Thermally Stable Invar

\* With electronic compensation provided by the RG-91 Ramp Generator

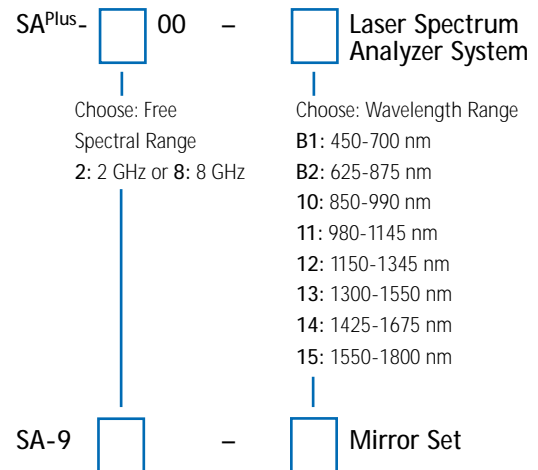
## SA<sup>Plus</sup> System Includes

SA-91 Interferometer
SA-92 or SA-98 Mirror Set
SA-900 Four-Axis Mount
DA-100 Detector Amplifier
RG-91 Ramp Generator

## SA<sup>Plus</sup> Accessories

SA-610	Fiber-Optic Coupler
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## How to Order



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