BOSA
True high-resolution
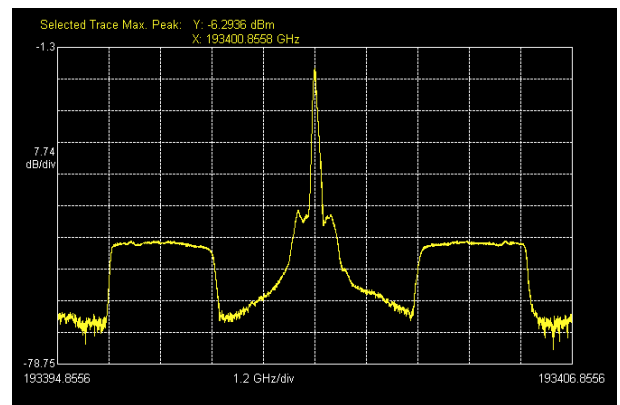
Aragon Photonics produces the most advanced and versatile Subpicometric Optical Spectrum Analyzer, the BOSA.

Based on revolutionary Brillouin spectroscopy, BOSA achieves the highest resolving power and spurious-free dynamic range thanks to its purely optical filtering, avoiding artifacts and undesired effects on your measurements.

BOSA advantages

✓ Great performance: 10 MHz pure optical resolution independent of span.

✓ Highest spurious-free dynamic range 80dB. Maximum reliability with no measurement artifacts.

✓ Stunning versatility with add-on options: TLS output, Component analyzer with IL & RL, Phase measurement, Full spectral resolved State-Of-Polarization, DGD (PMD), PDL,…

✓ Packed with advanced functions & software utilities: trace locking, peak-tracking markers, variable resolution, etc…

✓ Easily automated. Use the Macro Editor tool or the remote control to program your measurements. SCIP commands.

✓ BOSA100 series compatible with many TLS manufacturers. Low cost series with same high performance, and upgradeable anytime.

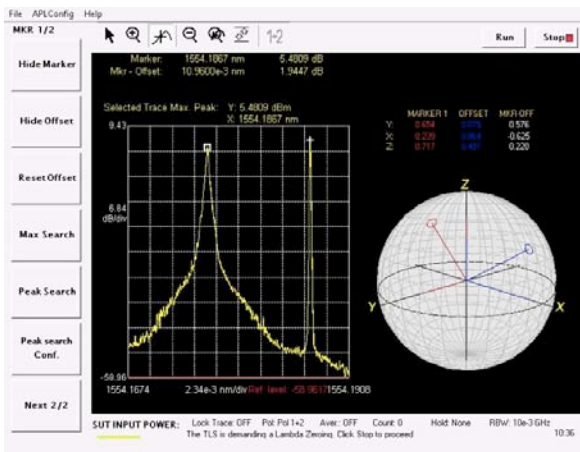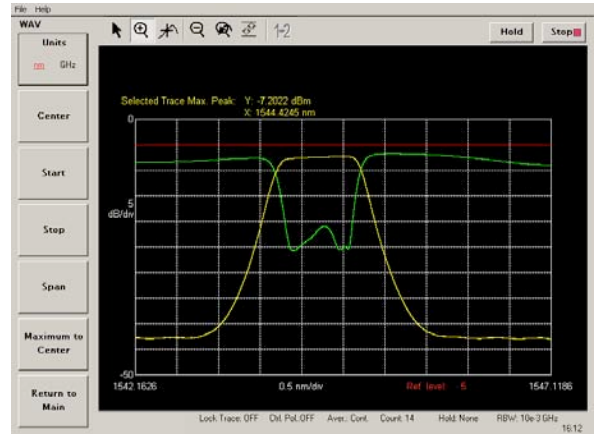*BOSA is the perfect tool to characterize OFDM signals and other advanced modulations*

BOSA 100[1] & 200 series	C band model	C+L band model
Optical Resolution (@3dB) [2]	80fm (10MHz @1550nm)	
Wavelength Range	1525 nm –1565 nm	1525 – 1610 nm
Wavelength Repeatability	± 1 pm	± 2 pm
Spurious-Free Dynamic Range[2]	>80dB	
Close-in Dynamic Range[2]	>40 dB @ ±0.3 pm >50 dB @ ±0.4 pm >60 dB @ ±0.6 pm	
Calibrated Input Power Range	+13 to –70dBm	
Maximum Safe Total Input Power	+20 dBm	
Sensitivity[2]	–70dBm/0.1pm	
Power Accuracy[2]	±0.5 dB	
Polarization Measurement	Two orthogonal polarization channels (+Option 230) Full state-of-polarization measurement	
Measurement time	1s for 10 nm	
Internal Wavelength Calibrator	C12 HCN	C12HCN + C12 CO + C13 CO

Option 220 – Component analyzer

This option turns your **BOSA** into a **passive component** analyzer. Including a high-dynamic range (>70 dB) measurement port synchronized with the TLS sweep, the response of optical filters, Bragg gratings, etc. can be measured.

Connect a passive optical device between the AUX Output and AUX Input ports of your **BOSA** and the spectral profile of insertion loss (IL) and return loss (RL) of your passive optical devices can be measured with great detail and precision.
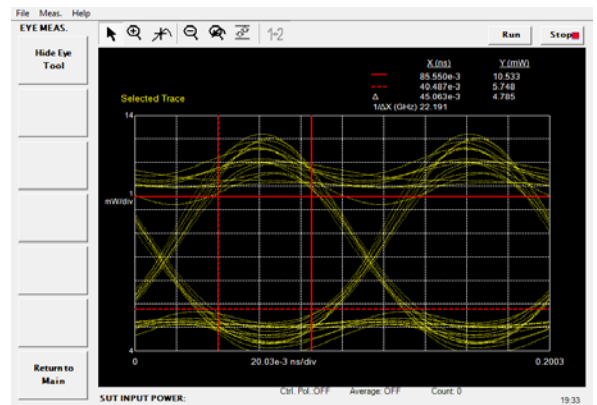

Option 230 – Polarimetry extension

Turn your BOSA into the most advanced tool for **polarization analysis**.

When using the optical spectrum analysis module with option 230 activated, the **spectrally-resolved state of polarization (SOP)** can be measured. Use markers to measure polarization differences between different light sources or different spectral components or plot the evolution of the SOP with wavelength to measure DGD. Option 230 also enables PDL measurement for passive devices.

Option 300 – Phase measurement

Aragon Photonics' BOSA Option 300 (BOSAPHASE) turns the BOSA into an **Optical Complex Spectrum Analyzer (OCSA)** that still uses the 10MHz resolution from his brother BOSA and takes advantage of the Brillouin effect to obtain the optical phase of modulated signals.

Working with a Pulse Pattern Generator (PPG) BOSA Phase provides Time domain information useful to characterize new optical advanced modulation formats in a reliable and fast measurement equipment. Measure the **eye-diagram, constellation and time-resolved chirp** of your signals.

Your local contact:

Integrated in the same mainframe, BOSA options **add multiple measurement capabilities** to your unit, making it a real all-terrain instrument for your research lab. Additional measurement modes with specific software can be selected when options are installed.

Option 210 – Tunable laser output

This option provides access to the internal tunable laser source included in BOSA200 series so that it can be used for additional applications. BOSA TLS is a high-quality **external cavity laser** with very good scanning performance. It can be controlled through GPIB or Ethernet interfaces with SCPI commands.
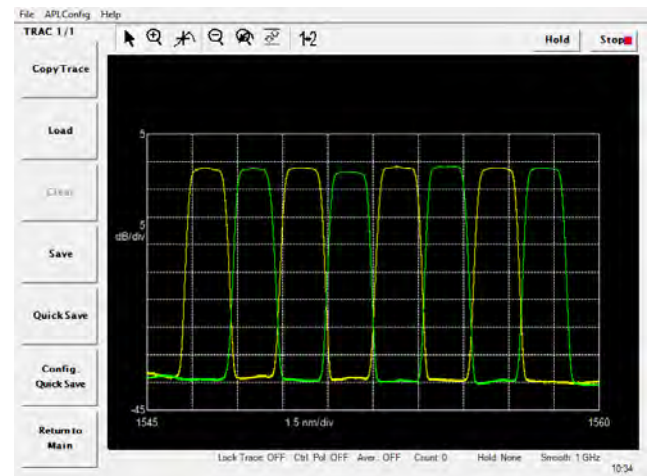

BOSA option 210	C band model	C+L band model
Wavelength range	1516–1565	1520–1630
Scanning repeatability	±1.5 pm	±2 pm
Tuning speed	1–100 nm/s	
Output power	> 1 mW	
Side–mode suppression	>43 dB	>45 dB
Relative intensity noise	<–145 dB/Hz	<–140 dB/Hz
Laser linewidth	<1 MHz	
Trigger output	BNC (others on request)	

Option 220 – Component analyzer

This option turns your BOSA into a **passive component** analyzer (option 210 is required). Including a high–dynamic range (>70 dB) measurement port synchronized with the TLS sweep, the response of optical filters, Bragg gratings, etc. can be measured.

Connect a passive optical device between the AUX Output and AUX Input ports of your **BOSA** and the spectral profile of insertion loss (IL) and return loss (RL) of your passive optical devices can be measured with great detail and precision thanks to the benefits of **BOSA** technology.

BOSA option 220	C band model	C+L band model
Wavelength range	1516–1565 nm	1521–1630 nm
Wavelength accuracy	±1 pm	±2 pm
Power accuracy	±0.2 dB	
Polarization measurement	2 orthogonal polarization states (+Option 230) Pol. Dependent Losses	
Output power	>0 dBm	
Sensitivity (IL)	–70 dBm	
Calibrated input range	+10 dBm to –70 dBm	
Sensitivity (RL)	–45 dBm	
Measurement time	1s for 10 nm	

Option 220 has its own optimized measurement GUI but also shares many of the advanced functionalities of BOSA:

– **Fully programmable** with SCPI commands through GPIB or Ethernet interfaces. Build you own monitoring applications easily!

– **Internal reference gas cell** for wavelength referencing and locking allows great accuracy.

– **Simultaneous measurement of insertion and return losses**.

– **Dual polarization scanning** for PDL–independent measurement.