

# BOSA PHASE

## High Resolution Optical Complex Spectrum Analyser

Optical Complex Spectrum Analyser	
Wavelength Range	1528-1565nm
Reference Frequency (1)	Fr1= 312MHz ± 50MHz Fr2= 1.25 GHz ± 0.25 GHz
Reference Power	>-10 dBm
Optical Power Measurement Range (2)	-58 dBm to +10dBm
Phase Measurement Repeatability	± 1° (+10 dBm to -30 dBm)
Measurement Refresh Time (3)	2s
Pattern Length (4)	R/Fr

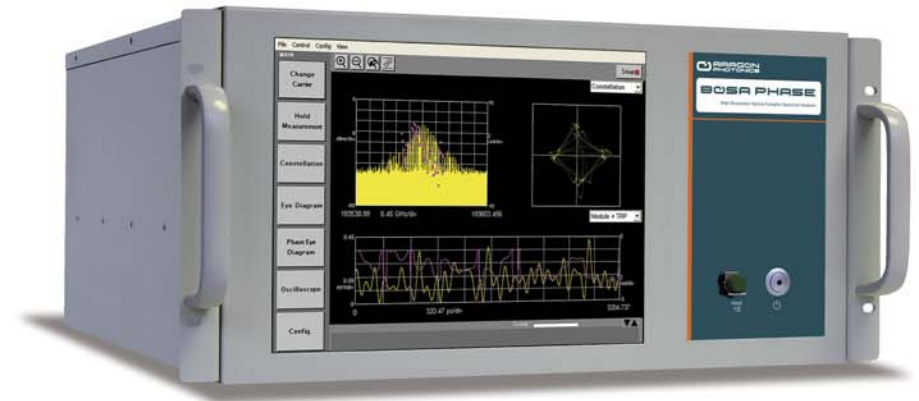
High Resolution Optical Spectrum Analyser	
Optical Resolution (@3dB)	80fm (10MHz @1550nm)
Wavelength Range	1528-1565nm
Span Range	1 pm to complete wavelength range
Wavelength Accuracy	±2pm (@1550nm)
Dynamic Range	>80dB
Close-in Dynamic Range	>40dB @±0.33pm (filter width @ 40dB depth) >60dB @±0.44pm (filter width @ 60dB depth)
Power Range	+10 to -70dBm
Maximum Safe Total Input Power	+20 dBm
Sensitivity (5)	-70dBm/0.1pm
Power Accuracy (6)	± 1.5 dB
Polarization Dependence	± 0.5 dB
Measurement time	1s for 10 nm

- (1) Reference frequency must be the same as the pattern repetition frequency.  
 (2) Optical power of spectrum components to obtain accurate measurement of phase.  
 (3) Measuring 80 GHz span w/o polarization control, independent of the number of spectrum components under measurement.  
 (4) Where R is the transmission bit rate (bits/second) and Fr is the pattern repetition frequency (Hz).  
 (5) Sensitivity is defined as signal value > 6x RMS noise value, after averaging, polarization control and with Lock Trace on.  
 (6) Valid for any wavelength and power value (polarization dependence included). Valid for measurements made with polarization control, in high sampling rate mode and averaging. For 1σ (63 % of the cases) typical value: ± 1 dB.

These specs are subject to change without further notice. Check out the latest status in [www.aragonphotonics.com](http://www.aragonphotonics.com).

Examples of Analysed Transmission rate R (*)				
Transmission rate R	2.5 Gb/s (±0.401)	10 Gb/s (±1.603)	25 Gb/s (±4.006)	40 Gb/s (±6.410)
Nominal pattern length (Fr2)	2 bits	8 bits	20 bits	32 bits
Nominal pattern length (Fr1)	8 bits	32 bits	80 bits	128 bits

(\*) Other transmission rate R can be analyzed following the relation R/Fr.



## When the Optical Phase becomes Essential for your System

- ✓ Advanced amplitude and phase modulation formats analysis in frequency and time domain with the highest resolution.
- ✓ Chirp measurement of optical sources.
- ✓ Short pulses analysis with high resolution in the time domain.
- ✓ High resolution optical spectrum analysis.

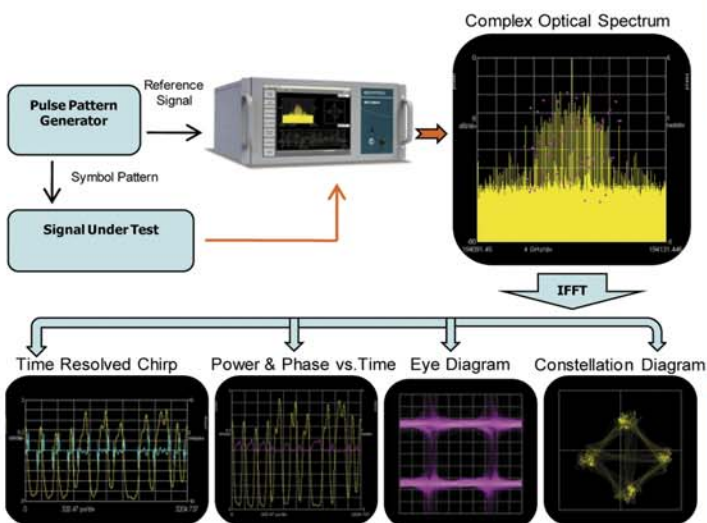
# BOSA PHASE

## High Resolution Optical Complex Spectrum Analyser

Optical Complex Spectrum Analyzer (OCSA) based on a novel technique which gives you the amplitude spectrum with ultra high resolution (80fm) and performs accurate phase measurements of discrete spectral components of optical signals with a repetitive pattern.

Amplitude and Phase of the optical signal are obtained in the time domain by Inverse Fourier Transform. Different representations in frequency and time domains provide complete information about your optical signals.

The measurement bandwidth is only limited by the band-width of the signal under test.



- ✓ Bit-rate independent measurement
- ✓ Modulation-format independent measurement
- ✓ Receiver-independent measurement
- ✓ Superb performance thanks to patented BOSA technology

Modulation	Complex spectrum	Complex field	Eye diagram	Constellation
10 Gb/s ASK with MZM 32 bits sequence				
9,8 Gb/s NRZ-DPSK with MZM 31 bits sequence				
9,8 Gb/s RZ-DPSK with MZM 31 bits sequence				
20 Gb/s NRZ-DQPSK 2x31 bits sequence				
20 Gb/s RZ-DQPSK 2x31 bits sequence				