

Lyra OCS 1100

Wavelength tunable comb source

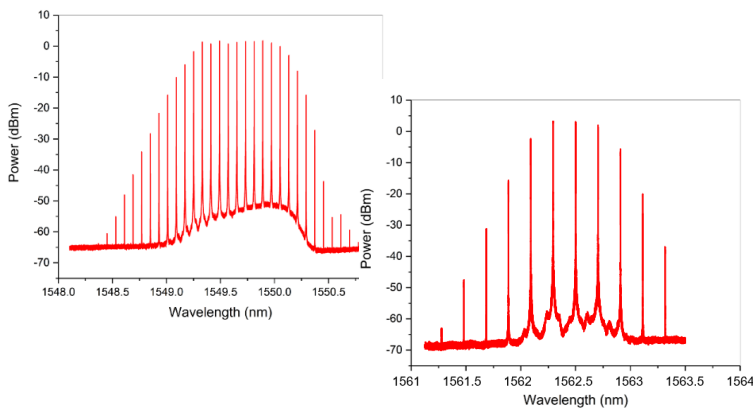
The Lyra OCS 1100 is a flexible optical frequency comb source based on our patented gain switching technology that offers a flat comb of coherent wavelengths with low optical linewidth, tunable central wavelength and tunable wavelength spacing (free spectral range).



Features

- Stable and robust optical frequency comb
- Low optical linewidth (80 kHz)
- Tunable centre wavelength
- Tunable free spectral range with high accuracy
- Strong phase correlation between comb lines
- Polarisation maintaining fibre coupled output
- Simple, key-switch operation

Optical Spectrum, 1550 nm, 10 GHz FSR



Optical Spectrum, 1562 nm, 25 GHz FSR

Applications

- Terabit superchannel transmitters
- Flexgrid wavelength division multiplexing
- Generation of millimetre-wave and THz signals
- Generation of 5G signals
- Ultra-wideband (UWB) over fibre HD-video distribution
- Optical signal processing (e.g. optical clock recovery)
- Precision optical measurements
- Spectroscopy
- Sensor interrogation

Typical Specifications

Wavelength	1550 – 1565 nm
Free Spectral Range	Option 1: 5 – 14 GHz Option 2: 20 – 26 GHz
Number of Comb Lines	8 – 25
Spectral Flatness	5 dB
Comb Bandwidth	250 GHz @ -40dB
Linewidth	80 kHz
Carrier to Noise Ratio	40 dB
Average Power	5 mW

Optical Specifications	Min.	Typ.	Max.	Unit	Notes
Centre Wavelength Tuning Range	1550	1560	1565	nm	
Free Spectral Range/ Wavelength Spacing	5	10	14	GHz	A free spectral range from 20-26 GHz can be offered upon request, with a limited central wavelength tuning range 1550-1565 nm.
Total Spectral Bandwidth	180	200	250	GHz	Measured at 40 dB down from envelope peak.
Number of Comb Lines	6 4	10 ^{a)} 5 ^{b)}	12 6		a) Within a 3 dB spectral flatness for free spectral ranges of 5-15 GHz. b) Within a 6 dB spectral flatness for free spectral ranges of 20-26 GHz.
Average Output Power	0	5	10	dBm	
Optical Linewidth	60	70	80	kHz	
Carrier to Noise Ratio	30	40	50	dB	
Relative Intensity Noise	-140	-130	-120	dBc/Hz	Uniform over frequency span.
RF Beat Tone Linewidth		100		Hz	Driven by laboratory synthesizer.
Comb Line Power Stability		1.5		dB	Measurements taken every 30 s during 24 h with OSA (Resolution: 2.5 pm).
Comb Line Wavelength Stability		2.5		pm	Measurements taken every 30 s during 24 h with OSA (Resolution: 2.5 pm).
Physical Specifications					
Dimensions		367 x 300 x 134.5		mm ³	
Power Consumption			80	W	
AC Voltage		90-264		V	
DC Supply Voltage		+/- 12 V			AC-DC power supply is provided.
DC Supply Ripple/Noise		0.5	1	% Pk-Pk	
Operating Temperature	15	25	40	°C	
RF Input Connector		SMA ^{a)} 2.92 mm (K) ^{b)}			a) Female. For free spectral ranges of 5-15 GHz. b) Female. For free spectral ranges of 20-26 GHz.
Optical Output		FC/APC PM			
Other Specifications					
Cold Start Settling Time (System Warm-up)		30		min	System warm-up time to reach optimum performance.
Switching Time			1	sec	