



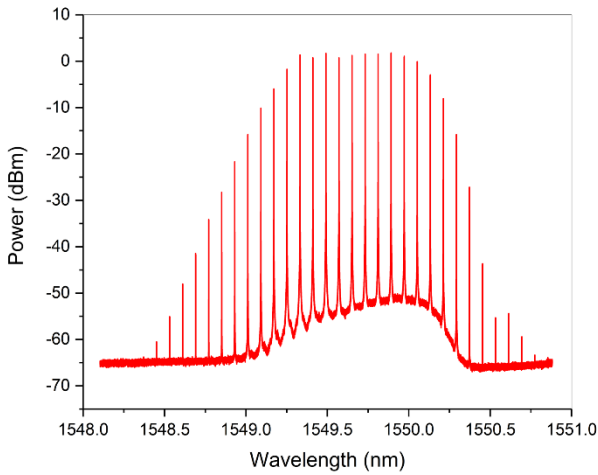
## Optical Frequency Comb Generator



Pilot Photonics' Optical Frequency Comb Source is based on our patented technology and offers best-in-class performance exhibiting a flat comb of coherent wavelengths with low optical linewidth tuneable wavelength spacing (free spectral range), and excellent stability.

### Features

- Stable and robust optical frequency comb.
- Low Optical linewidth (<300 kHz).
- Tuneable free spectral range with high accuracy, through an external voltage.
- Strong phase correlation between comb lines.
- Tuneable centre wavelength (on request).
- Polarisation maintaining fibre coupled output.
- Simple, push-button operation.



Typical Optical Comb Spectrum

### Typical Specifications

Wavelength Availability	1310, 1530-1610nm others on request
Free Spectral Range	5-15 GHz/others on request
Number of comb lines	8 - 25
Spectral Flatness	3 dB
Comb Bandwidth	250GHz @ -20dB
Linewidth	300 kHz
Carrier to Noise Ratio	40 dB
Average power	5 dBm

### Applications

- Terabit Superchannel transmitters
- Flexgrid Wavelength Division Multiplexing
- Generation of millimetre-wave and Terahertz 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

Specification	Min.	Typ.	Max.	Unit	Notes
<b>Optical Characteristics</b>					
Centre Wavelength	1530 765 (SHG)	1550	1610 805 (SHG)	nm	Other wavelengths 500-1100 nm and 1200-2000 nm available on request.
Centre wavelength tuning range	- 1	-	+ 1	nm	On request, wavelength can be tuned within the specified range around the selected centre wavelength.
Free Spectral Range/ Wavelength spacing	5	10	15	GHz	The free spectral range can be tuned over specified range by an external voltage.
Total Spectral Bandwidth		250		GHz	Measured at -20 dB from envelope peak.
Number of comb lines	4		25		Within a 3 dB spectral flatness for free spectral ranges between 5-25 GHz.
Average Output Power	0	5	10	dBm	
Optical Linewidth	100	300	600	kHz	
Carrier to Noise Ratio	30	40	50	dB	
Relative Intensity Noise	-140	-125	-110	dBc/Hz	Uniform over frequency span
RF Beat Tone Linewidth		30		Hz	Driven by laboratory synthesizer
RF Beat Tone Linewidth		400		kHz	Driven by provided RF module with broad frequency tunability
Comb Line Power Stability			1	dB	Measurements taken every 30 s during 24 h with OSA (Resn: 2.5 pm)
Comb Line Wavelength Stability			3	pm	Measurements taken every 30 s during 24 h with OSA (Resn: 2.5 pm).
<b>Physical Specifications</b>					
Dimensions		190x110x31		mm	
Power Consumption			10	W	
AC Voltage	100		240	V	
DC Supply Voltage	10	12	13		AC-DC power supply is provided.
DC Supply Noise (1 kHz – 200 kHz)		20	60	mVpp	
Operating Temperature	+5		+35	°C	
Storage Temperature	-20		+70	°C	
Humidity, non-condensing			90	%RH	
RF Input Connector		SMA			Female.
Optical Output		FC/APC PM			
<b>Other Specifications</b>					
Turn on time			7	s	From the moment of DC power application.
Cold start settling time (system warm-up)	20	30	90	min	
Rise time of optical signal	30	50	100	ms	
Fall time of optical signal	1		3	µs	