

Optical Comb Generator WTEC-01-25



WTEC-01-25 is a Fabry-Perot Electro-Optic (FP-EO) optical frequency comb generator with high frequency stability and low phase noise. The components are all passive so that the comb stability and comb interval are equal to input laser and modulation frequency (RF) respectively. Hermetic sealed waveguide FP-EO modulator/OFCG-2.5-25AS is built-in for comb/pulse generator to realize high performances and high reliability. Temperature control unit is built-in WTEC-01-25.

This device is applicable to Optical metrology, Optical communications Phase lock THz wave synthesis and so on.

Features

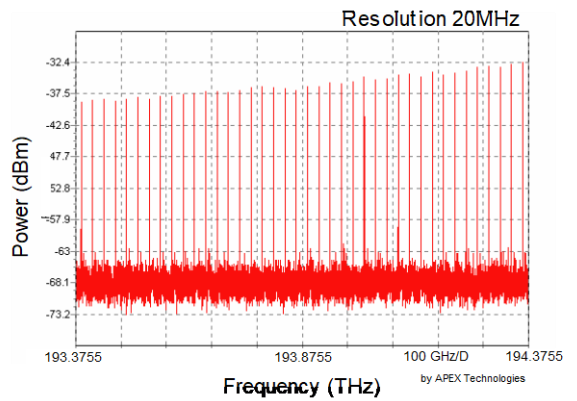
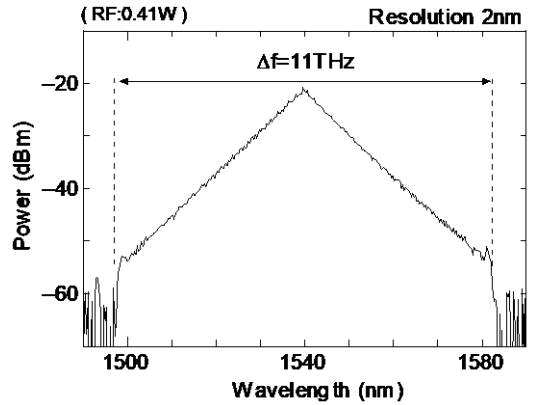
* Figure of Merit = $V\pi/\text{Finesse}$

- High finesse FP cavity
- Low $V\pi$ *
- High stability and low phase noise
- Compact and easy operation

Applications

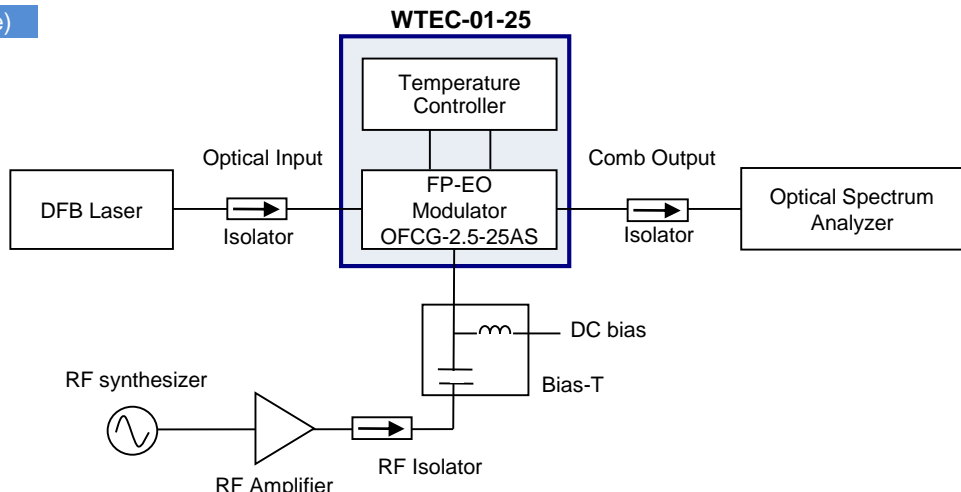
- Optical Comb/Pulse Generator
- THz synthesis
- Optical Metrology
- WDM communications

Comb Spectrum (example)



Note) Generated Comb specification varies with input conditions.

Configuration (example)



Note) This product is WTEC-01-25 in this configuration. The comb/pulse generation system is necessary.

Items	Specifications
Optical Input	
Center wavelength*1	1530 ~ 1565 nm single mode, single frequency
Optical input power*3	20 ~ 40 mW
Optical fiber	PM (PANDA)
Polarization	Slow axis
Optical connector	SC/APC
RF Input	
Modulation frequency*2 (Comb interval)	25.020 GHz \pm 25MHz @25 degree C
FSR*2	2.5 GHz \pm 5MHz
RF input power*3	\leq 1 W
RF connector	K connector
Temperature Characteristic	
Operational temperature range	10 ~ 60 degree C
Temperature stability	0.01 degree C
Display	LCD

Items	Specifications
Modulation Characteristic	
Frequency stability	Same as reference
Finesse	\geq 40
$V\pi$	\leq 10 V @ 25GHz
Transmittance (F- P_{peak}) *4	\geq 12 % (no modulation) App. 0.3 % @ $V=V\pi$ (Typ.)
Comb span*4	10 THz
Comb flatness*4	-7 dB / THz
Optical pulse width*4	< 1 ps
Power Supply	
Power supply	AC 100 ~ 240 V
Dimension and Weight	
Dimension	200W x 140L x 80D mm (Excluding protrusion)
Weight	< 2.0 kg

*1 Input laser should be stable (frequency fluctuation \ll FSR) and linewidth <10MHz is recommended.

*2 FSR and Modulation frequency are fixed at a single frequency.

*3 Optical and RF isolators are necessary.

*4 Specifications are typical data at $V=V\pi$

Ver.3.00

This brochure is subject to change without notice.

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