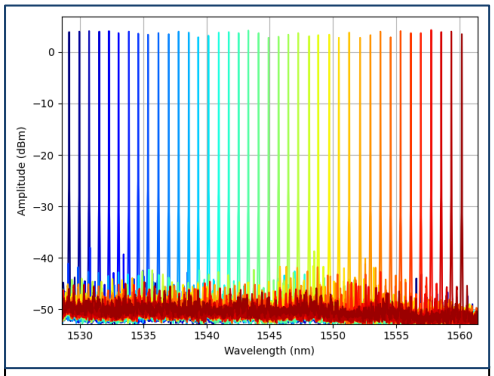
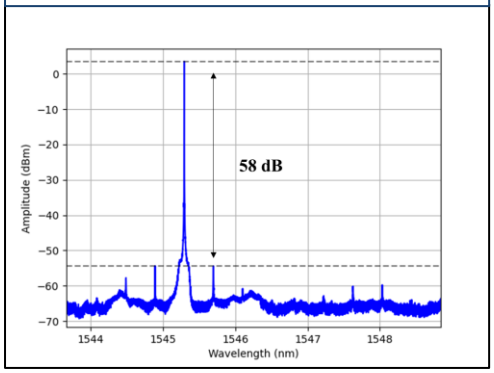
Low Linewidth Fast Tunable Laser





Typical Specifications

Central wavelength	1550/1310 nm
Switching speed	< 10 ns
RIN	< -150 dB/Hz
Tuning range	>30 nm
Side-Mode-Suppression Ratio	>40 dB
Output power	10 dBm
Linewidth	< 200 kHz

Pilot Photonics' tunable lasers are InP monolithic single mode lasers in the C-band and O-band. The lasers exhibit a tuning range of > 30 nm centered at 1550 nm (or 1310 nm), with distinct mode-islands and high side-mode suppression ratio. The tuning of these devices rely on a reverse-voltage controlled electro-optic effect which results in a fast switching, low linewidth (< 200 kHz) and low power consumption.
These devices are offered as both a 14-pin optical package, as well as a boxed validation unit with SMA connectors to facilitate high-speed tuning.
Each unit has thermo-electric coolers, internal isolators and polarization-maintaining (PM) fiber pigtail with FC/APC connectors. They also feature internal photodetectors and wavelength monitors.

Features

- Single mode laser chip
- Monolithic design suitable for photonic integration
- C-band wavelength (Option for O-band)
- Wide tuning range (>30 nm)
- High side-mode suppression ratio (up to 50 dB)
- Output power up to 13 dBm.
- High-temperature operation (> 50 °C)
- Low optical linewidth (<200 kHz)
- Nanosecond switching times through voltage tuning
- Wavelength locker (50 GHz) and wavelength meter included in package

Applications

- Dense Wavelength Division Multiplexing (DWDM)
- Coherent optical communications
- Distributed fiber sensing & gas sensing
- Sensor interrogation
- Fiber optic testing

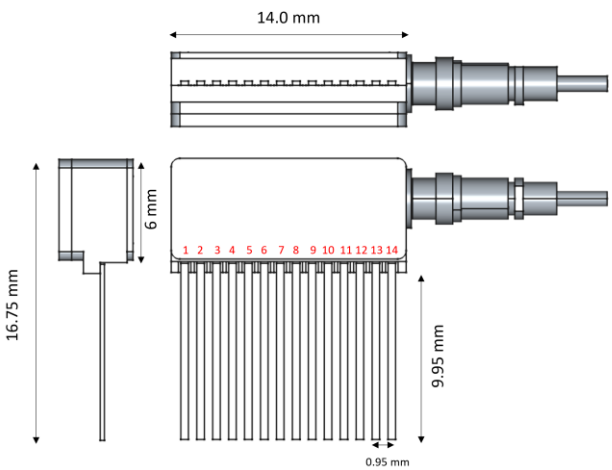
Pilot PHOTONICS

Tunable Laser

Fast, widely tunable & low linewidth

Specifications for C-band

Optical Specifications	Min.	Typ.	Max.	Unit	Notes
Centre Wavelength	-	1550	-	nm	
Tuning Range	30	35	40	nm	Mode separation 0.4 nm
Output Power		10	13	dBm	
Side-mode suppression ratio (SMSR)	30	40	55	dB	
Switching Speed	3	5	10	ns	
RIN		-150		dB/Hz	
Linewidth	100	150	200	kHz	
Chirp		3		GHz	At 300 kHz repetition rate
Operating Specifications					
Reverse Voltage (any section)	0	-	-10	V	
Total Power Consumption		3		W	PIC and TEC
TEC Voltage	-2		2	V	
TEC Current	-1	0	1	A	
Chip Temperature	15		50	°C	
Case Temperature	-5	25	85	°C	
Storage Temperature (Non-operational)	-20		70	°C	
Physical Specifications *(Butterfly package)*					
Dimensions		16.75x14.0		mm	
Optical isolation		30		dB	
Polarization Extinction ratio	17	20	26	dB	
Fiber type		Corning PANDA PM			
Fiber connector		FC/APC			



Pin Description

1	TEC-	8	Gain+
2	TEC+	9	Tuner 2+
3	Thermistor (10 $k\Omega$)	10	SOA+
4	Thermistor (10 $k\Omega$)	11	NC
5	GND-	12	Ref PD+
6	Phase+	13	λ-Meter PD+
7	Tuner 1+	14	Etalon PD+