

Low Linewidth Fast Tunable Laser

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, 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 (< 150 kHz) and low power consumption.

These lasers are offered in three form factors: standard 14-pin butterfly packages, n-iTLA and custom high-speed validation units. The standard 14-pin butterfly packages have 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)
- Very wide tuning range
- High side-mode suppression ratio
- Output power = 14 dBm*
- Low optical linewidth
- Nanosecond switching times through voltage tuning
- n-iTLA offers smaller size, power and costs
- Wavelength locker and wavelength meter included in package

Typical Specifications

Central wavelength	1550 nm
Switching speed	< 10 ns
RIN	< -150 dB/Hz
Tuning range	35 nm
Side-Mode-Suppression Ratio	45 dB
Output power	14 dBm*
Linewidth	< 150 kHz

Applications

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

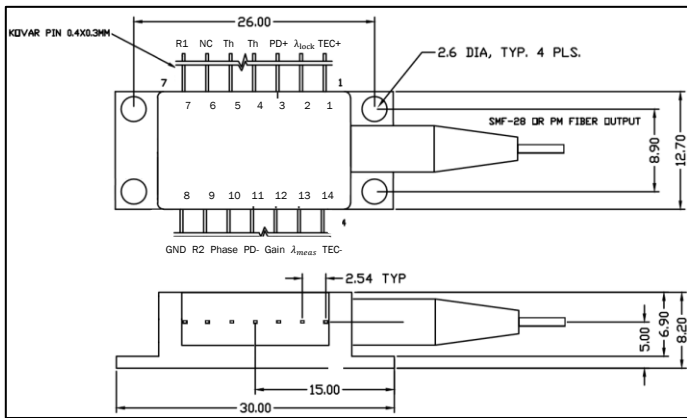


Tunable Laser

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 0.5 nm
Output Power			14 *	dBm	*Capability at bare-die level
Side-mode suppression ratio (SMSR)	40	45	50	dB	
Switching Speed	3	5	10	ns	
RIN		-150		dB/Hz	
Linewidth	100	150	200	kHz	
Chirp		1		GHz	*At 100 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	20	40	°C	
Case Temperature	-5	25	85	°C	
Storage Temperature (Non-operational)	-20		70	°C	
Physical Specifications (Butterfly package)					
Dimensions		30x12.7		cm	
Optical isolation		30		dB	
Polarization Extinction ratio	17	20	25	dB	
Fiber type		Corning PANDA PM			In butterfly packages, slow axis aligned
Fiber connector		FC/APC			In butterfly packages, narrow key



Pin Description			
1	TEC+	8	LD Ground
2	λ-Locker PD	9	Tuner 2
3	Reference PD	10	Phase
4	Thermistor (10 kΩ)	11	PD ground
5	Thermistor (10 kΩ)	12	LD Gain
6	LD SOA	13	λ-Meter PD
7	Tuner 1	14	TEC-