

# High Performance Tunable Laser TSL-510

The TSL-510 provides market-leading performance in a compact, easy to use package. The laser can perform continuous, mode-hop-free sweeps over its full 130nm tuning range with the highest output power of comparable lasers on the market today. Low noise and excellent stability are other notable features.

The model range has four separate versions. Type B has additional optics to lower the optical ASE noise and boasts a very high signal to noise ratio (SNR) of over 65dB. This is particularly important for characterization of high isolation DWDM filters. Type C includes a high accuracy wavelength meter which increases the wavelength accuracy to better than 5pm. Type D combines the high SNR with the high wavelength accuracy. All models have additional features such as fine tuning and coherence control. GPIB and USB interfaces with the industry standard SCPI command set allows full remote control and measurement automation.



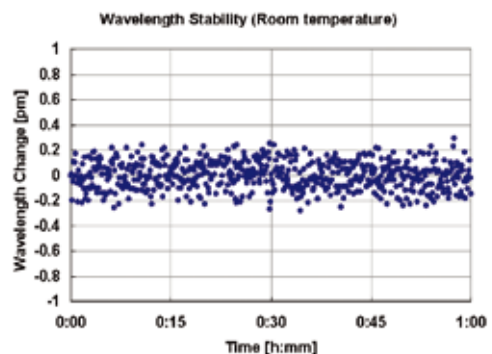
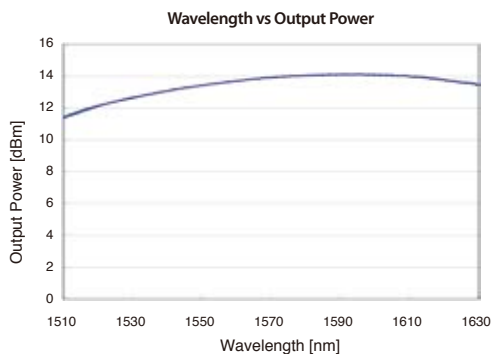
## Features

- ▶ +10dBm peak output power (types A & C)
- ▶ 130nm tuning range within 1260-1680nm
- ▶ Mode-hop-free wavelength sweeps
- ▶ 100nm/s sweep speed
- ▶ >65dB SNR (types B & D)
- ▶ <5pm wavelength accuracy (types C & D)

## Applications

- ▶ Optical component characterization
- ▶ Fiber optic transmission testing
- ▶ Fiber optic sensors
- ▶ Interferometry
- ▶ Optical spectroscopy
- ▶ Photonic material characterization

## Output Characteristics



# SANTEC TUNABLE LASERS

## Specifications

Category	Parameter	Unit	Performance				
			Type A	Type B	Type C	Type D	
Wavelength Characteristics	Tuning Range	nm	1560-1680	up to 130 within 1260 - 1630			
	Resolution	pm	5 (<1pm with fine tuning)		1	1	
	Absolute Accuracy	pm	<±30 <sup>*5</sup>	<±30 <sup>*5</sup>	<±5 <sup>*1</sup>	<±5 <sup>*1</sup>	
	Repeatability	pm	<±10	<±10	<±2	<±2	
	Stability <sup>*2</sup>	pm	<±5	<±5	<±1 (Typ.±0.4)	<±1 (Typ.±0.4)	
	Sweep Speed	nm/sec	up to 100	up to 100	up to 100	up to 100	
Optical Power Characteristics	Output Power	Peak (Typical)	dBm	>+10	>-2	>+10	>-2
		Full Tuning Range	dBm	>+8 (1560-1680) >+6 (1560-1580)	>-4	>+8	>-4
	Accuracy	%	<±5	<±5	<±5	<±5	
	Repeatability <sup>*6</sup>	dB	<±0.01	<±0.01	<±0.01	<±0.01	
	Stability <sup>*2</sup>	dB	<±0.01	<±0.01	<±0.01	<±0.01	
	Power Flatness vs. Wavelength	dB	<±0.2	<±0.2	<±0.2	<±0.2	
Spectrum	Typical Linewidth	Coh. Control OFF(Typical)	kHz	500	500	200	200
		Coh. Control ON(Typical)	MHz	40	40	40	40
	SMSR (Typical)	dB	>45	>45	>45	>45	
	Signal-to-Total Source Spontaneous Emission Ratio <sup>*3</sup>	dB	>35	>65	>35	>65	
	Signal-to-Source Spontaneous Emission Ratio <sup>*4</sup>	dB/nm	>45	>70	>45	>70	
Interface	Optical Output Connector	-	FC or SC, SPC or APC				
	Optical Fiber	-	SMF or PMF				
	Communication	-	GP-IB (IEEE 488.2), USB, RS-232C				
Modulation	LF Modulation	kHz	DC to 400				
	RF Modulation (option)	MHz	1 to 100				
Environmental Conditions and others	Operating	Temperature	°C	15 to 35			
		Humidity	%	<80			
	Power Supply	V,Hz	AC100-240±10%, 50/60				
	Power Consumption	VA	100				
	Laser safety class	-	3R				
	Dimensions (W) x (D) x (H)	mm	210 x 440 x 110				
Weight	kg	6		6.5			

※ All specifications are quoted after 1 hour warm-up period. \*1: <±8 for wavelengths <1270nm. \*2: For period of 1 hour. Within ±0.5°C. \*3: Ratio of signal power to total spontaneous emission power within ±15nm of the signal wavelength (typical value). \*4: Ratio of signal power to maximum spontaneous emission power in a 1nm band within a ±3nm band around the signal wavelength (typical value). \*5: Temperature within 25°C±1°C. For operating temperature is <±100pm. \*6: Under: Sweep mode is "Step", power mode is "Auto".

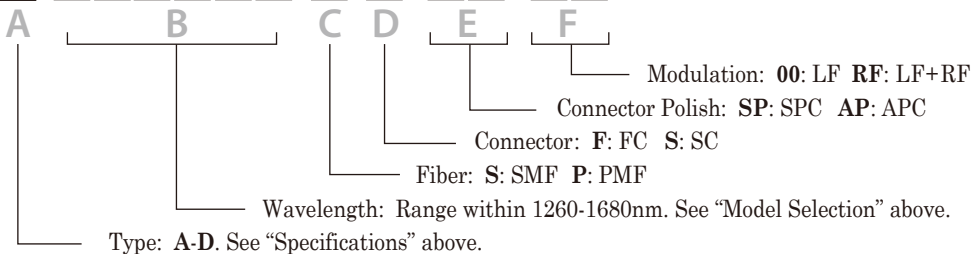
## Model Selection

Model Number	Wavelength Range
260360	1260 - 1360
500630	1500 - 1630
560680	1560 - 1680



## Ordering Code

TSL-510-□-□□□□□□-□-□-□□-□□



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