

Bench Top Tunable Lasers

TSL-210/220



Santec's TSL models are designed as fully-controllable, single-channel benchtop tunable lasers, with superior performance and reasonable cost. Both the TSL-210 and TSL-220 units offer excellent stability in conjunction with high output power and wide wavelength tuning ranges, selectable from various windows between 1260 and 1650 nm (TSL-210). These lasers share many standard features that include Automatic Power Control (APC), fine-tuning wavelength control, fully variable coherence control, and a GPIB-RS232C interface with drivers for LabView™ and Visual Basic™.

The TSL-220 also features an integrated wavelength monitor, which enables the laser to achieve absolute wavelength accuracy of ±5 pm. In addition, a built-in tracking filter is incorporated to cut ASE noise and provide a high signal-to-noise ratio (SNR). A built-in attenuator adjusts optical power to ensure that a high side-mode-suppression ratio (SSR) is maintained even at low output levels.

The TSL-210 and TSL-220 tunable lasers are ideal for use in a wide variety of telecom applications including research, development, and production environments.

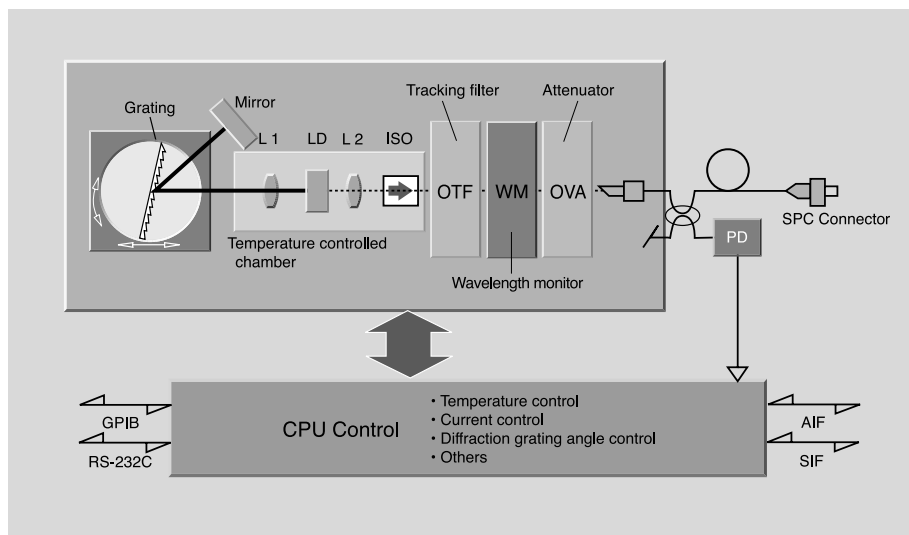


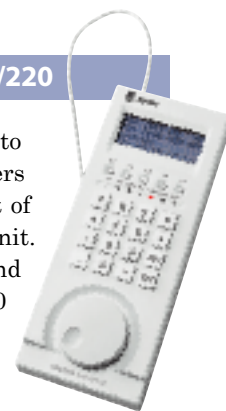
Figure 1: Principle of Operation

Model Comparison

	TSL-210	TSL-220
Peak Power	10mW (typ)	4mW
Tuning Range	>80nm	80nm
Accuracy	<±0.1nm	<±0.005nm
Wavelength Monitor	not available	included
Attenuator	optional	included
Tracking Filter	optional	included

CP-10 Control Pad for TSL-210/220

The TSL lasers feature a simple, easy to use front panel interface. The CP-10 offers additional control, providing full support of all functions in a compact handheld unit. Up to 123 combinations of wavelength and power can be stored in the CP-10 memory, and wavelength sweeps can be easily and conveniently performed.



TSL-220

High accuracy, high signal-to-noise

Features

- ▶ High wavelength accuracy <±5pm
- ▶ Standard built-in WM, OTF and OVA
- ▶ Compact size, & easy operation
- ▶ Low cost & short lead time
- ▶ Made in Japan Top quality

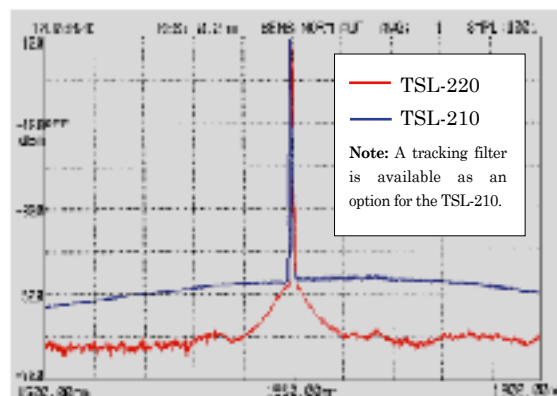
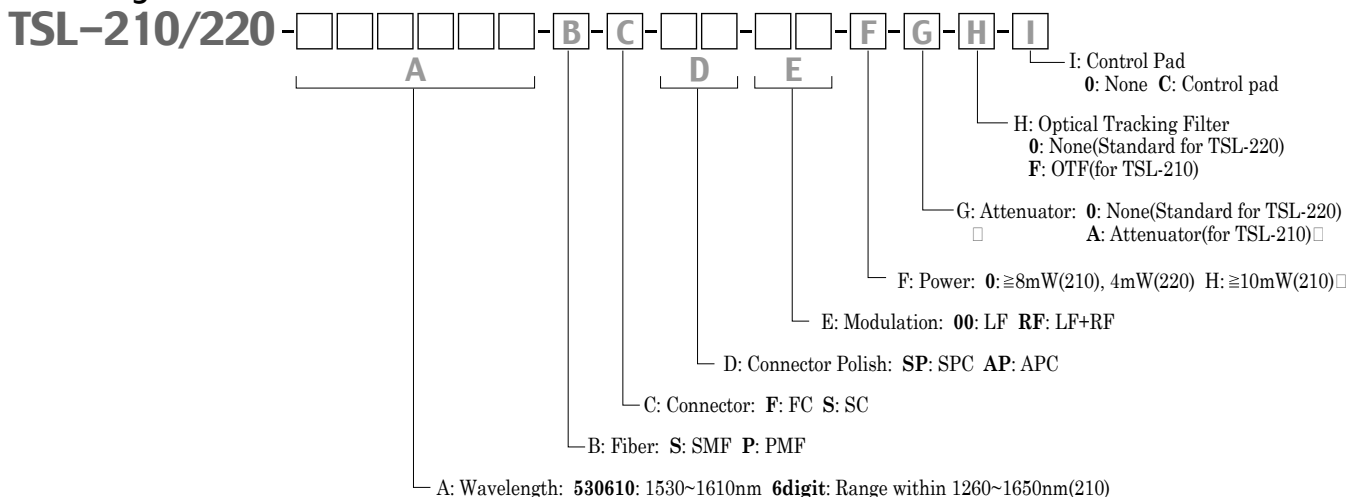


Figure 3: Built in Tracking Filter Characteristics

Specifications

Category	Parameter	Unit	TSL-210	TSL-220	Notes
Wavelength Characteristics	Tuning Range (Maximum tuning width)	nm	-	1530 to 1610	Refer to "TSL-210 Wavelength Selection(210)
	Resolution	nm	0.01	0.001	Refer to "TSL-210 Wavelength Selection(210)
	Accuracy	nm	<±0.1	<±0.005	0.001nm with fine tuning (210)
	Repeatability	nm	<±0.05	<±0.005	N=50 /Measured at center wavelength
	Stability	nm	<±0.01		After a warm-up 1h/1hour /Measured at center wavelength
	Fine Tuning Range	GHz		10	≈0.08nm
	Tuning Speed	ms/nm		170	Feedback time <500ms (220)
Power	Output Power	mW	-	>4 (Peak)	Refer to "TSL-210 Output Power" (210)
	Accuracy	%		<5	
	Repeatability	dB	<±0.01		N=50 /Measured at center wavelength /at 6dBm
	Stability	dB	<±0.01		After a warm-up 1h/1hour /Measured at center wavelength
	APC Flatness (Built in Attenuator Option)	dB	<±0.2		Measured at 6dBm APC:Automatic Power Control Resolution 0.04dB (Typ.)
	(Built in Tracking Filter Option)	dB	20% down		3dB Bandwidth 3nm (Typ.), Resolution 0.24nm (Typ.)
Environmental Conditions	Operating Temp. Range	°C	20 ~ 30		
	Operating Humidity Range	%	<80		non condensing
	Storage Temp. Range	°C	10 ~ 40		
	Storage Humidity Range	%	<80		non condensing
Spectrum	Recommendation Calibration Period	Year	1		
	Spectrum Line Width (Coh. OFF)	MHz	<1		Measured at center wavelength
	Spectrum Line Width (Coh. ON)	MHz	1 to 500		Variable /Measured at center wavelength
	SSR	dB	>45		Measured at center wavelength
Interface	RIN	dB	>145		Measurement Freq. <1GHz
	Optical Connector	-	FC or SC		
	Optical Fiber	-	SMF or PMF		
	Connector Polish	-	SPC or APC		
Modulation	GP-IB & RS-232C	-	Yes		IEEE-488
	LF modulation (RF Modulation option)	KHz	0 to 10		
Power Supply	Voltage	V	AC100-240		
	Power Consumption	VA	35-55		
Dimensions	Width x Height x Depth	mm	210x110x370		
	Weight	kg	6		

Ordering Code



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