

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.

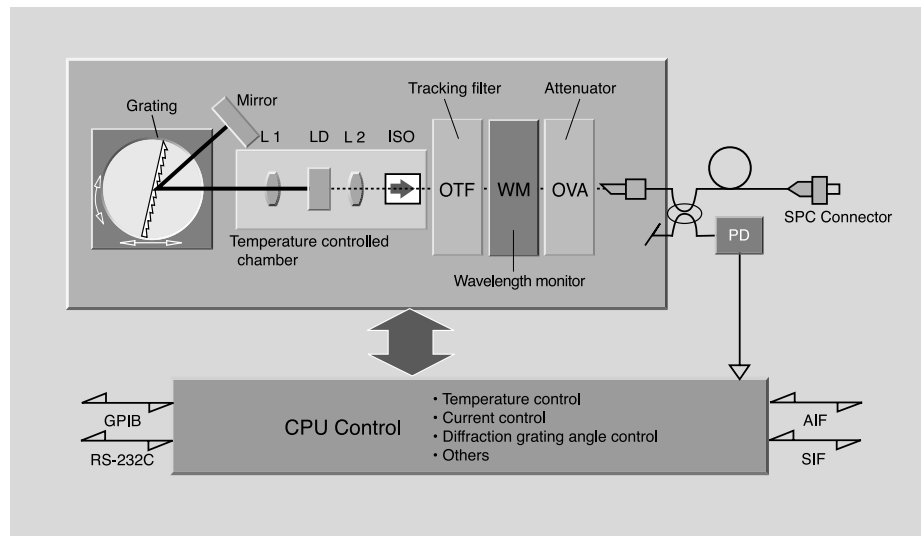


Figure 1: Principle of Operation

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

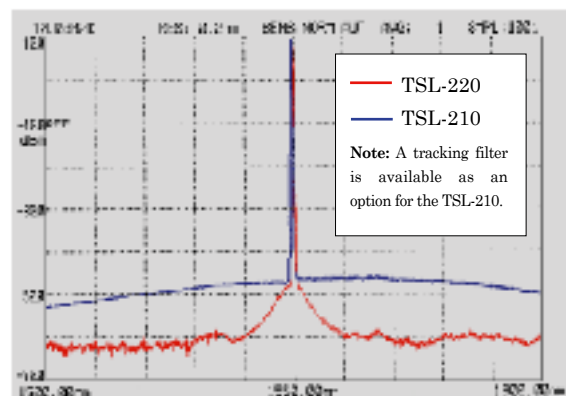
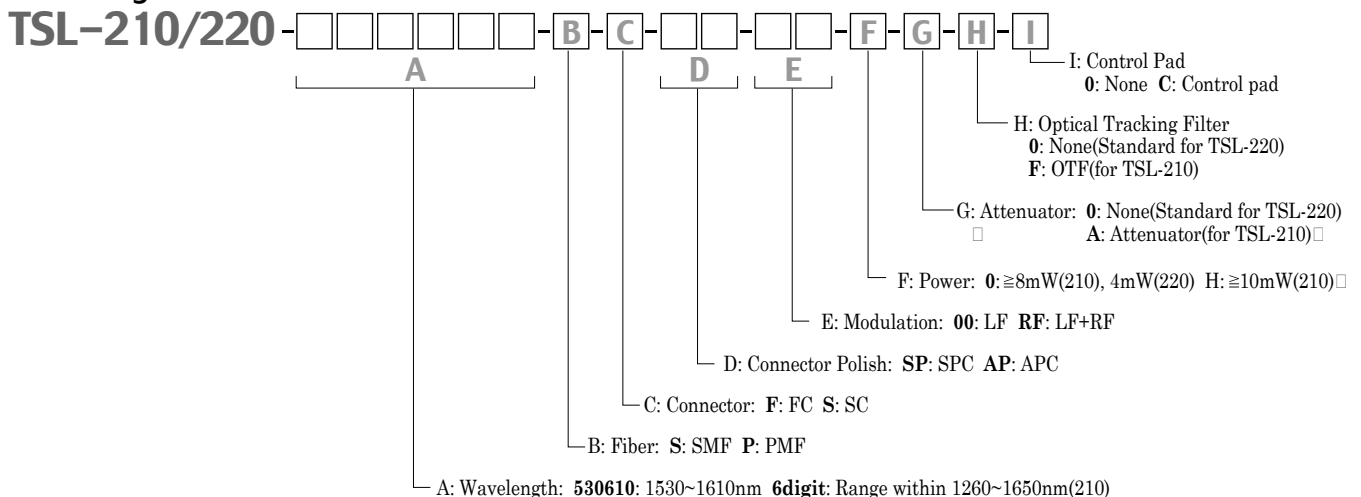


Figure 3: Built in Tracking Filter Characteristics

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 |
| | (Built in Tracking Filter Option) | dB | 0 to 20 | | Resolution 0.04dB (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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