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Data Sheet

August 13, 2026

SANTEC

Santec TSL-510 Tunable Laser

Key Features - 130 nm tuning in 1260-1680 nm windows - Mode-hop-free sweeps to 100 nm/s - Type A/C peak at least +13 dBm; Type B/D SNR greater than 65 dB - Type C/D wavelength accuracy better than +/-5 pm - Fine tuning less than 1 pm; coherence control - GPIB (IEEE 488.2), USB, RS-232C SCPI Technical Specifications Model: TSL-510 Manufacturer: Santec Instrument Type: Swept Wavelength Tunable Laser Series: TSL-510 Alias: TSL-510; TSL510 Wavelength Windows: 1260-1360 / 1340-1440 / 1420-1520 / 1500-1630 / 1560-1680 nm Tuning Span: 130 nm within 1260-1680 nm Wavelength Resolution: 5 pm; less than 1 pm with fine tuning Wavelength Accuracy TypesCD: +/-5 pm Wavelength Accuracy TypesAB: see type table (meter in C/D) Wavelength Stability: less than or equal to +/-5 pm (1 hour, within +/-0.



MODEL Santec TSL-510	CALIBRATION Available on request
CONDITION Used	STATUS In stock
RFQ / SKU TSL-510	LISTING https://aumictechlabs.com/products/tsl-510-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Santec TSL-510 is a tunable laser source engineered for telecommunications, optical component testing, and spectroscopy applications. It delivers continuous, mode-hop-free wavelength sweeps with high output power, low noise, and exceptional stability across a 130 nm tuning range. Four model types address diverse measurement requirements - from peak power performance to ultra-low ASE noise and integrated wavelength metrology. Technical Specifications Wavelength Range: Available in O-Band (1260-1360 nm), 1340-1440 nm, 1420-1520 nm, 1500-1630 nm, and 1560-1680 nm configurations. Full 130 nm tuning span within each

band. Sweep Speed: Up to 100 nm/sec. Wavelength Accuracy: ± 5 pm (Type C and Type D); < 5 pm achievable with fine-tuning. Wavelength Stability: ± 1 pm over 1 hour, or within ± 0.5 °C ambient variation. Output Power: Type A/C models deliver $\geq +13$ dBm peak (1560–1680 nm range yields $\geq +8$ dBm for Type A/C, ≥ -4 dBm for Type B/D; 1260–1360 nm Type D: $\geq +2$ dBm peak, ≥ -2 dBm full-range). Linewidth: Typically 40 MHz with coherence control enabled. Fine-Tuning Resolution: < 10 MHz ($\sim < 1$ pm). SSSER (Signal-to-Source Spontaneous Emission Ratio): ≥ 65 dB (Type B/D); ≥ 80 dB/0.1 nm (Type D, 1260–1360 nm). Wavelength Resolution: 1 pm. Optical Power Stability: ± 0.01 dB. Key Features Mode-Hop-Free Operation: Continuous sweeps across full tuning range without spectral discontinuities. Coherence Control: Standard feature adjusts optical linewidth to suppress multi-reflection interference. Four Model Variants: Type A emphasizes peak power; Type B optimizes SNR (≥ 65 dB) for high-isolation DWDM filtering; Type C integrates wavelength meter (± 5 pm accuracy); Type D combines Type B and Type C capabilities. Power Monitoring: Standard on Type D; optional on other models. Modulation: Low-frequency modulation standard; high-frequency modulation available. Typical Applications DWDM filter and optical component characterization Wavelength-dependent transmission and loss measurements Spectroscopic analysis and source spectral profiling High-resolution optical testing requiring mode-hop-free sweeps

Features & description

From manufacturer datasheet

Features

- 130 nm tuning in 1260-1680 nm windows • Mode-hop-free sweeps to 100 nm/s • Type A/C peak at least +13 dBm; Type B/D SNR greater than 65 dB • Type C/D wavelength accuracy better than +/-5 pm
- Fine tuning less than 1 pm; coherence control • GPIB (IEEE 488.2), USB, RS-232C SCPI

TSL510 Characteristics / Specifications

PARAMETER	VALUE
Model	TSL-510
Manufacturer	Santec
Instrument Type	Swept Wavelength Tunable Laser
Series	TSL-510
Alias	TSL-510; TSL510
Wavelength Windows	1260-1360 / 1340-1440 / 1420-1520 / 1500-1630 / 1560-1680 nm
Tuning Span	130 nm within 1260-1680 nm
Wavelength Resolution	5 pm; less than 1 pm with fine tuning
Wavelength Accuracy TypesCD	+/-5 pm
Wavelength Accuracy TypesAB	see type table (meter in C/D)
Wavelength Stability	less than or equal to +/-5 pm (1 hour, within +/-0.5 C typical table)
Sweep Speed	1 to 100 nm/s
Peak Power TypesAC	at least +13 dBm (1560-1680 nm model at least +8 dBm A/C)
Peak Power TypesBD	at least +2 dBm (1560-1680 nm model at least -4 dBm B/D)
SNR TypesBD	greater than 65 dB
Power Stability	+/-0.01 dB class (auto power mode tables)
Linewidth Family	200 kHz class B/D and 500 kHz class A/C on published tables
RIN Typical	-145 dB/Hz
Return Loss	greater than 45 dB
Fine Tuning	included
Coherence Control	included
LF Modulation	DC to 400 kHz class (input -2 to 0 V; depth greater than 50 percent/V typ)
RF Modulation	2 to 100 MHz class (5 Vpp; depth greater than 10 percent typ)
Connectors	FC/APC or SC/APC
Interfaces	GPIB IEEE 488.2, USB, RS-232C

PARAMETER	VALUE
Laser Type	external cavity diode laser
Laser Class	1M IEC 60825-1 (2014)
Output Power Class Limit	less than 50 mW (safety note)
Wavelength Safety Span	1200-1700 nm (manual)
Warm Up	specifications after 1 hour; exclude water absorption lines
Type A	standard high power
Type B	low ASE / high SNR
Type C	built-in wavelength meter
Type D	high SNR plus wavelength meter
Successor Path	TSL-550 / TSL-570 / TSL-580 Notes Specs from Santec TSL-510 datasheet and operation manual. Confirm type A/B/C/D and wavelength window on the rear label. 1560-1680 nm models have reduced peak power per datasheet note.
Linewidth	Family: 200 kHz class B/D and 500 kHz class A/C on published tables

Full OEM specifications

Complete technical content extracted from the manufacturer datasheet. Sparse OEM tables are reconstructed as tables below; other text is preserved as paragraphs.

Performance Swept Tunable Laser

Overview

The Santec TSL-510 is a compact external-cavity tunable semiconductor laser with mode-hop-free sweeps over a 130 nm window selectable within 1260 to 1680 nm. Peak power is at least +13 dBm on types A and C (at least +2 dBm on low-ASE types B and D). Sweep speed is 1 to 100 nm/s. Type C/D add a wavelength meter for better than +/-5 pm accuracy. Type B/D add optics for SNR greater than 65 dB. GPIB, USB, and RS-232C use SCPI. Laser class 1M (IEC 60825-1).

Applications

Optical component characterization; WDL/PDL swept test with power meters; fiber sensors and spectroscopy; DWDM filter isolation tests (Type B/D).

Key Features

- 130 nm tuning in 1260-1680 nm windows
- Mode-hop-free sweeps to 100 nm/s
- Type A/C peak at least +13 dBm; Type B/D SNR greater than 65 dB
- Type C/D wavelength accuracy better than +/-5 pm
- Fine tuning less than 1 pm; coherence control
- GPIB (IEEE 488.2), USB, RS-232C SCPI

Technical Specifications

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SNR Types BD	greater than 65 dB
Power Stability	+/-0.01 dB class (auto power mode tables)

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Linewidth Family	200 kHz class B/D and 500 kHz class A/C on published tables
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Return Loss	greater than 45 dB
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Connectors	FC/APC or SC/APC
Interfaces	GPIO IEEE 488.2, USB, RS-232C
Laser Type	external cavity diode laser
Laser Class	1M IEC 60825-1 (2014)
Output Power Class Limit	less than 50 mW (safety note)
Wavelength Safety Span	1200-1700 nm (manual)
Warm Up	specifications after 1 hour; exclude water absorption lines
Type A	standard high power
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Type C	built-in wavelength meter
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Successor Path	TSL-550 / TSL-570 / TSL-580

Notes

Specs from Santec TSL-510 datasheet and operation manual. Confirm type A/B/C/D and wavelength window on the rear label. 1560-1680 nm models have reduced peak power per datasheet note.

Laser Safety

class 1M (IEC 60825-1)

Available from Aumictech

Used and refurbished unit evaluated in-house. Calibration: Available on request. Used · In stock.

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NIST-traceable calibration · SAM registered ·
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Technical content from manufacturer specifications. Unit photo/stock from Aumictech listing when available. Specifications subject to OEM documentation and unit condition.