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Data Sheet

August 13, 2026

SANTEC

Santec TSL-550 Tunable Laser

Key Features - Selectable windows 1260-1360, 1355-1485, 1480-1630, 1500-1630, 1560-1680 nm - Mode-hop-free sweeps 1 to 100 nm/s; 0.1 pm setting resolution - Peak power at least +13 dBm; full-range at least +10 dBm (band notes below) - SNR at least 90 dB/0.1 nm (O/CL); Type C wavelength +/- 3 pm - Fine tuning and coherence control; optional LF+RF modulation - GPIB IEEE 488.2, USB, RS-232C SCPI; class 1M Technical Specifications Model: TSL-550 Manufacturer: Santec Instrument Type: Swept Wavelength Tunable Laser Series: TSL-550 Alias: TSL-550; TSL550 Wavelength Windows: 1260-1360 / 1355-1485 / 1480-1630 / 1500-1630 / 1560-1680 nm Wavelength Setting Resolution: 0.



MODEL Santec TSL-550	CALIBRATION Available on request
CONDITION Used	STATUS In stock
RFQ / SKU TSL-550	LISTING https://aumictechlabs.com/products/tsl-550-2/

NIST-traceable cal

SAM registered

30-day returns

NAICS 423690 • 811210 • 541380

This unit

The Santec TSL-550 is a widely tunable laser source engineered for precision optical testing, component characterization, and fiber optic communication system validation. It delivers high output power across a broad wavelength range with exceptional spectral purity, enabled by an innovative cavity design that minimizes ASE noise. The instrument supports mod-hop-free tuning with fine-tuning and coherence control capabilities, along with dual-mode power management (auto feedback and manual control via internal power meter). Two configuration options are available: Type A with ± 15 pm wavelength accuracy and 400 kHz linewidth, and Type C offering enhanced absolute accuracy of ± 3 pm with 200 kHz linewidth. Both versions feature integrated

wavelength metering, GPIB and USB interfaces, and SCPI command compatibility for automated measurement integration in production and laboratory environments. The TSL-550 enables WDL and PDL measurements when paired with Santec's MPM-210H power meter and supporting software.

Technical Specifications

Wavelength Tuning Range: 1260 nm to 1680 nm (O-Band, ES-Band, SCL-Band, CL-Band, U-Band options available; excludes water absorption lines)

Output Power (Peak, typical): $\geq +13$ dBm

Output Power (Full Tuning Range, typical): $\geq +10$ dBm

Signal-to-Source Spontaneous Emission Ratio (SSER): ≥ 90 dB/0.1 nm

Linewidth (Type A): 400 kHz

Linewidth (Type C): 200 kHz

Wavelength Accuracy (Type A): ± 15 pm

Wavelength Accuracy (Type C): ± 3 pm

Power Control: Auto mode (with internal power meter feedback) and Manual mode

Key Features

- Minimized ASE noise through optimized cavity design
- Mod-hop-free tuning with fine-tuning control
- Coherence control functionality for precision measurements
- Internal wavelength meter with type-dependent accuracy
- GPIB and USB connectivity with SCPI command support

Typical Applications

- Optical component characterization and testing
- Wavelength Dependent Loss (WDL) and Polarization Dependent Loss (PDL) measurements
- Fiber optic communication system validation
- Photonic material analysis
- Production inspection with enhanced scan repetition rates

Compatibility & Integration

Pairs with Santec MPM-210H power meter and dedicated measurement software for comprehensive loss analysis across the full tuning range.

Features & description

From manufacturer datasheet

Features

- Selectable windows 1260-1360, 1355-1485, 1480-1630, 1500-1630, 1560-1680 nm • Mode-hop-free sweeps 1 to 100 nm/s; 0.1 pm setting resolution • Peak power at least +13 dBm; full-range at least +10 dBm (band notes below) • SNR at least 90 dB/0.1 nm (O/CL); TypeCwavelength +/-3 pm • Fine tuning and coherence control; optional LF+RF modulation • GPIB IEEE 488.2, USB, RS-232C SCPI; class 1M

TSL550 Characteristics / Specifications

PARAMETER	VALUE
Model	TSL-550
Manufacturer	Santec
Instrument Type	Swept Wavelength Tunable Laser
Series	TSL-550
Alias	TSL-550; TSL550
Wavelength Windows	1260-1360 / 1355-1485 / 1480-1630 / 1500-1630 / 1560-1680 nm
Wavelength Setting Resolution	0.1 pm
Absolute Wavelength Accuracy Type C	+/-3 pm at 25+/-1 C, static or Step sweep
Absolute Wavelength Accuracy Type A	+/-15 pm at 25+/-1 C, static or Step sweep
Operating Temperature Accuracy Type C	+/-5 pm
Operating Temperature Accuracy Type A	+/-20 pm
Wavelength Repeatability TypeCTypical	+/-1 pm
Wavelength Repeatability TypeATypical	+/-5 pm
Wavelength Stability TypeCTypical	+/-1 pm (1 hour, within +/-0.5 C)
Wavelength Stability TypeATypical	+/-5 pm (1 hour, within +/-0.5 C)
Sweep Speed	1 to 100 nm/s
Peak Output Power Typical	at least +13 dBm
Full Range PowerOAnd CL	at least +10 dBm (1260-1360 and 1500-1630 nm)
Full Range Power ES SCL	at least +10 dBm on 1380-1485 nm (1355-1485 model) and 1500-1630 nm (1480-1630 model); at least +7 dBm full ES/SCL window
Full Range PowerUBand	at least +10 dBm (1560-1680 nm; warrant 1560-1650 nm)
Power Repeatability	+/-0.01 dB (Auto power, 1 hour, within +/-0.5 C)
Power Stability	+/-0.01 dB (Auto power, 1 hour, within +/-0.5 C)
Power Flatness Versus Wavelength	+/-0.2 dB (Auto power)
RIN Typical	-145 dB/Hz (1 MHz to 3 GHz, at maximum output)
Linewidth Coherence Off Typical	200 kHz

PARAMETER	VALUE
Linewidth Coherence On Typical	40 MHz
SMSR Typical	at least 45 dB
Signal To Total SSE	at least 70 dB (within +/-15 nm of signal; at least 35 dB on 1560-1680 nm)
Signal To SSE One Nm	at least 80 dB, at least 90 dB/0.1 nm (at least 45 dB / 55 dB/0.1 nm on 1560-1680 nm, spec to 1630 nm)
Optical Connectors	FC or SC, SPC or APC
Optical Fiber	SMF or PMF (PMF extinction 17 dB typical, key-aligned)
Interfaces	GPIO IEEE 488.2, USB, RS232C
Power Monitor Ports	0 to 3 (1 is standard)
LF Modulation	DC to 400 kHz; input -2 to 0 V; depth greater than 50 percent/V typical
RF Modulation Option	2 to 100 MHz; 5 Vpp; depth greater than 10 percent typical
Operating Temperature	15 to 35 C
Operating Humidity	less than 80 percent noncondensing
Supply Voltage	AC 100 to 240 V +/-10 percent, 50/60 Hz
Power Consumption	100 W
Dimensions	210 × 440 × 110 mm (WxDxH)
Weight	6.5 kg
Laser Class	1M IEC 60825-1 (2014)
Warm Up	specifications after 1 hour
Type A	wavelength meter, standard accuracy
Type C	high-accuracy wavelength meter
Successor Path	TSL-570 / TSL-580 Notes Specs from Santec TSL-550 datasheet Ver.1.5. Confirm TypeA versus C, wavelength window code (260360 / 355485 / 480630 / 500630 / 560680), SMF versus PMF, and LF versus LF+RF on the rear label. U-band SNR and SSE are reduced versus O/CL.
Absolute wavelength accuracy	Type C: +/-3 pm at 25+/-1 C, static or Step sweep
Wavelength repeatability	Type C Typical: +/-1 pm
Wavelength stability	Type C Typical: +/-1 pm (1 hour, within +/-0.5 C)

PARAMETER	VALUE
Linewidth	Coherence Off Typical: 200 kHz
Humidity	less than 80 percent noncondensing

General Specifications & Supplementary Characteristics

PARAMETER	VALUE
Operating temperature	Accuracy Type C: +/-5 pm
Operating Temperature	Accuracy Type C: +/-5 pm
Humidity	less than 80 percent noncondensing
Operating Temperature Accuracy Type C	+/-5 pm
Operating Temperature Accuracy Type A	+/-20 pm
Wavelength Repeatability TypeCTypical	+/-1 pm
Wavelength Repeatability TypeATypical	+/-5 pm
Wavelength Stability TypeCTypical	+/-1 pm (1 hour, within +/-0.5 C)
Wavelength Stability TypeATypical	+/-5 pm (1 hour, within +/-0.5 C)
Sweep Speed	1 to 100 nm/s
Peak Output Power Typical	at least +13 dBm
Full Range PowerOAnd CL	at least +10 dBm (1260-1360 and 1500-1630 nm)
Full Range Power ES SCL	at least +10 dBm on 1380-1485 nm (1355-1485 model) and 1500-1630 nm (1480-1630 model); at least +7 dBm full ES/SCL window
Full Range PowerUBand	at least +10 dBm (1560-1680 nm; warrant 1560-1650 nm)
Power Repeatability	+/-0.01 dB (Auto power, 1 hour, within +/-0.5 C)
Power Stability	+/-0.01 dB (Auto power, 1 hour, within +/-0.5 C)
Power Flatness Versus Wavelength	+/-0.2 dB (Auto power)
RIN Typical	-145 dB/Hz (1 MHz to 3 GHz, at maximum output)
Linewidth Coherence Off Typical	200 kHz
Linewidth Coherence On Typical	40 MHz
SMSR Typical	at least 45 dB
Signal To Total SSE	at least 70 dB (within +/-15 nm of signal; at least 35 dB on 1560-1680 nm)
Signal To SSE One Nm	at least 80 dB, at least 90 dB/0.1 nm (at least 45 dB / 55 dB/0.1 nm on 1560-1680 nm, spec to 1630 nm)
Optical Connectors	FC or SC, SPC or APC

PARAMETER	VALUE
Optical Fiber	SMF or PMF (PMF extinction 17 dB typical, key-aligned)
Interfaces	GPIO IEEE 488.2, USB, RS232C
Power Monitor Ports	0 to 3 (1 is standard)
LF Modulation	DC to 400 kHz; input -2 to 0 V; depth greater than 50 percent/V typical
RF Modulation Option	2 to 100 MHz; 5 Vpp; depth greater than 10 percent typical
Operating Humidity	less than 80 percent noncondensing
Supply Voltage	AC 100 to 240 V +/-10 percent, 50/60 Hz
Power Consumption	100 W
Dimensions	210 × 440 × 110 mm (WxDxH)
Weight	6.5 kg
Laser Class	1M IEC 60825-1 (2014)
Warm Up	specifications after 1 hour
Type A	wavelength meter, standard accuracy
Type C	high-accuracy wavelength meter
Successor Path	TSL-570 / TSL-580 Notes Specs from Santec TSL-550 datasheet Ver.1.5. Confirm TypeA versus C, wavelength window code (260360 / 355485 / 480630 / 500630 / 560680), SMF versus PMF, and LF versus LF+RF on the rear label. U-band SNR and SSE are reduced versus O/CL.

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 Tunable Laser

Overview

The Santec TSL-550 is a mode-hop-free external-cavity tunable laser combining high output (at least +10 dBm full range, typically at least +13 dBm peak) with high SNR (at least 90 dB/0.1 nm on O/CL bands). Tuning windows are selectable within 1260 to 1680 nm. Type A includes a wavelength meter at +/-15 pm (25+/-1 C); Type C is +/-3 pm. Fine tuning and coherence control are standard. GPIB, USB, and RS-232C use SCPI. Laser class 1M (IEC 60825-1:2014). Specifications after 1 hour warm-up; exclude water absorption lines.

Applications

Optical component characterization; fiber-optic transmission and WSS/DWDM tests; photonic material characterization; interferometry and optical spectroscopy; swept IL/PDL with MPM-210H and PCU-110.

Key Features

- Selectable windows 1260-1360, 1355-1485, 1480-1630, 1500-1630, 1560-1680 nm
- Mode-hop-free sweeps 1 to 100 nm/s; 0.1 pm setting resolution
- Peak power at least +13 dBm; full-range at least +10 dBm (band notes below)
- SNR at least 90 dB/0.1 nm (O/CL); Type C wavelength +/-3 pm
- Fine tuning and coherence control; optional LF+RF modulation
- GPIB IEEE 488.2, USB, RS-232C SCPI; class 1M

Technical Specifications

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Absolute Wavelength Accuracy Type C	+/-3 pm at 25+/-1 C, static or Step sweep
Absolute Wavelength Accuracy Type A	+/-15 pm at 25+/-1 C, static or Step sweep
Operating Temperature Accuracy Type C	+/-5 pm
Operating Temperature Accuracy Type A	+/-20 pm
Wavelength Repeatability Type C Typical	+/-1 pm
Wavelength Repeatability Type A Typical	+/-5 pm
Wavelength Stability Type C Typical	+/-1 pm (1 hour, within +/-0.5 C)
Wavelength Stability Type A Typical	+/-5 pm (1 hour, within +/-0.5 C)
Sweep Speed	1 to 100 nm/s

PARAMETER	VALUE
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Successor Path	TSL-570 / TSL-580

Notes

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Laser Safety

class 1M (IEC 60825-1:2014)

Available from Aumictech

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

Request a quote: sales@aumictech.com · +1 (484) 841-9341

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