

# TSL-570 Type H

## High Power Tunable Laser



### Product Overview

The new TSL-570 Type H tunable laser is a high performance, high power model with peak optical output power over 20 dBm. The advanced optical cavity design enables picometer accuracy, sub-picometer resolution and high scanning speeds up to 200 nm/second. The TSL-570 Type H can cover the O-band tuning range of 1260 - 1360 nm or the CL-band tuning range 1500 - 1630 nm.

Santec's Tunable lasers are used extensively in photonics: for optical component characterization, photonic integrated circuit testing, quantum photonics, spectroscopy, and sensors. In particular, as a high output power tunable light source, the TSL-570 Type H is useful for verification and evaluation of silicon photonics, which consist of densely integrated optical devices that exhibit large material loss and coupling loss. In addition, even in the wavelength range (1260 - 1360 nm) outside LAN-WDM, the output of the TSL-570 Type H exceeds +16 dBm, and the TSL-570 Type H enables the testing of transceivers for 100/400 GE as well as next-generation 800 GbE and 1.6 TbE.

The TSL-570 Type H is a high specification, full feature instrument suitable for all applications. It has a simple-to-use touch panel display as well as Ethernet, GPIB and USB interfaces for remote control.

### Features

- Ultra high output power: +20 dBm
- Fast, up to 200 nm/s, wavelength sweeps
- Wide tuning range lineup: 1260 - 1360 nm  
1500 - 1630 nm
- Wavelength resolution: 0.1 pm
- Fine tuning scan range: 10 GHz

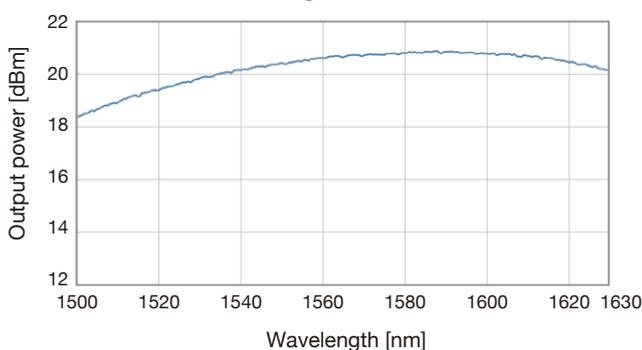


### Applications

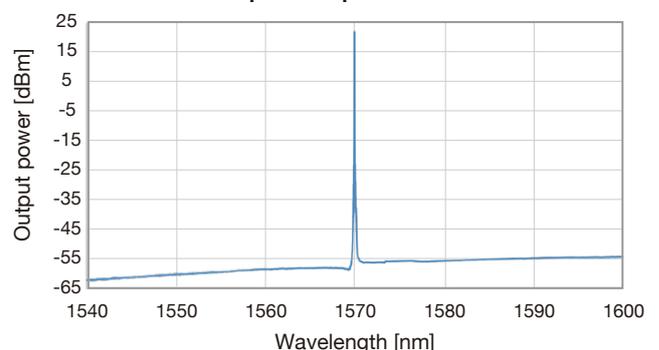
- Silicon Photonics testing
- Optical Component testing
- Optical spectroscopy

### Measurement Data

Wavelength vs Power



Optical Spectrum



# Specifications

Category	Parameter	Unit	Performance	
Wavelength Characteristics	Wavelength Tuning Range	nm	1260 - 1360 / 1500 - 1630	
	Wavelength Setting Resolution	pm	0.1	
	Wavelength Stability (typ.) <sup>*1</sup>	pm	≤ ±1	
	Absolute Wavelength Accuracy <sup>*2</sup>	Step Mode	pm	±1 (typ.)
	Absolute Wavelength Accuracy (Operating temp.)		pm	±2
	Wavelength Repeatability (typ.)		pm	±0.5
	Absolute Wavelength Accuracy (typ.) <sup>*2</sup>	Continuous sweep mode @100 nm/s	pm	±1.5
	Wavelength Repeatability (typ.)		pm	±0.8
	Sweep Speed	nm/s	1 to 200	
Fine Tuning Scan Range	GHz	≥ 10		
Optical Power Characteristics	Output Power	Peak (typ.)	dBm	≥ 20
		Full Tuning Range	dBm	≥ 16
	Power Stability <sup>*1, *3</sup>		dB	±0.01
	Power Repeatability <sup>*3</sup>	Step mode	dB	±0.01
	Power Flatness vs. Wavelength <sup>*3</sup>		dB	±0.2
	Dynamic power repeatability (typ.) <sup>*3</sup>	Continuous sweep mode	dB	±0.01
Dynamic relative power flatness (typ.) <sup>*3</sup>	@100 nm/s	dB	±0.2	
Relative intensity noise (RIN) (typ.) <sup>*4</sup>		dB/Hz	-145 (1 MHz to 3 GHz)	
Spectrum	Linewidth (typ.)	Coherence Ctrl. Off	kHz	100
		Coherence Ctrl. On	MHz	40
	SMSR (typ.)		dB	≥ 45
	Signal to Total Source Spontaneous Emission Ratio <sup>*5</sup>		dB	≥ 45@1280 - 1350 nm / ≥ 45@1540 - 1630 nm
Signal to Source Spontaneous Emission Ratio <sup>*6</sup>		dB/nm	≥ 65 (≥ 75 dB/0.1 nm)	
Interface	Optical Output Connector	-		FC or SC, APC
	Optical Fiber	-		PMF <sup>*7</sup>
	Communication	-		GP-IB (IEEE 488.2), USB, Ethernet
	Power Monitor		V	0 to 3
Environmental Conditions and others	Operating	Temperature	°C	15 to 35
		Humidity	%	< 80 (non-condensing)
	Power Supply		-	AC100 to 120 / 200 to 240 V ±10 %, 50/60 Hz
	Power Consumption		VA	100
	Dimensions (W) x (D) x (H) <sup>*8</sup>		mm	220 x 385 x 130
Weight		kg	7	

\* All specifications are quoted after 1 hour warm-up period. Specifications apply for wavelengths not equal to any water absorption line.

\*1: For period of 1 hour. Within ±0.5 °C. \*2: At 25±1 °C. \*3: At "Auto" power mode and > 0 dBm. \*4: At maximum output power.

\*5: Ratio of signal power to total spontaneous emission power within ±15 nm of the signal wavelength (typical value).

\*6: Ratio of signal power to maximum spontaneous emission power in a 1 nm band within a ±3 nm band around the signal wavelength (typical value).

\*7: In case of PMF, polarization axis in alignment with connector key. Polarization extinction ratio is 17 dB (typical value). \*8: Except for the protrusion.

## Laser safety information

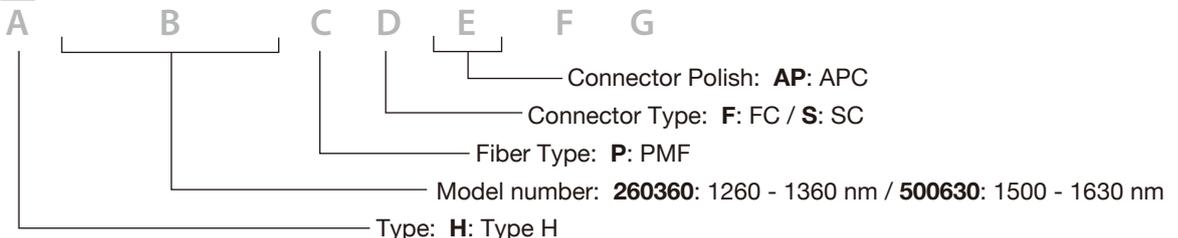


This product is classified class 3B laser product according to IEC 60825-1 (2014).

This product complies with FDA performance standards for laser products except for deviations pursuant to Laser Notice No. 56 dated May 8, 2019.

## Ordering Code

TSL-570 - **H** - **□□□□□□** - **P** - **□** - **AP** - **00** - **1**



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