

T100S-HP

HIGH POWER TUNABLE LASER



Easy-to-use and affordable for all optics laboratories while ensuring that measurements are no longer limited by laser performance.

SPEC SHEET

KEY FEATURES

13 dBm output power

Ultra-low optical noise

Built-in wavelength reference

Step-by-step or fast wavelength scans

Wide tuning range

Active mode-hop-free scan

INNOVATIVE TUNABLE LASER DESIGN

The T100S-HP tunable lasers combine long-term reliability with uncompromising specifications. This laser delivers high output power across its full tuning range with ultra-low SSE noise. This is an easy-to-use, affordable instrument for all optics laboratories which ensures that your measurements are no longer limited by laser performance.

KEY FEATURES

13 dBm output power

The T100S-HP provides the highest fiber-coupled output power of any comparable tunable laser on the market today. Essential models emit over 10 mW (10 dBm) over their entire tuning range. Peak power is 20 mW (13 dBm) for all models.

Ultra-low optical noise

The unique T100 cavity eliminates the broadband spontaneous emission (SSE) that is normally present in an external cavity laser's output. This gives a dramatic improvement in measurement's dynamic range and enables component characterization without compromise.

Built-in wavelength reference

An internal wavelength reference ensures high wavelength accuracy, better than ± 20 pm, is maintained in the long-term.

Step-by-step or fast wavelength scans

The laser can be tuned accurately to any wavelength or alternatively can be swept, at any speed from 1 to 100 nm/s over a range of wavelengths.

Wide tuning range

Six models are available. Essential models cover the standard telecom O and C & L wavelength bands. Extended range models have wider wavelength ranges, up to 200 nm, extending from 1240 nm to 1680 nm.

Active mode-hop-free scan

EXFO patented active mode-hop control ensures every scan is completely mode-hop-free. Reliable wavelength sweeps are attained with long-term reliability.

APPLICATIONS

Telecom system and component testing

The ultra-low SSE is a big advantage and enables repeatable high dynamic range measurements. Production environments benefit from the proven reliability and fast mode-hop-free scan.

Interferometry and metrology

For both stable and scanning interferometric systems.

Sensors and spectroscopy

0.1 pm fine scanning and wavelength modulation are additional features available for these applications.

Scientific research and development

Extensive input and output ports provide added flexibility and satisfy a wide range of test requirements.

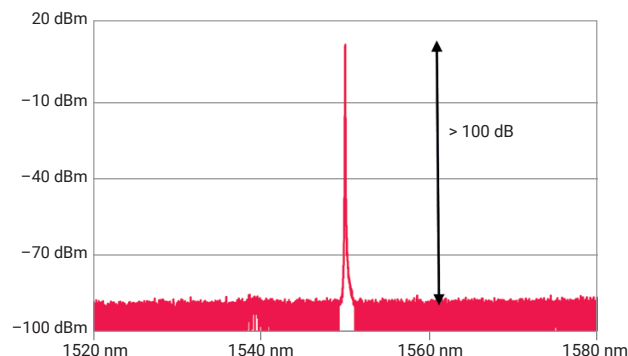


Figure 1. High power and high dynamic range.

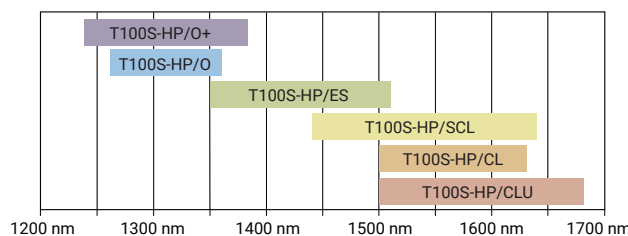


Figure 2. Overview of available models.

SPECIFICATIONS

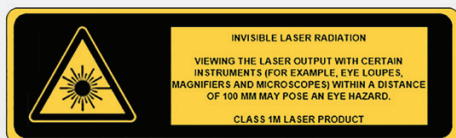
		Essential models		Extended range models			
		T100S-HP-O	T100S-HP-CL	T100S-HP-O+	T100S-HP-ES	T100S-HP-SCL	T100S-HP-CLU
Wavelength (nm)		1260-1360	1500-1630	1240-1380	1350-1510	1440-1640	1500-1680
Output power	Over full wavelength range (dBm)	≥ 10		≥ 8			
	Peak (dBm)	≥ 13					
Signal to source spontaneous emission ratio (dB) ^a		≥ 90 (100 dB typical)					
Side mode suppression ratio (dB) ^b		≥ 45					
Stability ^c	Wavelength	±5 pm/h (±3 pm/h ; ±5 pm/24h typical)					
	Output power	±0.01 dB/h (±0.025 dB/24h typical)					
Relative intensity noise (dB/Hz) ^d		< -140					
Spectral width (FWHM)		> 100 MHz (coherence control on)					
		400 kHz typical (coherence control off)					
Absolute wavelength accuracy ^e		±20 pm					
Wavelength setting repeatability		5 pm (typical)					
Wavelength setting resolution		1 pm (0.1 pm in fine tuning mode)					
Fine tuning mode range		±25 pm (±2 GHz)					
Tuning speed in step mode		Approximately 1 s for 100 nm step					
Mode-hop-free range ^f		Full wavelength range					
Continuous sweep speed		Adjustable from 1 to 100 nm/s					
Power flatness during sweep (dB)		±0.25 (typical)					
Power repeatability sweep to sweep (dB) ^g		±0.05 (typical)					
Low frequency modulation		DC to 8 MHz (sinusoidal), DC to 1 MHz (TTL)					
High frequency modulation		30 kHz to 200 MHz					
Output fiber type		SMF or PMF (option)					
Output connector		FC/APC					
Communication interfaces ^h		RS-232C and GPIB (IEEE-488.1)					
Temperature / humidity range		15 °C to 30 °C (60 °F to 85 °F) / <80% (non-condensing)					
Power supply		100 to 240 V a.c. / 50 to 60 Hz / 60 W					
Laser safety classification		Class 1M					
Dimensions (W x D x H)		448 x 370 x 133 mm (17 5/8 in x 14 1/2 in x 5 1/4 in)					
Weight		12.5 kg (27.5 lb)					

All specifications are given after 60 minutes warm-up and apply for wavelengths not equal to any water absorption.

Notes

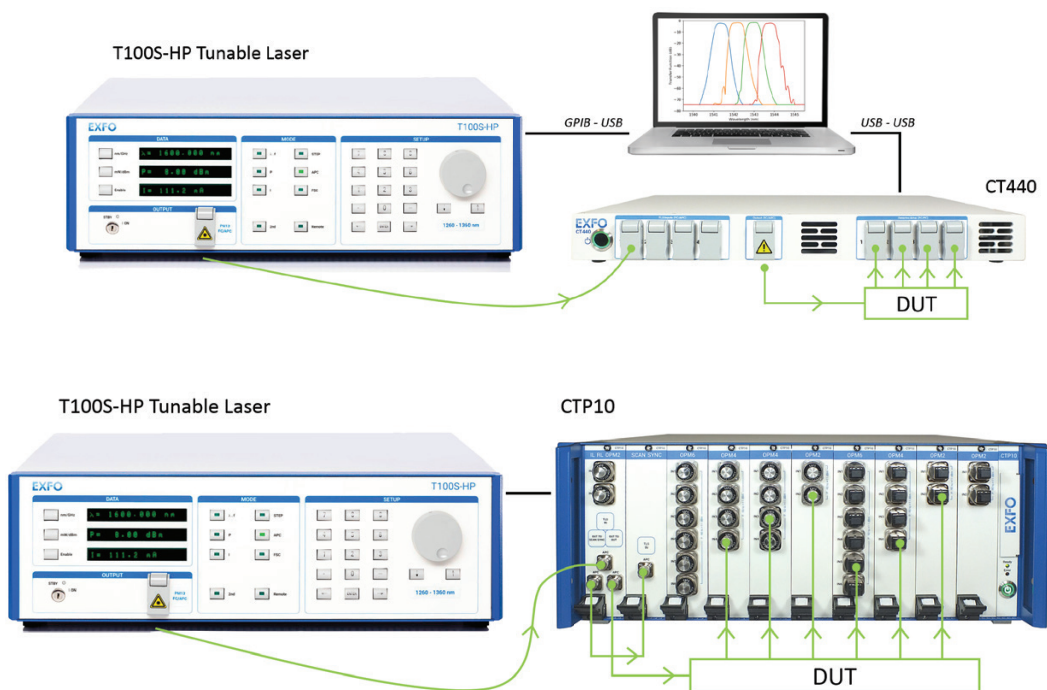
- Measured over a 0.1 nm bandwidth ±1 nm from the signal.
- For output power ≥ 0 dBm.
- Over one hour at constant temperature.
- RIN within the range 100 MHz-3 GHz measured at 8 dBm output power with RBW = 30 kHz.
- O and CL at 10 dBm. Others at 8 dBm, ±40 pm all at 0 dBm.
- Validated at 0 and 10 dBm for essential and 0 and 8 dBm for extended range models.
- Over 100 wavelength scans at constant temperature.
- GPIB tested and validated with National Instruments GPIB Board.

LASER SAFETY



COMPLETE TEST SOLUTION

T100S-HP lasers are designed to be integrated with EXFO's CT440 and CTP10 component testing solutions. For more information about these passive optical component testing solutions, please refer to the corresponding specification sheet.



ORDERING INFORMATION

T100S-HP-XX-XX

Wavelength range

- O+ = 1240–1380 nm
- O = 1260–1360 nm
- ES = 1350–1510 nm
- SCL = 1440–1640 nm
- CL = 1500–1630 nm
- CLU = 1500–1680 nm

Output fiber

- 00 = SMF28 singlemode fiber
- M = Polarization maintaining fiber

Example: T100S-HP-ES-M

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