SPEC SHEET

T100S-HP

HIGH-POWER CONTINUOUSLY TUNABLE LASER

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

KEY FEATURES AND BENEFITS

- 13 dBm output power
- Ultra-low optical noise
- Built-in wavelength reference
- Step-by-step or continuously swept 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.

The T100S-HP is part of EXFO's series of continuously tunable lasers that also include the T200S, a tunable laser with a scanning speed of 200 nm/s. For more details, please refer to the T200S specification sheet.

INDUSTRY-LEADING 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. When the T100S-HP is used with EXFO's component testers (CT440 or CTP10) as part of a passive component characterization system, this wavelength accuracy is improved to ±5pm with a wavelength repeatablity of the order of 1 pm.

Step-by-step or continuously swept wavelength scans

The laser can be tuned accurately to any wavelength or alternatively can be swept continuously, 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 over the full spectral range of the laser. Reliable wavelength sweeps are attained with long-term reliability.

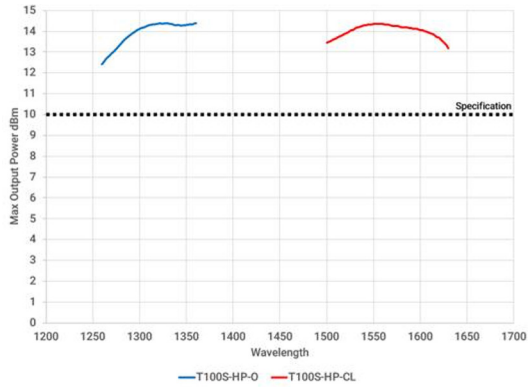


Figure 1. Typical maximum optical output power for the essential models

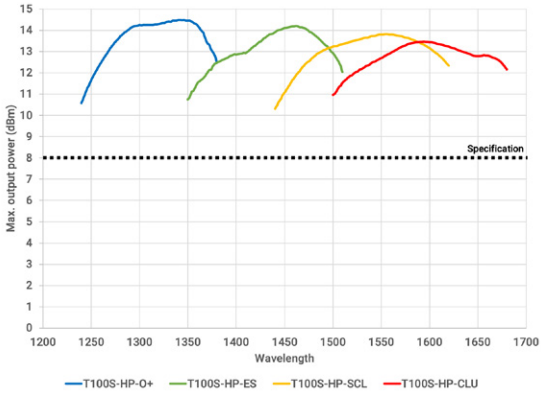


Figure 2. Typical maximum optical output power for the extended models

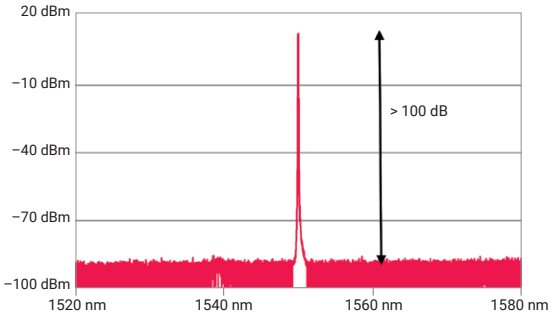


Figure 3. High power and high dynamic range.

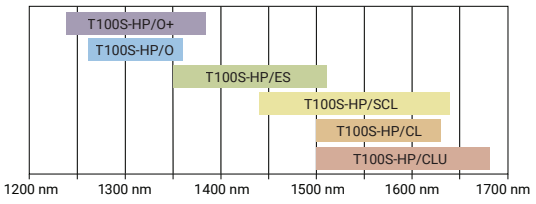


Figure 4. Overview of available models.

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

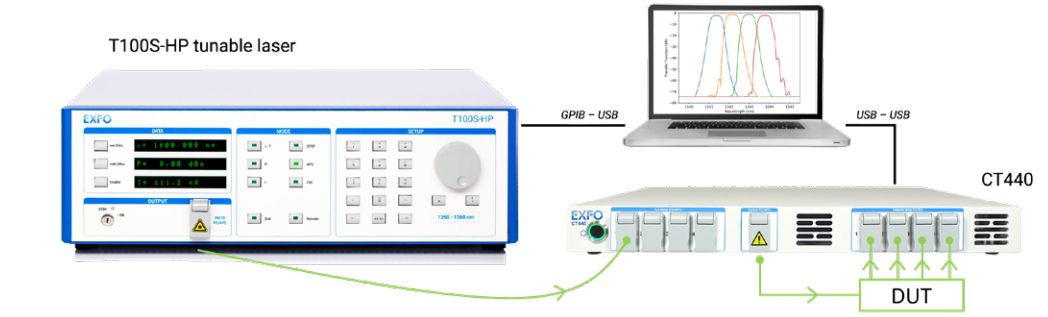
0.1 pm fine scanning and wavelength modulation are additional features available for these applications.

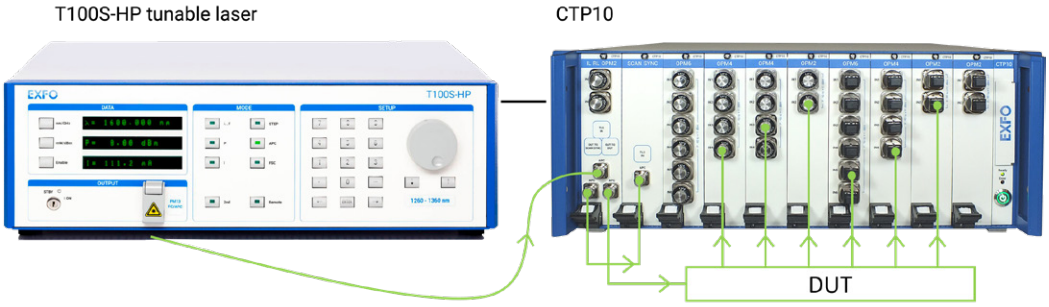
Scientific research and development

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

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.





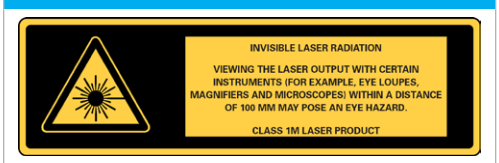
SPECIFICATIONS

	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 [a] Over full wavelength range (dBm)	≥ 10		≥ 8			
Peak (dBm)	≥ 13					
Signal to source spontaneous emission ratio (dB) [b]	≥ 90 (100 dB typical)					
Side mode suppression ratio (dB) [c]	≥ 45					
Stability [d] Wavelength Output power	±5 pm/h (±3 pm/h ; ±5 pm/24h typical) ±0.01 dB/h (±0.025 dB/24h typical)					
Relative intensity noise (dB/Hz) [e]	< −140					
Spectral width (FWHM)	> 100 MHz (coherence control on) 400 kHz typical (coherence control off)					
Absolute wavelength accuracy	±20 pm (stepped mode) [f] ±5 pm (sweep mode with CT440 or CTP10, typical)					
Wavelength setting repeatability	5 pm (stepped mode, typical) 1 pm (sweep mode with CT440 or CTP10, 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 [g]	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) [h]	±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 [j] (option)					
Output connector	FC/APC					
Communication interfaces [i]	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					
Dimensions (W x D x H)	448 x 370 x 133 mm (17 ⅝ in x 14 ½ in x 5 ¼ 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.

a. Maximum power achieved at driving current 400mA
b. Measured over a 0.1 nm bandwidth ±1 nm from the signal.
c. For output power ≥ 0 dBm.
d. Over one hour at constant temperature.
e. RIN within the range 100 MHz-3 GHz measured at 8 dBm output power with RBW = 30 kHz.
f. O and CL at 10 dBm. Others at 8 dBm, ±40 pm all at 0 dBm.
g. Validated at 0 and 10 dBm for essential and 0 and 8 dBm for extended range models.
h. Over 100 wavelength scans at constant temperature.
i. GPIB tested and validated with National Instruments GPIB Board.
j. Output connector key aligned with slow axis.

LASER SAFETY



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

EXFO headquarters **T** +1 418 683-0211 **Toll-free** +1 800 663-3936 (USA and Canada)

EXFO serves over 2000 customers in more than 100 countries. To find your local office contact details, please go to **www.EXFO.com/contact**.

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