

# Tunics T100S - Tunable Laser Source

## Purity High Power Spectrum

**YENISTA** proposes a general-purpose benchtop “work-horse” tunable laser, combining large wavelength range and high output power with ASE suppression. This laser is a must for all optical labs looking for an affordable every day use laser; with Tunics T100S, the laser is not anymore the limiting factor of your measurement set-up.



### Key Parameters

- **High and ASE-free Output Power : an unique combination ideal for Component Testing.**

With T100 technology, there is no more trade-off between high output power and ASE suppression. A single laser can be use for all applications from amplifiers/WDM testing to high resolution insertion loss characterization.

- **110 / 150 nm Tuning Range with 1 pm Resolution.**

In one single instrument, the Tunics guarantees a tuning range of up to 150 nm at 0 dBm (1 mW).

- **Fast Operation from the Start.**

The Tunics laser could be used a minute after turn-up. Scanning time between two wavelengths is around 1 second and sweeping speed is adjustable from 1 nm/s up to 100 nm/s.

- **Active Control for Mode-Hop-Free Operation.**

For ultimate performance, Tunics Plus features a proprietary active control that ensures perfect mode-hop-free operation and accurate wavelength sweep over its entire tuning range.

- **Fine Scanning Mode: down to 0.1pm resolution and frequency modulation.**

Fine Scanning Mode allows the user to accurately modify the wavelength over  $\pm 2$  GHz range using the rotary knob on instrument front pannel. An external modulation could also be applied to modulate this fine scanning.

- **Step-by-Step and Sweeping Mode.**

The Tunics T100S combines two operating modes. The sweeping ability delivers a continuous variation of the wavelength at a constant rate to enable a fast and uninterrupted measurement. In step-by-step application, the laser exhibits a high wavelength stability suitable for long-term testing.

- **Internal wavelength reference.**

Every Tunics T100S has an internal wavelength reference that leads to a  $\pm 30$  pm absolute wavelength accuracy. This eliminates the need for an external wavemeter or optical spectrum analyser.

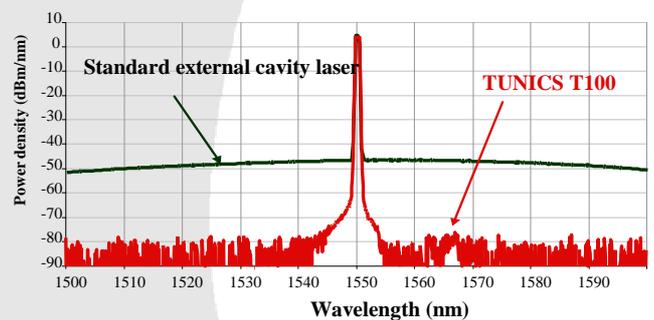


Fig.1 Tunics T100S Ase free Optical Spectrum

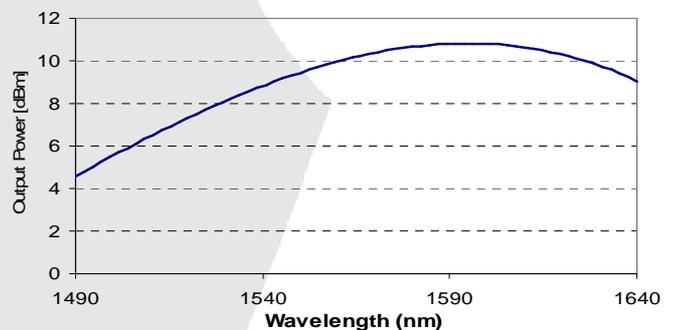


Fig. 2 Typical power versus wavelength (CL-WB Model)

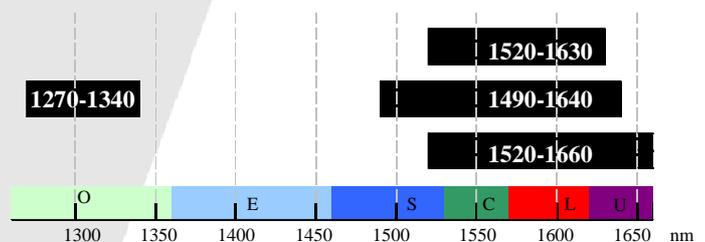


Fig. 3 Available T100S Models

All information and specifications are subject to change without notice

**Yenista**  
**OPTICS**

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## Tunics T100S Specifications

		Tunics T100S-O	Tunics T100S-CL	Tunics T100S-CL-WB	Tunics T100S-CLU	
<b>Tuning Characteristics</b>	Wavelength range (mode hop free) • P = 0 dBm • P = 3 dBm • P = 6 dBm • P = 8 dBm	1270-1340 nm	1520-1630 nm 1540-1620 nm 1560-1600 nm	1490-1640 nm 1520-1630 nm 1540-1610 nm	1520-1660 nm 1540-1620 nm 1560-1600 nm	
	Absolute wavelength accuracy <sup>-1</sup>	±50 pm	±30 pm			
	Wavelength stability <sup>-2</sup>	±5 pm / h (±3 pm / h typical and ±5 pm / 24h typical)				
	Tuning repeatability (typ.)	5 pm				
	Wavelength setting resolution	1 pm				
	Optical frequency fine tuning	±2 GHz				
	Tuning speed (typ.)	1s (100 nm)				
<b>Laser Output Characteristics</b>	Power stability <sup>-2</sup>	±0.01 dB / h (±0.025 dB / 24h typical)				
	Side mode suppression ratio <sup>-3</sup>	>40 dB	>45 dB			
	Signal to source spontaneous-emission ratio <sup>-4</sup>	>80dB	>90dB			
	Relative intensity noise <sup>-3, 5</sup>	-145 dB/Hz (typ.)				
	Spectral Width (FWHM)	400 kHz typical (coherence control OFF) >100 MHz (coherence control ON)				
<b>Sweeping Mode Characteristics</b>	Mode hop free range	Whole wavelength range for each specified power <sup>-8</sup>				
	Scan speed	Adjustable from 1 to 100 nm/s				
	Power flatness during scan (typ.)	±0.25 dB				
	Power repeatability from scan to scan (typ.) <sup>-6</sup>	±0.05 dB				
<b>Interfaces</b>	Optical connector	FC-APC				
	Output fiber	SMF-28™				
	Output isolation	35 dB				
	Return loss	60 dB				
	Remote control	RS-232 C and IEEE-488.1 <sup>-7</sup>				
	Low frequency modulation	10 kHz to 8 MHz				
<b>Environment</b>	Operating temperature range	+15° to +30°C +60° to +85°F				
	Power supply	100 to 240 V / 50 to 60 Hz				
	Dimensions (W x H x D) in mm <sup>3</sup>	448 x 133 x 370				
	Weight	12.5 kg				

Unless otherwise specified, specifications are given after 30 minutes warm-up.

\*1: After self calibration, at +21°C ±3°C, in C&L band. Wavelength Accuracy is ±40 pm over operating temperature range for CL and CL-WB model.

\*2: Over one hour at a constant temperature and after 1 hour warm-up.

\*3: Measured with 0 dBm output power.

\*4: Spontaneous emission measured on a 0.1 nm bandwidth at ±1 nm from the signal.

\*5: Measured at an electrical frequency of 100 MHz.

\*6: Over 100 scans at constant temperature.

\*7: Tested and validated with National Instruments GPIB board.

\*8: for CL and CL-WB model. One mode-hops per scan maximum on O band model.

### Options

**M** : Polarization maintaining output fiber (orientation TE in slow axis, in line with connector key)

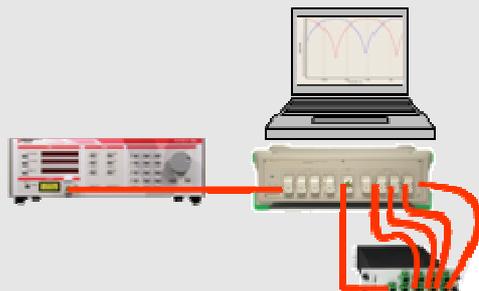
### Ordering Information

Please specify the model name followed by the option.

Example: Tunics T100S-O-M

## Tunics T100S and CT400 Component Analyzer : the perfect match.

When used in conjunction with Yenista's CT400 component analyzer, the Tunics T100S allows accurate insertion and return loss characterization in real time. Refer to CT400 individual data sheet for more details.



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