

TopLight

Tunable Laser Source



Product description

TopLight tunable laser source is the first product of this series developed by Dimension Technology integrating sixteen years of professional experience in the field of optical testing. It has the characteristics of high wavelength accuracy, fast scanning speed, high output power stability, and no mode hopping in the entire wavelength band. The product is highly integrated, compact in size, and flexible in control. It is equipped with high-speed power meter and bias meter from Dimension Technology.



Main advantages

- Wavelength accuracy $\pm 20\text{pm}$
- Scanning speed up to 200 nm/s
- High signal-to-noise ratio
- Mode-hop-free with rapid sweeps up to 100 nm/s
- Wide wavelength tunable range

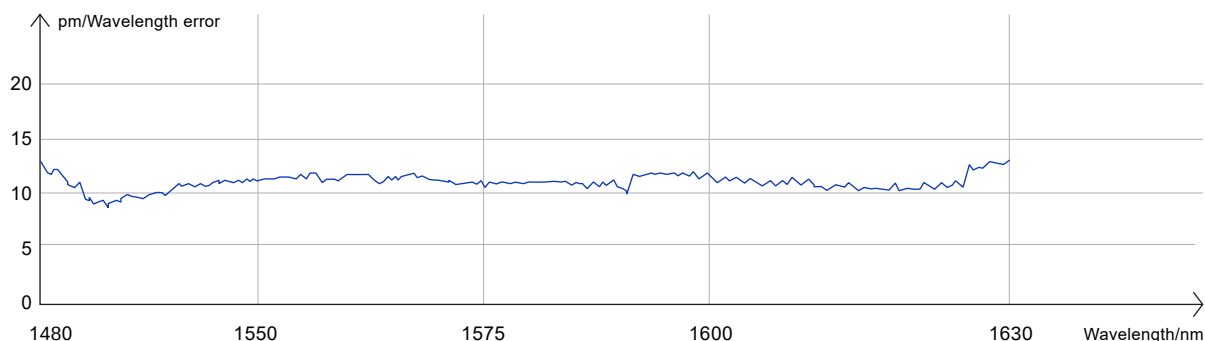


Main application

- WDM scanning test
- Wavelength dependence test
- Optical characterization of components and modules
- Specific wavelength output
- Spectroscopy

Ultra-high wavelength accuracy, repeatability and stability, stable output power

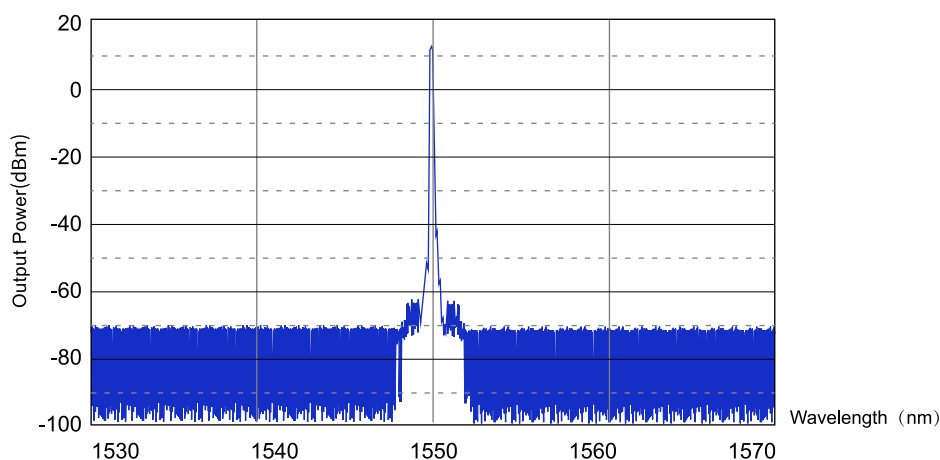
TopLight's tunable laser source ensures that the wavelength accuracy of the light source can reach $\pm 20\text{pm}$ through precise electromechanical control. The repeatability and stability of the wavelength remain reliable even during high-speed scanning. In different test environments, TopLight can also compensate for environmental changes to ensure stable and reliable wavelength accuracy.



The output power of the light source is strictly fitted to the wavelength correlation to ensure that the flatness of the power curve is higher than 0.2dB/nm , reducing the error caused by power to the test system.

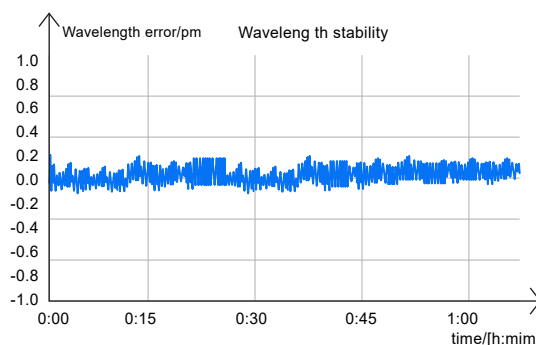
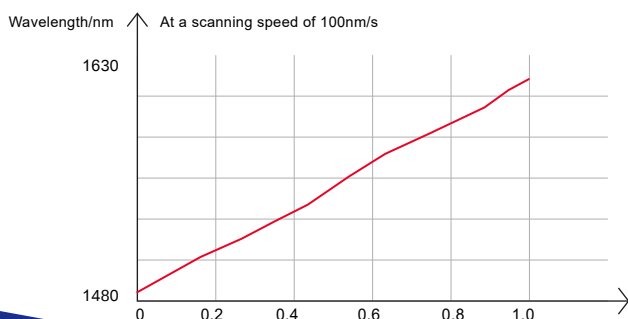
High output spectrum signal-to-noise ratio and side mode suppression ratio

TopLight uses the principle of external cavity resonance to tune the wavelength. Through precise optical and electromechanical control systems, it ensures that the narrow linewidth laser output from the resonant cavity always has a good signal-to-noise ratio and side mode suppression ratio, providing an excellent system for rigorous wavelength scanning, test environment and conditions.

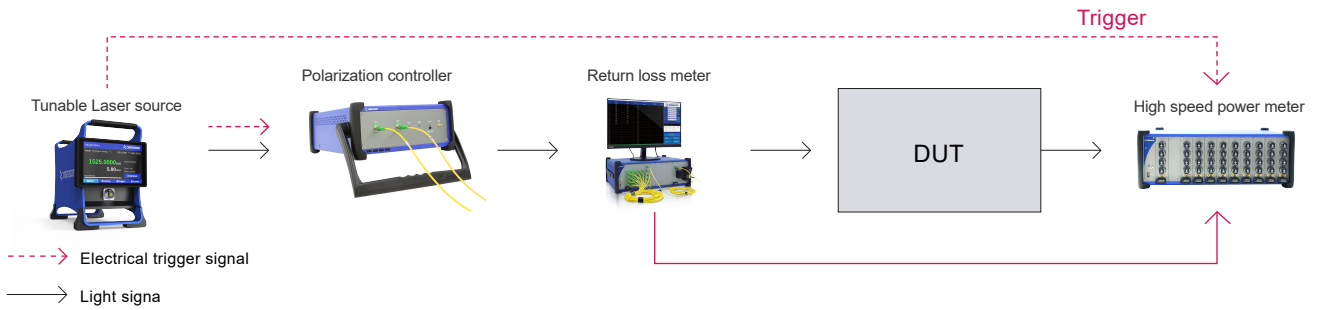


Achieve mode-hop-free within the entire band, ensuring continuity of the wavelength curve

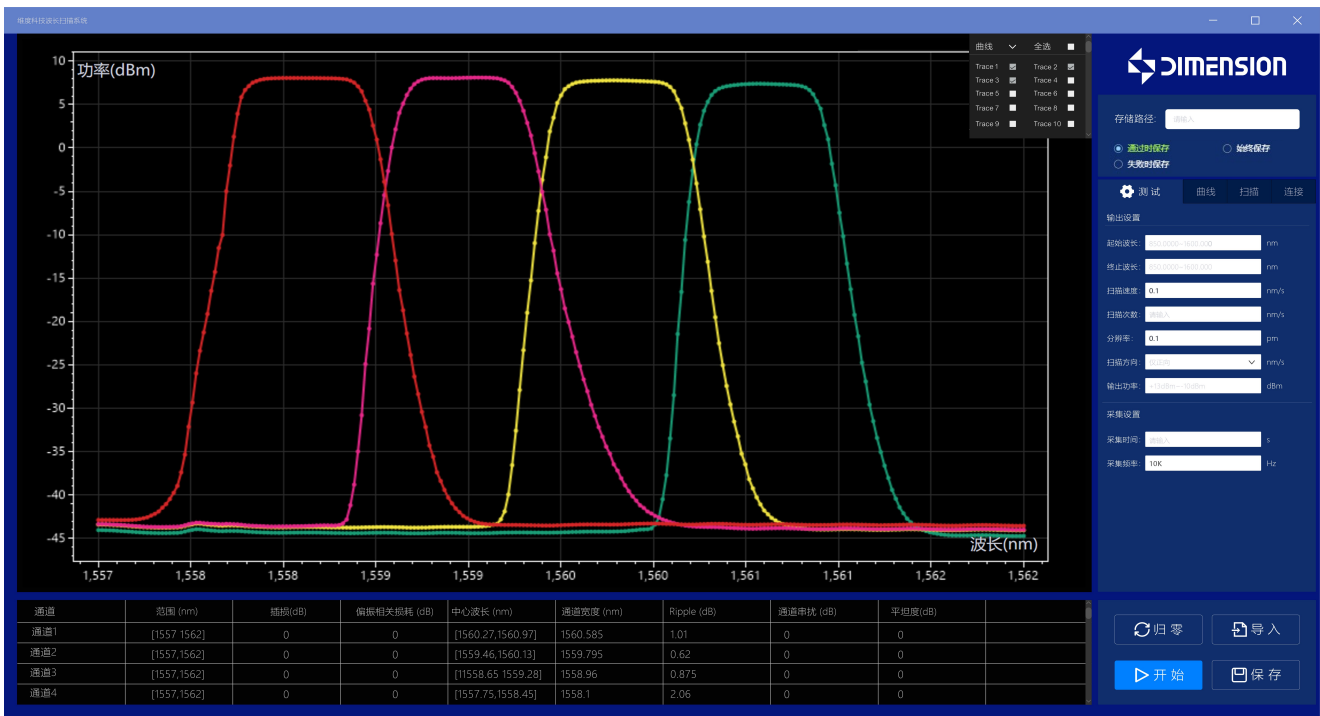
Dimension Technology's professional optical, mechanical and electrical computing integration capabilities provide reliable guarantee for the mode control of tunable laser sources. Through precise control and algorithms, TopLight can ensure. Under the premise of ultra-high scanning speed and wavelength accuracy, it is confirmed that the main mode wavelength of the laser output is always dominant, and the test can be completed without a wavelength calibration piece during scanning.



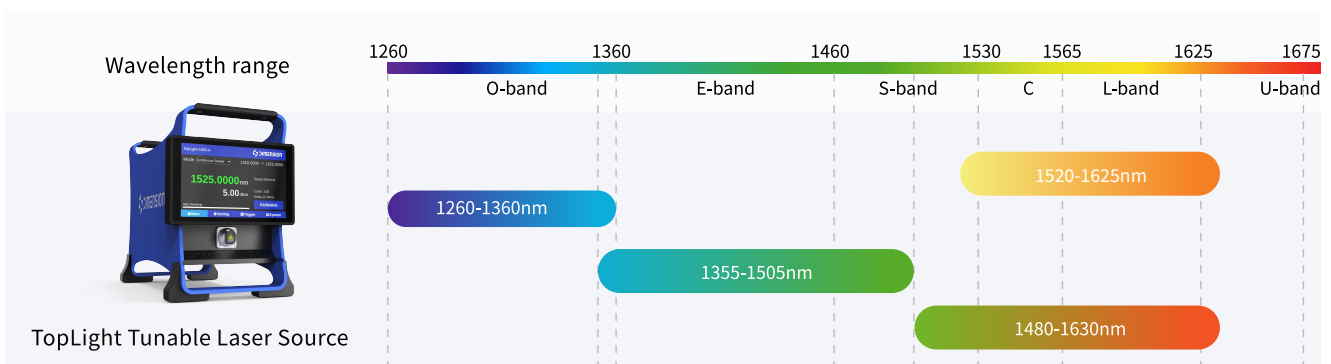
Used with wavelength scanning system to realize optical device scanning test



The wavelength scanning system independently developed by Dimension Technology is equipped with a TopLight tunable laser source and a high-speed power meter. The wavelength accuracy can reach $\pm 5\text{pm}$ and achieves a fast scan of 100nm/s . Scanning provides efficient and accurate testing solutions for wavelength-dependent devices. Based on years of design experience, Dimension Technology provides system software with good human-computer interaction, allowing Users can complete the wavelength scan test clearly and simply. Users only need to tap the test button to obtain a detailed test report. Moreover, due to the platform + modular design frame Dimension Technology's equipment is extremely flexible when needs change. It can be upgraded to a new test environment by simply adding, subtracting or replacing modules, saving users a lot of time and economic costs.



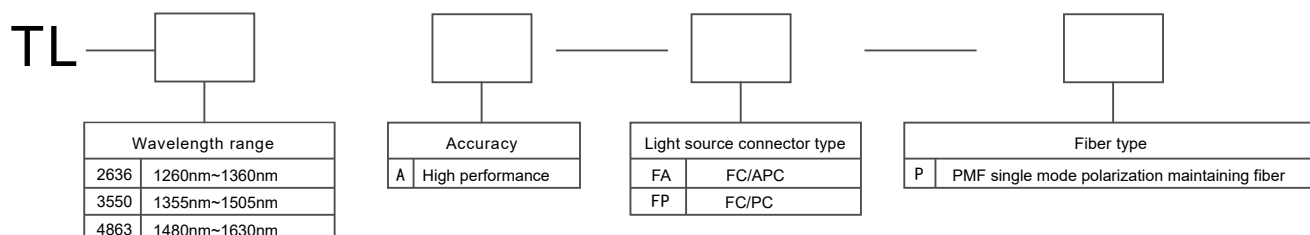
Multiple wavelength ranges are available, covers multiple device application scenarios



Parameter performance

Category	Parameter			TLS tunable laser source
Wavelength characteristics	Wavelength tunable range			1260nm~1360nm/1480nm-1630nm
	Wavelength resolution			0.1pm
	Wavelength stability			±5pm
	Wavelength accuracy	Absolute accuracy ¹		±10pm
		Absolute accuracy	Step scanning	±10pm
		Repeatability		±5pm
		Absolute accuracy	Continuous scanning @100nm/s	±20pm
		Repeatability		±10pm
Maximum scanning speed			200nm/s	
Output power characteristics	Output Power	Peak		+13dBm
		>10dBm range		1260nm-1360nm/1480nm-1630nm
		Full wavelength tuning range		-15~+10dBm
	Stability			±0.01dB
	Repeatability		Step scanning	±0.01dB
	Flatness			±0.2dB
	Repeatability		Continuous scanning @100nm/s	±0.01dB
	Flatness			±0.2dB
	Relative Intensity Noise (RIN) (Typical)			145dB/Hz (1 MHz to 3 GHz)
	Spectral characteristics	Line width		
SMSR			60dB	
SINR			70dB	

Tunable laser source selection



Example: TL-4863A-FA-P, TopLight tunable laser source, wavelength range 1480nm~1630nm, high-performance version, FC/APC, PMF single mode polarization maintaining fiber output.

All specifications require more than 1 hour of equipment warm-up before measurement.

1: The test conditions for all parameter indicators are that the temperature changes within 25±5°C.

2: The test conditions are wavelength resolution 5pm, wavelength range 100nm, single channel and single scan.

3: All losses do not include the impact of connectors.

Shenzhen Dimension Technology Co., Ltd.

Tel: +86 755-26480850

Email: sales@dimension-tech.com

Website: www.dimension-tech.com