SPEC SHEET

OSICS T100

TUNABLE LASER MODULE

EXFO's OSICS T100 is a cost effective, stepped external cavity tunable laser module that integrates the patented T100 cavity. The module combines a narrow linewidth, high output power and ultra-low optical noise, and significantly increases the dynamic range of measurements. Each T100 module can be tuned anywhere across a 100 nm range and can be combined together with an optical switch in a single OSICS-8 mainframe to provide full telecom wavelength coverage, from 1260 nm to 1680 nm.

KEY FEATURES

- External cavity design
- Spectral coverage from 1260 nm to 1680 nm
- >100 nm step-by-step tunability
- 6 dBm output power
- Ultra-low SSE noise: 90 dB/0.1 nm
- Narrow linewidth
- Digital modulation up to 1 MHz
- Easy front panel or remote control

The T100 laser modules are ideal laser sources for stepped optical component testing where high optical power and low optical noise are required to achieve high quality measurements. A “full band laser” solution can be created by combining four lasers with a SWT switch module in a single OSICS mainframe, providing a unique, cost effective, tunable laser system that covers the full telecom wavelength range with a single fiber output.

KEY FEATURES

Complete telecom spectrum coverage

All telecom wavelength bands (O, E, S, C, L and U) are supported through different models of the T100 laser series from 1260 nm to 1680 nm. Each T100 laser wavelength can be tuned with ±200 pm accuracy and a ±10 pm step resolution (or 1 pm with the high resolution option R).

90 dB/0.1 nm ultra-low optical noise

The unique T100 cavity eliminates broadband spontaneous emission (SSE) normally present in anexternal cavity laser’s output, while maintaining a high output power. The OSICS T100 has one of the lowest figures of merit for SSE of any tunable laser on the market and dramatically improves measurement dynamic range during component testing.

Modular flexibility

Thanks to its modular design, the OSICS platform can initially be purchased for partial spectral coverage, and later upgraded with modules covering different wavelengths, to stagger capital expenditure.

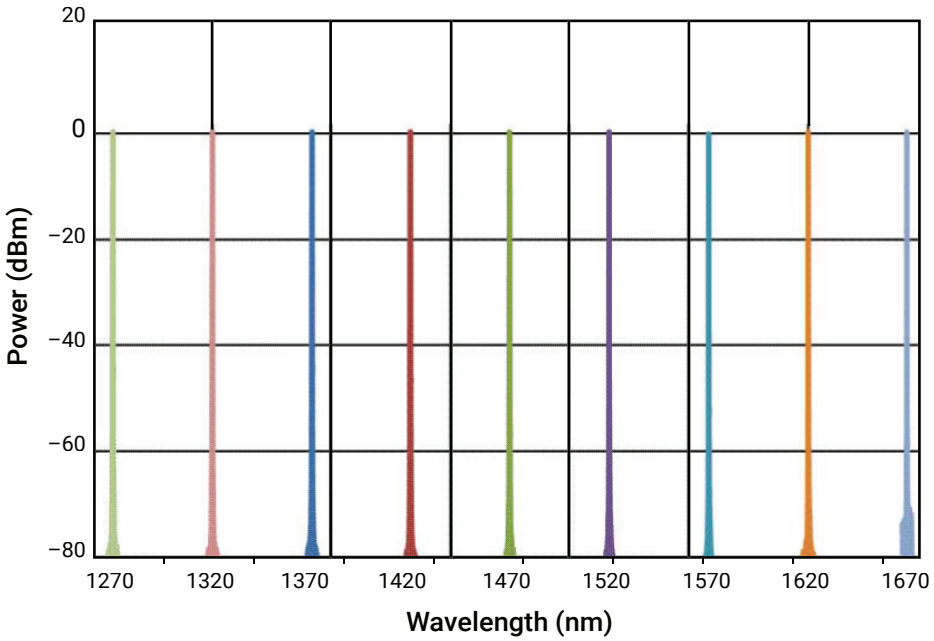


Figure 1.OS-T100 lasers spectra taken at various wavelengths throughout the telecom range

APPLICATIONS

Telecom system and component testing

Ultra-low SSE is a big advantage and enables repeatable high dynamic range measurements. Its proven reliability and easy-to-use interface make it ideal for production environments.

Material characterization

Thanks to its broad spectral coverage, the T100 is ideal for silicon photonics, CWDM, PON and photonic crystal characterization.

Scientific research and development

Extensive trigger and modulation ports provide added flexibility and satisfy a wide range of test requirements.

OSICS FULL BAND LASER

It is possible to create a full-band laser solution composed of an OSICS mainframe fitted with four lasers (T100 1310, T100 1415, T100 1520 and T100 1620) and a switch module thus creating a single-fiber output tunable laser solution.

OVERVIEW OF AVAILABLE MODELS

The laser models cover the main telecom bands and are designed to be included in the OSICS platform, particularly in a **full band laser** setup.

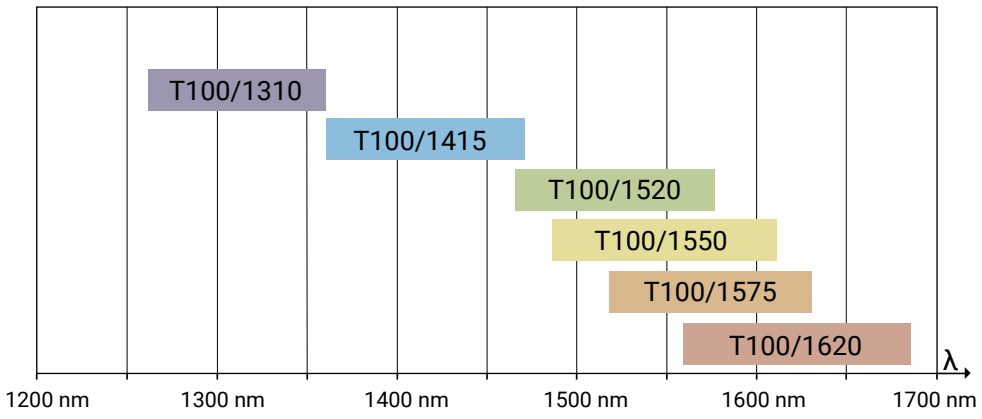


Figure 2. Wavelength range of available T100 modules

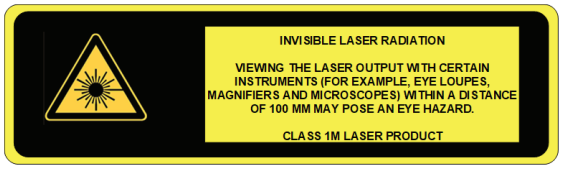
Specifications apply after 60-minute warm-up and for wavelengths not equal to any water absorption line.

SPECIFICATIONS

		T100 1310	T100 1415	T100 1520	T100 1550	T100 1575	T100 1620
Wavelength range (nm)	P= 0 dBm						
	P= 3 dBm	1260–1360	1360–1470	1465–1575	1490–1610	1520–1630	1560–1680
	P= 6 dBm	1290–1340	1390–1445	1495–1555	1520–1590	1540–1610	1580–1660
Signal to source spontaneous emission ratio [a]		≥ 90 dB / 0.1 nm (typical)					
Side mode suppression ratio (dB) [a]		≥ 45					
Stability [b, c]	Wavelength	±0.01 nm/h (±0.01 nm / 24 h typical)					
	Output power	±0.01 dB/h (±0.01 dB / 24 h typical)					
Relative intensity noise [d]		< –140 dB/Hz					
Spectral width (FWHM)		150 kHz typical (coherence control off)					
		> 100 MHz (coherence control on)					
Wavelength setting accuracy (nm) [c]		±0.2					
Wavelength setting repeatability (nm)		±0.01 (typical)					
Wavelength setting resolution (nm)		0.01 (0.001 option R)					
Tuning speed (step-by-step) (nm/s) [e, f]		10 (typical)					
Analog modulation		50 Hz to 50 MHz (external)					
Digital modulation		50 Hz to 1 MHz (internal and external)					
Optical isolation (dB)		35					
Output fiber type		SMF or PMF (option M)					
Output connector		FC/APC narrow key					
Laser safety classification		Class 1M					

a. Measured over a 0.1 nm bandwidth ±1nm from the signal.
b. At constant temperature.
c. Measured at 0 dBm output power.
d. RIN within the range 100 MHz–3 GHz measured at 3 dBm output power with RBW = 30 kHz.
e. With the high resolution option (R) the tuning speed is 2.5 nm/s typical.
f. The laser does not allow for sweep.

LASER SAFETY



ORDERING INFORMATION

OS-T100-XX-XX-58

Wavelength range
1310 = 1260–1360 nm
1415 = 1360–1470 nm
1520 = 1465–1575 nm
1550 = 1490–1610 nm
1575 = 1520–1630 nm
1620 = 1560–1680 nm

Connector
58 = FC/APC

Option
00 = SMF28 singlemode fiber with standard wavelength resolution (10 pm)
M = Polarization maintaining fiber with standard wavelength resolution (10 pm)
R = SMF28 singlemode fiber with high wavelength resolution (1 pm)
MR = Polarization maintaining fiber with high wavelength resolution (1 pm)

Example: OS-T100-1310-00-58

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