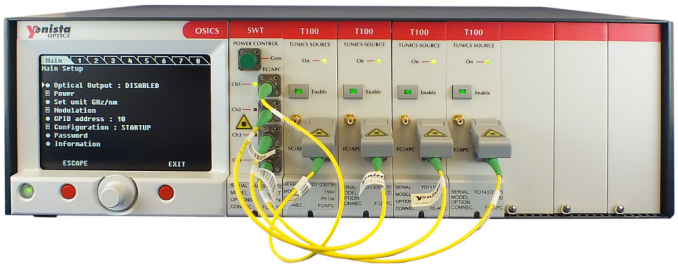
OSICS FBL

Full-Band Tunable Laser

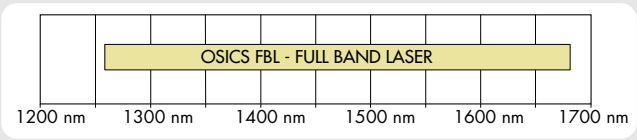
The OSICS FBL is a unique tunable laser system that covers the full telecom wavelength range, from 1260 nm to 1680 nm, in a single unit. The output is SSE free with power of at least 0 dBm. The system consists of four OSICS T100 modules integrated with an optical switch. The single fiber output combined with **Yenista**'s proven OSICS platform means reliable, fully automated test systems can be easily established.



Key Features

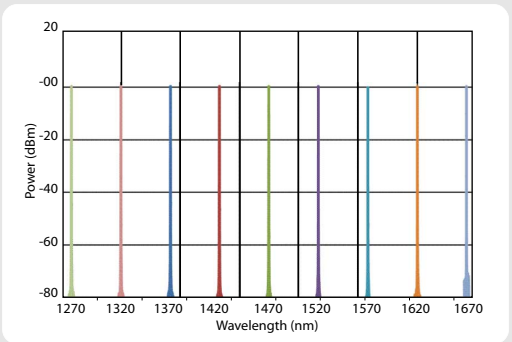
1260 nm to 1680 nm

All telecom wavelength bands (O, E, S, C, L and U) are supported with a single fiber output. This is particularly useful for silicon photonics, CWDM, PON and photonic crystal characterization. It also allows automated testing over the entire wavelength range.



90 dB/0.1 nm Ultra-low Optical Noise

Yenista's unique T100 cavity eliminates the broadband spontaneous emission (SSE) that is normally present in an external cavity laser's output. The OSICS T100 has one of the lowest figures of merit for SSE of any tunable laser on the market and gives a dramatic improvement in a measurement's dynamic range.



Modular Flexibility

The modular design means a partial system can be purchased initially. This can then be upgraded at a later date thus staggering capital expenditure. The system is also compatible with legacy OSICS modules. These can be integrated into the system if available.

User Friendly Control Interface

The front panel interface is a real benefit in a laboratory environment. The display shows, at a glance, the settings of all installed modules and alleviates the need for a separate control PC.

Stable Output

The OSICS FBL has benefited from **Yenista**'s experience in developing high performance tunable lasers. The optical design ensures both output power and wavelength are stable with excellent repeatability.

Proven Reliability

The OSICS platform and the opto-mechanics in the full-band tunable laser are well established and widely used in critical test environments in the telecoms industry.
Recent innovations have optimized performance whilst maintaining the design of the critical kinematic chain which is essential for reliable operation.

Applications

Telecom System & 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 easy to use interface.

Material Characterization

Ideal for photonic crystal and fiber characterization.

Sensors & Spectroscopy

The wavelength can be modulated to scan across a gas line for gas sensor research and spectroscopy.

Scientific Research & Development

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

Specifications

Wavelength	Tuning Range	1260 to 1680 nm
	Setting Resolution	0.01 nm
	Absolute Accuracy	±0.2 nm
	Repeatability	±0.01 nm typical
	Stability*1*2	±0.01 nm / h (±0.01 nm / 24 h typical)
	Tuning Speed	10 nm/s
Power	Output Power Over Full Tuning Range	> 0 dBm
	Accuracy*3	±0.2 dB
	Stability*1*2	±0.01 dB / h (±0.01 dB / 24 h typical)
	Analog Modulation	50 Hz to 50 MHz (external)
	Digital Modulation	50 Hz to 1 MHz (internal & external)
	Relative Intensity Noise*2*4	–145 dB/Hz typical
Spectrum	Side Mode Suppression Ratio*5	> 45 dB
	Signal to Source Spontaneous Emission Ratio*6	> 90 dB / 0.1nm typical
	Spectral Width (FWHM)	Coherence Control off: 150 kHz typical Coherence Control on: >100 MHz
Interfaces	Output Fiber Type	SMF or PMF (option)
	Output Connector	FC/APC
	Output Isolation	35 dB
	Control	Front panel, USB-B (for RS-232C communication), GPIB (for IEEE-488.2 communication *7)
Operating Conditions	Temperature Range	+15 to +30 °C (+59 to +86 °F)
	Power supply	100 to 240 V a.c. / 50 to 60 Hz / 60W
	Laser safety classification	Class 1M
Size	Dimensions (W x D x H)	448 x 370 x 133 mm
	Weight	13.1 kg

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

*1: At constant temperature.
*2: Measured at 0 dBm output power.
*3: Not calibrated above 1660 nm.
*4: Measured at 100 MHz.
*5: Includes suppression of the output of non-selected laser modules.
*6: Measured over a 0.1 nm bandwidth ±1nm from the signal.
*7: Tested & validated with National Instruments GPIB Board.

Additional OSICS Modules

The OSICS Full Band Laser uses five slots of the OSICS mainframe. The three spare slots can be used to support additional modules. These can be attenuators or switches to create a complete test system, or additional lasers and light sources.

The OSICS mainframe will identify the modules installed and display the setting for each module on the front panel. All modules can be controlled from the front panel or through the GPIB or RS-232C interfaces.

T100	Low noise, external cavity laser
TLS-50	ITU grid locked tunable laser
TLS-AG	Tunable laser for coherent systems
DFB	Distributed feedback laser
ATN-HP	Variable optical attenuator
BKR	Variable optical backreflector
SWT	A variety of optical switches
SLD	Superluminescent light source

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