Tunics Purity

SPECIFICATIONS

Tunable Laser from 1430nm to 1625nm

Tunics Purity provides full power ASE-noise-free emission. It features an ultra-stable self-aligned cavity, wide continuous tenability and multiple modulation possibilities.

ASE-Noise-Free Operation

A patented configuration ensures an intracavity filtering of the background broadband ASE noise. The equivalent full width at half maximum (FWHM) of this filtering is as narrow as 0.15 nm, which makes the residual ASE almost unnoticeable.

- Tunics Purity provides a pure ASE-noise-free operation with no compromise to other key features of state-of-the art tunable externalcavity laser-diodes.
- Tunics Purity provides up to +3 dBm output power and covers S-, C- and L-band.
- Tunics Purity offers a ±50 pm wavelength accuracy after internal referencing.

Ideal Source for Component Testing

Tunics Purity emits a pure high-power single-frequency laser line, enabling direct spectral measurements of filters and multiplexers with an unsurpassed dynamic range. This avoids complex set-ups requiring an additional tracking filter or the combination of an optical spectrum analyzer which often causes loss.

Multiple Modulation Possibilities

A full range of amplitude modulation capabilities and mode-locked operation satisfy any specific modulation requirement.

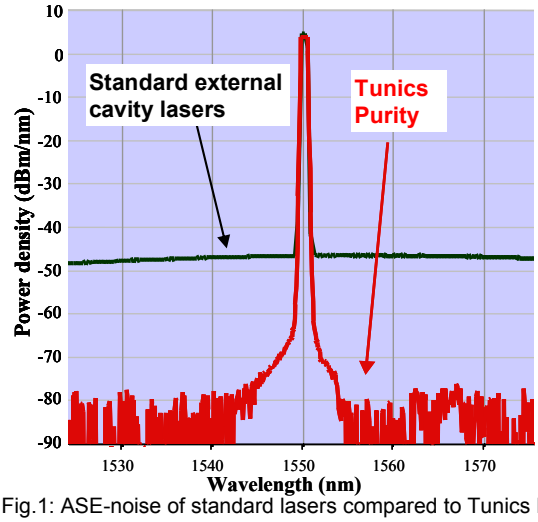

Fig.1: ASE-noise of standard lasers compared to Tunics Purity.

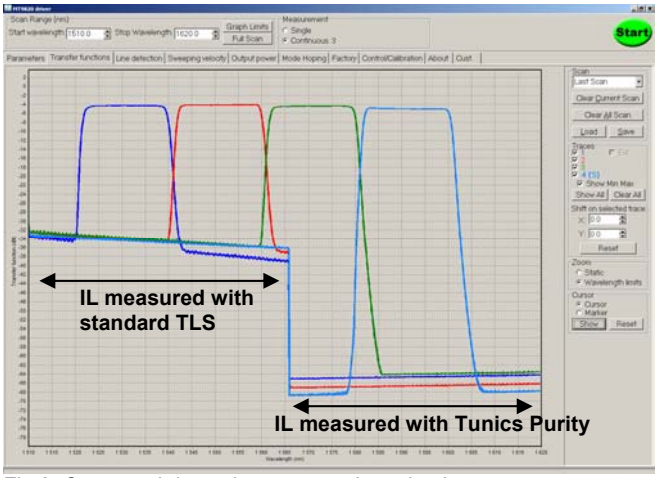

Fig.2: Compared dynamic ranges on Insertion Loss measurement done with a standard Tunable Laser Source and with a Tunics Purity (CWDM multiplexer measured with MT9820A All-Band Optical Component Tester + TLS)

Tunics Purity				
Specifications				
		Tunics Purity S	**Tunics Purity SC**	**Tunics Purity CL**
Tuning Characteristics	**Wavelength range** **• P = 0 dBm** **• P = 3 dBm**	 1430-1530 nm 1450-1510 nm	 1470-1570 nm 1510-1570 nm	 1525-1625 nm 1560-1620 nm
	Mode hop spacing	> 70 nm	> 70 nm	> 70 nm
	Absolute wavelength accuracy	±0.05 nm	±0.05 nm	±0.05 nm
	Wavelength Stability [1]	±5 pm / h (±3 pm / h typical and ±5 pm / 24h typical)		
	Tuning repeatability (typ.)	±5 pm	±5 pm	±5 pm
	Wavelength setting resolution	1 pm	1 pm	1 pm
	Optical frequency fine tuning	±2 GHz	±2 GHz	±2 GHz
	Tuning speed (typ.)	1 s (100 nm)	1 s (100 nm)	1 s (100 nm)
Laser Output Characteristics	**Power stability** [1]	±0.01 dB / h (±0.025 dB / 24h typical)		
	Power flatness [2]	±0.1 dB	±0.1 dB	±0.1 dB
	Signal to source spontaneous emission ratio [3]	> 90 dB	> 90 dB	> 90 dB
	Relative intensity noise [2, 4]	-145 dB/Hz (typ.)	-145 dB/Hz (typ.)	-145 dB/Hz (typ.)
	Spectral Width (FWHM)	150 kHz (typ.) (coherence control OFF) > 100 MHz (coherence control ON)		
Interface	**Optical connector**	FC-APC	FC-APC	FC-APC
	Output fiber	SMF-28™	SMF-28™	SMF-28™
	Output isolation	35 dB	35 dB	35 dB
	Return loss	60 dB	60 dB	60 dB
	Remote control	RS-232 C and IEEE-488.2[5]	RS-232 C and IEEE-488.2[5]	RS-232 C and IEEE-488.2[5]
	Low frequency modulation	10 kHz to 8 MHz	10 kHz to 8 MHz	10 kHz to 8 MHz
	High frequency modulation	30 kHz to 1 GHz	30 kHz to 1 GHz	30 kHz to 1 GHz
General Specifications	**Operating temperature range**	+15 to +30°C (+60 to +85°F)	+15 to +30°C (+60 to +85°F)	+15 to +30°C (+60 to +85°F)
	Power supply	100 to 240 V (50 to 60 Hz)	100 to 240 V (50 to 60 Hz)	100 to 240 V (50 to 60 Hz)
	Dimensions (W x H x D) in mm[3]	448 x 133 x 370	448 x 133 x 370	448 x 133 x 370
	Weight	12.5 kg	12.5 kg	12.5 kg

Notes

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

[1] Over one hour at a constant temperature and after 2 hour warm-up

[2] Measured with 0 dBm output power

[3] Spontaneous emission measured within a 0.1 nm bandwidth at ±1 nm from the signal

[4] Measured at an electrical frequency of 100 MHz

[5] Tested and validated with National Instruments GPIB board.

Ordering Information
Please specify the model/order number, name and quantity when ordering.
The following names are used for orders; the actual product names may be different.

Tunics Purity provides the latest breakthrough in external-cavity laser sources with full power ASE-noise-free emission. It features an ultra-stable self-aligned cavity, wide continuous tunability and multiple modulation possibilities.

Model Number:
Tunics Purity S or SC or CL

Please specify the model name followed by the options:
Example: Tunics Purity S/M

• Options
Use the following descriptions that correspond to the available option:

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

• Accessories
Use the following descriptions that correspond to the available accessories:

Description
- LabView driver for Tunics Purity
- Fiber optic jumper FC-APC/FC-APC
- Fiber optic jumper FC-APC/FC-PC
- Polarization maintaining fiber optic jumper FC-APC/FC-APC
- Polarization maintaining fiber optic jumper FC-APC/FC-PC
- Carrying case

Each benchtop instrument is delivered as standard with a FC-APC/FC-PC fiber optic jumper.

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