4 Channel CWDM Multiplexer / Demultiplexer

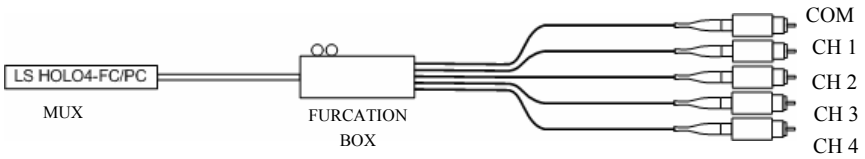
Crafting light for the Information Age

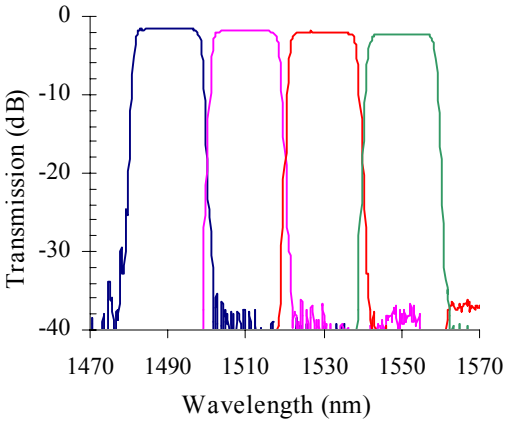
LightSmyth multiplexers/demultiplexers (mux/demux) incorporate breakthrough new technology to monolithically integrate thin-film-filter functionality into the robust silica-on-silicon planar waveguide format setting new standards for cost, performance, and footprint.

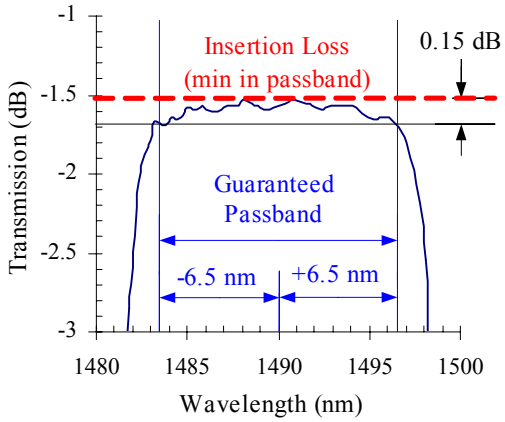
LightSmyth Coarse WDM mux/demux units are the first mainstream photonic devices employing nanophotonically engineered structures as their principal functional mechanism. Advanced engineering combined with reliable DUV photolithographic fabrication yield superior product.

Key Features

- Monolithically integrated silica-on-silicon mux/demux engine
- Ultra-small footprint
- Low part count
- Low cost
- High performance
- Athermal operation
- All ports single-mode compatible







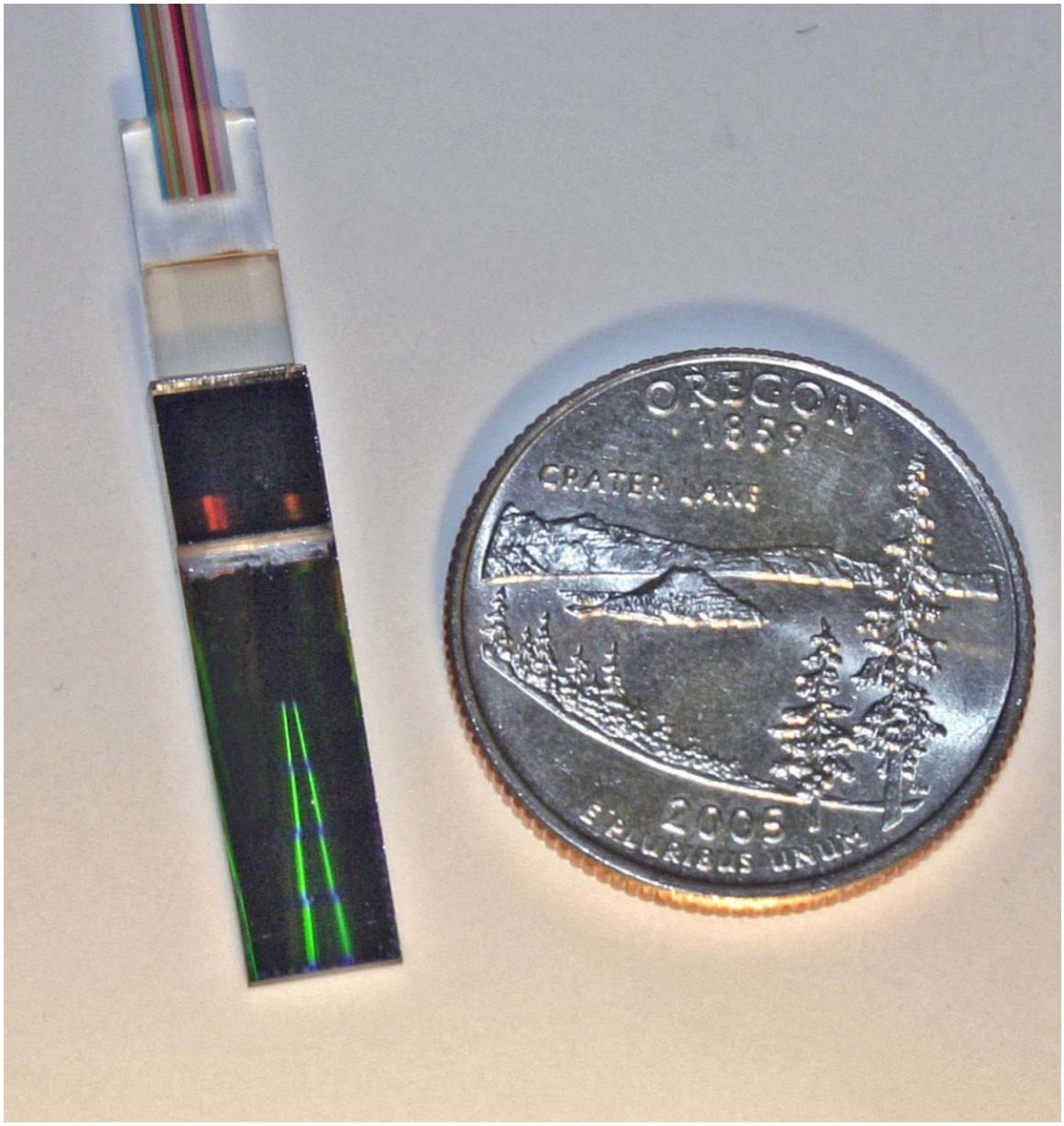
Specification

Parameter	All channels	
Channel central wavelength (CCW)	1490 nm, 1510 nm, 1530 nm, 1550 nm[4]	
Insertion loss [1, 2], connectorized device, excluding connector loss	Max	2.2 dB
Passband to – 0.3 dB level (symmetric about CCW)	Min	13 nm
Flatness [1, 2] (difference between max to min insertion loss)	Max	0.3 dB
Adjacent channel isolation [1, 2]	Min	33.5 dB
Non-adjacent channel isolation [1, 2]	Min	34.0 dB
Polarization dependent loss (PDL) [1, 2, 3]	Max	0.2 dB
Optical return loss [1]	Min	35.0 dB
Dimensions		12 × 12 × 65 mm
Optical connector		FC/PC, others available
Fiber type		SMF 28
Operating temperature range		-40 to 85 °C
Storage temperature range		-40 to 85 °C

Notes:

1. Defined as worst channel case over the entire operating temperature range and all input polarization states.
2. Defined within –0.3 dB level guaranteed passband.
3. PDL is defined as min/max insertion loss difference at any wavelength in the passband over all input polarization states.
4. Custom passbands and channel central wavelength from 1260 nm to 1610 nm available.

LightSmyth Technologies **860 W Park Street # 250, Eugene, Oregon** **Tel - 1 541 431 0026**
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LightSmyth Technologies announces the world's first fully integrated, single-mode compatible, coarse WDM (CWDM) multiplexer. Based on LightSmyth's patented nanophotonic filtering technology, the unit breaks records for size, part count, and cost while exceeding customary performance levels. LightSmyth integrated CWDM multiplexer units are passively athermal and polarization insensitive to 0.2 dB. LightSmyth's new integrated CWDM multiplexer is based on the silica-on-silicon planar waveguide format, requires chips of only 1 cm^2, and is the first photonic device to productively harness the Deep UV photolithographic patterning tools utilized in state-of-the-art electronics. LightSmyth's underlying filtering technology may also be referred to as integrated holographics (see Laser Focus World October 2004, pp. 73 – 76). Competing CWDM technologies utilize gratings or free-space thin-film filters. Grating devices can be integrated but require multimode outputs to produce low-loss flat-top passbands. Thin-film filters support flat-top passbands but cannot be monolithically integrated. LightSmyth's new diffractive nanophotonic filtering engine uniquely and powerfully combines the integrability of gratings with the functionality of thin-film filters.

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