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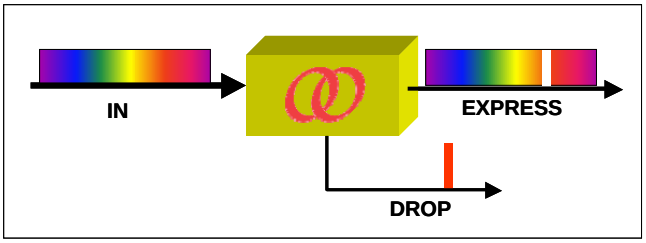
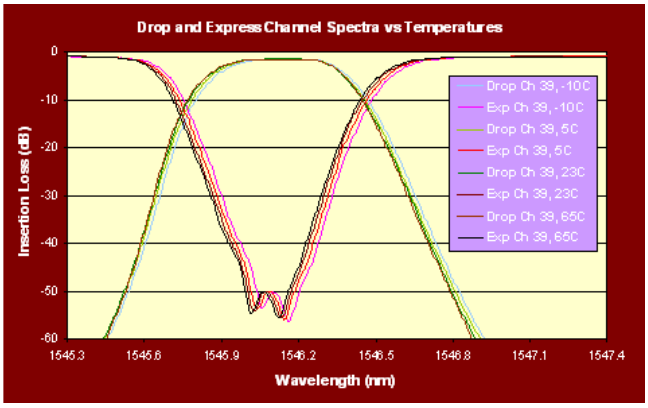
Reconfigurable Optical Add/Drop Multiplexer

Optoplex's **Reconfigurable Optical Add/Drop Multiplexer** (ROADM) module, also known as **Tunable Optical Add/Drop Multiplexer** (TOADM), is based on a proprietary micro-optics and micro-actuator design, athermal packaging technology, and state-of-the-art thin-film coating. When receiving a stream of optical signals of a plurality of wavelengths from the Input-Port (IN), this 3-port ROADM device directs a selected channel to the Drop-Port (ADD/DROP) and the remaining channels to the Express-Port (EXP), as depicted in the figure below. This tunable feature can also be used for adding a channel, when the device is used in reverse. Cascading two ROADM modules, simultaneous add and drop functions can be achieved. Each single ROADM device is optimized to cover either C- or L-band wavelengths. The standard 100- or 200-GHz channel spacing ROADM products allow for single-channel drop. Customized banded-channel drop ROADMs are available upon request.

Key Features and Benefits

- Athermal design
- Wide tuning range, covering entire C-band or L-band
- Flat and wide passband
- Low & uniform insertion loss
- High channel isolation
- Latching & low power consumption
- Option for electrical connector from side or bottom
- Telcordia GR-468 qualified





Applications

- Dynamically reconfigure channels
- Dynamic wavelength selection in DWDM systems
- Signal demultiplexing for DWDM
- Optical performance monitoring
- Tunable optical noise filtering

ROADM/TOADM Standard Product Datasheet[1]

Parameter	Unit	Specification
Wavelength Tuning Range	nm	1528 ~ 1563
Wavelength Tuning Resolution	-	Calibrated to ITU grids
Clear Bandwidth	GHz	ITU±10
Drop Channel Maximum Insertion Loss[2,3]	dB	2.8
Drop Channel Ripple[2,3]	dB	0.3
Drop Channel Adjacent Channel Isolation	dB	> 25
Drop Channel PDL[2,3]	dB	< 0.5
Express Channel Insertion Loss[2,3]	dB	< 2.3
Express Non-Adjacent Channel Ripple[2,3]	dB	< 0.1
Express Adjacent Channel Ripple[2,3]	dB	< 0.5
Express Channel Isolation (Drop in Express) [2,3]	dB	> 25
Express Channel PDL [2,3]	dB	< 0.5
PMD[2,3]	ps	< 0.5
Wavelength Setting Error[4]	GHz	< ±4
Wavelength Repeatability[4]	GHz	± 1
Wavelength Temperature Dependence[2]	pm/°C	< ±1 (typical)
Return Loss[2]	dB	> 40
Maximum Input Optical Power	mW	300
Tuning Speed (Channel to channel, depending on originating and destination channels)	s	5 ~ 10
Tuning Power Consumption (Peak value)	mW	<1800 (peak); <300 (idle)
Tuning Voltage	V	5 (DC)
Standard Package Dimensions (L×W×H)[5]	mm	88×62×18
Fiber Pigtail Type	-	SMF-28 with 900 μm tight buffer

Notes:

1. Certain parameter specifications can be varied based on customer needs.
2. Over the stated spectral and operating temperature ranges and all polarization states.
3. Within clear bandwidth.
4. Alignment related at a given temperature.
5. Including PCB.

Optoplex Corporation, located in Fremont, California, is an ISO9001:2000 certified supplier of cutting-edge photonic components and modules for dynamic wavelength management and signal conditioning. The company designs, develops, manufactures, and markets innovative fiber-optic products to communications networks, and provides customized solutions to instrument, defense, spectroscopy and sensing industries. By combining its proprietary optical design and packaging technology with its state-of-the-art optical coating expertise and facility, Optoplex supplies DPSK demodulators, DQPSK demodulators, 90° optical hybrids, 2-port tunable optical filters, 3-port reconfigurable optical add/drop multiplexers (ROADMs), optical interleavers, flat-top comb filters, optical performance monitors (OPMs), and portable spectrometers.