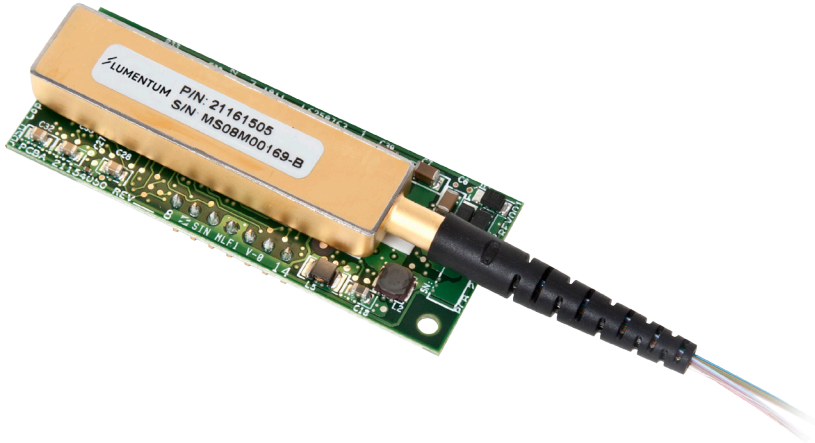
LUMENTUM

MEMS 1xN Switch

MEMS Series



The Lumentum 1xN switch, based on Microelectromechanical Systems (MEMS) technology, is a compact optical switch which provides optical signal connection between a single common fiber and N output/input fibers. Its hermetic packaging provides high reliability under demanding conditions.

Collimated beam optics, an epoxy-free optical path, and a specially designed MEMS mirror enable excellent performance characteristics. Together with control electronics, the switch can be controlled though digital interfaces.

Key Features

- 1x4 (or 4x1), 1x6 (or 6x1), 1x8 (or 8x1) and 1x12 (or 12x1) in non-latching configuration
- Hermetic packaging
- Unilateral input/output fiber location
- High durability (>1 billion)

Applications

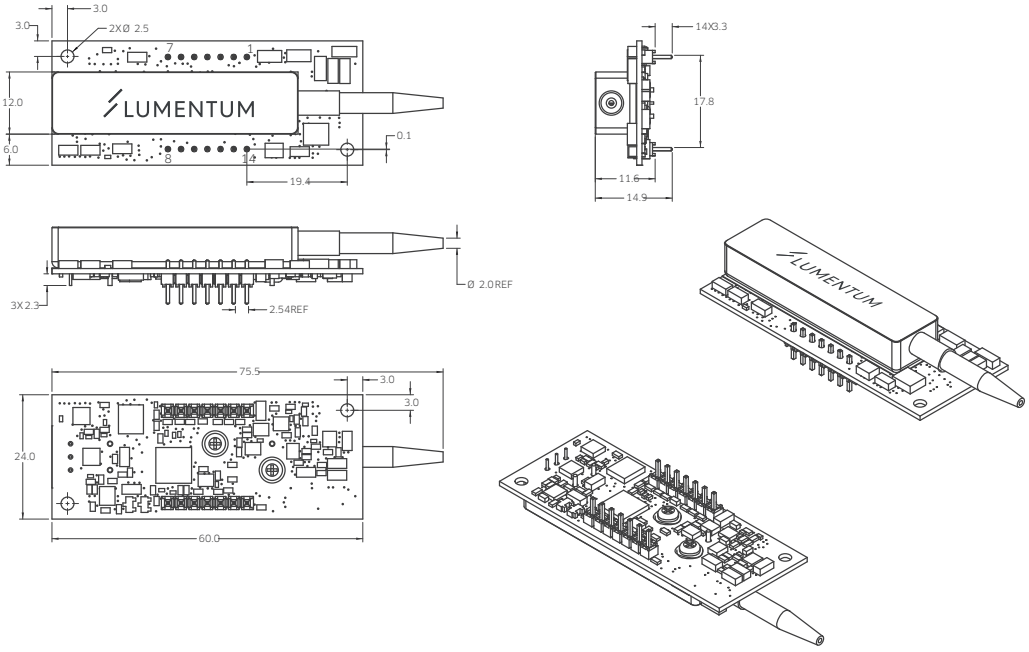
- Optical network switching
- Optical performance monitoring
- Instrumentation

Compliance

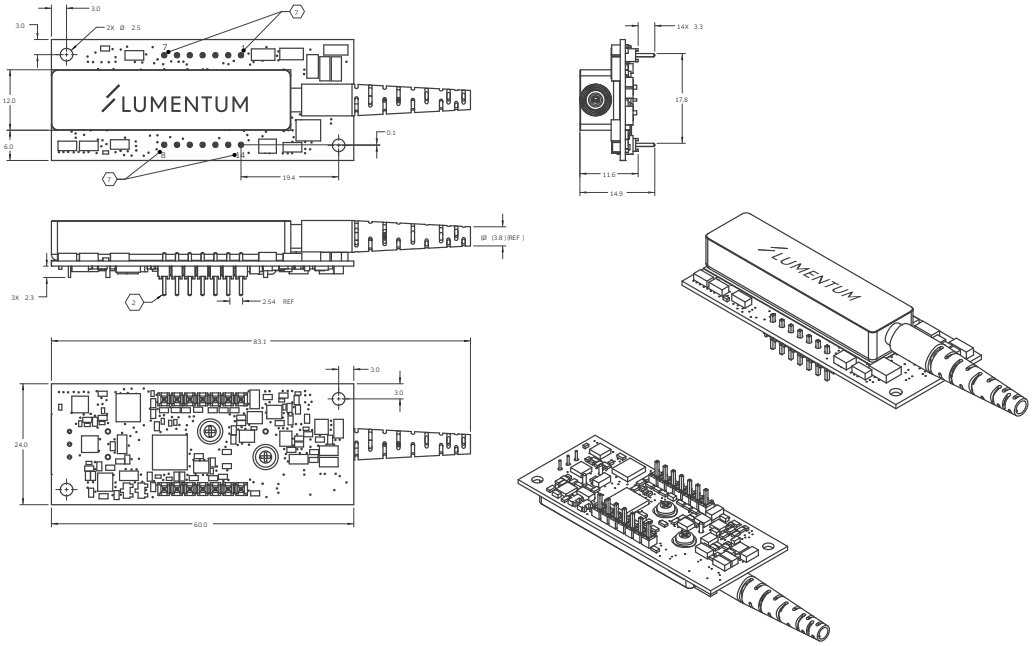
- Telcordia GR-1312-CORE

Dimensions Diagram
(Specifications in mm unless otherwise noted.)

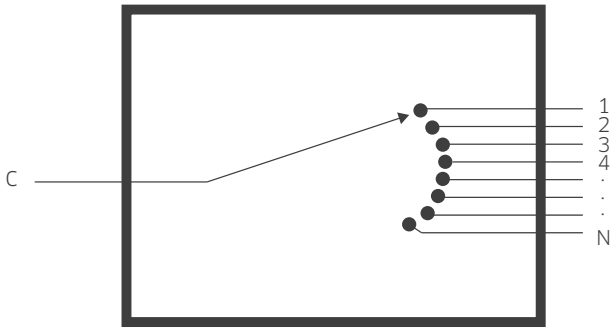
1x4 Switch and 1x6 Switch



1x8 Switch and 1x12 Switch



Functional Configurations



Note:
"C": common port
"1…N": possible selected input/output ports
– N can be 4, 6, 8, and 12

Optical Specifications

Parameter[1]		1x4	1x6	1x8	1x12	Unit
Spectral range		191.0 - 196.3	191.0 - 196.3	191.0 - 196.3	191.0 - 196.3	THz
Insertion loss	Maximum	1.2	1.2	1.5	1.6	dB
Wavelength-dependant loss	Maximum	0.2	0.2	0.2	0.3	dB
Polarization-dependant loss	Maximum	0.12	0.12	0.15	0.15	dB
Temperature-dependant loss	Maximum	0.3	0.3	0.35	0.35	dB
Crosstalk	Maximum	50	50	50	50	dB
Return loss	Maximum	40	40	40	40	dB
Optical input power Cumulative per port	 Maximum Maximum	 24 13	 24 13	 24 13	 24 13	 dBm dBm
Repeatability	Maximum	0.05	0.05	0.05	0.05	dB
Durability	Maximum	1 Billion	1 Billion	1 Billion	1 Billion	Cycles
Switching time	Maximum	7	8	10	10	ms
Power supply voltage	Minimum Maximum	4.75 12.6	4.75 12.6	4.75 12.6	4.75 12.6	V V
Power consumption	Maximum	325	325	325	325	mW

1. Parameters are specified for beginning of life (BOL) at 25°C and at 1550 nm, unless otherwise stated.

Mechanical Specifications

Parameter	Specifications
Module dimensions[2] (W x D x H)	12 x 24 x 60 mm
Fiber typ	SMF-28 9/125/250 µm
Fiber length	1.5±0.1 m

2. Excluding boot length

Electrical Specifications

Pin	Name	TTL Mode Functionality	I2C Mode Functionality
1	NC	Must be no connect	Must be no connect
2	VCC	Power supply	Power supply
3	STORE	Falling edge active, latches D3...D0 inputs	Not used
4	GND	Signal ground	Signal ground
5	D0/A0	Data 0 input	A0 for I2C address - input
6	I2C Data	n/a	I2C DATA - bidirectional
7	I2C Clock	n/a	I2C CLOCK
8	I/F Mode	Select I2C or TTL mode; 1 = TTL operation	Select I2C or TTL mode; 0 = I2C operation
9	D2/A2	Data 2 input	A2 for I2C address - input
10	~Done	Switch done low active	Switch done low active
11	Case GND	Case ground	Case ground
12	D1/A1	Data 1 input	A1 for I2C address - input
13	D3/A3	Data 3 input	A3 for I2C address - input
14	RESET	Hardware reset	Hardware reset

Maximum Ratings

Parameters	Specifications (Min.)	Specifications (Max.)	Units
Operating temperature	–5	70	°C
Operating humidity[3]	5	85	% RH
Storage temperature	-40	85	°C
Storage humidity	5	85	% RH

3. Noncondensing

Ordering Information

For more information on this or other products and their availability, please contact your local Lumentum account manager or Lumentum directly at customer.service@lumentum.com.

Sample: MEMSM-14N1150

MEMSM- □□ N1150

Code	Port Configuration
14	1x4
16	1x6
18	1x8
1T	1x12

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