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# MEMS M×N Matrix Optical Switch

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## ■ Features

- > Modular Design
- > Non-Blocking Switching
- > “any-to-any” switch
- > High Reliability and stability

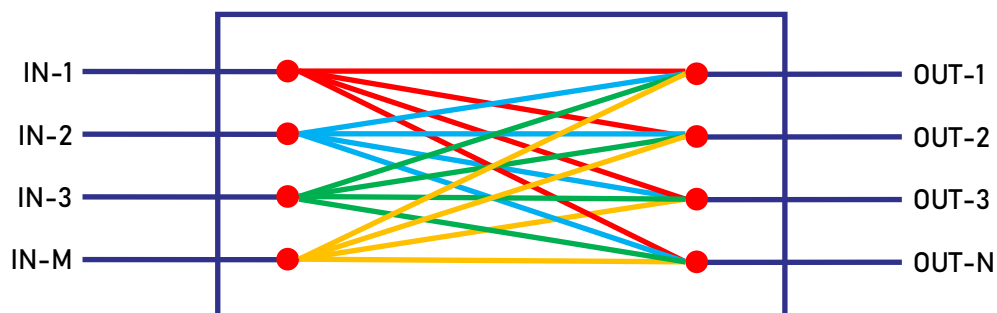
## ■ Application

- > OADM
- > OXC
- > Data Center
- > Instrumentation

## ■ Compliance

- > Telcordia GR-1221
- > Telcordia GR-1073

## ■ Optical Route



# MEMS M×N Matrix Optical Switch

## Specifications (Single Mode)

Parameters	Unit	MEMS M×N-SM	
Working Wavelength	nm	O/C/L/L+ band	
Testing Wavelength	nm	1310/1550/1625/1650	
Insertion Loss	dB	@CWL Single-band	@CWL Dual-band
		≤1.6 (M≤8, N≤8)	≤2.0 (M≤8, N≤8)
		≤2.0 (M≤16, N≤16)	≤2.4 (M≤16, N≤16)
		≤2.6 (M≤32, N≤32)	≤3.0 (M≤32, N≤32)
		≤3.0 (M≤64, N≤64)	≤3.4 (M≤64, N≤64)
WDL	dB	≤0.6	
PDL	dB	≤0.3	
Return Loss	dB	≥45	
Crosstalk	dB	≥50	
Repeatability	dB	≤±0.1	
Switching Time	ms	≤15	
Durability	times	≥10 <sup>9</sup>	
Input Optical Power	mW	≤500	
Operating Voltage	V	DC 5V±10%	
Operating Current	A	≤0.5 (M+N≤16)	
		≤0.8 (M+N≤32)	
		≤2.0 (M+N≤64)	
		≤4.0 (M+N≤128)	
Operating Temp.	°C	-5 ~ +75	
Storage Temp.	°C	-40 ~ +85	
Dimension	mm	M1: 200×180×18 ±0.2 (M+N≤32) customization: 32<M+N≤128	

1. Within operating temperature and all SOP.
2. Excluding connector.
3. WDL is measured in a ±20nm range at 23°C.

# MEMS M×N Matrix Optical Switch

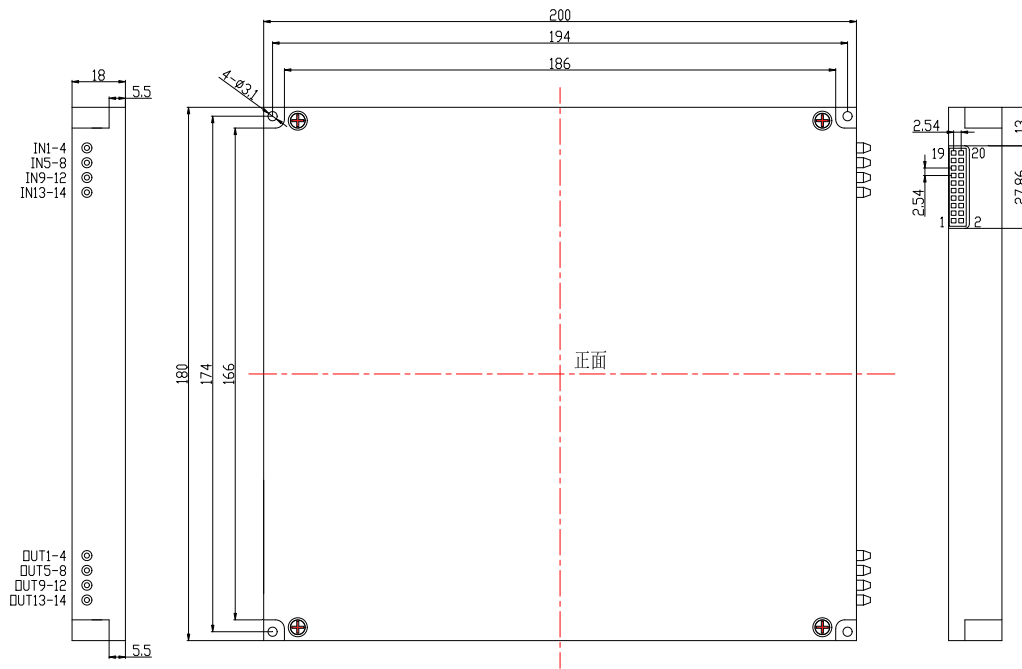
## ■ Specifications (Multi-Mode)

Parameters	Unit	MEMS M×N-MM	
Working Wavelength	nm	850±30, 1310±30	
Testing Wavelength	nm	850/1310	
Insertion Loss	dB	@CWL Single-band	@CWL Dual-band
		$\leq 1.6$ (M $\leq 12$ , N $\leq 12$ ) $\leq 2.0$ (M $\leq 16$ , N $\leq 16$ )	$\leq 2.0$ (M $\leq 12$ , N $\leq 12$ ) $\leq 2.4$ (M $\leq 16$ , N $\leq 16$ )
WDL	dB	$\leq 0.6$	
PDL	dB	$\leq 0.4$	
Return Loss	dB	$\geq 30$	
Crosstalk	dB	$\geq 30$	
Repeatability	dB	$\leq \pm 0.1$	
Switching Time	ms	$\leq 15$	
Durability	times	$\geq 10^9$	
Input Optical Power	mW	$\leq 500$	
Operating Voltage	V	DC 5V±10%	
Operating Current	A	$\leq 0.5$ (M+N $\leq 16$ )	
		$\leq 0.8$ (M+N $\leq 32$ )	
Operating Temp.	°C	-5 ~ +70	
Storage Temp.	°C	-40 ~ +85	
Dimension	mm	M1: 200×180×18 ±0.2 (M+N $\leq 32$ )	

1. Within operating temperature and all SOP.
2. Excluding connector.
3. WDL is measured in a ±20nm range at 23°C.

# MEMS M×N Matrix Optical Switch

## Dimension



M1: 200×180×18mm

## Pin Configuration

Pin No.	Pin Assignment	Signal Type	Description
1	2	VCC	Power Supply (DC 5V,1.0A)
3	4	GND	GND
5	TXD	Output	Data Transmit
6	RXD	Input	Data Receive
7	8	GND	GND
9~20	NC		No Connection

# MEMS M×N Matrix Optical Switch

## Ordering Information: MEMS M×N-A-B-C-D-E-F-G

A	
Code	Mode
S	Single Mode
M	Multi-Mode

B	
Code	Wavelength
85	850nm
13	1310nm
14	1490nm
15	1550nm
162	1625nm
165	1650nm
13/15	1310/1550nm
X	other

C	
Code	Dimension
M1	200×180×18mm
X	other

D	
Code	Fiber Type
5	50/125
6	62.5/125
9	9/125
X	other

E	
Code	Fiber Dimension
025	Φ0.25mm
09	Φ0.9mm
X	other

G	
Code	Connector
00	None
FP	FC/UPC
FA	FC/APC
SP	SC/UPC
SA	SC/APC
LP	LC/UPC
LA	LC/APC
MP	MPO
X	other

F	
Code	Fiber Length
05	0.5m
10	1.0m
15	1.5m
X	other