



## MEMS M×N Optical Switch Moudle

### Features

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

### Application

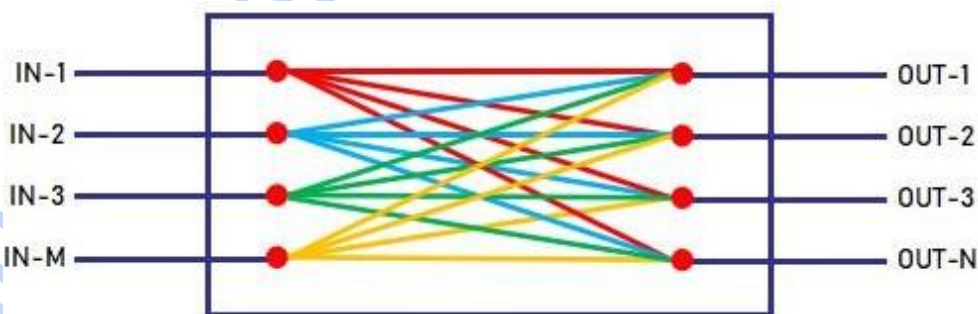
- OADM
- OXC
- Data Center
- Instrumentation

### Compliance

- Telcordia GR-1221
- Telcordia GR-1073



### Optical Route





## Technical Parameters

### Single Mode

Parameters	Unit	MEMS M×N-SM	
Working Wavelength	nm	1260-1650	
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	≤10	
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	M5: 110×141×12mm (M+N≤16) M6: 320×200×18mm (M+N≤48) M7: 320×240×30mm (M+N≤64) customization: 64<M+N≤128	

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



## Multi-Mode

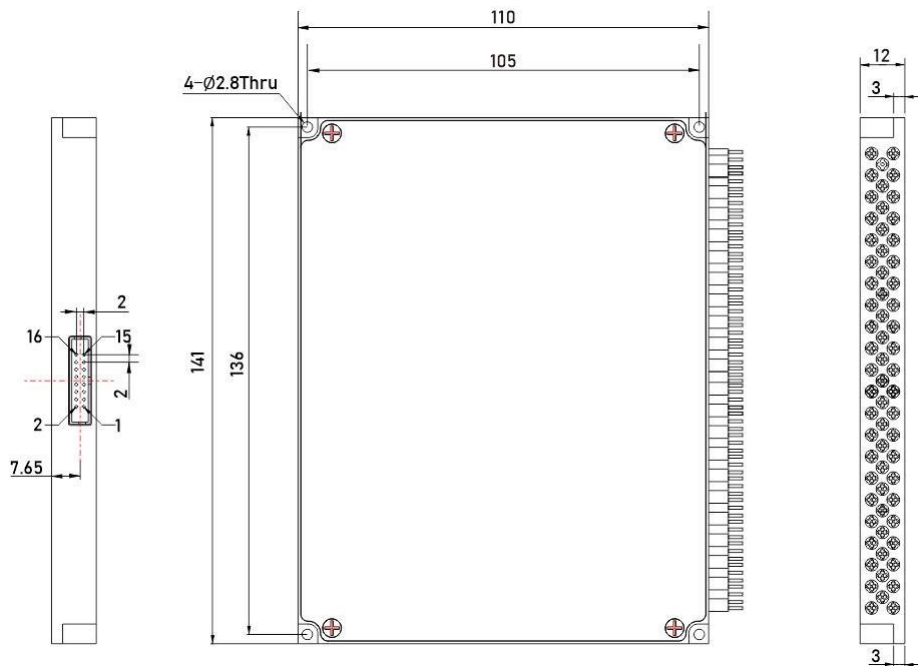
Parameters	Unit	MEMS M×N-MM	
Working Wavelength	nm	850±30, 1310±30	
Testing Wavelength	nm	850/1310	
Insertion Loss	dB	@CWL Single-band	@CWL Dual-band
		≤1.6 (M≤12, N≤12) ≤2.0 (M≤16, N≤16)	≤2.0 (M≤12, N≤12) ≤2.4 (M≤16, N≤16)
WDL	dB	≤0.6	
PDL	dB	≤0.4	
Return Loss	dB	≥30	
Crosstalk	dB	≥30	
Repeatability	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)	
Operating Temp.	°C	-5 ~ +70	
Storage Temp.	°C	-40 ~ +85	
Dimension	mm	M5: 110×141×12mm (M+N≤16)	
		M6: 320×200×18mm (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.

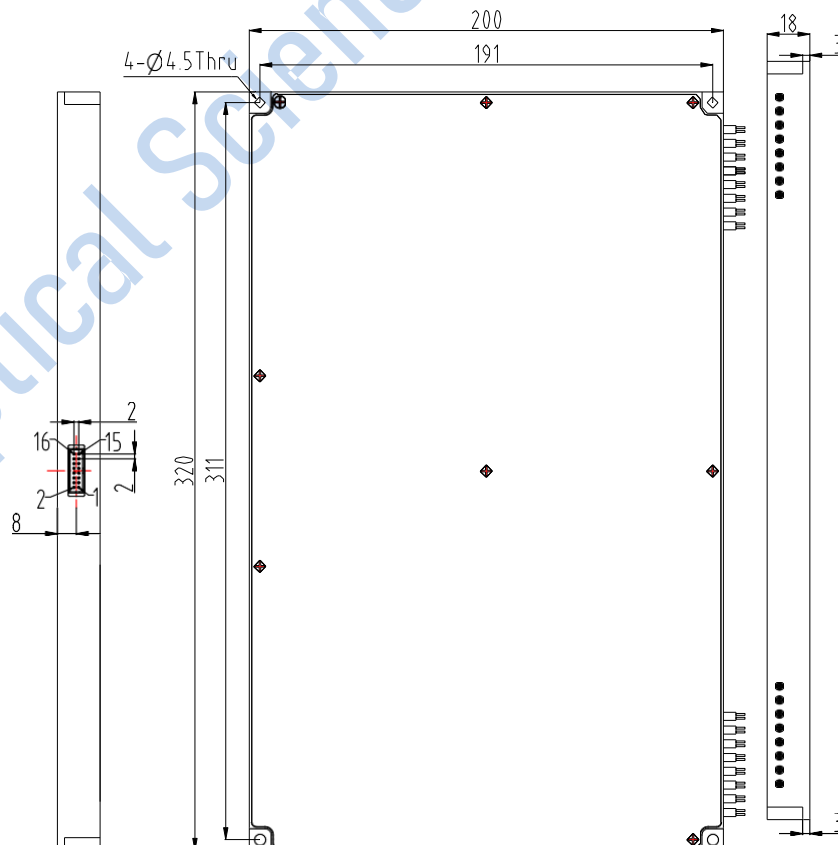


**Dimension**

**M5:110×141×12mm**

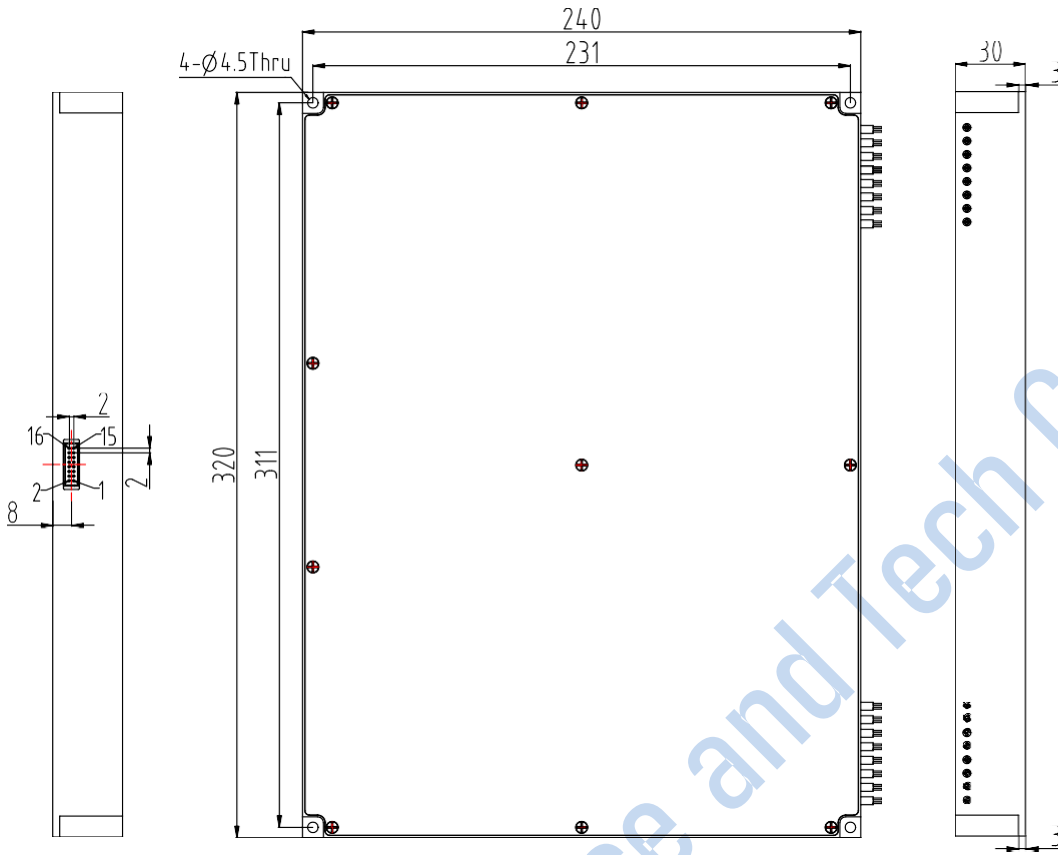


**M6:320×200×18mm**





M7:320×240×30mm





## Pin Configurations

Pin#	Signal name	Type	Description
1	NC		
2	NC		
3	VCC	Power	Power supply, DC 5V, 1.0A
4	NC		
5	NC		
6	GND	Power	GND
7	NC		
8	NC		
9	TXD	Output	RS232 TX (3.3V TTL)
10	RXD	Input	RS232 RX (3.3V TTL)
11	NC		
12	NC		
13	NC		
14	NC		
15	NC		
16	NC		

Note: The electrical interfaces of M5, M6 and M7 modules should use MOLEX's 87833-1620, and the customer connectors should use MOLEX's 87568-1694.



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

A	B	C	D	E	F	G
Mode	Wavelength	Dimension	Fiber Type	Fiber Dimension	Fiber Length	Connector
SM: Single Mode	85:850nm	1: M5	5: 50/125	025: Φ0.25mm	05: 0.5m	00: None
MM: Multi-Mode	13:1310nm	2: M6	6: 62.5/125	09: Φ0.9mm	10: 1.0m	FP: FC/UPC
	14:1490nm	3: M7	9: 9/125	X: other	15: 1.5m	FA: FC/APC
	15:1550nm	X: other	X: other		X: other	SP: SC/UPC
	162:1625nm					SA: SC/APC
	165:1650nm					LP: LC/UPC
	13/15: 1310/1550nm					MP:MPO
	X:other					X:other