DiCon’s MEMS 3D Matrix Optical Switch is a proprietary optical switch structure that allows any of the inputs to connect to any of the outputs in a fully non-blocking, all-optical cross-connect configuration. This innovative design is based on DiCon’s industry proven MEMS mirror technology and offers the same level of durability and reliability that can be expected from any of the DiCon’s MEMS fiber optic switch solutions.

**OPERATING PRINCIPLE**
(ANY PORT TO ANY PORT FUNCTIONALITY)

**FEATURES**
- High Reliability
- Proven MEMS Technology
- Lifetime > 1 Billion Switch Cycles
- Available in any MxN configuration up to 16x16

**APPLICATIONS**
- Dynamic Management of Optical Networks
- Configurable Test & Measurement
- ROADM
16X16 MEMS 3D MATRIX OPTICAL SWITCH

OPTICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insertion Loss 2</td>
<td>8x8 0.8 dB typ. 1.4 dB max.</td>
</tr>
<tr>
<td>16x16</td>
<td>0.8 dB typ. 1.4 dB max.</td>
</tr>
<tr>
<td>Crosstalk</td>
<td>-70 dB typ. -55 dB max.</td>
</tr>
<tr>
<td>Back Reflection</td>
<td>-55 dB typ. -45 dB max.</td>
</tr>
<tr>
<td>Switching Time</td>
<td>15 ms typ. 20 ms max.</td>
</tr>
<tr>
<td>TDL</td>
<td>0.1 dB typ. 0.4 dB max.</td>
</tr>
<tr>
<td>WDL</td>
<td>0.1 dB typ. 0.4 dB max.</td>
</tr>
<tr>
<td>PDL</td>
<td>0.08 dB typ. 0.25 dB max.</td>
</tr>
<tr>
<td>Repeatability</td>
<td>0.01 dB typ. 0.06 dB max.</td>
</tr>
<tr>
<td>Durability</td>
<td>10⁹ cycles min.</td>
</tr>
<tr>
<td>Optical Power</td>
<td>500 mW max.</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-5 to 70°C</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>-40 to 85°C</td>
</tr>
<tr>
<td>Fiber Type</td>
<td>9/125 μm Single-mode</td>
</tr>
</tbody>
</table>

1. All specifications are without connectors for the set wavelength band index.

Note: Each wavelength band has its own wavelength index, which can be set to optimized the optical performance for that band. Only one wavelength index band can be selected at a time and it applies to all the ports on the module.

2. IL is measured at CWL for the set wavelength index at 23°C +/- 5°C.
   Operation in 1290-1330 nm or 1570-1610 nm bands add 0.1 dB to the typical IL and add 0.2 dB to the maximum insertion loss.

3. WDL is measured from CWL in a +/- 20nm range at 23°C +/- 5°C.

4. Repeatability is defined within 100 cycles.

MECHANICAL DIMENSIONS
(Units: mm)

ORDERING INFORMATION

Product Code
MN4 - MEMS 3D Matrix

Switch Configuration
MxN MxN Non-Blocking
(Specify M,N≤16)

Control Interface
I2C I²C
RS2 RS232

Wavelength Range
13 1290 - 1330 nm
15 1530 - 1570 nm
16 1570 - 1610 nm
13/15 1290 - 1330 nm & 1530 - 1570 nm
15/16 1530 - 1570 nm & 1570 - 1610 nm
13/15/16 1290 - 1330 nm & 1530-1570 & 1570-1610 nm

Other wavelengths available upon special request

Fiber and Jacket Type
9/TB Corning SMF-28, Tight Buffer
Or other equivalent 9μm Single-mode fiber

Connector Type
FC/SPC FC/SPC
FC/APC FC/APC
LC/SPC LC/SPC
LC/APC LC/APC
SC/SPC SC/SPC
SC/APC SC/APC
N NONE

Other connector types are also available

Pigtail Length
1 1 Meter
X Specify X Meters
Tolerance is +/- 0.05 m

ELECTRICAL SPECIFICATIONS

<table>
<thead>
<tr>
<th>PARAMETER</th>
<th>RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latching Type</td>
<td>Non-latching</td>
</tr>
<tr>
<td>Control Type</td>
<td>I²C or RS232</td>
</tr>
<tr>
<td>Vcc Voltage</td>
<td>12 VDC</td>
</tr>
<tr>
<td>Power Consumption</td>
<td>Start Up 7.5 W max.</td>
</tr>
<tr>
<td>Operating</td>
<td>1.0 W max.</td>
</tr>
<tr>
<td>Connector Type</td>
<td>Molex 87833-1620</td>
</tr>
</tbody>
</table>

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MEMS 3D SINGLE-MODE MATRIX OPTICAL SWITCH