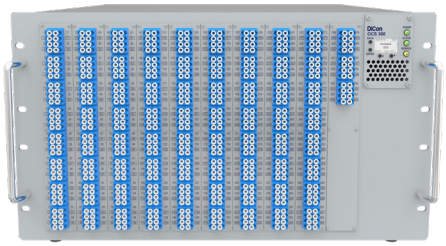
DiCon Fiberoptics, Inc.

MEMS 300X300 OPTICAL CIRCUIT SWITCH

OCS Model, Single Mode Fiber, Data Center Grade



DiCon OCS-300 is a high-density, 300x300 fully non-blocking **Optical Circuit Switch (OCS)** engineered specifically to meet the cost expectation and rigorous performance demands of AI data center networks. Built on DiCon's proprietary **MEMS mirror technology**, this matrix switch leverages a platform that has been in high-volume commercial deployment for more than 20 years, offering an unrivaled track record of field-proven reliability.

DiCon's MEMS is precise and stable. Unlike many other switching solutions that require complex feedback loops, the OCS-300 delivers industry-leading repeatability and reliability with standalone MEMS. It will operate seamlessly in dark fiber environments.

As AI clusters scale, the need for dynamic, redundant, and energy-efficient connectivity becomes an urgent priority. The OCS-300 allows operators to reconfigure server clusters on the fly to meet evolving functional requirements and maintain 24/7 uptime through intelligent redundancy management.

By drastically reducing power consumption compared to electrical switches, the OCS-300 provides a sustainable, cost effective, and high-performance solution for the rapidly progressing AI landscape.

Advantages

- **Field-Proven Reliability:** Leveraging over two decades of volume deployment and real-world performance.
- **Sensor-less Stability:** Proprietary MEMS design eliminates the need for feedback loops; mirrors stay locked even in "dark fiber" conditions.
- **AI-Scale Efficiency:** Dramatic reduction in power consumption and heat dissipation compared to electrical (OEO) switches
- **Future-Proof:** Protocol and bit-rate agnostic, supporting seamless transitions at any speed
- **Low Loss:** Meeting End-of-Life (EOL) insertion loss requirement for AI data center needs

Applications

- Leaf-spine data center networks
- A.I. training clusters
- Intelligent data center network management

ORDERING INFORMATION

OCS - □ - □ - □ - □

Configuration

300	300 Duplex Ports

Test Wavelength

O	1310 nm
C	1550 nm
L	1610 nm

Power

A1	AC 100-240V Single
D1	DC -48V Single
A2	AC 100-240V Redundant
D2	DC -48V Redundant

Bulkhead Connector Type

LC	LC/UPC
LC/APC	LC/APC
RLC	LC/UPC on Removable Panel
RLC/APC	LC/APC on Removable Panel
M8F	MTP-8 Female APC
M8M	MTP-8 Male APC
M12F	MTP-12 Female APC
M12M	MTP-12 Male APC

**Other connector types are available upon request*

MEMS 300X300 OPTICAL CIRCUIT SWITCH

OCS Model, Single Mode Fiber, Data Center Grade

OPTICAL SPECIFICATIONS[1]

Operating Wavelength	1310, 1510, or 1610 nm
Insertion Loss (E.O.L)[2]	2.0 dB Typ. (2.5 dB max.)
Crosstalk	< -60 dB
Data Latency	< 15 ns
Back Reflection	< -50 dB
Optical Transition Time[3]	< 25 ms
Switch Lifetime	> 1 Billion Cycles
Input Power Range	Dark to +27 dBm

1. Measured separately for each Test Wavelength at room temperature
2. Measured with 3-jumper method or equivalent. See TIA/EIA 526-7
3. Optical transition time for all ports switching concurrently, not including command processing overhead

ELECTRICAL SPECIFICATIONS

Power Consumption	< 70 W Steady State < 100 W at Startup
Power Supply Options	Redundant Power Supply, 100-240 VAC or -48 VDC
Network Interface Card	RJ45 Dual Redundant Gigabit Ethernet
SDN & Automation Interfaces	REST API, NETCONF, SNMPv3, TL1, Web GUI, RS232, gNMI

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	10 to 40°C, < 85% RH
Storage Temperature	-40 to 70°C, < 40% RH

MECHANICAL SPECIFICATIONS

Chassis Width	483 mm (19”)
Chassis Depth	559 mm (22”)
Chassis Height	6U