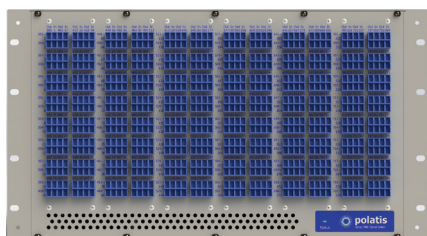


POLATIS® SERIES 7000n

Network Optical Matrix Switch

Single-mode network optical switch up to 384×384 ports



The POLATIS Series 7000n Network Optical Switch is the largest capacity, highest density, highest performance and most reliable non-blocking all-optical matrix switch in the industry. Available in sizes up to 384×384, the Series 7000n all-optical circuit switch is designed to meet the most demanding data center, telecom, defense and test applications with exceptionally low optical loss, compact size, and fast switching speeds. With support for Software-Defined Networks (SDNs) and based on patented POLATIS DirectLight® optical switching technology, the Series 7000n can route time-critical traffic with very low latency to enable new virtual cloud services in hybrid packet-optical data centers.

KEY FEATURES

- Non-blocking matrix sizes up to 384×384
- Available in symmetric N×N and single-side N×CC (customer configurable - any-to-any) port configurations (asymmetric M×N available on request)
- Industry leading low insertion loss and superior optical specifications
- Transparent fully bidirectional optics
- Protocol and bit-rate agnostic up to 400 Gbs and beyond
- Switch and hold dark fiber connections
- SDN enabled with NETCONF and RESTCONF control interfaces
- Configurable interface options with SNMP, TL1, and SCPI control languages
- Built-in user-friendly Web GUI interface
- Supports RADIUS secure user access protocols
- Seamlessly interfaces with infrastructure automation and orchestration solutions
- Optional optical power monitoring and alarms
- High reliability distributed architecture
- Eco-friendly low power consumption

DirectLight® technology

Series 7000n optical switches use patented, highly reliable piezoelectric POLATIS DirectLight® beam-steering technology that sets the industry standard for lowest optical loss and highest optical performance, enabling a wide range of network applications. POLATIS DirectLight® technology allows true dark fiber switching where the connections can be made and held without light being present on the fiber. This allows operators to pre-provision paths over lit or dark fiber. POLATIS DirectLight® can also switch bi-directional optical signals for PON, FTTx and other types of transmission systems.

SDN enabled

POLATIS switches can be easily deployed in an SDN platform using NETCONF or RESTCONF interfaces enabling network operators to monitor and dynamically reconfigure the network in real time to quickly respond to changing network conditions. This added level of flexibility increases equipment utilization and lowers overall costs while increasing network availability. In addition, POLATIS also offers SNMP, TL1, and SCPI command languages and a user-friendly secure web browser GUI interface that can be used to provision, monitor, and control the switch.

Switch matrix size options

The POLATIS Series 7000n is available in sizes up to 384×384 in symmetric (N×N)

and single-sided customer-configurable (N×CC) switch matrices, to meet a broad range of network applications. Asymmetric (M×N) configurations are available on request. The 7000n's large matrix size, combined with its low loss characteristics, allows operators to build multistage scalable switch solutions that can grow to interconnect thousands of ports.

Carrier-class reliability

The POLATIS Series 7000n switch has carrier-class reliability. The switch has a distributed architecture that eliminates the possibility of any single point of failure disabling it and includes dual, hot-swap power supplies and network interface cards. The SDN and other control interfaces allow for seamless integration with higher-level network management systems and test equipment controllers.

Optional power monitors and optical taps

POLATIS Series 7000n switches include options for integrated optical power monitoring on every connection. These are ideal for identifying signal degradation or loss, as well as for testing applications. POLATIS switches can also be easily configured to provide fully automated multilevel protection switching using a combination of power monitoring, threshold alarm indicators and fast switching.

BENEFITS OF POLATIS® SWITCHING

- Low optical loss minimizes impact on equipment and system optical power budgets and enables dynamic novel network architectures
- Superior optical specification enables DWDM operation at 400 Gbs and beyond
- NETCONF and RESTCONF SDN interfaces enable faster deployment of new network orchestration solutions
- Bi-directional, all-band transmission with minimal signal impairment provides truly transparent connections
- Fast switching times enable efficient provisioning and protection services
- Dark-fiber switching enables preprovisioning and use with intermittent signals
- Interoperates with popular third-party test software

APPLICATIONS

- Fast automatic provisioning and protection switching in optical networks with Software-Defined Networking
- Cage-to-cage provisioning in data centers
- Data center interconnects
- Network traffic and performance monitoring
- Cybersecurity monitoring
- Infrastructure as a Service (IaaS) automation and orchestration
- Video content creation and broadcasting
- High performance computing
- Disaggregation

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Performance Parameters

Performance Parameters	POLATIS® 7000n Specifications
Maximum Matrix Switch Size (N×N) ¹	384×384 and 384×CC
Other Matrix Sizes (N×N) ¹	256×256, 320×320, 360×360
Typical Insertion Loss ²	1.5 dB
Maximum Insertion Loss ²	2.7 dB
Maximum Insertion Loss with single OPM ²	3.0 dB
Loss Repeatability ³	+/-0.1 dB
Connection Stability ³	+/-0.1 dB
Dark Fiber Switching	Yes
Bi-Direction Optics	Yes
Switching Time	50 ms for a single connection or to reconfigure the entire switch
Polarization Dependent Loss (PDL)	<0.1 dB (C+L Bands) <0.3 dB with optional OPMs (C+L Band)
Crosstalk	<-50 dB
Operating Wavelength Range	1260-1675 nm
Wavelength Dependent Loss (WDL)	<0.3 dB (C+L Band)
Return Loss (with APC connectors)	>50 dB
Data Latency through a switch connection	75 ns
Optical Input Power Range	Dark to +24 dBm
Optional Optical Power Monitoring (OPM)	Dynamic range -25 dBm to +20 dBm Accuracy +/-1.0 dBm
Switch Lifetime	>10 ⁹ Cycles
Operating Temperature	+5 °C to +40 °C <85 % RH non-condensing
Storage Temperature	-40 °C to +70 °C <40 % RH non-condensing

Electrical and Mechanical

Electrical and Mechanical	POLATIS® 7000n Specifications
Fiber Type	Single-mode
Single Fiber Connector Types	LC or LC-HD Connectors Angled (APC) or Ultra (UPC) connector types available
Array Connector Types	MTP-8 or MTP-12 Elite Array Connectors
Control Interfaces	NETCONF, RESTCONF, SNMP, TL1, SCPI & Secure User-Friendly Web GUI
User Interfaces	RJ45 Dual Redundant Hot-Swap Gigabit Ethernet
Craft Interfaces	RS232 Serial and USB
Secure User Access Protocols	RADIUS
Power options	Hot Swappable Dual Redundant 100-240 VAC 50/60 Hz Hot Swappable Dual Redundant -48 VDC
Power Consumption	140 W standard switch 180 W with optional OPMs

Switch Chassis Height⁴

Switch Chassis Height ⁴	POLATIS® 7000n	POLATIS® 7000n
Optical Connector Type	Up to Matrix Size 320×320	Matrix Size 360×360 and 384×384
MTP	6RU	6RU
LC-HD (High Density LC)	6RU	6RU
LC	6RU	8RU

All parameters are measured excluding connectors at 1550 nm and 20 °C with an unpolarized source after thermal equalization unless otherwise noted.

1. Asymmetric MxN sizes available as options on request
2. Measured using the 3 patch-cord method as defined in ANSI/TIA/EIA-526-7-1998
3. Stability and repeatability are measured at maximum transmission
4. The switch chassis width is 19" and the depth is 22" for all Series 7000 switches