



SERIES

6000n Lite

Network
Optical Matrix Switch

COMPACT 48x48 SINGLE MODE NETWORK OPTICAL SWITCH



The Polatis Series 6000n Lite network optical switch is a high-performance, fully non-blocking all-optical 48x48 matrix switch that fits into a compact 1RU rack mounted chassis. It is designed to meet

the highest performance and reliability needs of the most demanding applications with exceptionally low optical loss, compact size, low power requirements and fast switching speeds. With support of Software-Defined Networks (SDNs) via an embedded OpenFlow control interface, the Series 6000n Lite enables extremely low latency for time-critical traffic required for new virtual cloud services in hybrid packet-optical data centers. The Series 6000n Lite is based on Polatis' patented DirectLight® optical switching technology that has been proven in the most challenging data center, telecom and defense applications and is also used in video distribution and by major network equipment manufacturers to automate testing of optical components and subsystems.

KEY FEATURES

- **Non-blocking 48x48 matrix switch**
- **High density switching in compact 1RU chassis**
- **Energy efficient**
- **SDN enabled with OpenFlow command interface**
- **Ultra-low insertion loss and superior optical specifications**
- **Able to switch and hold dark fiber connections**
- **Fully bidirectional optics**
- **Protocol and bit-rate agnostic up to 100Gbps and beyond**
- **Optional output optical power monitoring and protection switching**
- **User configurable optical power alarms**
- **Carrier-class interfaces with OpenFlow, SNMP, TL1 and SCPI control languages**
- **High reliability distributed architecture**
- **Dual redundant power and network interface cards**
- **Built-in user friendly web GUI interface**

DIRECTLIGHT BEAM-STEERING

The Series 6000n Lite 48x48 switch leverages Polatis' patented, highly reliable piezoelectric DirectLight beam-steering technology that sets the industry standard for lowest optical loss and highest optical performance. Polatis' beam-steering technology can be switched without light being present on the fiber. This allows operators to pre-provision paths as well as perform intelligent network monitoring and test over lit or dark fiber. The Polatis DirectLight technology can also switch bi-directional optical signals for PON, FTTx and other types of transmission systems.

SDN ENABLED

Polatis offers an OpenFlow client on the Polatis Series 6000n so it can be deployed in a Software Defined Network under an OpenFlow-enabled control plane. This allows data center and network operators to reconfigure the network on demand to deploy capacity where it is most needed and make the most productive use of network resources at the lowest cost.

COMPACT SIZE WITH ENERGY EFFICIENCY

The 6000n Lite is a high performance 48x48 matrix switch fitted into a compact 1RU chassis. The small form factor full-featured switch can be easily installed in the smallest spaces to meet a broad range

of application requirements. Its small footprint uses less than 25 Watts.

CARRIER CLASS RELIABILITY

The Polatis Series 6000n Lite switch has carrier-class reliability. The switch has a high reliability distributed architecture that eliminates the possibility of any single point of failure disabling the switch and includes dual hotswap power supplies and network interface cards. In addition, the switch software can be easily upgraded in the field without affecting in-service switch operations. OpenFlow, SNMP, TL1 and SCPI command languages allow for seamless integration with higher-level network management systems or test equipment controllers. Each switch also has a user-friendly HTML web browser GUI interface that can be used to provision, monitor and control the switch.

OPTIONAL POWER MONITORS

The Polatis Series 6000n Lite switches include options for up to 48 integrated optical power monitors, one for every connection. Integrated power monitors are ideal for network monitoring, protection switching as well as testing applications. Polatis switches can be easily configured to provide fully automated multilevel protection switching using a combination of power monitoring, threshold alarm indicators and fast switching.

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BENEFITS OF POLATIS SWITCHING

- Low optical loss reduces the need for extra optical amplification and enables novel architectures
- Superior optical specifications enable operation at 100Gbs and beyond
- SDN OpenFlow interface enables faster deployment of new control applications
- Bi-directional, all-band transmission with minimal signal impairment provides truly transparent connections
- Fast switching times enable efficient provisioning and protection switching
- Dark-fiber switching enables preprovisioning and use with intermittent signals

APPLICATIONS

- Software-defined networking
- Data center aggregation
- Colocation peering
- Cloud computing and data center virtualization
- Automated access, metro and long-haul network operations
- Centralized equipment sharing and automated network testing
- Video feed distribution
- Automated systems verification testing
- Fast automatic provisioning and protection switching
- Network monitoring and automatic fault location

Performance Parameters

Performance Parameters	Polatis 6000n Lite 48x48 Specifications
Maximum Matrix Switch Size (NxN)	48x48
Typical Insertion Loss	1.2dB
Maximum Insertion Loss ¹	2.2dB
Maximum Insertion Loss with single OPM	2.8dB
Loss Repeatability	+/-0.1dB
Connection Stability	+/-0.1dB
Dark Fiber Switching	Yes
Bi-Direction Optics	Yes
Max Switching Time	25ms
Polarization Dependent Loss (PDL)	<0.1dB (C+L Bands) <0.3dB with optional OPM (1510-1610nm)
Crosstalk	<-50dB
Operating Wavelength Range	1260-1675nm 1510-1610nm with optional OPMs
Wavelength Dependent Loss (WDL)	<0.3 dB (C+L Band)
Return Loss (with APC connectors)	>50dB
Optional Optical Power Monitoring (OPM)	Wavelength range 1510-1610nm Dynamic range -25dBm to +24dBm Accuracy +/-1.0dBm
Maximum Optical Input Power	+27dBm +24dBm with optional OPMs
Switch Lifetime	>10 ⁸ Cycles
Operating Temperature	+10°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 6000n Lite 48x48 Specifications
Fiber Type	Single Mode
Single Fiber Connectors	LC-HD Connectors Angled or straight connectors types available
Array Connector Types	MTP-8 (MPX Elite) Array Connectors
Control Languages	OpenFlow, TL1, SCPI & HTML
User Interfaces	RJ45 Dual Ethernet 10/100 Base T and USB
Craft Interface	RS232 Serial or RJ45 Ethernet 10/100 Base T
Power options	Hot Swappable Dual Redundant 100-240 VAC 50/60 Hz Hot Swappable Dual Redundant -48 VDC
Power Consumption	25W

Fiber Connector

Fiber Connector	Polatis 6000n Lite 48x48 Size (HxWxD)
LC or MTP	1RU x 19" x 22"

All parameters are measured excluding connectors at 1550nm and 20°C with an unpolarized source after thermal equalization unless otherwise noted.
1. Measured using the 3 patch-cord method as defined in ANSI/TIA/EIA-526-7-1998



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