

POLATIS® Series 6000 Ultra Q Quantum Grade Optical Switch

Description

- Non-blocking 16x16 all-optical switch
- Enhanced optics for ultra-low insertion loss
- QuPC ultra-low loss connectors
- Phase matched optical paths through switch to within +/- 0.5ns
- Able to switch and hold dark fiber connections
- Fully bidirectional optics
- SDN-enabled
- Ideal for photonic quantum communications and quantum key distribution networks and test beds



The POLATIS Series 6000 Ultra Q all-optical switch is a compact, high-performance fully non-blocking all-optical matrix switch with 16 input and 16 output ports. Further refinement of the POLATIS DirectLight™ switch optics plus use of ultra-low loss connectors designed specifically for quantum applications offers researchers and optical network operators the lowest insertion loss available on the market from all-optical switches

Technical data

Optical Performance

Description	Values
Switch Size (Ports)	16 input x 16 output
Typical Insertion Loss	0.35 dB
Maximum Insertion Loss ¹	0.70 dB
Loss Repeatability ²	+/-0.1dB
Connection Stability ²	+/-0.1dB
Dark Fiber Switching	Yes
Bi-Direction Optics	Yes
Data latency through a switch connection	25 +/- 0.5 ns
Maximum Switching Time	25ms
Polarization Dependent Loss (PDL)	<0.1dB (C+L Bands)
Crosstalk	<-50dB
Operating Wavelength Range	1260-1675nm
Wavelength Dependent Loss (WDL)	<0.3dB (C+L Band)
Return Loss (with APC connectors)	>50dB
Optical Input Power Range	Dark to +24 dBm
Switch Lifetime	>10 ⁹ Cycles

Electrical & Mechanical data

Characteristics	Values
Fiber Type	Single Mode
Fiber Connectors	QuPC (LC/APC)
Power options	Hot swap dual redundant 100-240VAC 50/60Hz Hot swap dual redundant 48 VDC
User Interfaces	Dual Gigabit Ethernet
Craft interfaces	RS232 Serial and USB
Nominal Electrical Power dissipation	25W
Control Languages	NETCONF, RESTCONF, TL1, SCPI, SNMP, POLATIS Web GUI

Notes:

1. Measured using the 3 patch-cord method as defined in ANSI/TIA/EIA-526-7-1998
2. Stability and repeatability are measured at maximum transmission

Preliminary Data Sheet

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Environmental data

Characteristics	Conditions	Values
Normal temperature range	In service	+5°C up to +45°C <85% RH non-condensing
	In storage	-40°C up to +70°C <40% RH non-condensing

Switch Dimensions

Characteristics	Value
Chassis height	44 mm (1 RU)
Chassis width	479 mm (19" nominal)
Chassis depth	554 mm

Ordering information

Order Code: **I - OS T - 1 6 x 1 6 - Q A 1 - H M X N Q**

Product Range

I = Instrumentation

-

Product Type

OS = Optical Switch

Form

T = Tray

-

Input Ports

16

X

Output Ports

16

-

Connectors

Q - QuPC (LC)

Connector Polish

A = APC

Fiber Type

1 = Single Mode 9/125um

-

Comms

H = Hot swap multisession Ethernet & Serial

Protocol

M = Multi-Protocol (TL1, SNMP, SCPI, webGUI)

Power

H = Hot Swap twin 100/240 VAC

T = Hot Swap twin -48 VDC

Environmental

N = Normal

Customisation

Q = Quantum spec