

CrystaLatch™ NxM Fiber Optical Switch

(No-Blocking, Bidirectional, Unidirectional, SM, PM, Up to 10W)

(Protected by U.S. patents 7224860, 6757101, 6577430 and pending patents)



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Features

- Non-Blocking
- High Speed
- High Reliability
- Fail-Safe Latching
- Low Insertion Loss
- Rugged
- Compact
- USB, Ethernet, RS232, TTL

Applications

- Optical Signal Routing
- Network Protection
- Signal Monitoring
- Instrumentation

The CLSM NxM Series fiber optic switch connects optical channels by redirecting any incoming optical signal into any selected output fiber. This is achieved using patented non-mechanical configurations and activated via an electrical control signal. It is a truly non-blocking switching matrix. The latching operation preserves the selected optical path after removing the drive signal. The CLSM series fiber optic switch features low insertion loss, high extinction ratio, high channel isolation, and extremely high reliability and repeatability. It is vibration-insensitive without moving parts. It is designed to meet the most demanding switching requirements of continuous operation without failure, longevity, operation under shock/vibration environment, large temperature variations, and fast response time.

The magneto-optical crystals used in the CL switches have no fatigue or drift effect. They have unidirectional and bidirectional configurations and can handle high optical power of up to 10W.

Specifications

Parameter	Min	Typical	Max	Unit
Operation Wavelength ^[1]	1520	1550	1580	nm
	1295	1310	1325	nm
Insertion Loss ^[2]		1.5	2.6	dB
Cross Talk On/Off Ratio ^[2]	Bidirectional Series	28	45	dB
	Unidirectional Series	30	45	dB
Return Loss ^[2]		50	55	dB
PDL (SM series)		0.1	0.3	dB
Extinction Ratio (PM Series)		18	30	dB
Optical Switching Speed (Rise, Fall)		5	10	µs
Repetition Rate		2K		Hz
Durability		10 ¹⁵		cycle
Repeatability		0.05	0.1	dB
Polarization Mode Dispersion			0.2	ps
Operating Temperature		0	70	°C
Storage Temperature		-40	85	°C
Optical Power Handling	Standard	300	500	mW
	High Power	3	5	W

Notes:

[1]. L band version available, please call

[2]. Measured without connectors, for 4x4. Larger matrix have higher loss

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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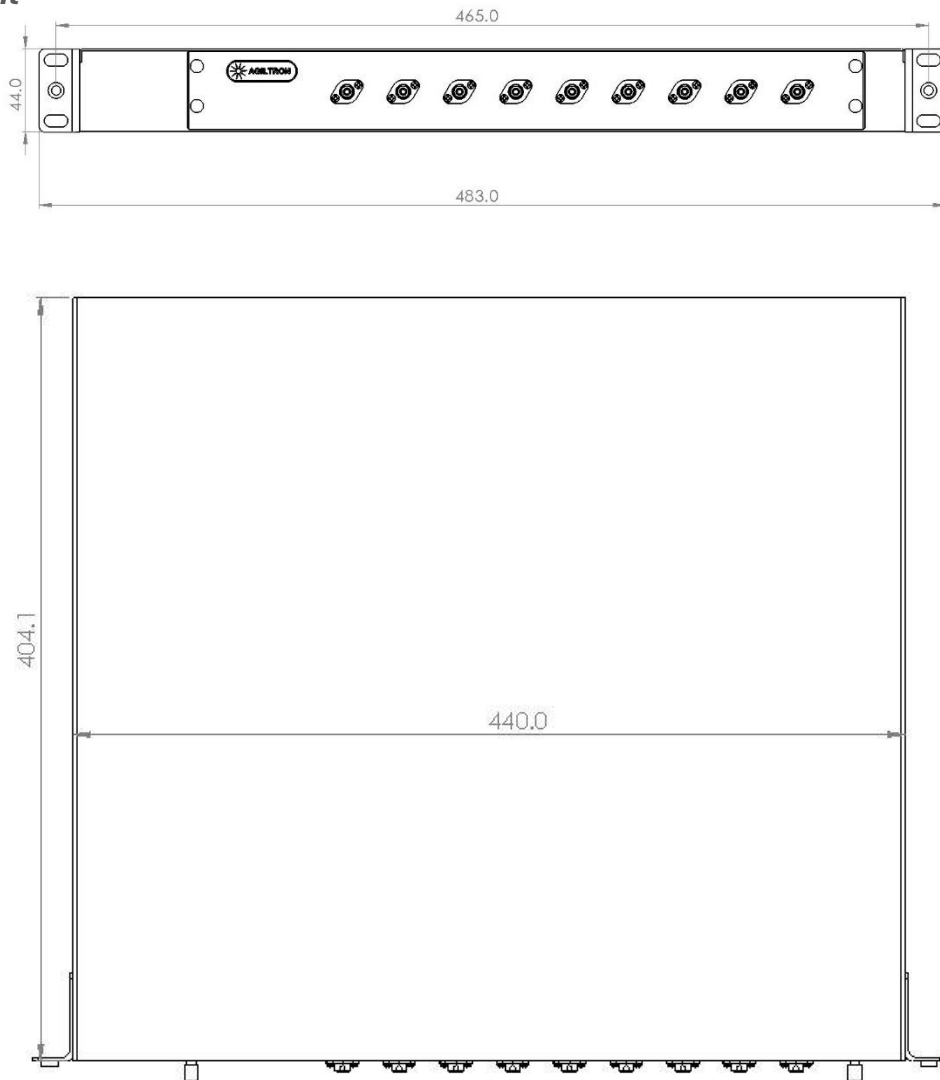
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Mechanical Dimensions (Unit: mm)

1U Rack Mount



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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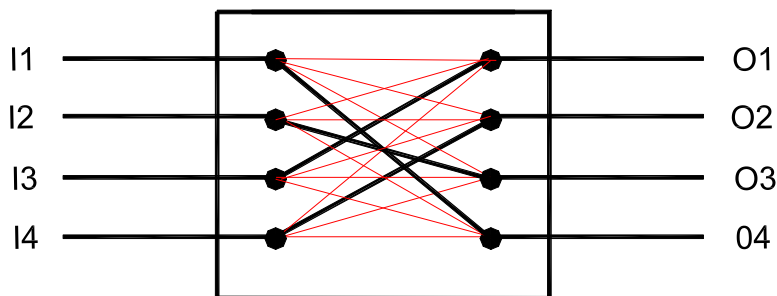


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Mechanical Dimensions (Unit: mm) 1U

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Functional Diagram



Electrical Driving Information

TTL driving format provides the speed performance listed on the specification table. Other methods introduce additional delay, in which the Ethernet is the slowest.

- **RS232 (GUI)**
- **USB (GUI)**
- **TTL**
- **Ethernet (GUI)**

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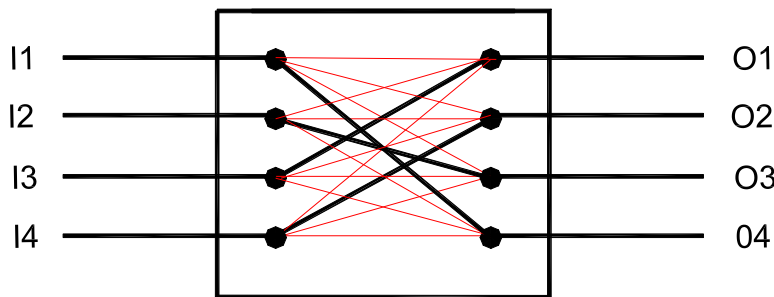
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Ordering Information

Prefix	Type	Wavelength	Directivity	Optical Power	Fiber Type	Polarization ER	Package ^[1]	Connector
CLSM-	4x4 = 44 4x3 = 43 4x2 = 42 3x4 = 34 2x4 = 24 3x3 = 33 3x2 = 32 2x3 = 23 8x8 = 88 7x7 = 77 6x6 = 66 Special = 00	1310 = 3 1550 = 5 Special = 0	Bidirectional = 2 Unidirectional = 1	Standard = 1 1W = A 2W = 2 3W = 3 4W = 4 5W = 5 10W = 10	SFM-28 = 1 PM1550 = 2 PM 1310 = 3 Special = 0	Non = 1 18dB = 2 23dB = 3 25dB = 4 30dB = 5	Rack = 1 Module = 2 Special = 0	None = 1 FC/PC = 2 FC/APC = 3 LC/PC = 7 High ER FC/PC = H High ER FC/APC = A MPO = Y Special = 0

[1]. Rack Mount Depth ~ 430mm.

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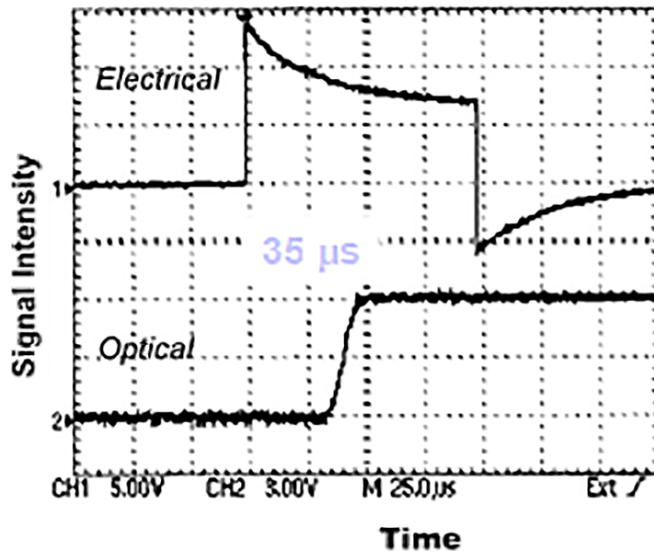
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Typical Switching Response



Typical Loss Change of 1x2 vs Switching Numbers

