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# CrystaLatch™ Bi-Directional 1x1,1x2 Solid-State Fiberoptic Switch

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

## Product Description

The CL Series bi-directional 1x1 and 1x2 solid-state fiber optical switch connects optical channels by redirecting an incoming optical signal into a selected output fiber. This is achieved using patented non-mechanical configurations and activated via an electrical control signal. Latching operation preserves the selected optical path after the drive signal has been removed. These switches are true bidirectional allowing light propagating in both directions simultaneously, a critical feature for sensing applications. Agiltron non-mechanical CL fiberoptic switch features low insertion loss, fast response time, high extinction ratio, extinction ratio, and extremely high reliability and repeatability. It is designed to meet the most demanding switching requirements of continuous operation without wear-out, longevity without fail, and live operation under vibration/shock. Electronic driver is available for this series of switches.



## Performance Specifications

CL Series 1x1,1x2 Switch	Min	Typical	Max	Unit
Operation Wavelength <sup>1</sup>	1520	1550	1580	nm
	1295	1310	1325	nm
Insertion Loss <sup>5</sup>		0.8	1.1	dB
Cross Talk	Single Stage	18	25	dB
	Dual Stage	35	50	
Switch Speed	5	50	200	μs
Repetition Rate		2K		Hz
Durability	10 <sup>14</sup>			cycle
Polarization Dependent Loss		0.1	0.2	dB
Polarization Mode Dispersion		0.1	0.2	ps
Return Loss	50	55		dB
Operating Temperature <sup>2</sup>	-5		70	°C
Optical Power Handling <sup>3, 4</sup>		300		mW
Storage Temperature	-40		85	°C
Fiber Type	Corning SMF-28			
Package Dimension	58.2L x 8.4W x 8.4H			mm

1. Agiltron can achieve same SPEC at L band.
2. -40°C version is also available.
3. High power version is available.
4. Continuous operation, for pulse operation call.
5. Excluding connectors

## Features

- Solid-State high speed
- Ultra-high reliability
- Fail-safe latching
- Low insertion loss
- Direct low voltage drive
- Compact
- Low cost

## Applications

- Optical channel blocking
- Configurable Add/Drop
- System monitoring
- Instrumentation

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## Electrical Driving Information

The switching is actuated by applying a voltage pulse. Applying one polarity pulse, one light path will be connected and latched to the position. Applying a reversed polarity pulse, another light path will be connected and latched to the position after pulse removed.

Parameter		Minimum	Typical	Maximum	Unit
Switch Voltage	Single Stage	2.25	2.5	2.75*	V
	Dual Stage	4.5	5	5.5*	
Switch Current(Dual Stage)		110	140	195	mA
Pulse Duration		0.2	0.3	0.5	ms

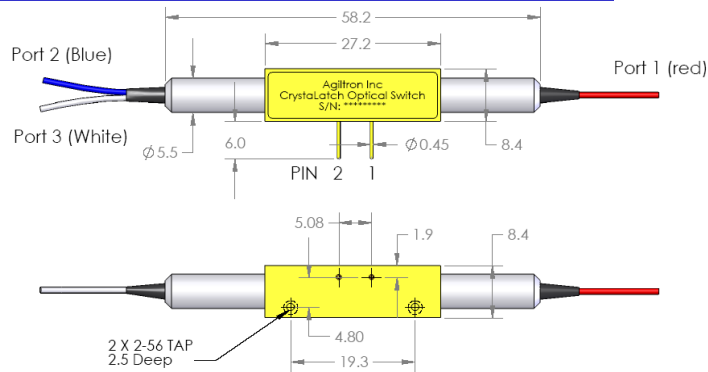
Driving kit with USB and TTL interfaces and Windows™ GUI is available. We also offer RS232 interface as an option - please contact Agiltron sales.

\* Over this value will damage the device.

### CL 1x2 Bi-Directional Switch

Optical Path	Pin 1	Pin 2
Port 1 ↔ Port 2	GND	5V Pulse
Port 1 ↔ Port 3	5V Pulse	GND

## Mechanical Dimensions (mm)



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

## Ordering Information

CLBD -	Type	Wavelength	Switch	Package	Fiber Type	Fiber Length	Connector Type	
<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	1x1=1B 1x2=2B	1310=3 1550=5 Special=0	Single Stage=1 Dual stage=2 Special=0	Special=0	SMF-28 =1 Special=0	Bare Fiber=1 900um Loose tube=3 Special=0	0.25m=1 0.5m =2 1.0 m=3 Special=0	None=1 FC/PC=2 FC/APC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC=7 Duplex LC=8 Special=0