

# CrystaLatch™ 2x2 Solid-State Fiberoptic Switch

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

## Product Description

The CL Series 2x2 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. The all solid state CL 2x2 fiberoptic switch features low insertion loss, high extinction ratio, high channel isolation, and extremely high reliability and repeatability. It is designed to meet the most demanding switching requirements of continuous operation without failure, longevity, operation under shock/vibration environment and large temperature variations, and fast response time.

The switch also has build-in Circulator and isolator functions. Electronic driver is available for this series of switches.



## Performance Specifications

| CL Series 2x2 Switch              | Min                 | Typical | Max                | Unit  |
|-----------------------------------|---------------------|---------|--------------------|-------|
| Operation Wavelength <sup>1</sup> | 1520                | 1550    | 1580               | nm    |
|                                   | 1295                | 1310    | 1325               | nm    |
| Insertion Loss <sup>2</sup>       |                     | 0.8     | 1.2                | dB    |
| Cross Talk                        | 20                  | 25      |                    | dB    |
| Switch Speed (rise, fall)         | 5                   | 50      | 200                | μs    |
| Repetition Rate <sup>4</sup>      |                     | 2K      |                    | Hz    |
| Durability                        | 10 <sup>11</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             | -5                  |         | 70                 | °C    |
| Optical Power Handling            |                     | 300     | 500 <sup>5,6</sup> | mW    |
| Storage Temperature               | -40                 |         | 85                 | °C    |
| Fiber Type                        | Corning SMF-28      |         |                    |       |
| Package Dimension                 | 67.3L x 8.5W x 8.5H |         |                    | mm    |

1. Agiltron can achieve same SPEC at L band.
2. Measured without connectors.
3. Agiltron is able to take a special order with 40 dB Cross Talk.
4. If the switch work at >1 KHz, pulse duration should be 0.1 ms.
5. High power version available.
6. Continuous operation, for pulse operation call.

## 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 switch 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.

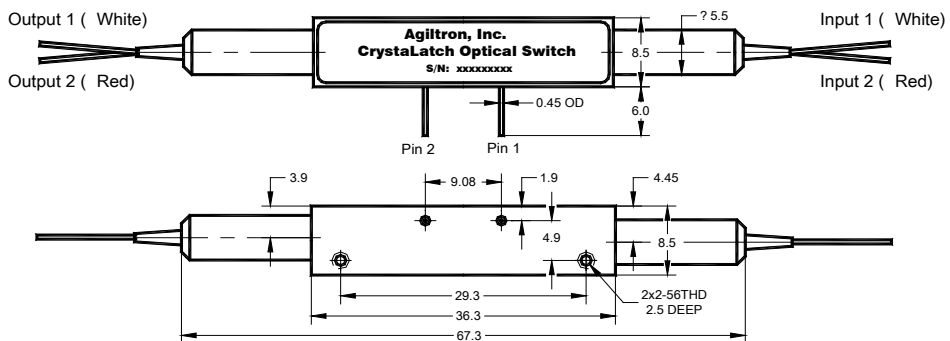
| Parameter      | Minimum | Typical | Maximum | Unit |
|----------------|---------|---------|---------|------|
| Drive Voltage  | 2.25    | 2.5     | 2.75    | V    |
| Drive Current  | 110     | 140     | 195     | mA   |
| Pulse Duration | 0.2     | 0.3     | 0.5     | ms   |

Driving kit with RS232 and TTL interfaces and Windows™ GUI is available

### CL 2x2 Switch

| Optical Path                         | Pin 1      | Pin 2      |
|--------------------------------------|------------|------------|
| Input 1→Output 1<br>Input 2→Output 2 | GND        | 2.5V Pulse |
| Input 1→Output 2<br>Input 2→Output 1 | 2.5V Pulse | GND        |

## Mechanical Dimensions (mm)



## Ordering Information

| CLSW- | Type   | Wavelength       | Switch                      | Package                 | Fiber Type             | Fiber Length                                      | Connector                                |   |
|-------|--------|------------------|-----------------------------|-------------------------|------------------------|---|--|---|
| 2 2   | 2x2=22 | 1310=3<br>1550=5 | Single stage=1<br>Special=0 | Standard=1<br>Special=0 | SMF-28 =1<br>Special=0 | Bare fiber=1<br>900um loose tube=3<br>Special = 0 | 0.25m=1<br>0.5m=2<br>1.0m=3<br>Special=0 | None=1<br>FC/PC=2<br>FC/APC=3<br>SC/PC=4<br>SC/APC=5<br>ST/PC=6<br>LC=7<br>Duplex LC=8<br>Special=0 |