



Applications

- Spectroscopy
- Bio-Tech
- Wavelength Management
- Signal Monitoring
- Instrumentation

Features

- Ultra Low Insertion Loss
- Ultra Broad Band
- High Modal Fidelity
- Latching

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 [\[click this link\]](#):

The Fiber-Fiber™ Series of optical fiber switch is based on a patent-pending self-groove alignment mechanism without needing AR coating and lenses. It offers unparalleled advantages of very low loss of about 1dB for any array size, low cost, amicable to any fiber core size, and broad wavelength operation from 300nm~2300nm. The latching operation preserves the selected optical path after removing the drive signal. Multimode fiber core size is from 50 to 1000µm. The switch is bidirectional and can accommodate up to 300 fiber ports. The Fiber-Fiber™ multimode switches are designed with very short paths between fibers, so signals propagate in practically the same distribution as through uninterrupted multimode fiber, uniquely achieving high modal fidelity. It is available in single and dual channels. The dual channel acts at the same time, design for testing applications.

The switch is controlled by RS232 or USB computer interface with graphic Software. The Labview version is also available.

Lightpath in the device is bidirectional.

The order table includes a list of standard control interfaces. Additionally, we provide a list of commands to assist customer engineers in coding. For those who require it, we offer a code-writing service for customer interfaces at an additional charge.

This switch uses a specially formulated index-matching liquid that does not generate fluorescent. The liquid fills a gap of less than 5 µm.

Specifications

Parameter		Min	Typica	Max	Unit
Operation Wavelength	UV-VIS	200		2000	nm
	MWIR	1000		5000	
	LWIR	7000		12000	
Insertion Loss ^[1]			0.6	2	dB
Wavelength Dependence Loss			0.15	0.3	dB
Polarization Dependent Loss			0.05	0.1	dB
Crosstalk, On/Off Ratio			70		dB
Extinction Ratio (PM Fiber)		18		23	dB
Return Loss	APC	50			dB
	UPC	40			
Repeatability			0.05	0.1	dB
Switch Time				200	ms
Switch type			Latching		
Durability		10 ⁷			cycle
Optical Power Handling			300	500 ^[2]	mW
Operating Temperature		-5		65	°C
Storage Temperature		-40		85	°C
Fiber Type	Single Mode	Corning SMF-28 or equivalent			
	Multimode	50		1000	µm
Power Supply		110 ~ 220			VAC
Package Type		2U 19" Mount Rack			

Notes:

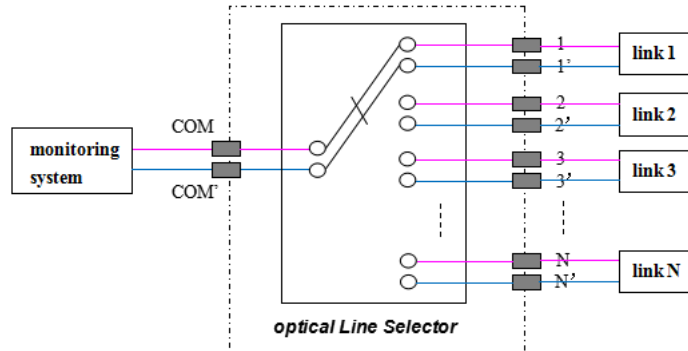
- [1]. Measured without connectors.
- [2]. High power version is available.

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Rev 10/21/24

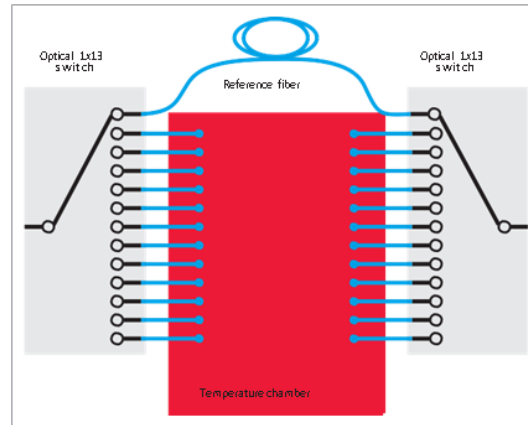
Dual Channel Optical Configuration

Two fiber channels are grouped to switch simultaneously. This is a cost effective configuration than using two 1xN switches.



Parallel Testing Configuration

In many cases, valuable signal source and analysis instrumentation can be used more effectively in a parallel-test configuration. For example, multiple cables or components can be tested together during temperature cycling. On the other hand, an increasing use of inherently parallel components, as for optical interconnections for 40G or 100G using 10Gb/s components, calls for identical testing in multiple paths. These are well supported by the 1x13 switch configuration and the 13th path can often be used as a permanent reference path.

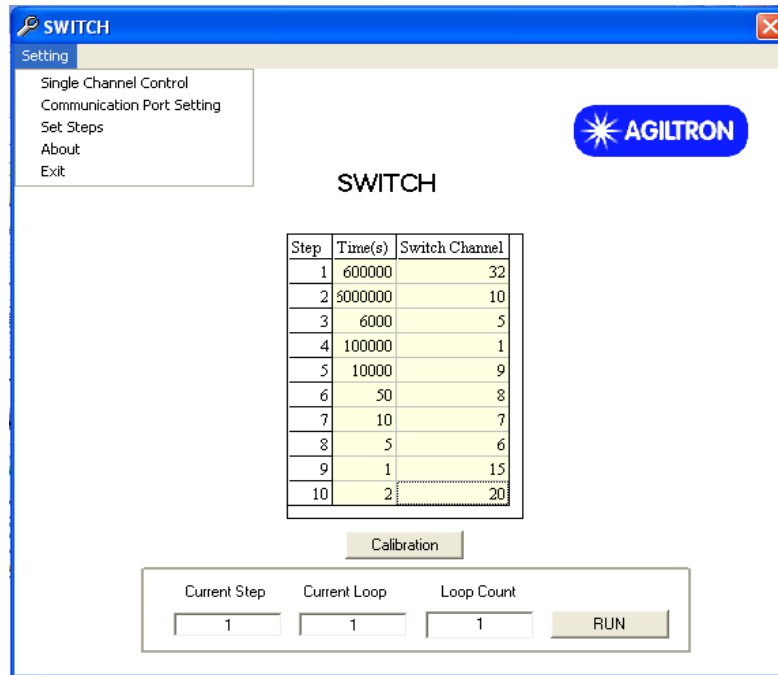


Module Mechanical Dimensions

2RU 19" mount rack typically. The input and output connectors are on the front panel, while the control interface and power supplier are on the rear panel.

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

Typical Graphic User Interface



Control Interface and Power Supply

- RS 232
- Ethernet 10/100 with definable IP address
- USB
- GUI
- 110-220V (0.6 A) Power Input



DATASHEET

Ordering Information

Prefix	Type	Wavelength	Switch Type	Package	Fiber Type	Fiber Cover	Connector
LBSCD-	1x8 = 008 1x16 = 016 1x32 = 032 1x64 = 064 1x128 = 128 1x256 = 256 Special = 000	1240-1640nm = A 1060nm = 1 1310nm = 3 1410nm = 4 1550nm = 5 1310/1550nm = 2 650nm = 6 780nm = 7 850nm = 8 Special = 0	Single Channel = 1 Dual Channel = 2	Standard 2RU = 1 Special = 0	50/.22 = 5 62.5/.22 = 6 105/.22 = E 200/.22 = F 300/.22 = G 400/.22 = H 600/.22 = J 800/.22 = K SM28 = 1 Special=0	loose tube = 2 Special = 0	FC/PC = 2 FC/APC = 3 SC/PC = 4 SC/APC = 5 ST/PC = 6 LC/PC = 7 Duplex LC/PC = 8 Quad LC/PC = 9 LC/APC = A LC/UPC = U Special = 0

RED is Special Order

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

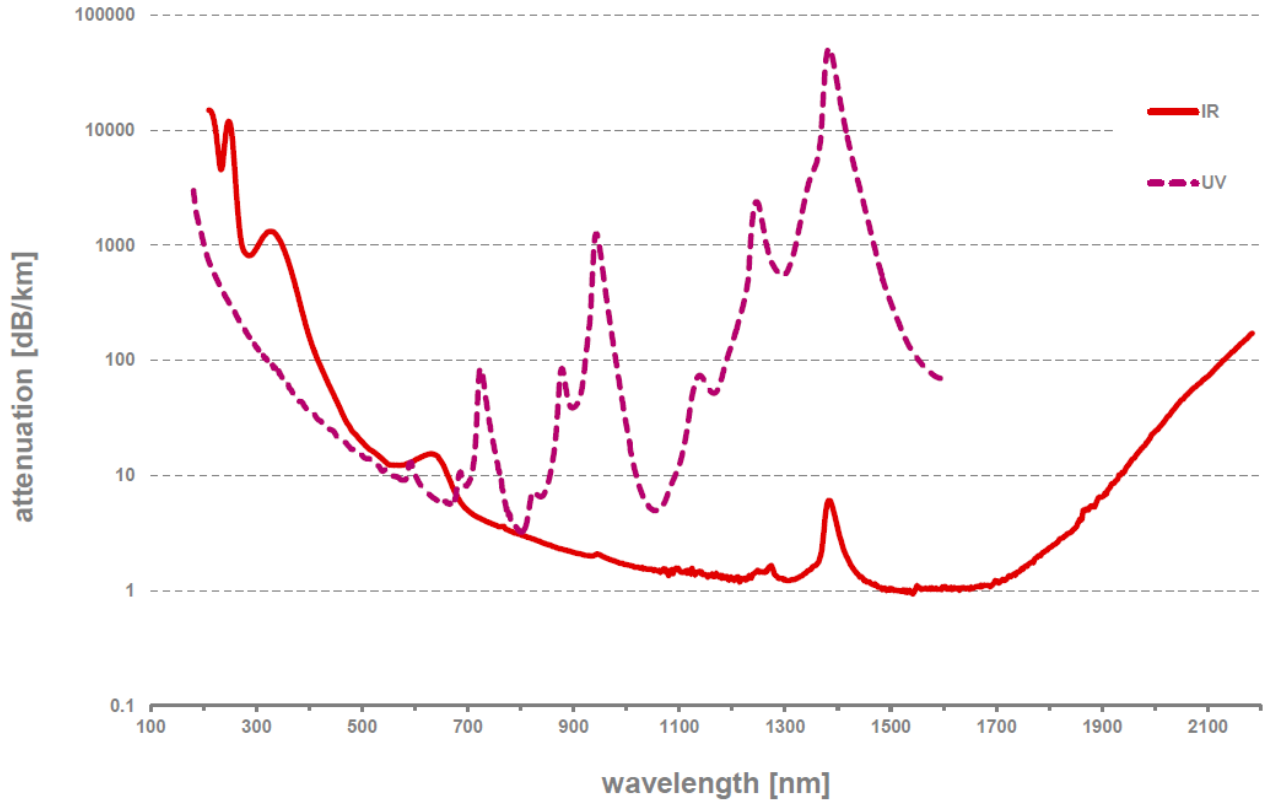
Fiber Cleanliness

Fibers with smaller core diameters (<5 µm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the handling by expanding the core side at the fiber ends.

Typical Fiber Transmissions



Questions and Answers

Q: If the device were to fail, would the switch continue to pass the fiber light through the switch as configured before failure? When power is restored, does the IN/OUT configuration before failure remain in place?

A: This depends, if one mirror fails, it only affects the light go through that mirror. Yes, when power back up it will go to the previous points

Q: When power is restored, does the IN/OUT configuration before failure remain in place?

A: Yes, when power back up it will go to the previous flightpath

Q: If power to the device were shutoff, would the device continue to pass the fiber light as configured before failure?

A: This function is call latching. We uniquely offer MEMS latching switch but cost more.

Q: With the Ethernet Control Option, does the switch support SNMPv3

A: Yes. This internet standard protocol allows user to write their own control code

Q: With the Ethernet Control Option, what type of encryption does the SNMPv3 use?

A: MD5/DES

Q: With the Ethernet Control Option, could this device be controlled by multiple users at different locations and all users will also see the configuration updates?

A: Yes

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A: Yes

Q: With the Ethernet Control Option, does the user need to install any software on their computer other than a web browser?

A: No