PHOTONWARES

NanoSpeed™ Ultra-Fast 1x1, 1x2, 2X2 Fiber Optical Switch

(8ns rise/fall time, polarization insensitive, all wavelengths)

(Protected by U.S. patents 7,403,677B1; 6,757,101B2; and pending patents)

Features

- Low Loss
- High Reliability
- High Power
- Bidirectional

Product Description

The NS Ultra-Fast Series (NF) fiber optical switch is based on a patented electro-optical configuration, featuring low optical loss and wide temperature operation with built-in dual crystal compensation, and polarization insensitive.

The NS fiber optical switch meets the most demanding switching requirements of continuous operations over 25 years and non-mechanical ultra-high reliability (passed Telcordia and space qualifications). The NF Series switch comes with electronic driver having a 5V TTL control signal SMA input and a standard 110-220 VAC power input cable.

Specifications

NanoSpeed P Series Switches		Min	Typical	Max	Unit
Insertion Loss [1]	1900-2200nm		0.8	1.8	dB
	1260~1650nm		0.6	1.0	
	960~1100nm		0.8	1.3	
	780-960nm		1.2	1.5	
	520 - 680nm		1.5	2.3	
Cross Talk [2]	Single Stage	15	20	30	dB
	Dual Stage	30	35	45	
PDL (SMF Switch only)			0.15	0.3	dB
PMD (SMF Switch only)			0.1	0.3	ps
ER (PMF Switch only)		18	25		dB
IL Temperature Dependency			0.25	0.5	dB
Return Loss		45	50		dB
Optical Rise Time [3]		5	8	10	ns
Optical Fall Time [3]		5	8	10	ns
Minimum Pulse Width			90		ns
Repetition Rate[5]		DC		2	MHz
Optic power Handling [4]	Normal power version		300		mW
	High power version			5	W
Operating Temperature	Standard	-5		75	°C
	Special version	-30		85	
Storage Temperature		-40		100	°C

[1] Measured without connectors.
[2] Cross talk is measured at 20kHz, and may be degraded at the higher repeat rate.
[3] It is defined as the rising or fall time between 10% and 90% of optical intensities for the single stage approach. It may be degraded in dual-stage approach.
[4] Defined at 1310nm/1550nm. For the shorter wavelength, the handling power may be reduced, please contact us for more information.
[5] The driver is optimized in a certain frequency ranges to reach the specified cross-talk and the raising/falling time at repeat rate >500kHz. The specs excludes a few resonant frequency points.

Applications

- Laser System
- Quantum System
- Instruments

Revised on 04/03/22

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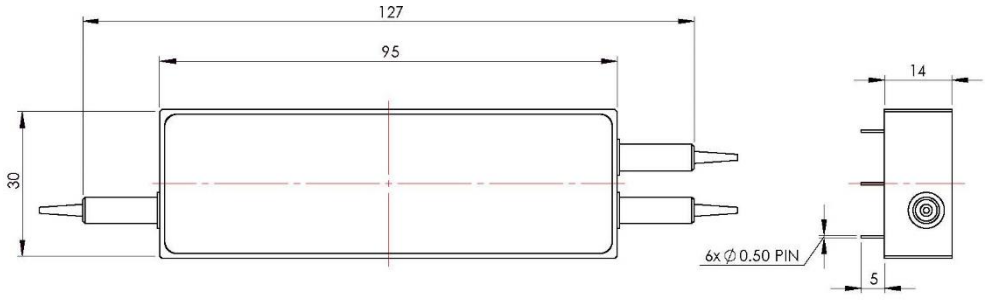
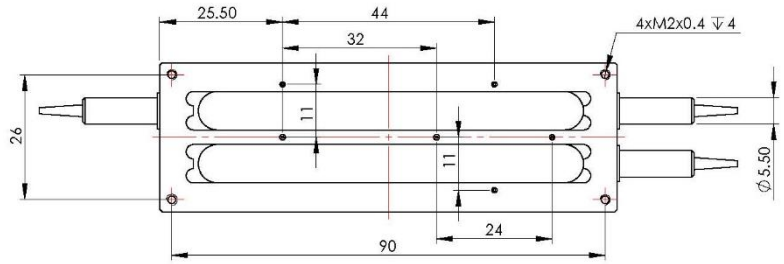
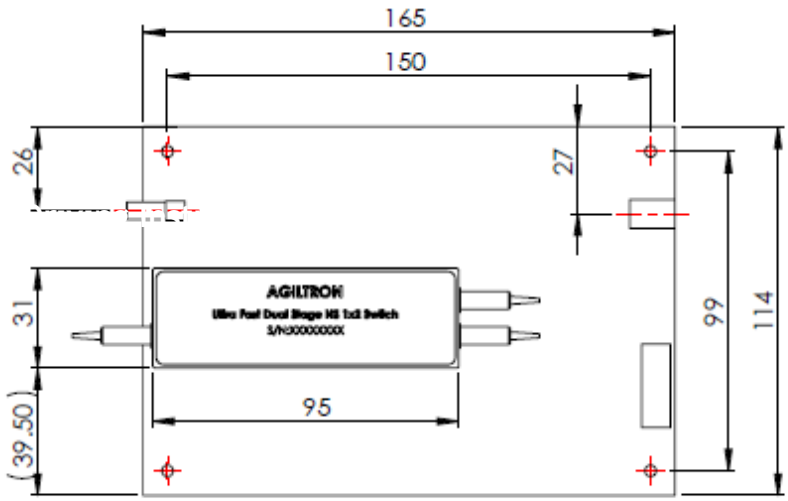
www.agiltron.com

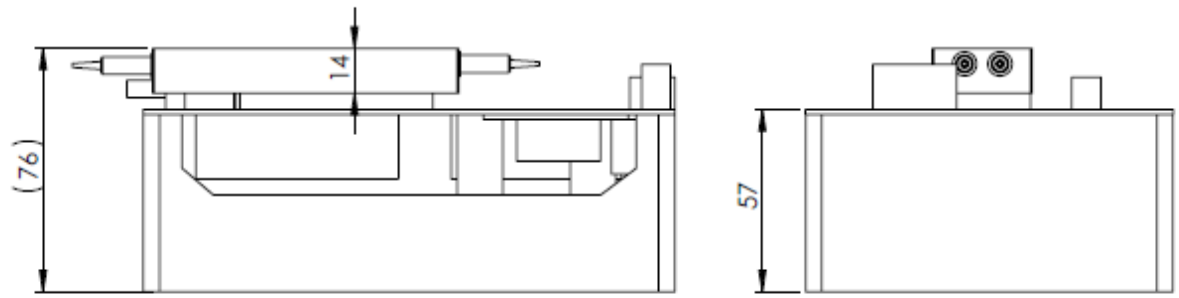
Mechanical Dimensions (mm)





Back





*The device in the picture may be different from your order

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

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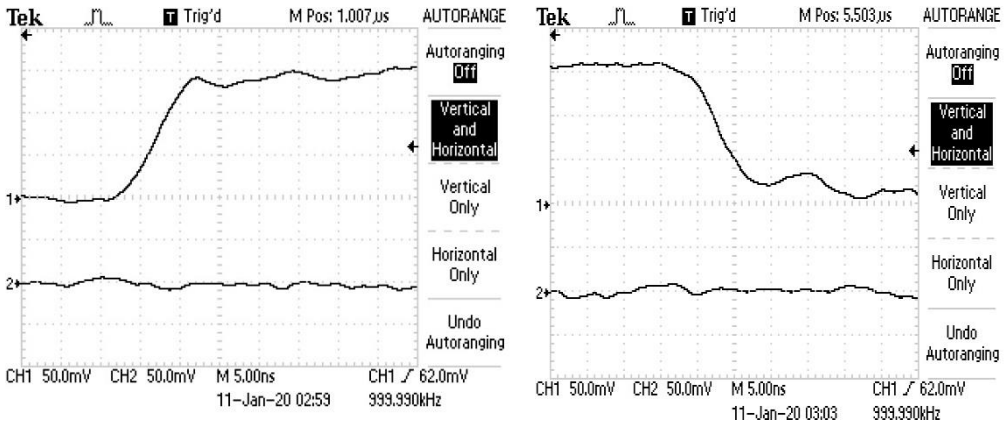
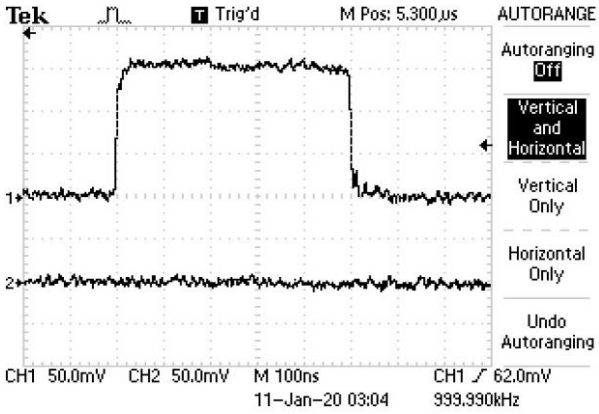
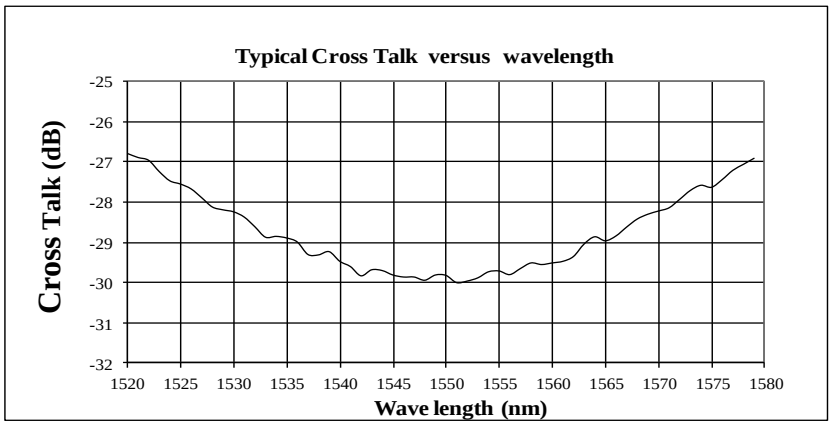
Typical Rise and Fall Optical Switching Profile (5ns)



Typical Optical Switching Repetition Profile (1MHz)



Typical Wavelength Dependence Profile



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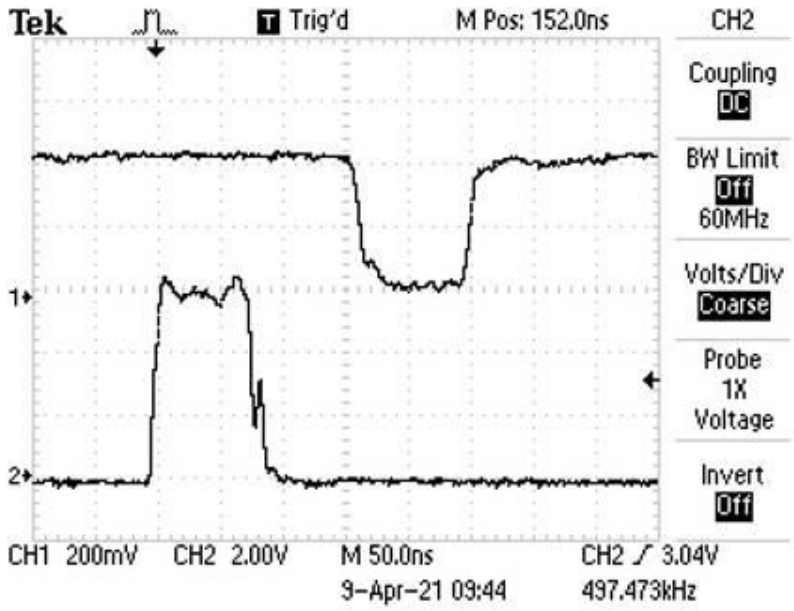
Electrical Driving Specification

Control Signal Input: 0-5V through SMA connector
Power Supply: 12V DC (provided)
Power Consumption in driver: <10W

Typical Narrow Pulse Generation (90ns at 500kHz)



Ordering Information

NF ☐☐ -	☐☐	☐	☐	☐	☐	☐	☐	☐
	Type	Wavelength [1]	Grade	Repetition Rate	Fiber Type		Fiber Length	Connector [4]
NFSW = Normal power version NFHW = High power version	1x1=11 1x2=12 2x2=22	1060nm=1 2000nm=2 1310nm=3 1480nm=4 1550nm=5 1625nm=6 780nm=7 850nm=8 650nm=E 550nm=F Special=0	Single stage =1 Dual stage =2[2]	100kHz = 2 1MHz = 6 2MHz =7 3MHz = 8[3]	SMF-28=1 HI1060=2 HI780=3 PM1550/250=5 PM850=8 PM980=9 Special=0	Bare fiber=1 900um tube=3 Special=0	0.25m=1 0.5m=2 1.0 m=3 Special=0	None=1 FC/PC=2 FC/APC= 3 ST/PC=6 LC/PC=7 LC/APC=8 Special=0

[1] Red Color marked is special order. For operating wavelength beyond stated range, special order can be made with specific coatings. Short Wavelength Bands have lower optical power handling. They use special crystals.
[2] Dual-stage isn't available for 2x2 configuration
[3] Under development. Please call for the availability.
[4] High power connector for NFHW should be ordered separately.

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