

NanoSpeed™ Variable Fiber Optical Attenuator (SMF, PMF, High Power)

(Protected by U.S. patent 7,403,677B1 and pending patents)

Product Description

The NS Series Variable Fiber Optical Attenuator (VOA) provides electrical control of optical power. This is achieved using a patent pending non-mechanical configuration and activated via a voltage electrical control signal. The solid-state optical crystal design eliminates mechanical movement and organic materials. The NS Series Variable Optical Attenuators are designed to meet the most demanding operation requirements of ultra-high reliability and fast response time with minimal mechanical footprint. Agiltron also offers customized electronic designs to meet special control requirements and applications. The switch is bidirectional.

The NS Series VOA is available in either normally-transparent or normally-opaque configurations.

The NS Series VOA is controlled by 5V TTL signals with a specially designed electronic driver having performance optimized for various repetition rate.

Performance Specifications

NanoSpeed Series VOA		Min	Typical	Max	Unit
Central wavelength ^[1]		780		1650	nm
Insertion Loss ^[2]	1260-1650nm		0.6	1.0	dB
	960-1100nm		0.8	1.3	
	780-960nm (Normal power VOA only)		1.0	1.5	
Attenuation Range ^[3]		20	28	36	dB
PDL (SMF VOA only)			0.1	0.3	dB
PMD (SMF VOA only)			0.1	0.3	ps
ER (PMF VOA only)		18	25		dB
Resolution			Continuous		dB
Return Loss		45	50	60	dB
Fiber Type			SMF-28, Panda PM, or equivalent		
Driver Repeat Rate	5kHz driver	DC	5		kHz
	20kHz driver	DC	20		
	100kHz driver	DC	100		
Modulation rate ^[4]		0.1		5	MHz
Optic power Handling ^[5]	Normal power VOA		300		mW
	High power VOA			5	W
Operating Temperature		-5		70	°C
Storage Temperature		-40		85	°C

[1] Operation bandwidth is +/- 25nm approximately at 1550nm.

[2] Measured without connectors. For other wavelength, please contact us.

[3] Full attenuation is measured at 5kHz, which may be degraded at the high repeat rate.

[4] Special circuit for narrow frequency range, maximum modulation depth is 5-10%.

[5] Defined at 1310nm/1550nm. For the shorter wavelength, the handling power may be reduced, please contact us for more information.

Features

- Solid-State
- High speed
- Ultra-high reliability
- Low insertion loss
- Compact

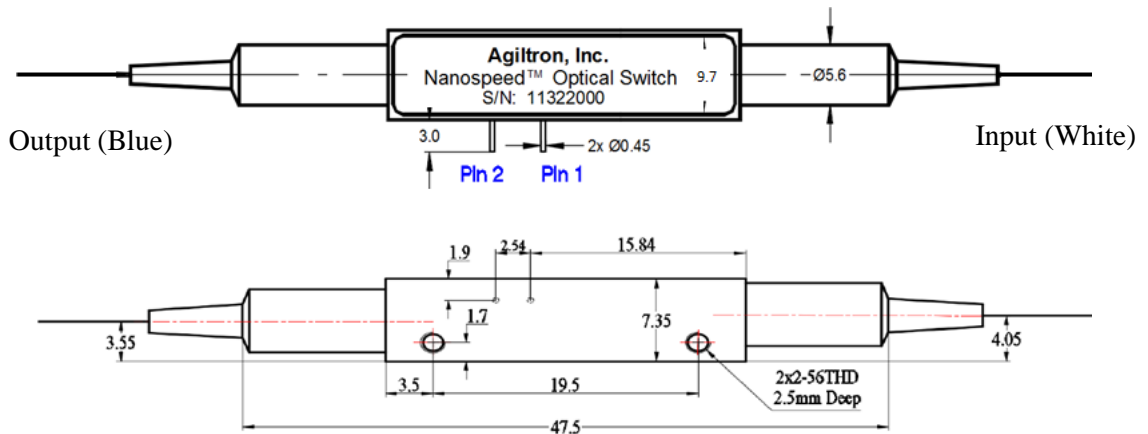
Applications

- Optical blocking
- Configurable operation
- Instrumentation

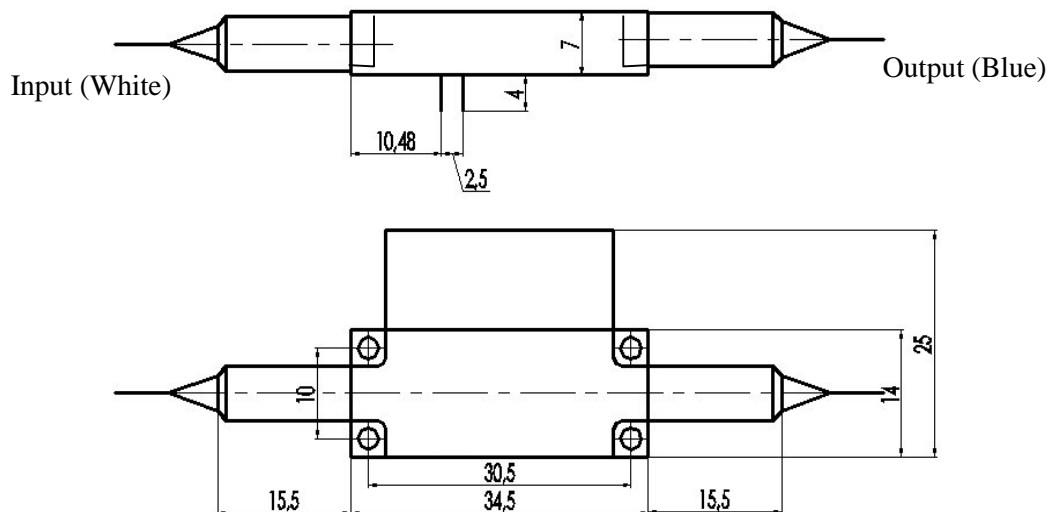


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Mechanical Dimensions (mm)



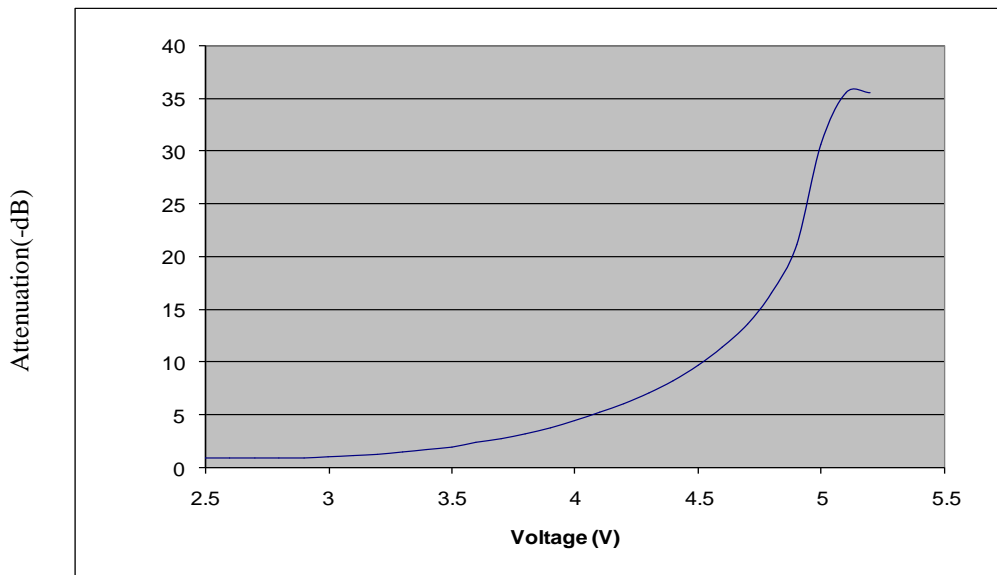
Normal Power VOA



High Power VOA

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Typical Attenuation versus Voltage



* Measured with Agiltron’s NVDR driver

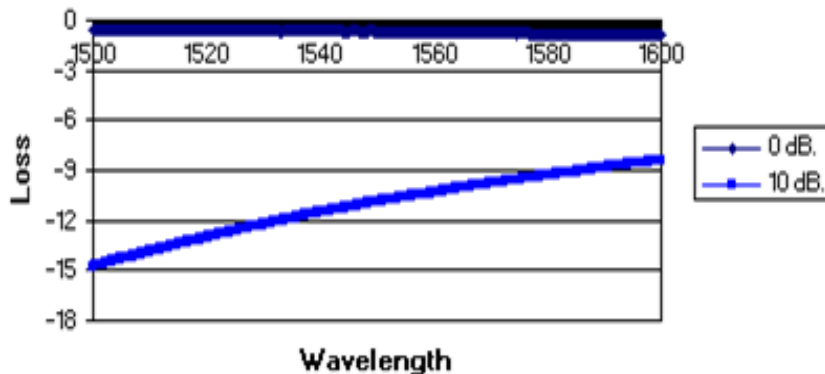
Driving Board Selection

Maximum Repetition Rate	Part Number (P/N)
5kHz	NVDR-111221112
20kHz	NVDR-113235112
100kHz	NVDR-112221112

* Note: For customers that prefer to design their own driving circuit, they are responsible for the optical performance. For more technical information, please contact us.

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Typical WDL @10dB attenuation



Ordering Information

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	Type	Wavelength ^[1]	Configuration	Fiber Type		Fiber Length	Connector ^[2]
NVOA = Normal power VOA NHOA = High power VOA		1060nm=1 L Band=2 1310nm=3 1410nm=4 1550nm=5 780nm=7 850nm=8 Special=0	Transparent & single stage =11 Opaque & single stage = 21 Special = 00	SMF-28=1 H11060=2 H1780=3 PM 1550/400=4 PM 1550/250=5 PM980=9 PM850=8 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/PC=7 Duplex LC=8 LC/APC=9 Special=0

[1]. High power VOA isn't available for the wavelength shorter than 960nm

[2]. There isn't any connector in the high power VOA normally. Please contact us for high power connectors.