

Broadband NanoSpeed™ Variable Optical Attenuator

(Bidirectional)

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

Product Description

The broad waveband NS Variable Fiber Optical Attenuator (NVOA) 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 NVOAs are designed to meet the most demanding operation requirements of ultra-high reliability and fast response time with minimal mechanical footprint. The switch is bidirectional and broadband. This NVOA can be used as the intensity modulator as well.

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

The NS Series VOA is controlled by 0~5V voltage with a specially designed electronic driver having performance optimized for various repetition rate.

Performance Specifications

Broadband NVOA	Min	Typical	Max	Unit
Wavelength	1260		1625	nm
Insertion Loss ^[1]		0.7	1.0	dB
Polarization Dependent Loss		0.1	0.35	dB
Return Loss	45	50		dB
Attenuation Range	20			dB
Response Time (Rise, Fall)			300	ns
Repetition Rate ^[2]	DC	5	100	kHz
Modulation Rate ^[3]	0.1		5	MHz
Resolution		Continuously		dB
Operating Optical Power	Normal		0.5	W
	High power		5	
Operating Temperature		-5 ~ 70		°C
Storage Temperature		-40 ~ 85		°C
Package Dimension		56 X8.2X5.95		mm

[1] Excluding connectors.

[2] 5kHz and 100kHz repeat rates are realized in the different drivers.

[3] Special circuit for narrow frequency range, maximum modulation depth is 5~10%

Features

- Solid state
- High Reliability
- High Speed
- Broadband
- Bidirectional
- Low Insertion Loss
- Compact

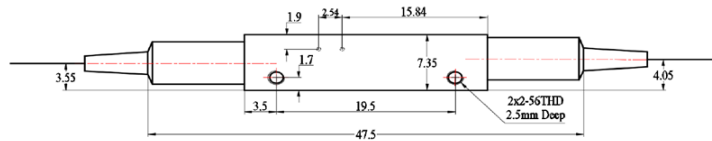
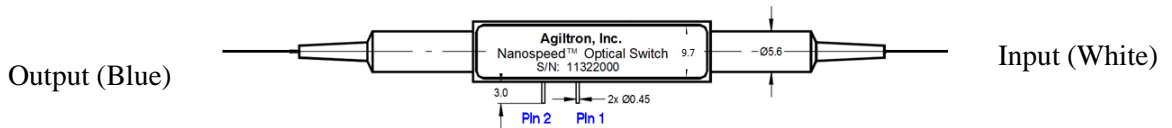
Applications

- Power Control
- Power Regulation
- Power Balance
- Instrumentation

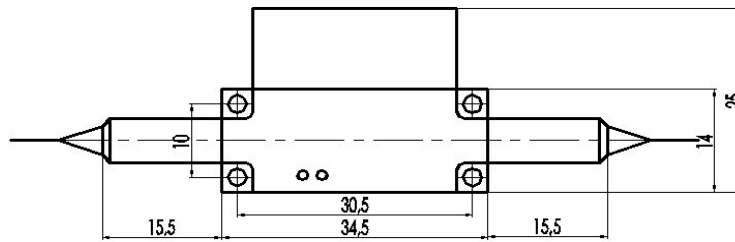
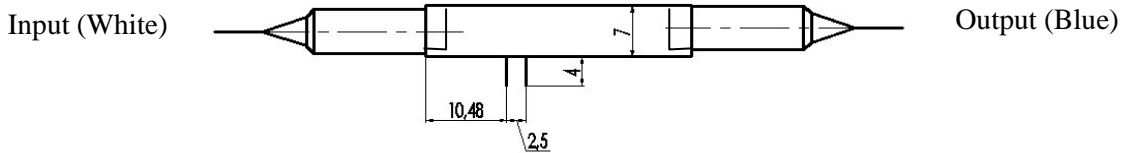


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Mechanical Dimensions (mm)

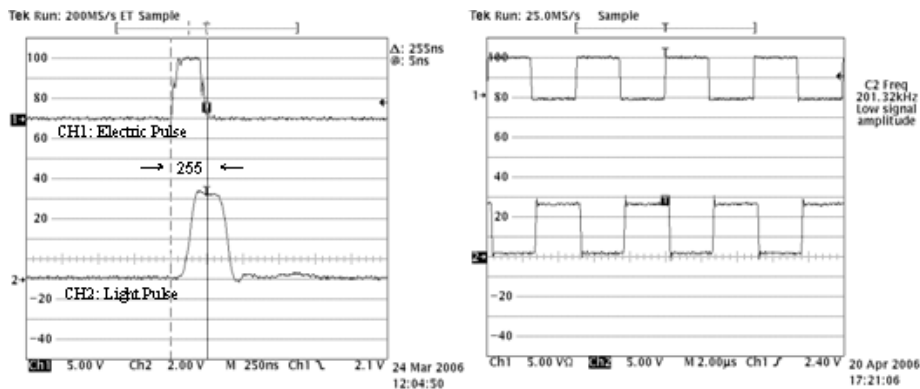


Normal Power VOA



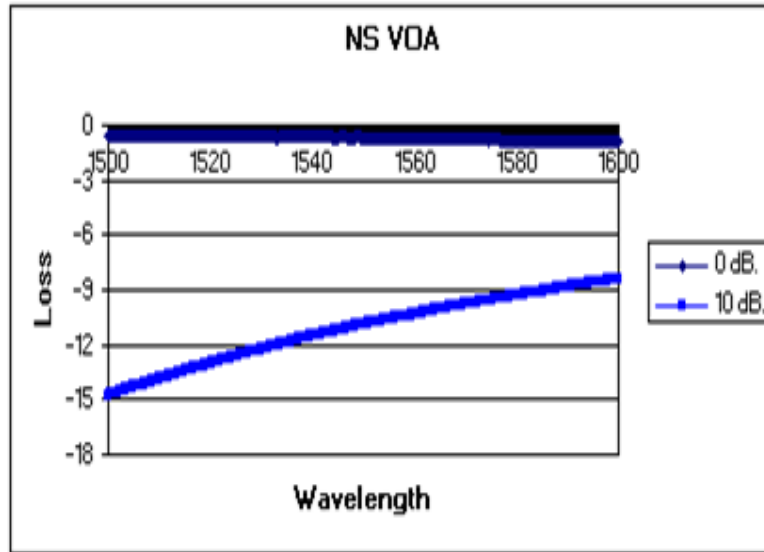
High Power VOA

Speed and Repetition Measurement

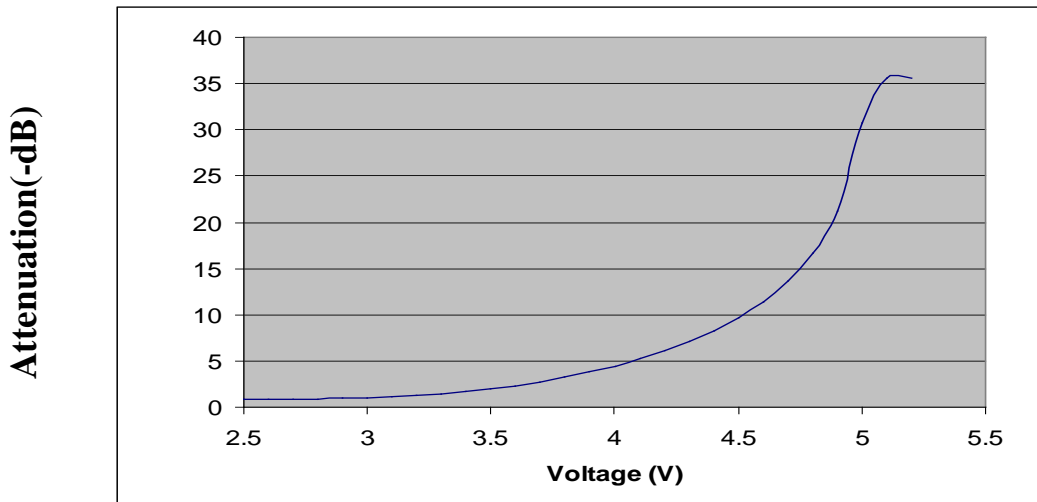


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Specify wavelength dependent loss @10dB attenuation



Typical curve of Attenuation versus Voltage



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Driving Board Selection

Maximum Repetition Rate	Part Number (P/N)
5kHz	NVDR-1P1210121
100kHz	NVDR-1P2210121

* 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.

Ordering Information

NVOA-	4 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Type	Wavelength	State	Optical power	Fiber Type		Fiber Length	Connector
	Regular slope=2	1260-1620nm=1 Special=0	Transparent = 1 Opaque = 2	500mW=8 2W CW=2 5W CW=5	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 Special = 0

