



Features

- Solid-State
- High Speed
- Up to 48 Channels
- Low Loss
- Compact

Applications

- Optical blocking
- Configurable operation
- Instrumentation



Legal notices: All product information is believed to be accurate and is subject to change without notice. Information contained herein shall legally bind Agiltron only if it is specifically incorporated into the terms and conditions of a sales agreement. Some specific combinations of options may not be available. The user assumes all risks and liability whatsoever in connection with the use of a product or its application.

Rev 06/11/26

The High Speed Variable Fiber Optical Attenuator Array (NSAA) features fast response, ultracompact size, and low driving voltage. It controls laser power with channel number up to 48 in an integrated package. This is achieved using a special waveguide configuration. The response is about 100 to 300ns. Agiltron offers electronic driver with convenient 0-5V control input.

Specifications

Parameter	Min	Typical	Max	Unit
Central wavelength	960		1650	nm
Wavelength Bandwidth		40		nm
Insertion Loss ^[1]	1260~1650nm	1.2	1.8	dB
	960~1100nm	1.5	2.3	
Attenuation Range	20	25	35	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
Response Time (Rise, Fall)	100		300	ns
Repeat Rate	DC		5	kHz
Control Voltage	0		5	V
Control Current (Each Channel)	0		35	mA
Optic power Handling ^[2]		30	150	mW
Operating Temperature ^[3]	-5		45	°C
Storage Temperature	-40		85	°C

Notes:

[1]. Measured without connectors. Connector add 0.3dB each

[2]. Defined at 1310nm/1550nm. For the shorter wavelength, the handling power is reduced.

[3]. The VOA can be operated in a wider temperature range from as -10 to 70°C, but some performances such as the maximum attenuation will be degraded.

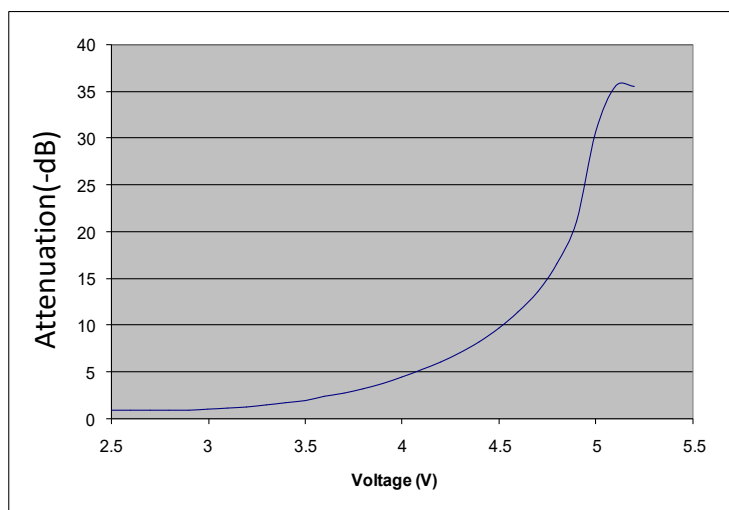
Warning: The device mounted on the PCB is an OEM module designed for system integration only, not for general uses. Do not touch the PCB by hand. The electrical static can kill the chips even without a power plug-in, and unpleasant electrical shock may also be felt. For laboratory use, please buy a protected Turnkey system.

DATASHEET

Mechanical Dimensions (mm)

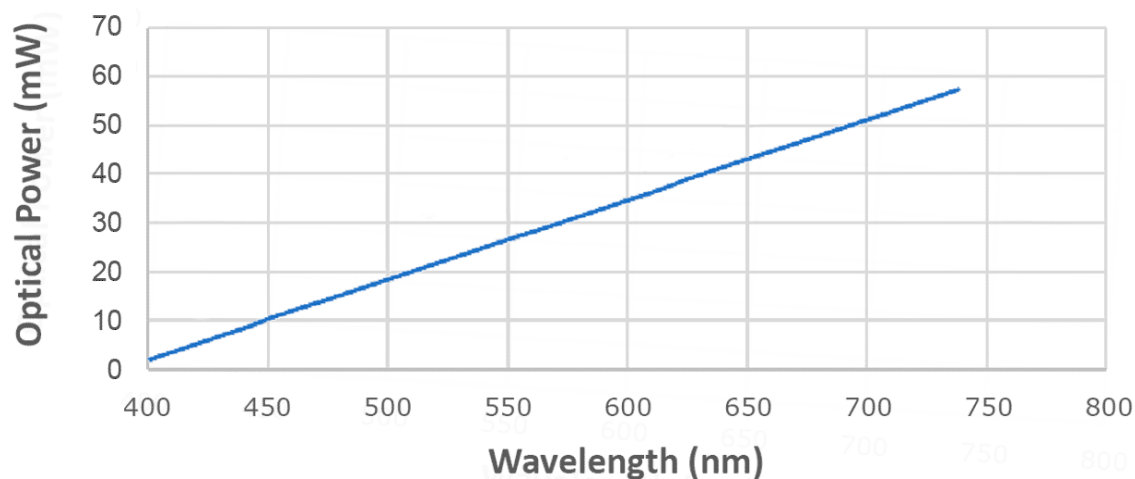
*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Typical Attenuation versus Voltage



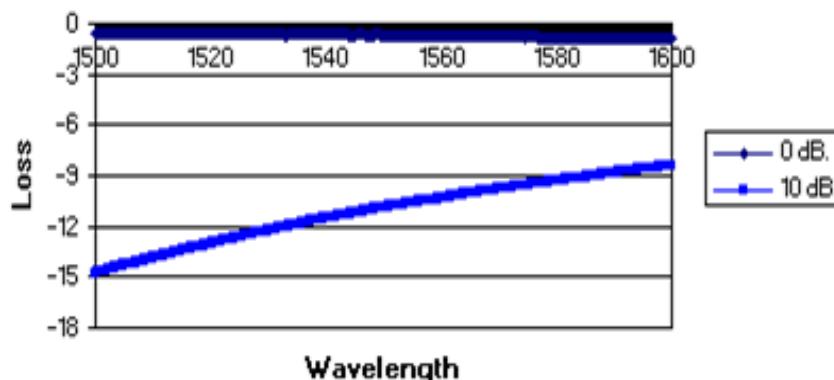
DATASHEET

Optical Power Handling vs Wavelength for Standard SM Fibers



DATASHEET

Typical WDL @10dB attenuation



Ordering Information (Part Number)

Prefix	Channel	Wavelength	Configuration	Driver	Fiber Type	Fiber Cover	Fiber Length	Connector ^{[1][2]}
NSAA-	6 = 06 8 = 08 12 = 12 16 = 16 20 = 20 48 = 48	1550nm = 5 1060nm = 6 1310nm = 3 Special = 0	Standard = 1 Special = 0	No = 1 Yes = 2 Special = 0	SMF-28 = 1 HI1060 = 2 PM1550 = B Special = 0	Bare fiber = 1 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 LC/PC = 7 LC/APC = 9 LC/UPC = U Special = 0

Note:

[1]. Regular fiber connector has PER ~22dB. Connector with PER >27 dB is available using special process

[2]. The default connector configuration uses fiber with 0.9 mm buffer protection. The connector cannot be installed directly onto bare fiber because the bare fiber is prone to damage during shipping. However, the connector can be assembled on bare fiber if a 3 cm protective loose tube is added for reinforcement. The customer may remove this protective tube after testing. The optical power handling of a standard connector is less than 0.5 W for SMF-28 fiber and decreases further for smaller-core fibers.

Red is available as a special order.

Operation Manual

1. Connect a control signal to the SMA connector on the PCB.
2. Attach the accompanied power supply (typically a wall-pluggable unit).
3. The device should then function properly.

Note: Do not alter device factory settings.

Application Notes

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 ($<5\text{ }\mu\text{m}$) 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.