

High Precision MEMS Fiber VOA (thermal)

(build-in position sensor, high setting precision, little drift)

(US patent 8,666,218 and other patents pending)

Product Description

The High Precision Series VOA is based on a micro-electro-mechanical system (MEMS) device platform driven by a thermally activated MEMS blocker having a built-in high precision optical position sensor. It uniquely offers advantageous performances, including low insertion loss, ultra-high setting/repeating precision of 0.1dB, and linear response to input control voltage. Once, the VOA attenuation value is set, it will remain at the value regardless of the environment variations. It is available with SM, MM, and PM fiber.

The VOA is integrated with a PCB having USB with GUI software and four sub-mount pins: two for 0-5V DC power input and two for 0-5V control input.



Performance Specifications

<i>Precision MEMS Series VOA</i>	Min	Typical	Max	Unit
Operation Wavelength	1230	2500		nm
Insertion Loss ^[1]	0.4	0.6	0.8	dB
Polarization Dependent Loss ^[2]		0.15	0.5	dB
Wavelength Dependence Loss ^[2]		0.1	0.2	dB
Attenuation Range		60	80	dB
Accuracy/Repeatability	0.6-30dB	0.1	0.2	dB
	30-60dB	0.8	1	dB
	60-80dB	2	3	dB
Linearity			0.3	dB
Extinction Ratio (PM version only)	18	23	25	dB
Polarization Mode Dispersion (SM version only)		0.01	0.05	ps
Return Loss	55			dB
Response Time		5	15	ms
Optical Power handling		300	500	mW
Operating Temperature	-10		75	°C
Storage Temperature	-40		85	°C
Package		40x25x10		mm

Notes:
 [1]. Without connector and at room temperature
 [2]. At attenuation less than 20 dB

Features

- Low Loss
- 0.1dB Repeatable
- Broadband
- 70dB Attenuation
- SM,PM,MM
- USB
- Linear Response

Applications

- Power Control
- Power Regulation
- Channel Balance
- Instrumentation



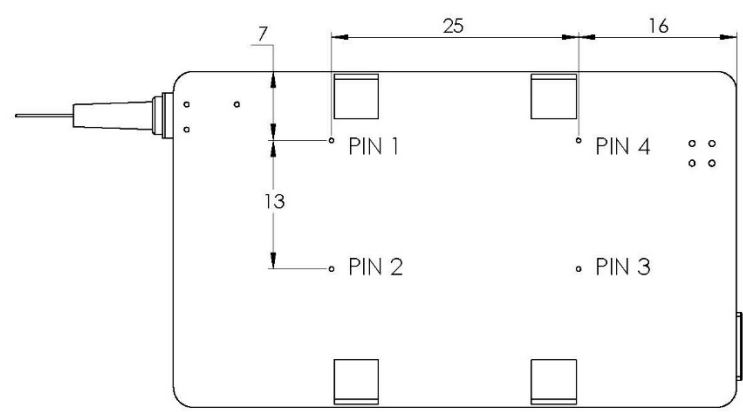
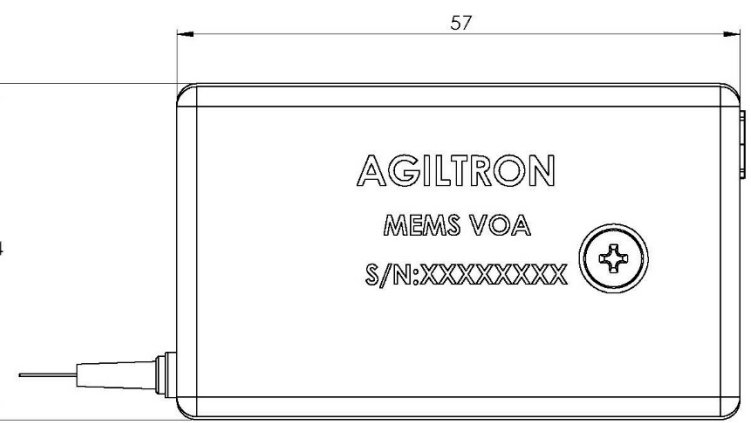
Revised on 9/14/21

Electrical Control Interface

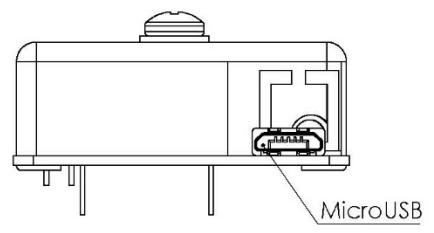
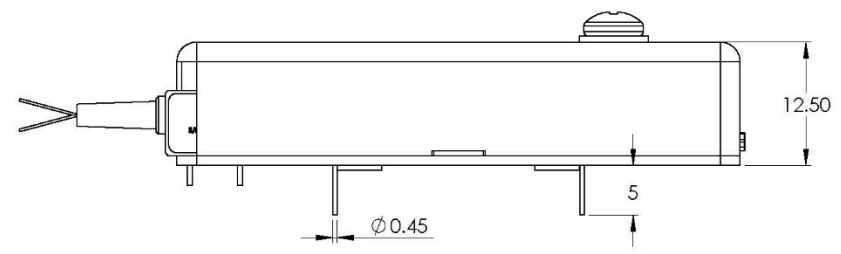
The VOA can be controlled by a computer via a USB interface. It uses a Micro USB type B connector that also provide power to the VOA at the same time. The device accept UART command and recognized as a serial device by the PC.

- Pin 1 – 0V
- Pin 2 – 5V DC Power
- Pin 4 - 0V
- Pin 5 - 0-5 V Control

Mechanical Footprint Dimensions (Unit:mm)

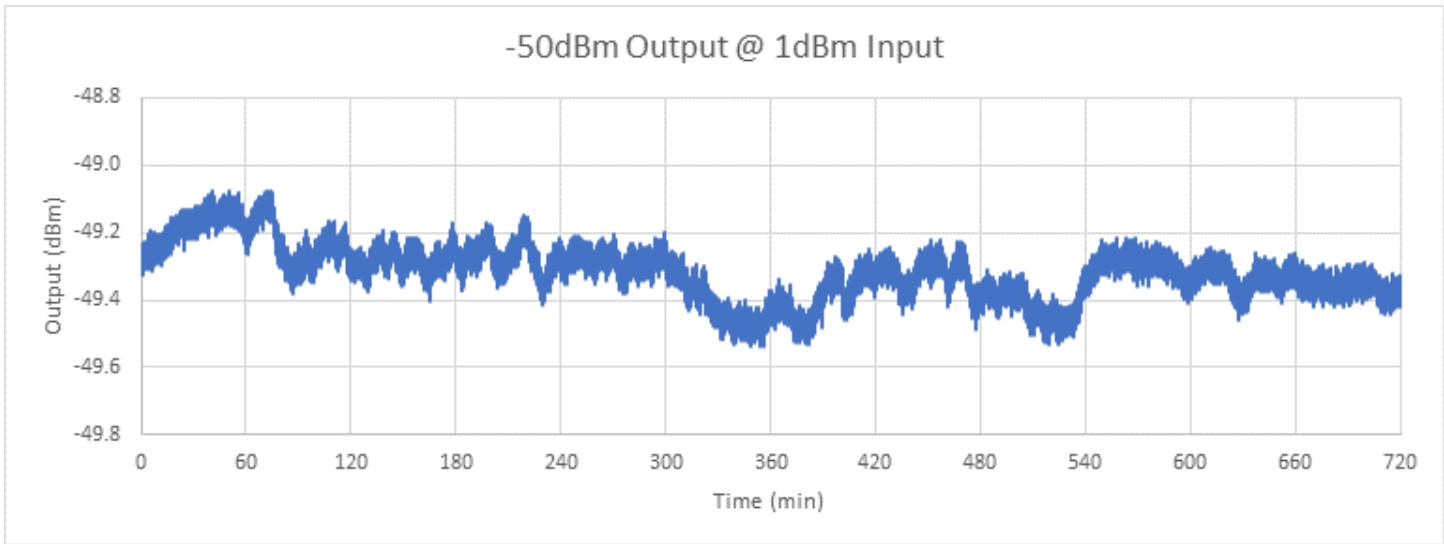
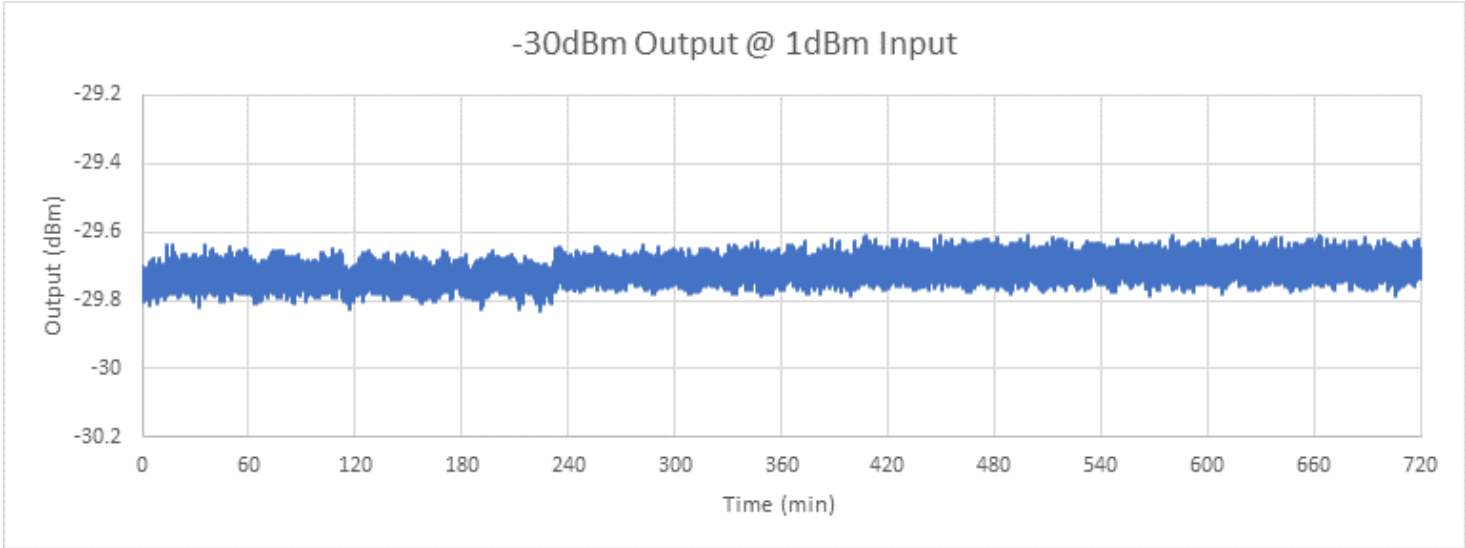


Back View



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

Typical Stability



Ordering Information

PVOA-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Type	Controller	Off State	Wavelength	Attenuation Range	Fiber type	Fiber Length	Connector		
MEMS=1 Special=0	No =0 USB =1 RS232=2	Transparent =1 Opaque = 2 Special =0	1240-1620=1 1060 = 6 2000 = 2 Special = 0	60dB=1 70dB=2 80dB=3 Special=0	SM 28 =1 PM 1550=2 PM 1310=3 50/125=5 60/125=6 Hi 1060=7 Special =0	Bare fiber=1 900um tube=3 Special=0	0.25m=1 0.5m=2 1.0m=3 Special=0	None=1 FC/PC=2 FC/APC=3 SC/PC=4 SC/APC=5 ST/PC=6 LC=7 Special=0	