Brand new

Multi&single Mode Optical Attenuator

The new generation of multi-mode programmable optical attenuator integrates years of technological iterations and innovations, and comprehensively upgrades the product. Attenuation accuracy, speed, range and other indicators have been comprehensively upgraded.The new attenuator has a built-in power meter for closed-loop monitoring of output power and supports multiple operating modes, perfectly adapting to the application scenario of testing the sensitivity of 800G/1.6T optical modules.

Main advantages

- Multi-mode ring flux control, calibration with multiple light sources
- Large attenuation range (MM>55dB, SM>40dB)
- Lower insertion loss, 200% increase in attenuation rate
- Ultra-high attenuation accuracy and repeatability
- Built-in power monitoring, three control modes
- Supports custom task settings and programming

Main application

- 800G optical module testing
- Optical path loss simulation
- Optical device BER (Bit Error Rate) testing
- EDFA (Erbium-Doped Fiber Amplifier) manufacturing and inspection
- WDM (Wavelength Division Multiplexing) power balancing

Strictly control multi-mode EF (Encircled Flux), adaptable to different types of light source injection

Due to the different encircled fluxes when different multi-mode lasers transmit within the optical fiber, there will be significant errors in the calibration data of the attenuator without calculating EF. Dimension Technology's multi-mode attenuator, through the mode controller and strict encircled flux detection equipment, strictly controls the EF within the standards of IEC-61280-1-4 and TIA-455-203, ensuring good testing accuracy under the injection of different light sources.

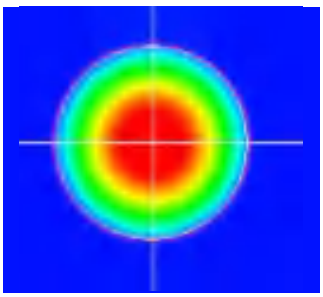


Figure 1 Overfill injection

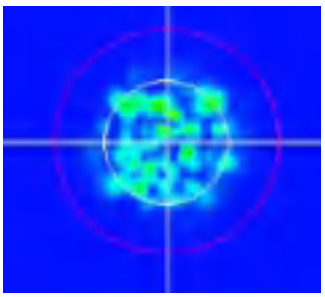


Figure 2 Under injection

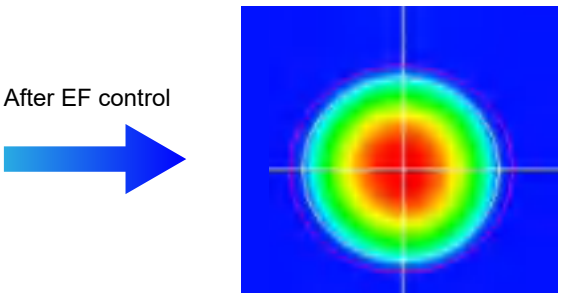
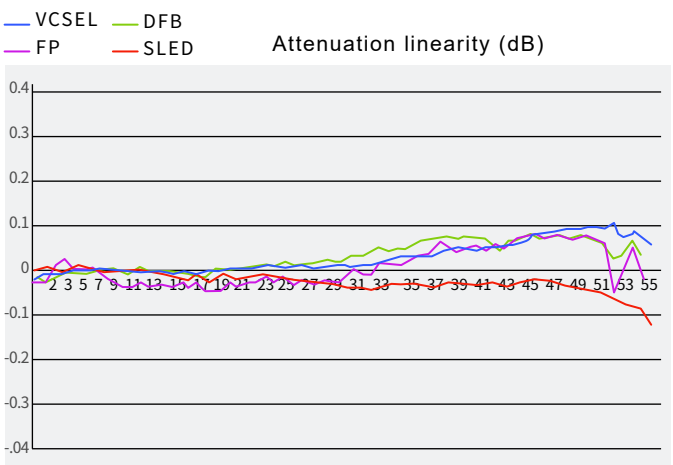
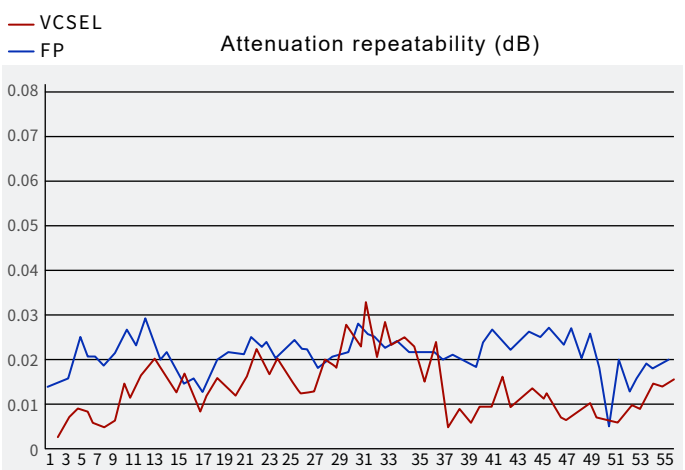


Figure 3 Complies with EF standards

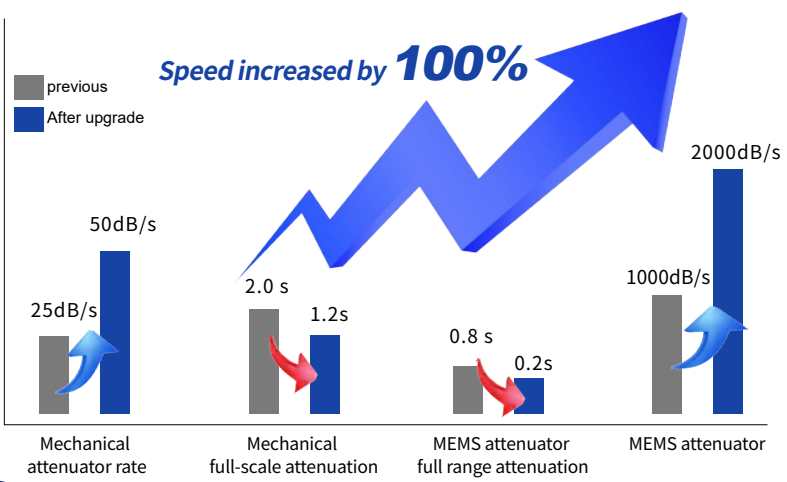
Test results after optimization: attenuation linearity **±0.10dB**





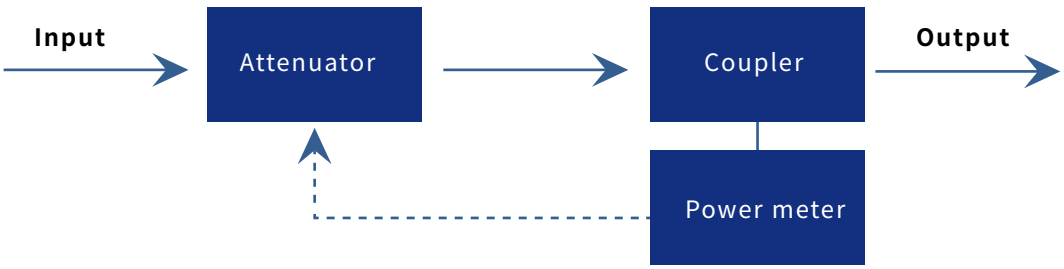
Ultra-low insertion loss and ultra-fast attenuation speed

The next-generation programmable optical attenuator, through optical path structure optimization, has achieved a further reduction in insertion loss (SM<1.0dB, MM<2.0dB). At the same time, the optimized design structure can meet higher attenuation rate requirements. The rate of mechanical attenuators has been upgraded from 25dB/s to **50dB/s**, with full-range attenuation in 1.2 seconds; MEMS attenuators have been increased from 1000dB/s to **2000dB/s.**



Built-in power monitoring with semi-open loop detection, controlling attenuation in three modes

To accurately measure the power value after attenuation, POA has added an optional optical power meter component after the attenuation optical path, monitoring the optical path attenuation in a semi-open loop. With the addition of the power meter, real-time feedback adjustment is made in power monitoring mode, achieving an attenuation accuracy of ±0.10dB.



POA power control

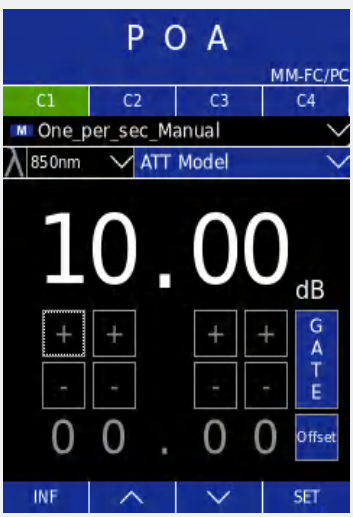
The all-new generation of attenuators has been designed with three control modes to cater to different application scenarios and meet various needs:

Power Monitor Mode

Real-time display of the current output power of the attenuator, making it convenient for users to detect the power intensity of the optical signal during instantaneous changes.

Power Feedback Mode

Set the attenuation according to the preset expected power value, and adjust it based on the feedback from the built-in power meter reading to ensure accurate output power.

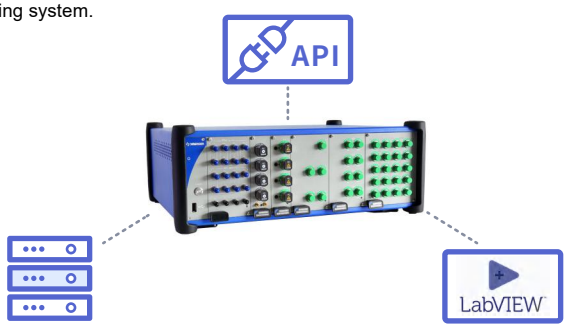


Attenuation Mode

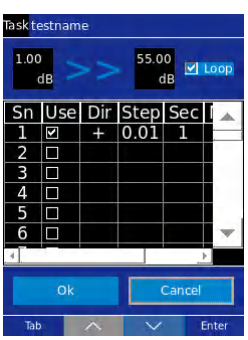
Directly adjust the attenuation value.

Programmable support for remote control and automatic testing, platform + modular design

For users with a high degree of automated integration in their testing systems, Dimension's new generation of programmable optical attenuators offers various remote control methods, including API interfaces, control commands encapsulated in LabVIEW statements, and OMEGA client software, etc., to help users quickly embed into the testing system.



For use cases in laboratories and universities, providing a setup interface on visual software makes it more convenient for users. Therefore, Dimension Technology offers a highly customizable automatic attenuation task feature, allowing for quick test task setup.



Specifications [1]

Product type	Mechanical	MEMS
Product model	POA2XXXA-FP	POA3XXXA/C-FA
Fiber Type	MM 50/125 or 62.5/125 μm	SM 9/125μm
Wavelength range	850/1300 nm	1260~1650 nm
Attenuation range	>55dB	>40dB
IL [2]	<1.5dB without power monitoring <2.0dB with power monitoring	<1.0dB-with power monitoring
RL [2]	>30dB	>50dB
Attenuation accuracy	±0.10dB	±0.25dB
Attenuation resolution	0.01dB	0.01dB
Attenuation repetition	±0.05dB	±0.15dB
Attenuation speed	50dB/S	2000 dB/s
Max. input power	+27dBm	+27dBm
Closed-loop power range (Typ.)	+20~-47dBm	+20~-47dBm
Power monitor linearity	±0.15dB	± 0.15 dB
Power setting repeatability	± 0.03 dB	± 0.03 dB
Power setting resolution	0.01 dB	0.01 dB
Warming up time	20 minutes (if the storage temperature is different from the service temperature, the preheating time is 60 minutes)	
Recommended recalibration period	2 years	
Operating temperature	10℃~40℃	
Storage temperature	-40℃~70℃	
Size	Machine：359mmX274mmX115mm；Module：285mmX133mmX71mm	

Ordering Information

POA □ □ □ □ — □ □

Model	
2	Mechanical MM
3	MEMS SM

Channel	
1	1CH
2	2CH
4	4CH
8	8CH
16	16CH

Fiber	
09	9/125μm
19	9/125μmPM
50	50/125μm
62	62.5/125μm

A/C	
A	No Power Meter
C	Built-in Power Meter

Connector	
FA	FC/APC
FP	FC/PC
SA	SC/APC
SP	SC/PC
LA	LC/APC
LP	LC/PC
X	custom

Example:

Model: POA2450A-FP four-way adjustable optical attenuator, multi-mode 50/125, no built-in Power Meter, interface type FC/PC

[1] Test wavelength:1310 nm/1550 nm for single-mode,850 nm/1300 nm for multimode.

[2] Including connectors.

[3] All the specfication are tested in 23℃±3℃.

[4] SM MEMS only supply POA3X09C.

Related Products

Stable light source

Programmable light switch

Optical power meter

Easycleaner-3

Dimension Technology Co.,Ltd
Tel：+86 755-26480850
Email：sales@dimension-tech.com
Web：www.dimension-tech.com