

## 1550nm SM Acousto-Optic Modulator 40MHz



### ● Product Description

The acousto-optic modulators from Idealphotonics, due to their high modulation extinction ratio and high power handling capabilities, are widely used in the field of fiber optic sensing. This product is specially developed to meet the application requirements of fiber optic sensing, featuring small size, low power consumption (<1W), fast rise time (12ns), good modulation pulse shape (minimal overshoot), and good pulse repetition (minimal jitter in the repetition period). Additionally, it can integrate the modulator and driver in a single package, making it convenient for system integration. It can be widely used in various fiber



optic sensing systems that require pulse modulation, such as  $\phi$ -OTDR, BOTDR, OFDR, and more.

## ● Product features

Small size 、 Low power consumption (<500mW) 、 Fast rise time (12ns) 、  
Good modulation pulse shape (small overshoot) 、 Good pulse repeatability  
(small jitter in repetition period)

## ● Part Number

MP-AOM-1550-40M-SM-FA

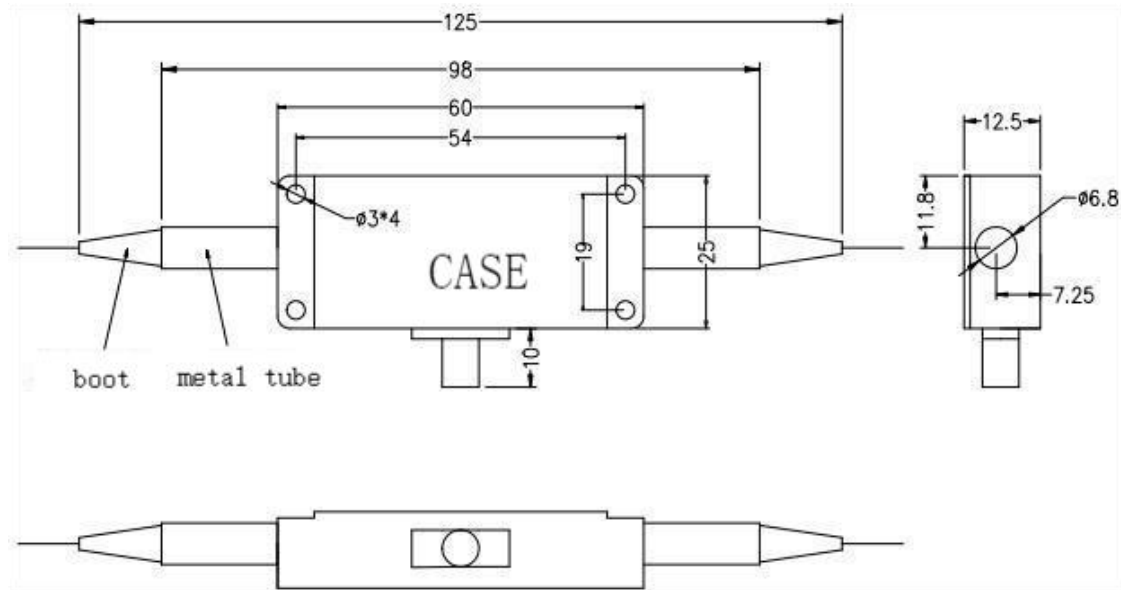
## ● Application area

Fiber optic sensing、 LiDAR、 BOTDA

## ● Core parameters

Wavelength	Operating Frequency
1550nm	40MHz

## ● Dimension Drawing

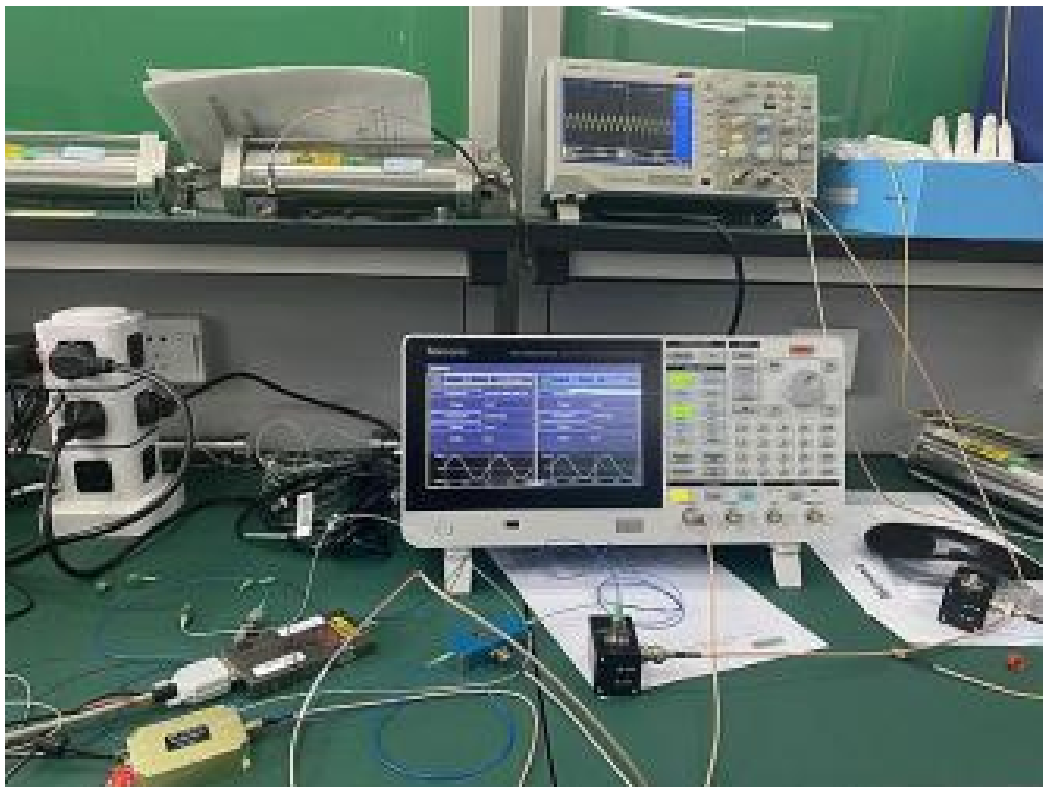


## ● General Parameters

Parameter	Unit	Min	Max	Typical	Remarks
Material				TeO <sub>2</sub>	
Wavelength	nm	1520	1580	1550	
Average Optical Power (CW)	W			0.5	
Ultrasonic Wave Speed	m/s			4200	
Insertion Loss	dB			2.5	
Polarization Extinction Ratio	dB	18	23	20	
Extinction Ratio	dB	50	55	50	
Return Loss	dB	40			
Rise Time	ns			60	
Frequency	MHz			40	
Frequency Shift	MHz			+/-40	Optional
Frequency Stability				0.1%	
RF Power	W		3	2.5	

Parameter	Unit	Min	Max	Typical	Remarks
Voltage Standing Wave Ratio				1.2:1	
Input Impedance	$\Omega$			50	
Device Connector				SMA	
Fiber Type	SMF28e				
Fiber Length	m			1.2	
Fiber Connector				FC/APC	
Operating Temperature	$^{\circ}\text{C}$			-20~60	
Storage Temperature	$^{\circ}\text{C}$			-30~70	

## Test Diagram



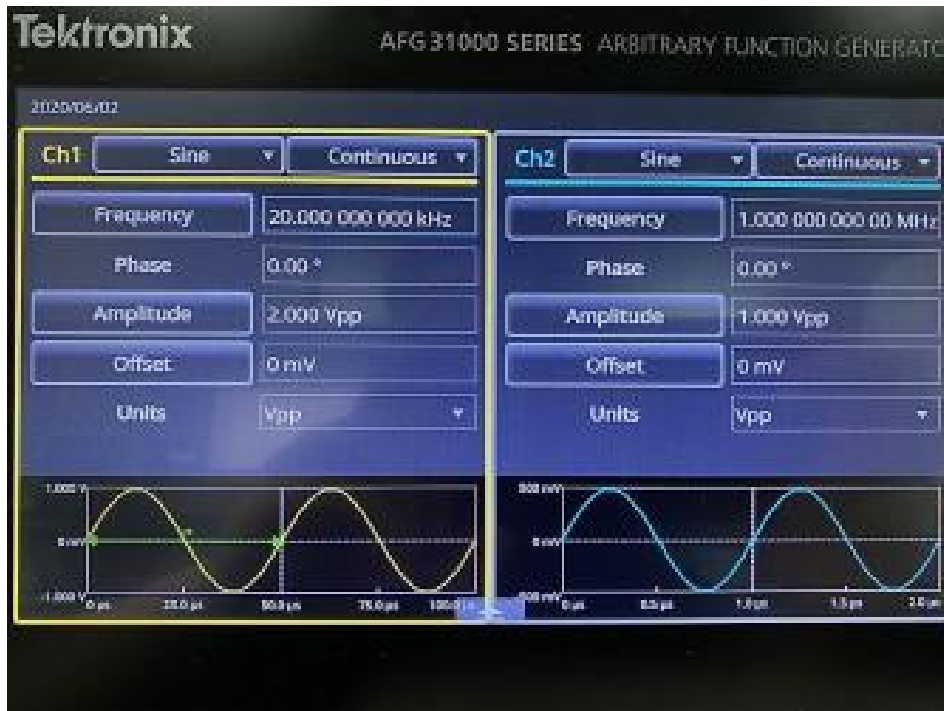
RIO's narrow linewidth lasers, 1550nm PM acousto-optic modulators, and EOT 2.5G

optoelectronic instruments

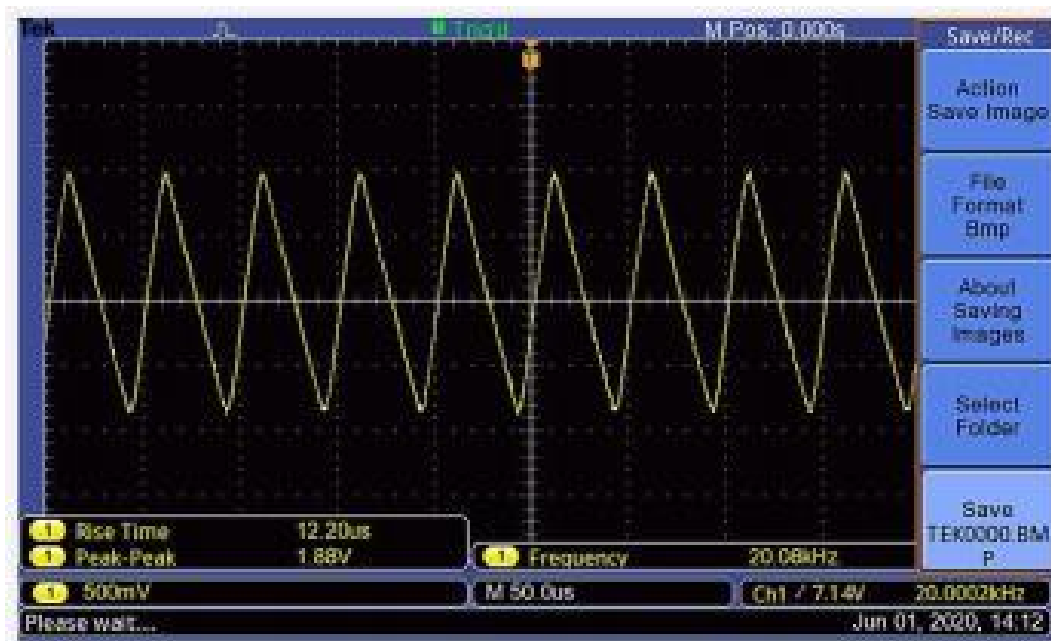


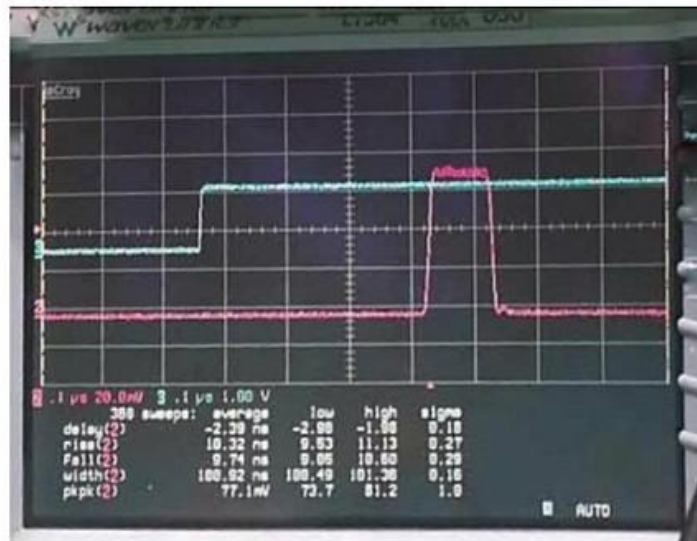
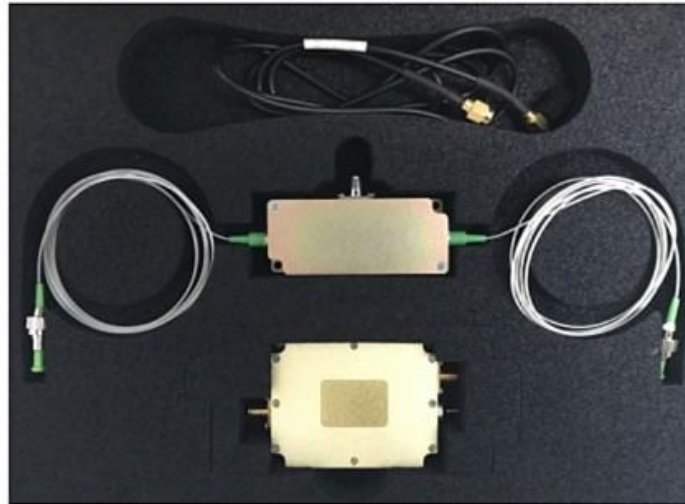
**Modulation curve**

The modulation signal applied to the AOM from the signal generator:

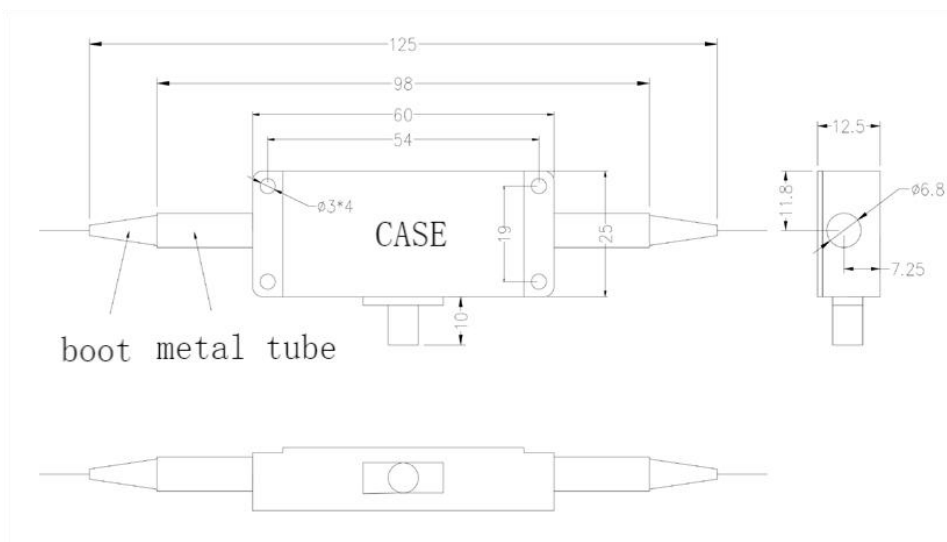


The oscilloscope displays the voltage signal output from the detector:





## A: AOM Dimensions





## B: Driver Dimensions

