

# Free-Space Electro-Optical Modulator

(2.5mm aperture, 400nm to 2000nm, DC-MHz)



DATASHEET

BUY NOW



## Features

- High Performance
- Compact Package
- Easy integration
- Customize Available
- Low cost

## Applications

- Laser Modulation
- Holography
- Metal cutting/engraving
- Microfabrication

Agiltron's Free-space Electro-optic modulator (FEOM) is an easy-to-use tool to modify the phase, polarization, or amplitude of a free-space laser covering a wide wavelength range. For general applications, the device uses a pair of compensated LiNbO<sub>3</sub> crystals. For high-power and short-wavelength applications, the device uses a special crystal pair to overcome LiNbO<sub>3</sub> instability. The device should be driven by applying  $\pm$  alternative high voltage to avoid internal charge build-up.

We provide driving electronics with modulation ranges from DC to MHz; the modulation depth is related to frequency due to limited amplification power.

Polarization cubes can be aligned and installed at both input and output ports to form an intensity modulator.

## Specifications

Parameter	Min	Typical	Max	Unit
Wavelength Range	W1	400	600	nm
	W2	600	900	
	W3	900	1250	
	W4	1250	1650	
Clear Aperture	3			mm
Halfwave Voltage, non-resonant		205V @ 633nm		
Extinction Ratio <sup>[1]</sup>	10			dB
Input impedance, resonant		50		ohms
Input capacitance, non-resonant		14		pF
Max Optical Power Density	532nm	2	10 <sup>[2]</sup>	W
	1064nm	5	20 <sup>[2]</sup>	W
Dimension		86 x 32 x 32		mm
Temperature	-20		50	°C

### Notes:

[1]: Characterized @ 633nm

[2]: High power version, please call us.

**Note:** The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link](#):

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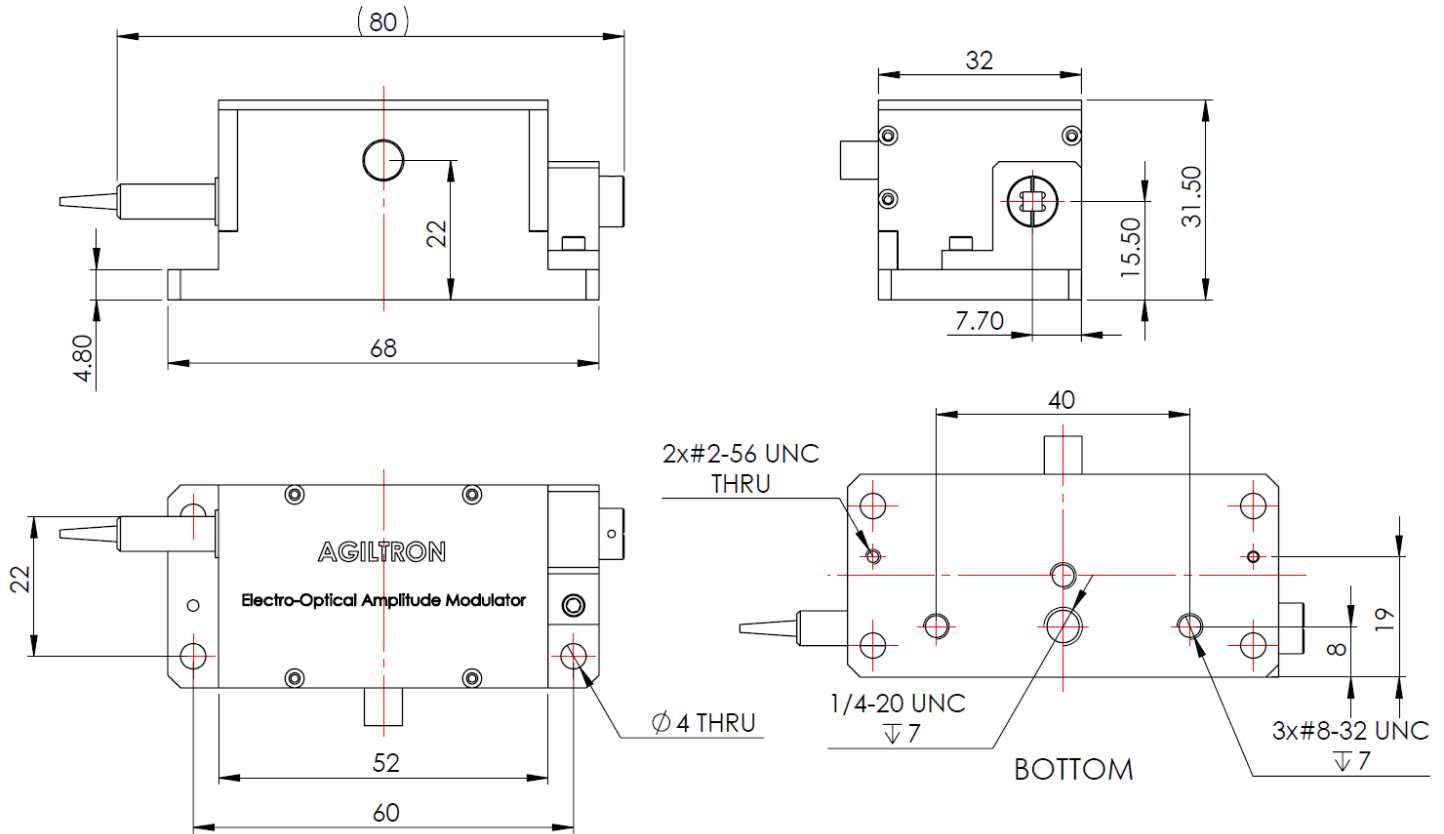
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### Mechanical Drawing (mm)



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

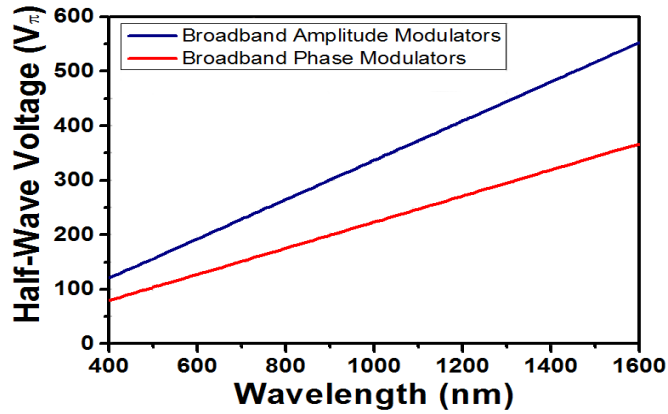
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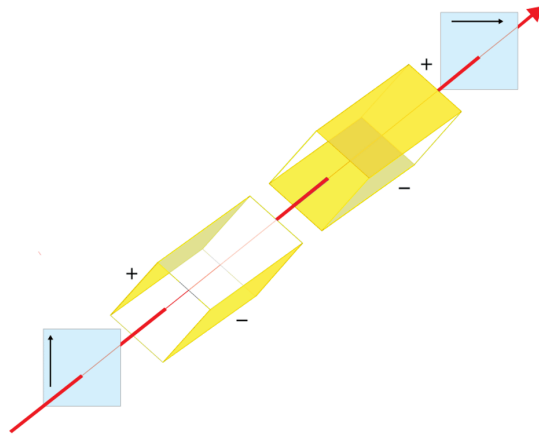


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### Modulator Half-Wave Voltage



### Amplitude Electro-Optic Crystal Configuration (yellow indicates electrode)



### Typical Resonance Response (sine wave)



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### Ordering Information

Prefix	Type	Wavelength	Optical Power	Config	Input Cube <sup>[1]</sup>	Output Cube <sup>[1]</sup>	F 0
<b>FEOM-</b>	Amplitude = 5 Phase = 6	400~600 nm = 05 600~900 nm = 07 900~1250 nm = 09 1250~1650 nm = 14	Regular = 1 High Power = 2	Standard = 1 Special = 0	No = 1 Polacore = 3 PBS = 4 Glan-Thompson = 5	No = 1 Polacore = 3 PBS = 4 Glan-Thompson = 5	Non-resonant version = F0

[1]. Polacore – CW 10W/cm<sup>2</sup>  
 PBS – CW 15W/cm<sup>2</sup>  
 Glan-Thompson – CW 2kW/cm<sup>2</sup>

#### Polarizer's prices:

Polacore	\$256
PBS	\$365
Glan Thompson	\$485

### Polarizer

