

For current pricing, please see our website.

CHAPTERS

Optical Elements

Polarization Optics

Optical Isolators

Optical Systems

Optics Kits

SECTIONS

Beam Expanders

Objective/Scan Lenses

Camera Lenses

Interferometers

Scanning Galvo Mirror System

Free-Space EO Modulators

Reference Cells

Free-Space Electro-Optic Modulators

NEW products



EO-AM-NR-C1

Features

- Compact Package: 2.60" x 1.25" x 1.25" (L x W x H)
- Broadband DC Coupled
- Broadband AR Coatings
- Ø2 mm Clear Aperture
- SMA Female Modulation Input Connector
- 8-32 Tapped Hole on Bottom
- High-Q Resonant and Custom Versions Available
- DC to 100 MHz

Thorlabs' free space electro-optic (EO) amplitude and phase lithium niobate modulators combine our experience with crystal growth and electro-optic materials. Our EO modulators use MgO-doped lithium niobate for high-power operation. The modulators have an SMA RF input, which is directly compatible with our HVA200 High Voltage Amplifier featured on page 981. A high-Q resonant model option is available that is customized for a user-specified operating frequency from 1 to 100 MHz. Please contact Technical Support for customization assistance.

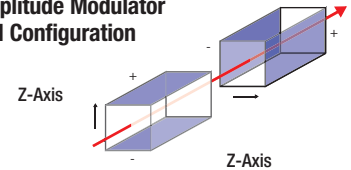
EO Amplitude Modulators

Thorlabs' electro-optic amplitude modulators consist of two matched lithium niobate crystals packaged in a compact housing with an RF input connector. Applying an electric field to the crystal induces a change in the indices of refraction, giving rise to an electric field-dependent birefringence, which leads to a change in the polarization of the optical beam. The EO crystal acts as a variable wave plate with retardance linearly dependent on the applied electric field. By placing a linear polarizer at the exit, the beam intensity through the polarizer varies sinusoidally with a linear change in applied voltage.

EO Phase Modulators

Thorlabs' electro-optic phase modulators provide a variable phase shift on the linearly polarized input beam. The input beam is initially polarized along the Z-axis of the crystal. A voltage at the RF input is applied across the Z-axis electrodes, inducing a change in the crystal's extraordinary index of refraction, thereby causing a phase shift in the optical signal. Electro-optic phase modulators include the additional benefit of sideband frequency generation via heterodyne mixing of the optical and RF inputs.

EO Amplitude Modulator Crystal Configuration



SPECIFICATION		AMPLITUDE MODULATORS	PHASE MODULATORS	RESONANT MODULATORS
Wavelength Range	C4	400 - 600 nm	400 - 600 nm	N/A
	C1	600 - 900 nm	600 - 900 nm	600 - 900 nm
	C2	900 - 1250 nm	900 - 1250 nm	sN/A
	C3	1250 - 1650 nm	1250 - 1650 nm	N/A
Max Optical Power Density		2 W/mm ² @ 532 nm 4 W/mm ² @ 1064 nm	2 W/mm ² @ 532 nm 4 W/mm ² @ 1064 nm	2 W/mm ² @ 532 nm 4 W/mm ² @ 1064 nm
Half-Wave Drive Voltage, V _π		360 V @ 1064 nm (Typical)	240 V @ 1064 nm (Typical)	15 V @ 633 nm
Capacitance (Typical)		14 pF	14 pF	-

EO Resonant Modulators

Thorlabs' Resonant EO Modulators make use of a high-Q resonant circuit. Compared to broadband EO modulators, this dramatically reduces the operating voltage required to drive the modulator for fixed-frequency applications. Amplitude and phase modulator versions operating at 20 MHz are offered with a C1 coating (600 - 900 nm). Custom AR coating options and versions with user-specified resonance frequencies from 0.1 to 100 MHz are also available. Please contact Technical Support to discuss your application needs.

EO Amplitude Modulators

ITEM #	\$	£	€	RMB	DESCRIPTION
EO-AM-NR-C4	\$ 2,346.00	£ 1,689.10	€ 2,041.00	¥ 18,697.62	Electro-Optic Amplitude Modulator, 400 - 600 nm
EO-AM-NR-C1	\$ 2,346.00	£ 1,689.10	€ 2,041.00	¥ 18,697.62	Electro-Optic Amplitude Modulator, 600 - 900 nm
EO-AM-NR-C2	\$ 2,346.00	£ 1,689.10	€ 2,041.00	¥ 18,697.62	Electro-Optic Amplitude Modulator, 900 - 1250 nm
EO-AM-NR-C3	\$ 2,346.00	£ 1,689.10	€ 2,041.00	¥ 18,697.62	Electro-Optic Amplitude Modulator, 1250 - 1650 nm

EO Phase Modulators

ITEM #	\$	£	€	RMB	DESCRIPTION
EO-PM-NR-C4	\$ 2,346.00	£ 1,689.10	€ 2,041.00	¥ 18,697.62	Electro-Optic Phase Modulator, 400 - 600 nm
EO-PM-NR-C1	\$ 2,346.00	£ 1,689.10	€ 2,041.00	¥ 18,697.62	Electro-Optic Phase Modulator, 600 - 900 nm
EO-PM-NR-C2	\$ 2,346.00	£ 1,689.10	€ 2,041.00	¥ 18,697.62	Electro-Optic Phase Modulator, 900 - 1250 nm
EO-PM-NR-C3	\$ 2,346.00	£ 1,689.10	€ 2,041.00	¥ 18,697.62	Electro-Optic Phase Modulator, 1250 - 1650 nm

EO Resonant Modulators

ITEM #	\$	£	€	RMB	DESCRIPTION
EO-AM-R-20-C1	\$ 2,900.00	£ 2,088.00	€ 2,523.00	¥ 23,113.00	Electro-Optic Resonant Amplitude Modulator, 600 - 900 nm
EO-PM-R-20-C1	\$ 2,900.00	£ 2,088.00	€ 2,523.00	¥ 23,113.00	Electro-Optic Resonant Phase Modulator, 600 - 900 nm

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