Acousto-Optic Modulator

Extracavity devices for intensity modulation of lasers

The acousto-optic modulators (AOM) are generally used to change the intensity of incident laser (amplitude modulation) outside the laser cavity. The modulation mode is determined by the type of RF driver, which can be digital (on/off) or analog (sine, square wave, linear, random, etc.). Generally, the RF driver of AOM adopts a fixed frequency. The key parameter of AOM is the rise/fall time, which defines the achievable "speed" or amplitude modulation bandwidth of modulation. The rise/fall time is proportional to the beam diameter of the modulator. Therefore, in order to achieve a fast rise time, the diameter of the incident laser beam must be controlled.

CASTECH has designed and developed a series of AOMs with a frequency range up to 300 MHz and a rise/fall time as low as 6 ns. CASTECH can optimize the design of the modulator according to customer requirements for modulation speed, wavelength, power, beam diameter, and extinction ratio, providing customers with the best modulation technology solution.

CASTECH's products are produced independently throughout the entire process and can be customized according to customer needs. Refer to the following list for standard products.
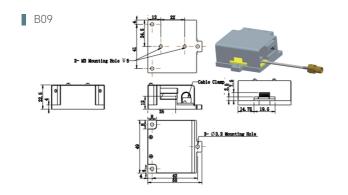
Applications

- Laser marking
- Photolithography
- Medical procedure
- Material processing

Model Number： CAOM-f-a-mt-w-c-h						
Center Frequency (f)	Aperture (a)	Material(m)	Mode(t)	Wavelength (w)	RF Connector (c)	Housing (h)
041 (40.68 MHz) …	010 (1 mm) …	CQ TE	C (Compressioa) …	266 (266 nm) …	AF (SMA-F) …	B09 …

Typical Specifications

Wavelength	Active Aperture	Operation frequency	Rise/fall time	Material
266，355 nm	3 mm	110，200MHz	113 ns/mm	CQ
400-540 nm	1-3 mm	110MHz	113 ns/mm	CQ
780-850 nm	0.5 mm	200MHz	153 ns/mm	TE
1030-1064 nm	1-5 mm	68，80MHz	113 ns/mm	CQ
1064 nm	0.5-1 mm	100，120MHz	153 ns/mm	TE
1064 nm	0.1-0.15 mm	200，250，300MHz	153 ns/mm	TE
9.4-10.6 μm	3-11.6mm	40.68 MHz	120 ns/mm	/

Housing dimensions(mm)：

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