

Acousto-optic Tunable Filters

Accurate, fast, adjustable wavelength selector

The Acousto-optic tunable filters(AOTF) are solid-state, electronically addressable, and random-access optical bandpass filters. Diffraction occurs when the acoustic beam and the light beam satisfy specific matching conditions. It can be used to quickly and dynamically select specific wavelengths from a wide spectrum.

We have designed TeO_2 -based slow shear wave AOTF products that deliver optimal performance in each wavelength range to meet most application requirements: operating wavelength of 400-1450 nm, resolution as low as 0.25 nm, and effective aperture up to 10mm. In AOTF, the incident light and diffracted light are orthogonally polarized. Under polychromatic light, two orthogonally polarized ± 1 st-order diffracted beams are generated, which users can utilize as needed or couple into optical fibers.

We offer both non-collinear and quasi-collinear AOTF configurations, both enabling rapid wavelength selection. The non-collinear AOTF features a large incident angular aperture, making it suitable for spectral imaging analysis. The quasi-collinear AOTF provide ultra-high resolution, ideal for femtosecond pulse compression systems.

For optimal performance, we recommend using our RF drivers, which support single-channel or multi-channel wavelength output functionality.

CASTECH's AOTFs are fully in-house manufactured and customizable to meet specific needs. Explore our standard product range below.



Applications

- Ultrafast laser
- Hyperspectral imaging
- Wavelength selection
- Optical communication
- Laser wavelength tuning

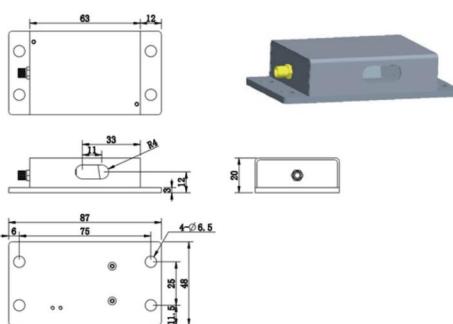
Model Number: CATF-w-a-mt-f-cn-h

Center Frequency (f)	Aperture (a)	Material (m)	Mode (t)	RF Connector (c)	Number of Connectors (n)*	Housing (h)
041 (40.68 MHz)	010 (1mm)	CQ TE	C (Compressional)	AF (SMA-F)	D(Double-Input)	A01
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Typical specifications

Wavelength	Aperture	Resolution	Diffraction efficiency	Input/output polarization
450-650 nm	2.5 nm	≤3 nm	≥85%	vertical/horizontal
400-650 nm	2.5 nm	≤5 nm	≥70%	vertical/horizontal
640-1100 nm	2 nm	≤5-10 nm	≥85%	vertical/horizontal
1000-1700 nm	2 nm	≤8 nm	≥70%	vertical/horizontal
400-900 nm	3 nm	≤5 nm	≥65%	horizontal/vertical
430-1450 nm	2.5 nm	≤15 nm	≥50%	horizontal/vertical
420-700 nm	2.5 nm	≤0.5 nm	≥75%	vertical/horizontal
700-1200 nm	2.5 nm	≤1.5 nm	≥75%	vertical/horizontal
1015-1070 nm	2.0 nm	≤0.25 nm	≥75%	vertical/horizontal

E18



C60

