AOTF3-HR AO Tunable Filter

TeO2 Modulator-Filter for 400-700 nm

• 400 to 700 nm • Lamps

This solid-state AOTF is an electronically tunable bandpass filter VISible range. It uses the acousto-optic interaction inside an anisotropic medium (TeO2-S). It allows to select and transmit a single wavelength from an incoming lamp source.

The main advantage of this technique is the total absence of any moving part which leads to a reliable, stable and fast technique for wavelength tuning. The RF frequency applied on the AOTF transducer controls the transmitted (filtered in 1st order) wavelength. A complete spectrum analysis can be done by varying the frequency corresponding to the wavelength range. The RF amplitude level applied on the transducer allows to adjust the transmitted (filtered) light intensity level. This is a unique feature that can provide the AOTF. It is fast (several µs), accurate and procures high extinction ratio.

Specifications

Number of channels	1
Material	TeO2 [S]
Acoustic velocity	Nom 650 m/s
Optical Wavelength	400 to 700 nm
AO interaction type	Birefringent
Selected order	+ 1
Input Light polarization	Linear parallel to baseplate
Output Light polarization (reference : base plate)	« +1 » order : linear vertical
Bragg (incidence) angle	Close to autocollimation (perpendicular to input face)
Drive frequency range (F)	134 – 57 MHz
Active aperture	∅ 4 mm
Light beam size	≤ 3 mm
Spectral Resolution (FWHM) (typical)	Nom 2.5 nm @ 0.45 µm 12 nm @ 0.7 µm
AO Light Frequency shift	« +1 » order : + F
Total Field of view	≤ 4 degrees
Separation "0"-"+/1" angle	≥ 3.5 degrees
Chromatic Collinearity	< 0.3 mrd (1st order for 400-700 nm)
Optical transmission	> 90 % (nom 95 %)
Temperature Stabilization	/
AO efficiency in "1" order	≥ 90% @ PRF ≤ 1 Watt (1 line)
Side lobes intensity	< 13 %
Access time / Response time	Nom 1.5 µs / 1 mm
Max accepted RF Power	2 W
Electrical impedance	50 Ohms
VSWR	≤ 2.5/1 (Full bandwidth)
Size	
Operating Temperature	10 to 40 °C

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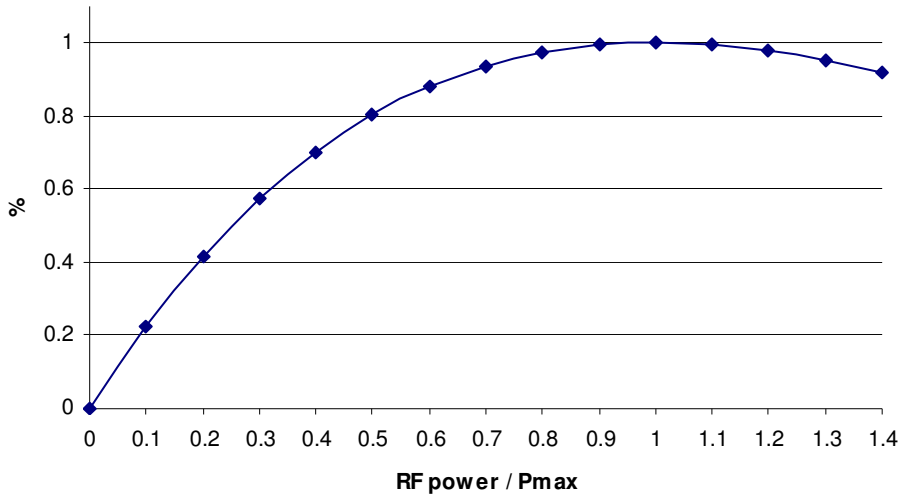
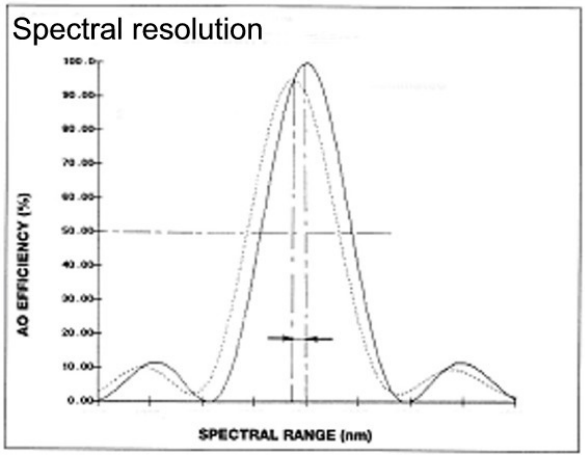
Relative Diffraction Efficiency vs RF Power





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