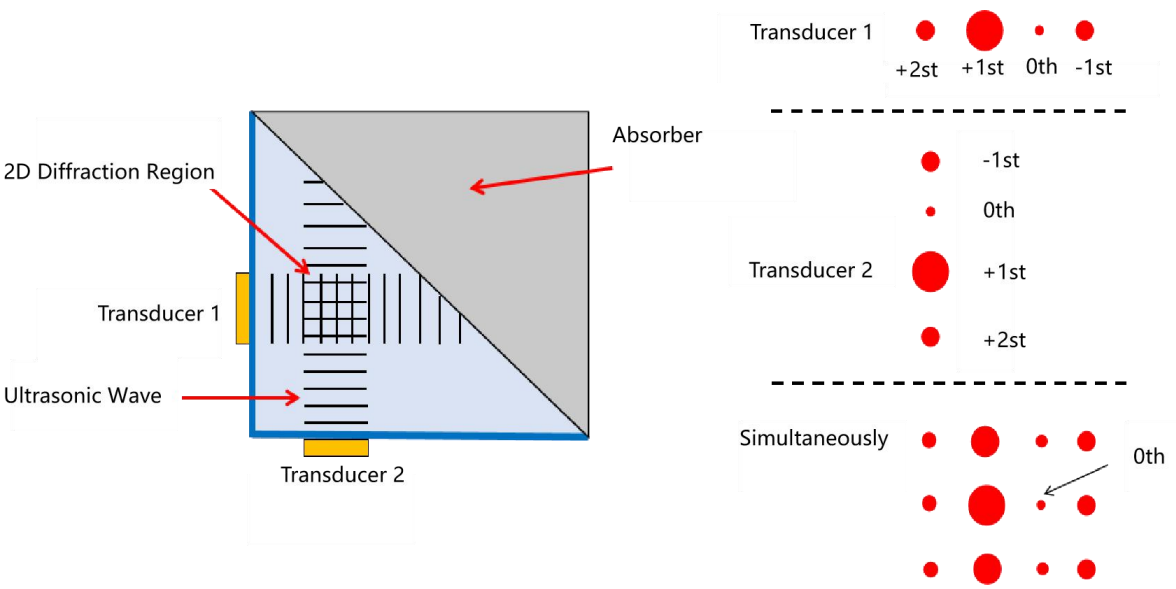
Two dimensional acousto-optic Q-switch (2D-AOQS) is based on one-dimensional acousto-optic Q-switch. Transducers are made on both two mutually orthogonal surfaces of the same acousto-optic medium. The RF signal is transmitted to the surface electrodes of the two transducers at the same time. The two transducers convert the absorbed RF signal into ultrasonic wave and transmit it to the acousto-optic medium at the same time, forming mutually orthogonal diffraction gratings in the medium. The incident light interacts with the orthogonal diffraction grating simultaneously to produce two-dimensional diffracted light, so as to improve the diffraction efficiency. 2D-AOQS aims to improve the diffraction efficiency of a single device and serve as an replacement of using two acousto-optic Q-switches in high-power system.

In order to obtain higher diffraction efficiency, 2D-AOQS requires higher RF power, therefore water cooling is needed to ensure the heat dissipation of the device.

Applications

●Laser marking ●Lithography ●Medical surgery ●Material processsing



Schematic diagram of two-dimensional acousto-optic Q-switch

2D-Q-Switches Model Number：CAQSD-f-a-mt-w-c-h

RF Frequency (f)	Aperture (a)	Material (m)	Mode (t)	Wavelength (w)	RF Connector (c)	Housing (h)
024 (24 MHz) 027 (27.12 MHz) 041 (40.68 MHz) 068 (68 MHz) 080 (80 MHz) ...	005 (0.5 mm) 010 (1 mm) 020 (2 mm) 030 (3 mm) 040 (4 mm) ...	FS (Fused Silica) CQ (Crystalline Quartz)	C (Compressional)	1030 nm 1064 nm …	AF (SMA-F) AM (SMA-M) NF (BNC-F) NM (BNC-M) MF (MMCX-F) MM (MMCX-M) …	A80 ...

Typical Specifications*

Frequency	Active Aperture	Wavelength	Transmission	Modulation Losses
24 MHz	2~6 mm	1064 nm	≥ 99.6%	≥ 90%
27.12 MHz	2~6 mm	1064 nm	≥ 99.6%	≥ 90%
40.68 MHz	2~6 mm	1064 nm	≥ 99.6%	≥ 90%

***Damage Threshold: 1GW/cm² @ 1064 nm, 10 ns, 10Hz**

Housing dimensions(mm):

A80