Acousto-optic Deflector

STDF Series

2022 V1

For customized projects please Contact us:

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Acousto-optic Deflector

A device for spatially controlling a scanning beam with high speed and precision

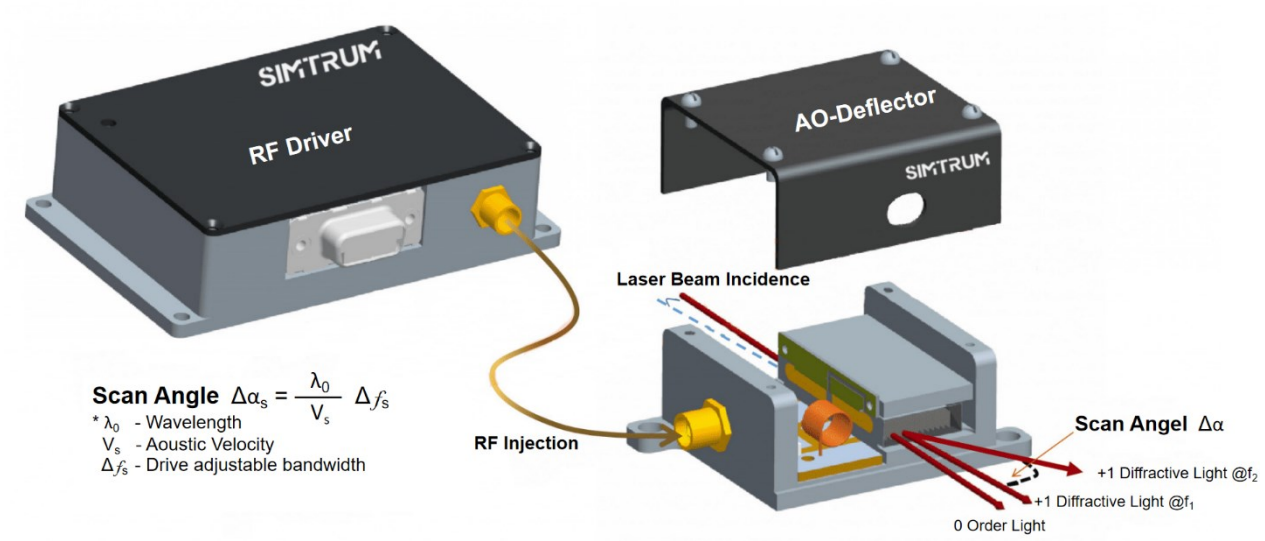
Acousto-optic Deflector (AODF) can realize laser beam scanning by changing the RF driving frequency. The scanning position can realize random position, continuous line scanning, and sequential point deflection, depending on the crystal, well as precise position control of the nRad. Optimal AODF efficiency usually beams, Bragg Angle mismatch occurs due to the fact that AODF can only perform optical alignment at one driving frequency. In general, this results in reduced efficiency.

SIMTRUM offers AODF that can be designed for one and two-dimensional scans, with a specially developed RF driver that can realize frequency sweep, chirp, and other control methods, convenient for customers to quickly realize a variety of functions.

Applications

- Laser direct writing
- Precision circuit board drilling
- Semiconductor testing
- Laser roller manufacturing
- Laser printing
- Cell sorting
- Holographic imaging
- Fast zoom system

Principle of Operation



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Product Specifications

General Specifications	
Interaction Material	Crystal Quartz / Tellurium Dioxide
Acoustic Mode	Longitudinal / Shear (AV 616 m/s)
Operating Wavelength	266 / 355 / 364 / 405 / 488 / 515 / 532 / 561 / 813 / 1064 / 1083 nm
Polarization	Linear, perpendicular to base
Transmission	> 90% ~ 99%
Active Aperture	refer to the product info
Center Frequency (Fc)	75 ~ 230 MHz
RF Bandwidth (RB)	10 ~ 110 MHz
Diffraction Efficiency @RB	> 40 ~ 50%
RF Power	3.5 ~ 22 W (Max)
Input Impedance	50Ω Nominal
VSWR @Fc	< 2.1:1 / < 3:1
RF Connector	SMA-F
Cooling	Conduction-cooled / Water-cooling
Shell Material	Aluminum alloy 6063

Selection Guide

Ordering Information

	Fc		RB		Active aperture		Wavelength
STDF0001 - QL	XXX	-	XXX	-	XXX	-	XXX
27.12 MHz	027	10 MHz	010	4 mm	040	266 nm	266
40.68 MHz	041	50 MHz	050	6 mm	060	355 nm	355
80 MHz	080	80 MHz	080	8 mm	080		

Product Code	Wavelength	Active Aperture	Center Frequency	Bandwidth	Scan Angle	Optical Material
STDF0003-QL230_110-020-266	266 nm	2.0 x 26.5 mm	230 MHz	110 MHz	5.1 mrad	Crystal quartz
STDF0005-QL230_110-020-266	266 nm	2.0 x 2.0 mm	230 MHz	110 MHz	5.1 mrad	Crystal quartz
STDF2005-QL200_100-020-266	266 nm	2.0 x 26.5 mm	200 MHz	100 MHz	4.6 mrad	Crystal quartz
STDF2008-QL200_100-040-266	266 nm	4.0 x 4.0 mm	200 MHz	100 MHz	4.6 mrad	Crystal quartz
STDF2001-QL170_070-070-355	355 nm	7.0 mm	170 MHz	70 MHz	4.3 mrad	Crystal quartz
STDF2002-QL170_030-070-355	355 nm	7.0 mm	170 MHz	30 MHz	1.9 mrad	Crystal quartz
STDF0006-QL110_16-060-364	364 nm	6.0 mm	110 MHz	16 MHz	1 mrad	Crystal quartz
STDF2006-TS100_050-035-364	364 nm	3.5 mm	100 MHz	50 MHz	29.6 mrad	Tellurium dioxide
STDF2007-TS100_050-080-364	364 nm	8.0 mm	100 MHz	50 MHz	29.6 mrad	Tellurium dioxide
STDF0007-TS075_10-040-405	405 nm	4.0 mm	75 MHz	10 MHz	6.6 mrad	Tellurium dioxide
STDF0008-TS100_36-010-488	488 nm	1.0 mm	100 MHz	36 MHz	27.1 mrad	Tellurium dioxide
ST2DF2003-TS088_44-100-515	515 nm	10 x 10 mm	88 MHz	44 MHz	34.9 x 34.9 mrad	Tellurium dioxide
ST2DF2001-TS085_40-100-532	532 nm	10.0 mm	85 MHz	40 MHz	32.4 x 32.4 mrad	Tellurium dioxide
STDF0009-TS100_36-010-561	561 nm	1.0 mm	100 MHz	36 MHz	30.04 mrad	Tellurium dioxide
ST2DF2002-TS100_42-075-813	813 nm	7.5 x 7.5mm	100 MHz	42 MHz	52.5 x 52.5 mrad	Tellurium dioxide
STDF0010-TS090_30-025-1064	1064 nm	2.5 mm	90 MHz	30 MHz	48.2 mrad	Tellurium dioxide
STDF2003-TL075_32-025-1083	1083 nm	2.5 mm	75 MHz	32 MHz	8.3 mrad	Tellurium dioxide

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