

# DEFLECTORS & VARIABLE FREQUENCY SHIFTERS

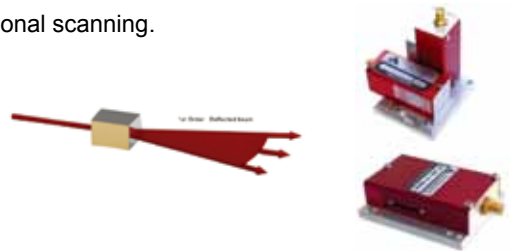
A Bragg configuration gives a single first order output beam, which intensity is directly linked to the power of RF control signal, and which angle is directly linked to the RF frequency. By varying the frequency, the output laser beam angle is modified. A deflector is used to scan a laser beam over a range of angles, or to control with accuracy the output angle of the laser beam.

By varying the frequency, the first order beam is also frequency shifted by the amount of the RF carrier frequency : it acts like a variable frequency shifter.

The main parameters to qualify a deflector are 1.Deflection angle range and 2.Resolution. The deflection angle range is the maximum angle variation of the laser beam : it is linked to the frequency range of the device.

The resolution of a deflection is the number of distinct directions which can be addressed by the deflector : it is linked to the deflection angle range and laser divergence.

Two deflectors can be used in series and at right angles to give full two-dimensional scanning.



## APPLICATIONS

Model	Material	Wavelength nm	Aperture mmxmm	Freq(Shift) MHz	Polarisation	Resolution	Deflection range	Efficiency %
DTSX-250	TeO2	350-1600	4.5 x 4.5	f( $\lambda$ )	Linear	300@633nm	48@633nm	> 70
DTSX-400	TeO2	350-1600	7.5 x 7.5	f( $\lambda$ )	Linear	500@633nm	48@633nm	> 70
DTSXY-250	2 Axis TeO2	350-1600	4.5 x 4.5	f( $\lambda$ )	Linear	300x300@633nm	41 x 41@532nm	> 45
DTSXY-400	2 Axis TeO2	350-1600	7.5 x 7.5	f( $\lambda$ )	Linear	500x500@633nm	41 x 41@532nm	> 45
DT230-B120A0.5-UV	TeO2	400-450	0.5 x 17.5	230+/-60	Linear	500	11.4@400nm	> 50
DT230-B120A0.5-VIS	TeO2	450-670	0.5 x 17.5	230+/-60	Linear	500	15@532nm	> 50

Model	Material	Wavelength nm	Aperture mmxmm	Freq(Shift) MHz	Polarisation	Resolution T $\Delta$ F	Deflection angle range	Efficiency %
MQ110-B50A1-266.300	Fused Silica	266-300	1 x 2	110+/-25	Linear	16	2.2@226nm	> 60
MQ110-B50A1-UV	Fused Silica	325-425	1 x 2	110+/-25	Linear	16	3@355nm	> 60
MT225-B50A0.5-400.442	TeO2	400-442	0,5 x 2	200+/-25	Linear/random	23	5.4 @458nm	> 80
MT200-B100A0.5-VIS	TeO2	450-700	0,5 x 2	200+/-50	Linear/random	47	12.6@532nm	> 60@633nm
MT110-B50A1-VIS	TeO2	450-700	1 x 2	110+/-25	Linear/random	23	6.3@532nm	> 60@633nm
MT110-B50A1.5-VIS	TeO2	450-700	1,5 x 2	110+/-25	Linear/random	23	6.3@532nm	> 60@633nm
MT80-B30A1-VIS	TeO2	450-700	1 x 2	80+/-15	Linear/random	14	3.8@532nm	> 65
MT80-B30A1.5-VIS	TeO2	450-700	1,5 x 2	80+/-15	Linear/random	14	3.8@532nm	> 65
MT225-B100A0.5-800	TeO2	750-850	0,5 x 2	225+/-50	Linear/random	47	18.6 @785nm	> 60
MT200-B40A1-IR	TeO2	700-1100	1 x 2	200+/-20	Linear/random	19	7.4 @800nm	> 70@785nm
MT350-B120A0.2-IR	TeO2	700-1100	0,2 x 1	350+/-60	Linear/random	28	22.8@800nm	> 60
MT250-B100A0.5-IR	TeO2	700-1100	0,5 x 2	250+/-50	Linear/random	47	19@800nm	> 60
MT200-B100A0.5-IR	TeO2	700-1100	0,5 x 2	200+/-50	Linear/random	47	19@800nm	> 60@785nm
MT110-B50A1-IR	TeO2	700-1100	1 x 2	110+/-25	Linear/random	23	9.5@800nm	> 60@785nm
MT110-B50A1.5-IR	TeO2	700-1100	1,5 x 2	110+/-25	Linear/random	23	9.5@800nm	> 60@785nm
MT80-B30A1-IR	TeO2	700-1100	1 x 2	80+/-15	Linear/random	14	5.7@800nm	> 70@785nm
MT80-B30A1.5-IR	TeO2	700-1100	1,5 x 2	80+/-15	Linear/random	14	5.7@800nm	> 70@765nm
MT200-B100A0.4-1064	TeO2	980-1100	0,4 x 2	200+/-50	Linear/random	47	25.3@1064nm	> 35
MT200-B100A0.2-1064	TeO2	980-1100	0,2 x 1	200+/-50	Linear/random	47	25.3@1064nm	> 60
MT110-B50A1-1064	TeO2	980-1100	1 x 2	110+/-25	Linear/random	23	12.6@1064nm	> 55
MT110-B30A1.5-10064	TeO2	960-1100	1,5 x 2	110+/-15	Linear/random	14	7.6@1064nm	> 60
MT80-B30A1-1064	TeO2	980-1100	1 x 2	80+/-15	Linear/random	14	7.6@1064nm	> 65
MT80-B30A1.5-1064	TeO2	980-1100	1,5 x 2	80+/-15	Linear/random	14	7.6@1064nm	> 65