

Triple-Mode Transducer Crystals

10 degree rotated Y-cut lithium niobate can be used to simultaneously generate both longitudinal and shear waves.

The third harmonic of the longitudinal mode coincides with the fifth harmonic of the shear mode. For example, a crystal with a thickness of 0.02692" will oscillate at its fundamental longitudinal mode of 5.0 MHz, its fundamental shear mode of 3.0 MHz, and its dual mode frequency is 15 MHz.

We currently produce 10 deg. rotated Y-cut lithium niobate crystals in the following frequencies:

L = longitudinal (MHz), S = shear (MHz), D = dual mode (MHz)

L	S	D		L	S	D
1.0	0.6	3.0		16.5	10.0	49.5
1.7	1.0	5.0		16.7	10.1	50.0
2.0	1.2	6.0		18.3	11.1	55.0
3.0	1.8	9.0		20.0	12.1	60.0
3.3	2.0	10.0		21.7	13.1	65.0
4.0	2.4	12.0		23.2	14.1	70.0
5.0	3.0	15.0		25.0	15.0	75.0
6.0	3.6	18.0		26.7	16.1	80.0
6.7	4.0	20.0		28.3	17.0	85.0
7.3	4.4	22.0		30.0	18.1	90.0
8.3	5.0	25.0		31.7	19.0	95.0
9.3	5.6	28.0		33.1	20.0	100.0
10.0	6.0	30.0		35.0	21.2	105.0
10.7	6.4	32.0		36.7	22.0	110.0
11.7	7.1	35.0		38.3	23.0	115.0
12.7	7.7	38.0		40.0	24.2	120.0
13.3	8.1	40.0		41.4	25.0	125.0
15.0	9.1	45.0		50.0	30.1	150.0

Typical crystal diameters: 0.250", 0.375", 0.500".

Not all crystal diameters are available in all frequencies.

Questions? [Contact us](#) to discuss your particular application.