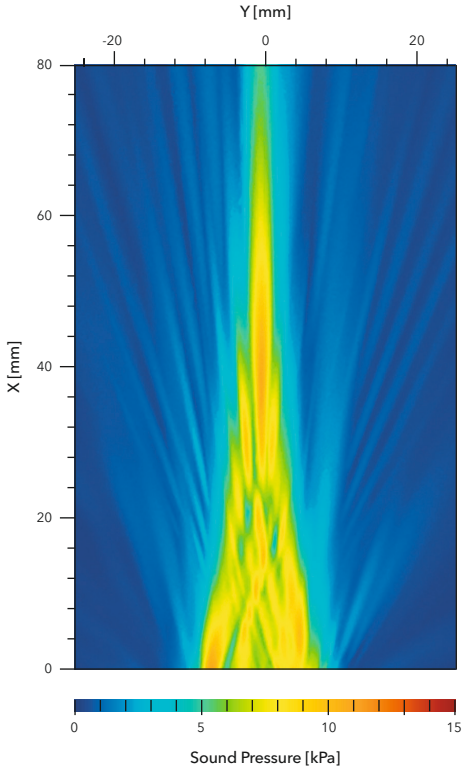
Ultrasound Field Characterization

precise acoustic measurement with an optical microphone



Ultrasound field scan of a piezoelectric emitter with an optical microphone

moving sounds without moving parts

xarion laser acoustics

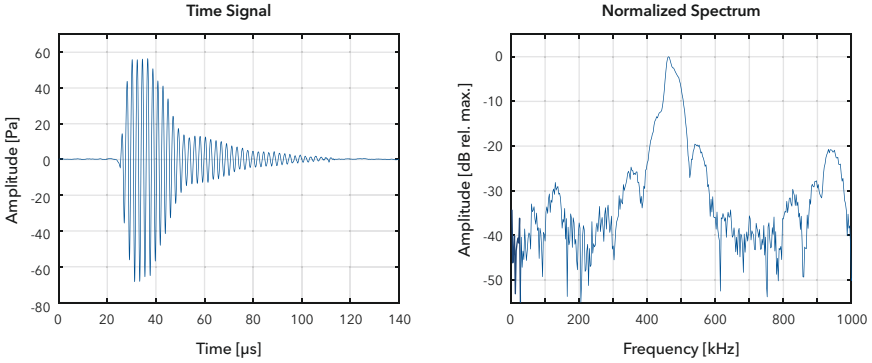
Features

Frequency range	10 Hz – 1 MHz
Dynamic range	100 dB
Active sensing area	0.6 mm²

Specifications

	Eta 100 Ultra	Eta 250 Ultra
Sensitivity at 1 kHz	0.35 mV/Pa	10 mV/Pa
Self-noise (BW: 1 Hz at 1 kHz)	1.5 mPa	50 µPa
Max. pressure level for THD < 3% (rel. 20 µPa)	176 dB	146 dB

XARION's membrane-free optical microphone is ideal for the characterization of the time signal and the spectrum of ultrasound emitters. Thanks to the all-optical detection principle without mechanical moving parts, the optical microphone offers true impulse response and provides absolute acoustic pressure levels in Pascal. A single sensor covers any acoustic emitter within the frequency range of 10 Hz to 1 MHz. Its small detection volume enables the mapping of complex acoustic fields with high spatial resolution. XARION optical microphones are suitable for operation in air and other gases. The sensors can withstand extreme sound pressure levels of more than 180 dB (rel. 20 µPa). Optionally available in a non-metallic version that is immune to electromagnetic interference.



Time signal and normalized spectrum of a piezoelectric emitter measured with the optical microphone

moving sounds without moving parts

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