Fiber Optic Hydrophone System
HFO-690 with Optical Probes

The HFO-690 is the latest generation optical fiber hydrophone designed to uniquely support high intensity fields for applications such as HIFU, providing both acoustic pressure and temperature measurements simultaneously. Whereas traditional piezo-electric hydrophones were susceptible to damage, the HFO can withstand acoustic pressures up to 500 MPa. Furthermore, the HFO system was designed to be easy to use. Operation with a visible wavelength makes the alignment process simple and safer to use.

Features

- Support high acoustic pressures up to 500 MPa
- Bandwidth limiting filters to reduce Noise Equivalent Pressure
- Easy to use touch screen user interface
- Simultaneous temperature measurement
- Simple calibration routine
- Fully integrated system with no separate modules
- Visible light source to simplify alignment
- Simple cleaving procedure to repair probes within minutes
- Immune to electrical interference
- Optically filtered to reject stray environmental light

HFO–690 Fiber Optic Hydrophone System

HIFU Measurement

Technical Specifications

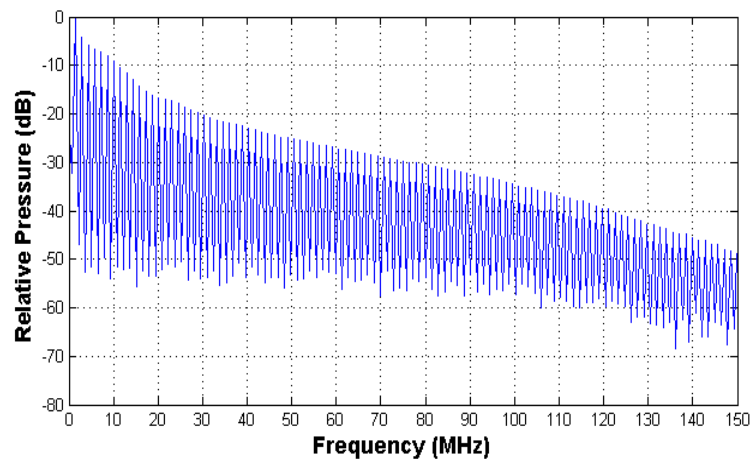|	HFO-690
Frequency Response	3 kHz to 150 MHz
Nominal Acoustic Sensitivity	6 mV / MPa
Noise Equivalent Pressure	0.25 MPa at 2 MHz BW 0.3 Mpa at 10 MHz BW 0.5 MPa at 100 MHz BW
Laser Source	690 nm
Laser Classification	Class 3B
Spatial Resolution	100 µm
Temperature Sensitivity	10 mV / °C
Operating Water Temperature Range	5 to 95 °C
Length of Optical Fiber	2 m

All specifications subject to change.

Sample Waveform and Frequency Response for 1.44 MHz HIFU Transducer
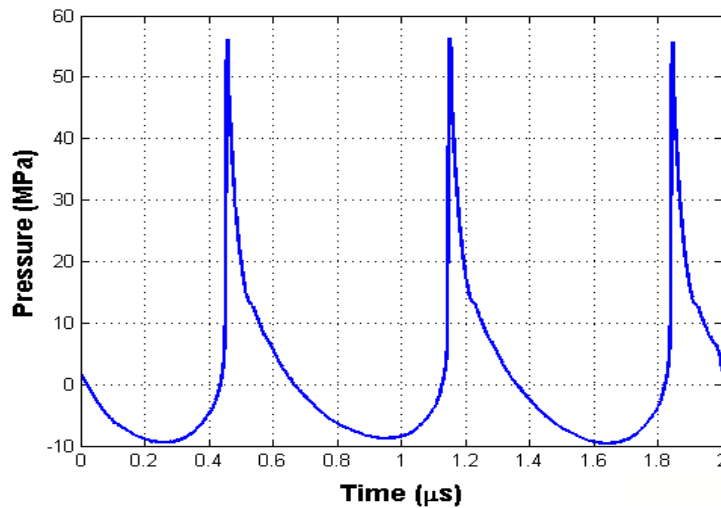
Measured waveform demonstrates non-linear propagation

Example Spectrum for 1.44 MHz HIFU Transducer

Base Configuration:
- HFO-690 Fiber Optic Controller
- Optical Probes: set of five, 2 meters long
- Optical Probe Holder
- Bandwidth Limiting Filters: 2 and 10 MHz
- Calibration kit
- Fiber preparation kit
- Deconvolution Software
- Protective Eyewear

Optional Accessories:
- Optical Probes: set of five, 2 meters long
- Protective Eyewear