ONDA

Putting Confidence in Ultrasound

OptiSon® Ultrasound Beam Analyzer

Visualize in real time and measure acoustic fields in seconds or minutes.

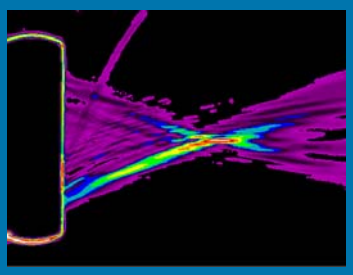
Now you can achieve control of project timing and costs, gain a more comprehensive and confident understanding of the system and transducer performance, eliminate the tedium of testing and provide timely results.

With 50 µm resolution and high dynamic range, there is no need to guess about the real field distribution.

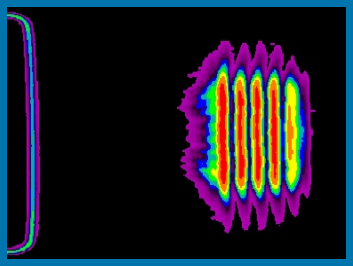
Now in a digital imaging version for better spatial resolution (1392x1040) and 12 bit depth!

OptiSon® S-12D

OptiSon® HF



Highly focused beam showing anomalous sidelobe caused by a crack in the radiating surface.



Short burst

Features

Quantitative
The OptiSon® Beam Analyzer quantifies beam plots, focal distances and total power from a single image. Power measurements correlate to radiation force balance and hydrophone - as does tomographic reconstruction for intensity. It can have higher spatial resolution than mechanical scanning and is invulnerable to high intensities or rough handling.

Eliminates Standing Waves
Unlike mechanical scanning methods such as acoustic microscopy and hydrophone surveys, the sensor in OptiSon® does not invade or disturb the acoustic field. Instead, acoustic waves are detected by Raman-Nath diffraction of light in a transparent medium, and captured by a video frame grabber.

Visual Advantage

- Reveals radiation ordinarily missed by a hydrophone survey.
- Provides instant identification of non-uniform wave formation at different frequencies.
- This enables diagnosing uneven thickness of piezo-electric materials or matching layers.
- Maps whole acoustic field in linear or log (dB) scale that can be displayed in black & white or pseudo-color.
- Easily generates one, two or three-dimensional maps of power or intensity and instantly reveals heating of transducer surface.

Unprecedented Dynamic Range
The proprietary optical design generates images with a dynamic range never possible with previous schlieren designs.

3-D Tomographic Imaging

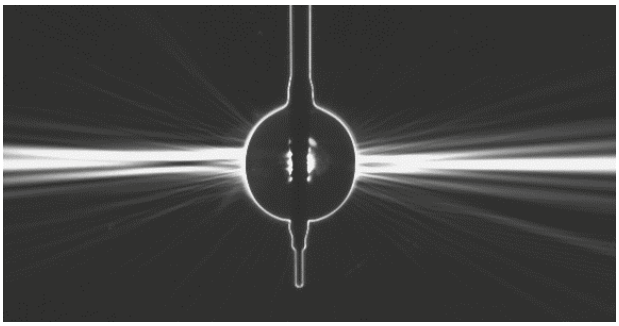
Technical Specifications

OptiSon® S-12D (Digital Imaging)

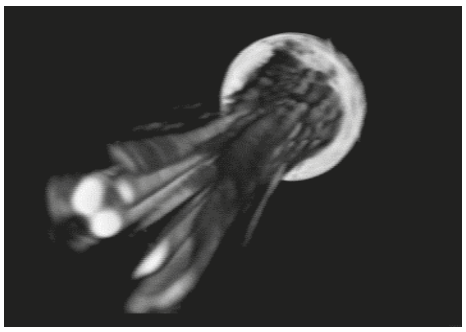
- Field of view: 9x12 cm to 3x4 cm (zoom 3:1)
- Image definition: 1392 x 1040 pixels and 12 bits
- Bandwidth: 1 to 100 MHz
  Spatial Resolution: Field of view/1390 or 50 µm (whichever is larger)
- Time Resolution (Pulsed): 150 ns
  Dynamic Range: 30 to 60 dB
- Power measurement accuracy: ± 2% between 5 mW and 100 mW
- Tank dimensions: 33 cm (H) x 28 cm (W) x 32 cm (L)

OptiSon® HF (High Frequency)

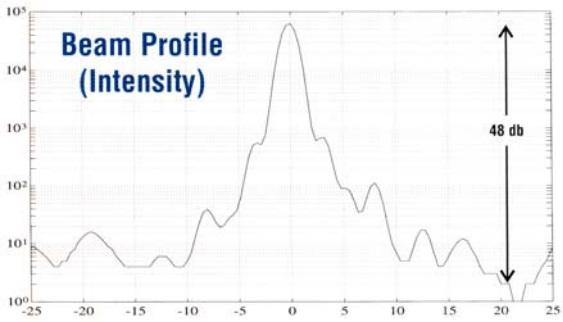
- Field of view: 1.25 cm x 1.67 cm (480 x 640 pixels)
- Image definition: 640 x 480 pixels, RS-170
- Bandwidth: 10 to 100 MHz
- Spatial Resolution: 12 µm
- Time Resolution (Pulsed): 10 ns
  Dynamic Range: up to 52 dB
- Power measurement accuracy: ± 2% between 5 mW and 100 mW
- Tank dimensions: 18 cm (H) x 11 cm (W) x 16 cm (L)



Beam from an ablation catheter



Tomographically reconstructed beam generated by a cylindrically asymmetric source.



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