

Shear Wave Liver Fibrosis Phantom

Model 039



Measure Known Tissue Elasticity with Shear Wave Systems

- Certified shear wave speed measurements
- Ensure over 10 years of reliable use through reinspection and repair services

Includes best in industry four-year warranty

Shear wave elasticity imaging is an emerging biomarker with many possible applications, most prominently for determining the stage of liver fibrosis in a patient without the need for invasive biopsies. The design of the Shear Wave Liver Fibrosis Phantom, Model 039, was developed and validated in a joint study sponsored by the Quantitative Imaging Biomarker Alliance, and serves as the standard reference tool for determining sources of variance in shear wave elasticity measurements (see references on next page).

Our Model 039 consists of four phantoms – each filled with Zerdine® gel formulated with differing values of Young's modulus, a tissue-average speed of sound of 1540 m/s and speckle contrast levels matching that of a healthy liver.

Certification of shear wave speed will be provided with each phantom, with tests run on Verasonics Vantage™ research platform running open source code developed for the Quantitative Imaging Biomarkers Alliance (QIBA) Ultrasound Shear Wave Speed Committee. The certification sheet provides the full dispersive analysis of shear wave speed, allowing performance assessment at different frequencies.

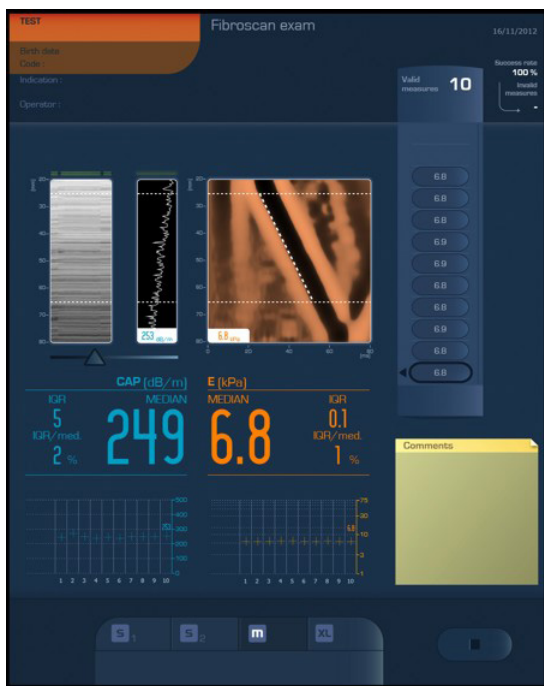
Model 039 comes with a carry case for easy transport and phantom set up.

Key Features for Model 039

- Set of 4 phantoms, each with a different stiffness (Young's modulus ranges from 2 – 36 kPa)
- Enables quantitative assessment of shear wave speed measurements used in the diagnosis of diffuse liver disease
- Certified measurement of shear wave speed according to protocol developed by Quantitative Imaging Biomarkers Alliance Ultrasound Shear Wave Speed committee
- Re-certification of phantoms available

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900 Asbury Ave • Norfolk, Virginia 23513 • USA • Tel: 757-855-2765 • WWW.CIRSINC.COM



The Shear Wave Liver Fibrosis Phantom is compatible with many elastography systems. (Image Credit: Echosens; Paris, France)



Carry Case included with CIRS Shear Wave Liver Fibrosis Phantoms.

SPECIFICATIONS

EXTERNAL DIMENSIONS	Ø 11.6 cm, height 14 cm
INTERNAL DIMENSIONS	Ø 10 cm, height 12 cm
PHANTOM WEIGHT	6.7 lbs (3kg)
HOUSING MATERIAL	ABS Plastic
MEMBRANE	Saran Laminate
SCANNING WELL	16.5 cm x 10 cm x 1 cm deep
TISSUE-MIMICKING MATERIAL	Zerdine® solid elastic hydrogel

ZERDINE® PROPERTIES

Freezing point: 0° C
 Melting point: Above 100° C
 Speed of Sound: 1540 m/s
 Density: 1.03 g/cc
 Poisson's Ratio: 0.5

PHANTOM STIFFNESS (NOMINAL)*

PHANTOM	YOUNG'S MODULUS*	SHEAR WAVE VELOCITY
Phantom 1	2 kPa	0.8 m/s
Phantom 2	8 kPa	1.6 m/s
Phantom 3	18 kPa	2.5 m/s
Phantom 4	36 kPa	3.5 m/s

*Certified values may vary (see Oudry et al: 2014)

MODEL 039 INCLUDES

QTY	COMPONENT DESCRIPTION
4	Shear Wave Liver Fibrosis Phantoms
1	Carry Case
1	Removable Scanning Well
-	48-Month Warranty
-	User Guide
-	Certificate of Compliance

References:

Dillman JR, Chen S, Davenport MS, et al. Superficial Ultrasound Shear Wave Speed Measurements in Soft and Hard Elasticity Phantoms: Repeatability and Reproducibility Using Two Different Ultrasound Systems. *Pediatric radiology*. 2015;45(3):376-385. doi:10.1007/s00247-014-3150-6.

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