# Triple Modality
# 3D Abdominal Phantom

**Model 057A**

## CT/ ULTRASOUND/ MRI IMAGE FUSION • LIVE SCANNING • BIOPSY TRAINING

The CIRS Triple Modality 3D Abdominal Phantom is constructed of a self-healing formulation of Zerdine®[1] that allows multiple biopsy insertions with minimal needle tracking, and is ideal for demonstrating image-guided navigation technologies.

Abdominal imaging is useful for diagnosing disease and monitoring treatments. Our Model 057A is representative of a small adult abdomen and can be imaged under CT, MR and ultrasound. This feature makes the phantom a useful tool for applications such as image fusion studies; imaging protocol developments; scan technique training; and system testing, validation and demonstration.

The Model 057A simulates the abdomen from approximately the thorax vertebrae (T9/T10) to the lumbar vertebrae (L2/L3) using simplified anthropomorphic geometry. The materials provide contrast between the structures under CT, MR and ultrasound. The solid polymer background gel will not leak when punctured.*

Internal structures include the liver, the portal vein, two partial kidneys, a partial lung, the abdominal aorta, the vena cava, a simulated spine and six ribs. The liver has six lesions and the kidneys each have one lesion. A muscle layer and outside fat layer surround these structures and plastic end caps make the phantom durable enough for extended scanning. Blood vessels have CT contrast added to provide enhanced auto registration in image fusion applications

The Phantom includes a foam lined hard carry case. To accommodate image fusion techniques, the phantom can be purchased as a kit to include a serial-number specific CT DICOM Data set for reference. CIRS can also offer value-added options and services such as phantom specific CMM, attachment of customer specific registration devices and inclusion of special point markers
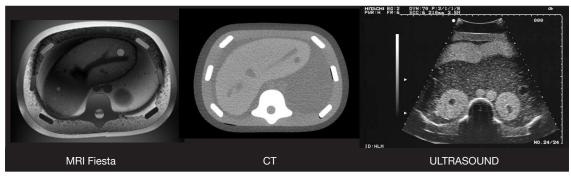
### Features
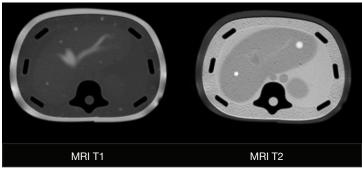
- Demonstrate CT, ultrasound and MRI scan techniques
- Assess image-fusion algorithms
- Test new equipment
- Optimize imaging protocols
- Improve performance of freehand abdominal biopsies

[1]US Patent #5196343

*NOTE: Some permanent tracking may be evident if debris and air bubbles are entrained in the gel during the biopsy procedure. To extend the lifetime of the phantom, the use of higher gauge needles that have been wetted and de-aired prior to insertion is recommended.

## CIRS
Tissue Simulation & Phantom Technology

MRI Fiesta          CT          ULTRASOUND



MRI T1          MRI T2

## SPECIFICATIONS

| | |
|---|---|
| **DIMENSIONS** | 26 cm x 12.5 cm x 19 cm (10.2" x 4.9" x 7.5") |
| **PHANTOM WEIGHT** | 11 lbs. (5 kg) |
| **MATERIALS** | Housing: ABS<br>Outer Fat Layer: Z-Skin™ elastomer<br>Hard Tissue: Epoxy Resin<br>Lungs: Epoxy Resin<br>Other Soft Tissue: Zerdine®(1) gel |
| **INTERNAL ORGANS** | • (1) Liver with six lesions<br>• (2) Kidneys with one lesion each<br>• (1) Spine<br>• (1) Partial lung<br>• (1) Portal Vein<br>• (1) Vena Cava<br>• (1) Aorta<br>• (6) Ribs<br>• Surrounding Soft Tissue with two lesions |

(1) US Patent # 5196343

(2) DICOM Images are provided with a free DICOM reader (Onis 2.6). If using alternate software to read the images, please notify CIRS of any special requirements for making the data compatible with your software. For instance, some programs include special checks of the DICOM header file or the DICOM directory when loading the image data set.
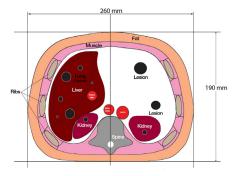
## MODEL 057A INCLUDES

| QTY | COMPONENT DESCRIPTION |
|---|---|
| 1 | Triple Modality 3D Abdominal Phantom |
| 1 | User Guide |
| - | 12-Month Warranty* |

## MODEL 057A-035 KIT INCLUDES

| QTY | COMPONENT DESCRIPTION |
|---|---|
| 1 | Triple Modality 3D Abdominal Phantom |
| 1 | CT DICOM Data Set(2) (Serial number specific, 1.5 mm slice thickness @ 120 kvp) |
| 1 | User Guide |
| - | 12-Month Warranty* |

*Please note: once any device has been inserted into the phantom (such as biopsy needles, localization wires, etc.) the 12 month warranty will not cover claims related to material desiccation or needle tracking.



*Lung is under liver in Model 057A