

Brachytherapy QA Phantom

Model 045



ZERDINE® Inside
A registered trademark of CIRS

PART OF A COMPLETE SOLUTION AS DESCRIBED BY AAPM TG128

A robust quality assurance prostate brachytherapy QA program is essential to ensure accurate image-guidance and dosimetry calculations. The CIRS Model 045, used in conjunction with the CIRS Model 053G Ultrasound Prostate Phantom, offers a complete solution for implementing a QA program specific to transrectal ultrasound used for guidance of prostate brachytherapy as recommended by AAPM Task Group 128¹.

The Model 045 enables users to check key imaging parameters such as depth of penetration, axial and lateral resolution, distance measurements, area measurements, volume measurements and geometric consistency with the treatment-planning computer.

When scanning towards the top of the phantom, a partial grid of wires appears. This N-shaped pattern should align with the electronic grid that appears on your screen to ensure correct vertical and horizontal distance measurements. This target group can also be used to assess axial and lateral resolution of the system. Five cross wires are embedded within

the phantom to determine if the probe is being retracted by the stepper system by the specified distance.

Turn the probe 60 degrees to the right or left to visualize and measure the volume of three different calibrated objects, one of which is non-spherical.

Features

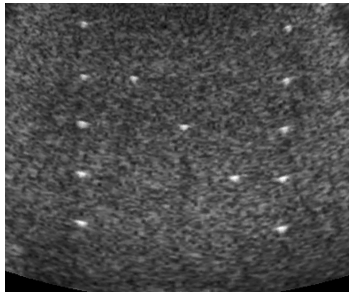
- QA assessments according to AAPM Task Group 128¹:
 - Depth of penetration
 - Resolution
 - Distance, area and volume measurements
 - Geometric consistency
- Foam-lined carry case
- 48-month warranty

2428 Alameda Avenue Suite 316 • Norfolk, Virginia 23513 • USA
Tel: 800.617.1177 • 757.855.2765 • Fax: 757.857.0523

WWW.CIRSINC.COM

CIRS

Tissue Simulation & Phantom Technology



Complete your QA solution by also purchasing the Model 053G Ultrasound Prostate Phantom. The Model 053G can be used to verify alignment of the physical needle template with the electronic grid.

SPECIFICATIONS

MODEL 045 INCLUDES

QTY	DESCRIPTION
1	Brachytherapy QA Phantom
1	Carry Case
1	User Guide
-	48-Month Warranty

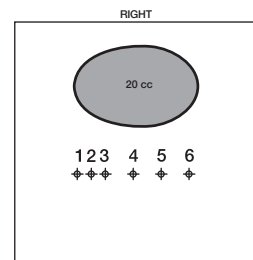
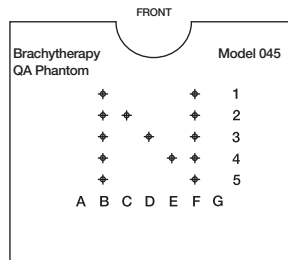
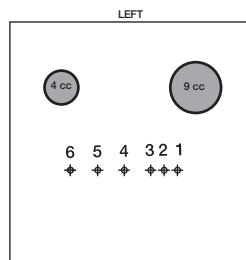
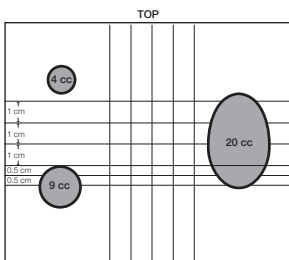
DIMENSIONS:	15.2 cm x 11.4 cm x 11.4 cm (6" x 4.5" x 4.5")
PHANTOM WEIGHT:	4 lbs. (1.5 kg)
BACKGROUND	Material: Zerdine® (2) Attenuation Coefficient: 0.50 ± 0.05 dB/cm-MHz Speed of Sound: 1540 m/s ± 10 m/s

OPTIONAL ACCESSORIES

MODEL NO.	DESCRIPTION
053G	Prostate Training Phantom with modified prostate gel for minimal needle tracks

TARGETS

INTERNAL GRID ASSESSMENT	PROBE RETRACTION ASSESSMENT	VOLUMES
Material: Nylon Monofilament Diameter: 0.5 mm Number of Targets: 13 Position: B1 - B5, C4, D3, F1 - F5	Material: Nylon Monofilament Diameter: 0.1 mm Number of Targets: 5 Spacing: 0.5 cm and 1 cm Position: along row 4	Material: Zerdine® Sizes: Rounded values are 4 cc (S), 9 cc (M), and 20 cc (L). Measured volumes provided on certificate of compliance. Contrast: Brighter than background



References:

1. Pfeiffer, Douglas, et al., AAPM Task Group 128: Quality assurance tests for prostate brachytherapy ultrasound systems. Med. Phys., vol. 35 (12), pgs. 5471-5489, December 2008.
2. US Patent #5196343.

