Oncology phantom selection guide

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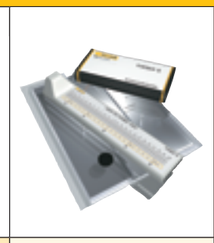
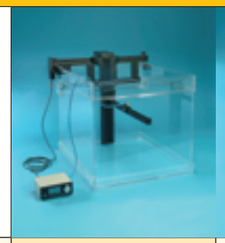
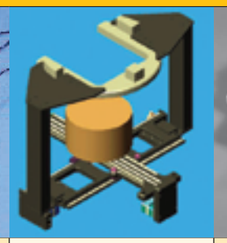
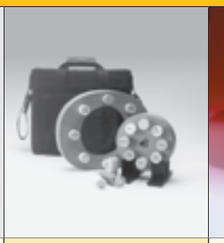
Non-Anthropomorphic

											
Product	**VeriDose® PMDC**	**Double Check Pro**	**THEBES® II**	**3D Tank and Scanner**	**2D Tank and Scanner**	**1D Tank and Scanner**	**Dynamic Phantom**	**Plastic Water™**	**SCRAD**	**Electron Density Phantom**	**Ct Simulation Phantom**
Model	**37-705**	**7600**	**7020/7040**	**7304**	**7302**	**7301**	**7309**	**74-6 series**	**74-379-388/ 74-379-399**	**76-462**	**76-417**
Application	**Linac QC**	**Linac QC**	**Linac QC**	**Linac QC**	**Linac QC**	**Linac QC**	**Linac QC**	**Dose/plan verification**	**Dose/plan verification**	**Input to therapy planning system**	**Digitally reconstructed radiograph QC**
Size of person/phantom	8 cm x 8 cm	9 in x 19 in x 2.3 in	23 cm/47 cm linear array	50 cm x 50 cm x 40 cm	25 cm x 25 cm	20.4 cm	2 cm x 2 cm to 40 cm x 40 cm depths 1 cm to 10 cm	30 cm x 30 cm and 40 cm x 40 cm slabs of various thicknesses	25 cm x 25 cm of various thicknesses		15 cm x 15 cm cube
Material body		Acrylic	Polystyrene	Water	Water	Water		Proprietary material equivalent to water within 0.5 % ± 0.3 % at 7 MeV	Polystyrene/acrylic	Water equivalent	Acrylic
Material lung				Water	Water	Water				0.195 g/cc – 0.634 x 10^{23}/cc	
Material breast										0.991 g/cc – 3.261 x 10^{23}/cc	
Material bone										1.609 g/cc – 5.052 x 10^{23}/cc	
Material trabecular bone										1.161 g/cc – 3.73 x 10^{23}/cc	
Liver										1.071 g/cc – 3.516 x 10^{23}/cc	
Material muscle				Water	Water	Water				1.062 g/cc – 3.483 x 10^{23}/cc	
Material adipose				Water	Water	Water				0.967 g/cc – 3.18 x 10^{23}/cc	
Dosimetry holes										17 positions	
Detector type	5 diode	10 ion chambers	47 ion chambers	Ion chamber, diode, array	Ion chamber, diode, array	Ion chamber, diode, array	Ion chamber, diode, array	Drilled for any ion chamber or diode	Drilled for any ion chamber or diode		
Energy range	4 MV to 25 MV, 5 MeV to 25 MeV	2 MV to 25 MV, 2 MeV to 25 MeV	1 MV to 25 MV, 6 MeV to 25 MeV	Determined by the detector	Determined by the detector	Determined by the detector	Determined by the detector	> 7 MeV			
Detector configuration	1 CAX, 4 orthogonal at 8 cm off CAX	1 CAX, 4 cm at 4 cm off axis, 4 cm at 8 cm off axis, 1 cm at 9 cm off axis	Linear array, 0.5 cm spacing for 7020, 1.0 cm for 7040	3D Scanner	2D Scanner	1D Scanner	3D Scanner in air	May be drilled in any configuration	May be drilled in any configuration		
Electrometer	5 channel	10 channel	48 channel non multiplex	2 channel	2 channel	2 channel	2 channel				
Resolution			5 mm/10 mm	0.1 mm	0.1 mm		0.1 mm				Spatial 1.5 mm, MTF 0.100 lp/mm
Parameters measured										Electron density	MRI, Spatial Res, Contrast Res., RLD, Linearity
Salient feature	5 channel dose monitor for linac QC as well as in-vivo measurements	Daily check device with pre-stored protocols, large bright color display, wireless (optional—Argus software does not support wireless communications with Double Check Pro)	47 vented ion chamber linear array	Stepping motor and all lead screw construction			Very accurate linac beam check. Good for TG 40 monthly checks	Very accurate water equivalency at therapy energies	Inexpensive, water equivalent, user customizable phantom kits	Extremely valuable as a check for electron density calibration of the CT data	Complete check of the CT simulator

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	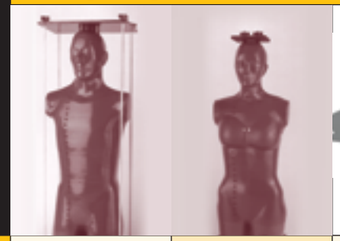			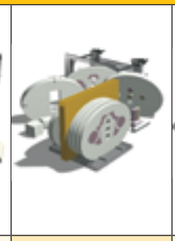		
Product	**ART Male**	**ART Female**	**Homogeneous IMRT**	**Pelvis IMRT**	**Thorax IMRT**	**Head and Neck IMRT**
Model	**ART 200X**	**ART 300X**	**74-008**	**74-034**	**74-007**	**74-001**
Appplication	**Dose/Plan Verification**	**Dose/Plan Verification**	**IMRT**	**IMRT**	**IMRT**	**IMRT**
Size of person/phantom	5 ft 9 in height, 162 lb	5 ft 1 in height, 110 lb	30 cm x 20 cm oval	30 cm x 20 cm oval	30 cm x 20 cm oval	16 cm Ø Cylinder
Material body	Water equivalent	Water equivalent	Water equivalent	Water equivalent	Water equivalent	Water equivalent
Material lung	0.30 g/cc	0.30 g/cc	0.21 g/cc	0.21 g/cc	0.21 g/cc	0.21 g/cc
Material bone	Highly detailed polymer moldings	Highly detailed polymer moldings	1.6 g/cc	1.6 g/cc	1.6 g/cc	1.6 g/cc
Material muscle			1.06 g/cc	1.06 g/cc	1.06 g/cc	1.06 g/cc
Material adipose			0.96 g/cc	0.96 g/cc	0.96 g/cc	0.96 g/cc
Dosimetry holes	3 cm x 3 cm grids, 5 mm and 7 mm Ø	3 cm x 3 cm grids, 5 mm and 7 mm Ø	1 cm with rods	1 cm with rods	1 cm with rods	1 cm with rods
Slice thickness	2.5 cm	2.5 cm	15 cm	6.4 cm, 5.0 cm, 1.0 cm	15 cm, 1 cm	6.4 cm, 5.0 cm, 1.0 cm
Detector type	TLD	TLD	Diode, ion chamber, film	Diode, ion chamber, film	Diode, ion chamber, film	Diode, ion chamber, film
Detector configuration	Distributed	Distributed	Three medial sagital, three coronal central left	Cross pattern, central sagital coronal	Distributed	1 central, 4 distributed
Salient feature	The material has been improved over the previous RANDO phantom to more closely mimic water		Check 2D and 3D dose distributions. Point dose measurements in multiple plains. Verify individual RTP			

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