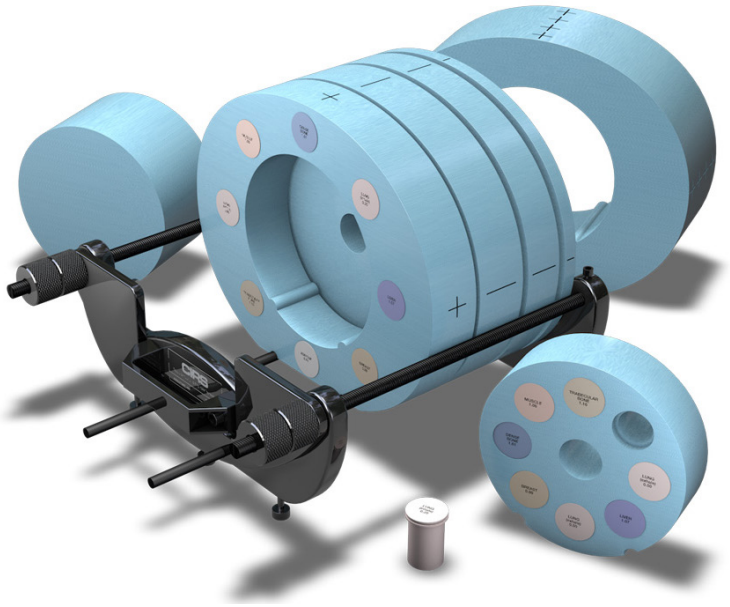
CBCT Electron Density Phantom

Model 062MA



INCREASE HU VALUE CONFIDENCE FOR ADAPTIVE RT

The Cone Beam (CBCT) Electron Density Phantom is an extended version of the CIRS Model 062M Electron Density Phantom and specifically designed for Cone Beam CT Imaging systems. Preliminary data shows that there may be differences between the HU readings for Diagnostic CT and Cone Beam CT. The geometry of the Cone Beam CT requires additional material and suggests that off central axis measurements should be taken.

The phantom was designed in collaboration with Dr. Peter H. Cossmann, PhD to provide a reliable tool for CT number to electron density calibration in volumetric imaging. Reliable CT calibration curves help enable treatment plan adaptation directly from Cone Beam CT data. Additionally, the phantom can accommodate any ion chamber for dose measurements and validation of heterogeneity correction based on the corrected CT calibration curve.

Our Model 062MA CBCT Electron Density Phantom's size covers geometries for imagers with dimensions of up to 40 cm x 40 cm. It is made of Plastic Water® and contains the same set of tissue equivalent electron density inserts as the standard Model 062. Additional interchangeable slabs allow for repositioning of the electron density section with an increment of 2.5 cm.

The 062MA is just one of three configurations available as a part of the Cone Beam CT Electron Density & Image Quality Phantom System.

Features

- Evaluate CT scan data
- Correct for inhomogeneities
- Document relationship between CT number and tissue electron density
- Simulate indicated tissue within the diagnostic and therapeutic energy range
- Quick assessment of distance registration (optional)

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CIRS
Tissue Simulation & Phantom Technology

OVERALL DIMENSIONS:	330 mm x 270 mm x 50 mm (W x H x D)
WEIGHT:	≈ 18 kg (40 lb)
MATERIALS:	Water and Tissue Equivalent Epoxy Resins

MODEL 062MA INCLUDES

QTY	PART NO.	DESCRIPTION	PHYSICAL DENSITY, g/cc	ELECTRON DENSITY, x 10^{23} electrons/cc	RED (RELATIVE TO H_2O)
1	062MA-01	Electron Density Head Insert	1.029	3.333	0.998
1	062MA-02	Electron Density Body without Head Insert	1.029	3.333	0.998
2	062A-04	Lung (Inhale) Equivalent Electron Density Plug	0.205	0.668	0.200
2	062A-05	Lung (Exhale) Equivalent Electron Density Plug	0.507	1.658	0.496
2	062A-06	Breast (50% Gland / 50% Adipose) Equivalent Electron Density Plug	0.99	3.261	0.976
2	062A-08	Solid Trabecular Bone (200 mg/cc HA) Equivalent Electron Density Plug	1.16	3.730	1.117
2	062A-09	Liver Equivalent Electron Density Plug	1.07	3.516	1.052
2	062A-10	Muscle Equivalent Electron Density Plug	1.06	3.483	1.043
2	062A-11	Adipose Equivalent Electron Density Plug	0.96	3.171	0.949
2	062A-15	Solid Dense Bone (800 mg/cc HA) Equivalent Electron Density Plug	1.53	4.862	1.456
1	062A-27	Solid Dense Bone (1250 mg/cc HA) Equivalent Electron Density Plug	1.82	5.663	1.695
1	062MA-39	Water-fillable Electron Density Plug, Ø 1" removable vial	1.00	3.340	1.000
1	062M-30	Set of 2 Feet for Model 062M			
1	062M-40	Soft Carry Case for Model 062M			
1	062MA-24	50 mm Thick Bolus Slab	1.029	3.333	0.998
2	062MA-32	100 mm L x Ø 30 mm Background Equivalent Plug	1.029	3.333	0.998
1	062MA-33	12.5 mm Thick Bolus Slab	1.029	3.333	0.998
1	062MA-34	37.5 mm Thick Bolus Slab	1.029	3.333	0.998
1	062MA-36	CBCT Electron Density Phantom - Annulus (100 mm Thick)	1.029	3.32	0.998
1	062MA-37	CBCT Electron Density - Annulus Solid insert (100 mm Thick)	1.029	3.333	0.998
1	062MA-30	Holder/Support set for Model 062MA & 062MQA			
1	062MA-40	Soft Carry Case for Model 062MA			
1		User Guide			
-		60 Month Warranty			

INSERT OPTIONS

***Customers are encouraged to complete their order with the purchase of the insert option listed below. Refer to separate CIRS cavity and plug code list for available chamber cavities. If the ion chamber cavity is not specified by customer, phantom is supplied with Part No. 062MA-14-CV50-1 that accommodates a Farmer type ion chamber. TLDs and Film available upon special request.**

QTY	PART NO.	DESCRIPTION	PHYSICAL DENSITY, g/cc	ELECTRON DENSITY, x 10^{23} electrons/cc	RED (RELATIVE TO H_2O)
1	062MA-14-CV†	Water Equivalent Chamber Rod with Cavity for Ion Chamber	1.029	3.333	0.998
1	062MA-42	Water Equivalent Material Surrounding 6.4mm Diameter Aluminum Rod Core Electron Density Plug	2.70	8.008	2.398

Optional inserts are available for purchase. Visit www.cirsinc.com for more information.

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