IMRT dose verification Phantom

Simultaneous acquisition of absolute, relative and point dose measurement.
Intuitive,easy set-up and visualization for fast confirmation of TPS.
Easy measurement at multiple points and planes,with layered
phantom slabs for 3D patient simulation.
For both IMRT commissioning and routine dose verification,
for comprehensive evaluation of the entire IMRT process.

Gain confidence in the accuracy of treatment plans
and help improve patient outcome by 3D evaluation of:

- High and low dose gradient areas
- Dose distributions to sensitive regions
- Inhomogeneity structures

Features and Benefits

ABSOLUTE DOSE
Make absolute measurements of dose at various depths in up to 16 positions throughout the phantom with standard thimble ion chambers.
RELATIVE DOSE
Make relative dose (fluence dose) measurements using ready pack or radiochromic film placed every 3 cm. Easily compare film to TPS in 3D using four reference marker points in acrylic Phantom Slab.Reference marker points facilitate orientation of film,digital reconstruction and transfer of multiple coronal film views to 3D sagital and transverse images.
POINT DOSE
Make point dose measurements in any position in the phantom using MOSFET diodes or TLDs.Point dose measurements are critical when evaluating dose to sensitive structures.
SIMULTANEOUS MEASUREMENT
Make all three dose measurements simultaneously with one set up and one treatment,saving time. Coronal film placement allows simultaneous ion chamber and film
use since the planes are parallel.
TREATMENT PLANNING INTERFACE
Interfaces with treatment planning systems as the TPS recognizes the phantom . fiducial system and anthropomorphic shape.
BONE EQUIVALENT PLUG
Simulates bone for realistic TPS evaluation.Assists with measuring the absolute dose at
isocenter near the spine.
ANTHROPOMORPHIC SHAPE
Anthropomorphic design provides intuitive,easy set-up for fast confirmation of treatment plan.
Bone and lung insert fields provide high gradient tissue interfaces to evaluate TPS s ability to manage these interfaces.
Uncovers edge effect issues related to tissue heterogeneity.
Accuracy of the prescribed dose is evaluated and confirmed in simulated patient conditions in the body,excluding extremities.
Effectively evaluates junctioning issues of upper neck and half beam block superclav fields.
FAST SET UP
Unique,versatile design allows many configurations to simulate individual treatment plans.
Quick,easy,intuitive set-up.Complete a prostate dose set up and verification in as little as 15 minutes.
Easily configure and adjust layered phantom slabs for individual 3D patient simulation.
Fine 1 mm scribed black lines for easy laser alignment positioning of phantom.
TRANSPARENT ACRYLIC CONSTRUCTION
Operator can visualize the placement of film,chambers and diodes for accurate measurements,

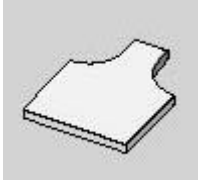
thus minimizingregistration errors. A rylic is characterized in TG 21 foracrylic to water conversion for high
energy photon and electron beams. Water equivalent phantoms are not characterized in this protocol.Some
water equivalent phantoms may only be characterized for cobalt to ascertain their equivalence to liquid water.Since
exacting measurements are essential when dealing with the small field sizes in IMRT,it is important to know the
equivalent properties to liquid water that the TG 21 acrylic to water conversion provides.
For absolute dosimetry,apply correction factors for acrylic to water which are published in the TG 21 protocol.
Standard Imaging combines the required corrections into one table based on depth and energy,allowing the
application of only one correction factor.

REF 91230 IMRT Dose Verification Phantom,includes:

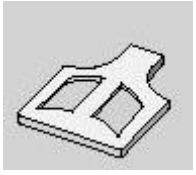
2	Chamber Phantom Slabs with 6 cavities each for ion chamber placement
2	Acrylic Phantom Slabs for build up thickness
2	Lung Phantom Slabs with cavities for simulated lung inserts
16	Solid Acrylic Plugs to fill unused ion chamber cavities
1	Solid Acrylic Plug with cavity drilled for ion chamber of your choice
1	Bone Equivalent Plug
1	Lung Equivalent Set with four (4)inserts for lung phantom voids

Phantom Overview

Chamber Phantom Slab has six cavities for thimble ion chamber measurement.
The diameter of each cavity is¾Solid acrylic plugs are included to fill the cavities
for simulated patient thickness.One solid acrylic plug is drilled for the ion chamber of choice.
A bone equivalent plug is included for bone simulation of heterogeneity measurements.

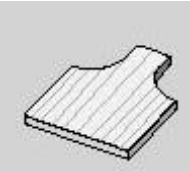


Acrylic Phantom Slab is a solid slab to provide simulated patient build-up material.Four 2 mm steel balls are
imbedded in the slab as reference markers for 3D orientation of film on TPS.

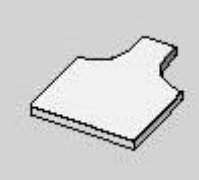


Lung Phantom Slab has two cavities for simulated lung inserts,two cylindrical cavities for thimble ion chamber
placement and a set of two cedar lung inserts for lung simulation.

Additional Options



MOSFET Diode/TLD Slab,REF 70608,has nine channels for MOSFET diodes or TLD chips which can be placed at
any point in a field for point dose measurements.The small channel size was designed not to perturb other
measurements so this slab can also be used as a solid slab for increased patient thickness.MOSFET diodes are
isotropic for dose measurements from any angle.



Acrylic Phantom Slab,REF 50062,is a solid slab to provide simulated patient build-up material.Four 2 mm steel
balls are provided for use as reference markers for 3D orientation of film on TPS.

Carrying Case,REF 50064,has extendable handles and wheels for transport from room to room.Case also
protects phantom during shipping.
Doc. No. 1194-00 02-15-02

Dimensions
Height (six slabs)18.00 cm (7.09 in)
Width (each slab)30.00 cm (11.81 in)
Length (each slab)45.00 cm (17.72 in)
Weight (six slabs)22.7 kg (50.0 lbs)
Cavity Diameter 1.90 cm (^{3}/4 in)

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