

Proton Therapy Dosimetry Head

Model 731-HN



TISSUE EQUIVALENT FOR PROTON AND PHOTON THERAPY

The CIRS Proton Therapy Dosimetry Head is an anthropomorphic head phantom designed for commissioning and treatment planning system (TPS) verification with any conformal or IMRT Proton Therapy system¹.

The phantom is constructed of CIRS tissue-equivalent materials, which mimic reference tissues within 1.5% for protons and within 1% for photons from 50 KeV to 15 MeV. The Proton Therapy Head can be used during all standard IMRT procedures from CT image acquisition to proton beam delivery verification^{1,3}.

Tissue equivalency of detailed internal structures makes the phantom ideal for treatment plan evaluation in high density-gradient locations, which are specifically important in proton therapy², such as air cavity vs. bone structures. Internal structures include brain, bone with cortical and trabecular distinction, larynx, trachea, fully-open sinus cavities, nasal and mouth cavities, and teeth with distinct dentine, enamel and root structure.

Model 731-HN approximates the average male human head in both size and structure to allow for intuitive set up with any patient positioning or fixation device.

One half of the phantom is sectioned in 2cm increments for three film locations in the cranio-caudal direction starting from the approximate center of the sagittal plane. Because slices are orthogonal to the CT axial plane, artifacts caused by residual air gaps are noticeably reduced compared to standard axial slices.

Proton system commissioning is enhanced by placement of a tungsten BB in a molar and a titanium prosthesis attached by two screws at C3 and C5 vertebra.

Features

- Detailed internal anatomy including bone and air
- Three film locations in sagittal direction
- Tissue Equivalent for protons and photons
- Dental filling and spine prosthesis

CIRS

Tissue Simulation & Phantom Technology

PEO B.V.

info@gotopeo.com
www.gotopeo.com

The Netherlands

Havenweg 16, 6603 AS Wijchen
+31 (0)24 648 86 88

Belgium

Watermolenstraat 2, B-2910 Essen
+32 (0)3 309 32 09

CoC 34107894

VAT NL807859151B01

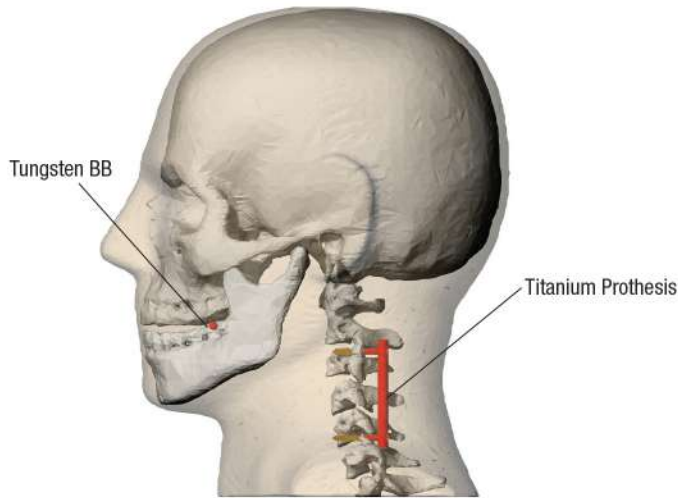
IBAN NL29 RABO 0356 1960 46

BIC RABONL2U

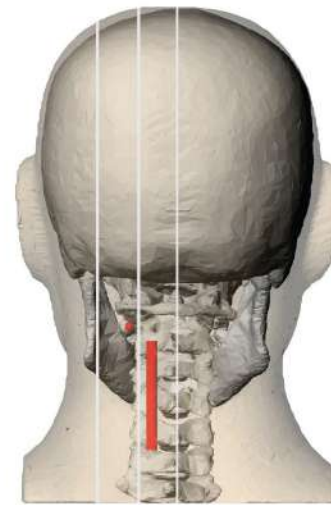


PROTON THERAPY DOSIMETRY HEAD

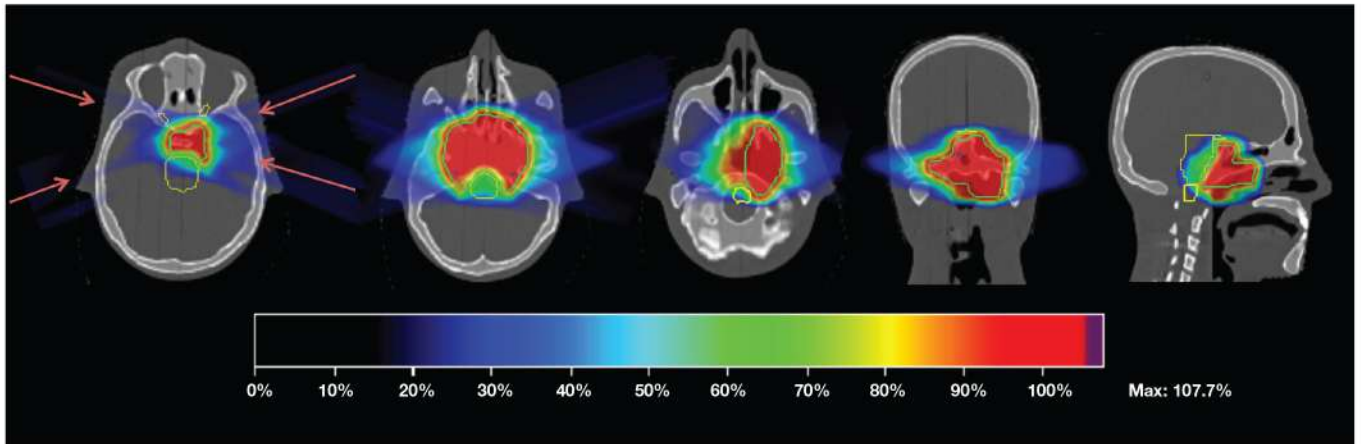
Model 731-HN



Model 731-HN Sagittal Rendering



Back view of phantom with sagittal cuts



Dose Distribution of sample treatment plan on Model 731-HN

SPECIFICATIONS

APPROXIMATE DIMENSIONS:	18 cm x 22 cm x 27 cm (7" x 8.6" x 10.6")
WEIGHT:	6.4 kg (14 lbs)
PHANTOM MATERIALS:	Epoxy Resin

REFERENCES:

1. Albertini F, Casiraghi M, Lorentini S, Rombi B, Lomax AJ. Experimental verification of IMPT treatment plans in an anthropomorphic phantom in the presence of delivery uncertainties. *Phys Med Biol.* 2011;56(14):4415-31.
2. Lorentini S, Menegotti L, Delana A, Schwarz M. PO-0873 DOSIMETRIC VERIFICATION OF IMRT PLANS WITH A CUSTOMIZED ANTHROPOMORPHIC PHANTOM. *Radiotherapy and Oncology.* 2012;103:S342.
3. Demez N, Lee T. EP-1320 STUDY ON THE COMPATIBILITY OF TISSUE EQUIVALENT PHANTOMS FOR USE IN PROTON BEAM THERAPY QA. *Radiotherapy and Oncology.* 2012;103:S501.

©2013 Computerized Imaging Reference Systems Inc. All rights reserved.
Specifications subject to change without notice.
Publication: 731HN DS 042716

MODEL731-HN INCLUDES

QTY	COMPONENT DESCRIPTION
1	Proton Therapy Head Phantom
1	Foam-Lined Carry Case
1	User Guide
-	48 Month Warranty

ADDITIONAL OPTIONS

PART NO.	DESCRIPTION
038-20	SRS Frame Support Cups, Set of 4



Computerized Imaging Reference Systems, Inc. has been certified by UL DQS Inc. to (ISO) 9001:2008. Certificate Registration No.10000905-QM08.

PEO B.V.

info@gotopeo.com
www.gotopeo.com

The Netherlands

Havenweg 16, 6603 AS Wijchen
+31 (0)24 648 86 88

Belgium

Watermolenstraat 2, B-2910 Essen
+32 (0)3 309 32 09

CoC 34107894

VAT NL807859151B01

IBAN NL29 RABO 0356 1960 46

BIC RABONL2U

