



CENTRO DE MEDICINA
NUCLEAR



DataSpectrum



Flanged SPECT Jaszczak



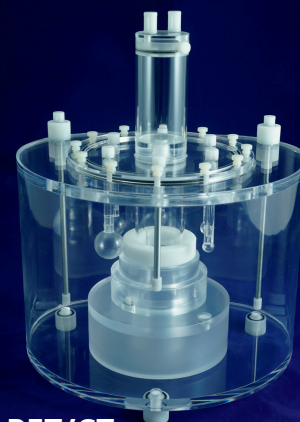
Hoffman 3D Brain



Flangeless PET Esser



Preclinical



PET/CT



Extended Oval PET body



Torso with Cardiac Insert

Request a quote for your Data Spectrum Phantom at
ventasglobales@centrodemednuclear.com

Hoffman 2D Brain Phantom™

Model BR/2D/P

Main Features

- Thickness differences between ventricle, gray and white matter simulate the radioactivity distribution in a single slice of a brain ECT study
- Normal gray-matter:white-matter:ventricle radioactivity ratio is 4:1:0 (simulated by partial volume effect)

Main Applications

- Evaluation of acquisition and reconstruction methods for brain PET and SPECT studies
- Research

Material

PMMA

Shipping

Carton: 7" x 7" x 3"

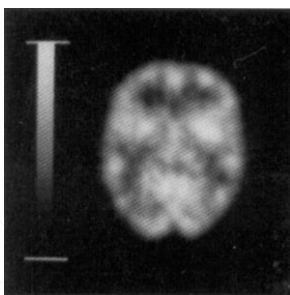
Weight: 2lbs.

Equivalent Scan Time

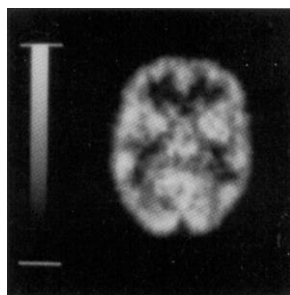
1₁₂₃



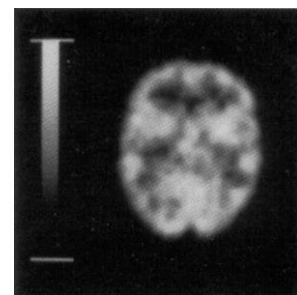
Hoffman 2D Brain Phantom™



Low Energy All Purpose
Collimation



Fan Beam
Collimation



Hi Resolution
Collimation

Hoffman 3D Brain Phantom™

Model BR/3D/P

Hoffman 3D Brain Solid Defects Set 2 on second page

Main Features

- Anatomically accurate simulation of radioactivity distribution for brain SPECT and brain PET studies* and distribution of proton density and relaxation parameters for brain MRI studies
- Simulates 4:1 uptake ratio (by partial volume effect) seen for normal gray and white matter in flow and metabolic studies
- Single fillable chamber eliminates the necessity of preparing different concentrations of radioactivity
- Solid defects for basil ganglia region available

Main Applications

- Evaluation of acquisition and reconstruction methods for brain ECT studies
- Evaluation of 3-D reconstruction methods
- Evaluation of 3-D attenuation and scatter compensation methods
- Evaluation of 3-D SPECT, PET and MRI registration techniques
- Research

Specifications

Cylinder material is PMMA

Cylinder inside diameter: ~ 208 mm

Cylinder inside height: ~ 175 mm

Fillable volume: ~ 1.2 liter

Slice Thickness:

Insert slice material is Polycarbonate

Very top slice: ~ 3.1 mm

All Center slices: 6.5 mm

Bottom slice: ~ 9.7 mm

Shipping

Carton: 13" x 13" x 13"

Weight: 14lbs.

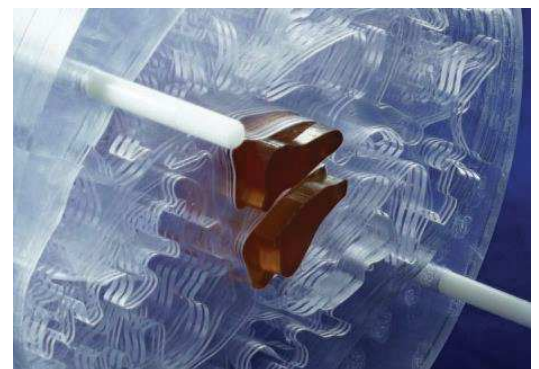
**Hoffman EJ, Cutler PD, Digby WM and Mazziotta JC. 3-D phantom to simulate cerebral blood flow and metabolic images for PET, IEEE Trans Nucl Sci 37:616-620, 1990.*



Hoffman 3D Brain Phantom™



Components of 3D Brain Phantom™



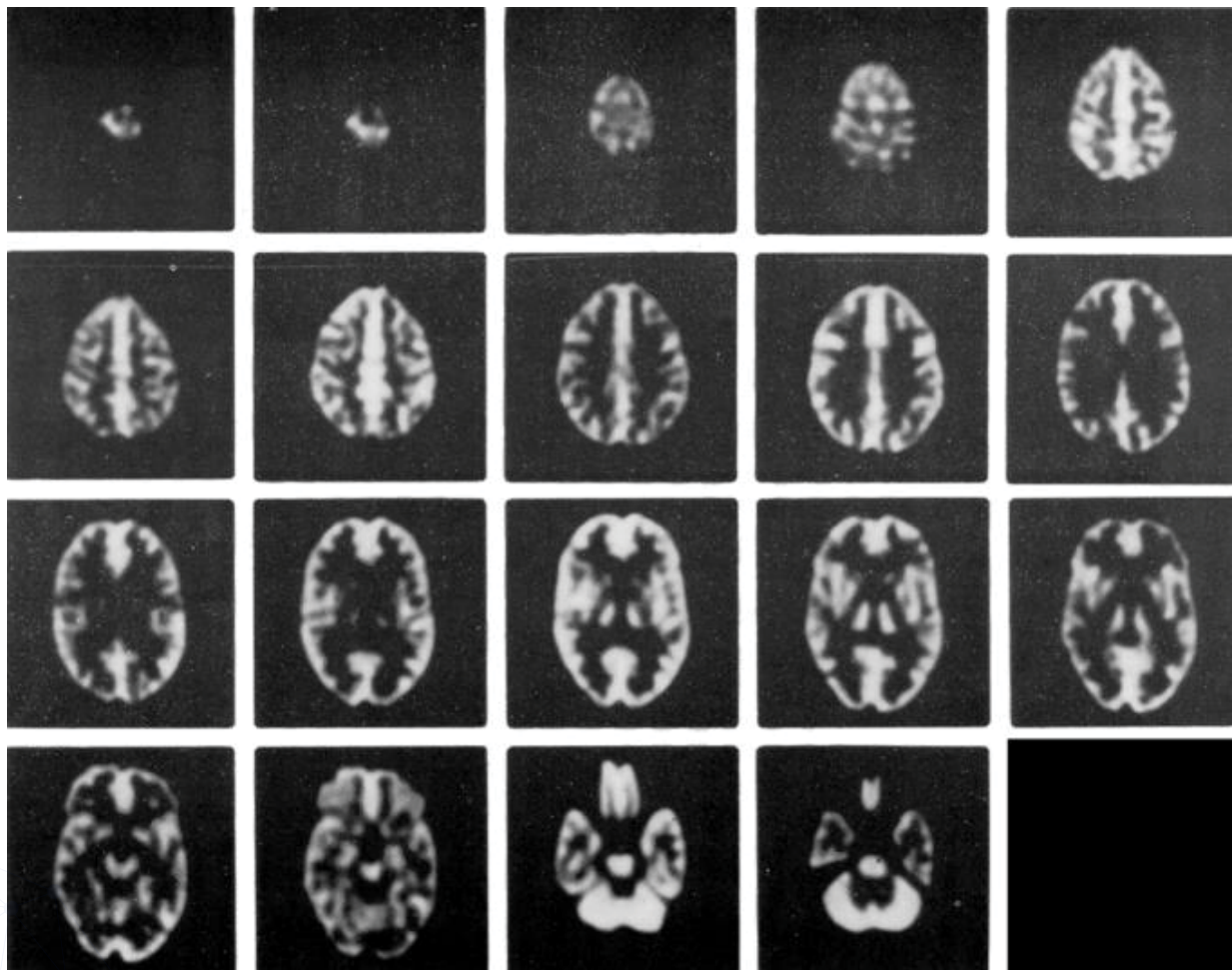
Hoffman 3D Brain Solid Defects Set 2™

Hoffman 3D Brain Solid Defects Set 2

Model BR/3D-SOL/SET2

Main Features

- Cold defects can be located in the basil ganglia region
- Allows user to determine image shape of the defect



Hoffman 3D Brain Phantom™

Hoffman 2D Multi-Compartment Brain Phantom™

Model BR/2D-MC/P

Main Features

- Anatomically correct - varying isotope uptake ratios - simulation of the activity distribution in a flow or metabolic image of normal and abnormal human brain*
- Seven (7) gray-matter compartments that may be separately filled with varying amounts of radiotracer to simulate a variety, of "hot" and "cold" abnormalities
- Normal gray-matter:white-matter:ventricle activity, ratio is 4:1:0 (simulated by partial volume effect)
- Abnormal-gray-matter:normal-gray-matter activity, ratios can be varied from 0.25:1 to greater than 100:1

Main Applications

- SPECT and PET applications include research, system performance measurements, optimization of imaging protocols, image interpretation, and training

Material

PMMA

Shipping

Carton: 12" x 9" x 6"

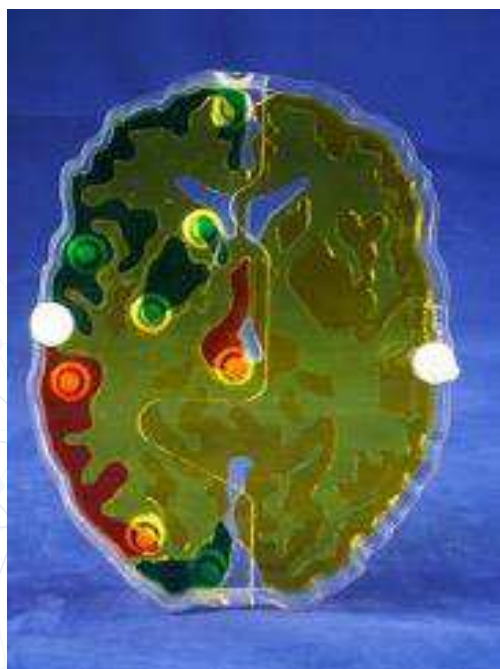
Weight: 3lbs.

A SPECT image and profile of Hoffman 2D Multi-Compartment Brain Phantom™ with a compartment (arrow) filled with increased activity to simulate a 67% increase in perfusion during an intraictal phase.

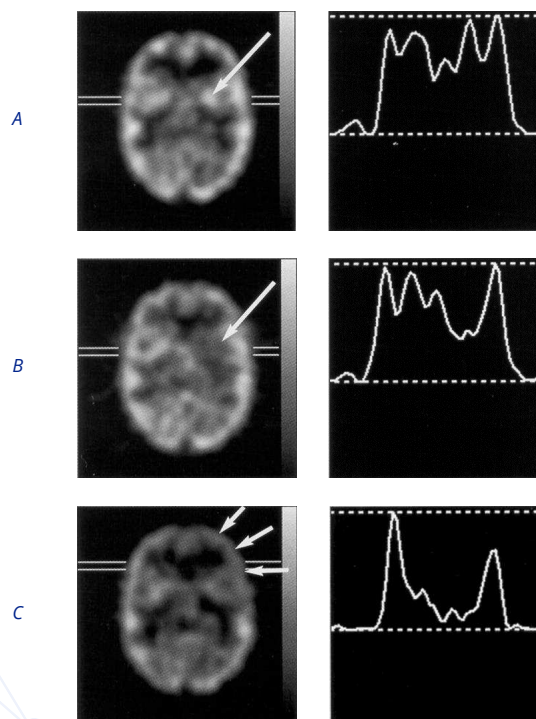
B SPECT image and profile of Hoffman 2D Multi-Compartment Brain Phantom™ with a compartment (arrow) filled with decreased activity to simulate a 67% reduction in perfusion during an interictal phase.

C SPECT image and profile of Hoffman 2D Multi-Compartment Brain Phantom™ with a compartment (arrows) filled with decreased activity to simulate a 33% reduction in perfusion in the left frontal lobe.

*Hoffman EJ, Ricci AR, van der Stee LMAM, Phelps ME. ECAT -- Basic Design Considerations, IEEE Trans Nucl Sci, NS-30:729-733, 1983.



Hoffman 2D Multi-Compartment Brain Phantom™



Anthropomorphic Torso Phantom™

Model ECT/TOR/P

Main Features

- Includes large, body-shaped cylinder with lung, liver and spine features
- Lung inserts can be filled with polystyrene beads and water to simulate lung tissue density
- Optional Cardiac Insert™ (Model ECT/CAR/I) may be purchased separately
- Simulates upper torso of average to large male/female patients (380 × 260 mm)
- Simulates anatomical structures and radioactivity distributions
- Optional Fillable Spine Insert (Model ECT/FIL-SPINE/I) and Liquid Bone filled (Model ECT/BONE-SPINE/I) are available

Main Applications

- Evaluation of cardiac ECT data acquisition and reconstruction methods
- Evaluation of non-uniform attenuation and scatter compensation methods
- Research

Specifications

All clear material: PMMA

Lateral outside dimension: ~ 380 mm

Lateral inside dimension: ~ 360 mm

Anteroposterior outside dimension: ~ 260 mm

Anteroposterior inside dimension: ~ 240 mm

Wall thickness: ~ 9.5 mm

Volumes:

Empty: ~ 13.4 liters

Left lung (w/o polystyrene beads): ~ 0.9 liter

Right lung (w/o polystyrene beads): ~ 1.1 liters

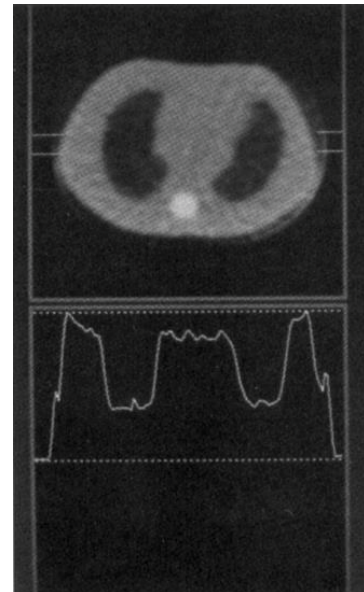
Left lung (w/ polystyrene beads): ~ 0.36 liter

Right lung (w/ polystyrene beads): ~ 0.44 liter

Liver: ~ 1.2 liters

Background: ~ 1.2 liters

Cylinder with lung-spine inserts: ~ 7.4 liters



Transmission CT

Shipping

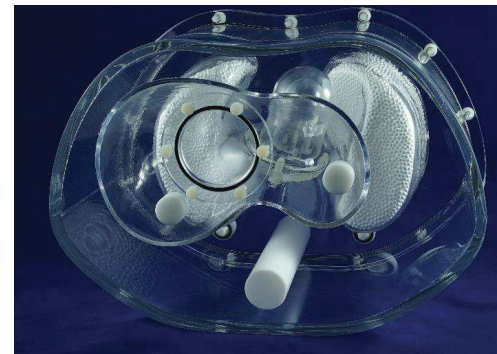
Carton: 16" x 16" x 16"

Weight: 14lbs.

Anthropomorphic Torso Phantom™

Frontal view
Shown with optional Cardiac Insert™

Bottom view
Shown with optional Cardiac Insert™



Elliptical Lung-Spine Phantom™

Model ECT/LUNG-SPINE/P

Main Features

- Includes spine and fillable lung inserts
- Lung inserts can be filled with polystyrene beads and water to simulate lung tissue density $\sim 0.3 \text{ gm / cm}^3$
- Optional Cardiac Insert™ (Model ECT/CAR/I) may be purchased separately
- Simulates anatomical structures and radioactivity distributions in upper torso of human

Main Applications

- Evaluation of acquisition and reconstruction methods for cardiac and lung ECT studies
- Evaluation of non-uniform attenuation and scatter compensation methods
- Research

Specifications

All clear material: PMMA

Cylinder inside diameter along major axis: 305 mm

Cylinder inside diameter along minor axis: 221 mm

Cylinder inside height: 186 mm

Cylinder wall thickness: 6.4 mm

Volumes

Empty cylinder: ~ 9.5 liters

Left lung (w/o polystyrene beads): ~ 0.9 liter

Right lung (w/o polystyrene beads): ~ 1.1 liters

Left lung (w/ polystyrene beads): ~ 0.36 liter

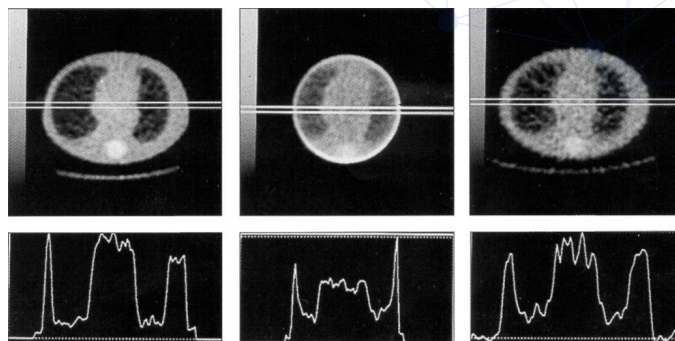
Right lung (w/ polystyrene beads): ~ 0.44 liter

Volume of cylinder with Lungs: ~ 7.4 liters

Shipping

Carton: 14" x 14" x 14" Weight: 10lbs.

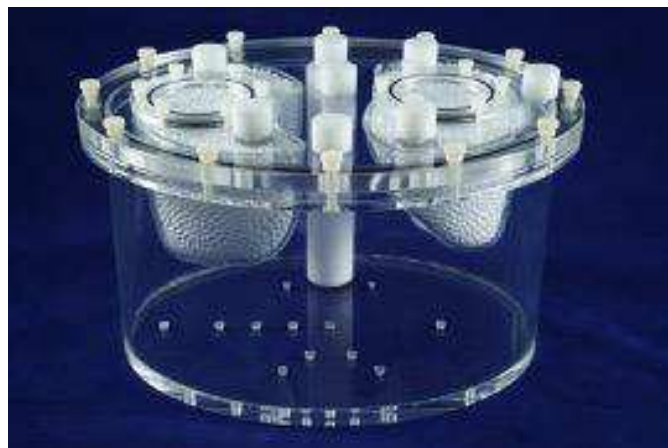
Transmission CT



Fan Beam (fL=110)cm

Fan Beam (fL=63)cm

Parallel Beam



Elliptical Lung-Spine Phantom™



Shown with optional Cardiac Insert™

Elliptical Lung-Spine Body Phantom Lid Insert™

Model ECT/LUNG-SPINE/I

Main Features

- Designed to be used exclusively with the Elliptical ECT Phantom™ (Model ECT/ELP/P)
- Consists of two lung chambers that can be packed with polystyrene beads and when filled with a radioactive solution simulate lung tissue with density of $\sim 0.3 \text{ gm/cm}^3$ and any desirable radioactivity concentration
- A Teflon® rod is used to simulate the spine Optional Cardiac Insert™ (Model ECT/CAR/I) can be purchased separately to be mounted on the lid
- Optional Fillable Spine Insert (Model ECT/FIL-SPINE/I) and Liquid Bone filled (Model ECT/BONE-SPINE/I) are available

Main Applications

- Evaluation of cardiac ECT data acquisition and reconstruction methods
- Quantitative evaluation of non-uniform attenuation and scatter compensation methods
- Research

Specifications

All clear material: PMMA

Diameter of Teflon® rod (spine): 38 mm

Length of Teflon® rod (spine): 17.8 cm

Volumes:

Left lung (w/o polystyrene beads): ~ 0.9 liter

Right lung (w/o polystyrene beads): ~ 1.1 liter

Left lung (w/ polystyrene beads): ~ 0.36 liter

Right lung (w/ polystyrene beads): ~ 0.44 liter

Shipping

Carton: 13" x 13" x 13"

Weight: 5lbs.



Elliptical Lung-Spine Phantom Lid Insert™



Shown with optional Cardiac Insert™

Fillable Spine Insert™

Model ECT/FIL-SPINE/I (user filled)

Spine Insert, With Liquid Bone™

Model ECT/BONE-SPINE/I (filled with liquid bone)

Main Features

- Designed to be used with the Elliptical Lung-Spine Insert™ (Model ECT/LUNG-SPINE/I) or Elliptical Lung-Spine Phantom™ (Model ECT/LUNG-SPINE/P) or Anthropomorphic Torso Phantom™ (Model ECT/TOR/P)

Main Applications

- Improved spine attenuation characteristic over Teflon® rod

Specifications

All clear material: PMMA
Outside height: ~ 190 mm
Inside height: ~ 152 mm
Outside diameter: ~ 45 mm
Inside diameter: ~ 38 mm
Volume: ~ 170 cc

Shipping

Carton: 7" x 7" x 3"
Weight: 2lbs.



Fillable Spine Insert™

Cardiac Insert with Fillable & Solid Defect Sets™

Model ECT/CAR/I

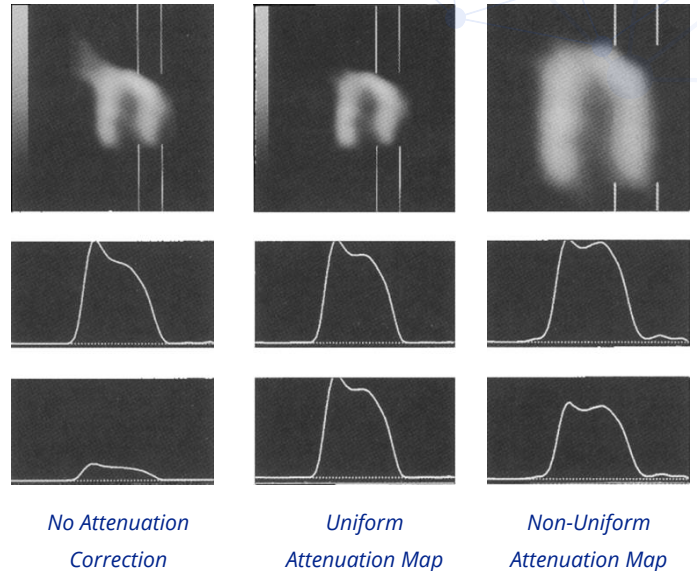
Main Features

- Designed to be used with the various Data Spectrum circular and elliptical cylinders, the Elliptical Lung-Spine Body Phantom™, and the Anthropomorphic Torso Phantom™
- Simulates normal and abnormal myocardial uptake and radioactivity in left ventricular chamber
- Solid inserts simulate transmural and non-transmural cold abnormalities
- Fillable inserts can be used to simulate transmural and non-transmural cold or hot abnormalities

Main Applications

- Evaluation of cardiac ECT data acquisition and reconstruction methods
- Quantitative evaluation of non-uniform attenuation and scatter compensation methods
- Research

SPECT scans with Cardiac Insert™



Specifications

All clear material: PMMA
 Cardiac Insert fillable regions:
 Ventricle length: 71 mm
 Ventricle volume: 62 mL
 Diameter: ~ 35 mm
 Myocardium thickness: 10.3 mm
 Volume: 121 mL

Solid Defect Set:

1. 60° × 20 mm
2. 45° × 15 mm
3. 60° × 20 mm, with 5 mm wall thickness (non-transmural defect)

Fillable Defect Set: Volume:

1. 180° × 20 mm 10.3 mL
2. 90° × 20 mm 5.2 mL
3. 45° × 20 mm 2.6 mL
4. 45° × 20 mm, 1.7 mL
with 5 mm thick chamber*

*Only the outer half of the 4th defect (non-transmural) is fillable. Each insert can be installed individually.

Shipping

Carton: 12" x 9" x 6" Weight: 5lbs.



Cardiac Insert™ shown with Fillable Defects Set™

Elliptical Jaszczak Phantom™

Model ECT/ELP/P

Main Features

- Jaszczak phantom with elliptical body shape

Main Applications

- For use with high spatial resolution SPECT and PET systems
- Evaluation of data acquisition using non-circular orbit
- System performance evaluation over larger field-of-view (collimator, artifacts, calibration reconstruction parameters)
- Study of the effects of regional variation in intrinsic system response using uniform portion of the elliptical cylinder
- Evaluation of the accuracy of body contour and attenuation compensation algorithms
- Evaluation of lesion detectability using spheres of different diameters
- Study of the effects of finite spatial resolution & Compton scatter on image quality
- Acceptance testing
- Routine quality, assurance and control
- Research

Specifications of Cylinder

All clear material: PMMA

Cylinder inside diameter along major axis:
~ 305 mm

Cylinder inside diameter along minor axis:
~ 221 mm

Cylinder inside height: ~ 186 mm

Cylinder wall thickness: ~ 6.4 mm

Volume of empty cylinder: ~ 9.5 liter

Volume of cylinder with cold rod insert and
cold spheres: ~ 8.3 liter

Specifications of Insert and Spheres

All clear material: PMMA

Rod diameters: 6.4, 7.9, 9.5, 11.1, 12.7 and
19.1 mm*

Height of rods: 8.8 cm

Solid sphere diameters: 12.7, 15.9, 19.1,
25.4, 31.8 and 38 mm

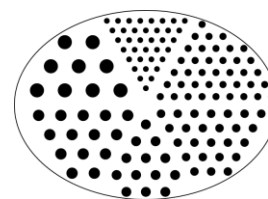
Distance from sphere center to mounting
surface: 127 mm

**For more details see Cold Rod Inserts*

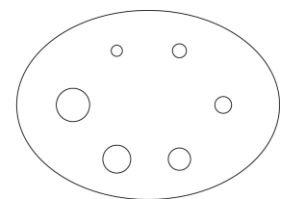
Shipping

Carton: 13" x 13" x 13"

Weight: 10lbs.



Elliptical Cold Rods

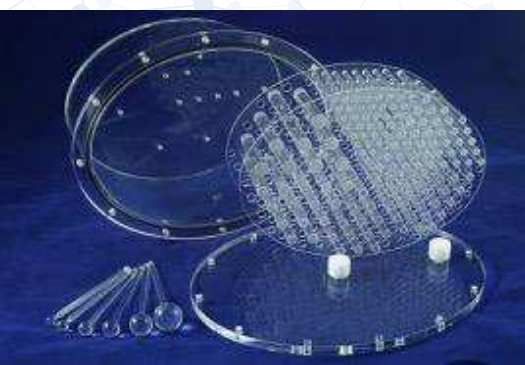


Elliptical Cold Spheres

Components of Elliptical Jaszczak Phantom™

Elliptical Jaszczak Phantom™

Elliptical Jaszczak Phantom™



Flanged Hot Spot Insert™

Model ECT/HOT/I

Flangeless Hot Spot Insert™

Model ECT/HOT-FL/I

Main Features

- Model ECT/HOT/I is designed for use with the 216 mm inside diameter flanged cylinder
- Model ECT/HOT-FL/I is designed for use with the 204 mm inside diameter flangeless cylinder
- May be mounted in the cylinder in three alternative ways:
 - by itself
 - simultaneously with the spheres that are supplied with the SPECT phantom
 - simultaneously with the Cold Rod Insert™ that is supplied with the SPECT Phantom

Main Applications

- For use with high spatial resolution SPECT and PET Systems
- System resolution test for high contrast structures
- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material: PMMA

Diameter of insert:

Model ECT/HOT/I: 214 mm

Model ECT/HOT-FL/I: 203 mm

Inside height: 6.6 cm

Diameters of hollow channels: 4.8, 6.4, 7.9, 9.5, 11.1 and 12.7 mm

Center-to-center spacing of channels: Two times the diameter

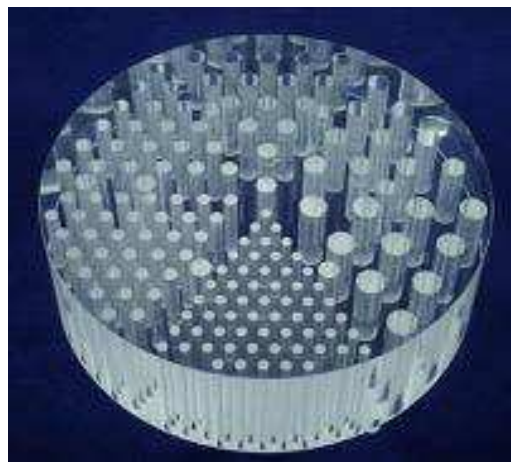
Shipping

Carton: 12" x 9" x 6"

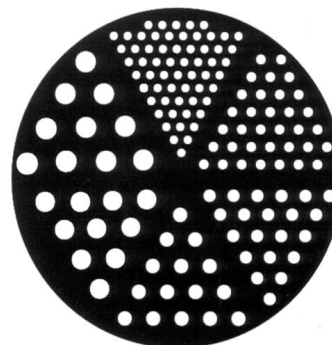
Weight: 5lbs.



Flangeless Hot Spot Inset™ and Cylinder



Flanged Hot Spot Inset™



Model ECT/HOT/I™

NEMA SPECT Triple Line Source Phantom (NU 1-2018)[™]

Model ECT/NEMA-TRI/P

Main Features

- The NEMA SPECT Triple Line Source Phantom[™] is designed in accordance with the recommendations by the National Electrical manufacturers Association (NEMA) to standardize the measurement of reconstructed spatial resolution of SPECT*

Main Applications

- Acceptance testing with NEMA standard
- Center-of-rotation error evaluation
- Evaluation of changes of radius-of-rotation on spatial resolution
- Quantitative evaluation of reconstruction filters and scatter compensation methods
- Research

Specifications

Clear material is PMMA

Cylinder outside diameter: ~ 222 mm

Cylinder inside diameter: ~ 202 mm

Cylinder outside height: ~ 238 mm

Cylinder inside height: ~ 200 mm

Diameter of line sources: ~ 1 mm

Spacing of Line Sources: ~ 75 mm

Useful Height of Line Sources: 184 mm

Shipping

Carton: 13" x 13" x 13" Weight: 8lbs.

**Performance Measurements of Scintillation Cameras, NEMA Standards Publication No. NU 1, National Electrical Manufacturers Association (NEMA), Washington, D.C., 2018.*



NEMA SPECT Triple Line Source
Phantom (NU 1-2018)[™]

Ultra Deluxe ECT Cold Rod Insert™

Model ECT/UL-DLX/I

Main Features

- Designed for use with the 216 mm inside diameter flanged phantoms

Main Applications

- For use with ultra-high spatial resolution SPECT and PET Systems
- System resolution test for lower contrast structures
- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material for plates: PMMA

Insert diameter: 213 mm

Rod diameters: 3.2, 4.8, 6.4, 7.9, 9.5 and 11.1 mm

Height of rods: 88 mm

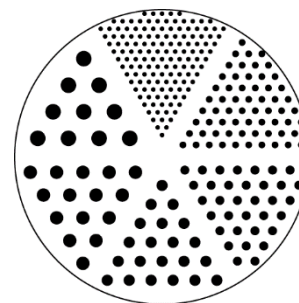
Shipping

Carton: 12" x 9" x 6"

Weight: 2lbs.



Flanged Cylinder with Deluxe ECT Cold Rod Insert™



Ultra Deluxe ECT Cold Rod Insert™

Deluxe ECT Cold Rod Insert™

Model ECT/DLX/I

Main Features

- Designed for use with the 216 mm inside diameter flanged phantoms

Main Applications

- For use with high and very high spatial resolution SPECT and PET Systems
- System resolution test for lower contrast structures
- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material for plates: PMMA

Insert diameter: 213 mm

Rod diameters: 4.8, 6.4, 7.9, 9.5, 11.1 and 12.7 mm

Height of rods: 88 mm

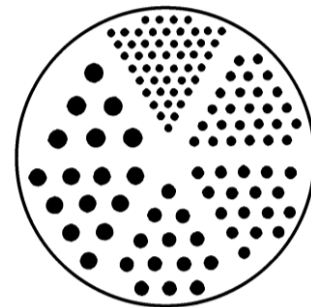
Shipping

Carton: 12" x 9" x 6"

Weight: 2lbs.



Deluxe ECT Cold Rod Insert™



Deluxe ECT Cold Rod Insert™

Standard ECT Cold Rod Insert™

Model ECT/STD/I

Main Applications

- For use with medium to high spatial resolution SPECT and PET Systems
- System resolution test for lower contrast structures
- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material for plates: PMMA

Insert diameter: 213 mm

Rod diameters: 6.4, 7.9, 9.5, 11.1 12.7 and 19.1 mm

Height of rods: 88 mm

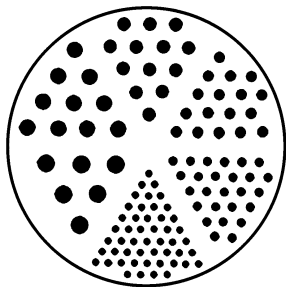
Shipping

Carton: 12" x 9" x 6"

Weight: 2lbs.

Main Features:

Model ECT/STD/I is designed for use with the 216 mm inside diameter flanged phantoms



Standard ECT Cold Rod Insert™

Elliptical ECT Cold Rod Insert™

Model ECT/ELP/I

Main Applications

- For use with medium to high spatial resolution SPECT and PET Systems
- System resolution test for lower contrast structures
- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material for plates: PMMA

Insert diameter: 302 mm along major axis

218 mm along minor axis

Rod diameters: 6.4, 7.9, 9.5, 11.1 12.7 and 19.1 mm

Height of rods: 88 mm

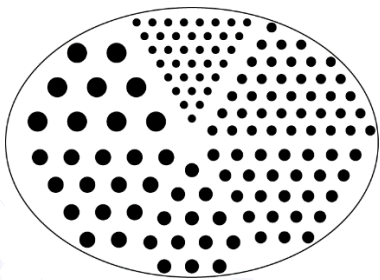
Shipping

Carton: 12" x 9" x 6"

Weight: 2lbs.

Main Features:

Model ECT/ELP/I is designed for use with the Elliptical ECT Phantom™ (Model ECT/ELP/P)



Elliptical ECT Cold Rod Insert™

Flangeless Deluxe ECT Cold Rod Insert™

Model ECT/FL-DLX/I

Main Features

- Designed for use with the 209 mm inside diameter flanged phantoms

Main Applications

- For use with high and very high spatial resolution SPECT and PET Systems
- System resolution test for lower contrast structures
- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material for plates: PMMA

Insert diameter: 208 mm

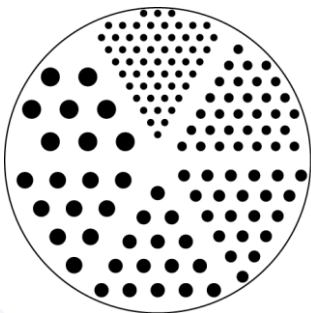
Rod diameters: 4.8, 6.4, 7.9, 9.5, 11.1 and 12.7 mm

Height of rods: 88 mm

Shipping

Carton: 12" x 9" x 6"

Weight: 2lbs.



Flangeless Deluxe ECT Cold Rod Insert™

Benchmark ECT Cold Rod Insert™

Model ECT/BEN/I

Main Features

- Designed for use with the 21.6 cm inside diameter flanged phantoms

Main Applications

- For use with ECT systems with poorer spatial resolution, larger radius-of-rotation, cut-off reconstruction filters and count densities mimicking clinical scans
- System resolution test for lower contrast structures
- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material for plates: PMMA

Insert diameter: 21.3 cm

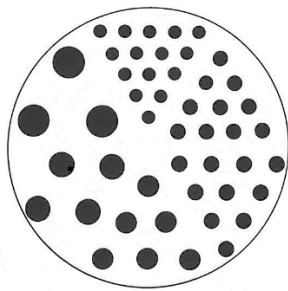
Rod diameters: 9.5, 11.1, 12.7, 15.9, 19.1, and 25.4 mm

Height of rods: 8.8 cm

Shipping

Carton: 12" x 9" x 6"

Weight: 3lbs.



Benchmark ECT Cold Rod Insert™

Small ECT Cold Rod Insert™

Model ECT/SM/I

Main Features

- Designed for use with the 140 mm inside diameter flanged phantoms

Main Applications

- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material for plates: PMMA

Insert diameter: 139 mm

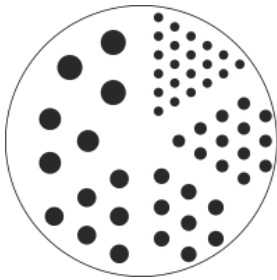
Rod diameters: 4.8, 6.4, 7.9, 9.5, 11.1 and 12.7 mm

Height of rods: 40 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 1lbs.



Small ECT Cold Rod Insert™

Small High Resolution ECT Cold Rod Insert™

Model ECT/SM-HR/I

Main Features

- Designed for use with the 140 mm inside diameter flanged phantoms

Main Applications

- Acceptance testing
- Routine quality, assurance and control
- System performance evaluation
- Research

Specifications

Material for plates: PMMA

Insert diameter: 139 mm

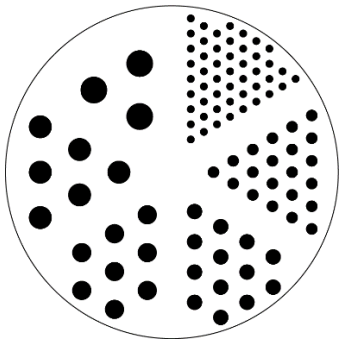
Rod diameters: 3.2, 4.8, 6.4, 7.9, 9.5, and 11.1 mm

Height of rods: 40 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 1lbs.



Small High Resolution ECT Cold Rod Insert™

Flanged Jaszczak ECT Phantoms

Main Features

- ECT phantoms with protruding flanged top and with 3.2 mm cylinder wall thickness, for reduced attenuation

Main Applications

- For use with SPECT and PET systems
- System performance evaluation (collimator, artifacts, calibration, reconstruction parameters)
- Acceptance testing
- Routine quality, assurance and control
- Evaluation of center-of-rotation error
- Evaluation of non-uniformity artifact
- Evaluation of changes of radius-of-rotation on spatial resolution
- Evaluation of reconstruction filters on spatial resolution
- Evaluation of attenuation and scatter compensation
- Research

Specifications of Cylinder

All clear material: PMMA

Cylinder inside diameter: ~ 216 mm

Cylinder inside height: ~ 186 mm

Cylinder wall thickness: ~ 3.2 mm

Volume empty: ~ 6.8 liters

Volume with Cold Rod Insert: ~ 5.7 liters

Spheres make no significant change in volume

Specifications of Insert

All clear material: PMMA

Rod diameters: Vary with insert, see next page

Height of rods: ~ 88 mm

Solid sphere diameters: Vary with insert, see next page

Distance from sphere center to mounting surface: ~ 127 mm

Shipping

Carton: 13" x 13" x 13"

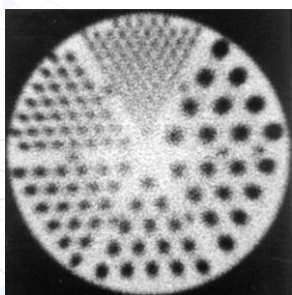
Weight: 10lbs.



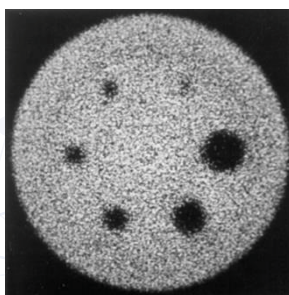
Components of Deluxe
Jaszczak Phantom™



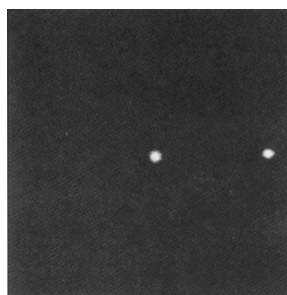
Deluxe Jaszczak Phantom™
(See next page for available models)



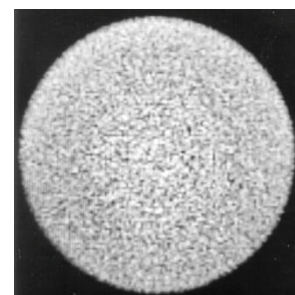
Cold Rods



Cold Spheres



Line Sources



Uniform

(The images were obtained with the Deluxe Jaszczak Phantom™ Model ECT/DLX/P)

Glass capillary tubes (user supplied) with 120 mm length may be positioned without removing top cover plate as a result of a unique design of filler caps, one on axis, one 86 mm from axis-of-rotation

Ultra Deluxe Jaszczak Phantom™

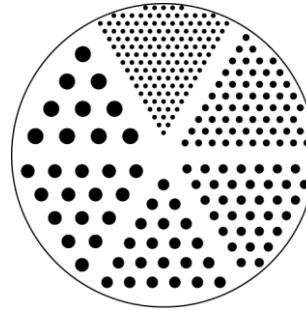
Model ECT/UL-DLX/P

- For use with ultra-high spatial resolution SPECT and PET systems.

Specifications

Rod diameters: 3.2, 4.8, 6.4, 7.9, 9.5 and 11.1 mm
Solid sphere diameters: 9.5, 12.7, 15.9, 19.1, 25.4, and 31.8 mm

Cold Rods



Cold Spheres



Ultra Deluxe

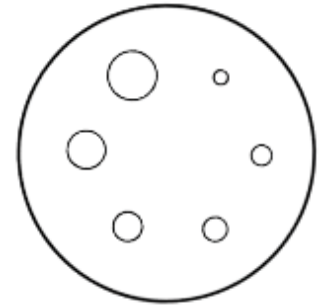
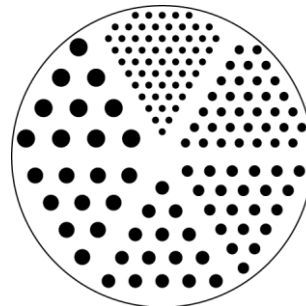
Deluxe Jaszczak Phantom™

Model ECT/DLX/P

- For use with high to very high spatial resolution SPECT and PET systems.

Specifications

Rod diameters: 4.8, 6.4, 7.9, 9.5, 11.1 and 12.7 mm
Solid sphere diameters: 9.5, 12.7, 15.9, 19.1, 25.4, and 31.8 mm



Deluxe

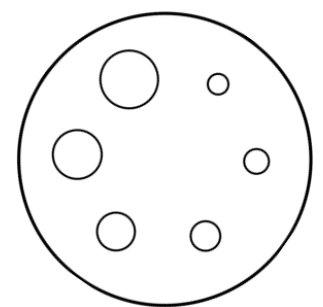
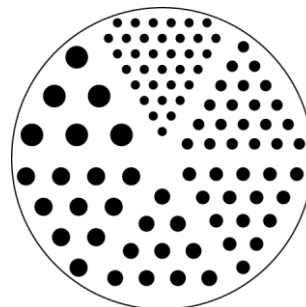
Standard Jaszczak Phantom™

Model ECT/STD/P

- For use with medium to high spatial resolution SPECT and PET systems.

Specifications

Rod diameters: 6.4, 7.9, 9.5, 11.1, 12.7 and 19.1 mm
Solid sphere diameters: 12.7, 15.9, 19.1, 25.4, 31.8, and 38.1 mm



Standard

Benchmark Jaszczak Phantom™

Model ECT/BEN/P

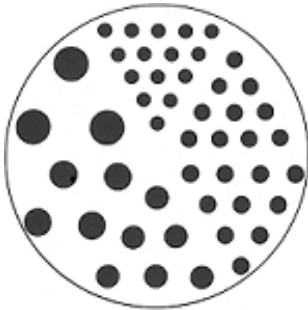
- For use with ECT systems with poorer spatial resolution, larger radius-of-rotation, low cut-off reconstruction filters and count densities mimicking clinical scans.

Specifications

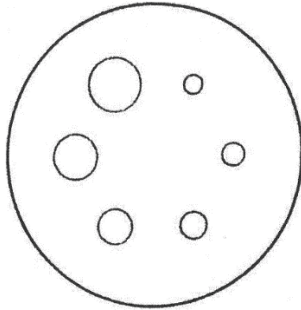
Rod diameters: 9.5, 11.1, 12.7, 15.9, 19.1 and 25.4 mm

Solid sphere diameters: 12.7, 15.9, 19.1, 25.4, 31.8,
and 38.1 mm

Cold Rods



Cold Spheres



Benchmark

For more details on just insert see
Cold Rod Inserts

Flangeless Deluxe Jaszczak Phantom™

Model ECT/FL-DLX/P

Deluxe ECT phantom without protruding flange to simplify positioning.

Main Applications

- For use with high spatial resolution SPECT and PET systems*
- System performance evaluation (collimator, artifacts, calibration, reconstruction parameters)
- Acceptance testing
- Routine quality assurance and control
- Evaluation of center-of-rotation error
- Evaluation of non-uniformity artifact
- Evaluation of changes of radius-of-rotation on spatial resolution
- Evaluation of reconstruction filters on spatial resolution
- Evaluation of attenuation and scatter compensation
- Research
- ACR recommended phantom

Specifications of Cylinder

All clear material: PMMA

Cylinder inside diameter: ~ 209 mm

Cylinder inside height: ~ 186 mm

Cylinder wall thickness: ~ 6.4 mm

Volume - Empty: ~6.3 liters

Volume - with cold rod insert: ~ 5.5 liters

Volume with PET Lid & no insert: ~ 6.2 liters

Spheres make no significant change in volume

**PET Lid available. See Flangeless Esser PET Phantom with fillable cylinders mounted to face plate.*

***For more details see Cold Rod Inserts*

Specifications of Insert and Spheres

All clear material: PMMA

Rod diameters: 4.8, 6.4, 7.9, 9.5, 11.1 and 12.7 mm**

Height of rods: 8.8 cm

Solid sphere diameters: 9.5, 12.7, 15.9, 19.1, 25.4 and 31.8 mm

Height of center of spheres from base plate: 12.7 cm

Filler Caps: 7/16 - 20 x 38.1 mm long

Shipping

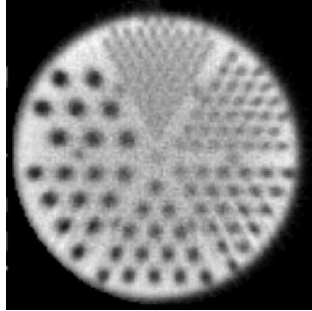
Carton: 13" x 13" x 13"

Weight: 10lbs.

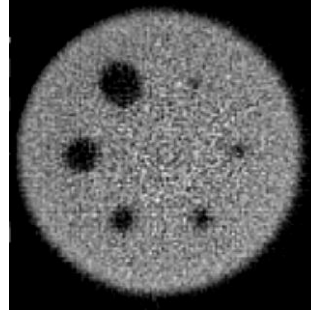


Flangeless Deluxe Jaszczak Phantom™

Cold Rods

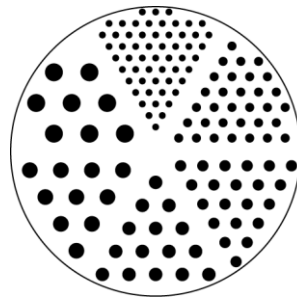


Cold Spheres

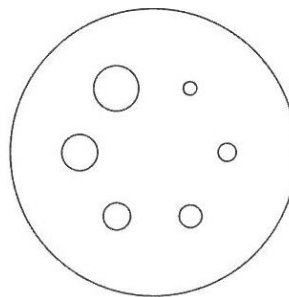


*The images were obtained with the
Flangeless Deluxe Jaszczak Phantom™*

Cold Rods



Cold Spheres



View from face plate

PET CT Phantom™

Model PET/CT/P

Main Features

- The PET-CT Phantom™ includes internal structures (three rods and five spheres) which when imaged with both modalities can demonstrate how accurately the two image sets are aligned.
- In addition, a single sample of radioactive water is attenuated by water, bone, and CT contrast material (as well as air only) to determine how accurately the CT-based PET attenuation correction works.
- Spheres are fillable from outside the closed cylinder

Main Applications

- Acceptance testing of PET/CT and SPECT/CT systems
- Routine quality evaluation of PET/CT and SPECT/CT Systems
- Evaluation of new image fusion software
- Evaluation of new attenuation correction algorithms
- Aluminum tubes are for registration
- The outer 2" OD micro cylinder is for comparing attenuation region to non-attenuation region
- The 6" ring is for contrast solution
- Research

Specifications

Main Cylinder

All clear material: PMMA
Exterior length: ~ 217 mm
Interior length: ~ 193 mm
Interior anteroposterior: ~ 221 mm
Interior lateral: ~ 290 mm
Wall thickness: ~ 3.2 mm
Volume of empty cylinder: ~ 9.7 l
Fillable Spheres (5) inner diameter: 10 mm, 13 mm, 17 mm, 22 mm, and 28 mm
Distance from sphere center to mounting surface: ~ 70 mm

Main Fillable Insert Specifications

All clear material: PMMA
Fillable Insert outside height: ~ 203 mm
Fillable Insert inside height: ~ 185 mm
Fillable Insert outside diameter: ~ 51 mm
Volume of Fillable Insert: ~0.26 liters

Cylinder Specifications

Cylinder outside diameter: ~ 51 mm
Cylinder inside diameter: ~ 45 mm
Cylinder inside height: ~ 82 mm
Cylinder outside height: ~ 115 mm
Volume of cylinder: ~ 408 mL

Three Aluminum Tubes Specifications

One 105 mm-long: ~ 1.7 mL
Two 200 mm (each): ~ 2.5 mL
ID of aluminum tubes: 3.8 mm

Stepped Bone Ring Specifications

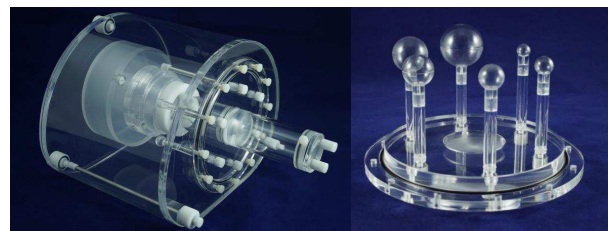
Call for detailed Bone Ring dimensions
Pre-filled with liquid bone composition, not to be opened
The volumes for the bone ring are:
Outer volume: ~ 256 mL
Inner volume: ~ 110 mL

Contrast Ring, Fillable Specifications

Outside height: ~ 27.15 mm
Outside diameter: ~ 149.86 mm
Outer volume: ~ 890 mL
Inner volume: ~ 562 mL

Shipping

Carton: 14" x 14" x 14"
Weight: 12lbs.



PET CT Phantom™

NEMA IEC Body / CT Lid
with Hollow Spheres

Ultra-Micro Hot Spot Phantom™

Model ECT/HOT/UMMP

Insert Only: Model ECT/HOT-UMMP/I

Main Applications

- For use with high spatial resolution SPECT and PET Systems (less than or equal to 76 mm FWHM)
- System resolution test for high contrast structures
- Acceptance testing
- Routine quality, assurance and control 0.162
- System performance evaluation
- Research

Specifications

All clear material: PMMA

Cylinder overall outside diameter: ~ 35 mm

Cylinder inside diameter: ~ 28 mm

Cylinder inside height: ~ 28 mm

Cylinder outside height: ~ 55 mm

Diameter of Insert: ~ 27 mm

Inside height of channel area: ~ 9.9 mm

Diameter of hollow channels: .75, 1.0, 1.35, 1.7, 2.0, and 2.4 mm

Center-to-center spacing of channels: Two times the diameter

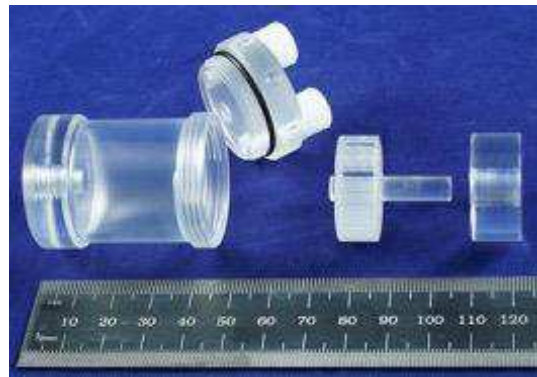
Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.



Ultra-Micro Hot Spot Phantom™



Components of Ultra-Micro Hot Spot Phantom™

Small Jaszczak SPECT Phantom™

Model ECT/SM/P

Main Features

- For use with high spatial resolution SPECT systems.
- Cylinder Twist and Lock lid design

Main Applications

- System performance evaluation (collimator, artifacts, calibration, reconstruction parameters).
- Acceptance testing
- Routine quality assurance and control
- Evaluation of center-of-rotation error
- Evaluation of non-uniformity artifact
- Evaluation of changes of radius-of-rotation on spatial resolution
- Evaluation of reconstruction filters on spatial resolution
- Evaluation of attenuation and scatter compensation
- Research
- **ACR recommended phantom for small field of view dedicated cardiac SPECT systems (Camera Specific)**



Components of the Small Jaszczak SPECT Phantom™

Specifications of Cylinder

Overall length: ~ 230 mm
 Inside diameter: ~ 139 mm
 Outside Diameter: ~ 153 mm
 Wall thickness: ~ 6.4 mm
 Inside length: ~ 150 mm

Specifications of Insert

Cold Rod diameters: 4.8, 6.4, 7.9, 9.5, 11.1 and 12.7 mm*
 Height of cold rods: ~ 40 mm

Specifications of Spheres

Solid sphere diameters: 6.4, 9.5, 12.7, 15.9, 19.1, and 25.4 mm
 Distance from sphere center to mounting surface: 78 mm
 Sphere circle pattern diameter: 97 mm
 Angular Spacing: 60°

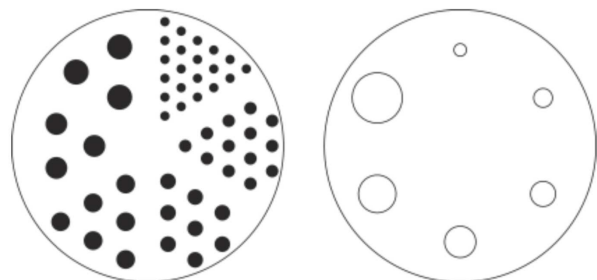
Shipping

Carton: 13" x 13" x 13" Weight: 6lbs.

**For more details see Cold Rod Inserts*



Small Jaszczak SPECT Phantom™



Small Jaszczak SPECT Phantom™

Flangeless Esser PET Phantom™

Model PET/FL/P

PET phantom without protruding flange to simplify positioning

Main Applications

- Evaluation of tumor detectability
- Evaluation of SUVs
- Acceptance testing
- Routine quality assurance and control
- Evaluation of reconstruction filters
- Evaluation of attenuation and scatter correction
- Research
- **ACR recommended phantom - MUST PROVIDE PETAP OR NMAP NUMBER FOR ACR ORDERS**

Specifications of Cylinder

Cylinder inside diameter: ~ 209 mm

Cylinder inside height: ~ 186 mm

Cylinder wall thickness: ~ 6.4 mm

Specifications of Insert

Rod diameters: 4.8, 6.4, 7.9, 9.5, 11.1 and 12.7 mm*

Height of rods: 8.8 cm

Solid sphere diameters: 9.5, 12.7, 15.9, 19.1, 25.4 and 31.8 mm

Distance from sphere center to mounting surface:
~ 127 mm

Shipping

Carton: 13" x 13" x 13"

Weight: 10lbs.

**For more details see Cold Rod Inserts*



Flangeless Esser PET Phantom™

Flangeless PET Lid Only

Model PET/FL/LID-ONLY

Specifications

All clear material: PMMA

Refillable thin-walled cylinders size/volume:

8 mm/~1.9 mL; 12 mm/~4.3 mL;

16 mm/~7.7 mL; (3x) 25 mm/~18.7 mL

Solid cylinder (Teflon®): 25 mm

Cylinder height: ~ 38.1 mm

Volume with PET Lid & no insert: ~ 6.2 liters

NOTE: Above Lid can be made for Flanged or Flangeless Cylinder, call for details



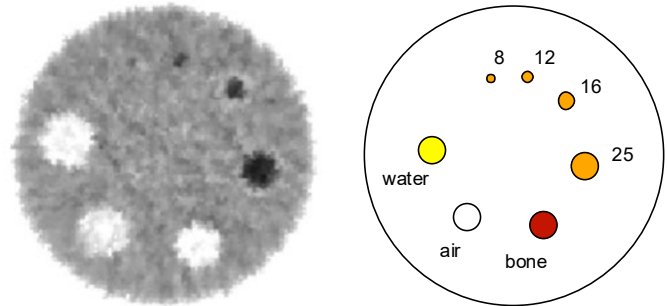
Flangeless Esser PET Phantom Lid™

Flangeless Esser PET Phantom, with 2nd Deluxe ECT Lid™

Model PET/FL-X2/P

Description

Includes above described Phantom with Flangeless Deluxe Jaszczak Lid. See Information Sheet on Flangeless Deluxe Jaszczak Phantom for complete description.



Flangeless Deluxe Jaszczak Phantom™

NEMA 94 PET Phantom (NU 2-1994)[™]

Model PET/NEMA-94/P

Main Features

- The NEMA 94 PET Phantom (NU 2-1994)[™] is designed in accordance with the recommendations by the National Electrical manufacturers Association (NEMA) to standardize the measurement of performance of PET*

Main Applications

- PET acceptance testing with NEMA standard
- Evaluation of count rate, uniformity, scatter fraction, attenuation compensation, and scatter compensation of ECT systems
- Research

Specifications

All clear material: PMMA

Cylinder outside height with lid: 229 mm

Cylinder outside height without lid: 216 mm

Cylinder outside diameter: 203 mm

Cylinder inside diameter: 197 mm

Wall thickness: 3 mm

Teflon® Insert diameter: 51 mm

Fillable Insert outside height: ~ 203 mm

Fillable Insert inside height: ~ 185 mm

Fillable Insert outside diameter: ~ 51 mm

Fillable Insert Inside diameter: ~ 45 mm

Line Source diameter: ~ 1 mm

Line Source height: ~ 184 mm

Volume

Empty: 6.5 liters

W/3 inserts: ~ 4.2 liters

Volume of each Fillable Insert: ~ 260 mL

Shipping

Carton: 13" x 13" x 13" Weight: 10lbs.

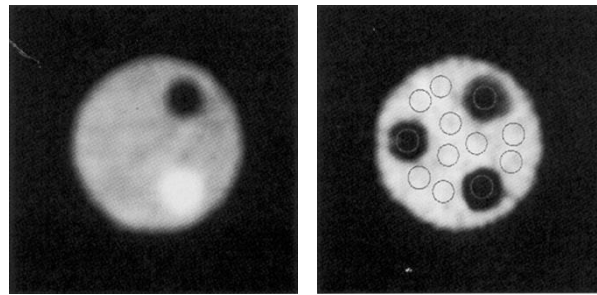
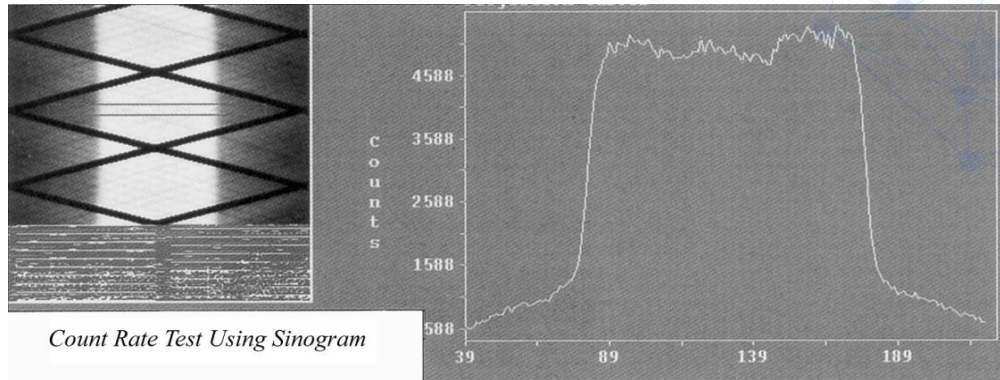
"Flangeless" version available!
Call for information!



NEMA 94 PET Phantom (NU 2-1994)[™]

**Karp JS, Daube-Witherspoon ME, Hoffman EJ et al. Performance standards in positron emission tomography, J Nucl Med, 32:2342-2350.*

**Performance Measurements of Positron Emission Tomographs, NEMA Standards Publication NU2, National Electrical Manufacturers Association (NEMA), Washington, D.C., 1994.*



Attenuation Correction Test

*Shown are attenuation image (left) with three inserts
and emission image (right) after attenuation correction
(with region-of-interest shown for data analysis).*

NEMA IEC PET Body Phantom (NU 2-2018)[™]

Model PET/NEMA-IEC-BODY/P

Main Features

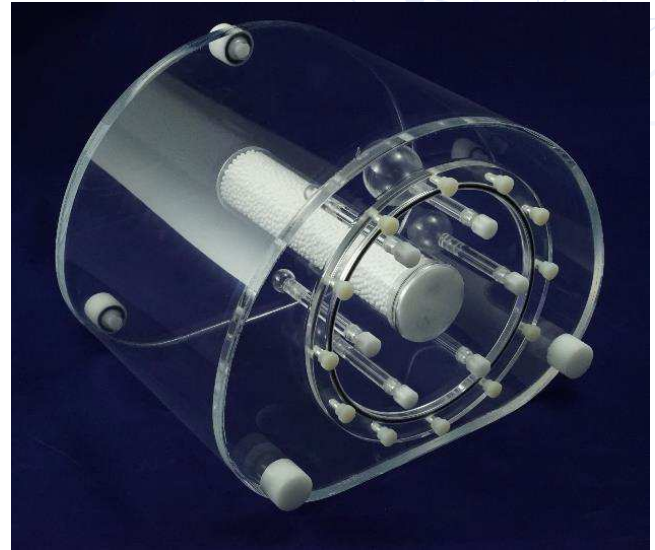
- The NEMA IEC PET Body Phantom Set[™] consists of a body phantom, a lung insert and an insert with six spheres with various sizes
- It is designed in accordance with the recommendations by the International Electrotechnical Commission (IEC) and modified by the National Electrical manufacturers Association (NEMA)
- It is recommended for use in the evaluation of reconstructed image quality in whole body PET imaging
- Spheres are fillable from outside the closed cylinder

Main Applications

- Simulation of whole-body imaging especially using PET and camera-based coincidence imaging techniques
- Evaluation of reconstructed image quality in whole-body PET and camera-based coincidence imaging
- Determination of the coincidence count rate characteristics in brain and cardiac imaging
- Evaluation of the relationship between true coincidence count rate and radioactivity
- Determination of the address errors caused by address pile up
- Evaluation of the count loss correction scheme
- Research

Specifications of Main Cylinder

All clear material: PMMA
Exterior length: ~ 217 mm
Interior length: ~ 193 mm
Interior anteroposterior: ~ 221 mm
Interior lateral: ~ 290 mm
Wall thickness: ~ 3.2 mm
Volume of empty cylinder: ~ 9.7 l



NEMA IEC PET Body Phantom (NU2 2018)[™]

Specifications of Insert and Spheres

All clear material: PMMA
Fillable Insert outside height: ~ 203 mm
Fillable Insert inside height: ~ 185 mm
Fillable Insert outside diameter: ~ 51 mm
Fillable Insert Inside diameter: ~ 45 mm
Volume of Fillable Insert: ~ .26 liters

**International Standard: Radionuclide imaging devices – Characteristics and test conditions – Part 1: Positron emission tomographs, International Electrotechnical Commission (IEC), 61675-1, Geneva, Switzerland, 1998.*

***Performance Measurements of Positron Emission Tomographs (PETS), NEMA Standards Publication NU 2-2018, National Electrical Manufacturers Association (NEMA), Washington, D.C.*

Shipping

Carton: 13" x 13" x 13"

Weight: 9lbs.

Externally Fillable Hollow Spheres

Specifications

Model No:	Inner Diameter
EHS-100:	10 mm
EHS-130:	13 mm
EHS-170:	17 mm
EHS-220:	22 mm
EHS-280:	28 mm*
EHS-370	37 mm

Distance from sphere center to mounting surface: 70 mm \pm 1 mm

Shipping

Carton: 7" x 3" x 3" Weight: 1lb.

**Purchase an extra 28 mm Sphere to make your PET/NEMA-IEC-BODY/P compliant with NEMA Standard NU 1-2018.*



NEMA IEC PET Body / CT Lid with Hollow Spheres

Available in Convenient Sets

Specifications

Model No:	Spheres included
EHS-SET6-A:	10 mm, 13 mm, 17 mm, 22 mm, 28 mm, 37 mm (For NEMA NU 2 PET Standard)
EHS-SET6-B:	10 mm, 13 mm, 17 mm, (2) ea of 28 mm, 37 mm (For NEMA NU 1-2018 Gamma Camera Standard)

NEMA PET Scatter Phantom (NU 2-2018)[™]

Model PET/NEMA-SCT/P

Main Features

- The NEMA Scatter Phantom[™] is designed in accordance with the recommendations by the National Electrical Manufacturers Association (NEMA) to standardize the measurement of count rate performance of a scintillation camera in the presence of scatter*
- Is a solid right circular high density polyethylene cylinder
- Has a fillable line source holder parallel to the center axis of the cylinder and offset a distance of 4.5 cm
- The cylinder is made of four sections for ease of carrying/storage

Main Applications

- Acceptance testing with NEMA standard
- Determine the imaging systems relative sensitivity to scatter radiation
- Measure the effects of dead-time and the effects of random events generated at different levels of activity of the line source

Specifications

Outside diameter: ~ 203 mm
Length: ~ 700 mm
Hole diameter: ~ 6.4 mm
Offset distance: ~ 45 mm

Line source insert (polyethylene tubing):

Length: ~800 mm
Inside diameter: ~ 3 mm
Outside diameter: ~ 5 mm
Volume of tubing: ~ 9 mL

Main Material:

Natural High Density Polyethylene

Shipping

Carton: 18" x 18" x 12" Weight: 50lbs.



NEMA PET Scatter Phantom (NU 2-2018)[™]



*NEMA PET Scatter Phantom
(NU 2-2018)[™] showing tubing*



*Tubing kit for NEMA PET
Scatter Phantom (NU 2-2018)[™]*

**Performance Measurements of Scintillation
Cameras, NEMA Standards Publication No. NU2,
National Electrical Manufacturers Association
(NEMA), Washington, D.C., 2001*

**Performance Measurements of Positron Emission
Tomographs (PET) NEMA Standards Publication No.
NU 2-2018*

NEMA PET Sensitivity Phantom (NU 2-2018)[™]

Model PET/NEMA-SEN/P

Main Features

- 6 Concentric aluminum tubes used to detect camera sensitivity in PET

Specifications

5 internally stacked aluminum tubes all 700 mm in length

1st Tube inside diameter 3.9 mm, outside diameter 6.4 mm

2nd Tube inside diameter 7.0 mm, outside diameter 9.5 mm

3rd Tube inside diameter 10.2 mm, outside diameter 12.7 mm

4th Tube inside diameter 13.4 mm, outside diameter 15.9 mm

5th Tube inside diameter 16.6 mm, outside diameter 19.1 mm

The innermost tube, a fillable polyethylene tubing has an inside diameter of 1 mm, outside diameter 3 mm

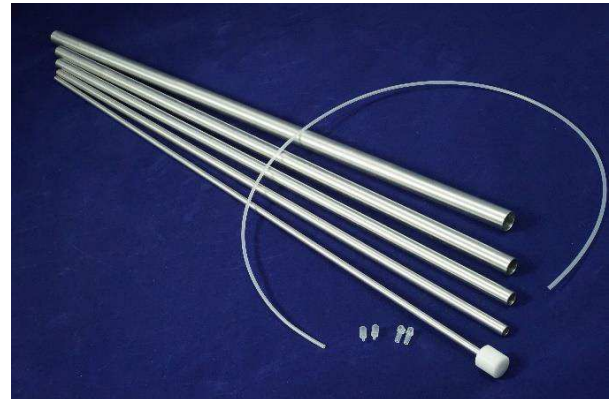
Shipping

Carton: 6" x 6" x 36"

Weight: 3lbs.



*Close up of end of NEMA PET
Sensitivity Phantom (NU 2-2018)[™]*



*Set of aluminum tubes used in
NEMA PET Sensitivity Phantom (NU 2-2018)[™]*



*Tubing kit for NEMA
Sensitivity PET Phantom (NU 2-2018)[™]*



NEMA Sensitivity PET Phantom (NU 2-2018)[™]

Hollow Sphere – 60 mm™

Model ECT/HS-60/A

Main Features

- Simulates large hot or cold spherical “lesion” (~ 60 mm ID, 63 mm OD, and ~ 113 mL volume)
- Designed for use in all Data Spectrum circular and elliptical ECT phantoms

Main Applications

- Quantitative evaluation of attenuation and scatter effects
- Evaluation of quantitative ECT reconstruction methods
- Research

Material For All Hollow Spheres

All clear material is PMMA

Shipping

Carton: 10" x 8" x 4"

Weight: 1lbs.

**Stand not included*



*Hollow Sphere - 60 mm™ **

Spherical Shell - Large™

Model ECT/SPS-LG/A

Spherical Shell - Small™

Model ECT/SPS-SM/A

Main Features

- Model ECT/SPS-LG/A simulates solid tumors and tumors with necrotic core (~ 26 and ~ 80 mL volume in core and outer shell)
- Model ECT/SPS-SM/A simulates solid tumors and tumors with necrotic core (~ 5.6 and ~ 18 mL volume in core and outer shell)
- Independently fillable inner sphere (core) and outer sphere (shell)

Main Applications

- Quantification of size, width, wall thickness and mass of tumor
- Research

Specifications

	ID	OD	Wall
Spherical Shell - Large:			
Inner Core	37 mm	39 mm	1 mm
Outer Shell	60 mm	63 mm	1.5 mm
Spherical Shell - Small			
Inner Core	22 mm	24 mm	1 mm
Outer Shell	37 mm	39 mm	1 mm

Shipping

Carton: 7" x 3" x 3"

Weight: 1lbs.

**Stand not included*



*Spherical Shell - Small™ **

Hollow Sphere Set 6™

Model ECT/HS/SET6

Main Applications

- Designed for use in all circular and elliptical ECT cylinders
- Simulates hot or cold spherical “lesions”
- Quantitative evaluation of spatial resolution/object size, attenuation and scatter effects
- Evaluation of quantitative ECT reconstruction methods
- Research

Specifications

Outer diameter: ~ 11.9 mm, ~ 14.4 mm,
~ 17.7 mm, ~ 21.8 mm, ~ 26.8 mm,
~ 33.3 mm

Volume of Spheres: ~ 0.5 mL, ~ 1 mL, ~ 2 mL,
~ 4 mL, ~ 8 mL, and ~16 mL

Distance from sphere center to mounting
surface: 127 mm



Hollow Sphere Set 6™

Dimensions And Volumes (Approx.)

Volume (mL)	ID (mm)	Wall Thickness (mm)	OD (mm)
16	31.3	1	33
8	24.8	1	27
4	19.8	1	22
2	15.4	1	18
1	12.4	1	14
0.5	9.9	1	12

Shipping

Carton: 7" x 3" x 3"

Weight: 1lbs.

Micro Hollow Sphere Set 4™

Model ECT/MI-HS/SET4

Main Applications

- Simulates small hot or cold spherical "lesions"
- Quantitative evaluation of spatial resolution/ small object size effects
- Evaluation of quantitative ECT reconstruction methods
- Research

Specifications

Outer diameter: ~ 5.9 mm, ~ 6.9 mm, ~ 8.2 mm,
~ 9.9 mm

Volume of Spheres: ~ 31 μ L, ~ 63 μ L, ~ 125 μ L,
~ 250 μ L

Distance from sphere center to mounting
surface: 127 mm



Micro Hollow Sphere Set 4™

Dimensions And Volumes (Approx.)

Volume (μ L)	ID (mm)	Wall Thickness (mm)	OD (mm)
250	7.9	1	10
125	6.2	1	8
63	5	1	7
31	4	1	6

Shipping

Carton: 7" x 3" x 3"

Weight: 1lbs.

Solid Sphere Set 6™

Model ECT/SS/SET6

Main Features

- Designed for use in all Data Spectrum circular and elliptical ECT phantoms

Main Applications

- Simulates cold spherical “lesions”
- Quantitative evaluation of spatial resolution/object size, attenuation and scatter effects
- Evaluation of quantitative ECT reconstruction methods
- Research

Specifications

Material: PMMA

Diameters of solid spheres: 9.5, 12.7, 15.9, 19.1, 25 and 31.8 mm

Distance from sphere center to mounting surface: ~ 127 mm

Shipping

Carton: 7" x 7" x 3"

Weight: 1lbs.

Solid Sphere 2nd Set 6™

Model ECT/SS-2ND/SET6

Same as ECT/SS/SET6, except:

Diameters of solid spheres: 12.7, 15.9, 19.1, 25, 31.8 and 38 mm



Solid Sphere Set 6™

Small Solid Sphere Set 6™

Model ECT/SS-SM/SET6

Main Features

- Designed for use in Small Jaszczak Phantom (ECT/SM/P) circular cylinder, with Medium Resolution Insert

Main Applications

- Simulates cold spherical “lesions”
- Quantitative evaluation of spatial resolution/object size, attenuation and scatter effects
- Evaluation of quantitative ECT reconstruction methods
- Research

Specifications

Material: PMMA

Diameters of solid spheres: 6.4, 9.5, 12.7, 15.9, 19.1, and 25.4 mm

Distance from sphere center to mounting surface: ~ 78 mm

Shipping

Carton: 7" x 3" x 3"

Weight: 1lbs.

Small Solid Sphere 2nd Set 6™

Model ECT/SS-SM-2ND/SET6

Same as ECT/SS/SET6, except:

Associated with High Resolution Insert

Diameters of solid spheres: 3.2, 4.8, 9.5, 12.7, 15.9, and 19.1 mm



Small Solid Sphere Set 6™

Micro Defrise Phantom™

Model ECT/DEF/MMP

Micro Defrise Insert™

Model ECT/DEF-MMP/I

Main Applications

- Very small animal system evaluation (with field-of-view greater than 45 mm)
- Evaluation of ultra-high resolution ECT systems (less than or equal to 3 mm FWHM)
- Evaluation of slice profile uniformity, along longitudinal axis of an ECT system
- Evaluation of ultra-high resolution, fan-beam, cone-beam and pinhole collimation
- Research

Specifications

All clear material: PMMA

Cylinder outer diameter: ~ 51 mm

Cylinder inside diameter: ~ 45 mm

Cylinder inner height: ~ 36 mm

Disk diameter: ~ 43 mm

Disk thickness: ~ 4.3 mm

Gap thickness: ~ 4.3 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.



Micro Defrise Phantom™



Components of Micro Defrise Phantom™

Micro Deluxe Phantom™

Model ECT/DLX/MMP

Micro Deluxe Cold Rod Insert™

Model ECT/DLX-MMP/I

Main Applications

- Small animal system evaluation (with field-of-view greater than 45 mm and under 77 mm)
- Evaluation of ultra-high resolution ECT systems (less than or equal to 3 mm FWHM)
- Spatial resolution measurements
- Evaluation of center-of-rotation error
- Research

Specifications

All clear material: PMMA

Rod diameters: 1.2, 1.6, 2.4, 3.2, 4.0 and 4.8 mm

Rod spacing: Center-to-center rod spacing is equal to twice the rod diameter for any given sector. For example, the center-to-center spacing is 8.0 with the 4.0 mm diameter rods.

Height of rods: ~ 34 mm

Insert diameter: ~ 43 mm

Cylinder outside diameter: ~ 51 mm

Cylinder outside height: ~ 76 mm

Cylinder inside diameter: ~ 45 mm

Cylinder inside height: ~ 36 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.

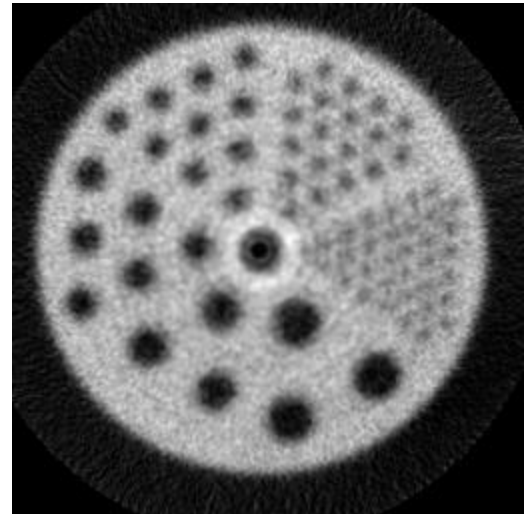


Image of Micro Deluxe Cold Rod Phantom™



Components of Micro Deluxe Phantom™



Micro Deluxe Phantom™

Micro Hollow Sphere Phantom™

Model ECT/HS/MMP

Main Features

- Fillable Spheres
- Threaded for rapid mounting

Main Applications

- Small animal system evaluation (with field-of-view greater than 45 mm)
- Evaluation of ultra-high resolution ECT systems (less than or equal to 3 mm FWHM)
- Simulates small hot or cold spherical "lesions"
- Quantitative evaluation of spatial resolution/small object size effects
- Evaluation of quantitative ECT reconstruction methods
- Spatial resolution measurements
- Research

Specifications

All clear material: PMMA

Cylinder outside diameter: ~ 51 mm

Cylinder inside diameter: ~ 40 mm

Cylinder inside height: ~ 82 mm

Cylinder outside height: ~ 114 mm

Volume of empty cylinder: ~ 408 mm

Lid has 5 places to position micro hollow spheres:

1 position is centered; other 4 are spaced evenly around the center at a distance of 12.7 mm

Distance from sphere center to mounting surface:

~ 53 mm from lid within cylinder

Support Rods are solid PVC ~ 3mm diameter

Length: 38 mm

Hollow spheres:

Outer diameter: ~ 6 mm, ~ 7 mm, ~ 8 mm,

~ 10 mm Volume of Spheres: ~ 31 μ L, ~ 63 μ L,

~ 125 μ L, and ~ 250 μ L

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.



Micro Hollow Sphere Phantom™

Mini Defrise Phantom™

Model ECT/DEF/MP

Mini Defrise Insert™

Model ECT/DEF-MP/I

Main Applications

- Small animal system evaluation (with field-of-view greater than 77 mm)
- Evaluation of ultra-high resolution ECT systems (less than or equal to 3 mm FWHM)
- Evaluation of slice profile uniformity along longitudinal axis of an ECT system
- Evaluation of ultra-high resolution, fan-beam, cone-beam and pinhole collimation
- Research

Specifications

All clear material: PMMA

Cylinder outer diameter: ~ 83 mm

Cylinder inside diameter: ~ 76 mm

Cylinder inner height: ~ 57 mm

Disk diameter: ~ 75 mm

Disk thickness: ~ 4.3 mm

Gap thickness: ~ 4.3 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.



Mini Defrise Phantom™



Components of Mini Defrise Phantom™

Mini Deluxe Phantom™

Model ECT/DLX/MP

Mini Deluxe Cold Rod Insert™

Model ECT/DLX-MP/I

Main Applications

- Small animal system evaluation (with field-of-view greater than 77 mm)
- Evaluation of ultra-high resolution ECT systems (less than or equal to 3 mm FWHM)
- Spatial resolution measurements
- Evaluation of center-of-rotation error
- Research

Specifications

All clear material: PMMA

Rod diameters: 1.2, 1.6, 2.4, 3.2, 4.0 and 4.8 mm

Rod spacing: Center-to-center rod spacing is equal to twice the rod diameter for any given sector. For example, the center-to-center spacing is 8.0 with the 4.0 mm diameter rods.

Height of rods: ~ 34 mm

Insert diameter: ~ 75 mm

Cylinder outside diameter: ~ 83 mm

Cylinder outside height: ~ 76 mm

Cylinder inside diameter: ~ 76 mm

Cylinder inside height: ~ 38 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.

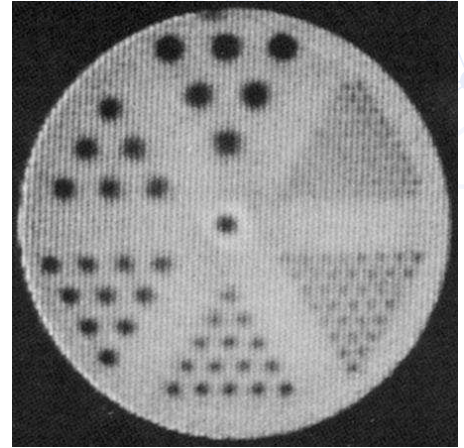


Image of Mini Deluxe Cold Rod Phantom™

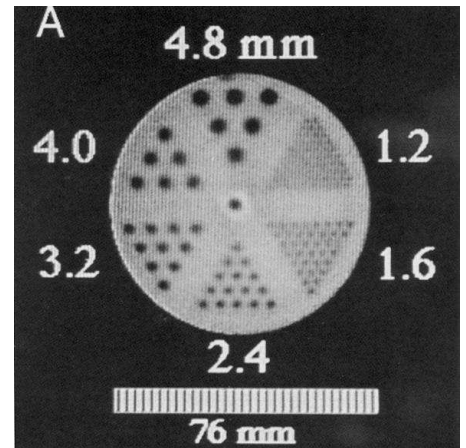


Image of Mini Deluxe Cold Rod Phantom™



Mini Deluxe Phantom™



Components of Mini Deluxe Phantom™

Ultra-Micro Defrise Phantom™

Model ECT/DEF/UMMP

Insert Only: Model ECT/DEF-UMMP/I

Main Applications

- Very small animal system evaluation (with a field-of-view greater than 76 mm)
- Evaluation of ultra-high resolution ECT systems (less than or equal to 76 mm FWHM)
- Evaluation of slice profile uniformity, along longitudinal axis of an ECT system
- Evaluation of ultra-high resolution, fan-beam, cone-beam and pinhole collimation
- Research

Specifications

All clear material: PMMA

Cylinder overall outside diameter: ~ 35 mm

Cylinder inside diameter: ~ 28 mm

Cylinder inside height: ~ 28 mm

Cylinder outside height: ~ 55 mm

Diameter of Insert: ~ 27 mm

Inside height of channel area: ~ 9.9 mm

Diameter of hollow channels: .75, 1.0, 1.35,
1.7, 2.0, and 2.4 mm

Center-to-center spacing of channels:
Two times the diameter

Specifications for Defrise Insert

Disk diameter: ~ 27 mm

Disk thickness: ~ 1.62 mm

Gap thickness: ~ 1.62 mm

Number of solid disks: 8

Volume with insert in place: ~ 9 mL

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.



Ultra-Micro Defrise Phantom™



Components of Ultra-Micro Defrise Phantom™



CENTRO DE MEDICINA
NUCLEAR

DS DataSpectrum

Micro Hot Spot Phantom™

Model ECT/HOT/MPP

Micro Hot Spot Insert™

Model ECT/HOT-MMP/I

Specifications

All clear material: PMMA

Diameters of hollow channels: 1.2, 1.6, 2.4, 3.2,
4.0, and 4.8 mm

Center-to center spacing of channels: Two
times the diameter

Insert height: ~ 33 mm

Insert diameter: ~ 43 mm

Cylinder outside diameter: ~ 51 mm

Cylinder outside height: ~ 76 mm

Cylinder inside diameter: ~ 45 mm

Cylinder inside height: ~ 36 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.



Components of Micro Hot Spot Phantom™



Micro Hot Spot Phantom™

Triple Line Insert™

Model ECT/TRI/I

Main Features

- Designed for use with nearly all of the cylinders supplied with Data Spectrum phantoms
- Produces three parallel 1 mm tracer lines

Main Applications

- Center-of Rotation error evaluation
- Evaluation of changes of radius-of rotation on spatial resolution
- Spatial Resolution measurement in air and in water if mounted in cylinder
- Quantitative evaluation of reconstruction filters and scatter compensation methods
- Research

Specifications

All clear material: PMMA

Diameter of insert: ~ 186 mm

Inner diameter of line sources: ~ 1 mm

Spacing of line sources: ~ 75 mm

Useful height of line sources: ~ 70 mm

Shipping

Carton: 13" x 13" x 13"

Weight: 5lbs.



Triple Line Insert™



*Triple Line Insert™ shown mounted
inside Flangeless Circular ECT Cylinder*

NEMA PET Small Animal Phantom (NU 4-2008)[™]

Model PET/NEMA-SAVP

Main Features

- Designed in accordance with the recommendations by the National Electrical Manufacturers Association (NEMA) to standardize the measurements of performance of PET for animal imaging.*

Main Applications

- Hot Rod measurements indicative of spatial resolution
- Uniform region for evaluation of signal to noise ratio
- Uniformity for evaluation of attenuation and scatter correction performance

Specifications

Outside Diameter: ~ 33 mm

Cylinder Length: ~ 63 mm

Fillable Chamber Inside Diameter: ~ 30 mm

Fillable Chamber Length: ~ 1.5 mm

Sidewall Thickness: ~ 1.5 mm

Fillable Chamber Inside Diameter: ~ 8 mm

Fillable Chamber Inside Length: ~ 14 mm

Fillable Chamber Wall Thickness: ~ 1 mm

Hot Spot Dimensions

Length: ~ 20 mm

Diameters: 1, 2, 3, 4, and 5 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.

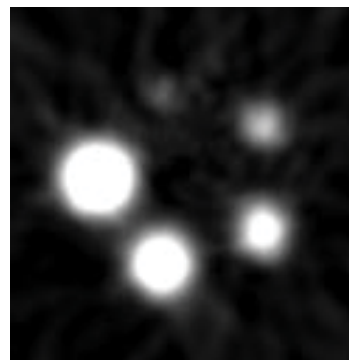
**Performance Measurements of Small Animal Positron Emission Tomographs, NEMA Standards Publications No. NU 4-2008 Section 6*



NEMA PET Small Animal Phantom (NU 4-2008)[™]



*Chambers of NEMA PET
Small Animal Phantom (NU 4-2008)[™]*



*Rods of NEMA PET
Small Animal Phantom (NU 4-2008)[™]*

Mini Hot Spot Phantom™

Model ECT/HOT/MP/

Mini Hot Spot Insert™

Model ECT/HOT-MP/I

Main Applications

- Small animal system evaluation (with field-of-view greater than 77 mm)
- Evaluation of ultra-high resolution ECT systems (less than or equal to 3 mm FWHM)
- Spatial resolution measurements
- Evaluation of center-of-rotation error
- Research

Specifications

All clear material: PMMA

Diameters of hollow channels: 1.2, 1.6, 2.4, 3.2, 4.0, and 4.8 mm

Center-to center spacing of channels: Two times the diameter

Insert height: ~ 34 mm

Insert diameter: ~ 75 mm

Cylinder outside diameter: ~ 83 mm

Cylinder outside height: ~ 76 mm

Cylinder inside diameter: ~ 76 mm

Cylinder inside height: ~ 38 mm

Shipping

Carton: 10" x 8" x 4"

Weight: 3lbs.



Mini Hot Spot Phantom™



Components of Mini Hot Spot Phantom™



*Components of Mini Deluxe
and Hot Spot Phantom™*