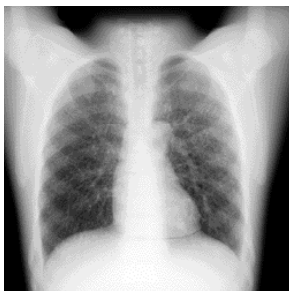
PH-1 | 41337-000

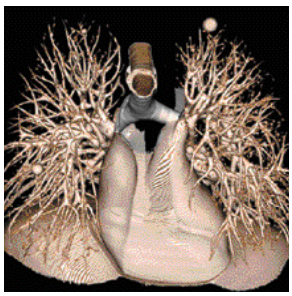
Multipurpose Chest Phantom N1 "LUNGMAN"

CT X-ray

PH-1 is used in a study by the FDA to create a database of CT scans with different scanners and protocols, as a resource for assessment of lung nodule size estimation method



SHOW MORE!



FEATURES

- Radiation absorption and HU number approximate to human body
- Simulated tumors and other targets can be attached at any points in the lung fields
- Wide variety of uses in interpretation training, anatomical education, evaluation and assessment of devices and other research
- Arms-abducted position of the torso suits the CT

APPLICATIONS

- CT
- Plain X-ray
- Radiographic interpretation

ANATOMY

Chest includes;

- main body:
  synthetic bones are embedded
- mediastinum:
  heart, trachea
  pulmonary vessels
- abdomen (diaphragm) block:
  no internal structure

Simulated tumors

Simulated tumors in five-size and three-HU-number variations can be attached to arbitrary position in the lung field.

DESCRIPTIONS

SET INCLUDES

1 chest torso	1 set of sample X-ray data (DVD)
15 simulated tumors (15 variations 1 piece each)	manual

MATERIALS

Soft tissue: urethane based resin (specific gravity: 1.06)
Synthetic bone: epoxy resin (specific gravity: 1.31)
*Phantom has no metal parts or liquid structure

SPECIFICATIONS

Phantom size:
43 x 20 x 48 cm, chest girth 94 cm
17 x 8 x 18 in, chest girth 37 in

Packing size:
65 x 55 x 29 cm
26 x 22 x 11 in

Phantom weight:
18 kg/ 39.6 lb

Packing weight:
25 kg / 55.1 lb

OPTIONAL PARTS

41337-010	Chest plates
41363-020	Storage case
41337-070	Simulated tumors

PUBLICATION REFERENCES

Xie, X., Zhao, Y., Snijder, R. A., van Ooijen, P. M., de Jong, P. A., Oudkerk, M., ··· Greuter, M. J. (2013). Sensitivity and accuracy of volumetry of pulmonary nodules on low-dose 16- and 64-row multi-detector CT: an anthropomorphic phantom study. European radiology, 23(1), 139–147. doi:10.1007/s00330-012-2570-7

Gomi, T., Nakajima, M., Fujiwara, H., Umeda, T. (2011) Comparison of Chest Dual-energy Subtraction Digital Tomosynthesis Imaging and Dual-energy Subtraction Radiography to Detect Simulated Pulmonary Nodules with and without Calcifications. Academic Radiology, 18(2), 191–196. doi:10.1016/j.acra.2010.09.021

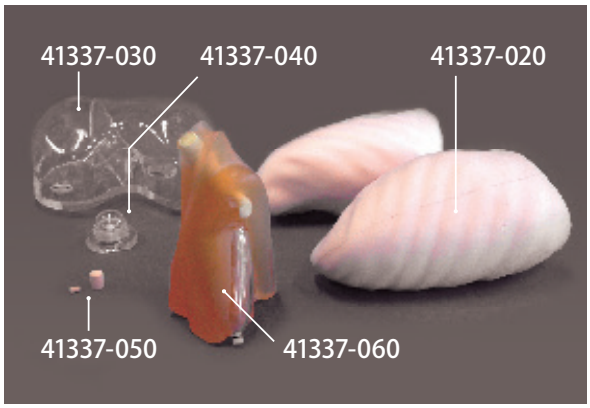
41337-020-

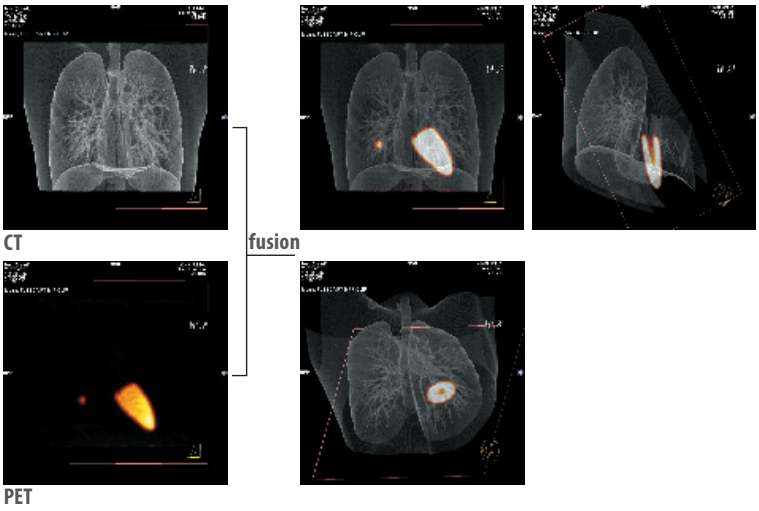
Components for Radioisotope

Optional Parts for PH-1

fusion: CT + PET/CT

The set of RI container inserts can be set in the chest phantom in place of standard inserts allowing wider research applications including PET/CT fusion evaluation





41337-020 Lungs of urethane
41337-030 Liver RI container
41337-040 Gallbladder RI container
41337-050 Pulmonary nodule RI container
41337-060 Mediastinum with left myocardium RI container

DESCRIPTIONS

MATERIALS

Container: acrylic resin
Liver: acrylic resin
Heart: urethane based resin

Lung and pulmonary nodule: urethane based resin

PH-58

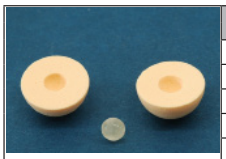
Subsolid Nodules Phantom

Optional Parts for PH-1

Both mixed and pure GGO are provided in a variety of sizes and HU numbers

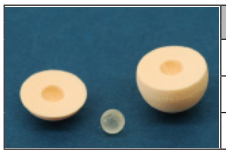
Subsolid Nodules Phantom is a set of simulated lesions designed for study and training in Grand-Glass Opacity (GGO) detection and interpretation. Both mixed and pure GGO are provided in a variety of sizes and HU numbers. The set also includes 3-D GGO modeled on clinical CT data. The simulated lesions can be attached to the pulmonary vessels of the Chest Phantom N1 "LUNGMAN" or in the CT Lung Phantom.

41923-000 No.1-7 Concentric



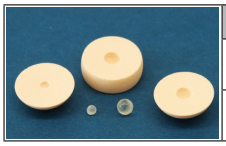
Item No.	GGO field Diameter	GGO field HU	Solid field Diameter	Solid field HU	Type
1	1.5 cm 0.59 in	-650	0.5 cm/0.20 in	-50	Concentric
2				0	
3				50	
4	2.0 cm 0.79 in		0.3 cm/0.12 in	0	
5			0.5 cm/0.20 in		
6			0.7 cm/0.28 in		
7			0.9 cm/0.35 in		

41923-100 No.8-10 Eccentric



Item No.	GGO field Diameter	GGO field HU	Solid field Diameter	Solid field HU	Type
8	1.5 cm 0.59 in	-650	0.5 cm/0.20 in	-50	Eccentric
9				0	
10				50	

41923-200 No.11-12 Eccentric

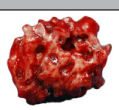


Item No.	GGO field Diameter	GGO field HU	Solid field Diameter	Solid field HU	Type
11	2.0 cm 0.79 in	-650	0.3 cm/0.12 in 0.5 cm/0.20 in	0	Eccentric
12			0.5 cm/0.20 in 0.7 cm/0.28 in	0	

41923-300 No. a-h Pure GGO

Item No.	GGO field Diameter	GGO field HU	Solid field Diameter	Solid field HU	Type
a	1.5 cm 0.59 in	-750	-	-	Pure GG
b		-650	-	-	
c		-550	-	-	
d		-450	-	-	
e		-350	-	-	
f		-250	-	-	
g		-150	-	-	
h		-50	-	-	

3D GGO



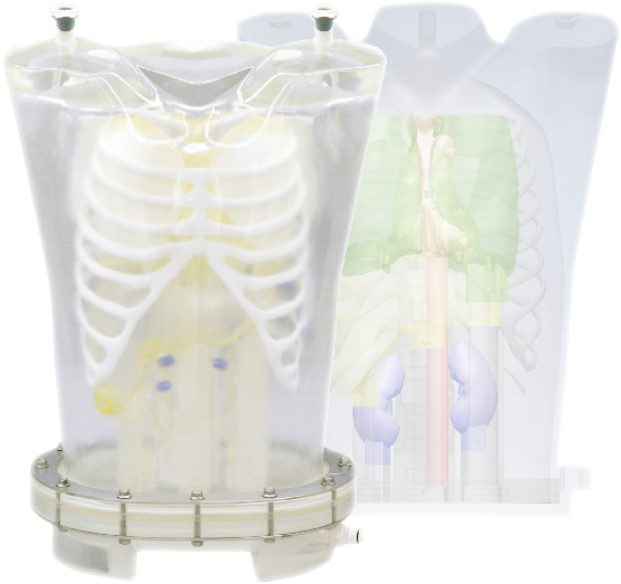
Item No.	GGO field Diameter	GGO field HU	Solid field Diameter	Solid field HU	Type
3D-GGO	1.5 x 1.5 cm 0.59 x 0.59 in	-590	-	-	-

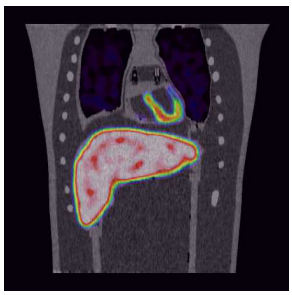
PH-63 | 41927-000

PET/SPECT Thorax Phantom

PET/ SPECT

PET/ SPECT Thorax Phantom is an optimal tool for study in nuclear medicine





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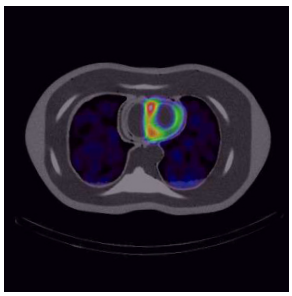
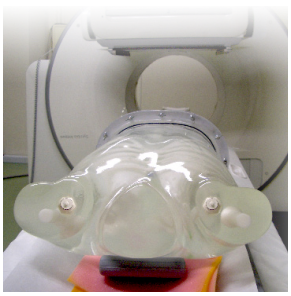




FEATURES

Examination of myocardial density through SPECT imaging

- Verification of myocardial imaging with the use of various RI solution densities
- Ability to capture defects of the myocardial region
- Can reproduce image variations of the heart by injecting RI solutions in the liver, kidney and lungs

Examination of RI solution density for simulated tumors

- The simulated tumors can be inserted into lung, liver and breast
- Tumors can be filled with FDG/RI solution into the spheres for evaluation of density, size and placement

APPLICATIONS

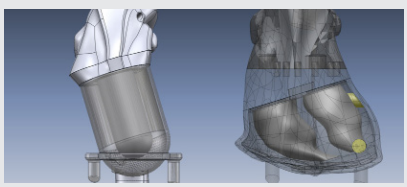
- PET/SPECT
- Quality management of NM equipment
- Myocardial density with SPECT imaging
- RI solution density for tumor imaging

ANATOMY

- Liver
- Lung (right/left)
- Kidney (right/left)
- Hot spots (liver, lungs and breast)

* Hot spot for PET can be set in liver, lungs and breast.

- Heart
  - Anatomical type: right ventricle, left ventricle and myocardium
  - Geometric type: left ventricle and myocardium



Geometric type Anatomical type

HU

- Bone: 370HU
- Lung: -900HU
- Organ shell material: 100HU, and 1.16g/cm3 in density

DESCRIPTIONS

SET INCLUDES

1	thorax body
2	lungs (left and right)
4	hearts
1	liver
2	kidneys
1	rib cage and spine
2	breasts
3	hot spots

*S: Several

1	base
S*	plastic pins
6	supporting bars
4	flat bar rings for base
5	tubes
1	syringe
S*	nuts and bolts
1	water tank
	manual

MATERIALS

Soft tissue: transparent polyurethane
Lungs: materials with density 0.4 g/cm3
Bone materials: Calcium infused material to provide proper attenuation with use of RI solutions

SPECIFICATIONS

Phantom size:
W44 x H69.4 cm
W17.3 x H27.3 in

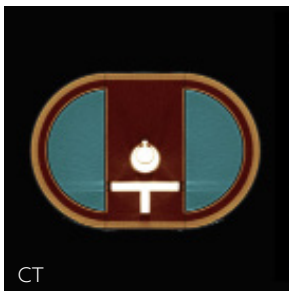
Phantom weight:
phantom itself: 21 kg / 46.2 lb
when filled with liquid: 37.5 kg / 82.6 lb

PH-74 | 41938-000

Bone Scintigraphy Quality Assurance Phantom

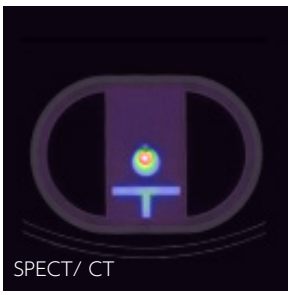
SPECT/ CT

An innovative QA phantom for Bone Scintigraphy, Bone SPECT/CT and NaF-PET



SHOW MORE!

SPECT



FEATURES

- The phantom can represent either thoracic or lumbar region by changing the filling of side cavities

APPLICATIONS

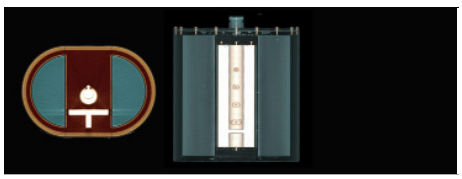
- Bone scintigraphy
- Bone SPECT/CT
- NaF-PET

EVALUATION PARAMETERS

Visual Evaluation
- Tumor detectability
- Image distortion
- Artifact

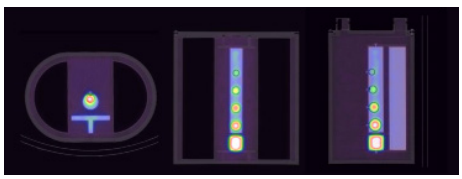
Quantitative Evaluation
- Contrast and count ratio between vertebral body and tumor
- Concentration linearity and recovery coefficient in the tumor
- Statistical noise
- FWHM at the spinous process (relative index of resolution)

Other
- Verification of scattering correction and attenuation correction



CT

SPECT



SPECT/ CT

DESCRIPTIONS

SET INCLUDES

1	phantom	1	petroleum jelly
1	screwdriver	1	needle
1	funnel		manual

MATERIALS

Acrylic resin
Tough lung (PVA acetal compound)

SPECIFICATIONS

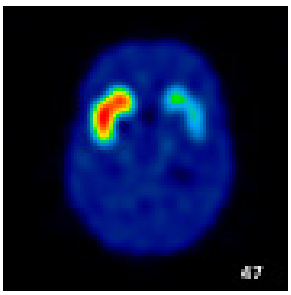
Phantom size:
OD: W310 x D210 x H355 mm ID: W290 x D190 x H300mm
W12.2 x D8.2 x H14 in W11.4 x D7.5 x H11.8 in

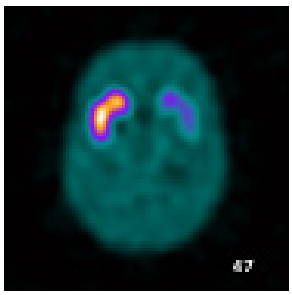
PH-64 | 41928-000

PET/ SPECT Brain Phantom

MRI | Nuclear Medicine | STORAGE CASE

Nucleus and the caudate nucleus for I-123 DatSCAN





SHOW MORE!

FEATURES

- Anthropomorphic head phantom simulates the absorption and scatter characteristics of head and skull
- RI solution can be injected to striatum and putamen

APPLICATIONS

- SPECT
- DatSCAN

ANATOMY

- Brain ventricle
- Striatum
- Caudate nucleus
- Putamen
- Cerebrum
- Skull

	Volume
Cerebrum	1038.90 ml
Putamen (right)	5.46 ml
Putamen (left)	6.7 ml
Caudate nucleus (right)	5.38 ml
Caudate nucleus (left)	5.09 ml

DESCRIPTIONS

SET INCLUDES

1	head phantom (separated at the top)
1	brain container
1	storage case
	manual

MATERIALS

Striatum case: epoxy resin
Brain ventricle: polyurethane
Brain case: polyurethane
Artificial bone: epoxy resin
Soft tissue: polyurethane

SPECIFICATIONS

Phantom size:
W20 x D21 x H33 cm
W7.8 x D8.2 x H13 in
Phantom weight:
5.5 kg / 12.1 lb

PH-53 | 41918-000

Brain Phantom IB-20 advanced

SHOW MORE!

APPLICATIONS

- SPECT, PET

EVALUATION PARAMETERS: common with IB-20

DESCRIPTIONS

SET INCLUDES

2	bone scatterer cases
	adult male: equivalent HU750
	elderly female: equivalent HU530
1	brain striatum phantom
1	screwdriver
1	velcro tape
1	petroleum jelly
1	storage case
	manual

SPECIFICATIONS

Phantom size:
W21 x D15 x H8 cm
W8.2 x D5.9 x H3.1 in

MATERIALS

Brain striatum: epoxy resin
Brain striatum container: urethane resin
Cerebral ventricle: urethane resin
Brain stratum phantom cover: acrylic
Bone scatterer case: epoxy resin

PH-27 | 41530-000

Brain Phantom IB-10

-

SHOW MORE!

APPLICATIONS

- SPECT, PET

EVALUATION PARAMETERS

- Homogeneity evaluation
- Cross calibration
- Gamma ray absorption rate by a skull
- Detectivity of gray matter and white matter
- Spatial resolution of negative images (IB-10 set only)
- Radioactive concentration and linearity of SPECT value (IB-10 set only)

DESCRIPTIONS

SET INCLUDES

1	brain unit
1	skull container unit
1	J-Jack phantom
1	section phantom

MATERIALS

Acrylic resin/ urethane resin

SPECIFICATIONS

Phantom size:
W21 x D15 x H8 cm / W8.2 x D5.9 x H3.1 in

PH-65 | 41929-000

PET/ SPECT Thyroid Phantom AT

Nuclear Medicine | STORAGE CASE

Five kinds of thyroid with different capacities for uptaking rate measurement

SHOW MORE!

FEATURES

- Anthropomorphic thyroid phantom simulates the absorption and scatter characteristics of human neck area that surrounds thyroid
- For quality assurance of system for iodine uptake ratio test; scatter, attenuation, and sensitivity

APPLICATIONS

- SPECT, PET

ANATOMY

- Cervical spine C3 to C7
- Thoracic spine T1
- Clavicle
- Breastbone (half)
- Thyroid (5 variations)

	Volume
Thyroid 1	14.7 ml
Thyroid 2	16.7 ml
Thyroid 3	20.7 ml
Thyroid 4	30.2 ml
Thyroid 5	39.0 ml

DESCRIPTIONS

SET INCLUDES

1 neck and upper chest phantom	1 storage case
1 neck cover for thyroid	1 manual
1 thyroid containers	

MATERIALS

Soft tissue: urethane based resin
Synthetic bone: epoxy resin
Thyroid: acrylic resin
Thyroid container: urethane based resin
Bronchus: acrylic resin

SPECIFICATIONS

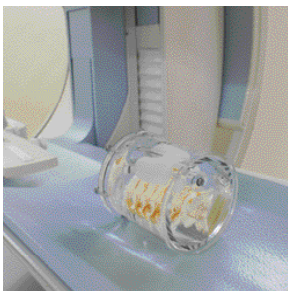
phantom size:	phantom weight:
W40 x D18 x H16 cm	4kg
W15.7 x D7 x H6.3 in	8.8 lb

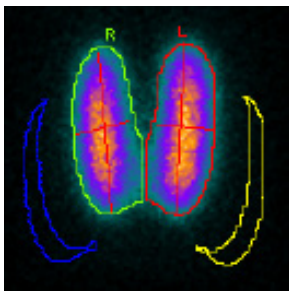
PH-69 | 41930-000

Thyroid Phantom UN

Nuclear Medicine | STORAGE CASE

Five kinds of thyroid volume containers for measurement purposes





SHOW MORE!

FEATURES

- 5 kinds of thyroid grand (40,30,21,17,15 cc)
- Synthetic cervical vertebrae as a scatteration
- Infusing radiopharmaceuticals

APPLICATIONS

- SPECT, PET

ANATOMY

- Cervical vertebrae from C3 to C7

DESCRIPTIONS

SET INCLUDES

1 neck and upper chest phantom	1 storage case
1 neck cover for thyroid	1 manual
1 thyroid containers	

MATERIALS

Container: acrylic resin
Synthetic bone: epoxy resin
Thyroid: acrylic resin

SPECIFICATIONS

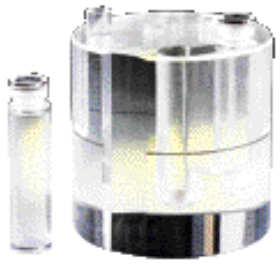
phantom size:	phantom weight:
13 dia. x H11.6 cm	0.85 kg
5.1 dia. x H4.6 in	1.87 lb

PH-26 | 41503-000

ORINS Thyroid Phantom ITS

STORAGE CASE

A phantom by the ORINS standards



SHOW MORE!

FEATURES

- Oak Ridge Institute for Nuclear Studies type phantom for measurement of thyroid radionuclide uptake
- Cavities for iodine-131 are prepared in the neck phantom

APPLICATIONS

- SPECT

DESCRIPTIONS

SET INCLUDES

1	petroleum jelly
1	screwdriver
3	storage case
1	manual

MATERIALS

Acrylic resin

SPECIFICATIONS

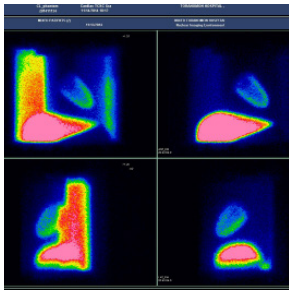
Phantom size:
12.5 dia. x 12.5 (H) cm/4.9dia. x 4.9(H) in

PH-24 | 41333-000

Myocardial Phantom HL

STORAGE CASE

For the study of high radio accumulation interference in the liver with the myocardial SPECT images



SHOW MORE!

FEATURES

- Allows the study of RI liver intake and its effect on the myocardial SPECT
- Cold defect can be set in the left cardiac muscle
- Background can be set individually in lung field, mediastinum and right ventricle

APPLICATIONS

- SPECT

DESCRIPTIONS

SET INCLUDES

1	main Phantom Body	1	stomach
1	right Lung	1	heart
1	left Lung	1	work base
1	mediastinum	1	screwdriver
1	liver	1	petroleum jelly

MATERIALS

Main Container: Acrylic Resin
Spine: Epoxy Resin (similar to human in HU)
Heart: Acrylic Resin, Acrylic resin
Lung: Foamed Resin, Water
Screw: Polyacetal Resin

SPECIFICATIONS

Phantom size:
W32 x D22 x H31 cm / W12.5 x D8.6 x H12.2 in
Phantom weight:
7.1 kg / 15.6 lb
Packing size:
W44 x D39 x H42 cm
W17.3 x D15.3 x H16.5 in
Packing weight:
12.5 kg / 27.5 lb

PH-29 | 41540-030

ECT Hot Cold Phantom SP-6

STORAGE CASE

Volumetric measurement phantom for PET/SPECT

SHOW MORE!

FEATURES

- Five sphere containers with different sizes can be filled with RI solution
- Volume of sphere phantoms are:
  50 mm/2 in (100%), 80%, 60%, 40% and 20%

APPLICATIONS

- SPECT, PET

DESCRIPTIONS

SET INCLUDES

1	phantom
1	storage case

MATERIALS

Acrylic resin

SPECIFICATIONS

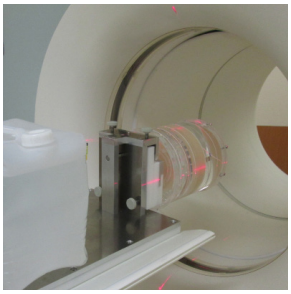
Phantom size:
21 dia. x 16 (H) cm / 8.2 dia. x 6.2 (H) in

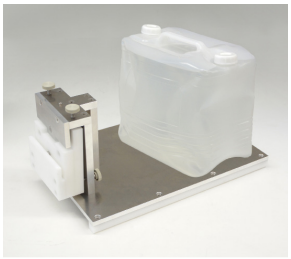
PH-28 | 41535-000

SPECT QA Phantom JSP

STORAGE CASE

For daily quality control in SPECT and PET imaging

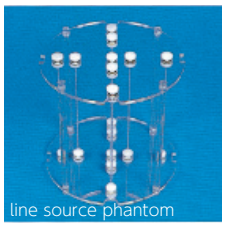




Optional parts: holder

SHOW MORE!

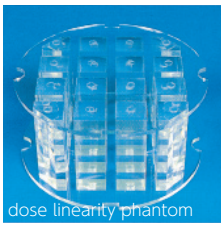

outer phantom


line source phantom


cold spot phantom


hot spot phantom


geometric distortion phantom


dose linearity phantom

FEATURES

| A set of test units for daily QA of SPECT/PET

APPLICATIONS

| SPECT and PET

EVALUATION PARAMETERS

| Uniformity
| Spatial resolution
| Dose linearity
| Image distortion

DESCRIPTIONS

SET INCLUDES

1	outer phantom
1	line source phantom
1	cold spot phantom
1	hot spot phantom
1	dose linearity phantom
1	geometric distortion phantom
1	phantom holder
1	petroleum jelly
1	screwdriver
3	kinds of extra screw
1	Injection needle
1	storage case
	manual

MATERIALS

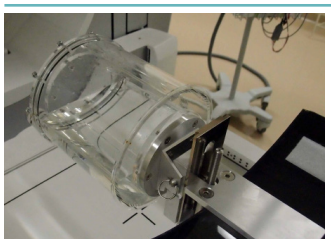
Phantom: methacrylic resin

SPECIFICATIONS

Phantom size:
22dia. x 22 cm / 8.7dia. x 8.2 in

COMPILES WITH

JIS Z 4922



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Optional Parts for PH-28 and 30

Holder and accessories

Specify the manufacturer and type of the scanner