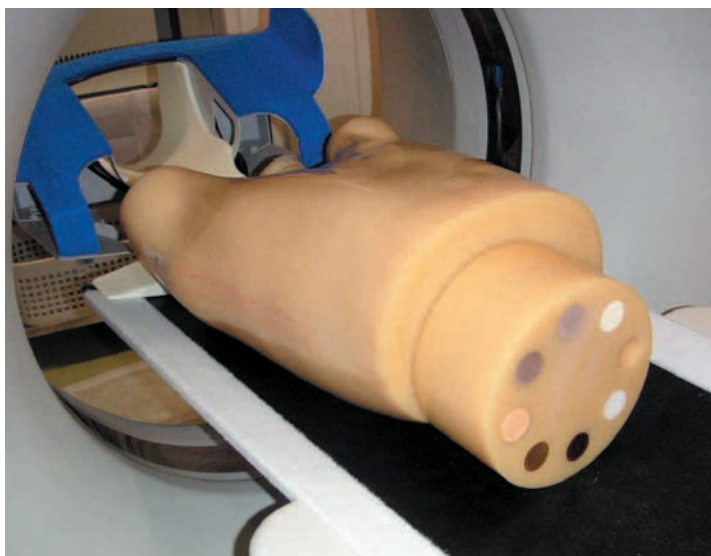


Lung Cancer Screening CT Phantom LSCT 0001

Product No. **PH-8**

LSCT0001 is a CT phantom developed to facilitate optimizing the radiation dose and other scanning conditions for Lung Cancer Screening CT examination with Helical CT or MDCT, which is aiming at early detection of lung cancers. As the screening is usually done on healthy people, the necessity of minimizing the exposure while maximizing the image quality is considered to be particularly high.

The phantom is designed to set conditions for detection of small early lung cancers such as GGA, which are difficult to be found by plain X-ray. Anthropologic structure of the phantom provides life-like images allowing operators visual evaluation, while quantitative evaluation on radiation dose and density curve of the image can be done stimulatory with a single scanning.

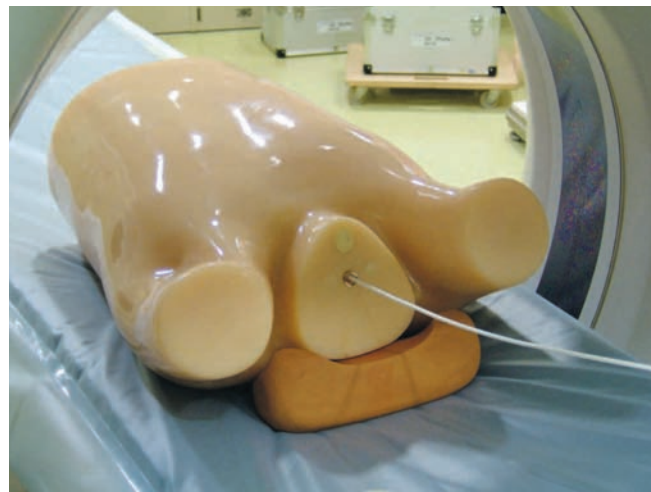
Unique phantom dedicated for optimizing lung cancer CT screening conditions, as well as setting the standard conditions between multiple equipments or facilities for mass screening.

Original human tissue substitute material creates life-like artifact under CT scanning

Simulated GGA type tumors are embedded on three main sections of both lungs.

Dose meter holder on the central axis of the phantom allows housing a pencil type chamber dose meter.

8-step cylindrical linearity phantom to control density curve as a scale can be attached to the chest phantom base.



LSCT 0001 with dose meter

Set Includes:

Phantom includes:

- 1 Chest Phantom: life size torso with arm up position

Internal structures:

- Bones
- Simulated tumors on sections of three lung area
 - Apical portion of the lungs
 - Bifurcation of the trachea
 - Base of lungs
- Dose meter hole
(13 mm dia., on the central axis of the phantom)

- 1 8-step linearity phantom

8 steps of 30mm dia. density samples are embedded

- 1 adjustment base

Sizes:

- Chest Phantom
 - Measurement around the chest 93 cm
 - Height 45 cm Weight approx.18 kg
- Linearity phantom
 - Diameter 200mm Height 100 mm



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Materials and CT features

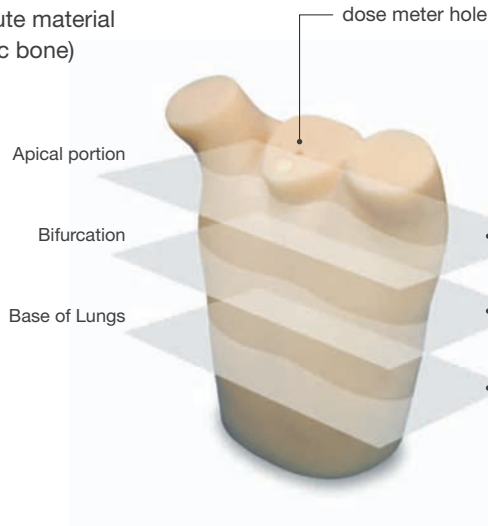
Chest phantom walls and mediastinum
Human soft tissue substitute material

Bones

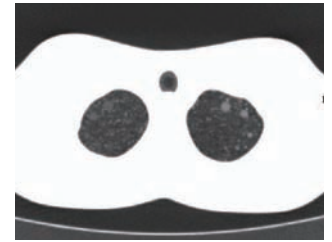
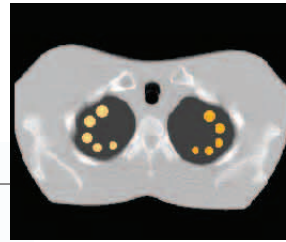
Human bone substitute material
(epoxy base synthetic bone)

Lung background

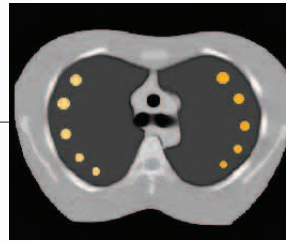
Polystyrol foam
HU# -900



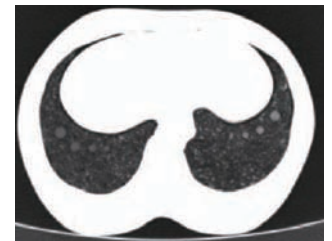
CT images



Apical portion



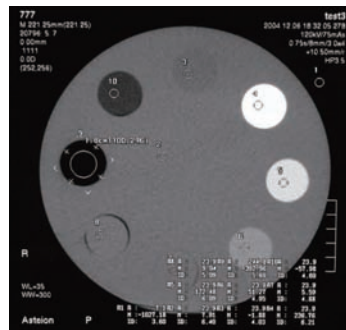
Bifurcation



Base of Lungs

Simulated tumors

	HU contrast with the lung background	Size	Materials
Tumors in the right lung	Δ HU=100	4, 6, 8, 10, 12 mm dia.	Urethane resin
Tumors in the left lung	Δ HU=270	2, 4, 6, 8, 10 mm dia.	Urethane resin



Linearity Phantom

Linearity phantom background
Urethane resin
HU# 60

Linearity phantom targets

	HU#	Materials
A	-1000	Air
B	-850	Polyurethane
C	-600	Polyurethane
D	-400	Polyurethane
E	-200	Polyurethane
F	100	Polycarbonate
G	250	Bakelite
H	350	Polyacetal resin



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