

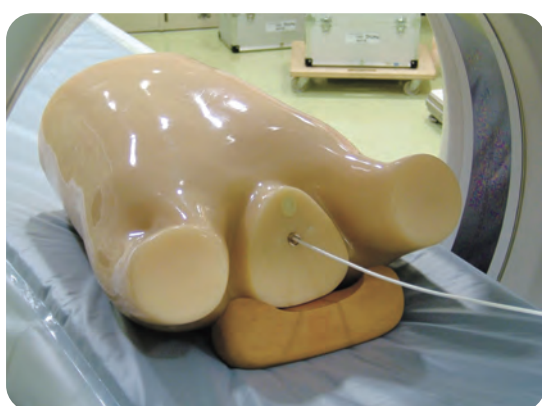
PH-8

# Lung Cancer Screening CT Phantom LSCT001

**Caution:**

Don't mark on the phantom with pen or leave printed materials contacted on its surface.  
Ink marks on the phantom will be irremovable.

## Instruction Manual



## Contents

- Please read before training  
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LSCT001 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.

LSCT001 is a 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.

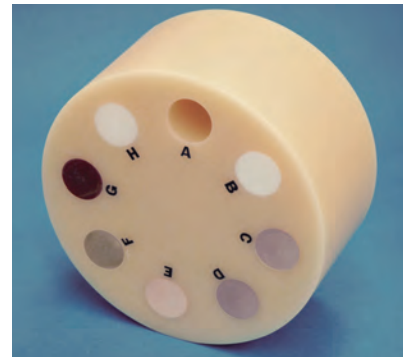
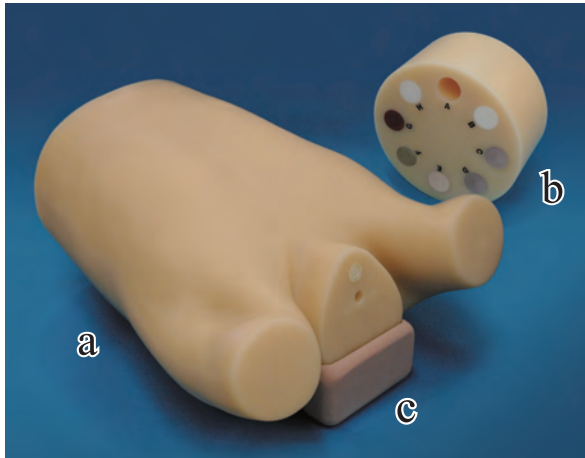
Simulated GGA type tumors with different sizes and densities are prepared in the vicinity of three main sections of bilateral lungs.

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.

## Set includes

Before your first use, please ensure that you have all components listed below.



Linearity Phantom

- a Chest Phantom ..... 1
- b Linearity Phantom ..... 1
- c Adjustment Base ..... 1
- d Urethane cylinder ..... 1
- Instruction manual (this leaflet)

### Materials

- Chest wall: human tissue substitute
- Bones: synthetic bones
- Alveoli: styrene foam and urethane foam

### Size

Chest measurement 930mm, Hight450mm  
(based on measurement of Japanese men)

## ⚠ CAUTION

### ● Handle with care

The models consists of special compositions of resin. Please handle them with the utmost care at all times.

- Change of the color of the phantom, which may occur across the ages, does not affect the quality of the phantom.

### ● Storage

Store model at room temperature, away from shock, heat, moisture and direct sunlight.

- Don't mark on the models with pen or leave any printed materials in contact with their surface. Ink marks on the models are not removable.

# Specifications

## 1 Simulated Tumors

Simulated Tumors are embedded in the lung fields at apical portion, bifurcation and base of lungs (see the images below).

Alveoli are made of styrene foam mixed with urethane powder to create realistic back ground image.

Contrast of the simulated tumors against the background (alveoli: HU-900):

Right lung: -100HU

Left lung:-270HU

Sizes of simulated tumors

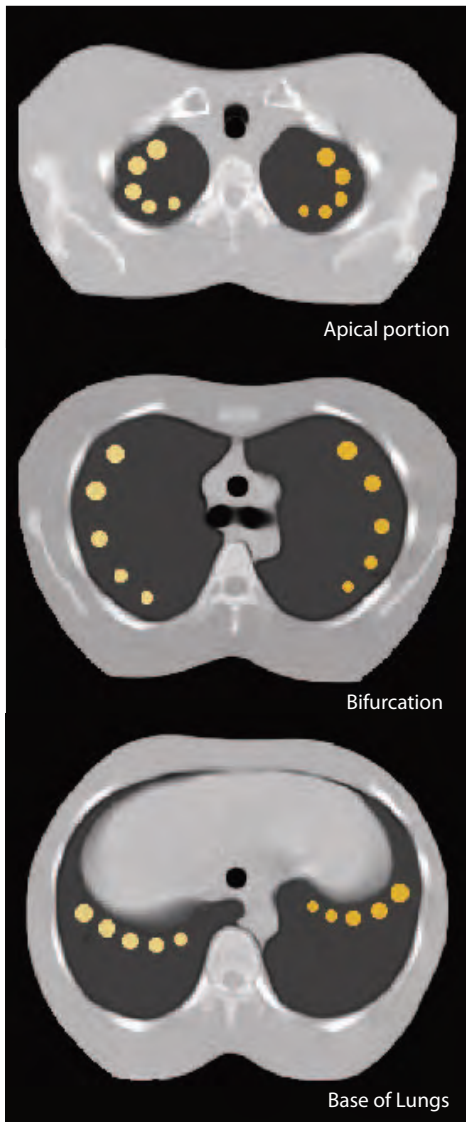
Right lung: 6,8,10,12mm dia.

Left lung: 2,4,6,8,10mm dia.

Materials of simulated tumors

Right lung: urethane foam

Left lung: polyurethane



Simulated tumors

	HU contrast with the lung back ground	size	materials
tumors in the right lung	$\Delta$ HU=100	4, 6, 8, 10, 12 mm dia.	urethane resin
tumors in the left lung	$\Delta$ HU=270	2, 4, 6, 8, 10 mm dia.	urethane resin

### Chamber hole

A dose meter hole to accommodate a pencil chamber is made in the middle of the phantom.

The dose meter hole is designed to come on the rotation center of the scanner.

The diameter of the hole is 13mm.

Insert a pencil chamber for CT to assess the dose.

### Accessories

Adjustment base to support the phantom neck, to keep the chest phantom horizontal.

Urethane cylinder to plug in the dose meter hole.

# Specifications

## 2 Linearity Phantom

The phantom is to assess the density curve of the image.

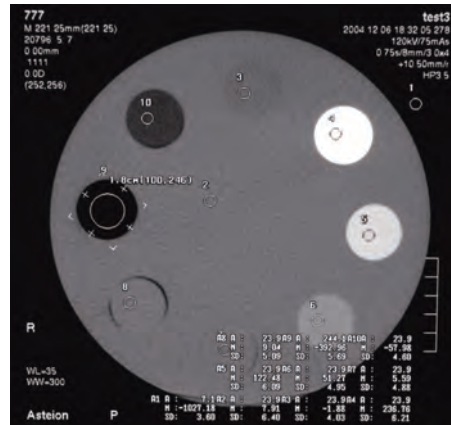
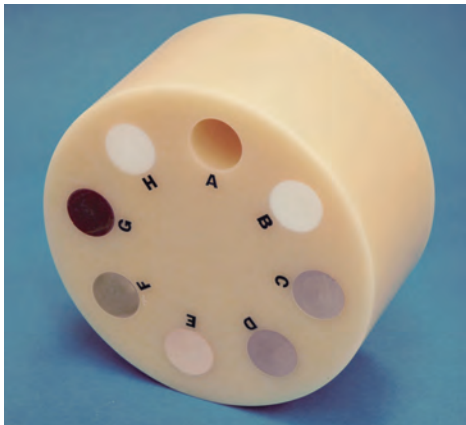
Size:

200mm dia., 100mm high

Materials:

Background: human tissue substitute...HU  $\approx$  60  
8 steps contrast cylinders...30mm dia. each.

A	-1000	air
B	-850	urethane foam
C	-600	polyurethane
D	-400	polyurethane
E	-200	polyurethane
F	100	polycarbonate
G	250	bakelite
H	350	polyacetal



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