



Ring Gantry with 2 Detectors

SPECT and Whole Body

Digital Signal Processing

Ring gantry

2nd detector adjustable to the following positions: 90° and 180°

Height of rotation center	110 cm
Rotation	unrestricted
Weight of stand with detector	1300 kg

Movement unit for detector head in radial direction

Radial movement of detector	28 cm
Ring opening (maximum diameter of object)	80 cm
Minimum distance of detector from the rotation center line	12 cm
Maximum distance of detector from the rotation center line	40 cm

Option OP-501: Detector Tilt (one detector)

Motorized rotation of the detector around its shorter axis from -30° to +180°
For acquisitions outside the ring gantry as well as in special planar acquisitions

Slip Ring Transformer

- 8 channel transformation of
- energy supply (24/48V)
- motor control
- detector control and data transfer

Option OP-502: Mobile Camera Stand

Set-up of camera stand on a carriage
Drive and steering by rack-and-pinion-drive.
Minimum movement 170 cm.

2 Rectangular Detectors

each consisting of:

case	10 mm aluminium
shielding	6 mm / 8 mm lead
dimensions (in cm)	70x56x33 (HxWxD)
weight	240 kg

Crystal

type	NaI
thickness	9,5 mm (60-400 KeV)
form	rectangular
dimensions (cm x cm)	58 x 42
field of view (cm x cm)	54 x 40

Photomultipliers

number	48
form	square
assembly	rectangular grid 8x6
side width	78 mm

Collimators

(with touch sensor as protection)	
standard	LEHR (140 KeV)
optionally available	LEGP, HEGP, MEGP
collimator cart	included

Detector Electronics

Digital high performance detector processing electronics
One 40 MHz ADC per PMT.
High speed FPGA processor

While operating all the detector parameters are being checked and aligned by the detector processor (auto-alignment).

The necessary detector field corrections are completely integrated into the software of the acquisition computer.

Adjustment of offset and gain of the pre-amplifiers is done with an accuracy of 12 Bit. High voltage digitally controlled. All the calibration and adjustment functions are entirely controlled by software. No manual calibration necessary. The detection computer is integrated in the respective detector. Communication to the processing computer is done by a serial high speed interface.

Power supplies and stand electronics

Integrated in the stand

Flat Screen

Display of current acquisition of the detectors,
Information on starting position, detector height
and patient table

Manual control switch

For controlling the position of stand, detector
and patient table.
Remote start of acquisition.

Patient Table

- solid table (can be fixed to the floor) with
mobile 4 mm aluminum plate
- motorised height adjustment: 60 - 100 cm
- linear adjustment range: 0 – 170 cm
- scan length: 200 cm, load capacity: 180 kg

Device for contour adjustment

light grid with 5 mm resolution for detecting the
body outline at entrance into the detector range.

Technical Specifications

Range of Energy

standard	60-200 KeV
optional	60-400 KeV

Performance parameters (DIN IEC 789)

intrinsic spatial resolution	
- FWHM	<3,7 mm
- FWTM	<7,5 mm

uniformity	
- integral	<3.0%
- differential	<2.8%

linearity	
- absolute	<0,4 mm
- differential	<0,2 mm

Count rate processing

- max. count rate	220.000 cps per detector
intrinsic energy resolution	<9,5%

Minimal Spatial Requirements

SPECT and WB	450 cm x 350 cm
Recommended:	560 cm x 450 cm

Floor Loading

required minim. loading capacity: >500 kg/m²

Software

Operating software LINUX
User software and manual
available in English, French and German
(others on request)

Nuclear Medical Software Packages (NSP):

NSP-00 basic software for general purpose functions
(organ-independent) including quality checks

NSP-01 thyroid scintigraphy

NSP-02 extension package organs (planar):
bone, lung, kidney, parotis, lymph system,
liver, stomach, esophagus,
gastrointestinal tract

NSP-03 extension package heart (planar)

NSP-04 whole body scintigraphy

NSP-50 SPECT basic software

Options:

NSP-51 Iterative reconstruction

NSP-52 ECG-Gated SPECT

NSP-53 Quantification brain SPECT

NSP-54 SPECT fusion software

NSP-56 4DM SPECT

Hardware

current specifications:
see processing System GMS-586

Peripherals

TFT colour monitor	24"
colour laser printer	included
mouse, keyboard	

Additional Equipment

DICOM: Store, Query/Receive, Print, Worklist, MPPS
Uninterruptable Power Supply (UPS)