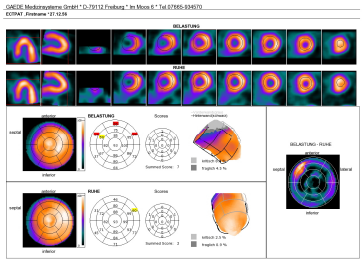
GAEDE
MEDIZINSYSTEME

# Heart SPECT Camera GKS-2000 Cardiac

## Ring Gantry with 2 detectors in fixed 90° position

## Digital Signal Processing



### Ring Gantry

2 detectors in fixed 90° position, both with radial movement and optical distance sensors

| | |
|---|---|
| height of rotation centre: | 100 cm |
| rotation: | unrestricted in every direction |
| ring opening: | 80 cm |
| weight gantry with detectors: | 1200 kg |

**Radial Movement of each Detector**

Distance of detector from the rotation centre line: 15-35 cm

**Slip Ring Transformer**
8 channel transformation of
- energy supply (24/48 V)
- motor control
- control of detector processor
- transfer of detector data
- unrestricted rotation without stop

**2 rectangular detectors** each consisting of:

| | |
|---|---|
| case | 10 mm aluminum |
| shielding | 6 mm lead |
| dimensions (in cm) | 50x35x30 (TxBxH) |
| weight | 200 kg |

### Crystal

| | |
|---|---|
| Type | NaI |
| Thickness | 8,5 mm (60 -200 KeV) |
| Form | rectangular |
| Dimensions (cm x cm) | 40.2 x 24.6 |
| Field of View (cm x cm) | 37 x 21.5 |
| | |
| dimensions | 78 mm x 78 mm |

### Photomultiplier

| | |
|---|---|
| Number | 24 |
| Form | square |
| Formation | rectangular grid 4x6 |

### Collimators

(with touch sensor as safety device)

| | |
|---|---|
| standard | LEHR (140 KeV) |
| collimator rack | included |

### Detector Electronics

Digital high performance detector processing electronics, 1 ADC per PMT
High speed FPGA processor board

While operating all the detector parameters are being checked and aligned if necessary.

All detector field corrections are 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 settings and adjustments are carried out digitally. All detector settings are carried out digitally.

Each detector is equipped with its own detector processor. Data are communicated to the processing computer by high speed interface.

### Power Supplies and Gantry Electronics

integrated in the gantry

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v1.0
21.03.2017

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## Flat Screen

Display of current acquisition, position of all moving parts, display of ECG signal

## Hand Control

For controlling all moving parts such as patient table height, table top, detector rotation, radial position of detectors, 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
- load capacity: 180 kg

## Light grid for optimal distance settings and body contour detection

## Safety device

collimators equipped with touch sensors

## ECG-Monitor

ECG unit with 5 electrodes max. and ECG trigger, ECG monitor combined with acquisition monitor

## Technical Specifications

**Range of Energy**

| | |
|---|---|
| standard | 50-200 KeV |

**Performance parameters** (DIN IEC 789) in calibrated state for complete FOV:

| | |
|---|---|
| intrinsic spatial resolution | |
| - FWHM | <3,0 mm |
| - FWTM | <7,4 mm |
| intrinsic uniformity | |
| - integral | <2.5 % |
| - differential | <1.5 % |
| Intrinsic linearity | |
| - absolute | <0,4 mm |
| - differential | <0,2 mm |

**Count Rate Processing**

| | |
|---|---|
| - max. count rate | 250.000 cps per detector |
| intrinsic energy resolution | <9,4% |

## Minimal Spatial Requirements

450 cm x 300 cm

## Floor Loading

required minim. loading capacity: >500 kg/m2

## Software

Operating software LINUX or Windows
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-03** extension package heart (planar)

**NSP-50** SPECT basic software

**NSP-52** ECG Gated SPECT

**Optional:**

**NSP-51** Iterative reconstruction

**NSP-55** Emory Tool Package

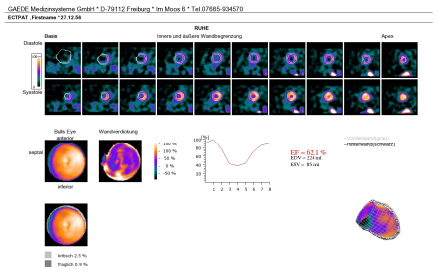
**NSP-56** Corridor4DM SPECT

## Hardware

current specifications:
see processing System GMS-586

## Additional Equipment

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



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