IMAGING FOR **LIFE**

Nucline™ X-Ring-R(HR), X-Ring-C

multipurpose single-head rectangular and circular LFOV gamma camera

for all SPECT, whole body and planar imaging

Nucline™ universal line

Mediso
Medical Imaging Systems

Nucline™ X-Ring-R (HR), X-Ring-C

Multipurpose Single-Head Rectangular and Circular LFOV Gamma Camera

DETECTOR

Rectangular high stability detector represents high optical performance and excellent mechanical quality

- NaI(Tl) scintillation crystal
  size: 585 x 470 mm (X-Ring-C: ø 430 mm)
  thickness: 9.5 mm
- photomultipliers:
  55 pcs (X-Ring/C: 37 pcs) high quantum efficiency PMTs characterized by improved energy resolution, magnetic shielding and long term stability
- lead shielding for 511 KeV, thickness: 12–32 mm

DETECTOR ELECTRONICS

A compact, highly integrated, one board easily serviceable construction without tuning potentiometers

- computer controlled PMT autotuning processor for fast PMT gain stabilisation and adjustment
- computer controlled ODC (Optical Distortion Correction) electronics
- high precision summation electronics
- active high voltage bleeder with integrated HV module

ACQUISITION CONSOLE

Ergonomic acquisition WS console stand on wheels
– Full-digital electronics assembled from the latest "high-tech" components including fast PCI bus acquisition interface

- Windows XP based computer
  – Intel® Core™ 2 Duo 3.0 GHz dual-core processor
  – 2 GB RAM
  – 1 TB hard disk drive
  – CD-DVD-RW drive
  – keyboard, mouse
  – full DICOM 3.0 compatibility (send/ receive, print, query/retrieve)
  – 19" high resolution (1280x1024) LCD monitor
  – integrated Gigabit Ethernet controller
- 40 MHz X,Y,Z A/D conversion
- 4 independent energy channels
- multi-channel analyser up to 1024 channels (40–600 keV)
- 4096 x 4096 pixel image digitising
- digital corrections:
  – direct addressing TS® simulation linearity correction with FOV increasing technology
  – energy correction
  – uniformity correction without count rate loss
  – automatic real time uniformity cross-correction for the different collimators
  – three-phase pile up recovery and resolution enhancing technology for high count rates

- **for all single head imaging applications**
- **outstanding COR parameters**
- **robotic mechanical movements**
- **typical intrinsic spatial resolution FWHM ≤3.4 mm (HR model)**
- **universal table for SPECT and whole body imaging**

CLINICAL PROCESSING WORKSTATION

Dedicated nuclear medicine workstation with ***InterView™XP*** software package running on Windows XP

Processing workstation:

- Intel® Core™ 2 Duo 3.0 GHz dual-core processor
- 2 GB RAM
- 1 TB hard disk drive
- CD-DVD-RW drive
- keyboard, mouse
- full DICOM 3.0 compatibility (send/receive, print, query/retrieve)
- 19" high resolution (1280x1024) LCD monitor (24" optional)
- integrated Gigabit Ethernet controller

GANTRY

- light weight easy-to-use gantry
- open ring design SPECT gantry
- all motions motorized and computer controlled
- motorized whole body gantry motion with automatic detector positioning for anterior-posterior view
- pre-programmed robotic gantry motions for precise positioning
- COR < 0.2 pixel (64 x 64 matrix)
- Intel Pentium based intelligent gantry electronics
- 17" colour high resolution TFT display

COLLIMATORS

- LEGP (Low Energy General Purpose) collimator
- LEHR (Low Energy High Resolution) collimator
- LEUHR (Low Energy Ultra High Resolution) collimator
- MEGP (Medium Energy General Purpose) collimator
- HEGP (High Energy General Purpose) collimator
- HEPH (High Energy Pinhole) collimator

IMAGING TABLE

Universal imaging table for SPECT and whole body examinations

- low attenuation carbon fiber pallet up to 180 kg patient weight
- motorized vertical patient positioning with digital height display
- cordless operation with battery

DOCUMENTATION

Automated bi-level macro-controlled printing and reporting. High quality inkjet colour and b/w hardcopy

- on normal paper
- on premium photo paper
- 2400 dpi print quality
- special printing software for faithful printing

NEMA SPECIFICATIONS (HR model)

- Field of view: 530x390 mm (X-Ring-C: ø 380 mm)
- Energy range: 40–400 keV
- Intrinsic energy resolution for ^{99m}Tc: 9.7%
- Intrinsic Flood Field Uniformity
  differential CFOV: 1.9%
  integral CFOV: 2.4%
  differential UFOV: 2.4%
  integral UFOV: 2.9%
- Intrinsic Spatial Resolution:
  CFOV: 3.4 mm (FWHM)
- Intrinsic Spatial Linearity
  differential CFOV: 0.18 mm
  absolute CFOV: 0.38 mm
  differential UFOV: 0.20 mm
  absolute UFOV: 0.40 mm
- Max. count rate with full correction: 220,000 cps (20% window)
- System Spatial Resolution (with LEHR collimator): 7.3 mm (FWHM)
- System sensitivity (with LEHR collimator): 160 cpm/µCi

OPTIONAL ACCESSORIES

- ECG triggering device for cardiac gated studies
- Colour laser printer
- CODONICS colour postscript printer
- Tuning and test phantoms

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