

Nucline™

UNIVERSAL LINE

X-Ring/R (HR), X-Ring/C



Multipurpose single-head
rectangular and circular
LFOV gamma camera

for all SPECT, whole body and planar imaging



Mediso

Medical Imaging Systems

Nucline™ X-Ring/R (HR) and X-Ring/C

Single – Head Gamma Camera for All Energy and All Imaging Applications

DETECTOR

- Newly developed rectangular FOV high stability detector assembled with high optical and mechanical quality
- NaI(Tl) scintillation crystal
 - size: 585 x 470 mm (X-Ring-C: \varnothing 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" elements including fast PCI bus acquisition interface
- Intel Pentium 4, 2.26 GHz computer with 64 bit memory handling
 - 512 Mbytes (333 MHz) fast program memory
 - 512 kbytes cache memory
 - 80 Gbytes hard disk drive
 - 17" high resolution TFT colour monitor
 - 1.44 Mbytes floppy drive
 - CD-RW drive
 - 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

CLINICAL PROCESSING WORKSTATION

- Dedicated nuclear medicine workstation with **Interview™** software package running on Windows XP
- 64 bit 2.26 GHz Intel Pentium 4
 - 512 Mbytes (333 MHz) RAM
 - 512 kbytes cache memory
 - 64 Mbytes 64 bit graphic card
 - 80 Gbytes hard disk drive
 - 1.44 Mbytes floppy disk drive
 - CD-ROM drive
 - 21" 1600 x 1200 high resolution colour monitor
 - fast Ethernet network interface

GANTRY

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

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 SPET 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 through MS-Office XP. High quality inkjet colour and b/w hardcopy
- on normal paper
 - on premium photo paper
 - on dull X-ray-like film
 - 2400 dpi print quality with HP PhotoRET III technology
 - special printing software for faithful printing

NEMA SPECIFICATIONS

- Field of view: 530 mm x 390 mm (X-Ring-C: \varnothing 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: > 240,000 cps
System Spatial Resolution (with LEHR collimator): 7.3 mm (FWHM)
System sensitivity (with LEHR collimator): 160 cpm / μ Ci

OPTIONAL ACCESSORIES

- ECG triggering device for cardiac gated studies
- MODEM long-distance service kit (hardware and software)
- Colour video imager or colour laser printer
- CODONICS dry film imager
- Tuning and test phantoms