



NeuViz
Computed
Tomography

Advanced, Value-Rich
128-Slice CT Technology

Prime

Neusoft[®] Medical
Systems

Prime NeuViz

Value-based healthcare, a new financial challenge

Make your imaging budget go further.

Hospitals are faced with the difficult transition from fee-for-service based healthcare to the emerging value-based reimbursement system in which providers are paid on the value delivered during a diagnostic procedure instead of the number of procedures. As a result, it is more important than ever before to deliver quality service, efficiently and with a high degree of patient satisfaction.

As the aging patient population continues to grow while reimbursements decline, imaging professionals are challenged to find new ways to meet fiscal requirements. In this new landscape, CT system purchasing decisions are critical to financial success.

The lower cost of ownership afforded by a Neusoft Medical Systems NeuViz Prime 128-slice CT makes patient care in the challenging world of value-based payment profitable, without compromising on patient outcomes.

Invest Wisely

Neusoft delivers more functionality and a lower total cost of ownership:

- Extended warranty including non-prorated tube coverage.
- FREE Applications support.
- FREE software upgrades for life — no service contract required.
- Liquid bearing technology removes heat from critical rotating parts in the X-ray tube dramatically increasing longevity and providing no wait time between exams.

Improving the Patient Experience

Low-Dose Innovation

ClearView Iterative Reconstruction

Auto SFOV

60 KV Scanning

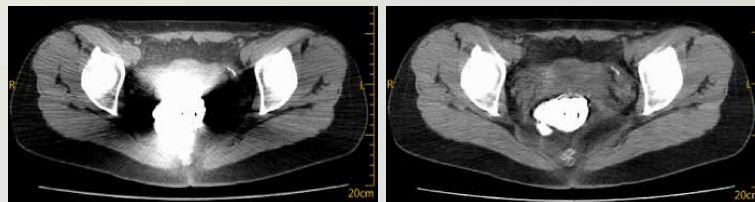
Low Dose + High-Speed Scanning

Spectral Imaging

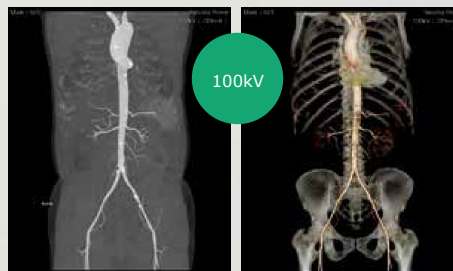
Optional Clinical Applications

Systems Specifications

Advanced Clinical Applications are the Neusoft Standard



Metal Artifact Reduction (MAR): Software constructs front projection, anatomy, and noise models from the raw data and image data while removing the streaking artifact.



Auto kV: Reducing kV has the potential to reduce dose. Based on study type and patient size, the software recommends kV to the technologist. The technologist can accept or reject this suggestion based upon clinical need.



Head and Neck Bone Removal: Neuro studies become effortless and can be performed at the CT console.

Improving the Patient Experience

U.S. workers shoulder out-of-pocket healthcare expenses averaging \$1,478.¹ As a result, patients are more informed, cost sensitive and selective in making healthcare purchases.

Attracting patients with competitive technology is the first step in exceeding expectations and delivering a positive scanning experience.



NeuViz Prime's award-winning design puts the patient first.

- 72cm gantry opening accommodates patients comfortably
- 300kg table weight limit.
- Table can be lowered to 43cm from the floor for safe and easy patient transfers.
- Enhanced voice and visual patient commands.
- Easier, faster patient handling with larger displays and ergonomic controls.

¹The Kaiser Family Foundation and Health Research & Educational Trust, 2016 Annual Survey: Employer Health Benefits. <http://files.kff.org/attachment/Report-Employer-Health-Benefits-2016-Annual-Survey>.



Prime



Low-Dose Innovation



Unique 60kV Scanning

Reduced kV imaging is ideal for pediatric patients and lung screening.



Auto SFOV

Reduced scan field of view (SFOV) lowers patient dose and improves image quality.



Organ Safe

A unique approach to reducing direct x-ray exposure to radiosensitive organs.



New Detector Design

Improved conversion efficiency and afterglow.



ECG-Dose Modulation

This market-leading iterative reconstruction solution provides maximum dose reduction without diminished image quality or recon speed.



240° Exposure

Partial rotations limit exposure to the attending clinician during biopsies and play a central role in organ-based dose modulation.



ClearView

Iterative processing in projection and image spaces delivers dose reduction.



Pediatric Protocols

Age- and weight-based protocols that lower and optimize dose to pediatric patients.



3D-Dose Modulation

O Dose modulates mA ensuring the optimum dose is used for the specific anatomical region being imaged.



Dose Check

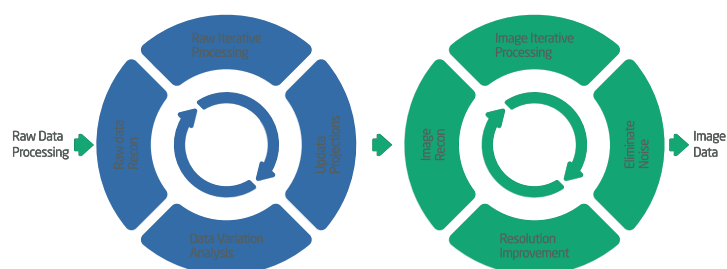
With NEMA XR-25 compliant functionality, Dose Check prevents accidental over exposure to safeguard patient safety.



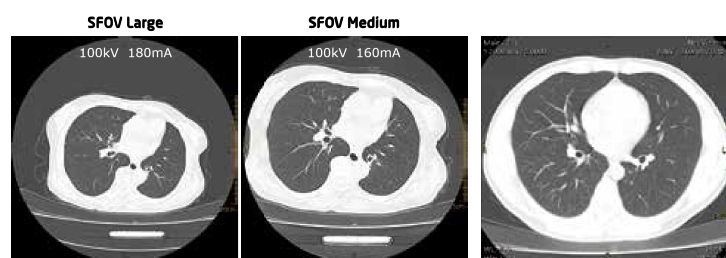
Neusoft is continually advancing low-dose imaging technology to improve patient safety. Neusoft has joined other medical imaging manufacturers in the MITA Smart campaign to set dose standards, putting patients first. The NeuViz Prime complies with MITA Smart Dose (XR 29) standards.



ClearView Iterative Reconstruction



Iterative processing in both projection and image spaces delivers dose reduction while improving overall diagnostic image quality.



Auto SFOV - Automatically change SFOV based on targeted organ and patient size for quality images at a lower radiation dose. Peripheral X-ray dose is minimized and beam hardening artifact is reduced.

60kV Scanning - 60kV has elevated low-dose scanning to a new level. Using an advanced image reconstruction algorithm, the NeuViz Prime achieves lower radiation dose without compromising image quality. The benefits of 60kV scanning are significant for pediatrics and lung cancer screening.

Low Dose + High Speed Scanning – A Winning Combination

With a new gantry design and the patented 10GBs/HIFI data transmission technology, NeuViz Prime has a top rotation speed of 0.259 seconds. This powerful combination offers significant advantage for many clinical applications including pediatric and cardiac scanning.

Pediatric

The ability to image at 60 and 70kV makes the NeuViz Prime a premier pediatric imaging system. Rapid scanning offers lower dose and excellent motion control, addressing the two primary challenges in pediatric CT imaging.

Cardiac

Increased rotation speed of 0.259 second increases temporal resolution, a key consideration for cardiac imaging. This, coupled with Neusoft's advanced algorithms, enables Cardiac CTA study of patients with challenging cardiac rhythms.

- Prospective gating and ClearView iterative reconstruction enable low-dose Cardiac CTA.
- The system detects and avoids arrhythmias providing a quality study for patients with cardiac rhythm abnormalities.
- Auto recon capabilities identify the optimal imaging phase within the complex cardiac cycle.



Spectral Imaging

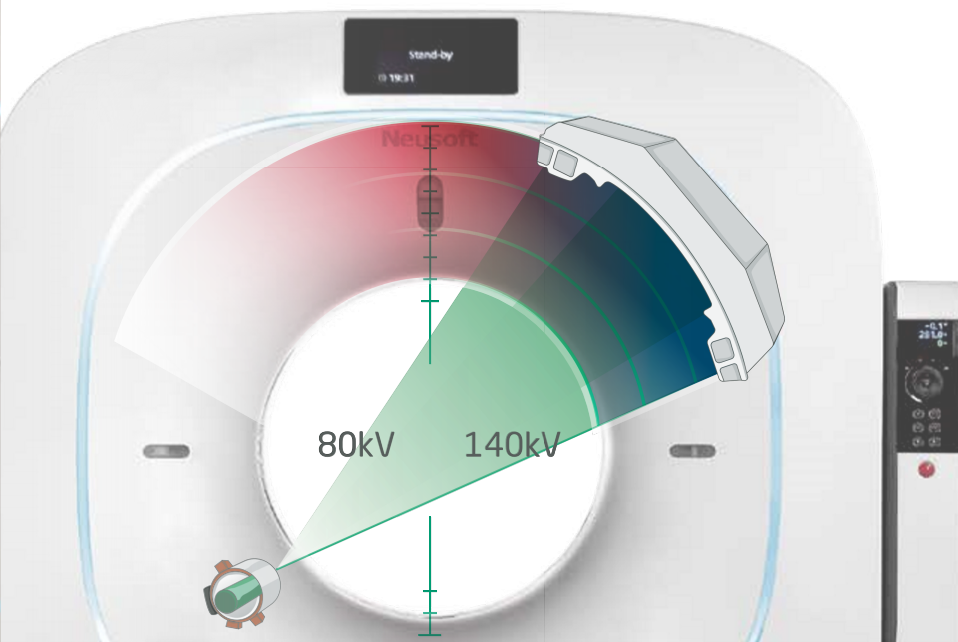
Dual energy spectral imaging has become a sought-after feature of high-end CT scanning. Researchers have identified the potential of this emerging technology to provide unprecedented anatomical and pathophysiologic information.

NeuViz Prime offers spectral imaging generated by kV switching to provide diagnostic information not available from a standard CT examination, such as tumor invasion degree, pathological types of tumors, diagnosis of lymph node metastasis and metastatic lesion.

As the field of spectral imaging evolves, your investment in the NeuViz Prime ensures that you are just a field upgrade away from the latest advances in CT diagnostics.

Optional Clinical Applications

Brain Perfusion	Uses dynamic CT for quantitative assessment of cerebral ischemia in acute stroke.
Body Perfusion	Provides quantitative analysis of renal, hepatic and pancreatic tissue characterization, risk stratification and monitoring of treatment effects.
Lung Density	Provides quantitative lung emphysema measurements and a visual representation of the diffusion of emphysema.
Lung Nodule Analysis	Detects and quantifies pulmonary nodules and lesions to stage and track growth over time.
Virtual Colonoscopy	Uses automatic colon segmentation to locate polyps and growths of tissue in the colon and rectum.



NeuViz Prime Specifications

GANTRY	
Aperture	72cm
Scan FOV	Large: 500mm±2mm; Medium: 330 mm±2mm; Small: 250 mm±2mm
Tilt	±30°
Scan speed (360°)	0.259s, 0.32s (option), 0.374s (option), 0.4s (option), 0.5s, 0.6s, 0.8s, 1.0s, 1.5s, 2.0s
Temporal Resolution	25ms
Focus-to-isocenter distance	570mm
Focus-to-detector distance	1040mm
DATA ACQUISITION SYSTEM	
Maximum number of slices/rotation	128
Number of detector rows	64
Number of detector elements	672 x 64
Maximum number of projections/rotation	4640
Surview acquisition modes	2 x 0.625
Axial acquisition modes	128 x 0.625, 64 x 0.625, 32 x 0.625, 16 x 0.625, 8 x 0.625, 8 x 0.3125 (iHD option), 2 x 0.625
Spiral acquisition modes	128 x 0.625, 64 x 0.625, 32 x 0.625, 16 x 0.625, 16 x 0.3125 (iHD option), 8 x 0.625
Detector type	Solid-state GOS ceramic
X-RAY TUBE ASSEMBLY	
Tube	XS-100
Tube current range	10mA~833mA
Tube voltage	60kV, 70kV, 80kV, 100kV, 120kV, 140kV
Tube anode heat storage capacity	Unlimited MHU
Maximum cooling rate	1696 KHU/min
Focal spot size	1.1 x 1.2 (large); 0.6 x 0.7 (small); 0.4 x 0.7 (extra small)
FILTER SYSTEM	
Equivalent	Total filtration: min. 4.8mm Al equivalent at 140kV
Beam limiting device	Equivalent to 3.90mm Al
GENERATOR	
Maximum power	100kW

COUCH	
Maximum couch load	205kg/452 lbs.; 300kg/661 lbs. (option)
Horizontal motion speed	0.375mm/s-464mm/s
Vertical movement range	430mm-970mm (from cradle bottom to ground)
Vertical motion speed	9mm/s-15mm/s
Couch horizontal movement range	0-1770mm
HOST COMPUTER SYSTEM	
The host computer workplace provides an intelligent and reliable workflow for data acquisition, image reconstruction and routine post processing at the CT scanner.	
Standard monitor	19 inches; 1,280 x 1,024 resolution
RAM storage	Host: ≥16GB; Recon: ≥64GB
SYSTEM PERFORMANCE	
Surview	
Maximum length	1650mm
Scan width	500mm
Views	A.P., lateral, dual
Real-time surview	Yes
Axial	
Slice thickness	0.3125mm (iHD option), 0.625mm, 1.25mm, 2.5mm, 5mm, 10mm
Reconstruction FOV	50mm~500mm
Maximum Length	1750mm
IMAGE RECONSTRUCTION	
Maximum recon speed	40 image (s)
Recon matrix	512 x 512, 768 x 768, 1024 x 1024
CT value	-1024~3072; Support extended -32768~32767
Spiral	
Slice thickness	0.4mm (iHD option), 0.625mm, 0.8mm, 1mm, 1.25mm, 1.5mm, 2.0mm, 3.0mm, 4.0mm, 5.0mm, 10mm
Reconstruction FOV	50mm~500mm
Scan time	Maximum 100s (uninterrupted)
Scan length	1650mm (scan speed: 1s, pitch factor: 1, slice width: 128 x 0.625mm) 1700mm (scan speed: 1s, pitch factor: 1, slice width: 64 x 0.625mm)
Pitch factor	0.13 to 1.5 (continuous)

IMAGE QUALITY	
High contrast resolution	
X-Y-Plane	17 lp/cm@0% MTF
X-Y-Plane (iHD)	30 lp/cm@0% MTF
Technique	280mA, 120kV, 1s, 0.625mm
Low contrast resolution	
Low contrast resolution	4.0mm@0.3%; 3.0mm@0.5%; 2mm@1%
Image noise	≤0.35%
Technique	280mA, 120kV, 1s, 10mm (large SFOV)
Uniformity of CT value	Less than ±4HU (water CT number)
Accuracy of CT value	Air: -1000HU±10HU



Siting Information

OUTLINE DIMENSIONS AND WEIGHT	
Gantry dimensions	2198mm (L) x 938mm (W) x 1910mm (H)
Gantry weight	1800kg
Gantry package	2370mm (L) x 1030mm (W) x 2250mm (H)
Couch dimensions	2540mm (L) x 643mm (W) x 1055mm (H)
Couch weight	360kg
Couch package dimensions	2770mm (L) x 970mm (W) x 1230mm (H)
Console dimensions	600mm (L) x 800mm (W) x 675mm (H)
POWER SUPPLY REQUIREMENTS	
Rated power	125kVA
Input voltage	380/400VAC 3-phase 5-line 3-phase 4-line (Export is equipped with isolate transformer), power supply from options: 190/200/208/220/230/240/380/400/415/440/460/480VAC
Voltage variation	±10%
3-phase unbalance	≥5%
Frequency	50/60Hz±1Hz
Ground resistance	4Ω (specialized grounding); 1Ω (connected to a grounding system)
Minimum area of scanning room	5550mm × 3650mm
Minimum area of operating room	1700mm × 3650mm
OPERATING ROOM	
Recommended room size	Operating room: 3000mm × 4600mm; Scanning room: 6000mm × 4600mm
Minimum ceiling height	2010mm
Temperature of scanning room	18°C~24°C
Temperature of operating room	18°C~28°C
Humidity of scanning room	30%~60% (no condensation)
Humidity of operating room	20%~80% (no condensation)
Atmospheric pressure	70kPa~106kPa
Temperature of transportation and storage	-20°C~+55°C
Humidity of transportation and storage	10%~90%, (no condensation)
Running noise	Less than 70dB (A-weighted)



Contact Neusoft Medical Systems USA to learn more about the NeuViz Prime and FREE software upgrades for the life of your scanner.

Call 1-866-520-2626



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