NeuViz 128 CT Configuration

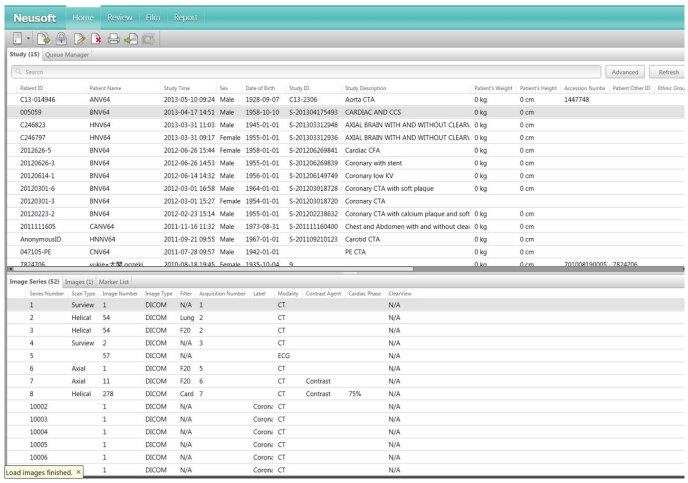
NeuViz 128 - High Definition Imaging

With Ultra-Fast Working Speed

NeuViz 128 is the newest product of Neusoft. It will bring our customers more comfortable application experience, higher definition images with lower dose in the shortest time.

Based on windows 7 operation system

NeuViz 128 console is based on windows 7 operation system. It brings more safety operating environment, more humanization operation interface.



New operation interface and convenient work flow.

A top-level workflow bar directs the user along important tasks, providing a structured workflow that also allows users to easily move between functions without losing current work.This provides the user with the highefficiency and necessary flexibility forviewing, performing applications,filming, or reporting.

New Advanced Technology

Iterative algorithm, coronary artery analysis, fat analysis and many more advanced applications, bring patients more safety, all-sided clinical applications.

NeuViz 128
More than expectation…

Neusoft®
Beyond Technology™

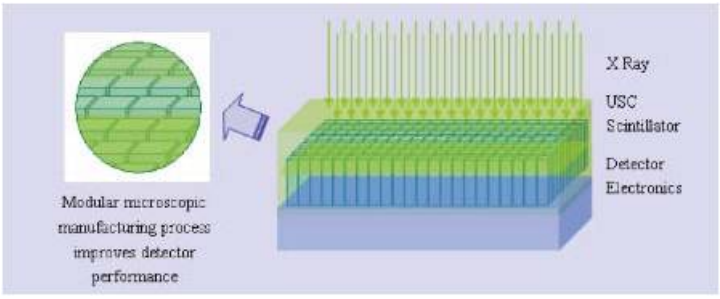
Hardware Configuration

1.Gantry System

Aperture: 72 cm
Scan Field: 50 cm
Tilt: ± 30°
Rotation Time: 0.374s, 0.5s, 0.6s, 0.8s, 1.0s, 1.5s, 2.0s
Partial Scan Times (240°): 0.25s, 0.32s, 0.39s, 0.52s, 0.65s, 0.97s, 1.29s
Focus to iso-center Distance: 570mm
Focus to detector Distance: 1040mm
Cool Method: Air cooling

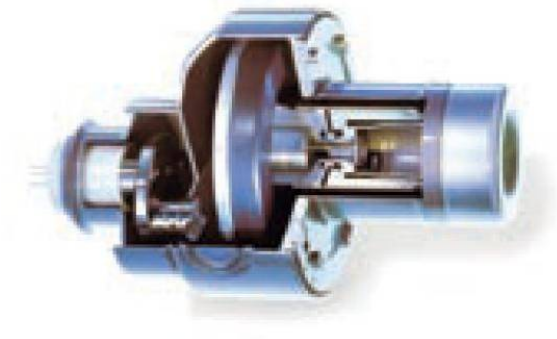
2.Data Acquisition System

Max. number of Slices: 128 Slices/Rotation
Number of Detector Rows: 64 Rows
Number of Detector Elements:672X64
Total Channels per Slice: 1344
Min. Slice Thickness: 0.625mm
Detector Width: 40mm
Number of Projections: 4640
Sequence Acquisition Modes: 128x0.625, 64x0.625, 32x0.625, 16x0.625, 8x0.625, 2x0.625
Spiral Acquisition Modes: 128x0.625, 64x0.625, 32x0.625, 16x0.625, 16x0.3125, 8x0.625
Detector: Up to 50% SNR improvement compared to conventional CT detectors;
Down to 1us-2us decay time for sub second scan application;
Ultra low afterglow;
Special design to minimize electronic noise;
High geometric efficiency



3.X-ray Tube & Generator

Tube Current Range: 10mA～667mA
Tube Voltage: 80kV, 100kV, 120kV, 140kV
Tube Anode Heat Storage Capacity: 8.0MHU
Cooling Rate: 931kHU/min
High Tube Capacity high patient throughput
Focal Spot Size: 0.6×1.2(Small) 1.1×1.2（Large）
Max. Power: 80kW



4.Patient Table

Max. table Load: 205kg/452 lbs
Table Feed Speed: 1mm/s-160mm/s
Vertical Table/Travel Range: 430mm-970mm
Vertical Travel Speed: 9 mm/s-15mm/s
Scannable Range: 1750mm
Table pad material: Carbon Fiber

5. Host Computer Systems

The host computer workplace provides an intelligent and reliable workflow for data acquisition, image reconstruction, and routine ppost processing at the CT scanner.

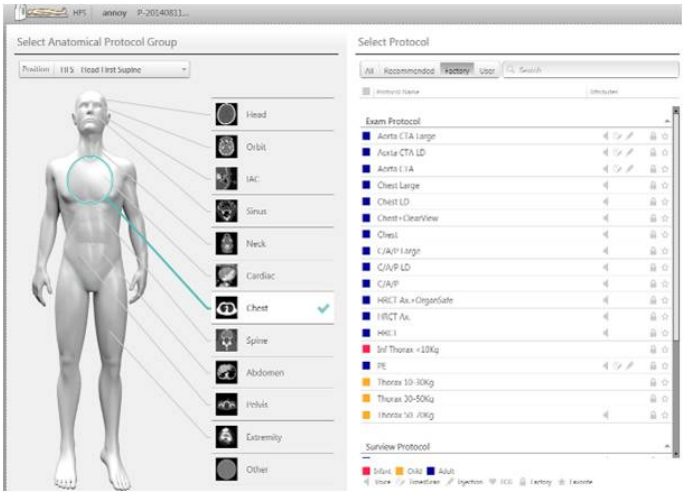
High-performance Computer:
Operation System: Windows 7
Host: 1 x Quad Core Intel(R) Xeon(R)
Recon: 2 x8 Core Intel Xeon 3.30GHz processor
Standard Monitor:
Flat Screen Monitor 19" (48 cm)
1,280 x 1,024 Resolution
1,024 x 1,024 Image Display Matrix
Dual Monitor:
Support Dual Monitor
Flat Screen Monitor 19" (48cm)
RAM Storage:
Host: 16 GB
Recon: 128G
Image Storage: 1 TB; 1,920,000 Uncompressed Images Additional Storage:
CD-R 700 MB 1,100 Images
DVD DICOM Drive 4.7 GB DVD Media 8,400 Images
Write-RW/+RW/-DL/Read
DICOM Viewer: Included on each CD;
Automatically started on the viewer's PC

6. AVW Workplace Systems

AVW workplace provides the unique advantage of an efficient multi-modality diagnostic workflow at a single workplace.It manages the clinical diagnostic workflow anywhere within the clinical environment.
High-Performance Computer: Windows 7
Standard Monitor: Flat Screen Monitor 19"
RAM Storage: >=16GB
Image Storage: >=700GB;
>=1,400,000 Uncompressed Images
Additional Storage: CD-R 700 MB 1,100 Images
DVD DICOM Drive 4.7 GB DVD Media 8,400 Images
Write-RW/+RW/-DL/Read
DICOM Viewer:Included on each CD;
Automatically started on the viewer's PC

7. System Performance

Patient Registration: Direct input of patient information;
Acquisition Workplace immediately prior to scan;
Pre-registration of patients at any time prior to scan;
Special emergency patient registration (allows examination without entering patient data before scanning);
Transfer patient information from HIS/RIS via DICOM Worklist;
Transfer examination information from scanner into HIS/RIS via MPPS (Modality Performed Procedure Step)



Up to 10,000 protocols can be edited, modified, and stored, the doctors can modify and create the protocols freely!

Surview
Length: 50–1650mm
Scan Times: 1.5–18 s
Views: A.P., Lateral, Dual
Real-Time Topogram: Yes

Sequence Acquisition
Reconstructed Slice Widths: 0.625, 1.25, 2.5, 5, 10mm
Dynamic Multi-Scan: Multiple (continuous) sequence scanning without table movement for fast dynamic contrast studies with maximum slice thickness of 40mm

Multi-slice Spiral Acquisition
Reconstructed Slice Widths: 0.4, 0.625, 0.8, 1, 1.25, 1.5, 2, 2.5, 3, 4, 5, 6, 7, 8, 9,10mm
Slice Increment: 0.1–20 mm
Spiral Scan Time: Max. 100 s
Scan Length: Max. 1700mm
Pitch: 0.13-2

8.Image Reconstruction

Real-Time Display: Real-time image display during spiral acquisition.
Scan Field: 50 cm
Recon Field: 5–50 cm
Recon Time: Up to 40 images/s with full cone beam reconstruction
Recon Matrix: 512x512, 768x768,1024x1024
Display Matrix: 512x512, 768x768,1024x1024
HU Scale: –32,768 to +32,767

9.CINE Display

Display of Image Sequences
Automatic or Interactive with Mouse Control Max.
Image Rate: 30 frames/s

10.Filming

Connection via DICOM Basic Print Interactive Virtual film Sheet

11.Image Transfer/Networking

Interface for transfer of medical images and information using the DICOM 3.0 standard.
Facilitates communication with devices from different manufactures.
DICOM Storage (Send/Receive)
DICOM Query/Retrieve
DICOM Basic print
DICOM Get Worklist (HIS/RIS)
DICOM MPPS
DICOM Storage Commitment
DICOM Viewer on CD

Raw Data Capacity: 2.4TB

12. Image Quality

Low-contrast Resolution
Low-contrast resolution is the ability to see
a small object (mm)
with a certain contrast difference (HU)
On a particular phantom
at a certain mAs value (mAs)
with a particular patient dose (mGy)

Spiral
Phantom: Catphan 600
Object Size: 4mm
Contrast Differentce: 3HU
Dose (CTDIw): 19.8mGy
Tecfhnique: 10mm,120kv

Sequence
Phantom: Catphan 600
Object Size: 4mm
Contrast Differentce: 3HU
Dose (CTDIw): 19.8mGy
Tecfhnique: 10mm,120kv

High-contrast Resolution
Isotropic high-contrast resolution in all three planes (x, y, and z).
X-Y-Plane
0%MTF 17lp/cm, 0.29mm (24lp/cm, 0.21mm, iHD)
10%MTF 11lp/cm, 0.45mm
50%MTF 7.5lp/cm, 0.66mm
Z-Plane
0%MTF 15.0lp/cm, 0.33mm
10%MTF 10.0lp/cm, 0.5mm
50%MTF 6.0lp/cm, 0.83mm

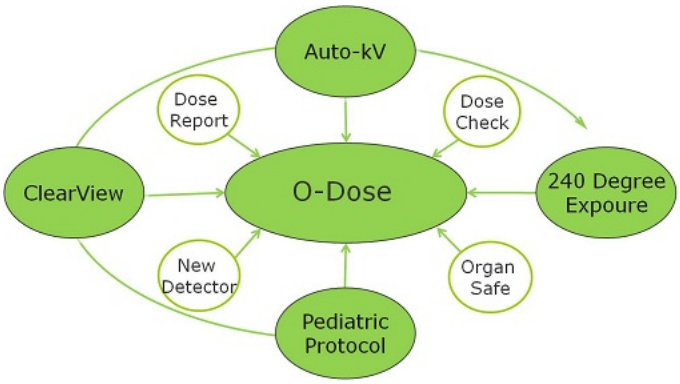
Technique
245mA, 120kV, 1.0s, 0.625mm

Noise: <=0.35%

Artifact reduction
· Beam hardening compensation
· Metal artifact reduction
· Motion artifact reduction
· Volume artifact reduction
· Adaptive streak Artifact reduction
· Lung intensification
· Advanced noise reduction

Software for Application

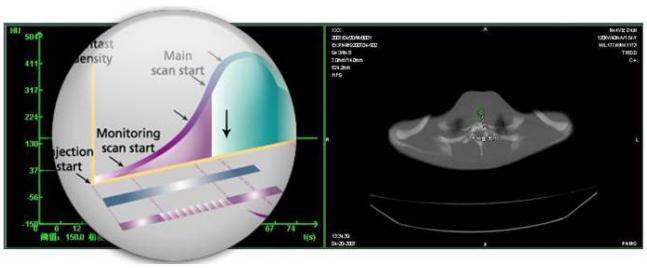
O-Dose
According to the patient's surview scanning data to determine the human body's size, and automatically calculates the proper Dose;
The system will automatically on-line modulate dose to adapt to different attenuation, and then the dose is optimized under the premise of image quality guarantee and noise uniformity;
Auto kV; Auto mA;
Dose modulation based on ECG signal and cardiac phase selected.



AutoVoice
A standard set of commands for patient communication;
before, during and after scanning.

AutoFilm
This function allows the user to set up and store filming Parameters. Pre-stored protocols can be set to include auto-filming.The operator can film immediately after each image, at the end of a series, or film after the end of a study and review images prior to print. The operator can also automatically film.

Bolus Tracking
An automated injection planning technique that permits the user to monitor actual contrast enhancement and initiate scanning at a predetermined enhancement level. Combine with SAS for full automation and efficacy.



SAS
Spiral Auto Start integrates the injector with the scanner, allowing the technologist to monitor the contrast injection to check for extravasation and to initiate and stop the scan (with the pre-determined delay) while in the scan room.

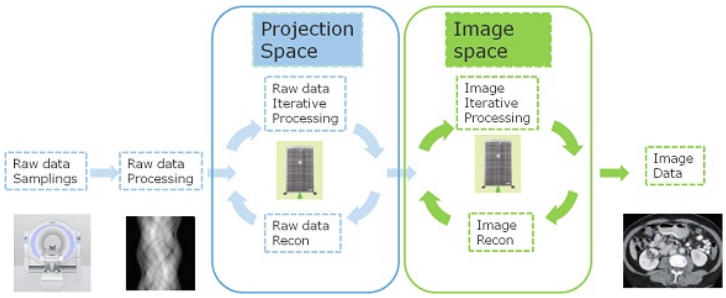
Dual Monitor*
Console dual monitor support, and here is the advice. When scanning on left monitor, on right monitor the user can register, access to the image information of the patients, and do the DICOM printing and sending (based on the current technical accumulation, better resource reuse pattern to the vice monitor can be designed).

Continuous CT*
Continuous CT (CCT) is a scanning mode that allows the physician to perform extended, low-dose scans while performing a biopsy. The resulting images display on a remote monitor in the scan room, providing near-real-time visual feedback during the biopsy.

Barcode Reader* Symbol LS1203

Report
- Create, Edit, Confirm, Save, Manage, Export report
- Manage case template
- Template management: create, delete and edit
- Support structured reports

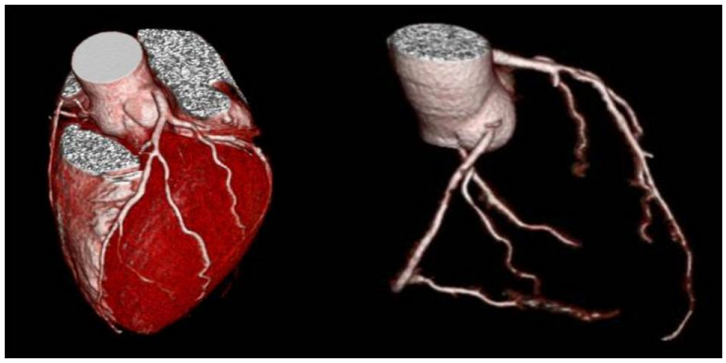
ClearView
ClearView iterative reconstruction provides nine different recon levels, respectively corresponding to different levels of image noise.

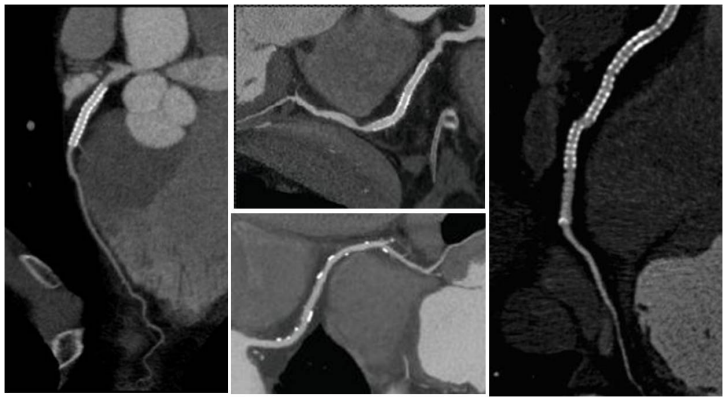


iHD*
The iHD function can improve the spatial resolution of the system, the high reconstruction can be achieved 24lp/cm@0%MTF for option through iHD.

Cardiac Scan
- Prospective ECG scan and multi-phase reconstruction
- Retrospective ECG scan
- Retrospective ECG scan mA modulation
- ECG wave edit

Cardiac Viewer
Can View cardiac images and provide measurement tools;
• Providing MPR and 3D view
• Can switch data between different phases
• Comparing different phases data
• 4D playing
• Displaying three cardiac MPR images
• Providing Oblique MPR display
• Defining CPR





Home
Home is used as patient list manager, it provides following functions:
• Patient image management
• Image quick review
• Search image
• Import, delete images
• Application selection

Filming
• Film Edit
• Print Preview
• Images Management
• Basic gray and color DICOM Print Function
• Normal Printing
• Send Images to Report
• Send Images to other Data Sources
• Show surview lines
• Allow users to set and store camera parameters

Image review
• Support displaying Image, operation, measurement and other functions.
• Display, zoom, pan Image, adjust window width and window level.
• Preset window width and window level.
• Measure ROI.
• Show image information.
• Display location lines and surview image.
• Compare series.
• Batch function.
• Support Image storage, including Secondary Capture, BMP, PNG, JPG, TIFF, Derived Image and PS

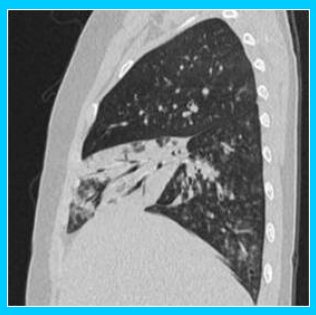
Fat Analysis*
• Used to analyze fat of abdomen, including calculate the area of Subcutaneous Fat, Abdomen Fat and Waist circumference, etc.
• Segment the fat of Subcutaneous and Abdomen function;
• Saving and reading processing results

Preprocessing function*
The specified image data can be preprocessed before the user review them. For example, following processing will be done before the user review the image data:
bone removal, couch removal, vessel extraction etc.

Accessory

• Isolation Transformer（37KVA）
• QA Phantom
• Cervical Vertebra Cushion
• Arm-Head Cushion
• Knee Joint Cushion
• NMS Head Holder Assly
• Head Holder Cushion
• Belt 1/2/3
• Arm Support
• Coronal Head Holder
• Coronal Cushion
• Head Side Cushion-L/M/S
• Couch Extension
• Couch Extension cushion
• 2.7KVA APC UPS for console
• Tool Box
• ECG Monitor
• Gantry Transportation Dolly
• Couch Transportation Dolly
• Infant Cradle*
• Flat Head Holder*

Post-Processing

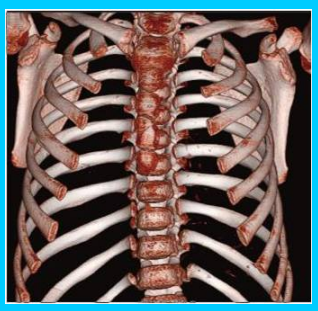


MPR/CMPR

Real-time reformation of axial images into any userdefined plane - coronal,sagittal or general oblique – or curved plane.
Interactive and friendly user interface is provided.

MIP/MinIP/AveIP

Maximum,Average or Minimum Intensity Projection. Projection images can be interactively generated in any arbitrary viewing angle,and can be windowed,zoomed and panned.

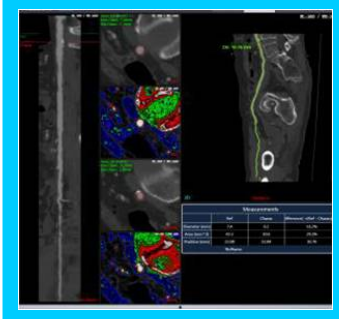


VR/3-D/SSD

3D visualization software provides unique simultaneous visualization of vasculature, soft tissue and bone.
Permit viewing through and beyond surrounding structures.

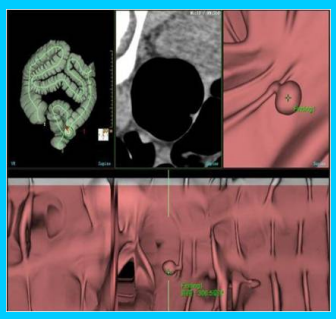
VE

Fly-through images within and around hollow organs.
Clinical applications include virtual colonoscopy, bronchoscopy,and angioscopy.



Vessel Analysis

One click bone removal;
Vessel centerline extraction;
Various review modes may be used: Volume Rendering ,MIP,MPR, CPR;
Measurements are provided for vessel assessment, including maximum and minimum cross section diameters, lumen areas.

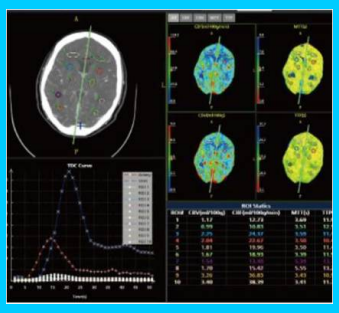


Virtual Colonoscopy*

Virtual colonoscopy application is a clinical application for the viewing and evaluating of virtual colonoscopy CT images.
The application is an interactive tool to help visualize colon anatomy, find polyps and assess their characteristics.

Dental Analysis*

Dental Analysis is designed for assisting oral surgeons in planning implantation of prostheses.
It has following features:
Display panoramic views of dental;
Display cross-sectional planes of dental;
Filming the panoramic and cross sectional images in true size.



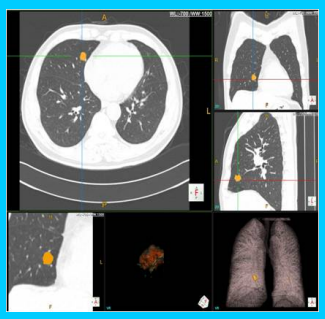
Brain Perfusion*

Brain Perfusion is a blood flow imaging application, It has following features:
Preprocess image
Calculate CBF, CBV, MTT, TTP Map;
ROI and TDC display;
Send result to Film & Report.

Post-Processing

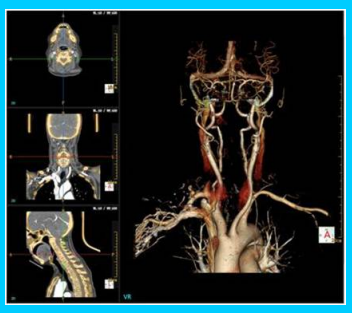
Body Perfusion*

Application for the quantitative analysis of renal, hepatic, and pancreatic blood flow.
It has following features:
Calculate CBF, CBV, MTT, TTP Map;
ROI and TDC display;
Send result to Film & Report.



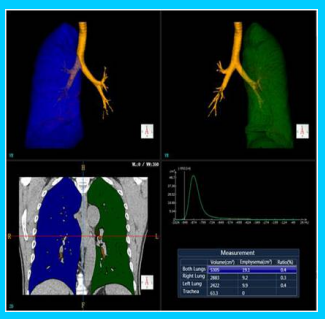
Lung Nodule Anaylsis*

Application assists the radiologist with detection and quantification of pulmonary nodules and lesions.
Single click segmentation.
Nodule volume calculation.
Follow up support.



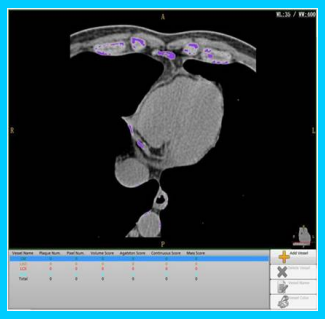
Nerve System DSA*

Application is used to remove boney structures and reveals vascular structure in the skull.
It has following features:
Auto registration of contrast and without contrast series;
Auto subtraction of bone structures;
Rendering Modes: VR, MIP and MPR.



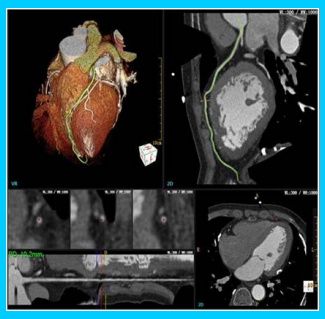
Lung Density*

Provides quantitative (volumetric) lung emphysema measurements and a visual representation of the diffusion of the emphysema.
It has following features:
Automated left and right lung segmentation;
Left and right lung emphysema measurements.



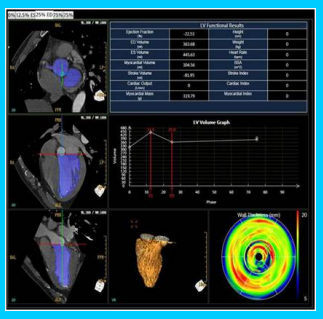
Coronary Calcium Scoring

Coronary Calcium Scoring application is used to estimate the amount of calcium in the coronary arteries.



Coronary Artery Analysis*

Application is used to analysis coronary artery disease from CT Scan data.
It has following features:
Automatic Cardiac cage removal;Automatic Cardiac Segmentation and Cardiac Artery tree extraction;
Manual Segment of cardiac artery;
Render modes: VR,MIP, MPR,CPR



Cardiac Function Analysis*

Allow you to analyze a variety of heart functions, including: Left ventricular volumes; Ejection fraction; Left ventricle wall motion and thickening;
Using Simpson or Segmentation methods of calculation;
4D Rendering

Tumor Evaluation*

Application can provide tumor segmentation and measurements from CT Scan series: One click tumor segmentation;
Tumor diameter and volume calculation;
Follow up support;
RECIST measurement support.

Dimensions & 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: 2570mm(L) x 970mm(W) x 1230mm(H)
Console Table: 600mm(L) x 800mm(W) x 675mm(H)

CT Site Planning

Min. Area of Scanning room: 5550mm×3650mm
Min. Area of Operating Room:1700mm×3650mm

Recommended Room Size:
Operating Room: 3000mm×4600mm
Scanning Room: 6000mm×4600mm
Min. Height of Ceiling: 2010mm

Power Supply Requirement

Power Capacity: 100KVA;
Input Voltage: 380/400VAC
3-phase 5- line
3-phase 4-line (with isolate transformer)
Power supply from below options:
190/200/208/220/230/240/380/400/415/440/460/480 VAC
Voltage Variation: tolerance ≤+10%
3-phrase Unbalance: ≤5%
Frequency: 50Hz/60Hz±1Hz
Grounding Resistance:
Independent Grounding Resistance <4Ω;
Common Grounding Resistance<1Ω

Environment requirements

Temperature of Scan room : 18℃~24℃
Temperature of control room: 18℃~28℃
Humidity of Scan room : 30%~60%
Humidity ofControl room: 20%~ 80%
Atmospheric Pressure: 70kPa~106kPa
Temperature of Transportation and Storage : -20℃～+55℃;
Humidity of Transportation and Storage: 10%～90% (no-condensing)
Running Noise: <70dB(A) (1 meter distance)

*option. Specifications are subject to change without notice.

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