

System Requirements

EQUIPMENT NAME: 128-slice and up computed tomography system

FUNCTIONAL UNIT: Hospital Imaging Center

PATIENTS: All

FUNCTIONAL APPLICATIONS

For the diagnosis with 2D images and 3D volumes of the skull, brain, neck, chest, heart, lungs, abdomen, extremities and vascular system in adults and children

TECHNICAL REQUIREMENTS

NOTE: Indicate if the solution presented has Artificial Intelligence software

GENERAL

Multi-slice computed tomography scanner performing 128 or more reconstructed slices per 360° revolution from not less than 64 detector rows

Dicom 3.0 interface, including: Dicom Print, Modality Worklist, Query/retrieve, MPPS, Storage Commitment and Dose Reporting

GANTRY

Gantry opening: greater than 70 cm

Gantry tilt angle: Digital and/or physical -20 to + 30 degrees in 0.5 degree steps

Control touch screen for patient positioning, on both sides of the gantry (left and right) with independent function from each other

Laser for patient positioning

Rotation time: 0.35 seconds or less

GENERATOR

Rated power 72 KW or more

Maximum kilovoltage selection: 140KV or above

Minimum kilovoltage selection: 70KV or less

Maximum mA: 650 mA or more

X-RAY TUBE

With two focal points

X-ray tube with anode heat storage capacity not less than 7.2 MHU

Heat removal capacity: not less than 1500 KHI/min.

Anode rotation speed: 6,000 RPM or greater

PATIENT TABLE

Table with wide range of vertical and longitudinal movement

Scannable range: 200 cm or more

Z-axis positioning accuracy: +/-1.0 mm or less

DETECTORS

Solid State or Ceramic Technology

Detector array coverage of 40 mm or greater at isocenter

Thinnest slice thickness: 0.625 mm

50cm field of view

Spatial resolution: 16 pairs of lines per centimeter or greater

Low contrast resolution: 4.0 mm @ 0.3% (120 kVp, 250 mAs) or better

Noise: 0.25% or less

DATA ACQUISITION, STORAGE, VISUALIZATION AND RECONSTRUCTION

Automatic modulation of the dose level in angular and longitudinal form

Dedicated Pediatric Protocols based on age and weight

Reconstruction of images with iterative method for dose reduction

Iterative algorithm for metal artifact reduction

Software that allows blocking the study if it exceeds a maximum dose value to be defined by the user

Image reconstruction speed of up to 60 images per second or higher

Matrix reconstructed image resolution up to 1024 x 1024

Automated injection planning tool to monitor contrast enhancement

Tool that allows the scanner to communicate with the intravenous contrast injection pump

and analysis of ventricular function. It must allow cardiac segmentation and visualization of 2D and 3D maps and visualization in cinema mode

Two monitors of 23" or more, high resolution, resolution 1920 x 1200 pixel or higher

Hard drive with storage capacity of 900 GB or more

RAM memory: 8 gigabyte or higher

CD or DVD recorder/reader

Intercom with predefined and configurable commands, in multiple languages

Visualization of 2D images/cines in axial, sagittal and coronal views

Reconstruction and Visualization of images in planar mode, volume (3D), endoscopic, 3D volume rendering, MinP as a minimum

MPR Multiplanar Reconstruction

With software for image quality adjustment, CT window adjustment, acquisition protocol adjustment, dose adjustment, etc.

UPS for console with autonomy of 10 minutes or more

Ability to include post-processing options on console virtual colonoscopy studies, vessel analysis, pulmonary nodule analysis, brain perfusion and dental package.

POST PROCESSING AND ANALYSIS CONSOLE

Two monitors of 23" or larger

Hard drive with a capacity of 1 TB or more

RAM memory: 8 gigabyte or higher

Reading and recording of studies on removable media such as CD or DVD

Visualization of 2D images/cines in axial, sagittal and coronal views and measurements of length, area, angles

Reconstruction and visualization of images in planar (2D) and volume mode (3D)

MPR Multiplanar Reconstruction

With software for shooting and printing image sequences

Ability to view studies from other modalities (MR, SPECT, PET, etc.) and perform fusion

With software for vascular studies and angiographic post-processing: easy bone removal, extraction and segmentation of vessels to quickly perform the usual measurements such as intraluminal diameter, lumen cross-sectional area, length and tortuosity of vessel segments and angle from the vessels
Application that allows the quantification of coronary artery calcifications and the generation of results through Agatston assessment
High-tech cardiac analysis software for coronary tree visualization, detailed coronary artery assessment, and ventricular function analysis. It must allow cardiac segmentation and visualization of 2D and 3D maps and visualization in cinema mode.
Virtual Colonoscopy Software: allows automatic segmentation of the colon and the central line allowing visualization in 2D and 3D (with forward, backward, fillet and central line navigation in 2D
Software for Brain Perfusion
Software to quantify diffuse lung disease (COPD)
Software of Photo Realistic Volume Rendering
Software aimed to create realistic 3D images (PRVR)
Software that automatically identifies, segments and quantifies the liver from the portal venous phase of a tri-phase liver scan, and automatically segments and classifies the hepatic and portal veins.