

TECHNICAL SPECIFICATION OF 32 SLICE CT SCANNER

Equipment: CT Scanner 32 Slice.

Operational Requirements

The spiral CT scanner system for high resolution whole body scanning. The instrument must be capable of acquiring minimum 16 slice per 360 degree rotation and reproducing 32 slices. The system must have FDA approved latest iterative reconstruction technique.

Technical Specifications

1.	Scan Time
a.	The scan time for one gantry rotation of complete 360 degree rotation should be 0.9 sec or less.
2.	Scanning Capability
a.	Paediatric and infant base protocols shall be available based on the infant weight.
b.	Real time contrast monitoring acquisition with auto scan initiation protocol and with auto injector trigger.
c.	High contrast Resolution should be at least 15 lp/cm for axial and spiral scan at 2% MTF.
d.	Low contrast resolution should be at least 3 mm at 3%.
3.	Gantry
a.	Aperture of 70 cm or more.
b.	Auto positioning Lights.
c.	Should have FOV of at least 50 cm or more.
d.	Physical / Digital Remote Gantry Tilt must be provided with Tilt +/- 30.
4.	Detectors
a.	Data acquisition system capable of acquiring 16 Slice or more per 360 degree rotation with 16 or more rows of detector. Total coverage of the detectors must be 10 mm or more.
5.	Slice thickness
a.	16 slice acquisition with minimum thickness of 0.80 mm or less.
6.	Pitch Factor (Volume Pitch)
a.	Should be variable between 0.6 – 1.5 or better and should be user selectable or automated. Specify all possible pitch selections.
7.	Scan time and length in Spiral / Helical Technique
a.	Should be at least 100 sec continuous. Must be able to tri-phasic abdomen studies of 400 mm or more within 60 seconds.

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8.	X-Ray Generator
a.	High Frequency type.
b.	Power output: 26 KW or higher Voltage Selection: 80 – 140 KV or wider.
c.	mA Range: 230 mA or more (with incremental steps of 1 mA).
9.	X-Ray Tube
a.	Anode Heat Storage Capacity – Minimum of 3.5 MHU or more.
b.	Anode Heat Dissipation: Specify the minimum value in K W.
10.	Patient Table
a.	Carbon Fibre Table Top with Load carrying capacity 150 Kg or more with 1mm positioning accuracy.
b.	Horizontal Table speed preferably 100 mm / sec.
c.	Metal free scan able range of 120 cm or more.
d.	Facility of positioning aid for horizontal Iso-centric positioning of the patient.
e.	Vertical up / down movement.
11.	Image Reconstruction
a.	Reconstruction Field of View Range: 5 – 50 cm Reconstruction Matrix: 1024 x 1024.
12.	Image Display
a.	Image Area Matrix Dimension: 1024 x 1024.
13.	Image Reconstruction
a.	Image reconstruction capability should be at least 10 image/sec with simultaneous reconstruction facility.
b.	Storage Capacity 2 TB or more.
c.	System should have latest iterative reconstruction technique in raw data space.
14.	Operator Console
a.	It should have 21" or more high resolution LCD monitor.
b.	The system should be user friendly with all functions menu driven. It should be modern user interface.
c.	All functions including scanning image reconstruction, film documentation, archiving transferring. MPR Angiography maximum intensity projection, 3D volume rendering, 3D SSD, CT Angio, CT Urography, vessel analysis, should be possible on console MIP, CT Angio software with quantitative vessel analysis must be provided.
15.	Computer System & Image Processor
a.	64 Bit Bit main CPU with at least 8 GB RAM memory or better.
b.	High speed CPU with latest software should be provided.
c.	Hard Disc of 2 TB or more.
d.	Image storage in 512 x 512 matrix for storage of 7, 00, 000 image or more.
e.	DVD / CD archive capacity with Dicom viewer software default.

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f.	Image Processor: Operating system shall be windows / Linux based.
g.	The image reconstruction time should be at least 10 image / sec or better for all types of acquisition modes including Cone Beam Correction, Neuro Imaging studies.
16.	Software
a.	Should have DICOM 3.0 compatibility.
b.	Volume rendering technique with axial cross reference imaging along with measurement tools on volume rendered image 3D, 3D small volume measurement package MIP slab viewer.
17.	Patient Communication System
a.	An integrated intercom and Automated Patient Instruction System (API) should be provided.
18.	Others
a.	System should have PACS interface ready without any new hardware or software.
b.	Fully DICOM 3.0 complaint including.
19.	Dose saving protocols.
a.	Latest dose saving protocols must be available.
20.	Accessories
a.	Lead Glass of size 100 x 120 cm
b.	Single Head Pressure Injector (300psi) with 100 syringes.
c.	Patient Trolley.
d.	The equipment should be new and unused. The manufacturing date should not be more than 180 days when it would reach the consignee address.
e.	All patient positioning accessories including head rest.
21.	Standard and Safety
a.	Should be of CE ("Conformite Europeene"), USFDA and AERB approved .Please submit the documents for the same.
22.	Viewing Work Station: 2 nos of LCD monitors with 18" or more
a.	Standard multimodality independent work station.
b.	2 TB Hard disc & 8 GB RAM.
c.	Should be capable of simultaneous viewing all post processing functions and filming independently without the help of main console. Two way data transfer between the operative console and the satellite workstation should be standard.
23.	50 KVA or more UPS for the entire system including CT scanner, console, additional work station with sufficient rating for 15 minutes back up. Rate to be quoted separately which will be taken for evaluation.

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24.	Dry imager
a.	Resolution: 16 bits / 500 dpi or more with minimum three trays.
b.	Support Multiple Film Sizes: one of which must be 17" x 14"
c.	DICOM Compatible.
25.	Laser printer of latest configuration should be provided.
26.	View boxes – LED type of 14" x 17" 3 films type.
27.	Light weight vinyl Lead Aprons of 0.5 mm lead equivalence.

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