

TECHNICAL SPECIFICATIONS FOR 64-SLICE CT SCANNER

The system should be the latest state-of-the-art, independent 64 or more rows of detectors with the acquisition of at least 64 slices per rotation capable of integrating with any PACS/HIS system. The system should be DICOM - ready with true isotropic volume acquisition and sub-millimeter resolution. The model quoted should be, US FDA/European CE certified. **The system should be capable of doing ultra-low dose imaging using the iterative reconstruction technique.** The essential requirements of the system are as follows: -

a) Gantry:

- Aperture: 70 cm or more
- FOV: 50 cm or more
- Gantry Tilt: $\pm 20^\circ$ physical
- 3-D laser lights for positioning.
- Dual LED/LCD display

b) X-Ray Generator:

- High-Frequency type.
- Power output: 72 kW or higher
- mA Range: 20-600 mA (With incremental steps of 10 mA)
- KV Range: **70-140** or more

c) X-Ray Tube:

- Tube Voltage: **70-140 kV** or more
- Anode Heat Storage Capacity of at least 7.5 MHU or direct cooling tube

d) Patient Table:

- Load carrying capacity at least of 200 Kg with positional accuracy of 1 mm or less
- Metal-free scan range of 160 cm or more
- Floating table top with foot pedal/hand control for positioning.

e) Spiral Acquisition:

- Scan Time should be **0.4** sec or less for full 360-degree rotation.
- Minimum slice thickness should be **0.625** mm or less.
- Pitch Factor (volume pitch): freely selectable in auto mode and also manually variable

between 0.2 to 1.5 or more. Specify all possible pitch selections.

- Bolus Triggered or bolus chase spiral acquisition should be available.
- Real-time x-ray dose reduction which combines both the Z axis and angular tube current modulation to adjust the dose to the size and shape of the individual.

f) Image Resolution:

1. High contrast resolution should be at least 15 lp/cm for an axial and spiral scan at 0% MTF with full FOV.
2. Low contrast resolution – 5mm or less at 3.0 HU using 20 cm CATPHAN phantom on 10 mm slice thickness.

g) Data Acquisition System:

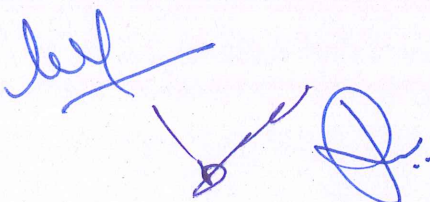
- Detector- Capable of acquiring at least 64 slices per 360 degrees of rotation.
- At least 64 rows of independent detectors are required with Z-axis coverage of 38 mm or more.
- Solid state or rare earth detectors of the latest technology free from repeated calibration.

h) Image Reconstruction:

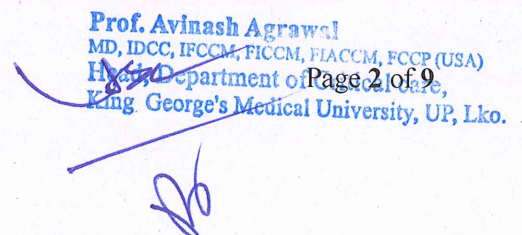
- High-speed real-time reconstruction with a display matrix of 1024x1024 or more.
- Reconstructed slice thickness should be sub-millimetre to 10mm freely selectable.

i) Operator Console:

- High-resolution on medical grade LCD colour dual monitors of 19" or more (Minimum 3 monitors- 1 for console, 1 for processing & 1 for reporting).
- Should perform Registration, scheduling, protocol selection, Volume rendering, volume measurements, Multi-planar Reconstruction, and standard evaluation application and all available post-processing functions without the help of the satellite workstation.
- Brain Perfusion, fly through/virtual colonoscopy,
- Raw Data storage with at least 1TB Hard disc or image storing capacity of 5,00,000 images or more in 512x512 format.
- Auto-voice capability with custom-designed key board and mouse.
- Archiving options: CD-R, DVD, and Flash drive should be available.

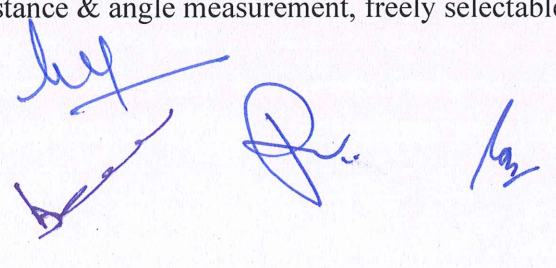


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j) Workstation client-server architecture

1. It should be a high-speed (minimum post-processing frame rate of 35 images /sec) CPU with a speed of 3.0 GHz or better and with an independent Hard disc storage capacity of 500000 images or more, with 21 inches or more high-resolution medical grade colour LCD monitors capable of simultaneously viewing and performing all post-processing functions and filming independently without the help of the main console.
2. Memory of the workstation should be independent of the console.
3. Two-way data transfer between the operator console & the satellite workstation should be automatic and standard.
4. Post Processing Soft-wares
 - (i) Perfusion CT for brain
 - (ii) CT Angio, VRT, MIP, MPR, 3-D Shaded Surface display, Image Fusion, Vessel segmentation, luminal view
 - (iii) Advanced cardiac package including Coronary Artery Imaging, Calcium Scoring, Myocardial Viability software, Cardiac functional analysis and advanced Vessel Analysis including stenosis assessment. Facility for prospective and retrospective ECG editing, facility for automatic selection of rotation speed according to heartbeat and step and shoot for low dose acquisition should be available
 - (iv) Automatic bone removal facility.
 - (v) Dental CT.
 - (vi) Lung nodule evaluation software.
 - (vii) DSA
5. Interactive & Automatic Cine display should be available.
6. Image Evaluation Tools:
 - (i) Parallel evaluation of multiple ROI in circle, irregular and Polygonal forms,
 - (ii) Statistical Evaluation for area/ volume, S.D, Mean/Max and Histograms.
 - (iii) Distance & angle measurement, freely selectable, positioning of co-ordinate

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system, grid and image annotation.

k) Patient communication system:

1. An integrated intercom and Automated Patient Instruction System (API) should be provided.
2. One closed circuit TV for patient monitoring.

Accessories to be included for 32 Slice CT Scanner

- i. Lead Glass of size-100 X 150 cm- 1 no.
- ii. Lead Apron Hanger -2 nos.
- iii. Zero lead Apron -6 nos.
- iv. Gonadal shields for boys and girls of all age groups — Two set each
- v. Online UPS from a reputed manufacturer having at least 30 minutes back up with appropriate KVA of the entire system. The backup should be such that the scan can be done uninterrupted.
- vi. All patient positioning accessories including the headrest.
- vii. Contrast injector (300 psi) Syringe- 100 nos.
- viii. Trolley cart for consumables injection & syringes.
- ix. Cabinet for storage.
- x. Changing room & accessories for changing room.
- xi. Suitable ACs & lightning.
- xii. Required AC & Ventilation in UPS room.
- xiii. Air curtains as needed.
- xiv. Console privacy curtain.
- xv. Site to be developed as per AERB Guidelines including room layout, lead glass & lead-lined door.
- xvi. Reception counter table, Counter Glass, chairs, and storage cabinet.
- xvii. Furniture for Doctors, Technologists, Receptionist & patients as per site requirement.

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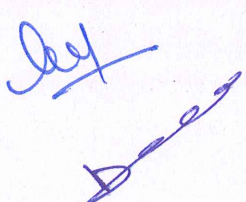
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l) Dry Chemistry Laser Imager:

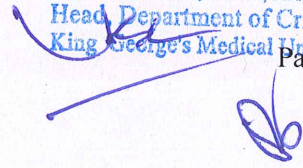
1. Resolution: 16 bits/ 500 dpi or more with minimum of three ports (Single tray).
2. Support Multiple Film Sizes: one of which must be 17"x14".
3. DICOM 3.0 Compatible.
4. One additional laser colour printer.

n) System Configuration Accessories, spares and consumables:

- Collapsible wheelchair with rubberized swivel wheels - 01 nos.
- Standard Patient positioning accessories and restraining devices - 02 sets.
- Lightweight Lead Aprons "0.25" lead equivalence - 3 Nos. Gonadal shields – 2 Nos, Thyroid shields – 3 Nos and Lead goggles – 2 Nos.
- Apron hanger -1
- Lead Glass 100 cm x 150 cm of 2 mm Lead equivalence as per the requirement of the equipment. As per AERB recommendations
- 120 KVA Online UPS of suitable rating should be supplied for the complete system including Gantry, computer system, with at least 30 minutes back up.
- Dual Head Pressure Injector with 200 syringes should be supplied.
- Software for Remote Diagnostics Service over a telephone line.
- System must be PACS, HIS/RIS interface ready without any new hardware or software.
- Remote connectivity facility to provide efficient and quick after-sales service.
- A free comprehensive software update guarantee for the entire life of the scanner must be provided during warranty and CMC.
- Bidder should provide toll-free no to log a service calls
- OEM should participate in the tender directory.
- Comprehensive Maintenance Contract for the next eight years including all the accessories, Air conditioning and CT tube and all major consumables.
- Warranty: 24 months from the date of satisfactory installation. The warranty shall cover all the accessories including the CT tube and all major consumables.



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- Centralized oxygen facility for both CT (to be connected to the nearest port) in gantry and recovery room. **Sucker machine, pulse oximeter, intubation sets (standard resuscitation accessories)**
- One latest all-in-one desktop computer with the printer's latest specifications (for reporting & teleradiology) to be provided.
- AERB-approved system. The system must be EUROPEAN CE and US FDA approved.
- Please make sure to submit copies of all certifications- USFDA, ECE, LIST OF INSTALLATIONS in India with performance and after sale service records at time of submission of bids only to save tender processing time.

Conditions for tender:

1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body?
4. Other necessary certifications, if any, will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.

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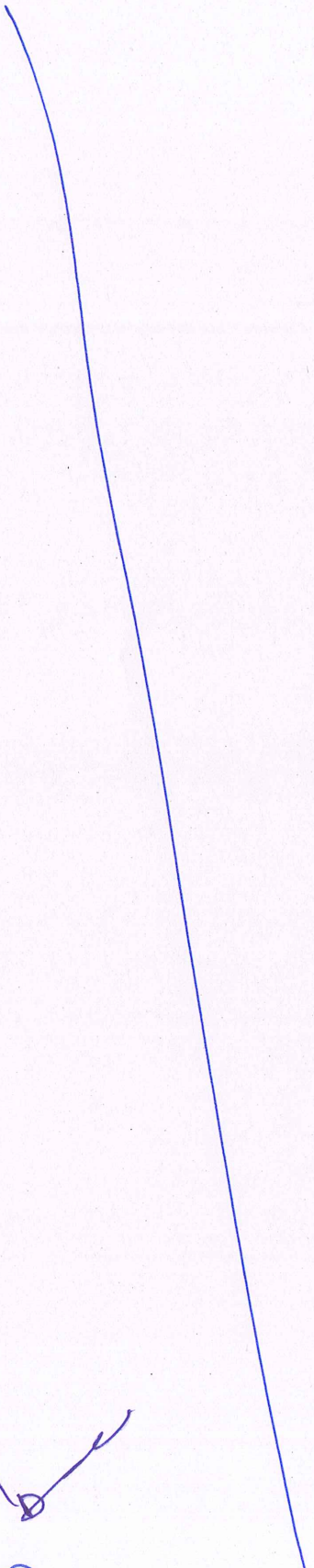
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.
12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.

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18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6th, 7th, 8th, 9th and 10th years) in rupees only (and on basis of percentage of price) should be included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6th to 10th year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
20. System configured application-specific educational video tutorials shall be provided as standard with the system.
21. Details of service outlet in India to render services during 5 years warranty period.
22. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.



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