



Notice Inviting e-Tender

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Supply and Commissioning of C arm X ray Machine in department of Orthopedic Surgery at N.R.S. Medical College and Hospital, Kolkata

(Submission of Bid through *online*)

Bid Reference No.: WBMSCL/NIT-163/2025

Dated-25.02.2025

AMENDMENT-I

REVISED Technical Specification

High End C-arm System

Microprocessor controlled C-arm machine with FPD should provide the excellent image quality at low radiation, ideally suited for general surgeries in many application fields and special application such as orthopedics, urology, Gastroenterology, Neurology and pain management procedures.

A) FLAT PANEL DETECTOR:

- Receptor Type should be of Amorphous Silicon technology
- Conversion Screen should be of CsI
- FPD with 30 x 30 cm size should be provided
- Image Matrix should be 1K x 1K or more
- Pixel pitch should be 210 µm or less.
- ADC conversion should be 14 bit or more.

B) Monitor on Trolley:-

1 No. 32" colored monitor with split screen for live & reference image display is provided on mobile trolley

C) Monitor on C-carriage (12 inch or more):-

Touch screen console mounted on C-carriage for the operator.

D) C-ARM Movements: Fully counterbalanced all movements

1. Rotation: ± 180 Degrees.
2. Motorized Up/down: 400mm or more
3. Horizontal Travel: 200mm or more
4. Arc Orbital Movement: 120 Degrees or more.
5. Wig Wag: ± 12.5 Degrees.
6. Source to Image distance should be more than 900mm.
7. Depth of "C" should be at least 630mm
8. Free space should be 750mm or more

E) X-Ray Generator:

1. High Frequency (50KHz).
2. Output power should be min. 6 KW
3. Fluoro & Rad. KV 40 to 120 KV
4. Digital Spot: 60mA or more
5. Pulse Fluoroscopic mA (peak):-
 - Up to 10mA or more (Normal Mode)
 - Up to 20mA or more (boost fluoro mode)

F) X-Ray Tube:

- Monoblock tube head having dual focus Rotating anode X-ray tube of focal spot 0.3mm (small focus) & large focus (0.6mm) should be provided.
- Anode Heat Storage capacity should be 200 kHU
- Lead collimator Shutters with preview-Radiation free should be provided

G) Control: Control should have the following:

Touch screen monitor mounted on C-arm carriage for Image & Exposure parameters control is provided with following function and indication:-

On GUI Screen

- Fluoro and Radio mode selection.
- Image rotation & Flip
- Fluoroscopy timer (Five-minute cumulative timer with buzzer that activates after the completion of 300 seconds of exposure to reinitiate the exposure reset switch is provided).
- ABS (Automatic brightness stabilization) selection for hand free operation-also known as ADR
- KV and mAs increase and decrease switches.
- X-ray ON indicator
- Collimator open/close switches

Others

- Switches for up/down movement of "C" on both side of machine frame.
- Emergency OFF switches mounted on monitor.
- Machine ON/OFF Key switch
- Fluoro, Cine & spot Switches on both side of panel

H) Memory System Should included the following:-

Image Acquisition:

- Image processing software with real time image capturing, storage, and display in 1K X 1K format.
- Digital Radiography (SPOT) exposure mode is available

User selectable view on Single monitor with 4K Resolution

- User selectable image display for Live & Reference view

DSA:

- Up to 4 FPS image acquisition for DSA
- Re-Mask
- Land marking
- Pixel Shift

Roadmap:

- Real time path map
- Roadmap clear
- Peak Hold

Image Processing:

- Real time noise with reduction with Averaging up-to 16
- Redcursive filter for image smoothing, DRC, contrast, Brightness Sharpness
- Interactive Zoom and Pan
- Dynamic Zoom up to 400%
- Pre-programming for image setting for different operating Modes
- Image Inversion
- WW/WL level adjustments
- Image Flipping and Image Rotation Clockwise or Anti-Clockwise Live to Reference View on Single Monitor
- Cine loop Play (Auto and Frame wise)
- Real time Image Flip (Horizontal/Vertical)

Collimator:

- Ultra fast Preview collimator

DAP Module:

- DAP dose integrated in software and total summary for Fluoro /Cine Save.
- Real Time Patient dose monitoring display with overdose warning message

MAG:

- Real Time/ **post processing** Three step Digital MAG

Touch monitor:

- Touch based console for frequently used parameters along with image display

DICOM Features

- Connectivity with DICOM workstation/PACS
- DICOM Send/Storage Commitment
- DICOM Print
- DICOM Worklist

Storage:

- Upto 780 GB Hard disk for storing images
- Fluoro saving as per user need
- LIH saving as per user need

Annotation:

- Line, Text

Measurement:

- Length Measurement

PACS Connectivity:

- Multiple Nodes can be configured
- Single/Multiple Image Tagging to transfer into PACS/Workstation

Miscellaneous:

- Electronic Collimator
- Paper Printing
- Different format of image saving like JPG, BMP, TIF, GIF, AVI Loop

Power requirement:

- The unit should be operable on Single Phase 230 V \pm 10% AC, 50 Hz
- Inbuilt electronic voltage stabilizer should be provide
- UPS for power backup of the software should be provided.
- Lead Apron (0.5mm lead) 8 Nos. Thyroid Guard 8 Nos. Gonad Shield 8 nos.
- Lead Apron Hanger **mobile**.

Other Requirement:

- The company should be ISO certified company
- AERB approved for radiation safety
- The company should have a service center in State

The bidder should submit valid CDSCO Certificate/Registration/License for both the manufacturer(s) and importer(s) as applicable.

