

Specification for Mobile Flat Panel Detector C-Arm Unit (High end)

	Mobile C-Arm with Flat Panel system with true counterbalanced C arm for fluoroscopic and X-ray operation.
A.	Gantry / C-Arm
	Fully counterbalanced C-arm with side-to-side (wig-wag) and horizontal travel movements, and the following features:
1	Motorized Angulations movement: at least 140 degrees or more.
2	Motorized longitudinal movement: at least 200 mm or more
3	Motorized Orbital Rotational Movement: at least 140 degrees or more
4	Motorized Vertical movement: at least 485 mm or more
5	Swivel range: ± 10 degrees
6	Depth of immersion: 73 cm or more
7	source to image distance: 990 mm or more
8	Free space within the C-arm: at least 77 cm
9	Field of view: square field of view for better ROI coverage.
10	Touch-based panel for control of C-Arm functions mounted on the C-arm stand itself.
11	The collision prevention sensors help support patient safety by stopping the C-Arm Movement when an object is sensed/detected within the periphery of the detector.
B	Generator & X-Ray Tube
1	The generator should be a microprocessor-controlled converter & type with an output of at least 15 KW.
2	Modes: continuous, digital pulse fluoroscopy and digital radiography.
3	Fluoroscopic KVp range: 40-120kV, minimum 60 mA.
4	Radiographic kVp range: 40-120kVp, minimum 125 mA or more.
5	The X-ray tube should have a rotating anode.
6	Anode heat storage capacity should be 300 KHU or higher.
7	Anode cooling capacity should be 75 KHU /minute or higher.
8	Tube housing heat storage capacity should be a minimum of 2000 KHU.
9	The generator should provide digital pulse fluoroscopy with pulse rates of at least 15 frames/second.
10	Additional safety size filtration for the safety of scattered radiation
11	The focal spot size should be 0.3mm & 0.6mm dual focal spots.
12	Automatic dose rate control.
13	Integrated laser high localizer, radiation-free collimation
14	Multifunction foot switch to control all operating modes and single image storage out of the sterile field.
15	Inbuilt heat management capabilities for long interventional procedures.
16	Integrated dose monitoring chamber.
17	Metal Artifact reduction/metal correction should be available.
18	Additional safety size filtration should be 4 mm or more Al Equivalent
19	The system should have the Software facility to allow free positioning of the anatomy, even at the edge of the image detector. It automatically detects anatomy and adjusts parameters to produce high-quality images
C	Flat Panel Detector System
1	Flat detector of CSI (Cesium Iodide) with amorphous Silicon doping.
2	Size of detector: at least 30 X 30 cm or more
3	The pixel size should be 155 microns or less.
4	The resolution of the detector must be 1.5 K x 1.5 K.
5	Image inversion: right to left top to down
6	Provide a last image hold capability that the last image is displayed on the active monitor after the termination of exposure.

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7.	Cable-free rear side and 180-degree rotatable monitors.
8	Equipped with two high-resolution 19" HD LED/LCD/TFT monitors with Diagnostic Image quality with an image matrix of 1024 x 1024 or more in the exam room.
9	Vertically and horizontally adjustable monitor for specific needs.
10	Viewing angle of at least 150 degrees with the ergonomic mounting of the monitors on the mobile view station.
11	The system shall allow the user to change the image orientation on the display screen during a live exposure or using the last image hold. Those functions include image rotation, left-to-right, and top-bottom image reversals.
D	Digital System & Image Management
1	Multipatient database for handling large quantities of images, including dose management reports.
2	Automatically select proper Imaging parameters, kVp, and mA during an image, but also allow the user to override these settings manually.
3	Real-time and automatic brightness and contrast should be provided to optimize the displayed image.
4	Provide a real-time post-processing edge enhancement capability to get better image quality according to the density of the tissue. An electronic zoom function, an automatic save function to hard disk, Mosaic Display.
5	The system should save more than 1 lac image to the internal hard disk and retrieve stored images later.
6	It should have a facility to record online fluoroscopy.
7	Should have facility for image and Fluoro sequences retrieval on a CD/DVD/Pen drive and print Images on paper/ firm.
8	The system should have a facility for DICOM connectivity and DICOM ready (HIS compatible DICOM modality worklist, DICOM send/ receive, DICOM print, DICOM query retrieve). All DICOM functions should be offered and installed when needed at no additional cost.
9	Facility for wireless data transfer.
10	The System should be equipped with a touch control panel on the patient table side with a Preview image.
11	Position memory & position tracking.
12	The system must have a Sensor inside the Detector and non-touch Collision protection. It must have an automatic position Control Feature for C-arm positioning.
13	Operating system Windows 10 Pro operating system. Should be the latest version of Windows that the system can support. Any updates/upgrades/patches to the OS and the application should be provided free of cost for the entire period of warranty and CAMC
14	It is the vendor's responsibility to connect the system to the closest network switch in the hospital network and to configure the system with HIS/RIS/PACS
15	Optional Items: <ul style="list-style-type: none"> • 3 tray Dry laser Printer to be supplied (at least 500 dpi) • Software and hardware capability of performing digital subtraction angiography
E	Essential Accessories.
1	Suitable U.P.S online to run the entire system for at least 15 minutes of Backup time.
2	APRON ultra-lightweight: - 4 No.
3	Thyroid Shield - 04 nos., lead goggles 2
4	Sterile covers for C-Arm, X-ray tube, and flat panel detector (disposable):100 for each
6	Lead Apron Stand: - 01 nos.
7	Patient Table: Compatible, Free-floating, transparent to X-rays with motorized table movement (Cranio-caudal, left-right, up-down). Control Switch for table movement on the table itself.
H	Terms & Conditions:
1	The company should be ISO 13485 / ICMED / FDA / European CE certified.
2	During the CMC period, the QA for the unit must be done by the supplier as per AERB requirements.
3	The unit should be approved by AERB.
4	The company should have a proven track record in the Govt. sector.

Handwritten signatures and notes:
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5	Out of the three components (generator, detector & x-ray tube), two should be from the same principal manufacturer of the X-ray system
6	The company is to give an undertaking that the detector will be replaced with the same detector that was quoted during the initial offer for the entire warranty period and the CMC period. No change in detector company is acceptable in case of replacement during the warranty /CMC period

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Shiv

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- Space in main
 power available.
 Turkey works as
 per requirement.

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 6/5/2016