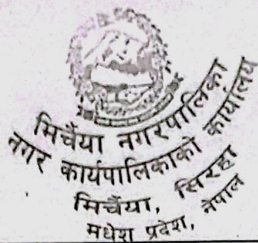


## X-Ray Machine 500 mA with accessories

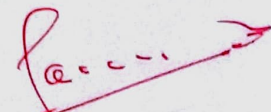
S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
	<b>X-Ray Machine 500 mA with accessories</b>			
	<b>Manufacturer</b>			
	<b>Brand</b>			
	<b>Type/Model</b>			
	<b>Country of Origin</b>			
<b>1</b>	<b>Description of Functions</b>			
1.1	A general purpose Line Frequency X-ray machine 500mA with Horizontal Bucky Table			
<b>2</b>	<b>Operational Requirements</b>			
2.1	It shall be suitable to be used for adult, pediatric and infant patients in general Radiography examination.			
<b>3</b>	<b>System Configurations</b>			
3.1	X-ray Generator, 1 unit.			
3.2	X-Ray tube & tube support system, 1 unit.			
3.3	Manual Horizontal Bucky Table, 1 unit.			
<b>4</b>	<b>Technical Specifications</b>			
<b>I</b>	<b>X-ray Generator:</b>			
4.1	Generator Output: not less than 40 kW			
4.2	Radiographic voltage: 40 kV to 100kV.			
4.3	Radiographic current: 50 to 500mA.			
4.4	Exposure time: approx. 0.01sec (1msec) to 5 sec in 24 steps.			
4.5	Shall come with overload protection device.			
4.6	Power supply: 3 phase, 380-415V 50/60Hz.			
<b>II</b>	<b>Control Console:</b>			
4.7	Digital display for parameters.			
4.8	Minimum 2-point exposure technique.			
4.9	Status display,			
4.10	Shall come with radiography remote control in control room.			
<b>III</b>	<b>X-Ray Tube:</b> Bidder shall indicate brand and model information here and provide technical data document for X-ray tube offered.			
4.11	The tube assembly shall be floor to ceiling mounted.			
4.12	Max. Exposure voltage: 100KV.			
4.13	Max. Exposure current: 500mA.			
4.14	Large focus not more than 2.0 mm.			

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4.15	Small focus not more than 1.0 mm.			
4.16	Maximum tube voltage 100 KV. Maximum tube output shall match with the generator output of not less than 40 KW.			
4.17	Filtration: min. 2.5mm Al equivalent.			
4.18	Cooling method passive or forced air and/or oil cooling.			
4.19	The anode shall be a rotating anode.			
4.20	Anode heat capacity shall not be less than 140kHU.			
4.21	It shall come with tube overload and overheat protection.			
IV	Floor to Ceiling Tube Stand:			
4.22	Longitudinal travel: approx. 1700mm.			
4.23	Vertical travel: from in the range 600 -1900mm.			
4.24	Rotation of tube arm around vertical axis: 180°; lockable at 0° to +/- 90°.			
V	Collimator:			
4.25	Collimator with manual exposure field setting having additional filters for Dose Reduction.			
4.26	Halogen lamp or better			
4.27	Horizontal Bucky Table Radiography patient table:			
4.28	Radiography table top dimension: approximately 2200L x 650 W mm with effective X-ray transparent area of approximately 1750 x 650mm.			
4.29	It shall be a radio-translucent multi position table top with load capacity of more than 200kg.			
4.30	Come with grid and cassette tray, with grid ratio: 10:1. Grid line number: approx. 40 line/cm.			
4.31	Cassette size: accept all sizes up to 35x43 cm type.			
5	<b>Accessories, Spare Parts and Consumables</b>			
5.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6	<b>Operating Environment</b>			
6.1	The system offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.			
6.2	Power supply: 380-415VAC 3 phase 50Hz fitted with appropriate plug for X-ray generator.			
7	<b>Standards &amp; Safety Requirements</b>			
7.1	Must submit ISO 13485:2016			
7.2	CE (93/42 EEC Directives) or USFDA			
8	<b>Installation and Commissioning &amp; User Training</b>			

  
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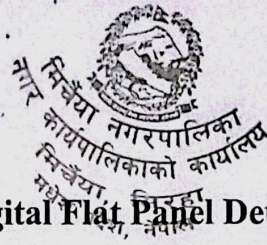




8.1	Supplier must accomplish proper installation and commissioning of the equipment onsite.			
8.2	Must provide user training (including how to use and maintain the equipment)			
9	<b>Warranty &amp; Maintenance Service During Warranty Period</b>			
9.1	Comprehensive warranty for 2 years after installation			
9.2	During warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required			

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## Technical Specification of Digital Flat Panel Detector (DR) System

S.N.	Purchaser's Specification	Bidder's Offer
	<b>Digital Flat Panel Detector (DR) System</b>	
	<b>Manufacturer:</b>	
	<b>Brand:</b>	
	<b>Model:</b>	
	<b>Country of Origin:</b>	
<b>1</b>	<b>Digital Flat Panel Detector (DR) System</b>	
1.1	Description of functions: The Flat Panel Detector directs digital radiography unit (portable type) for general purpose radiology examinations. It should be a retrofit solution and capable to work with any of the X-ray available in the hospital.	
1.2	Flat Panel Detector with work station should be provided. It shall be suitable for adult and pediatric patients in general radiography examination.	
<b>2</b>	<b>System Configuration</b>	
<b>2.1</b>	<b>Flat Panel Detector System</b>	
2.1.1	Direct Deposit Cesium Iodide (CSI): TI Scintillator	
2.1.2	The most advanced CSI Direct-deposition technology ensures excellence of image quality at low X-ray dose and improves operation safety	
2.1.3	Should incorporate Full-Field Automatic Exposure Detection (F2AED) Technology.	
2.1.4	Portable approx. 14x17 inches size detector	
2.1.5	The detector should be light weight (less than 4 Kgs)	
2.1.6	The Pixel pitch should be equal to or less than 140 microns	
2.1.7	Should have a spatial resolution: 3.5 LP/mm (lines per millimeter) or better	
2.1.8	Image matrix size: 3072 pixels X 2560 pixels or better	
2.1.9	Image acquisition time should be less than 2-4 sec	
2.1.10	Should have a minimum image depth of 16 bits or more.	
2.1.11	Data communication should be wireless and wired connection powered by Power Box using single Interface Cable and Gigabit LAN Cable.	
2.1.12	The Detector should have Detachable Li-ion Polymer Technology battery and should be provided with one extra battery along with battery charger.	
2.1.13	The Battery Charger should have facility to charge at least three batteries simultaneously.	
2.1.14	The detector connectivity should be both wireless and wired.	
2.1.15	The Detector should be able to withstand surface load of 150kg or more	
2.1.16	The Detector should have built-in foldable handle for easy and safe transport.	
2.1.17	Detector Panel must incorporate 1-Shot Calibration Technology for fast initialization. The Detector should be pre calibrated with Calibration data must be stored in Detector. There should be no requirement for calibration even if PC is changed.	

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2.1.18	Software should have DICOM & PACS connectivity as a standard feature	
2.1.19	Must have dedicated Mobile App to be used without Workstation in case of emergency.	
2.1.20	Workstation: Should be supplied with the following configuration: • Branded CPU – Intel i5 or Latest model processor, • RAM – 8GB, SSD – 500GB, • OS Window 10 Pro 64 bit or Latest • Display: At least 22" size Full HD LED Monitor	
2.1.21	Image Manipulation/Post processing Software: • Image post-processing, such as image transformation, including inversion, flip vertically/horizontally, rotation, etc. • Multi patient viewing and printing. • Image Magnification • Cropping and masking of images (standard software) • Distance measurement and Angle • Exporting images in JPEG and DICOM	
2.1.22	Compatible Inkjet Film Printer should be provided for 8x10 inches film size.	
2.1.23	The offered model must be manufactured in the year 2025. Bidder must mention the year of manufacture.	
3	<b>Accessories and spare parts and consumables</b>	
3.1	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).	
4	<b>Operating Environment:</b>	
4.1	The system offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.	
4.2	Power supply: 220–240V AC, 50Hz fitted with appropriate plug type. The power cable must be at least 3 meter in length	
5	<b>Standards and Safety Requirements:</b>	
5.1	Must submit ISO13485:2003/AC:2007 for Medical Devices for Flat Panel Detector	
5.2	Must submit European CE (93/42 EEC Directives) from European Commission notified body with the Notified body number with an extension declaration of conformity from the principal manufacturer.	
5.3	Must submit USFDA approved product certificate	
6	<b>User Training:</b>	
6.1	Must provide user training (including how to use and maintain the equipment).	
7	<b>Warranty:</b>	
7.1	Comprehensive warranty for 3 years after installation.	
8	<b>Maintenance Service During Warranty Period:</b>	
8.1	During the warranty period supplier must ensure preventive and Corrective/breakdown maintenance whenever required.	
9	<b>Installation and Commissioning:</b>	

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9.1	Supplier must accomplish proper installation and commissioning of the equipment on site.	
10	Documentation:	
10.1	User (Operating) manual in English	
10.2	Service (Technical/ Maintenance) manual in English	

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