
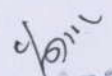


Technical Specification


X-Ray Machine 300 mA with accessories

S.N.	Purchaser's Specifications	Bidder's Compliance (Yes/No)	Reference Page No.	Remarks
	X-Ray Machine 300 mA with accessories			
	Manufacturer			
	Brand			
	Type/Model			
	Country of Origin			
1	Description of Functions			
1.1	A general purpose Line Frequency X-ray machine 300mA with Manual multi position table.			
2	Operational Requirements			
2.1	It shall be suitable to be used for adult paediatric and infant patients in general Radiography examination.			
3	System Configurations			
3.1	X-ray Generator, 1 unit.			
3.2	X-Ray tube & tube support system, 1 unit.			
3.3	Manual multi position patient table, 1 unit.			
3.4	Floor mounted Bucky stand, 1 unit.			
4	Technical Specifications			
I	X-ray Generator: Bidder shall indicate brand and model information here and provide technical data document for X-ray generator offered			
4.1	Generator Output: not less than 30 kW			
4.2	Radiographic voltage: 30 kV to 125kV, in 1kV step.			


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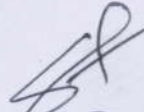

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S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
4.3	Radiographic current: 10 to 300mA.			
4.4	Exposure time: approx. 0.01sec (1msec) to 5 sec in 24 steps.			
4.5	Shall come with overload protection device.			
4.6	Power supply: 3 phase, 380-415V 50/60Hz.			
II	Control Console:			
4.7	Digital display for parameters.			
4.8	Minimum 3 point exposure technique.			
4.9	Status display, error display.			
4.10	Shall come with radiography remote control in control room.			
III	X-Ray Tube: 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: 125KV.			
4.13	Max. Exposure current: 300mA.			
4.14	Large focus not more than 1.2 mm.			
4.15	Small focus not more than 0.6 mm.			
4.16	Maximum tube voltage 125 KV. Maximum tube output shall match with the generator output of not less than 30 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, with a speed not less than 3000rpm.			
4.20	Anode heat capacity shall not be less than 300 kHU.			


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 प्रमुख प्रशासकीय अधिकृत

S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
4.21	It shall come with tube overload and overheat protection.			
IV	Floor Mounted 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 automatic and manual exposure field setting having additional filters for Dose Reduction.			
4.26	Halogen lamp.			
4.27	Mobile Multi position Radiography patient table: Bidder shall indicate brand and model information here and provide technical data document for table offered.			
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 /12:1. Grid line number: approx. 40 line/cm.			
4.31	Cassette size: accept all sizes up to 35x43 cm type.			
VI	Floor Mounted Bucky Stand:			
4.32	Vertical travel: from in the range 460-1700mm.			
4.33	Moving Grid with Grid ratio not less than 10:1.			
4.34	Cassette size: accept all sizes from 5"x7" to 14"x17".			
5	Accessories, Spare Parts and Consumables			
5.1	Accessories:			


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S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
	<ul style="list-style-type: none"> Lead apron, light weight-02 nos. 			
5.2	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			
6	Operating Environment			
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	Standards & Safety Requirements			
7.1	Must submit ISO 13485:2003/AC: 2007 and BIS, AERB Approved product or Equivalent			
7.2	CE (93/42 EEC Directives) or USFDA approved product certificate.			
8	Installation and Commissioning & User Training			
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	Warranty & Maintenance Service During Warranty Period			
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			
10	Authorization			
10.1	Bidder Should Submit Manufacturer's Authorization			
11	Documentation			
11.1	User (Operating) manual in English			

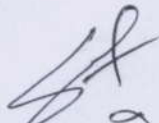
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S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
11.2	Service (Technical / Maintenance) manual in English			
11.3	Certificate of calibration and inspection from factory.			
11.4	Shall accomplish all the Qualification Criteria of the bidder mentioned in the main bid document			


Computed Radiography System (CR System) with accessories

S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
	Computed Radiography System (CR System) with accessories			
	Manufacturer			
	Brand			
	Type / Model			
	Country of Origin			
1	Description of Function			
1.1	Radiography system to replace the conventional Film/Screen based X ray processing technique with photo stimuable plate's technology to obtain digital X ray images.			
2	Operational Requirements			
2.1	The CR system shall be able to record X ray images on Imaging Plates (IP) and Convert these images IP into digital values and transfer these values to an images			
3	System Configuration			
3.1	CR Workstation : 1 set Imaging reader System : 1 set Dry view laser imaging printer (Film Based), double Tray : 1 Set			


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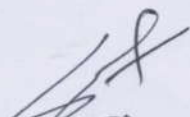
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S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
	CR Cassettes and Screen: 8*10:1 set each,10*12:1 set each,14*17:1 set each.			
4	Technical Specifications			
4.1	Image Reader : <ul style="list-style-type: none"> • IP Processing rate: min 45 films/hr of 14*17 inches cassettes • Scanning mechanism to read ,erase and process the images from the imaging plates.(IP) • Panel for indicating online status of the CR reader in case of machine malfunction. • Verification of the connectivity status of configured image destination • Spatial resolution of 16 bits to the image sent to the processing and output of 12 bit to the image processed. • CR system should have data acquisition of 16 bits or more. • CR system should be capable of loading cassettes both by vertical and Horizontal way and capable of installation by both way vertical and horizontal. • Image matrix at standard resolution (14*17)-3000*4000 Row*column • Emergency mode for accepting exposed cassettes without patient demographic for casualty trauma workflow requirements. • The total weight of machine should be less than 30 kg . 			
4.2	CR Workstation <ul style="list-style-type: none"> • Capable of Archiving and printing selected images to a standard DICOM destination in DICOM 3.0 format. • Storing images in the local disk for predefined period. • Shorting of patient images based on name, date, exam etc. • Using predefined parameters or user defined and stored images parameters. • Correcting typographical in patient demographic module, in case RIS connection was down and manual data entry was done. • Capability of changing R/L, Flipping, Rotating, Zooming, Collimating, annotating the incoming images. • Multi Images and slide formats • Capability of storing in CD/DVD • Software for Advance image processing, applications, display and quality monitoring. 			


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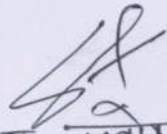
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S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
	<ul style="list-style-type: none"> Connectivity and compatibility to communicate to RIS/HIS and DICOM compatible devices such as MR/CT/DSA work station Must provide for HL-7 compatible interface. Output grayscale resolution -16 bits/pixel. 			
4.13	Console : <ul style="list-style-type: none"> Software should have graphic selection to allow quick and easy picking of body parts and views. Software should have minimum 4 web enablement license for viewing of images to enhance productivity. Multifunctional console having all the images optimization and post processing, flipping, windowing and centering. At least 19 " LCD monitor with CPU. 			
4.14	Dry laser imaging printer (Film Based) <ul style="list-style-type: none"> Print images from CR workstation, in DICOM 3 format. Must be at least 2 one line tray Printer should provide image depth of 14 bits or more. Mechanism to print images to 14*17 and 10*12 film sizes simultaneously. Printer should have dry laser imager technology. Processing capacity should be more or equal to 70 films/hours of 14*17 inches film size Resolution \geq 500 dpi Printer should be capability of printing Mammographic films 			
4.15	IP Cassettes and screen <ul style="list-style-type: none"> 14*17 : 1 pc 10*12 : 1 pc 			
5	Accessories			
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.			
5.2	3KVA Online(Internal Battery) UPS should provide for regulation and spike protection and maintenance free batteries for 30 minutes backup shall be supplied.			
5.3	2 Ton AC with all accessories			
6	Operating Environment			


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S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
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: 100 – 240 VAC, 50-60Hz fitted with appropriate plug.			
7	Standards and Safety Requirements			
7.1	Must submit ISO 9001 or ISO 13485:2003/AC:2007 AND			
7.2	CE (93/42 EEC Directives) and USFDA approved product certificate.			
7.3	Shall meet IEC-60601-1-2:2001 General Requirements of Safety for Electromagnetic Compatibility.			
8	User Training			
8.1	Must provide on-site user training (including how to use and maintain the equipment).			
9	Warranty			
9.1	Comprehensive warranty for 2 year after acceptance.			
10	Maintenance Service During Warranty Period			
10.1	During the warranty period supplier must ensure planned preventive maintenance (PPM) along with corrective/breakdown maintenance whenever required.			
11	Installation and Commissioning			
11.1	The bidder must arrange for the equipment to be installed and commissioned by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.			
12	Documentation			
12.1	User (Operating) manual in English			

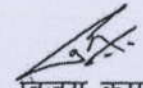

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 प्रमुख प्रशासकीय अधिकृत

S.N.	Purchaser's Specifications	Bidder's Compliance (Yes / No)	Reference Page No.	Remarks
12.2	Service (Technical / Maintenance) manual in English			
12.3	Certificate of calibration and inspection from factory.			


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प्रमुख प्रशासकीय अधिकृत


ई. विजय कुमार विष्ट
(NEC 123, A, Biomedical)
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