


X-ray Machine- 500mA					
S.N.	Purchaser's Specifications (Phaktanglung rural mun FY:81/82)	Bidder's Compliance Sheet			
1	X-ray Machine 500mA	Yes	No	Page No. in Catalogue	Remarks
	Manufacturer				
	Brand				
	Type / Model				
	Country of Origin				
2	Description of Function				
2.1	A general X-ray machine 500mA, floor to ceiling X-ray machine				
3	Operational Requirements				
3.1	It shall be suitable to be used for adult and pediatric patients in general radiography examination and it shall operate three phase AC power supply.				
4	System Configuration				
4.1	X-ray Generator, 1unit				
4.2	HV tank and Control Console, 1unit				
4.4	Floor mounted tube stand & X-ray tube, 1unit				
4.5	Table				
4.5	Bidder shall indicate brand and model information here and provide technical data document for all major components specified above.				
5	Technical Specifications				
5.1	X-ray Generator				
	The generator must be suitable for 500 mA at 100 KVP.				
	Generator output: not less than 40KW.				
	KVp Range (Rad):40 to 125KVP in Steps of 1 KVP each				

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	Electronic Timer with timing range 0.01 sec to 5.0 sec.				
5.2	X-Ray Tube				
	Rotating anode X-Ray tube				
	Rotating Anode X-ray Tube with Dual Focus having focus not more than 1.0 mm and 2.0 mm focal spots.				
	Maximum tube voltage 125 KV. Maximum tube output shall match with the generator output of not less than 40 KW.				
	Anode heat capacity shall not be less than 140 KHU.				
	Anode rotating speed: not less than 2700 rpm@50Hz				
	Tube filtration not less than 2.4mm AL equivalent.				
5.3	CONTROL Unit: Attractively designed Control Panel having the following functions & features for Radiography, Fluoroscopy and Spot filming: Push to ON/OFF Switches Voltmeter to indicate Input Voltage mA meter to indicate Tube Current Digital Display of KVP and mAs Voltage Compensator for compensation of Input Voltage Tube Overload Protection circuitry Major and Minor KVP Selection Switches for Radiography Technic Selection Switch for tube current Time Selection Switch Bucky IN / OUT selection switch Space charge compensation Indicators for Line ON, X-Ray ON, Overload and Bucky ON Switches for Ready and X-Ray ON A Dual action Hand switch shall be provided on the Panel with retractable cord for radiation Protection OR Digital Control				
5.4	X-Ray Examination Table				
	Stain resistant table top with SS tray.				
	Cassette 14" x 17", grid size 17 1/4 x 18 7/8" Ratio 8:1, 85 lines per inch.				


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5.5	Safety features				
	Automatic trip off overload circuit breaker with indicator shall be provided				
	Electronic overload protection with simultaneous protection from high input voltage, KVP, mA and Time				
6	Accessories, spares and consumables				
6.1	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.				
6.2	Accessories • Lead apron				
7	Operating Environment				
7.1	The product 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				
7.2	Power supply: Three Phase power supply $\pm 10\%$ Line regulation.				
8	Standards and Safety Requirements				
8.1	Must submit ISO13485: 2016				
8.2	Must submit CE 93/42EEC or USFDA approved prod certificate				
8.3	The product should be approved by AERB and BIS				
9	User Training				
9.1	Must provide user training (including how to use and maintain the equipment).				

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10	Warranty				
10.1	Comprehensive warranty for 1 years				
10.2	Maintenance Service During Warranty Period				
10.3	During the warranty period supplier must ensure 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.				
12.2	Service (Technical / Maintenance) manual in English.				
12.3	Certificate of calibration and inspection from factory				


Bidder must completely fill the Technical Specification Form (TSF). Only Yes/no/all complies should not be written. Page number in the catalogue of all the required parameters must be clearly mentioned and highlighted. Failure in doing so may lead to rejection of bid from technical committee.

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Technical Specification Computed Radiography (CR) System

S.N.	Purchaser's Specifications (Phaktanglung rural mun FY:81/82)	Bidder's Compliance Sheet			
		Yes	No	Page No. in Catalogue	Remarks
	Computed Radiography (CR) System				
	Manufacturer				
	Brand				
	Type / Model				
	Country of Origin				
1.	Description of Function				
a.	Radiography system to replace conventional Film/Screen based X-Ray processing techniques with Photostimulable Phosphor Plate technology to obtain digital X-ray images.				
2.	Operational Requirements				
a.	The system shall be able to record X-Ray images on Imaging Plates (IP)				
b.	Convert these images from the IP into digital values and transfer these values to an image evaluation computer with predefined Image Processing Parameters. Both CR System and Printer must be from same manufacturer.				
3.	System Configuration				
a.	Image Reader system: 01				
b.	Dry view imaging printer (film based), double tray type :01				
4.	Technical Specifications				
4.1.	Image Reader				
a.	IP processing rate minimum 40 films/hr or more for 14 x 17 inches cassette.				
b.	Scanning mechanism to read, erase and process the images from the imaging plate. (IP)				
c.	Panel for indicating online status of the CR Reader in case of machine malfunction				
d.	Emergency Mode for accepting exposed cassettes without patient demographics for casualty trauma workflow requirements				
e.	Verification of the connectivity status of configured image destination				
f.	Spatial resolution of digital image 6-10 pixels/mm.				
g.	CR System should have data acquisition of 16 bits or more				
h.	X-Ray Generator compatibility with reputed manufacturers.				
i.	CR system should have the capability of processing the cassettes both in standard and high-speed mode.				
j.	Image matrix at standard resolution (14 x 17) -Approx. 3000 x 4000 Row x Column				
4.2.	CR Workstation:				


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a.	Capable of Archiving and printing selected images to a standard DICOM format				
b.	Storing images in the local disk for predefined period.				
c.	Sorting of patient image based on name, date, exam etc.				
d.	Using predefined parameters or user defined and stored image parameters				
e.	Correcting typographical in-patient demographic module, in case RIS connection was down and manual data entry was done.				
f.	Capability of changing R/L, Flipping, Rotating, Zooming, Collimating, annotating the incoming image.				
g.	Multi-image and slide formats				
h.	Capability of storing in CD/DVD.				
i.	Software for Advance Image processing, applications, display and quality monitoring.				
j.	Connectivity and compatibility communicate to RIS/HIS and DICOM Compatible devices such as MR/CT/DSA Work station,				
k.	Must provide for HL-7				
l.	Scanning gray scale resolution- 16 bits/pixel.				
4.3	Console:				
a.	Software should have graphic selection to allow quick and easy picking of body parts and views				
b.	Multifunctional console having all image optimization and post processing software like zooming, annotation, flipping, windowing and centering.				
c.	Additional computer with necessary software should be provided to feed the patient information to help ease the workflow.				
4.4	Two Tray Dry view imaging printer (film based) Unit:				
a.	Print images from CR workstation, in DICOM format.				
b.	Printer should provide image depth of 14 bits or more				
c.	Mechanism to print images to 14x17 and 8x10 film sizes				
d.	Resolution > 500 DPI.				
e.	Processing capacity should be more than 60 films/hour or more for 14x17 inch film size				
f.	Printer should have dry Laser imager Technology				
4.5	IP/Cassettes size:				
a.	CR system should be provided with the following cassettes and imaging plates.				
b.	10 x 12 in: 1 Pcs.				
c.	8 x 10 in: 1 Pcs.				



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5.	Accessories, spares and consumables				
5.1	Accessories:				
a.	Computer				
b.	At least Latest model Computer having Intel i3 processor and 4 GB RAM and 19"LCD Monitor- 1 set				
c.	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				
a.	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.				
b.	Power supply: 220 - 240 VAC, 50Hz fitted with appropriate plug.				
7	Standards and Safety Requirements				
a.	Must submit ISO13485:2003/AC:2007 for Medical Devices AND				
b.	CE (93/42 EEC Directives) and USFDA approved product certificate				
8.	User Training				
a.	Must provide user training (including how to use and maintain the equipment).				
9.0	Warranty				
a.	Comprehensive warranty for 1 years after acceptance.				
10.	Maintenance Service During Warranty Period				
a.	During warranty period supplier must ensure preventivemaintenance & corrective/breakdown maintenance whenever required				
11.	Installation and Commissioning				
a.	The bidder must arrange for the equipment to be installed by certified or qualified personnel; any prerequisites for installation to be communicated to the purchaser in advance, in detail.				
12	Documentation				
a.	User (Operating) manual in English				
b.	Service (Technical / Maintenance) manual in English.				
c.	Certificate of calibration and inspection from factory.				
d.	Must submit the valid authorization letter				

Bidder must completely fill the Technical Specification Form (TSF). Only Yes/no/all complies should not be written. Page number in the catalogue of all the required parameters must be clearly mentioned and highlighted. Failure in doing so may lead to rejection of bid from technical committee.

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