



Government of West Bengal  
Office of The Principal  
Medical College, Kolkata  
88, College Street, Kolkata-700073



Memo No: MC/PRIN/ 5519/2021

Dated: 09-11-2021

Modification of Technical Specification for Re-E-Tender vide NIT No MC/PRIN/5387/2021 Dt 29/10/2021

The modification of technical specifications for as recommended by the HOD Deptt of Radiology Medical College Kolkata vide NIT No for Re-E-Tender MC/PRIN/5387/2021 Dt 29/10/2021 , for procurement and installation of X-Ray-Machines is attached herewith for uploading in [www.wbetenders.gov.in](http://www.wbetenders.gov.in) and [www.wbhealth.gov.in](http://www.wbhealth.gov.in).

  
Principal  
Medical College Kolkata

Memo No: MC/PRIN/

Dated:

Copy forwarded for information and n.a:-

1. The Director of Medical Education Deptt of H& FW Govt of WB.
2. The Medical Superintendent Cum Vice Principal Medical College & Hospital Kolkata.
3. HOD Deptt of Radiology Medical College Kolkata .
4. Kazi Gowsas Salam Asstt Super MCH Kolkata
5. Sri Swarup Saha Asstt Super MCH Kolkata.
6. Store Keeper Store Section Medical College Kolkata.
7. Office File.

  
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TECHNICAL SPECIFICATIONS

800 mA high frequency X-Ray machine with motorized table and IITV			
Parameter / Feature	Threshold Limit/Range	Yes	No
Generator			
POWER OUTPUT	65 KW		
mA Range	10-800		
Output frequency	100 KHz or more		
Radiographic parameter			
KVp range	(40-120) or more <i>40-150</i>	<i>B 8/11/21</i>	<b>Professor &amp; Head Dept. of Radiology MEDICAL COLLEGE Kolkata</b>
Exposure time (sec)	(0.01-3) or more	<i>for</i>	
mAs Range	(1-300) or more <i>500 or more</i>	<i>B 8/11/21</i>	<b>Professor &amp; Head Dept. of Radiology MEDICAL COLLEGE Kolkata</b>
Fluoroscopic parameter		<i>for</i>	
KV range	(40-120) or more		<b>Professor &amp; Head Dept. of Radiology MEDICAL COLLEGE Kolkata</b>
mA	(0.5-3) or more		
mA high level Flouro	(1 to 20) or more		
Pulsed Flouro in mA	(10-130) or more		
X-Ray Tube			
Dual focus rotating anode tube in nos	2		
Small focal spot value (mm)	0.6 X 0.6		
Large focal spot value (mm)	1.2 X 1.2		
Rotating Anode speed in RPM	5000 more		
Anode heat storage capacity in KHU	250 or more		
X-ray table (Motorized)			
Table tilt	(-)12 degree trendelenberg to + 90 degree		
Bucky tray wide grid accommodating casswette of size in inch			

## Specification of 500mA X-Ray machine

Machine	YES	No
X-ray generator rated 22.5/47 KW a small focus and large focus maximum output KVp 125 and Maximum mAs output.		
<b>X-ray Console:</b>		
<ol style="list-style-type: none"> <li>1. 2 or 3 point technique selection i.e. mAs and KVP or mA time and KVP Selection should be digitally displayed.</li> <li>2. Selection of Line voltage from 180 v to 250 v through major and minor voltage selection switch.</li> <li>3. Selection of KV from 40KVP to 125KVP or more through major and minor KV selection switch.</li> <li>4. Mode switch for selection of 1) Radio 2) Fluro and 3) Bucky.</li> <li>5. mA Selection switch for mA range 50mA to 500mA having stations of 50mA in small focus and 200mA, 300mA, 400 mA, 500mA in large focus.</li> <li>6. Fluro mA 3mA continuous.</li> <li>7. Automatic change over from fluoroscopy mode to radiography to spot film X-ray image.</li> <li>8. Solid stage electronic Timer having exposure tuning range from 0.02 to 5 sec. in 23 steps.</li> </ol>		
X-ray tube overload protector and acute trip in case of short circuit should be provide		
<b>H.V. Cable:</b>		
High voltage cable at least 8meters in length 2 pairs		
<b>X-ray Tube unit 2 No- ①</b>		
<ol style="list-style-type: none"> <li>1. Dual focus rotating anode X-ray tube manufactured by Toshiba Japan or equivalent of reputed manufacturer (Make and module must be mentioned).</li> <li>2. Small focus should be 1.0mm X 1.0 mm and large focus should be 2.0 mm X 2.0 mm.</li> <li>3. Anode Heat storage capacity should be 140 KHU or more, anode speed should be minimum 3200 rpm</li> <li>4. Target angle should be 16deg.</li> </ol>		
<b>Tube stand</b>		
Floor to calling column stand, with a facility or 360° column rotation.		
<b>X-ray table</b>		
<ol style="list-style-type: none"> <li>1. All position motor driven X-ray table having tilting.</li> <li>2. Angle from 15deg, Trend lending to - 90deg. Complete electrically operated bucky with moving Grid of ratio 6:1 and 60 lines inch, shutter diaphragm. Semi automatic spot film device with stationary grid, suitable for taking 1.2 or 4 spot radiographs, 14" X 14" lead glass and , 14" X 14" fluoroscopic screen. Motorized Floating table top on longitudinal direction.</li> </ol>		
<b>Monitors</b>		
<ol style="list-style-type: none"> <li>1. 02 nos 19" or more medical grade gray scale monitors.</li> <li>2. Gray scale 1000 or more contrast ratio should be 1000</li> <li>3. Resulting should be 1100000</li> <li>4. Prevision for multiple display mode is preferable.</li> <li>5. Mobile trolley having smooth and free movement.</li> </ol>		

Monitor of its content should be omitted.

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<b>Memory system</b> <i>to be omitted</i>		
<ol style="list-style-type: none"><li>1. Permanent image storage capacity of approx 100 image or more (USB port facility shall be preferred).</li><li>2. Contrast enhancement function</li><li>3. Images are retained even when power is turned off</li><li>4. Real time negative, interactive contrast stretching</li><li>5. Image zoom function with horizontal and vertical pan.</li><li>6. Image mirror function</li><li>7. Feature of live / Pulse / LIH</li><li>8. Remote control shall be preferred.</li></ol>		
<b>Power supply:</b> 50KVA 3 Phase 440 v 50 HZ		
<b>Certification :</b> Time should be approved by AERB for radiation safety.		
<b>Alter sales service:</b> <ol style="list-style-type: none"><li>1. Should have service centre in Kolkata.</li><li>2. Should have stock of spares to replace parts if any within 24 hours.</li></ol>		
<b>Qualification criteria</b> <ol style="list-style-type: none"><li>1. Should have at least 5 such unit installed in Medical College and Hospital under Government of West Bengal and are in use for past 4 years.</li><li>2. Performance certificated of the machines installed should be attached.</li></ol>		

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## Specification of 300mA X-Ray machine

### 300 mA or more X-ray Machine

Description & Function	YES	No
<ol style="list-style-type: none"> <li>1. X-ray machine is required to perform radiological studies in emergency, trauma departments and also in the radiology Department for conventional radiography.</li> <li>2. Exposures with remotely controlled should be possible with hand switch.</li> </ol>		
<b>X-ray Generators:</b>		
<ol style="list-style-type: none"> <li>1. Should consist of High frequency X-ray generator of <del>10KHz</del> or more <span style="color: blue;">50 kHz or more</span></li> <li>2. Power output: 30 KW or more.</li> <li>3. X-ray Generator should have output of 300 mA at 100 KVP</li> <li>4. Shortest exposure time: 5 ms or lower</li> <li>5. Free selection of radiographic setting in 2-point technique.</li> <li>6. It should have electronic timer and digital display of mAs &amp; KV.</li> <li>7. Should have voltage compensator.</li> <li>8. KV range – 40KV to 125 KV</li> <li>9. mA range – 20mA to 300Ma or more <span style="color: blue;">for B. Ghosh</span></li> <li>10. mAs: at least <del>200</del> <span style="color: blue;">500 or more</span> <span style="color: blue;">for</span></li> <li>11. Operating distance &gt; 10 feet.</li> </ol>		
<b>X-ray tube:</b>		
<ol style="list-style-type: none"> <li>1. Dual focus X-ray tube of 30KW or more capacity</li> <li>2. Output should match the output of the generator</li> <li>3. Should have rotating anode</li> <li>4. The unit should be offered with 1 (one) manual collimator</li> <li>5. Focal Spot: 1mm X 1 mm and 2mm X 2 mm.</li> <li>6. Should have Inherent filtration</li> <li>7. The exposure release switch should be detachable with a cord of at least 5 meters.</li> </ol>		
<b>Patient Table:</b>		
<ol style="list-style-type: none"> <li>1. Motorized patient table.</li> <li>2. Table top should be radiolucent with negligible X-ray absorption, stain free, break resistant and water proof.</li> <li>3. Table should be compatible of cassette size 14 X 17, 12 X15, 10X12 &amp; 10X8 with high grid ratio 6:1 and density at least 50 lines per com. Grid should be aluminum interspaced.</li> <li>4. Bucky stand – fully counter balance moving bucky wall stand for cassette size 14X17, 12X15, 10X8 with high grid ratio 6:1 and density at least 50 Lines per com. Grid should be aluminium interspaced.</li> <li>5. The table should be incorporated with all safety provision against collision.</li> <li>6. The offered Equipment should have sufficient stock of spares in local office.</li> </ol>		

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