

TECHNICAL SPECIFICATIONS

300MA HIGH FREQUENCY X-RAY MACHINE

High Frequency X-Ray machine suitable for generator Radiography.

X-RAY GENERATOR:

- High Frequency X-Ray generator having frequency of 20KHz or more should be provided.
- Power output of generator should be 30 KW or more.
- Radiographic KV range should be 40 to 125 KV
- mAs range(RAD) 300 m A or more
- Exposure time (Rad) 1ms to 5 Sec.

CONTROL:

A very compact, soft touch control panel having following function & indications should be provided. The panel can be supplied in floor or wall mount with spill proof design.

- Following features should be available on the control panel
- Machine ON/OFF switch
- Digital display of KV & mAs
- KV & mAs increase and decrease switches.
- Tube focal spot selection switch
- Ready & X-Ray on switch with indicators
- Bucky selection switch
- Self diagnostic programme with indicators for earth fault error, KV error, filament error and Tube's thermal Overload.
- Anatomical Programming Radiography (i.e. APR) should be provided in which KV & mAs are automatically selected depending upon the physique of the patient and part of the body to be X-Rayed.
- Anatomical Programming should be of minimum 200 programmes.
- A dual action hand switch with retractable cord should be provided for Radiation Protection of Operator.
- There should be provision of auto shut off of Control if no key is pressed for 10mins.

X-RAY TUBE:

- One no. dual focus Rotating Anode X-Ray tube thermally protected
- Anode heat storage capacity of tube should be more than 140 KHU
- One Pair of 8 meter of H.V. cable
- One No. collimator with auto shut off facility should be provided.

HV TANK:

A very compact H.V. Tank filled with high dielectric transformer oil should be provided. The H.V. Tank should contain H.V. transformer, filament transformer, H.V. rectifiers & H.V. Cable receptacles.

TUBE STAND:

Floor to ceiling stand with Counter Balanced Tube Head (Rotatable + or - 180 Degree), 360 Degree Rotatable: mounted on floor ceiling Rails for convenient movement should be provided.

TABLE:

- Horizontal table with 4-way movement of the table top should be provided.
- Longitudinal movement of the table top should more than 400 mm & transverse movement should be more than 160mm. It should have height adjustment facility.
- The Table should consist of motorized reciprocating bucky with Imported Grid of size 17¼ " x 18 7/8 " & of Ratio 8:1-85 lines/inch.

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- The Bucky should cover the entire length of the table and should be locked at any desired position by an Electromagnetic lock
- The Tabletop should be made of low radiation absorption, waterproof material.
- Table accessories like stainless steel cassette tray, compression band should be provided.
- Bucky tray should accommodate cassette up to 14" X 17 inch.

VERTICAL BUCKY STAND:

- Vertical bucky stand with oscillating Grid of ratio 8 : 1, 85 lines /inches is provided
- The bucky should move up & down & should be equipped with a stainless steel cassette tray
- The stand should be floor mounted type & can accommodate cassette up to 14" X 17".
- The Bucky is tilted in 6 steps of 15 degree angle each for various radiographs.

ACCESSORIES:

Following accessories should be supplied with the machine at the time of installation

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|--|--------------------|
| a) Lead Apron 0.5mm Pb equivalent | 1 No. |
| b) Lead Barrier 1.5mm Pb equivalent with lead viewing window | 1 No. |
| c) Cassettes with Image Intensifying screens of various Sizes (inch) :- 8" X 10", 10" X 12", 12" X 15", 14" X 17". | 2 Nos. each |
| d) One Packet of films of each size | |
| e) Film hangers for manual Processing for film sizes (inch): 8" X 10", 10" X 12", 12" X 15", 14" X 17". | 3 Nos. each |
| f) Chemical Tank 9 liters with lid | 1 No |
| g) Fixer & developer | 1 No. Each |
| h) Dark Room Light | 1 No. |
| i) Lead divider 14" X 17" (inch) | 2 No. |

POWER REQUIREMENT:

The unit should be operable on 3 Phase, 440 Volts AC 50Hz with line-resist less than 0.4 Ohms. Line regulation + or - 10%

OTHER REQUIREMENTS

1. The manufacture should be ISO-9001: 2008 & ISO-13485: 2003 certified. (valid documentation should be submitted in technical bid)
2. The unit should be approved by AERB. (valid documentation should be submitted in technical bid).
3. The company should submit technical compliance sheet as per technical specifications mentioning the make & model of quoted item in the Technical bid .
4. The company should have a local Service center.
5. The company should have proven track record in Govt. sector.
6. The Company should provided **QA & QC test report** at the time of Installation & in every two years during guarantee period.
7. **Guarantee:** Three years on complete unit from the date of the installation.
8. **CMC:** CMC may be given for seven year (on yearly basis) after guarantee period of three years.
9. Installation will be done by supplier free of cost.
10. **The Company should submit original catalogue and data sheet (signed & stamped) of quoted item at the time of bid submission. Any declaration/ undertaking in this regard shall not be considered.**

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Dr M

**Executive Director (EPM)
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