



The linac may also be housed in a separate enclosure.
Contact RadiaBeam Systems for more information.

Let us design your complete linac system based on your unique application. Joint research and development projects are also welcome. Our team looks forward to discussing your products and ideas.



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Custom X-ray and Electron Sources



EQUIPMENT DESCRIPTION

- X-RAY HEAD:** the main component of the system, the x-ray head is composed of a standing-wave accelerating tube, collimator, optional shielding, microwave transmission system, gas-filling system, AFC sampler, and magnetron.
- MODULATOR:** the modulator powers the linac system, including high-voltage pulse power for the magnetron and electron gun. Solid-state switches provide the highest quality and service life.
- CONTROL CONSOLE:** the control console is the operation platform of the accelerator system. The standard control console is PC based with an external signal interface. An optional remote console provides the same control at a distance of up to 50 meters from the modulator interface.
- TEMPERATURE CONTROL UNIT:** The TCU is used to cool the accelerating cavity, modulator, tungsten target, microwave load, magnetron, and other devices, which generate a considerable heat load during operation. Options for cold-starts are available.
- SHIELDING OPTIONS:** In addition to unshielded systems, we offer three levels of shielding, with 0.1%, 0.02%, and 0.0001% leakage rates.
- OTHER OPTIONS:** Remote x-ray head, interconnecting cables and hoses, standard spare parts kit, installation supervision and start-up assistance, custom beam collimator, beam flattener, and many more.



SAMPLE SPECIFICATIONS

RadiaBeam offers a wide range of custom systems. A small selection is show here.

| | S2-500-X | S4-150-X | S6-100-X | S9-75-X |
|---|-----------|-----------|-----------|-----------|
| Energy | 2 MeV | 4 MeV | 6 MeV | 9 MeV |
| Dose at 1 m (cGy/min) | 200 | 600 | 1000 | 2000 |
| Linac head dimensions (L x W x H in cm) | 125x60x55 | 125x60x55 | 160x60x55 | 180x60x55 |
| Linac head weight (no shielding) | 200 kg | 230 kg | 250 kg | 280 kg |
| HVL (cm) | 2.0 | 2.5 | 2.8 | 3.0 |
| Flatness (% at 7.5 degrees) | 76 | 68 | 62 | 55 |

All above models require 480 VAC, 3 phase, 4-wire, 60 Hz, at 20 amps. The addition of a TCU requires an additional 480 VAC, 3 phase, 4-wire, 60 Hz, at 30 amps. Other power options are available. (All models have a focus spot size of 2 mm, and the S9-75-X can be provided with a 1.5 mm spot size.)

APPLICATIONS OF ACCELERATORS

- Non-destructive testing and radiography
- Cargo and vehicle inspection for contraband control
- Material processing
- Sterilization and de-infestation

MANUFACTURING CAPABILITY

RadiaBeam Systems designs and fabricates its own accelerating tubes, with a capacity of up to 50 per year.

In addition to our line of X-ray systems, we also supply electron beam linacs, higher-energy sources, sterilization facilities, and self-shielded irradiators, in standard and custom configurations.