



TREB10M20: 10MeV\20kW accelerator



Irradiation management software

The management software is a set of business management software developed for electronic irradiation processing system, covering all aspects of irradiation production, including customer management, goods management, process information management, production management, quality management, financial management and statistical analysis. Easy to deploy and operate. Users can login to the system at any time through a browser without installing a client. Friendly interface, simple and clear, function Settings can be flexibly adjusted according to user needs.

Analysis of typical production of 10MeV/20kW electron

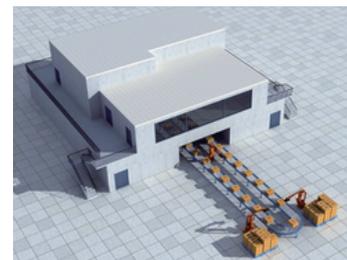
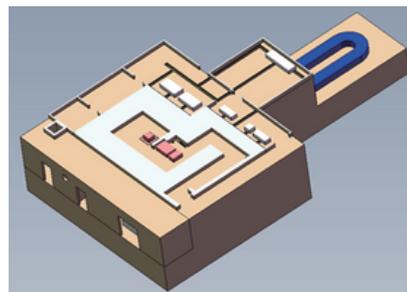
Type of articles	Dore required	Output (ton/Hour)
general materials	20	4.5
Healthcare products	10	9
Food	5	18

ACCELERATING A QUALITY FUTURE

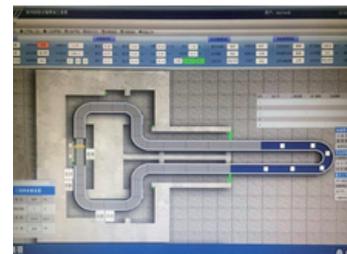
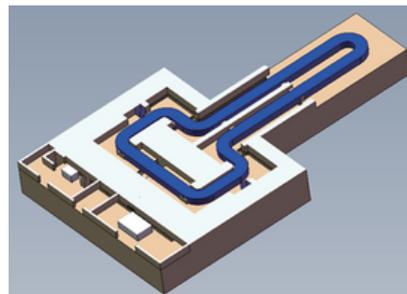
Engineering scheme introduction

The main system of the comprehensive irradiation processing system is installed in a two-floor shielding bunker, which covers an area of about 400 m², is about 11m high, has steel-concrete structure, and the earth volume is about 1500 m³. Usually a single irradiation processing system is recommended to be equipped with a stack plant covering an area of about 4000 m².

The accelerator equipment is installed on the second floor, with concrete walls of sufficient thickness and maze passageways to ensure the safety of radiation protection at the entrance of the accelerator chamber and the outer area of the building. The goods delivery system is installed on the first floor, which is also equipped with a maze channel. The maze channel has sufficient wall thickness and turn frequency to attenuate the rays and ensure the safety of radiation protection in the exit, entrance and outer area of the bunker maze.



TREB10M20 conveyor layout



Central control operation interface





Energy consumption of irradiation system

The energy consumption of electron irradiation accelerator system is mainly electricity consumption and only a small amount of circulating cooling water.

Energy consumption of accelerator irradiation system

The accelerator consumes power/kW	150	remarks
Cooling system power consumption/kW	30	Maximum Accelerator beam power: 20kW
The ventilation system consumes electricity/kW	5	
The conveyor consumes electricity/kW	10	
Cooling water consumption (t/h)/kW	0	
Other/kW	5	
Total /kW	200	At full load

Parameters

Technical specifications of electron irradiation processing system

Item	Technical indicators and parameters
Accelerator subsystem	
Ray type	E-BEAM
Electron beam energy	10MeV
Energy instability of electron beam	$\leq \pm 5\%$
Average power of electron beam	20kW
Electron beam intensity	2mA
Electron beam surface scanning inhomogeneity	$\leq \pm 5\%$
Conveyor and control subsystem	
Transfer item width range	500~800mm
Item transfer width adjustment device positioning accuracy	$\pm 5\text{mm}$
Beam irradiation zone transfer velocity	12mm/s ~150mm/s
Velocity fluctuations in the beam beam transmission section	<0.5%
Transfer weight per unit length	Not less than 80kg/m or according to user requirements
Conveyor loading and unloading section height	700mm
Maximum passing height of beam irradiation zone	Subject to user requirements

