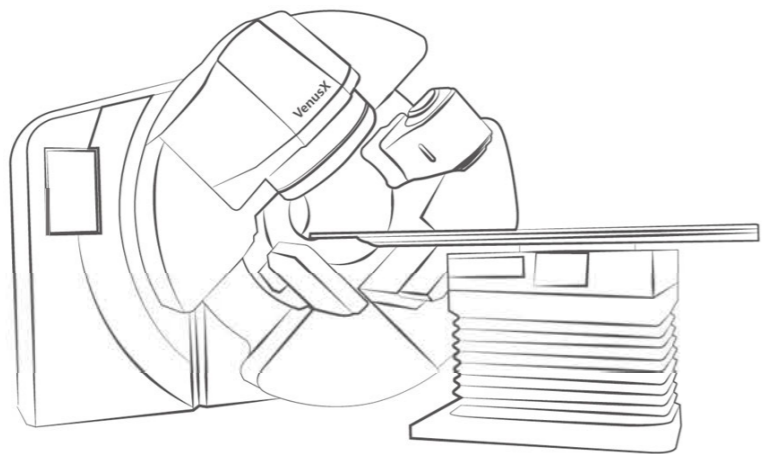


不断为放疗领域带来先进技术



**VenusX**  
Specifications  
V1.0

## VenusX Performance Parameters

This document briefly summarizes the main performance parameters of VenusX. Unless otherwise specified, all units follow the IEC61217 standard.

### Beam Specifications

Specifications	
Beam energy (MV)	6 FFF
Maximum dose rate (cGy/min)	1000
Maximum open field (cmxcm)	40×40
Maximum dose depth (cm)	1.4±0.1
Percentage depth dose at 10cm underwater	63.0±0.5%
Symmetry	≤2%
Effective beam half-opening angle	15°

### Dosage Specifications

Specifications	
Output dose error	≤1% or 0.25MU
The stability of the output dose when the gantry rotates	≤1%
Dose Rate Stability	≤1%

### Imaging Mode and Treatment Mode Specifications

Specifications	
Imaging technology	kV-kV, kV-MV, MV-MV, CBCT
Treatment techniques	2D/3DCRT、IMRT、VMAT、SRS/SBRT

### Geometric Specifications

Specifications	
Gantry structure	Integrated ring gantry
Rotation angle of outer ring frame (degree)	±185
Rotation angle of inner ring frame (degree)	±40
Rotation accuracy of outer ring frame (degree)	≤0.1
Rotation accuracy of inner ring frame (degree)	≤0.1
Isocenter height (mm)	≤1350
Isocenter to treatment head clear space (mm)	470
Mechanical isocenter accuracy (mm)	≤0.5
Beam hit size (mm)	≤2

### Environmental Specifications

Specifications	
Temperature range (°C)	15-35
Relative humidity range (%)	30-75
Atmospheric pressure (kPa)	70-110

### Beam Device Specifications

Specifications	
Collimator installation method	Upper and lower double-layer orthogonal MLC installation
Collimator layers	2 (standard), 3 (optional)
Number of leaves	102 pairs (204 pieces), 153 pairs (306 pieces)
Leaf minimum physical thickness (mm)	1.63
Leaf maximum speed at isocenter (cm/sec)	7
Leaf thickness at isocenter (mm)	4
Maximum open field at isocenter(cm <sup>2</sup> )	40 × 40
Total thickness between leaves (cm)	14
Maximum distance over isocenter (cm)	15
leaves/end transmittance	≤0.1%
Leaves positioning accuracy (mm)	≤0.25



### kV Imaging System Specifications

Specifications	
Beam type	Cone beam
Maximum FOV(cm)	≥35
CBCT reconstruction resolution (lp/cm)	≥12
Available scan thickness	0.5mm-10mm
Spatial resolution	2816×2816
Detector type	Amorphous Silicon X-ray Digital Flat Panel Detector
Dynamic image acquisition speed (fps)	≥25

### Integrated Optical Body Surface Scanning Device Specifications

Specifications	
Camera resolution	1600×1200
Camera maximum frame rate (fps)	60
Projector resolution	1140×912
Projector maximum frame rate (fps)	120
Optical distance ruler accuracy (mm)	≤1
Light field accuracy (mm)	≤2
Automatic positioning accuracy (mm)	≤1
Dynamic monitoring (respiratory gating) accuracy (mm)	≤1



### Treatment Couch Specifications

Specifications	
Maximum load (kg)	250
Positioning accuracy	≤0.5mm, ≤0.3°
Motion Dimension	4 (standard) 、 6 (optional)
Lateral travel range (cm)	±25
Vertical travel range (cm)	53.5
Longitudinal travel range (cm)	130
Couch adjustable minimum height (cm)	≤85
Rotational (yaw) about isocenter (degrees)	±95
Rotational (pitch) about isocenter (degrees)	±1.5
Rotational (roll) about isocenter (degrees)	±1.5
An exposure range with a single long target	65cmX40cm
The max. exposure range of a single plan	160cmX40cm



### MV Imaging System Specifications

Specifications	
Robotic arm repeatability (mm)	0.5
Effective image sensing area (cm)	40×40
Spatial resolution	2816×2816
Detector type	Cesium iodide
Dynamic image acquisition speed (fps)	25
Coincidence of image center and beam center (mm)	±1
Minimum exposure dose (MU)	≤0.5
Support quality control mode	Daily inspection, weekly inspection, monthly inspection, quarterly inspection, annual inspection



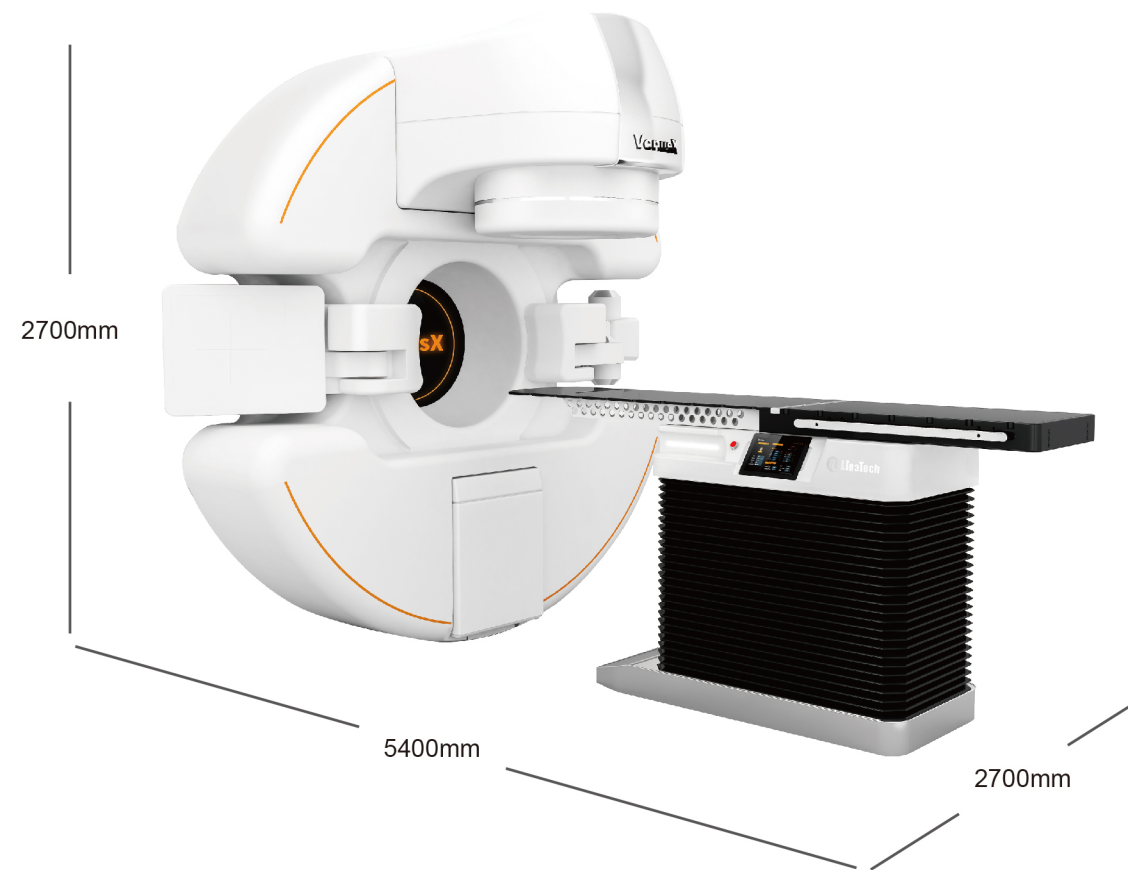
### Power Supply Configuration Standard

Specifications	
Three-phase AC input voltage	380 V±10%: 50HZ±3%
Maximum power	120 kVA

### LINAC Use Minimum Size Criteria

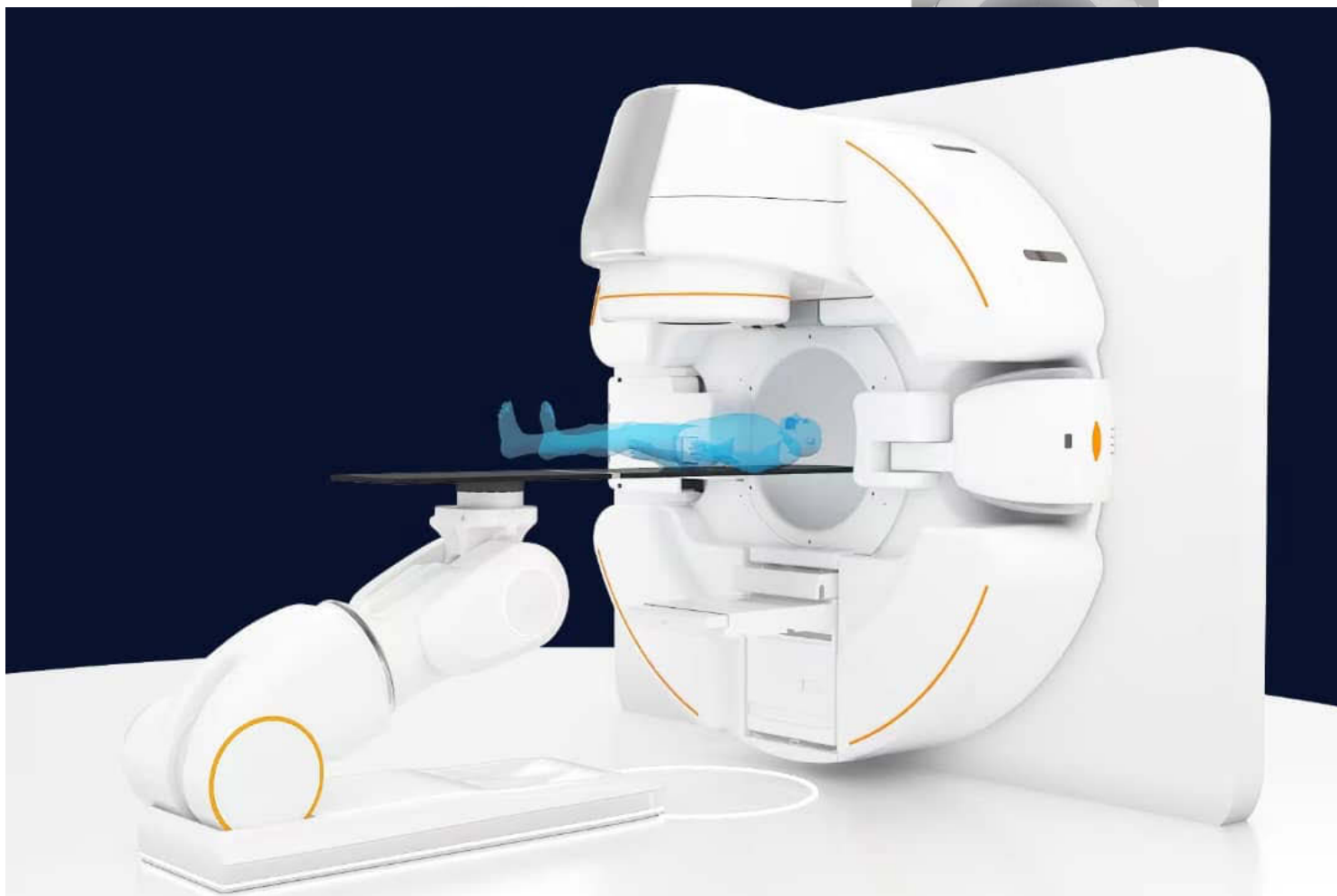
Specifications	
Height (m)	2.7
Width (m)	2.7
Length (m)	5.4

### VenusX Size



- 51 pairs 2mm thickness leaves
- The aperture of the cone ranges from 5mm-30mm, with total of 9
- The maximum radiation field of the isocenter is 10cmx10cm
- Suitable for SRS/SBRT

Therapy System ("2SRS" add-on accessories)



Intensity Modulated Radiation Therapy Planning System TiGRT TPS

Technical Description

Specifications

- DICOM 3.0/ RT import and export modules
- CT/MRI/PET/SPECT and other patient image fusion modules
- Patient organ and target area contour module: supports automated AI contour of more than 70 organs such as skin, whole brain, lung, spinal cord, and eyes
- Plan design module
- External irradiation plan design module
- 3D Forward Conformal Planning Module
- 3D dose calculation module
- Dose calculation module based on Monte Carlo algorithm
- Inverse IMRT plan module: support orthogonal dual (or triple) static IMRT, dynamic IMRT, VMAT, SRS/SBRT
- Program Evaluation and Other Modules
- QA function module
- Patient and Machine Data Management Module



Monte Carlo Algorithm



Doctor Work Station



Multimodal Image Fusion



Data Modeling