SMART3D-X
3-IN-1 INTELLIGENT CBCT

CBCT · PAN · CEPH

e-brochure

Extraordinary Image

QuartZ 4 scan platform, supporting flexible scan mode

Multiple focus layers in panoramic imaging, fitting the patients' dental arch

360° scan and 800 frame images with unique CT algorithms

Cephalometric PA/ LAT and carpus shot for orthodontic treatment

User-friendly

Easy-to-target scan area

Seven positioning lasers with face-to-face communication to posit precisely

X-type base is convenient for wheelchair-bound patients

10" LED touch screen

Storage box design

Voice reminder

CBCT PHOTOGRAPHY

Multiple FOVs

16cm × 10cm
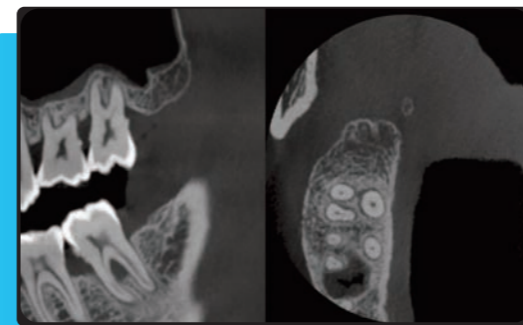
15cm × 10cm

12cm × 10cm

8cm × 8cm

5cm × 8cm

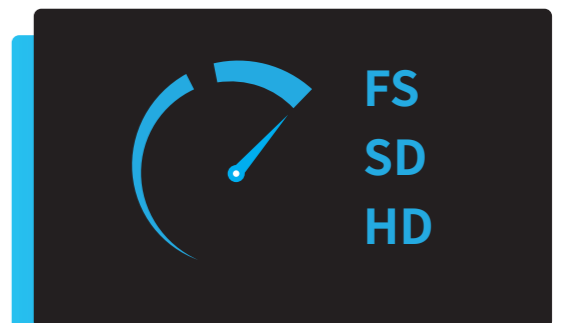High Resolution up to 2.0 lp/mm
Voxel Size 0.05–0.25 mm

Panoramic Image Reconstructed from
3D Image Data

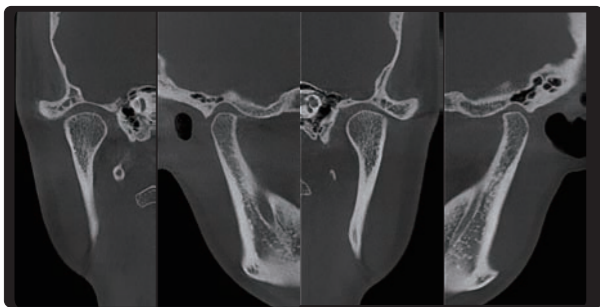Enhanced Image by Small Focal Spot
X-ray Tube

Three Scan Modes

FS
SD
HD

PAN AND CEPH

▶ Cephalometric PA/LAT and Carpus Images

CEPH LAT(full)

CEPH LAT(half)

CEPH PA

Carpus Images

▶ Panoramic and TMJ Images
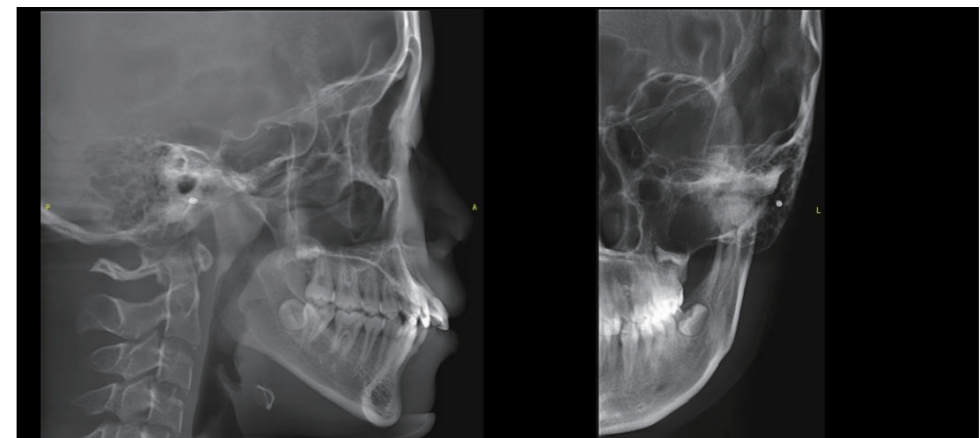
PAN

AI+PAN

TMJ

Lateral Cephalometric Measurements

In comparison to traditional two-dimensional cephalometric radiographs, lateral cephalograms on CBCT can better reflect the true craniofacial morphology. With higher accuracy in landmark point identification and line distance measurement, it can avoid the distortion of patient measurement data caused by superimposition, image blurring and facial asymmetry of two-dimensional anatomical structures.

DENTAL RADIOLOGY SOFTWARE

SmartVPro
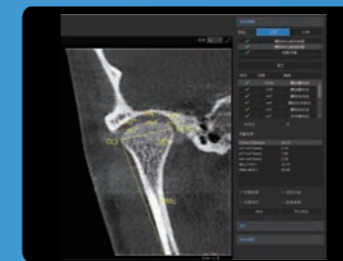
▶ TMJ Measurements(Optional)

Doctors can use the professional TMJ measurement function to analyse temporomandibular joint diseases intuitively and efficiently with accurate measurement data for the diagnosis of diseases in the fields of orthodontics, arthropathy and maxillofacial surgery.

▶ Cloud Storage Solution (Optional)

It supports cloud case storage, multiterminal data sharing, and synchronization.

CLOUD STORAGE

▶ Implant Simulation

It can evaluate the bone quality and bone quantity of the implant area, automatically outline the neural tube. Clarifying the relationship between the implant position and the adjacent anatomical structure to accurately select the implant position, the optimal length and diameter of the implant. It can improve the success rate, and avoid possible nerve or blood vessel damage.
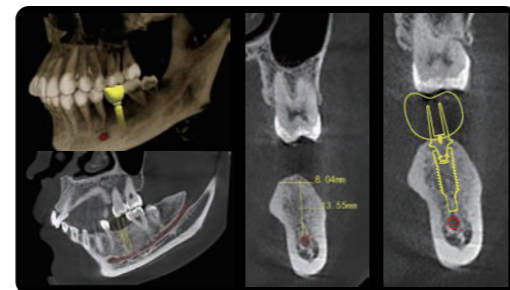
▶ Multi-Planar Reconstruction (MPR)

In SmartVPro software, doctors can simultaneously view axial, coronal, and sagittal images. The software also allows for customized slice positioning, enabling buccolingual and mesiodistal cross-sections at any desired location. This feature enhances diagnostic convenience by providing comprehensive imaging perspectives.
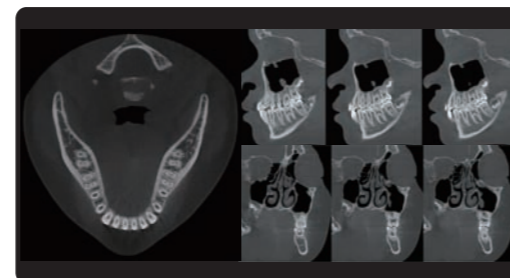
▶ Metal Artifact Correction

With the new T-MAR correction module for metal artifact removal, the system corrects metal artifacts intelligently. It avoids overmodification and saves the original clinical data.
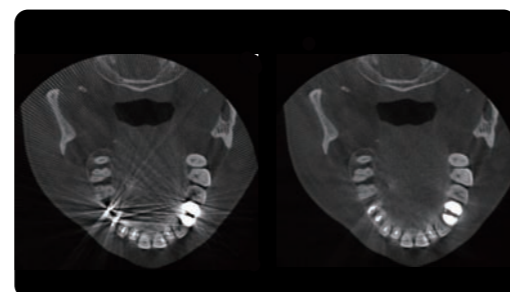
▶ Multiple Images

Support CT / PAN / CEPH.

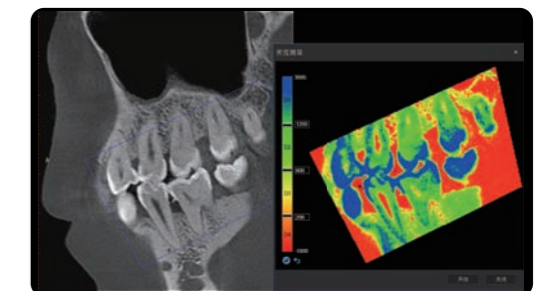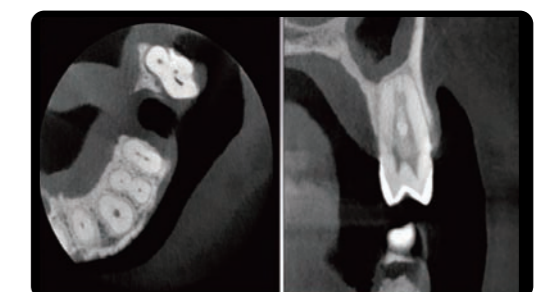### ▶ Image Slice for Implanting
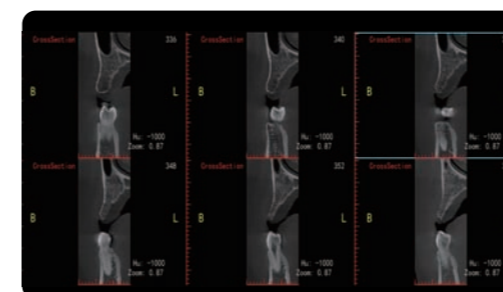
It permits the evaluation of the overall osteogenesis and facilitates the macroscopic observation of the bone condition around implants.

▶ Density Measurement

Visual assessment of bone quality, bringing greater convenience to dentists.

▶ 3D Fine Reconstruction

The smallest voxel size reaches 0.05 mm, which is more suitable for the diagnosis of dental pulp disease.

ORTHODONTIC SOFTWARE
(OPTIONAL)

CephPro3D

▶ Orthodontic Case Report

It integrates the basic information of the patients with oral and facial photos at different stages of treatment. Meanwhile, patients' eyes can be covered automatically, which protects their privacy. Case reports can be generated with one-click, which is convenient for doctors to manage orthodontic cases.

### ▶ Visual Presentation of Report with the Clear Measurement Effect

The report is generated with just one-click. It promotes communication between doctors and patients.

▶ VTO

CephPro3D superimposes patient's cephalic images with side photos. It can be fine-tuned through the anchor point to ensure that the image and photos are superimposed completely. Intuitive simulation of the orthodontic effect is generated by one-click.

▶ Customizing Measurement Analysis Methods

There are 19 built-in cephalometric measurement methods, 135 measurement items, and 73 measurement points in the software. Doctors can choose the corresponding measurement method according to the diagnostic demands, and provide patients with professional cephalometric measurement reference.
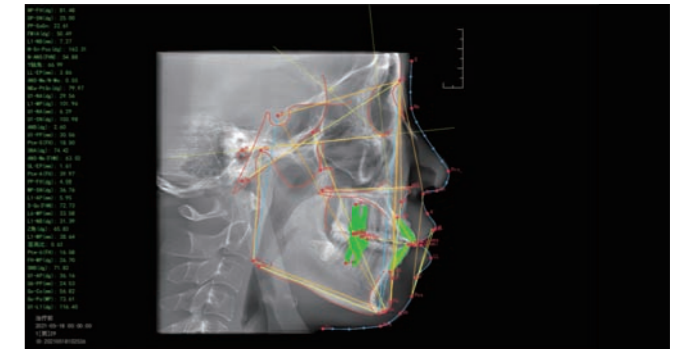
▶ Convenient Comparison

The software is equipped with an overlay interface, allowing simultaneous review of cephalometric and panoramic images, and treatment comparisons before and after orthodontic treatment for the same patient. The overlay process enables a review of the alignment with American Board of Orthodontic (ABO) standard.

Maxillary tracing overlap

Mandibular tracing overlap

Anterior skull base plane overlap
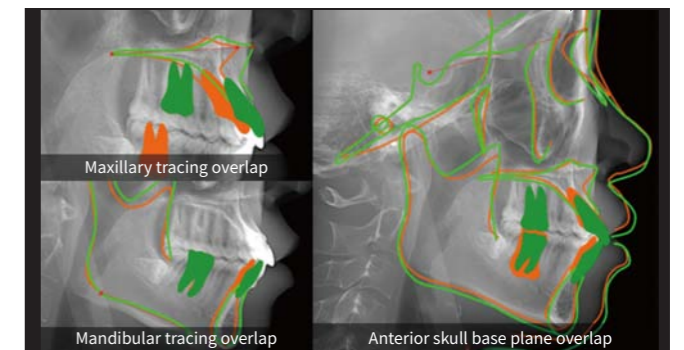
▶ Intelligent Tracking of Treatment Stage

The AI cephalometric measurement and manual drawing function can be combined with the patient's historical records to fine-tune the pre-treatment region curves. During and after treatment, the pre-treatment curves can be directly imported, and the tracing images can be easily adjusted, facilitating efficient and swift diagnosis for doctors.
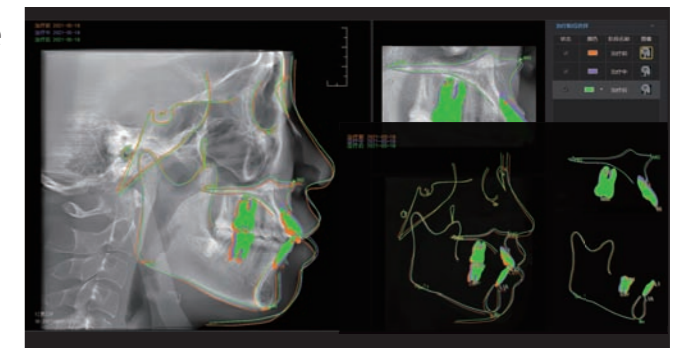
▶ Intelligent Export

The system allows for direct export of cephalometric tracing images and overlay diagrams without background images, which can be easily shared by doctors in reports.
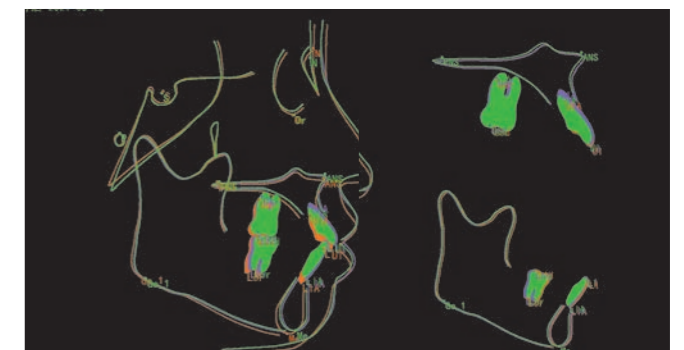
ARTIFICIAL INTELLIGENCE

SCAN TO GET

MORE FUNCTION DISPLAYS

▶ **AI+Low Dose**

Boosted by the deep learning-based CT reconstruction algorithm, the Smart3D-X can now obtain more defined tomography while further reducing the radiation dose, continuing to raise the industry standard for low-dose control.

4mA   1mA

▶ **AI+Automatic Head Position Correction**
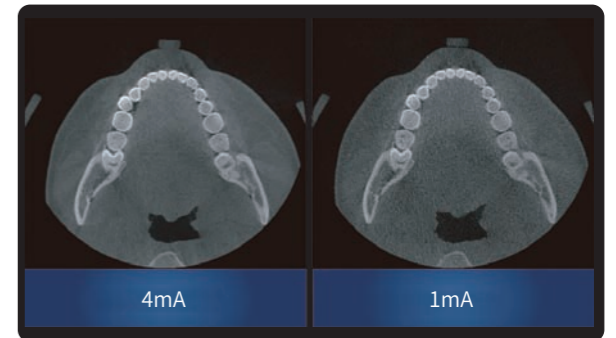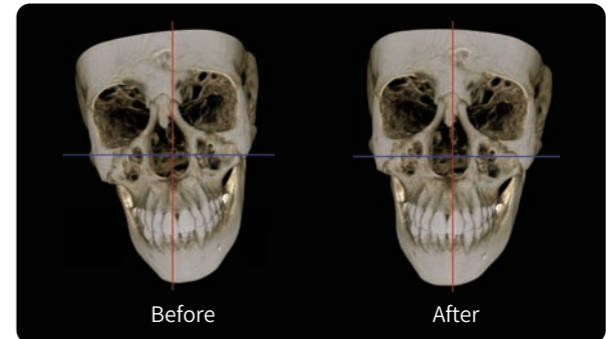
It enhances the accuracy and reliability of CT imaging, producing more precise lateral cephalometric images. It also ensures that scan results at different times can be compared and analyzed effectively.

Before   After

▶ **AI+Nerve**

This function can locate the shape of the inferior alveolar nerve in 3D space, as well as the positional relationship between the relative alveolar bone wall, adjacent teeth, and implants, providing a reference for doctors, greatly improving work efficiency and reducing surgical risks.
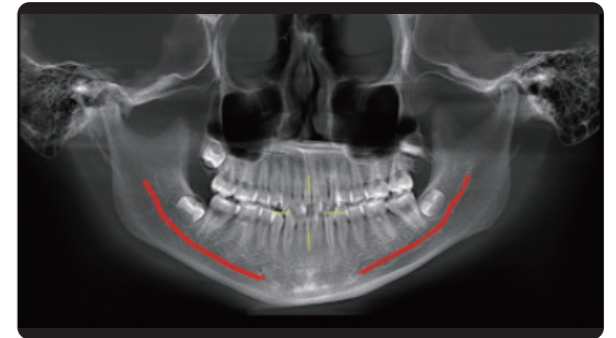
▶ **AI+Predict Bone Age by Observing the Cervical Spine**

With bone age analysis, the patient's growth and development level and maturity can be accurately evaluated. It can provide reference for the diagnosis of oral diseases and the selection of orthodontic treatment solution.

▶ **AI+CEPH Measurement(Optional)**

The neural network is trained by mega data, which automatically identifies orthodontic anatomical landmark points, draws anatomical structures and outputs measurement reports according to the selected measurement methods.
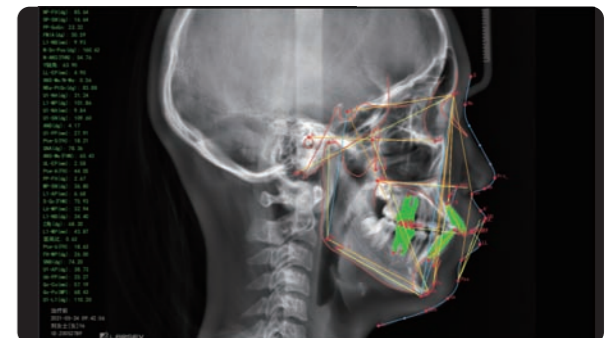
ARTIFICIAL INTELLIGENCE

▶ AI+TMJ Automatic Positioning Diagnosis

The display mode of comparing the left and right temporomandibular joints, with the cross positioning line automatically located at the temporomandibular joint, facilitates the diagnosis and treatment of temporomandibular joint diseases by doctors.

▶ AI+Airway Measurement

Quick segmentation of airway with two modes，automatic and manual, providing accurate imaging information for the discovery and diagnosis of airway diseases.

▶ AI+Mandible Segmentation

It accurately evaluates the morphology and position of jaw, as well as provide doctors with reliable anatomical structures.
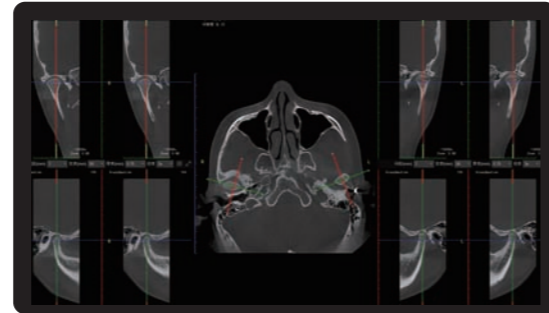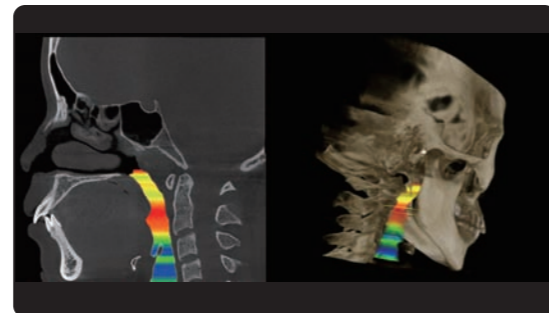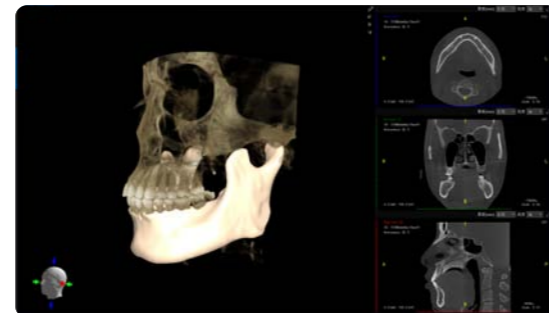

▶ AI+Maxillary Sinus Segmentation

This leading technology not only provides a high-precision 3D model of the superior maxillary sinus, but also helps doctors to distinguish the position and size, which contributes to customized surgical plans.

▶ AI + Lingual Canal Detection

This helps doctors accurately locate and identify the position and structure of lingual canals, understanding its anatomical features in the mandible. This is crucial in preventing unexpected bleeding during implant surgeries.
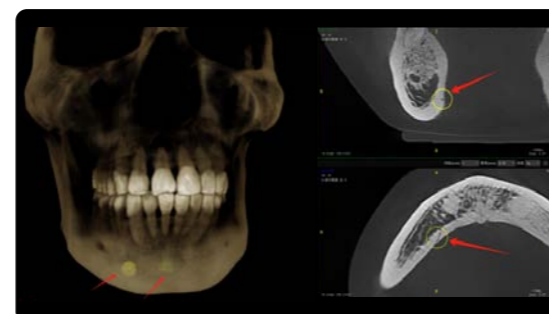
▶ AI+Teeth Segmentation

With this feature, doctors can more accurately understand the shape and position of the teeth, diagnose issues such as cavities, tooth deformities, and missing teeth, and provide patients with more precise treatment solutions.
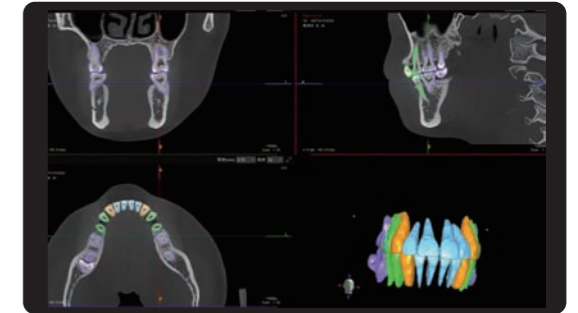
▶ AI+Simulated Tooth Extraction

As a tool for doctor-patient communication, AI simulated tooth extraction uses virtual scenarios to demonstrate the tooth extraction procedure and highlight important considerations. It helps patients to understand the treatment process.

▶ AI+Automatic Implant Placement

By segmenting the patient's oral structure, AI algorithms determine the best position and angle for implant insertion. It controls the risk of implantation, minimizes planning time.

▶ AI+Multi-Implant Placement with One-Click

This feature is ideal for multiple teeth, partial, and full-mouth implants. It significantly reduces the time for doctors to design implant surgery plans. It enhances doctor-patient communication efficiency and increases the acceptance of treatment plans.
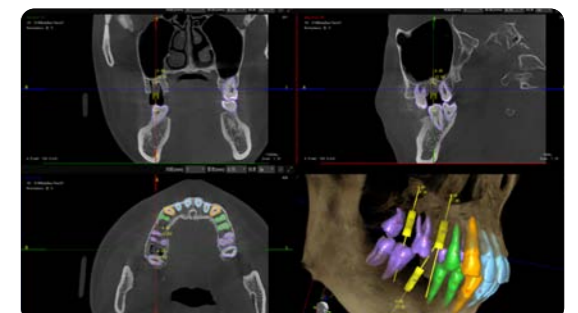
▶ AI + Root Canal Segmentation

It assists doctors in quickly and accurately identifying the position, shape, and structure of root canals. This provides more precise diagnostic information and treatment planning, proving essential for root canal treatments, apical surgeries, and other dental procedures.

MILESTONE

2011

LargeV Instrument Corp., Ltd. was founded on March 11.

2013

Passed TüV ISO 13485 quality management system certification and CE certification. Achieved the title of "National High-tech Enterprise."

2016

The Multifunction Dental CBCT Smart3D was granted certification from NMPA.

2018

Awarded with "Edgy Technology Enterprise" by Beijing Pharmaceutical Profession Association and selected as "Zhongguancun Pioneering Technology Enterprise."

2020

Zhejiang langshi Instrument Corp., Ltd. was put into operation.

2022

Ultra3D, the world's first CBCT with dual-source and dual-detector was launched. Ultra3D has won the Red Dot Design Award.

2024

FusionScanner Digital Intraoral Scannar has obtained the Medical Device Registration Certificate. CBCT products have achieved MDR Certificate under the European Medical Devices Regulation.

2012

HiRes3D, the first seated Chinese CBCT model, was approved to enter the market.

2015

Awarded the first level prize of "Technological Invention" by the Chinese Society for Stereology Science and Technology. The first Chinese CBCT debuted at the International Dental Show (IDS) in Cologne, Germany.

2017

HiRes3D-Plus and HiRes3D-Max, professional dental CBCT models with super-large FOV were certified by NMPA.

2019

SmartVPro, the first professional dental CBCT radiology software in China, was certified by NMPA. CephPro3D, the first dental cephalometric analysis software, was certified by NMPA.

2021

Smart3D-X won the German iF Design Award.

2023

Customized Bracketless Aligner has been awarded the Medical Device Registration Certificate. "The Joint R&D Engineering Center of Intelligent Orthodontics" formed with Beijing Stomatological Hospital, Capital Medical University was formally established.

SPECIFICATIONS

Technical Specifications

Field of View	16cm × 10cm	15cm × 10cm	12cm × 10cm
	8cm × 8cm	8cm × 8cm	8cm × 8cm
	5cm × 8cm	5cm × 8cm	5cm × 8cm
Detector Type	CsI+TFT		
Tube Voltage	CT/PAN/CEPH	60-100 kV	
Tube Current	CT/PAN/CEPH	2-10 mA	
Exposure Time	CT	9.5 s / 12.5 s / 18.5 s	
	PAN	8.1 s / 18 s	
	CEPH	7.5 s / 10.1 s / 11.8 s	
Focal Spot Size	CT/PAN/CEPH	0.5 (IEC60336)	
Spatial Resolution	2.0 lp/mm		
Reconstruction Time	＜ 60 s		
Voxel Size	0.05-0.25 mm		
Weight	220 kg(485.02 lb)		

Product Size Display

1672-2372mm (5.49-7.78ft)
1029mm (3.38ft)
1916mm (6.29ft)

1455mm (4.77ft)
848mm (2.78ft)
1298mm (4.26ft)

Shielding Room Diagram

1646mm (5.4ft)
R536mm (1.76ft)
1940mm (6.36ft)
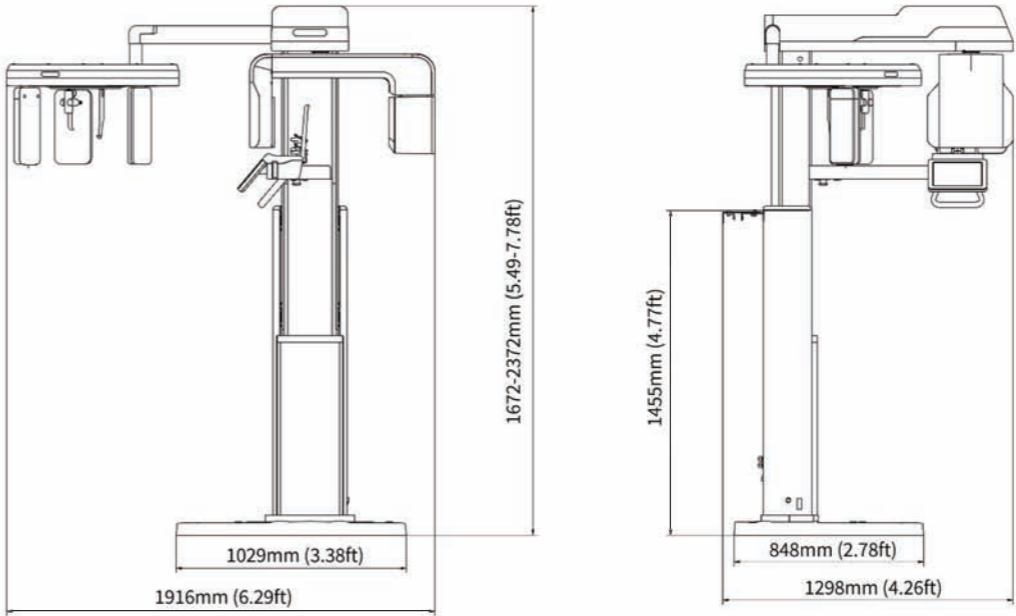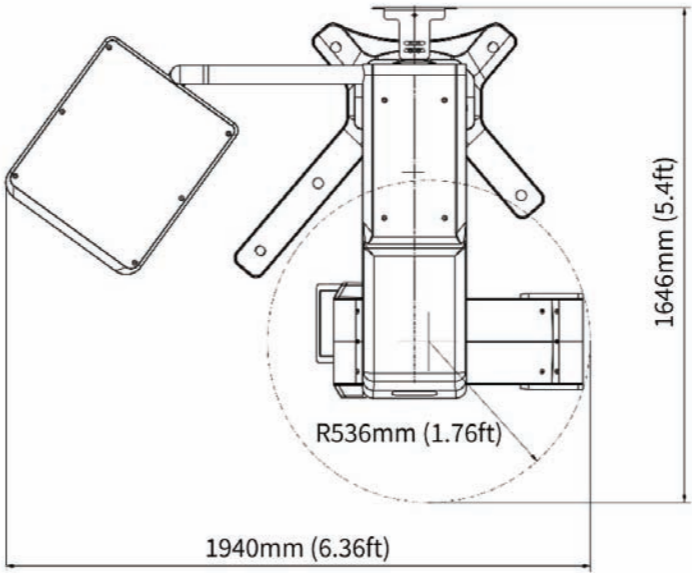
LargeV Instrument Corp., Ltd. was founded in 2011 and committed to the development and industrialization of high-end medical devices. The core team of LargeV was graduated from Tsinghua University and has a solid foundation in the technical fields of computed tomography, radiation protection, and image processing. We insist on a customer-centric business philosophy and focus on innovation and excellence.
Our mission: Provide doctors and patients with superior products and services.
Our vision: Be the world's leading manufacturer of medical equipment.

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CE MDR NMPA

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