PERLOVE MEDICAL

Digital Intraoperative 3D C-arm System

PLX C7600 series

BROCHURE

Part 1. Company Introduction

➢ Company Profile

Ever since Perlove Medical was founded in 2003, the company has been a high-tech enterprise integrating the research, production, sales and service of medical imaging equipment and orthopedic surgery robots. Although the concerns of these activities are different, one thing remains the same: Perlove Medical is customer demand-oriented and has always demonstrated a strong commitment to society with qualified products and services. As a high-tech enterprise, Perlove Medical firmly engages in self-research and technological innovation to make products meet clinical demands and continuously promote medical technology. All this is to help improve global healthcare and reduce medical costs. Located in Nanjing, China, Perlove Medical's products are serving clients in over 100 countries and districts across the globe.

➢ Company Strength

- ✧ **More than 200 patents of R&D**
- ✧ **Over 20 years of technology accumulation**
- ✧ **Quality control system**
- ✧ **Worldwide service network**

Part 2. Product Description

Perlove Medical is the first manufacturer to master 3D imaging technology in China, and now has more than ten years of intraoperative 3D imaging technology. Based on the first flat panel 3D C-arm, Perlove Medical further upgraded the technology and configuration, and launched a new high-power flat panel 3D C-arm PLX C7600 series.

PLX C7600 series can perform rapid intraoperative 3D scanning, generating CT-like images and 3D images to guarantee the precision of implant placement. At the same time, the series is equipped with the high-quality imaging chain to ensure image quality. It is widely used in orthopedics, spine surgery, traumatology and other departments.

Product Features

Intraoperative CT-like Images	● Large field-of-view 3D imaging ● Ultra-thin slice thickness ● Isocentric design ● Large-angle fast scanning
High-quality Image Chain	● Maximum 25kW output power ● Large flat panel detector ● Rotating anode tube with high heat capacity ● Active circulating cooling water system
Extensive Applications	● Orthopedics, traumatology and spine surgery ● Linked with navigation and robotics systems
Easy Operation	● Motorized motion control ● Adjustable SID ● Three-way laser localization ● Easily-sterilized design
Radiation Protection	● Removable grid ● Multiple radiation protection

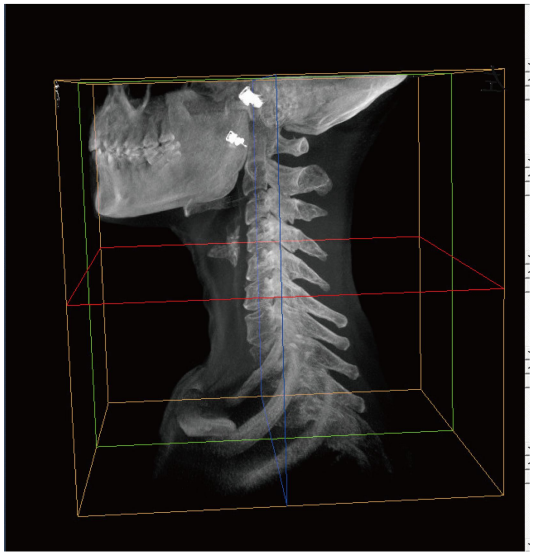
2.1 Intraoperative CT-like Images

The PLX C7600 series generates transverse, sagittal, coronal, and rotatable 3D images, allowing the surgeon to see real-time CT-like images of the patient's lesion in the operating room, helping the surgeon to assess the surgical outcome in a timely and comprehensive way.

➢ Large field-of-view 3D imaging

With a 3D imaging range of up to 17.5cm^3, more anatomical information can be presented in one imaging, such as:

- ✓ Whole cervical spine
- ✓ Whole lumbar spine
- ✓ Seven thoracic vertebra
- ✓ Bilateral sacroiliac joints
- ✓ Femur and unilateral pelvis



➢ Ultra-thin slice thickness

One 3D scan can generate 400 tomographic images in all dimensions, with a slice thickness as low as 0.42 mm, and more details in all cross-sections. The relative position of the implant and the vertebral body can be more accurately determined during screw implantation. In surgery, it can identify the tiny lesions and help the surgeon to locate them accurately.

➢ Isocentric design

The PLX C7600 series adopts an isocentric design, avoiding the movement of the C-arm frame in the horizontal and vertical directions during 3D image acquisition and always keeps the exposed part in the X-ray's center, which reduces motion artifacts and improves image clarity.

➢ Large-angle fast scanning

The model can quickly complete a 190 ° sweep in 30 seconds and 3D image reconstruction in 8 seconds, with faster scanning speed, more comprehensive acquired information, and more accurate reconstructed 3D images.

Currently, mobile C-arms use volume rendering techniques to realize intraoperative 3D imaging. The quality of 3D images generated by volume rendering relies on the acquisition of 2D images at different angles under fluoroscopy. The PLX C7600 series has an acquisition angle of 190°, which exceeds the industry standard of 180°, and the reconstructed 3D information is more accurate.

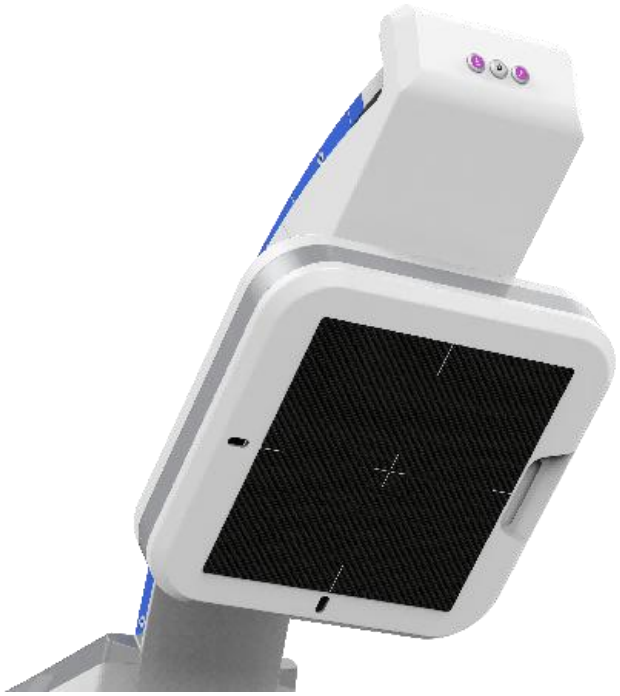
In addition, the fast scan mode can complete the 3D scan in only 30 seconds, which allows for timely examination and adjustments of cement dispersion when performing vertebroplasty.

2.2 High-quality Image Chain

The PLX C7600 series adopts high-end image chain components in the industry and uses an advanced active circulating cooling water system to guarantee image quality and working performance.

➢ Stable high-power generator

The maximum output power of PLX C7600 series is 25kW, which effectively meets the imaging requirements of pulse fluoroscopy for obese patients or thicker tissues, fully satisfying the need for instantaneous exposure during digital radiography.



➢ Large flat panel detector

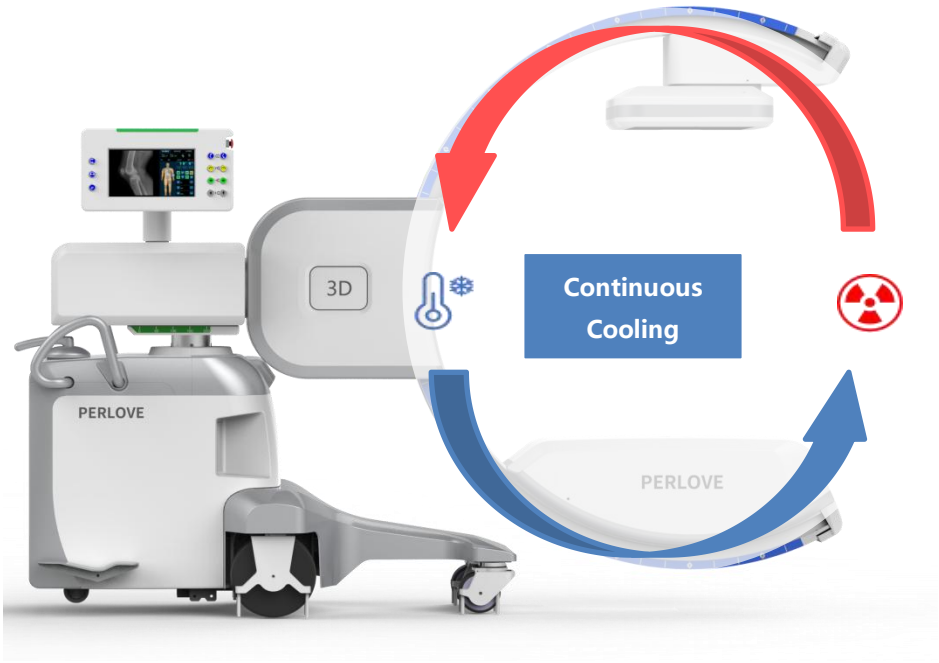
The PLX C7600 series is equipped with a 30 cm * 30 cm (12-inch) large flat panel detector with a wide field of view that can cover the entire lumbar spine or the entire pelvis. In clinical use, one exposure can be used to localize the surgical site, greatly improving surgical efficiency.

The flat panel detector has up to 4 million pixels, which highly improves the spatial resolution and signal-to-noise ratio, and the imaging performance is superior. It guarantees the image resolution and improves the image clarity, helping surgeons to clearly observe the tiny tissue structure.

➢ Rotating anode tube with high heat capacity

In order to meet the demand for high-power fluoroscopy, the PLX C7600 series adopts a high-speed rotating anode X-ray tube, which rotates at 2,800 rpm and has a heat capacity of up to 5,200 kHu. The excellent performance of the tube guarantees image quality and stable operation even under long-term high-intensity work.

In addition, compared with the stationary anode tube, the rotating anode tube has a smaller focal spot, and the X-ray beam is relatively concentrated under the small focal spot, which further improves the image quality.



➢ Active circulating cooling water system

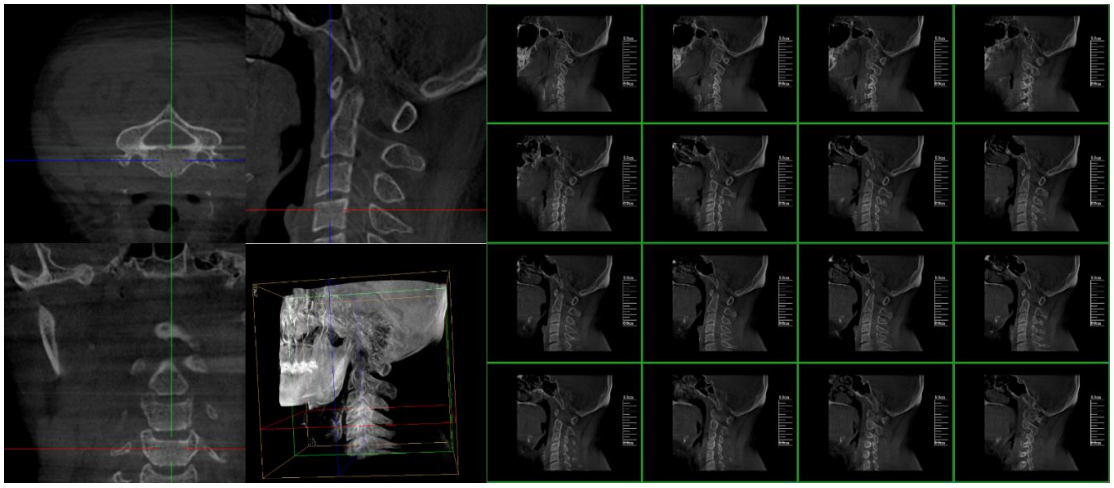
The PLX C7600 series is equipped with an advanced active circulating cooling water system, which continuously cools down the high-voltage generator and the tube through a powerful liquid cooling system, further improving the heat dissipation efficiency, preventing the surgical process from being affected due to the overheating protection, and allowing the C-arm system to operate stably during complex surgeries that require long-time fluoroscopy.

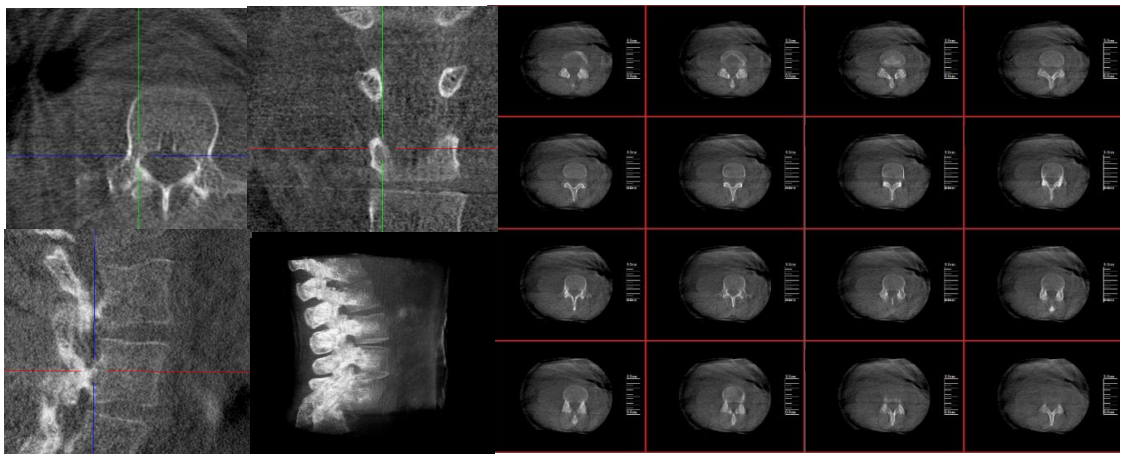
2.3 Extensive Applications

With great performance and image quality, the PLX C7600 series can be applied in orthopedics, traumatology, spine surgery, and osteotomy orthopedics to provide 2D fluoroscopic images and intraoperative 3D images. It has a wide range of clinical applications.

- **Orthopedics, traumatology and spine surgery**

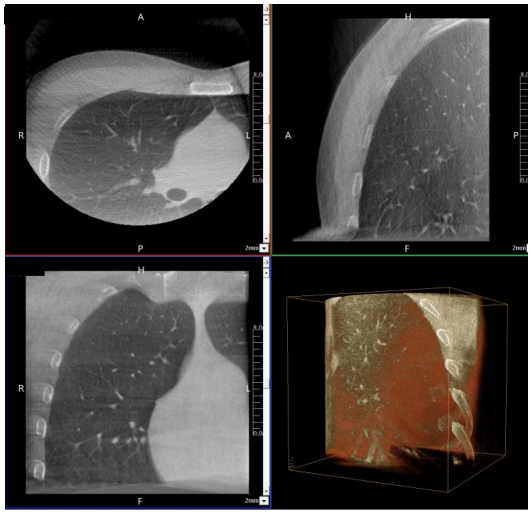
The PLX C7600 series can provide 2D and 3D images during the surgery. In orthopedic surgery, it can assist surgeons in completing internal fixation, screw implantation, joint replacement, anatomic restoration, osteotomies and other procedures. It effectively improves implantation accuracy and reduces the probability of complications. Meanwhile, the 3D image can comprehensively present the information about the lesion, reduce the 2D exposures, lower the radiation absorption, and shorten the operation time.





➢ Respiratory intervention

The PLX C7600 series can meet the clinical needs of pulmonary diagnosis and treatment, such as fluoroscopic monitoring, localization of lesions and surgical tools, and monitoring of ablation zones. The C-arm can assist doctors to complete bronchoscopy and localization of pulmonary nodules.



In addition, compared to CT and interventional angiography systems, the PLX C7600 series is smaller and easier to move, making it more suitable for operating rooms with limited space.

➢ Linked with navigation and robotics systems

With an open platform, the PLX C7600 series can integrate seamlessly with navigation and robotics systems. It can wirelessly transmit 3D data to the navigation or robotics system. Real-time guidance and planning through intraoperative images can assist surgeons in positioning surgical instruments and implants, providing the possibility of a digital and intelligent operating room.

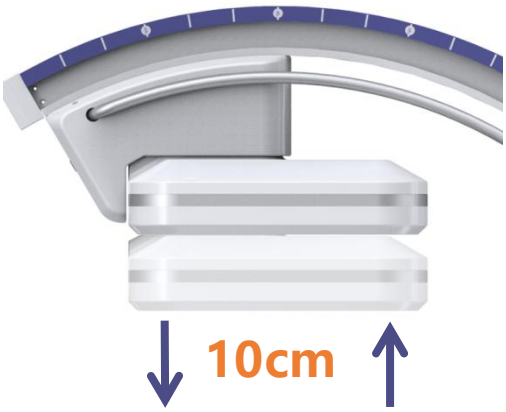
2.4 Easy Operation

➢ Motorized motion control

All the motion dimensions of the equipment are motorized, and the position or projection angle can be adjusted by pressing the button. Compared with manual control, the motorized control is simpler and more convenient, and the operation is stable and safe. The stroke and rotation angle of the motion can be visualized through numerical values, making the position more accurate.

➢ Adjustable SID

The PLX C7600 series allows flexible SID adjustment to control the C-arm opening. When the detector is raised, the C-arm opening space is increased, expanding the surgical operation space and making it easier for surgeons to perform positioning. When the detector is lowered, it can be closer to the exposed part, which not only expands the imaging field of view but also facilitates surgical positioning.



➢ Three-way laser localization

The PLX C7600 series adopts three-way laser aimers for better positioning, which not only guides the surgeon to localize the lesion in the horizontal and longitudinal directions but also in the vertical direction. Whether it is 2D fluoroscopy or 3D scanning, it can project a light crosshair, indicating the center of the X-ray collimator enabling alignment of the C-arm without X-rays and improving positioning efficiency.

➢ Easily-sterilized design

The cable is hidden between the C-arm and the base, easy to install a sterile cover and avoiding contamination caused by exposed cable.

2.5 Radiation Protection

- **Removable grid**

Equipped with a pluggable high-density filter grid, it can effectively filter scattered X-rays, improve image contrast and reduce haze. At the same time, for dose-sensitive people, the grid can be manually removed and installed, which can reduce the exposure time and reduce radiation absorption.

- **Collimator preview function**

The PLX C7600 series is equipped with a collimator preview function, which can reduce unnecessary exposure testing by previewing the effective exposure field of view on the screen, thus reducing radiation damage to medical staff and patients.

- **DAP**

An intelligent DAP monitoring system can record the single examination dose in time and manage the radiation absorption of patients.

- **Digital filter**

The filter can reduce soft X-rays and lower the radiation dose.

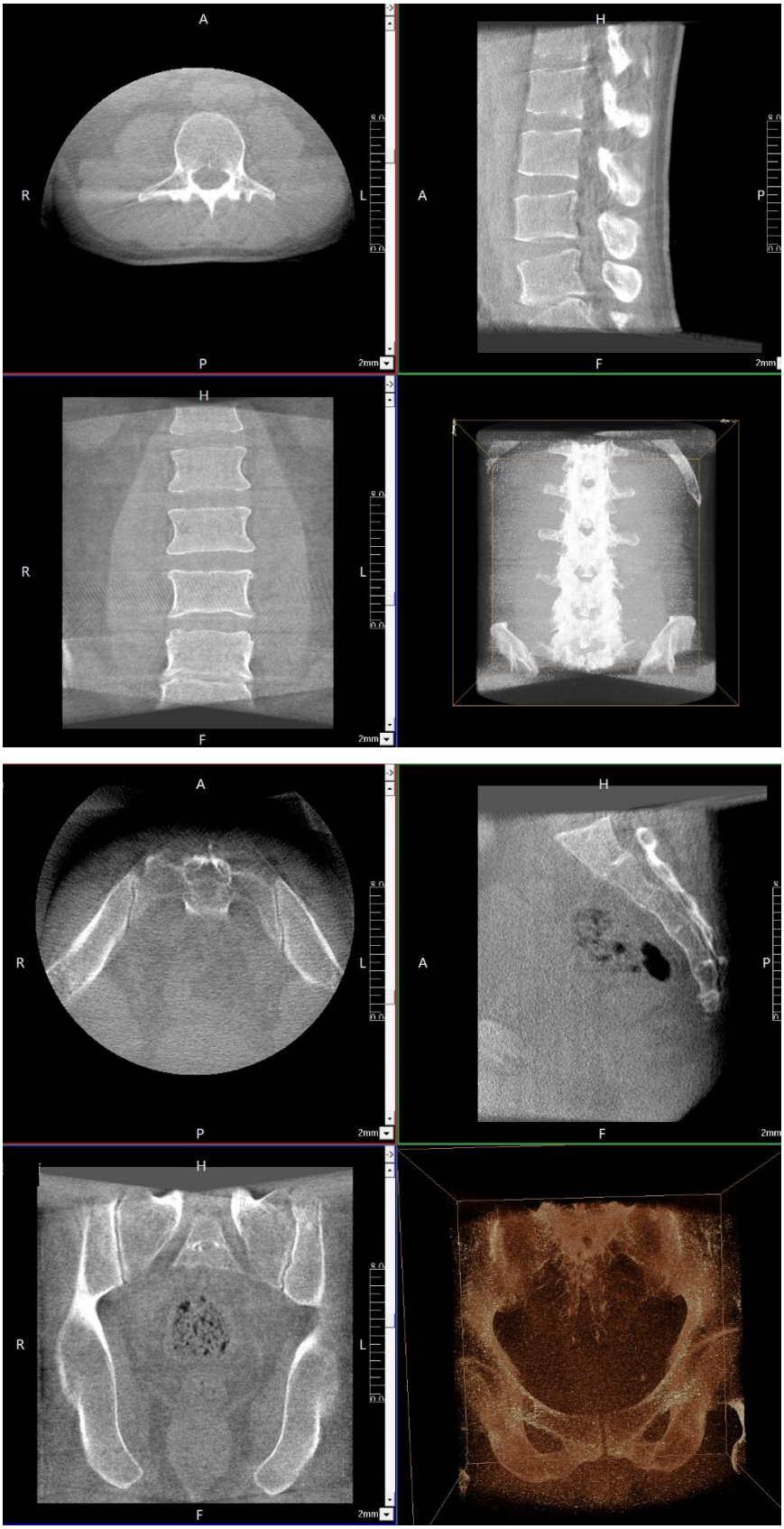
- **Low-dose mode:**

If in low-dose mode, it can significantly reduce the exposure and radiation dose in simple body parts such as limbs.

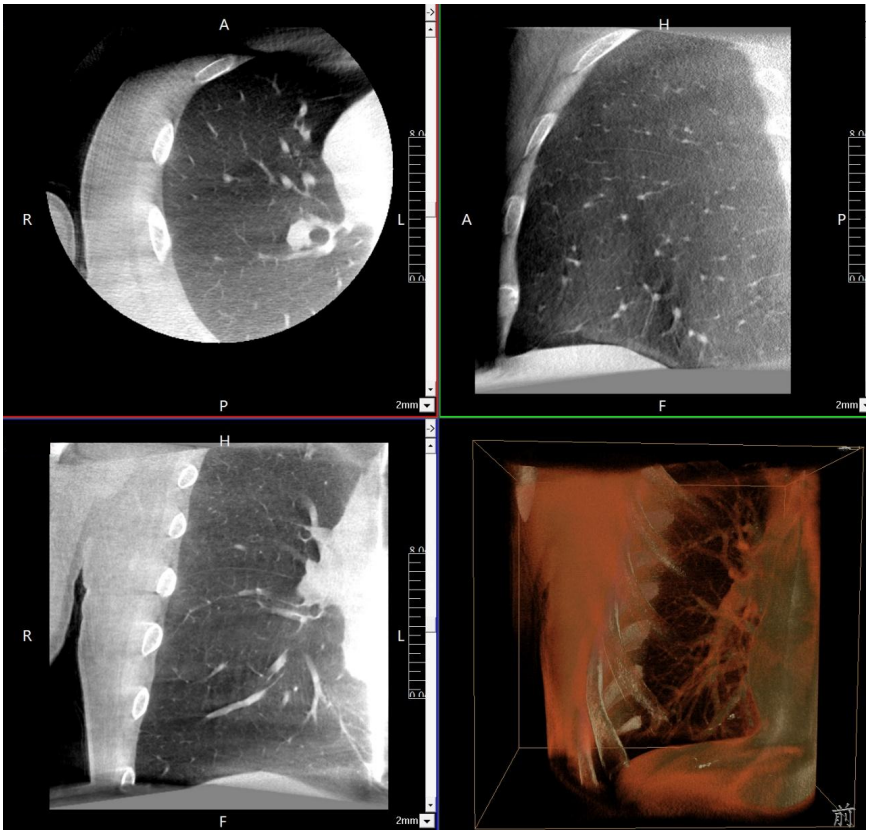
- **Intelligent parameter control**

Combined with intelligent hardware and closed-loop software algorithms, the system can adjust the optimal parameters in real time to ensure a good reading experience.

Clinical Images



Clinical Images



Part 3. Service

Move forward steadily, keep improving

- Professional service team for pre-sales, in-sales and after-sales
- More than 100 overseas local engineers in 60 countries
- More than 100 Chinese after-sales engineers serve the world
- Cooperate with professional sea, air and land logistics to ensure safe delivery

After-sales Service Centers All Over the World

- Reply within 24 hours
- Sufficient accessories, quick solutions
- 7/24 hours remote after-sales service
- Barrier-free commu -nication in English
- Qualified training and issua -nce of operation certificate

Since Perlove Medical's establishment in 2003, it has provided high-quality products and services to nearly 10,000 customers around the world!