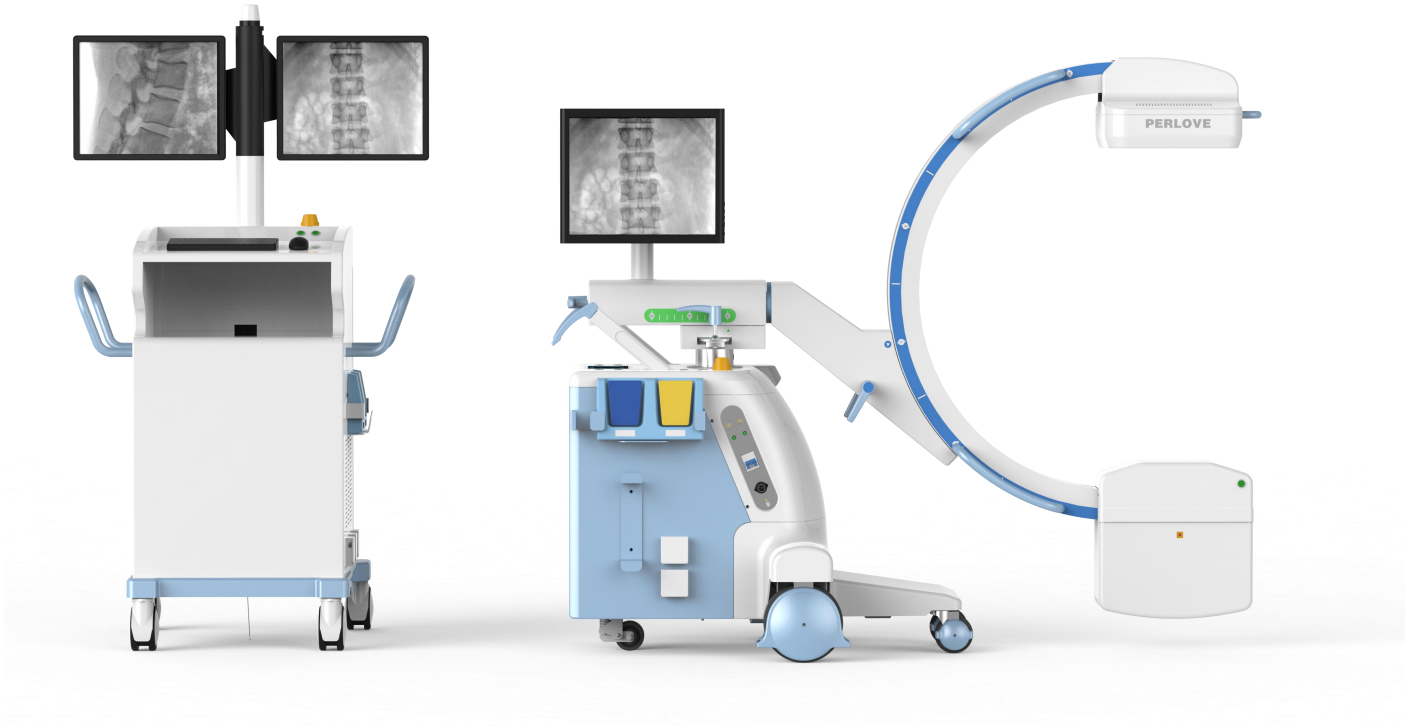
PERLOVE MEDICAL

Mobile Digital FPD C-arm System

(PLXC 1118A)



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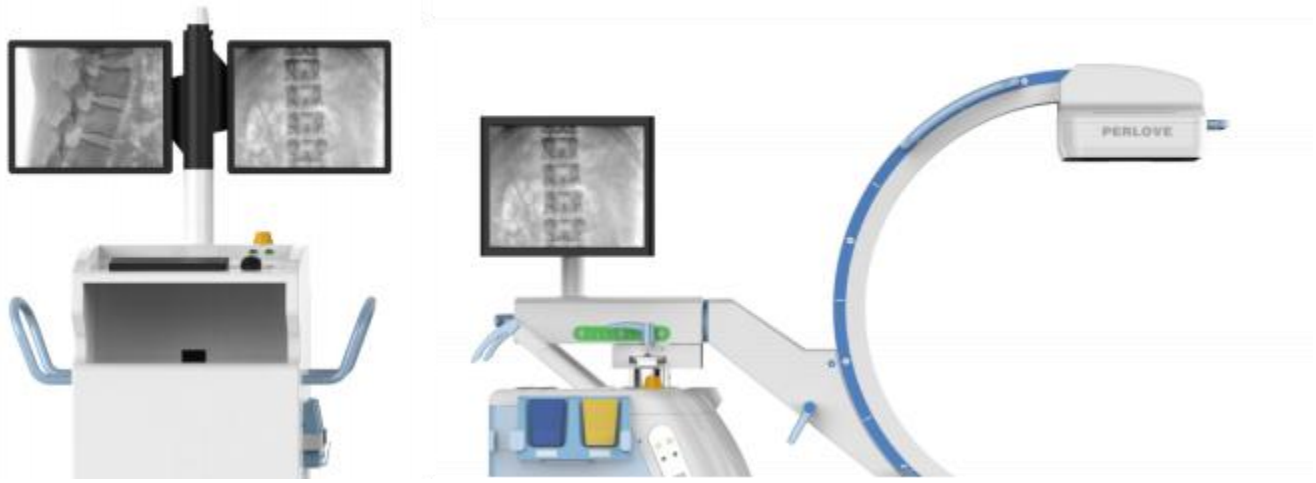
Company Introduction

Perlove Medical, established in 2003, is a high-tech enterprise integrating the R&D, production, sales, and after-sales service of medical X-ray imaging equipment. We always adhere to customer demand and are dedicated to providing high-quality products and services to global medical institutions. Meanwhile, Perlove Medical has consistently persisted in independent R&D and technological innovation, helping to improve medical conditions and reduce healthcare costs worldwide by staying close to clinical needs and constantly advancing medical technology. Headquartered in Nanjing, China, Perlove Medical exports its products to more than 180 countries and regions.

The main catalog of medical radiology equipment:

1. Mobile Digital Radiography System (Mobile DR);
2. Floor-mounted Digital Radiography Equipment; Floor-mounted Dynamic Digital Radiography Equipment;
3. Floor-mounted Digital Radiography and Fluoroscopy Equipment;
4. High-frequency Mobile C-arm System (Image Intensifier C-arm, Flat Panel Detector C-arm, DSA C-arm, Integrated Design C-arm).

Product Information



The **PLXC 1118A** is a dynamic flat-panel mobile C-arm system specifically designed for orthopedics. Equipped with the latest amorphous silicon dynamic flat-panel detector, it is a mobile device perfectly suited for orthopedic clinical needs. This product provides clear imaging effects while maintaining the characteristics of a standard mobile C-arm, thereby optimizing the operational environment for orthopedic surgery.

Clinical Applications : Orthopedics, general surgery, trauma surgery, urology, spine surgery, pain management, gastroenterology, oncology, obstetrics and gynecology, and other departments..

General Surgery

Orthopedics

Spine Surgery

Gynecology

Emergency Department

Urology

Trauma

Pain Management

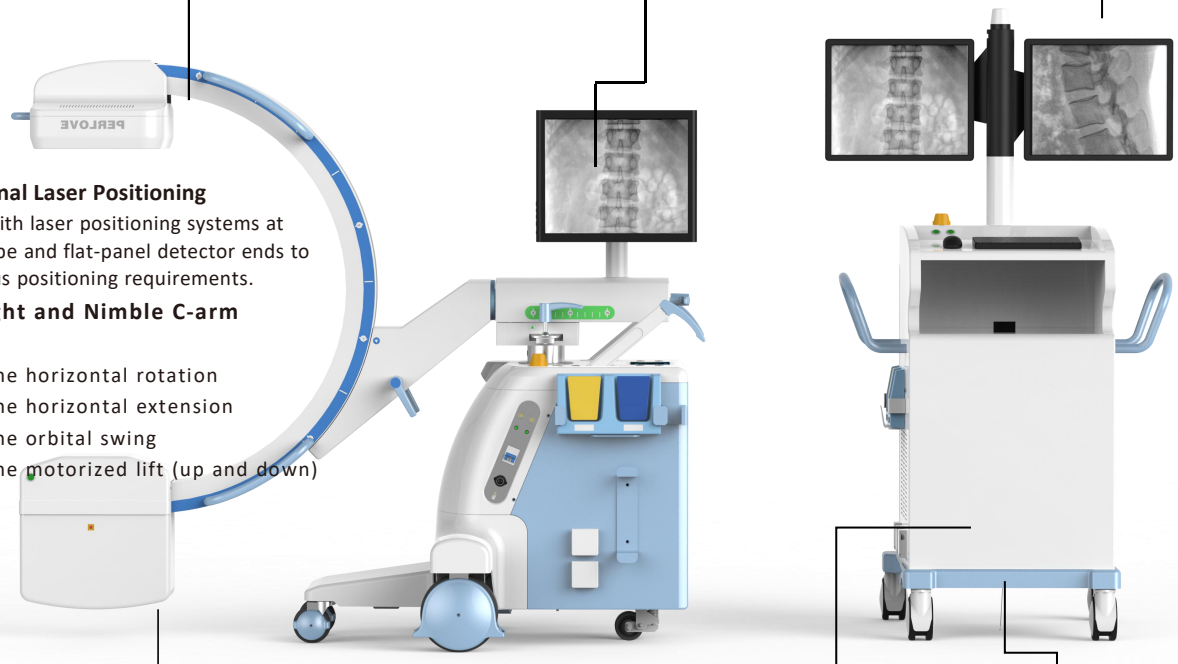
Configuration:

Dynamic Flat Panel Detector

Utilizing the latest dynamic flat panel detector, it features a large field of view, high resolution, high dynamic range, low noise, and zero distortion, all while being compact and lightweight ;
The 9" x 9" effective imaging area can meet various fluoroscopy requirements for common clinical applications;

User-friendly User Interface
Characteristic human body perspective parameters
can be preset for different patient body types and examination sites, making it easy to operate;

19-inch LCD Monitors (3 sets)
Grayscale liquid crystal display with higher resolution and excellent image quality.



Bidirectional Laser Positioning
Equipped with laser positioning systems at both the tube and flat-panel detector ends to meet various positioning requirements.

Lightweight and Nimble C-arm Design
C-arm frame horizontal rotation
C-arm frame horizontal extension
C-arm frame orbital swing
C-arm frame motorized lift (up and down)

Integrated X-ray Tube
Featuring a high-quality integrated high-frequency X-ray generator, it can significantly reduce the amount of X-ray radiation.

Utilize a Gigabit network to connect to the dynamic flat-panel detector; provide the Dicom 3.0 international standard interface, which facilitates connection to the PACS system for transmission and printing.

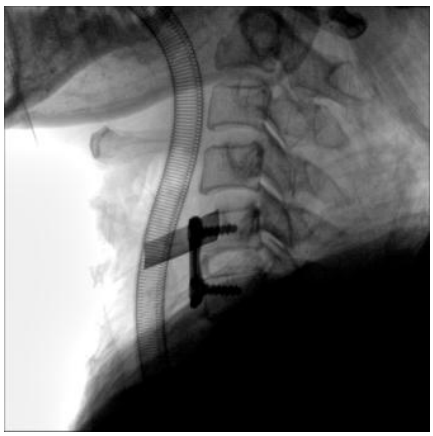
The image processing software adopts a unique GPU-based Rapid Dynamic Image Processing and Display System (RCDPS), featuring advanced enhancement processing technology.

1	Mobile C-arm Stand	1 set
2	X-ray Tube Assembly	1 set
3	Collimator	1 set
4	Anti-scatter Grid	1 set
5	Flat Panel Detector (FPD)	1 set
6	LCD Monitor	3 units
7	Image Processing Workstation	1 set
8	Medical Imaging Software Package	1 set
9	DAP Monitoring System	1 set
10	Laser Line Localizer	4 units
11	Wired Exposure Foot Switch	2 sets
12	Wired Handheld Motion Controller	1 set

Specifications:

Items	Specifications	
Input Power	Maximum output power	5kW
	Main inverter frequency	110kHz
	Continuous fluoroscopy mode (Manual/Auto):	
	Continuous fluoroscopy tube voltage	40kV ~ 120kV
	Continuous fluoroscopy tube current	0.3mA ~ 4.0mA
	Pulsed fluoroscopy (Manual/Auto)	
	Pulsed fluoroscopy tube voltage	40kV ~ 120kV
	Pulsed fluoroscopy tube current	0.3mA ~ 30mA
	Radiography mode (Photography)	
	Radiography tube voltage	40kV ~ 120kV
	Radiography tube current	25mA~100mA
	Radiography mAs	1mAs～280mAs
	Maximum current for single spot film	15mA
	DSI (Digital Spot Imaging)	Included
	Intelligent Brightness Stabilization (IBS)	
X-ray Tube	Dual focus size	0.3/1.5
	Maximum anode heat capacity	35kJ (47kHU)
	Tube heat capacity	650kJ (867kHU)
C-arm Frame	Main wheel rotation range	±90°
	Rotation around vertical axis	±15°
	Horizontal travel range	200mm
	Rotation around horizontal axis	±180°
	SID (Source-to-Image Distance)	1000mm
	C-arm opening distance	800mm
	C-arm arc depth	660mm
	Orbital sliding (along the track)	135°
	Motorized column lift range	≥400mm
Dynamic Flat Panel Detector (FPD)	Flat panel detector scintillator type	Cesium Iodide (CsI)
	Flat panel detector type	Amorphous Silicon (a-Si)
	Imaging size	9 inches x 9 inches
	Image acquisition matrix	1024 × 1024
	Image acquisition grayscale levels	16bit
	Pixel size	205 microns
	DQE (Detective Quantum Efficiency)	74%
	Spatial resolution	2.5LP/mm

Clinical Images:



Advantages:

1-Effective low-dose X-ray source guarantee
2-Effective fully digital image acquisition system guarantee
3-Effective image processing system guarantee
4-Effective display system guarantee
5-Effective intelligent control system guarantee
6-Humanized mechanical structure design guarantee

1. Reliable Guarantee of Low-Dose X-ray Source

X-ray Tube:

The PLXC 1118A features a high output power reaching 5kW. This technology ensures the requirement for instantaneous high-dose continuous exposure during digital spot radiography and high mA pulse acquisition.

The PLXC 1118A adopts a unique tube design (advanced tube heat dissipation technology), which significantly improves the overall heat dissipation efficiency and the long-term operational capacity of the device. The tube can operate for extended periods under continuous pulsed fluoroscopy.
The micro-focus design results in sharper and clearer images.

High Inverter Frequency: 110 kHz
To ensure that the imaging equipment provides sufficient and efficient X-ray quality, the X-ray source utilizes high-frequency inverter technology. While the main inverter frequency of some similar brands is around 40 kHz, the PLXC 1118A reaches a high frequency of 110 kHz, which is more than 100% higher than standard products.

The inverter waveform presents a rectangular wave with low scatter lines, which eliminates the generation of soft radiation at the source, ensures precise radiation dose control, and fundamentally improves the quality of the X-ray source.

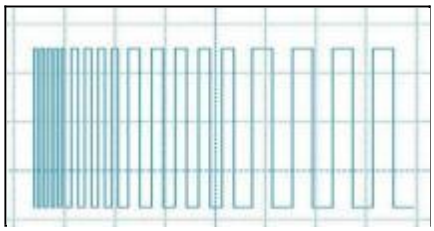
The high-voltage generator is fully digitally controlled, offering high precision, strong stability, and excellent repeatability.

Electric Adjustable Collimator
Complex clinical operations demand stricter requirements for the light field, necessitating high-quality light field control systems.

The PLXC 1118A adopts a linear symmetrical electric adjustable beam limiter to achieve both horizontal and vertical light field control. This component effectively adjusts the projection field of view, reduces scattered radiation, and improves the image signal-to-noise ratio (SNR).

Furthermore, X-ray radiation doses can be minimized by shielding unnecessary rays, thereby reducing radiation damage to both medical personnel and patients.

Intelligent Pulse Technology:

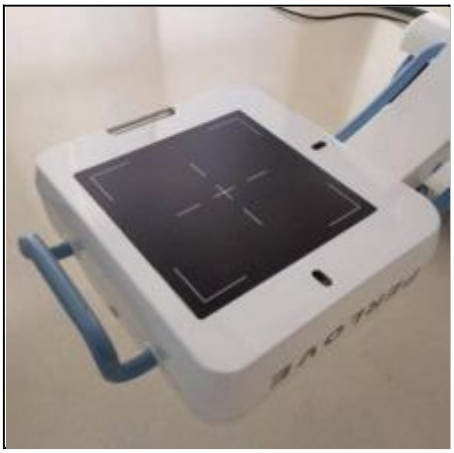


The PLXC 1118A incorporates internationally leading intelligent digital pulse dose control technology. The application of real-time continuous pulsed fluoroscopy technology enables arbitrary multi-frequency adjustment of high instantaneous mA output, meeting the multi-pulse frequency requirements of various clinical procedures while providing high-quality images for accurate diagnosis.

In pulse mode, the fluoroscopy tube current reaches 30 mA, which is significantly higher than the fluoroscopy tube current of similar products. In this mode, users can easily obtain perfect ultra-high-definition image data to meet the needs of high-precision and complex diagnostic and treatment procedures.

The intelligent frequency conversion pulse design reduces the total radiation dose per unit of time by more than 60%, significantly lowering the radiation exposure received by the user. This technology is perfectly integrated with a high-quality imaging chain. While achieving superior image quality, it substantially reduces radiation damage to both physicians and patients, making the system truly "green" and safe.

2. Effective Guarantee of the Fully Digital Image Acquisition System



Removable Grid

Depending on the requirements of clinical procedures, it effectively enhances image contrast and reduces fogging. The PLXC 1118A image acquisition system features an integrated fiber grid, which effectively eliminates scattered radiation, improves image contrast, and reduces haze, providing a vital guarantee for image quality.

Large-Size Dynamic Flat Panel Detector (FPD)

The PLXC 1118A utilizes a dynamic flat panel detector with a wider field of view (FOV), delivering high-definition, distortion-free images. This ensures precise and reliable image data, enabling the capture of detailed and accurate information for small lesions and meeting the needs of various specialized clinical operations. Its high dynamic range allows for optimal detailed imaging of both human soft tissues and bone structures.

In lumbar spine, cervical spine, hand, and foot surgeries, the wider field of view reduces exposure frequency and radiation dose, prevents overlapping omissions, and shortens the overall operation time.

High-definition, distortion-free images provide precise and reliable information, addressing the diverse clinical needs of multiple hospital departments.

Compared to conventional Image Intensifier-based C-arms, the flat panel detector is less susceptible to external environmental interference during imaging. It offers essential improvements in Detective Quantum Efficiency (DQE) and spatial resolution. Furthermore, the images are free of saturation artifacts and distortion, exhibiting superior uniformity without "burn-out" (overly white) or "black-out" (overly dark) zones.
When imaging a target, the Region of Interest (ROI) is clearly displayed, significantly enhancing the precision and confidence of physicians during clinical treatment.

3. Efficient Image Processing System Guarantee

Standard dedicated digital workstation with powerful image processing capabilities:

The image processing software utilizes a unique GPU-based Rapid Contrast Dynamic Processing System (RCDPS), featuring multi-resolution image enhancement technology and anatomical-specific processing to precisely meet diverse clinical requirements.

The dedicated digital workstation features automatic gamma correction, enabling non-linear tone editing by adjusting the image's gamma curve. It optimizes the ratio between the dark and bright regions within the image signal, significantly improving contrast for an optimal visual effect.

The dedicated workstation includes an integrated, comprehensive, and professional expert report printing module. This module facilitates the effortless generation and printing of expert-level medical reports, effectively reducing physician workload and improving diagnostic efficiency.

Dedicated digital workstations with seamless storage capabilities. During fluoroscopy, both static and dynamic images can be captured and stored for real-time comparison, effectively reducing unnecessary repeat exposures.

The dedicated workstation applies high-capacity digital storage technology.
Fluoroscopy and spot film images are stored in a lossless digital format, allowing for rapid editing, encryption, and network sharing as required.

Throughout the imaging process, all initial test image acquisition sequences remain accessible at any time via the workstation, enabling detailed comparisons and systematic archiving.

Powerful Network Sharing Capabilities

Flexible choice between Worklist registration or manual entry, ensuring seamless integration with Hospital Information Systems (HIS). The open PACS/RIS communication protocol allows for rapid transmission of patient information.

Specialized digital workstation with standard DICOM 3.0 interface, fully compliant with international DICOM protocols. It connects seamlessly to HIS, RIS, PACS, and dry imagers, facilitating open resource sharing and effectively optimizing departmental workflow.

Portable storage of critical image data can be performed via DICOM DVD-RAM, supporting flexible import and export of medical records.

4. Efficient Display System Guarantee (Medical Monitor)

Medical Monitor

The PLXC 1118A is equipped with three 19-inch medical LCD monitors as standard. This configuration enables dual-monitor display both inside and outside the operating room, allowing the surgeon to observe images conveniently from either location and eliminating the need to move back and forth. The monitors support multi-angle rotation, ensuring clear image observation from various viewing perspectives.

5. Efficient Intelligent Control System Guarantee

The intelligent control system ensures a stable and smooth clinical workflow.

Intelligent Dose Control and Working Modes

The PLXC 1118A utilizes intelligent dose control technology to precisely and easily adjust radiation dosage according to different body types and anatomical regions. This allows operators to achieve lower doses while obtaining clearer diagnostic images in any environment. The intelligent dose exposure system works in tandem with real-time dynamic image optimization to ensure that image quality is always maintained at its peak state.

The PLXC 1118A offers a variety of working modes to meet diverse clinical imaging requirements. High-dose and low-dose modes can be switched rapidly. Regarding dose adjustment, users can toggle between intelligent and manual modes at will. For complex surgeries, "Composite Mode" can be selected, while "Single Mode" is available for simpler procedures, providing multiple options for versatile applications.

The PLXC 1118A applies advanced anatomical graphical program control technology. Distinguishing itself from previous text and symbol-based parameters, the interface is primarily based on human anatomy graphics, making the visual effect more intuitive and the operation simpler and more convenient.

The anatomical programming (APR) technology features rich and precise parameter settings. With various selections for body parts and body types, it provides hundreds of human projection parameters. Furthermore, individual parameter settings can be saved based on user preferences to meet personalized clinical needs.

6.Parameter and Humanized Motion Control

The PLXC 1118A adopts an ergonomic LCD touch-screen control panel design and a handheld parameter controller. Users can perform various operations, such as working mode selection and parameter adjustment, directly on both the host unit and the workstation.

During surgery, users can perform remote or compartmentalized manipulations through the system. This includes free switching of working modes, parameter adjustments, beam limiter (collimator) control, and other complex operations.

The PLXC 1118A adopts a compartment exposure foot switch design. Through this advanced design, users can easily achieve remote exposure and perform surgical fluoroscopy with ease from a protected distance.