

# All-In-One Digital Fluoroscopy X-ray system

C260313001



**PRESENTATION OF PRODUCT**

## Part 02. Product Description

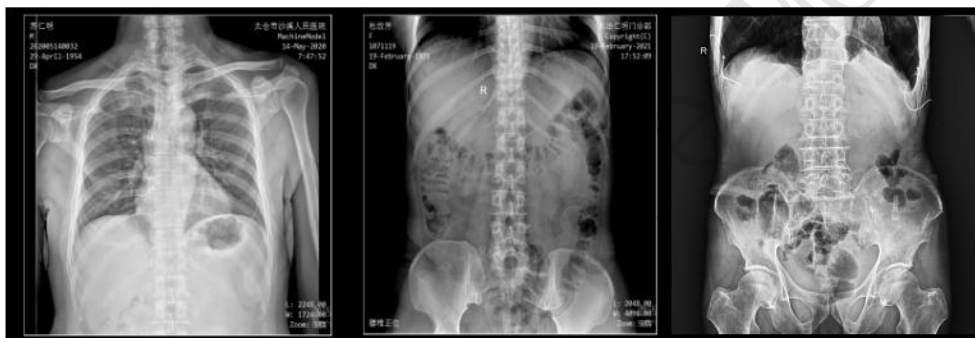
### ● Digital Radiography

Meet the radiographic examination of all parts of the human body, including conventional radiography, special radiography (image stitching), precise visual radiography, large-area fracture radiography, and large-scale physical examination radiography, suitable for all clinical departments of the general radiological department.



### ● Digital Fluoroscopy

Suitable for fluoroscopy of all parts of the body (such as chest, abdomen, etc.), fluoroscopic positioning, fluoroscopic puncture. It is used in gastroenterology, urology, gynecology, etc



### ● Digital Gastrointestinal Graphy

Suitable for gastrointestinal angiography, such as esophageal angiography, upper gastrointestinal angiography, total gastrointestinal angiography, etc. It is mainly suitable for gastroenterology and general surgery.



## ● Digital Angiography

Suitable for all kinds of general and special angiography, such as oral cholecystography angiography, intravenous cholangiography, T duct angiography, ERCP, IVP, hysterosalpingography, etc., mainly used in digestive surgery, urology, gynecology, etc.






## ● Visual Radiography

In fluoroscopy, millisecond high-definition spot imaging can be performed, and high-definition images can be obtained through multi-angle dynamic inspection, accurately capturing lesions, and avoiding missed diagnoses and misdiagnosis caused by blind shots; Rapid and accurate positioning of foreign objects, thereby greatly saving valuable rescue time; It has an irreplaceable role in the early detection of occult

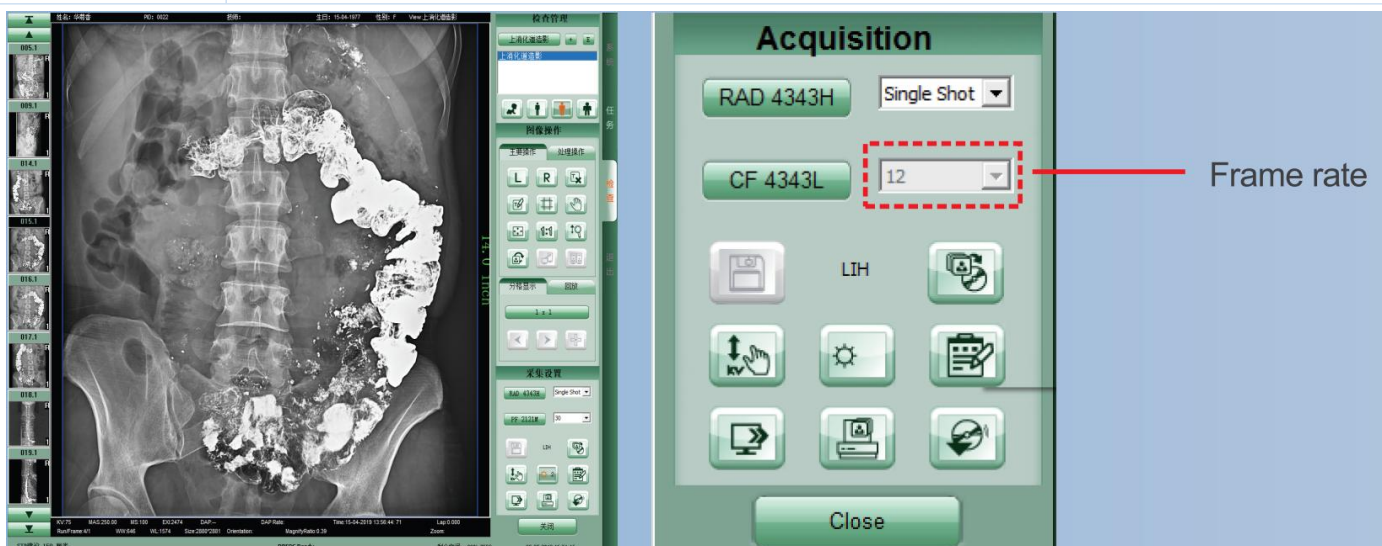


DRF all-in-one machine Application			
No	Digital Radiography	Dynamic Fluoroscopy & angiography examination	Others
1	Chest x-ray-PA	Dynamic cervical spine-Neutral,flexion Extension	Digital Subtraction Angiography (DSA) (optional)
2	Chest x-ay AP& LAT	Dynamic lumbar spine-Neutral,flexion Extension	Image-Stitching
3	Thoracic inlet AP&LAT	Dynamic lumbar spine-Neutral, Flexion and Extension	Tomosynthesis (optional)
4	Abdomen-Erect	Fluoroscopy of various parts of the body	Dual Energy (optional)
5	Abdomen-supine	Positioning under fluoroscopy	AEC (Optional)
6	Abdomen-erect & supine	Puncture under fluoroscopy	DAP (Optional)
7	Ankle- AP& LAT	Gastrointestinal tract angiography	
8	Leg- AP & LAT	Esophagography	
9	Femur- AP & LAT	Upper gastrointestinal tract (GI)	
10	Knee-AP & LAT	Total gastrointestinal tract angiography	
11	Hip- AP & LAT	Double contrast barium enema (DCBE)	
12	Pelvis-AP	Defecation angiography (DFG)	
13	Foot-AP & LAT	Oral cholecystography	
14	Sacroiliac joint- AP & Oblique	Intravenous biliary tract Angiography	
15	Hand-AP & LAT	T-tube angiography	
16	Wrist- AP & LAT	Hysterosalpingography(HSG)	
17	Forearm-AP & LAT	Retrograde Urethrography (RUG)	
18	Elbow joint-AP & LAT	Micturating cystourethrography (MCUG)	
19	Humerus-AP & LAT	Intravenous urogram (IVU)	
20	Shoulder joint-AP & LAT	Barium Enema	
21	Scapula-AP & LAT	Barium Swallow	
22	Clavicle-AP	Barium meal/follow-through	
23	Skull-AP & LAT	Distal colostography (DC)	
24	Sella turcica-LAT	Pediatric genitography	
25	Mandible-PA & Obliques	Fistulogram	
26	Maxilla-OM& LAT	Endoscopic retrograde cholangiopancreatography (ERCP )	
27	Paranasal sinuses-OF,OM &LAT	Intravenous Pyelogram (IVP)	
28	TMJ-both LAT with open and closed	Myelography	
29	Nasal bone-LAT	Intussusception	
30	Mastoid air cell-Townes & Oblique	Pediatrics Foreign body aspiration (FBA)	
31	Orbit-PA & LAT	Pediatrics Hypertrophic pyloric stenosis (HPS)	
32	Thoracic /Lumbar/Cervical spine-AP&LAT	Cystography	
33	Scoliosis /Sacrococcygeal spine-AP&LAT	Gastric cancer angiography	
34	Calcaneus /Toes/ tibia/fibula series	Lower Leg Venography	
35	Sinus and facial bone radiography	Urethrography	
	<b>MORE</b>	<b>MORE</b>	

## 2.2 High-quality Digital Image Chain

Item	Content	Technical Parameter
<b>Power</b>	Voltage	<b>380V±38V</b>
	Frequency	50Hz±10Hz
	Capacity	≥105kVA
	Internal Resistance	≤0.17Ω
<b>X-</b> 	<b>Power</b>	<b>65.5KW</b>
	<b>Inverter Frequency</b>	<b>500KHz</b>
	Radiography Tube voltage	40kV—150kV
	Radiography Tube current	<b>10mA—800mA</b>
	Radiography Exposure time	1.0~10000ms
	Radiography mAs	0.1mAs—1000mAs
	Fluoroscopy tube voltage	Non-industrial frequency
	Fluoroscopy tube current	0.5mA~10mA (Continuous fluoroscopy) 5mA~20mA (Pulse fluoroscopy)
<b>Collimator</b>	View light	LED lamp, DC3.6V/5W
	Brightness	>100Lux
	Visible light illumination	5s ~ 45s(Adjusted).
	Filter	≥1mmAL
<b>X-ray tube</b> 	<b>Model:</b>	<b>Canon E7254FX</b>
	Tube Focus: big/small	1.2mm /0.6mm
	Input power	180Hz: Big focus 102kW Small focus 40kW
	Anode thermal capacity	285KJ (400KHU)
	Rotary anode speed	9700rpm (180Hz)
	Target angle	12°
<b>Dynamic Flat Panel Detector</b> 	Active area	427(H)mm×427(V)mm
	Pixel matrix	3072(H)×3072(V)
	Pixel pitch	139 μm
	Pixel matrix	3072(H)×3072(V)
	Limiting resolution	≥3.71 line pair/mm
	A / D transition	16 bit
	Acquisition speed	<b>Up to 30fr/s</b>
	Energy range	40 - 150 kVp

<b>Diagnostic Table</b>	Table tilting range	+90°~0°~ -90°
	Detector vertical movement	1300mm
	Table Elevating	800mm (550-1350mm)
	Table top lateral movement	320mm
	Tube Swing	+45°~0°~ -45°
	SID stretch	1000mm ~ 1800mm
	Loading capacity	200KGS
<b>WorkStation</b>	<b>Computer System</b>	CPU: i5-7500 2M Gray Scale display RAM: 8GB Hardware: 500G+1TB
<b>Software</b>	<b>Basic operation:</b> Change control console password, edit ID, Acquiring images.	
	<b>Additional operation:</b> Add new check, edit present checking info, add new position, change image acquisition order, multi-checking agreement chance, manual adjustment of exposure parameters, automatic exposure control mode, focus choice, patient body-type choice, tube capacity check, ESA curve choice, image cutting, note added (sent to DICOM workstation), mark on images, rotate or overturn, full-size image observation, check patient info and dose info, accept or refuse images. Digital radiography working mode ,Digital fluoroscopy working mode ,One button switch	
	<b>Image management:</b> Change order, patient basic info editing, inquiry history images, resend history images, re-print history images, check images mark info, review history images, manage refused images, space reclaimed, image protection, and manual image deletion etc.	
	<b>System management:</b> ID edition, change ID password, ED refrigeration set, statistics info checking, detector calibration, equipment control, output order management, image measurement.	



◇ High rotating speed, fast heat dissipation and long service life.

## ➤ Self-developed high power and high frequency generator

- 500kHz ultra-high inverter frequency, 1000mA maximum tube current, stable radiation output, excellent radiation quality, good imaging effect.
- High-power high voltage generator to ensure high quality and stable radiation output.
- Guaranteed after-sales service, low maintenance costs.



## ➤ Dynamic FPD

- A dynamic FPD, realizing radiography, fluoroscopy and angiography functions;
- 17"\*17" ultra-high-definition pixel dynamic FPD, larger field of view, no need to move to observe the entire dynamic process;
- Advanced and efficient dynamic flat panel technology, the image with no geometric distortion, providing high-resolution and accurate images and accurate basis for clinical diagnosis;
- The maximum frame rate up to **30 fps**, clear and smooth dynamic acquisition, avoiding missed diagnosis and misdiagnosis;
- In the process of visualization or replay, if suspected lesions are found, millisecond high-definition spot shoots can be carried out to capture single-frame images at any time and accurately capture lesions, so that doctors can further diagnose and analyze, reduce misdiagnosis, and help to quickly compile reports.



## ➤ Automatic Electric Collimator

- ✧ Quickly select and preset the desired field of view, saving time in positioning;
- ✧ According to shooting needs or technicians' usage habits, one key switches the beam range, efficient and convenient. The conventional beam limiter can only automatically switch the two beam ranges of radiography and angiography, and the automatic electric collimator can automatically adjust the beam size according to different body position, which is more intelligent and greatly improves the inspection efficiency.



## ➤ Double high-density grids

- ✧ The function of the high-density filter grid to filter scattered rays is better, which can further improve the image quality;
- ✧ Two high-density grids as standard, special distance dedicated;
- ✧ The grid can be removed for low-dose examinations.



## 2.3 Intelligent Multi-functional Mechanical Design



### ***Elevating table top min 55cm to the ground, Max 1350cm***

1. it is convenient for the elderly, children, critically ill patients, and those with mobility issues to get on and off the table. greatly reduce the work intensity of medical staff, bringing patients and medical staff more comfortable examination. Experience.

2. Avoid second injuries: the height of hospital transfer bed is around 60 cm normally, our equipment can be elevated lower the height, so that the patient can directly move over without lifting it up, saving manpower; avoiding second injuries during the movement,

3. Up to 1350cm is convenient for doctors to operate near the table by adjusting different heights according to needs, making the doctor's operation more comfortable and various angiography more convenient, especially like ERCP



### ***Tube stand swing $\pm 45^\circ$***

With the function of tube swing arm, it can take angle films of special parts such as the root of the ankle and the axis of the patella. At the same time,  $\pm 45^\circ$  is the largest swing angle in the industry. It can shoot more special parts and expand the scope of the hospital's business.



### ***The SID can be able to stretched to 1.8 meters***

to meet the needs of various filming distances in the radiology department, and only such products can be used as both DR and digital gastrointestinal.



### ***Table tilting $\pm 90^\circ$***

The larger the lifting range, the better the flow direction and speed of the contrast agent can be controlled. it adopts the dual-motor axial symmetry design, which runs more smoothly and with less noise, which can bring more benefits to patients and operators. Comfortable inspection experience, and can effectively extend the service life of the machine. In addition, the ultra-large range of  $\pm 90^\circ$  is more effective for angiography of special parts of the human body, such as myelography, colonic double-gas barium angiography, etc.

Rotating foot pedal



### ***360°rotating foot pedal***

With the humanized design ,doctors can remotely adjust the patient's position by remote control in the compartment, especially for patients who cannot cooperate. Avoid cross-infection, and bring a more comfortable inspection experience to patients and medical staff.



### ***Free column moving***

Whether it is working in DR or DF mode, the electric moving subject can match the irradiation field in a more suitable position, which is more efficient in clinical operations, especially for obese subjects.

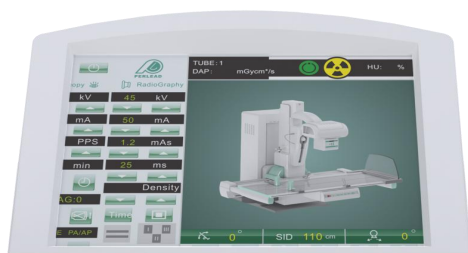
## ➤ **2.4 Intelligent System**

### ➤ **LCD Workstation**

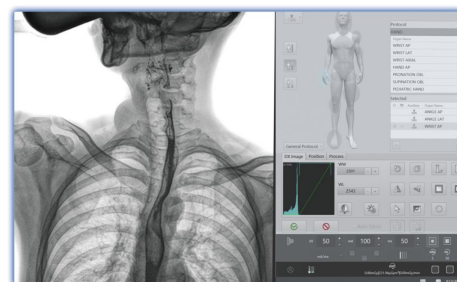
- ✧ It can not only adjust the exposure parameters, but also control the bed and tube movement by remote sensing, which is convenient for doctors to carry out clinical examination with extremely high intelligence
- ✧ All operation buttons are accompanied by text and icon prompts, which is simple and convenient.

### ➤ **Efficient and Convenient Software Operating System**

- ✧ Intelligent image acquisition and processing workstation, with integrating registration, radiography control, image processing and transmission, report printing and other functions.
- ✧ Humanized menu design makes the operation more convenient. It can switch fluoroscopy and radiography with one button to optimize the workflow.
- ✧ Excellent image post-processing technology, effectively reducing the dose and improving image quality.



LCD Touchscreen Workstation



Software Operating System

➤ **Mechanical Movement Remote control**



Smart control joystick



Table-side buttons

➤ **Intercom Speaker System**

- Easily talking with patients for How to adjust positioning  
When doing fluoroscopy with Contrast.

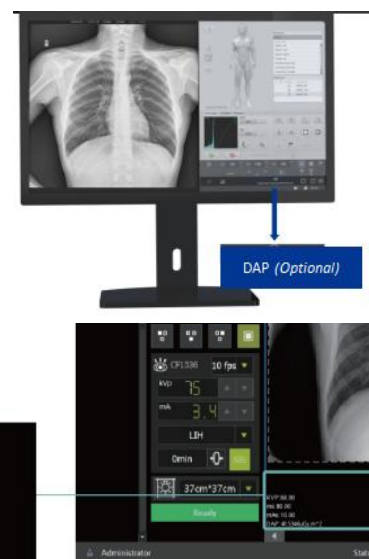


**2.5 Optional powerful functions**

➤ **DAP Function (Optional)**

**DAP monitoring•Visualized data for safety and health**

- ✧ The first industrial manufacturer to adopt DAP monitoring system with deep technical accumulation.
- ✧ Intelligent DAP monitoring system can record the single examination dose and manage the radiation absorption of patients.
- ✧ DAP monitoring is an important functional index to measure the quality of X-ray machine, and it is also a necessary function to export to European and American countries.



**DAP**

KVP: 88.00  
ms: 80.00  
mAs: 10.00  
DAP: 41.5346uGy.m<sup>2</sup>

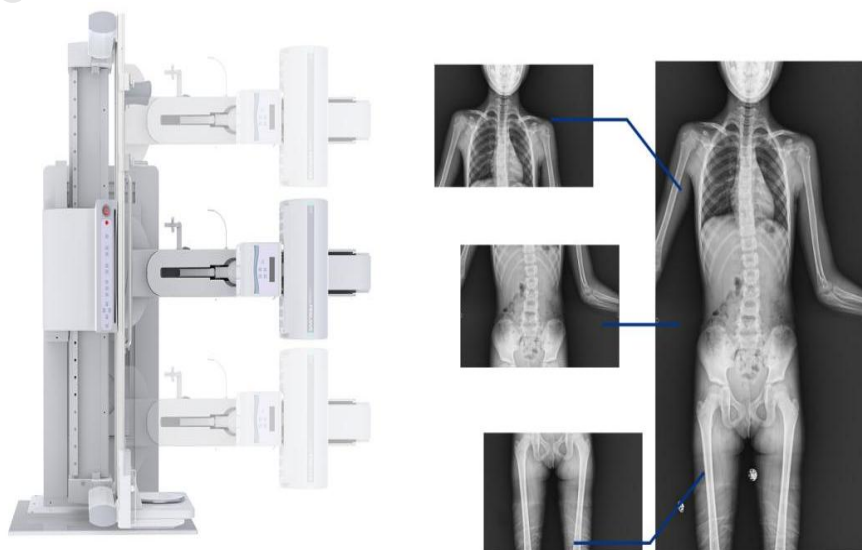
## ➤ AEC Function *(Optional)*

- ✧ AEC function automatically controls the exposure time, which can make the images taken by different parts and different patients have the same amount of light, and completely solve the problem of inconsistent photo sensitivity.
- ✧ The operator does not need to select parameters, reducing the operation difficulty and shortening the workflow, especially suitable for large-scale physical examinations and large-scale outpatients.
- ✧ Automation and intelligence are the development direction of all electrical equipment.



## ➤ Image Stitching Automatically *(Optional)*

- ✧ Panoramic stitching of full lower limb or full spine images.
- ✧ A reliable basis for preoperative planning and postoperative review in the treatment of spinal and lower limb deformities.
- ✧ It provides an important data reference for the formulation of preoperative surgical plans and the evaluation of postoperative effects such as scoliosis and loading bone orthotics, knee prosthesis, and hip replacement surgery.





# Part 04. Worldwide installation



**Worldwide Installation**

# Part 05. Quality Certifications

## Quality Certifications



ISO13485



ISO9001



CE

# Part 06. Multiple Marketing Activities

## South-East Asia



Philippines



Indonesia



Nigeria



South Africa

## Central Asia



Kyrgyzstan



Uzbekistan

## Local Visitings



Latin America



Europe

## Middle East



Dubai



Syria