

# AR-300 Digital Mammography System



## Feature

AR-300 have the latest photon-counting detector, it increase the X-ray utilization rate, enhance the resolution. Silicon crystal not only has a high X-ray absorption efficiency but is also a mature semiconductor material, with very stable and reliable performance

**-Photon-Counting Technology**

**-Direct conversion to ensure clear, sharp, and high-resolution image quality.**

**-Pixel size:  $\leq 70\mu\text{m}$**

**-Output Image:  $\geq 16$  bit image data**

**-Limiting Spatial Resolution: 7 lp/mm**

## Product Specification

### (I) Generator

- 1.1. Inverting frequency of generator:  $\geq 28\text{kHz}$
- 1.2. Maximum Output: 5 kW
- 1.3. kV Range: 20 kV to 40 kV
- 1.4. mAs Range: 0.1 mAs to 630 mAs
- 1.5. Maximum mA: 166 mA

### (II) X-Ray tube:

- 2.1. Anode Type: Molybdenum
- 2.2. Anode Design: Bi-angular

- 2.3. Focal Spot Size: 0.1 mm (Small), 0.3 mm (Large)
- 2.4. Anode Speed:  $\geq 9600$  RPM
- 2.5. Heat Capacity: 300KHU (225 kJoules)
- 2.6. Heat dissipation power: 715W
- 2.7. Tube voltage: 35KV
- 2.8. Anode heat storage capacity:  $\geq 500$  kHu
- 2.9. Collimator Type: electric, automatic adjustment
- 2.10. Collimator feature: automatic window adjustment
- 2.11. Supports horizontal and vertical collimator blades

(III) Digital Image detector:

- 3.1. Detector: self-develop and self-produced detector
- 3.2. Type: Photon-counting Direct Capture Technology
- 3.3. X-Ray Absorption Material: monocrystalline silicon
- 3.4. High-resolution acquisition matrix:  $\geq 3000 \times 4000$
- 3.5. Pixel size:  $\leq 70 \mu\text{m}$
- 3.6. Output Image:  $\geq 16$  bit image data
- 3.7. Limiting Spatial Resolution: 7 lp/mm
- 3.8. Without grid
- 3.9. Detector operating temperature range:  $10^{\circ}\text{C}$ - $40^{\circ}\text{C}$ ;  
Operating humidity range: 30%-75%
- 3.10. Effective Image Area: 21 cm x 28 cm
- 3.11. Magnification factor: 1.5
- 3.12. Ghosting Coefficient:  $< 0.1$

(IV) C-Arm Assembly

- 4.1. Vertical Travel: 76 cm to 134 cm motorized
- 4.2. Rotation:  $+200^{\circ}$  to  $-200^{\circ}$
- 4.3. Rotation type: isocenter rotation
- 4.4. SID: 65 cm
- 4.5. C-arm control panels: up-down and rotation movement control
- 4.6. LCD Parameter display screen: thickness, angle, and pressure
- 4.7. Compression fine-tuning knobs
- 4.8. Manual pressure release handle
- 4.9. Emergency stop buttons (available on both the mammographic stand and workbench)
- 4.10. Compression one-key release bottom on workbench
- 4.11. Patient handrail
- 4.12. Patient face shield
- 4.13. Can be adapted to foot pedals
- 4.14. One-key positioning function: one-key switch to the next position, one-key mirror image, one-key reset

(V) Compression Device

- 5.1. Compression type: Electrically powered

- 5.2. Compression Control: Manual, electric, foot pedal control
- 5.3. Compression Mode: Intelligent flexible compression, manual compression, manual fine-tuning
- 5.4. Compress release: automatic release (which can be enabled and disabled by software setting), one-key release, manual release control
- 5.5. Compression force (electric): 0-200N
- 5.6. Maximum compression travel: 250mm
- 5.7. Compression paddle size: 24cm×30cm, 15cm×15cm(optional config), 8cm (diameter) Spot Contact(optional config), 18cm×24cm(optional config), Localization Paddle: 18cm×24 cm (optional config)
- 5.8. Automatically recognize the paddle type

#### (VI) Acquisition Workstation

- 6.1. CPU: Multi-Core Intel Based CPU
- 6.2. Operating System: Windows/Linux
- 6.3. Memory: ≥16 GB
- 6.4. Hard Drive: ≥512 GB
- 6.5. Monitor Size: ≥22 inch
- 6.6. Monitor display resolution: ≥1280×1024
- 6.7. Image Display:
  - 2MP grayscale medical grade display (standard)
  - 5MP grayscale medical grade display (optional)
- 6.8. DICOM Services: Worklist, Print, Storage, Query, Retrieve
- 6.9. Local Image Store Capacity: Approximately 11,000 screening
- 6.10. Compatible with PACS/RIS/HIS
- 6.11. Basic image post-processing functions: overall image resizing, image moving, window width/ level adjustment, local image amplification, image color reversal, image flipping/ rotation, and text input
- 6.12. Image display supports multiple layouts
- 6.13. One-click restoration of window width and window level settings
- 6.14. One-click multi-image synchronous image processing and display
- 6.15. Exposure Modes:
  - Manual (Operator selects all parameters)
  - Auto-Time (System selects mAs, Operator selects filter and kV)
  - Auto-kV (System selects kV and mAs, Operator selects filter)
  - AEC (System selects filter, kV and mAs)

#### **Operating Conditions**

- Temperature range: 10°C to 40°C
- Relative humidity range: 30% to 75% non-condensing

#### **Storage Environment**

- Storage Temperature Range: -20°C to 50°C
- Relative Humidity Range: 20% to 95% non-condensing

## Standard Configuration

No.	Configuration	Quantity
1	High Frequency High Voltage Generator	1
2	X-ray Detector	1
3	X-ray Tube	1
4	Exposure Control Box and Exposure Footswitch	1
5	Quadruple Foot Switch	1
6	Image Acquisition and Processing System	1
7	24cm×30cm Compression Paddle	1
8	Acquisition Workstation (host computer, software, 2MP grayscale medical grade display)	1

## Optional Configuration

No.	Configuration	Quantity
1	Diagnostic Workstation (graphics workstation, software, 2×5MP grayscale medical grade display)	1
2	Localization Paddle:18cm×24 cm	1
3	15cm×15cm Compression Paddle	1
4	Spot Contact Compression Paddle: (diameter) 8cm	1
5	Magnification Compression Paddle: 18cm x 24cm	1
6	Magnification Platform	1
7	Localization Crosshair Assemblies	1



## Mammography images:

