AMRAD Medical by Summit Industries

Aptitude+

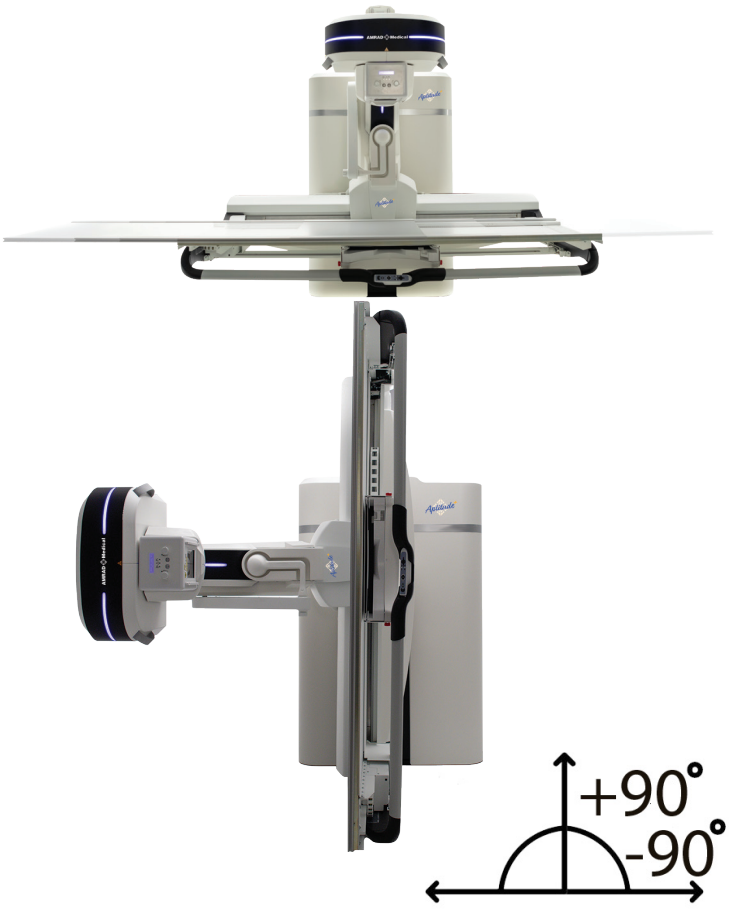
APTITUDE+ R/F System

Remoted-Controlled with Canon CXDI-RF B1 FPD

Aptitude+ Remote-Controlled R/F

System components:

- Remote-controlled R/F with flat tabletop to facilitate patient positioning and transfer
- Angling column with automatic collimator and integrated DAP
- Integrated Canon 4343 detector with integrated electronics eliminating large system cabinets
- Main console that includes all the controls for the remote-controlled R/F, the touch screen interface with the generator, the patient camera and the acquisition console for auto-positioning
- Optional secondary infrared remote console to mirror the main table controls



Unmatched Patient Coverage

Motorized variable height, 6 cm/s, from 15 in to 58.25 in (38 cm to 148 cm)

The flat, carbon-fiber tabletop, has patient rails and is weighted for bariatric patients up to 507 lbs (230 kg) without movement limitations. Up to 683 lbs (310 kg) with some movement limitations.

- 88.5 in x 31.9 in (225 cm x 81 cm)
- 23.6 in (60 cm) radiolucent
- 0.55 mm Al eq. maximum
- Patient weight according to IEC 60601-1 standards
- Motorized lateral movement, +/- 7 in (18 cm) at 2.4 in/s (6 cm/s)
- Motorized longitudinal movement, +47.2 in (120 cm) /- 23.6 in (60 cm) (other inferior values on request) at 3.1 in/s (8 cm/s)
- **Tilting of + 90°/- 90°,** motorized at 6°/s

The composite footrest, as a standard accessory, is weight-rated up to 507 lb (230 kg) and its maximum width of 15.7 in (40 cm) permits lateral exams with optimum comfort and safety for the patient. With a radiolucent upper, the 46mm thickness allows visibility of the entire foot including soft tissue.

The lightweight design makes it easy to handle with one hand.

The 120cm extension of the tabletop allows for true rear access for operators. The flat tabletop enables effortless patient transfer from the stretcher to the table.

Aptitude+

Longitudinal movement of 53.1 in (135 cm), motorized at 5.5 in/s (14 cm/s)

Total patient coverage includes entire table top and all tabletop movements

Removable carbon fiber grids 10:1, FS 49.2 in (125 cm) and 70.9 in (180 cm)

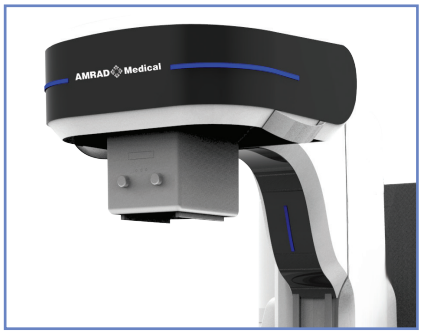
Tube Support

Motorized Column Angulation

The column has a full angle of +/- 40 °. With tabletop movements, it becomes easy to do exams requiring oblique images, even at the end of the table, without moving the patient. Shoulder exams are possible in standing position.

Motorized Source-Image Distance

6 cm/s, variable continuous from 43.3 in (110 cm) to 70.9 in (180 cm)



Motorized Collimator

Fitted with four pairs of mobile lead shutters and two pairs of pre-shutters for maximum collimation flexibility. Minimum inherent filtration 2mm Al eq; additional variable filtration (1mm Al + 0.1mm Cu or 1mm Al + 0.2mm Cu or 2mm Al) can be pre-programmed in each protocol (like pediatrics). Equipped with LED light beam (160 lux @ 1m @ 14”x14”) and laser indicator, it can be rotated manually by +/-45° (optional).

In automatic mode, shutters are opened depending on the detector format, anatomical region (APR), auto-positioning and selected fluoroscopic field.

Manual refinement of the collimator is possible from the main console, using the joystick, the remote hand switch or the collimator.

For dose reduction, automatic collimation and filters are predetermined in each protocol and a video camera permits to position the patient without irradiation. Touch screen of main table console displays these video images.

Manual Tube Rotation

+/- 180°, electrically assisted, rotation with mechanical stops every 90°. Electromagnetic brake to select any tube angulation. Setting the table in vertical position, allows exposures to be made on a stretcher or the wall bucky at any angle.

Retractable Motorized Compression Device

The compression paddle can apply up to 200 N compression when the column is in the incidences range of -10°/+10°. The factory setting is 130 N. The compression paddle has a minimum distance of 10 cm to the tabletop.

Patient safety systems:

- No tabletop, carriage or angulation movement can occur when compression is in use and superior to 60 N
- Manual disengagement of the compression paddle is possible when the table is switched off from the main supply.

Wireless Remote Control

The major functions of the system are available using the magnetic wireless remote control which is stored table side for easy access.

Main Control Console

The main control is made up of capacitive keys and joysticks. A capacitive touch screen permits the selection of table and generator parameters, to display system information and video images on the same page; MOVE button engages auto-positioning of the selected anatomical protocol and table parameters; buttons for Prep and x-ray.

Keys are arranged in functional order: column angulation at 0°, table tilting in park-position, longitudinal & lateral tabletop movements, reverse and reset positions. The automatic collimator light and mode keys are close to the joysticks.

Joysticks control the SID, angulation, table tilting, variable height, carriage, tabletop lateral movement and collimator shutters in continuous mode.

High Frequency Generator

The generator is made of an electronic cabinet and HV tank. Generator application software is integrated in the table console.
The generator is microprocessor controlled and uses the Inverter technology with IGBT circuits (Insulated Gate Bipolar Transistor).
Available with 65 kW (standard) or 80 kW (optional upgrade).
Nominal output: 65 kW according to EN 60336 standards at 100 kV during 0.1 s, constant potential high frequency generator
Maximum power line impedance: 0.135 Ohm
Inverter frequency: 25 kHz
Ripple rate: < 1 kV at 100 kV
Maximum voltage at the maximum current: 100 kV at 650 mA
Maximum current at maximum voltage: 400 mA at 150 kV

Radiography parameters:
From 40 to 150 kV, by step of 1 kV (or displacement in the range by slider), accuracy ± (3% + 1 kV)
From 10 to 650 mA, accuracy ± (4% + 1 mA), 19 values (10, 12.5, 16, 20, 25, 32, 40, 50, 65, 80, 100, 125, 160, 200, 250, 320, 400, 500, 650)
From 1 ms to 10 s, accuracy ± (2% + 0.1 ms), 38 values 1, 2, 3, 4, 5, 6, 8, 10, 12, 16, 20, 25, 32, 40, 50, 65, 80, 100, 125, 160, 200, 250, 320, 400, 500, 650, 800 ms and 1, 1.25, 1.6, 2, 2.5, 3.2, 4, 5, 6.5, 8, 10 s
From 0.1 mAs to 500 mAs

Fluoroscopy parameters:
From 40 to 120 kV, by step of 1 kV, accuracy ± (3% + 1 kV)
From 0.5 to 5 mA (low dose) and up to 7 mA (higher dose)
Operating modes:
9989 customizable anatomical protocols / 3 points (kV, mA, s) / 2 points (kV, mAs) / 1 point (kV, AEC)

AEC

Installed in the detector tray, the ionization chamber is an x-ray sensor designed for automatic exposure control for selected kV in One-Point Mode. It will optimize image quality with patient dose reduction. The five rectangular fields are composed of solid-state detectors.
Dimensions of active areas: 2 x (90 x 40) mm + 1 x (100 x 40) mm
Sensitivity difference between sensor fields: < 10%

X-ray Tube

Several sizes of X-ray tubes are available. Standard is A 292 with B-147 housing from IAE.

X-ray tube information: high-speed starter and one tube output :

- Pre-setting of x-ray tube features:
    - Loading ratings, cooling ratings, starting voltages, starting times, maximum current limitation
- Safety and protection disposals for x-ray tube:
    - The electronic calculation of load by software indicates limits to the tube with message and forbids x-ray emission
    - Housing temperature control and display of available Heat Units in %
    - Overheated IGBTs detection
    - Housing oil pressure control in series with x-ray tube heat safety

A 292 X-ray Tube

Nominal focal spots values:	0.6 and 1.2 mm
Anode rotation speed:	9,500 rpm
Nominal anode input powers:	40 and 100 kilowatts
Anode diameter:	102 mm
Anode material:	Rhenium - Tungsten - Molybdenum
Anode angle:	12°
X-ray coverage at 1 m:	43 x 43 cm
Inherent filtration:	0.7 mm
Radiation protection:	complies to IEC 60-601-3 standard
Anode heat storage capacity:	400 kHU (285 kJ)
Anode heat dissipation rate:	1,250 W
Housing:	**B-147**
House heat storage capacity:	2,450 kHU
Housing heat dissipation rate:	1,250 W
Cooling:	Air (with fan)
High Voltage cable length:	12 meters

Dose Area Product Measuring System

Consisting of a transparent ionization chamber and integrated detector electronics, the DAP is installed in the collimator. The acquisition console has a dedicated zone to display Dose Area Product and registration is done in the patient study for each exposure or whole study.

Active area:	146 mm × 146 mm
Measuring range:	up to 99,999,999 Gym^2
Transparency:	> 75%

Canon CXDI-RF Wireless B1

- True portability outside the bucky thanks to the low weight, magnetic connector, wireless functionality and ergonomic design.
- 2 sculpted hand grips for a secure and comfortable grip. Easier and more comfortable to position behind a patient due to the shaped cover and smooth rounded corners.
- At just 7.7 lb (3.5kg) this detector can be removed from the bucky with ease.
- High quality dynamic and static imaging at low dose.
- Sharable across multiple compatible systems. Additional static detectors can be added to the system for increased functionality.

Contact with fluids is inevitable, particularly in emergency- and high-dependency care. Our IP57 protection against liquid and dust entering the FPD provides you with extra assurance in the product, while it is in use under challenging conditions, or when cleaning the product for safety.

Specifications[1]

Model:	CXDI-RF Wireless B1[2]
Scintillator:	CsI (Cesium Iodide)
Effective imaging area:	43x43cm
Weight	3.5 kg
External dimensions:	460 x 460 x 15. 5 mm
Pixel pitch:	160 µm
DQE:	Typical 60% (0.5 lp/mm)
MTF:	Typical 38% (2 lp/mm)
Dust and waterproof:	IP 57 [3]
Robustness:	Load: 310 kg @ entire 100 kg @040 mm Drop height: 100 cm
1/F:	Wired: Gigabit Ether Wireless: IEEE 802.lla/b/g/n
Frame rate (wired[4]):	Sfps@l xl 15 fps@ 2 X 2 30 fps @ 3 X 3 (9” X 9”)
Continuous X-ray:	Supported

[1] Specifications subject to change.

[2] CXDI-RF Wireless BI system consists of various components.

[3] Based on tests conducted by an independent institution. Certification does not guarantee against failure or damage. Dust-and water resistance may be compromised by substantial impacts [dropping, crushing, etc.)

[4] Wireless Dynamic imaging implemented later.

CXDI Controller RF Software[1]

CXDI Controller RF software is made exclusively for use with Canon Digital Radiography systems. This imaging control and management software helps to optimize workflow and reduce the steps required to complete each examination quickly.

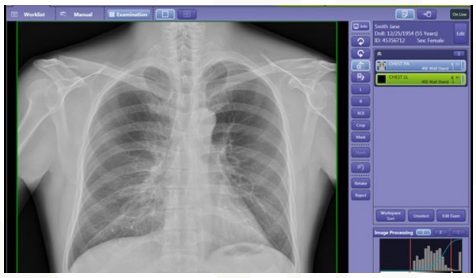
The intuitive Graphical User Interface (GUI) can be used for all types of digital radiography modality and this commonality of GUI across the entire detector range is a major advantage when it comes to speed of operator training, user confidence, convenience and familiarity. Canon CXDI Controller RF software configuration options ensure a GUI that is always right for you. Comprehensive image processing including 'Scatter Correction', 'Advanced Edge Enhancement' (AEE)[2], 'One Shot Long Length'[3], Digital Subtraction Angiography (DSA), Tomosynthesis imaging options guarantee optimized image quality with the lowest possible dose; the industry standard DICOM 3.0 interface ensures multi-vendor and cross-platform connectivity in any situation.

[1] CXDI Controller RF Software version 3.00 onwards for support of CXDI-RF Wireless BI, CXDI-702 series and CXDI-710 series.

[2]Only for static imaging. [3]Only for static imaging with CXDI-710CW, CXDI-410CW.

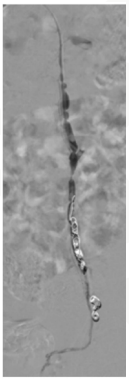
All-in-One Dynamic and Static FPD

CXDI-RF Wireless B1 offers clients true Dynamic and Static imaging in one detector providing maximum flexibility in a clinical setting.



Tomosynthesis (optional)

Performing high-resolution, limited-angle tomography at radiation dose levels comparable with projection radiography.

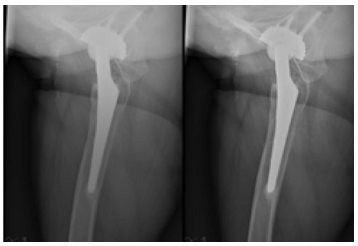


DSA (optional)

Digital subtraction angiography (DSA) is a fluoroscopy technique used in interventional radiology to clearly visualize blood vessels by eliminating (subtracting) radiopaque structures, such as bones or dense soft tissue.

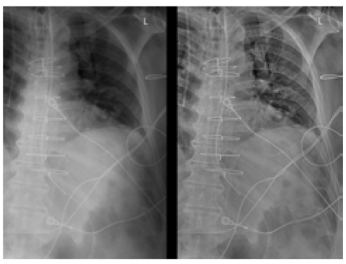
Scatter Correction (optional)

Canon's Scatter Correction reduces the effect of scattered radiation for non-grid examinations, allowing you to obtain images with outstanding contrast.



Advanced Edge Enhancement (optional)

Improved visualization of tubes, lines and bone details. The software has three different image processing algorithms (small structures, bone detail and catheter setting).



Auto-Positioning

Choice of programmed protocol (where table and generator parameters were determined) on acquisition console

Transmission to table console

Press MOVE button to automatically position the table regarding entered parameters:

- horizontal, vertical or tilted tabletop
- column angulation
- SID
- lateral and longitudinal tabletop position
- collimation
- filters

When the table reaches the position, a message appears and the system is ready for the examination.

Standard Accessories

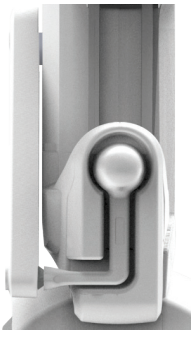
One composite footrest

One adjustable stool

Two patient handles

Two winches & one belt

Two double fluoroscopy pedals



Compression device

Equipment Environment

Dimensions (l x w x h) and weight

Table 226 x 235 x 189 cm minimum, in horizontal position, lower height, minimum SID, column at 0°, 1600 kg
Table cabinet integrated into the table
Table main console 60 x 27 x 12 cm, 15 kg
X-ray tube 49.3 x Ø 190 cm, 31 kg
Generator cabinet 59.2 x 36 x 69 cm, 95 kg
Generator control interface integrated into table console
Flat panel detector: 50 x 49 x 4.5 cm, 14kg
Acquisition console/computer 65 x 52 x 88 cm, 103 kg
Acquisition console/color LCD monitor 63 x 39 x 57 cm, 9.7 kg

Operating environmental conditions

Temperature from 10°C to 35°C (the temperature has to change progressively)
Relative humidity from 30% to 75% (not condensing)
Atmospheric pressure from 760 to 1060 HPa

Power supply

Generator: 400/480 V ac +/- 10%, three phases, 50/60 Hz
Table: 230 V ac +/- 10%, single phase, 50/60 Hz
Digital system by FPD: 120/230 V ac +/- 10%, single phase, 50/60 Hz
For 60 Hz frequency, the power is provided via an optional three-phase transformer 480 V+N/400 V+N, 60 Hz, 12 kVA are provided

Protection

Generator: 63 A circuit breaker, D power line, with 30 mA differential sensitivity
Table: 20 A circuit breaker, D power line, with 30 mA SI differential sensitivity
Digital system by FPD: 2 x 16 A circuit breaker, D power line, with 30 mA differential sensitivity

Optional Accessories

(Others on request)

Cup holder

Retaining bar

Pair of leg supports

IV-Pole

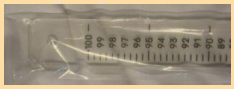
Ruler support for stitching

Secondary mobile console

Multi FPD lateral support

Pair of shoulder rests

Pair of gynecology stirrups



1 m ruler for stitching

10 cm ruler for measuring

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