Sophisticated features. Human comfort.

Smarter and more comfortable. Pursuing a design concept that is close to the senses of patients, doctors and technologists. This leads to a smooth and relaxed test experience and provides high-quality test results and diagnostic images more reliably. This is the birth of AMULET SOPHINITY, which has refined “gentleness” to meet the needs of all women.

AMULET SOPHINITY

Concept Movie ↓

USABILITY

A more comfortable positioning experience

The thin and compact exposure table with reduced side bulging reduces stress during positioning. The curved shape of the front of the exposure table reduces the feeling of pressure on the abdomin associated with the CC view and improves the fit of the side of the body for the MLO view, providing for more comfortable positioning.

Armrest that support comfortable examination postures for patient comfort

The armrest bar on which the patient arms/hands rest during the examination has been extended to accommodate more comfortable examination postures for patients. It can also be used as a hand rest during CC examinations.

Accessible button layout improves the examination flow

Swivel arm rotation and height buttons have been added to the side of the tube head. Easy-to-operate buttons can be selected according to the situation, enabling smoother examination.

Smooth compression paddle operation

Allows fine adjustment of electric compression without removing the line of sight from the breast area during positioning. The compression paddle can be operated while confirming the breast condition, contributing to pain reduction for the patient.

Tube parking option

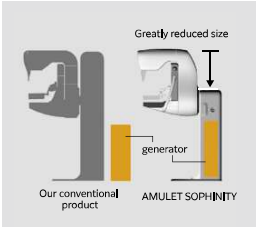
The X-ray tube can be retracted to the parking position.

Easy paddle attachment / removal

An array of compression paddles are tailored for the size of the breast and view to be performed. The attachment and removal of the paddles from the gantry is fast and easy for the technologist.

Displays and imaging information at a readily visible panel location

Displays the patient and positioning information on the panel at the bottom of the exposure stand. The technologist can easily see the information regardless of the situation during the test.



A new exterior design that significantly saves space and is aesthetically pleasing

By integrating a generator within the main unit, the overall size has been significantly reduced. Can be installed in a limited space. The slim and rounded design is more aesthetically pleasing for patients and technologists alike of the patient.

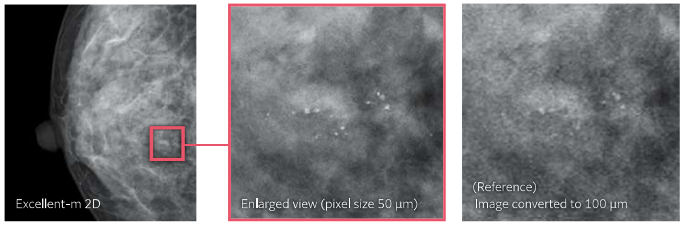
HIGH QUALITY

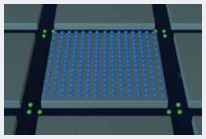
Excellent-m 2D

FUJIFILM's 2D diagnostic images

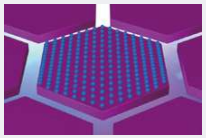
High-definition images with 50 µm pixel size. Enables low-dose imaging.

The smallest direct conversion FPD pixel size of 50 µm enables high-definition imaging. It also includes ISC, which adjusts contrast and low X-ray dose using a Tungsten target.





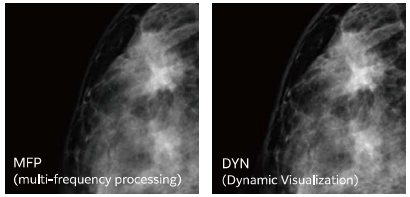
Conventional square pixel



AMULET SOPHINITY hexagonal pixel

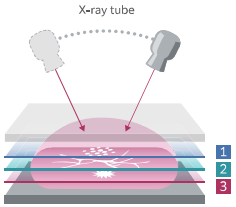
High Contrast Images – Automatic contrast adjustment to make the ROI visible

It has density/contrast adjustment processing, frequency enhancement processing, and dynamic range compression processing, which allow for automatic adjustment of the amount of dynamic range compression for each image. It recognizes image areas that include the characteristics of the mammary gland and fat areas, and increases the contrast of those areas independently making the density of each constant.



Excellent-m 3D

FUJIFILM's 3D diagnostic images



Tomosynthesis Optional

Generates more projection images to reduce artifacts

Continuous tube motion for tomosynthesis sweep and images taken from multiple positions are reconstructed. It can provide images focused on the structures you want to see, further facilitating observation of lesions that are difficult to detect due to overlapping mammary gland structures.

A 2D image | Tomographic images

Two modes for a wide range of clinical applications

ST (Standard) mode

Sweep angle: ±7.5°
Number of shots: 19
Pixel size: 100/150µm

This mode enables high-speed imaging by reducing the sweep angle and speeding up image readout. The depth of field is deep, and the cine display allows efficient viewing of tomographic images.

Exam / screening / follow-up, etc.

HR (High Resolution) mode

Sweep angle: ±20°
Number of shots: 35
Pixel size: 50/100µm

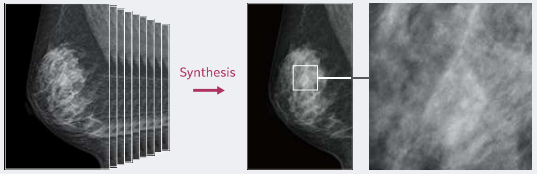
This mode has a larger sweep angle with improved depth resolution. The shallow depth of field allows for a better focus on an area of interest.

Additional imaging for close test / morphology, etc.

Functions to support diagnosis

S-View (Synthesized View) Optional

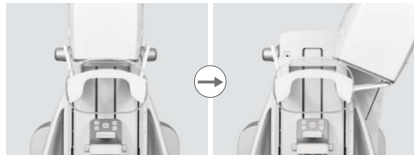
A S-View image that includes breast thickness information is created from the tomosynthesis image at 50 µm. A single tomosynthesis imaging session produces a tomosynthesis (3D) image and a S-View image that includes features of tomosynthesis.



Tomosynthesis images | S-View image | Enlarged view

Fixed face guard for tomosynthesis imaging Optional (Face Guard T Comfort)

To prevent movement of the face guard during tomosynthesis imaging, the face guard is secured to the supporting column of the device. The swivel arm connecting the face guard to the supporting column collapses in accordance with the tube movement, so the face guard will not be visible at either the ST (15 degrees) or HR (40 degrees) angles.



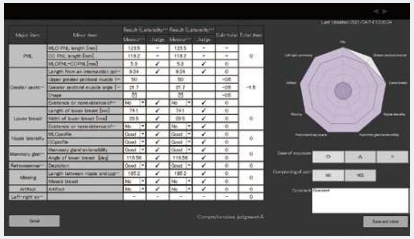
Positioning support function developed using AI technology

Projection Function (Positioning MAP) Optional

Skin lines and nipple positions extracted from past images are projected onto the exposure table surface, making it possible to capture images that can be easily compared with past images. To compare the right and left breasts, the image of the opposite side can be inverted and projected onto the table.

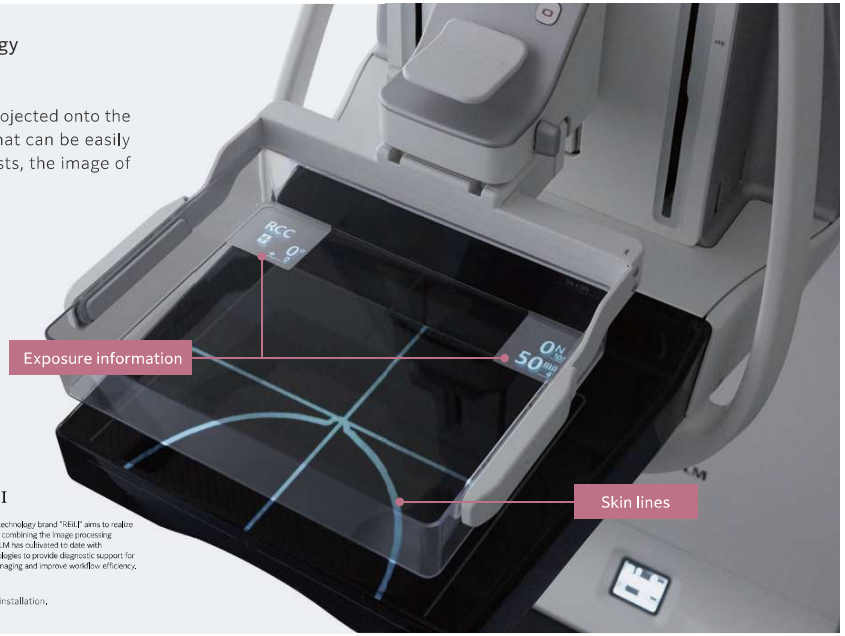
Positioning Analysis Optional

To further improve positioning techniques



Supports technologists in improving their examination skills by using AI technology to analyze positioning from the images taken.

*The extraction of the reference point of the pectoralis major muscle and nipple position for positioning was designed using an AI technique called deep learning. There is no automatic change in performance or accuracy of the system after installation.



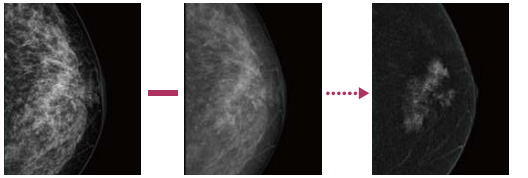
REiLI

FUJIFILM's medical AI technology brand "REiLI" aims to realize better medical care by combining the image processing technology that FUJIFILM has cultivated to date with cutting-edge AI technologies to provide diagnostic support for doctors in diagnostic imaging and improve workflow efficiency.

CEDM function Optional

(Contrast Enhanced Digital Mammography)

With one compression, it continuously performs low tube voltage (low energy) imaging close to the conventional mammography imaging and high tube voltage (high energy) imaging with a Cu filter, and automatically generates and displays a subtraction image of the obtained images.



Low energy image | High energy image | Energy subtraction image

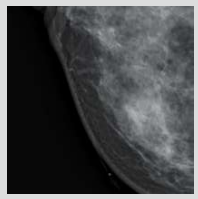
*When an iodinated contrast medium is used.

Compression automatic decompression control (Comfort Comp)

For the aim of reducing pain

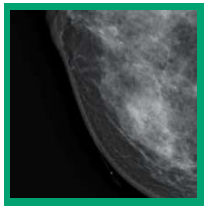
This function reduces the compression pressure within the range (± 3 mm) where the thickness of the breast does not change after the completion of normal breast compression and therefore reduces the pain of the patient. The hysteresis* phenomenon is used to reduce the time that the pressure is at maximum pressure compared to normal compression methods.

Conventional



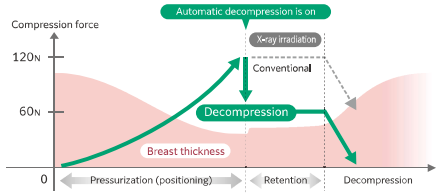
29kV 44mAs 0.83mGy
33mm 102N

Comfort Comp



29kV 44mAs 0.83mGy
34mm 62.8N

■ Principle of automatic decompression



*Hysteresis: A phenomenon in which the state of a substance or system depends on the course of forces applied in the past.
L. Han, M. Burcher, and J.A. Noble. Non-invasive Measurement of Biomechanical Properties of in vivo Soft Tissues. MICCAI 2002, LNCS 2488, pp. 208-215, 2002.

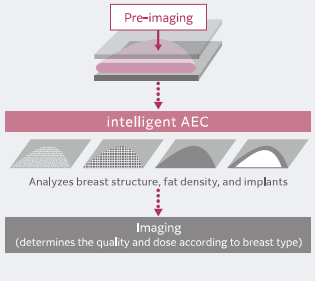
A single button is all that is needed for automatic decompression

Easy to use.

Flexible for different types of breasts

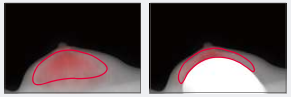
Intelligent AEC — Adjusts the x-ray dose according to breast type

The position of the mammary gland in the breast is analyzed from pre-shot images taken at a low dose. Only the mammary gland area is used, enabling imaging with appropriate technical factors and dose. Even breast implants, for which it is often difficult to determine the correct manual technique can be automatically imaged by identifying the area of the implant.



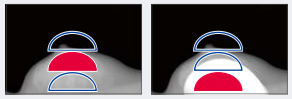
■ intelligent AEC

Automatically selects the appropriate mammary gland area from pre-shot images



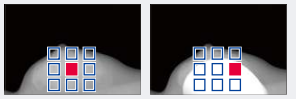
■ Manual sensor method

The technician can select the area manually during positioning, imagining the location of the mammary glands



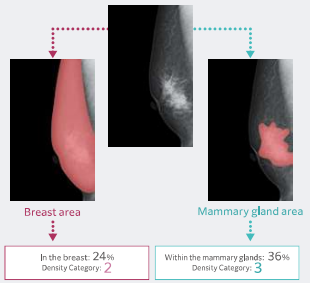
■ Automatic sensor method

Automatically selects the appropriate sensor from pre-shot images



Breast Density Assessment function (Density Category) Optional

Immediately after imaging, the AWS console automatically assesses the mammary gland volume and outputs the analyzed values to a DICOM Tag. Density Category thresholds can be set arbitrarily. It can assess not only the breast area but also the mammary gland volume in the mammary gland area.



Biopsy System (FDR-4000BPY) Optional

☐ Vertical biopsy kit

Use of high resolution (50 µm) enables highly precise biopsy.

* An essential option in connection with introduction of a biopsy positioner.

Puncture at a 10° angle.

This reduces overlapping of needles, and increases visibility in the area of interest of the needle tip.

Positioner

Pre-biopsy QC automation

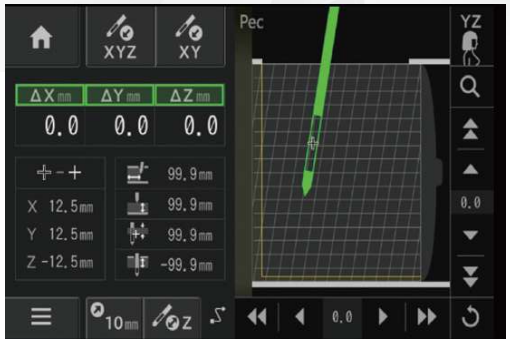
QC completed solely by imaging the position accuracy check needle.

* The user must check the evaluation results for the device.

Position accuracy check needle

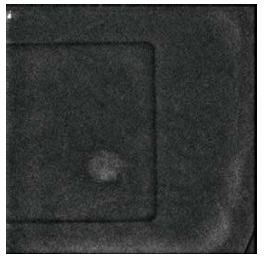
A 7-inch, color, touch monitor is used for the operating panel.

A schematic diagram of the breast, the target coordinates, and needle information selected at the time of biopsy (diameter and aperture size) are displayed graphically as appropriate to the breast thickness. The needle position can be confirmed visually.



☐ CEDM Biopsy Optional

Stereo exposure can be performed using low and high energy, and targeting is possible on the created subtraction image.



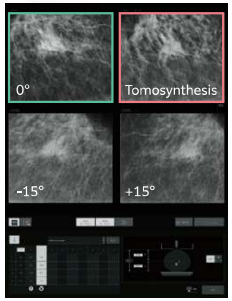
☐ Specimen imaging kit

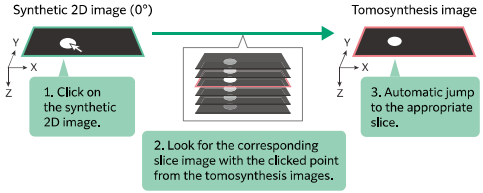
Optional

Using a specimen image collimator, specimen imaging is performed with the breast compressed. Use is possible even with the swivel arm rotated.

☐ Tomosynthesis biopsy (S-View/Tomosynthesis) Optional

When using S-View image for tomosynthesis biopsy, clicking on the S-View image displays the corresponding slice of the tomosynthesis image.





Compression paddle

☐ Fit Sweet Paddle for 18 × 24 (shift)

Compression plate size: 18 × 24 cm
Radiation field size: 18 × 24 cm

The compression paddle has a slit, and by using a flexible material for the slit, the compression paddle can bend along the breast to disperse the pressure during compression.

☐ Compression paddle for 9 × 24 (shift)

Compression plate size: 9 × 24 cm
Radiation field size: 18 × 24 cm

☐ Compression paddle for 18 × 24 (shift)

Compression plate size: 18 × 24 cm
Radiation field size: 18 × 24 cm

The compression paddle (shift) can be moved to the center for the CC view and to the top for the MLO view. In addition, the radiation field automatically moves along with the compression paddle.

☐ Compression paddle for 8 × 30 (shift)

Compression plate size: 8 × 30 cm
Radiation field size: 18 × 24 cm

The radiation field automatically moves along with the angle of swivel arm.

☐ Compression paddle for 18 × 30 (shift)

Compression plate size: 18 × 30 cm
Radiation field size: 18 × 24 cm

The radiation field automatically moves along with the angle of swivel arm.

☐ Fit Sweet Paddle for 24 × 30

Compression plate size: 24 × 30 cm
Radiation field size: 24 × 30 cm

The compression paddle has a slit, and by using a flexible material for the slit, the compression paddle can bend along the breast to disperse the pressure during compression.

☐ Compression paddle for axilla

Compression plate size: 8 × 20 cm
Radiation field size: 18 × 24 cm

- Compression from axilla (lymph node) to the upper breast

☐ Rectangular spot compression paddle

Compression plate size: 10 × 10 cm
Radiation field size: 9 × 9 cm

- Localized compression of the breast

☐ Round spot compression paddle

Compression plate size:
Approx. 9 cm diameter
Radiation field size: 8.1 × 11.6 cm

- Localized compression of the breast

☐ Focal spot compression paddle

Compression plate size:
Approx. 18 × 24 cm diameter
Radiation field size: 18 × 24 cm

☐ Square 2D Biopsy compression paddle

Compression plate size: 18 × 23 cm
Radiation field size: 17.4 × 22.4 cm

☐ Compression paddle for magnification exposures

Compression plate size: 17 × 23 cm
Radiation field size: 18 × 24 cm

☐ Magnification rectangular spot compression paddle

Compression plate size: 10 × 10 cm
Radiation field size: 14.5 × 14.5 cm

☐ Magnification round spot compression paddle

Compression plate size:
Approx. 9 cm diameter
Radiation field size: 8.1 × 11.6 cm

☐ Magnification exposure table for magnification exposures (magnification: 1.5/1.8x)

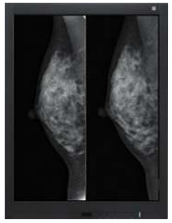
- Used in a set with magnification compression paddle/magnification spot paddle

AWS — Operation workstation

- User-friendly interface
- Equipped with an X-ray control section Exposure condition can be set and confirmed on the same screen
- Enables setting and switching of 1, 2, or 4 divided displays on the examination screen
- Left and right image alignment
- Allows arbitrary image output even during examination

High-Definition 3M/5M Second Monitor (Optional)

AWS



5M Second Monitor
(see past reference images)

- Second monitor allows for the display of current and/or past images for comparison* (*when connected to PACS)
- Automatically displays tomosynthesis reconstructed images
- Targeting for biopsy procedures. Displays stereotactic/tomo biopsy images.

Quality control tools for FUJIFILM Mammo QC Mammography (Optional)

Quality control program designed exclusively for the FUJIFILM Digital Mammography System. Provides high-quality images that enables highly reliable examination and diagnosis.

- 10-item image quality evaluation can be performed within 5 minutes
- Graphically represents day-to-day fluctuations
- Capable of data analysis and history management of daily inspection items, including the X-ray equipment
- Accumulated management data can be managed individually in a CSV file

Phantom imaging | Visual result entry | Automatic calculation