

# ASPIRE *Cristalle*

Digital Mammography Solution

## FORWARD-THINKING TECHNOLOGY, WITH FUJIFILM INNOVATION.

Now with digital breast tomosynthesis

- Gentle dose and brilliant images across all breast types
- Efficient patient throughput and better uptime with one-button startup
- Automated sleep mode to extend detector life
- Greater patient comfort
- Now available with digital breast tomosynthesis and stereotactic biopsy options

**FUJIFILM**  
Value from Innovation



# MEET OUR MOTIVATION

Fujifilm is constantly working to develop the **most advanced digital mammography solutions** to assist in the early detection of breast cancer. ASPIRE Cristalle brings together Fujifilm's extensive research, expertise and experience. Here are some of the people and ideas that motivate us:

## Motivated by Patients

The patented Comfort Paddle is just one of many features designed to make mammograms more comfortable and easy for patients. Our new imaging technology and advanced algorithms provide **exceptional imaging of all breast types** including dense breasts and implants, helping to reduce the anxiety of repeat exams and higher-dose procedures.

## Motivated by Clinicians

ASPIRE Cristalle's new Hexagonal Close Pattern (HCP) technology results in **high DQE and MTF** producing brilliant image quality. New, precise algorithms optimize image contrast and dose **specific to breast type**, helping reduce the need for repeat exams or higher-dose alternatives.

## Motivated by Technologists

Mammography technologists care deeply about their work. ASPIRE Cristalle helps make it easier for them to perform reliable exams quickly and easily. From the simple one-button startup to the patented Comfort Paddle, which provides even compression of the breast, technologists will find many reasons to love ASPIRE Cristalle.

## Motivated for Administrative Success

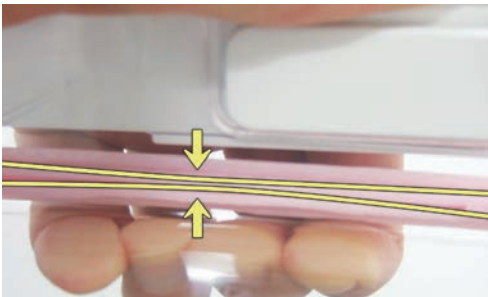
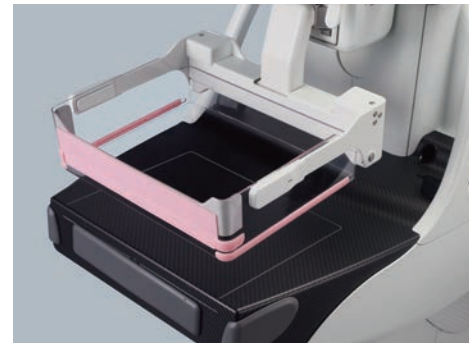
In a competitive business environment, ASPIRE Cristalle is the best investment you can make in the future. ASPIRE Cristalle's unique platform allows easy upgradability to future technologies, while offering **optimal imaging of all breast types at lower dose, today**. ASPIRE Cristalle's features increase detector life, help simplify exam acquisition for the technologist, and ensure consistently high-quality images. Fujifilm's renowned uptime is backed by 24/7 remote monitoring and diagnostic services.

More than 9,000 global customers trust Fujifilm Digital Mammography Solutions.

# Comfort Paddle designed for a more comfortable patient experience

## Flexible compression paddle gently adapts to the breast

- Patented design allows for firmer, more tolerable compression
- Slotted paddle edge allows plate to flex and contour to the breast
- Tilting paddle allows for more gradual and even compression
- Distributes pressure evenly, for more even spread
- Available in two sizes to accommodate all breast sizes: 18x24cm and 24x30cm

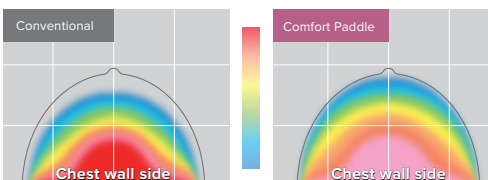


## Slotted paddle edge distributes pressure more evenly

Fujifilm's Comfort Paddle distributes pressure that is normally concentrated on the thickest part of the breast, helping to compress evenly along the natural curve of the breast with appropriate – but not excessive – force.

## Four-way pivoting paddle mechanism enables more gradual and even compression

The Comfort Paddle allows gradual application of pressure to the breast compared to standard compression designs. The tilting of the paddle toward the nipple side allows for more even compression across the breast, helping to separate structures and maintain more comfortable positioning.



## Better compression can impact x-ray dose

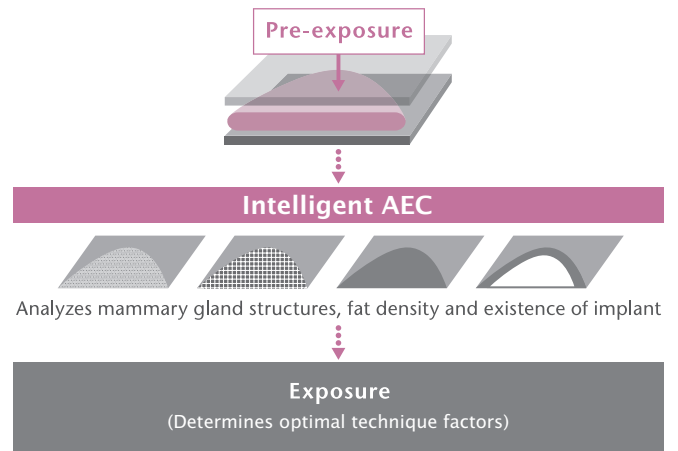
Combining the automated exposure settings of iAEC, which detects the location of glandular tissue, with the more even compression provided by the paddle's unique design mechanisms, it is possible to provide more optimized images at lower doses.

# iAEC plus ISC: Optimized x-ray dose and contrast for every breast type

Intelligent AEC “factors in” breast composition to calculate the dose and exposure techniques for each examination

Through the analysis of information obtained from an ultra-low dose, pre-shot image, Fujifilm’s proprietary Intelligent AEC (iAEC) takes into account the breast density (breast type) and presence of implants when defining the x-ray energy and level of dose required.

iAEC **optimizes exposure parameters**. iAEC also optimizes exams for patients with implants, by automatically detecting the implant and calculating the optimal exposure and image processing.



Conventional AEC



Requires manual adjustment of the settings based on the assumed location of glandular tissue

Intelligent AEC

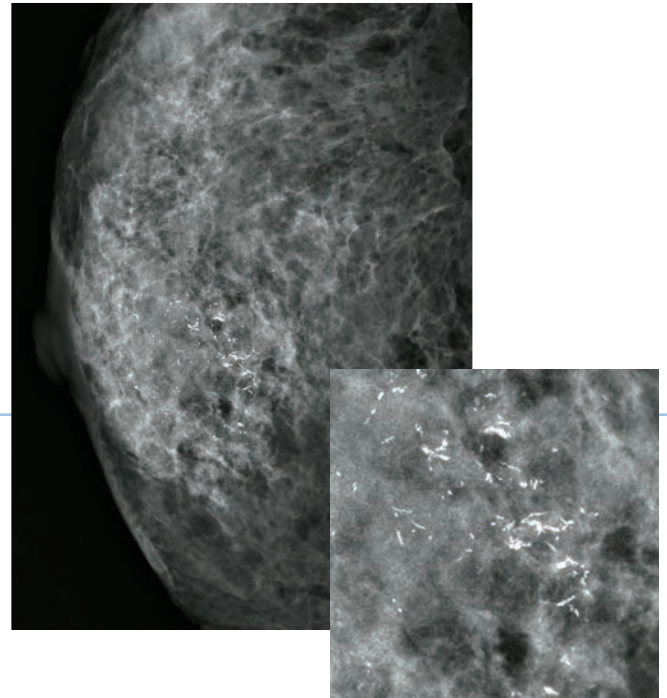
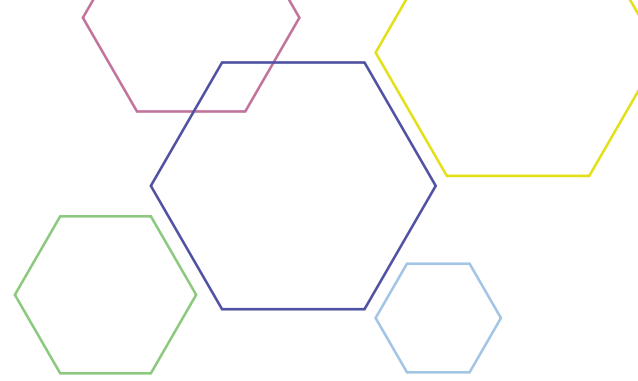


Automatically selects the region of interest for exposure optimization in the pre-shot image

## Optimized contrast and low x-ray dose with ISC

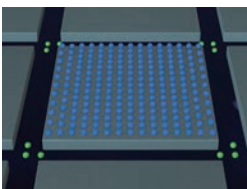
Combines the dose-saving characteristics of tungsten anode x-ray beam quality with Fujifilm’s Image-based Spectrum Conversion\* (ISC) to intelligently adapt contrast to all breast types.

\*Based on image analysis the appearance is adjusted to emulate the image quality with the simulated “optimal” spectrum.

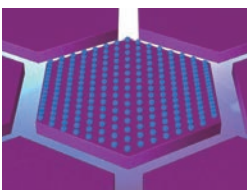


# The future of mammography – now

Our third generation amorphous selenium (aSe) detector features Fujifilm’s exclusive Hexagonal Close Pattern (HCP) direct conversion technology, positioning ASPIRE Cristalle at the forefront of digital mammography, and ready to take on the future

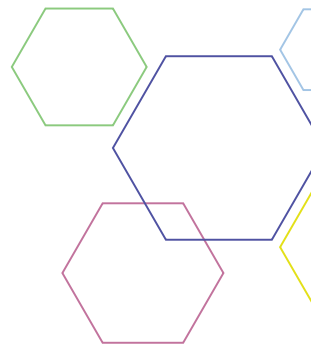


Conventional square pixel



ASPIRE Cristalle HCP pixel

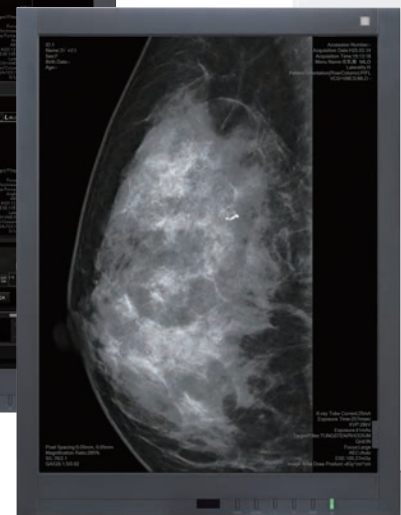
- 50-micron displayed pixels
- Fast acquisition time – only 15 seconds
- Hexagonal pixels distribute the electrical field more efficiently for a stronger, more uniform signal
- Results in images with high DQE and MTF
- Ultra-sharp images, gentle dose
- Upgradeable to future technologies



# User-friendly acquisition workstation

## Efficient design helps streamline technologist workflow

- Set exposure, view exposure confirmation on a single screen
- Easily adjust density and contrast while viewing images
- Simultaneously adjust density and contrast for both left/right images
- Immediately output individual images to PACS, viewer or printer during exam
- Portrait-oriented monitor for optimized viewing and operation
- Optional display split; switch between 1-, 2- or 4-up images
- Optional secondary Precise Enlargement Monitor allows viewing of prior images (when connected to PACS); Secondary monitor is required for biopsy and tomosynthesis
- Supports DICOM v3
- Computer aided detection software (CAD) is available for FFDM from leading 3rd party providers



# Easy for the technologist, easy on the patient

## Automatic positioning of radiation field

ASPIRE Cristalle automatically shifts the radiation field to the ideal place for patient positioning depending on the compression paddle used and the rotation of the gantry arm. ASPIRE Cristalle also features a one touch button for positioning, which automatically moves the gantry to a pre-determined angle for MLO and ML acquisitions.



## Display toggle

Easily switch between patient and positioning information directly from the display at the exposure unit. Confirm positioning information at the patient's side.

## Automatic startup for more system availability

- Automatic system startup and calibration – timer can be set to save as much as 20 minutes of startup time each morning so that ASPIRE Cristalle is ready for work as soon as you are
- Startup and shut down use the same, one-button procedure
- Initializes and calibrates the system in the correct order with one button

## Sleep mode can extend detector life up to 300%

- Flat panel detector is deactivated after one hour of inactivity
- Reactivates in 45 seconds

## Mood lighting for a more relaxing environment

Inviting, indirect lighting illuminates the exposure stand, helping make the examination room feel less cold and “clinical.” Mood lighting also indicates to the technologist that the system is on.

# Digital mammography Quality Control program

## ASPIRE QC Tools

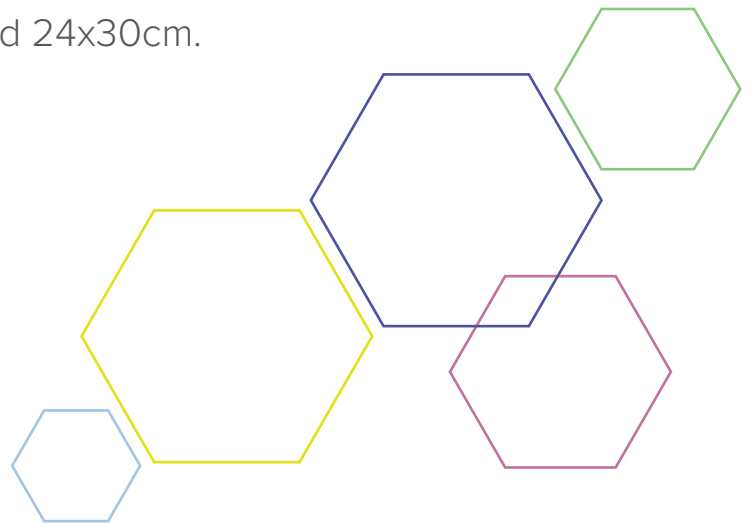
The 1 Shot Phantom M Plus offers a simple, efficient way for technologists and physicists to perform the necessary tests to maintain peak image quality. Used for both screening and diagnostic mammography imaging, the 1 Shot Phantom M Plus allows technologists and physicists to efficiently perform accurate routine QC tests.



## Fujifilm's exclusive Mammography QC Phantom for MQSA and ACR QC Tests

- Performs 10 QC Tests with one exposure
- Tracks and compares changes in system stability
- Compares QC Tests to baselines set during installation
- Recorded data can be downloaded and stored
- Perfect for routine weekly, semi-annual and annual QC Tests

Fujifilm offers two QC sizes: 18x24cm and 24x30cm.  
The 24x30cm is required for DBT.





# Stereotactic Biopsy System

## Accuracy is vital

The optional stereotactic biopsy unit allows radiologists to perform reliable, accurate procedures with confidence and efficiency.

## Easy positioning, built-in comfort

- Integration with PACS allows technologists and radiologists to review prior examinations within the system for more accurate initial positioning
- Tube and detector are flexible from  $-90^{\circ}$  to  $+90^{\circ}$ , offering more positioning options
- Ergonomically-designed arm rests and disposable soft pads for patients



## Easy, accurate targeting with target support functions

- High resolution dual-display system
- Targeting guide function on stereo images
- Advanced image processing

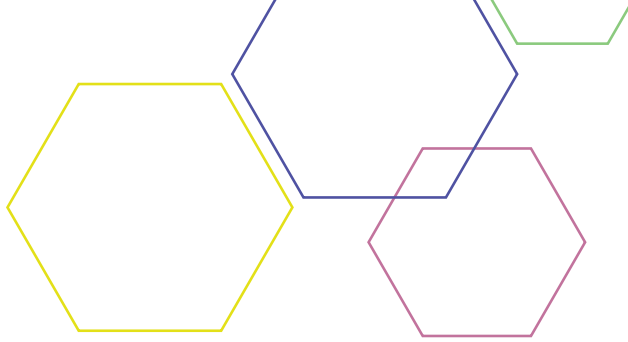
## Safety features

- Easily check needle depth directly from the biopsy unit to provide peace-of-mind to patient and protect the exposure table from accidental damage
- Target position is shown in a diagram on the display screen, allowing radiologists to make fine adjustments of the Z coordinate

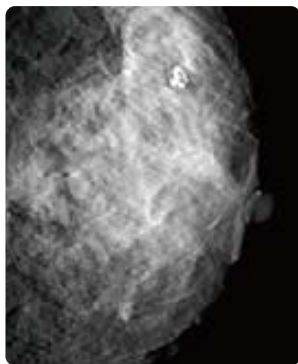
## Lateral approach

- Lateral adapter allows radiologist to perform both lateral and vertical procedures to compressed breast
- Allows facilities to expand the application of mammographic needle biopsies

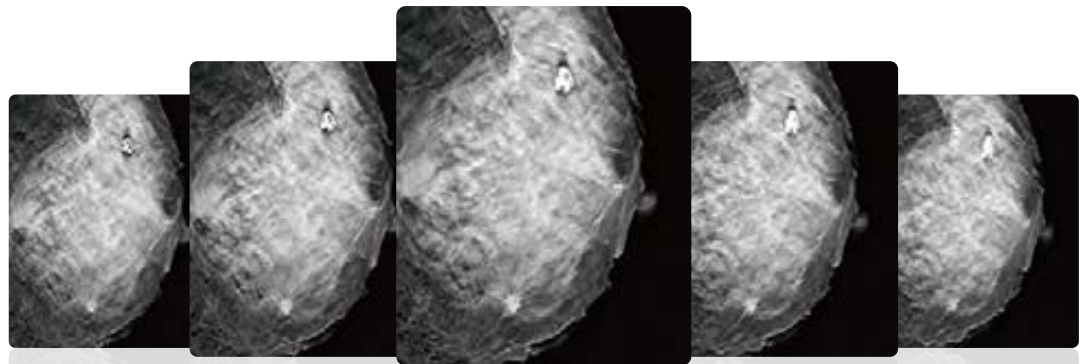
Not for use with digital breast tomosynthesis. Requires secondary Precise Enlargement Monitor.



# Digital breast tomosynthesis



2D mammography image



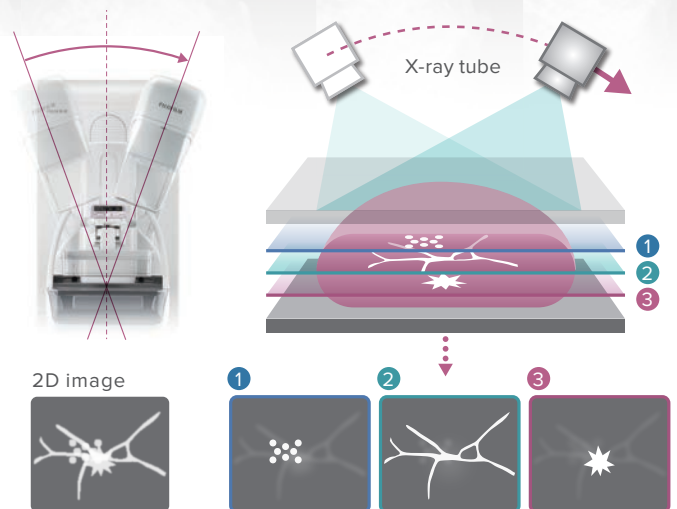
Tomosynthesis images

## Enhance visualization of suspicious features masked by overlapping tissue

Digital breast tomosynthesis (DBT) is a software upgrade option to the ASPIRE Cristalle full field digital mammography (FFDM) system. In DBT, the x-ray tube moves through an arc, acquiring a series of low-dose images at different angles. The acquired images are reconstructed into a series of high-resolution 1 millimeter slices displayed individually or dynamically in a cine mode.

The reconstructed tomographic images make it easier to identify lesions which might otherwise be difficult to visualize in traditional 2D FFDM images because of the presence of overlapping breast structures.

ASPIRE Cristalle's tomosynthesis combines our state-of-the-art HCP a-Se detector innovations, advanced image processing and image acquisition workflow to optimize patient dose, comfort and maximize image quality. Its Standard (ST) acquisition mode combines rapid exposure timing, acquiring images in as little as 4 seconds, with low x-ray dose. The resulting images provide outstanding resolution for improved visualization.



Requires secondary Precise Enlargement Monitor.

# Fast, easy, exceptional image quality



## Forward-thinking technology, with Fujifilm innovation

- Fast exams with safe, smooth movements for the patient
- Easy operation and controls for the technologist
- Exceptional image quality for the screening physician

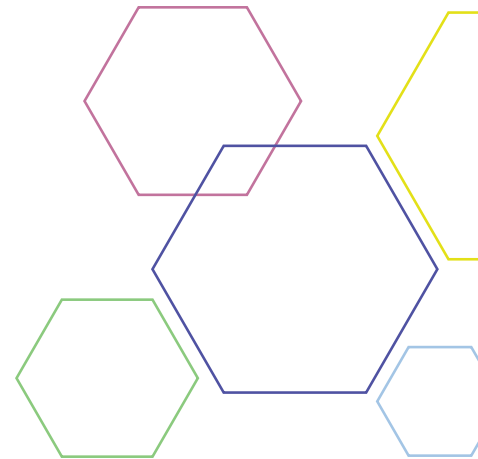
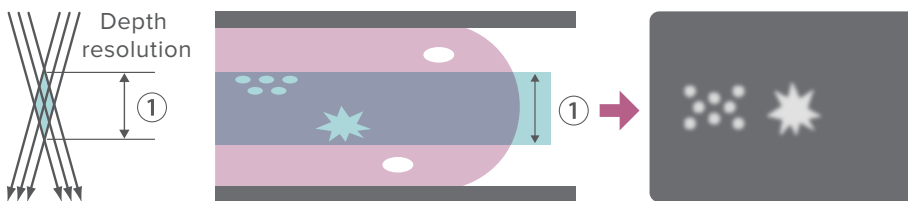
Radiologists using the ASPIRE Cristalle FFDM system with DBT will realize valuable enhanced clinical efficacy compared to using FFDM alone:

- Superior diagnostic accuracy
- Superior (lower) recall rates for non-cancer cases
- Improved recall rates for cancer cases

### ST (Standard) mode

Acquisition angle:  $\pm 7.5^\circ$     Pixel size:  $100\mu\text{m}$

The smaller angular range and fast image acquisition allow tomosynthesis scans to be quickly performed with a relatively low x-ray dose.





**FUJIFILM**  
Value from Innovation

[www.fujimed.com](http://www.fujimed.com)

© 2017 FUJIFILM Medical Systems U.S.A., Inc.  
XBUSMA091-A