

Shanghai United Imaging Healthcare Co., Ltd.

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Shanghai, China

2258 Chengbei Rd., Jiading District, Shanghai, 201807.

Email | [info.global@united-imaging.com](mailto:info.global@united-imaging.com)

Business Consultation | +86 (21) - 67076666

After-sales Service | 4006 - 866 - 088

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## ABOUT UIH

At United Imaging, we develop and produce advanced medical products, digital healthcare solutions, and intelligent solutions that cover the entire process of imaging diagnosis and treatment. Founded in 2011 with global headquarters in Shanghai, our company has subsidiaries and R&D centers across China, the United States, and other parts of the world. With a cutting-edge digital portfolio and a mission of broader access to healthcare for all, we help drive industry progress and bold change.

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IMAGING 



# uMammo 890i

## Pushing the Boundary of Breast Imaging

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# uMammo 890i

## Pushing the Boundary of Breast Imaging

Every year, over 2 million women are diagnosed with breast cancer, leading to almost 700,000 deaths globally, the numbers continuously increasing.<sup>[1][2]</sup>

Early diagnosis is the key, allowing almost all women with breast cancer to survive at least 5 years.<sup>[3]</sup>

Our mission and vision is to improve survival rates by making breast cancer preventable, treatable, and curable through advanced early screening. The uMammo 890i combines cutting-edge technology with state-of-the-art design. Together with you, we are pushing the boundary of breast imaging.



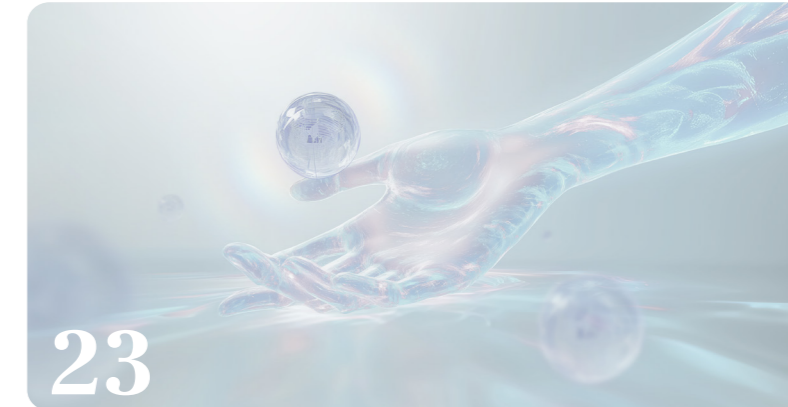
### Optimizing the Balance Between Image Quality and Dose



### An Efficient Way to Achieve Precise Diagnosis



### Elevating the Standard of Women's Care



### The Value You Deserve

[1] Ferlay J, et.al. Global Cancer Observatory: Cancer Today. Lyon, France: International Agency for Research on Cancer. Retrieved July 31, 2024

[2] The Lancet Breast Cancer Commission. (2024). Curbing the climb in cancer incidence. The Lancet. Oncology, 25(5), P529.

[3] Cancer Research UK. Why is early cancer diagnosis is important? (2023, March 30) Retrieved July 11, 2024

# Optimizing the Balance Between Image Quality and Dose

Achieving exceptional image quality with minimal patient dosage is paramount in modern mammography. While Digital Breast Tomosynthesis (DBT) offers clearer images, it typically involves higher radiation dose.<sup>[1]</sup>

uMammo 890i utilizes advanced technology to achieve 3D imaging with radiation dose comparable to FFDM. This breakthrough allows radiologists to visualize breast tissue with enhanced clarity, ensuring precise detection

of abnormalities. By optimizing image resolution and minimizing radiation exposure, we are pioneering a new balance between image quality and imaging dose.

[1] M.Ali, R. M. K, et al. (2020). Radiation dose from digital breast tomosynthesis screening – A comparison with full field digital mammography. *Journal of Medical Imaging and Radiation Sciences*, 51(4), 599–603.

# Greater Clarity with ~30% Lower Dose

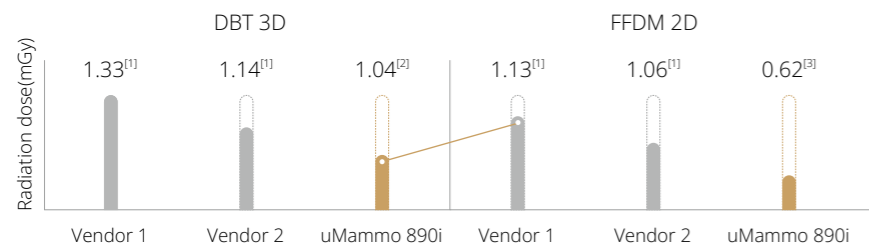
Between 20-50% of detected cancers are misdiagnosed, which can lead to repeated tests and unnecessary anxiety for patients<sup>[1]</sup>. This can be attributed to insufficient

clarity of lesions. To enhance your diagnostic accuracy, the uMammo 890i delivers high-quality images while minimizing patient exposure to radiation.

## Obtain high-definition 3D images with a 2D-like dose

With the advanced complementary metal-oxide semiconductor (CMOS) detector and uDose intelligent dose control technology and image processing algorithms, uMammo 890i generates high-definition 3D

images with doses equivalent to those of conventional 2D images. It delivers a substantial 40% reduction in radiation dose while maintaining high image quality in FFDM mode, and a 30% reduction in DBT mode.



**10%**

Dose reduction of uMammo 3D vs. conventional 2D<sup>[4]</sup>

**30%**

Dose reduction compared to conventional 3D<sup>[4]</sup>

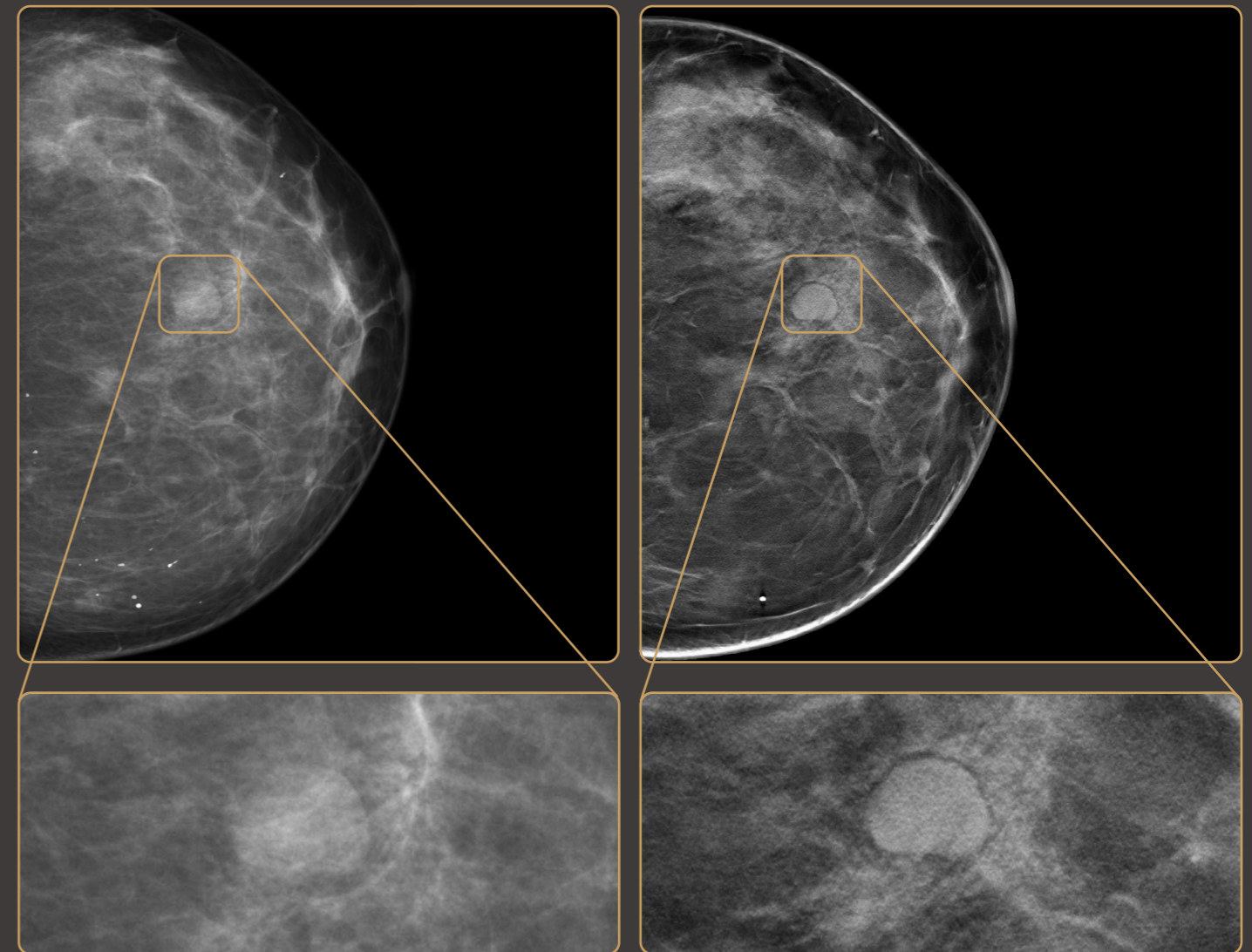
**40%**

Dose reduction compared to conventional 2D<sup>[4]</sup>

## High resolution FFDM and DBT images

**FFDM** clearly shows the shadow of an ovoid dense mass in the middle of the posterior-superior portion of the left breast with partially clear borders.

**DBT** shows more clearly the fatty interstices of the mass and the halo around the fibroadenoma.



Breast type: Fibroglandular dense  
Breast thickness: 65mm  
AGD: 0.88 mGy

Breast type: Fibroglandular dense  
Breast thickness: 65mm  
AGD: 1.53 mGy

[1] Breast Cancer Screening - Health Professional Version. (n.d.). National Cancer Institute. Retrieved July 11, 2024, from [https://www.cancer.gov/types/breast/hp/breast-screening-pdq#section\\_1.11](https://www.cancer.gov/types/breast/hp/breast-screening-pdq#section_1.11)

[2] NHS Breast Screening Programme. Equipment Reports. Dose results from technical evaluation of mammography system using PMMA with a thickness of 40mm

[3] Li-Min Lei, et al. A preliminary study of domestic digital breast tomosynthesis in breast cancer screening, Journal of Clinical Radiology, 2022, 41(9), 1649-1653, Clinical data of 40-50mm real breast thickness.

[4] Calculated according to real clinical data, 40-50mm real breast thickness clinical data.

# Technology Spotlight for Low-dose Imaging

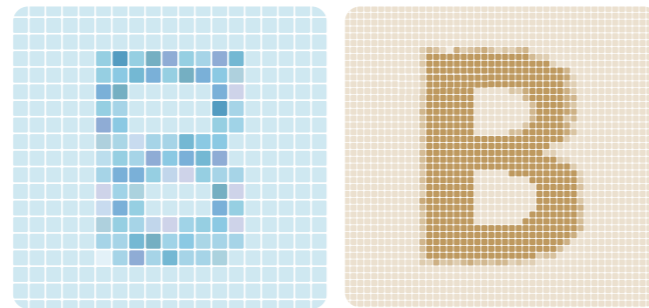
## CMOS detector

CMOS detector features a highly harmonized microstructure and a small pixel of 49.5µm, enabling electron to move almost 1400 times faster than

traditional a-Si detector. This very fine and swift image acquisition facilitates high-quality mammography, especially in dynamic imaging modes of DBT.

## High Resolution

Fine details of lesions are better delineated with smaller pixels of 49.5µm, potentially reducing false negatives and improving overall sensitivity in breast cancer detection.

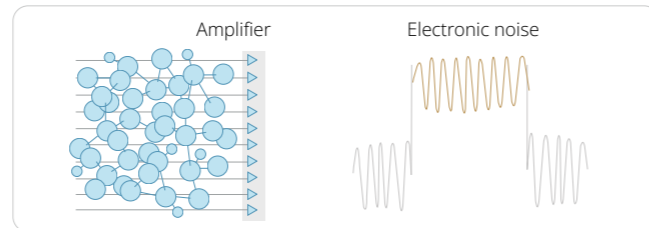


Conventional detector

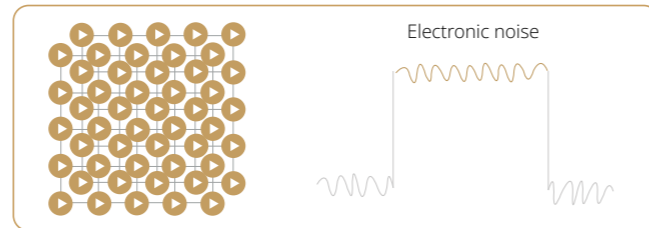
CMOS detector

## Improved Dose Efficiency

Thanks to harmonized crystal structure and on-pixel amplification, CMOS detectors amplify only useful signals but not noises during transmission, while a-Si detectors amplify both signals and noises together. Therefore, CMOS enhances the dose efficiency with higher signal to noise ratio(SNR).



Conventional detector

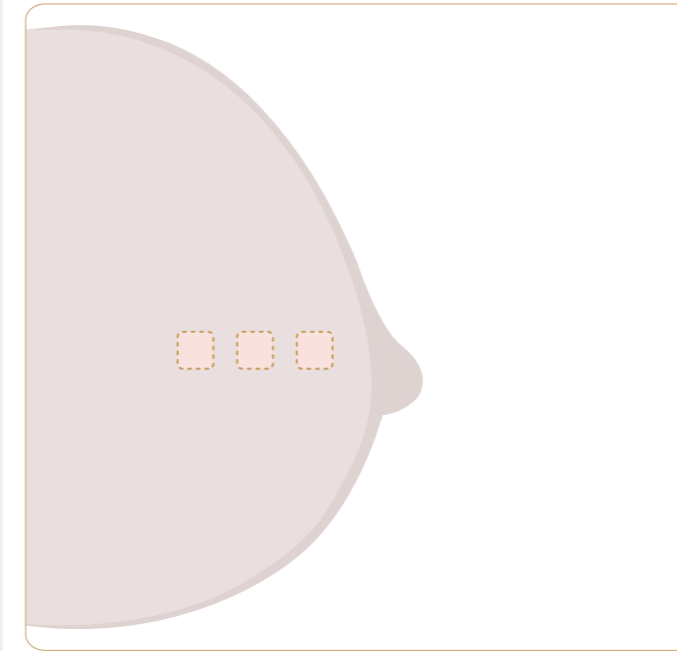


CMOS detector

## uDose intelligent dose control technology

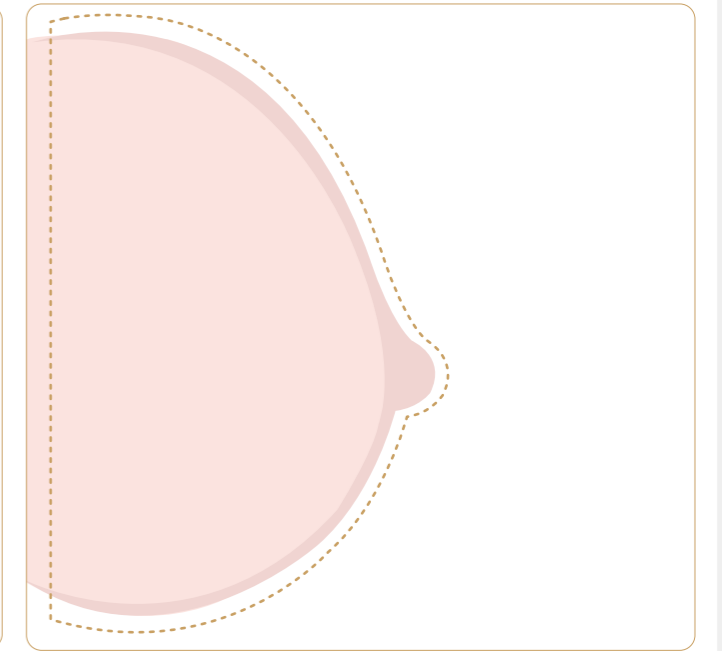
uDose is an advanced algorithmic technology that automatically evaluates the radiation characteristics of a breast with full-panel AEC, and intelligently selects

optimal exposure parameters to deliver high-quality images while significantly reducing radiation.



### Conventional AEC

Conventional AEC collects breast density information from only limited areas. This can lead to inaccurate estimates and affect subsequent exposure due to variations in tissue distribution across different areas of the breast.



### Full-panel AEC with uDose

uDose adopts full-panel AEC to cover the entire glandular area of the breast, providing comprehensive data for accurate and precise dose calculations in a variety of clinical settings.

# Increase Diagnostic Confidence with Every Sweep

Breast cancer is present but undetected in 6% to 46% of exams, which leads to delays or unnecessary recalls in cancer diagnosis<sup>[1]</sup>. A 15000 patients

study suggests that a single-view tomosynthesis scan increased invasive cancer diagnosis by 43%.<sup>[2]</sup>

## Removing the effect of tissue overlap

Our 40° tomosynthesis captures 21 image projections in a single scan. This extensive coverage, combined with the wider angle, enhances the detection of subtle

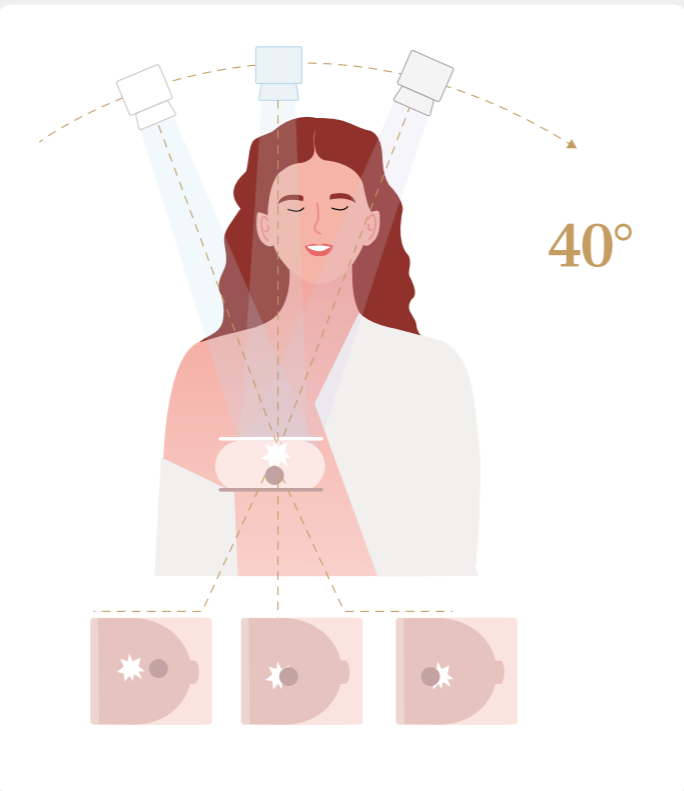
or obscured lesions at various depths within the breast, effectively overcoming tissue overlap and provides more detailed information crucial for precise diagnosis.

Wider-angle and higher in-depth resolution

# 40° Wide-Angle

More projections and better visibility of details

# 21 Image Projections

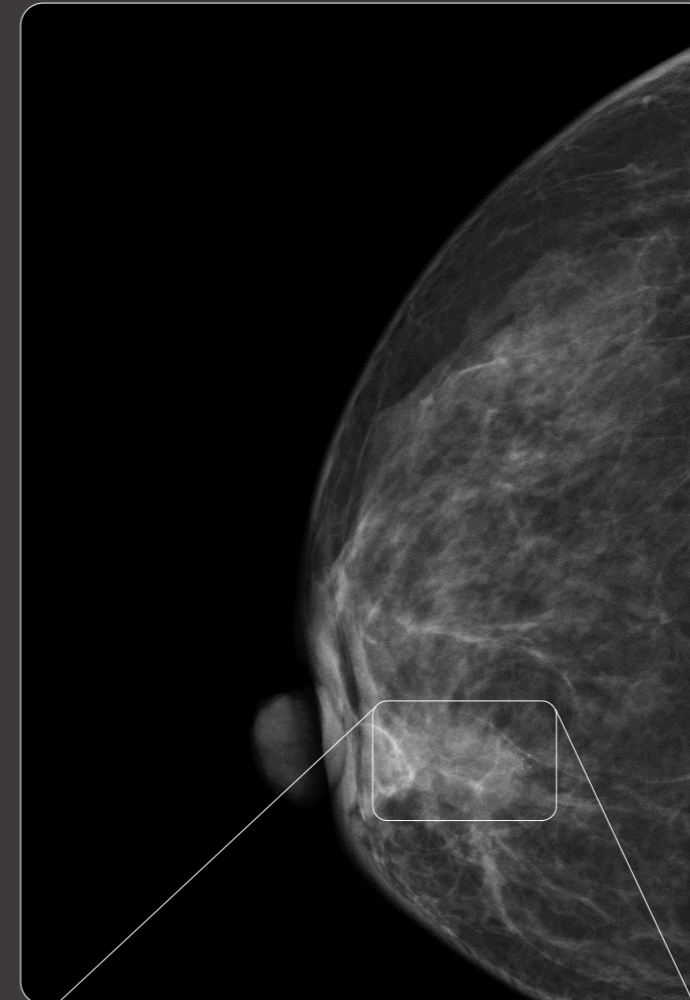


[1] Breast Cancer Screening - Health Professional Version. (n.d.). National Cancer Institute. Retrieved July 11, 2024, from [https://www.cancer.gov/types/breast/hp/breast-screening-pdq#section\\_1.11](https://www.cancer.gov/types/breast/hp/breast-screening-pdq#section_1.11).

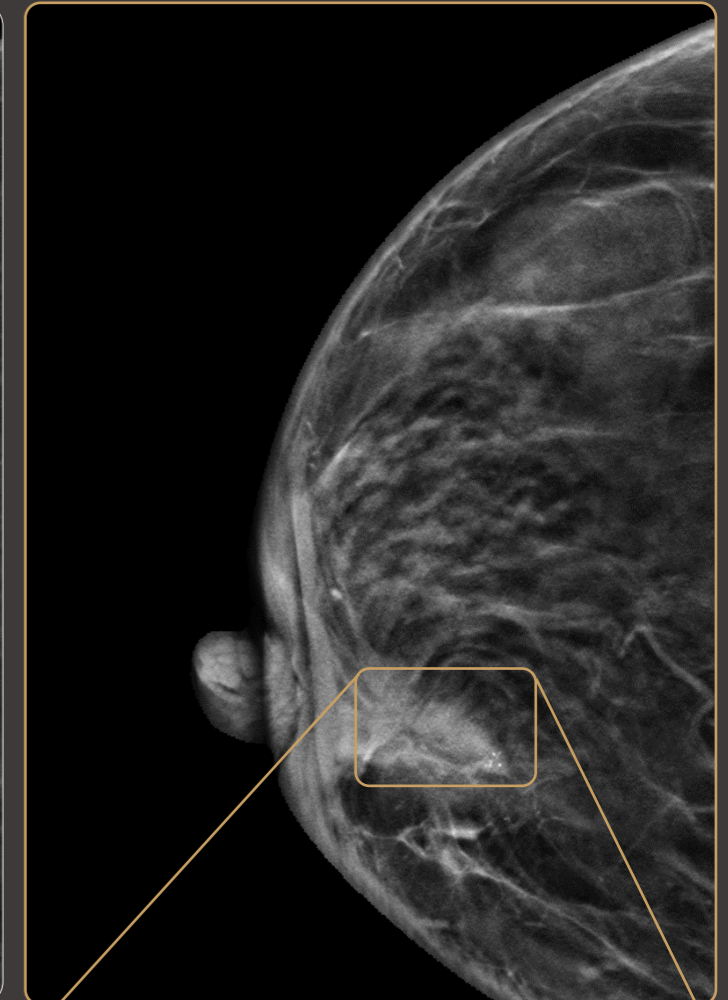
[2] Zackrisson, S, et al. (2018). One-view breast tomosynthesis versus two-view mammography in the Malmö Breast Tomosynthesis Screening Trial (MBTST): a prospective, population-based, diagnostic accuracy study. *The Lancet Oncology*, 19(11), 1493–1503. [https://doi.org/10.1016/s1470-2045\(18\)30521-7](https://doi.org/10.1016/s1470-2045(18)30521-7).

## Definitive findings with 40° tomosynthesis

DBT images show polymorphic calcifications previously obscured by tissue overlap, which can be used for further diagnosis.



RCC FFDM  
Breast type: Heterogeneous dense  
Breast thickness: 36mm



RCC wide-angle DBT  
Breast type: Heterogeneous dense  
Breast thickness: 36mm



# An Efficient Way to Achieve Precise Diagnosis

The demand for radiologists is significantly higher than previously estimated. Numerous studies over the past two decades have highlighted shortages in radiographic staff, particularly in fields such as mammography and

computed tomography<sup>[1]</sup>. There is a pressing need to implement standardized and efficient methods to alleviate the workload of radiologists.

[1] Konstantinidis, K. (2023). The shortage of radiographers: A global crisis in healthcare. *Journal of Medical Imaging and Radiation Sciences*, S1939-8654(23)018775.

# Streamlined Screening in Less Than ~5 Min

## Scanning

### Faster exposure with a 15° tomosynthesis

Experience a significant reduction in scanning time with our 15° Narrow-Angle Screening Mode, cutting down the process by 30-40% compared to wide-angle diagnostic modes. From scanning to reconstruction and presentation, generating DBT images and synthesized U-view 2D images in 30 seconds.

15° narrow-angle mode

**30%**  
Less Scan Time\*\*



## Reading

### Efficient reading with GRACE workstation

**Faster review for DBT images**  
DBT images enhance clarity but increase radiologist workload. Our GRACE workstation streamlines breast image processing with customizable reconstruction slice thickness of DBT images, balancing efficiency and diagnostic accuracy.

**Handy operation with keypad**  
Equipped with a dedicated mammography keyboard, it allows radiologists to click a button to select images, switch patients, and adjust images, and twist a knob to adjust image contrast.



## Reporting

### Snap diagnosis with AI assistance\*\*

AI assistance improves radiologists' efficiency and ensures diagnostic accuracy amid potential radiologists shortages and challenges in lesion

confirmation and diagnostic standardization within the healthcare sector.

#### 4 Steps to Get AI Report

Accurate analysis of the breast glandular types.

Discover and highlight lesions in seconds.

Accurate measurement of the size, shape and density of the lesions.

Get the diagnosis BI-RADS report in 1 minute.

**1min**

### Mammography Report

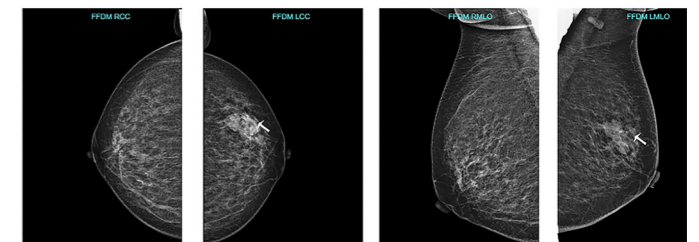
#### Image Findings

Both breasts density: a. The breasts are almost entirely fatty.  
Right breast found round and punctate calcification.  
In the upper outer quadrant and middle depth of the left breast, an irregular high-density soft tissue mass is visible (cc 16-46/64; mlo 10-40/68), the size is approximately 35.30mm x 21.10mm(31/64), with indistinct margin.  
Left breast found round and punctate calcification.

#### Management Recommendations

Left breast upper outer quadrant mass. BI-RADS: Category 4B. Please combine clinical physical examination w ultrasound and MRI examination, and suggest conducting histological examination.  
Both breasts benign calcification. BI-RADS: Category 2. Benign finding, continued monitoring with regular mammograms is recommended.

#### Images



The AI analysis results should not be solely used for diagnosis. Please consult a physician for an accurate diagnosis.

\*\*Compared with the uMammo 890i's 40° wide-angle scanning time.

\*\*This feature is not commercially available in all countries. Due to regulatory reasons, its future availability cannot be guaranteed.



# Simplified Biopsy Workflow, Bridging Precision and Efficiency

To provide imaging guidance for clinical interventions, we offer uStereo for accurate positioning of lesions, from 'accurate diagnosis' to 'accurate treatment'.

## Visualized needle guidance for accurate acquisition

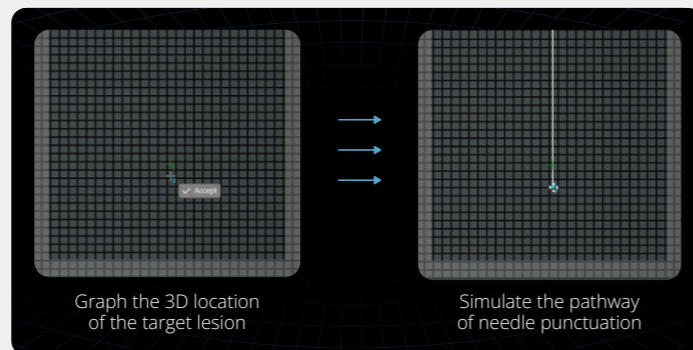
For your targeted lesion, uStereo calculates its spatial coordinates using parallax views from  $\pm 15^\circ$ , enhanced with Multiview visualized needle guidance. Multiview

precisely maps the target and simulates the needle pathway, enabling accurate biopsy with a target precision of  $\pm 1$  mm.

Accuracy in

# $\pm 1$ mm

Highly accurate biopsy with Multiview

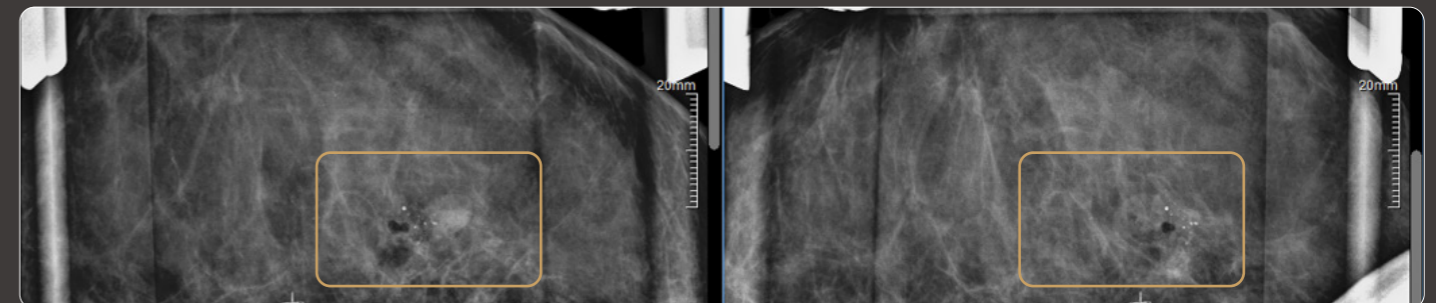
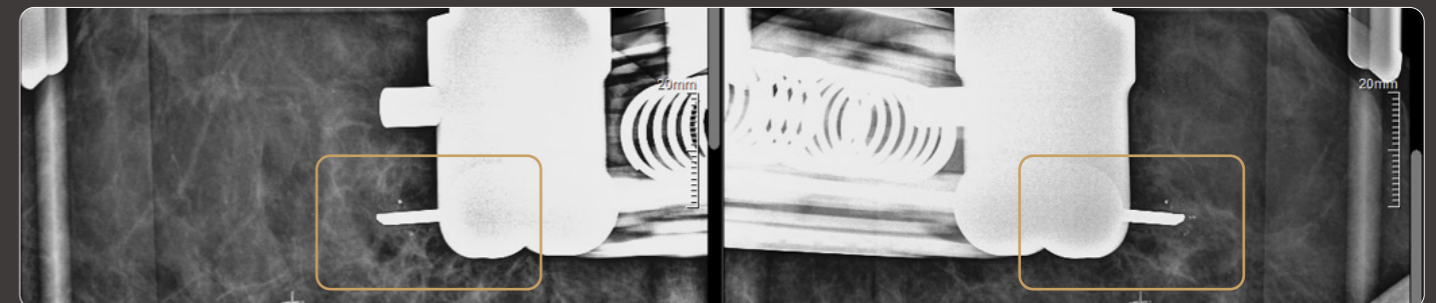
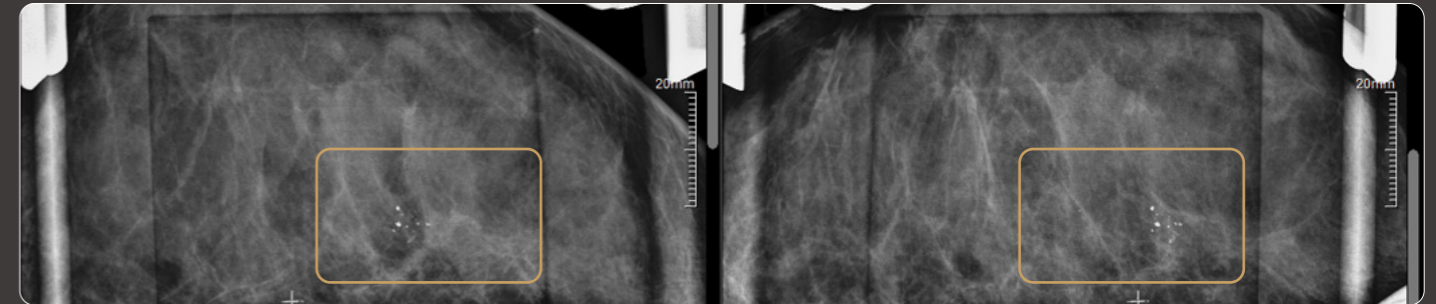


## ~1 sec sliding installation, quick biopsy conversion

By sliding the stereotaxic module horizontally along the panel detector, and connecting the cable to the port beneath the object table, you can swiftly transit from screening to biopsy mode with uMammo 890i.



## uStereo biopsy



# Elevating the Standard of Women's Care



Mammography presents significant challenges for both patients and clinicians. Research reveals that nearly half of women decline follow-up screenings due to discomfort from breast compression<sup>[1]</sup>, while radiation concerns further dissuade attendance.

Additionally, a substantial majority of mammography technicians experience repetitive strain injuries<sup>[2]</sup>, which can disrupt their focus and potentially impact patient care and satisfaction.

[1] Whelehan, P. (2013), et al. The effect of mammography pain on repeat participation in breast cancer screening: A systematic review. *The Breast*, 22(4), 389-394.

[2] Thompson, A. C. (2014), et al. Factors associated with repetitive strain, and strategies to reduce injury among breast-imaging radiologists. *Journal of the American College of Radiology*, 11(11), 1074-1079.

# Designed with Women's Comfort in Mind

## Adaptive compression brings more comfort

Our intelligent compression automatically stops compression at the ideal moment and releases the breast immediately after exposure, minimizing manual adjustments and maximizing women's comfort.



## Dedicated design for stress relief

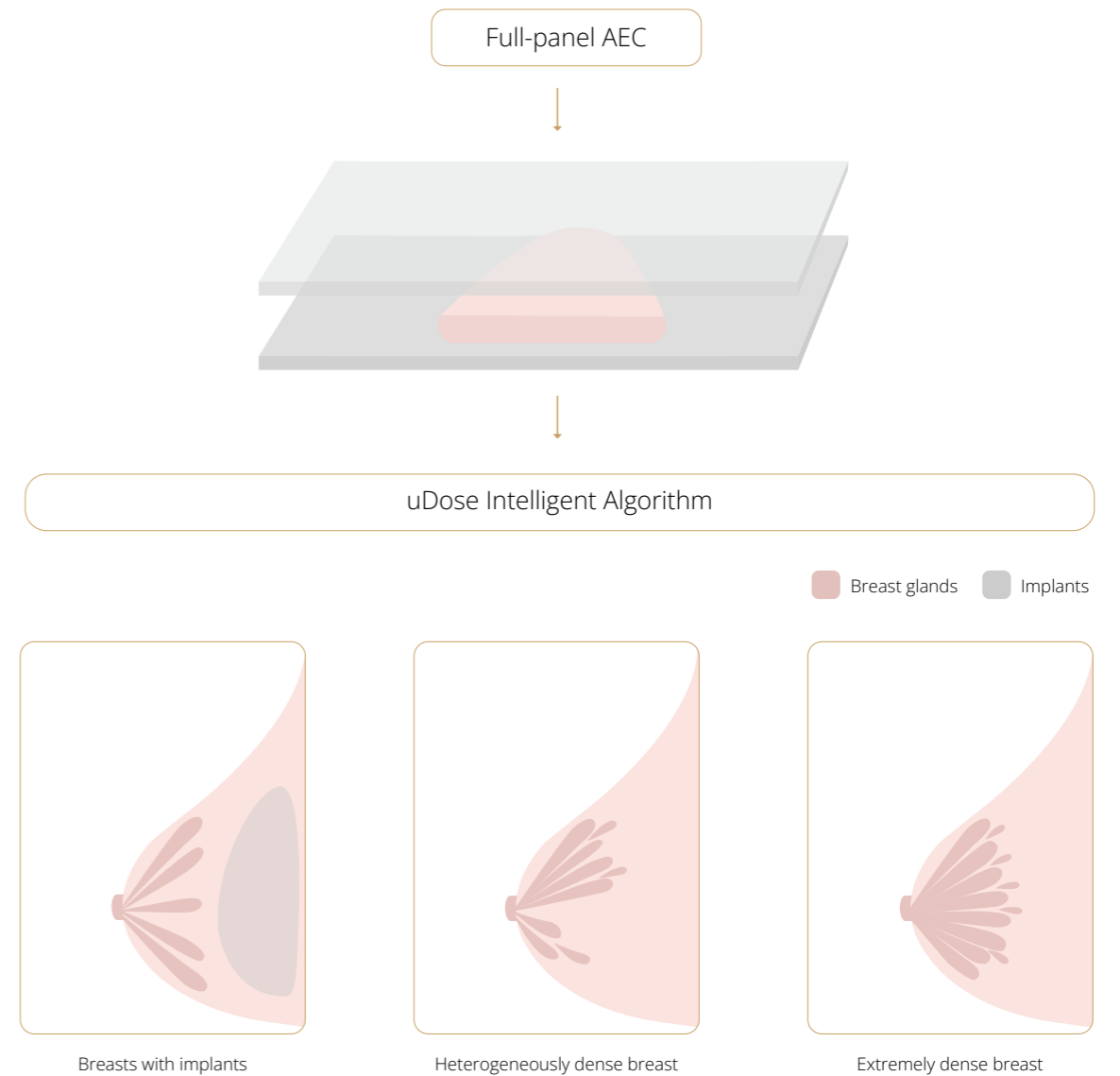
Before compression, the breathing light can guide the patient. As the light on one side illuminates, it indicates which breast side should be compressed to prevent mistakes. During compression, the rhythmic flashing of the light calms patients down, reducing anxiety and tension.

When in the MLO position, placing the hand on the curved armrest helps patients relax and prevents tension in the pectoralis major muscle, which could otherwise affect compression.



## Lower dosage for all type of breast

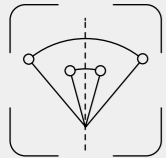
uDose enables precise identification of breast glands, tailored to individual breast density to ensure lowest possible dose at all times.



# Tailored for Hands-on Use with a Focus on Women

## Wise move easy scan

With **one-touch opposite positioning**, technicians avoid readjusting the C-arm height for MLO position, reducing unnecessary patient movement.



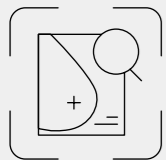
## Intuitive user interface design

Our **user-friendly acquisition workstation** uses icons and tabs designed to make it easy for you to navigate and use without extensive training.



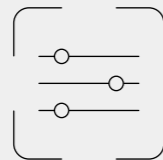
## Ensure good images all at once

We offer **AI-driven real-time image quality control**\* to alert you of obstructed or insufficient breast images, reducing unnecessary patient recalls and ensuring a smooth experience.



## Easy control at your fingertips

The dedicated mammography control box is incorporated with buttons for quick power-on / -off, exposure, emergency power-off.



\*This feature is not commercially available in all countries. Due to regulatory reasons, its future availability cannot be guaranteed.





# The Value You Deserve

With the WHO's heightened focus on breast cancer and the emphasis on screening, there has been a significant increase in the number of patients undergoing breast cancer screening, posing a substantial challenge to healthcare providers.<sup>[1]</sup>

Healthcare facilities must manage larger volumes of screening patients while stay within the budget. uMammo 890i is designed to minimize system costs and enhance service efficiency to meet growing clinical demands.

[1] World Health Organization.(2022) The global Breast Cancer Initiative (2022, June 30) Retrieved July 11, 2024.

# The Value You Deserve

## From screening to diagnosis, one system meeting all your needs

The uMammo 890i offers narrow-angle mode for fast screening, 40° wide-angle for diagnostic mammography, and uStereo biopsy for pathological diagnosis.

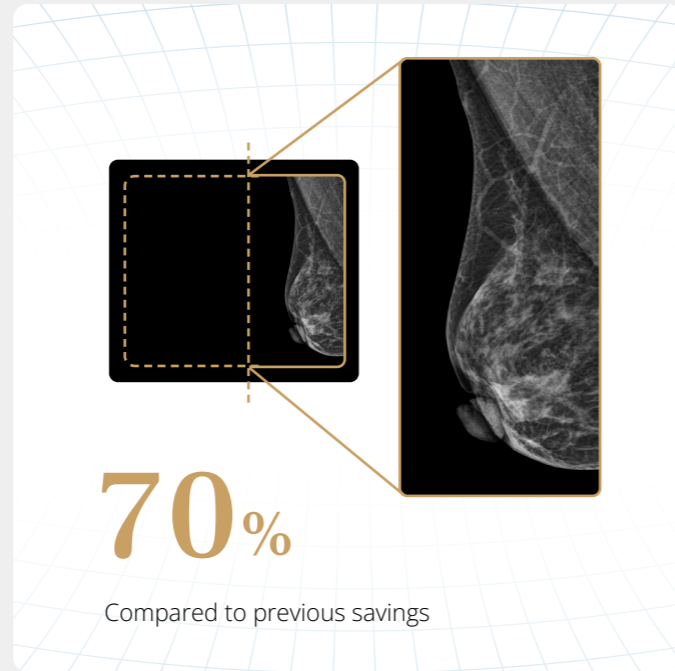
This versatile system facilitates accurate diagnosis and minimize interruptions throughout the diagnostic process.



## Optimized image storage, archiving for high throughput

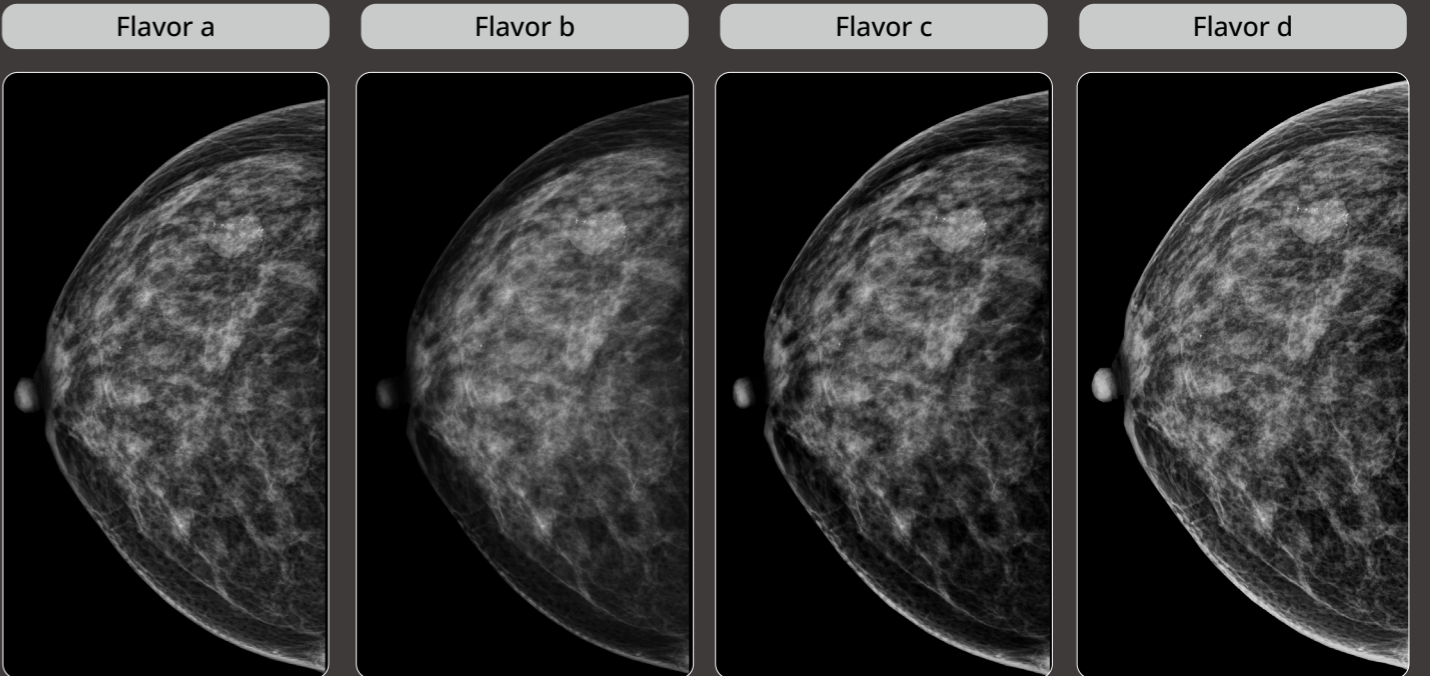
A large volume of DBT images place a burden on the system's storage and transmission. Automatic image cropping supports the elimination of non-breast imaging regions, resulting in a 70% reduction in storage space and transmission time.

Also, 15° narrow-angle rapid DBT screening ensures high image quality, reduces screening time, and increases hospital screening capacity.



## Multiple image flavors fit your preference

Radiologists can customize image styles by adjusting contrast and sharpness to match their reading habits, ensuring consistent diagnosis across different mammography systems.



Patient information: extremely dense breast of 37mm in thickness.

# uMammo 890i

## Dual-angle Tomosynthesis

Offering a 40° wide-angle and a 15° narrow-angle to meet diverse clinical need

## uStereo Biopsy

±1 mm biopsy target accuracy, supporting both vertical and horizontal approaches

## Advanced CMOS Detector

High spatial resolution of up to 10.1 lp/mm with an exceptionally small pixel size of 49.5 μm

## uDose Technology

For better intelligent exposure control and the lowest possible exposure dose

## AI-assisted Diagnosis\*

For greater efficiency in lesion analysis and real-time image quality control

## Automatic Image Cropping

Allowing for a 70% reduction in storage space and transmission time



\*This feature is not commercially available in all countries. Due to regulatory reasons, its future availability cannot be guaranteed.

# User in Mind Design

Focusing on user experience, our system combines precision with a lightweight and artistic design, providing patients with a sense of ease and comfort during their medical procedures. With uMammo 890i, we're committed to delivering trusted medical care that respects the patient's needs and preferences



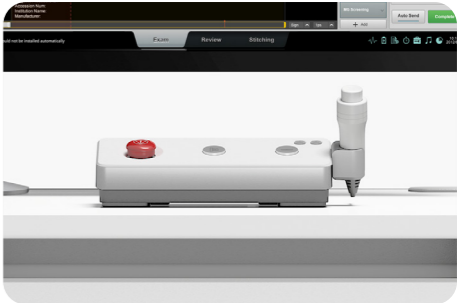
### User-friendly Design

The product design delivers comfort, safety, efficiency and ease-of-use. By applying ergonomic principles, uMammo 890i combines innovative design with optimal functionality in order to provide the best possible user experience and optimize patient comfort during the examination



### Sophisticated Craftsmanship

Driven by the principles of precision design, we meticulously refine every aspect of our technology



### Pleasing Aesthetics

Our design scheme integrates modern aesthetics with minimalism, presenting a seamless fusion of traditional and modern styling