Selenia® Dimensions®

A Revolution in Breast Imaging

HOLOGIC™
The Women's Health Company

SELENIA® Dimensions®
Digital Tomosynthesis System

The promise of breast tomosynthesis is here

Hologic has been at the forefront of the industry's transformation from analog to digital mammography. Now we have taken another significant leap forward with the introduction of the Selenia® Dimensions® system, the first practical tool to deliver on the extraordinary promise of breast tomosynthesis.

The Selenia Dimensions system delivers the exceptional digital mammograms you've come to expect from Hologic and takes you to the next level in breast imaging. You can now offer your patients breast tomosynthesis—a breakthrough technology poised to revolutionize how breast cancer is detected today. This versatile platform also opens the doorway to future advances in breast imaging, such as tomosynthesis-guided biopsy, contrast-enhanced tomosynthesis, and tomosynthesis fusion technologies.

SELENIA® Dimensions®
Digital Tomosynthesis System

A powerful, versatile platform

A masterpiece of state-of-the-art technology and flexibility, the Selenia Dimensions system delivers digital mammography and breast tomosynthesis capabilities in a high performance, ergonomic system designed to streamline workflow and provide a more comfortable experience for the technologist and the patient.

Selenia Dimensions delivers:

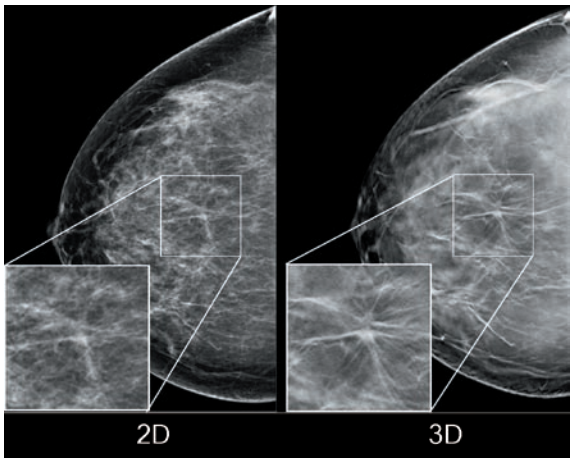
- Exceptionally sharp images for visualizion of the finest details.
- Ground-breaking tomosynthesis platform designed to deliver superior diagnostic performance with optimal workflow efficiencies.
- One-touch control for seamless, instantaneous transition between imaging modes: 2D imaging only, tomosynthesis imaging only, or combo imaging, Hologic's unique feature that acquires a traditional digital mammogram and a tomosynthesis scan in one exposure, under the same compression, in seconds.
- Advanced user tools to simplify operation and enable higher patient throughput.
- Sophisticated, ergonomic features specifically developed to assure the well-being of the patient and technologist.

Now cancer has nowhere to hide

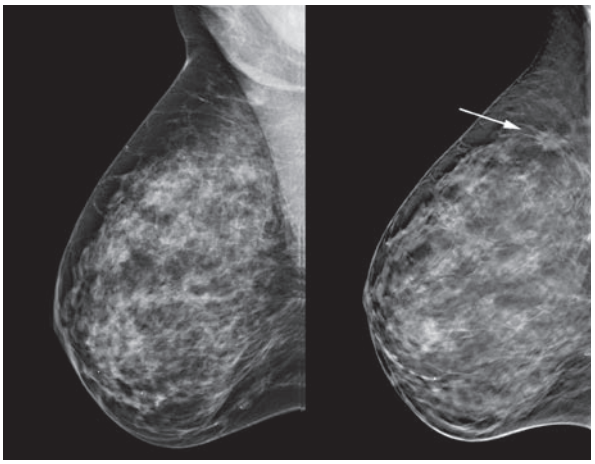
Tomosynthesis is a revolutionary technology that gives radiologists the ability to identify and characterize individual breast structures without the confusion of overlapping tissue. During a tomosynthesis scan, multiple, low-dose images of the breast are acquired at different angles. These images are then used to produce a series of one-millimeter thick slices that can be viewed as a three dimensional reconstruction of the breast.

Instead of viewing all tissue complexities on a traditional 2D mammogram, the radiologist can now scroll through the layers of the breast in one-millimeter thick slices. This allows the radiologist to see around features in the tissue and identify areas of concern that may have been hidden by overlapping tissue, or dismiss normal areas that may have appeared suspicious on a digital mammogram. As a result, recalls may be reduced, unnecessary biopsies may be eliminated, and breast cancers may be identified earlier.

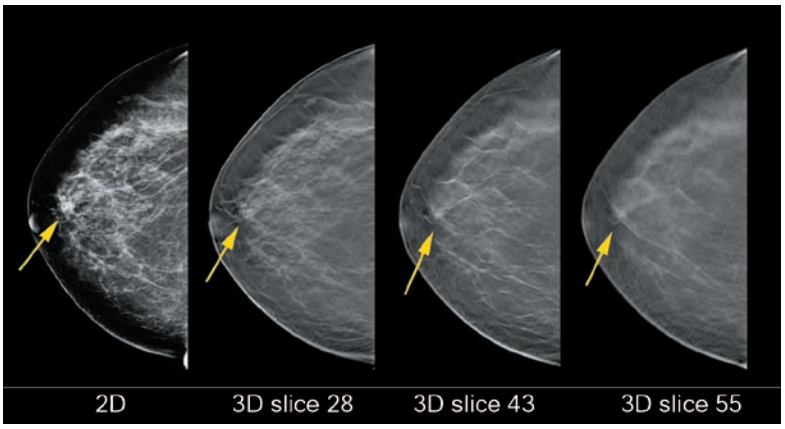
Selenia Dimensions Clinical Images



A small invasive ductal carcinoma is easily visible using tomosynthesis (right image) but not visible using the conventional mammogram (left image). The breast cancer margins appear spiculated on the tomosynthesis image while the area appears to be normal glandular tissue using the conventional mammogram.



Mammographically occult cancer (left image) is visible with tomosynthesis (right image).



A suspicious area behind the nipple is resolved using tomosynthesis imaging (rightmost three images). Unlike the mass-like appearance on conventional mammography (left image), with tomosynthesis the normal structures creating the suspicious area on the conventional mammogram are identified. Those structures are normal vessels and ligaments in different regions of the breast (28, 43 and 55 mm above the breast platform).

Unparalleled flexibility
for any patient

The Selenia® Dimensions® system was designed as a single platform to provide an efficient solution for any breast imaging need. One touch lets the operator effortlessly select one of three imaging modes: conventional digital mammography only, tomosynthesis imaging only, or Hologic's unique combo imaging. These flexible imaging modes give radiologists all the options needed to tailor the exam to the needs of the patient.

When performing an exam in combo mode, the breast is compressed in the normal way. The x-ray first sweeps in a 15 degree arc over the breast, acquiring a series of 15 low dose projection images at multiple angles. These projection images form the three dimensional reconstruction.

Immediately following the tomosynthesis scan, the HTC® grid automatically comes into the imaging field and a conventional digital mammogram is acquired.

This complex operation is completed in just seconds, giving the radiologist both a 2D mammogram and a tomosynthesis scan, under the same compression, for perfectly co-registered images.

Superior image quality, minimal dose

Image quality is key to early detection. We never stop looking for ways to push our breast imaging technology forward, and the Selenia® Dimensions® system is no exception.

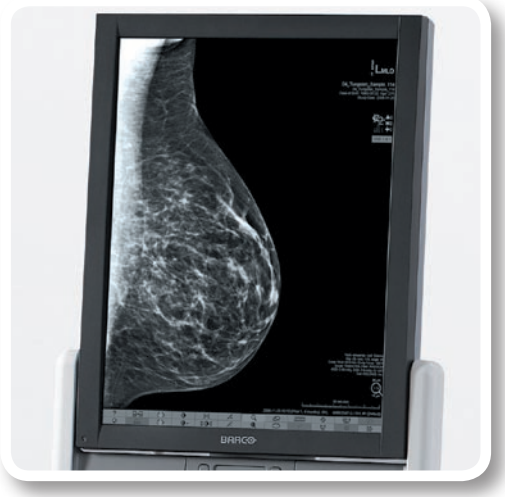
- The Selenia Dimensions system uses Hologic's direct conversion detector, which eliminates the need to convert x-rays to light. The result is exceptionally sharp digital images and high Detective Quantum Efficiency (DQE), enabling low-dose tomosynthesis imaging.

- Our High Transmission Cellular (HTC®) Grid technology delivers higher contrast images by significantly reducing radiation scatter without increasing patient dose.

- A tungsten x-ray tube with rhodium and silver filters for 2D imaging reduces radiation dose to the patient by as much as 30 percent, while maintaining superb image quality and contrast. Silver filtration provides better penetration of larger breasts without increasing exposure time, while the proven rhodium filter is the ideal selection for all other breast sizes. In tomosynthesis imaging, the tungsten tube combined with aluminum filtration provides high quality images at the lowest possible dose.

- System settings are optimized for high quality tomosynthesis imaging;
  - 15 degree scan provides high in-plane resolution.
  - Acquisition of 15 projection images (1image/degree of arc) enables rapid reconstruction time with significantly fewer reconstruction artifacts than seen in wider scans.

Streamlining workflow
in a way never before possible



The Selenia Dimensions system incorporates the latest technologies to simplify workflow and facilitate high patient throughput;

Touch-screen controls

Touch-screen controls with intuitive icons and function screens allow the operator to move through exams quickly and efficiently.

Biometric login

Simply place your finger on the biometric login window and you are ready to start an exam with your preconfigured workflow preferences in place.

High resolution display

Preview images are viewed on a 3MP, DICOM-calibrated display providing exceptionally fine image detail. Prior breast imaging studies can be recalled at a moments notice, making it possible to view new and prior images side-by-side.

Retractable face shield

The technologist has the option of retracting the face shield to position patients. The face shield may be easily pulled back from its retracted position to protect the patient during the exam.

Automated HTC grid

The automated movement of the HTC Grid greatly streamlines patient throughput. Automatic engagement for 2D imaging and retraction for magnification views and tomosynthesis imaging takes place in approximately 2 seconds, so the patient is never delayed.

Smart paddle technology

The system collimates to the appropriate field of view based on the compression device installed and the position of the paddle, ensuring accurate positioning of any size breast on a single detector. The paddle automatically shifts to the next view in the technologist's preconfigured workflow; an easy override function accommodates changes in the exam.

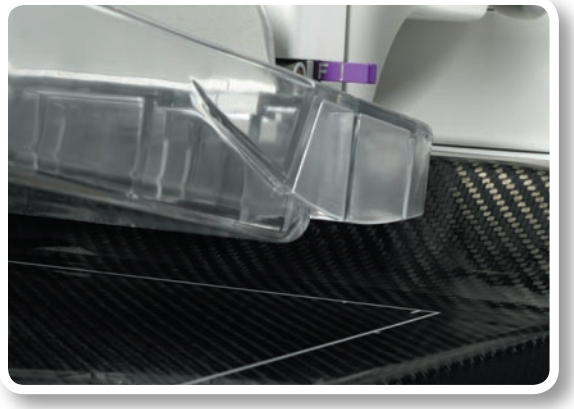
An ergonomic design
for comfort and ease of operation

Ergonomically designed exposure switches

The technologist simply depresses a pair of levers on either side of the acquisition system to initiate exposure. A light pressure is all that is needed for exposure activation, eliminating repetitive motion discomfort. The system can be configured for one or two lever activation.

Advanced paddle technology

Newly designed compression paddles are light and easy to handle. Each paddle mounts directly onto the compression carriage, eliminating the need to handle bulky components.



Hologic's acclaimed FAST Paddle™ conforms to the natural contour of the breast for greater comfort to the patient and more even compression across the entire breast. For even greater flexibility, the FAST Paddle can be converted to a standard screening paddle with the push of a button.

Natural positioning

Indented spaces on the side of the gantry give patients a natural spot to place their hands during the exam, making positioning easier for the technologist and more comfortable for the patient.

Streamlined tube head

The streamlined tube head and SID of 70 cm makes positioning easier and provides more working space for interventional procedures.

A comprehensive and efficient solution for breast tomosynthesis review

Hologic's SecurView® DX diagnostic workstation has been optimized to support the Selenia® Dimensions® breast tomosynthesis system, with novel workflow tools to ensure accurate and efficient review of both 2D and 3D exams.

- **Hologic's proprietary image compression technology** allows you to move between image sets without delay.
- **Dynamic ciné method:** SecurView DX's new keypad allows you to display images in a dynamic ciné loop with adjustable speed. You also have the added flexibility to manually scroll through each slice in the reconstructed image.
- **Slabbing mode:** Control the thickness of displayed slices with the touch of the button for more effective review of calcification clusters.
- **Digital mammogram tomosynthesis overlay:** Images acquired in combo mode show the 2D and 3D images in complete co-registration, allowing the reviewer to easily toggle between them. CAD marks generated from the 2D images can be overlaid on the breast 3D image sets in their correct locations.
- **CAD for tomosynthesis:** Works-in-progress program is being developed to facilitate the identification of calcification clusters and aids in analysis of mass borders.

Meeting the digital connectivity challenge

The advent of breast tomosynthesis introduces a new level of connectivity requirements for facilities. Hologic helps you meet this challenge through its extensive staff of highly trained connectivity specialists and a suite of products developed to address any connectivity need:

- SecurXchange™ archive provides a cost-effective, scalable image storage and retrival solution for any facility, large or small.
- SecurXchange router, helps accelerate image transmission and automate workflow in the exchange of DICOM objects, for greatly simplified workflow.
- Applications Synchronization provides an interface with all major third party applications to streamline reviewing and reporting functions.

Bringing care to remote areas

Across the world there are overwhelmingly large numbers of women who do not have access to breast cancer screening services. Instead of accepting this obstacle to care, many hospitals are looking to mobile technologies as a means to expand their reach. Mobile mammography makes it possible to bring care to the most remote areas and medical centers that do not offer breast cancer screening.

The Selenia® Dimensions® platform was built with the flexibility to be configured for mobile mammography. Adapting a Selenia Dimensions system for mobile allows you to bring the same leading technology you offer in a hospital setting to any location around the world, giving every woman access to life saving screening services.

A growing global company

With centers of operation in North America, Europe, Central America, Australia, and Asia, Hologic is focused on extending its medical systems and solutions to benefit women around the world. We have the strength and resources of a billion dollar company, and the vision of leaders committed to a broad spectrum of women's health issues. There are over 4,000 Hologic employees dedicated to achieving breakthroughs in research, in product development and in the worldwide distribution of healthcare solutions. We have the unwavering support of thousands of healthcare partners who are equally dedicated to extending and enriching the lives of women everywhere.

Together we can improve the lives of women around the world.

Hologic is defining the standard of care in women's health. Our technologies help doctors see better, know sooner, reach further and touch more lives. At Hologic, we turn passion into action, and action into change.

BREAST IMAGING SOLUTIONS | INTERVENTIONAL BREAST SOLUTIONS | BONE HEALTH
PRENATAL HEALTH | GYNECOLOGIC HEALTH | MOLECULAR DIAGNOSTICS

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