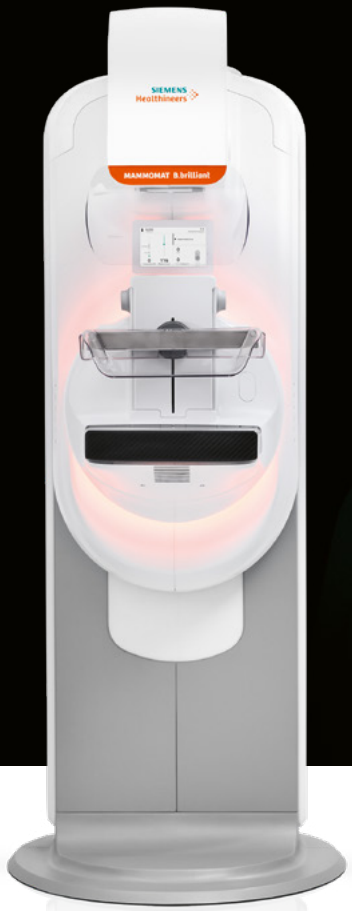
MAMMOMAT B.brilliant

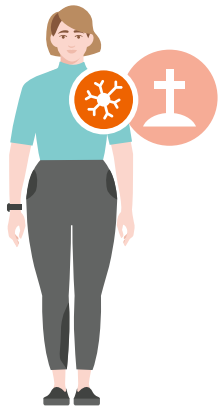
Exclude the maybes.

siemens-healthineers.com/mammomat-bbrilliant

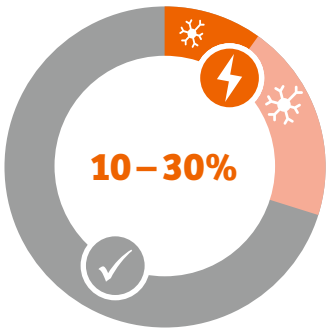


SIEMENS Healthineers

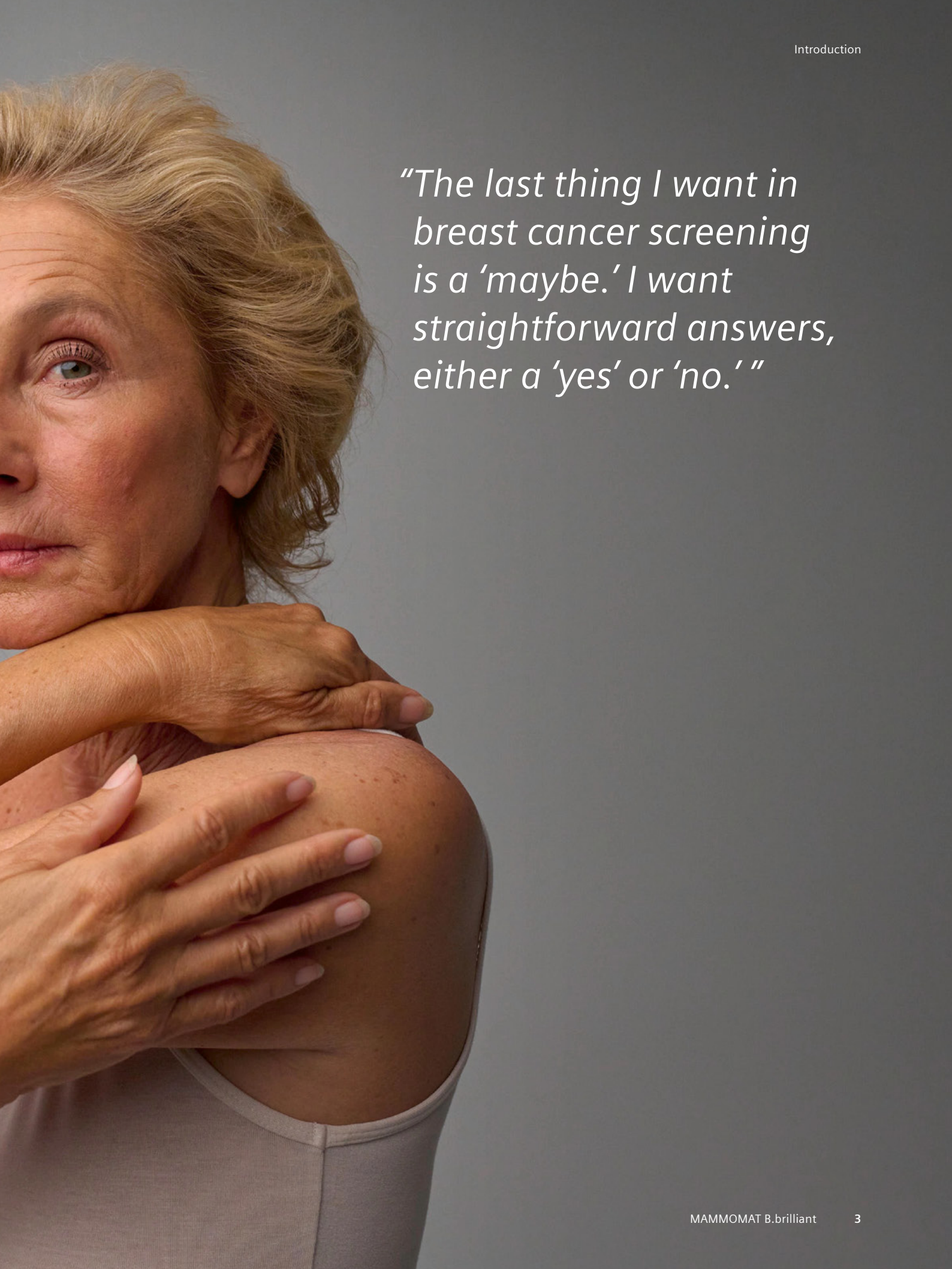
Continuing challenges in breast cancer detection



For women, **breast cancer** is the **2nd leading cause of cancer-related deaths** in the developed world.[1]



Radiologists **still miss** between **10% and 30%** of breast cancers.[1]



"The last thing I want in breast cancer screening is a 'maybe.' I want straightforward answers, either a 'yes' or 'no.' "

MAMMOMAT B.brilliant

Exclude the maybes.

A new dimension in image quality

Get unprecedented image quality in digital breast tomosynthesis thanks to our new PlatinumTomo.

A new level of patient-centricity

Make patient comfort a priority with smart, fast, and intuitive workflows. In addition, benefit from a design that helps you prevent physical strain.[2]

A convenient path to diagnostic clarification

Make use of fast, easy access to supplemental diagnostic methods that aim to boost accuracy.

A system that pays off

Benefit from high patient throughput and great customer support in 50° Wide-Angle Tomosynthesis with a service experience that goes above and beyond pure maintenance.

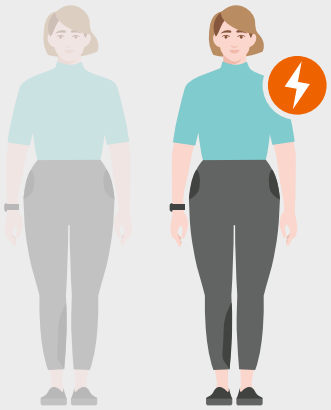
In the fight against breast cancer, we do what we can to offer support. We believe that our biggest impact lies in complementing your experience with ours – our track record of technological breakthroughs. When it comes to breast cancer screening and diagnosis, we strive to provide you and your patients with the most accurate diagnostic results.

With MAMMOMAT B.brilliant, we are breaking new ground. It aims to offer uncompromised cancer detection for women who want straightforward answers. Experience higher accuracy,[2,3] easy workflows,[2] and efficient diagnostic processes – in a next-generation mammography system that was developed with women's wellbeing in mind.

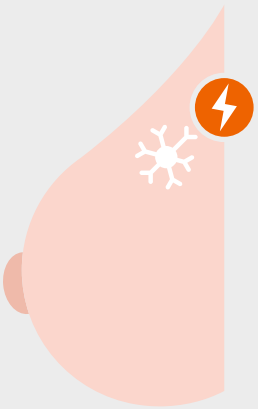
MAMMOMAT B.brilliant is the first mammography device featuring PlatinumTomo combining 50° Wide-Angle Tomosynthesis and impressive acquisition speed with excellent in-plane resolution and customizable image impression. At the same time, MAMMOMAT B.brilliant is easy to work with – offering convenient decision processes for all mammography-based diagnostic applications.[2]

Table of content

Challenges of false-positive or false-negative findings



Research suggests **50% of women** getting annual mammograms will have **a false-positive finding.***[5]



At the same time, about **1 in 8 breast cancers** are missed due to **false negatives**.[5]

Diagnostic uncertainty resulting from questionable image quality can result in negative consequences for patients – no matter if it is overlooked cancer, overdiagnosis, or avoidable recalls.

A new dimension in image quality

MAMMOMAT B.brilliant delivers unprecedented image quality for digital breast tomosynthesis and FFDM images, helping you provide accurate results to your patients.

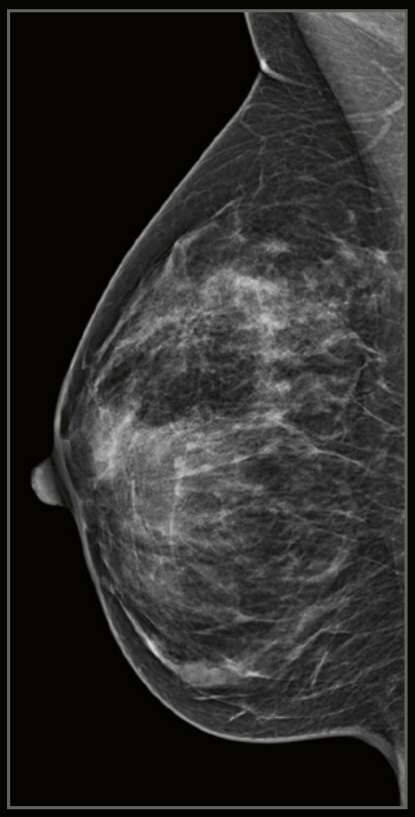
Highest depth resolution and excellent in-plane resolution[4]

MAMMOMAT B.brilliant offers innovative features that safeguard excellent image resolution at decreased scanning time and lower patient dosage:[2,3] From 50° Wide-Angle Tomosynthesis and flying focal spot technology to AI-powered image reconstruction and synthetic 2D images looking closer to FFDM images than ever before.[5] Benefit from highest depth resolution and mass detectability as well as excellent in-plane resolution to enable more accurate detection of breast cancer.

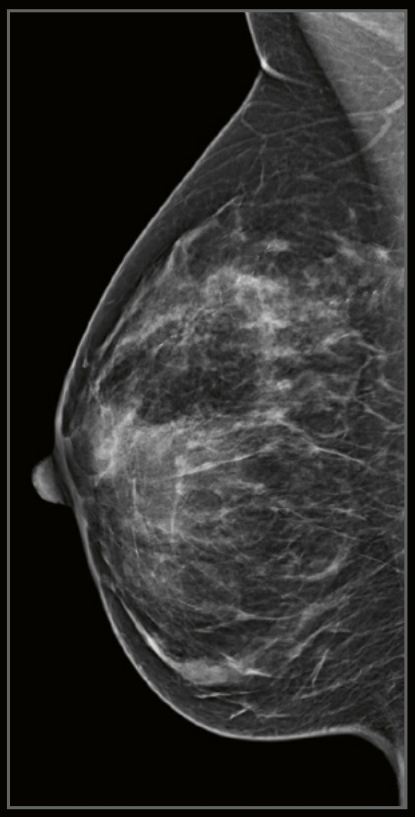
Comfortable switch from other systems

Whether you perform tomosynthesis, Insight 2D, or FFDM, MAMMOMAT B.brilliant allows you to choose image contrast and sharpness according to your personal preferences. Your choice of image impression can help you switch more easily and comfortably from other systems – and can give you an easier way to compare results to previously acquired images.

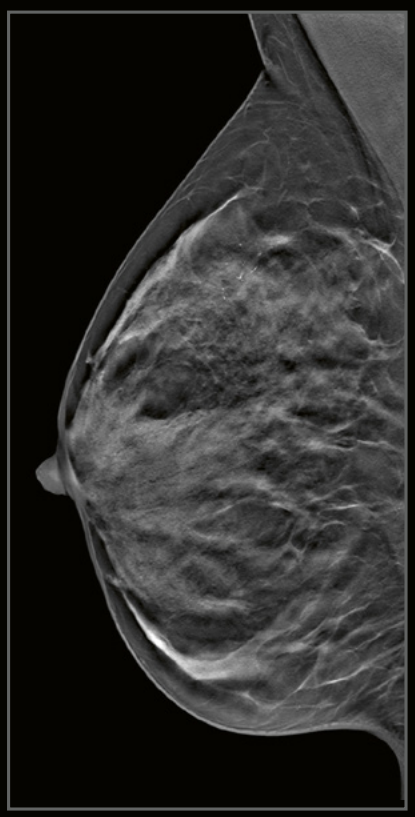
** Over a 10-year period.*



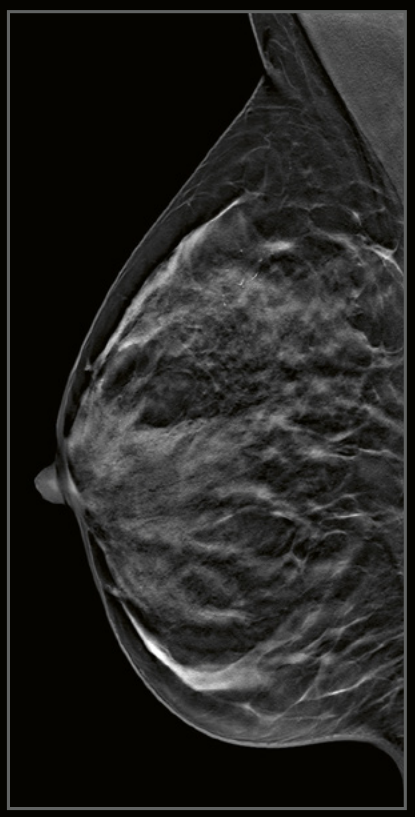
FFDM



Insight 2D



DBT Flavor 0



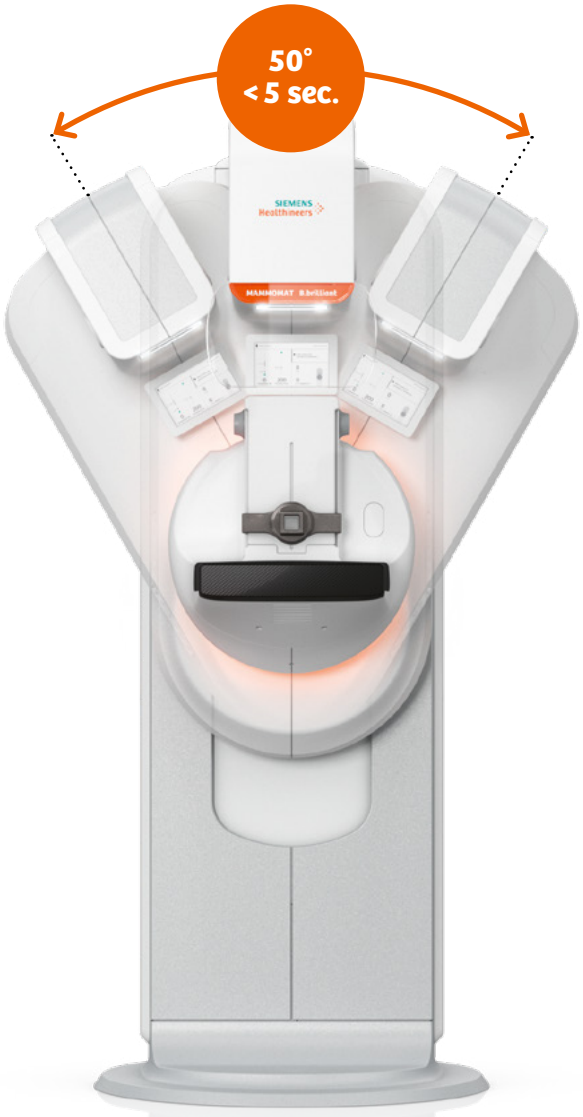
DBT Flavor 1

PlatinumTomo

The new benchmark in tomosynthesis image acquisition

Learn how PlatinumTomo employs breakthrough technologies to innovate mammography.

Highest depth resolution[4] and excellent in-plane resolution in no more than 5 seconds![2,6]



50° Wide-Angle Tomosynthesis

Leverage the highest depth resolution on the market[3]

Our image acquisition angulation provides you with the highest depth resolution and mass detectability.[7] 50° Wide-Angle Tomosynthesis can help you overcome diagnostic challenges, like overlapping tissue, with up to 3.5 times higher depth resolution than standard tomosynthesis. Designed to help you rule out the maybes in breast cancer detection.[2,8]

Cutting-edge detector

Faster read-out time for higher image acquisition speed

Our new detector features a fast read-out, meaning less compression time and higher tomosynthesis image acquisition speed. The slim detector housing provides more space for the patient to stand comfortably, while offering easy wheelchair accessibility.[2]

Unique flying focal spot technology

Excellent in-plane resolution and acquisition speed

The unique flying focal spot technology enables short X-ray pulses that lead to a small flying focal spot size even when the tube is moving. Combined with the 50° Wide-Angle Tomosynthesis, this technology delivers images with excellent in-plane resolution without compromising on depth resolution or acquisition time. Speed up workflows and benefit from a better visualization of lesions, calcifications, and architectural distortions to improve diagnostics.[2–4]

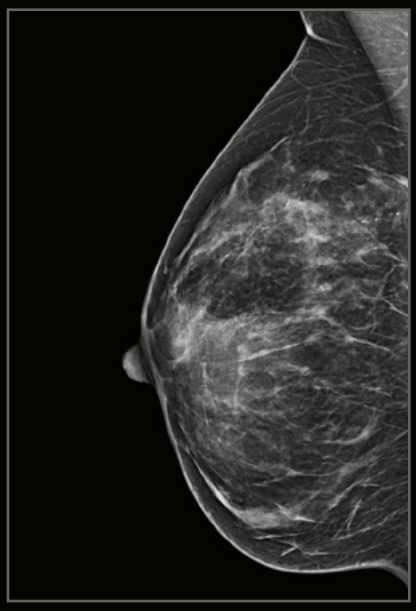
PREMIA image reconstruction

Improve visibility of pathologies and benefit from fast reconstruction[2]

The improved PREMIA image reconstruction framework automatically enhances images to reduce artifacts and enhance visibility of calcifications and lesions. Thanks to its AI-powered noise reduction, PREMIA also boosts synthetic mammogram sharpness. For easier diagnostics, there are completely customizable image impressions for FFDM, tomosynthesis, and synthesized 2D images. In this way, PREMIA helps you speed up workflows and seamlessly switch from other systems.

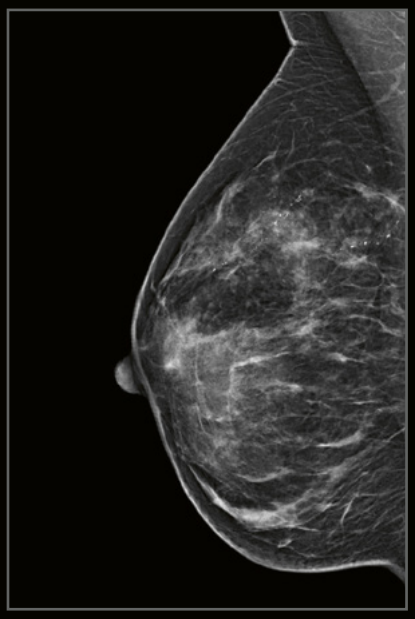
Rule out maybes and give patients peace of mind with proven diagnostic capabilities.

Insight 2D – the new standard for synthetic mammograms



Get a synthesized 2D image that can replace FFDM as an adjunct to digital breast tomosynthesis.

Insight 3D – the only rotating 3D mammogram

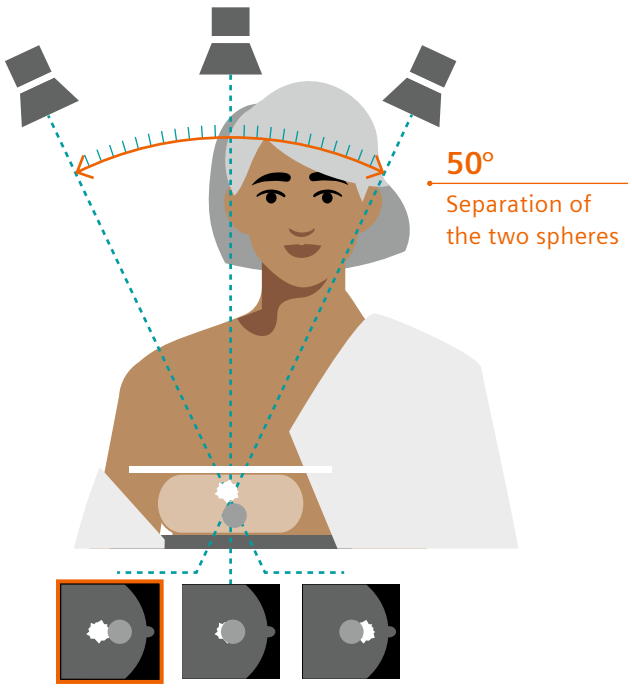


Insight 3D delivers superior visualization of microcalcifications and their distribution as compared to tomosynthesis alone.[9,10]

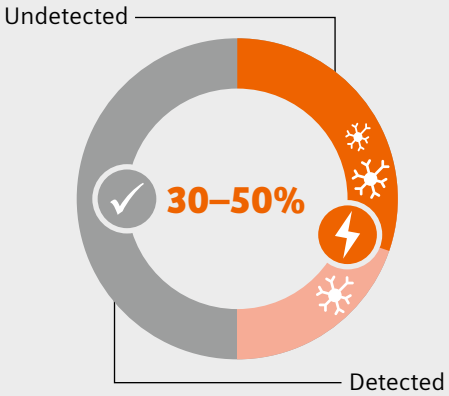
Why a wide angle is the right angle

PlatinumTomo including 50° Wide-Angle Tomosynthesis – a clear picture for greater accuracy and diagnostic confidence[12]

Benefit from highest differentiation of overlapping tissues[12,13]

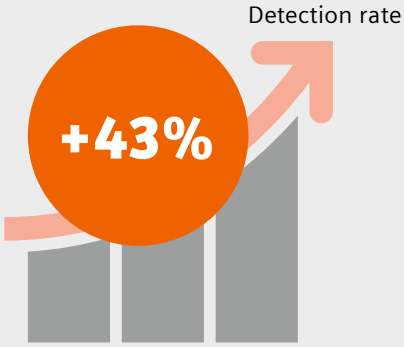


Traditional 2D mammography

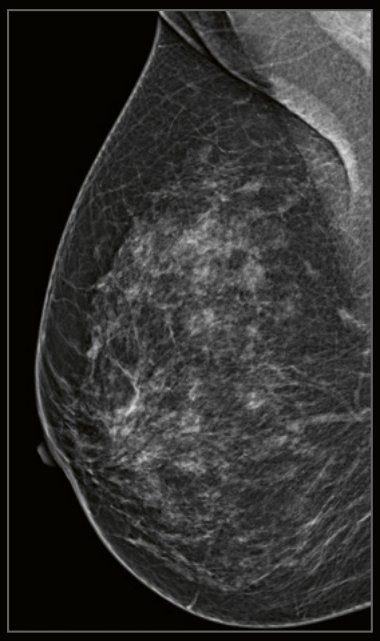


30–50% of malignant tumors may be **left undetected.**[11]

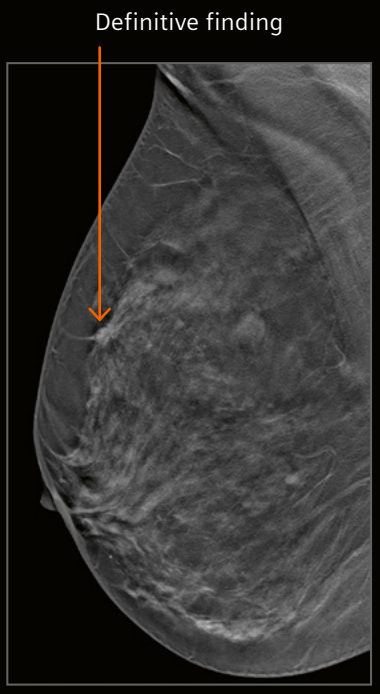
50° Wide-Angle Tomosynthesis



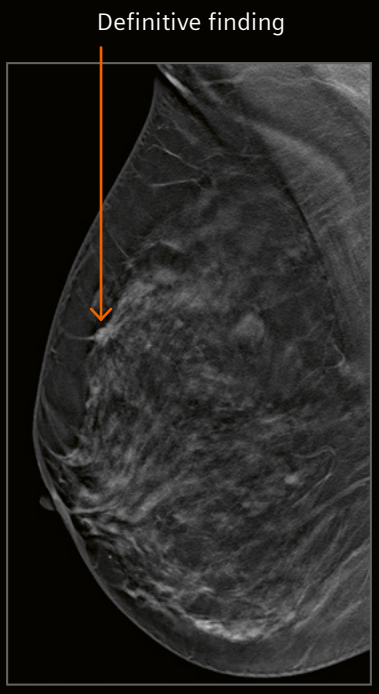
Increased invasive cancer detection rate of 43% with just a one-view tomosynthesis scan[6] and a 15% dose reduction in one of the largest studies worldwide with more than 15,000 screened patients.[7]



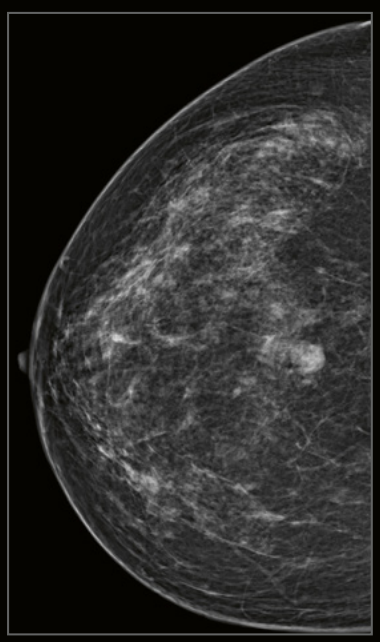
FFDM



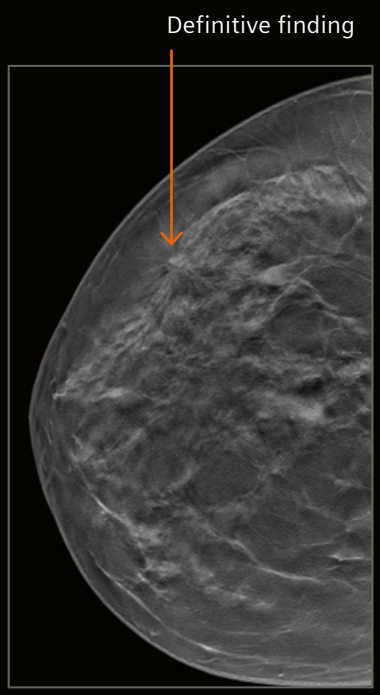
Wide-angle DBT Flavor 0



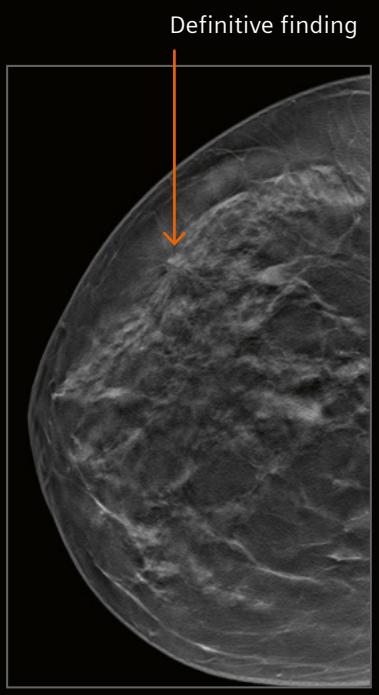
Wide-angle DBT Flavor 1



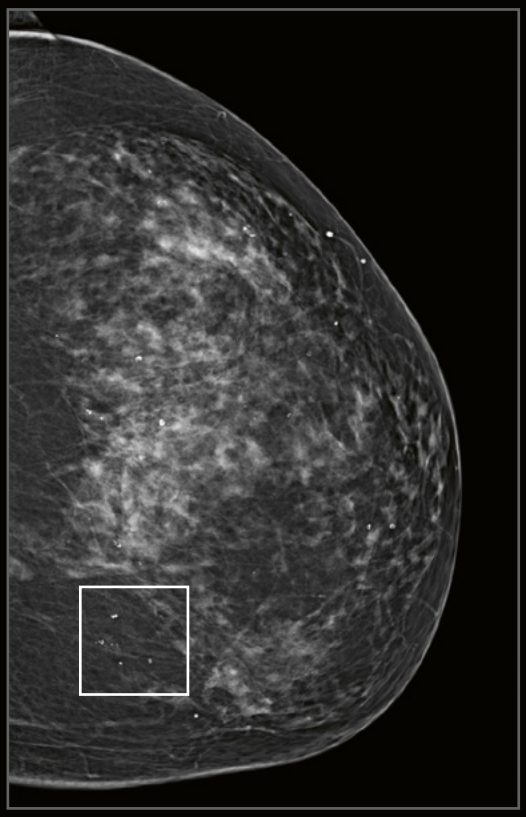
FFDM



Wide-angle DBT Flavor 0



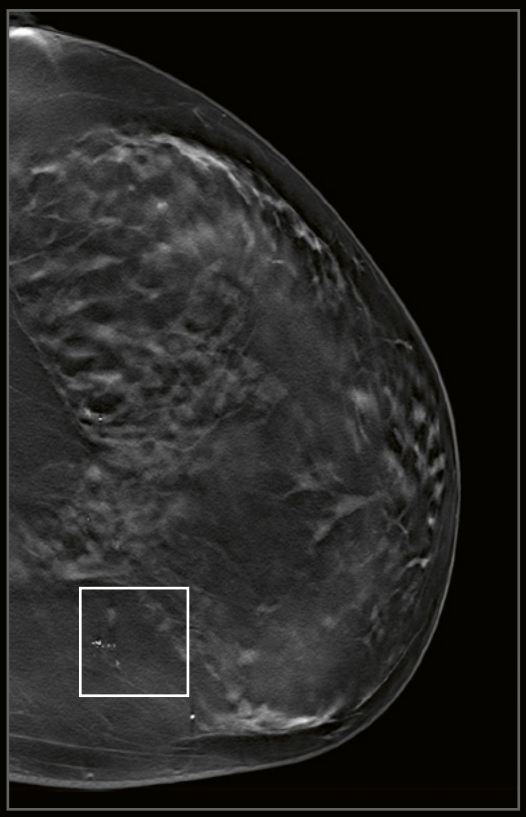
Wide-angle DBT Flavor 1



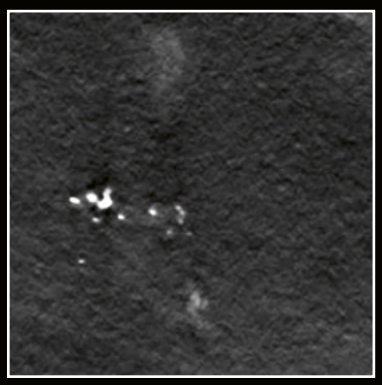
1aac770

1aac770

FFDM



1aac771

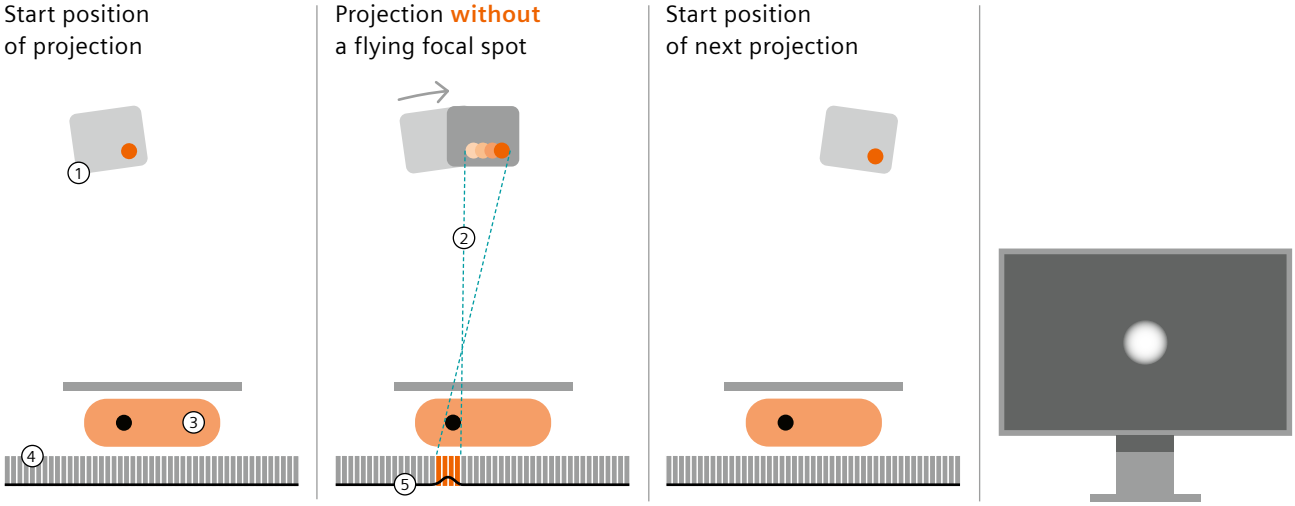


1aac771

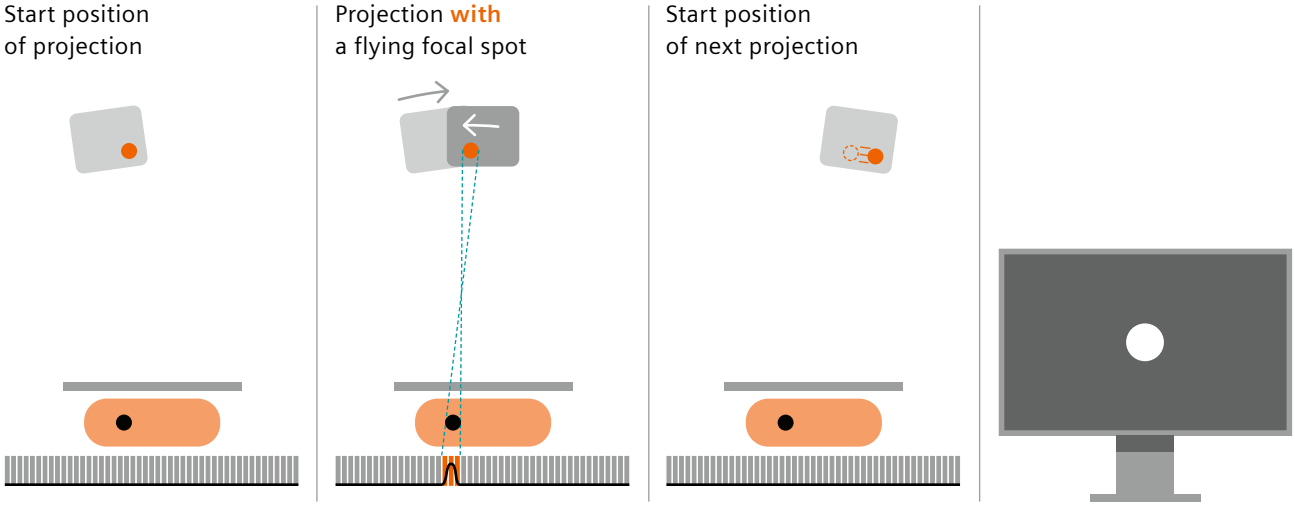
DBT

Our aim with the flying focal spot tube:

Best in-depth resolution without compromise



In a standard tomosynthesis, tube and focal spot constantly move together. For 25 projections, both the tube and the focal spot move during the X-ray pulse. The result is a larger area of pixels and images with blurry edges.

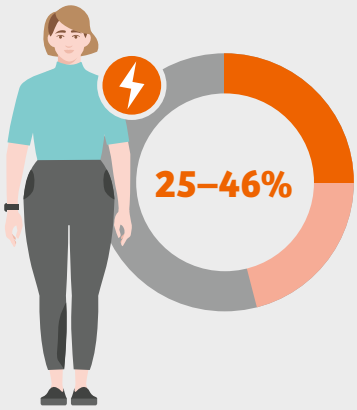


Flying focal spot technology compensates tube movement during each X-ray pulse by deflecting the focal spot in the opposite direction. The focal spot is effectively static during the X-ray pulse. This generates images that have not only the highest depth resolution[4], but excellent in-plane resolution as well.

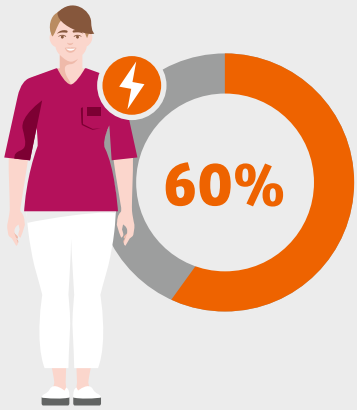
Improved sharpness

① *Tube with focal spot* ② *X-ray pulse* ③ *Breast with calcification* ④ *Detector* ⑤ *Signal intensity*

Challenging exams for patients and radiographers alike



A study showed that **25–46%** of women **did not attend their next screening appointment due to pain** related to breast compression.



Meanwhile, **60%** of female X-ray technologists suffer from **physical strain**.[14]

Whether it's due to non-standardized workflows, difficulties in accommodating individual patient needs, or insufficient system guidance on the next examination steps, mammography exams may lead to physical strain for the radiographer and cause unnecessary discomfort for the patient.

A new level of patient-centricity

MAMMOMAT B.brilliant offers smart, fast, and intuitive workflows for better radiographer ergonomics. The system allows users to adapt their personal preferences to individual patient conditions and exams. Thanks to limited compression time,[2] MAMMOMAT B.brilliant enables more focus on patients and may reduce women's anxiety during the examination.

Excellent user ergonomics and impressive workflow guidance

Make examination processes more transparent
Receive patient and workflow information on a screen always in sight thanks to ComfortGuide Display. This means there is no need to go back to the acquisition workstation. Instead, have all patient information at hand, workflows displayed where you need them, and information on the current and upcoming workflow steps all directly at the MAMMOMAT B.brilliant.

Independent movement, easy patient access
ComfortMove is the ergonomic feature that aims to significantly reduce physical strain of radiographers caused by mammography examinations through independent movement of the tube unit from the table. Now you can easily and safely access your patient during the MLO positioning process – without having to bend under the swivel arm. An additional work light and positioning laser further help support in accurately positioning the breast of your patient. As a result, ComfortMove aims to make patient positioning easier and safer, providing more freedom of movement for both radiographers and patients. Plus there is the added benefit that radiologists may avoid back pain.

A system designed with women's comfort as a priority

Increase comfort, save time
Thanks to an automated movement of the tube unit, ComfortMove allows you and your patient more freedom and ergonomic positioning. By automatically positioning itself to 15° while the table is in a 45° position* – or whatever angle you prefer – the tube unit does not

** The preferred degree of the angle can be set by an application specialist.*

More freedom of movement for technologist and patient alike – thanks to ComfortMove.

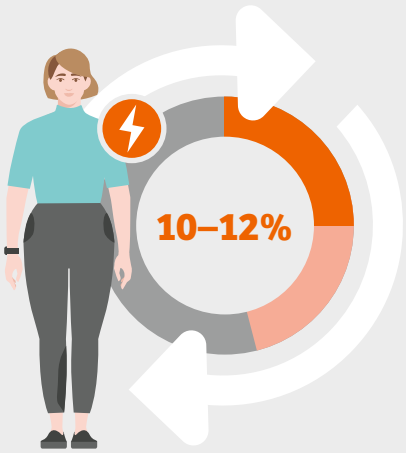
stand between you and the patient. With ComfortMove, you will be able to serve individual patient needs, increasing patient satisfaction without compromising image quality.

Create more stability and comfort for patients
MAMMOMAT B.brilliant combines two features for increased stability and patient comfort: the detachable, transparent face shield and short scan times. Our face shield lets your patients rest their head comfortably during scans and serves as a helpful tool for positioning. And with scans taking no more than 5 seconds,[8] patients get scanned extremely quickly.[2] These features ensure patient safety during tomosynthesis and get you optimal images from the secure patient positioning, which in turn increases workflow speed.

More features to increase patient comfort and satisfaction

- **OpComp** – automatic, optimized, and personalized breast compression for increased patient comfort and image quality.
- **PRIME** – intelligent software algorithm offering up to 20% dose reduction without compromising on image quality.[15]
- **SoftComp Paddles** – breast-optimized, rounded edges provide higher patient comfort and more convenience for the radiographer.
- **Patient hand rest** – ensures easy positioning of the patient while reducing the risk of applying too much tension at the pectoralis muscle.
- **MoodLight** – creates a welcoming room design and a soothing atmosphere for your patients.

Delays and interruptions in diagnostic processes



In the U.S., about **10–12% of women are called back** after a mammogram **for more tests**,[16] such as:

- Follow-up FFDM or tomosynthesis
- Breast ultrasound
- Breast biopsy
- Contrast-enhanced mammography
- Breast MRI

Whether it is devices that are unavailable for adjunct examinations or transfer time between them, the processes and modalities involved in diagnostic clarification can lead to unnecessary delays and interruptions – and may cause long examination periods or deferred therapy decisions.

A convenient path to diagnostic clarification

As a system that offers both TiCEM (Titanium Contrast Enhanced Mammography) and wide-angle tomosynthesis-guided biopsy, MAMMOMAT B.brilliant enables fast and easy access to supplemental modalities for diagnostic clarification in mammography. By bringing together features that boost accuracy, speed, and convenience, MAMMOMAT B.brilliant helps reduce time and effort in diagnostic exams – and supports fast therapy decisions for your patients.

Accurate targeting, visual feedback on needle position, and quick biopsy results

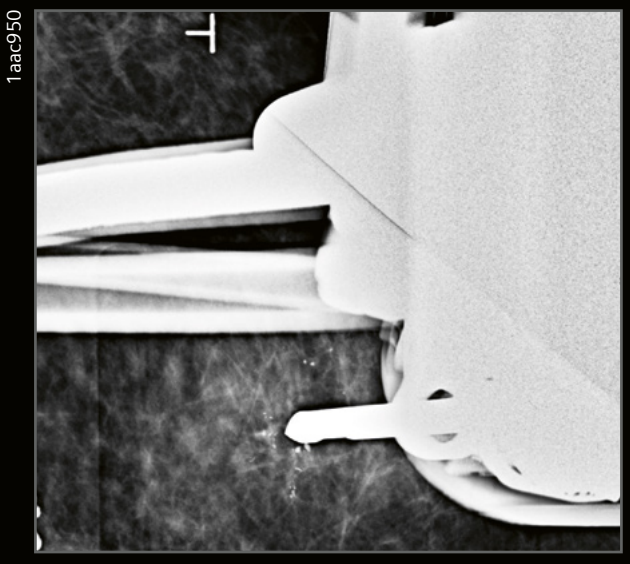
Pinpoint precision for biopsies thanks to 50° Wide-Angle Tomosynthesis
Image acquisition with PlatinumTomo enables highest depth resolution to help you feel confident in your diagnosis.[3] Benefit from precise one-click biopsy targeting with an accuracy of +/-1 mm. A quick impression of the first image, the navigator for visual feedback on the needle position, and pre- and postfire tomosynthesis* images aim to make your biopsy procedures faster and more convenient than ever before.

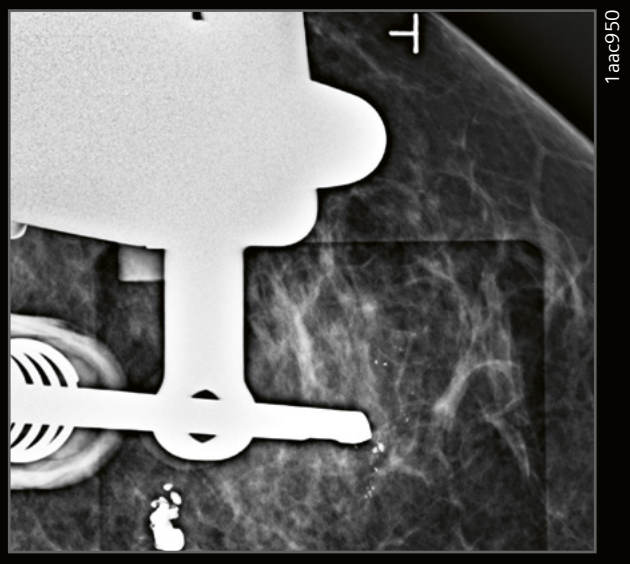
More confidence for your biopsy procedures
The needle navigator is your visual guide enabling safe and more confident breast biopsy procedures. It offers you instant visual feedback on the needle and target position, supporting you to confidently navigate the biopsy needle within the breast for higher safety and precision. In addition, it can help you avoid unnecessary re-adjustment and movements of the biopsy needle in the breast.

More time to focus on your patient during biopsy
InSpect is our integrated specimen scan that takes less than 20 seconds. Stay with your patient and check the specimen immediately in the exam room, without having to reposition the patient or switch to another system, thus saving time and avoiding unnecessary patient inconvenience – saving you from investing in an additional scan device.

** Only available in lateral view.*

Accurate biopsy targeting thanks to image acquisition with PlatinumTomo

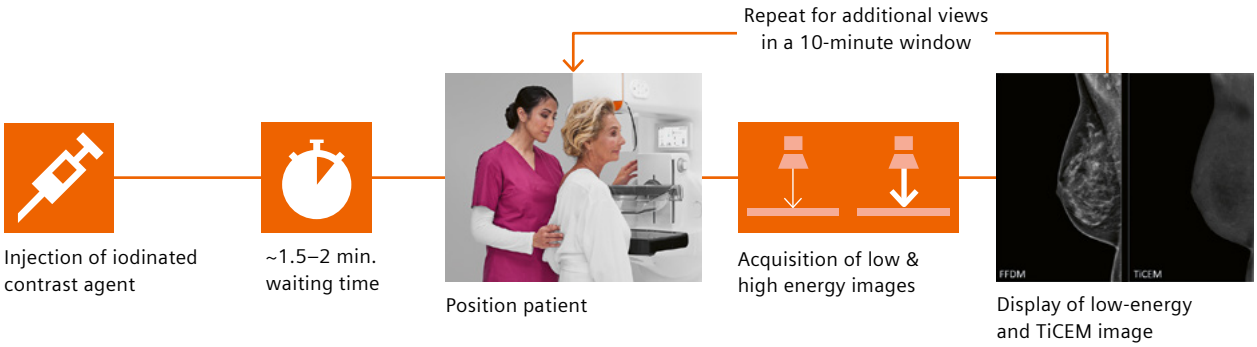




Reduced examination time thanks to the quick availability of TiCEM

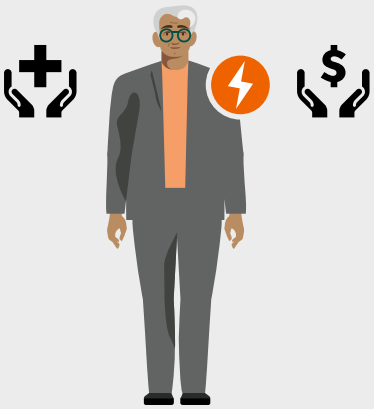
Stay at the forefront of clinical developments
MAMMOMAT B.brilliant makes TiCEM results available quickly – thus offering a quick and easy pathway to contrast-enhanced mammography. Its optimized titanium filter can help you identify potential cancers quickly and rule out inconclusive lesions, all while avoiding the excess time and cost of an MRI scan. Make patients feel more secure and optimize your workflows.

TiCEM workflow – expand your diagnostic insights



Mammography systems are significant investments

Healthcare spendings are continuously rising. **Healthcare budgets**, however, are not.



This creates a very **challenging situation for healthcare providers**.

In screening settings, high-patient throughput is key and system downtime can create serious challenges. Institutions need to maintain a high throughput while relying on system uptime, serviceability, and support services.

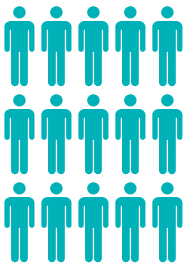
A system that pays off

MAMMOMAT B.brilliant has been designed to ensure high patient throughput in mammography screening. In addition, it comes with a service experience that goes above and beyond pure maintenance. From instant remote assistance 24/7 (in every time zone) to top-tier training and training services as well as dedicated service solutions – you will benefit from a system that is optimized for your financial success.

Performance optimization for high patient throughput in screening

Scan more patients per day without compromising quality
PlatinumTomo is redefining 50° Wide-Angle Tomosynthesis. Perform the fastest wide-angle tomosynthesis in the market in no more than 5 seconds,[2] while gaining access to even more diagnostic information as compared to FFDM or narrow angle systems. Further save time with ComfortMove's easy patient positioning. Together, this can increase patient throughput, while still getting high quality scan results for easier diagnosis.

examination time per patient



up to 15 patients per hour

Ensure comparability by streamlining prior images
Automatic pre-fetching enables you to get pre-fetched information and prior images at the acquisition workstation, so you can compare them to new scans. Pre-select images at the system, making it easy for you to get a quick first impression of any potential pathological changes in the breast. All this can help you shorten procedure times, while having higher security and protecting against simple mistakes from manual tasks.

Benefit from committed experts delivering onsite and remote support to your MAMMOMAT B.brilliant.

Service offerings for smooth daily operations

Today, the service experience goes above and beyond pure maintenance. Service can make the difference to your daily operations and help you evolve. With our services, we are by your side whenever you need us. Siemens Healthineers specialists are available for instant remote assistance 24/7 in every time zone. With our presence in more than 150 countries around the globe, we're always close to our customers.

- **Hardware maintenance**
  Maximize equipment performance and optimize uptime at defined costs with the service contracts Performance Plans.

- **Software updates**
  Perform to your full potential today and be ready for what's coming next with the Evolve Program.

- **Staff training**
  We care for your knowledge and develop your skills along your MAMMOMAT's lifecycle.

Customized business and financial models

Flexible investment to match your needs
Legal guidelines for breast imaging can change rapidly. To protect your investment, MAMMOMAT B.brilliant offers a modular and future-ready system design that evolves with your requirements. For greater investment security, it integrates the latest technologies in one device – and allows you to start with a lower initial investment and upgrade as your needs grow.

Optimizing clinical workflows and processes
Enjoy access to innovative medical technology and equipment throughout the entire contract lifetime, so you can optimize your asset management and planning – and focus on patient care. In addition, our customized business and financial models can help you maintain your competitive edge and stay on top of your budgetary and enterprise needs.

Breast Imaging World

Shaping the future of breast imaging online education

Step into the future of mammography education: unleash your expertise with our comprehensive clinical learning and event platform! Discover cutting-edge insights, master the latest techniques, and elevate your mammography skills to a new level – together with a vibrant community of medical professionals and enthusiasts in the world of mammography.

Stay ahead
As a registered member, you'll gain priority access to upcoming online events, workshops, and training sessions led by renowned breast imaging experts.

Knowledge at your fingertips
Our comprehensive materials provide you with in-depth insights, research findings, and best practices.

Learn at your own pace
Engage in online learning modules and case studies that offer an in-depth understanding of breast imaging procedures and technologies.

Join now!

At Siemens Healthineers, we pioneer breakthroughs in healthcare. For everyone. Everywhere. Sustainably. As a leader in medical technology, we want to advance a world in which breakthroughs in healthcare create new possibilities with a minimal impact on our planet. By consistently bringing innovations to the market, we enable healthcare professionals to innovate personalized care, achieve operational excellence, and transform the system of care.

Our portfolio, spanning in vitro and in vivo diagnostics to image-guided therapy and cancer care, is crucial for clinical decision-making and treatment pathways. With the unique combination of our strengths in patient twinning*, precision therapy, as well as digital, data, and artificial intelligence (AI), we are well positioned to take on the greatest challenges in healthcare. We will continue to build on these strengths to help overcome the world's most threatening diseases, enable efficient operations, and expand access to care.

We are a team of more than 71,000 Healthineers in over 70 countries passionately pushing the boundaries of what is possible in healthcare to help improve the lives of people around the world.

**Personalization of diagnosis, therapy selection and monitoring, aftercare, and managing health.*

Breast Health 360°

Providing the highest degree of care. Because we care.

Seeing the whole picture also means seeing your entire journey as you deliver the best possible care to your patients. Siemens Healthineers is at your side with a holistic, personalized portfolio of solutions that we call our 360° approach: We've got you covered in every step of the Breast Health Journey from discovery to recovery. From obtaining a patient's medical history to screening and diagnosis, treatment, and follow-up – we provide accurate, human-centric, and economical solutions to empower your decisions. Thanks to our new business segment Varian, we are expanding the potential of cancer treatment even further.

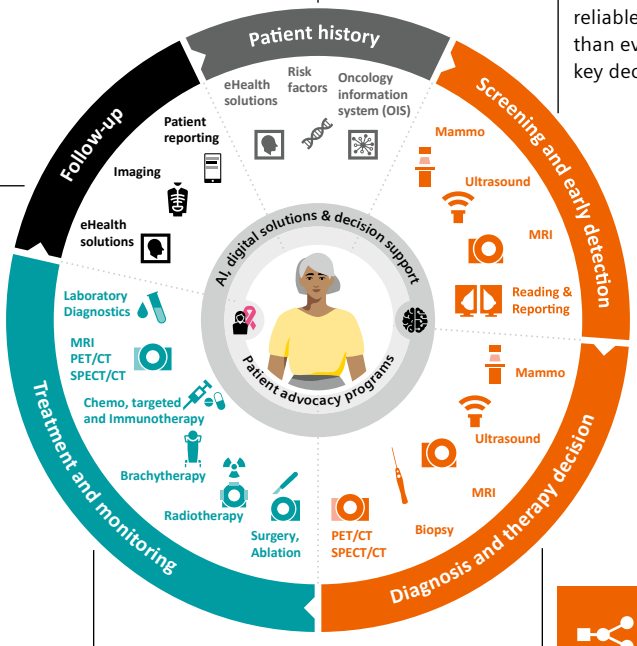
Profit from expert knowledge across all imaging modalities with a global player: Siemens Healthineers

Patient history

From the very beginning, it is important to make sure that all information about a patient's history is accessible to every doctor and nurse involved in the treatment.

Follow-up

A diverse assortment of state-of-the-art technologies and procedures provides doctors with excellent tools for comprehensive and comfortable support during aftercare.



Screening

Every case is unique, and every patient needs to be treated as an individual. Technological innovations make screenings reliable, precise, and more comfortable than ever before, helping doctors make key decisions faster.

Treatment

Clinicians can choose from a variety of highly effective treatments and personalize each patient's treatment plan to meet their individual needs.

Diagnosis

Doctors rely on a wide range of cutting-edge procedures and scans to get to the bottom of what's going on as quickly as possible. The more information we have, the better equipped we are to find a solution.

MAMMOMAT B.brilliant

Exclude the maybes.

A new dimension in image quality

PlatinumTomo

The new benchmark for tomosynthesis image acquisition thanks to breakthrough technologies.

- **50° Wide-Angle Tomosynthesis**
  Leverage the highest depth resolution on the market[3]
- **Unique flying focal spot technology**
  Excellent in-plane resolution and acquisition speed[2]
- **Cutting-edge detector**
  Faster read-out time for higher image acquisition speed[2]
- **PREMIA image reconstruction**
  Improve visibility of pathologies and benefit from fast reconstruction[2]

Insight 2D
The new standard for synthetic mammograms

Insight 3D
The only rotating 3D mammogram

1-view tomosynthesis
Always try for the lowest dose possible

Image impressions in tomosynthesis, Insight 2D, and FFDM
Work according to your preferences

Insight BD
Automatic and objective breast density assessment

A new level of patient-centricity

- **ComfortGuide Display**
  Make examination processes more transparent
- **ComfortMove**
  Independent tube, easy patient access, increased patient comfort, and time savings
- **Optimized face shield and a short scan time**
  Create more stability and comfort for patients

More confidence and comfort:

- One-click positioning
- QuickView
- OpComp
- PRIME
- SoftComp Paddles
- Patient hand rest
- MoodLight & Breast Health Moods

A convenient path to diagnostic clarification

50° Wide-Angle Biopsy
Pinpoint precision for biopsies thanks to 50° Wide-Angle Tomosynthesis

Pre- and postfire tomosynthesis images
Rely on diagnostic information throughout the entire biopsy workflow

Needle Navigator
Perform biopsies with confidence

InSpect – Integrated specimen scanner
More time to focus on your patient during biopsy

TiCEM – Titanium Contrast Enhanced Mammography
Stay at the forefront of clinical developments

A system that pays off

Performance optimization
High patient throughput in screening with shorter image acquisition time

Unique service offerings
Smooth daily operation thanks to hardware maintenance, software updates, and staff training

Customized business and financial models
Evolve your system over time and futureproof your investment

MAMMOMAT B.brilliant is not commercially available in all countries. Due to regulatory reasons its future availability cannot be guaranteed. Please contact your local Siemens Healthineers organization for further details.

On account of certain regional limitations of sales rights and service availability, we cannot guarantee that all products/services/features included in this brochure are available through the Siemens Healthineers sales organization worldwide. Availability and packaging may vary by country and are subject to change without prior notice.

The information in this document contains general descriptions of the technical options available and may not always apply in individual cases. Siemens Healthineers reserves the right to modify the design and specifications contained herein without prior notice. Please contact your local Siemens Healthineers sales representative for the most current information. In the interest of complying with legal requirements concerning the environmental compatibility of our products (protection of natural resources and waste conservation), we may recycle certain components where legally permissible. For recycled components we use the same extensive quality assurance measures as for factory-new components.

Any technical data contained in this document may vary within defined tolerances. Original images always lose a certain amount of detail when reproduced.

The statements by Siemens Healthineers' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

[1] Ekpo EU, Alakhras M, Brennan P. Errors in Mammography Cannot be Solved Through Technology Alone. Asian Pac J Cancer Prev. 2018; 19(2): 291–301.

[2] Data on file.

[3] In comparison with MAMMOMAT Revelation.

[4] Maldera A, De Marco P, Colombo PE, Orrigi D, Torresin A. Digital breath tomosynthesis: Dose and image quality assessment. Phys Med. 2017; 33: 56–67.

[5] American Cancer Society (2022): Limitations of Mammograms. https://www.cancer.org/cancer/types/breast-cancer/screening-tests-and-early-detection/mammograms/limitations-of-mammograms.html

[6] Data on file; for average breast size of 50/50 glandular/adipose tissue and 5 cm thickness.

[7] Compared to FFDM; Zackrisson S, et al. One-view breast tomosynthesis versus two-view mammography in the Malmö Breast Tomosynthesis Screening Trial (MBTST): A prospective, population-based, diagnostic accuracy study. Eur Radiol. 2018; 28(2): 579–87.

[8] Scaduto DA, et al. Impact of angular range of digital breast tomosynthesis on mass detection in dense breasts. Eur Radiol. 2018; 28(10): 4098–105; compared to FFDM; PMA P140011/S001 & P140011/S003; Georgian-Smith D, et al. Can Digital Breast Tomosynthesis Replace Full-Field Digital Mammography? A Multireader, Multicase Study of Wide-Angle Tomosynthesis. AJR Am J Roentgenol. 2019; 213(5): 1146–53. Responses from more than 400 radiologists. Survey conducted at RSNA 2014, ECR 2015, and Advisory Board 2015.

[9] Responses from more than 400 radiologists. Survey conducted at RSNA 2014, ECR 2015, and Advisory Board 2015.

[10] Tani H, et al. Assessing Radiologist Performance and Microcalcifications Visualization Using Combined 3D Rotating Mammogram (RM) and Digital Breast Tomosynthesis (DBT). Breast Care (Basel). 2014; 9(2): 118–23.

[11] International Agency for Research on Cancer, World Health Organization (2020). Published here: https://www.who.int/cancer/PRGlobocanFinal.pdf.

[12] Maldera A, et al. Digital breast tomosynthesis: Dose and image quality assessment. Phys Med. 2017; 33: 55–67.

[13] Huang H, et al. Comparison of lesion detection and conspicuity between narrow-angle and wide-angle digital breast tomosynthesis for dense and non-dense breasts. J Med Imaging. 2023; 10(2): S22407.

[14] Yee KM. Repetitive strain injury common among breast imagers. AuntMinnie. 2014 Sep 26 [cited 2023 May 5]. Available from: https://www.auntminnie.com/index.aspx?sec=ser&sub=def&pag=dis&ItemID=108640.

[15] Compared to grid-based acquisition with MAMMOMAT Inspiration, depending on breast thickness.

[16] Know Your Girls. Everything you should know if you need a follow-up test [cited 2023 May 5]. Available from: https://knowyourgirls.org/resources/everything-you-should-know-if-you-need-a-follow-up-test/.

Siemens Healthineers Headquarters
Siemens Healthineers AG
Siemensstr. 3
91301 Forchheim, Germany
Phone: +49 9191 18-0
siemens-healthineers.com

Published by Siemens Healthineers AG · A91XP-50024-2C1-7600 ·