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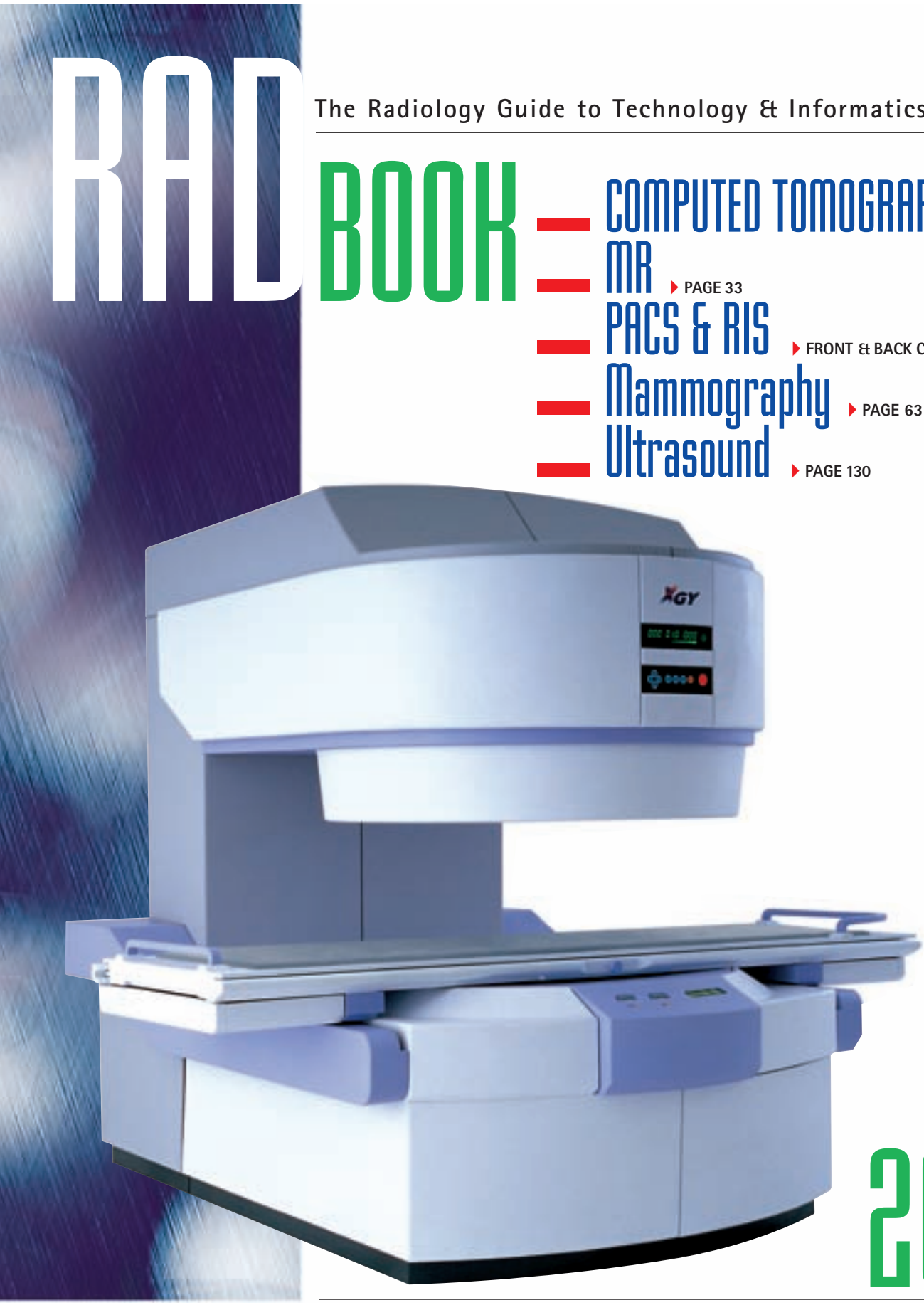
# RAD BOOK

The Radiology Guide to Technology & Informatics in Europe



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# Dear Reader,

There is no modality in radiology that in the past few years has seen such stunning quantum leaps in technological development as computed tomography. Studies, however, show that with each additional row radiation exposure for the patient increases.

With the introduction of the new premium models that offer innovative scanning technologies doses – particularly in cardiac examinations – started to decrease. Two to three years ago the standard radiation dose of a heart scan was approximately 10 mSv. Today, it is 1 to 2 mSv. An enormous success!

Maybe the volume scanners will end the slice race once and for all and research will focus again on patient benefit. While in projection radiography there are clear guidelines, computed tomography does not apply a quantifiable image quality standard which is directly related to patient dose.

As far as radiation exposure is concerned, what might in fact be more important than official guidelines is professional handling of the systems. Modern CTs combined with sophisticated post-processing workstations offer a host of functionalities that ensure high quality images at low doses. The different technological approaches the manufacturers chose to master the dose challenge are described in the chapter on CT in this issue.

The RadBook – as usual – presents an independent overview of all systems and accessories, accompanied by many insightful articles. And best of all: as of now RadBook is available online.

EDITORIAL

See you at www.radbook.eu

**Daniela Zimmermann**
**Guido Gebhardt**

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RAD·BOOK 2010

# ASiR™ – Forget compromise: High image quality at low dose

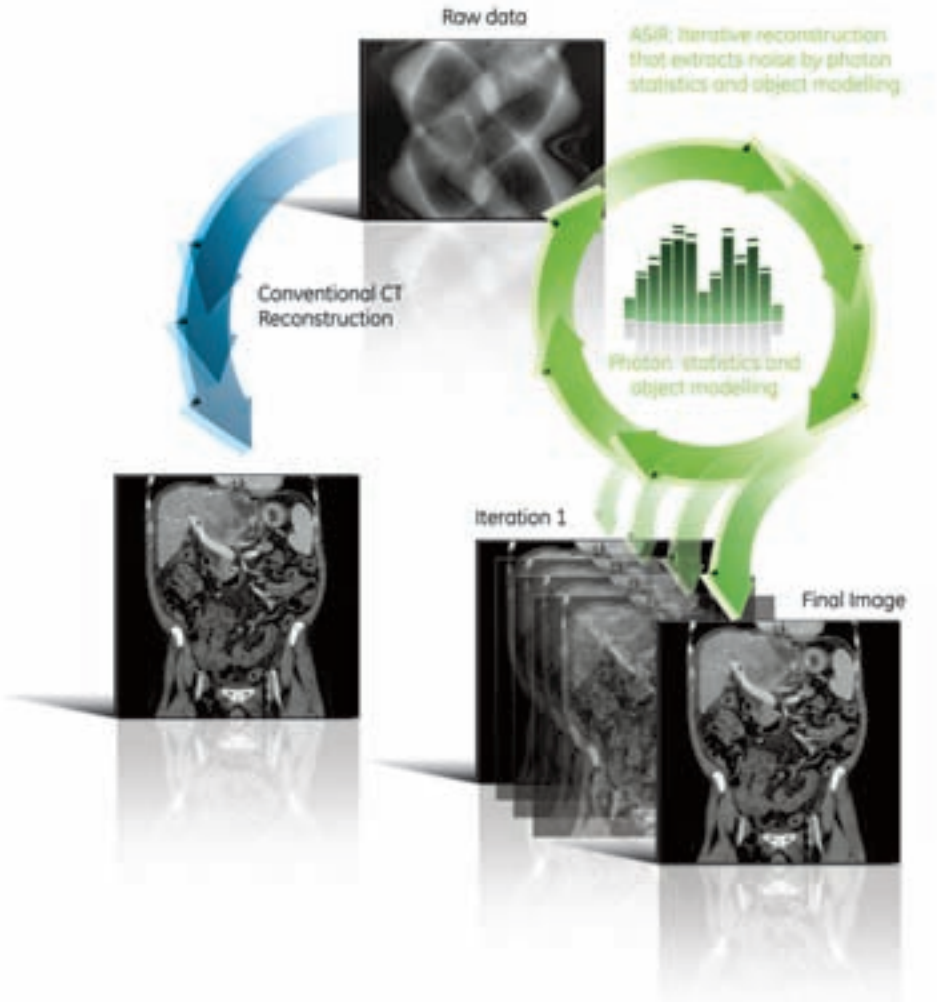
**CT is a powerful tool for making sound diagnoses and following disease evolution. Yet for years, its imaging power has been constrained by the need to limit the radiation dose delivered to patients.**

Now, at last, clinicians can have it both ways. GE Healthcare introduces Adaptive Statistical Iterative Reconstruction (ASiR), an image reconstruction technique that ASiR enables dose reduction up to 50% for Discovery™ CT750 and up to 40% for LightSpeed™ VCT and BrightSpeed™ Elite across the whole body.

ASiR combined with SnapShot Pulse allows dose reduction up to 83% for cardiac exams and boosts image quality by improving Low Contrast Detectabilty.

ASiR aligns with the clinical consensus around ALARA (As Low As Reasonably Achievable) practice that aims to limit patient's X-ray exposure as much as possible.

ASiR opens new perspectives in CT imaging. Unlike conventional dose reduction techniques like collimators and mA modulation, its benefits are universal, independent of patient size or anatomic region.




## ASiR™ – Compact

ASiR is a new CT reconstruction engine that helps reducing dose while improving image quality. ASIR models the noise root causes and subtracts it throughout multiple iterations. ASiR is not a simple filter but a true raw data iterative reconstruction.

- Integrated Vectorial Reconstruction Board
- Up to 35 fps reconstruction
- Raw data space reconstruction
- Patient specific dose optimization
- Improved Low Contrast Detectability
- Available on Discovery™ CT750 HD, LightSpeed™ VCT Series, BrightSpeed™ Elite
- Lowers dose across all anatomy: Neuro, Cardiac & Colonography, Chest, Abdo/Pelvis

Experience in routine

- More than 400.000 patients examined to date
- Dose and image quality results confirmed in more than 20 international clinical studies

ASiR technology is especially beneficial in higher risk populations, such as children and young women, in whom the greater sensitivity of growing tissues makes strict dose limitation a real necessity. Based on wide experience in patients scanned with ASiR, GE customers can attest to consistently high image quality with low dose levels.

Conventional CT image reconstruction techniques are simple and fast, but have limitations, as they are sensitive to noise and artifacts.

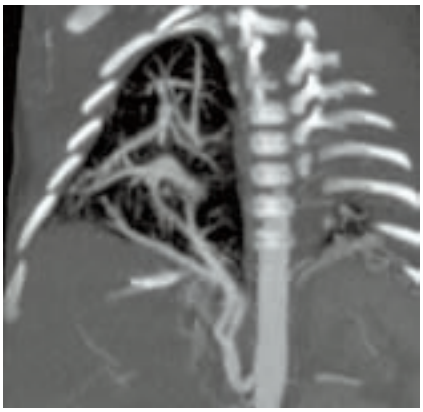
ASiR extracts noise by modelling its root causes for each patient and application type.

## Runoff vascular exam

3.5 mSv* effective dose
(DLP: 300 mGy.cm)
ASiR allows lower kV on many applications such as vascular examinations, resulting in a significant dose reduction.
Courtesy: Dr JL. Sablayrolles, Centre Cardiologique du Nord, Saint Denis, France.
** Obtained by EUR-16262 EN, using an adult pelvis factor of 0.019*DLP and leg factor of 0.008*DLP.*

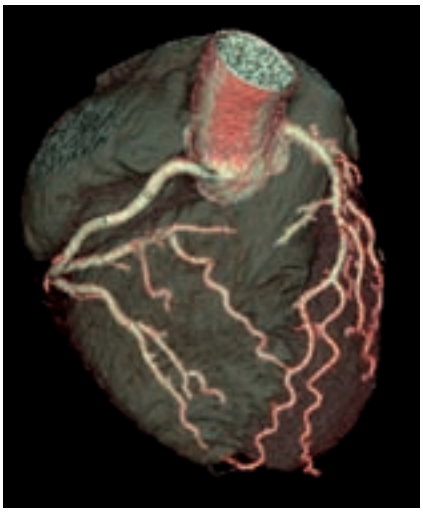
## Thoracic aorta angio and heart exam

1.08 mSv* effective dose
(DLP: 27.6 mGy.cm)
7-day-old girl.
ASiR allows up to 60% dose reduction in these congenital heart disease exams.
Courtesy: Dr F. Stålhammar Queen Silvia Children's Hospital, Gothenburg, Sweden
** Dose conversion obtained from ICRP 0-year-old Chest factor of 0.039*DLP.*



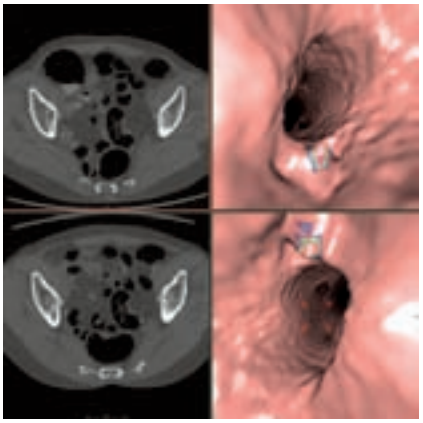
## Heart exam

0.78 mSv* effective dose
(DLP: 46 mGy.cm)
Prospective Gating mode, 100 kV, 87,5 mAs, ASiR Reconstruction.
Courtesy: JK. Min, MD, Cornell University Medical Center, New York Presbyterian Hospital
** Obtained by EUR-16262 EN, using an adult chest factor of 0.017*DLP.*



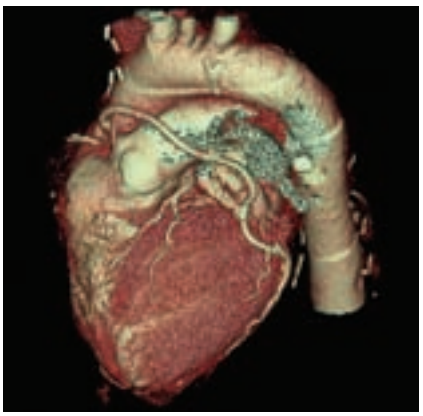
## CT colonography exam

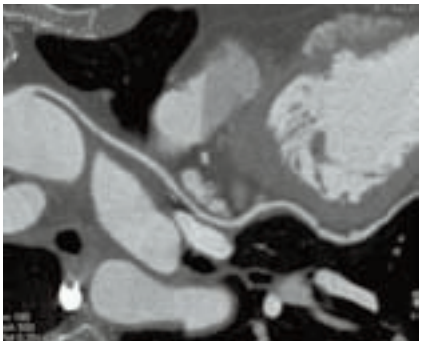
1 mSv* efffective dose
(DLP: 52 mGy.cm,
total dose for prone and supine series)
Courtesy: Dr V. Barrau, Centre Cardiologique du Nord, Saint Denis, France.
** Obtained by EUR-16262 EN, using an adult pelvis factor of 0.019*DLP.*



## Thoracic Aorta and heart exam on obese patient (BMI=34)

2.2 mSv* effective dose
(DLP=133 mGy.cm)
Whole thoracic aorta acquired in prospective gating mode, 100 kV, 175 mAs, ASiR reconstruction.
Courtesy: Dr. Pontone, Centro Cardiologico Milano, Italy
** Obtained by EUR-16262 EN, using an adult chest factor of 0.017*DLP*





# Philips Designs for Maximum Diagnostic Results While Lowering Risks

**While advances in medical imaging are continuously opening new doors in both early diagnosis and disease management, regulators, clinicians and patients all have concerns about the potential risks of radiation dose. In the US, the Food and Drug Administration has just announced initiatives to address reports of acute overdoses in some American hospitals and to reduce lifetime exposure to radiation. Recent studies have shown that the average American's total radiation exposure has nearly doubled in the last 30 years and that medical radiation now accounts for more than half the American population's total radiation exposure whereas it used to account for just one-sixth.**

These concerns about radiation dose risk and reduction make it increasingly important for radiologists to have access to imaging systems which limit exposure while maintaining image quality. Researchers at Philips have spent decades designing innovative products which produce maximum diagnostic results while lowering risks. This research has resulted in Philips' DoseWise radiation management which is a set of techniques, programmes and practices based on the ALARA (As Low As Reasonably Achievable) principle.

## Philips' Most Advanced Solution: iDose for CT

The iDose iterative reconstruction technique is the latest addition to the DoseWise portfolio of radiation management tools. iDose uses a number of Philips technologies to lower X-ray dose by up to 80% while maintaining high image quality and fast reconstruction times.

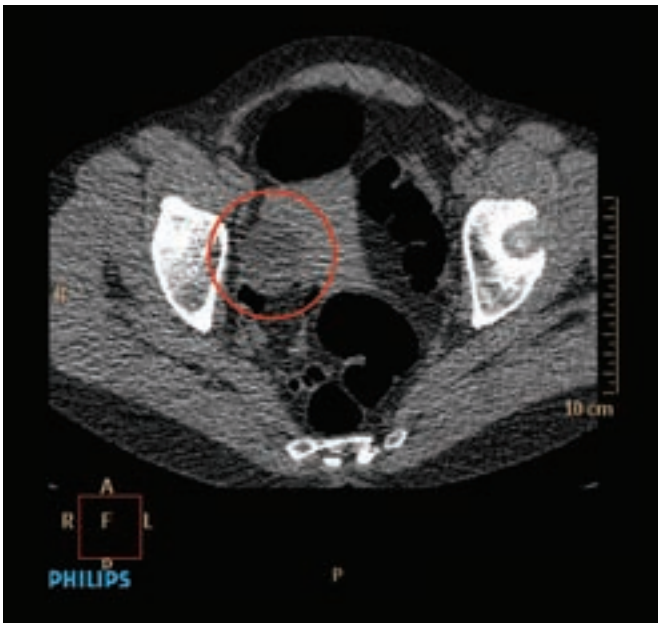
iDose works in concert with other DoseWise tools including filters to optimize beam distribution by individual patient; detectors to provide ultra-high signal-to-noise ratio; collimators to eliminate unnecessary dose at the beginning and end of the examination and to reduce scatter and Automatic Current Selection (ACS), which adapts tube current to patient size. Dose modulation tools automatically adjust the dose delivered to the patients, compensating for their individual physiology and optimising the dose by anatomic region.

Together these tools enable the iDose to provide an equivalent diagnostic image quality at a fraction of the dose.

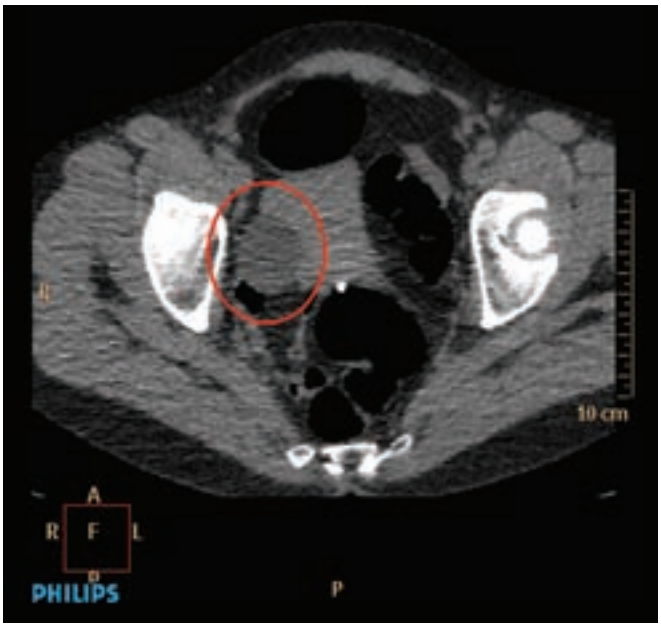
Original FBP reconstruction of an abdomen


iDose reconstruction of an abdomen

*Images courtesy of University of Chicago*




**Original FBP reconstruction of a pelvis**




**iDose reconstruction of a pelvis (VC)**

In a blinded study, 20 radiologists at 14 global sites compared datasets from both full-dose scans and low-dose scans using iDose technology. The study showed that there was no significant difference found in the diagnostic image quality between the conventional full-dose images and the reduced dose images.

As Dr Rajiv Shah, Associate Professor of Radiology at the CWRU Metro Health Medical Center in Cleveland, Ohio commented: "It's a no-brainer. The processed images at the decreased dose are as good as the full-dose images." While other users, such as Dr Shawn Teague from the Indiana University School of Medicine, Indianapolis and Dr Shigeru Suzuki from the Teikyo University School of Medicine, Tokyo felt that the low dose images were better than full-dose images in some cases. Dr Suzuki, in particular, preferred the sharpness of lung parenchyma on the iDose image.

## iDose in Clinical Routine

In order to streamline workflow for radiologists, iDose was designed to provide the same look and feel as conventional, higher-dose radiation images, therefore no additional training is needed. Radiologists simply need to plan their work as normal and then enable the iDose, using its dedicated low-dose protocols. The dose-lowering features of the iDose come into play automatically during the scan.

The iDose reconstruction technique is made possible by the RapidView IR console that contains hardware advances designed specifically to provide the performance requirements and processing power needed for low-dose scanning. It automatically generates statistical noise and anatomic structure models to improve operational efficiency. A comparative dual model (noise and anatomic) technique removes noise while preserving morphologic information.

The RapidView IR balances image quality, dose reduction, full-dose appearance and workflow. And it is fast – very fast. In fact, the RapidView IR provides radiologists with reconstruction times that are 20 times faster than those provided by conventional hardware.

The iDose is available both for clinics acquiring new Brilliance iCT and 64-channel scanners and for clinics with these already installed. Installation simply involves bringing in a new computer central processing unit and software, and deliveries can be expected in the second half of 2010.

## DoseAware for Interventional Radiologists

The radiation exposure risk of hospital staff is a very real concern and DoseAware, another new addition to the DoseWise group of solutions, has been designed to help interventional radiologists track their X-ray exposure in real time. This personal dose measuring system, which is the first of its kind, allows healthcare professionals performing potentially lengthy interventional procedures to manage their radiation exposure on the spot.

Using the DoseAware technology, all staff working in an X-ray environment wear a personal dose meter which measures scatter radiation and transmits this information to a base station mounted in the examination room, where it is displayed on an LCD screen. The staff can see from the screen if their X-ray exposure is in the green, yellow or red zone and can take immediate action to limit their exposure. The data can also be viewed on a computer screen and it can be retrieved from the base station for archiving, analysing and reporting

DoseAware does not replace the thermoluminescent dose meter (TLD) as the legal dose meter which reports accumulated exposure for a period of time but it does manage radiation exposure in real-time, putting staff in control of the way they work and allowing them to immediately change their behaviour and work patterns.

Research and innovation from Philips demonstrate the company's unique dedication to supporting its customers with systems that help reduce the radiation dose to patients and hospital staff, while maintaining exceptional image quality to aid in the diagnosis and treatment of patients.

# Digital Volume Tomography

**State-of-the-art radiological diagnostics require state-of-the-art equipment. Cone beam technology well-nigh revolutionized dental and medical x-ray diagnostics. Meeting the continuously increasing demand by orthodontists and ENT specialists for high quality and high resolution x-ray images, digital volume tomography (DVT) has proven to be a valuable modality.**

## High precision + low dose = superior efficiency

DVT enjoys an excellent reputation with orthodontists and clinicians alike, in particular with regard to image quality in 3D skull base diagnostics. Superior to conventional computed tomography (CT), it offers significantly better resolution and requires less dosage. Its major advantage, however, is its impressive efficiency and safety record.

"This innovative technology provides radiologists with an opportunity to expand the service portfolio for referring physicians. The economies of scale that can be achieved with DVT make sure that the owners' investment enjoys long-term protection," explains Markus Hoppe, managing director of SCS GmbH).

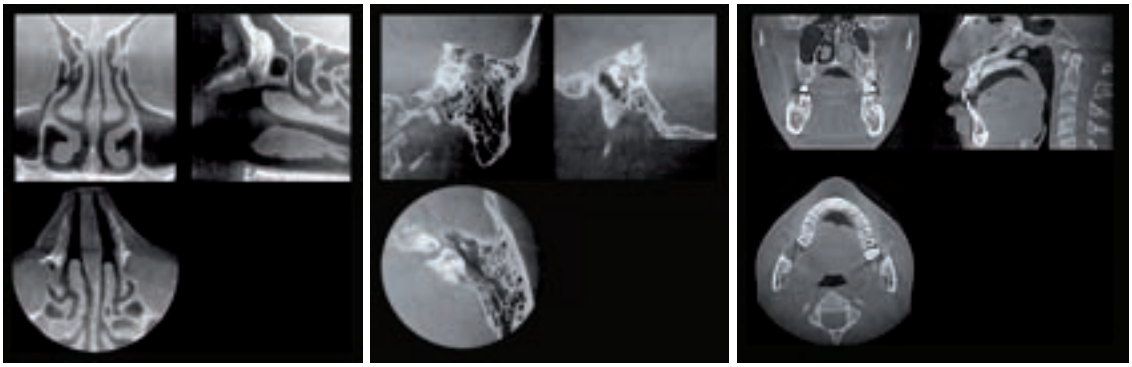
Morita's 3D Accuitomo 170 is a DVT scanner especially designed for the specific requirements of dento-maxillo-facial diagnostics. Leading dentists and orthodontists have been very successfully using this scanner with different image sizes 40x40 mm, 60x60 mm and 80x80 mm). The even larger formats of 100x100 mm and 170x120 mm with voxel sizes of 80 µm are ideally suited for non-dental applications. 360° rotation combined with upright sitting position of the patient ensure the high quality of the image data.

## Low dose – high resolution

Images in landscape format are well suited for examinations of the entire head and neck area, particularly in implant therapy, restorative dentistry and surgery. Hard and soft tissue can be visualized exactly due to increased image dynamics. The 3D Accuitomo 170 is equipped with a special Flat Panel Detector (FDP) and offers 14 bit grayscale capabilities.

Furthermore, the systems features zoom reconstruction. Diagnostic data are quickly available – independent of data volume. In any 80 x 80 mm image with a voxel size of 160 µm and170 x 120 mm image with a voxel size of 250 µm details can be zoomed to a voxel size of 80 µm. Thus follow-up detail imaging, which puts an additional burden on the patient's health and on the physician's time and financial resources, can be avoided.

"Combining extremely highly spatial resolution with extremely low radiation dose, digital volume tomography has the potential to replace conventional CT for examinations of the skull," Axel Hoppe predicts. While well accepted in dentistry, not even ten percent of the ENT specialists have adopted DVT technology. Nevertheless: High resolution and low dose are a convincing proposition. Paired with diagnostic competence – be it delivered by radiologists, dentists or any other specialised physician – DTV can be a most powerful tool.



**The need for low-dose high-contrast images leads to an increasing demand for DVTs that can be met only by radiologists.**

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# 3D ACCUITOMO H17

**Standard equipment**

- High-end capture PC
- High-end server PC
- Diagnostic display 30" TFT
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- 3-D image reconstruction
- 3-D real-time imaging
- Reslicing
- Volume rendering
- One data viewer EX

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**Nine image formats**

ø 40 mm × 40 mm, ø 60 mm × 60 mm,
ø 80 mm × 80 mm, ø 100 mm × 100 mm,
ø 170 mm × 120 mm

- Consistant image quality in large field of view
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- Weight: ca. 400 kg

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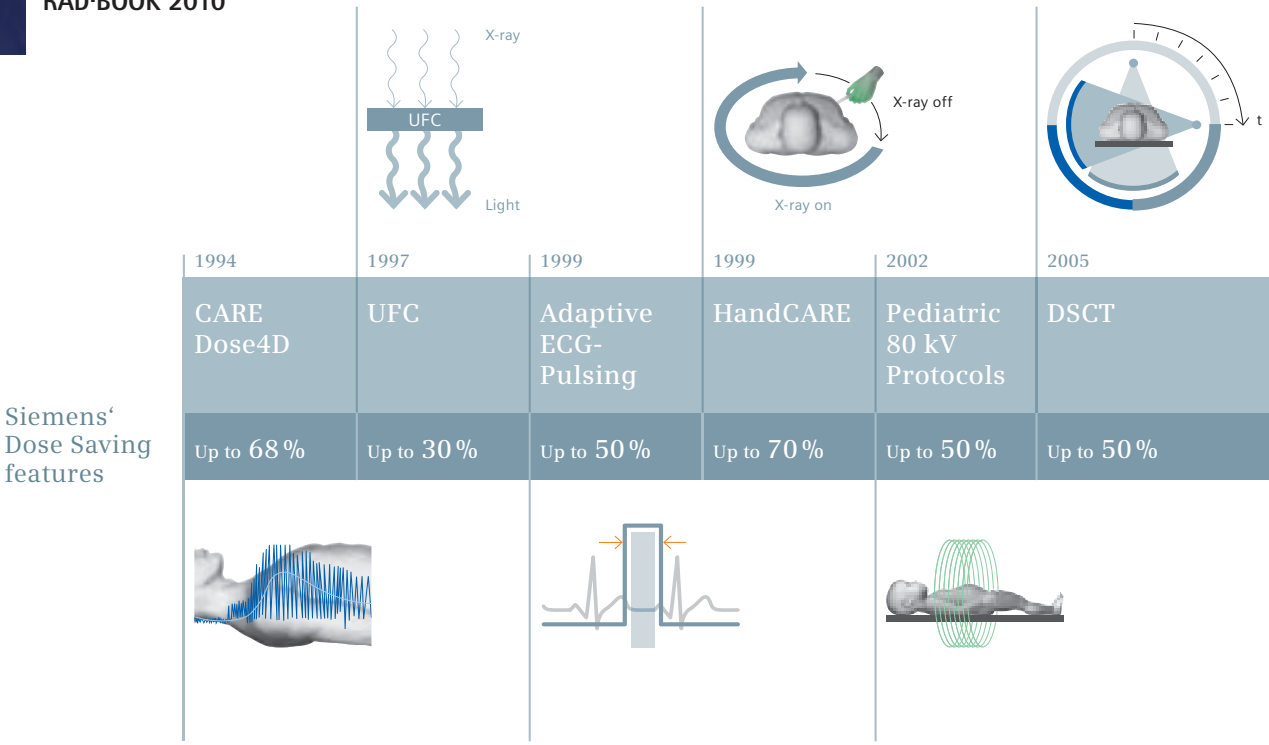



# Mission Possible: Reducing Radiation Dose in CT

**Over the past decade, Siemens has been a pioneer in creating a host of innovative technical features that significantly reduce radiation exposure in CT scans.**

**SOMATOM Sessions, the customer magazine from Siemens computed tomography, recently requested feedback on some of the most important of these innovations from physicians in Germany and the U.S.A. who have had experience with them.**

By Catherine Carrington

Lots of people talk about radiation dose and CT. But for more than a decade, Siemens Healthcare has made dose reduction a mission. The result: an impressive portfolio of innovations in scanner hardware, software, and imaging protocols that together have cut patient radiation exposure to a fraction of what it once was.

"Reducing radiation dose has always been a concern for Siemens," says Thomas Flohr, PhD, Director of CT Physics and Applications for Siemens Healthcare in Forchheim, Germany. "CT is the imaging modality of choice in many situations, and it would be used even more if not for the concern about radiation dose."

Siemens' focus was intensified in the late 1990s, when the company began to systematically search for new ways to reduce radiation dose. A timeline shows not only how relentless Siemens has been in pursuing this goal over the years, but also how creative Siemens Research & Development was. Key milestones include:

**1994:** Introduction of DOM, later extended to CARE Dose4D, a fully automated, real-time, anatomical dosemodulation technology that reduces radiation dose, depending on the area of the body, by 20% to 68% – without degrading image quality.

**1997:** Introduction of an ultra-fast ceramic (UFC) detector designed with a new gadolinium-oxy-sulfite scintillator. The UFC detector – still a key component of multidetector and Dual Source CT systems – cut radiation dose by 30% when compared to previous generations of CT detectors.

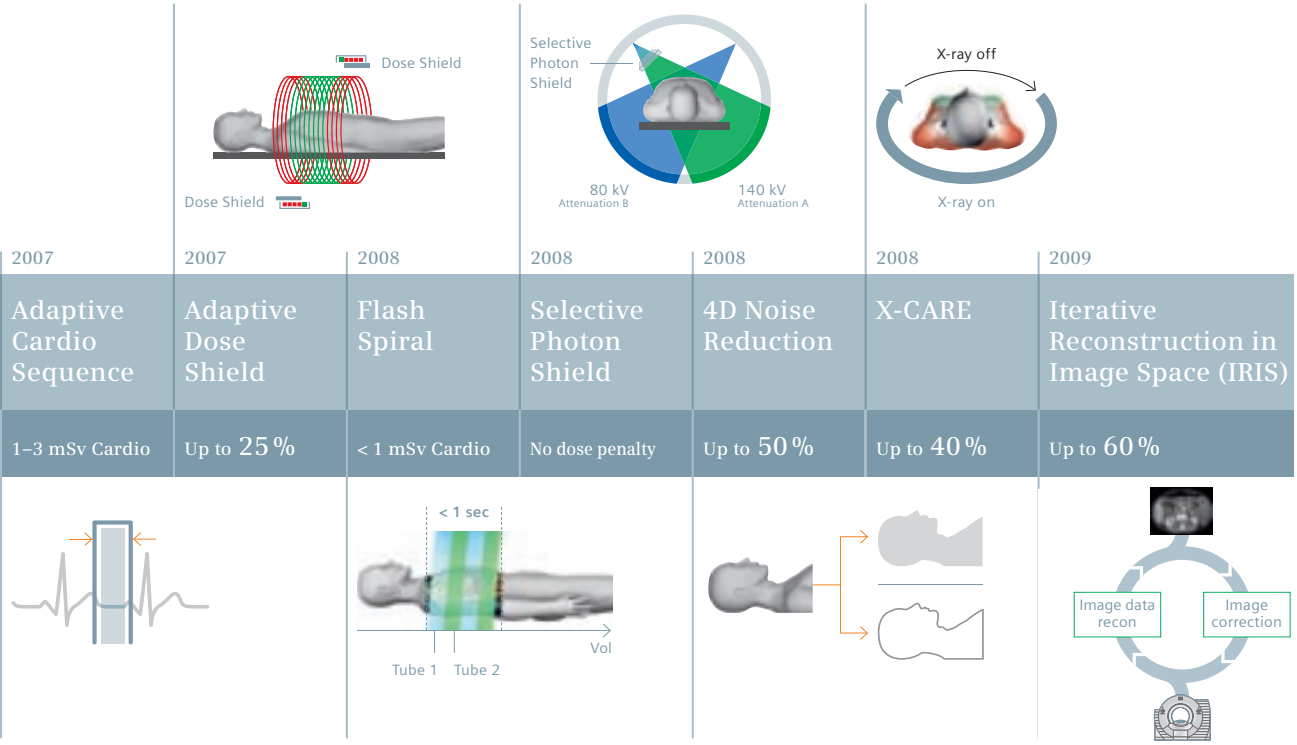
**1999:** Introduction of ECG-pulsing, a technique that synchronizes tube current to the electrocardiogram. Used during spiral cardiac CT scans, ECG-pulsing maintains nominal tube current only during targeted phases of the cardiac cycle, markedly reducing tube current during phases that will not be used for image reconstruction. Dose savings: 30% to 50%.

**2005:** Introduction of the SOMATOM® Definition Dual Source CT scanner, which offers further dose efficiencies in cardiac CT through faster scanning, Adaptive ECG-Pulsing, and automated adaptation of table speed to heart rate. Dose savings: up to 50%, compared to single source CT.

**2007:** Introduction of the Adaptive Cardio Sequence, a prospective ECG-triggered "step and shoot" technique that reduces the average dose for CT coronary angiography to about 2.5 mSv.

**2007:** Introduction of the Adaptive Dose Shield, a technique of asymmetric collimator control that eliminates overscanning at the beginning and end of the CT spiral. Depending on the length of the scan, it reduces dose by 5% to 25%.

**2008:** Introduction of the SOMATOM Definition Flash CT scanner. With dual detectors and a table speed of




| 2007 | 2007 | 2008 | 2008 | 2008 | 2008 | 2009 |
|---|---|---|---|---|---|---|
| Adaptive Cardio Sequence | Adaptive Dose Shield | Flash Spiral | Selective Photon Shield | 4D Noise Reduction | X-CARE | Iterative Reconstruction in Image Space (IRIS) |
| 1–3 mSv Cardio | Up to 25 % | < 1 mSv Cardio | No dose penalty | Up to 50 % | Up to 40 % | Up to 60 % |

up to 45 cm/s, the Flash cuts radiation dose for coronary CT angiography to less than 1 mSv in many patients.

**2008:** Introduction of X-CARE, organ-based dose modulation that reduces output of the X-ray tube when it is directly in front of the breast and other dose-sensitive organs, such as the thyroid gland and eye lens. Reduces radiation dose to the breast by 30% to 40%.

**2009:** Introduction of Iterative Reconstruction in Image Space (IRIS). By "cleaning up" image noise, iterative reconstruction makes it possible to reduce radiation dose by up to 60% and still produce high-quality images.

Several dose-reduction strategies deserve special attention, including CARE Dose4D, the Adaptive Dose Shield, the SOMATOM Definition Flash CT scanner, and IRIS. Each of these is an example not only of Siemens' commitment to minimizing radiation exposure but also its track record of innovation.

## CARE Dose4D

Determining the right tube current and, therefore, the right radiation dose, has always been crucial, says Marilyn J. Siegel, MD, Professor of Radiology and Pediatrics at the Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, Missouri, USA. But achieving that goal was much more difficult before CARE Dose4D, because adjustments in tube current had to be made empirically.

"CARE Dose4D has really been a great advantage for a number of reasons," Siegel says. "We get great image quality, reduced dose, and increased patient comfort. And it's automated, so it's easier for the technologist."

CARE Dose4D automatically adapts radiation dose to the size and shape of the patient, achieving optimal tube current modulation in two ways. First, tube current is varied on the basis of a topogram, by comparing the actual patient to a "standard-sized" patient. As might be expected, tube current is increased for larger patients and reduced for smaller patients. Differences in attenuation in distinct body regions are taken into account. For example, in an adult patient, 140 mAs might be needed in the shoulder region, whereas 55 mAs would be sufficient in the thorax, 110 mAs in the abdomen, and 130 mAs in the pelvis.

In addition, real-time angular dose modulation measures the actual attenuation in the patient during the scan and adjusts tube current accordingly – not only for different body regions, but also for different angles during rotation. This is particularly important in efficiently reducing dose in the shoulder and pelvic region, where the lateral attenuation is much higher than the anterior-posterior attenuation.

Siemens has further refined this process with CARE Dose4D. Clinical experience has shown that the relationship between optimal tube current and patient size is not linear. Larger patients clearly need a higher dose than average-sized patients, but they also have more body fat, which increases tissue contrast. Smaller patients need a lower dose than average-sized patients, but they have less fat and less tissue contrast, which would result in noisy images if the dose were too low. Therefore, during real-time dose modulation, CARE Dose4D reduces radiation dose less than might be expected for smaller patients, while increasing the dose less than might be expected for larger patients. This maintains excellent diagnostic image quality while achieving an optimal radiation dose.

"CARE Dose4D is different from dose modulation approaches used by other vendors," says Flohr. "It uses measured attenuation data in real time, not just information from topograms; it makes use of a wide mA-range; and it can fine-tune dose on the fly."

Nowhere is CARE Dose4D more important than in pediatric imaging, where the risk associated with radiation exposure is many times higher in children than in adults. A child's smaller body bsorbs more of the radiation dose than does a

**"With children, you want as low a dose as possible but also excellent spatial resolution. CARE Dose4D allows us to reduce radiation exposure in all three planes without impairing diagnostic image quality."**

*Marilyn J. Siegel, MD, Professor of Radiology and Pediatrics at the Mallinckrodt Institute of Radiology, Washington University School of Medicine, St. Louis, Missouri, USA*

larger body. In addition, the cancer induction risk is higher in children, because they have a longer lifespan ahead of them. At the same time, because children's anatomy is smaller it can be more difficult to visualize.

"With children, you want as low a dose as possible but also excellent spatial resolution," explains Siegel. "CARE Dose4D allows us to reduce radiation exposure in all three planes without impairing diagnostic image quality, and that's key."

Publications in scientific journals have shown that in adults, CARE Dose4D reduces radiation dose by 68% in the cervical spine, 37% in the lumbar spine, 30% in the thorax, and 38% in the abdomen and pelvis. In pediatric scans of the heart, a 58% dose reduction has been reported for CARE Dose4D.[1]

## Adaptive Dose Shield

In spiral CT, it is routine to do an extra half-rotation of the gantry before and after each scan, fully irradiating the detector throughout, even though only part of the acquired data is necessary.

As a result, the wide-cone beam exposes tissue that will never be part of reconstructed images. Until recently, no one gave much thought to this needless radiation exposure to patients. Such "overscanning" beyond the targeted scan range was simply accepted as an inevitable part of spiral CT.

Siemens took a fresh look at the problem and, in 2007, introduced the Adaptive Dose Shield, a technology based on precise, fast, and independent movement of both collimator blades. Instead of exposing patients to unnecessary radiation, the Adaptive Dose Shield asymmetrically opens and closes collimators at the beginning and end of each scan, tempo-rarily blocking those parts of the X-ray beam that are not used for image reconstruction. As a result, only the targeted tissue is irradiated. Like many other dose-saving innovations, it is a feature pioneered by Siemens.

**"There's more and more awareness about the amount of radiation used for CT scanning. Siemens has thoroughly looked into this and is one of the first vendors to implement the tools we need to improve our scanning."**

*Christoph Becker, MD, Professor of Radiology and Section Chief of CT and PET/CT at Munich University Hospital in Germany:*

"There's more and more awareness about the amount of radiation used for CT scanning," says Christoph Becker, MD, Professor of Radiology and Section Chief of CT and PET/CT at Munich University Hospital in Germany. "Siemens has thoroughly looked into this and is one of the first vendors to implement the tools we need to improve our scanning."

**"This ultra-low dose wasnever possible before, but with SOMATOM Definition Flash – with its high temporal resolution and improvements in the X-ray tube and detector – it is now possible."**

*Jörg Hausleiter, MD, Cardiologist, Associate Professor of Medicine, German Heart Center, Munich, Germany*

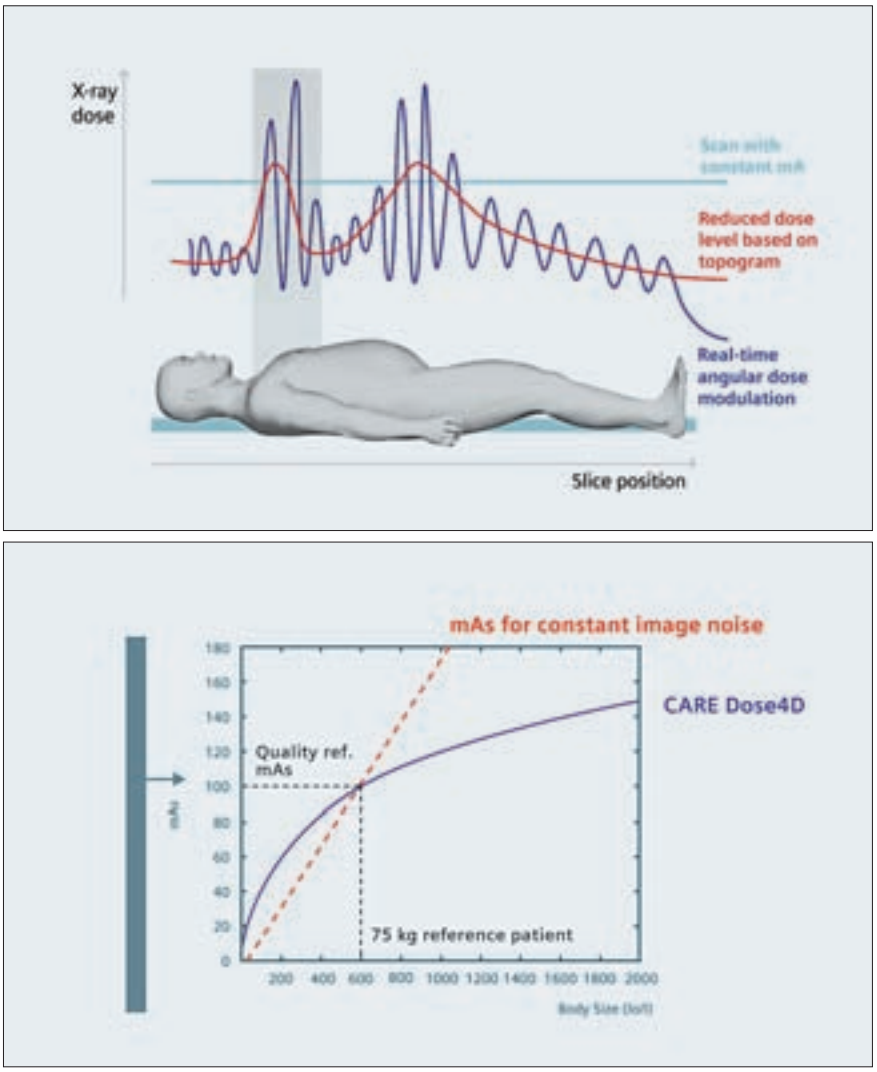
At Munich University Hospital, Becker has two Siemens scanners equipped with an Adaptive Dose Shield, the SOMATOM Definition AS+ and the SOMATOM Definition Flash. Although the Adaptive Dose Shield reduces the radiation dose in every study, the savings are especially notable over shorter scan ranges. Dose savings can reach 25% or more in cardiac imaging, for example.

The Adaptive Dose Shield is especially well suited to pediatric imaging. "In any circumstance in which children have to be investigated, I would always prefer to use a scanner with the Adaptive Dose Shield," Becker says. "It's always on, and it always reduces the radiation dose."

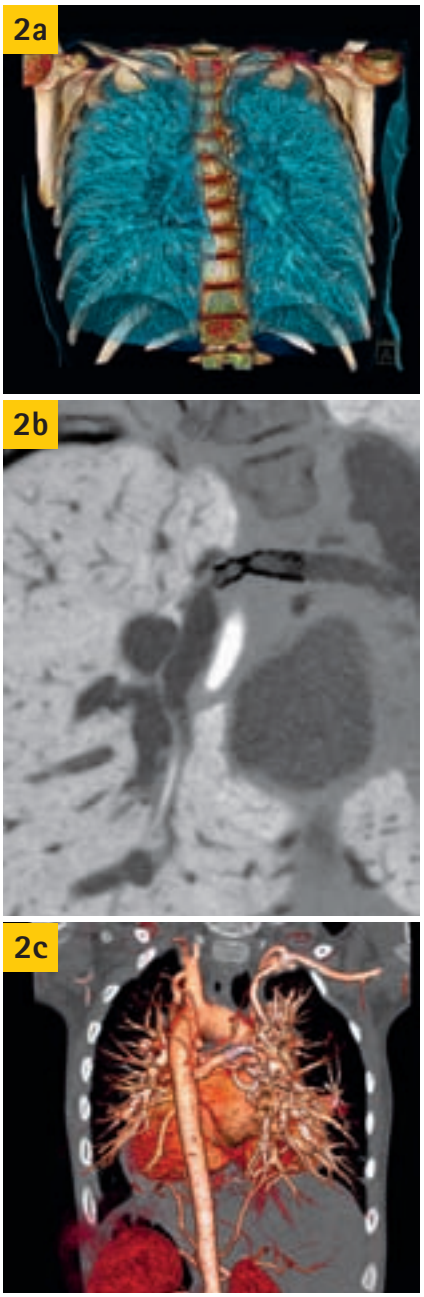
## Flash

At the German Heart Center, Jörg Hausleiter, MD, has been using a SOMATOM Definition Flash CT scanner since April. With this revolutionary scanner, he can image the heart in a quarter of a single heart beat. Equally impressive, he has been able to achieve a radiation dose of 1mSv or less in a large proportion of patients undergoing CT coronary angiography. "That's unbeatable compared to other CT scanners," says Hausleiter, an Associate Professor of Medicine at the Munich-based hospital.

The SOMATOM Definition Flash gets its name from its flash-fast speed. Equipped with two detectors, two X-ray sources, and a gantry that rotates in 0.28




**1: Instead of just taking into account the patient's external dimensions and apparent size, CARE Dose4D analyzes the cross-sectional anatomy in real-time and adjusts the emitted X-ray dose accordingly – providing excellent image quality with minimized exposure.**




**2: Pediatric imaging: no breath hold and no anesthesia was necessary for the scan with 0.37s scan-time by using only 1 mSv (Fig. 2A); Split-second thorax scan by using only 1.65 mSv (Fig. 2B and 2C).**

seconds, the scanner boasts a temporal resolution of just 75 ms. Moreover, thanks to an innovation unique to the SOMATOM Definition Flash, the patient table no longer slowly inches forward during scanning. Instead, in low-dose Flash Spiral mode, the table can glide along at 45 cm/s while the scanner integrates data from both detectors, achieving a gap-free scan even though each spiral is wide open.

Still, according to Hausleiter, the key question is whether excellent image quality can be achieved at such a high scan speed and low dose. With the SOMATOM Definition Flash, the answer is clearly yes. "This ultra-low dose was never possible before, but with this scanner – with its high temporal resolution and improvements in the X-ray tube and detector – it is now possible," he says.

Of the first 100 coronary CT scans performed on the Definition Flash at the German Heart Center, more than 70% could be done in Flash mode. As a result, the average radiation dose for all coronary CT scans – including longer scans needed for presurgical evaluation and triple rule-out studies – dropped from a median of 5 to 7 mSv down to 1.8 mSv.

Of the 70% of patients scanned in Flash mode, approximately half could be scanned at 100 kV. (In general, a tube voltage of 100 kV is suitable for patients with a body mass index of less than 30 or a body weight of less than 90 kg). In these patients, Hausleiter found that the median radiation dose was just 1 mSv. The other half of the patients were scanned at 120 kV, and received a radiation dose of 1.6 to 1.8 mSv, still far lower than the typical radiation dose for coronary CT angiography.

The PROTECTION I study highlights how much progress has been made. In 2007, Hausleiter and an international group of researchers from 50 medical centers set out to determine the typical radiation dose for patients undergoing coronary CT angiography, using CT scanners manufactured by a variety of vendors. Published in the February 4, 2009, issue of JAMA, the study showed that the median dose was 12 mSv.

"It's important to realize the large steps we've taken," says Hausleiter. "The dose we can achieve today is one-tenth of what it was in the PROTECTION I study. That's a major improvement."

Such a low radiation dose could expand CT's horizons in the evaluation of heart disease. For example, for patients with high heart rates and irregular heart rhythms, the "step and shoot" Adaptive


**3: Image cardio sequence: Fully flexible X-ray pulsing in combination with 75ms temporal resolution results in low dose cardio scan (0.36 mSv dose).**

Cardio Sequence, with prospective ECG-triggering and arrhythmia detection, is ideal and keeps radiation dose to about 2.5 mSv. For patients with reasonably low and stable heart rates, the Flash Spiral is the method of choice. But even for patients with mild arrhythmia, Hausleiter thinks the Flash mode, which captures all necessary data in a single heart beat, may be fast enough to do the job, and at a radiation dose of 1mSv. And, if that one heart beat happens to be an extra unwanted beat generated by the arrhythmia, the Flash's low radiation dose means there is little risk in repeating the study.

A radiation dose of below 1 mSv also raises the possibility of using CT for screening patients at risk for heart disease. "We need to start thinking about that question," Hausleiter says. "With coronary CTA, we would gain information on calcification, the location of plaques, and the presence of noncalcified plaques – the type we really worry about. In the end, screening could reduce the number of heart attacks."

## Iterative Reconstruction

Iterative reconstruction, which Siemens is slated to debut at the 2009 RSNA meeting in Chicago, is the latest success story in the company's mission to reduce radiation dose. Essentially, iterative reconstruction introduces a correction loop in the image generation process that cleans up artifacts and noise in low-dose images.

Other vendors are working on iterative reconstruction, but Siemens has developed a unique method. A typical approach to iterative reconstruction is to measure data in the reconstructed image and compare it to the original data, using differences to identify ways to improve the image. This approach is time-consuming because, with each iteration, new measurement data must be calculated.

Siemens instead takes the original data and reconstructs a super-high-resolution image. The image is very noisy, because the filtering that ordinarily reduces image noise is not used, in order to avoid any loss of information. Then prior knowledge of the scanned object is used to smooth the image and reduce noise within homogeneous regions, while contrast edges are preserved. This process is repeated over several steps, or iterations.

"Why is Siemens' approach better?" Because we start with a super-high-resolution image and clean it up," says Thomas Flohr. "We can fine-tune the process, so we don't lose object information. We maintain image texture that is familiar to readers, so the resulting image looks like a standard CT image and doesn't have the plastic-like look that is often the drawback of other iterative reconstruction approaches. And the process is very fast and efficient." Most important, Siemens' iterative reconstruction technique can reduce radiation dose by up to 60%, depending on the body region and the original scan dose.

**"With Siemens Iterative Reconstruction I can save up to 60% dose for wide range of routine applications while maintaining excellent image quality"** *says U. J. Schoepf, MD, Professor of Radiology and Cardiology and Director of CT Research and Development at the Medical University of South Carolina.*

## Future Directions

The next automated tool for dose reduction is likely to be automatic kV adaptation to the patient's size and the exami-

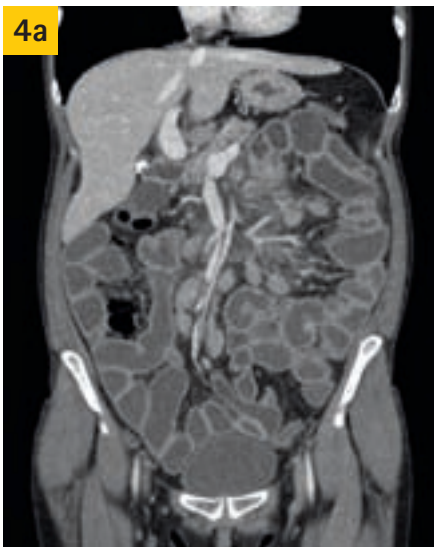
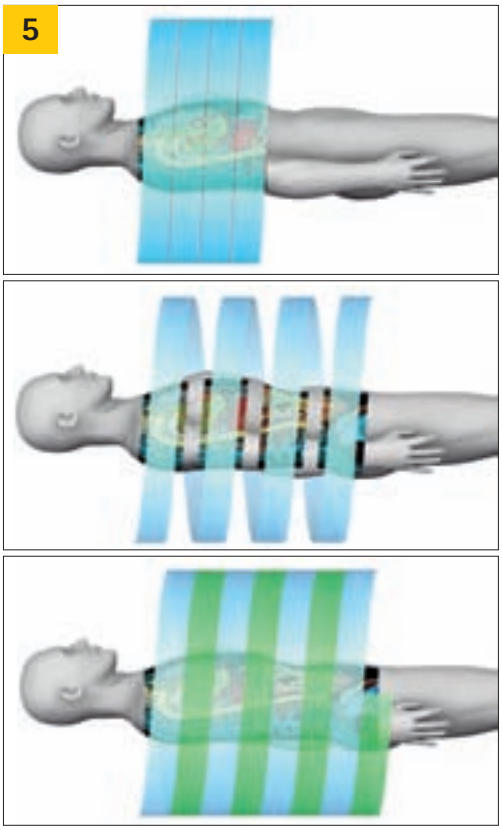




**Image data reconstruction of an abdominal scan with Standard FBP at full dose (Fig. 4a) and scanned at 60% lower dose while reconstructed with Iterative Reconstruction in Image Space (Fig. 4b). Despite the fact that Fig. 4B was acquired at significantly lower dose it shows the same low noise compared to the standard FBP at full dose.**



**5: Single Source CT requires slower table feeds to prevent gaps in the acquired volume (top, center). Dual Source CT combines the data from 2 detectors for faster table feeds above a pitch of 3 (bottom).**

nation type. Researchers are beginning to understand and further evaluate its effect on image quality and dose. In the PROTECTION II study, for example, Hausleiter and his colleagues randomly assigned 400 patients to undergo coronary CT angio-graphy with either a 100 kV protocol or the more conventional 120 kV protocol. Reported at the 2009 American College of Cardiology Annual Scientific Session, the study showed that the use of 100 kV reduced radiation dose by 31%, while image quality scores were virtually identical. "This proves you can use 100 kV very liberally when looking at the coronary arteries," says Hausleiter. At the Mallinckrodt Institute, Siegel has also been evaluating the radiation savings possible through use of a lower tube voltage. Her work with Lucite phantoms that simulate the size of various body regions in children has shown that at a tube voltage of 80 kV the radiation dose is reduced when compared to a tube voltage of 140 kV, even when the tube current is increased to ensure good image quality.

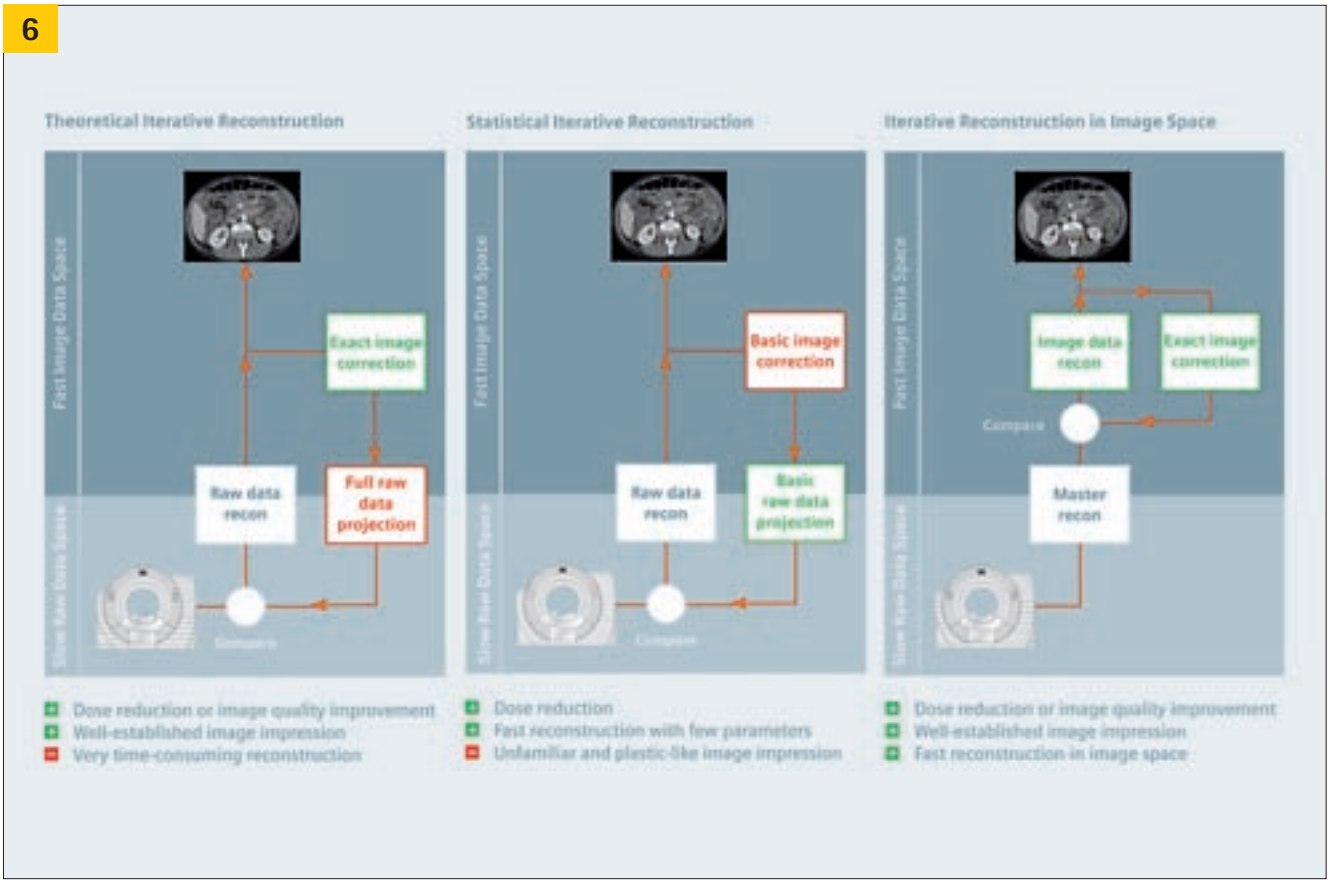
At the St. Louis Children's Hospital, Siegel has been using the SOMATOM Definition AS 64-slice CT scanner to scan pediatric patients. She will continue her research in pediatric phantoms and in patients with this newer generation scanner to determine the impact on radiation dose and image quality of modulating kV. She anticipates that with this newer-generation scanner, the quality of CT studies will improve even further as radiation dose is decreased. "There is an old saying, 'Beautiful pictures come at the cost of higher radiation dose,' " Siegel says.

"We've already disproved that, and we intend to further disprove it."

**6: To accelerate the convergence of the reconstruction IRIS applies the raw data reconstruction only once. During this newly developed initial raw data reconstruction a so called master image is generated that contains the full amount of raw data information. The following iterative corrections known from true iterative reconstruction are consecutively performed in the image space. In addition, the noise texture of the images is comparable to standard well-established convolution kernels. The new technique results in artifact and noise reduction, increased image sharpness and dose savings up to 60% for a wide range of clinical applications.**

Medical writer Catherine Carrington holds a master's degree in journalism from the University of California Berkeley and is based in Vallejo, California.

1 Mulkens et al.: Use of an Automatic Exposure Control Mechanism for Dose Optimization in Multi-Detector Row CT Examinations: Clinical Evaluation, Medical Physics.



# Low dose and Robustness of Aquilion ONE for Cardiac CT

After ten years of research and development, Toshiba released the Aquilion ONE™ CT scanner at the RSNA 2007. This scanner was able to cover 16cm in the '*z*' direction using an array of 320 x 0.5mm detectors. This was, and still is the only CT scanner in the world capable of capturing images of the entire heart and coronary arteries in a single rotation without any need for patient motion during the scan.

This paper reports huge robustness of the system. Furthermore, it is now possible to provide diagnostic images of the heart and coronary arteries at low radiation dose in all patients. Figure 1 shows the principal of generating slice data from a wide volume acquisition. Double number of slices (640) can be generated out of volume data without increasing radiation dose as this is done in the reconstruction[1]. This is as opposed to the z-sampling technique which increases the exposure dose due to larger penumbras.

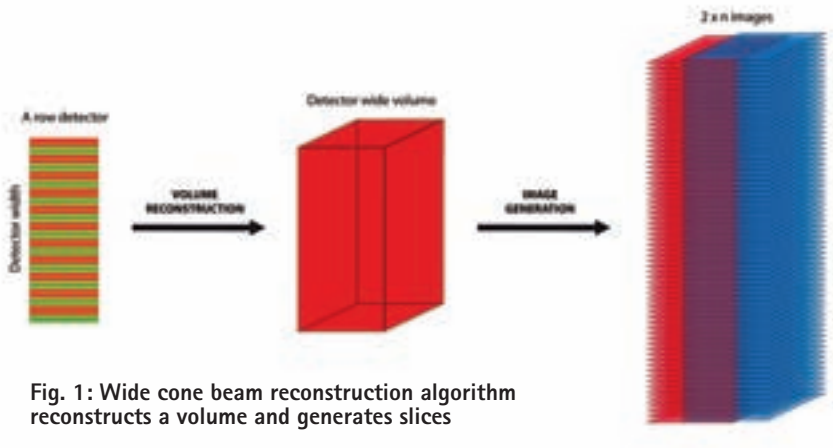



**Fig. 1: Wide cone beam reconstruction algorithm reconstructs a volume and generates slices**

## Robustness

All conventional spiral CT systems 'build-up' an image of the heart and coronary arteries over multiple heart-beats. This can be achieved in two ways[2]:

### Retrospective Spiral Technique

This is the original method used in cardiac CT which involves a spiral acquisition using a very low pitch in order to acquire an entire image dataset of the heart and coronary arteries at all phases of the cardiac cycle. A major drawback of this technique is radiation dose which is commonly above 10 mSv, even when using ECG dose modulation techniques (which reduces tube current during systole and increases it during diastole – usually the phase at which the heart is stillest and the highest quality images are obtained).

### Prospective-gating ('step and shoot')

Prospectively-gated techniques have been introduced on all commercially available 64-MDCT in an attempt to address these radiation issues. This involves acquiring an axial block of data at end-diastole using the full width of the 64 detectors (3.2-4cm coverage). As this coverage is insufficient to cover the entire heart, the image is again built up using multiple (typically 4-5) similar acquisitions performed over multiple heart beats with the scanner moving between each acquisition. These separate blocks of data are acquired with some overlap allowing the images to be 'stitched' together afterwards in an attempt to create a single dataset of the entire heart and coronary arteries. Although this technique typically reduces radiation doses to the 5-10mSv range, this comes at the price of robustness as the data has been acquired at multiple separate time-points. Conventional prospective gating techniques require a low resting heart rate (ideally <60bpm) and are very sensitive to poor breath-holding and to any variation in heart rate during the study. They are completely unsuitable for patients with multiple ectopic beats or those in AF.

Aquilion ONE, in contrast, uses a unique prospective technique in which the entire dataset is acquired in one heart-beat. This provides huge advantages compared with conventional techniques both in terms of radiation dose and robustness.

### HR ≤ 65bpm

A single-beat prospective radiation pulse is chosen that enables data to be acquired between 70% and 80% of the R-R interval. This technique is used without patient selection and provides reliably excellent images of the heart and coronary arteries at radiation doses which are typically below 3 mSv as reported by Dr. Bull[2].

"Using the conversion factor $k = 0.014$ mSv/mGy/cm (ICRP102) the estimated patient radiation exposure was E = 0.887 mSv averaged for all patients. An increase with patient's BMI was observed with a range between 0.22 mSv and 1.57 mSv", reported by Lembcke et al[3].

### 65bpm < HR < 75 bpm

This technique is used for patients in which beta blockers are either contra-indicated or not completely effective. The radiation pulse is widened in this scenario to enable data to be acquired in a single beat between 30% and 80% of the R-R interval. This option is unique to the Aquilion ONE as it enables end-systolic images to be reconstructed in addition to conventional end-diastolic images still using prospective ECG gating in a single heart beat. End-systolic isovolumic relaxation is

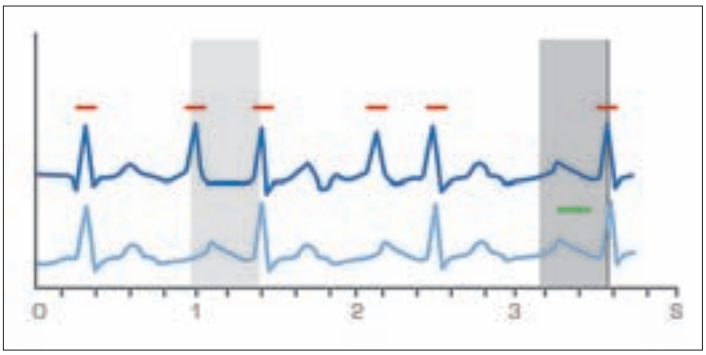



**Fig. 2: Arrhythmia rejection: the system skips the irregular RR-intervals until it finds the best one (green line) within clinical justified time level**

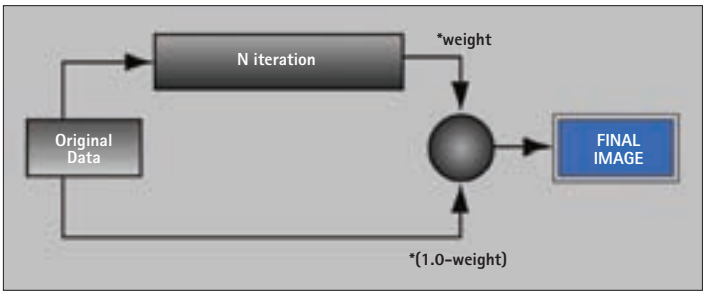



**Fig. 3: AIDR was introduced at the RSNA 2009 to save the radiation dose up to 60% for a wide range of clinical applications.**

relatively short but unlike end-diastolic relaxation this is 'fixed' and does not shorten with increasing heart rate. Radiation doses are typically below 5 mSv using this technique with excellent image quality[2,3].

## HR ≥ 75bpm

A feasible option is to use a single-beat prospective technique acquiring data throughout a single entire cardiac cycle. This enables data to be reconstructed at any phase of the cardiac cycle. The reconstruction options (0-100% of R-R interval) are similar to conventional spiral 'retrospective' techniques but at greatly reduced radiation dose as this is still a prospective technique with no 'oversampling' required (typical radiation doses are 4-6 mSv with good image quality)[2].

## Arrhythmias rejection

The Aquilion ONE's unique ability to acquire an entire cardiac dataset in a single beat with no table motion has particular advantages in arrhythmias. As long as ventricular rate is reasonably well controlled (approximately < 75 bpm) reliably excellent images are acquired in all patients with no motion artefact and no step artefacts. In effect the Aquilion ONE is able to 'wait' for a sufficiently long R-R interval in which to deliver its prospective radiation pulse.

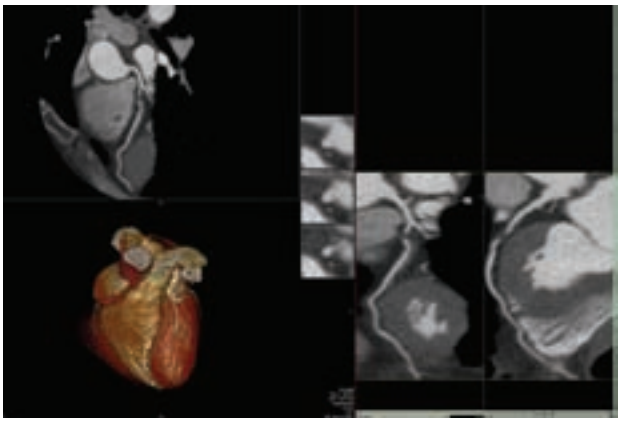
## Adaptive Iterative Dose Reduction

Although low radiation dose as low as 0.22 mSv has been reported by Charite Cardiac group, Toshiba keeps working on further dose reduction. At the RSNA 2009 Adaptive Iterative Dose Reduction (AIDR) has been introduced which result in dose saving up to 60% (Fig. 3).

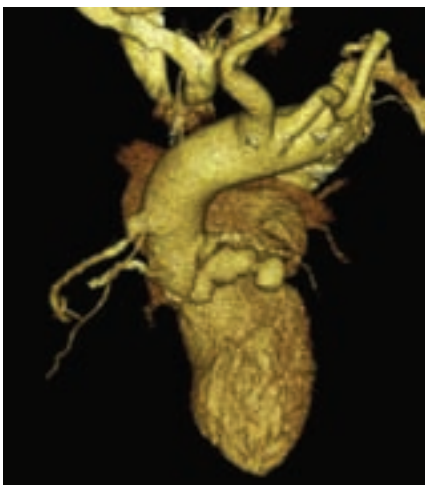
Most importantly is this iterative dose reduction algorithm does not blur the edges nor change the texture but only suppresses the noise.

References
1 J. Blobel, H de Vries, R. Irwan, J Mews, Y Ogawa, "640 Multislice Reconstruction with Dynamic Volume CT", VISIONS 13:2009
2 R. Bull, "Robustness of Aquilion ONE for cardiac CT", VISIONS 15:2010
3 A. Lembcke, P. Rogalla, J. Mews, J. Blobel, "Dose Optimized Single Beat Coronary CT Angiography", VISIONS 15:2010

## Clinical Cases



**Case 1**
**55 year old woman with atypical chest pain. Negative exercise test but continued clinical concern. Single rotation, 70%–80% acquisition. Images show critical LAD stenosis subsequently treated with PCI.**



**Case 2**
**80 year old man. Persistent fever post aortic valve replacement. Two step protocol covering whole chest, HR 80bpm. Each step single rotation, reconstructed at 40% of R-R interval. Images show large false aneurysm secondary to aortic root abscess.**

*Source: Dr Russel Bull, Royal Bournemouth Hospital UK*

## GE Healthcare LightSpeed Series

| LightSpeed | VCT XT | VCT Pro | VCT | VCT XTe | VCT Select |
|---|---|---|---|---|---|
| Channels | *64* | *64* | *64* | *64* | *32* |
| Power in kW | *100* | *100* | *85* | *85* | *85* |
| Coverage/ rotation in mm | *40 mm isotropic per 0.4 s (Cardiac: 0.35 s), 0.35 mm resolution incl. SnapShot Pulse & Volume Helical Shuttle* | *40 mm isotropic per 0.4 s, (Cardiac: 0.35 s) 0.35 mm resolution* | *40 mm isotropic per 0.4 s, 0.35 mm resolution* | *40 mm isotropic per 0.4 s, 0.35 mm resolution incl. SnapShot Pulse, Volume Helical Shuttle & ASiR* | *40 mm, 20 mm isotropic per 0.4 s, 0.35 mm resolution* |

**Highlights**
- VCT XTe: Up to 35 frames reconstruction / sec
- VCT XTe: Adaptive Statistical Iterative Reconstruction (ASiR)
- VCT XTe: Volume HelicalShuttle up to 500 effective slices
- VCT XT: 5-beat cardiac acquisition, up to 70% dose reduction
- VCT XT: from one to 6 mSv for cardiac CTA
- VCT XT: expanded coverage to 80 mm for CT perfusion
- VCT: 5-beat cardiac imaging: resolution, coverage, fast scanning
- VCT: a true 64-channel DAS

## GE Healthcare BrightSpeed Series

| | BS 4 | BS 8 | BS 16 | BS 16 Elite |
|---|---|---|---|---|
| Channels | *16* | *8* | *16* | *16* |
| Power in kW | *42* | *42* | *42* | *53.2* |
| Coverage/ rotation in mm | *2 x 0.625, 4 x 1.25, 4 x 2.5 & 4 x 5 mm per 0.8 s* | *2 x 0.625, 8 x 1.25 & 8 x 2.5 mm per 0.8 s* | *16 x 0.625 & 16 x 1.25 mm per 0.8 s* | *16 x 0.625 & 16 x 1.25 mm per 0.5 s* |

**Highlights**
- LightSpeed VCT Technology inside
- BS 4: perform long coverage and high grade CT-A
- BS 8: any organ in a breath-hold
- BS 16: Sub-mm microvoxels for incredible detail
- BS 16 Elite: faster routine scanning with variable speed rotations

## GE Healthcare HiSpeed CT Dual

| | HiSpeed CT/e Dual |
|---|---|
| Channels | *2* |
| Power in kW | *24* |
| Coverage/ rotation in mm | *2 x 10 mm* |

**Highlights**
- Xtream productivity
- As easy as 1-2-3 with GE's SmartGantry
- Patient concious design
- Multi-slice scanning for everyone and everywhere
- Increased speed and greater clinical flexibility

## GE Healthcare LightSpeed RT

| | LightSpeed RT 16 | LightSpeed RT 16 Pro |
|---|---|---|
| Channels | *16* | *16* |
| Power in kW | *53* | *100* |
| Coverage/ rotation in mm | *16 x 1.25 mm per 0.8 s* | *16 x 0.625 mm per 0.5 s* |

**Highlights**
- Multi-slice wide bore radiation oncology CT scanner
- Large 80 cm opening
- 65 cm field of view
- Full RT connectivity
- Complete radiotherapy simulation solution

## GE Healthcare Discovery CT-750 HD

| | |
|---|---|
| Views / s | *> 7.000* |
| Power in kW | *150* |
| Resolution | *230 Microns* |

**Highlights**
- See more, know more, less dose New Gemstone Detector plus complete new imaging chain
- 230 Micron Resolution over 2 m coverage
- Dual Energy with 1 Tube and 50 cm FOV
- Volume HelicalShuttle up to 500 effective slices
- Adaptive Statistical Iterative Reconstruction (ASIR)
- Dose reduction up to 50% over the intire body up to 83% for cardiac examination
- Up to 35 frames reconstruction / sec

## Hitachi Medical Systems ECLOS 4/8/16

| | |
|---|---|
| Slices | *4/8/16* |
| Power in kW | *42* |
| Coverage/rotation in mm | |

### Highlights
- X-ray tube: 3.5 to 5.0 MHU
- Sub-second, real-time image reconstruction
- Minimum scan time 0.8 sec and maximum field of view 500 mm
- Preventive examination supported by fatPointer or riskPointer
- Straight forward patient registration and easy system handling

## Morita 3D Accuitomo 170

| | |
|---|---|
| Voxelsize | *80µm* |
| Scan time | *18 s* |
| Scan-Volumina | *Ø40 x H40 mm, Ø60 x H60 mm, Ø80 x H80 mm, Ø100 x H100 mm, Ø170 x H120 mm* |

### Highlights
- Offers high definition 3D-CT images with low patient dose
- Displays both hard and soft tissue
- A wide dynamic range and precise grayscale differentiation capability
- Enables comprehensive examination for diagnosing temporal bone, paranasal sinuses, mandible, skull base, etc.
- Compact Floor space: 1,620 mm X 1,200 mm

## NeuroLogica CereTom® Portable CT-Scanner

| | |
|---|---|
| Slices | *8* |
| Power | *1.4 kW* |
| Adjustable slice thickness | *1.25, 2.5, 5, 10 mm* |

### Highlights
- Rotation speed 0,5 sec
- KV Range 80-140 kV at 7,5 mA
- Patient dose CTDI 41mGy
- Field of view 25 cm
- Images compatible with surgical navigation systems
- Wireless connectivity to PACS and DICOM 3 compliant with modality worklist
- Intraoperative scanning capabilities with DORO® CERETOM® Intraoperative Cranial Stabilisation system
- Immediate 2D, 3D and MPR images with custom pre-set protocols
- Advanced visualisation solutions powered by Barco's Voxar 3TTM

## Philips Brilliance iCT scanners

| | Brilliance iCT | Brilliance iCT SP |
|---|---|---|
| Channels | *256* | *128* |
| Power in kW | *120* | *100* |
| Coverage/rotation in mm | *80* | *40* |

### Highlights
- Enhanced performance for routine and emerging applications
- Patient-specific acquisition protocols to balance image quality and dose utility
- Revolutionary AirGlide Gantry for whisper-quiet performance at 220 rpms
- Exclusive dose-saving features like the Eclipse Collimator, Step & Shoot Cardiac and Dedicated Pediatric Protocols
- Life-cycle benefits through a scalable hardware and software platform

## Philips Brilliance CT 64

| | Brilliance 64 with Essence technology |
|---|---|
| Channels | *64* |
| Power in kW | *60* |
| Coverage/rotation in mm | *40* |

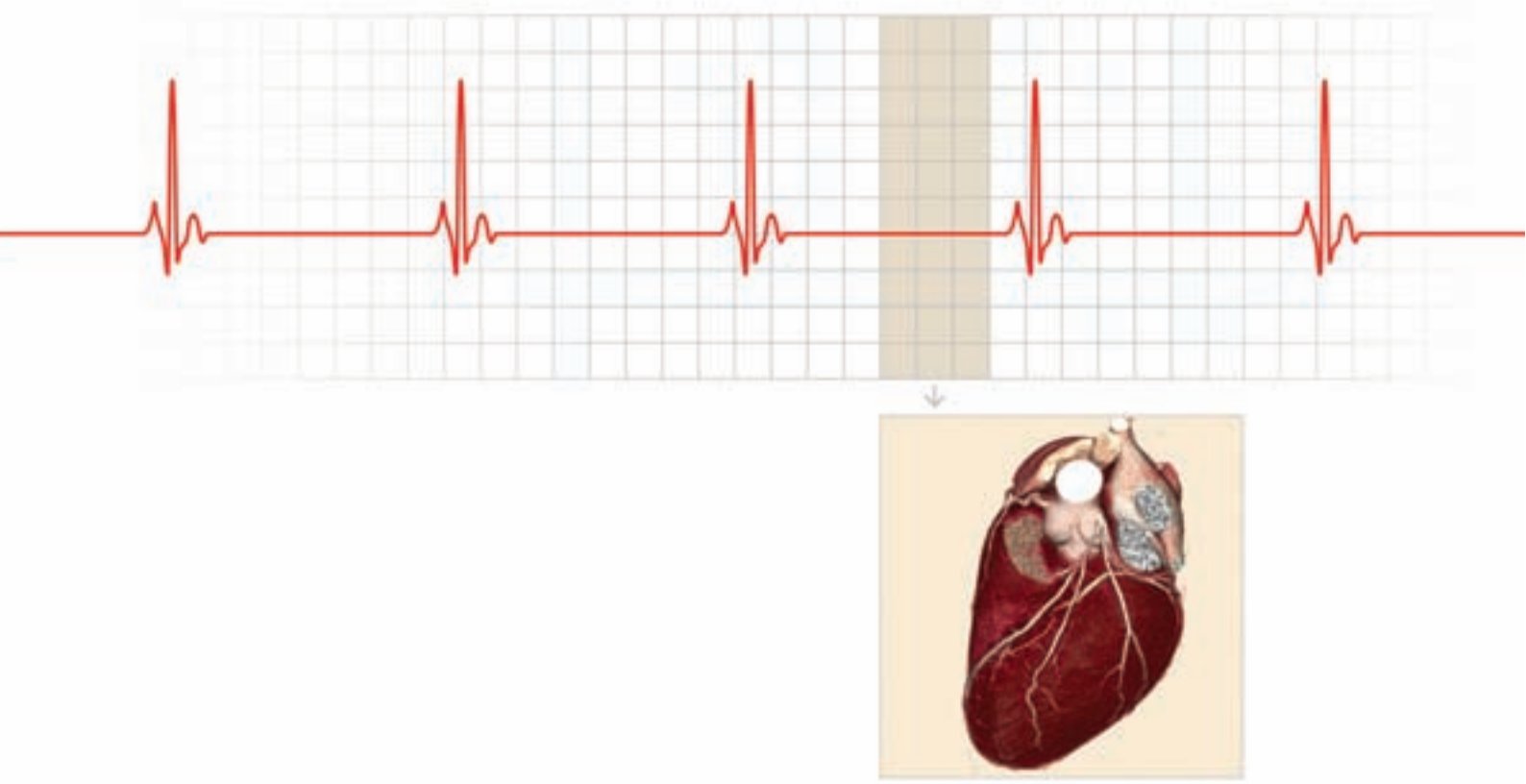
### Highlights
- Myocardial perfusion, CTA and whole brain perfusion
- CT stroke assessment, 80 mm coverage through Jog Scan
- Brilliance CT workspace user environment improves productivity by working the way you do
- DoseWise design delivers optimal dose efficiency without compromising image quality
- Submillimeter isotropic accuracy
- Essence technology with the latest x-ray tube, detector and reconstruction advancements improving image quality

## Philips Brilliance CT 16

| | Brilliance 16 |
|---|---|
| Channels | *16* |
| Power in kW | *48* |
| Coverage/rotation in mm | *24* |

### Highlights
- Advanced performance systems for routine imaging needs with fast acquisition and high quality image results
- Diagnoses of small lesions with submillimeter slices
- Brilliance CT workspace user environment improves productivity by working the way you do
- DoseWise design delivers optimal dose efficiency, without compromising image quality
- Scalable platform for growth and future applications, making it a secure, long-term investment

**TOSHIBA**
**Leading Innovation** >>>



# One beat cardiac imaging

## Aquilion ONE: the world's first dynamic volume CT

Aquilion ONE

Toshiba Medical System's Aquilion ONE is a quantum leap in CT imaging that can capture a 3D image of the heart in just one beat.

The wide coverage provided by the Aquilion ONE's 16cm detector, which has 320 detector rows, can scan the brain or heart in less than a second. So you can see an entire organ in 3D with perfect continuity along the *z*-axis. Or see it in 4D, moving as time passes. Or see it extremely fast, with a lower contrast medium dose and exposure dose.

The Aquilion ONE will bring you dynamic views of the body you could not see before.

See it for yourself at www.toshiba-medical.eu.

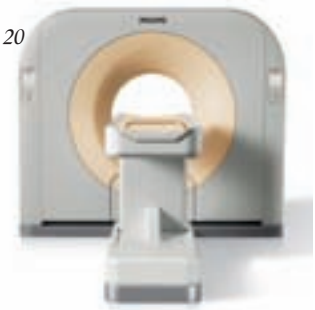
Toshiba: Made for Patients, Made for You, Made for Life!

Made for Life™

ULTRASOUND CT MRI X-RAY SERVICES

## Philips MX CT scanners

| | MX 4000 Dual | MX 6000 Dual |
|---|---|---|
| Channels | 2 | 2 |
| Power in kW | 28 | 42 |
| Coverage/ rotation in mm | 20 | 20 |



**Highlights**
- Multislice technology doubles performance for hard-to-image anatomy
- Advanced applications right at console: 3D, MIP, MPR, volume rendering, CTA, virtual endoscopy, etc.
- 0.8* sec rotation; 0.9* sec reconstruction; 0.8* mm slices
- People-centric design improves user productivity and patient comfort

## Philips Brilliance CT Big Bore

| | |
|---|---|
| Channels | 16 |
| Power in kW | 60 |
| Coverage/ rotation in mm | 24 |

**Highlights Radiology**
- Answers many unique clinical challenges in the emergency department
- Beriatric table, 295 kg
- 85 cm gantry opening
- 60 cm true scan field-of-view (FOV)
- Extended FOV to 70 cm

**Highlights Oncology**
- 4D respiratory imaging
- TG66 compliant table
- 85 cm gantry opening
- 60 cm true scan field-of-view (FOV)
- Extended FOV to 70 cm

## Philips MX 16-slice CT scanner

| | |
|---|---|
| Channels | 16 |
| Power in kW | 50 |
| Coverage/ rotation in mm | 24 |

**Highlights**
- Easy-to-use workflow for efficient operation
- Widest detector coverage in 16-slice class
- One of the industry's smallest site requirements at 18 square meters
- Fully compatible with Brilliance Workspace, Extended Brilliance Workspace and the Brilliance Workspace Portal

## Siemens Somatom Definition Flash

| | |
|---|---|
| Channels | 2 x 128 slices |
| Power in kW | 200 kW |
| Coverage/ rotation in mm | 48 cm (with A4DS) |
| | 0.24 mm resolution |

**Highlights**
- Flash speed. Lowest Dose.
- Split-second thorax imaging without the need for breath hold
- Sub-mSv heart scanning to cover the entire heart in only 250 ms
- Single dose Dual Energy for a 2nd contrast in daily routine
- Iterative Reconstruction in Image Space delivers up to 60% additional dose reduction or significantly improved image quality

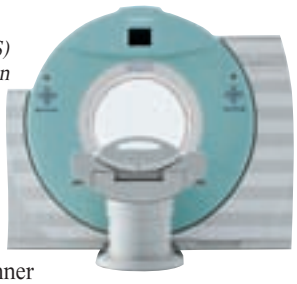
## Siemens Somatom Definition

| | |
|---|---|
| Channels | 2 x 64 slices |
| Power in kW | 160 kW |
| Coverage/ rotation in mm | 20 cm (with A4DS) |
| | 0.24 mm resolution |

**Highlights**
- The world's first Dual Source CT
- Faster than every beating heart without the need for beta-blockers
- Full cardiac detail at half the dose required for a conventional single source CT
- One-stop diagnosis in acute care for acute chest pain, abdominal pain, trauma, and neuro imaging
- Beyond visualization with Dual Energy by characterizing, highlighting and quantifying material for the first time

## Siemens Somatom Definition AS+

| | |
|---|---|
| Channels | 128 slices |
| Power in kW | 100 kW |
| Coverage/ rotation in mm | 27 cm (with A4DS) |
| | 0.24 mm resolution |



**Highlights**
- The world's first adaptive scanner
- Adapts to any patient, e.g. cardiac, pediatric, obese, trauma, intervention with 78 cm bore, up to 300 kg patient table load and up to 2 m scan range
- Eliminates over-radiation in every spiral scan, additionally reducing the dose by up to 25%
- Iterative Reconstruction in Image Space delivers up to 60% additional dose reduction or significantly improved image quality
- Allows whole organ perfusion studies and 4D dynamic studies with up to 27 cm covarage


# Looking for a cost-effective, workhorse CT?

## Then look at the latest edition of the most popular CT in the world – the SOMATOM Emotion Excel Edition

Siemens' SOMATOM Emotion Excel Edition incorporates all of Siemens' renowned creativity and technical competence to combine highest 16-slice CT performance in an affordable package. Our research competence is your opportunity to own leading technology with a substantially lower total cost of ownership.
**www.siemens.com/healthcare +49 69 797 6420**

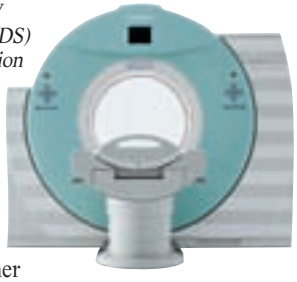
Answers for life.

SIEMENS

A91CT-9093-A1-7600

## Siemens Somatom Definition AS

| | | |
|---|---|---|
| **Channels** | *64 slices* | *40 slices* |
| **Power in kW** | *100kW* | *80 kW* |
| **Coverage/ rotation in mm** | *67 mm (with A4DS)* | *0.24 mm resolution* |



**Highlights**
- The world's first adaptive scanner
- Adapts to any patient, e.g. cardiac, pediatric, obese, trauma, intervention with 78 cm bore, up to 300 kg patient table load and up to 2 m scan range
- Eliminates over-radiation in every spiral scan, additionally reducing the dose by up to 13%
- Enables 3D guidance in minimally invasive procedures with Siemens´ unique Adaptive 3D Intervention Suite
- Adapts to your space with on-site upgradeability from 40/64 to 128 slice configuration

## Siemens Somatom Definition AS Excel Edition

| | |
|---|---|
| **Channels** | *64 slices* |
| **Power in kW** | *80 kW* |
| **Coverage/ rotation in mm** | *19,2 mm* |
| | *0,24 mm resolution* |

**Highlights**
- Affordable Performance
- Adapts to your space with on-site upgradeability from Excel Edition to AS 64 or 128 slice configuration.

## Siemens Somatom Sensation

| | | |
|---|---|---|
| **Channels** | *64 slices* | *40 slices* |
| **Power in kW** | *80 kW* | *70 kW* |
| **Coverage/ rotation in mm** | *28.8 mm* | *28.8 mm* |
| | *0.24 mm resolution* | *0.33 mm resolution* |

**Highlights**
- Trusted performance. Without compromise.
- Speed, resolution, coverage and low dose without compromise
- Industry's highest isotropic resolution
- 0.33 second rotation time

## Siemens Somatom Sensation Open

| | |
|---|---|
| **Channels** | *40 slices* |
| **Power in kW** | *50 kW* |
| **Coverage/ rotation in mm** | *28.8 mm* |
| | *0.33 mm resolution* |

**Highlights**
- 82 cm large bore with 82 cm FOV
- 280 kg high capacity patient table
- Designed for RT planning
- Available as sliding gantry for trauma and inter-operative installations.

## Siemens Somatom Definition AS 20

| | |
|---|---|
| **Channels** | *20 slices* |
| **Power in kW** | *80kW* |
| **Coverage/ rotation in mm** | *67 mm (with A4DS)* |

**Highlights**
- The world's first adaptive scanner
- Adapts to any patient, e.g. cardiac, pediatric, obese, trauma, intervention with 78 cm bore, up to 300 kg patient table load and up to 2 m scan range
- Eliminates over-radiation in every spiral scan, additionally reducing the dose
- Enables 3D guidance in minimally invasive procedures with Siemens´ unique Adaptive 3D Intervention Suite
- Adapts to your space with on-site upgradeability from 20 to 40,64 or 128 slice configuration

## Siemens Somatom Emotion 6/16

| | | |
|---|---|---|
| **Channels** | *16 slices* | *6 slices* |
| **Power in kW** | *50 kW* | *42 kW* |
| **Coverage/ rotation in mm** | *19,2 mm* | *18 mm* |

**Highlights**
- The Most Popular CT in the World
- Perfection in image detail with the smallest tube focal spot size and up to 68% dose reduction with CAREDose 4D
- Clinical efficiency simplified with the breathing indicator, CT storage box in gantry, up to 16 images per second recon and remote access to acquisiton workplace
- Savings in every scan with the smallest space required for installation and lowest power and air-conditioning requirements

## Siemens Somatom Emotion Excel Edition

| | |
|---|---|
| Channels | *16 slices* |
| Power in kW | *50 kW* |
| Coverage/ rotation in mm | *19.2 mm* |

### Highlights
- The Most Popular CT in the World now even more affordable
- Perfection in image detail with the smallest tube focal spot size and up to 68% dose reduction with CAREDose 4D
- Clinical efficiency simplified with the breathing indicator and CT storage box in gantry and up to 8 images per second reconstruction
- Savings in every scan with the smallest space required for installation and lowest power and air-conditioning requirements

## Siemens Somatom Spirit

| | |
|---|---|
| Channels | *2 slices* |
| Power in kW | *40 kW* |
| Coverage/ rotation in mm | *10 mm* |

### Highlights
- Join the World of CT
- New technology, more performance, less cost
- Easy user interface
- New level of cost-effectiveness
- New dimension in patient-friendliness

## Toshiba Aquilion ONE

| | |
|---|---|
| Slices | *640* |
| Coverage/rotation | *16 cm* |
| Rotation speed | *0,35 s* |

### Highlights
- Worlds first Dynamic Volume CT
- Dynamic CT DSA
- Volume heart perfusion*
- Lateral table movement*
- Isophasic ONE-beat cardiac imaging in ONE rotation
- Isophasic 16 cm dynamic volume imaging with 20 volumes/s
- Whole organ perfusion without table movement, e.g. brain, liver, pancreas, kidney, etc.*
- Dual Energy with 50 cm Field of View*
- 8 cm ultra helical with outstanding image quality
- 0,5 mm detector technology with best low contrast resolution 2 mm @ 3HU
- Morphology and moving joints

## Toshiba Aquilion Premium

| | |
|---|---|
| Slices | *320 – upgradeable to 640 slices* |
| Coverage/rotation | *8 cm* |
| Rotation speed | *0,35 s* |

### Highlights
- Dynamic volume CT
- Dynamic CT DSA
- Cardiac volume imaging
- 8 cm ultra helical with outstanding image quality
- Wide area organ and heart perfusion*
- Dual Energy with 50 cm Field of View*
- Isophasic 8 cm dynamic volume imaging with 20 volumes/s
- 4D-Volume shuttle technology for areas larger 8 cm
- Lateral table movement*
- 0,5 mm detector technology with best low contrast resolution 2 mm @ 3HU

## Toshiba Aquilion CX

| | |
|---|---|
| Slices | *128* |
| Coverage/rotation | *3,2 cm* |
| Rotation speed | *0,35 s* |

### Highlights
- ConeXact™ 3D volume reconstruction for super resolution imaging
- CT DSA with SureSubtraction *(option)*
- SureCardio-Prospective for helical cardiac imaging with lowest dose *(option)*
- Up to 35 ms temporal resolution *(option)*
- Patient specific automatic optimization of cardiac scan parameter
- Variable helical pitch to combine two scans in one run (e.g. ECG-gated and Run-off )
- 0,5 mm detector technology with best low contrast resolution 2 mm @ 3HU

## Toshiba Aquilion 32 / 64

| | |
|---|---|
| Slices | *32 / 64 – upgradeable to Aquilion CX* |
| Coverage/rotation | *3,2 cm* |
| Rotation speed | *up to 0,35 s* |

### Highlights
- CT DSA with SureSubtraction *(option)*
- SureCardio-Prospective for helical cardiac imaging with lowest dose *(option)*
- up to 35 ms temporal resolution *(option)*
- Patient specific automatic optimization of cardiac scan parameter
- Variable helical pitch to combine two scans in one run (e.g. ECG-gated and Run-off) *(option)*
- 0,5 mm detector technology with best low contrast resolution 2 mm @ 3HU

GE Healthcare

# Balance image quality and dose like never before.

Today, with breakthrough ASiR™* technology from GE, you can lower patient dose in CT imaging without sacrificing image quality. So while leading-edge clarity lets you diagnose with confidence, a reduced dose enables better patient care. That's our kind of balance—and thanks to ASiR, only GE delivers it.

Learn more at gehealthcare.com/lowdoseCT

**ASiR** is available in both the Discovery™ CT750 HD and the LightSpeed® VCT XTe.


**LightSpeed VCT XTe**:** Low-dose scanning on an established platform.

**Discovery CT750 HD:** Unmatched image clarity at up to 50% less dose.

imagination at work

* Adaptive Statistical Iterative Reconstruction, a proprietary dose-reducing technology that subtracts noise without degrading anatomical integrity.
** A premium LightSpeed VCT configuration.

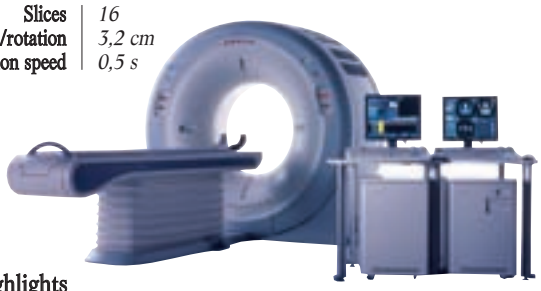
## Toshiba Aquilion 16

| | |
|---|---|
| Slices | *16* |
| Coverage/rotation | *3,2 cm* |
| Rotation speed | *up to 0,4 s* |

### Highlights
- CT DSA with SureSubtraction *(option)*
- Helical cardiac imaging, incl. cardiac CTA
- up to 40 ms temporal resolution *(option)*
- Patient specific automatic optimization of cardiac scan parameter
- Advanced 3D, automatic bone removal, etc.
- Ultra low dose scanning
- 0,5 mm detector technology with best low contrast resolution 2 mm @ 3HU

## Toshiba Aquilion Large Bore

| | |
|---|---|
| Slices | *16* |
| Coverage/rotation | *3,2 cm* |
| Rotation speed | *0,5 s* |



### Highlights
- 4D CT - for respiratory triggered radio therapy
- 90 cm gantry bore
- 85 cm extended field of view *(option)*
- 70 cm standard field of view
- Superior homogeneity for high precision radiation therapy planning
- 0,35 mm isotropic spatial resolution
- 0,5 mm detector technology with best low contrast resolution 2 mm @ 3HU
- Real time multislice open bore fluoroscopy

## Toshiba Activion 16

| | |
|---|---|
| Slices | *16* |
| Coverage/rotation | *2,0 cm* |
| Rotation speed | *0,75 s* |

### Highlights
- CT DSA with Sure Subtraction *(option)*
- Powerful 3D software with auto bone removal
- 0,35 mm isotropic spatial resolution
- Easy “Ready-Set-Go” user concept
- Ultra low dose scanning
- Real time multislice fluoroscopy
- 0,5 mm detector technology with best low contrast resolution 2 mm @ 3HU

## Toshiba Asteion S4

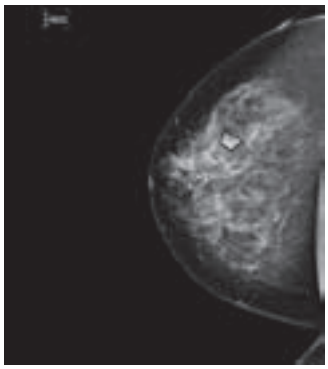
| | |
|---|---|
| Slices | *4* |
| Coverage/rotation | *2,0 cm* |
| Rotation speed | *0,75 s* |

### Highlights
- Extended field of view: 68 cm
- Powerful 3D software with auto bone removal
- Easy “Ready-Set-Go” user concept
- Ultra low dose scanning
- Real time multislice fluoroscopy
- 0,5 mm detector technology with best low contrast resolution 2 mm

## Alliance Medical – flexible diagnostic imaging services

**Highlights**
- Static diagnostic imaging centers MRI, CT, PET, PET/CT
- Interim services for bridging downtimes
- Regular „routing“ services

## Hologic ImageChecker D



**Highlights**
- Industry GOLD standard for CAD
- Highest sensitivity at comparable false marker rates
- Seamless integration of ImageChecker and review workstation
- Powered by R2 technology, the most trusted and fieldproven CAD technology
- Customized CAD results

## IBA Dosimetry Dosimax plus A HV

Dosimeter for measuring simultaneously dose, dose rate, exposure time and dose length product

**Highlights**
- Designed according to IEC 61674
- For use with solid state detectors or ionization chambers
- For CDTI determination in combination with head and body phantom

## PTW CT Dosimetry

Quality control equipment for CT dose measurements

**Highlights**
- Combined head & body phantom available
- CT chamber for precise dose length product measurements and CTDI determination

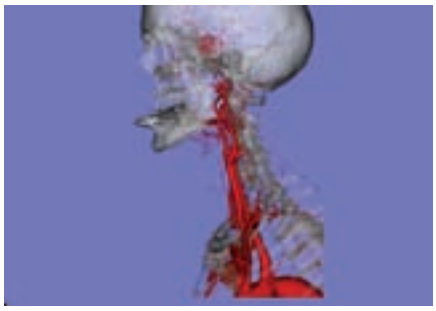
## RTI Electronics CT Slice Probe

*The CT Slice Probe is designed to make CTDI measurement more exact and has also the ability to further analyze the result. Following parameters are achived from a single exposure: CTDI100, CTDIvol, DCTIw, CT dose profile, DLP, Point Dose, Performance of the AEC, FWHM and Scatter Index.*

**Highlights**
- All in One Shot
- Quick and Simple Set up
- Accurate and Sensitive
- No limitations due to the beam width

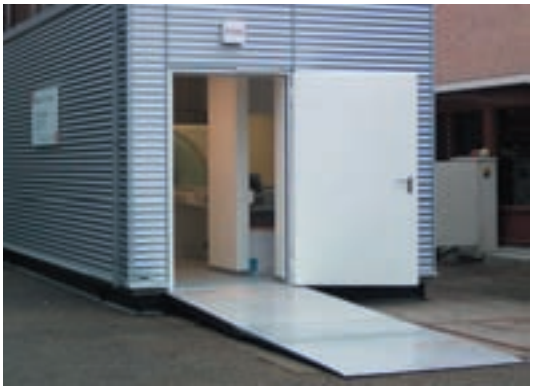
## TeraRecon Aquarius

| | | |
|---|---|---|
| **Product** | *Aquarius workstation* | *AquariusNET server* |
| **Technology** | *3D diagnostic workstation* | *Client-server 3D architecture* |
| **Resolution** | – | – |
| **Size** | – | – |



**Highlights**
- Thin client-server solution enterprise-wide
- VolumePro: handling many 3D sessions at once
- Rendering on central server, results streamed to PC
- Fast and efficient in the reading workflow
- AquariusNET runs on almost any standard PC

## Tomovation – Modular building solutions



**Highlights**
- Engineering, rental, sale of modular buildings MRI, CT, PET, PET/CT including or excluding diagnostic equipment

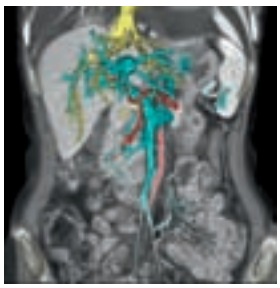
## ulrich medical – $CO_2$ Insufflator for virtual coloscopy

| | |
|---|---|
| **Pressure** | *0-30 mmHG, infinitely variable, preselectable* |
| **Insufflation rate** | *1-4 l/min, arbitrary* |
| **Setting** | *supported by voice confirmation system* |

**Highlights**
- Automatic insufflation of $CO_2$ into the colon for virtual coloscopy examinations in CT
- Significant improvement of diagnostic results compared to manual room air insufflation
- Increase of patient comfort due to automatic adjustment of over pressure and faster resorption
- Easy setting of gas volume and pressure
- Display of gas consumption
- Four adjustable flow rates

## Ziosoft Ziostation

| | |
|---|---|
| **Full Suite of Clinical Applications** | *3D, 4D, MIP, MPR, CPR, Multi-Modality Viewer* |



**Highlights**
- Multi-volume fusion
- Vessel analysis
- Coronary analysis
- Colon analysis
- PET/CT viewer
- CT Cardiac Function Analysis
- CT Brain Perfusion
- Calcium Scoring
- Reporting functions
- Customizable button palettes and keyboard/mouse shortcuts to configure the system individually
- Automatic segmentation algorithms employ anatomical analysis, targeting specific objects to maximize accuracy
- Full Web-Based Capabilities
- Action macros perform multiple processes with one or zero button clicks

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ECR in Vienna
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Booth 305, Expo 10

# MAGLIFE Serenity

## PERFECTION IN MRI MONITORING – SAFE, USER-FRIENDLY, MOBILE

The MAGLIFE Serenity provides the guarantee for highest safety:
For years, SCHILLER has been one of the world's leading suppliers of MRI-compatible patient monitoring systems. The new MAGLIFE Serenity guarantees highest ECG quality during magnetic resonance imaging (MRI) scanning – even under strongest gradient influence. It monitors all vital parameters during anaesthesia in an MRI environment.


MAGNETOM Avanto, photo courtesy of Siemens AG

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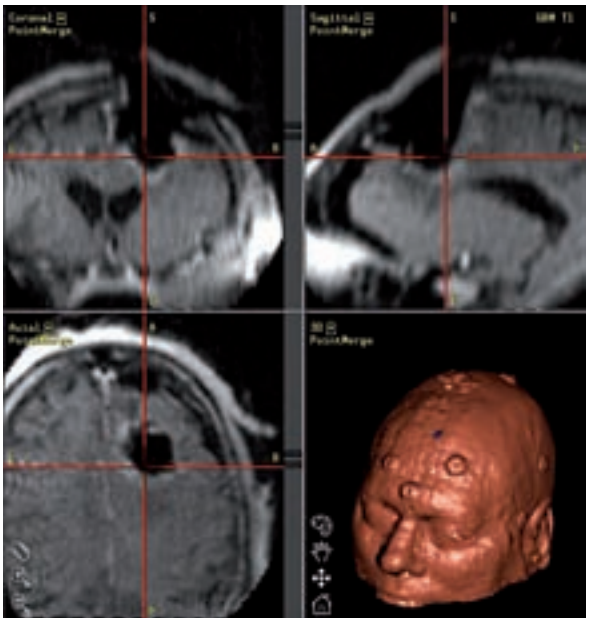
The Art of Diagnostics

**Headquarters:** SCHILLER AG, Altgasse 68, CH-6341 Baar, Switzerland, Phone +41 41 766 42 42, Fax +41 41 761 08 80, sales@schiller.ch, www.schiller.ch

# The PoleStar® Surgical MRI System

Navigating on intraoperative images



Magnetic Resonance images have proven to be indispensable for brain disease diagnosis since MRI was invented in the 1970's. Neurosurgeons use MR images to understand the location of pathological tissue in relation to healthy parenchyma and to functional areas, and to plan surgical access to lesions. With the introduction of intraoperative image-guided navigation systems in the early 90's, MR images registered to the patient enable more precise incision planning, minimally invasive surgeries, and precise access to small, deep-seated lesions. Today, most neurosurgical operating rooms are equipped with a navigation system and their use has become a de-facto standard of care.

However, intraoperatively, changes of the brain, which occur due to tissue resection and brain shift, make preoperative images less relevant. To provide up-to-date information to the surgeon, the images have to be acquired during surgery.

## Satisfying the Neurosurgeon's Needs for Intraoperative Imaging

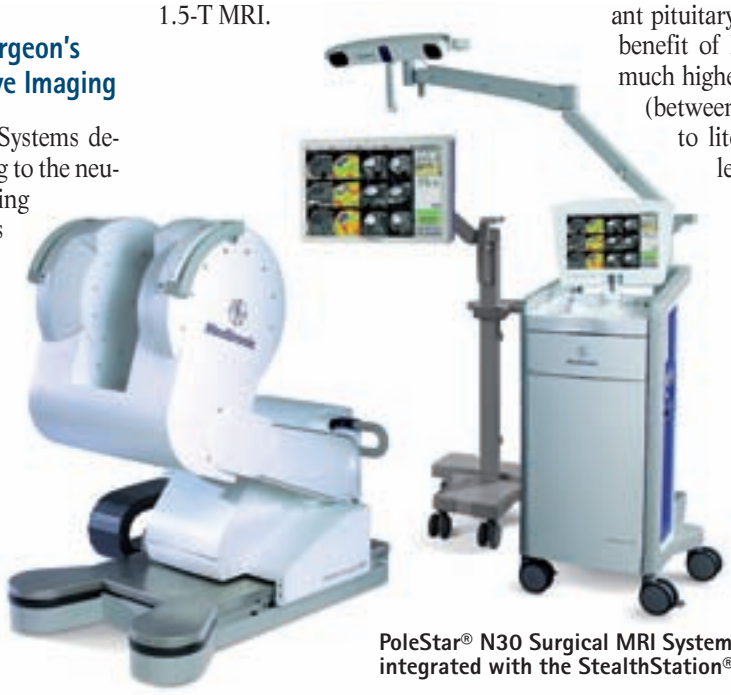
PoleStar® Surgical MRI Systems deliver the power of MR imaging to the neurosurgeon in real time during surgery. Surgeons can assess the degree of achievement of their surgical goals and the absence of any complications before they even close the patient. Whether the goal is complete tumor resection, or just a reduction in tumor size, MR images acquired during surgery provide the information to decide whether additional resection is necessary. Furthermore, the newly acquired images are displayed by the integrated navigation system to provide accurate navigation throughout the surgery, even in presence of the inevitable brain shift. The navigation system can simultaneously display the preoperative diagnostic scans as well as any intraoperative scans so the surgeon can always review the progress of surgery.

PoleStar® users report that images acquired by the system enable them to achieve higher tumor resection rates. Senft et al[1] report:

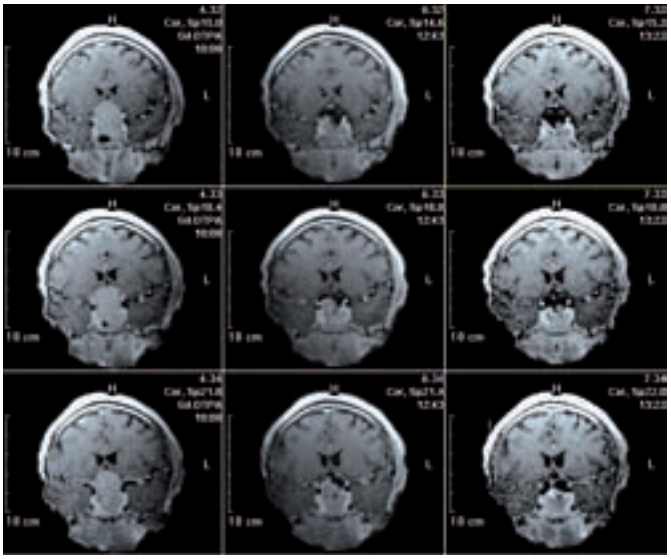
"In our study, GTR was the preoperative surgical goal in 30 patients harboring contrast-enhancing tumors. In 8 (26.7%) of these patients, we were able to detect residual contrast-enhancing tumor by iMRI at a point when the surgeon believed GTR had been achieved. These intraoperative findings led to further tumor resection, resulting in GTR in all 30 patients (100%) as confirmed by postoperative 1.5-T MRI.

Intraoperatively acquired images were highly reliable. After intraoperative scanning, tumor resection was continued in an additional 4 patients not amenable to complete tumor removal, thus at least leaving less tumor tissue behind. The surgical goal of GTR or STR was achieved in all 42 patients with contrast-enhancing, histologically confirmed, high-grade gliomas." These results are similar to those reported for other intraoperative MRI systems.

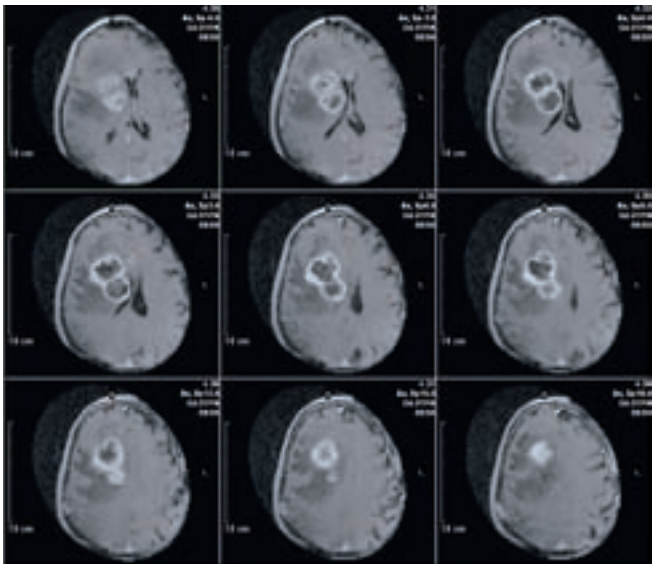
Baumann et al[2] in their series of six giant pituitary adenomas resected with the benefit of PoleStar® imaging report "a much higher total resection rate of 66% (between 27.9% and 40% according to literature), accompanied by at least as favorable endocrinological outcome and symptom control as with conventional pituitary surgery" and conclude: "We believe these favorable outcomes are supported by the use of intraoperative imaging, which serves as an intraoperative quality control to resection and to preservation of surrounding structures beyond that of the operating microscope or



PoleStar® N30 Surgical MRI System: PoleStar® N30 scanner integrated with the StealthStation® S7™ System



**Resection control in pituitary surgery. Left column – preoperative images, middle column – intraoperative images revealing residual tumor, right column – postoperative images demonstrating complete resection**



**Preoperative T1 weighted images with contrast agent**

endoscope. This intraoperative information translates into more radical resections that may lead to fewer severe complications, fewer additional procedures (such as transcranial complementary operations, hormonal replacement therapy, radiotherapy), and to reduction of overall costs of therapy of this difficult group of patients."

The PoleStar® system enables surgeons to improve patient outcomes and positions the hospital as a regional leader in neurosurgery. This may attract more patients and leading surgeons to the hospital.

## The PoleStar® Surgical MRI System

Starting with the introduction of the PoleStar® N-10 system in 1999, through the PoleStar® N20 announced in 2003, and on to the new PoleStar® N30 system, over 6000 cases have been performed at the more than 50 sites worldwide.

The PoleStar® system consists of a moveable MRI scanner and an integrated StealthStation® navigation system. Prior to surgery the scanner is moved to the OR table and positioned under the head of the table. With the push of a button the scanner's magnets move into position around the patient's head for imaging. Since the magnet moves to the patient, the patient can be positioned in a variety of standard surgical positions to minimize changes in surgical technique. Most of the hospital's standard instruments can also still be used when operating with the system.

The system's simple interface, which is typically operated by the surgical staff or surgeon, provides T1 and T2 weighted images, in addition to FLAIR and SSFP protocols. After the typical 10 to 15 minute imaging session the magnet is retracted to its home position under the OR table and the surgery continues. Since the magnet is tracked by the navigation system, no patient registration is required and the acquired images are immediately ready for navigation

PoleStar® systems are installable in any existing operating room with only minimal room modifications. When the system is not in use, the scanner is stored in a special storage cabinet, making the room available for any other surgery – there is no need to dedicate an OR to iMRI use. RF shielding is achieved with either conventional whole-room shielding or with a novel StarShield™ local RF shield. It is located, retracted, at the feet of the patient for most of the time, then is closed around the patient and magnet just during the scan sessions. This enables computers and other electronic equipment to be left turned on all the time, again minimizing changes to conventional surgical technique.

## The New PoleStar® N30 Surgical MRI

The PoleStar® N30 is the latest addition to the PoleStar® system line. It provides better imaging while further reducing the magnet's size and weight and enhancing its integration into the OR. Due to a greatly improved gradient subsystem, the T2 and FLAIR images acquired by PoleStar® N30 are about 30% better than the images acquired by its predecessor systems. At the same time the magnet weighs 80kg less than PoleStar® N20, providing easier handling of the scanner in the OR. The system's dimensions are smaller and the scanner can be moved laterally to simplify its positioning near the OR table.

The PoleStar® N30 system is released with a host of new features and accessories, including a new more ergonomic patient head holder. The PoleStar® N30 scanner can be used with hospital's existing Treon®plus or S7™ navigation system, eliminating the need to purchase additional navigation hardware.

Prof Moshe Hadani from Sheba Medical Center in Tel Aviv says:

"The Polestar N30 is the latest version of the system. It is smaller in weight and dimensions and is easily manipulated in the operating room.

We operated with this new generation system on 20 patients, for brain and pituitary tumor removal, for aspiration of brain abscesses and for accurate navigation to small lesions. We found that the quality of the images of T2 and FLAIR sequences improved dramatically, rendering them useful in the resection of low grade gliomas. When intraoperative MRI is used for the right indication, I can not overestimate its important contribution to a successful operation."

---

1 Usefulness of Intraoperative Ultra Low-Field Magnetic Resonance Imaging in Glioma Surgery, Christian Senft, Volker Seifert, Elvis Hermann, Kea Franz and Thomas Gasser, Neurosurgery 63 (ONS Supplement 2), ONS 257–ONS267, 2008

2 Intraoperative magnetic resonance imaging-guided transsphenoidal surgery for giant pituitary adenomas, Fabian Baumann ,Christoph Schmid, and René-Ludwig Bernays, Neurosurgical Review, 33:83-90, 2009

## Esaote C-Scan

| | |
|---|---|
| Field | *0.2 T* |
| Gradient | *±10 mT/m* |
| Slewrate | *40 mT/m/ms* |

**Highlights**
- In-office MRI unit for the MRI diagnosis of the upper and lower extremities
- Permanent magnet with integrated RF-shielding, no external RF-shielding necessary
- Direct operator – patient contact
- Patient positioning outside the magnet
- Only 9 m² room size needed

## Esaote S-Scan

| | |
|---|---|
| Field | *0.25 T* |
| Gradient | *±20 mT/m* |
| Slewrate | *25 mT/m/ms* |

**Highlights**
- MRI unit for all musculoskeletal MRI, from foot to shoulders including the most important spine segments such as Lumbar and Cervical Spine.
- Open permanent magnet design
- High efficiency
- Only 18m² room size needed

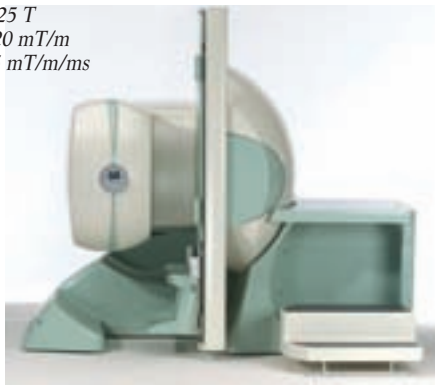
## Esaote Opera

| | |
|---|---|
| Field | *0.2 T* |
| Gradient | *±20 mT/m* |
| Slewrate | *25 mT/m/ms* |

**Highlights**
- E-MRI unit for the MRI diagnosis of the upper and lower extremities incl. shoulder and hip
- Open permanent magnet design
- Extremely patient friendly, no claustrophobia effects
- Easy to use
- Only 15 m² room size needed

## Esaote G-Scan

| | |
|---|---|
| Field | *0.25 T* |
| Gradient | *±20 mT/m* |
| Slewrate | *25 mT/m/ms* |



**Highlights**
- MRI unit for weight bearing musculoskeletal examinations
- Open permanent magnet design
- Tilting magnet mechanism 0° – 90°
- Weight bearing examinations of lumbar spine, knee and foot
- Functional MRI of the cervical spine in seated patient positioning

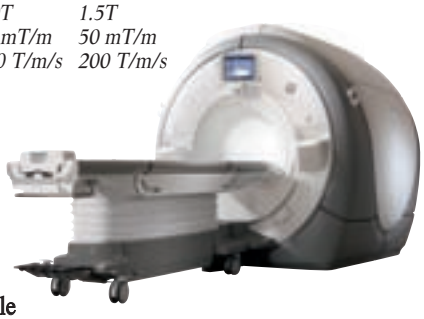
## Esaote O-Scan

| | |
|---|---|
| Field | *0.31 T* |
| Gradient | *±20 mT/m* |
| Slewrate | *50 mT/m/ms* |

**Highlights**
- New generation of dedicated MRI for MSK applications
- Excellent MRI capabilities, wide FOV, enhanced productivity, full connectivity and superior cost-effectiveness
- Its unique design and ergonomy provides optimal patient comfort and eliminates claustrophobic reactions

## GE Healthcare Discovery MR750 3.0T & MR450 1.5T

| | MR750 | MR450 |
|---|---|---|
| Field | *3.0T* | *1.5T* |
| Gradient | *50 mT/m* | *50 mT/m* |
| Slewrate | *200 T/m/s* | *200 T/m/s* |



**Highlights**

**Powerfully simple**
- Express preparation exam
- »Can't miss« applications and HD coils

**Simply powerful**
- Shorter TE/TR & faster acquisitions with unique gradients architecture
- Faster reconstruction
- 27 % more SNR with optical RF technology

## GE Healthcare Optima™ MR450w 1.5T

| | |
|---|---|
| **Field** | *1.5T* |
| **Gradient** | *54 mT/m* |
| **Slewrate** | *150 T/m/s* |

**Highlights**
- 70 cm bore
- excellent images and a user-friendly experience
- access to full 50 cm FOV imaging and application performance
- Next generation of clinical applications for reduced exam time, and improved patient comfort
- Ability to handle more patients with fewer scans helps boost efficiency and makes scheduling more predictable.

## GE Healthcare Optima™ MR360 1.5T

| | |
|---|---|
| **Field** | *1.5T* |
| **Gradient** | *33 mT/m* |
| **Slewrate** | *100 T/m/s* |

**Highlights**
- Remarkable flexibility and efficiency to match a wide range of imaging needs
- high image quality and lower total cost of ownership
- Technologists benefit from ease of use and confidence
- Radiologists benefit from expanded diagnostic capabilities Administrators benefit from more satisfied patients, efficient throughput, and opportunities for growth

## GE Healthcare HDxt 3.0T

| | |
|---|---|
| **Field** | *3.0 T* |
| **Gradient** | *50 mT/m* |
| **Slewrate** | *150 T/m/s* |

**Highlights**
- HD technology for diagnostic power and confidence
- Engineered for high definition: HD applications and HD coils
- Designed for productivity: optimized workflow and expanded applications
- Built for longevity: upgradeability and continued enhancement to every user

## GE Healthcare Signa HDe 1.5T

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *23 mT/m* |
| **Slewrate** | *50 T/m/s* |

**Highlights**
- Compact MR design – only 25 m² siting space
- Low operating costs – 25% less than other 1.5 T systems
- High fidelity gradients to achieve accurate gradient pulses
- Broad range of high density coils for all applications
- Exclusive HD applications
- Consumes 41% less energy than previous generation systems, GE »ecomagination« certified

## GE Healthcare Signa HDi and HDxt 1.5T

| | *Signa HDi 1.5T* | *Signa HDxt 1.5T* |
|---|---|---|
| **Field** | *1.5T* | *1.5T* |
| **Gradient** | *33 mT/m* | *33 mT/m* |
| **Slewrate** | *120 T/m/s* | *120 T/m/s* |

**Highlights**
- HD technology for diagnostic power and confidence
- Engineered for high definition: HD applications and HD coils
- Designed for productivity: optimized workflow and expanded applications
- Built for longevity: upgradeability and continued enhancement to every user

## GE Healthcare Signa Ovation HD 0.35T

| | |
|---|---|
| **Field** | *0.35 T* |
| **Gradient** | *19 mT/m* |
| **Slewrate** | *46 T/m/s* |

**Highlights**
- Patient-friendly wide open bore
- High definition MR technology delivers definitive diagnosis
- High resolution, high speed imaging
- Latest advanced neuro and vascular applications

## GE Healthcare Signa HD Profile 0.2T

| | |
|---|---|
| **Field** | *0.2 T* |
| **Gradient** | *19 mT/m* |
| **Slewrate** | *46 T/m/s* |

**Highlights**
- Patient-friendly wide open bore
- Superb magnet homogeneity
- Broad choice of multi-channel phased array coils
- Latest advanced spine applications

## GE Healthcare Oni MSK Extreme 1.0T & 1.5T

| | *ONI MSK Extreme™ 1.0T* | *ONI MSK Extreme™ 1.5T* |
|---|---|---|
| **Field** | *1.0T* | *1,5T* |
| **Gradient** | *15 mT/m* | *70 mT/m* |
| **Slewrate** | *60 T/m/s* | *200 T/m/s* |

**Highlights**
- High definition imaging of cartilage and soft tissue of the extremities
- Enhanced patient experience with non claustrophobic design
- Minimal space requirements
- ONI MSK Extreme 1.5T offers the most powerful gradients commercially available

## GE Healthcare MRgFUS (MR-guided focused ultrasound)

| | |
|---|---|
| **Field** | *1.5T/ 3.0T* |
| **Technology** | *Combination of MR imaging and highly intense ultrasound ExAblate 2000 (InSightec)* |
| **Clinical Applications** | *Uterine fibroids / bone tumors* / breast cancer* liver tumors* / prostate cancer** * Investigational use |

**Highlights**
- No radiation
- Visualizes and controls treatment by monitoring tissue effect real time
- Limited conscious sedation (except for liver application general anaesthetic; necessary)
- Quick recovery, low rate of complications

## GE Healthcare MR Surgical suite

| | |
|---|---|
| **Field** | *1.5T/ 3.0T* |
| **Technology** | *An MR – OR transfer solutions with all ancillary MR compatible devisces* |
| **Clinical Applications** | *IntraOperative MR for neurosurgery* |

**Highlights**
- True OR
- MR without any compromise
- Two rooms concept allows standard surgery devices usage and state-of-the-art MR performance

## GE Healthcare MR-Touch

**Highlights**
- A liver palpation device using low frequency sound waves in combination with MRI to measure relative tissue elasticity. Based on technology invented by Mayo Clinic (Rochester, MN, USA)
- MR-Touch extends the principles of physical palpation with a precise and non-invasive visual evaluation of tissue stiffness of the liver
- Third party certified healthymagination product

## Hitachi Medical Systems Oasis

| | |
|---|---|
| **Field** | *1.2 T* |
| **Gradient** | *33 mT/m* |
| **Slewrate** | *100 T/m/s* |

**Highlights**
- Wide, truly open HF MRI system: latest technology milestone in MRI scanners design. A new standard for effective MR Imaging
- Fit for every patient: bulky (up to 300kg), kids, elderly, anxious
- Genuine "human" centric design: patient, nurses, radiologists,…
- Highest field strength presently available on the market for open HF MRI systems
- Unique system: allows application development and keeps owners having something different from others

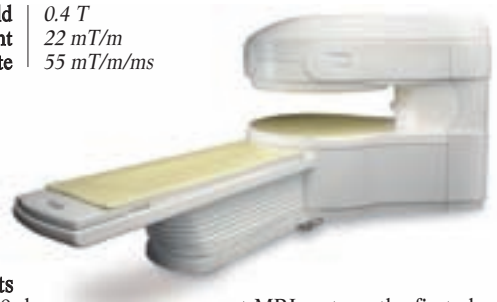
## Hitachi Medical Systems Echelon

| | |
|---|---|
| Field | *1.5 T* |
| Gradient | *30 mT/m* |
| Slewrate | *150 T/m/s* |

**Highlights**
- Short bore, low running costs HF MRI system
- High magnetic field homogeneity
- Dedicated technology and sequences for artefacts suppression, very effective fat suppression/separation
- Scalable to 32 RF receiver, 32 RF coils available
- Low cryogen boil-off technology

## Hitachi Medical Systems Aperto Eterna

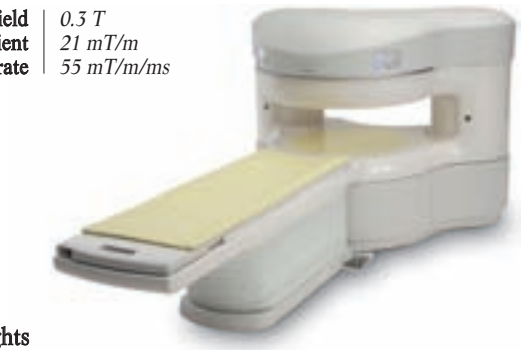
| | |
|---|---|
| Field | *0.4 T* |
| Gradient | *22 mT/m* |
| Slewrate | *55 mT/m/ms* |



**Highlights**
- Wide, 320 degrees open permanent MRI system: the first class permanent full body MRI system allowing a different solution to HF applications
- It features the highest field strength – 0.4T – amongst the permanent MRI systems presently on the market.
- Newly developed built-in technologies keep Aperto Eterna delivering image quality comparable with entry level HF MRI scanners
- Fast processing chain allows increasing patient throughput
- Reduced running costs allowing fast return of investment

## Hitachi Medical Systems Airis Vento

| | |
|---|---|
| Field | *0.3 T* |
| Gradient | *21 mT/m* |
| Slewrate | *55 mT/m/ms* |



**Highlights**
- Comfort class permanent open MRI system, which keeps enhanced capabilities meeting sophisticated open design
- Allows newly developed technologies available at an excellent cost of ownership
- High magnetic field homogeneity
- Environment friendly: extremely low power consumption and reduced installation requirements
- Reduced running costs allowing fast return of investment

## Medtronic Polestar® Surgical MRI System

| | |
|---|---|
| Magnetic Field | *0.15 T* |
| Gradient Amplitude | *23.5 mT/m* |
| Gradient Slew Rate | *80 T/m/S* |
| | *Compact and mobile* |

**Highlights**
- Designed for integration in most OR's using mobile RF shielding
- Compatible with most existing surgical equipment.
- Perfect match to neurosurgical workflow.
- Fits under OR table and moves up to patient for imaging.
- Standard patient positioning, no patient movement needed during procedure.
- Integrated StealthStation® Image Guided Surgery System to maintain navigational accuracy throughout the surgery.
- Auto-registration of images to patient
- Confirmation of completeness of resection and absence of complications prior to closing.

## Oni MRI

**Orthone**

| | |
|---|---|
| Field | *1.0 T* |
| Gradient | *70 mT/m* |
| Slewrate | *200 mT/m/ms* |

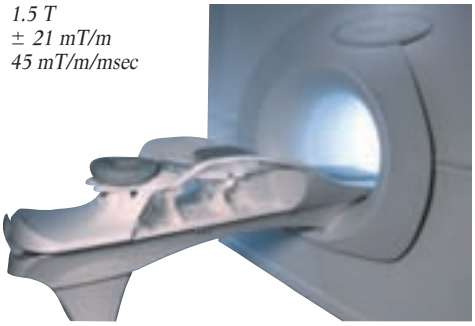
**MSK Extreme**

| | |
|---|---|
| Field | *1.5 T* |
| Gradient | *70 mT/m* |
| Slewrate | *200 mT/m/ms* |

**Highlights**
- Power of high field
- Low siting costs
- Patient comfort, truly open
- Optimized performance, high resolution
- Ease of use

## Paramed Aurora

| | |
|---|---|
| Field | *1.5 T* |
| Gradient | *± 21 mT/m* |
| Slewrate | *45 mT/m/msec* |



**Highlights**
- The only one FDA-cleared, truly dedicated MRI system designed specifically for breast imaging
- Fully integrated, user friendly MRI guided interventional system
- Revolutionary acquisition technology, SpiralRODEO™, provides far superior image quality
- Integrated Aurora-CAD™ software, the new standard in breast MRI software

## Paramed MrJ

| | |
|---|---|
| Field | *0.22 T* |
| Gradient | *± 15 mT/m* |
| Slewrate | *25 mT/m/msec* |

**Highlights**
- Dedicated, in-office MRI, with largest magnet opening
- Designed specifically for the complete study of the joints
- Possibility to include C-Spine and L-Spine
- Easy to install, extremely reliable, quick financial break-even

## Paramed MrOpen

| | |
|---|---|
| Field | *0.5 T* |
| Gradient | *± 20 mT/m* |
| Slewrate | *33 mT/m/msec* |

**Highlights**
- Revolutionary high temperature cryogen-free superconductive magnet
- Unique U-shaped magnet design eliminates any claustrophobic reaction
- Unprecedented patient comfort and clinical flexibility
- Dynamic imaging, weight-bearing imaging, and interventional application

## Philips Achieva 3.0T TX

| | |
|---|---|
| Field | *3.0 T* |
| Gradient | *80 mT/m* |
| Slewrate | *200 mT/m/ms* |

**Highlights**
- MultiTransmit technology for enhanced speed, image quality and consistency through patient-adaptive imaging
- Productivity and efficiency with SmartExam: 1 click for consistent and reproducible MR exams. Available for Brain, Spine, Knee, Shoulder and Breast
- Advanced functionality: high SENSE acceleration capabilities, ultra-fast MR angiography with 4D-TRAK, cardiac imaging with k-t BLAST, 2k Imaging for ultra-high spatial resolution and unique applications like DWIBS, ASL & SENSE spectroscopy

## Philips Achieva 3.0T X-series

| | |
|---|---|
| Field | *3.0 T* |
| Gradient | *80 mT/m* |
| Slewrate | *200 mT/m/ms* |

**Highlights**
- Wide open, patient-friendly, flared short bore design with 50 cm imaging coverage for comfortable and efficient patient imaging
- High productivity and efficiency with SmartExam: 1 click for consistent and reproducible MR exams. Available for Brain, Spine, Knee and Shoulder
- Advanced functionality for speed and resolution: high SENSE acceleration capabilities, ultra-fast MR angiography with 4D-TRAK, cardiac imaging with k-t BLAST, 2k Imaging for ultra-high spatial resolution

## Philips Achieva XR

| | |
|---|---|
| Field | *1.5 T rampable to 3.0 T* |
| Gradient | *80 mT/m* |
| Slewrate | *200 mT/m/ms* |

**Highlights**
- Superb 1.5T clinical solution: Covers wide ranging applications including advanced capabilities such as Body Diffusion (DWIBS), non-contrast perfusion (ASL), DTI and fiber tractography and Cardiac
- Easy and economic transition to 3T: avoids typical downtime, construction and operational costs
- 3.0T value inside: XR system retains high residual value with 3.0T magnet and gradients built-in

## Philips Achieva 1.5T A-series

| | |
|---|---|
| Field | *1.5 T* |
| Gradient | *66 mT/m* |
| Slewrate | *180 mT/m/ms* |

**Highlights**
- SmartExam – 1 click for consistent and reproducible MR scans
- 4D Angio's (Time resolved) with 4D TRAK and SENSE parallal imaging
- A full range of high-channel SENSE coils for high resolution and speed
- New contrast in oncology applications with DWIBS whole body diffusion
- Advanced 3D cardiac, neuro, breast and spectro imaging

## Philips Achieva 1.5T SE

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *33 mT/m* |
| **Slewrate** | *122 mT/m/ms* |

### Highlights
- A true value-for-money 1.5T system with comprehensive imaging capabilities
- Smarter economics with PowerSave (reduces energy bill by up to 50 %) and compact siting (only 27m²)
- Built on proven Achieva platform offering wide choice of easy and economical upgrade paths

## Philips Intera 1.5T

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *33 mT/m* |
| **Slewrate** | *80 mT/m/ms* |

### Highlights
- SmartExam – 1 click for consistent and reproducible MR scans
- NetForum community access with ExamCards for all studies
- Investment value – FreeWave platform based – ready for new applications
- SENSE for fast imaging in all applications

## Philips Panorama HFO

| | |
|---|---|
| **Field** | *1.0 T* |
| **Gradient** | *28 mT/m* |
| **Slewrate** | *120 mT/m/ms* |

### Highlights
- Patient friendly: three times larger patient aperture than conventional MR to handle stressed and claustrophobic patients, children, elderly and large patients
- High-field performance comparable to 1.5 T in a truly open configuration
- Increased productivity with SmartExam, one-click planning, scanning and processing
- Enables unique applications not possible with cylindrical systems

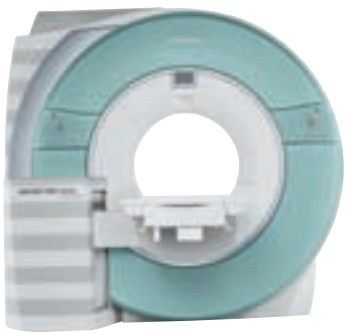
## Siemens Magnetom Skyra, A Tim+Dot System

| | |
|---|---|
| **Field** | *3T* |
| **Gradient** | *45 mT/m* |
| **Slewrate** | *200 T/m/s* |

### Highlights
- Boost productivity with Tim® (Total imaging matrix) and Dot™ (Day optimizing throughput)
- Ultra-light and short 3T system
- Greater patient access and comfort with 70 cm Open Bore design
- TrueForm® Design for increased homogeneity
- DirectRF™ - for higher signal purity and improved stability
- New fixed and Tim Dockable Table options

## Siemens Magnetom Verio, A Tim System

| | |
|---|---|
| **Field** | *3T* |
| **Gradient** | *45 mT/m* |
| **Slewrate** | *200 mT/m/s* |



### Highlights
- Unique combination of 3T, 70 cm Open Bore and Tim (Total imaging matrix)
- Over 300 Verio systems installed
- Very flexible imaging from high throughput clinical to advanced research
- TrueForm Design offers enhanced image quality at 3T by optimizing the homogeneity

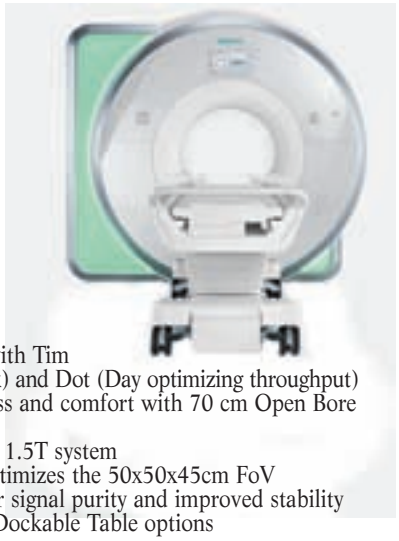
## Siemens Magnetom Trio, A Tim System

| | |
|---|---|
| **Field** | *3T* |
| **Gradient** | *45 mT/m* |
| **Slewrate** | *200 T/m/s* |

### Highlights
- Excellent 3T magnet with unmatched homogeneity and strong gradients with AudioComfort
- Tim with up to 32 RF channels for outstanding image quality, speed and flexibility
- New trendsetting applications make the extraordinary routine

## Siemens Magnetom Aera, A Tim+Dot System

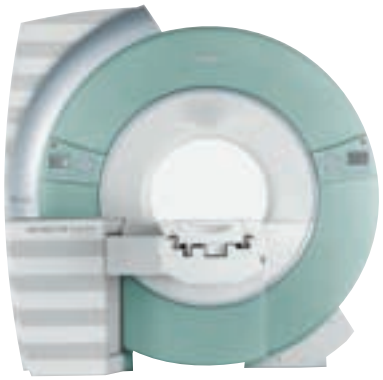
| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *33 mT/m* |
| **Slewrate** | *125 T/m/s* |



### Highlights
- Boost productivity with Tim (Total imaging matrix) and Dot (Day optimizing throughput)
- Greater patient access and comfort with 70 cm Open Bore design
- Ultra-light and short 1.5T system
- TrueForm Design optimizes the 50x50x45cm FoV
- DirectRF - for higher signal purity and improved stability
- New fixed and Tim Dockable Table options

## Siemens Magnetom Espree, A Tim System

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *33 mT/m* |
| **Slewrate** | *170 T/m/s* |



### Highlights
- First MR with 70 cm Open Bore, proven with more than 900 installations
- Shortest system length of 125 cm only
- Especially appreciated by obese or claustrophobic patients
- Tim (Total imaging matrix) coils can be flexibly combined
- Field of view up to 205 cm with *syngo* TimCT

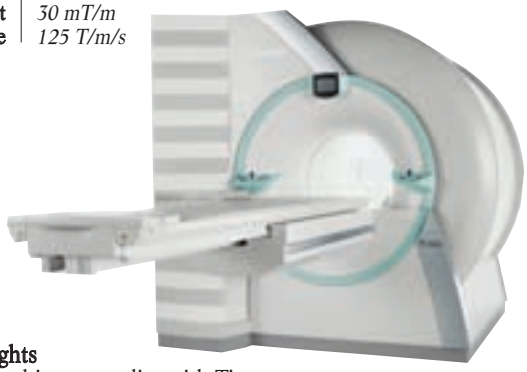
## Siemens Magnetom Avanto, A Tim System

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *45 mT/m* |
| **Slewrate** | *200 T/m/s* |

### Highlights
- Leading applications with Tim (Total imaging matrix)
- 8 out of the top ten U.S. hospitals work with the MAGNETOM Avanto
- 500 mm field of view, zero eddy-currents
- AudioComfort: ear protection not mandatory
- Parallel imaging from head to toe

## Siemens Magnetom Symphony, A Tim System

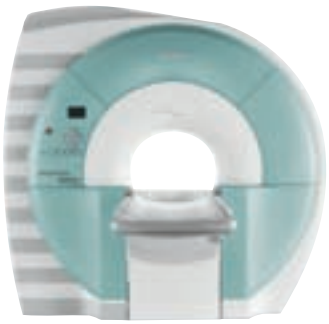
| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *30 mT/m* |
| **Slewrate** | *125 T/m/s* |



### Highlights
- Improved image quality with Tim
- Complete range of applications powered by Tim
- Advanced applications, like non-contrast enhanced applications *syngo* ASL (Arterial Spin Labeling) and *syngo* NATIVE
- Whole-body capabilities with up to 200 cm Field of View
- Higher throughput with Tim's revolutionary coil concept

## Siemens Magnetom Essenza, A Tim System

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *30 mT/m* |
| **Slewrate** | *100 mT/m/s* |



### Highlights
- The most affordable*, all-new 1.5 T MRI – low initial investment, low set-up and running cost, reduced siting costs
- Helps to enhance business opportunities by providing a broader range of applications and higher throughput with Tim
- Enhance patient comfort with a ultra-short (145 cm) 1.5 T system and ultra-light weight coils
- Optimize image quality with the IsoCenter Matrix

* Results may vary. Data on file

## Siemens Magnetom Espree – Pink

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *33 mT/m* |
| **Slewrate** | *170 T/m/s* |

### Highlights
- First dedicated 70 cm Open Bore breast scanner with shortest system length of only 125 cm
- Pink Comfort with Open Coil design and variable coil geometry (VCG) for both imaging and biopsy – Sentinelle Vanguard for Siemens
- Pink Applications offering a complete portfolio for all needs
- Pink Workflow including dedicated workplace for reading and biopsy planning: syngo BreVis and syngo BreVis Biopsy

## Siemens Magnetom C!

| | |
|---|---|
| **Field** | *0.35 T* |
| **Gradient** | *24 mT/m* |
| **Slewrate** | *55 mT/m/ms* |

**Highlights**
- Patient friendly exams due to side loading
- 270° accessibility assistance in reach of the patient
- Can be sited in less than 30 m²/323 sqft
- Offers a comprehensive set of clinical applications
- Excellent return-on investments: decreased costs – optimized profitability

## Toshiba Excelart Vantage powered by Atlas

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *30 or 33 mT/m* |
| **Slewrate** | *130 or 200 mT/m/ms* |

**Highlights**
- Pianissimo gradient system
- Connectivity of up to 128 coil elements with 16 or 32 channel-readout
- Image reconstruction rate of up to 4.000 images/sec
- FBI MR angiography without contrast medium
- 55 x 55 x 205 cm scanning region

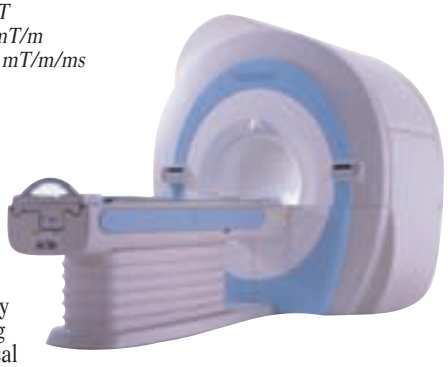
## Toshiba Excelart Vantage

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *30 mT/m* |
| **Slewrate** | *50 or 130 mT/m/s* |

**Highlights**
- Pianissimo gradient system
- FBI MR angiography without contrast medium

## Toshiba Excelart Vantage Titan

| | |
|---|---|
| **Field** | *1.5 T* |
| **Gradient** | *30 mT/m* |
| **Slewrate** | *130 mT/m/ms* |



**Highlights**
- Patient-friendly 71 cm opening with full clinical FOV of 55 x 55 x 50 cm
- Pianissimo gradient system
- Up to 128 coil elements connected to up to 32 channel-readout
- Next generation of contrast-free angiography: FBI, CIA, t-slip, TSA
- Image reconstruction rate of up to 4.000 images/sec

## Toshiba Excelart Vantage Titan 3T

| | |
|---|---|
| **Field** | *3 T* |
| **Gradient** | *30 mT/m* |
| **Slewrate** | *200 mT/m/ms* |
| **RF** | *128 x 32* |

**Highlights**
- patient friendly 71 cm opening with 50 x 50 x 205 cm scan area
- Pianissimo gradient system
- Next generation of contrast-free angiography FBI, CIA, t-slip, TSA
- optical data transfer
- Image reconstruction rate of up to 4000 img/sec

## Xingaoyi Ningbo (XGY) Oper - 0.35T

| | |
|---|---|
| **Field** | *o,35T* |
| **Gradient** | *19 mT/m* |
| **Slewrate** | *60 mT/m/ms* |

**Highlights**
- Excellent Images, Fully performed scanning sequence, Complete function
- Low power consumption, low failure rate
- Small installation site

## Xingaoyi Ningbo (XGY) Oper – 0.5T

| | |
|---|---|
| Field | *0,5 T* |
| Gradient | *24 mT/m* |
| Slewrate | *70 mT/m/ms* |

**Highlights**
- The first mid-field Permanent Magnet MRI system used in clinical application in the world
- Richer performed scanning sequences, More complete function, Clearer images
- Much more patients with shorter scanning time

## Xingaoyi Ningbo (XGY) Oper – 0.4T

| | |
|---|---|
| Field | *0,4 T* |
| Gradient | *20 mT/m* |
| Slewrate | *66 mT/m/ms* |

**Highlights**
- Higher SNR & Larger Imaging range with Multi-RF Channels
- Excellent Image with fully performed scanning sequences
- Low power consumption, low failure rate, high operating ratio
- Small installation site

## Xingaoyi Ningbo (XGY) Oper – 0.3T

| | |
|---|---|
| Field | *0,3 T* |
| Gradient | *15 mT/m* |
| Slewrate | *48 mT/m/ms* |

**Highlights**
- Complete function, Excellent images, Fully performed scanning sequences
- Quick scan image is much clearer with high slew rate
- Extremely low power consumption and very low failure rate

# MRI ACCESSORIES

## Alliance Medical – flexible diagnostic imaging services

**Highlights**
- Static diagnostic imaging centers MRI, CT, PET, PET/CT
- Interim services for bridging downtimes
- Regular „routing“ services

## Invivo DynaCAD

**Highlights**
- Comprehensive tool for automatic image processing
- Improves workflow and diagnostic confidence
- Automatic calculation of subtractions, MPRs and MIPs
- Volume analysis feature for therapy response monitoring
- Fast, accurate interventional planning

## Invivo Precess

**Highlights**
- Precess brings you the future of MRI patient monitoring
- Wireless ECG and SPO2
- Wireless remote display
- 5.000 Gauss Compliant
- 3.0 T compatible

## Invivo Eloquence

**Highlights**
- Eloquence is a complete, fully integrated fMRI solution
- Critical goals may be achieved with ease
- Integrated in-magnet compatible components
- Operator room control of both experiment and analysis
- High performance tools for postprocessing fMRI data

## Invivo Foot and Ankle Array Coil

**Highlights**
- Produces exquisite MR images of the foot, ankle and toes
- »Ski Boot« design for fast and easy patient set-up
- Three 5° cradle tilt settings for patient comfort
- Patient comfort pads to reduce motion artifact
- Optimized for parallel imaging

## Schiller Maglife Serenity

*MRI compatible up to 3 Tesla*
*Mains and Battery driven (1,5 and 6 hours)*
*12,1" colour Display*

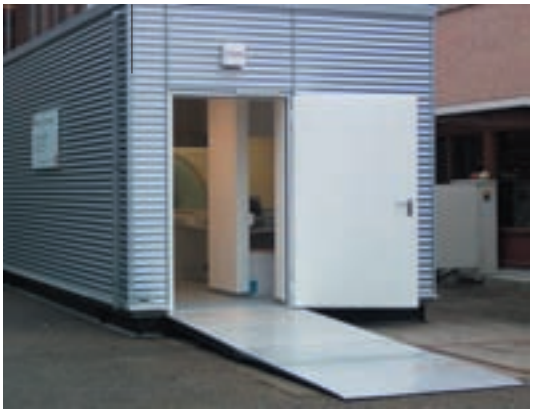
**Highlights**
- Optical core and skin temperature
- Configuration for Anaesthesia, cardiac und Intensive care applications
- Patented artefact inhibition
- 6 optical Gating outputs
- Optimized for Adult children and neonates

## Schiller Maglife light

*MRI compatible up to 3 Tesla*
*Parameter: SPO2 and/or NIBP*
*Mains and Battery driven (1,5 hours)*

**Highlights**
- Optimized for day to day application
- No installation necessary
- HTML printing function
- Optimized for Adult children and neonates

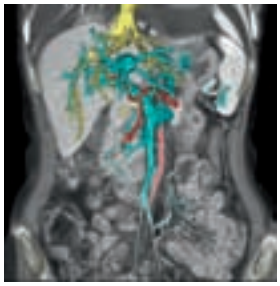
## Tomovation – Modular building solutions



**Highlights**
- Engineering, rental, sale of modular buildings MRI, CT, PET, PET/CT including or excluding diagnostic equipment

## Ziosoft Ziostation

**Full Suite of Clinical Applications** | *3D, 4D, MIP, MPR, CPR, Multi-Modality Viewer*



**Highlights**
- Multi-volume fusion
- Vessel analysis
- Coronary analysis
- Colon analysis
- PET/CT viewer
- CT Cardiac Function Analysis
- CT Brain Perfusion
- Calcium Scoring
- Reporting functions
- Customizable button palettes and keyboard/mouse shortcuts to configure the system individually
- Automatic segmentation algorithms employ anatomical analysis, targeting specific objects to maximize accuracy
- Full Web-Based Capabilities
- Action macros perform multiple processes with one or zero button clicks

ACIST MEDICAL SYSTEMS

COVIDIEN
formerly Tyco Healthcare

Medicor

MEDRAD
Performance. For life.

MEDTRON AG

Nemoto

TOMOVATION

ulrich medical

## Acist EmpowerMR

**Syringe Volume** *1 – 100 ml in user-specified increments of 1 ml*
**Pressure** *40 – 300 psi in user-specified increments of 1 psi*
**Flow rate** *0.1 – 10 ml/sec in increments of 0.1 ml/sec*

### Highlights
- 7 T tested, no minimum distance requirement from magnet
- Hydraulic technology – no motor, no battery in the MR suite
- No interference with magnetic field, no magnetic attractive force
- Double-barrel injector, floor stand mounted
- Ease-of-operation through intuitive operators interface

distributed by TOMOVATION GmbH

## Acist EmpowerCTA

**Syringe Volume** *1 – 200 ml in user-specified increments of 1 ml*
**Pressure** *40 – 300 psi in user-specified increments of 1 psi*
**Flow rate** *0.1 – 10 ml/sec in increments of 0.1 ml/sec*

### Highlights
- Double-barrel injector, floor stand or ceiling mount
- Ease-of-operation through intuitive operators interface
- 10 ml/sec maximum flow rate with »change on the fly« control
- Extravasation detection (EDA) stops injecting if an extravasation is detected
- Networkable through IrisCT and CANopen interfaces

distributed by TOMOVATION GmbH

## Covidien CT 9000™ ADV CT injector

**Capacity** *30, 50 ml hand held; 50, 75, 100, 125 ml high pressure prefilled; 200 ml empty*
**Pressure limit** *25 – 300 psi (1.7 – 20.7 bar)*
**Flow rate** *0.1 – 9.9 ml/s*

### Highlights
- Contrast delivery injector for computed tomography
- New easy to read color touchscreen
- Requires only 3 simple key strokes to activate injection
- Accommodates front loading 200 ml disposable syringes and prefilled syringes
- Highly visible LED display

## Covidien Angiomat™ Illumena™ Angiography injector

**Capacity** *50, 75, 100, 125 ml high pressure prefilled; 150 ml, 200 ml empty*
**Pressure limit** *75 – 1200 psi (5.17 – 82.74 bar) in angio-cardiac and peripheral modes, 75 – 300 psi (5.2 – 20.7 bar) in CT mode*
**Flow rate** *0.1 – 40.0 ml/s angio-cardiac and peripheral modes; 0.1 – 10.0 ml/s CT mode*

### Highlights
- Injector for angiography, cardiology and CT contrast delivery
- Digital powerhead display
- Automatically »flips« as powerhead is rotated
- Fill control bar allows easy, one finger operation
- Latex free and transparent syringes provide crystal clear view of the contrast medium
- Sensitive touchscreen display for direct and easy setup

## Covidien Optivantage™ DH Dual Head CT injector

**Capacity** *50, 75, 100, 125 ml high pressure prefilled; 200 ml empty*
**Pressure limit** *50 – 325 psi (3.5 – 22.4 bar)*
**Flow rate** *0.1 – 10.0 ml/s*

### Highlights
- Contrast delivery injector for dual head injector protocols
- Fully programmable powerhead: color coded display
- Patency check feature: saline flush prior to injection
- Timing bolus feature: to determine ideal scan
- Auto-fill feature: automatically filling of syringes
- Drip mode: changing drip rate, volume and duration

## Covidien Optistar™ Elite MRI injector

**Capacity** *10, 15, 20, 30 ml high pressure prefilled; 60 ml empty*
**Pressure limit** *20 – 150 psi (1.4 – 10.3 bar) for 60 ml syringes*
**Flow rate** *0.1 – 0.8 ml/s*

### Highlights
- Dual syringe injector for magnetic resonance tomography
- Battery free operation
- Single bolus and dual phase injections
- Full color touchscreen for a greater visibility
- Switch from injection to drip mode at any time
- Drop in syringe loading reduces preparation time

## Medrad Intego™ PET Infusion System

| | |
|---|---|
| **Flowrate** | *1 mL/s* |
| **Radiation profile** | *< 0.02 mSv/hr at 30.5 cm* |
| **Max radioactivity** | *27.7 GBq, shielding effectiveness*<br>*25.9 GBq, dose preparation* |
| **Max FDG volume** | *30 mL* |
| **Max FDG activity concentration** | *1.48 GBq/mL* |
| **Dose range** | *37 - 925 MBq* |
| **FDG dose accuracy** | *+/- 2% of the measured dose* |

### Highlights
- Automatically on-demand measurement of patient-specific FDG doses
- Safety features to reduce radiation exposure of dose preparation > 20%
- Consistently and accurately administers FDG within +/-2% of the measured dose – providing precise, repeatable control of the FDG dose delivered.

## Medrad Dual syringe CT injector Stellant® DX

| | |
|---|---|
| **Capacity** | *A: 200 ml – B: 200 ml* |
| **Pressure limit** | *325 psi (22.1 bar)* |
| **Flow range** | *A: 0.1 – 10 ml/s in 0.1 ml/s increments*<br>*B: 0.1 – 10 ml/s in 0.1 ml/s increments* |

### Highlights
- Saline Flush Capability for contrast efficiency, improved image quality and reduced artifacts
- Automated loading, filling and priming
- Stores and recalls up to 32 protocols
- Precisely times contrast delivery with real-time display of injection pressure
- MEDRAD's P3T Personalized Patient Protocol software enables to program the contrast amount and the delivery rate for each individual patient, enhancing image quality while maintaining efficient workflow.

## Medrad Spectris Solaris® EP MR Injection System

| | |
|---|---|
| **Capacity** | *65 ml contrast medium,*<br>*115 saline*<br>*Prefilled 5, 10, 15 20 ml* |
| **Pressure limit** | *325 psi (22.1 bar)* |
| **Flow range** | *0.01 - 10mL/s in 0.01 mL/s increments between .01 and 3.1mL/s; 0.1 mL/s increments between 3.1 - 10 mL / s* |

### Highlights
- Six user-programmable phases for added flexibility
- Optimized color touch screen support at-a-glance identification of protocol and quick check of fluid levels.
- Flexible power management allowing to switch to either battery or wall power in seconds
- 3T compatible

## Medrad Avanta advanced Fluid Management System

| | |
|---|---|
| **Capacity** | *150 ml* |
| **Pressure limit** | *Selectable pressure increasement*<br>*300 to 1200 psi / bar* |
| **Flowrate** | *Variable 1 to 10 ml / s* |

### Highlights
- Contrast and saline flush cardiovascular power injector
- Precise fluid delivery, enhanced air management, fluid level sensing and gross air detection.
- Accurate injection pressure control with user adjustable pressure limits
- Bolus sharpness delivering exact variable and fixed contrast via a responsive syringe
- Color graphical user interface with on screen tutorial for simplified setup

## Medrad Avidia

| | |
|---|---|
| **Capacity** | *150 ml* |
| **Pressure limit** | *1200/82 psi / bar* |
| **Flowrate** | *0.1 to 50 ml / s* |

### Highlights
- Fully automatic microprocessor controlled contrast medium injector for angiography applications with volume, flow and time control
- Power cable free, battery operated, fully mobile on a pedestal, with interface
- Up to 20 single phase or multi phase injection programs possible
- Display of injector parameters on the injector head
- User control console with display and start button

## Medtron Accutron CT-D

| | |
|---|---|
| **Capacity** | *200 ml (CM),*<br>*200 ml (NaCl) Easy Loading Syringe (ELS)* |
| **Delivery Pressure** | *21 bar (304 psi)* |
| **Flow range** | *For both injection units:*<br>*0.1 – 10 ml/s, programmable in steps of 0.1 ml/s* |

### Highlights
- Absolutely wireless injector unit with rechargeable batteries
- Integrated heated syringe holder for Easy Loading Syringe (ELS)
- Wireless touchscreen remote control
- Use of prefilled syringes *(as an option)*
- Up to 6 phases
- Secured injection position (built-in sensor)
- Alternatively, display of injection parameters or pressure graph
- Aluminium housing
- Wall or ceiling syspension system *(as an option)*
- CANopen Interface *(as an option)*

## Medtron Accutron MR

| | |
|---|---|
| **Capacity** | *65 ml or 200 ml (CM), 65 ml or 200 ml (NaCl)* |
| **Delivery Pressure** | *Easy Loading Syringe (ELS) 21 bar (304 psi)* |
| **Flow range** | *For both injection units: 0.1 – 10 ml/s, programmable in steps of 0.1 ml/s* |

**Highlights**
- Absolutely wireless injector unit with rechargeable batteries
- Touchscreen control panel with different languages
- Wireless touchscreen remote control
- Up to 6 phases
- Secured injection position (built-in sensor)
- Use of prefilled syringes *(as an option)*
- Alternatively, input of flow rate or phase duration
- Pressure graph
- Aluminium housing

## Medtron injectron 82 HP

| | |
|---|---|
| **Capacity** | *200 ml (NaCl)* |
| **Delivery Pressure** | *Angio mode: 83 bar (1205 psi), CT mode: 21 bar (304 psi)* |
| **Flow range** | *Angio mode: 0.1 – 30 ml/s, CT mode: 0.1 – 10 ml/s* |

**Highlights**
- Integrated heated syringe holder with Easy Loading Syringe (ELS) 200 ml
- Fully digital, user programmable injector
- Remote control *(as an option)*
- Pressure jacket for prefilled syringes *(as an option)*
- Wall or ceiling suspension system *(as an option)*
- Interface on request *(as an option)*
- 100 injection protocols can be defined and stored by the user (50 protocols Angio-Mode/ 50 protocols CT-Mode)
- Aluminium housing

## Medtron Accutron HP-D

| | |
|---|---|
| **Capacity** | *200 ml (CM), 200 ml (NaCl) Easy Loading Syringe (ELS)* |
| **Delivery Pressure** | *83 bar (1203 psi)* |
| **Flow range** | *0.1 – 30 ml/s, programmable in steps of 0.1 ml/s* |

**Highlights**
- Absolutely wireless injector unit with rechargeable batteries
- Multiphase program controlled injection of CM and NaCl
- Single or multi injection mode
- Integrated heated syringe holder for Easy Loading Syringe (ELS)
- Touchscreen control panel with different languages
- Wireless touchscreen remote control
- Up to 3 phases
- Pressure graph
- Secured injection position (built-in sensor)
- 60 injection protocols can be definded and stored by the user
- Interface *(as an option)*
- Aluminium housing

## Medtron Accutron CT

| | |
|---|---|
| **Capacity** | *200 ml Easy Loading Syringe (ELS)* |
| **Delivery Pressure** | *21 bar (304 psi)* |
| **Flow range** | *0.1 – 10 ml/s, programmable in steps of 0.1 ml/s* |

**Highlights**
- Absolutely wireless injector unit, rechargeable batteries
- Integrated heated syringe holder with Easy Loading Syringe (ELS) 200 ml
- Touchscreen control panel with different languages
- Wireless touchscreen remote control
- Secured injection position (built-in sensor)
- Up to 6 phases
- Use of prefilled syringes *(as an option)*
- Alternatively, input of flow rate or phase duration
- Display of injection parameter or pressure graph at the remote control
- Interface capability *(as an option)*
- Aluminium housing

## Nemoto Dual Syringe-CT-injector DualShot GX

| | |
|---|---|
| **Syringes** | *A: Contrastmedia A: 200 ml, 100 ml with adapter* |
| | *B: Saline 50 ml* |
| **Pressure** | *A: 300 psi, B: 300 psi* |
| **Throughput** | *A: 1–100 ml/200 ml in 1 ml steps* |
| | *B: 1–50 ml in 1 ml steps* |

**Highlights**
- Needle positioning test
- Progammable autofill function
- Program memory on CF memory card
- Creation of an optimized program by input of injection parameters

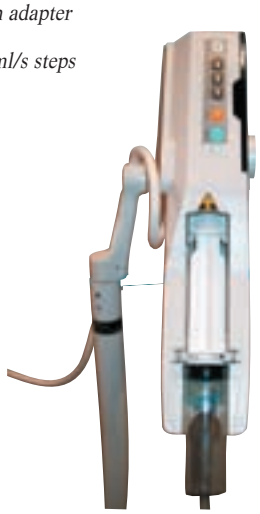
## Nemoto Dual Syringe-CT-injector DualShot Alpha

| | |
|---|---|
| **Syringes** | *A: Contrastmedia A: 200 ml, 100 ml with adapter/125 ml with prefilled syringe adapter* |
| | *B: Saline 200 ml, 100 ml with adapter* |
| **Pressure** | *A: 300 psi, B: 300 psi* |
| **Throughput** | *A: 1 – 100/125/200 ml in 1 ml steps* |
| | *B: 1 – 100/200 ml in 1 ml steps* |

**Highlights**
- Needle positioning test
- Progammable autofill function
- Program memory on CF memory card
- Advanced Programming Functions
- Timing Bolus option
- Auto prime function

## Nemoto CT-injector A 60

| | |
|---|---|
| **Syringes** | *200 ml, 100 ml with adapter* |
| **Pressure** | *300 psi* |
| **Throughput** | *0.1–10 ml/s in 0.1-ml/s steps* |



**Highlights**
- LCD-display
- Real time monitoring of the injection parameters
- Economical entrance model

## Nemoto MR-injector Sonic Shot GX

| | |
|---|---|
| **Syringes** | *A: MR Contrastmedia A: 60 ml standard; 10, 15, 20 ml with adapter (for prefilled syringe)* |
| | *B: Saline* |
| **Pressure** | *A: 200 psi, B: 200 psi* |
| **Throughput** | *A: 0.1 – 10 ml/s in steps of 0.1 ml/s* |
| | *B: 0.1 – 10 ml/s in steps of 0.1 ml/s* |

**Highlights**
- Needle positioning test
- Progammable autofill function
- Injector with MRI-compatible ceiling suspension available
- To be used for prefilled syringe

## Nemoto Angio-injector RemPress

| | |
|---|---|
| **Syringes** | *150 ml* |
| **Pressure** | *50–1200 psi* |
| **Throughput** | *0.1–25 ml/s in 0.1-ml/s steps* |

**Highlights**
- Test Shot Mode
- Various installation styles
- Easy handling
- Infusion Mode
- 21 cm touch screen monitor

## ulrich medical CT/MRI injector mississippi (XD 2000)

| | |
|---|---|
| **Media containers** | *CA max. 2 x 1.000 ml (for CT), CA max. 2 x 100 ml (for MRI) NaCl max. 1 x 2.000 ml* |
| **Injection volume** | *max. 400 ml/patient* |
| **Pressure** | *16 bar* |
| **Flow rate** | *0.2 – 8.0 ml/s, by increments of 0.1 ml/s* |

**Highlights**
- Roll pump injector for CT and MRI
- Several injections consecutively out of one media container (multi dosing)
- Battery operated
- Proven hygienic safety
- Different software options available

## ulrich medical CT injector missouri (XD 2001)

| | |
|---|---|
| **Media containers** | *CA max. 2 x 1.000 ml, NaCl max. 1 x 2.000 ml* |
| **Injection volume** | *max. 400 ml/patient* |
| **Pressure** | *16 bar* |
| **Flow rate** | *0.2 – 8.0 ml/s, by increments of 0.1 ml/s* |

**Highlights**
- Roll pump injector for CT
- Several injections consecutively out of one media container (multi dosing)
- Economic consumption of disposables
- Proven hygienic safety
- Different software options available

## ulrich medical CT injector ohio tandem (XD 2002)

| | |
|---|---|
| **Media containers** | *CA max. 2 x 1.000 ml, NaCl max. 1 x 2.000 ml* |
| **Injection volume** | *max. 400 ml/patient* |
| **Pressure** | *16 bar* |
| **Flow rate** | *0.2 – 8.0 ml/s, by increments of 0.1 ml/s* |

**Highlights**
- Roll pump injector for CT
- Several injections consecutively out of one media container (multi dosing)
- Tandem function for different contrast agents without previous change of media containers
- Proven hygienic safety
- Different software options available

## ulrich medical CT/MRI injector ohio M with tandem function

| | |
|---|---|
| **Media containers** | *CA max. 2 x 1.000 ml (for CT), CA max. 2 x 100 ml (for MRI) NaCl max. 1 x 2.000 ml* |
| **Injection volume** | *max. 400 ml/patient* |
| **Pressure** | *16 bar* |
| **Flow rate** | *0.2 – 8.0 ml/s, by increments of 0.1 ml/s* |

**Highlights**
- Roll pump injector for CT and MRI
- Several injections consecutively out of one media container (multi dosing)
- Battery operated
- Tandem function for different contrast agents without previous change of media containers
- Proven hygienic safety

## ulrich medical MRI injector tennessee (XD 2003)

| | |
|---|---|
| **Media containers** | *CA max. 2 x 1.000 ml (for CT), CA max. 2 x 100 ml (for MRI) NaCl max. 1 x 2.000 ml* |
| **Injection volume** | *max. 400 ml/patient* |
| **Pressure** | *16 bar* |
| **Flow rate** | *0.2 – 8.0 ml/s, by increments of 0.1 ml/s* |

**Highlights**
- Roll pump injector for MRI – accumulator free
- Several injections consecutively out of one media container (multi dosing)
- Ready for use anytime
- Smooth workflow without interruption of daily workflow
- Proven hygienic safety

PHILIPS

PTW

Radcal

SIEMENS

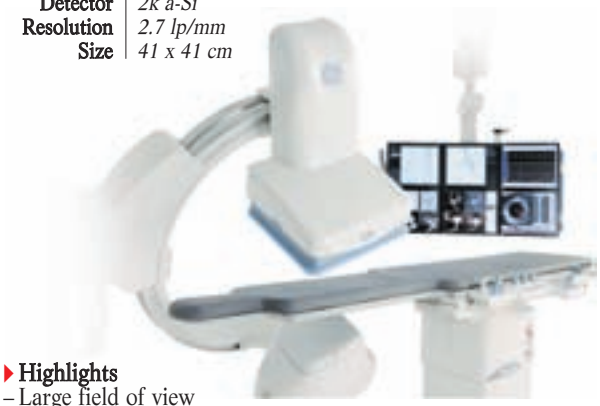
SHIMADZU

TOSHIBA

ziehm imaging
... dedicated to clinical innovation

## GE Healthcare Innova 4100 IQ

| | |
|---|---|
| **Design** | *Floor-mounted c-arm* |
| **Detector** | *2k a-Si* |
| **Resolution** | *2.7 lp/mm* |
| **Size** | *41 x 41 cm* |



**Highlights**
- Large field of view
- Wide dynamic range
- Highest DQE for significant dose savings
- Advanced applications
- FP-CT techniques

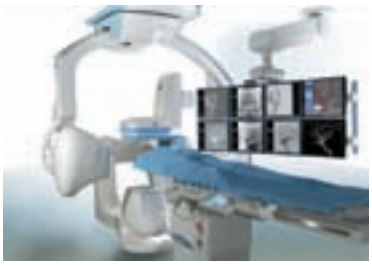
## GE Healthcare Innova 3100 IQ

| | |
|---|---|
| **Design** | *Floor-mounted c-arm* |
| **Detector** | *1.5k a-Si* |
| **Resolution** | *2.7 lp/mm* |
| **Size** | *30 x 30 cm* |

**Highlights**
- Optimal detector size for mixed applications
- Fast gantry with smart patient sensing system
- Highest DQE for significant dose savings
- FP-CT techniques
- Total in-room control

## GE Healthcare Innova 3131 IQ

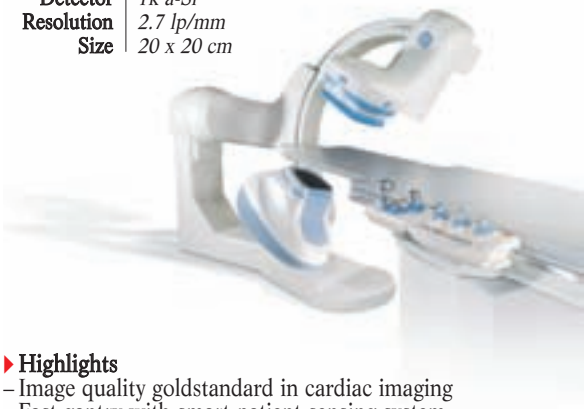
| | |
|---|---|
| **Design** | *3131 IQ* |
| **Detector** | *Biplane Angio system* |
| **Resolution** | *1.5k a-Si* |
| **Size** | *2.7 lp/mm* |
| | *31 x 31 cm frontal, 31 x 31 cm lateral* |



**Highlights**
- Optimal detector size for dedicated neuro applications
- Highest DQE for significant dose savings
- FP-CT techniques
- Powerful 3D-processing tools
- Total in-room control

## GE Healthcare Innova 2100 IQ

| | |
|---|---|
| **Design** | *Floor-mounted c-arm* |
| **Detector** | *1k a-Si* |
| **Resolution** | *2.7 lp/mm* |
| **Size** | *20 x 20 cm* |



**Highlights**
- Image quality goldstandard in cardiac imaging
- Fast gantry with smart patient sensing system
- Highest DQE for significant dose savings
- Complete integration of intra-vascular-ultrasound
- Seamless data exchange for comprehensive workflow solution

## GE Healthcare Innova 2121 IQ

| | |
|---|---|
| **Design** | *2121 IQ* |
| **Detector** | *Biplane Cardiac system* |
| **Resolution** | *1k a-Si* |
| **Size** | *2.7 lp/mm* |
| | *20 x 20 cm frontal, 20 x 20 cm lateral* |

**Highlights**
- Image quality goldstandard in cardiac imaging
- Smart gantry for optimal C-arm positioning
- Highest DQE for significant dose savings
- Complete integration of Intra-Vascular-Ultrasound
- Seamless data exchange for comprehensive workflow solution

## Philips Allura Xper FD 20/10

| | |
|---|---|
| **Design** | *Biplane* |
| **Detector** | *a-Si* |
| **Resolution** | *0.154 mm* |
| **Size** | *38 x 30 cm* |

**Highlights**
- Live 3D guidance with XperGuide for needle planning and guidance and Dynamic 3D Roadmap for easy navigation
- ISoft tissue information available with XperCT, controllable at tableside
- Xper Workspace integration for instant recall and viewing of all related multimodality images – from CT, MR and precious x-ray cases – at tableside during the intervention
- Flat detector with 2k digital imaging chain featuring; complete 2048 x 2048 pixel, digital imaging chain

## Philips Allura Xper FD 20

**Design** *Ceiling-mounted*
**Detector** *a-Si*
**Resolution** *0.154 mm*
**Size** *38 x 30 cm*

### Highlights
– Live 3D needle guidance, bringing back needle guided interventions into the angio suite with XperGuide
– Complete 2048 x 2048 pixel, digital imaging chain
– Image area of 30 x 40 cm adjustable to a square image of 16 cm
– Powerful set of diagnostic tools, e.g. Bolus Chase, Rotational Scan
– Accessibility to innovations such as high-speed XperCT and 3D Roadmapping

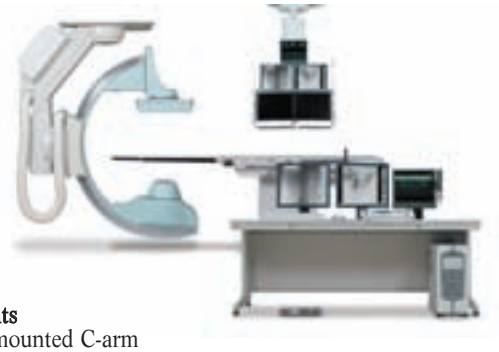
## Shimadzu Bransist safire VB/HB

**Detector** *Direct-conversion flat-panel detector (a-Se)*
**Resolution** *3.3 lp/mm*
**Size** *9" x 9" (22 x 22 cm)*

### Highlights
– Bi-plane Angio/Cardio system
– Flat-panel detector technology for outstanding image quality
– Grid controlled X-ray tube for superior dose management
– Exclusive »Cyber Chase« feature to keep the ROI automatically in bi-plane rotation
– Excellent coverage without moving a patient
– Motion-artefact-free by patented mask-less DSA technology

## Shimadzu Bransist safire VC/HC

**Detector** *Direct-conversion flat-panel detector (a-Se)*
**Resolution** *3.3 lp/mm*
**Size** *9" x 9" (22 x 22 cm) or 17" x 17" (43 x 43 cm)*



### Highlights
– Ceiling-mounted C-arm
– Flat-panel detector for outstanding image quality
– Grid-controlled X-ray tube for superior dose management
– High speed C-arm up to 60°/sec. rotational DSA
– Excellent coverage without patient moving

## Shimadzu Bransist safire VF/HF

**Detector** *Direct-conversion flat-panel detector (a-Se)*
**Resolution** *3.3 lp/mm*
**Size** *9" x 9" (22 x 22 cm) or 17" x 17" (43 x 43 cm)*

### Highlights
– Floor-mounted C-arm
– Flat-panel detector for outstanding image quality
– Grid controlled X-ray tube for superior dose management
– High speed C-arm up to 60°/sec. rotational DSA
– Excellent coverage without patient moving
– Flexibility and reliability with triple pivots

## Siemens Artis zee floor-mounted

**Design** *Universal floor-mounted flat detector angiography system*
**Detector** *2k a-Si with CsI scintillator*
**Resolution** *1920 x 2480 pixel, 3.25 lp/mm*
**Size** *30 x 40*

### Highlights
– Advanced 3D imaging at low dose
– Slim-line design and flexible positioning capabilities for easy patient access with full body coverage
– New ergonomic system controls for smooth table-side operation
– Complete 3D portfolio including cross-sectional imaging with syngo DynaCT

## Siemens Artis zee ceiling-mounted

**Design** *Universal ceiling-mounted flat detector angiography system*
**Detector** *2k a-Si with CsI scintillator*
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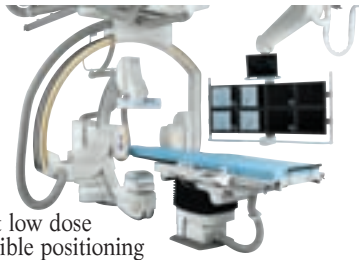
**Size** *30 x 40*

### Highlights
– Advanced 3D imaging at low dose
– Slim-line design and flexible positioning capabilities for easy patient access with full body coverage
– New ergonomic system controls for smooth table-side operation
– Complete 3D portfolio including cross-sectional imaging with syngo DynaCT

## Siemens Artis zee biplane

| | |
|---|---|
| **Design** | *Biplane flat detector angiography system* |
| **Detector** | *2k a-Si with CsI scintillator* |
| **Resolution** | *1920 x 2480 pixel, 3.25 lp/mm* |
| **Size** | *30 x 40 per plane* |

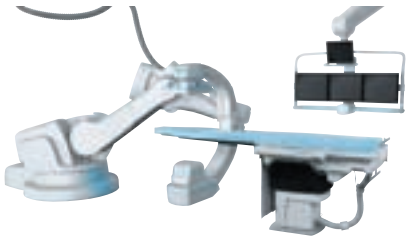


### Highlights

– Advanced 3D imaging at low dose
– Slim-line design and flexible positioning capabilities for easy patient access with full body coverage
– Largest biplane anatomical coverage available today
– Clinical flexibility – from neurovascular to spine and abdominal imaging
– New ergonomic system controls for smooth table-side operation
– Complete 3D portfolio including cross-sectional imaging with syngo DynaCT

## Siemens Artis zeego

| | |
|---|---|
| **Design** | *Multi-axis flat detector angiography system* |
| **Detector** | *2k a-Si with CsI scintillator* |
| **Resolution** | *1920 x 2480 pixel, 3.25 lp/mm* |
| **Size** | *30 x 40* |



### Highlights

– Cross-sectional imaging with Large Volume syngo DynaCT to visualize the whole liver or the whole lumbar spine
– Complete 3D portfolio
– Small footprint and multiple park positions
– Ideally suited for the OR environment
– Flexible working height reduces fatigue associated with long procedures
– Pre- and post-operative high-end imaging directly in the OR

## Toshiba Infinix – CFi/BP

| | |
|---|---|
| **Design** | *Biplane C-Arm + Omega-Arm* |
| **Detector** | *20 x 20 cm; 30 x 30 cm* |
| **Tube** | *3 MHU , 200 mA pulsed* |

### Highlights

– Single User Operation
– Sequential Navigation for fast and easy throughput
– Hyper Handle for One Hand Operation
– FollowME Concept
– Full 3D capacity for Angiography
– Full range of Dose optimization techniques

## Toshiba Infinix – CFi/SP

**Design** | *Mono C-Arm floor mounted*
**Detector** | *20 x 20 cm or 30 x 30 cm*
**Tube** | *3 MHU , 200 mA pulsed*

**Highlights**
- Five Axis System for maximum freedom and flexibility
- Single User Operation
- Sequential Navigation for fast and easy throughput
- Hyper Handle for One Hand Operation
- FollowME Concept
- Full 3D capacity for Angiography
- Full range of Dose optimization techniques

## Toshiba Infinix – VCi/BP

**Design** | *Biplane C-Arm + Omega-Arm*
**Detector** | *30 x 40 cm; 30 x 30 cm*
**Tube** | *3 MHU , 200 mA pulsed*

**Highlights**
- Single User Operation
- Sequential Navigation for fast and easy throughput
- Hyper Handle for One Hand Operation
- FollowME Concept
- Low Contrast Imaging
- 3D rotational angiography
- Full range of Dose optimization techniques

## Toshiba Infinix – VFi/SP

**Design** | *Mono C-Arm floor mounted*
**Detector** | *30 x 40 cm or 30 x 30 cm*
**Tube** | *3 MHU , 200 mA pulsed*

**Highlights**
- Single User Operation
- Five Axis System for maximum freedom and flexibility
- Sequential Navigation for fast and easy throughput
- Hyper Handle for One Hand Operation
- FollowME Concept
- Low Contrast Imaging
- 3D rotational angiography
- Full range of Dose optimization techniques

## Toshiba Infinix – CCi

**Design** | *Mono C-Arm ceiling mounted*
**Detector** | *20x20 cm or 30 x 30 cm*
**Tube** | *3 MHU, 200 mA pulsed*

**Highlights**
- Single User Operation
- Sequential Navigation for fast and easy throughput
- Hyper Handle for One Hand Operation
- FollowME Concept
- Full 3D capacity for Angiography
- Full range of Dose optimization techniques

## Toshiba Infinix – VCi

**Design** | *Mono C-Arm ceiling mounted*
**Detector** | *30 x 40 cm*
**Tube** | *3 MHU , 200 mA pulsed*

**Highlights**
- Single User Operation
- Sequential Navigation for fast and easy throughput
- Hyper Handle for One Hand Operation
- FollowME Concept
- Low Contrast Imaging
- 3D rotational angiography
- Full range of Dose optimization techniques

# IS MOBILE C-ARM

## GE Healthcare OEC 9900 Elite

**Power** | *15 kW*
**II-Format** | *11, 15, 23 and 31 cm*

**Highlights**
- DRM (Dynamic Range Management)
- Intuitive touchscreen interface
- Comfortable viewing with flat screen monitors
- Easy archiving: CD/DVD and DICOM
- Fully motorized imaging system

## GE Healthcare OEC FluoroStar 7900

**Power** | *2.2 kW*
**II-Format** | *11, 15 and 23 cm*

**Highlights**
- Compact monitor cart & c-arm
- Superb image quality – 1k x 1k
- Simple touchscreen interface
- Innovative connectivity solution: CD/DVD, USB and DICOM
- Available as Compact, Compact², Compact+ and Series

## GE Healthcare OEC EverView 7500 PRO

**Power** | *2.2 kW*
**II-Format** | *10, 15 and 23cm*

**Highlights**
- Procedural flexibility
- Reliable image quality
- CD, USB and up to 80.000 image storage

## Hologic Fluoroscan™ InSight mini C-arm system

**Highlights**
- Precision and versatility in extremity surgery
- Ultra-fine fluoroscopy images
- Tremendous maneuverability
- Automated adjustments that deliver the optimum image every time, for every patient

## Landwind LWX-C

**Power** | *3.5/5.0kW*
**II-Format** | *9 Inch*

**Highlights**
- Suitable for surgery applications
- Excellent low-dose surgical imaging
- Compact and easy-to-use design
- More clear, high quality and sharp images
- Cost-effective solution

## Medtronic O-arm® System

**Power** | *32 kW*
**II-Format** | *Digital flat panel detector 30 x 40 cm*

**Highlights**
- Flexible intraoperative 2D and 3D imaging
- Fast 13 sec 3D scan
- Large 2D image size and large 3D scan volume
- Fully mobile
- Seamless integration in OR workflow
- Easy of use: All motions motorized, simple control panel
- Position memory remembers scan positions
- Easy draping of the breakable gantry.
- Seamless integrating with StealthStation® Navigation
- Full DICOM3, USB, CD/DVD interfacing

## Philips Veradius

**Power** | *15 kW*
**Field of view** | *27 x 27 cm*

**Highlights**
- Super thin flat detector frees up valuable space
- Superb contrast thanks to high dynamic range
- Insensitive to magnetic fields
- No geometrical distortions

## Philips BV Pulsera with 3D-RX

**Power** | *15 kW*
**II-Format** | *31/23/17 cm*

**Highlights**
- Based on the BV pulsera
- Unique combination of conventional 2D c-arm flexibility and top-quality 3D imaging in a single compact system
- 12" image intensifier for largest 3D reconstruction, expanding clinical applications
- Motorized propeller movement of 200 degrees in only 30 seconds acquisition

## Philips BV Pulsera 2

**Power** | *15 kW*
**II-Format** | *31/23/17 cm*

**Highlights**
- An interventional powerhouse, covering the widest range of applications, including cardiac interventions
- SmartVision – a fully digital imaging chain including powerful image processing functions
- High quality images at a low dose, time after time
- Pulsed acquisition 30 pulses/sec
- Rotating anode power

## Philips BV Endura 2

**Power** | *3.15 kW*
**II-Format** | *31/23/17 cm*

**Highlights**
- Versatile workhorse designed for routine and vascular interventions
- SmartVision – a fully digital imaging chain including powerful image processing functions
- High quality images at a low dose, time after time
- Optimally designed mobile view station providing a unique intelligent viewing concept
- Extended rotation

## Philips BV Libra

**Power** | *3.15 kW*
**II-Format** | *23/17/14 cm*

**Highlights**
- Most compact and lightweight mobile fluoroscopy system for routine procedures
- Cost-effective performance
- Best possible images time after time, at a low dose
- Excellent maneuverability
- Ease of operation

## Shimadzu Opescope Pleno

**Power** | *2.0 kW*
**II-Format** | *16 / 23 cm*

**Highlights**
- Fully balanced C-arm for fast and easy positioning
- 1 Megapixel CCD camera
- Realtime DSA
- Configurable application programs and touchscreen operation
- Fully DICOM compliant

## Shimadzu Opescope Activo

**Power** | *2.0 kW*
**II-Format** | *16 / 23 cm*

**Highlights**
- Fully balanced C-arm for fast and easy positioning
- Pulsed fluoroscopy at up to 15 frames/sec
- Configurable application programs
- Optional digital imaging processing functions
- Optional DICOM function

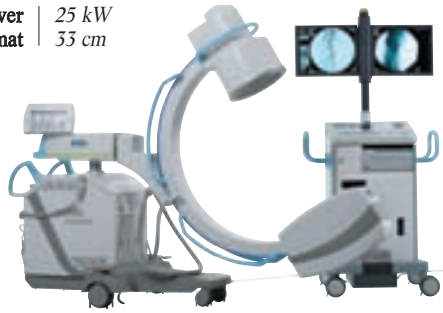
## Siemens Siremobil Compact L

**Power** | *1.4 kW*
**II-Format** | *23 cm*

**Highlights**
- High projection flexibility of 130°
- Minimum radiation with CARE (Combined Applications to Reduce Exposure)
- MEMOSKOP CX provides a large image memory with up to 5.000 images
- Optional DICOM compatibility

## Siemens Arcadis Avantic

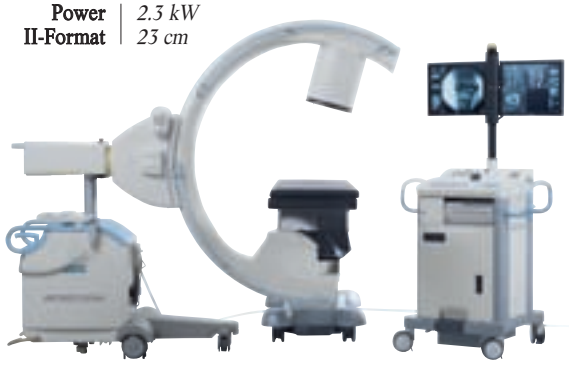
**Power** | *25 kW*
**II-Format** | *33 cm*



**Highlights**
- Maximum overview through industry leading 13" (33 cm) image intensifier
- Excellent performance due to its large power reserve of 25 kW
- Brilliant images in every situation thanks to EASY (Enhanced Acquisition System)
- Remote user interface for direct control from within the sterile field
- Full DICOM compatibility

## Siemens Arcadis Orbic/Orbic 3D

**Power** | *2.3 kW*
**II-Format** | *23 cm*



**Highlights**
- Highly versatile intraoperative 3D imaging based on truly isocentric design
- Brilliant images in every situation thanks to EASY (Enhanced Acquisition System)
- Full DICOM compatibility
- NaviLink interface for 3D navigation

## Siemens Arcadis Varic

**Power** | *2.3 kW*
**II-Format** | *23 cm*

**Highlights**
- Intuitive system operation
- Small footprint and lightweight design
- Continuous 1K² digital imaging chain with up to 23 mA tube current
- Brilliant images in every situation thanks to EASY (Enhanced Acquisition System)
- Full DICOM compatibility

## Ziehm Imaging – Ziehm Compact

**Power** | *2 kW*
**II-Format** | *15 cm / 23 cm*

**Highlights**
- Monitor mounted on mobile stand
- No separate monitor cart needed
- Small and lightweight design
- Self-explaining user interface
- Customizable start-up configuration

## Ziehm Imaging – Ziehm 8000

**Power** | *2 kW*
**II-Format** | *15 cm / 23 cm*

**Highlights**
- Proven mobile c-arm quality
- Increased imaging performance
- Unrivaled mobility
- Self-explaining user interface
- Programmable function »F« key

## Ziehm Imaging – Ziehm Solo

**Power** | *2 kW*
**II-Format** | *23 cm*

**Highlights**
– Superb image quality
– compact one-piece design
– small footprint
– Intuitive Solo Center TFT-User Interface
– multiple display options

## Ziehm Imaging – Ziehm Vision

**Power** | *2 kW*
**II-Format** | *23 cm / 31 cm*

**Highlights**
– Excellent 1k x 1k image quality
– Unique ODDC software
– Intuitive Vision Center TFT-User Interface
– Anatomical programs
– Pulsed generator (up to 30 frames/s)

## Ziehm Imaging – Ziehm Vision FD

**Power** | *2 kW*
**II-Format** | *Digital flat-panel detector 20 cm x 20 cm*

**Highlights**
– Integrated a-Si detector 1k x 1k
– Larger c-arm opening
– Fully digital, distortion free imaging
– High dynamic range images
– Optimal skeleton & soft tissue imaging

## Ziehm Imaging – Ziehm Vision R

**Power** | *7.5 kW*
**II-Format** | *23 cm / 31 cm*

**Highlights**
– High power monoblock (rotating anode)
– Unique ODDC software
– Excellent image quality
– Lowest possible dose
– Advanced Active Cooling system

## Ziehm Imaging – Ziehm Vision RFD

**Power** | *7.5 kW*
**II-Format** | *Digital flat-panel detector 30 cm x 30 cm*

**Highlights**
– Outstanding image quality
– High power monoblock (rotating anode)
– Larger field of view
– 165° orbital rotation
– Advanced Active Cooling system

## Ziehm Imaging – Ziehm Vision Vario 3D

**Power** | *2 kW*
**II-Format** | *23 cm*

**Highlights**
– Flexible intraoperative 3D imaging
– Variable isocenter
– Fully automatic isocentric scan
– Intuitive Vario Center TFT-User Interface
– Ziehm NaviPort Interface

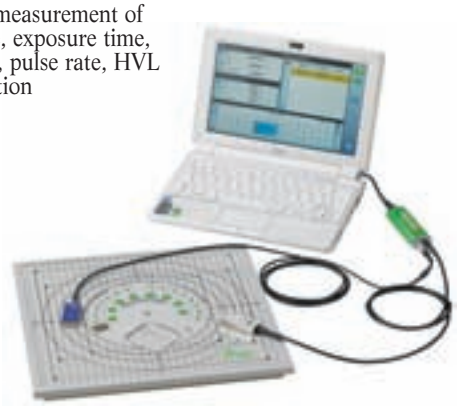
## Ziehm Imaging – Ziehm Vision FD Vario 3D

**Power** | *2 kW*
**II-Format** | *Digital Flat Pane Detector 20 cm x 20 cm*

**Highlights**
- Integrated a-Si detector 1k x 1k
- Flexible intraoperative 3D imaging
- Fully digital, distortion free imaging
- Variable isocenter
- Ziehm NaviPort Interface

## IBA Multimeter MagicMax

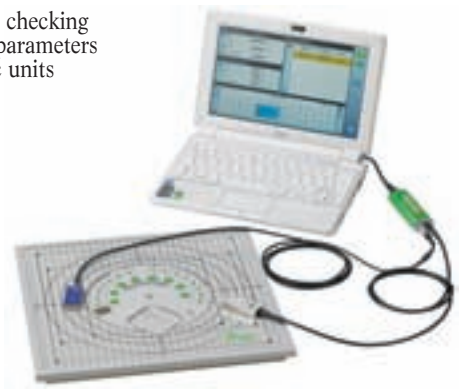
Simultaneous measurement of dose, dose rate, exposure time, kV, dose/pulse, pulse rate, HVL and total filtration



**Highlights**
- Small device with separate multifunction detector
- Connected via USB to PC or Notebook
- Intuitive use via PC interface
- Time resolution: 100 µs
- Optimized solutions for all applications

## IBA Dosimetry Primus

Test device for checking image quality parameters at fluoroscopic units



**Highlights**
- Modular construction: structural plate and separated attenuator
- Check of spatial and contrast resolution, size of the radiation field, artefacts; kV test area
- Compact Al pre-attenuator or PMMA and Cu plates
- Available in two different sizes

## PTW Diamentor C2

Dual channel dose area product (DAP) meter for patient dosimetry and quality control

**Highlights**
- Prized for biplane units
- Integrated printer
- Built-in test function for fast calibration and constancy checks
- Easy connection to a RIS or PACS

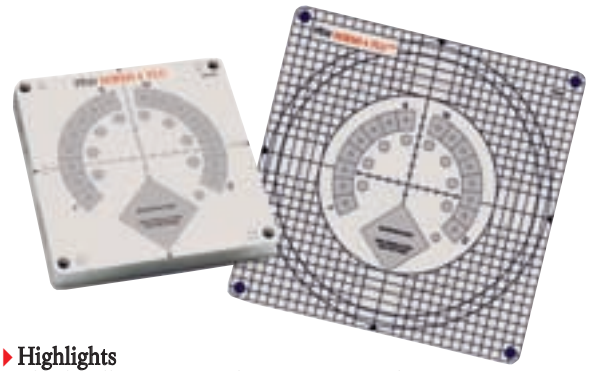
## PTW Diavolt Universal Multimeter

Compact X-ray multimeter for kVp, PPV, dose and irradiation time measurements


**Highlights**
- Very fast 13 kHz sampling frequency for precise measurements even on units with a ripple up to 30 %!
- Independent of orientation, angle, field size and distance
- Long operating time by means of rechargeable batteries (non stop: up to 7 hours)
- Data evaluation by means of the DiaControl *expert* software

## PTW NORMI 4 FLU

Test object for quality control of digital fluoroscopic X-ray units



**Highlights**
- Checks all imaging quality parameters (dynamic range, spatial resolution, low contrast, artefacts, radiation field, etc.)
- Convenient use at over and under couch tubes
- Patient equivalent absorber (Al or PMMA) included
- Small version for C-arms available

## Radcal ACCU-PRO™

X-Ray Analyzer
Simultaneous dose, rate, time, kVp. HVL, filtration, mA/mAs, and more

**Highlights**
- Use for manufacturing, installation, QA, and service
- R/F, mammography, CT, dental, leakage
- Ion chamber based dosimetry, no corrections required
- Correctly measure AEC fluoro and filtered beams
- Remote control, waveforms, and archiving with XLPRO software
- Compact, easy to use

## Radcal PDC-DAP/KAP verification meter

**Highlights**
- Newly patented Patient Dose Calibrator
- Use to calibrate DAP/KAP and rate
- Also measures dose and rate
- Optical and radiographic alignment markers
- Simple to use with optional computer control

## RTI Electronics Piranha

*The Piranha is designed as a truly self-contained, all-in-one, X-ray multi-function meter that assures accurate results in one shot. kV, time, dose, dose rate, HVL and total filtration*

**Highlights**
- Self-Contained, All-in-One
- Auto-Compensation
- R&F, Mammo, Dental and CT
- Quick and Simple Set-up
- Enhanced Graphical Display
- Built-In Bluetooth for PC and PDA
- mA, mAs, and Light Probes
- Fits in the Palm of Your Hand

## RTI Electronics Barracuda

*The Barracuda X-ray multimeter has a cabinet that can house up to six different application modules, and can measure on all modalities; R/F, mammography, flouroscopy, pulsed flouroscopy, dental, panoramic dental and CT systems*


**Highlights**
- All in One, All at Once
- Auto-Compensation
- Enhanced Graphical PDA Display
- R&F, Mammo, Dental and CT
- Ionization Chambers
- Built-In Bluetooth for PC and PDA
- mAs, and Light Probes
- Fits in the Palm of Your Hand

AGFA HealthCare

FUJIFILM

GE Healthcare

iba

medigration
the Digital Company

HOLOGIC
Clarity Of Vision

KONICA MINOLTA

Medicor

MeVis
BREASTCARE

PHILIPS

Planmed

PTW

RTI

SECTRA

SIEMENS

VISUS

# Large Teaching Hospital Evaluates 3D Imaging for Breast Cancer Screening

King's College, London, UK

King's College Hospital in London, UK has begun a trial program utilizing breast tomosynthesis, a new 3D digital x-ray technology for breast cancer screening and diagnosis. The first national hospital in the UK to undertake this kind of trial, King's College anticipates that if the trial is successful, 3D breast imaging could offer new hope in the fight against breast cancer. King's College is one of the UK's largest and busiest teaching hospitals, with over 6,000 staff assisting approximately 700,000 patients a year.

Breast cancer is the leading cancer in the UK with 46,000 new cases diagnosed each year and over 12,000 dying from the disease. The hospital hopes the trial will prove that 3D technology can assist doctors in reducing the estimated 70,000 to 80,000 women every year who are mistakenly told that something unusual has been found, as well as the small number of women mistakenly given the all clear. The system used in the trial is a Hologic Selenia® Dimensions® breast tomosynthesis system, now commercially available in Europe and other areas of the world and in the FDA process in the U.S.

* M.J. Michell et. al. "Digital Breast Tomosynthesis: A Comparison of the Accuracy of Digital Breast Tomosynthesis, Two-Dimensional Digital Mammography and Two-Dimensional Screening Mammography (film-screen)", Royal College of Radiologists Breast Group Annual Scientific Meeting, Belfast, Northern Ireland,November 1-3, 2009.

King's College Hospital hosted the first ever hands-on breast tomosynthesis users training meeting, attracting radiologists from tomosynthesis sites throughout Europe.

## 2D Imaging Shows Room for Improvement

At present, 2D mammography is the standard breast x-ray used in the UK. Although recognized as safe and reliable in detecting the early signs of cancer, the "anatomical noise" associated with 2D imaging can sometimes hide cancers, or produce shadows that falsely create the suspicion of cancer. Some cancers remain undetectable with 2D technology. The trial hopes to prove the efficacy of 3D in overcoming this deficiency.

Digital breast tomosynthesis is a 3D imaging technology that enables doctors to look at separate "slices" of the breast. The system acquires individual images of a stationary compressed breast at multiple angles during a short scan. Individual images are reconstructed into a series of thin high-resolution slices that can be displayed individually or in a dynamic ciné mode.

Reconstructed tomosynthesis slices reduce or eliminate the problems caused by tissue overlap and structure noise in single slice 2D mammography imaging. Digital breast tomosynthesis also offers a number of exciting opportunities, including improved diagnostic and screening accuracy, fewer recalls, greater radiologist confidence and 3D lesion localization.

"This is exciting new technology that could improve the accuracy of breast cancer screening and help save more lives by detecting more breast cancers when they are small and at an early stage, when they can be more effectively treated," states Dr. Michael Michell, director of breast screening at King's College. "In human terms, this technology could spare a lot of women a lot of heartache, and also save the NHS (National Health Service) valuable resources through people not having to attend follow-up appointments and undergo further tests."

Sarah Sellars, assistant director of NHS Cancer Screening Programs, adds, "The NHS Breast Screening Program welcomes research into the use of new technology for screening, and we await the outcome of this study with interest."

The trial use of digital breast tomosynthesis at King's College has been authorized by the hospital's Ethics and Research and Development committees. The clinical results of the trial at King's will be considered by the NHS Breast Screening Program.

## Update

In November 2009, Dr. Michell reported on the first results of the trial - a reader study involving women that attended an assessment clinic for evaluating a mammographic abnormality found in a routine film-screen exam.* Ninety-one percent of the women that were eligible for the study agreed to participate in a follow-up bi-lateral 2D digital mammography exam and a breast tomosynthesis exam.

The radiologists reading the results of the first 300 cases found that their diagnostic confidence increased with breast tomosynthesis. These results, Dr. Michell said, supported the need to move forward with a larger, multicentre study.

Professor Patrice Taourel of the University Hospital Lapeyronie of Montpellier on

# Breast Tomosynthesis

One of the largest teaching hospitals in France, the University Hospital Lapeyronie of Montpellier prides itself on utilizing state of- the-art technology to provide the highest levels of patient care, teaching, and research. Six years ago, the hospital replaced its analog mammography system with a Hologic Selenia digital mammography.

The difference in the quality of images between analog and digital mammography is dramatic, and digital mammography has proven to be a superior modality for detecting breast cancer. But 20 – 30 percent of cancers remain undetected even with digital mammography, and too many women receive a call back for a second exam. So, when Hologic's tomosynthesis three-dimensional technology became available, the University Hospital became one of the first sites in France to implement the technology.

## 2D and 3D Technology: Better Views of the Breast

Tomosynthesis technology provides major improvements over digital mammography. Breast tomosynthesis reduces the interference of overlapping tissue by providing three-dimensional views of the breast and making it easier for doctors to see cancer especially in higher-risk women with dense breasts.

"Tomosynthesis supplements mammography," states Professor Patrice Taourel, head of the Radiology Department. "We use it on a systematic basis for patients who need more detailed views. From the beginning, we established a protocol to use tomosynthesis for all women who fit the stereotype of:

- It is their first mammogram and they do not have comparison films;
- They have risk factors, such as family history;
- They have a history of breast cancer and are looking for other lesions, or
- They want a second opinion.

"Our workflow has not changed with tomosynthesis," continues Professor Taourel. "It only requires several more seconds. For the patient, the change is almost transparent. For our radiologists, they need only to familiarize themselves with the new images they can see with tomosynthesis. It was the same when we went from analog to digital technology. The images are different, you see a lot more, and radiologists need to be properly trained to become familiar with these new images."

**Well known for his work in breast imaging MRI, Professor Taourel thinks MRI is not necessary or practical as a breast imaging tool for all women. On the other hand, tomosynthesis can be used easily for patients. It takes less time and can be used at the first point of contact with a patient.**

## Tomosynthesis and MRI as Breast Screening Tools

Well known for his work with breast imaging MRI, Professor Taourel thinks MRI is still the best imaging modality, but it is not necessary or practical as a breast imaging tool for all women.

"Tomosynthesis can be used easily for patients. It takes less time and can be used at the first point of contact with a patient. It is very helpful for breast health."

Professor Taourel feels more confident in his diagnosis that the lesion is either suspicious or non-suspicious with breast tomosynthesis. And tomosyn¬thesis reduces the number of women the University Hospital of Montpellier recalls. His dream is to use tomosynthesis to guide biopsies.

**Looking much like a digital mammography system, the x-ray tube of the Selenia Dimensions digital breast tomosynthesis system rotates around the breast taking 15 images from numerous angles in an exam that takes less than 4 seconds.**

# Pioneers by Tradition

**History does not reveal the number of millisieverts used by the X-ray machine presented to Dr. Karl Rohrbacher of Vienna at the beginning of the 1940s. However, this machine laid the foundation for one of the most modern radiology practices in Austria after the turn of the century, the Diagnosezentrum Urania (DZU). And today, the center uses the mammography system with the lowest radiation dose available, Sectra MicroDose Mammography.**

**Dr. Wolfgang Drahanowsky, Technical Director at the Diagnose Zentrum Urania.**

Looking at the history of the practice, it comes as no surprise that the installation of the Sectra system in 2004 marked Sectra MicroDose Mammography's arrival in the Austrian market. Ever since Dr. Rohrbacher became an established radiologist, the philosophy has been to make use of technological progress. This approach has intensified since Prof. Dr. Peter Riedl took over the practice in 1979 and developed it into today's center with the help of his partners. For example, Riedl was the first private CT operator in Vienna and the DZU began to operate Austria's first 3-Tesla MR as early as in 2004.

When Swedish developers from Sectra created a new, low-dose form of mammography using photon-counting technology, it was only a matter of time before it also became available in Vienna. "CT became routine; 3-Tesla became routine. With Sectra MicroDose, we were once again at the forefront of future-proof technology, which we are sure will become even more widespread in the future," comments Dr. Wolfgang Drahanowsky, Radiologist and Technical director at the Diagnosezentrum Urania (DZU) and one of the leading figures at the facility, alongsideUniv. Doz. Dr. Peter Barton , Univ. Doz. Dr. Lucas Prayer and Prof. Dr. Peter Riedl .

## Because less is more

In the past three years, Sectra MicroDose has won over the team, primarily because of its extremely high image quality and the distinct 50%reduction in radiation compared with other digital systems. "It's the best dose reduction available in the medical technical equipment market. In 2009, we participated in a comparative study conducted by medical physicists into the radiation impact of various mammography machines and this provided confirmation," says Dr. Drahanowsky, referring to the currently unrivaled low radiation doses with no loss of quality using the photon-counting technology developed by Sectra. In this, the special multi-slit detector counts all of the x-rays directly, without previously converting the radiation to light. The effect of the detector design is that scatter is reduced by 97% instead of the 70% reduction common with flat panel digital systems. At the same time, with no conversion steps, there is zero electronic noise.

## Equipping for the national screening program

In screening programs, minimizing radiation is the top priority. In Austria, the process of so-called "gray" mammography is still practiced: Every woman can have a mammography at the institution of her choice on a physician's referral. However, this year, Austria will follow the current trend in adopting a national screening program for the early detection of breast cancer and the DZU, with its two Sectra installations regards itself as fully prepared. "The referring physicians particularly appreciate the low dose we offer their patients. We receive direct referrals as a result of our MicroDose equipment," says Dr. Drahanowsky.

"Since there is emphasis on close cooperation with local hospitals, we also always try to maintain the top standard at clinical level in the form of the latest technology." Accordingly, the mammography unit at the DZU has not only received the "Mammadiagnostic Quality Certificate" from the Austrian Radiology Society and

**From examination to diagnostic findings in only 30 minutes.**

**Routine in the Diagnose Zentrum Urania: Every picture is diagnosed by at least two radiologists**

the Federal Group of Radiology Specialists of the Austrian Medical Chamber, but has also achieved excellent reliability and performance reviews: "We conduct up to 100 mammography examinations per day. This means that we cannot accept any technical delays."

## From image to result in 30 minutes

At the DZU, the team provides continuous double reading by two specialists. The diagnoses are made immediately after the tests and directly on-screen by the examining physician and an independent second opinion is also provided. Both physicians are aided in their work by a CAD System (Computer Aided Detection) that is integrated with the Sectra PACS. The CAD system acts as a third reader, further ensuring that nothing is missed. "With Sectra PACS as a tool, the workflow for double diagnosis works beautifully," says Dr. Drahanowsky. "This means that the first and second experts can examine the data independently and make a simultaneous independent evaluation of the image material." After only 30 minutes, the patient receives an envelope with her results. It couldn't be faster!

The Sectra PACS is fully integrated with the DZU's overall IT system. Images and data from various imaging technologies or manufacturers, such as from the mammography unit's long-term archiving systems, can be accessed at any time without any problems. This means that comparative images of patients, who have already been examined at the DZU, can again be used in evaluation. Even the smallest changes in breast tissue over time can be found in this way

**One of the most modern institutions of its kind in Vienna: The Diagnose Zentrum Urania**


In the meantime, Dr. Drahanowsky's assumption regarding the establishment of Sectra technology has become reality: other radiological centers in Austria are already catching on and are also investing in MicroDose Mammography. The progressive approach of the institute has once again proven correct.

## Benefits of Sectra MicroDose Mammography™ at a glance

- Excellent high resolution, high-contrast images
- Reduction of at least 50% in the radiation dose compared to other available systems
- Efficient workflow and higher patient processing, with up to 18 exams per hour
- Excellent ergonomics
- A curved and heated patient support for increased comfort and ease of positioning

## MicroDose conquers the Vienna market

The "Regional Structural Plan for Health in Vienna" envisages a dramatic reduction from 54 radiology practices and 14 diagnostic centers to an anticipated 16 diagnostic centers! Each of these 16 diagnostic centers would provide for an area with about 70,000 women. To continue to offer the patients effective mammography screening, reliable and efficient equipment with a high rate of processing must be acquired. As a result, four radiology practices in the Austrian capital rapidly decided in favor of a Sectra MicroDose system. In addition to the DZU, which decided to acquire a second MicroDose, the Diagnosticum Gersthof, the Hietzing Diagnostic Center and Röntgen Liesing also opted for the Sectra mammography equipment. Accordingly, Sectra with its partner, Enomed, has managed to increase its market share for digital mammography machines to 25% in a very short time.

# Mammography at its Best

**Seamless Image Logistics, Optimized Reporting, and Structured Archiving in Mammography**

In western countries, the carcinoma of the breast is the most common cancer in women. In order to improve the cure rate, it is of major importance to detect the disease at the earliest possible stage. As a result goverments have initiated nation-wide mammography screening programs. For this purpose, it is necessary to link a variety of IT systems, and to ensure smooth workflow across a multitude of locations. But curative mammography, too, entails particular requirements regarding image logistics and image display.

## Optimized Reporting Based on Digital Mammography

Mammographies are captured, to an increasing extent, digitally through Computed Radiography (CR) or Direct Radiography (DR) systems. The complementary exams relevant for mammography are usually also carried out in digital format (MRTs or ultrasound exams). In combination with information systems linked via worklists, this provides the cornerstone for the realization of a smooth holistic digital workflow. Patient admission is done in the information system, as is the planning of, and request for, the exam. The worklists generated automatically based on this information ensure the necessary consistency of the data. This safeguards that it is possible to locate all the data pertaining to a case. This applies to the technologist in radiology as well as to the reporting radiologist.

During reporting, routine work steps are automated by highly specialized hanging protocols. These have been programmed on the basis of know-how from many expert reporting physicians. In order to make sure that the physician "feels at ease" with his reporting environment, the hanging protocols as well as their graphic user interface can be adapted to the individual needs.

The main support for the reporting process is provided by automated prefetching of previous exams and their standardized display on screen. A multitude of image processing are there to provide additional support. In conclusion, this leads to increased certitude in reporting and therefore to optimized quality in reporting. Further support can be achieved by integration of computer-aided detection systems (CAD). For additional benefits regarding ergonomics, the application can be managed via keyboard as well as, in addition, a keypad.

Reporting documentation is realized in a structured manner and in accordance with international standards (the ACR scheme and BI-RADS classification). The categorization defines, on the one hand, mamma density (ACR) and, on the other hand, the risk for carcinomas is appraised. Subsequent care strategies for the patient can be deduced from this.

## Flexible Archiving, Rapid Access

Archiving of images and reports is done in a flexible manner, adapted completely to the needs of the individual customer. For example, data can be stored on CD or DVD in a single media archive, or in networked structures in the Storage Area Network (SAN). The most recent option is Storage Service Providing (SSP). This service enables the customer to store his data in an external archive operated by a service provider. This type of data storage enables cost-optimized operation for the user. With full orientation of fees towards use, the customer is not required to make investments and tie up capital. Cost can be planned because there are no additional expenditures for migration, administration, or maintenance.

No matter which archiving technology the user selects, his access to all previous exams is ensured at any time. This includes information from a third-party PACS, too. In addition, X-ray films generated and scanned externally can be integrated seamlessly into the workflow.

## Increased Requirements Regarding Image Logistics in Screening

Mammography screening entails extended requirements regarding integration and image logistics. Software applications for screening campaign purposes which organize the invitation procedure and manage the client data.

**www.visus.com**

**JiveX supports mobile mammography units as well as structured reporting at a multitude of sites and complies with the IHE-defined workflows.**

## Fujifilm Amulett

**Technology** *Direct Optical Switching, a-Se*
**Resolution** *50 µm, pixel size*
**Size** *18 x 24 cm / 24 x 30 cm*

**Highlights**
- 50 micron pixel at extremely low radiation dose
- High DQE and high MTF
- Direct Optical Switching technology
- Excellent ergonomic design
- Optimized workflow and quick, comfortable examination
- Stereo-Option available

## GE Healthcare Senographe Essential

**Technology** *a-Silizium*
**Resolution** *100 µm*
**Size** *24 x 31 cm*

**Highlights**
- High patient throughput
- Dual track tube Mo/Rh
- Automatic Optimization of Parameters (AOP)
- Ergonomic paddles that shape to the breast
- Stereo-Option available

## GE Healthcare Senographe DS

**Technology** *a-Silizium*
**Resolution** *100 µm*
**Size** *19 x 23 cm*

**Highlights**
- High patient throughput
- Dual track tube Mo/Rh
- Automatic Optimization of Parameters (AOP)
- Ergonomic paddles that shape to the breast
- Stereo-Option available

## GE Healthcare Senographe 2000D

**Technology** *a-Silizium*
**Resolution** *100 µm*
**Size** *19 x 23 cm*

**Highlights**
- Automatic and fast image processing
- Dual track tube Mo/Rh
- Automatic Optimization of Parameters (AOP)
- DICOM connectivity for digital workflow
- Proven technology

## GE Healthcare Performa

**Anode** *Mo*
**Filter** *Mo/Rh*
**kV Range** *20 – 35*

**Highlights**
- Bi-directional compression ECS
- Enhanced patient comfort
- Increased amount of breast tissue images
- VectorPoint-AEC for optimized image quality
- Compact, small system

## Hologic Selenia® Dimensions® digital breast tomosynthesis*

**Highlights**
- Combines traditional mammography and multi slice 3D tomosynthesis imaging capabilities
- Reconstructed tomosynthesis slices reduce or eliminate the problems caused by tissue overlap and structure noise in mammography imaging offering improved diagnostic confidence and enhanced patient care

* Selenia Dimensions breast tomosynthesis is cleared for sale in the European Community and awaiting FDA clearance in the U.S.

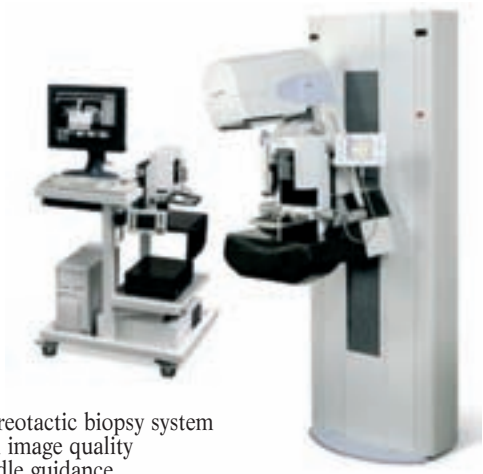
## Hologic Selenia® digital mammography

**Highlights**
- Exceptionally sharp digital images with better contrast and resolution at the lowest possible radiation dose
- Flexible and interactive tools for the mammographer to use to increase productivity and optimize workflow
- Seamless integration with hospital infrastructure, assuring the best possible care
- Smart paddle system streamlines technologist workflow

## Hologic MammoSite® multi-lumen targeted radiation therapy

**Highlights**
- 5-day radiation therapy after breast lumpectomy instead of the conventional 5-7 week whole breast radiation treatment
- Multi-lumen device gives radiation oncologists the ability to shape the radiation does for typical cases
- Treats patients who are otherwise not appropriate candidates for traditional brachytherapy
- Targets area where cancer is most likely to recur
- Spares healthy tissue and organs from the side effects of radiation

## Hologic Digital StereoLoc® II stereotactic upright biopsy

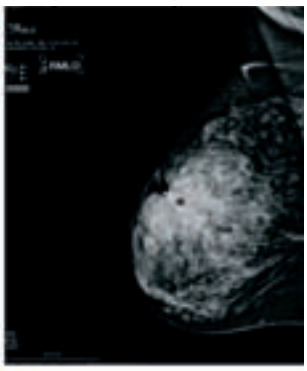


**Highlights**
- Upright stereotactic biopsy system
- Exceptional image quality
- Precise needle guidance
- Provides easy transition from Selenia® digital mammography to stereotactic breast biopsy

## Hologic SecurView® diagnostic workstation

**Highlights**
- Review digital images from mammograms, MRI, PET, and ultrasound
- Flexible, intuitive image review capabilities
- Unlimited hanging configurations
- Work interactively and intelligently through information-sharing
- Supports the display, manipulation and interpretation of DICOM images from multiple modalities including ultrasound, MRI, PET and nuclear medicine

## Hologic R2™ computer-aided detection (CAD)



**Highlights**
- R2 CAD sophisticated pattern recognition software proven to help find breast cancers at an earlier stage
- Identifies features and brings them to the radiologist's attention in order to decrease false negative readings
- Often compared to a second pair of eyes, it serves as an interpretive aid during image review

## Hologic ATEC® automated tissue excision and collection system


**Highlights**
- One system for use under all 3 imaging modalities (stereotactic, MRI and ultrasound)
- Consistently larger and more complete specimens for a confident diagnosis
- Fast tissue acquisition – every 4.5 seconds
- Safe, fully closed system limits fluid exposure
- Saline lavage irrigates and aspirates the cavity
- Pain medication can be continuously delivered direct to the biopsy site

# Now breast cancer has nowhere to hide

## The promise of breast tomosynthesis is here

Hologic has taken another significant leap forward in breast imaging with the introduction of Selenia® Dimensions® digital mammography system, the first practical tool to deliver on the extraordinary promise of breast tomosynthesis. Selenia Dimensions is the embodiment of state-of-the-art technology and flexibility, delivering:

- Revolutionary fusion imaging capabilities that combine digital mammography and tomosynthesis images in one exam, under one compression
- Exceptionally sharp images that allow you to visualize the finest details
- A sophisticated, ergonomic design for streamlined work-flow and enhanced comfort for both the technologist and the patient

Learn More call +32.27.11.46.95
e-mail womensimaging@hologic.com
visit www.hologic.com

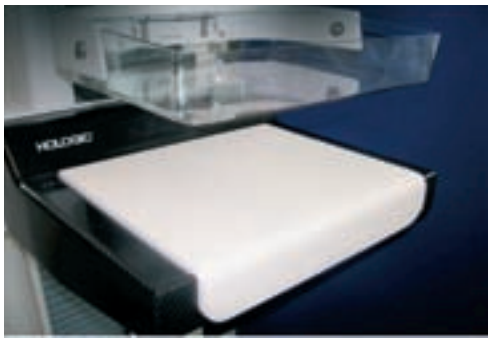
HOLOGIC™

**Come visit us at ECR, Expo E, Booth #311**

## Hologic Eviva™ vacuum-assisted breast biopsy device


**Highlights**
- A fast, safe and simple breast biopsy device that removes suspicious breast tissue for pathological evaluation
- The only vacuum-assisted device with a fully integrated end-deploy biopsy site marking solution

## Hologic MammoPad® radiolucent breast cushion



**Highlights**
- Enables 5 million women to experience a softer, warmer mammogram
- Because patient is relaxed, technologists and radiologists often find better tissue acquisition
- Does not create a need for increased dose
- Does not compromise high level of image quality needed for a routine mammogram

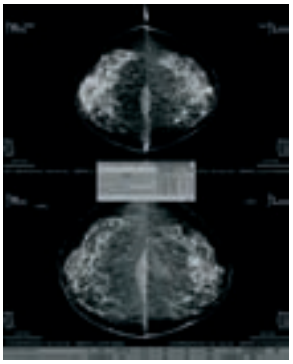
## Hologic MultiCare® Platinum prone biopsy table

**Highlights**
- Minimally invasive stereotactic breast biopsy table
- Pinpoint accuracy
- Enhanced patient comfort and optimized efficiency
- Superb image quality
- Adjustable breast tray compensates for breast thickness
- Cartesian coordinates system ensures accurate targeting
- True 360 degree access

## Hologic SecurView® technologist workstation

**Highlights**
- Powerful technologist workstation for the mammography suite
- Fast access to patient images
- Flexible, intuitive image review capabilities
- Work interactively and intelligently through information-sharing

## Hologic Quantra™ volumetric assessment for breast density



**Highlights**
- A break-through technology that estimates volumes in the breast and calculates the volumetric fraction of fibroglandular tissue
- Aggregates volumetric measurements from each view in a study into a simple, concise assessment for each breast

## Konica Minolta Regius Pureview M

| | |
|---|---|
| **Anode** | *Mo* |
| **Filter** | *Mo/Rh* |
| **kV Range** | *20 – 35* |

**Highlights**
- Revolutionary new x-ray mammography system based on phase contrast technology
- Sharpness and spatial resolution highly improved by the use of phase contrast technology
- Reading at 43.75 µm thus equivalent to resolution of around 70 million pixels
- Flex AEC 48 independent detectors

## Konica Minolta Acies Mammo Workstation

**Highlights**
- Easy to use diagnostic workstation for digital mammography
- Advanced configurable hanging protocol
- Multi-viewing modality
- DICOM compliance
- Software upgrades included

## medigration MammoView

**Highlights**
- Extremely easy to use and manage
- Access to all images (including previous images) in seconds
- Direct findings in the image
- Hanging protocols can be configured individually to automate your routine procedures
- Outstanding image quality (2048 greyscale)
- Excellent price/performance ratio

## Philips MammoDiagnost DR

**Technology** | *Amorphous Selenium*
**Resolution** | *85 µm*
**Size** | *24 x 30 cm*

**Highlights**
- Comfortable and efficient workflow thanks to the intuitive Eleva User Interface and ergonomic design award winning system
- Excellent, UNIQUE-processed images to help with diagnosis
- Smooth procedures make your patients feel at ease

## Philips MammoDiagnost

**Anode** | *Mo/W (Dual Track)*
**Filter** | *Mo/Rh*
**kV Range** | *23 – 35*

**Highlights**
- Efficient workflow for screening, diagnosis and interventions
- Perfect image quality to help with a diagnosis
- Smooth procedures make your patients feel at ease

## Philips PCR Eleva CosimaX

**Technology** | *Dual-side reading*
**Size** | *18 x 24 cm / 24 x 30 cm HR-BD cassette/plate*
**Resolution** | *up to 50 Ìm pixel size*

**Highlights**
- Cost-efficient path to go digital
- Intuitive workflow with the Eleva User Interface
- Excellent image quality with UNIQUE image processing
- Multi-slot reader with up to 80 plates per hour
- Multi-purpose reader for mammography and other applications such as pediatrics and extremities

## Planmed Nuance Excel

**Anode** | *Mo or W (optional)*
**Filter** | *Mo/Rh or Rh/Ag (optional)*
**kV Range** | *20 – 35*

**Highlights**
- Low dose FFDM Unit with 23.9 x 30.5 cm a-Se detector and fully automatic Flex-AEC with tissue type recognition
- Acquisition Workstation (AWS) with 3 megapixel TFT monitor and optional Nuance Acquire Station with motorized height adjustment
- Integrated MaxView Breast Positioning System
- Side Access for optimal patient positioning and ergonomics
- Optional stereotactics with Nuance Excel DigiGuide

## Planmed Nuance

| | |
|---|---|
| **Anode** | *Mo or W (optional)* |
| **Filter** | *Mo/Rh or Rh/Ag (optional)* |
| **kV Range** | *20 – 35* |

### Highlights
- FFDM Unit with 17.1 x 23.9 cm a-Se detector and fully automatic Flex-AEC with tissue type recognition
- Acquisition Workstation (AWS) with 3 megapixel TFT monitor and optional Nuance Acquire Station with motorized height adjustment
- Integrated MaxView Breast Positioning System
- Side Access for optimal patient positioning and ergonomics
- Optional stereotactics with Nuance DigiGuide

## Planmed Nuance Classic

| | |
|---|---|
| **Anode** | *Mo* |
| **Filter** | *Mo/Rh* |
| **kV Range** | *20 – 35* |

### Highlights
- High-end analog mammography unit with Flex-AEC
- Field upgradeable to Full Field Digital Mammography
- Side Access Patient Positioning
- Optional MaxView Breast Positioning System
- Film or digital stereotactics system DigiGuide available as an add-on
- Network ID camera and CR interface available

## Planmed Sophie Classic MVR

| | |
|---|---|
| **Anode** | *Mo* |
| **Filter** | *Mo/Rh* |
| **kV Range** | *20 – 35* |

### Highlights
- Versatile mid-tier film unit with multiple options
- Optional Flex-AEC with tissue type recognition
- Optional MaxView or TwinComp compression systems
- Optional magnification and film or digital stereotactics
- Optional CR interface

## Planmed Sophie Classic Mobile

| | |
|---|---|
| **Anode** | *Mo* |
| **Filter** | *Mo/Rh* |
| **kV Range** | *20 – 35* |

### Highlights
- Robust, mobile analog unit with integrated, telescopic radiation protection screen
- Optional battery backup
- Active brake system with lockable front wheels
- Versatility with optional Flex-AEC, magnification, MaxView Breast Positioning System or TwinComp and film or digital stereotactics
- Network ID camera and CR interface available

## Planmed Sophie Classic S

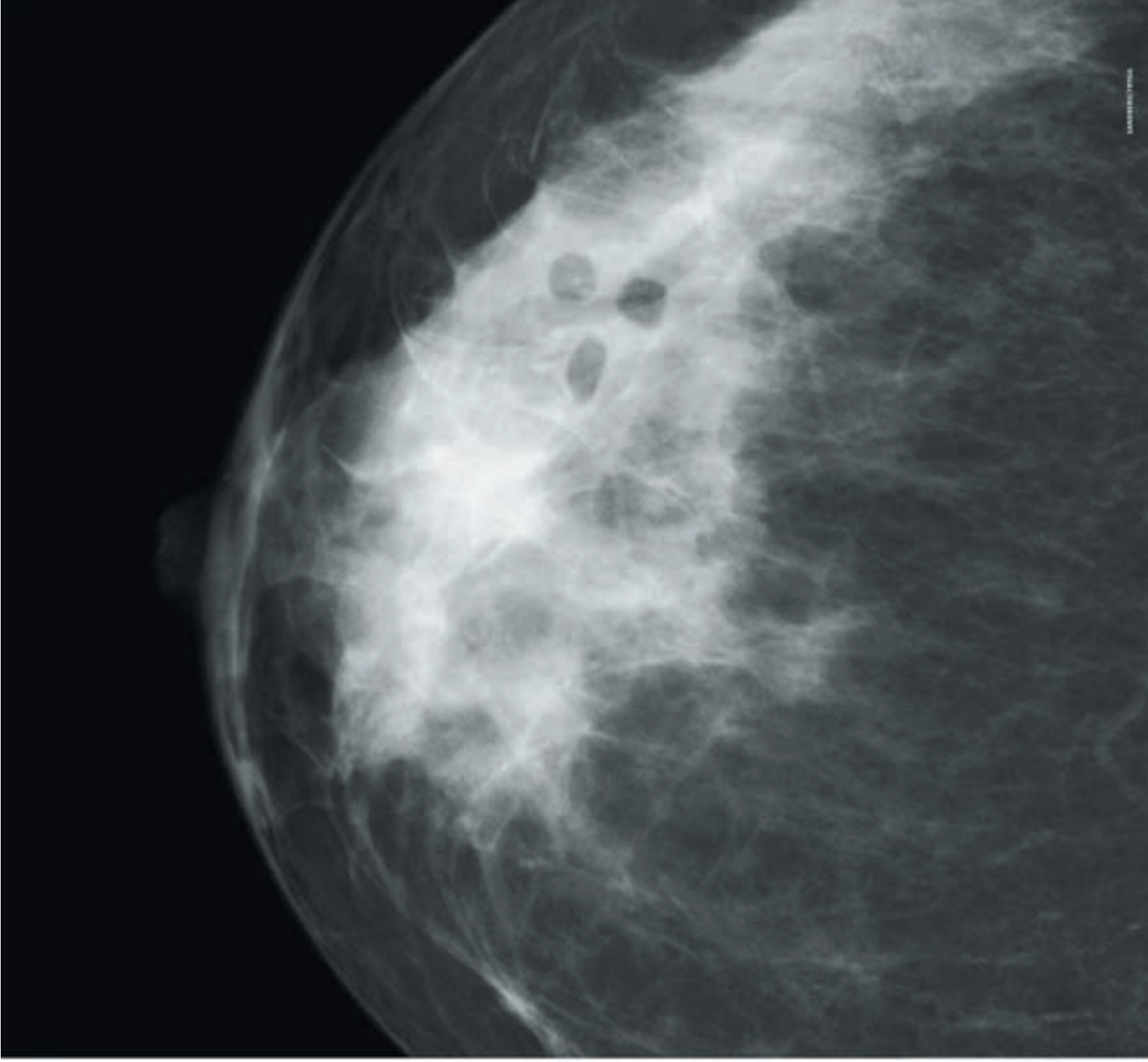
| | |
|---|---|
| **Anode** | *Mo* |
| **Filter** | *Mo/Rh* |
| **kV Range** | *20 – 35* |

### Highlights
- Entry-level film unit
- Optional magnification
- Optional film or digital stereotactics
- Optional CR interface

## Sectra MicroDose Mammography

| | |
|---|---|
| **Technology** | *Photon-counting* |
| **Resolution** | *50 µm, 14 bit* |
| **Size** | *24 x 26 cm* |

### Highlights
- Unique photon counting detector
- 50 % dose reduction compared with other FFDM systems
- Highest image quality
- Superior workflow and ergonomic design enabling unsurpassed throughput
- Complete screening solution with Sectra Breast Imaging PACS



# MICRODOSE MAMMOGRAPHY. NO IMAGE DISTORTIONS TO HAUNT YOU

Ghosts belong in creaky old buildings. Not in X-rays. Our patented photon-counting technology effectively banishes them. The detector is fast enough to be ready when the next photon arrives, so there's nothing to interfere with image interpretation. Along with ghosts, you can banish inefficiencies, too. Specially designed for the smoothest possible workflow, you'll find MicroDose is a superb all-round screening solution.

For more on the highest image quality at the lowest dose, visit sectra.com/medical

RIS/PACS | **MAMMOGRAPHY** | ORTHOPAEDICS

SECTRA

## Sectra mammography workstation

**Technology** | *Photon-counting*
**Resolution** | *50 µm, 14 bit*
**Size** | *24 x 26 cm*

### Highlights
– A multimodality workstation with dedicated software tools to meet the special workflow and throughput requirements of mammography
– Fast image display
– Dedicated keypad
– Automatic display protocols

## Siemens Mammomat Inspiration*

**Technology** | *W/Rh, a-Se*
**Resolution** | *85 µm*
**Detector size** | *24 x 30 cm*

### Highlights
– Screening, upgradable to stereotactic biopsy and 3D imaging with tomosynthesis
– Dual target anode W/Rh reduces dose up to 50% especially for dense breasts
– Comprehensive system solution with syngo-based acquisition workstation
– Streamlined workflow: One-click-to-image
– Special MoodLight function
– Broad range of accessories

*not available in the USA

## Siemens Mammomat 3000 Nova

**Anode** | *Mo/W*
**Filter** | *Mo/Rh*
**kV Range** | *23 – 35*

### Highlights
– Pivoting buckys, easy switching between 18 x 24 and 24 x 30
– Prepared for stereo biopsy
– Opdose auto-selects best anode/filter combination (Mo/Mo, Mo/Rh, W/Rh)
– Opcomp – Siemens' exclusive optimized compression system
– Optional digital spot imaging with *syngo* Opdima

## Siemens Mammomat Inspiration with 3D Tomosynthesis*

**Technology** | *W/Rh, a-Se*
**Resolution** | *85 µm*
**Detector size** | *24 x 30 cm*

### Highlights
– Platform for multiple mammography applications: Screening, diagnostics, stereotactic biopsy and Tomosynthesis in one system and one Acquisition Workstation
– 3D imaging via the acquisition of breast images taken at multiple angles (+25° to –25°): Improved capability to diagnose especially very dense breasts
– The only installed system which offers all applications and can be upgraded to 3D tomosynthesis
– The largest angular range in industry increases depth resolution and contrast

*not available in the USA

## Siemens Mammomat 1000

**Anode** | *Mo*
**Filter** | *Mo/Rh*
**kV Range** | *23 – 35*

### Highlights
– Cost-efficient system, ideally suited for screening
– Opcomp – Siemens' exclusive optimized compression system
– Soft speed – two speed compression

## Siemens Acuson S2000 Automated Breast Volume Scanner*

**Technology** | *Ultrasound*
**Size** | *15.4 cm x 16.8 cm Transducer*

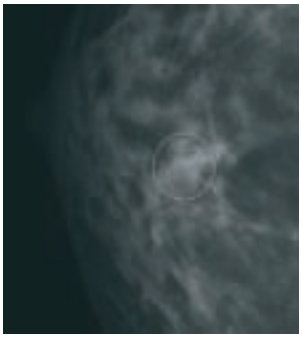
### Highlights
– Acquisition of full-field volumes of the breast automatically, quickly and comfortably
– Reporting on ABVS Workplace - Intuitive volume image analysis and manipulation, comprehensive BI-Rads reporting
– Ideally suited to image patients with dense breast tissue and/or a history of breast disease
– Patient friendly - minimal compression
– No radiation

## Siemens syngo MammoReport

| | |
|---|---|
| **CPU** | *Dual-core Xeon 5130 2.00 GHz or faster* |
| **Displays** | *Dual high-contrast 5 MP monitors, 2.5 x 2 k* |
| **User Interface** | *Dedicated keypad customized to user's individual workflow* |

**Highlights**
- Customization to personal workflow and image arrangement, controllable with a single key
- Supports CAD and a CAD-driven workflow
- Multi-modality and third-party viewing, including viewing of 3D tomosynthesis, 3D ultrasound, and MR breast images
- Advanced display layouts for different demands
- DICOM and IHE workflow compliance

## Agfa HealthCare iCAD SecondLook Digital



**Highlights**
- SecondLook[R] Digital is a second opinion tool for Agfa HealthCare's CR Mammography
- Adds value in daily routine
- Can be used in mammography screening as well as by diagnostic HealthCare providers
- Markers that indicate potential microcalcifications and/or masses are visible on Agfa HealthCare's IMPAX Breast Imaging Workstation

## IBA Dosimetry Pasmam

Test device for checking spatial resolution, contrast resolution, signal to noise ratio, dynamic range, image limitation towards the chest wall, AEC performance

**Highlights**
- Modular construction
- Different test inserts
- Basic plate with Al step wedge
- Structural plate with turnable spatial resolution test
- Additional attenuation plates

## Konica Minolta CP-1M

| | |
|---|---|
| **Technology** | *CsBr phosphor* |
| **Resolution** | *43.75 µm* |
| **Size** | *18 x 24 cm / 24 x 30 cm* |

**Highlights**
- Crystal column technology
- Superior DQE
- Superb sharpness, granularity and stability
- Excellent image quality with reduced exposure dose
- Compatible with Regius110HQ, Regius190 or Regius210

## PTW Normi PAS

Modular test object for quality control of digital mammography X-ray units

**Highlights**
- Checks all imaging quality parameters (high contrast, low contrast, spatial resolution, signal-to-noise ratio, dynamic range, artefacts, thoracic wall side limitation, etc.)
- Test element based on the Mammographic Accreditation Phantom of the ACR included
- Acrylic absorbers for AEC testing included

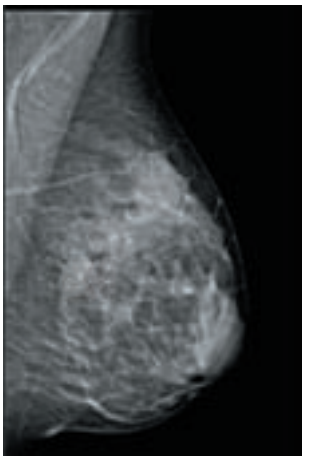
## PTW Diados E Dosemeter

High sensitive dosemeter for absolute dosimetry, acceptance testing and quality control


**Highlights**
- Measures dose, dose rate, dose/pulse, pulses, dose length product, irradiation time
- Wide dynamic measuring range
- New mammography qualities like Mo/Mo, Mo/Rh, Rh/Rh, W/Rh, W/Al, etc. available
- Data evaluation by means of the DiaControl *expert* software

## Siemens syngo MammoCAD*

**CPU** | *Dual processor Intel Xeon 3.60 HT/800, 1 MB, EM64T*



**Highlights**
- Advanced image processing capabilities with state-of-the-art pattern recognition technology
- Up to 4 DICOM input connections
- Up to 10 DICOM output connections
- CAD processing of a four-image case within less than 90 seconds
- Designed for MAMMOMAT Novation and MAMMOMAT Inspiration*

*not available in the USA

iba

GE Healthcare

HOLOGIC
Clarity Of Vision

LANDWIND MEDICAL

PHILIPS

PROVOTEC
X-RAY FROM ESPELKAMP | GERMANY

PTW

Radcal

RTI

SHIMADZU

SIEMENS

TOSHIBA

ulrich medical

# Shimadzu – Pioneers of Vision

For more than 100 years, Shimadzu has been counted among the most innovative companies in medical technology. Already 10 months after the discovery of X-rays, Shimadzu recorded the first X-ray image in Japan. To this day, the company is one of the pioneers in diagnostic imaging.

Shimadzu focused extensively on DR systems and introduced additional novel diagnostic and interventional radiology products. An essential element of Shimadzu's current product range is the safire flat-panel detector (FPD), which is based on the principle of direct conversion, and this new technology has been further developed for radiography, fluoroscopy, angiography and cardiology systems.

## Safire – groundbreaking flat-panel detector technology

The dynamic safire FPD – suitable for Radiography, Fluoroscopy as well as Angiography – offers excellent image quality with an outstanding detailed resolution.

Unlike the safire FPD indirect-conversion FPDs or conventional image intensifiers need several intermediary steps in order to generate an electrical output signal that can be digitally processed. Each of these steps deteriorates the signal-to-noise ratio and therefore the image contrast. This actual loss of information can only be compensated by a higher radiation dose.

## Reduced dose and optimized image quality

### The RSM-DSA technology

Using the RSM-DSA (Real-time Smoothed Mask DSA) technology patented by Shimadzu, DSA-typical motion artifacts (breathing, heartbeat or patient-induced movement) as well as the noise component in fluoroscopy images are significantly reduced. Multiple-bolus dosing, essential in conventional systems, is superfluous using RSM-DSA. High resolution fluoroscopy images can be generated within shorter patient examination times – all this at lower radiation doses and lower contrast agent use.

### The SUREengine

SUREengine is a real-time image processing software package for the safire flat-panel detector, specifically designed for image improvement and dose reduction. For digital data processing the frequency spectrum is first decompounded into wave bands. The noise components are then subtracted from the individual frequency bands and the image contrast is selectively increased. In order to broadly reduce blooming and to display evenly illuminated image backgrounds, the entire dynamic range is compressed. Moreover, Moiré patterns resulting from scattered radiation grids are filtered out of the original images without any loss in image quality. In this way, for instance, guide wires and catheters become much more clearly distinguishable.

### State-of-the-art diagnostic imaging technology

With the introduction of the safire technology, Shimadzu has opened the gateway to new applications such as digital tomosynthesis, slot radiography, dual-energy subtraction and CT-like imaging.

## Digital tomosynthesis

Digital tomosynthesis is the next generation development of imaging tomography. Unlike other sectional imaging techniques, tomosynthesis can also be applied to patients in an upright position. This is particularly helpful for functional and orthopedic diagnostics. The advantages of DR tomosynthesis in comparison with computer tomography are considerable. Based on the lower patient radiation dose required, this procedure is suitable especially for lung cancer screening.

### Slot radiography

During slot radiography a sequence of 5 cm wide, adjoining bands (slots) is acquired using almost closed collimator geometry and pulsed radiation, while X-ray tubes and flat-panel detector move linearly in one direction. After examination, the individual image bands are digitally reconstructed into a so-called long image (long leg/spine). Therefore, this procedure is used in scoliosis and orthopaedics examinations in order to completely map the spine or the lower extremities.

The component of the elicited image noise due to stray radiation is significantly reduced in slot radiography. The use of a grid is no longer necessary.

### Dual-Energy Subtraction

Dual-energy imaging enables fast image acquisition using alternating high and low value kV-pulses. During post processing, the resulting images are subtracted from each other and a soft-tissue image as well as bone image can be calculated after previous standardization with respect to bone or lung values. The main advantage of this procedure is the clear representation of calcifications, extremely helpful in the detection of lung nodules.

## CT-like imaging

CT-like imaging closes the gap between angiography and computer tomography systems in interventional radiology.

The digital data sets acquired during C-arm rotation can be reconstructed – similarly to computer tomography – to represent delicate three-dimensional vascular structures. In comparison with a 128-line CT, CT-like examinations using a flat-panel based C-arm can lead to resolution improvements of up to 200%, while the patient dose can be simultaneously reduced up to 90%.

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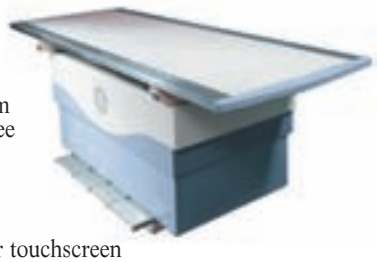
## GE Healthcare Proteus XR/a

**Design** | *3D ceiling-mounted*
**Table** | *Height adjustable*
**Power** | *50, 65, 80 kW*



**Highlights**
- Low table height 50 cm
- Foot pedal for hand free table control
- OTS with innovative user interface
- Patient coverage
- User-friendly generator touchscreen

## GE Healthcare Proteus XR/i

**Design** | *Floor-mounted*
**Table** | *Height adjustable*
**Power** | *50, 64 kW*

**Highlights**
- Very flexible positioning
- Rotatable tube stand
- Transverse tube travel
- Anatomical programs
- Tomographic option

## Landwind LWX-50P

**Design** | *Floor mounted design*
**Table** | *70cm*
**Power** | *50kW*

**Highlights**
- Wide clinical applications
- Green low dose imaging
- Electronic anatomical program function
- User friendly workflow
- Digital upgrade

## Landwind LWX-20P

**Design** | *Floor mounted design*
**Table** | *Height 67cm*
**Power** | *20kW*

**Highlights**
- Compact and reliable
- Extensive clinical applications
- Electronic anatomical program function
- Outstanding clear imaging
- Digital upgrade

## Philips BuckyDiagnost High-performance room

**Design** | *Ceiling-mounted tube carrier for standard bed exposures*
**Table** | *Fixed or hight adjustable (optional) with various table top sizes*
**Power** | *30 – 85 kW with several options*

**Highlights**
- Optional generator functionalities are AEC, APR, automatic collimation, tracking, and tomography
- Flexible, interchangeable components with a large range of tables, stands, tube carriers, tubes and generators
- Same handling and options for floor-mounted system and ceiling-mounted tube carrier
- Future-proof with digital upgrade possibilities via PCR Eleva or digital detector
- Ergonomic design enabling easy handling and near patient control

## Philips BuckyDiagnost Standard room

**Design** | *Floor-mounted system (floor, floor/wall or floor/ceiling)*
**Table** | *Fixed or hight adjustable (optional) with various table top sizes*
**Power** | *30 – 85 kW with several options*

**Highlights**
- Optional generator functionalities are AEC, APR, automatic collimation, tracking and tomography
- Flexible, interchangeable components with a large range of tables, stands, tube carriers, tubes and generators
- Same handling and options for floor-mounted system and ceiling-mounted tube carrier
- Digital upgrade possibilities via PCR Eleva or digital detector
- Ergonomic design enabling easy handling and near patient control

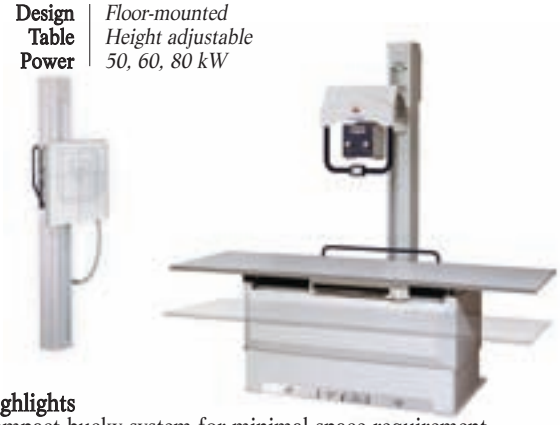
## Philips Essenta RAD

**Design** *Floor-mounted system*
**Table** *Fixed table with floating table top*
**Power** *30 or 50 kW*

**Highlights**
- Compact and reliable radiography system for a tough day's work
- Easy and intuitive to use
- Total flexibility for broad application range and flexible room layout

## Provotec PRS 500 ES

**Design** *Floor-mounted*
**Table** *Height adjustable*
**Power** *50, 60, 80 kW*



**Highlights**
- Compact bucky system for minimal space requirement
- 50 kW ProVario 50 generator integrated into the table
- Elevating and floating table top
- Automatic coupling device to center tube and bucky
- Including wall bucky stand

## Provotec PRS 500

**Design** *Floor-mounted*
**Table** *Fixed height*
**Power** *50 kW*

**Highlights**
- Compact bucky system for minimal space requirement
- 50 kW ProVario 50 generator integrated into the table
- Anatomical programs and AEC
- Automatic coupling device to center tube and bucky
- Including wall bucky stand

## Provotec Prognost XPE

**Design** *Movable*
**Table** *Height adjustable*
**Power** *Line or battery*

**Highlights**
- Mobile to position the patient directly above the corresponding image receptor
- For digital DR detectors or with bucky tray integrated
- Elevating and floating cabon fibre table top
- Line connection or battery powered

## Provotec ProStar FS

**Design** *Open design Floor-mounted*
**Table** *Compact, modular, economic*
**Power** *Line 230 Vac, 50/60 Hz*

**Highlights**
- Bucky table with different sizes of floating table tops
- Elevating or fixed height versions
- Open design with large space suitable for different image receptors like Bucky for analogue and CR cassettes or for housings for DR-Detector Systems
- Tube column and Bucky/Detector are linked via an automatic clutch which means X-ray unit and Bucky are centred all the time

## Shimadzu RADspeed series

**Design** *Floor-mounted or ceiling-mounted X-ray tube assembly*
**Table** *Motorised height adjustable*
**Power** *50 / 65 / 80 kW*

**Highlights**
- Parameter setting next to the patient
- Up to 400 application programs
- Auto-positioning function
- Automatic tracking functions
- Flat-panel detector upgradability

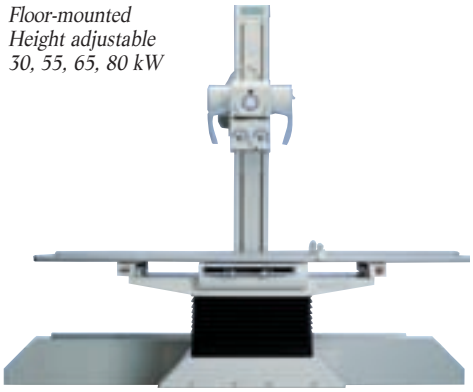
## Siemens Multix Swing

**Design** *Floor-mounted*
**Table** *Weight capacity of 450 kg*
**Power** *30 or 55 kW*

**Highlights**
- Cost-efficient, all-in-one X-ray room solution
- Generator is integrated into the table for minimal space requirements
- Floating tabletop with weight capacity of up to 450 kg
- Synchronized tube and bucky tray movements
- Tube can be rotated for cross-table exposures

## Siemens Multix Pro

**Design** *Floor-mounted*
**Table** *Height adjustable*
**Power** *30, 55, 65, 80 kW*



**Highlights**
- Conventional radiography solution with integrated X-ray tube
- Robust and easy-to-use, accommodating a wide range of clinical imaging
- Wide range of tabletop movements with table height adjustments
- Automatic exposure control

## Siemens Multix Top

**Design** *3D-ceiling-mounted*
**Table** *Height adjustable*
**Power** *30, 55, 65, 80 kW*

**Highlights**
- Ceiling-mounted, conventional radiography solution
- Robust and a real workhorse, suitable for high-throughput radiography rooms
- Easy, colour-coded ceiling tube handling
- TOP alignment of x-ray field for dose reduction during chest examinations
- Upgradeable to flat detector technology

## Toshiba Radrex-I

| | | |
|---|---|---|
| **Design** | *Ceiling mounted Dual Panel System 2x fixed FPD* | *Ceiling mounted Single Panel System 1 portable FPD* |
| **Power** | *80 kW* | *80 kW* |

**Highlights**
- Easy Operation for high throughput
- In Room Image Review
- Big size OTC Interface for easy Operation
- Automated FollowME Concept e.g. Auto Tracking, -processing, -image distribution, -image stitching, etc.
- Full Dicom functionalities included
- Optional wired portable FPD

# R/F SYSTEMS MOBILE

## GE Healthcare AMX 4+

**Power** *12.5 kW*
**kV Range** *50 – 125*
**mAs Range** *0.4 – 320*

**Highlights**
- High usable battery power storage
- Wide mAs range for variety of applications
- Unique column rotation
- AEC for consistent image quality
- Excellent maneuverability with motor drive

## GE Healthcare TMX+ / TMX R+

| | **TMX R+** | **TMX+** |
|---|---|---|
| **Power** | *30 kW* | *30 kW* |
| **kV Range** | *40 – 125* | *40 – 125* |
| **mAs Range** | *0.2 – 220* | *0.2 – 220* |

**Highlights**
- Powerful system for variety of applications
- Anatomic programs
- Dose level selection
- Dual focal spot: 0.8 and 1.3 mm
- TMX R+: column rotation for easy positioning

## Philips Practix Convenio

| | |
|---|---|
| **Power** | *30 kW* |
| **kV Range** | *40 – 125* |
| **mAs Range** | *0.63 – 320 (large focal spot)*<br>*0.1 – 200 (small focal spot)* |

**Highlights**
- Robust electrical and technical concept with swiveling column and telescopic tube arm
- Powerful motor drive for outstanding maneuverability on the spot, on ramps and over obstacles
- Long-life batteries due to intelligent single charging management
- Ergonomic design and intuitive user guidance – winner of the iF and the I.D. design award 2006
- Digital with Philips Computed Radiography and UNIQUE image processing

## Philips Practix 160

| | |
|---|---|
| **Power** | *16 kW* |
| **kV Range** | *40 – 125* |
| **mAs Range** | *0.2 – 200* |

**Highlights**
- Brilliant at routine work, including thorax in intensive care and recovery rooms
- Very low weight combined with high maneuverability including side travel capability
- Microprocessor-controlled 16 kW x-ray converter generator

## Philips Practix 33 plus

| | |
|---|---|
| **Power** | *3.3 kW* |
| **kV Range** | *40 – 110* |
| **mAs Range** | *0.2 – 250* |

**Highlights**
- Cost-effective solution for all basic needs in plaster rooms and healthcare programs
- Small and solid workhorse for rough environments
- Easy handling, high system reliability and wide application range
- Microprocessor-controlled 3.3 kW x-ray converter generator

## Shimadzu MobileArt Evolution

| | |
|---|---|
| **Power** | *32 kW (12.5 kW)* |
| **kV Range** | *40 – 133 (125)* |
| **mAs Range** | *0.32 – 320* |

**Highlights**
- Superb image quality
- Easy handling
- User-friendly operation
- Sophisticated radiographic functions
- Flat-panel detector upgradability

## Shimadzu MobileArt eco

| | |
|---|---|
| **Power** | *12.5 kW* |
| **kV Range** | *40 – 125* |
| **mAs Range** | *0.32 – 100 (200)* |

**Highlights**
- Telescopic arm
- Easy positioning
- Wide coverage
- Compact design

## Siemens Polymobil

| | **POLYMOBIL III** | **POLYMOBIL Plus** |
|---|---|---|
| **Power** | *2.5 kW* | *16 kW* |
| **kV Range** | *40 – 100* | *40 – 125* |
| **mAs Range** | *0.32 – 200* | *0.5 – 250* |

**Highlights**
- Lightweight
- Minimum exposure time 4 ms for reduced motion artifacts
- Touchscreen keys and digital display for easy and quick settings
- Adjustable collimator
- Compact design

## Siemens Mobilett Family

**MOBILETT XP**

| | |
|---|---|
| **Power** | *30 kW, 450 mA (max.)* |
| **kV Range** | *40 – 133* |
| **mAs Range** | *0.32 – 200* |

**MOBILETT XP Hybrid**

| | |
|---|---|
| **Power** | *30 kW, 450 mA (max.)* |
| **kV Range** | *40 – 133* |
| **mAs Range** | *0.32 – 360* |

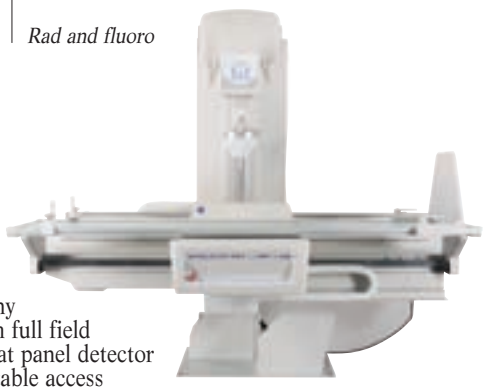
**MOBILETT XP Eco**

| | |
|---|---|
| **Power** | *20 kW, 400 mA (max.)* |
| **kV Range** | *40 – 125* |
| **mAs Range** | *0.5 – 125* |

**Highlights**
- Self-calibrating high image output with up to 30 kW and 360 mAs
- Extremely short exposure time as low as 1 ms
- Optimal for semi-sterile environments such as ICU, neonatal and pediatric departments
- Lightest system in its class, offers outstanding maneuverability
- Supports a wide range of applications

## Apelem Baccara dRF43

| | |
|---|---|
| **Design** | *Remote controlled table with dynamic flat panel detector* |
| **II-format** | |
| **Image system** | *Rad and fluoro* |



**Highlights**
- Tomography
- 43 x 43 cm full field dynamic flat panel detector
- Very easy table access
- Real-time fluoroscopy for GI procedures and DSA applications
- Ideal for diagnostic and interventional RAD
- Fully DICOM 3 compliant with RIS and APR workflow optimization

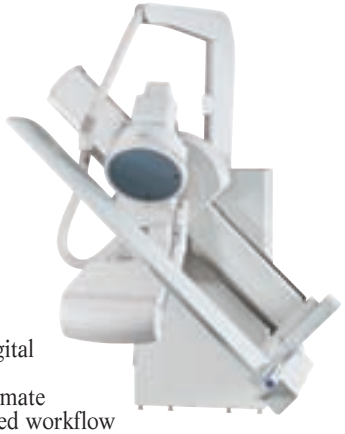
## Apelem Baccara 90/20 – 90/25 remote controlled table

| | |
|---|---|
| **Design** | *Remote controlled table* |
| **II-format** | *9" to 16"* |
| **Image system** | *Digital imaging system R/F* |

**Highlights**
- User-friendly, compact & ergonomic
- Fix height or elevating
- Tomography
- Image intensifier from 9” to 16” with optional 1024 x 1024 digital R/F
- Upgradable with the new dRf43 dynamic flat panel detector

## Apelem Unix+

| | |
|---|---|
| **Design** | *Multipurpose digital c-arm table* |
| **II-format** | *9" to 16"* |
| **Image system** | *1024 x 1024 x 12 bits digital imaging system* |



**Highlights**
- Full range of R/F, interventional RAD and angiography
- Versatility and fast auto positioning exams
- 1024 x 1024 x 12 bits digital imaging system
- Compact system with ultimate customization for increased workflow
- Dose reduction

## GE Healthcare Precision RXi

| | |
|---|---|
| **Design** | *Remote controlled R+F system* |
| **II-format** | *32 or 40 cm* |
| **Image system** | *1024 x 1024, 12 bit CCD* |

**Highlights**
- Extended patient coverage
- Efficient dose management
- High resolution image chain
- Digital system tailored to customer needs
- Seamless digital workflow

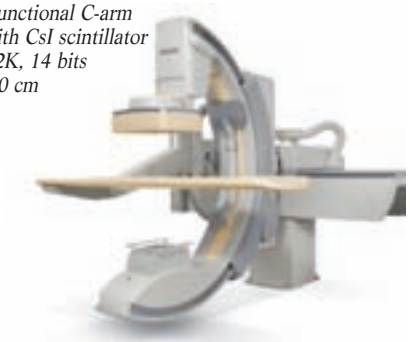
## GE Healthcare Precision 500D

**Design** | *Nearby controlled R+F System*
**II-format** | *32 or 40 cm*
**Image system** | *1024 x 1024, 12 bit CCD*

### Highlights
- AutoEx – fully parameter optimization
- Efficient dose management
- High resolution image chain
- Innovative user interface
- Seamless digital workflow

## Philips MultiDiagnost Eleva FD with 3D-RX (optional)

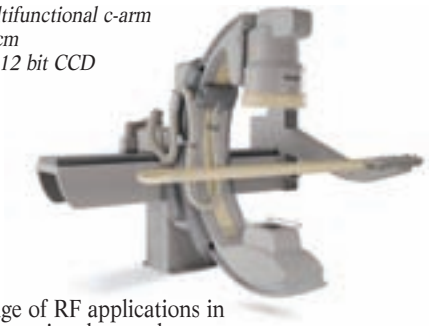
**Design** | *Multifunctional C-arm*
**Detector** | *a-Si with CsI scintillator*
**Resolution** | *up to 2K, 14 bits*
**Size** | *30 x 40 cm*



### Highlights
- Covers a broad range of applications from RF, orthopedics up to interventional and vascular exams
- Easily absorbs changes in application mix
- 3D-RX providing excellent anatomical insight and which is unique under weightbearing conditions'
- Proven scan principle with c-arm moving around the patients
- 180 degree isocentric c-arm rotation increases projection flexibility

## Philips MultiDiagnost Eleva

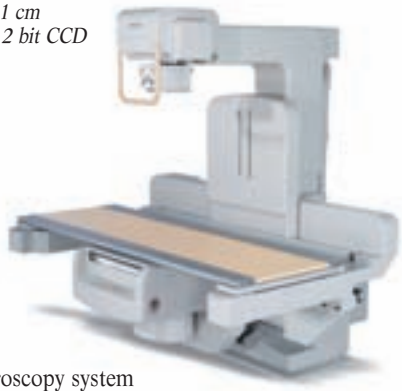
**Design** | *Multifunctional c-arm*
**II-format** | *38 cm*
**Image system** | *1k, 12 bit CCD*



### Highlights
- Covers broad range of RF applications in vascular and interventional procedures
- Easily absorbs changes in application mix and adds to departmental efficiency as overflow system for dedicated rooms
- Offers ultimate customization by adjusting the system to preferences
- Proven scan principle with c-arm moving around the patients
- 180 degree isocentric c-arm rotation increases projection flexibility

## Philips Essenta RC

**Design** | *Remote controlled system*
**II-format** | *23/31 cm*
**Image system** | *1k, 12 bit CCD*



### Highlights
- All-you need fluoroscopy system that covers a comprehensive range of applications
- Offers also nearby controlled functionality
- Excellent price-performance ratio
- Workflow integration with RIS capability and APR
- Seamless integration into DICOM network

## Philips Juno DRF

**Technology** | *CsI-Scintillator*
**Resolution** | *Matrix: 2880 x 2881, Pixel size: 148 µm*
**Size** | *43 cm x 43 cm*

### Highlights
- 2-in-1 system for digital radiography and fluoroscopy which enables you to perform a wide range of digital X-ray applications
- Patient capacity up to 284 kg in all movements combined with a large table top size allows for bariatric examinations
- Exams on the table with Source Image Distance (SID) of 180 cm
- Minimum table top height of 62 cm facilitates easy transfer and positioning of patients
- Scan range of 203 cm without table top movement enables examinations without repositioning for increased patient comfort

## Philips DuoDiagnost

**Design** | *Free arm system*
**II-format** | *23/31/38 cm*
**Image system** | *1k*

### Highlights
- Unique design that provides both radiography and fluoroscopy in one system
- Detachable tube arm for maximum flexibility
- Compact design that allows it to be installed in small rooms
- Digital version of DuoDiagnost provides all benefits of digital technology: time, cost and dose savings
- Seamless integration into DICOM network

## Philips EasyDiagnost Eleva

**Design** *Nearby controlled system*
**II-format** *23/31/38 cm*
**Image system** *1k, 12 bit CCD*

**Highlights**
- Intelligent design offering work environment with top of the line convenience
- EasyLat – unique fold-out cassette holder
- Comprehensive dose management
- Up to 250 kg table load covering all types of patients
- Eleva concept offers ultimate customization by adjusting system to preferences

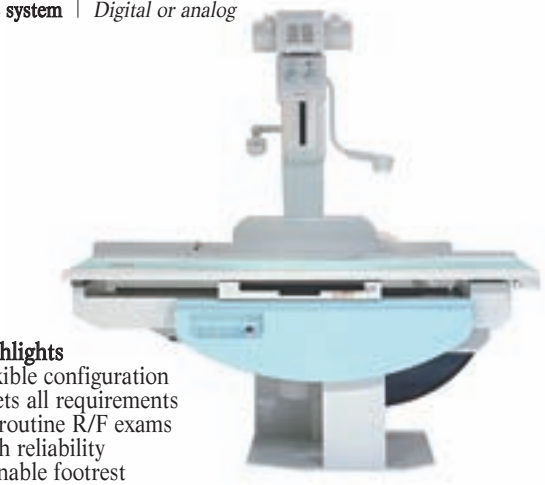
## Shimadzu Fluorospeed 300

**Design** *90/90 Digital local R/F table*
**II-format** *16" and 12"*
**Image system** *Digital*

**Highlights**
- High performance
- GI to angiographic studies
- High image quality
- High reliability
- High throughput

## Shimadzu Flexavision series

**Design** *90/30 Digital or analog local R/F table*
**II-format** *12" and 9"*
**Image system** *Digital or analog*



**Highlights**
- Flexible configuration
- Meets all requirements for routine R/F exams
- High reliability
- Turnable footrest

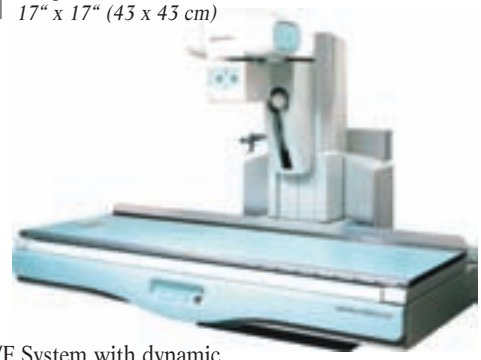
## Shimadzu Sonialvision Versa series

**Design** *Universal remote R/F table*
**II-format** *12" and 16"*
**Image system** *Digital*

**Highlights**
- 1 Megapixel CCD camera
- Proven reliability
- Perfect design
- Large storage capacity

## Shimadzu Sonialvision safire

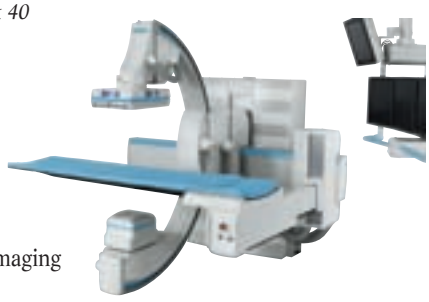
**Detector** *Direct-conversion flat-panel detector (a-Se)*
**Resolution** *3.3 lp/mm*
**Size** *17" x 17" (43 x 43 cm)*



**Highlights**
- Premium R/F System with dynamic direct-conversion flat-panel detector
- wide range of functions:
- Digital tomosynthesis
- Dual energy subraction
- Slot radiography

## Siemens Artis zee multi-purpose

**Design** *Multi-purpose flat detector fluoroscopy and angiography system*
**Detector** *2k a-Si with CsI scintillator*
**Resolution** *1920 x 2480 pixel, 3.25 lp/mm*
**Size** *30 x 40*



**Highlights**
- 3D applications
- New multi-host imaging system
- Right or left side suspension for endoscopic applications
- 2k-acquisition available
- New ergonomic system controls for smooth table-side operation
- Undertable/overtable positioning
- Full in-room-control (on trolley)
- Remote controls for room operation available

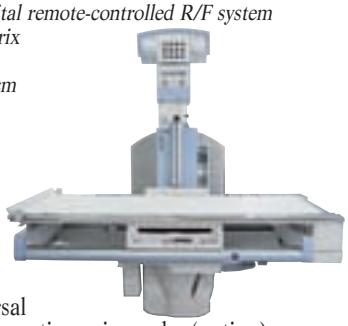
## Siemens Axiom Iconos MD

**Design** *Digital remote-controlled R/F system*
**Technology** *1 k x 1 k matrix*
**Resolution**
**II-format** *33 cm*
**Image system**
**Size**

### Highlights
- Complete patient coverage with 8-way tabletop travel and large receptor movements
- Single-handed cassette handling: automatic loading, centering, format sensing and collimation
- FLUOROSPOT Compact high-resolution digital imaging system with intuitive user interface and DICOM 3.0 interfaces
- Seamless integration into DICOM network
- Dose-saving fluoroscopy with SUPERVISION (option)
- Bucky wall stand (option)

## Siemens Axiom Iconos R200

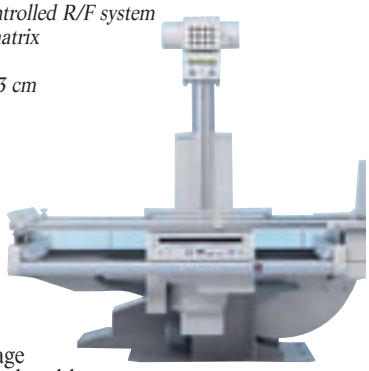
**Design** *Universal digital remote-controlled R/F system*
**Technology** *1 k x 1 k matrix*
**Resolution**
**II-format** *33 cm or 40 cm*
**Image system**
**Size**



### Highlights
- Modular design for universal applications including diagnostic angiography (option)
- Complete patient coverage with 8-way tabletop travel and large receptor movements
- Single-handed cassette handling: automatic loading, centering, format sensing and collimation
- FLUOROSPOT Compact high-resolution digital imaging system with intuitive user interface and DICOM 3.0 interfaces
- Seamless integration into DICOM network
- Comprehensive CARE dose reduction package

## Siemens Luminos RF Classic

**Design** *Remote-controlled R/F system*
**Technology** *1 k x 1 k matrix*
**Resolution**
**II-format** *23 cm or 33 cm*
**Image system**
**Size**



### Highlights
- Complete patient coverage with 8-way tabletop travel and large receptor movements
- Single-handed cassette handling: automatic loading, centering, format sensing and collimation
- Intuitive and fast operation with innovative control console
- Dose-saving fluoroscopy with SUPERVISION (Option)
- Bucky wall stand (Option)
- Excellent price-performance ratio

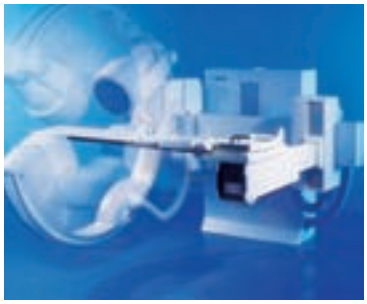
## Siemens Axiom Luminos TF

**Design** *Digital tableside controlled R/F system*
**Technology** *1 k x 1 k matrix*
**Resolution**
**II-format** *33 cm or 40 cm*
**Image system**
**Size**

### Highlights
- One digital system for fluoroscopy and radiography from pediatrics to bariatrics
- Open design to accommodate bariatric patients up to 272 kg
- Ergonomic single-handed system operation with OPTI Grip handle
- FLUOROSPOT Compact high-resolution digital imaging system with intuitive user interface and DICOM 3.0 interfaces
- Comprehensive CARE dose reduction package
- Mobile flat detector (option) for fully digital radiography workflow

## Siemens Axiom Artis U

**Design** *Universal, floor-mounted*
**II-format** *23 cm or 33 cm*
**Image system** *1024 x 1024 pixel, 12 bit-CCD*



### Highlights
- High-power output for excellent image quality
- High heat capacity x-ray tube virtually eliminates overheating issues
- Compact and »room-mobile« design
- Broad application spectrum
- Excellent price-performance ratio

## Siemens Axiom Luminos *d*RF

**Design** *Remote-controlled 2-in-1 system with dynamic flat detector*
**Technology** *Amorphous-Silicon with Cesium Iodide scintillator*
**Resolution** *Up to 3.4 lp/mm*
**II-format**
**Image system**
**Size** *43 cm x 43 cm*

### Highlights
- Fully digital 2-in-1 solution for dynamic and static high-resolution imaging including DSA procedures (option)
- Easy patient transfer at 48 cm lowest table height
- Dynamic Density Optimization (DDO) and DiamondView Plus for excellent detail contrast
- FLUOROSPOT Compact high-resolution digital imaging system with intuitive user interface and DICOM 3.0 interfaces
- Comprehensive CARE dose reduction package
- Limitless projection flexibility with optional ceiling-suspended tube and wireless detector wi-D

### Toshiba Ultimax-I

**Design** *Multifunctional C-arm, table*
**Detector** *43 x 43 cm*
**Technique** *RF; DA, DSA*

**Highlights**
- Complete clinical flexibility
- New Harmony User Interface
- Full anatomical coverage
- Stepping DSA
- Easy and quick handling
- Full range of Dose optimization techniques

### Toshiba Zexira

**Design** *True 2 in 1 System for fluoroscopy and radiography*
**Detector** *43 x43 cm*

**Highlights**
- Full clinical flexibility: G.I; Venography; Urology; ERCP; Angiography; Radiography, Oblique Imaging, etc.
- Easy Userinterface
- Full patient coverage
- Full range of Dose optimization techniques

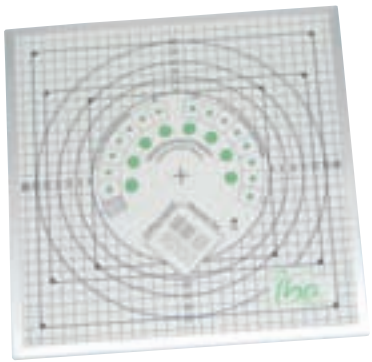
## R/F SYSTEMS ACCESSORIES

### Hologic Discovery™ bone densitometer

**Highlights**
- Accurate and precise bone density measurements of the spine, hip, whole body and forearm
- Provides the industry's highest resolution vertebral imaging which dramatically improves the detection of vertebral fractures
- Vertebral imaging (IVA-HD) capability can also be used for the assessment of aortic calcification, a significant indicator of heart disease

### IBA Dosimetry Primus

Test device for checking image quality parameters at fluoroscopic units



**Highlights**
- Modular construction: structural plate and separated attenuator
- Check of spatial and contrast resolution, size of the radiation field, artefacts; kV test area
- Compact Al pre-attenuator or PMMA and Cu plates
- Available in two different sizes

### IBA Dosimetry DIGI-13

Test device for checking image quality parameters at digital radiographic units

**Highlights**
- Compact device with separated Al pre-attenuator
- With integrated copper plate
- Check of homogeneity, spatial and contrast resolution, size of the radiation field, artefacts
- Easy-to-use

### IBA Multimeter MagicMax

Simultaneous measurement of dose, dose rate, exposure time, kV, dose/pulse, pulse rate, HVL and total filtration

**Highlights**
- Small device with separate multifunction detector
- Connected via USB to PC or Notebook
- Intuitive use via PC interface
- Time resolution: 100 µs
- Optimized solutions for all applications

## Provotec ProVario Screen

**Design** *Power unit floor-mounted*
**Table** *Control console placed on a desk*
**Power** *50 kW*

### Highlights
- High frequency generator for x-ray diagnostic
- Easy operation by monitor – or touchscreen
- Digital control of nearly unlimited organ programs
- Safety device against undue radiation for each organ with AEC-technique
- X-ray book for storing patient name with generator exposure data
- Upgradeable for using CR- and DR-systems

## PTW Diamentor CM

Miniature dose area product (DAP) meter for patient dosimetry and quality control

### Highlights
- Compact solution - ideal for integration in mobile units
- Built-in test function for fast calibration and constancy checks
- Easy connection to a RIS or PACS

## Radcal ACCU-PRO™

X-Ray Analyzer
Simultaneous dose, rate, time, kVp. HVL, filtration, mA/mAs, and more

### Highlights
- Use for manufacturing, installation, QA, and service
- R/F, mammography, CT, dental, leakage
- Ion chamber based dosimetry, no corrections required
- Correctly measure AEC fluoro and filtered beams
- Remote control, waveforms, and archiving with XLPRO software
- Compact, easy to use

## Radcal RAPIDOSE

PC X-ray Analyzer

### Highlights
- Plug into a laptop USB port for an inexpensive X-ray analyzer
- Simultaneous dose, rate, kVp, time, HVL, waveforms, and more
- Revolutionary inherent remote measurement operation
- Easy use, genuine time saver
- Data archiving and analysis using your Excel

## Radcal PDC-DAP/KAP verification meter

### Highlights
- Newly patented Patient Dose Calibrator
- Use to calibrate DAP/KAP and rate
- Also measures dose and rate
- Optical and radiographic alignment markers
- Simple to use with optional computer control

## RTI Electronics Piranha

*The Piranha is designed as a truly self-contained, all-in-one, X-ray multi-function meter that assures accurate results in one shot. kV, time, dose, dose rate, HVL and total filtration*

### Highlights
- Self-Contained, All-in-One
- Auto-Compensation
- R&F, Mammo, Dental and CT
- Quick and Simple Set-up
- Enhanced Graphical Display
- Built-In Bluetooth for PC and PDA
- mA, mAs, and Light Probes
- Fits in the Palm of Your Hand

## RTI Electronics Barracuada

*The Barracuda X-ray multimeter has a cabinet that can house up to six different application modules, and can measure on all modalities; R/F, mammography, flouroscopy, pulsed flouroscopy, dental, panoramic dental and CT systems*


**Highlights**
- All in One, All at Once
- Auto-Compensation
- Enhanced Graphical PDA Display
- R&F, Mammo, Dental and CT
- Ionization Chambers
- Built-In Bluetooth for PC and PDA
- mAs, and Light Probes
- Fits in the Palm of Your Hand

## ulrich medical – $CO_2$ Insufflator for virtual colonoscopy

| | |
|---|---|
| **Pressure** | *0-30 mmHG, infinitely variable, preselectable* |
| **Insufflation rate** | *1-4 l/min, arbitrary* |
| **Setting** | *supported by voice confirmation system* |

**Highlights**
- Automatic insufflation of $CO_2$ into the colon for virtual colonoscopy examinations in CT
- Significant improvement of diagnostic results compared to manual room air insufflation
- Increase of patient comfort due to automatic adjustment of over pressure and faster resorption
- Easy setting of gas volume and pressure
- Display of gas consumption
- Four adjustable flow rates

# World's First Purpose-built Direct Digital RSA X-Ray System

## opened by Susan Hampshire OBE

A pioneering orthopaedic research direct Digital Radiography system (dDR), the 'Adora RSA', has been officially opened by actress, author and osteoporosis campaigner Susan Hampshire OBE at Aberdeen University.

Xograph Healthcare, the leading independent supplier of diagnostic imaging equipment in the UK and Republic of Ireland helped facilitate the design and construction of this state-of the-art system through collaboration with Aberdeen University, Danish manufacturer Nordisk Røntgen Teknik and market-leading direct Digital Radiography pioneer Canon Inc.

During her visit, Susan Hampshire spoke to members of staff at Aberdeen University and listened intently as they discussed how 'Adora RSA' will greatly assist researchers performing radiostereometric analysis (RSA). This technique is a precise method for determining the migration and wear of orthopaedic implants such as hip and other joint replacements. Two simultaneous X-rays exposures are performed with images being captured on flat panel Canon dDR detectors. The resulting images are analysed using software, developed by specialists at the University, which determines the three-dimensional movements of parts of the body, such as bone fracture components, in relation to one another, or a surgical implant in relation to the host anatomy. The information gathered from RSA demonstrates precisely how much positional change has occurred for example since implantation of a prosthesis. This may help predict how long implants will last. RSA will also benefit future patients by providing important data to help researchers improve joint replacement technology and surgery.

'Adora RSA', tailored to Aberdeen university researchers exacting requirements, is causing quite a stir in the field of radiostereometric analysis and other pioneering authorities in this area of research have expressed an interest in visiting this revolutionary new system for themselves. Whilst other specialist RSA centres are using more traditional forms of technology, Aberdeen University is the world's first that uses a purpose-built direct digital RSA imaging technology generating high quality digital images that can be viewed just three seconds after exposure. Now, leading researchers at Aberdeen will be able to gain faster results leading to earlier conclusions that will enable more accurate assessment in the healing of broken bones and joint replacement surgery. This in turn will improve the effectiveness of other research and clinical investigations.

For more information please contact our representatives in UK:
**Xograph Healthcare Ltd**
Hampton Street · Tetbury
Gloucestershire · GL8 8LD · UK
Tel: +44 (0)1666 501501
Fax: +44 (0)1666 501502
canon@xograph.com

## Agfa HealthCare DX-S

**Slots** | *1*
**Capacity** | *Up to 130 plates/h*
**Resolution** | *50 µm*


**Highlights**
- High throughput decentralized digitizer, resulting from two major technology shifts (DirectriX and Scanhead)
- Bridges the gap between CR and DR, offering the best of both worlds
- Precision image quality
- Dose reduction
- Broad range of applications: general radiography, pediatrics and emergency

## Agfa HealthCare CR 85-X

**Slots** | *1 – 10 cassettes: drop and go buffer*
**Capacity** | *112 plates/h*
**Resolution** | *50 – 100 – 150 µm*


**Highlights**
- Multi-user digitizer for centralized use
- Unique drop and go buffer system
- Broad range of applications: mammography (outside US), orthopedics, dentistry, pediatrics, general radiography

## Agfa HealthCare CR 35-X

**Slots** | *1*
**Capacity** | *Up to 71 plates/h*
**Resolution** | *50 – 100 – 150 µm*


**Highlights**
- Multi application digitizer
- Ideal for decentralized environments
- Broad range of applications: radiotherapy, mammography diagnostic and screening (outside US), orthopedics, dentistry, pediatrics, general radiography
- Three different resolution modes

## Agfa HealthCare CR 30-X

**Slots** | *1*
**Capacity** | *Up to 82 plates/h*
**Resolution** | *10 pixel/mm*


**Highlights**
- Tabletop digitizers
- Broad range of applications: general radiology, orthopedics, chiropractic, dentistry
- Low total cost of ownership
- Mobile use

## Agfa HealthCare DX-G

**Slots** | *1-5 cassettes: drop and go buffer*
**Capacity** | *Approx. 83 plates per hour (35x43cm cassette)*
**Resolution** | *6.7-10 pixels/mm*

**Highlights**
- Allows use of both standard phosphor plates and needle-based detectors
- Has the potential for dose reduction for all studies – particularly neonatology and pediatrics
- High throughput, delivered by a unique five cassette drop-and-go buffer, and a very fast preview.
- Housed in a compact system
- Provided with intuitive NX workstation with the gold standard image software,MUSICA2

## Agfa HealthCare DX-M

**Slots** | *1-5 cassettes: drop and go buffer*
**Capacity** | *Approx. 83 plates per hour (35x43cm cassette)*
**Resolution** | *6.7-20 pixels/mm*


**Highlights**
- Allows use of both standard phosphor plates and needle-based detectors
- Able to read NIP for Mammography requirements as well as NIP for general radiography
- High throughput, delivered by a unique five cassette drop-and-go buffer and a very fast preview
- Dedicated mammography needle-based detector and compatible with existing breast imaging modalities
- Provided with intuitive NX workstation with the gold standard image software MUSICA2

## Fujifilm FCR Profect CS

**Slots** 4
**Capacity** 165 Imaging plates (IPs)/h
**Resolution** 5 – 20 pixel/mm

**Highlights**
- EUREF & PAS 1054 compliant
- First mammography CR system approved by FDA
- Fastest mammography system available
- 50 µm
- Needs 30% less dosage for pediatric exams
- Worldwide more than 5.000 FCR Profect installed

## Fujifilm FCR XG5000

**Slots** 4
**Capacity** 165 Imaging plates (IPs)/h
**Resolution** 5 – 10 pixel/mm

**Highlights**
- Worldwide more than 70.000 Fujifilm CR systems installed
- Universal applicable
- IHE certified
- Wide dynamic range
- Optimized workflow

## Fujifilm FCR Profect One

**Slots** 1
**Capacity** 85 Imaging plates (IPs)/h
**Resolution** 5 – 20 pixel/mm

**Highlights**
- EUREF & PAS 1054 compliant
- First mammography CR system approved by FDA
- Needs 30% less dosage for pediatric exams
- Compact system

## Fujifilm FCR Capsula X / XL II

**Slots** 1
**Capacity** 72/94 Imaging plates (IPs)/h
**Resolution** 5 – 10 pixel/mm

**Highlights**
- Extremely compact system, mobile model available
- IHE certified
- Universal applicable, wide dynamic range
- Ideal for medium radiologists (e.g. orthopedic doctors)
- Optimized workflow

## Fujifilm FCR Prima

**Slots** 1
**Capacity** up to 29 (IPs)/h
**Resolution** 10 pixel/mm

**Highlights**
- Seamless image and patient data workflow
- Efficient use of space in examination room
- Compact and quiet, Footprint 0,24 m²
- All-in-one workstation: Console, Viewer, Archive
- Value for money

## Konica Minolta Regius 190 HPS$^{MAMMO}$

**Slots** 4
**Capacity** 188 plates/h (14"x 14", 175 µm)
**Resolution** 175 µm/87,5 µm/43.75 µm

**Highlights**
- Innovative technology and modern design
- Simultaneous reading of 2 cassettes
- High throughput performance
- High resolution mammo mode 43.75 µm for mammo cassettes
- Normal & high quality mode for all standard cassettes (175 µm/87.5 µm)

## Konica Minolta Regius 190MAMMO

| | |
|---|---|
| Slots | *2* |
| Capacity | *94 plates/h (14"x 14", 175 µm)* |
| Resolution | *175 µm/87.5 µm/43.75 µm* |

**Highlights**
- Innovative technology and modern design
- High resolution mammo mode 43.75 µm for mammo cassettes
- Flexible workflow integration
- Normal & high quality mode for all standard cassettes (175 µm/87.5 µm)

## Konica Minolta Regius 190

| | |
|---|---|
| Slots | *2* |
| Capacity | *94 plates/h (14"x 14", 175 µm)* |
| Resolution | *175 µm/87.5 µm/43.75 µm* |

**Highlights**
- Innovative technology and modern design
- Flexible workflow integration
- Normal & high quality mode for all cassettes (175 µm/87.5 µm)

## Konica Minolta Regius 110

| | |
|---|---|
| Slots | *1* |
| Capacity | *80 screens/h (14 x 14 cm)* |
| Resolution | *175 µm/87.5 µm/ 6 – 11 pixel/mm* |


**Highlights**
- Very compact and flexible design
- Normal & high quality mode for all cassettes (175 µm/87.5 µm)
- Integration in Regius 190 network
- Cost efficient CR solution

## Konica Minolta Regius 110HQ

| | |
|---|---|
| Slots | *1* |
| Capacity | *80 plates/h (14" x 14", 175 µm)* |
| Resolution | *175 µm/87.5 µm/43.75 µm* |

**Highlights**
- Powerful, compact reader with linear motor technology
- High quality Mammography read function
- Easy operability and maintenance
- Use with standard cassettes and/or CP-1M

## Konica Minolta Regius 210

| | |
|---|---|
| Slots | *2* |
| Capacity | *100 plates/h (14" x 14", 175 µm)* |
| Resolution | *175 µm/87.5 µm/43.75 µm* |

**Highlights**
- High performance dual bay reader
- Outstanding image quality in both general X-ray and Mammography
- Low dose imaging for Pediatric use
- Use with standard cassettes and crystal column cassettes (CP-1M, CP-1S)

## Philips PCR Eleva CosimaX

| | |
|---|---|
| Slots | *4* |
| Capacity | *165 cassettes/h (18 x 24 cm, standard readout)*<br>*80 cassettes/h (18 x 24 cm, dual-side readout)* |
| Resolution | *5 – 10 pixel/mm;*<br>*20 pixel/mm with dual-side reading for HR-BD and ST-BD cassettes* |

**Highlights**
- Customizable Eleva User Interface combined with superb image quality by UNIQUE image processing
- Features simultaneous dual-side reading for 18x24 and 24x30 imaging plates
- 40% increase of DQE and enabling high-resolution imaging like mammography (HR-BD cassettes/plates)
- Low-dose imaging for pediatrics (ST-BD cassettes/plates)
- Dedicated for mammography or pediatrics environments
- Orthopedic automatic image stitching

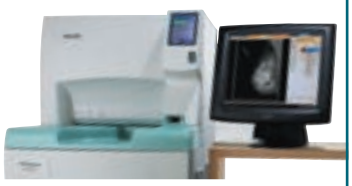
## Philips PCR Eleva Corado

| | |
|---|---|
| Slots | *4* |
| Capacity | *165 cassettes/h (18 x 24 cm) 143 cassettes/h (35 x 35 cm, in high-speed mode)* |
| Resolution | *10 pixel/mm, 5 pixel/mm in high-speed mode* |

**Highlights**
- Customizable Eleva User Interface combined with superb image quality by UNIQUE image processing
- High-throughput, multi-slot system, for environments using a central reader set-up
- For general radiographic applications including orthopedics
- Orthopedic automatic image stitching

## Philips PCR Eleva S Hi-res

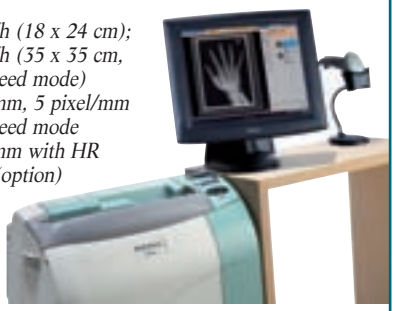
| | |
|---|---|
| Slots | *1* |
| Capacity | *94 plates/h (18 x 24 cm, standard readout) 52 plates/h (18 x 24 cm, dual-side readout* |
| Resolution | *5 – 10 pixel/mm; 20 pixel/mm with dual-side reading for HR-BD and ST-BD cassettes* |



**Highlights**
- Customizable Eleva User Interface combined with superb image quality by UNIQUE image processing
- Features simultaneous dual-side reading for 18x24 and 24x30 imaging plates
- 40% increase of DQE and enabling high-resolution imaging like mammography (HR-BD cassettes/plates)
- Low-dose imaging for pediatrics (ST-BD cassettes/plates)
- Orthopedic automatic image stitching

## Philips PCR Eleva S Plus

| | |
|---|---|
| Slots | *1* |
| Capacity | *97 plates/h (18 x 24 cm); 94 plates/h (35 x 35 cm, in high-speed mode)* |
| Resolution | *10 pixel/mm, 5 pixel/mm in high-speed mode 20 pixel/mm with HR cassettes (option)* |



**Highlights**
- Customizable Eleva User Interface combined with superb image quality by UNIQUE image processing
- For environments with high throughput requirements
- For general applications, including orthopedic and dental applications
- Faster read-out than S reader with high speed mode
- Smaller footprint and dimensions
- 50 micron scanning option
- Orthopedic automatic image stitching

## Philips PCR Eleva S

| | |
|---|---|
| Slots | *1* |
| Capacity | *78 plates/h (18 x 24 cm)* |
| Resolution | *10 pixel/mm* |

**Highlights**
- Customizable Eleva User Interface combined with superb image quality by UNIQUE image processing
- Suitable in environments with moderate performance requirements and/or decentral reader set-up
- For general applications, including orthopedic and dental applications
- Smaller footprint and dimensions
- Orthopedic automatic image stitching

## Protec Proscan 35E CR-System

| | |
|---|---|
| Slots | *1* |
| Capacity | *52 – 110 screens/h* |
| Resolution | *up to 20 pixel/mm* |


**Highlights**
- 16 bit grayscale resolution
- Smallest physical pixel size is 12.5 µm
- Can read IPs in odd formats, e.g. 18 x 35 cm for lumbar spine images and faster readout
- CONAXX image acquisition software included in standard delivery
- Fully DICOM compatible
- Independent modality or easy integration to PACS

## Protec Proscan 43 CR-System

| | |
|---|---|
| Slots | *1* |
| Capacity | *55 – 80 screens/h* |
| Resolution | *Up to 20 pixel/mm* |


**Highlights**
- 16 bit grayscale resolution
- Smallest physical pixel size is 12.5 µm
- Touch-free IP transport
- Installation table top or on cabinet (option)
- Extremely small footprint
- CONAXX image acquisition software included in standard delivery
- Fully DICOM compatible
- Network-compatible
- RFID chip for cassette identification and workflow optimization
- Independent modality or easy integration to PACS

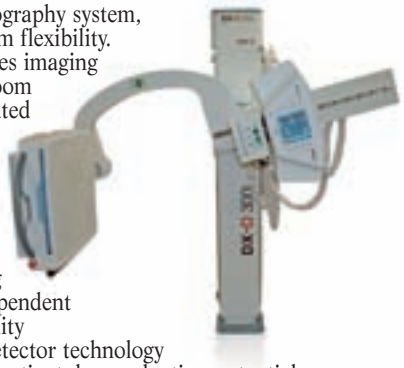
## Agfa HealthCare DX-S*i*

**Technology** | *DirectriX and ScanHead*
**Resolution** | *50 µm*
**Size** | *35 x 43 cm, 24 x 30 cm, 18 x 24 cm, 15 x 30 cm*

**Highlights**
- Integrated digital radiography solution
- In room integration/ workflow for all general radiography applications
- Flexibility to create multiple tailor made configurations
- High throughput system: up to 130 plates/h
- Dose reduction

## Agfa DX-D 300 HC

**Power** | *64 kW*
**kV-Range** | *From 40 to 150 KVp in 1 kVp step*
**mAs-Range** | *From 0.1 to 500 mAs in 38 step*



**Highlights**
- Universal direct radiography system, designed for maximum flexibility.
- Small footprint enables imaging solution in a single room
- Provided with integrated NX workstation for connectivity with RIS/HIS/PACS and imagers
- Superior contrast detail provided by MUSICA2 processing producing exam independent consistent image quality
- Cesium Iodide DR detector technology providing significant patient dose reduction potential

## Agfa HealthCare DX-D 500

**Power** | *80 kW*
**kV-Range** | *40 kV to 150 kV*
**mAs-Range** | *from 0.5 mAs to 800 mAs*

**Highlights**
- Can handle a very comprehensive range of X-ray exams, from general radiography to emergency and pediatrics
- Two detector high productivity General Radiography DR System
- Provided with integrated NX workstation for connectivity with RIS/HIS/PACS and imagers
- Superior contrast detail provided by MUSICA2 processing producing exam independent consistent image quality
- Cesium Iodide DR detector technology providing significant patient dose reduction potential

## Apelem Da Vinci Solo – universal single detector solution

**Technology** | *CsI*
**Resolution** | *143 µm*
**Size** | *43 x 43 cm*

**Highlights**
- For gen rad, orthopedics and trauma applications
- Maximum space saving
- Fast and easy installation
- Fast and easy patient positioning
- Dose reduction and excellent DQE
- Fully DICOM 3 compliant and RIS integration – workflow optimization

## Apelem Da Vinci Verso – multi-purpose single detector

**Technology** | *CsI*
**Resolution** | *143 µm*
**Size** | *43 x 43 cm*

**Highlights**
- Elevating four way mobile table with auto tracking capability
- Auto positioning
- Dose reduction and excellent DQE
- Single touchscreen console controls generator and ceiling suspension
- Full HIS/RIS and PACS integration

## Apelem LEO detector – portable flat panel detector

**Technology** | *CsI*
**Resolution** | *143 µm*
**Size** | *35 x 43 cm*

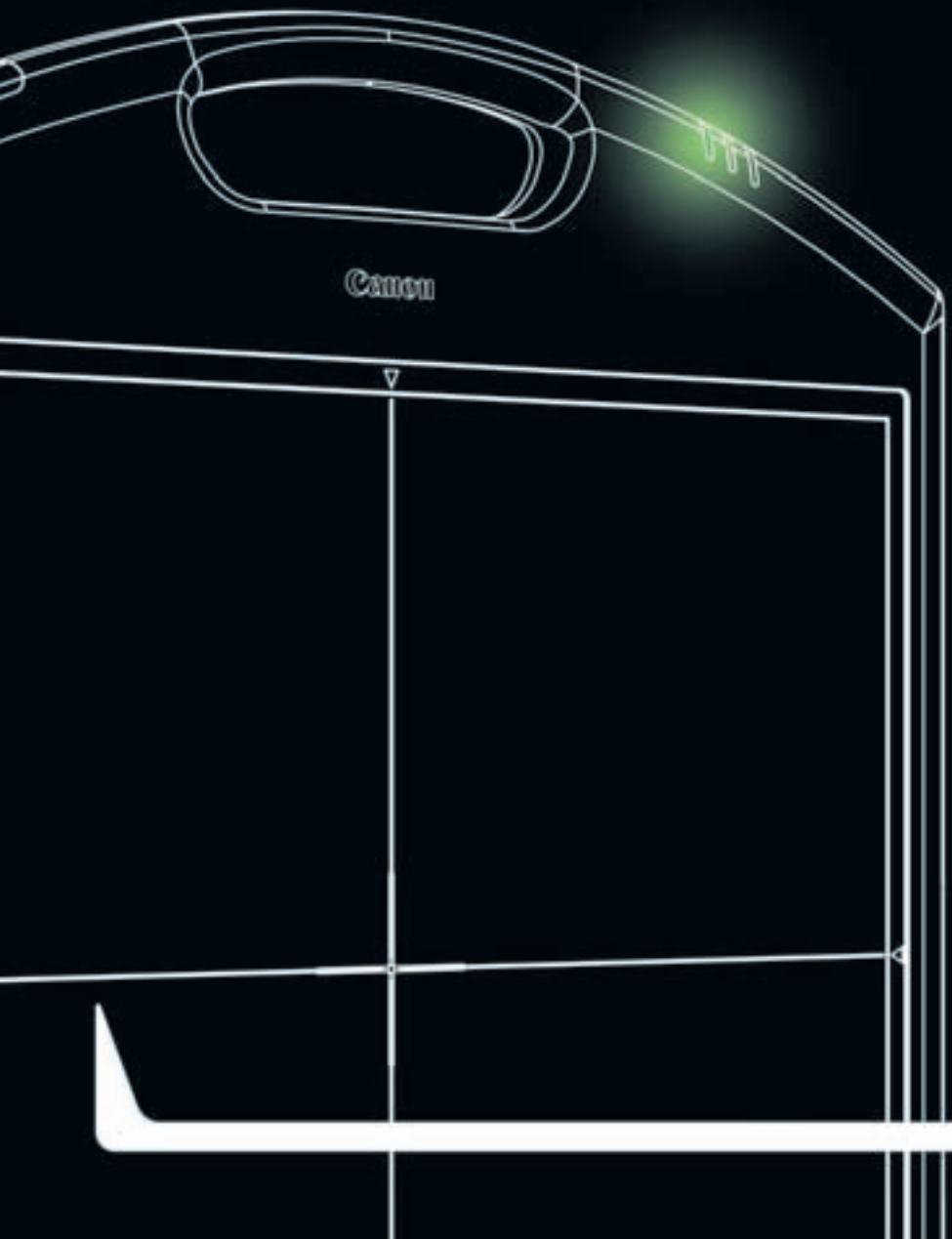
**Highlights**
- Wireless/Wi-Fi connected flat panel detector
- Mobile and easy to handle: <5 kg
- Very high quality image: 144 µm pixel size
- Real-time imaging: 3 sec in preview
- Dose reduction thanks to the CsI scintillator

# Light.

Light for true portability.

Canon's new range of Digital Radiography Imaging Systems. Enhance workflow efficiency with our interchangeable flat panel detectors: the thinnest, lightest and most versatile in the industry. See our latest innovation, the 3-in-1 detector for superior static, serial and fluoro imaging at **www.canon-europe.com/medical**

*We Speak Image*




Canon

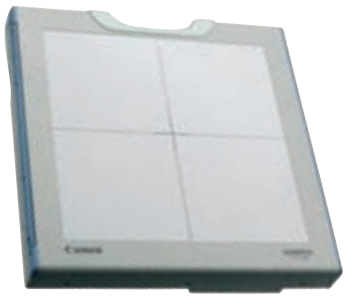
## Canon CXDI-50G/50C

**Technology** *50 C: Cesium Iodide Scintillator;*
*50 G: Gadolinium OxiSulfide scintillator*
**Resolution** *160 µm*
**Size** *35 x 43 cm*

**Highlights**
– For table, upright and portable applications
– 35 x 43 cm imaging area
– 1 tile robust construction
– Powerful image processing software
– Click on grid

## Canon CXDI-40EG/40EC

**Technology** *40 EC: Cesium Iodide Scintillator;*
*40 EG Gadolinium OxiSulfide scintillator*
**Resolution** *160 µm*
**Size** *43 x 43 cm*



**Highlights**
– For table and upright applications
– 43 x 43 cm imaging area
– 1 tile robust construction
– Powerful image processing software
– No cooling required

## Canon CXDI-60G/C

**Technology** *60C: Cesium Iodide Scintillator*
*60G: a-silicon Gadolinium OxiSulfide Scintillator*
**Resolution** *160 µm*
**Size** *23cm x 28cm*

**Highlights**
– Compact Portable Flat Panel Detector
– 2,5 kg weight
– X-ray image in just a few seconds
– User friendly touch screen operation
– Click on grid
– Powerfull image processing software

## Canon CXDI-55G/C

**Technology** *55C: Cesium Iodide Scintillator*
*55G: a-silicon Gadolinium OxiSulfide Scintillator*
**Resolution** *160 µm*
**Size** *35cm x 43cm*

**Highlights**
– For table, upright and portable applications
– 3.4 kg weight
– 1 tile robust construction
– X-ray image in just a few seconds
– User friendly touch screen operation
– Powerfull image processing software

## Canon CXDI-50RF

**Technology** *Cesium Iodide Scintillator*
**Resolution** *160 µm*
**Size** *35cm x 43cm*

**Highlights**
– Portable Dynamic Flat Panel Detector
– Static, serial imaging and fluoroscopy
– Acquisition mode 5-30 fps
– Excellent signal to noise ratio
– Powerfull image processing software
Available only in integrated applications

## Canon CXDI-40G Compact

**Technology** *a-silicon Gadolinium OxiSulfide Scintillator*
**Resolution** *160 µm*
**Size** *43 x 43 cm*

**Highlights**
– Retrofit system for existing bucky
– 1 tile robust construction
– Economical solution
– No cooling required
– User friendly touch screen operation
– Grid line elimination SW
– Powerfull image processing software

## Fujifilm Velocity U

**Technology** *Hyper HS-100*
**Resolution** *10 pixel/mm*
**Size** *43 x 43 cm*

**Highlights**
- Suitable for all upright examinations
- New detector technology
- 240 shots/h
- Outreaching image quality

## Fujifilm Velocity T

**Technology** *Hyper HS-100*
**Resolution** *10 pixel/mm*
**Size** *43 x 43 cm*

**Highlights**
- Suitable for supine-position examinations
- New detector technology
- Fully adjustable table
- Outreaching image quality

## Fujifilm Velocity Unity

**Technology** *Hyper HS-100*
**Resolution** *10 pixel/mm*
**Size** *43 x 43 cm*

**Highlights**
- Suitable for all examinations
- 240 shots/h
- Outreaching image quality
- Suited for radiology and orthopedic clinics
- Automatic positioning system(remote controlled)

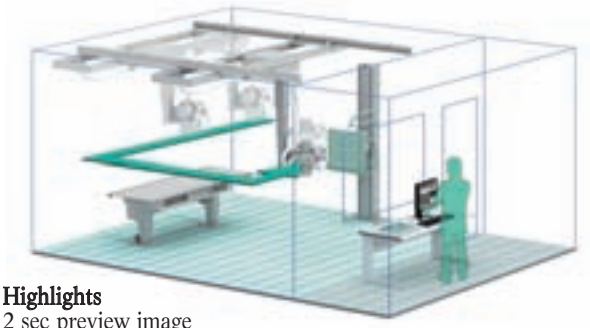
## Fujifilm D-EVO

**Technology** *IIS indirect conversion method*
**Resolution** *150 µm*
**Size** *38,4 cm x 46 cm x 1,4 cm (W x D x H)*

**Highlights**
- For table, upright and portable applications
- 35 x 43 imaging area
- Only 2,8 kg and 14mm thick
- 3 Sec preview time
- 9 Sec interval exposure time
- Detector size: 35 x 43 cm
- DQE and MTF improved by new ISS method

## Fujifilm AcSelerate

**Technology** *Amorphous selenium (a-Se), direct conversion*
**Resolution** *150 µm*
**Size** *43,2 cm x 43,2 cm*



**Highlights**
- 2 sec preview image
- 4 sec interval exposure time
- Fully automated functionality as standard
- Auto-Positioning, Auto-Tracking
- Auto-Collimation, Auto-Filtering
- Higher DQE and excellent MTF

## GE Healthcare Definium 5000

**Technology** *a-Silicon*
**Resolution** *2022 x 2022 pixel, 14 bit*
**Size** *41 x 41 cm*

**Highlights**
- Flexible DR solution with fast and proven detector technology
- Excellent image quality at low dose
- Easy to install and operate
- Seamless digital workflow
- Pasting optional

## GE Healthcare Definium 6000

**Technology** | *a-Silicon*
**Resolution** | *2022 x 2022 pixel, 14 bit*
**Size** | *41 x 41 cm*

**Highlights**
- Fast and proven detector technology
- More flexibility with mobile »flying« detector
- Fully motorized wall stand
- OTS with vertical auto-tracking
- Optional Advanced Applications
- Seamless digital workflow
- Flexible configurations, including cost-effective 1-detector shared solution

## GE Healthcare Discovery XR650

**Technology** | *a-Silicon*
**Resolution** | *2022 x 2022 pixel, 14 bit*
**Size** | *41 x 41 cm*

**Highlights**
- High patient throughput
- Fully motorized tube suspension with Autopositioning
- Advanced Applications: Autopasting, VolumeRAD, Dual Energy
- Flexible configurations, mobile or fixed detector
- Seamless digital workflow

## GMM Opera Swing

**Technology** | *Amorphous silicon photodiodes array*
**Resolution** | *148 µm*
**Size** | *43x43 cm*

**Highlights**
- Highly integrated all-in-one system ensuring enhanced exams in digital RAD and Fluoro procedures
- Extraordinary user-friendliness combined with operational efficiency in any application (Emergency, DA, IR, digital Tomosynthesis, etc.)
- Efficient execution of any exam either on the completely overhanging tabletop or in direct contact with the detector
- Easy and precise execution of lateral projections and oblique incidences also on stretchers
- Intelligent user interface integrating all the controls of the system components in a unique exclusive Touch Screen combined with a series of joysticks

## GMM Opera RT20 "Guitar" and "Harp"

**Technology** | *Amorphous silicon photodiodes array*
**Resolution** | *139 µm*
**Size** | *43 x 43 cm*

**Highlights**
- Radiographic unit with double digital detector for application versatility and full operational efficiency
- X-ray tube remarkable movement for the quickest and easiest execution of any exams and oblique incidences also stretchers
- Accurate full-length examination of the patient with no need for repositioning
- Total comfort for the patient and enhanced diagnostic results in any exam of the spine, thorax, legs, etc.
- Ease of installation in any diagnostics room thanks to the extremely compact structure and extraordinary suppleness

## GMM Chorus

**Technology** | *Amorphous silicon photodiodes array*
**Resolution** | *139 µm*
**Size** | *43 x 43 cm*

**Highlights**
- Integrated DR multifunctional system featured by an extremely flexible configuration and ultimate user-friendliness
- Efficient, rapid execution of routine and specialized exams
- Advanced automatic alignment of the X-ray source to the detector movement on both examination table and wall stand
- Examination table ensuring the utmost manoeuvrability and safe positioning
- Rapid and accurate execution of any oblique incidence on stretchered patients thanks to the tilting and rotating wall stand

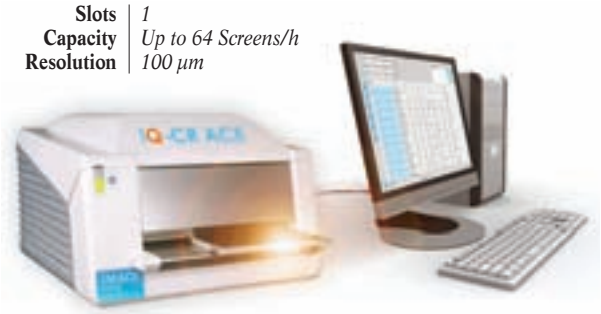
## Konica Minolta FlexDR C30

**Technology** | *FPD with CsI scintillator*
**Resolution** | *3.6 lp per mm*
**Size** | *43 x 43 cm*

**Highlights**
- User-friendly design provides maximum operability for both patient and technologist
- High throughput for efficient workflow
- Touchscreen preview display
- Acquisition station controls both DR and CR imaging
- Connectible to different generators

## Image Display Solutions iQ-CR ACE

**Slots** | *1*
**Capacity** | *Up to 64 Screens/h*
**Resolution** | *100 µm*



**Highlights**
- Full diagnostic web based PACS + CR as an All in One solution!
- Automatic image post processing gives superb quality for both soft tissue and bones
- Scans plates directly into the PACS
- Robust table-top digitizer
- Complete digital x-ray acquisition solution

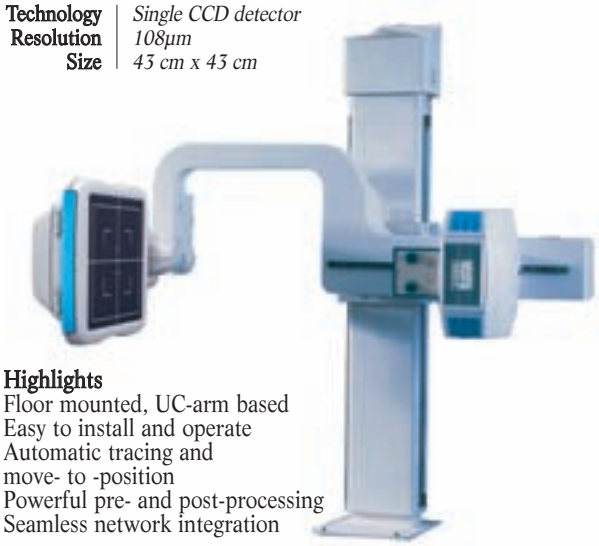
## Landwind DR2800

**Technology** | *Single CCD detector*
**Resolution** | *108µm*
**Size** | *43 cm x 43 cm*

**Highlights**
- User-friendly design
- Dual touchscreen preview display
- Automatic tracing and move- to -position
- Powerful pre- and post-processing
- Cost-effective DR solution

## Landwind DR2600

**Technology** | *Single CCD detector*
**Resolution** | *108µm*
**Size** | *43 cm x 43 cm*



**Highlights**
- Floor mounted, UC-arm based
- Easy to install and operate
- Automatic tracing and move- to -position
- Powerful pre- and post-processing
- Seamless network integration

## Landwind DR2200U

**Technology** | *Single CCD detector*
**Resolution** | *108µm*
**Size** | *43 cm x 43 cm*

**Highlights**
- Compact U-arm design
- New generation CCD detector
- Electronic APR function
- Comprehensive network compatibility
- Cost-effective and efficient DR resolution

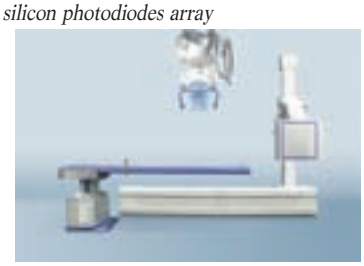
## Landwind CCD Detector

**Technology** | *CCD*
**Resolution** | *108µm*
**Size** | *43 cm x 43 cm*

**Highlights**
- Ergonomic design
- Large imaging area
- High spatial resolution
- High density resolution
- Reliable performace and stability

## Mecall Eidos 3000

**Technology** | *Amorphous silicon photodiodes array*
**Resolution** | *143 µm*
**Size** | *43 x 43 cm*



**Highlights**
- Advanced DR system with advanced grid equipped with exclusive auto-focusing device
- Single detector for accurate execution of any kind of exam with no limitation even for stitching function
- Innovatory carbon-fiber tabletop ensuring 90° rotation for easy stretcher positioning
- Simple and quick installation also in small-dimension rooms even with ceilings of only 270 cm height from the floor
- Motorized movements ensuring full automated control of the whole system

## Mecall Eidos RF 439

| | |
|---|---|
| Technology | *Amorphous silicon photodiodes array* |
| Resolution | *148 µm* |
| Size | *43 x 43 cm* |

**Highlights**
- State-of-the-art system with single removable grid with exclusive auto-focusing device
- Innovative completely overhanging carbon-fiber tabletop allowing examination of patient from any side
- Adjustable height-tabletop ensuring an extraordinary minimum distance from the floor of only 50 cm
- Ample variable Focal Distance
- Full-length patient examination in both vertical and horizontal position with Stitching function possibility

## medigration DigiRoebs

| | |
|---|---|
| Technology | *CsI* |
| Resolution | *143 µm, 14 bits*<br>*DQE @ 0 lp/mm 66 % typ.*<br>*at 3.2 µG RQA5* |
| Size | *43 x 43 cm* |

**Highlights**
- Excellent image quality
- Comfortable and efficient operation to optimize work flow
- Motorized, floor mounted X-ray robot for all exam techniques
- Real-time previews and fast cycle times
- User-friendly touch screen interface
- DICOM services: print, store, query/retrieve, MPPS, WL

## medigration DigiRoebs basic

| | |
|---|---|
| Technology | *CsI or $Gd_2O_2S$* |
| Resolution | *139 µm, 14 bits*<br>*3,6 lp/mm* |
| Size | *43 x 43 cm* |

**Highlights**
- Universal X-ray stand for all general radiology examinations
- Swivel arm rotation: -45° - + 135°
- Excellent price/performance ratio
- User-friendly touch screen interface
- DICOM services: print, store, query/retrieve, MPPS, WL

## medigration DigiRoebs wireless

| | |
|---|---|
| Technology | *CsI* |
| Resolution | *144 µm, 16 bits*<br>*DQE @ 0 lp/mm 66 % typ. at 2 µG RQA5* |
| Size | *35 x 43 cm* |

**Highlights**
- Digital Radiography: The Next Generation
- High-quality digital images
- Real-time previews (3 sec.) and fast cycle times
- Easy integration in existing radiography systems
- User-friendly touch screen interface
- DICOM services: print, store, query/retrieve, MPPS, WL

## OR Technology Medici

| | |
|---|---|
| Technology | *Gadox or CsI scintillator* |
| Resolution | *139 µm* |
| Size | *36 x 43 cm, 43 x 43 cm* |

**Highlights**
- Retrofit solution: available for almost any existing X-ray system
- Various makes and sizes of flat panels allow individual configuration of the system
- *dicomPACS® DX-R* X-ray acquisition software can be operated intuitively via touchscreen
- Professional image processing and integrated multimedia radiographic positioning guide

## OR Technology Leonardo DR 1210P

| | |
|---|---|
| Technology | *CsI scintillator* |
| Resolution | *127 µm* |
| Size | *26 x 33 cm* |

**Highlights**
- Portable system for mobile X-ray imaging
- Provides all necessary components in one suitcase, including flat panel, notebook, *dicomPACS® DX-R* X-ray acquisition soft ware and cables
- Flat panel with a low weight of 3.4 kg

## OR Technology Leonardo DR 4336R

| | |
|---|---|
| **Technology** | *Gadox or CsI scintillator* |
| **Resolution** | *139 µm* |
| **Size** | *36 x 43 cm* |

**Highlights**
- Portable system for mobile X-ray imaging
- Provides all necessary components in one suitcase, including flat panel, notebook, *dicomPACS®DX-R* X-ray acquisition software and cables

## Philips DigitalDiagnost High-performance room – Dual detector

| | |
|---|---|
| **Technology** | *a-Si, CsI-Scintillator* |
| **Resolution** | *3k x 3k image matrix, 143 µm pixel size* |
| **Size** | *43 x 43 cm* |

**Highlights**
- 50 kW, 65 kW or 80 kW
- Easy switch from table to chest exams with two detectors
- Automated functions such as auto collimation and move-to-position
- Optional wireless portable detector and PCR integration
- Easy orthopedic imaging with automatic image acquisition and stitching
- Vertical stand (moveable or fixed) with integrated detector, digital bucky table with integrated detector and ceiling-based tube carrier

## Philips DigitalDiagnost Multi-purpose standard room – Single detector

| | |
|---|---|
| **Technology** | *a-Si, CsI-Scintillator* |
| **Resolution** | *3k x 3k image matrix, 143 µm pixel size* |
| **Size** | *43 x 43 cm* |

**Highlights**
- 50 kW, 65 kW or 80 kW
- Versatile single detector room for medium to high patient load
- Extended move-to-position functionality
- Easy orthopedic imaging with automatic image acquisition and stitching
- Moveable multi-purpose stand with swiveling c-arm and integrated detector, ceiling-based tube carrier and single side suspended table
- Optional wireless portable detector and PCR integration
- Optional swiveling table for better accessibility

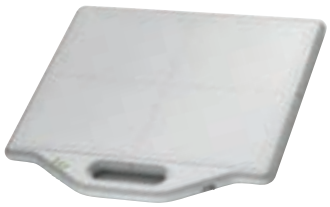
## Philips DigitalDiagnost Compact room – Single detector

**Technology** *a-Si, CsI-Scintillator*
**Resolution** *3k x 3k image matrix, 143 µm pixel size*
**Size** *43 x 43 cm*

### Highlights
- 50 kW, 65 kW or 80 kW
- For multi-purpose use and medium workflow requirements
- Often used as chest room which also serves as back-up general DR room
- Tracking and move-to-position
- Fixed multi-purpose stand with swiveling c-arm and integrated detector, ceiling-based tube carrier plus height adjustable trolley
- Optional wireless portable detector and PCR integration
- Easy orthopedic imaging with automatic image acquisition and stitching

## Philips DigitalDiagnost with wireless portable detector

**Technology** *a-Si, CsI-Scintillator*
**Resolution** *3k x 2.4k image matrix, 144 µm pixel size*
**Size** *35 x 43 cm*



### Highlights
- The wireless portable detector is available as an additional detector for all DigitalDiagnost single and dual detector configurations
- More flexibility: The wireless portable detector carries out even the most difficult projections projections at table, patient bed, wheelchair or trolley
- More efficiency: Smooth digital workflow with instant results at the Eleva workspot
- More freedom: Convenient handling and high hygienic standards thanks to the wireless detector's cable-free design
- Optional wireless portable detector and PCR integration

## Philips DigitalDiagnost Chest room – Single detector

**Technology** *a-Si, CsI-Scintillator*
**Resolution** *3k x 3k image matrix, 143 µm pixel size*
**Size** *43 x 43 cm*

### Highlights
- 50 kW, 65 kW or 80 kW
- Highly automated workflow with workstation controlled collimation, asymmetric beam alignment, automatic tracking
- Extended application range for skeletal examinations with tiltable vertical stand
- Optional wireless portable detector and PCR integration

## Philips Essenta DR

**Technology** *a-Si, CsI-Scintillator*
**Resolution** *3k x 3k image matrix, 143 µm pixel size*
**Size** *43 x 43 cm*

### Highlights
- 50 kW, 65 kW or 80 kW
- Cost-effective flat detector technology for state-of-the-art direct digital imaging
- Easy handling through motorized movements
- Tiltable detector and rotatable tube for unlimited patient positioning incl. free cassette exposures
- Floor-mounted, u-arm based

## Philips Essenta DR Compact

**Technology** *Quantmaster, High Stability Scintillator (GoS)*
**Resolution** *Matrix: 1920 x 2367*
**Size** *35 x 43 cm (14" x 17"), rotatable*

### Highlights
- 50 kW, 65 kW or 80 kW
- affordable price with low cost of ownership
- Affordable handling through counterbalanced movements
- Fits into very small rooms (height 2,50 m)
- Floor-mounted, u-arm based

## Philips DRF room solution

**Technology** *a-Si, CsI-Scintillator*
**Resolution** *3k x 3k image matrix, 143 µm pixel size*
**Size** *43 x 43 cm*

### Highlights
- Maximized room utilization with high-quality digital radiography and fluoroscopy applications in just one room
- Filmless workflow with DR technology for high throughput
- Excellent image quality with UNIQUE image processing and DoseWise concept
- One room for all types of patients from infants to obese adults

## Protec Rapixx 43 WiFi DR-System

**Technology** | *CsI*
**Resolution** | *144 µm*
**Size** | *36 x 43 cm*


**Highlights**
- 16 bit dynamic range
- Wireless system connection (WiFi)
- Portable and easy to handle: 4,8 kg
- Images in 3 sec. result in high productivity
- Versatile and robust design for long lifespan
- Simple integration and upgrade into existing conventional X-ray units
- Outstanding flexibility: close at hand, close at patients, just one panel required for bucky table and wall integration
- Docking station, interface box, power supply and CONAXX image acquisition software included in standard delivery
- Fully DICOM compatible for integration to PACS

## Protec Rapixx 4336M DR-System

**Technology** | *$Gd_2O_2$ or CsI*
**Resolution** | *139 µm*
**Size** | *36 x 43 cm*


**Highlights**
- 16 bit dynamic range
- Cable connection
- Lightweight: 3,6 kg
- Minimal cycle time: 8 sec.
- Predestined for simplest retrofitting of existing X-ray units due to dimensions equal to conventional X-ray cassette
- High shock tolerance and water resistant portable flatpanel detector
- Interface box, power supply and CONAXX image acquisition software included in standard delivery
- Fully DICOM compatible for integration to PACS

## Protec Rapixx 4343M DR-System

**Technology** | *$Gd_2O_2$ or CsI*
**Resolution** | *139 µm*
**Size** | *43 x 43 cm*


**Highlights**
- 16 bit dynamic range
- Cable connection
- Weight: 7,5 kg
- Minimal cycle time: 6 sec.
- For integration and upgrade into existing conventional X-ray units / intended for constant mounting in a X-ray unit
- Interface box, power supply and CONAXX image acquisition software included in standard delivery
- Fully DICOM compatible for integration to PACS

## Provotec PEDS 600

**Design** | *Floor-wall mounted*
**Table** | *Prognost XP series, optional*
**Power** | *50 kW*

**Highlights**
- DR-System with dig. flat panel detector
- Variable SID 120 – 180 cm
- Rotatable u-arm 360°
- Rotatable DR-detector

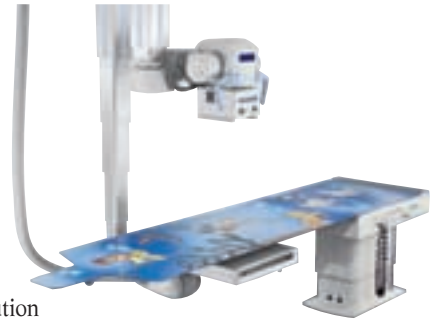
## Shimadzu RADSpeed Safire

**Technology** | *Direct-conversion flat-panel detector (a-Se)*
**Resolution** | *3.3 lp/mm*
**Size** | *17“ x 17“ (43 x 43 cm)*

**Highlights**
- Superior image quality
- 2880 x 2880 pixel; 16 bit dynamic range
- Parameter setting next to the patient
- Up to 400 application programs
- Auto-positioning function
- Automatic tracking functions

## Siemens Axiom Aristos FX Plus

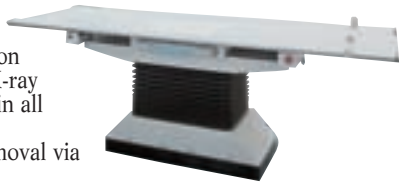
**Technology** | *Amorphous-Silicon with Cesium Iodide scintillator*
**Detector** | *143 µm, 3k x 3k, 14 bit*
**Size** | *43 x 43 cm*



**Highlights**
- Universal digital flat detector solution
- Fully-automated system positioning via organ programs
- Tube and detector independently mounted on the ceiling
- Auto tracking of X-ray tube and detector in x-, y- and z-direction
- Automated ortho acquisition of entire spine and long legs
- Excellent detail contrast with DiamondView

## Siemens Axiom Aristos MX

**Technology** *Amorphous-Silicon with Cesium Iodide scintillator*
**Detector** *143 µm, 3k x 3k, 14 bit*
**Size** *43 x 43 cm*



**Highlights**
- Universal digital flat detector solution
- Auto tracking of X-ray tube and detector in all directions
- Motorized grid removal via organ programs
- Pull-out detector for ease of patient positioning
- Excellent detail contrast with DiamondView

## Siemens Axiom Aristos VX and VX Plus

**Technology** *Amorphous-Silicon with Cesium Iodide scintillator*
**Detector** *143 µm, 3k x 3k, 14 bit*
**Size** *43 x 43 cm*

**Highlights**
- Digital flat detector solutions for chest and skeletal applications
- Auto tracking in the vertical direction
- Comprehensive control of parameters via organ programs
- TOP alignment of X-ray field for dose reduction
- Automated ortho acquisition of entire spine and long legs

## Siemens Axiom Aristos TX

**Technology** *Amorphous-Silicon with Cesium Iodide scintillator*
**Detector** *143 µm, 3k x 3k, 14 bit*
**Size** *43 x 43 cm*

**Highlights**
- Dedicated flat detector solution for chest imaging
- Automated workflow processes for high patient throughput
- Comprehensive control of parameters via organ programs
- TOP alignment of X-ray field for dose reduction
- Excellent detail contrast with DiamondView

## Siemens Axiom Multix M

**Technology** *Amorphous-Silicon with Gadolinium Oxysulfide scintillator*
**Detector** *160 µm, 2688 x 2208 pixel*
**Size** *35 x 43 cm*

**Highlights**
- Universal digital radiography solution with mobile flat detector
- Flexible and easy handling – positions just like a cassette
- Electronic tomography possible (option)
- Ceiling-mounted and floor-mounted solutions available

## Siemens Axiom Vertix MD Trauma

**Technology** *Amorphous-Silicon with Cesium Iodide scintillator*
**Detector** *160 µm, 2688 x 2208 pixel*
**Size** *35 x 43 cm*

**Highlights**
- Digital radiography solution with mobile flat detector
- Ceiling-mounted u-arm for maximal flexibility
- X-ray tube is constantly centered to flat detector in all planes
- All exposures with one detector, in or out of the holder
- Fast image preview available within 5 seconds

## Siemens Ysio

**Technology** *Amorphous-Silicon with Cesium Iodide scintillator*
**Detector** *Fixed detector (148 µm), 14 bit*
*Wireless detector, wi-D with (144 µm), 16 bit*
**Size** *43 x 43 cm*
*35 x 43 cm*

**Highlights**
- Flat detector, digital radiography (DR) solutions
- Choice between fully automated or fully synchronised systems
- Digital flat detectors with newest detector technology
- Ceiling-mounted tube with MaxTouch – a color touchscreen for enhanced workflow
- Automated system positioning and synchronised tracking of X-ray tube and detector in different planes
- Excellent detail contrast with DiamondView Plus

## Siemens Axiom Luminos *d*RF

**Design** *Remote-controlled 2-in-1 system with dynamic flat detector*
**Technology** *Amorphous-Silicon with Cesium Iodide scintillator*
**Resolution** *Up to 3.4 lp/mm*
**II-format**
**Image system**
**Size** *43 x 43 cm*

### Highlights
– Fully digital 2-in-1 solution for dynamic and static high-resolution imaging including DSA procedures *(option)*
– Easy patient transfer at 48 cm lowest table height
– Dynamic Density Optimization (DDO) and DiamondView Plus
– FLUOROSPOT Compact high-resolution digital imaging system with intuitive user interface and DICOM 3.0 interfaces
– Comprehensive CARE dose reduction package
– Limitless projection flexibility with optional ceiling-suspended tube and wireless detector wi-D

## Siemens Multix Swing mFD

**Technology** *Amorphous-Silicon with Oxysulfide scintillator*
**Detector** *160 µm*
**Size** *2688 x 2208 pixel*
*35 x 43 cm*

### Highlights
– Cost-efficient, all-in-one DR solution with mobile Flat Detector
– Flexible positioning of mobile detector in table, wall stand and for free exposures
– Generator is integrated into the table for minimal space requirements
– Accomodates wide range of exams for cost-conscious digital imaging
– Synchronized tube and bucky tray movements

## Tetenal Vidix U (Universal Type)

**Technology** *a-Se (amorphous Selenium)*
**Resolution** *168 µm, 14 bit, 2.560 x 2.560 Pixel*
**Size** *43 cm x 43 cm*

### Highlights
– User-friendly – Easy – Reliable - Efficient
– Low radiation
– Full auto positioning
– Interchangeable grid
– Anti-collision system

## Tetenal Vidix II (Single Type)

**Technology** *a-Se (amorphous Selenium)*
**Resolution** *168 µm, 14 bit, 2.560 x 2.560 pixels*
**Size** *43 cm x 43 cm (17“ x 17“)*

### Highlights
– Low radiation
– Preview function
– Automatic tracking function
– Immediately ready without preliminary lead time
– Entry area for bucky table is very low

## Tetenal Vidix II (Dual Type)

**Technology** *a-Se (amorphous Selenium)*
**Resolution** *168 µm, 14 bit, 2.560 x 2.560 pixels*
**Size** *43 cm x 43 cm (17“ x 17“)*

### Highlights
– Improved workflow and working time (fast image acquisition)
– High image quality (excellent dynamic range)
– Decrease of x-ray dose
– Cost-efficient
– Low radiation

## Valmex X Store DR

**Technology** *Selenium type direct conversion detector or Cesium Iodide-Scintillator detector*
**Resolution** *From 129 µm up to 168 µm pixel size*
**Size** *20 x 25 cm, 35 x 43 cm, 43 x 43 cm*

### Highlights
– Plug&Ray© Bucky System for existing x-ray units
– Slim form factor – portable or stationary type
– High frame rate with up to 225 exposures per hour
– Dynamic bandwidth – one exposure for all purposes
– Moving pendulum grid to exclude artificial grid suppression for better diagnosis
X Store© Image Viewer acquisition Software
X Store© Generator Software
X Store© PACS Software

## Xingaoyi Ningbo (XGY) GDX-HAWK

| | |
|---|---|
| **Technology** | *a-se* |
| **Resolution** | *168µm* |
| **Size** | *43 x 43 cm* |

**Highlights**
- 16bit dynamic range; Up to 3.7lp/mm
- Fixed multi-purpose stand with swiveling c-arm and Ceiling suspension
- Best image quality
- Complete DICOM Data
- 50KW,65KW or 80KW

## Fujifilm Go

| | |
|---|---|
| **Power** | *15 kW* |
| **kV Range** | *40 – 130* |
| **mAs Range** | *0.5 – 200 mAs* |

**Highlights**
- Flexible & high-performance portable digital X-ray unit
- Dual motor drive allows free and smooth steering
- Easy positioning with telescopic arm
- Smart and easy to use with additional controls at the tube head
- For use in every department, even NICU and OR

## GE Healthcare Definium 700

| | |
|---|---|
| | **AMX 700** |
| **Detector** | *a-Si* |
| **Resolution/Size** | *2022 x 2022 pixel, 41 x 41 cm* |
| **Power** | *12.5 kW* |
| **kV Range** | *50 – 125* |
| **mAs Range** | *0.4 – 320* |

**Highlights**
- Increased image consistency through detector performance
- Automatic and fast image processing
- DICOM connectivity for digital workflow
- Unique column rotation
- Excellent maneuverability with motor drive

## Landwind DR200Mate

| | |
|---|---|
| **Power** | *20/30 kW* |
| **kV-Range** | *40 - 150kV* |
| **mAs-Range** | *0.5 - 200 mAs* |

**Highlights**
- Optimized clinical workflow
- Outstanding operability
- Efficient APR function
- Fast bedside imaging
- Full Dicom compatible

## Landwind DR200M

| | |
|---|---|
| **Power** | *20kW* |
| **kV-Range** | *40 -150kV* |
| **mAs-Range** | *10 - 500 mAs* |

**Highlights**
- Compact design, easy to move
- Integrated flat detector technology
- Easy to position with telescopic arm
- Instant bedside imaging
- Easy pre- and post- processing

## Shimadzu MobileDaRt Evolution

| | |
|---|---|
| **Detector** | *a-Si or GOS* |
| **Resolution** | *2208 x 2688 pixel* |
| **Power** | *32 kW* |
| **kV Range** | *40 – 133* |
| **mAs Range** | *0.32 – 320* |

**Highlights**
- Superb image quality
- Easy handling
- User-friendly operation
- Up to 72 application programs per focus
- Fully DICOM compliant
- WLAN connectivity

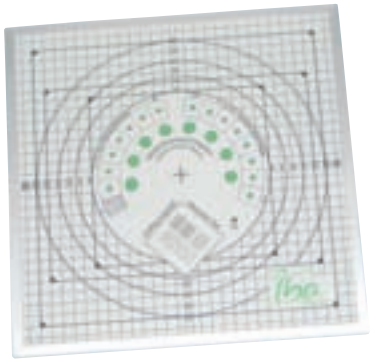
## Siemens Mobilett XP Digital

| | |
|---|---|
| **Detector** | *a-Si* |
| **Resolution** | *2688 x 2208 pixel* |
| **Power** | *30 kW* |
| **kV Range** | *40 – 133* |
| **mAs Range** | *0.32 – 360* |

**Highlights**
- Integrated flat detector for fully digital imaging
- Instant bedside imaging
- Direct organ selection program
- Fully DICOM compatible
- WLAN connectivity for improved workflow

## IBA Dosimetry Primus

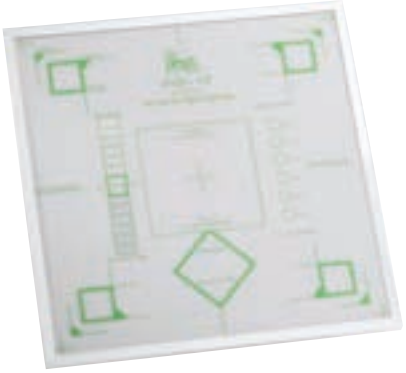
Test device for checking image quality parameters at fluoroscopic units



**Highlights**
- Modular construction: structural plate and separated attenuator
- Check of spatial and contrast resolution, size of the radiation field, artefacts; kV test area
- Compact Al pre-attenuator or PMMA and Cu plates
- Available in two different sizes

## IBA Dosimetry DIGI-13

Test device for checking image quality parameters at digital radiographic units



**Highlights**
- Compact device with separated Al pre-attenuator
- With integrated copper plate
- Check of homogeneity, spatial and contrast resolution, size of the radiation field, artefacts
- Easy-to-use

## IBA Multimeter MagicMax

Simultaneous measurement of dose, dose rate, exposure time, kV, dose/pulse, pulse rate, HVL and total filtration

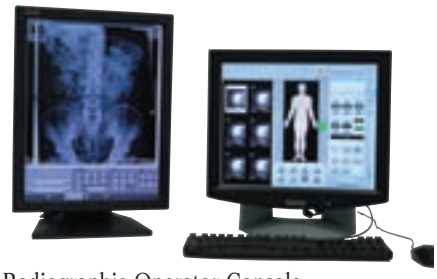
**Highlights**
- Small device with separate multifunction detector
- Connected via USB to PC or Notebook
- Intuitive use via PC interface
- Time resolution: 100 µs
- Optimized solutions for all applications

## medigration CD-Imager

**Highlights**
- Fully automatic compact system for creating DICOM patient CDs or DVDs
- Highly compatible with all digital DICOM modalities (multimodality)
- Individual labeling (practice/clinic logo)
- Easy integration of DICOM patient data
- Extremely cost effective due to quick printing times and low link consumption

## Provotec Droc

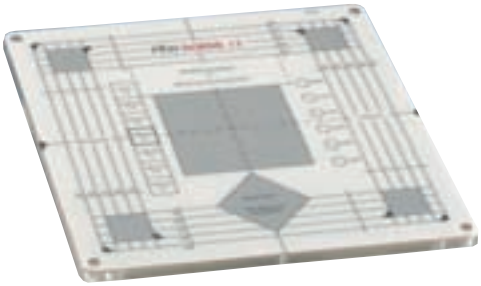
| | |
|---|---|
| **Design** | *Placed on a desk* |
| **Table** | *Desktop* |
| **Power** | *Line connected* |



**Highlights**
- DROC – Digital Radiographic Operator Console
- For DR-detectors and CR-units
- Automatic image optimization and instantaneous acquisition time
- Advanced noise reduction and optimized image calibration technology
- Full DICOM 3.0 compatibility
- Support DR-detector and generator
- Remote online system diagnosis

## PTW Normi 13

Test object for quality control of digital radiography X-ray units



**Highlights**
- Checks all imaging quality parameters (dynamic range, spatial resolution, low contrast, artefacts, radiation field, etc.)
- Convenient use at bucky units
- Patient equivalent absorber (Al or PMMA) included

## Radcal Accu-Pro™

X-Ray Analyzer
Simultaneous dose, rate, time, kVp. HVL, filtration, mA/mAs, and more

**Highlights**
- Use for manufacturing, installation, QA, and service
- R/F, mammography, CT, dental, leakage
- Ion chamber based dosimetry, no corrections required
- Correctly measure AEC fluoro and filtered beams
- Remote control, waveforms, and archiving with XLPRO software
- Compact, easy to use

## Radcal Rapidose

PC X-ray Analyzer

**Highlights**
- Plug into a laptop USB port for an inexpensive X-ray analyzer
- Simultaneous dose, rate, kVp, time, HVL, waveforms, and more
- Revolutionary inherent remote measurement operation
- Easy use, genuine time saver
- Data archiving and analysis using your Excel

## Radcal PDC-DAP/KAP verification meter

**Highlights**
- Newly patented Patient Dose Calibrator
- Use to calibrate DAP/KAP and rate
- Also measures dose and rate
- Optical and radiographic alignment markers
- Simple to use with optional computer control

## RTI Electronics Piranha

*The Piranha is designed as a truly self-contained, all-in-one, X-ray multi-function meter that assures accurate results in one shot. kV, time, dose, dose rate, HVL and total filtration.*

**Highlights**
- Self-Contained, All-in-One
- Auto-Compensation
- R&F, Mammo, Dental and CT
- Quick and Simple Set-up
- Enhanced Graphical Display
- Built-In Bluetooth for PC and PDA
- mA, mAs, and Light Probes
- Fits in the Palm of Your Hand

## RTI Electronics Barracuada

*The Barracuda X-ray multimeter has a cabinet that can house up to six different application modules, and can measure on all modalities; R/F, mammography, flouroscopy, pulsed flouroscopy, dental, panoramic dental and CT systems.*

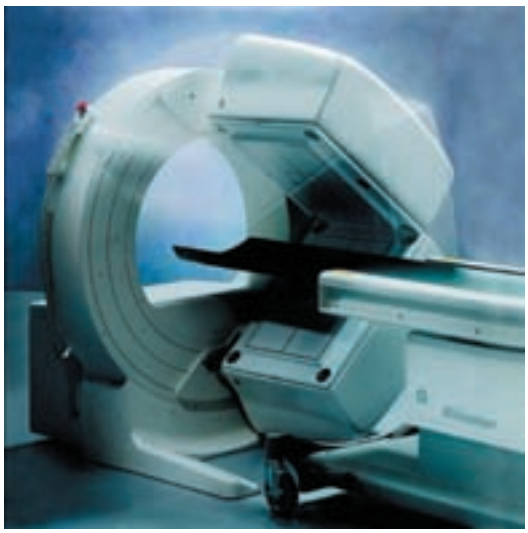

**Highlights**
- All in One, All at Once
- Auto-Compensation
- Enhanced Graphical PDA Display
- R&F, Mammo, Dental and CT
- Ionization Chambers
- Built-In Bluetooth for PC and PDA
- mAs, and Light Probes
- Fits in the Palm of Your Hand

Alliance Medical

GE Healthcare

iba Dosimetry

PHILIPS



PTW

RTI

SIEMENS

TeraRecon

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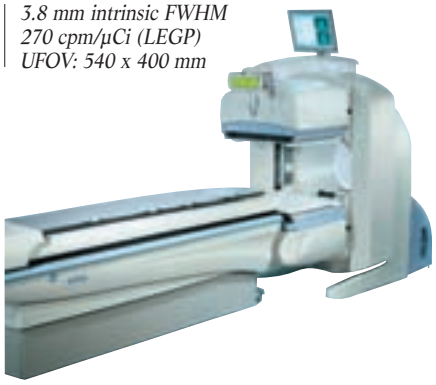
## GE Healthcare Infinia

| | |
|---|---|
| **Resolution** | *3.8 mm intrinsic FWHM* |
| **Sensitivity** | *270 cpm/µCi (LEGP)* |
| **Field of View** | *UFOV: 540 x 400 mm* |



**Highlights**
- High performance variable dual head system
- Unmatched productivity – time saving up to 15 %
- Excellent clinical versatility & unlimited flexibility
- Advanced image quality
- High reliability and excellent serviceability

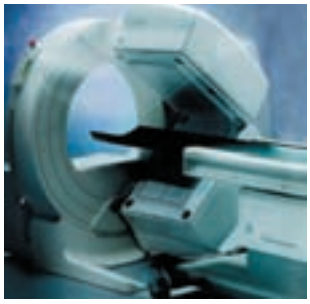
## GE Healthcare Infinia Hawkeye 4

| | |
|---|---|
| **Resolution** | *3.8 mm intrinsic FWHM* |
| **Sensitivity** | *270 cpm/µCi (LEGP)* |
| **Field of View** | *UFOV: 540 x 400 mm* |

**Highlights**
- True integrated hybrid imaging system
- Four slice axial/helical CT scanning
- Superior image quality & flexibility
- Ultra low dose CT technology
- Leading economic value

## GE Healthcare Millennium MG

| | |
|---|---|
| **Resolution** | *3.9 mm intrinsic FWHM* |
| **Sensitivity** | *262 cpm/µCi (LEGP)* |
| **Field of View** | *UFOV: 510 x 360 mm* |



**Highlights**
- Variable multi-purpose dual head system
- Unmatched scanning efficiency
- Excellent clinical versatility – all applications
- Extreme small footprint & gantry size
- High reliability and excellent serviceability

## GE Healthcare Millennium MPR

| | |
|---|---|
| **Resolution** | *3.9 mm intrinsic FWHM* |
| **Sensitivity** | *262 cpm/µCi (LEGP)* |
| **Field of View** | *UFOV: 510 x 360 mm* |

**Highlights**
- Multi-purpose single head system
- Operational ease and flexibility
- Open gantry – extra large detector
- Excellent clinical versatility – all applications
- High reliability and excellent serviceability

## GE Healthcare Ventri

| | |
|---|---|
| **Resolution** | *3.7 mm intrinsic FWHM* |
| **Sensitivity** | *325 cpm/µCi (LEGP)* |
| **Field of View** | *UFOV: 370 x 190 mm* |

**Highlights**
- Fixed angle dual head cardio system
- Designed for all patient sizes
- Uncompromized patient comfort
- Superior image quality
- Extreme small footprint & gantry size

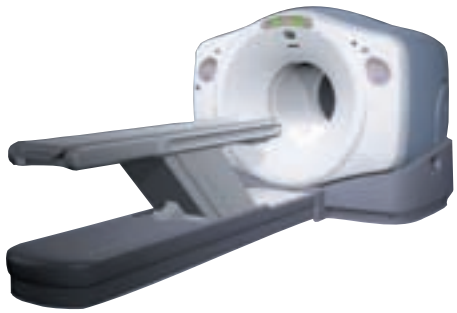
## GE Healthcare Discovery VCT XT

| | |
|---|---|
| **Resolution @ 1cm** | *5.0 mm* |
| **NECR @ 6 kBq/cc** | *64 kcps* |
| **Transaxial PET Field of View** | *70 cm* |

**Highlights**
- Volume CT inside
- Uncompromized between high sensitivity and resolution
- 5-beat cardiac CT angio
- Snapshot Pulse – 70% dose reduction for CT angio
- VUE point HD 3D iterative reconstruction

## GE Healthcare Discovery ST

| | |
|---|---|
| **Resolution @ 1cm** | *6.1 mm* |
| **NECR @ 6 kBq/cc** | *57 kcps* |
| **Transaxial PET Field of View** | *70 cm* |



**Highlights**
- Optimized for 3D and 2D imaging
- Dynamic and gated PET, CT and PET/CT acquisition
- MotionFree technology
- VUE point HD 3D iterative reconstruction
- Designed for maximum flexibility

## GE Healthcare Discovery STE

| | |
|---|---|
| **Resolution @ 1cm** | *5.0 mm* |
| **NECR @ 6 kBq/cc** | *64 kcps* |
| **Transaxial PET Field of View** | *70 cm* |

**Highlights**
- Uncompromized between high sensitivity and resolution
- Highest NECR in clinical range*
- Optimized for 3D and 2D imaging
- VUE point HD 3D iterative reconstruction
- MotionFree technology

(* based on NEMA 2001)

## GE Healthcare Discovery 600

| | |
|---|---|
| **Resolution** | *5.0 mm* |
| **Peak NECR** | *75 kcps @ 15 kBq/ml* |
| **Transaxial PET Field of View** | *70 cm* |

**Highlights**
- Motion Free PET/CT
- Optimized for gated and dynamic PET- and CT-acquisitions
- VUE Point HD 3D iterative reconstruction
- IBM Blade Center for fastest reconstruction
- Highest NECR in clinical range

## GE Healthcare Discovery 690

| | |
|---|---|
| **Resolution** | *4.9 mm* |
| **Peak NECR** | *110 kcps @ 20 kBq/ml* |
| **Transaxial PET Field of View** | *70 cm* |

**Highlights**
- Motion Free PET/CT
- Stable timing resolution, independent of count rate
- Time of Flight PET acquisition
- VUE Point HD 3D iterative reconstruction with time of flight information
- IBM Blade Center for fastest reconstruction

## GE Healthcare Discovery NM/CT 670

| | |
|---|---|
| **Resolution** | *3.7 mm intrinsic FWHM *** |
| **Sensitivity** | *270 cpm/uCi (LEGP) *** |
| **Field of View** | *UFOV 540 mm x 400 mm* |

**Highlights**
- Combination of SPECT technology power with proven multi-slice CT
- advanced fusion imaging
- State-of-the-art Nuclear Medicine slim detectors
- Ultra-fast gantry robotics
- BrightSpeed™ Elite 16 slice CT

*FDA 510k cleared; EC declaration of conformity pending. ** preliminary data

## GE Healthcare Discovery NM 530c with Alcyone™ Technology

| | |
|---|---|
| **SPECT Acquisition Time** | *2 min* |
| **SPECT Resolution** | *3.1 mm tangential* |

**Highlights**
- Alcyone Technology
- four leading-edge technologies in nuclear imaging: CZT detectors, focused pinhole collimation, 3D reconstruction, and stationary data acquisition.
- increased diagnostic confidence and efficiency
- improved patient care with low dose and fast scans
- upgradeable
- no motion

## Philips CardioMD

| | |
|---|---|
| **Resolution** | *3.8 mm, FWHM intrinsic* |
| **Sensitivity** | *277 cpm/µm Ci (LEGP)* |
| **Field of view** | *37 x 21.4 cm* |

### Highlights
- Minimal patient-to-detector distance for excellent image quality
- Compact design fits easily into a 2.4 x 3 m room
- Fixed-90 dual head design and cardiac workflow are optimized for high throughput
- Comprehensive suite of cardiac image applications
- Vantage Pro clinically validated non-uniform attenuation correction

## Philips Forte with JETStream acquisition and AZ detectors

| | |
|---|---|
| **Resolution** | *3.3 mm, FWHM intrinsic* |
| **Sensitivity** | *265 cpm/µm Ci (LEGP)* |
| **Field of view** | *38.1 x 50.8 cm* |

### Highlights
- High throughput capability for all nuclear medicine procedures
- VantagePro clinically validated non-uniform attenuation correction
- Automatic acquisition workflow
- Concurrent imaging allows a single acquisition step to be saved simultaneously in up to 15 unique data sets
- Energy independent detectors provide high performance with reduced quality control time

## Philips Gemini TF PET/CT – GXL PET/CT

| | **TF PET/CT** |
|---|---|
| **Peak NECR** | *210 kcps* |
| **PET Spatial Resolution** | *4.3 mm* |
| **CT Configuration** | *16-slice or 64-channel* |

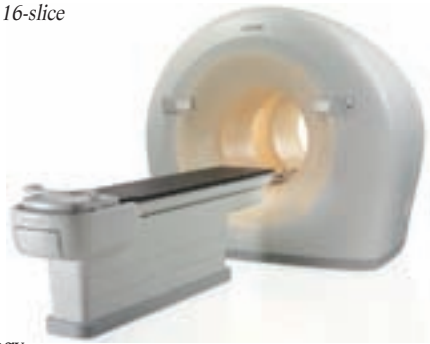
| | **GXL PET/CT** |
|---|---|
| **Peak NECR** | *70 kcps* |
| **PET Spatial Resolution** | *4.5 mm* |
| **CT Configuration** | *16-slice* |

### Highlights TF
- World's first commercially available time-of-flight PET/CT
- Fast scans (10 min) with low dose
- Premium Brilliance CT image quality & applications
- 190 cm PET/CT scan length
- Exclusive OpenView gantry design

### Highlights GXL
- Fast scans (15 min) with low dose
- Fully 3D LOR PET reconstruction
- Premium Brilliance CT image quality & applications
- 190 cm PET/CT scan length
- Exclusive OpenView gantry design

## Philips TF Big Bore PET/CT

**CT Configuration** | *16-slice*



### Highlights
- Optimized for Radiation Oncology
- Brilliance CT Big Bore subsystem and exclusive PET TruFlight technology
- 85cm bore diameter to accommodate all positioning devices for radiotherapy planning.
- Compliant with the AAPM TG-66 standards for positional accuracy
- State of the art diagnostic image quality

## Philips BrightView

| | |
|---|---|
| **Resolution** | *3.3 mm, FWHM intrinsic* |
| **Sensitivity** | *277 cpm/µm Ci (LEGP)* |
| **Field of view** | *40.6 x 54 cm* |

### Highlights
- Patient focus for an open experience with all patients and sizes
- Maximized image quality with CloseUp technologies
- Improved workflow efficiency, BodyGuard automatic contouring
- Rich in capability yet compact in design
- Scalable to match the capabilities with practice

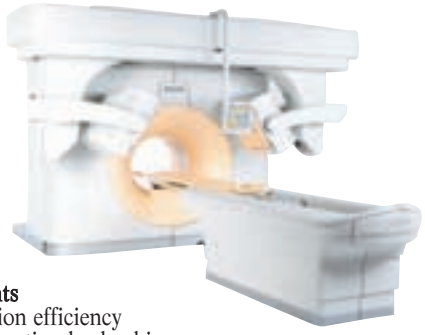
## Philips SKYLight

| | |
|---|---|
| **Resolution** | *3.3 mm, FWHM intrinsic* |
| **Sensitivity** | *265 cpm/µm Ci (LEGP)* |
| **Field of view** | *38.1 x 50.8 cm* |

**Highlights**
- Gantry-free design for clinical flexibility and openness
- DualPlanar capability to acquire two patients simultaneously
- Automatic acquisition workflow
- Concurrent imaging allows a single acquisition step to be saved simultaneously in up to 15 unique data sets
- Fully automatic collimator exchange

## Philips Precedence SPECT/CT

| | |
|---|---|
| **Resolution** | *3.3 mm, FWHM intrinsic* |
| **Sensitivity** | *265 cpm/umCi (LEGP)* |
| **Field of view** | *38.1 x 50.8 cm* |



**Highlights**
- Acquisition efficiency
- Reconstruction leadership
- Ease-of-use
- System efficiency
- Superior diagnostic CT image quality

## Siemens c.cam

| | |
|---|---|
| **Resolution** | *≤3.7 mm FWHM in UFOV* |
| **Sensitivity** | *290 cpm/µCi (LEAP at 10 cm at 140 keV)* |
| **Field of view** | *37 x 21.4 cm* |

**Highlights**
- A whole New Angle in Cardiology
- Award winning design
- Open and patient-friendly
- Reclining position improves image quality
- Easy to install, learn and use
- Comprehensive quantification and viewing software
- Field upgradeable with c.clear attenuation correction

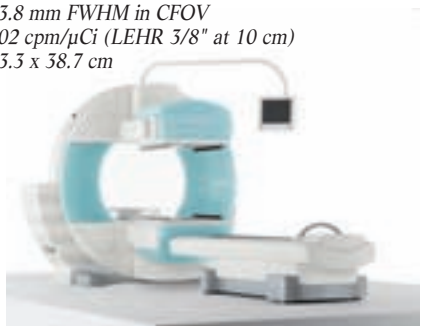
## Siemens Symbia E

| | |
|---|---|
| **Resolution** | *≤3.8 mm FWHM in CFOV* |
| **Sensitivity** | *202 cpm/µCi (LEHR 3/8"at 10 cm)* |
| **Field of view** | *53.3 x 38.7 cm* |

**Highlights**
- Simply Evolutionary
- Work with confidence through Siemens HD detector, c.clear attenuation correction and Siemens Remote Service
- Accelerate your workflow through fast acquistion, autocontour, syngo workflows and physician worklist
- Experience versatility through detector flexibility, clinical engines, specialized pallets and investment protection

## Siemens Symbia S

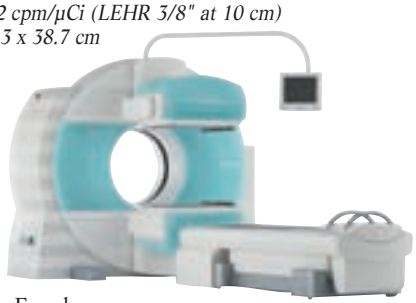
| | |
|---|---|
| **Resolution** | *≤3.8 mm FWHM in CFOV* |
| **Sensitivity** | *202 cpm/µCi (LEHR 3/8" at 10 cm)* |
| **Field of view** | *53.3 x 38.7 cm* |



**Highlights**
- The first SPECT that's ready for everything
- Work with confidence through Symbia HD detector, superb image quality with Flash and Siemens Remote Service
- Accelerate your workflow through fast acquisition, autocontour, syngo workflows, Integrated/Automated Collimator Changer and Automated Quality Control
- Experience versatility through detector flexibility, clinical engines, investment protection and bariatric imaging

## Siemens Symbia TruePoint SPECT•CT

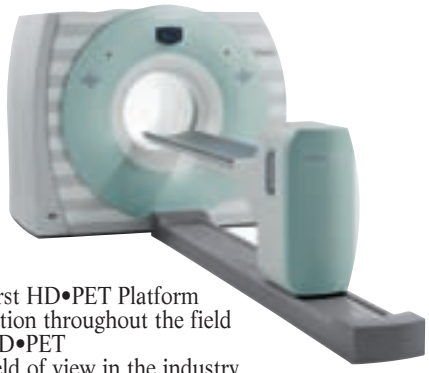
| | |
|---|---|
| **Resolution** | *≤3.8 mm FWHM in CFOV* |
| **Sensitivity** | *202 cpm/µCi (LEHR 3/8" at 10 cm)* |
| **Field of view** | *53.3 x 38.7 cm* |



**Highlights**
- A Merger of True Equals
- Work with confidence through Symbia HD detector, superb image quality with Flash, Siemens Remote Service and SPECT•CT University
- Accelerate your workflow through fast acquisition, autocontour, CT attenuation correction, Integrated/Automated Collimator Changer and Automated Quality Control
- Experience versatility through detector flexibility, clinical engines and diagnostic CT (2, 6, 16 slice)

## Siemens Biograph TruePoint PET•CT

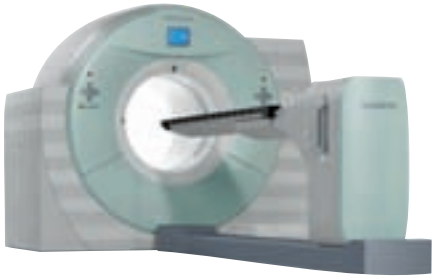
| | |
|---|---|
| **Resolution** | *2.0 mm average FWHM at 1 cm (HD•PET)* |
| **Sensitivity** | *7.6 cps/kBq at 435 keV (TrueV)* |
| **Field of view** | *605 mm transaxial, 216 mm axial (TrueV)* |



**Highlights**
- The World's First HD•PET Platform
- Uniform resolution throughout the field of view with HD•PET
- Largest PET field of view in the industry, increasing count rate performance by >70%
- Exceptional lesion detectability with the best NEMA spatial resolution in the industry

## Siemens Biograph mCT

| | |
|---|---|
| **Resolution** | *2.0 mm average FWHM at 1 cm (HD•PET)* |
| **Sensitivity** | *9.5 cps/kBq at 435 keV (TrueV)* |
| **Field of view** | *700 mm transaxial, 216 mm axial (TrueV)* |



**Highlights**
- The World's First Molecular CT
- 5 minute whole-body PET•CT scans
- unprecedented throughput for true shared service capability in CT and PET
- Exceptional image quality
- More comfortable examinations
- Low patient doses

# MI ACCESSORIES

## Alliance Medical – flexible diagnostic imaging services

**Highlights**
- Static diagnostic imaging centers MRI, CT, PET, PET/CT
- Interim services for bridging downtimes
- Regular „routing" services

## IBA Dosimetry Dosimax plus A HV

Dosimeter for measuring simultaneously dose, dose rate, exposure time and dose length product

**Highlights**
- Designed according to IEC 61674
- For use with solid state detectors or ionization chambers
- For CDTI determination in combination with head and body phantom

## PTW CT Dosimetry

Quality control equipment for CT dose measurements

**Highlights**
- Combined head & body phantom available
- CT chamber for precise dose length product measurements and CTDI determination

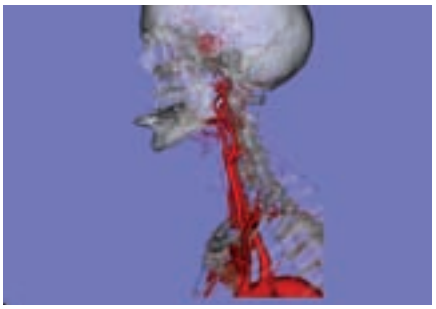
## RTI Electronics CT Slice Probe

*The CT Slice Probe is designed to make CTDI measurement more exact and has also the ability to further analyze the result. Following parameters are achived from a single exposure: CTDI100, CTDIvol, DCTIw, CT dose profile, DLP, Point Dose, Performance of the AEC, FWHM and Scatter Index.*

**Highlights**
- All in One Shot
- Quick and Simple Set up
- Accurate and Sensitive
- No limitations due to the beam width

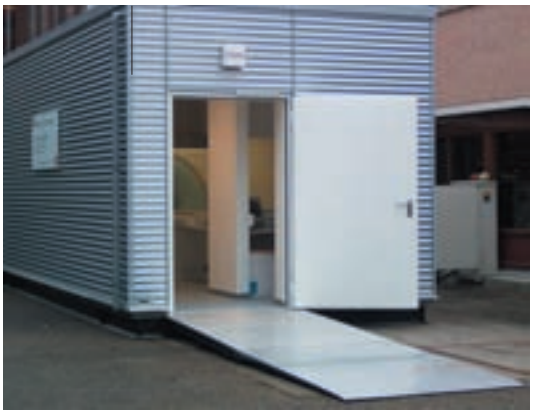
## TeraRecon Aquarius

| | | |
|---|---|---|
| **Product** | *Aquarius workstation* | *AquariusNET server* |
| **Technology** | *3D diagnostic workstation* | *Client-server 3D architecture* |
| **Resolution** | – | – |
| **Size** | – | – |



**Highlights**
- Thin client-server solution enterprise-wide
- VolumePro: handling many 3D sessions at once
- Rendering on central server, results streamed to PC
- Fast and efficient in the reading workflow
- AquariusNET runs on almost any standard PC

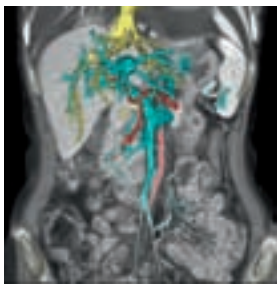
## Tomovation – Modular building solutions



**Highlights**
- Engineering, rental, sale of modular buildings MRI, CT, PET, PET/CT including or excluding diagnostic equipment

## Ziosoft Ziostation

| | |
|---|---|
| **Full Suite of Clinical Applications** | *3D, 4D, MIP, MPR, CPR, Multi-Modality Viewer* |



**Highlights**
- Multi-volume fusion
- Vessel analysis
- Coronary analysis
- Colon analysis
- PET/CT viewer
- CT Cardiac Function Analysis
- CT Brain Perfusion
- Calcium Scoring
- Reporting functions
- Customizable button palettes and keyboard/mouse shortcuts to configure the system individually
- Automatic segmentation algorithms employ anatomical analysis, targeting specific objects to maximize accuracy
- Full Web-Based Capabilities
- Action macros perform multiple processes with one or zero button clicks

AGFA HealthCare

BARCO Visibly yours

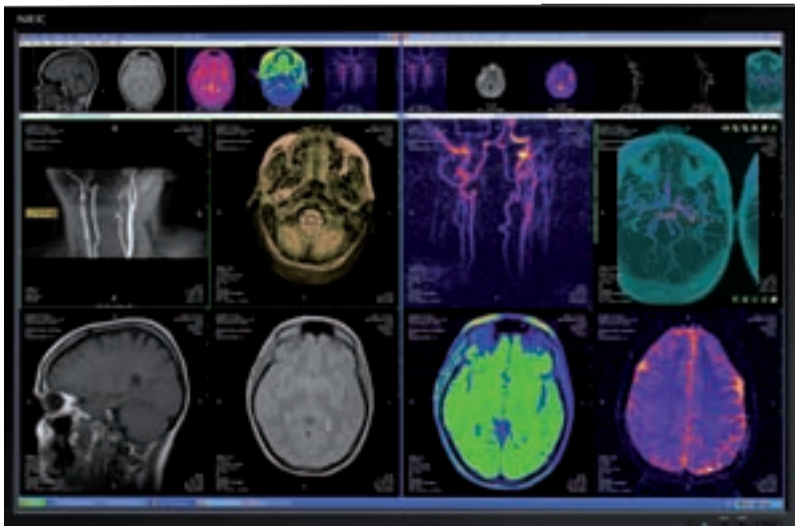
CPS

FUJIFILM

KONICA MINOLTA

iba Dosimetry

IMAGE Display Solutions



medigration The Digital Company

MITSUBISHI ELECTRIC Changes for the Better

NEC

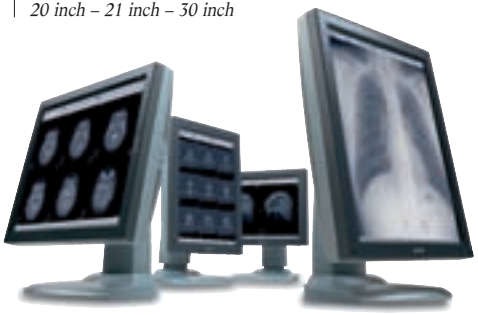
NDS SURGICAL · IMAGING

TOTOKU

TETENAL Medical Imaging Division

## Barco Nio and Coronis Family

**Name** *Full range of diagnostic display system – Nio and Coronis Family*
**Technology** *Color and grayscale LCD*
**Resolution** *2MP – 3MP – 4MP – 5MP – 6MP – 10MP*
**Size** *20 inch – 21 inch – 30 inch*



### Highlights
- Full breadth of color and grayscale display systems
- Proven technology for long-term image confidence
- Fully transparent calibration and QA
- High-speed image processing
- 5-year warranty

## Barco Coronis Fusion 6 MP DL

**Name** *Wide-screen diagnostic color display system – Coronis Fusion 6 MP DL*
**Technology** *Color LCD*
**Resolution** *6 Megapixel (3280 x 2048)*
**Size** *30 inch*

### Highlights
- Bezel-free 30 inch desktop for multi-modality PACS imaging
- Unmatched viewing characteristics
- High-performance image processing
- Automated Quality Assurance
- 5-year warranty

## Barco Mammography Displays

**Name** *Mammography display system – Coronis 5 MP Mammo*
**Technology** *Grayscale LCD*
**Resolution** *5 Megapixel (2048 x 2560)*
**Size** *21 inch*

### Highlights
- Pixel-perfect diagnostic precision
- Uniform luminance across the screen
- Ultra-fast image processing
- Transparent calibration and QA
- 5-year warranty

## Barco Clinical Review Displays

**Name** *Clinical review displays – MDRC Series*
**Technology** *Color LCD*
**Resolution** *1MP – 2MP*
**Size** *19 inch – 20 inch - 24 inch*

### Highlights
- Providing consistent DICOM images anywhere, anytime
- Professional LCD Quality
- Approved for medical use
- Backlight output stabilization
- User-friendly Quality Assurance

## Barco Surgical Displays

**Name** *Full range of endoscopic and surgical displays - MDSC and HD SERIES*
**Technology** *Color LCD*
**Resolution** *1.3MP – 4MP – High Definition*
**Size** *19 inch – 24 inch – 30 inch – 42 inch – 47 inch*

### Highlights
- Full breadth of surgical and endoscopy displays
- High Definition image quality
- Smooth, artifact-free video images
- Easy cleaning and disinfection
- Approved for medical use

## Barco Point-of-care devices

**Name** *Mobile point-of-care devices – ProScribe and CliniScape*
**Technology** *Transmissive TFT LCD*
**Resolution** *1024 x 768*
**Size** *10 inch - 12 inch*

### Highlights
- Easy-to-use touch screen interface
- ultra-portable grab and go devices
- robust, lightweight and sealed design
- instant wireless connectivity
- medical grade compliance

## Image Displays cQ-2MP BASIC

| | |
|---|---|
| **Screensize** | *20.1 inch* |
| **MegaPixel** | *2 MP* |
| **Resolution** | *1.600 x 1.200 Pixels* |

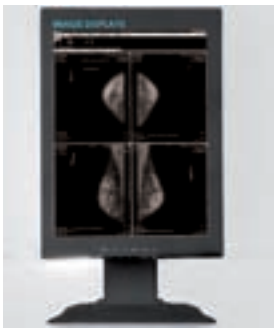
### Highlights
- Optimized for orthopedic surgeons and imaging centers
- Multiple video interfaces
- Picture-in-picture
- Perfect combination of high performance and affordable prices
- Available with color, grayscale and extra-bright grayscale panels

## Image Displays cQ-3MP PRO

| | |
|---|---|
| **Screensize** | *21.3 inch* |
| **MegaPixel** | *3 MP* |
| **Resolution** | *2.048 x 1.536 Pixels* |

### Highlights
- High-res medical diagnostic displays for professional users
- First medical displays worldwide including true 12-bit image grayscale transfer in the processing line
- Easy and fast installation; IMAGE DISPLAYS are calibrated twice before delivery
- Intelligent self-diagnosis function for precise luminance and DICOM calibration
- Excellent image quality even in light rooms

## Image Displays cQ-5MP PRO



| | |
|---|---|
| **Screensize** | *20.1 inch* |
| **MegaPixel** | *5 MP* |
| **Resolution** | *2.048 x 2.560 Pixels* |

### Highlights
- High-res medical diagnostic display for professional users
- Designed for Mammography readings
- Excellent image quality even in light rooms
- First medical displays worldwide including true 12-bit image grayscale transfer in the processing line
- Intelligent self-diagnosis function for precise luminance and DICOM calibration

## Image Displays cQ-2in1

| | |
|---|---|
| **Screensize** | *30 inch* |
| **MegaPixel** | *4 MP* |
| **Resolution** | *1.600 x 2.560 Pixels* |

### Highlights
- Revolutionary solution for the simultaneous assessment of two X-ray images on one 30” panel
- Outstanding magnified views with full quality
- No frameworks in-between when doing dual readings or viewing large images
- Homogenous color and grayscale across the whole display
- Highest performance in processing radiological and nuclear medical images

## NDS surgical imaging E-Series

| | |
|---|---|
| **1 MP** | – |
| **2 MP** | *GS E2* |
| **3 MP** | *GS E3* |
| **4 MP** | – |
| **5 MP** | *GS E5* |

### Highlights
- FDA 510(k) cleared
- Automatic DICOM calibration
- 3061 unique shades of grey
- Fanless display
- High operating brightness

## NDS surgical imaging Ec-Series

| | |
|---|---|
| **1 MP** | – |
| **2 MP** | *E2colour* |
| **3 MP** | *E3colour* |
| **4 MP** | *E4colour* |
| **5 MP** | – |

### Highlights
- FDA 510(k) cleared
- Automatic DICOM calibration
- Fanless display
- High operating brightness
- Flexibility of colour and DICOM calibrated greyscale imaging

## NDS surgical imaging Dome Dashboard

### Highlights
– Simplifies network display management in healthcare environment
– Monitor and maintenance console for multiple workstations
– Supporting Dome medical imaging displays and the Dome CXtra software
– Operates within Windows framework
– Provides intuitive features and functions

## NDS surgical imaging Dome GX 2MP

**Resolution** | *MP Color*
**Size** | *20,1“*

### Highlights
– Superior visual quality with .255mm pixel pitch
– 16 ms response time
– Outstanding 1000:1 contrast ratio
– 300 cd/m²luminance
– Dome CXtra™ for DICOM Calibration

## NEC MD GS-Series

**MD21GS-2MP**
21.3" (2.0 MP image resolution: 1200 x 1600 pixels in portrait orientation)

### Highlights
– Unique XLight® Backlight System for long lasting stable white point
– Individual factory calibrated DICOM gamma correction curve
– Precise DICOM GSDF calibration using internal 10-bit look-up table

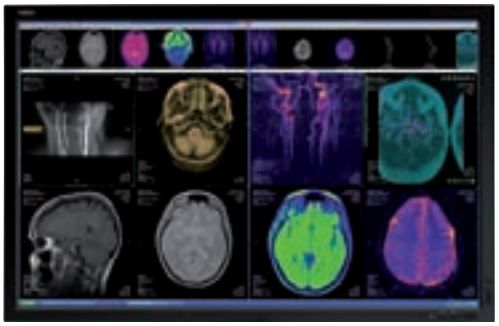
**MD213MG**
21.3" (3.0 MP image resolution: 1536 x 2048 pixels in portrait orientation)

### Highlights
– Unique Frontsensor for long lasting brightness stability
– Individual factory calibrated DICOM gamma correction curve
– Precise DICOM GSDF calibration using internal 12-bit look-up table

**MD205MG-1**
20.1" SA-SuperFine Grayscale TFT glass

### Highlights
– 5.0 MP image resolution: 2048 x 2560 pixels in portrait orientation
– Up to 1024 simultaneous shades of gray out of a pallette of 3061 (10-bit image reproduction)
– High adjustable stand (Range: 120 mm)

## NEC MD Color-Series



**MD213MC**
21.3" (**3.0** MP image resolution: **2048 x 1560** pixels in portrait orientation)

### Highlights
– Unique XLight® 3 Backlight System for long lasting stable white point
– Individual factory calibrated DICOM gamma correction curve
– Precise DICOM GSDF calibration using internal 12-bit look-up table

**MD304MC**
29.8" (4.0 MP image resolution: 2560 x 1600 pixels)

### Highlights
– High performance H-IPS TFT display
– Stand-alone calibration and matching to ensure efficient onsite colour temperature matching, with 12-bit LUT and precise DICOM GSDF grayscale
– Medical certification conforming to 93/42/EC (MDD) and FDA510k pending

**MD212MC**
21.3" (2.0 MP image resolution: 1200 x 1600 pixels in portrait orientation)

### Highlights
– Unique X-Light® 3 Backlight System for long lasting stable white point
– Individual factory calibrated DICOM gamma correction curve
– Pre cise DICOM GSDF calibration using internal 12-bit look-up table

**MD21M**
21.3" (2.0 MP image resolution: 1600 x 1200 pixels)

### Highlights
– Factory pre-set DICOM gamma curve
– Digital Uniformity Control (DUC) for enhanced spatial uniformity
– Complies with DIN V6868-578 Cat.B and AAPM TG18 Secondary Class

## NEC MDview Series Colour Displays

**MDview193**
19.0" (1.3 MP image resolution: 1280 x 1024 pixels)

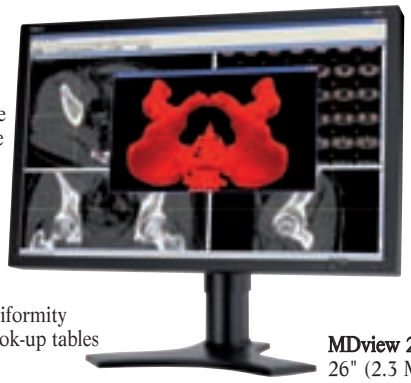
### Highlights
– Real Hardware-DICOM Calibration including Ambient Light compensation
– Quick and easy setup utilizing the factory pre-set DICOM curve
– Long distances to modalities and workstations without compromise in display quality font size is to small compared to the others

**MDview 202**
20.1" (2.0 MP image resolution: 1600 x 1200 pixels)

### Highlights
– Factory pre-set DICOM gamma curve
– Digital Uniformity Control (DUC) for enhanced spatial uniformity
– Precise DICOM GSDF calibration using 3 internal 12-bit look-up tables

**MDview 213**
21.3" (2.0 MP image resolution: 1600 x 1200 pixels)

### Highlights
– Factory pre-set DICOM gamma curve
– Digital Uniformity Control (DUC) for enhanced spatial uniformity
– Precise DICOM GSDF calibration using 3 internal 12-bit look-up tables



**MDview 242-2**
24.1" (21.3 MP image resolution: 1920 x 1200 pixels)

### Highlights
– Factory pre-set DICOM gamma curve
– Digital Uniformity Control (DUC) for enhanced spatial uniformity
– Precise DICOM GSDF calibration using 3 internal 12-bit look-up tables

**MDview 262-2**
26" (2.3 MP image resolution: 1920 x 1200 pixels)

### Highlights
– XLight® Pro: Backlight system for stabilised white luminance and colour
– Factory pre-set DICOM gamma curve
– Digital Uniformity Control (DUC) for enhanced spatial uniformity

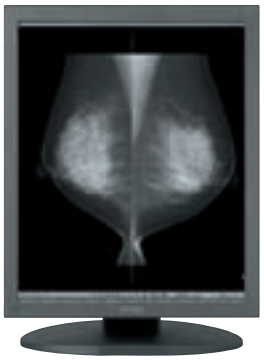
## Provotec ProVario Screen

| | |
|---|---|
| **Design** | *Power unit floor-mounted* |
| **Table** | *Control console placed on a desk* |
| **Power** | *50 kW* |

### Highlights
– High frequency generator for x-ray diagnostic
– Easy operation by monitor – or touchscreen
– Digital control of nearly unlimited organ programs
– Safety device against undue radiation for each organ with AEC-technique
– X-ray book for storing patient name with generator exposure data
– Upgradeable for using CR- and DR-systems

## Totoku Mammography Display

| | Grayscale |
|---|---|
| **15 MP** | *MS51i2* |



### Highlights
– ISD Technologie to support »Super high resolution« of 15 megapixel
– Supports 5 megapixel videoboards thanks to ISD technologie
– Luminance uniformity correction
– Remote calibration and management
– New developed AR coating for an improved resolution
– Increased lifetime with backlight dimming system

## Totoku Diagnostic Displays

| | Grayscale | Color |
|---|---|---|
| **5 MP** | *ME551i2* | |
| **3 MP** | *ME351i2* | *CCL354i2, CCL352i2* |
| **2 MP** | *ME253i2, ME201L* | *CCL240, CCL254i2 , CCL252i2, CCL208* |
| **1 MP** | *ME181L* | *CCL182* |

### Highlights
– Up to 5-years warranty
– High brightness color displays up to 800 cd/m²
– Luminance uniformity correction
– Remote calibration and management
– Up to true 11 bit grayscale
– Increased lifetime with backlight dimming system

## Totoku ISD Displays

| | Grayscale |
|---|---|
| **3/9 MP** | *MS31i2* |
| **2/6 MP** | *MS21i2* |

### Highlights
– ISD Technologie
– Luminance uniformity correction
– Remote calibration and management
– New developed AR coating for an improved resolution
– Increased lifetime with backlight dimming system

## Agfa HealthCare Drystar 5503

**Capacity** | *100 films/h (14 x 17")*
**Resolution** | *508 dpi/50 µm pixelsize*
**System** | *Direct Digital Imaging*

### Highlights
- Multi-modality, high throughput imager with film sorter
- Ideal for centralized work-flow, can easily be connected to the network
- Integrated A#Sharp techno-logy for optimized image quality
- 3 multi-format trays, each supporting different film sizes and types
- Suitable for CT, MRI, DSA, digital R&F, CR, DR and optional mammography applications

## Agfa HealthCare Drystar 5302

**Capacity** | *75 films/h (14 x 17")*
**Resolution** | *320 dpi*
**System** | *Direct Digital Imaging*

### Highlights
- Suitable for all applications and ideal for CR/DR
- A#Sharp technology for optimized image quality
- Convenient imaging with two media sizes on-line (multi-format)
- Very short access time ensures fast printing of small print jobs

## Agfa HealthCare Drystar 5300

**Capacity** | *70 films/h (14 x 17")*
**Resolution** | *320 dpi*
**System** | *Direct Digital Imaging*

### Highlights
- Tabletop, next-to-application Direct Digital Imager
- Suitable for all applications and ideal for CT/MR
- Reliable, low maintenance printer
- A#Sharp image enhancement for excellent quality
- Very short access time ensures fast printing of small print jobs

## Agfa HealthCare Drystar AXYS

**Capacity** | *75 films/h (14 x 17")*
**Resolution** | *508 dpi/50 µm pixelsize*
**System** | *Direct Digital Imaging*

### Highlights
- Flexible, tabletop imager delivering mammography-quality images
- Multi-application hardcopy solution
- Integrated A#Sharp technology for optimized image quality
- 2 multi-format trays, each supporting different film sizes and types
- Very short access time for extremely fast delivery of first four prints

## CPS - Codonics Horizon Ci / GS / SF

### Highlights
- Read in room light with convenient grayscale or color paper (Ci, GS and SF)
- Outstanding image quality, prints on all standard sizes of clear/blue dry film
- Compact design with the fastest print speed in its class
- Economical sunrise express swap warranty provides a replacement imager
- Network printer with up to 24 DICOM connections, no additional hardware required
- Validated with all major OEMs, modalities, PACS and workstations

**Horizon Ci**

**Speed** | *100 sheets/h*
**Capacity** | *300 copies*
**Resolution** | *320 dpi – 126 cm spatial resolution, 4096 pixel contrast resolution, shades gray*
**System** | *Direct thermographic (grayscale) and dye-diffusion (color)*

**Horizon GS**

**Speed** | *100 sheets/h*
**Capacity** | *300 copies*
**Resolution** | *320 dpi – 126 cm spatial resolution, 4096 pixel contrast resolution, shades gray*
**System** | *Direct thermographic (grayscale)*

**Horizon SF**

**Speed** | *100 sheets/h*
**Capacity** | *300 copies*
**Resolution** | *320 dpi – 126 cm spatial resolution, 4096 pixel contrast resolution, shades gray*
**System** | *Direct thermographic (grayscale) and dye-diffusion (color)*

## CPS DICOM PaperPrint Server

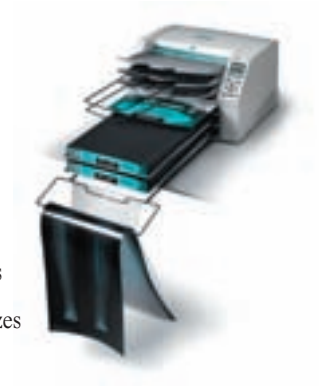
| | | | |
|---|---|---|---|
| **Color Laser Printer** | **DocuColor 242** | **WorkCentre 7665** | **WorkCentre 7425** |
| **Copier** | *yes* | *yes* | *yes* |
| **Scanner** | *yes* | *yes* | *yes* |
| **Paper sizes** | *A3/A4 and many other* | *A3/A4 and many other* | *A3/A4 and many other* |
| **Print resolution** | *2400 x 2400 dpi* | *2400 x 2400 dpi* | *1200 x 1200, 1200 x 2400dpi* |
| **Printout** | *color, black & white* | *color, black & white* | *color, black & white* |

| | | | |
|---|---|---|---|
| **Color Laser Printer** | **Phaser 7760** | **Phaser 7500** | **Phaser 5550** |
| **Copier** | – | – | – |
| **Scanner** | – | – | – |
| **Paper sizes** | *A3/A4 and many other* | *A3/A4 and many other* | *A3/A4 and many other* |
| **Print resolution** | *1200 x 1200 dpi* | *1200 x 1200 dpi* | *1200 x 1200 dpi* |
| **Printout** | *color, black & white* | *color, black & white* | *black & white* |

### Highlights
- Full DICOM 3.0 Basic Grayscale and Color Print Management
- Single licence for unlimited number of modalities and printers
- Individual header and footer including text and graphic logos
- Individual LUT in color and black & white for every modality, user and printer
- Print-Presentation-LUT
- Full immediate online-support for printer, server and software by CPS
- Low average cost per page, about 1 cent in black&white and 8 cent in color

## CPS - Codonics Horizon XL

| | |
|---|---|
| **Speed** | *100 sheets/h* |
| **Capacity** | *300 copies* |
| **Resolution** | *320 dpi – 126 cm spatial resolution, 4096 pixel contrast resolution, shades gray* |
| **System** | *Direct thermographic (grayscale) and dye-diffusion (color)* |



### Highlights
- 14“ x 36“ and 14“ x 51“ long dry film
- Perfect for scoliosis, long bone studies
- »True-size« imaging up to 51“ in length
- Saves space and eliminates wet film processing
- Also prints on standard sizes of film
- Low-cost grayscale paper and color paper

## Fujifilm DryPix 4000

| | |
|---|---|
| **Capacity** | *160 films/h* |
| **Resolution** | *50 µm/14 bit* |
| **System** | *Laser* |

### Highlights
- 5 available formats: from 8"x10" up to 14"x17" from (20x25cm) up to (35x43cm)
- 1 or 2 film trays
- On-top sorter optional available
- High resolution for mammography
- High density for mammography ($D_{max}$=4.0)

## Fujifilm DryPix 7000

| | |
|---|---|
| **Capacity** | *240 films/h* |
| **Resolution** | *50 µm/14 bit* |
| **System** | *Laser* |

### Highlights
- 5 available formats: from 8"x10" up to 14"x17" from (20x25cm) up to (35x43cm)
- 2 or 3 film trays
- 10 bin sorter optional available
- High resolution for mammography
- High density for mammography ($D_{max}$=4.0)

## Fujifilm DryPix Prima

| | |
|---|---|
| **Capacity** | *up to 70 films /h* |
| **Resolution** | *100 µm / 14 bit* |
| **System** | *Laser* |

### Highlights
- Tabletop laser printer
- 0,38 $m^2$ Footprint
- Support for 5 different film formats
- Fully DICOM compatible

## Konica Minolta DryPro 832

**Capacity** *90 films/h*
**Resolution** *78,6 µm/12 bit*
**System** *Laser*

**Highlights**
- Smallest laser imager
- Fastest time for first film print out (50 s)
- Ready for up to 2 film trays
- Support of 5 different film sizes

## Konica Minolta DryPro 793

**Capacity** *120 films/h*
**Resolution** *43.75 µm/14 bit*
**System** *Laser*

**Highlights**
- Central print solution for multi-modality environment
- Ready for up to 3 film trays
- Support 5 different film sizes
- Optional sorter available
- Supports mammography

## Konica Minolta DryPro 873

**Capacity** *180 films/h*
**Resolution** *43,75 µm*
**System** *Laser*

**Highlights**
- Fast multi-modality printer for optimal performance
- High density printing for mammography – Dmax 4.0
- Fully DICOM compatible
- Ready for up to 3 film trays
- Optional sorter available

## medigration DICOM PaperPrint

**Paper Sizes (max.)** *DIN A3, 11 x 17*
**Resolution** *1.200 x 2.400 dpi (print), 600 x 600 dpi (copy)*
**System** *Laser, scan, fax*

**Highlights**
- Supports all DICOM 3.0 modalities (e.g. CT, MRT, CR, DR, US, NUK etc)
- Supports one or more PostScript printers within the network
- General licence package (no restrictions on how many DICOM modalities are connected)
- Image header and footer customizable incl. physician logo
- Separate LUT (Look Up Table) for each printing system
- GSDF calibration according IHE

## Mitsubishi Printer P93E

**Capacity** *Approx. 260 print roll, max. 923 sheets/h*
**Resolution** *325 dpi/1280 x 600 (PAL/normal)*
**System** *B&w video printer, direct thermal*

**Highlights**
- User-friendly settings with control switches
- Extremely compact dimensions and lightweight design
- Fast print speed due to BAS/FBAS, BNC connector
- 7 different picture formats
- Picture memory for 10 individually selectable frames

## Mitsubishi Printer CP30W

**Capacity** *80 prints set, max. 225 sheets/h*
**Resolution** *423 dpi/1600 x 2100*
**System** *Color video printer, dye sublimation*

**Highlights**
- Front-loading system on rails for paper and ink sheet cassette
- Compact and ergonomic design
- Integrated control panel
- Integrated paper tray with illuminated exit slot
- PAL & NTSC compatible, all standard interfaces

## Mitsubishi Printer P93DW

**Capacity** | *Approx. 260 print roll, max. 973 sheets/h*
**Resolution** | *325 dpi/1280 x 5760 (panorama)*
**System** | *B&w digital printer, direct thermal*

### Highlights
– USB Version 2.0 guarantees print speed from 3.7 seconds
– Compact size of only 154 x 90 x 256 mm
– Quick and easy adjustment on the front panel
– Panorama-print up to 100 x 150 mm
– Extensive adjustment possibilities using the printer driver

## Mitsubishi Printer CP31W

**Capacity** | *80 prints set, max. 225 sheets/h*
**Resolution** | *423 dpi/1600 x 2100*
**System** | *Color video printer, dye sublimation*

### Highlights
– Front-loading system on rails for paper and ink sheet cassette
– Compact and ergonomic design
– Integrated control panel
– Integrated paper tray with illuminated exit slot
– PAL & NTSC compatible with common S-Video and Composite Video

## Mitsubishi Printer P95DE

**Capacity** | *Approx. 245 print roll, max. 1,895 sheets/h*
**Resolution** | *325 dpi with 16-bit data processing*
**System** | *B&w digital printer, direct thermal*

### Highlights
– Print time per image 1.9 sec. (100 x 75 mm)
– Compact size of only 154 x 84,5 x 239 mm
– Exceptional long print format possible (100 x 450 mm)
– New high-gloss thermal paper
– Optimised heating process thanks to Print Control Engine

## Mitsubishi Printer CP30DW

**Capacity** | *80 prints set, max. 225 sheets/h*
**Resolution** | *423 dpi/1600 x 2100*
**System** | *Color digital printer, dye sublimation*

### Highlights
– Front-loading system on rails for paper and ink sheet cassette
– Compact and ergonomic design
– High-speed USB interface (Version 2.0)
– Large integrated paper tray
– Illuminated paper exit slot

## Sony UP-DF 750

**Capacity** | *75 sheets/h*
**Resolution** | *604 dpi*
**System** | *Direct thermal*

### Highlights
– Multiple Film Sizes for Various Radiology Modalities
– New Blue Thermal Film for Mammography
– Two Film Trays Compatible with All Film Sizes
– Large Effective Print Area and Edge-to-edge-like Printing
– Easy Network Parameter Settings
– DICOM Connectivity

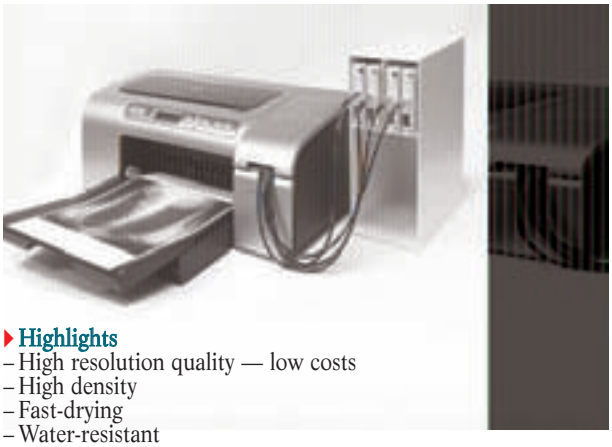
## Sony UP-DR80MD

**Capacity** | *50 sheets/h*
**Resolution** | *301 dpi*
**System** | *Dye Sublimation Thermal Printing*

### Highlights
– Superb Print Quality
– Stylish Design and Compact Size
– Useful Front Operation
– Easy Color Adjustment
– Color Look Up Table
– Gray Balance Adjustment

### Tetenal spectra™ jet Ink

**Printing Technology** | *HP 2800 (A3+, A3, A4, A5, A6)*
**Resolution b/w** | *4800_1200 dpi*



**Highlights**
- High resolution quality — low costs
- High density
- Fast-drying
- Water-resistant
- Transparent + solid printouts

### Tetenal spectra™ jet Film

**Printing Technology** | *HP 1000 (A4, A5)*
**Resolution b/w** | *4800_1200 dpi*

**Highlights**
- High resolution quality — low costs
- High density
- Fast-drying
- Water-resistant
- Transparent + solid printouts

## DISPLAYS/PRINTERS ACCESSORIES

### CPS – Codonics Virtua Medical Disc Publisher

**Highlights**
- Burns up to 60 CDs or 30 DVDs an hour
- Auto records patient studies and reports without tying up workstation or employee resources
- Touchscreen interface for optimized workflow
- Full-color disc labels creator
- DICOM compliant network appliance
- Burn speeds based on a typical clinical study with full color label. Not all features available on all models. Specifications subject to change

**Virtua Medical Disc Publisher**

| | |
|---|---|
| **Capacity** | *Two 50-disc input bins; 100 disc total capacity* |
| **Drives/Recordable Format** | *DVD±R / CD-R dual-layer drives, CD-R, DVD-R, DVD+R* |
| **Printer** | *Inkjet 4800 dpi* |

**Virtua XR Medical Disc Publisher**

| | |
|---|---|
| **Capacity** | *Two 50-disc input bins; 100 disc total capacity* |
| **Drives/Recordable Format** | *Two dual-layer, DVD±R / CD-R drives, CD-R, DVD-R, DVD+R* |
| **Printer** | *Inkjet 4800 dpi* |

### CPS – Codonics Integrity Medical Image Importer

| | |
|---|---|
| **User Interface** | *Remote web browser access* |
| **Import Formats** | *DICOM 3.0, IHE PDI, ACR NEMA, older DICOM image files* |
| **Processor** | *Intel® Core™ 2 Duo* |
| **Search Rules** | *Configurable* |
| **Dimensions** | *6.49" (16.5 cm) W, 6.49" (16.5 cm) D, 1.96" (5 cm) H* |
| **Weight** | *2.41 lbs. (1.46 kg)* |

**Highlights**
- Compact, stand alone solution to read, reconcile and store medical studies from CD/DVD
- Improves workflow by bringing the reconciliation process to the user
- Automatically scans for viruses to protect your data
- Reconciles patient data with facility's own modality worklist
- Displays the original imported data as well as the matching MWL or PACS data

### IBA Dosimetry LX*can*

Spot luminance meter for quality tests at displays

**Highlights**
- Luminance and illuminance measurements
- Display: 1.2" TFT
- Targeting device: integrated camera
- Ultrasonic distance sensor; alignment sensor
- USB interface

CIVCO

esaote

GE Healthcare

HITACHI
Inspire the Next

LANDWIND MEDICAL

see it all
MEDISON

PHILIPS

SIEMENS

SonoScape

SUPERSONIC imagine

TOSHIBA

ULTRASONIX

ZONARE

## Esaote MyLab25 XVGold

**Modes** *B-mode, M-mode, color-, high sensitivity power doppler, PW-, CW doppler, TEI, CMM, TVM, TP-View, VPan*

**Scan format** *3D/4D*

**Transducer inputs** *2+1 probe connectors. Probes: LA, CA, PA, microconvex, pencil*

**Highlights**
- 15"LCD monitor
- high frequency imaging up to 18 MHz
- brilliant images (XView)
- Compound Imaging (MView)
- CnTI™ (contrast enhanced ultrasound)
- PC-workstation MyLabDesk™
- Li-Ion battery (up to 1h)
- mobile system, DICOM

## Esaote MyLab One

**Modes** *B-mode, colorized 2D, CFM- mode, TEI, B-mode steering*

**Transducer probes** *LA, CA and microconvex*

**Highlights**
- Arm-held
- wearable unit
- big 12" LCD real touch screen monitor
- Tutorial
- programmable keys on the LA-probe,
- for activating functions on the scanner remotely
- brilliant images (XView), user defined protocol editor
- PC-workstation MyLabDesk™
- 2 USB ports
- Li-Ion battery (up to 3h)
- DICOM

## Esaote MyLab Twice

**Modes** *B-mode, M-mode, color-, high sensitivity power doppler, PW-, CW-doppler, TEI, TVM, CMM, TP-View, VPan*

**Scan format** *3D/4D linear & convex*

**Transducer inputs** *4+1 probe connectors LA, CA, PA, microconvex, pencil*

**Highlights**
- 19" LCD monitor
- HF imaging 18 MHz
- XView, Compound Imaging MView, CnTI™, Elastographie, QIMT, Fusion Imaging, MyLabDesk™
- DICOM, 4 USB ports, 500 GB, Satellite system

## GE Healthcare Logiq E9

**Modes** *B-Mode, M-Mode, CFM-Mode, Doppler, Amplitude modulated contrast mode, Realtime4D*

**Scan format** *Linear, convex, microconvex, sector phased array, trapezoid*

**Transducer inputs** *4*

**Highlights**
- Matrix array transducer technology
- 3D/4D Volume scan
- Depth independed contrast imaging thanks to new amplitude modulation technology
- True spatial image fusion of CT/MRT Images and realtime ultrasound
- Volume navigation
- Agile, adaptive beamformer

## GE Healthcare Voluson E 8

**Modes** *B-Mode, M-Mode, CFM-Mode, Doppler, HD-Flow, Realtime4D*

**Scan format** *Linear, convex, microconvex, sector phased array*

**Transducer inputs** *3*

**Highlights**
- Realtime 4D up to 40 volumes/sec.
- Automatic volumetric analysis
- STIC (Realtime 4D view of the fetal heart)
- CRI (Compound Resolution Imaging)
- HD-Flow (high sensitive Power Doppler)

## GE Healthcare Logiq 9

**Modes** *B-Mode, M-Mode, CFM-Mode, Doppler, B-Flow, coded contrast Harmonic, Realtime4D*

**Scan format** *Linear, convex, microconvex, sector phased array, trapezoid*

**Transducer inputs** *4*

**Highlights**
- Volume ultrasound (3D and contrast harmonic imaging, VOCAL II, 16 Mhz volume probe)
- TUI (Tomographic Ultrasound Imaging)
- CrossBeam realtime compound (up to 9 angles)
- Matrix array transducer technology
- LOGIQView (panoramic imaging)
- Ergonomic design with swiveling keyboard, LCD monitor, VoiceScan

## GE Healthcare Logiq 7

**Modes** *B-Mode, M-Mode, CFM-Mode, Doppler, B-Flow color, Coded Contrast Harmonic, StressEcho, anatomical M-Mode*

**Scan format** *Linear, convex, micro-convex, sector phased array, trapezoid*

**Transducer inputs** *4*

**Highlights**
- High end shared service system
- B-Flow color (digitally subtraction technique)
- Matrix array transducer support
- CrossBeam realtime compound and speckle reduction imaging
- Contrast harmonic imaging with DualView and TIC analysis

## GE Healthcare Logiq S6

**Modes** *B-Mode, M-Mode, CFM-Mode, Doppler, B-Flow colour, Coded Contrast Harmonic, StressEcho, Anatomical M-Mode*

**Scan format** *Linear, convex, microconvex, sector phased array, trapezoid*

**Transducer inputs** *3*

**Highlights**
- Compact shared service system
- B-Flow color (digitally subtraction technique)
- Matrix array transducer support
- CrossBeam realtime compound and speckle reduction imaging
- Digitally archive with RawData support

## GE Healthcare Logiq P6

**Modes** *B-Mode, M-Mode, CFM-Mode, Doppler, B-Flow color, Coded Contrast Harmonic, StressEcho, Anatomical M-Mode*

**Scan format** *Linear, convex, microconvex, sector phased array, trapezoid*

**Transducer inputs** *3*

**Highlights**
- Compact shared service system B-Flow color (digitally substraction technique)
- CrossBeam realtime compound and speckle reduction imaging
- LOGIQView (panoramic imaging)
- Auto optimize (For B-Mode, color, Doppler)
- Digitally archive with RawData support

## GE Healthcare Logiq A5 / P5 Premium

**Modes** *Modular configurable from b/w system up to color triplex system (B-Mode, M-Mode, CFM-Mode, Doppler, B-Flow, cardiology)*

**Scan format** *Linear, convex, microconvex, sector phased array, trapezoid*

**Transducer inputs** *3*

**Highlights**
- Compact lightweight and modern design with 15“ LCD monitor
- CrossBeam and speckle reduction Imaging
- LOGIQView (panoramic imaging)
- Auto optimize (for B-Mode, color, Doppler)
- Digitally archive with RawData support

## GE Healthcare Logiq e

**Modes** *B-Mode, M-Mode, CFM-Mode, Doppler*

**Scan format** *Linear, convex, microconvex, sector phased array, trapezoid*

**Transducer inputs** *1*

**Highlights**
- Portable premium system with shared service capabilities
- High frequency modul (for vascular and SmallParts diagnostic)
- Sector phased array modul (for cardiology)
- CrossBeam
- LOGIQView (panoramic imaging)

## GE Healthcare Venue™ 40

**Modes** *B mode, Color flow Imaging, Power Doppler*

**Scan format** *Linear, Convex, Sector (Phased array)*

**Transducer inputs** *1*

**Highlights**
- No buttons. No knobs. No keyboard. Easy to use at the point of care.
- Concurrent acquisition technology provides fast, high-resolution imaging to easily visualize anatomy and needle placement.
- Depth-synchronized optimization with adjustable gain.
- CrossXBeam™ and Speckle Reduction Imaging (SRI).
- Single-surface screen – no seams, no monitor frame.

## Hitachi Medical Systems HI Vision 900

**Modes** *B & M Mode; Omni Directional M Mode; PW & CW Doppler; Dual Gate Doppler; Colour & power Doppler; Fine Flow Mode; Triplex Mode; TDI; Tissue elastography; Contrast harmonic imaging; 4D; Real-time Virtual Sonography; Real-time Bi-plane*

**Scan format** *Sector, linear, and convex array, 360° scanning, dual imaging, wide-view panoramic, HI definition Zoom, Pan Zoom; Picture in Picture*

**Transducer inputs** *3 active*

**Highlights**
- 3 types tissue harmonic imaging (6 choice of frequencies)
- Tissue adaptive filtering, HI Rez+ (4 levels) for speckle and noise reduction
- Compound imaging, HI Com (from multiple directions and different frequencies)
- Coded Imaging for increased penetration from high frequency transducers
- Option of waterproof remote control operation and voice-activated Bluetooth operation

## Hitachi Medical Systems HI Vision Preirus

**Modes** *B & M Mode; Omni Directional M Mode; PW & CW Doppler; Dual Gate Doppler; Colour & power Doppler; Fine Flow Mode; Triplex Mode; TDI; Tissue elastography; Contrast harmonic imaging; 4D; Real-time Virtual Sonography; Real-time Bi-plane*

**Scan format** *Sector, linear and convex array, 360° scanning, trapezoid, B-steer, dual imaging, wideview panoramic, HI definition Zoom, Pan Zoom; Picture in Picture*

**Transducer inputs** *3 active*

**Highlights**
- Unique ergonomic design gives increased system flexibility
- 3 types tissue harmonic imaging (6 choice of frequencies)
- Tissue adaptive filtering, HI Rez+ (4 levels) for speckle & noise reduction
- Compound imaging, HI Com (from multiple directions and different frequencies)
- Graphical User Interface incorporating Smart Tab menus, Image Thumbnails and Touch Screen panel for image optimisation

## Hitachi Medical Systems EUB-7500 HV

**Modes** *B & M Mode; Omni Directional M Mode; PW & CW Doppler; Dual Gate Doppler; Colour & power Doppler; Fine Flow Mode; Triplex Mode; TDI; Tissue elastography; Contrast harmonic imaging; 4D; Real-time Virtual Sonography; Real-time Bi-plane*

**Scan format** *Sector, linear and convex array, 360° scanning, dual imaging, wide-view panoramic, HI definition Zoom, Pan Zoom; Picture in Picture*

**Transducer inputs** *3 active ports*

**Highlights**
- 3 types tissue harmonic imaging (6 choice of frequencies)
- Tissue adaptive filtering, HI Rez+ (4 levels) for speckle and noise reduction
- Compound imaging, HI Com (from multiple directions and different frequencies)
- Option of waterproof remote control operation and voice-activated Bluetooth operation
- Compatibility with wide range of transducers including endoscopic/ bronchoscopic options

## Hitachi Medical Systems HI Vision Avius

**Modes** *B & M Mode; Omni Directional M Mode; PW & CW Doppler; Colour & power Doppler; Fine Flow Mode; Triplex Mode; TDI; Tissue elastography; Contrast harmonic imaging; 4D*

**Scan format** *Sector (phased), linear, and convex array, 360° scanning, trapezoid, B-steer, dual imaging, Wideview panoramic, HI definition Zoom, Pan Zoom; Picture in Picture*

**Transducer inputs** *3 active ports*

**Highlights**
- 3 types tissue harmonic imaging (6 choice of frequencies)
- Tissue adaptive filtering, HI Rez+ (4 levels) for speckle & noise reduction
- Compound imaging, HI Com (from multiple directions and different frequencies)
- Graphical User Interface incorporating Smart Tab menus, Image Thumbnails for image optimisation
- PSS, patient specific scanning selector

## Hitachi Medical Systems EUB-7000 HV

**Modes** *B & M Mode; Omni Directional M Mode; PW and CW Doppler; Colour and power Doppler; TDI; Tissue elastography; 4D*

**Scan format** *Sector (phased), linear, and convex array, 360 degrees radial scanning, dual imaging, wide view panoramic, HI definition Zoom, Pan Zoom; Picture in Picture*

**Transducer inputs** *3 active ports*

**Highlights**
- 3 types tissue harmonic imaging (6 choice of frequencies)
- Tissue adaptive filtering, HI Rez (4 levels) for speckle and noise reduction
- Option of waterproof remote control operation and voice-activated Bluetooth operation
- Compatibility with wide range of transducers including endoscopic/bronchoscopic, surgery and urology options
- Real-time tissue elastography for breast, prostate, pancreas, thyroid, musculoskeletal, and many more

## Landwind Mirror2Plus

**Modes** *B-mode, M-mode, color-, high sensitivity power doppler, PW Doppler£¨ CW Doppler*

**Scan format** *Phased, Linear, convex, micro-convex*

**Transducer inputs** *3 active ports*

**Highlights**
- Tissue Doppler imaging
- Color Doppler panoramic imaging
- High resolution write zoom
- MCI (Multi-angle Compound Imaging)
- Phase inversion tissue harmonic imaging
- Color M mode

## Landwind Mirror2

**Modes** *B-mode, M-mode, color-, high sensitivity power doppler, PW doppler*

**Scan format** *Linear, convex, micro-convex*

**Transducer inputs** *2 active ports*

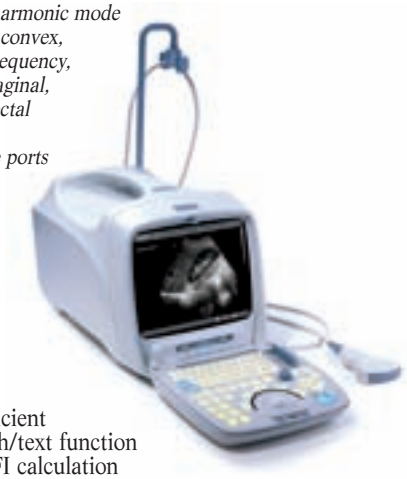
**Highlights**
- High sensitivity of power Doppler imaging
- Color Doppler panoramic imaging
- Color Doppler 3D imaging
- Real time PW spectrum auto calculation
- THI for TDP technically difficult patients(obese,old,etc)
- Big FOV angle of trans-vaginal probe

## Landwind NeuCrystal C40

**Modes** *B-mode, B/B, 4B, M, B/M, tissue harmonic mode*

**Scan format** *Linear, convex, multi-frequency, trans-vaginal, trans-rectal*

**Transducer inputs** *2 active ports*



**Highlights**
- Quick image save, batch transferred to USB stick
- Context dependent Softkey, intuitive, efficient
- Powerful report graph/text function
- 4B images for OB AFI calculation
- THI for TDP technically difficult patients(obese,old,etc)

## Landwind NeuCrystal F40

**Modes** *B-mode, B/B, 4B, M, B/M, tissue harmonic mode*

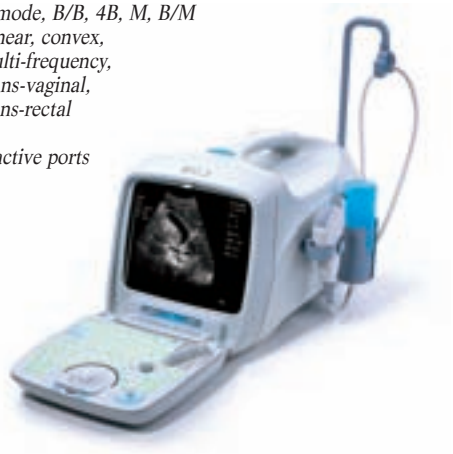
**Scan format** *Linear, convex, multi-frequency, trans-vaginal, trans-rectal*

**Transducer inputs** *2 active ports*

**Highlights**
- Quick image save, batch transferred to USB stick
- Context dependent Softkey, intuitive, efficient
- Powerful report graph/text function
- 4B images for OB AFI calculation
- THI for TDP technically difficult patients(obese,old,etc)
- iView¸ image management
- DICOM storage SCU

## Landwind NeuCrystal C30

**Modes** *B-mode, B/B, 4B, M, B/M*
**Scan format** *Linear, convex, multi-frequency, trans-vaginal, trans-rectal*
**Transducer inputs** *2 active ports*



**Highlights**
- Quick image save and transferred to USB stick
- Short cut key for obstetrics measurement
- 4B images for OB AFI calculation

## Landwind Mirror2Plus

**Modes** *B-mode, M-mode, color-, high sensitivity power doppler, PW Doppler£¨ CW Doppler*
**Scan format** *Phased, Linear, convex, micro-convex*
**Transducer inputs** *3 active ports*

**Highlights**
- Tissue Doppler imaging
- Color Doppler panoramic imaging
- High resolution write zoom
- MCI (Multi-angle Compound Imaging)
- Phase inversion tissue harmonic imaging
- Color M mode

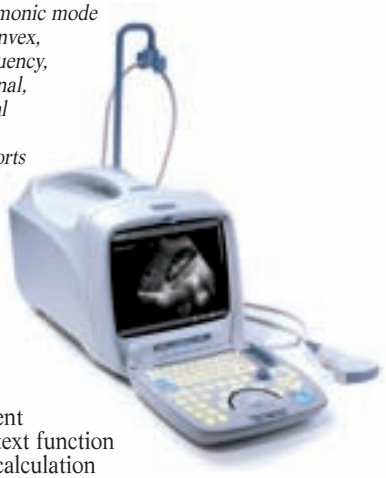
## Landwind Mirror2

**Modes** *B-mode, M-mode, color-, high sensitivity power doppler, PW doppler*
**Scan format** *Linear, convex, micro-convex*
**Transducer inputs** *2 active ports*

**Highlights**
- High sensitivity of power Doppler imaging
- Color Doppler panoramic imaging
- Color Doppler 3D imaging
- Real time PW spectrum auto calculation
- THI for TDP technically difficult patients(obese,old,etc)
- Big FOV angle of trans-vaginal probe

## Landwind NeuCrystal C40

**Modes** *B-mode, B/B, 4B, M, B/M, tissue harmonic mode*
**Scan format** *Linear, convex, multi-frequency, trans-vaginal, trans-rectal*
**Transducer inputs** *2 active ports*



**Highlights**
- Quick image save, batch transferred to USB stick
- Context dependent Softkey, intuitive, efficient
- Powerful report graph/text function
- 4B images for OB AFI calculation
- THI for TDP technically difficult patients(obese,old,etc)

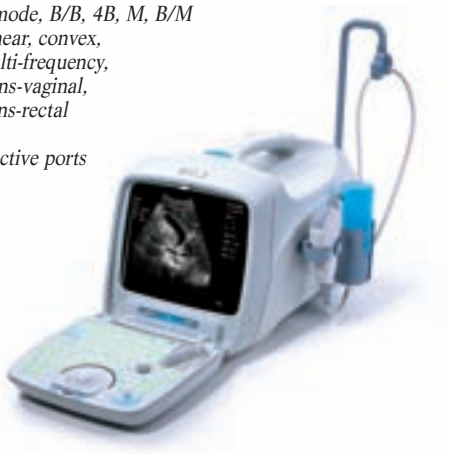
## Landwind NeuCrystal F40

**Modes** *B-mode, B/B, 4B, M, B/M, tissue harmonic mode*
**Scan format** *Linear, convex, multi-frequency, trans-vaginal, trans-rectal*
**Transducer inputs** *2 active ports*

**Highlights**
- Quick image save, batch transferred to USB stick
- Context dependent Softkey, intuitive, efficient
- Powerful report graph/text function
- 4B images for OB AFI calculation
- THI for TDP technically difficult patients(obese,old,etc)
- iView¸ image management
- DICOM storage SCU

## Landwind NeuCrystal C30

**Modes** *B-mode, B/B, 4B, M, B/M*
**Scan format** *Linear, convex, multi-frequency, trans-vaginal, trans-rectal*
**Transducer inputs** *2 active ports*



**Highlights**
- Quick image save and transferred to USB stick
- Short cut key for obstetrics measurement
- 4B images for OB AFI calculation

## Medison Sonoace X4

| | |
|---|---|
| Modes | *B-mode, freehand 3D, M-mode and PW Spectral Doppler* |
| Scan format | *Linear, convex and micro convex* |
| Transducer inputs | *1 (opt. 2)* |

**Highlights**
- Premium B/W and Doppler ultrasound system
- Digital multi-beam-forming channels
- Full Spectrum™ imaging
- Free hand 3D imaging

## Medison Sonoace X6

| | |
|---|---|
| Modes | *B-mode, Tissue- and Pulse inversion Harmonic Imaging, DynamicMR™, M-mode, Anatomical M-mode, CFM-mode, Power Doppler, Spectral Doppler (PWD/CWD), Pulsed Wave Tissue Doppler Imaging* |
| Scan format | *Linear, trapezoidal, compound linear, convex, micro convex, 3D convex, phased array sector and pencil* |
| Transducer inputs | *3 + 1* |

**Highlights**
- Economical multi-speciality digital color ultrasound system
- Full Spectrum™ and Tissue Harmonic Imaging
- Color and Power Doppler
- Free hand 3D imaging
- High resolution (LCD monitor)

## Medison Sonoace X8

| | |
|---|---|
| Modes | *B-mode, Tissue- and Pulse inversion Harmonic Imaging, DynamicMR™, M-mode, Anatomical M-mode, CFM-mode, Power Doppler, Spectral Doppler (PWD/CWD), Pulsed Wave Tissue Doppler Imaging, Live 3D™/4D and 3D XI™* |
| Scan format | *Linear, trapezoidal, compound line ar, convex, micro convex, 3D convex, phased array sector and pencil* |
| Transducer inputs | *3 + 1* |

**Highlights**
- Popular class multi-speciality live 3D™/4D ultrasound system
- High resolution (1280 x 1024) 17" LCD monitor
- Live 3D™ with extreme volume rates
- 3D XI™, Multi Slice View™, Oblique view™ and VolumeCT™
- Highly sensitive directional Power Doppler
- Auto IMT, CEUS, Elastoscan

## Medison Accuvix V20 Prestige

| | |
|---|---|
| Modes | *B-mode, Tissue- and Pulse inversion Harmonic Imaging, DynamicMR™, M-mode, Anatomical M-mode, CFM-mode, Power Doppler, Spectral Doppler (PWD/CWD), Pulsed Wave Tissue Doppler Imaging, Live 3D™/4D and 3D XI™* |
| Scan format | *Linear, trapezoidal, compound linear, 3D linear, convex, micro convex, 3D Convex, phased array sector and pencil* |
| Transducer inputs | *4 + 1* |

**Highlights**
- Multi-application 3D/4D ultrasound system
- High resolution 19" LCD monitor
- Auto IMT, CEUS, Elastoscan
- Panoramic View 2.0, Spatial Compound Imaging, Speckle Reduction Filter, DynamicMR™ PLUS
- XI STIC™ , BW STIC, Color STIC™, STIC + MSV™, 3D MXI™ ,Multi Volume Slice™, Mirror View™, Multi-OVIX™ 3D DMRTM, VCETM (Volume Contrast Enhancement)
- Highly sensitive directional Power Doppler

## Medison Accuvix V10

| | |
|---|---|
| Modes | *B-mode, Tissue- and Pulse inversion Harmonic Imaging, DynamicMR™, M-mode, Anatomical M-mode, CFM-mode, Power Doppler, Spectral Doppler (PWD/CWD), Pulsed Wave Tissue Doppler Imaging, Live 3D™/4D and 3D XI™* |
| Scan format | *Linear, trapezoidal, compound linear, convex, micro convex, 3D convex, phased array sector and pencil* |
| Transducer inputs | *3 + 1* |

**Highlights**
- Multi Application live 3D/4D ultrasound system
- High resolution 19"LCD monitor
- Live 3D™ with extreme volume rates
- 3D XI™ Multi Slice View™, Oblique view™ and VolumeCT™ 3D XI STIC™, VOCAL and XI VOCAL™
- Highly sensitive directional Power Doppler
- CEUS, Elastoscan

## Medison MySono U5

| | |
|---|---|
| Modes | *B-mode, Tissue- and Pulseinversion Harmonic Imaging,DynamicMRTM, M-mode,Anatomical M-mode, CFM-mode,Power Doppler, Spectral Doppler(PWD/CWD), Pulsed WaveTissue Doppler Imaging, Live3DTM/4D and 3D XI* |
| Scan format | *Linear, trapezoidal, compound linear, convex, micro convex, 3D convex, phased array sector* |
| Transducer inputs | *1 port* |

**Highlights**
- Multi Application portable live 3D/4D ultrasound system
- High resolution 15"LCD monitor
- Live 3D™ with extreme volume rates
- 3D XITMMulti Slice View™, Oblique view™ and VolumeCT™–3D XI STIC™, VOCAL, XI VOCAL™, Auto IMT
- Highly sensitive directional Doppler

## Medison Sonoace X1

**Modes** *B-mode, BB mode, 4B, BM, M mode*
**Scan format** *Linear, convex*
**Transducer inputs** *2 port*

**Highlights**
- Multi Application portable ultrasound system
- 10" CRT monitor
- Large image storage
- USB direct storage
- High resolution zoom

## Mindray DC-3

**Modes** *B,2B,4B, B/M, M, Color Doppler Flowing Imaging, HPRF, Power, Dirpower*
**Scan format** *Linear Array, Convex Array, Micro Convex, Endocavity, Intrarectal, Phased array, T-type linear, Biplanar*
**Transducer inputs** *4*

**Highlights**
- Compact system with full ergonomic design
- iClear™: Speckle reduction technology
- THI(Tissue Harmonic Imaging), Smart 3D™, Trapezoid imaging, iScape™ view and Free Xros™ imaging
- iTouch™: Intelligent one-touch image optimization
- iStation™: Intelligent patient management platform
- DVD-R/W, USB, DICOM 3.0, and ECG module
- Height adjustable and rotatable control panel

## Mindray DC-7

**Technology** *iClear, iBeam, Frequency Compounding Imaging, Adaptive Frame Averiging*
**Modes** *B, C, M, PW, CW, Power (DirPower), TDI, CM (Color M), 4D*
**Scan format** *Convex, Linear, phased array, convex volume, endovaginal volume*
**Transducer inputs** *2-15 Mhz*

**Highlights**
- High-resolution LCD screen, color touch screen
- Four active probe connectors, wide bandwith and high density integrated probes
- Simplified workflow with fast system response
- Value-added performance in versatile fields of applications
- Rich use-define packages and specific reports

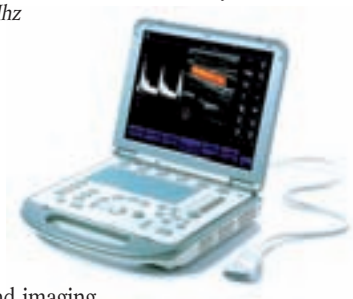
## Mindray M7

**Technology** *Microsoft Windows XP Professional with ASIC Design Platform*
**Modes** *B / M / Anatomical M / Color Doppler Velocity / Power (DirPower) / PW / CW /Smart 3D /Static 3D / 4D/ iScape (panoramic imaging) / TDI (Tissue Doppler Imaging) / Color M (CM)*
**Scan format** *Linear, Convex, Phase, Endocavity, Volume*
**Transducer inputs** *2-15 Mhz*

**Highlights**
- Phase Inversion THI
- iBeam™ Spatial compound imaging
- iClear™ Adaptive Speckle Suppression Imaging
- iTouch™ Intelligent Image Optimization
- iZoom™ Automatically expand the image to full screen
- iRoam™, 802.11b/g wireless data transfer solution

## Mindray M5

**Technology** *Microsoft Windows XP Embedded*
**Modes** *B / M / Color Doppler Velocity / Power (DirPower) / PW / CW / Smart 3D /Static 3D / iScape (Panoramic imaging)*
**Scan format** *Linear, Convex, Phase, Endocavity*
**Transducer inputs** *2-15 Mhz*



**Highlights**
- THI
- iBeam™ Spatial compound imaging
- iClear™ Adaptive Speckle Suppression Imaging
- iTouch™ Intelligent Image Optimization
- iZoom™ Automatically expand the image to full screen
- iStation Powefull patient data management platform

## Philips HD7

**Modes** *Microfine 2D focusing, Color Doppler, Color Power Angio imaging, Pulsed Wave Doppler, 3D, Stress Echo, M-mode and Anatomical M-mode, pulse inversion, Tissue Harmonic Imaging' DICOM SR and contrast*
**Scan format** *Curved, linear and sector arrays*
**Transducer inputs** *up to 4*

**Highlights**
- User centric functions and design
- Exceptional HD performance with Broadband beamformer and broadband transducers
- Optimized workflow with simple 2D, color and spectral Doppler optimization
- All type of clinical applications:
- Data Management with USB access through user interface
- Transducer compatibility with other Philips systems

## Philips iU22

**Modes** *2D, Tissue Harmonic, M-Mode, advanced volumetric modes including Live xPlane (simultaneous display of 2 live images), PW-Doppler, CW-Doppler, panoramic, contrast, Color Power Angio*

**Scan format** *Curved, linear, sector (PureWave) and xMATRIX arrays*

**Transducer inputs** *3*

### Highlights
- Exceptional image quality as a result of leading-edge technologies
- Advanced volumetric imaging with freehand, automated and electronic (xMATRIX) acquisition
- Unique system design provides unparalleled ergonomics
- Built-in automation – optimal image quality with the push of a button
- Full range of applications including abdominal, ob/gyn, TCD, musculoskeletal, adult cardiac (including stress echo), vascular and small parts

## Philips HD11 XE

**Modes** *2D, Tissue Harmonic, M-Mode, PW-Doppler, Color Power Angio, CW-Doppler, panoramic, trapezoidal, contrast*

**Scan format** *Curved and linear arrays*

**Transducer inputs** *5*

### Highlights
- Fully equipped to cover a full range of applications: abdominal, small parts/musculokeletal, ob/gyn, vasclar, cardiac and TCD
- Advanced imaging capabilities with volumetric imaging and manipulation tools: iSlice, STIC, Colour invert
- Cardiac imaging supported with stress echo, anatomical M-mode and tissue Doppler imaging
- Superb ergnomics and mobility – the system goes where you need it

## Philips EnVisor HD

**Modes** *2D, Tissue Harmonic, PW-Doppler, CW-Doppler, M-Mode, trapezoid, panoramic, 3D, contrast*

**Scan format** *Sector, curved and linear arrays*

**Transducer inputs** *4*

### Highlights
- Optimized workflow for the demanding practice
- Full range of transducers support a wide variety of exams, including abdominal, cardiac (including TEE), ob/gyn, vascular and musculoskeletal/small parts
- Workstation quality data management at the point of care
- Affordably priced

## Philips HD3

**Modes** *B-Mode, M-Mode, Color Doppler, VeloPower, PW-Doppler, HPRF, CW-Doppler, Tissue Harmonic Imaging, Color Power Angio Imaging, Grayscale 3D*

**Scan format** *Curved and linear arrays*

**Transducer inputs** *3 + 1*

### Highlights
- Powerful capabilities in a compact package
- HD performance in a small, easy-to-use, mobile system
- Easy to maneuver and ergonomically adjustable
- Extremely affordable

## Siemens Acuson S2000

**Modes** *B-mode, Color Doppler, Power Doppler, PW Doppler (Duplex, Triplex), Doppler Tissue Imaging (Color and PW), CW spectral Doppler, M-mode and Color Doppler M-mode*

**Scan format** *Curved array, phased array, linear, endocavity, 3D/4D imaging, pencil*

**Transducer inputs** *3*

### Highlights
- Advanced transducer technology including micro-pinless connectors, Hanafy lens and matrix arrays, and silicon-ready
- Advanced breast imaging application with eSieTouch™ elasticity imaging and Fatty Tissue Imaging technologies including option to add ABVS Automated Breast (see Mammography)
- Advanced SieClear™ spatial compounding with dynamic TCE™ technology with speckle reduction in 3D
- Advanced fourSight™ technology
- Automatic measurement of lesions with syngo® e-Sie Calcs native tracing software

## Siemens Acuson Antares

**Modes** *B-mode, Color Doppler, Power Doppler, PW Doppler (Duplex, Triplex), Doppler Tissue Imaging (Color and PW), CW spectral Doppler, M-mode and Color Doppler M-mode*

**Scan for mat** *Curved array, phased array, linear, endocavity, 3D/4D imaging, pencil*

**Transducer inputs** *3*

### Highlights
- High-end ultrasound system
- 3D/4D imaging
- Advanced breast imaging application with eSieTouch™ elasticity imaging and fatty tissue imaging technologies
- Cadence CPS Contrast enhanced imaging
- Hanafy lens transducer technology
- MultiHertz™ multiple frequency imaging technology
- Advanced SieClear™ spatial compounding with dynamic TCE™ technology
- Advanced fourSight™ technology
- TEQ™ ultrasound technology: Clarify™ vascular enhancement technology, syngo® auto OB measurements

## Siemens Acuson X300 Premium Edition

**Modes** *B-mode, Color M-mode, M-mode, Color Doppler velocity mode, Power Doppler mode, Pulsed Wave spectral Doppler mode (PW), Continuous Wave spectral Doppler mode (CW), Duplex mode, Triplex mode*

**Scan format** *Curved array, phased array, linear, endocavity, 3D/4D imaging*

**Transducer inputs** *3*

### Highlights

– Excellent imaging performance through excellent detail and contrast resolution
– high temporal resolution in 2D
– TGO™ tissue grayscale optimization technology for more consistent image quality
– High quality 4D imaging through Advanced fourSight™ technologies
– Exceptional clinical performance across a variety of applications and patient body types
– Easy-to-use ErgoDynamic imaging system design

## Siemens Acuson X300

**Modes** *B-mode, Color M-mode, M-mode, Color Doppler Velocity mode, Power Doppler mode, Pulsed Wave (PW) spectral Doppler mode, CW Continuous Wave spectral Doppler mode*

**Scan format** *Phased array, curved array, endocavity, linear array*

**Transducer inputs** *3*

### Highlights

– Hanafy lens transducer technology
– Tissue harmonic imaging
– DTI™ Doppler tissue imaging capability
– Multi-beam formation technology
– Streamlined clinical workflow with integrated DIMAQ-IP workstation, a user customizable control panel, and TGO™ tissue grayscale optimization technology
– ErgoDynamic™ imaging system design with flat panel display and articulating arm

## Siemens Acuson X150

**Modes** *B-mode, M-mode, Color Doppler Velocity mode, Power Doppler mode, Pulsed Wave (PW) spectral Doppler mode, Duplex mode, Triplex mode*

**Scan format** *Phased array, curved array, endocavity, linear array*

**Transducer inputs** *2 + 1 optional*

### Highlights

– Top diagnostic performance and scalability
– Superior 2D-mode imaging
– Color imaging option
– Cardiac screening option and phased array transducers fully integrate 3-Scape™ real-time 3D imaging application to easily acquire real-time 3D images during freehand acquisition
– Intuitively simple, yet powerful user interface with highly functional ergonomics

## Siemens Acuson P10

**Modes** *B-Mode, harmonic modes*
**Scan format** *Phased array*
**Transducer inputs** *Single handheld unit with integrated transducer*

**Highlights**
- Excellent image quality
- Instant power-up
- Removable, rechargeable battery
- Simple, intuitive user interface
- TGO™ tissue grayscale optimization technology
- Application presets
- SD memory card and USB port
- Offline image review software

## SonoScape A6 Portable B/W

**Modes** *4B, Tissue Harmonic Imaging, B, B/M, M, B/B*
**Scan format** *Linear-, Convex-, Micro Convex Array*
**Transducer inputs** *2*

**Highlights**
- Portability with Position adjustable large 12" LCD monitor
- Weight less than 6kg with a convertible cart-based system design
- Super high physical processing channel
- HD vary broadband 5-frequency-selection probes
- Full patient database solutions: DVD RW, PDF report, Dual USB 2.0 and DICOM 3.0, etc.

## SonoScape S8 Portable Color Doppler

**Technology** *Micro Scan Processing*
**Modes** *B-mode, Steer M-mode, TDI, CFM, PDI, PWD, CWD, 3D/4D, Color M-mode, Tissue Doppler Imaging*
**Scan format** *Linear-, Convex-, Micro Convex-, Phased Array, TEE*
**Transducer inputs** *2*

**Highlights**
- HCU with two standard transducer sockets and convertible cart-based system design
- HCU with premium multi-specialty 4D ultrasound
- Micro scan real-time compound imaging
- Full cardiovascular transducers: TEE, Pediatric TEE, high frequency phased array, linear, etc.
- HD transducers (frequency range:1.9 to 15MHz) and full patient database solutions

## SonoScape SSI-8000 Color Doppler

**Technology** *Micro Scan Processing*
**Modes** *B-mode, Steer M-mode, TDI, CFM, PDI, PWD, CWD, 3D/4D, Color M-mode, Tissue Doppler Imaging*
**Scan format** *Linear-, Convex-, Micro Convex-, Phased Array, TEE, Volume Convex*
**Transducer inputs** *4*

**Highlights**
- Premium multi-specialty 4D ultrasound
- A full range of cardiovascular transducers and Cardiovascular analysis kits
- Integrated with state-of-the-art imaging technologies, like micro-scan, multiple-beam processing, etc.
- 200 degree transvaginal image
- Full patient database solutions: DICOM3.0, USB2.0, HDD, etc.

## SonoScape A8 B/W

**Modes** *4B, B, B/M, M, B/B, Tissue Harmonic Imaging*
**Scan format** *Linear-, Convex-, Micro Convex Array*
**Transducer inputs** *3*

**Highlights**
- Compact and agile trolley design with standard three transducer Sockets
- Intuitive operation with M-Tuning one-key image optimization
- 180 degree HD endocavity probe with temperature-detection technology
- Intuitive operation with M-Tuning one-key image optimization.
- Full patient database solutions: DICOM3.0, USB2.0, HDD, PDF report, etc

## SonoScape S6BW Portable B/W

**Modes** *B-mode, Steer M-mode, TDI, CFM, PDI, PWD, CWD, 3D/4D, Color M-mode, Tissue Doppler Imaging*
**Scan format** *Linear Array, Convex array, Micro Convex Array, Phased Array, TEE*
**Transducer inputs** *2*

**Highlights**
- Premium B/W HCU with color option
- HCU with two standard transducer sockets and convertible cart-based system design
- Micro scan real-time compound imaging
- Full cardiovascular transducers: TEE, Pediatric TEE, high frequency phased array, linear, etc.
- HD transducers (frequency range:1.9 to 15MHz) and full patient database solutions

## SonoScape SSI-6000 Color Doppler

**Technology** *Micro Scan Processing, 200 degree transvaginal image with transducer temperature detection technology*

**Modes** *B, Steer M, CFM, PDI, PWD, CWD, 3D, Color M, 4D(optional)*

**Scan format** *Trapezoid Linear, Electronic Linear, Convex-, Micro Convex-, Phased Array, Volume Convex(optional)*

**Transducer inputs** *3*

### Highlights

– Premium 2D/3D images stem from micro scan real-time compound imaging
– A wide choice of transducers: Convex, Sector, Linear, transvaginal, etc. Maximum 15MHz frequency linear probe
– Integrated with state-of-the-art imaging technologies, like micro-scan, multiple-beam processing, etc.
– 200 degree transvaginal image and temperature-detection technology for endocavity transducers

## Sonosite MicroMaxx

**Modes** *2D, Tissue Harmonic Imaging, M-mode, Velocity Colour Dopppler, Color Power Doppler, PW, PW Tissue Doppler and CW*

**Scan format** *Linear array, curved array, phased array, multiplane TEE and micro-convex*

**Transducer inputs** *3*

### Highlights

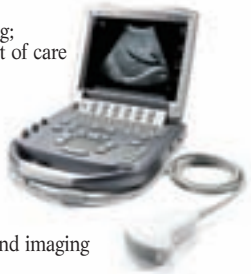
– Image quality
– Portable
– Ease-of-use
– Durable
– Reliable

## Sonosite M-Turbo

**Modes** *2 D, Tissue Harmonic Imaging, M-Mode, Velocity Colour Doppler, Colour Power Doppler, PW, PW Tissue Doppler and CW*

**Scan format** *Linear array, curved array, phased array, micro convex, multidriven multiplane TEE, pencil probe, intraoperative transducer and vaginal probe*

**Transducer inputs** *1 and 3*



### Highlights

– Portability – weight 3.8 kg; lithium-ion battery; full activity at the point of care
– Ease-of-use – booth up in a few seconds; clearly arranged user guidance
– Reliability – drop tested to withstand the real world (1.50 m)
– Durability – unique 5-year warranty
– SonoHD™ – high resoluted image quality; 8 GB storage capability (pictures and videos up to 60 seconds)
– SonoMB™ – multibeam, real-time compound imaging
– SonoAdapt™ – tissue optimization
– SonoCalc IMT – intima media thickness measurement tool, automatic edge detection with mean and maximum thickness reporting, internal and external
– Auto-gain for 2D imaging

## SuperSonic Imagine Aixplorer

**Technology** *MultiWave™ Ultrasound*

**Modes** *B-mode, Color Flow, Color Power, PW Doppler, ShearWave™ Elastography, UltraFast™ Imaging, Tissue Harmonic Imaging, SuperCompound™, SuperRes™, TissueTuner™,Trapezoidal Imaging*

**Scan format** *Linear array, curved array*

**Transducer inputs** *2*

### Highlights

– SonicSoftware™, an all software based architecture, providing impeccable image quality
– SonicTouch™ and UltraFast™ Imaging enabling ShearWave™ Elastography to measure and display, in real-time, local tissue elasticity in kilopascal
– ShearWave™ Elastography / user-skill independent, real time, quantitative, reproducible
– Ultra fast acquisition rate, up to 20.000 Hz
– Q-Box™ Quantitative Tools Elasticity Measurement
– Integrated BI-RADS® and new Thy-RADS™ Clinical Reporting
– Easy to operate with Interactive Touch Screen

## Toshiba Aplio XG

**Modes** *2D, 3D, 4D, M modes; PW/CW Doppler; high PRF; color flow Doppler*

**Scan format** *Linear, convex, matrix, and phased arrays; biopsy & 4D volume probes (linear and convex); Motorised-TEE; rectal, vaginal & pencil probe*

**Transducer inputs** *3 + 1 (pencil)*

### Highlights

– Precision Imaging, MicroPure and Elastography
– ApliPure Plus: Advanced realtime compound imaging
– Differential THI: better resolution and depth of penetration
– Advanced Dynamic Flow: Broadband colour flow Doppler
– Contrast imaging: Low MI, VRI, microflow imaging
– Whole body 4D imaging with linear and convex transducers; Volume view; Multiview

## Toshiba Viamo

**Modes** *2D, M modes; spectral Doppler; high PRF; color flow Doppler*

**Scan format** *Linear, convex and phased arrays*

**Transducer inputs** *1 + 1*

– Hybrid operation with touch screen and programmable panel
– Versatile mounting in desk-top, cart and tablet modes
– Instant image optimisation
– One-click workflow control

### Highlights

– Premium image quality
– 5 seconds bootup time

## Toshiba Xario XG

**Modes** *2D, 3D, 4D, M modes; PW/CW Doppler; HPRF; color flow Doppler*

**Scan format** *Linear, convex and phased arrays; biopsy probe; 4D volume probes (linear and convex); Motorised-TEE; rectal and vaginal probe; pencil probe*

**Transducer inputs** *3 + 1 (pencil)*

### Highlights
- Precision Imaging and MicroPure
- Aplipure Plus: advanced real-time compound imaging
- Differential THI: better resolution and depth of penetration
- Advanced Dynamic Flow: broadband color flow doppler
- Quick Scan: image optimisation with just one click
- Whole body 4D imaging with linear and convex transducers; Volume view; Multiview

## Toshiba Xario

**Modes** *2D, 3D, 4D, M modes; PW/CW Doppler; high PRF; color flow Doppler*

**Scan format** *Linear, convex, and phased arrays; biopsy probe; 4D volume probe; Motorised-TEE; rectal and vaginal probe; pencil probe*

**Transducer inputs** *3 + 1 (pencil)*

### Highlights
- Precision Imaging and 4D Convex
- ApliPure: Realtime compound imaging
- Advanced Dynamic Flow: Broadband colour flow Doppler
- Quick Scan: image optimization with just one click
- User defined programming of operating console
- IASSIST: Remote control via handheld Bluetooth controller

## Toshiba Nemio XG

**Modes** *2D, 3D, 4D, M modes; PW/CW Doppler; HPRF; color flow Doppler*

**Scan format** *Linear, convex and phased arrays; biopsy probe; 4D volume probe; TEE; rectal and vaginal probe; pencil probe, endoscopic FNA, Laparoscopic*

**Transducer inputs** *3 + 1 (pencil)*

### Highlights
- ApliPure: Realtime Compound Imaging
- Advanced dynamic flow: broadband color flow Doppler
- SonoSet: Workflow control with just one click
- User defined programming of menus and buttons
- Onboard reporting, DICOM, DVD, USB, and export to PC

## Toshiba Famio XG

**Modes** *2D, M modes; THI*

**Scan format** *Linear and convex arrays; biopsy probe; rectal and vaginal probe*

**Transducer inputs** *2*

### Highlights
- 100% digital signal processing
- Broadband technology
- Image optimization option
- User defined programming of the operating console
- Image and loop storage on hard-disk and CD, DICOM

## Ultrasonix SonixMDP

**Modes** *B, Dual B, Quad B, Spatial Compound. Trapezoidal. B-Mode, Extended Sector, CFM Colour Doppler, Directional Power Doppler, Colour Steering, PW Doppler, Pulsed Doppler steering, CW Doppler, M, 3-D, Panoramic, Harmonic. Duplex, Triplex, 4D/Live 3D, Elastography, Cardiac*

**Scan format** *Linear, Convex, Microconvex, Phased Array, Endocavity*

**Transducer inputs** *3*

### Highlights
- Intuitive console design, QSonix quick exam button
- Premium Image Quality, Compact Design
- OpenSONIX Platform Increased Expansion Options
- 17" LCD Monitor, DVI Input
- Dicom Compliant, Online Updates, Wireless Connectivity
- Sonix LIVE Live Streaming
- ECG Module

## Ultrasonix SonixOP

**Modes** *B, Dual B, Quad B, Spatial Compound. Trapezoidal. B-Mode, Extended Sector, CFM Colour Doppler, Directional Power Doppler, Colour Steering, PW Doppler, Pulsed Doppler steering, CW Doppler, M, Harmonic. Duplex, Triplex*

**Scan format** *Linear, Convex, Microconvex, Phased Array, Endocavity*

**Transducer inputs** *3*

### Highlights
- Intuitive console design, QSonix quick exam button
- Premium Image Quality, Compact Design
- OpenSONIX Platform Increased Expansion Options
- 17" LCD Monitor, DVI Input
- Dicom Compliant, Online Updates

## Ultrasonix SonixSP

| | |
|---|---|
| Modes | *B, Dual B, Quad B, Spatial Compound. Trapezoidal. B-Mode, Extended Sector, CFM Colour Doppler, Directional Power Doppler, Colour Steering, PW Doppler, Pulsed Doppler steering, CW Doppler, M, 3D, Panoramic, Harmonic. Duplex, Triplex, 4D/Live 3D, Elastography* |
| Scan format | *Linear, Convex, Microconvex, Phased Array, Endocavity* |
| Transducer inputs | *3* |

### Highlights

- Intuitive console design, QSonix quick exam button
- Premium Image Quality, Compact Design
- OpenSONIX Platform Increased Expansion Options
- 17" LCD Monitor, DVI Input
- Dicom Compliant, Online Updates, Wireless Connectivity

## Ultrasonix SonixTOUCH

| | |
|---|---|
| Modes | *B, Dual B, Quad B, Spatial Compound, Trapezoidal, B-mode steering, Extended Sector, CFM Color Doppler, Power Doppler, Directional Power Doppler, Color Steering, PW Doppler, Pulsed Doppler steering, CW Doppler, M, 3-D, Panoramic, Harmonic, Duplex, Triplex, 4D/Live 3D, Elastography* |
| Scan format | *Linear, Convex, Microconvex, Phased Array, Endocavity* |
| Transducer inputs | *3* |

### Highlights

- Touch Screen Technology
- Premium Image Quality
- Application Specific Packages (Anesthesia, Critical Care, IVF, and more)
- Easy to use
- Easy to Maneuver
- Compact design, small foot print, fold down 17" DVI display
- Battery Powered (option)
- Online updates

## Well.D WED-160

| | |
|---|---|
| Modes | *B,B+B,B+M,M,4B* |
| Scan format | *Convex, linear, micro-convex* |
| Transducer inputs | *2* |

### Highlights

- Windows xp operation system based
- 4 sets of scroll menus mouse control friendly
- Ultrasound Work-station managing system
- Powerful measurement & calculation software packages
- Patient data managing system
- 4X windows
- Pseudo color
- Dicom 3.0
- 12 inch LCD
- Full range of probes

## Well.D WED-180

| | |
|---|---|
| Modes | *B,B+B,B+M,M,4B,B+2B,6B,12B* |
| Scan format | *Convex, linear, micro-convex* |
| Transducer inputs | *2* |

### Highlights

- Net weight:6.1kg
- 12 inch TFT color LCD (1024*768)
- THI (tissue harmonic imaging)
- Automatic report generation (Normal/OB)
- Pseudo color
- 2 USB port
- Full range of probes

## Well.D WED-660

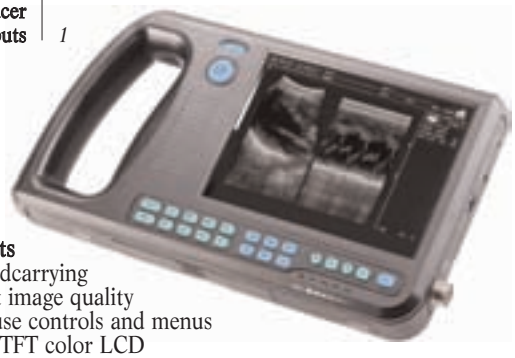
| | |
|---|---|
| Modes | *B,B+B,B+M,M,4B* |
| Scan format | *Convex, linear, micro-convex* |
| Transducer inputs | *2* |

### Highlights

- Windows xp operation system based
- sets of scroll menus mouse control friendly
- Ultrasound Work-station managing system
- Powerful measurement & calculation software packages
- Patient data managing system
- THI (tissue harmonic imaging)
- 4X images
- Pseudo color
- Dicom 3.0
- 15 inch LCD
- Full range of probes

## Well.D WED-3000

| | |
|---|---|
| Modes | *B,B+B,B+M,M,4B* |
| Scan format | *Convex, linear* |
| Transducer inputs | *1* |

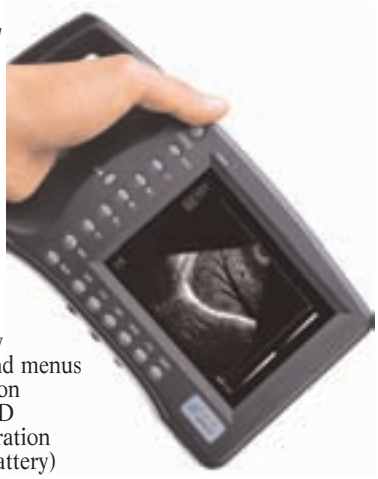


### Highlights

- Easy handcarrying
- Excellent image quality
- Easy-to use controls and menus
- 6.4 inch TFT color LCD
- 3hrs continuous operate
- 1.3 Kg (including the battery)
- Multi-frequency probes
- Car charger

## Well.D WED-2000A

| | |
|---|---|
| **Modes** | *B,B+B,B+M,M* |
| **Scan format** | *Mechanical Sector* |
| **Transducer inputs** | *1* |



**Highlights**
- Easy handcarrying
- Excellent image quality
- Easy-to use controls and menus
- Low power consumption
- 5.0 inch TFT color LCD
- 3.5hrs continuous operation
- 650 g (including the battery)
- Car charger

## z.one *ultra*

| | |
|---|---|
| **Technology Mode** | *Zone Sonography™ Technology 2D / B- & M-Mode, Tissue Harmonic Doppler Imaging, Compound Harmonics, Color- and Color Power Doppler, PW- & CW-Doppler, Simultaneous Dual Imaging, 3D-Imaging, Elastography, Real-Time Triplex, Contrast Imaging* |
| **Scan Transducer inputs** | *Curved Array (Micro-convex), Linear Array, Phased Array, Virtual Apex Array (trapezoidal), TEE*<br>*1 – Z.ONE Scan Engine only (hand-held use)*<br>*3 – Z.ONE ULTRA or ULTRA SP (Scan Engine or Scan Module combined with SmartCart or SmartCart SP Workstation)* |

**Highlights**
- ZST Zone Speed Technology
- ZSI Zone Speed Index
- AUTO-OPT Automatic Optimization
- IQ Scan / Retrospective Imaging (The Virtual Patient)
- Utilizing the power of DSP Digital Signal Processing chip technology
- Convertible / Hybrid Ultrasound Concept
- Battery Pack for SmartCart Workstations

## Civco Ultrasound Transducer Covers

CIVCO's CIV-Flex™ Transducer Covers have been recommended for over two decades as the latex-free cover of choice and are a reliable way to provide patient and staff safety and prevent the spread of infection.

**Highlights**
- Offers extended sterile protection when performing puncture and drainage procedures
- Soft, pliable, distortion-free, latex-free material
- Available telescopically-folded for easy application to transducer and in extended lengths of 36 and 58 inches
- Select covers offer a three-dimensional box end

## Civco General Purpose Needle Guidance Systems

CIVCO's needle guidance systems offer physicians reduced technique variability, a shorter learning curve and reduced procedure time during ultrasound-guided procedures. They are designed for use with ultrasound systems from leading equipment manufacturers.

**Highlights**
- Ultra-Pro II™ Needle Guide is designed for ultrasound-guided procedures including catheter placement, core tissue biopsy, drainage procedures and fine needle aspirations
- AccuSITE™ Needle Guide is a transverse guide designed specifically for guidance in central line placement procedures
- Infiniti™ Needle Guide offers a unique open channel with infinite angle capabilities and is ideal for deep or shallow access applications including breast biopsy and regional anesthesia

## Civco eTRAX™ Needle Guidance System

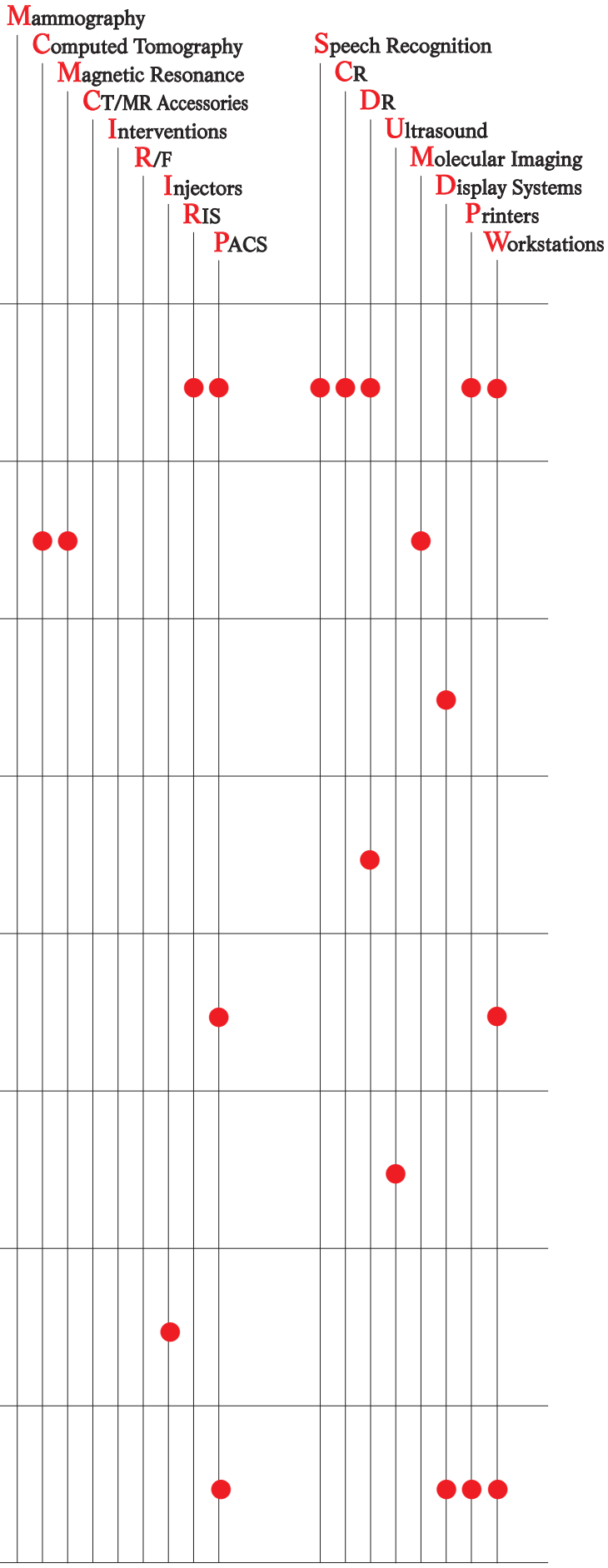
eTRAX allows physicians safe and precise placement of instruments in the interventional suite by tracking the tip of the needle using electromagnetic technology in real-time navigation.

**Highlights**
- Enables precise percutaneous targeting of lesions without radiation or open surgery
- Ideal for ablations, core tissue biopsies, drainage, fluid aspirations, therapeutic delivery, vascular access and anesthesia
- Accepts 18 GA or smaller instruments
- Compatible with validated ultrasound equipment and software only

## Siemens Acuson S2000 Automated Breast Volume Scanner

**Highlights**
- Ideally suited to image patients with dense breast tissue and/or a history of breast disease
- Acquisition of full-field volumes of the breast automatically, quickly and comfortably
- Efficient and comprehensive analysis of the volume data
- Comprehensive BI-RADS® reporting capabilities
- Patient friendly - minimal compression
- No radiation

# COMPANIES/SUPPLIERS

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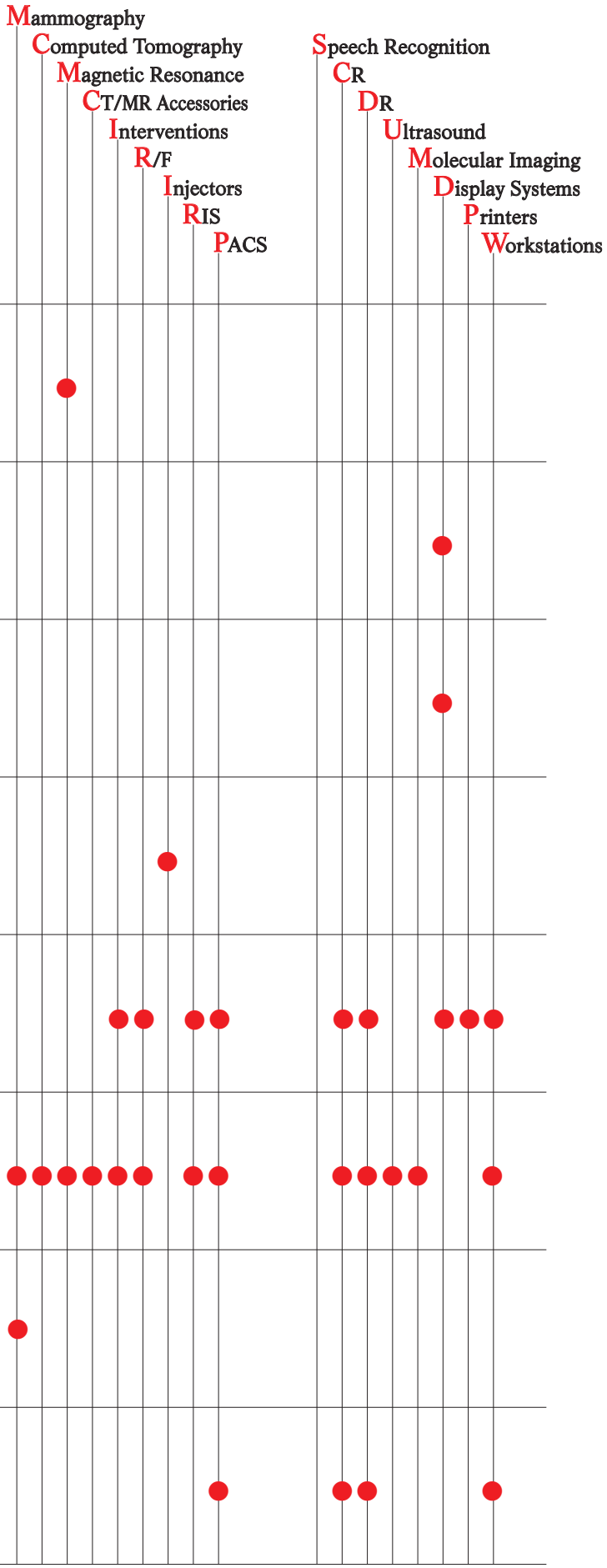


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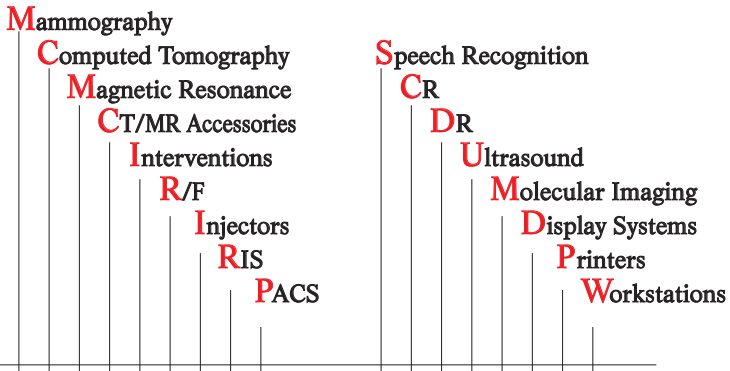


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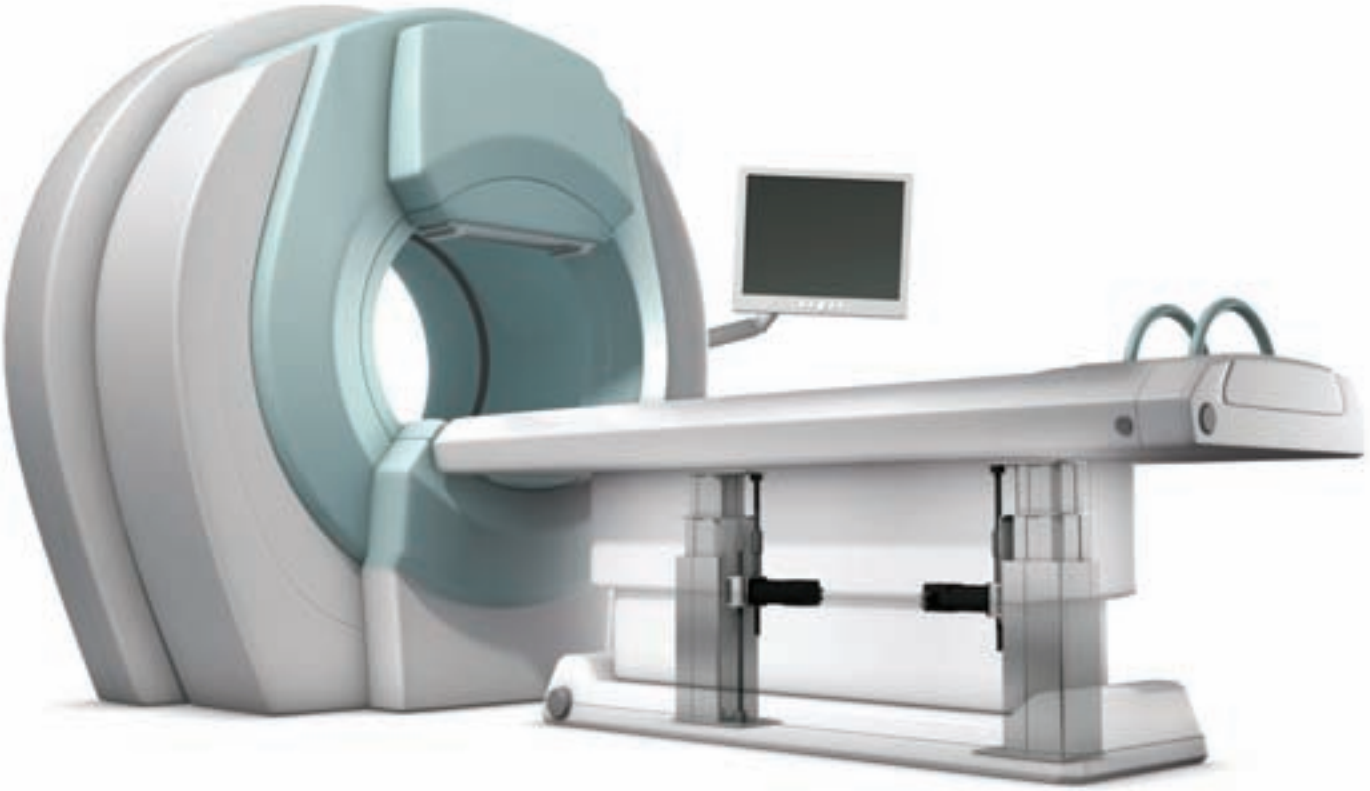

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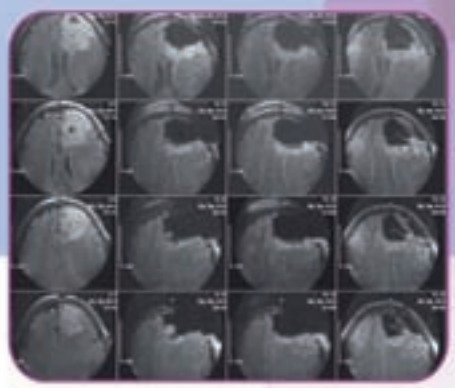


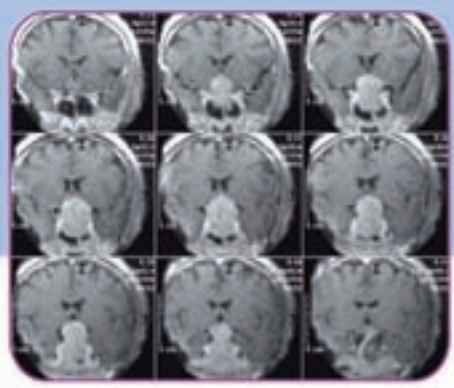

**Find a full article on the PoleStar® N30 inside this issue of RadBook**

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