Canon

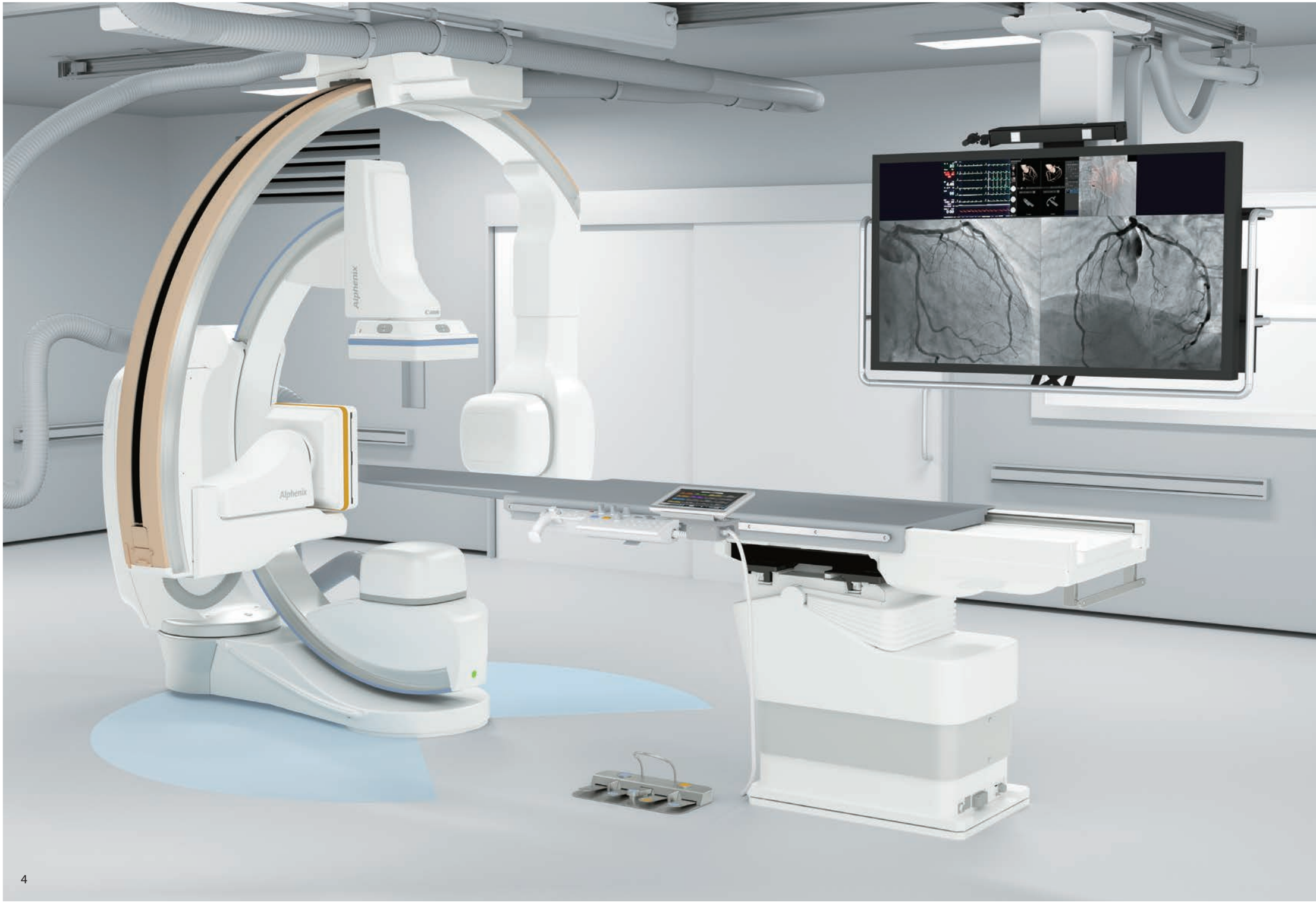
Alphenix

Cardiac & Vascular
Interventional Systems

Redefine Intervention

See New Possibilities Beyond the Image

The Alphenix family of interventional systems deliver images with greater clarity and precision. Combined with industry-leading dose optimization technologies, enhanced workflow, and a new set of features, Alphenix continues Canon Medical's commitment to supporting you and your mission to provide patients with safe, accurate and fast imaging.


Alphenix
Alphenix

Technology to help you deliver the best possible outcomes for your patient.

WorkRite

WorkRite technologies help you optimize workflow and provide an unprecedented range of patient access and coverage.

ImagingRite

ImagingRite technologies enable you to deliver high-quality imaging and offer a full complement of fully customizable advanced imaging tools.

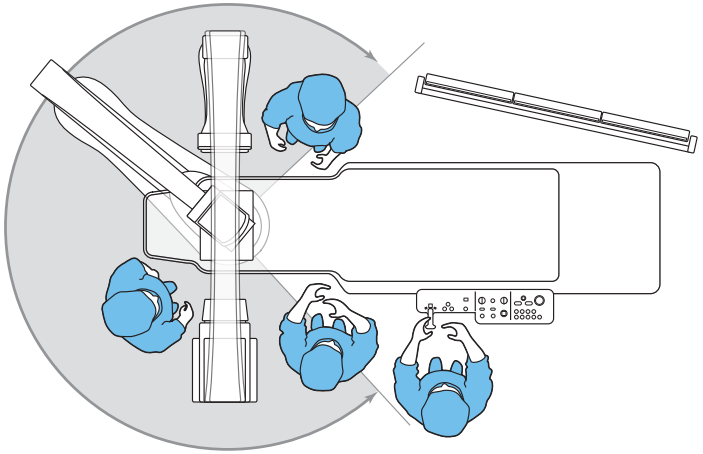
DoseRite

DoseRite technologies provide a comprehensive dose management suite of tools designed to help you minimize patient X-ray exposure.

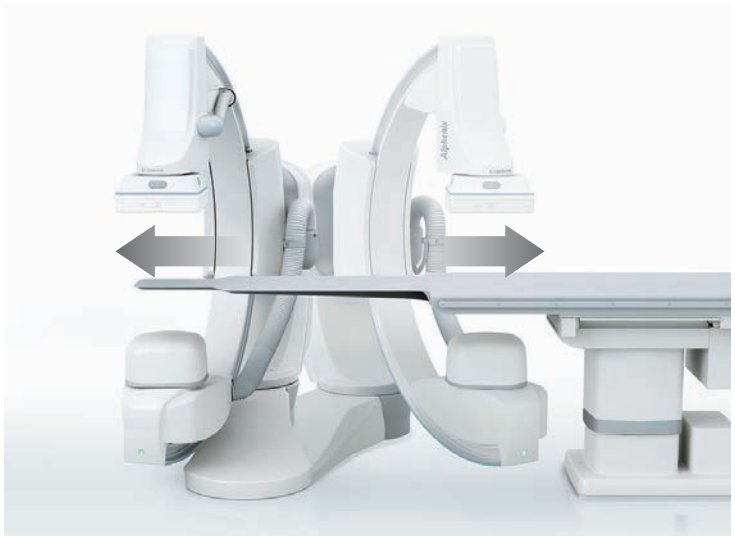
Unparalleled flexibility and access to your patient.

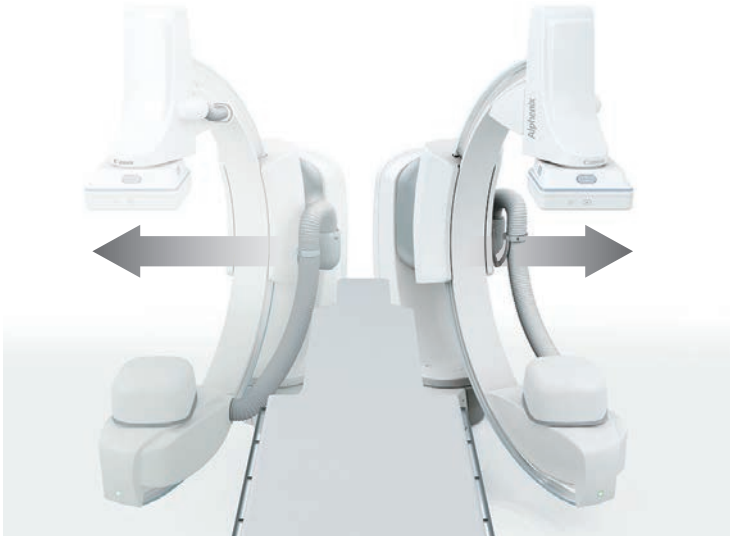
WorkRite

Every patient is different. The Alphenix, with its WorkRite technologies, provides you with unprecedented access to the patient and flexible anatomical coverage from any angle.

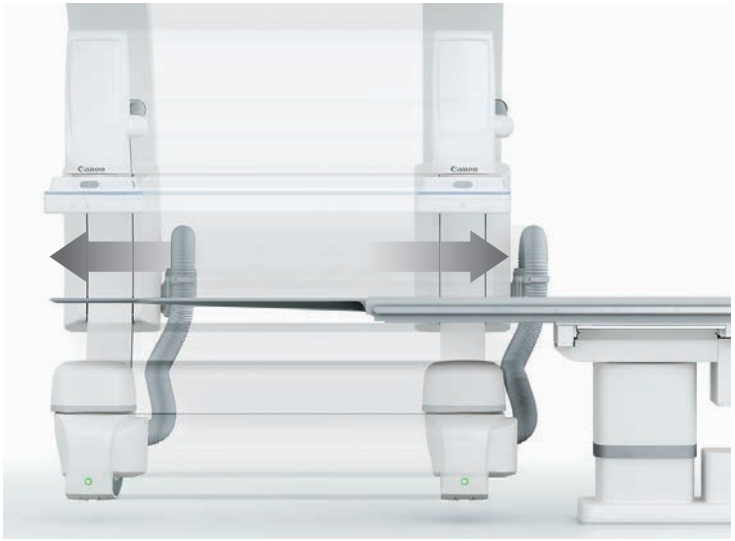


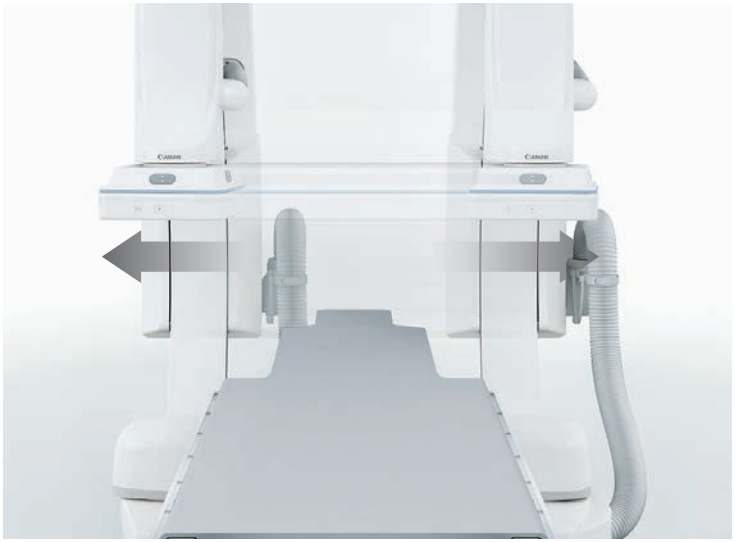
Multi-access floor-mounted C-arm allows for head-to-toe and fingertip-to-fingertip coverage for greater clinical flexibility





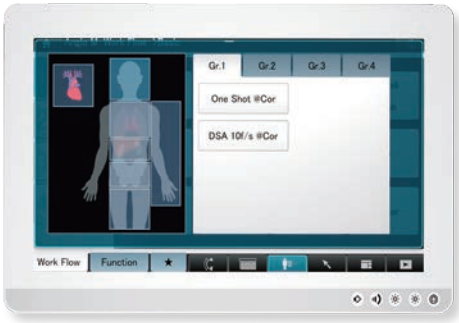
Ceiling-mounted C-arm provides unparalleled full-body lateral access without moving the patient or the table





A fast, seamless, and intuitive work experience.

Easily select acquisition protocols and C-arm positions using the tableside Alphenix tablet*.



Program tabs
The intuitive graphical interface allows you to select the appropriate acquisition program by clinical region.

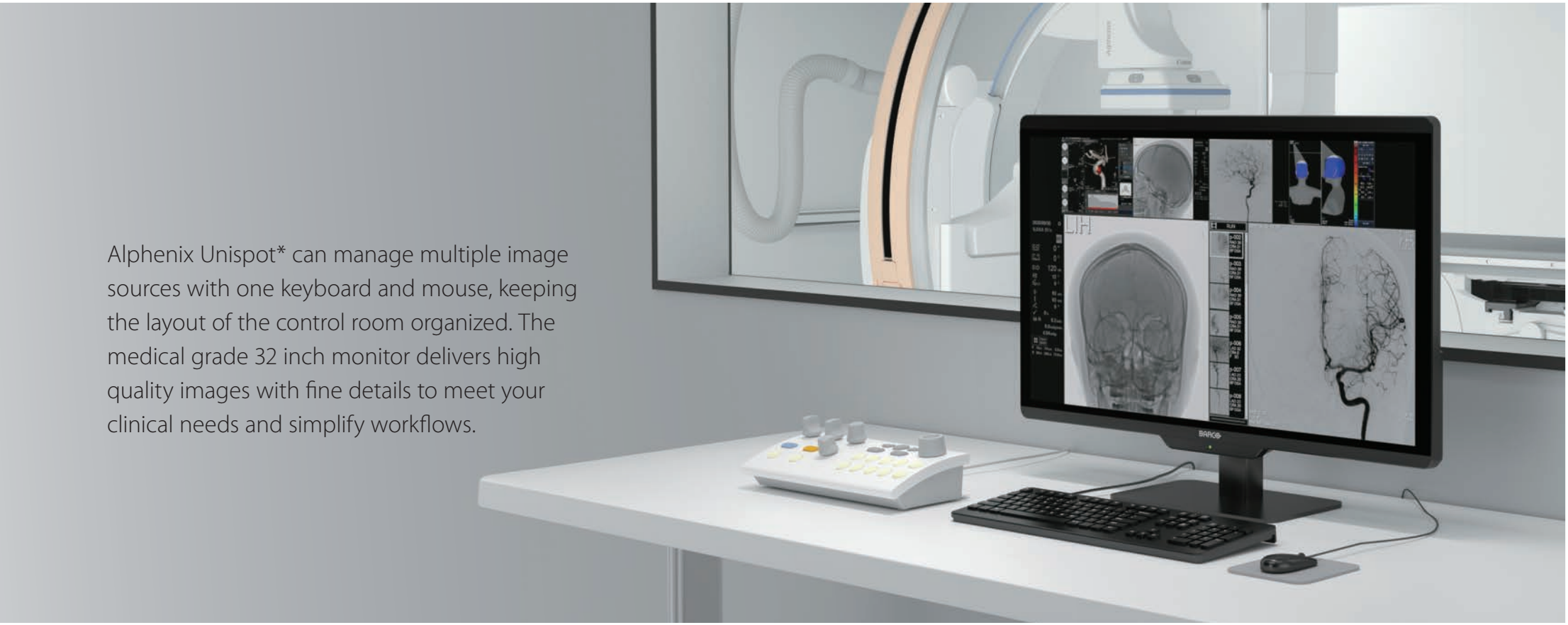
Related functions
Additional functions customized for each workflow can be readily accessed when needed.

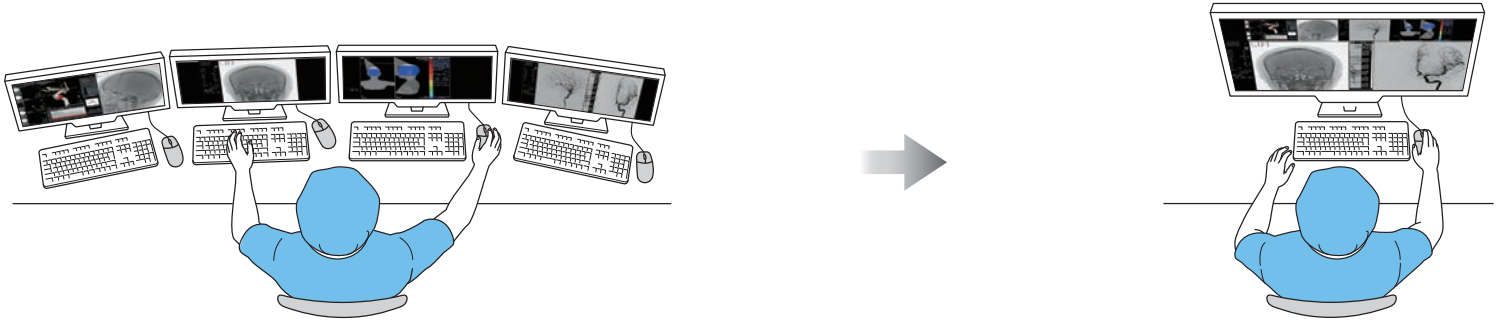
Intuitively select the position of the C-arm
Quickly register, select and move the C-arm into position from the menu screen.

Interoperable access control
Alphenix Workstation Pro, the large monitor layout, and QMAPP®[1] can be controlled from our tablet.

1: QMAPP is a trademark of Fysicon B.V.

Alphenix Unispot* can manage multiple image sources with one keyboard and mouse, keeping the layout of the control room organized. The medical grade 32 inch monitor delivers high quality images with fine details to meet your clinical needs and simplify workflows.





*: option

The heart of your cardiac lab

QMAPP® is a product of Fysicon, a Canon Group Company.
For more information, please visit fysicon.com or contact your Canon Medical representative.

Alphenix Integrated with QMAPP®

The most compact, smart and advanced hemodynamic measuring system in the world.
An easy-to-use device installed with one single cable, seamless integration between devices, hemodynamics, and CVIS. With software that really allows you to focus on your patients.

SMART SOFTWARE

- Connects and integrates with everything in your lab
- Integrated workflow
- Unparalleled uptime

SMART HARDWARE

- Connects with one single cable
- Compact amplifier
- No forced cooling

QMAPP® provides:

- Non Invasive Blood Pressure
- Cardiac Output
- End Tidal CO_2
- Up to 2 Temperature Channels
- SpO_2
- Up to 4 invasive Blood pressures
- 12 Lead ECG
- Up to 32 EP Channels
- Integrated FFR
- and more...

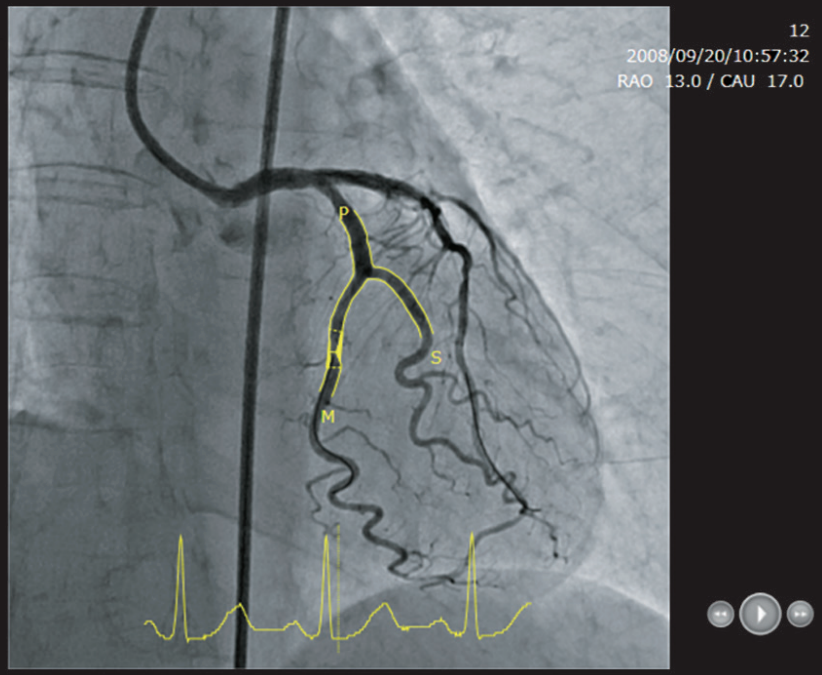
Operate QMAPP® with Alphenix tablet

Mostly used functions of QMAPP can be performed from the bedside allowing you to focus on your patient.

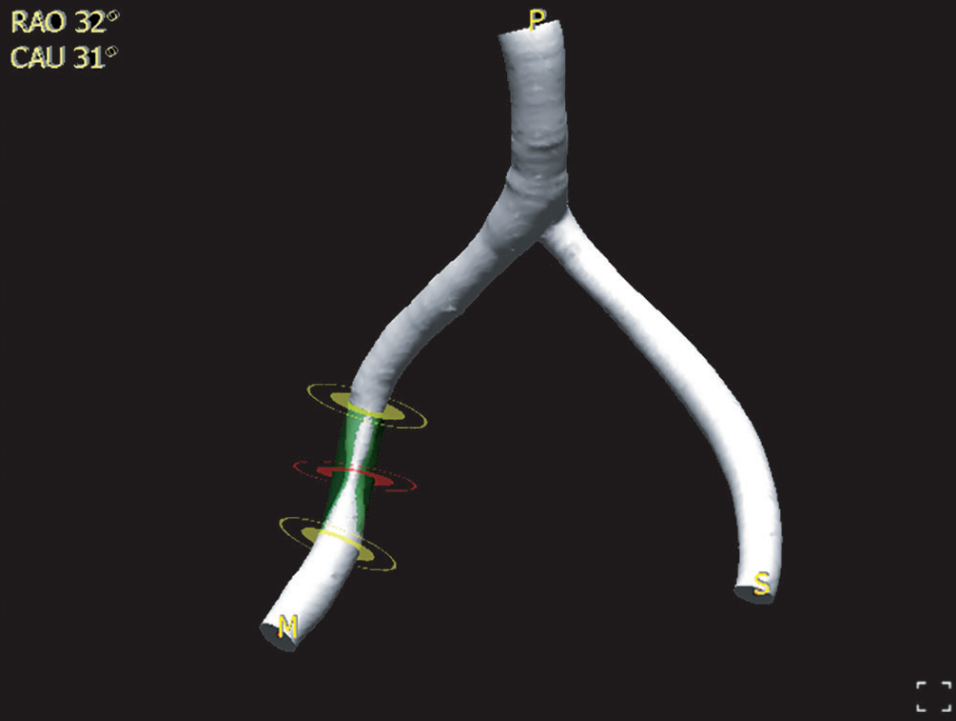
- Hemodynamic samplings (Normal sample, ECG (12 leads), EDP, NiBP, Pullback, Gradient, Vitals, Marker)
- IBP Zeroing
- FFR
- Cardiac Output
- Start/Stop Timers
- and more...

A feature-rich workstation to enhance your productivity

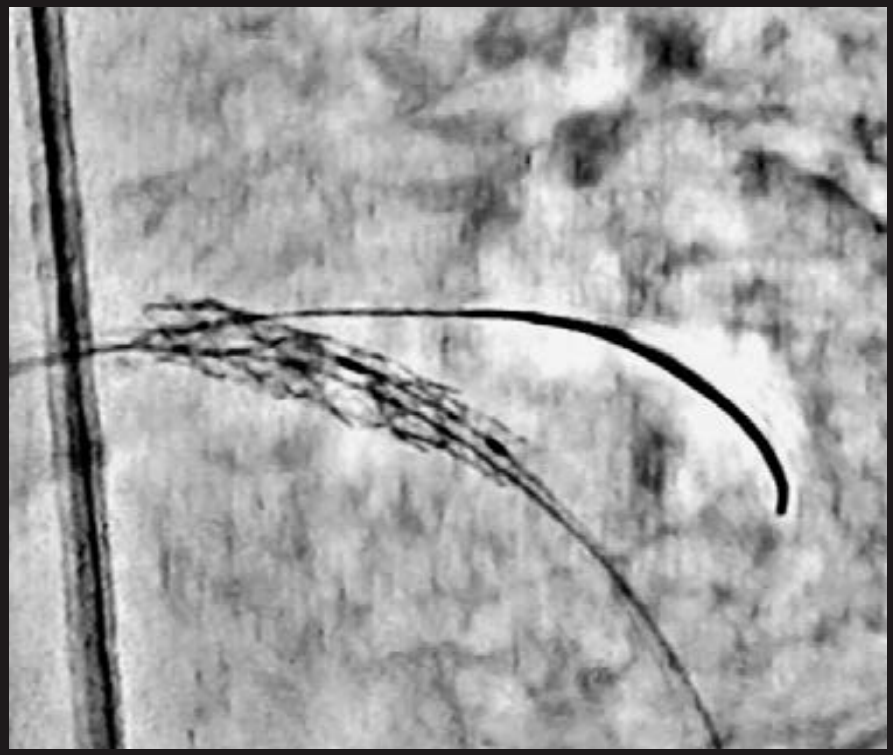
Integrated cardiac-optimized applications help boost productivity.



QCA* features automatic contour detection and analysis of the area of interest. Various calibration options are available, such as Catheter, Sphere, and Distance calibration methods.



3D-QCA* features reconstructions of stenotic coronary arteries and allows quantitative cross-sectional information to be displayed. This offers automatic contour detection, single-segment analysis, and bifurcation analysis.



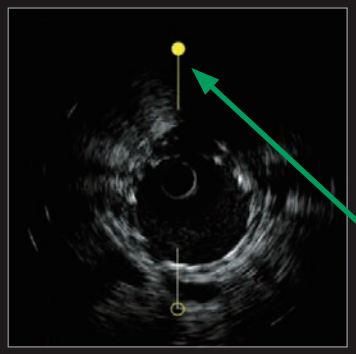
The Dynamic Device Stabilizer (DDS)* displays a device such as a catheter or stent that moves in response to cardiac motion at the center of the monitor in stationary state during fluoroscopy (left) or DA (right) mode.

*: option

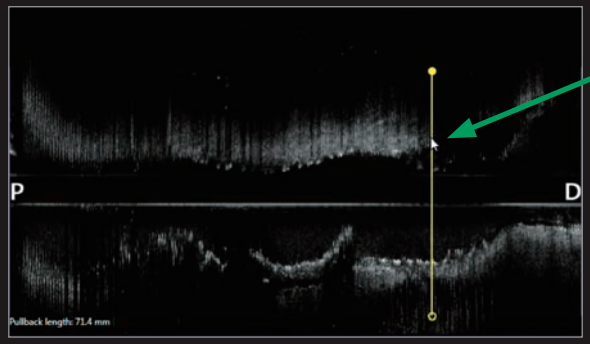
Navigate with confidence and accuracy.

IV-LINQ*[1]

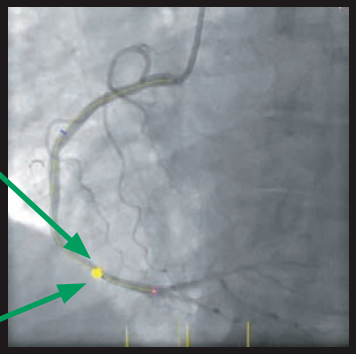
Short axis cross-sectional image

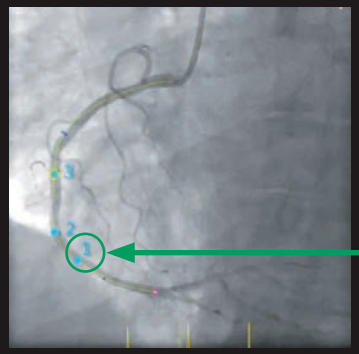


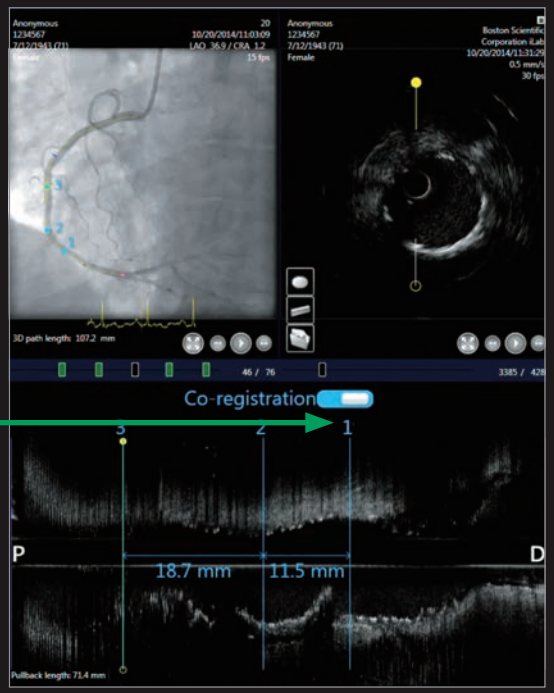
Long axis cross-sectional image



Co-register in real time between angiography and IVUS/OCT to obtain a detailed view of the lesion and its exact location in the coronary tree.







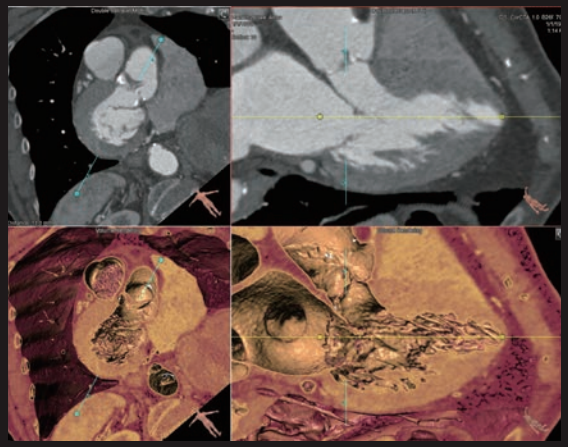
Annotate the image with bookmarks to facilitate stent planning and placement.

*: Designed and manufactured by Pie Medical Imaging

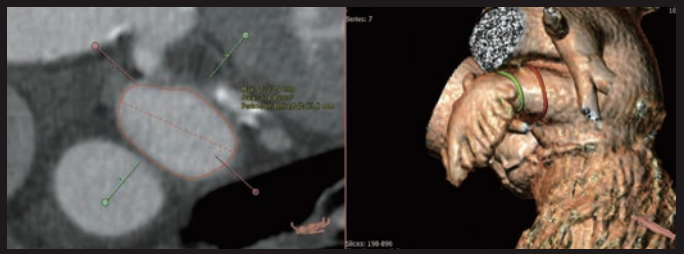
3mensio Structural Heart[1] and CAAS A-Valve[1]

3mensio Structural Heart is a software solution enables visualization and measurement of structures of the heart and vessels for pre-operational planning and sizing for interventions and surgery, and post-operative evaluation. CAAS A-Valve assists the physician in evaluating aortic regurgitation after transcatheter valve replacement.

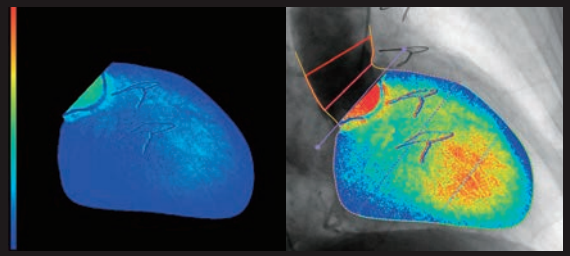
Aortic Valve



Mitral Valve



Left Atrial Appendage



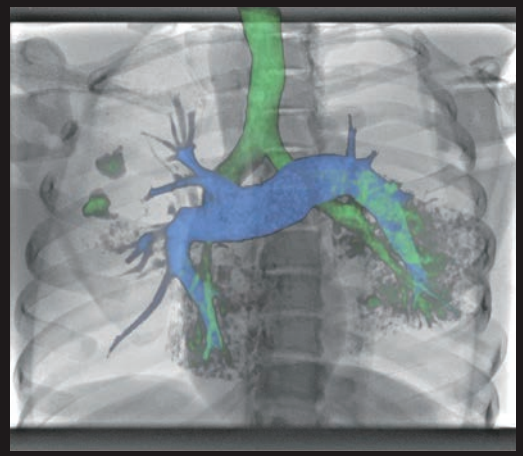
Caas A-Valve

*: option

1: Designed and manufactured by Pie Medical Imaging

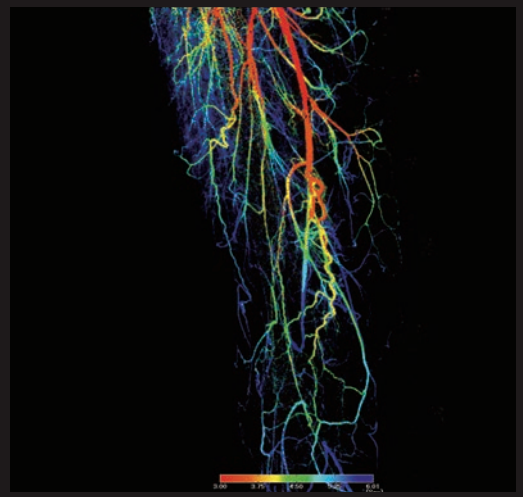
3D/Multi-modality Roadmap*

Any segmented region of 3D volume data from Alpha CT (CBCT), CT, or MRI can be fused on fluoroscopy, which entirely supports your procedure from planning to treatment phase. The 3D image display updates seamlessly in real-time to the changes in C-arm angulation, field of view (FOV), table position, source to image distance (SID), and other system movements for proper alignment.



Parametric Imaging[1]

Parametric Imaging uses information from the time density curve to express the timing arrival of contrast medium. Information is assigned at the pixel level. Color values are assigned based on the time density curve. The PI maps of Time-to-Peak values with red to blue color-maps represent fast to slow blood flow. The image is displayed in colors corresponding to the elapsed time or to the number of elapsed frames.

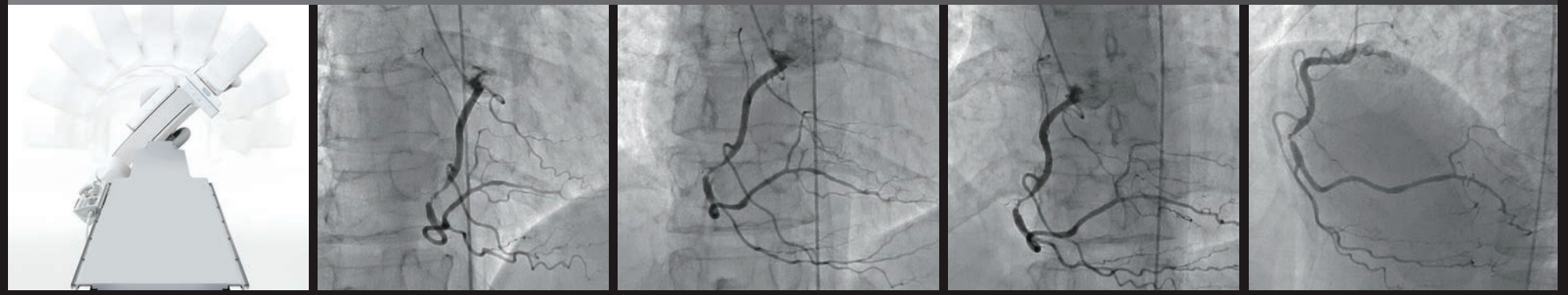


1: Parametric Imaging software is not intended for stand-alone use or diagnosis

Rotational Angiography*

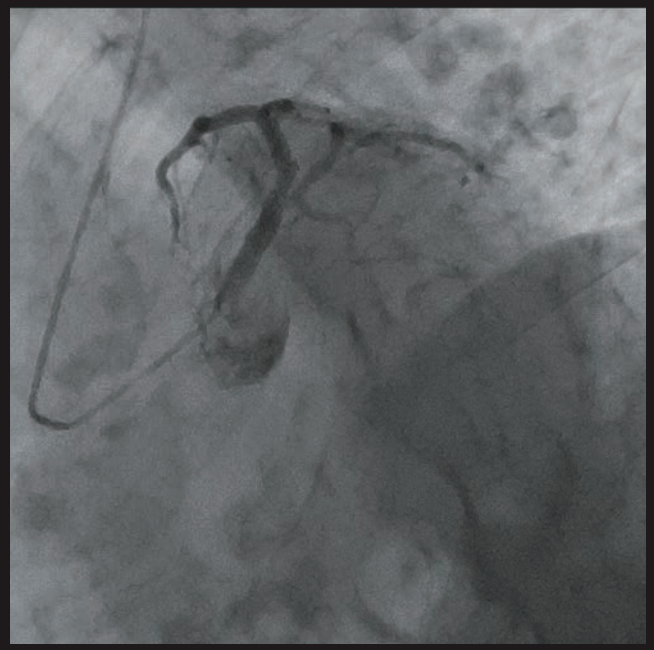
Automated sequential rotational image acquisition can enhance visualization and diagnostic confidence while optimizing contrast and radiation exposure.

Rotational Angiography : Multiples angles with one injection



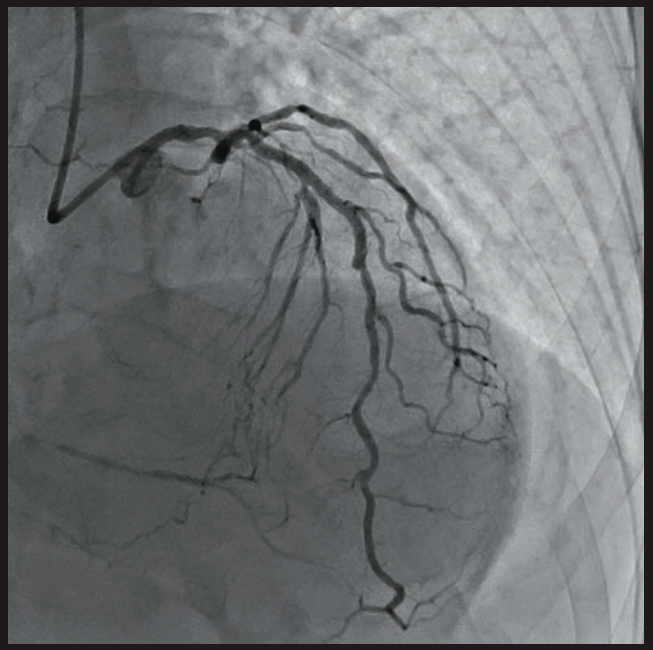
*: option

Clinical gallery



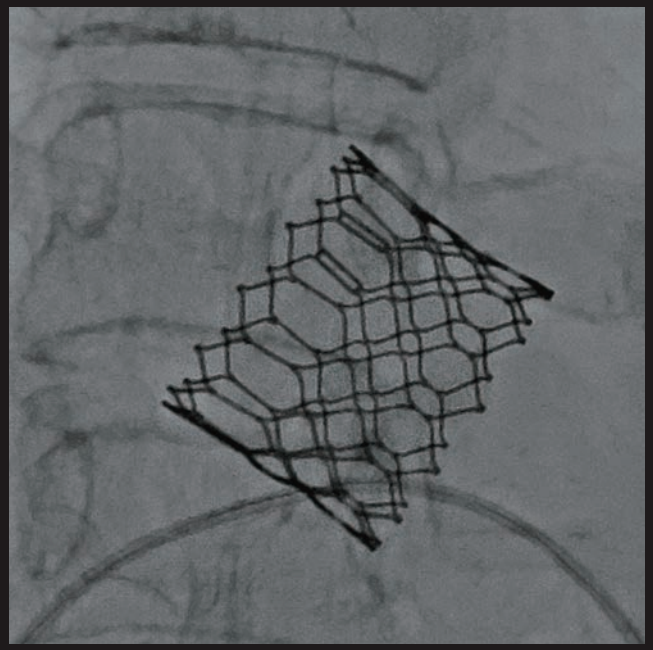
Spider view for over 100 kg patient

Pre PCI

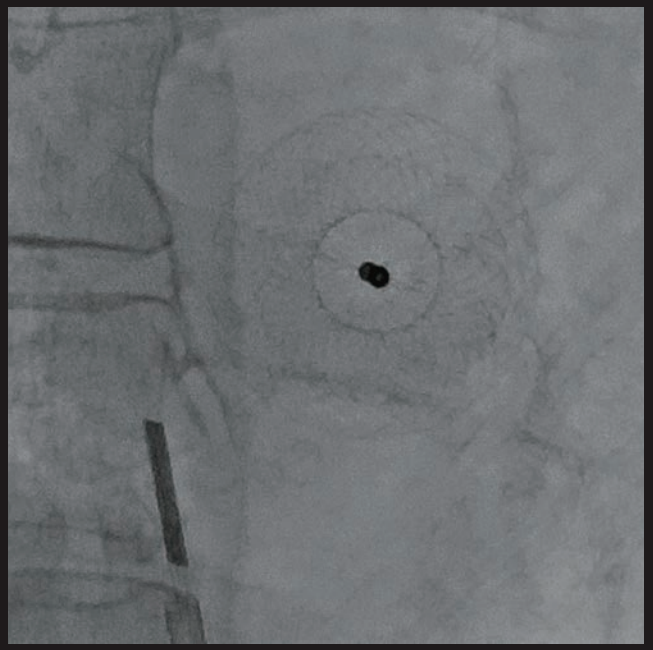


Post PCI

RCA & Stent



TAVI with Hi-Def mode



PFO occluder with Hi-Def mode

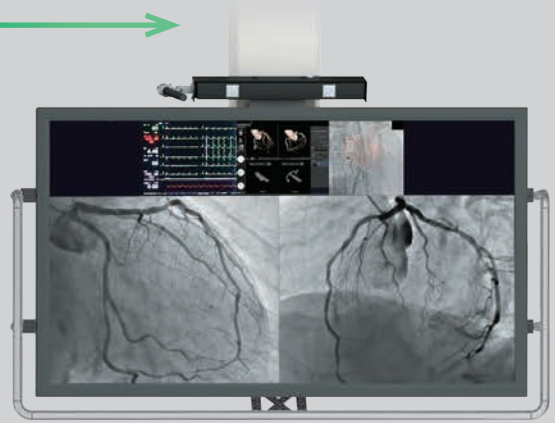
Optimize image quality while reducing the exposure dose.

ImagingRite

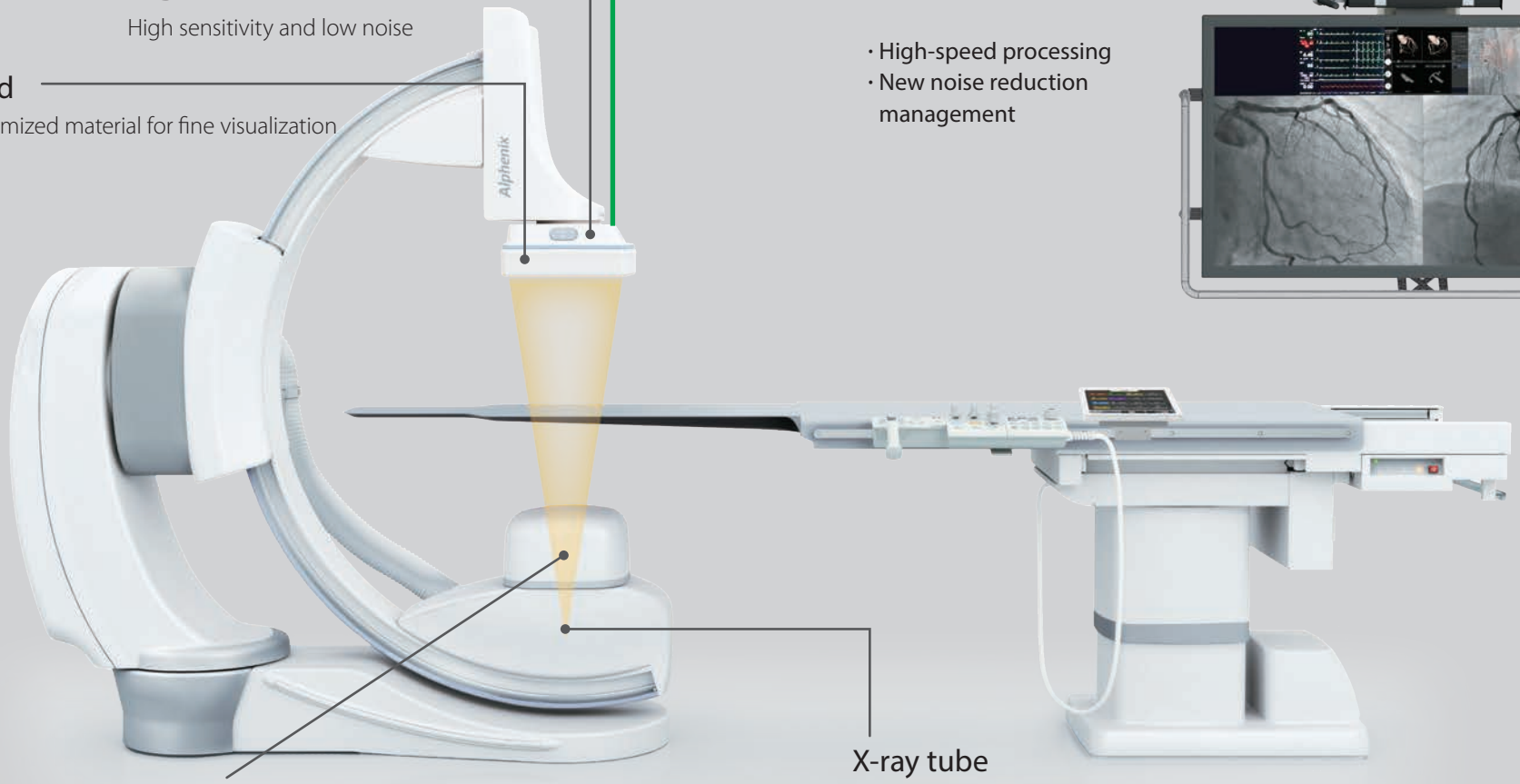
Digital connection

16-bit

Digital connection



- High-speed processing
- New noise reduction management



FPD

High sensitivity and low noise

Grid

Optimized material for fine visualization

Collimator and compensation filters, and/or ROI filter*

Minimize radiation dose and optimize X-ray beam

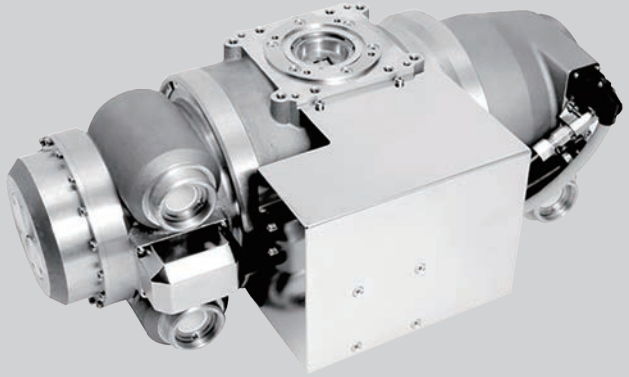
X-ray tube

In-house X-ray tube tailored for standard and reliable utilization of small focal spot for hyper-detail imaging.

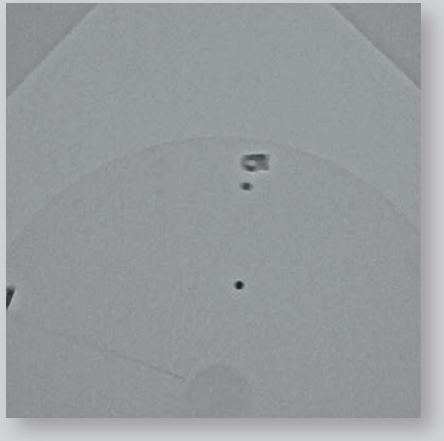
*: option

Dedicated Cardiac Tube

Our dedicated Cardiac tube was developed to provide sharp images with maximized output, even for bariatric patients and at steep C-arm angles, and to reduce motion blur caused by rapidly moving coronary arteries with shortened pulse width.
It provides consistent reliable visibility and supports percutaneous coronary intervention (PCI) procedures with the 8" and 12" FPD*, as well as other structural heart disease (SHD) intervention.



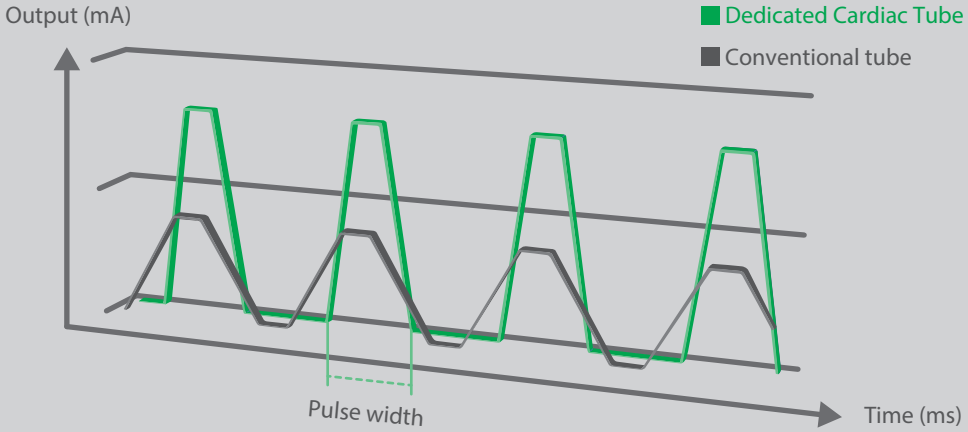
Rotational Phantom



Conventional tube

Dedicated Cardiac tube

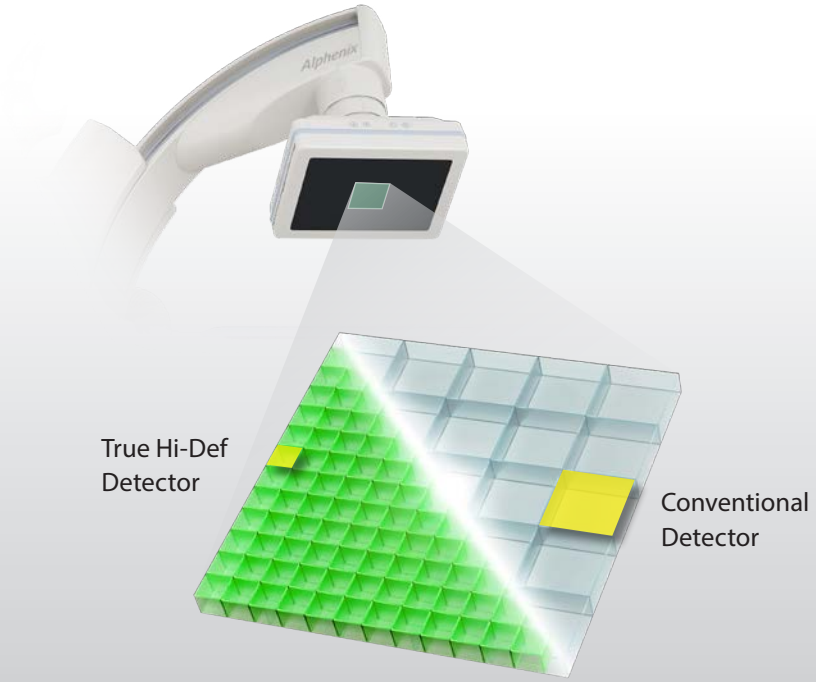
X-ray tube Performance

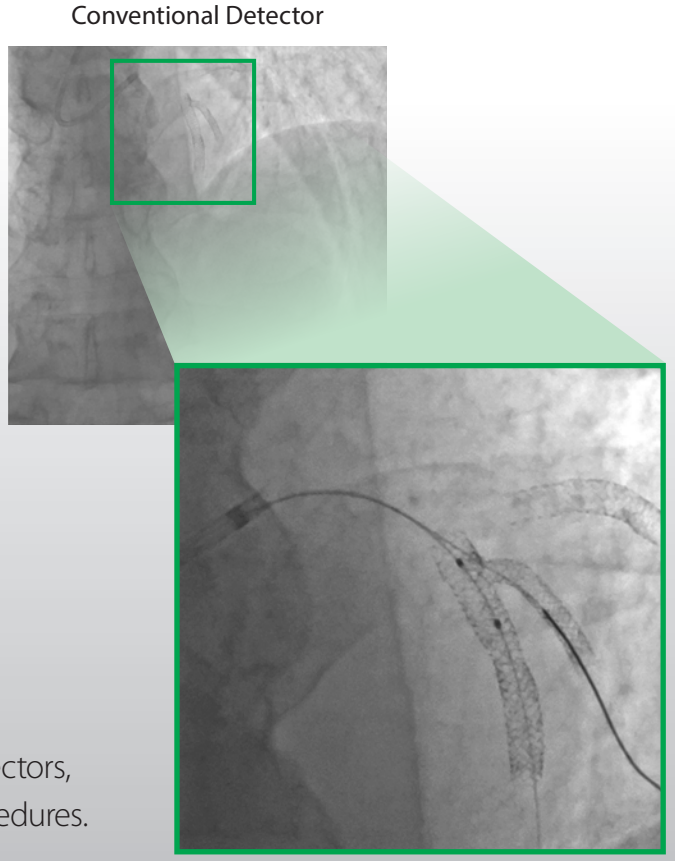


*: Dedicated Cardiac Tube is available for Alphenix Core +(8", 12"), Alphenix Biplane (8", 12"), Alphenix Sky (8") .

Refine and Redefine Intervention Using High-Definition (Hi-Def) Technology

The world's first True Hi-Def Detector[1]





"During the critical parts of the case when you deploy a complex intravascular device – for example, a coil, a stent, a flow diverter, an endosaccular flow disrupter, anything where you really need to appreciate how the device is behaving in a small space and it is of critical implication – there's nothing that comes close to the ability to visualize these implements than Hi-Def technology."

Adnan SIDDIQUI, M.D., Ph.D.
FACS FAHA FAANS
Vice Chairman and Professor
Gates Vascular Institute

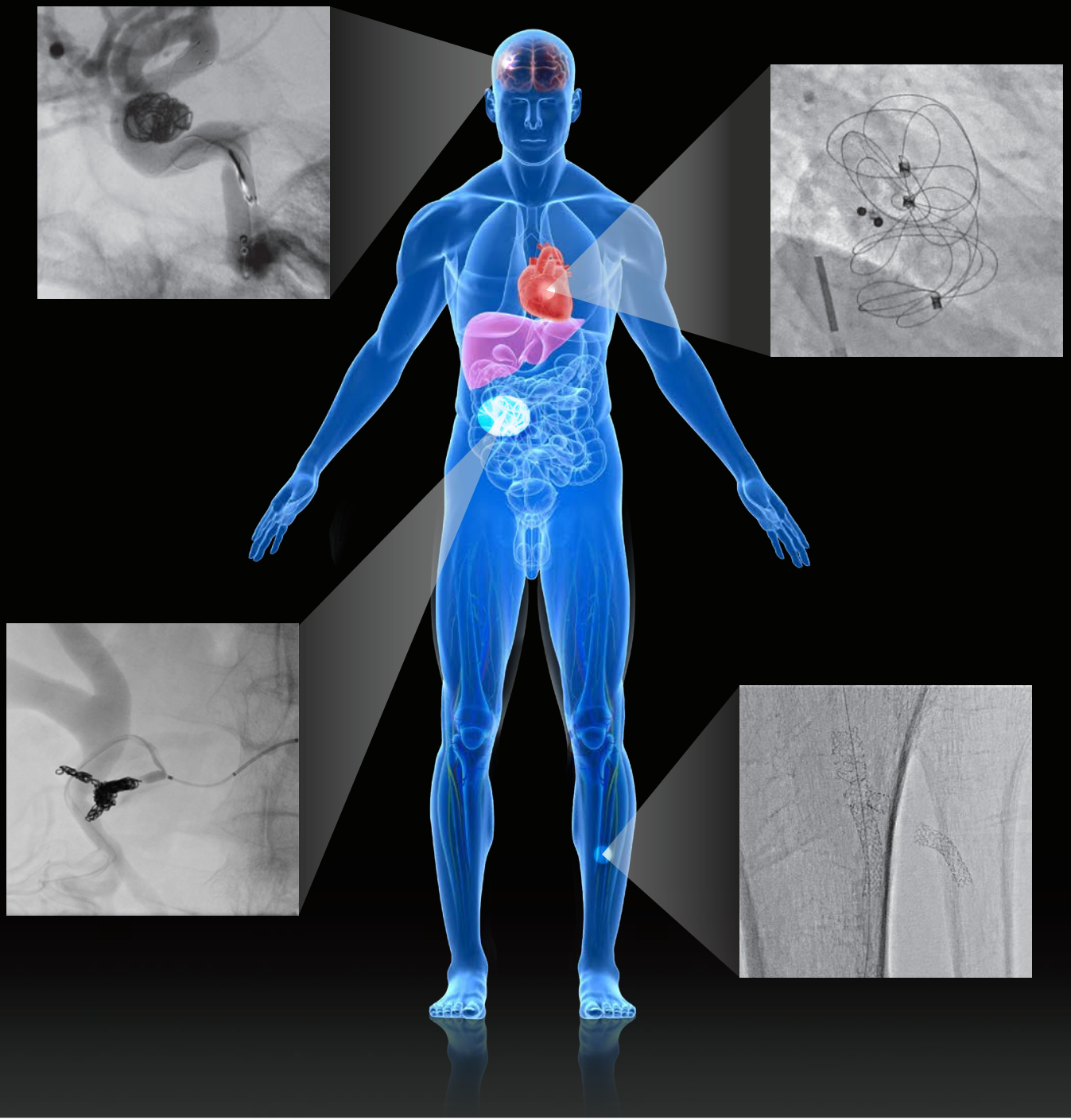
More than twice the spatial resolution of conventional flat panel detectors, to visualize fine details with the ability to facilitate interventional procedures.

1: Documented testing has demonstrated imaging capabilities with up to 2.5x greater resolution. Available as an option for Alphenix Core+ (FPD12), Alphenix Biplane (FPD12/FPD12), Alphenix Sky (FPD12), Alphenix Sky+ (FPD1216/Tilt. table), Alphenix 4D CT (FPD1216/CAS-930A)

High-Definition imaging (Option[2])

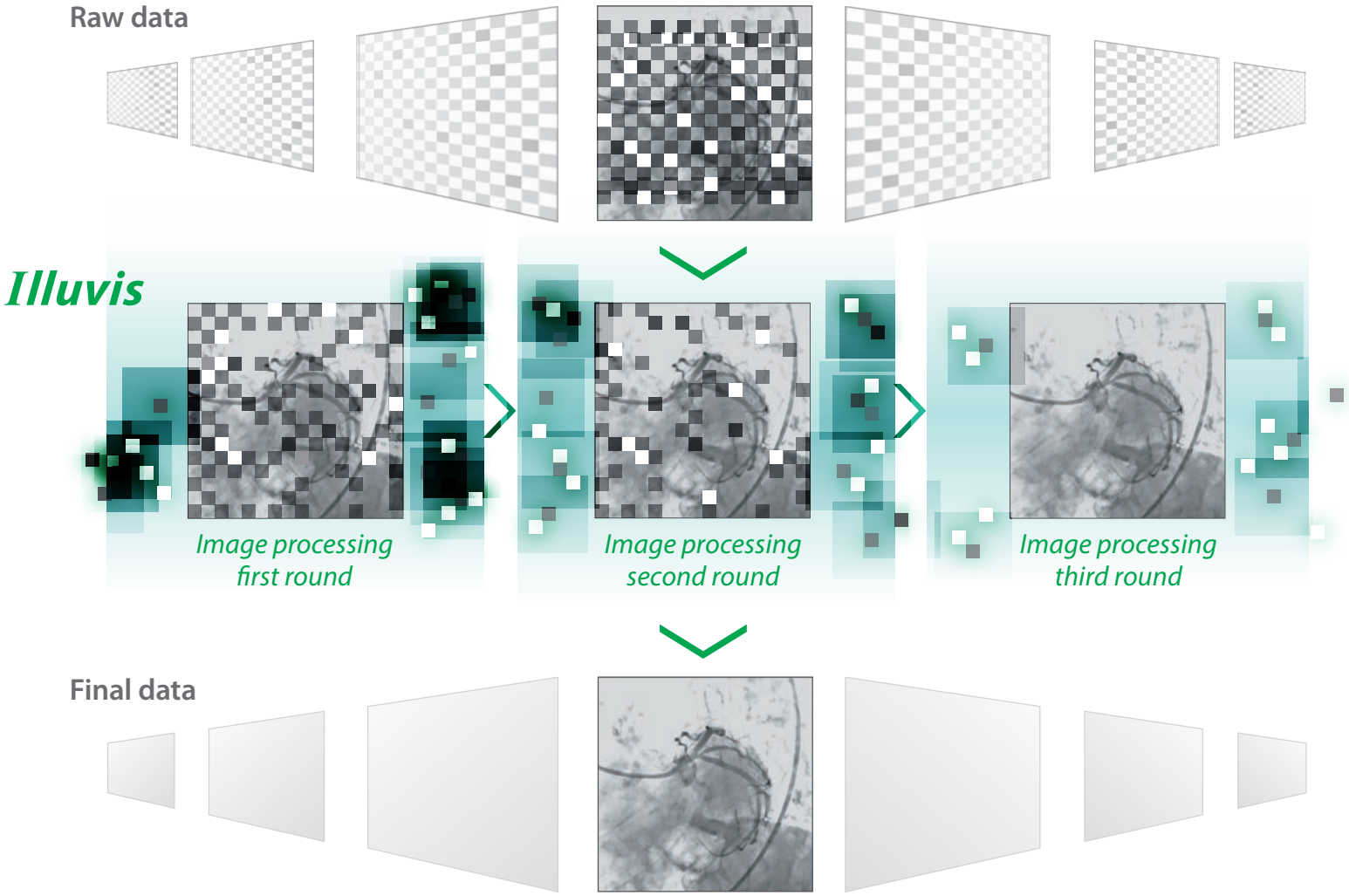
This technology has enabled clinicians to transform their neuro endovascular therapy in past years, and it is bringing innovative High-Definition modes to cardiac and peripheral endovascular therapy. Now, our expanded Hi-Def technology is available for general interventional radiology use with the 12" × 16" flat panel detector.

2: Documented testing has demonstrated imaging capabilities with up to 2.5x greater resolution. Available as an option for Alphenix Core+ (FPD12), Alphenix Biplane (FPD12/FPD12), Alphenix Sky (FPD12), Alphenix Sky+ (FPD1216/Tilt. table), Alphenix 4D CT (FPD1216/CAS-930A)



The clinical results, performance and views described in the testimonials are the experience of the clinician. Results may vary due to clinical setting, patient presentation and other factors. Many factors could cause the actual results and performance of Canon's product to be materially different from and of the aforementioned.

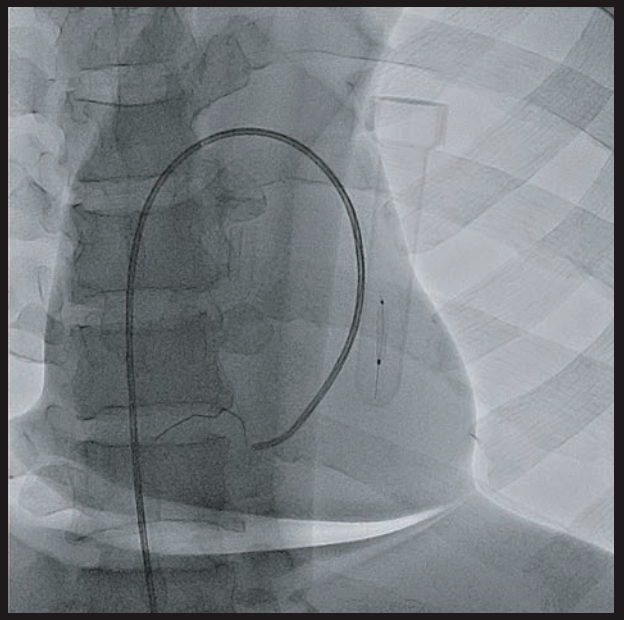
Powerful imaging and processing tools.



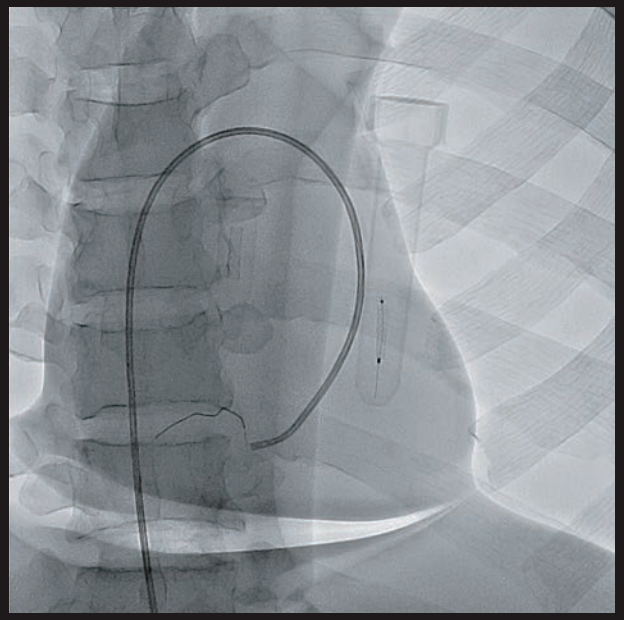
Illuvis technology takes advantage of new hardware and software improvements to reduce noise, enabling you to see through the clutter. Each frame is triple-processed in real-time to reduce background noise and enhance features.

ROI control

This function automatically senses excessively bright areas in the ROI, such as the lung fields, and excessively dark areas, such as the vertebral bodies and the diaphragm, and calculates the appropriate X-ray conditions.



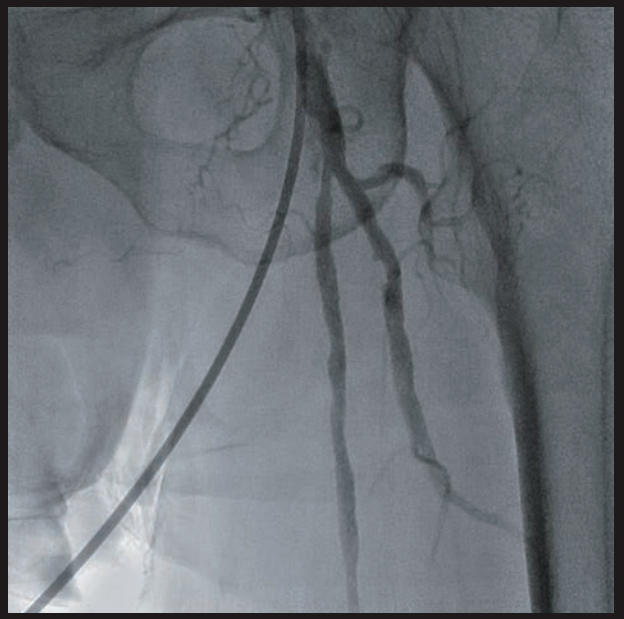
Conventional processing method



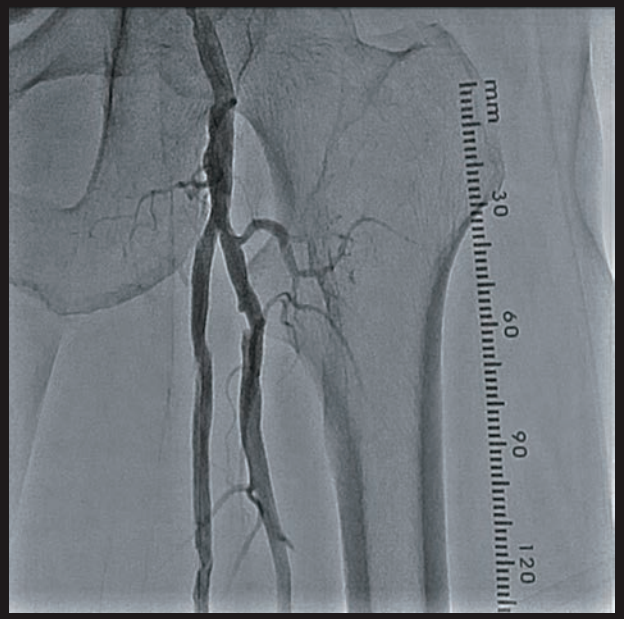
ImagingRite

Dynamic Trace

In the endovascular treatment EVT area, which is easily affected by direct X-rays, it is possible to acquire vascular images in which the effect of bones overlapping blood vessels is significantly reduced while maintaining stable image quality with no variation in brightness.



Without Dynamic Trace

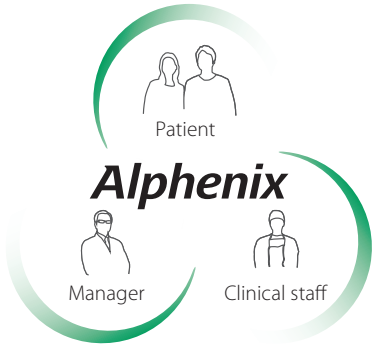


With Dynamic Trace

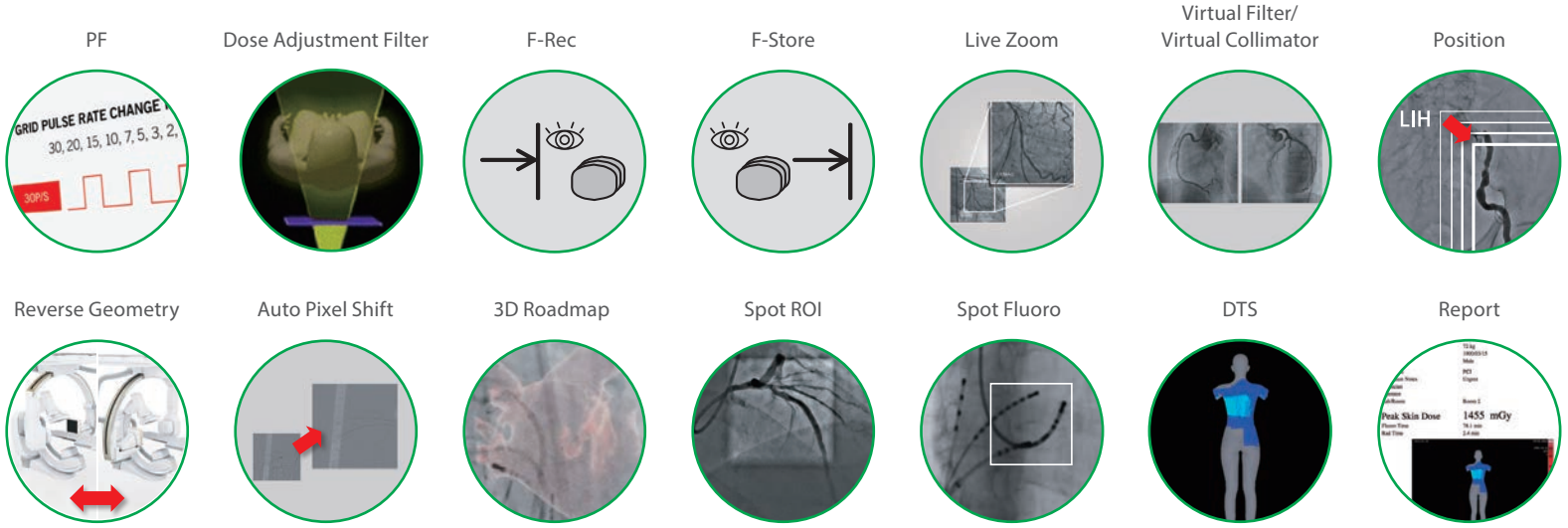
Optimize exposure dose while delivering high-quality imaging.

DoseRite

- X-ray beam filter to reduce patient dose and scatter radiation
- Removable grid
- Live zoom to digitally increase image size without performing field of view magnification
- Variable dose mode to pre-programmed combinations of pulse rate, dose level and image processing parameters
- Virtual collimation and filtration to adjust collimation without additional fluoroscopy



Dose Management for Everyone.

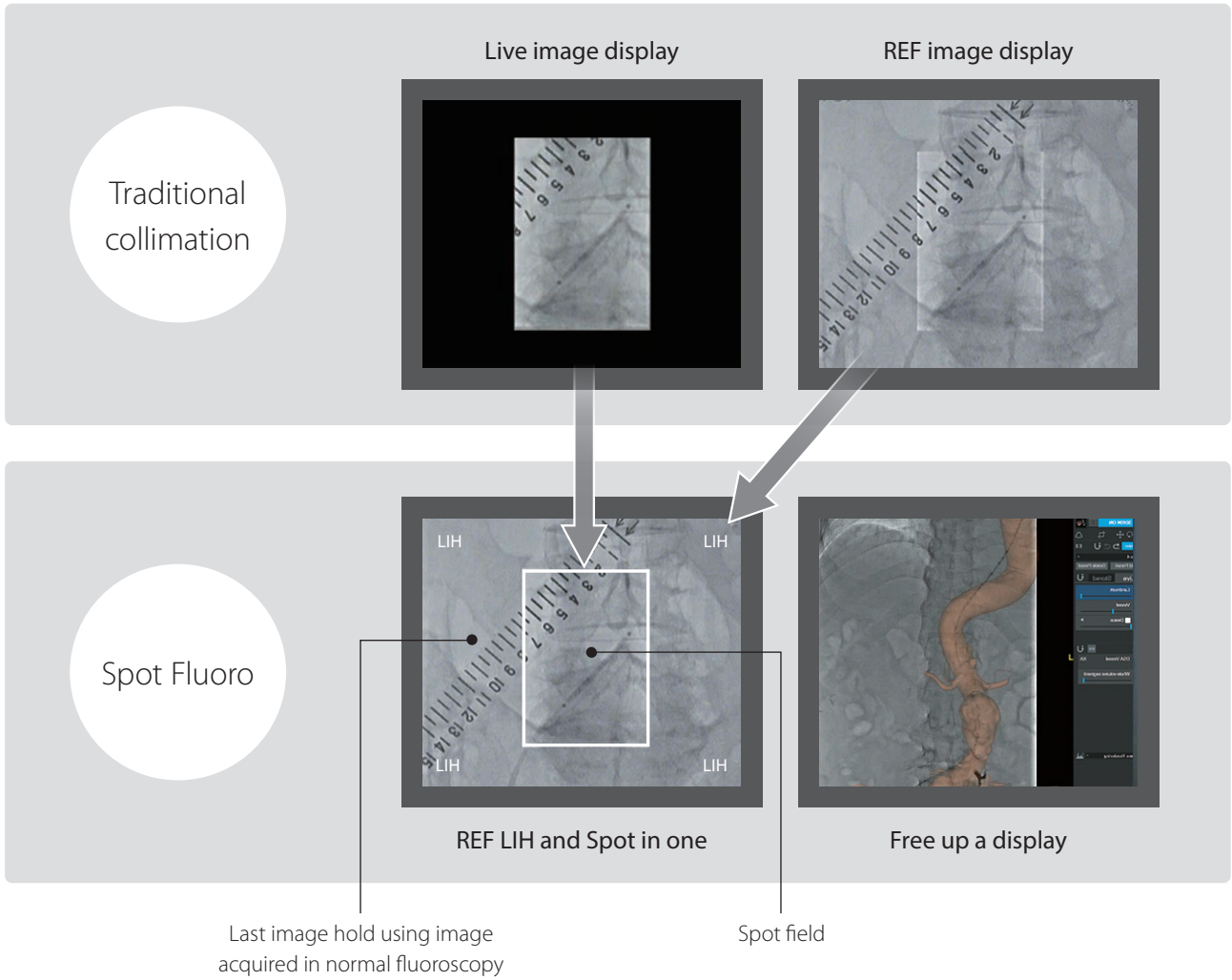


Asymmetric collimation allows reductions in patient dose.

Spot Fluoro: Industry's first spot fluoroscopy technology.

Conventional X-ray collimation has two disadvantages: black areas caused by the collimator blades are distracting for the interventionist, and there is an increased exposure dose for the patient due to collimation in the ABC Region of Interest (ROI).

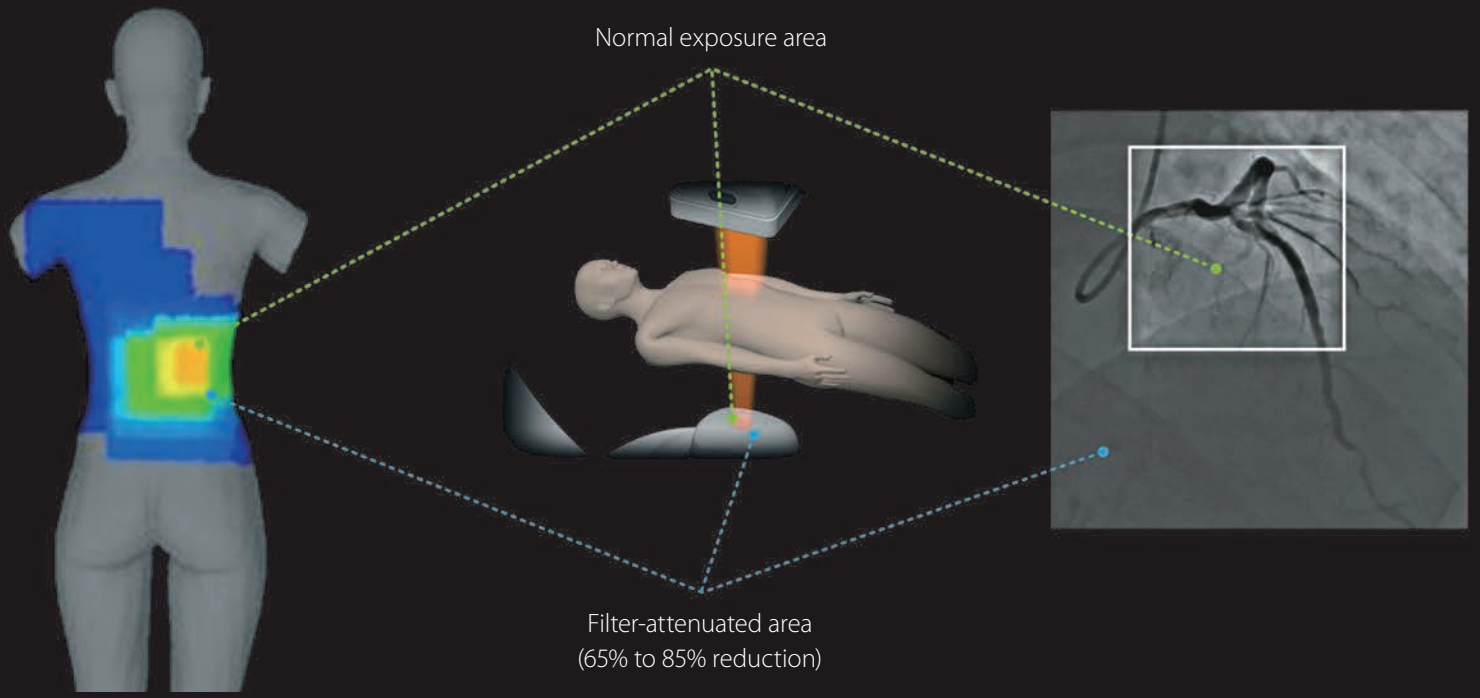
Compared to fluoroscopy without collimation, Spot Fluoro can reduce the cumulative dose area product by more than 50%. Moreover, scatter radiation can also be reduced by more than 50%. Spot Fluoro reduces unnecessary exposure and radiation burden to both the patient and the clinical staff present in the cath lab.

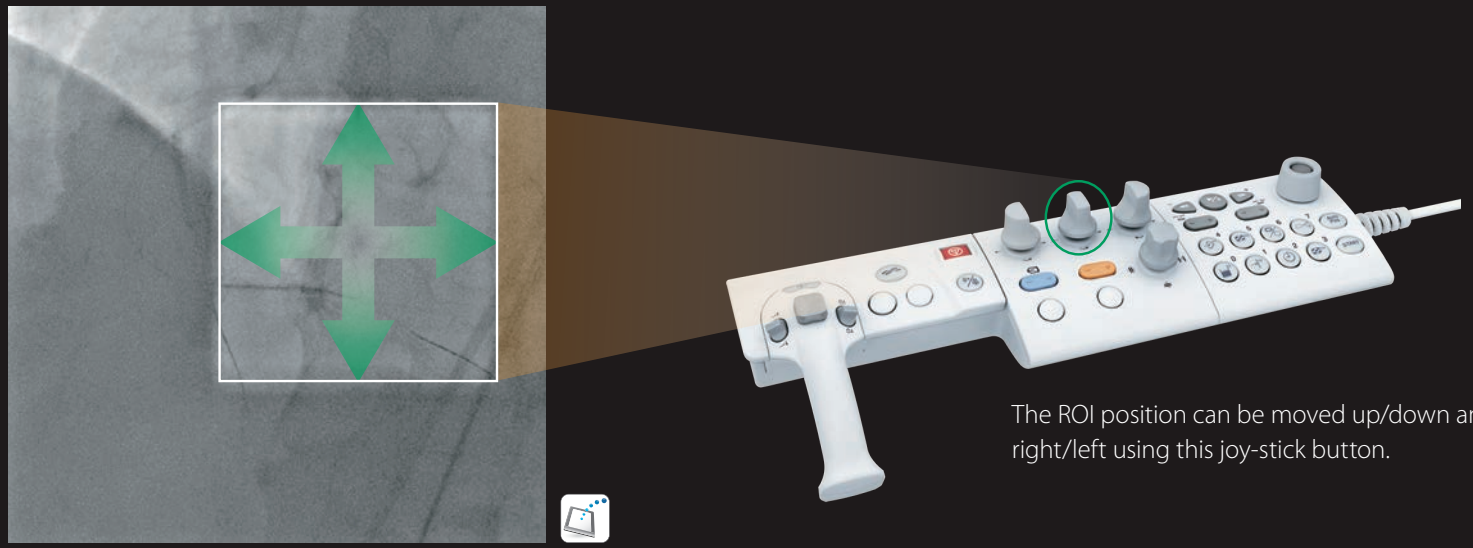


See beyond region of interest with less exposure

Spot ROI*

Spot ROI provides dose reduction outside of the region of interest, while still allowing visualization of the surrounding anatomy utilizing an X-ray attenuation filter. During device placement visualization not only of the device, but also the surrounding anatomy is critical for success.





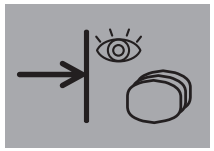
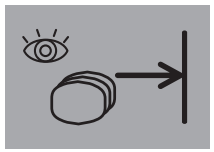
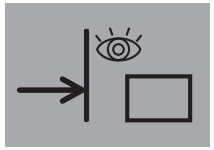
The ROI position can be moved up/down and right/left using this joy-stick button.

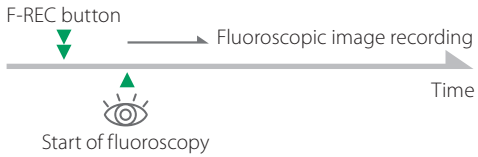
*: Spot ROI is a hardware option that is only available on Alphenix Core+/Biplane (FPD8/12/1216), Alphenix Sky (FPD1212 Hi-Def), and Alphenix Sky+ (FPD1216 with Hi-Def). Spot ROI can cannot be utilized on FOV larger than 12".

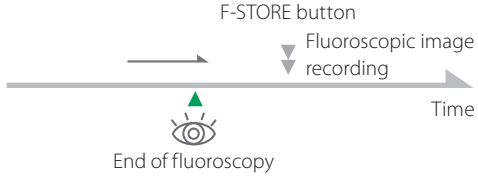
Advanced dose management tools

Fluoroscopic acquisition

Using the footswitch, the operator can capture still and dynamic images for future reference.

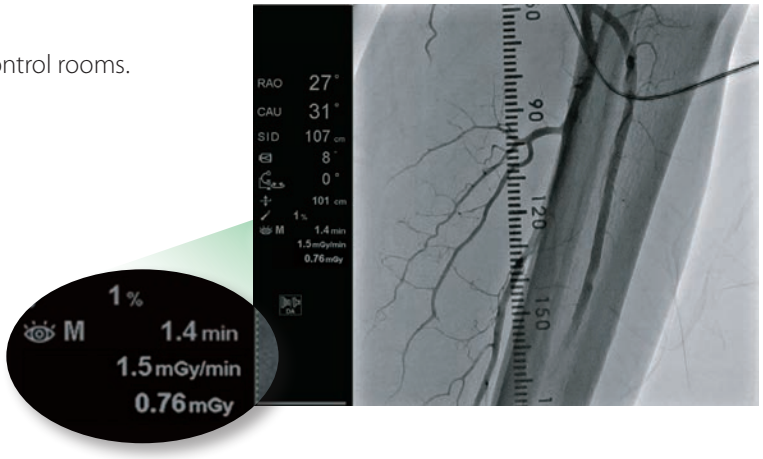
F-REC		Fluoroscopic images acquired after pressing the fluoroscopy start button are recorded. Images can be recorded for up to 90 seconds or 1020 frames. (Dynamic image recording)
F-STORE		Fluoroscopic images acquired in the last 10 seconds are recorded. Press the F-STORE button after fluoroscopy is completed to save the run as part of the patient file. (Dynamic image recording)
F-REC (S)		The LIH (last image hold) image acquired in fluoroscopy is recorded. (Still image recording)





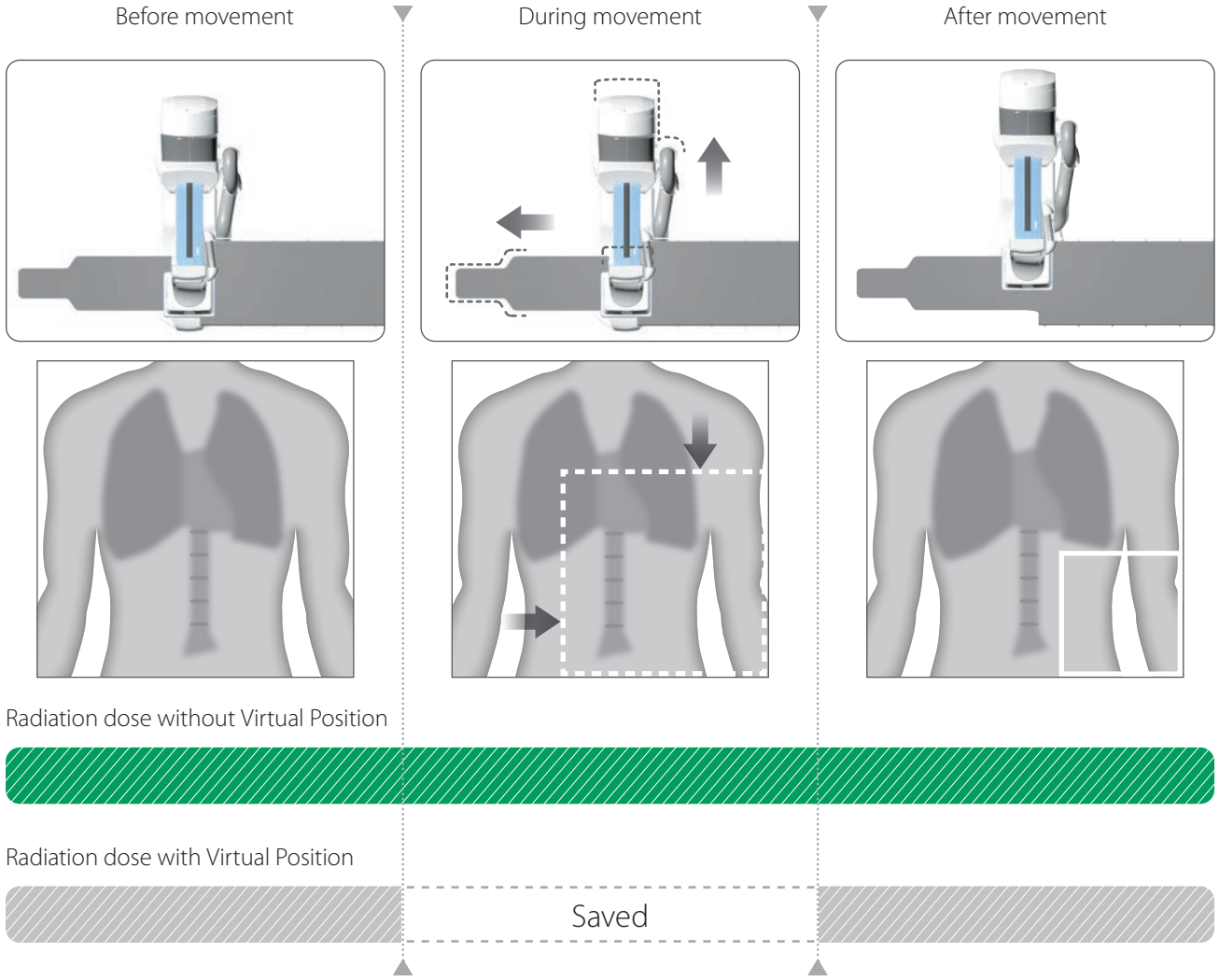
Real-time display of exposure dose

The operator can observe real-time dose levels on a digital display in the examination and control rooms.



Virtual Position

Virtual Position provides the desired ROI for the next image using Last Image Hold (LIH) while panning the table or during C-arm movement, enabling the operator to avoid unnecessary X-ray exposure.



By applying a graphical outline on the Last Image Hold (LIH) image, Virtual ROI can provide the ROI position for the next image after the C-arm or the tabletop is moved. By anticipating the position, unnecessary exposure during movement of the arm or tabletop is prevented.

Visualize estimated peak skin dose in real-time, and act on it.

Multiple 3D patient models are defined in advance and a patient model is selected for each study.

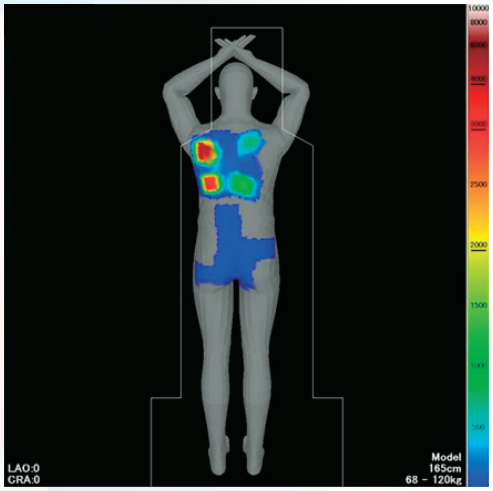
Dose Tracking System* (DTS)

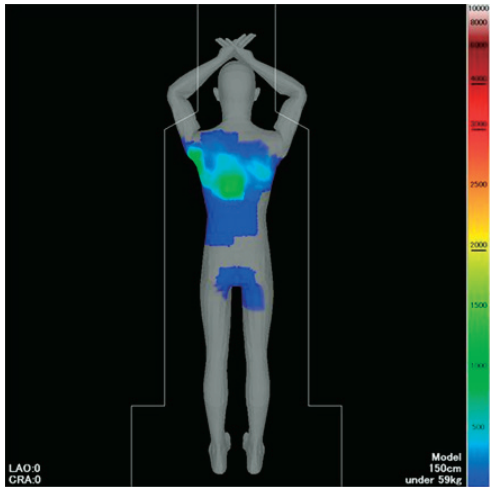
Visualize and record in real-time

Enhanced dose awareness is available through the DTS tool, providing estimated skin dose in real-time. Displayed as a 3D color map on a realistic patient graphic, this data can be used to exclude regions of previous high exposure both during and in subsequent procedures.

Guide the procedure

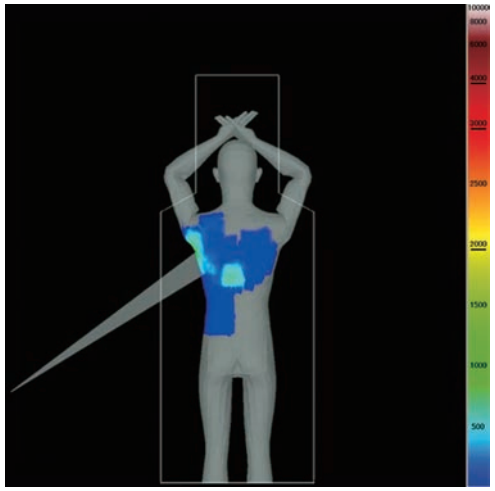
Each patient's estimated peak skin dose is represented on a 3D color map. Live data can be displayed allowing the clinical staff to avoid regions of previous high exposure. During long procedures, such as PCI, CTO or EP, the operator can choose alternative approaches to optimize patient radiation dose while continuing the treatment.





without DTS　　with DTS

With DTS, the operator can chose different angulations during long procedures, such as CTO, to avoid regions.



Visualize the accumulated estimated peak skin dose across the patient's body.

*: option

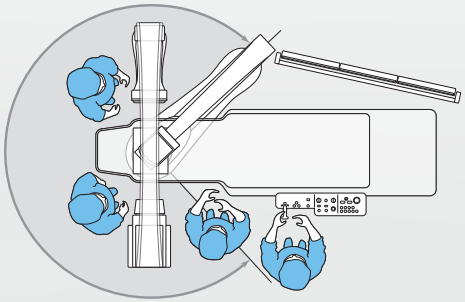
Work with unprecedented access.

Unique multi-access floor and ceiling mounted C-arm positioners were developed through extensive collaboration with leading clinicians.
This resulted in designs that optimize C-arm positions in order to assist clinicians in providing optimal patient care.

Alphenix *Biplane*

Multi-access biplane system

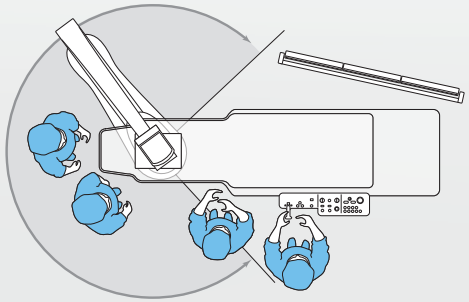
Combining the exceptional flexibility of a floor-mounted and ceiling-mounted C-arm combination, the biplane system is an ideal choice for vascular and neuro diagnostic and interventional procedures.



Alphenix *Core+*

Floor-mounted multi-access single-plane system

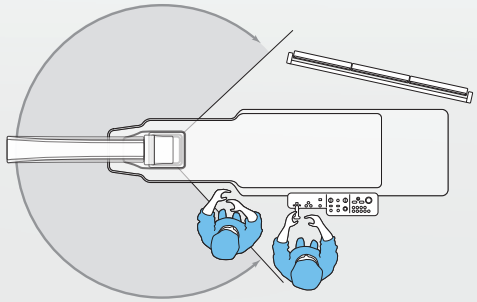
Providing flexible patient access, the 5-axis floor-mounted C-arm is ideally suited for a wide range of applications.



Alphenix *Sky*

Ceiling-mounted system

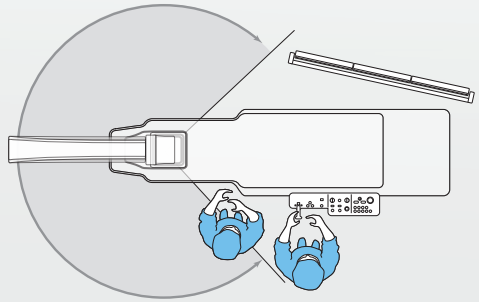
Unique ceiling-mounted C-arm offers motorized longitudinal and lateral coverage to support upper extremity examinations.



Alphenix *Sky+*

Advanced Ceiling-mounted system

Advanced ceiling-mounted C-arm offers unprecedented flexibility and full body 3D imaging capability with fast acquisition.



Select the optimal lab for your clinical needs.

Alphenix interventional systems unique flexibility addresses your clinical needs, enhances your workflow, and optimizes patient care by providing multi access C-arms with a selection of three different size detectors.

Detector size choices

Alphenix interventional angiography systems are available with a range of flat panel detector sizes to suit your coverage needs.

8" × 8"
(20 cm × 20 cm)

12" × 12"
(30 cm × 30 cm)

12" × 16"
(30 cm × 40 cm)

Fast, easy flat panel positioning

The flat panel detectors and the beam limiting devices mounted to the frontal and lateral systems are automatically rotated so that images are always displayed with the head end at the top of the monitor screen.

Multiple table options

Designed to support your clinical practice using a hybrid approach to allow greater positioning flexibility in order to facilitate both endovascular and open surgical techniques.

Standard type

Tilt/cradle type

CANON MEDICAL SYSTEMS USA, INC.

https://us.medical.canon

2441 Michelle Drive, Tustin CA 92780 | 800.421.1968

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Made For life