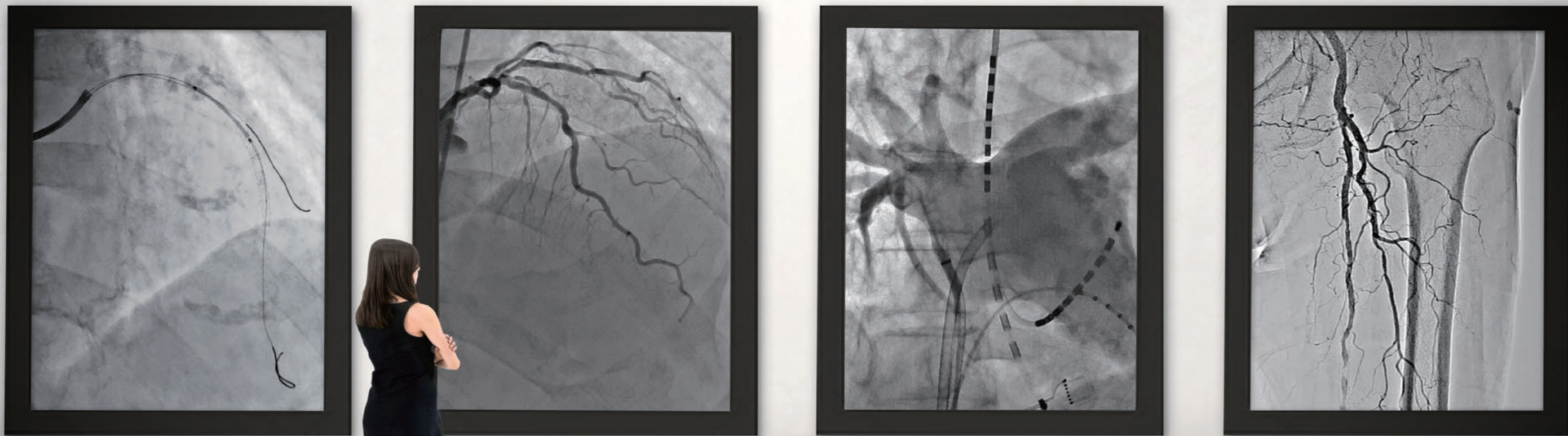# Canon

Cardiac & Vascular
Interventional systems

Alphenix

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.

# 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.
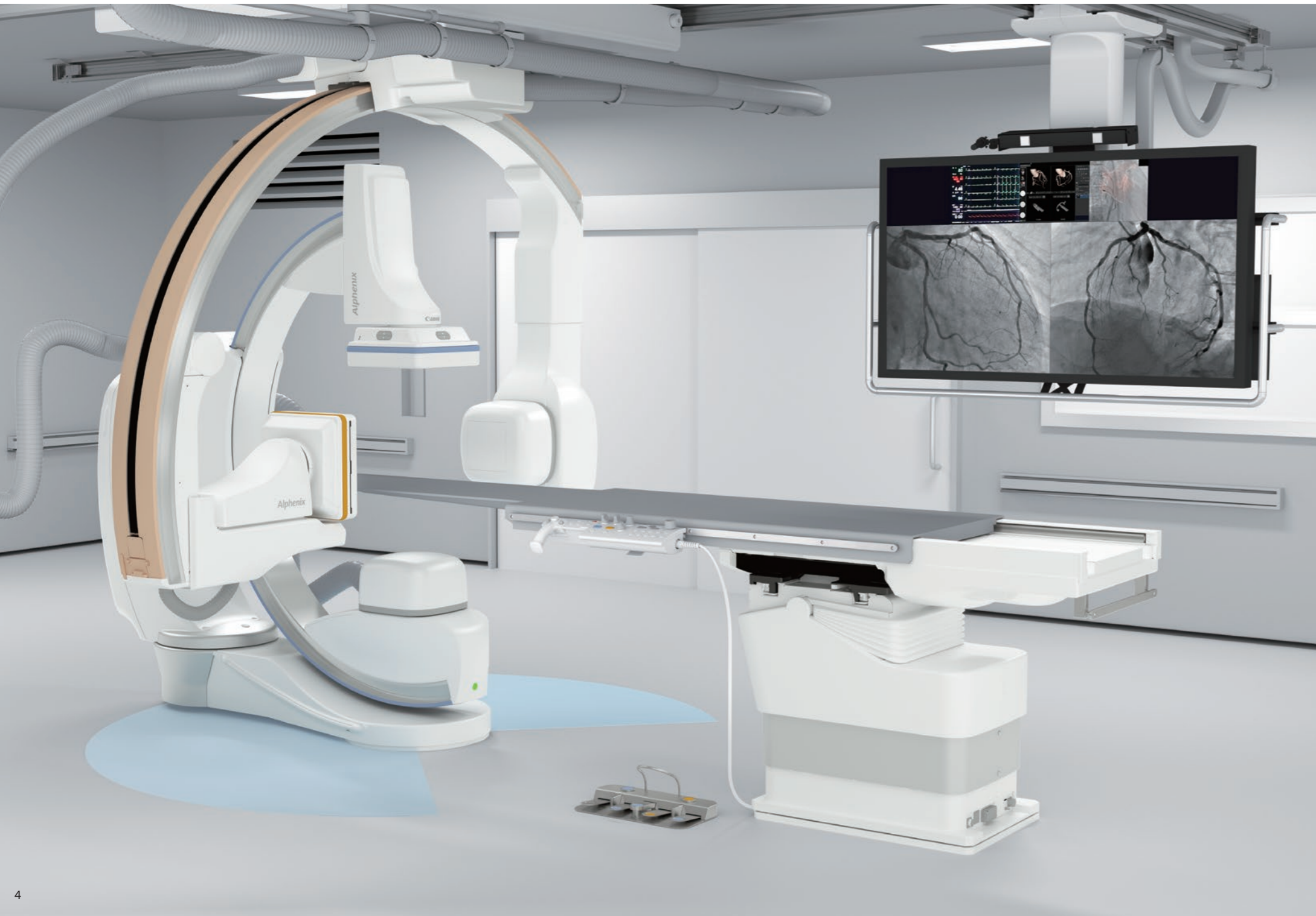
# Unparalleled flexibility and access to your patient.

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.
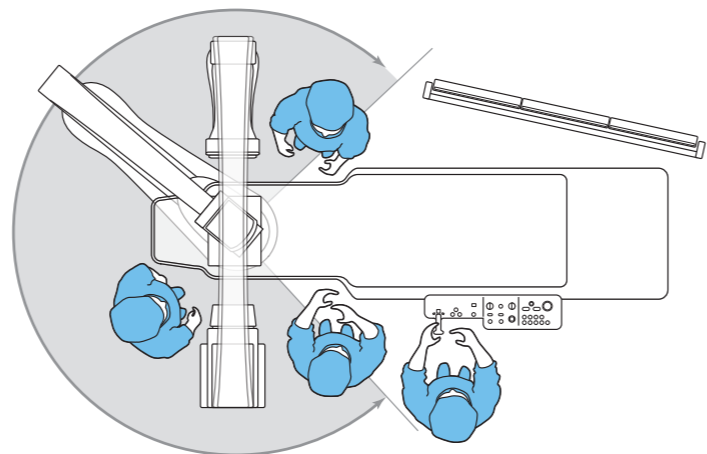
Multi-access floor-mounted C-arm allows for head-to-toe and fingertip-to-fingertip coverage for greater clinical flexibility
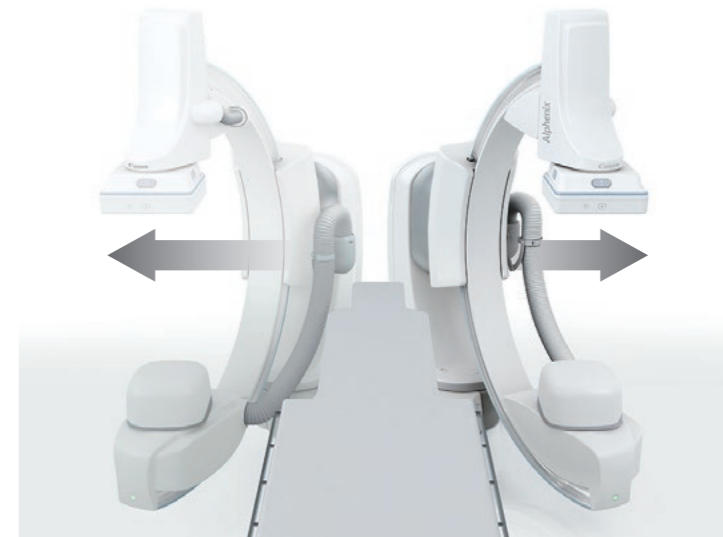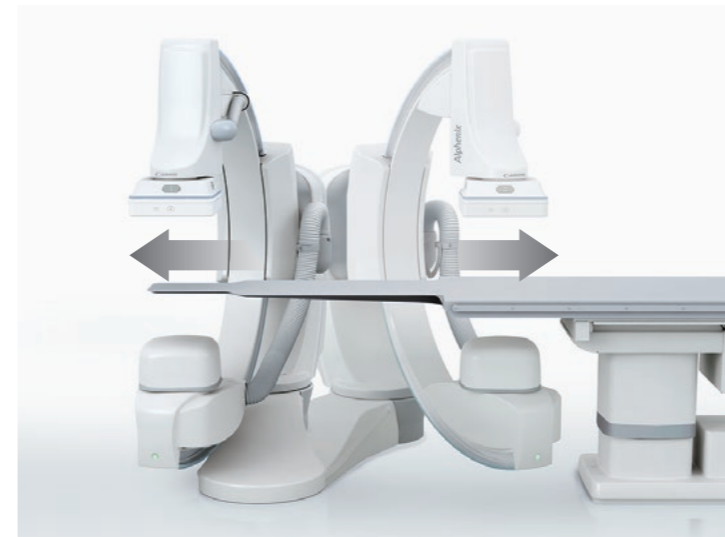
Ceiling-mounted C-arm provides unparalleled full-body lateral access without moving the patient or the table
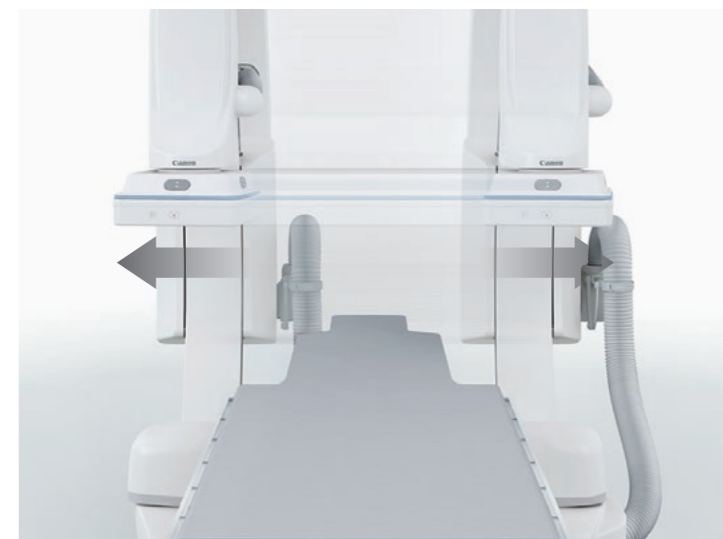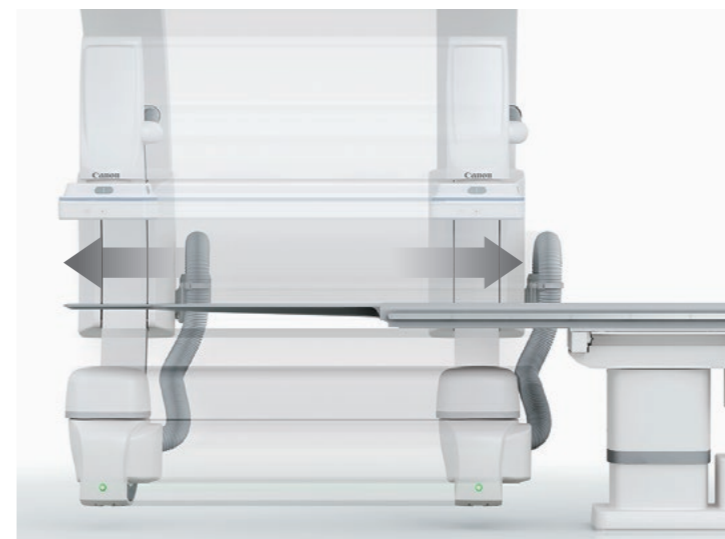
The heart of your cardiac lab

Integrated with QMAPP®

The most compact, smart and advanced hemodynamic measuring system in the world. An easy-to-use device installed with only one cable. 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 TD / FICK
- 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...

QMAPP® is a product of Fysicon, a Canon Group Company.
For more information, please visit fysicon.com or contact your Canon Medical representative.
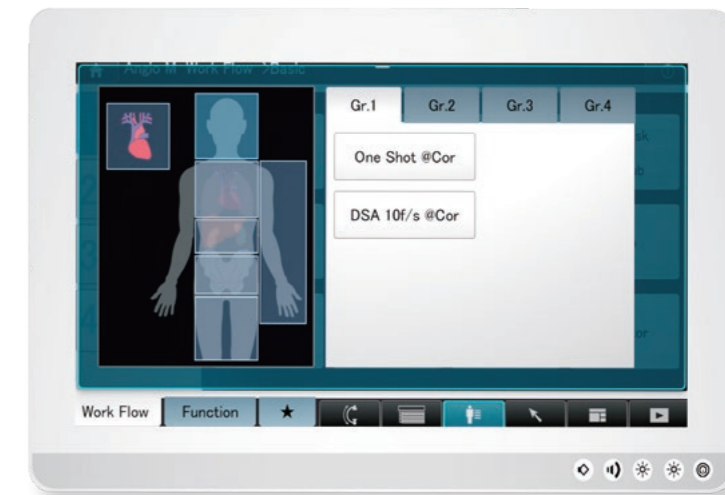
A fast, seamless, and intuitive work experience.

Easily select acquisition protocols and C-arm positions using the tableside Alphenix tablet.
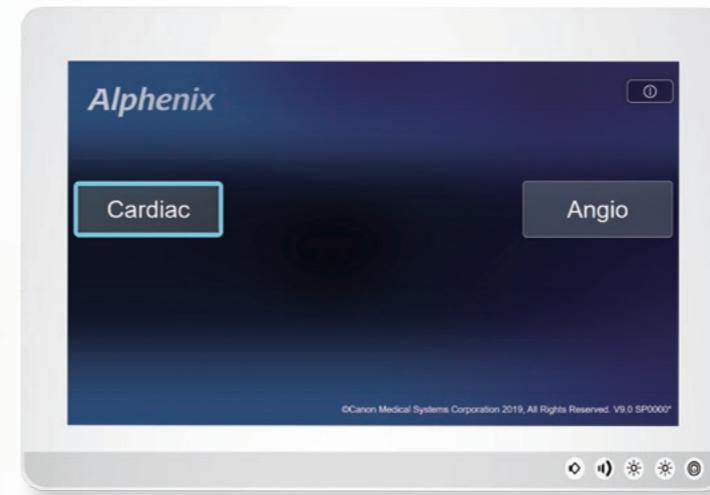
Startup screen
Easily register or select your desired clinical protocol on the tableside tablet.

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.

10

*: Alphenix tablet is available as an option.

11

# 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.
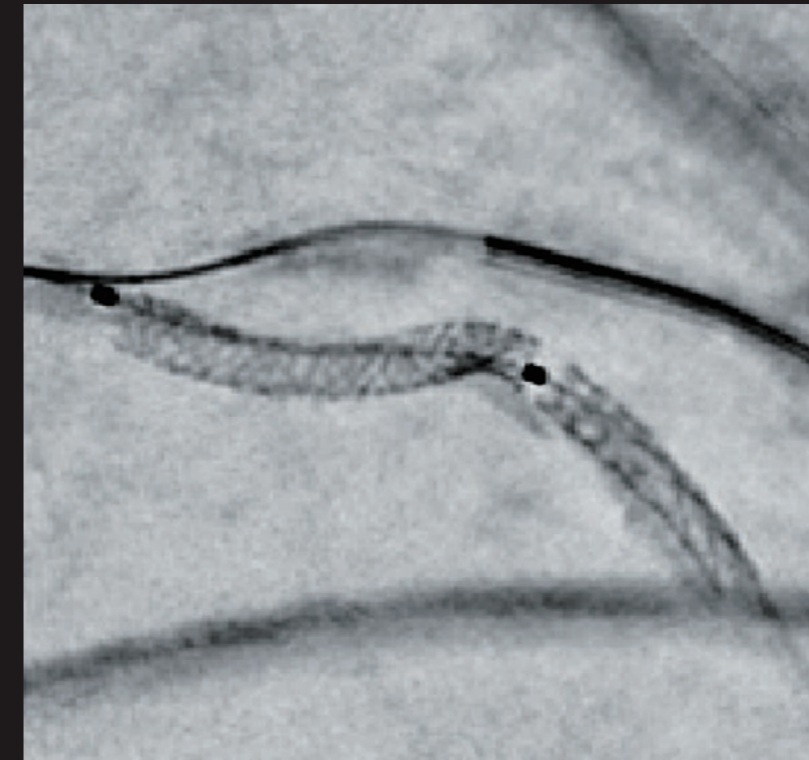
Stent Enhancer provides visualization of a stent by suppressing anatomical structures and background noise. To help clinicians further decrease dose, this feature also works with low frame rate acquisitions.
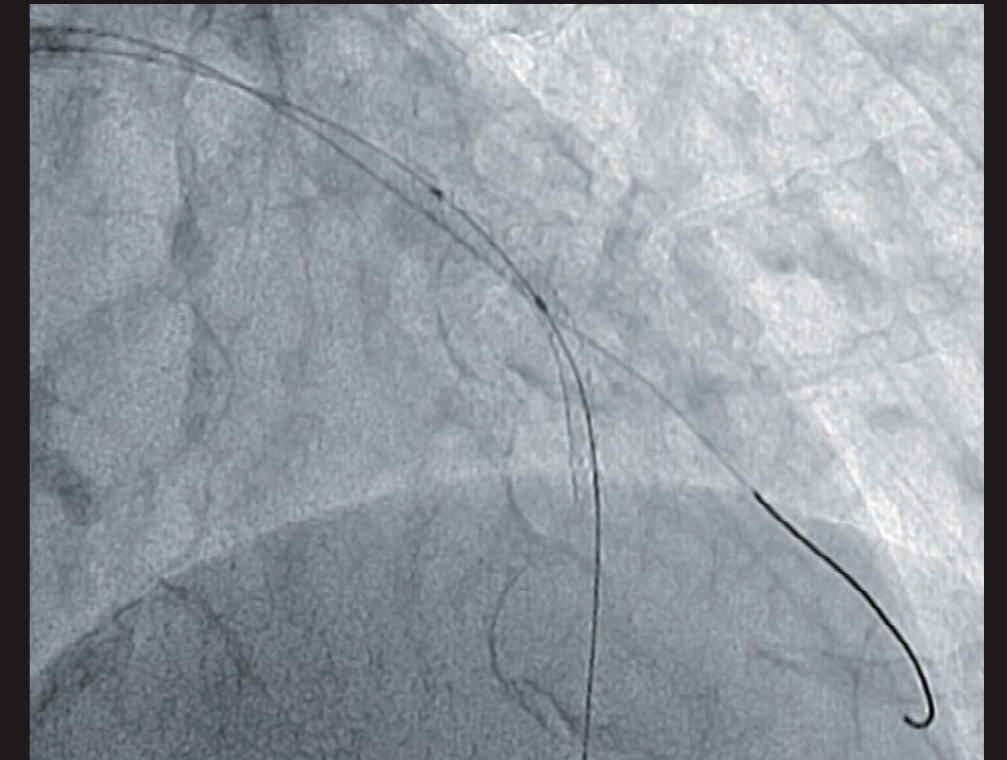
Stent Mode provides enhanced live stent visualization without the need of any additional separate processing or post processing. Every press of the foot pedal will immediately display Fluoro or Acquisition runs with Stent optimized settings.

Navigate with confidence and accuracy.

## Valve planning and view angle support* (3Mensio)
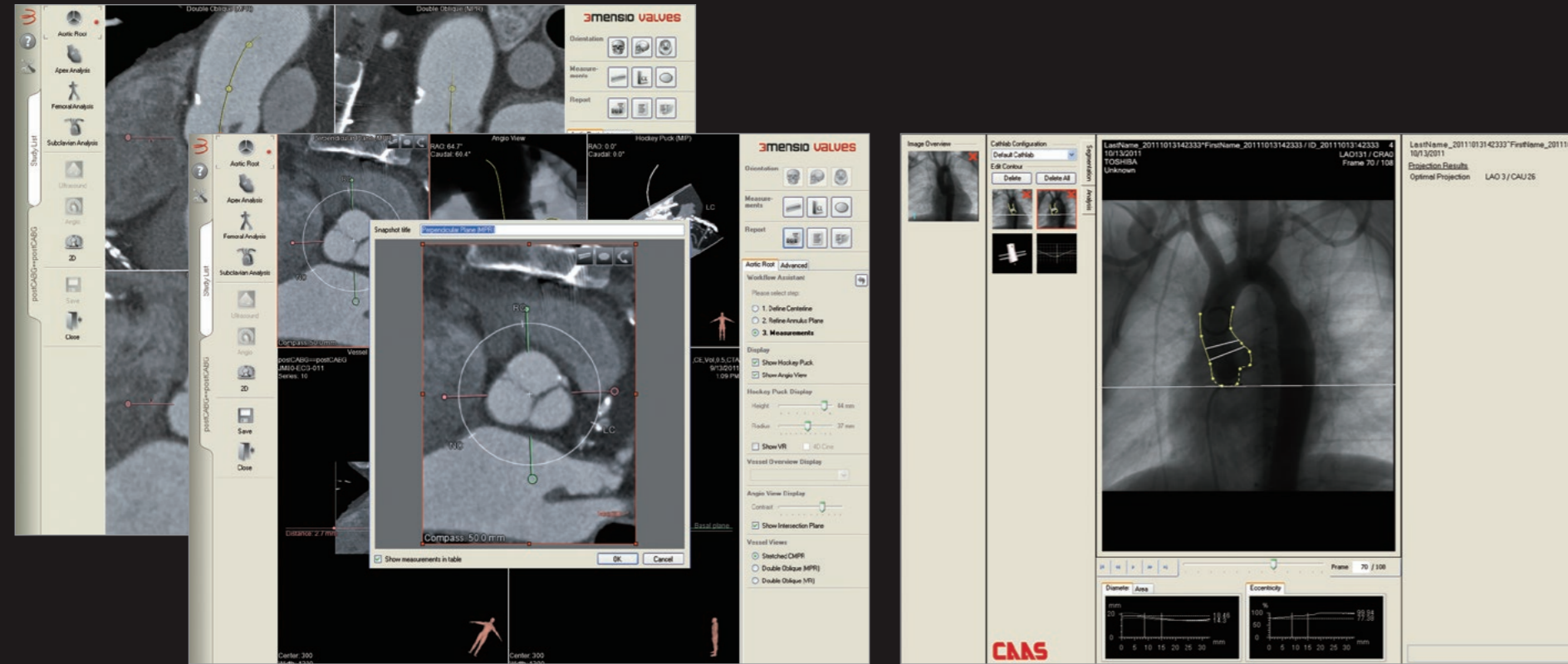
Examples of screenshots for valve planning (left) and view angle support (right).
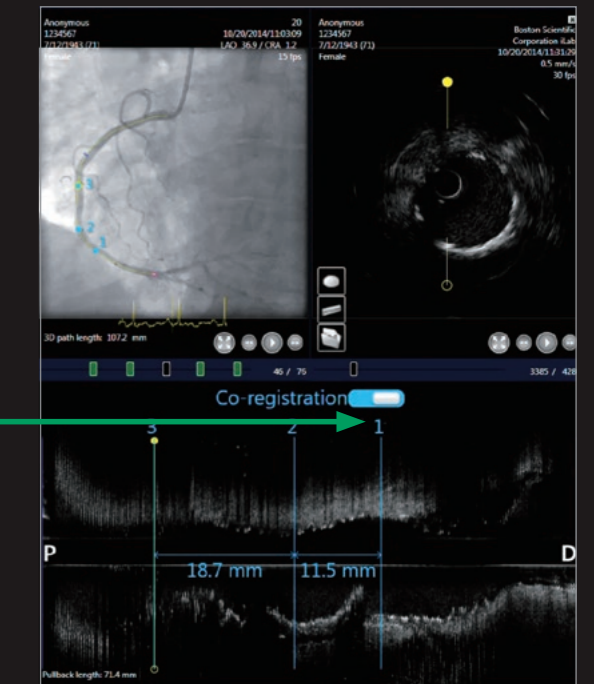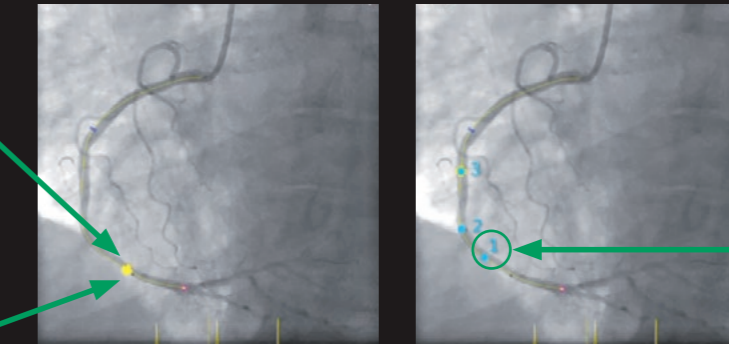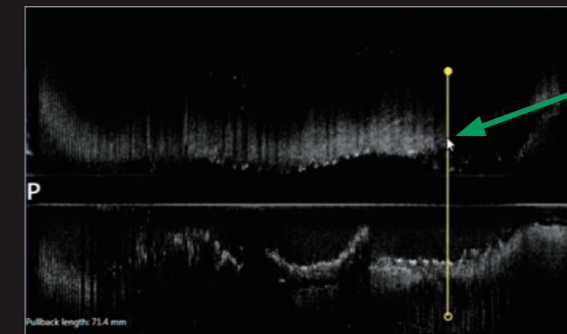
Comprehensive valve planning software makes pre-implementation analysis possible, allowing quick and intuitive analysis of the aortic valve prior to Transcatheter Aortic Valve Replacement (TAVR).

IV-LINQ*

Short axis cross-sectional image
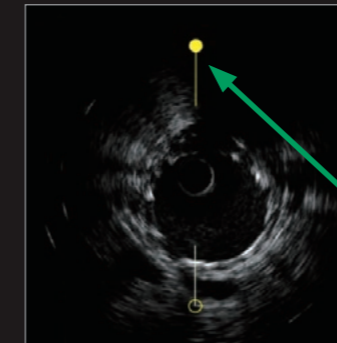
Long axis cross-sectional image

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.

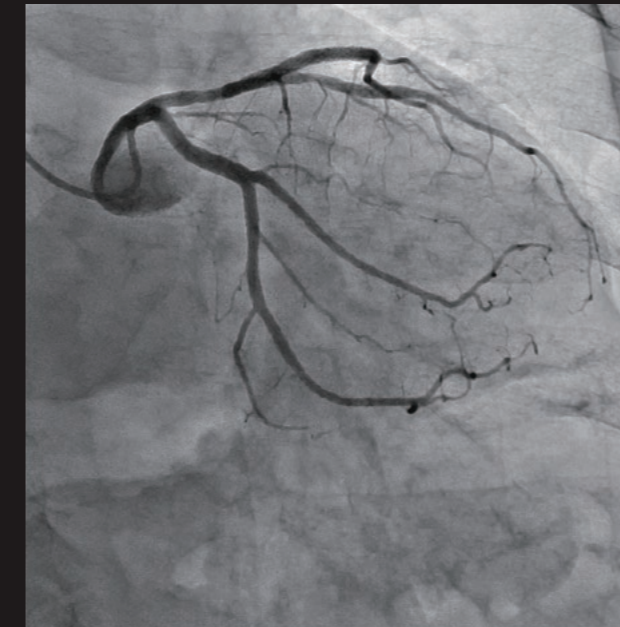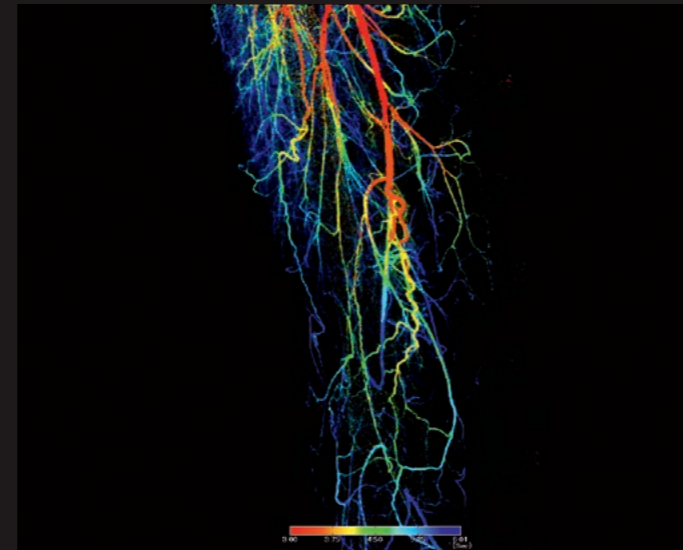∗: option

Clinical gallery

Multi-modality fusion*

3D fusion technology enables superimposition of 3D volume data on the live fluoro display. Fusion is possible using a C-arm acquired 3D dataset or importing a pre-procedural CT/MR study.
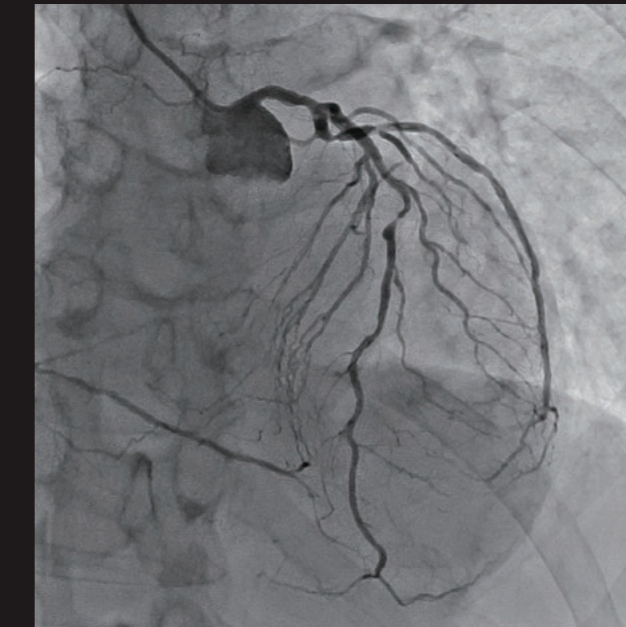

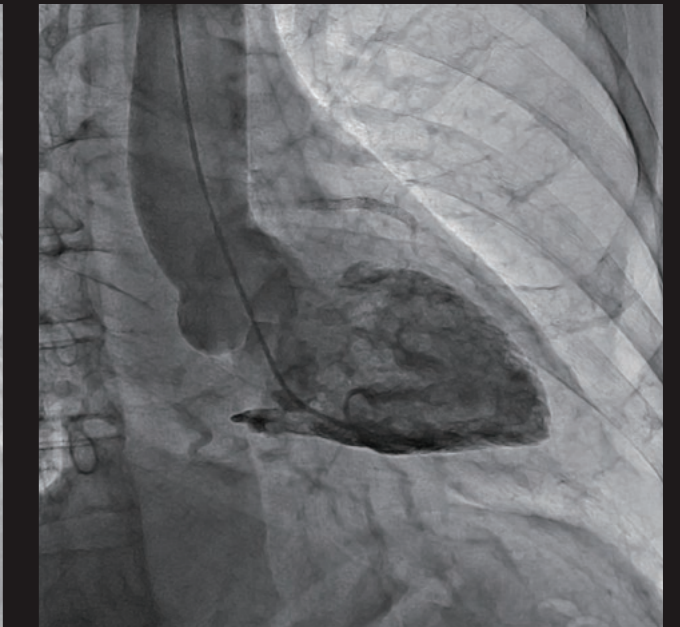## Parametric imaging

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 time density curve.
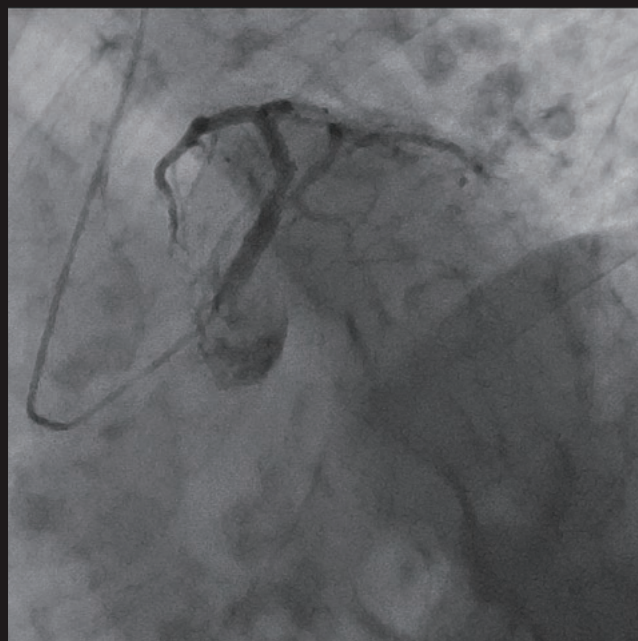

CAG

CAG with collateral

LVG

*: option

Clinical gallery

Spider view for over 100 kg patient
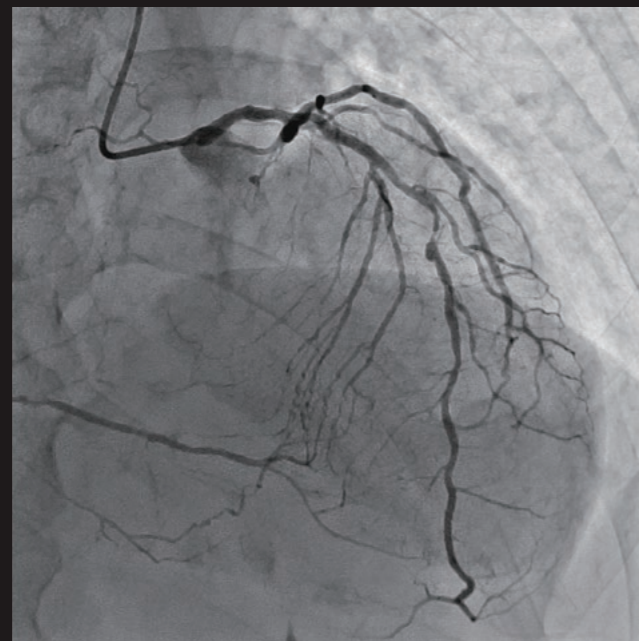
Pre PCI
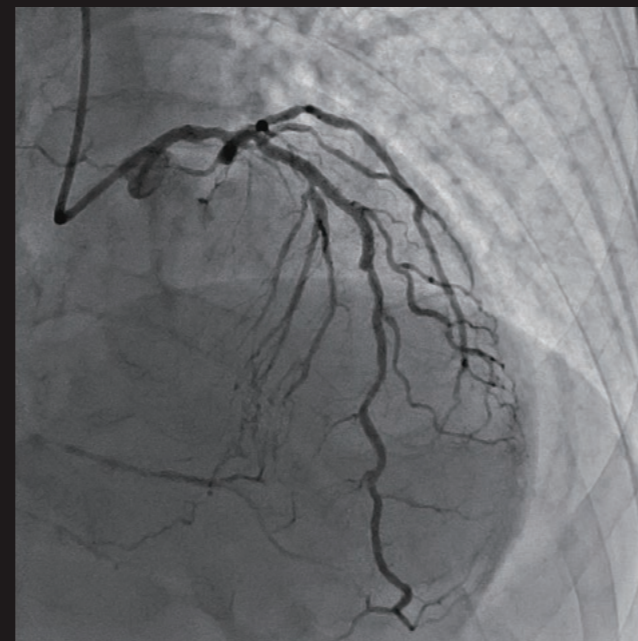
Post PCI
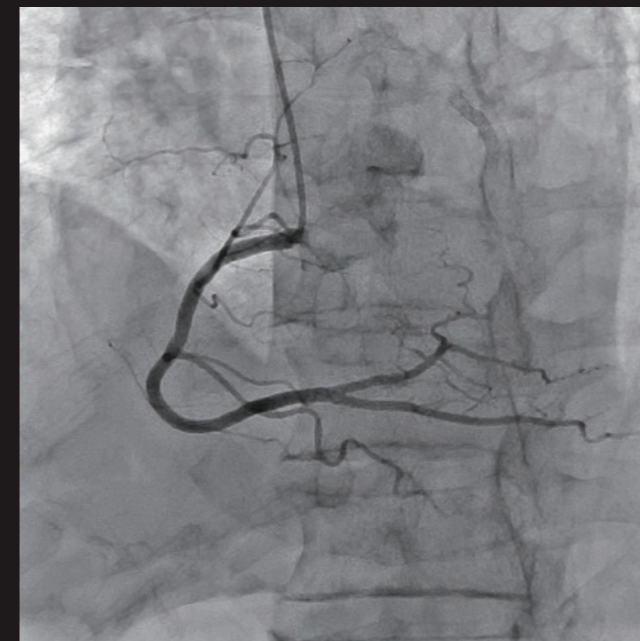
RCA & Stent

Spider view
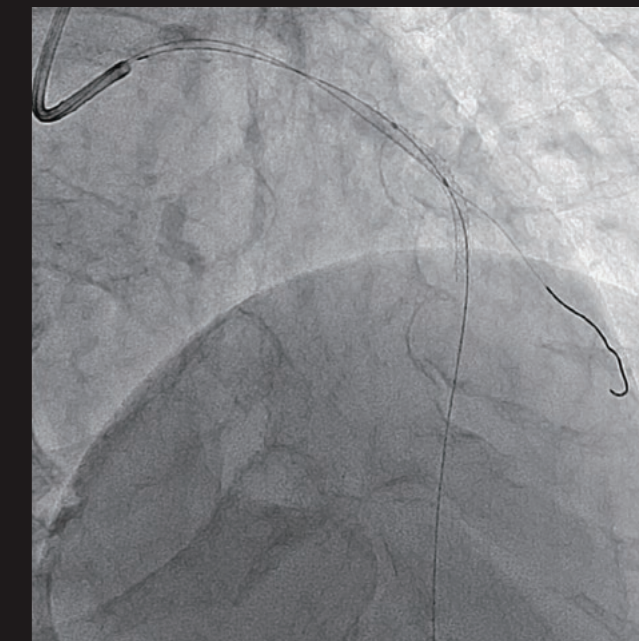
Stent mode

Optimize image quality while reducing the exposure dose.

FPD
High sensitivity and low noise

Grid
Optimized material for high definition

Collimator and compensation filter
Minimize radiation dose and optimize X-ray beam

X-ray tube
ROI control

Digital connection

16-bit
· High-speed processing
· New noise reduction management

Digital connection
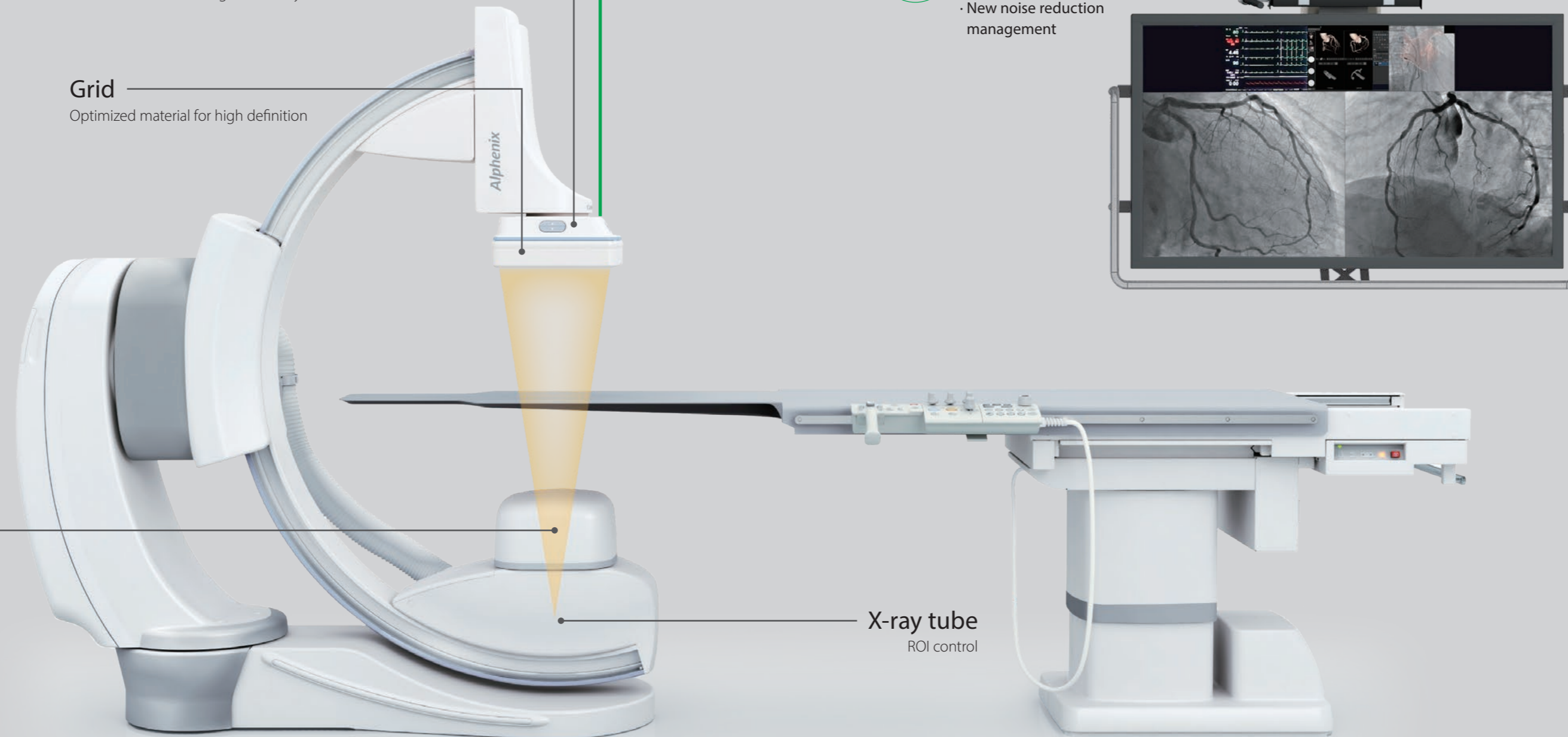
ImagingRite

Powerful imaging and processing tools.

Raw data

Illuvis

Image processing first round → *Image processing second round* → *Image processing third round*

Final data

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 realtime to reduce background noise and enhance features.

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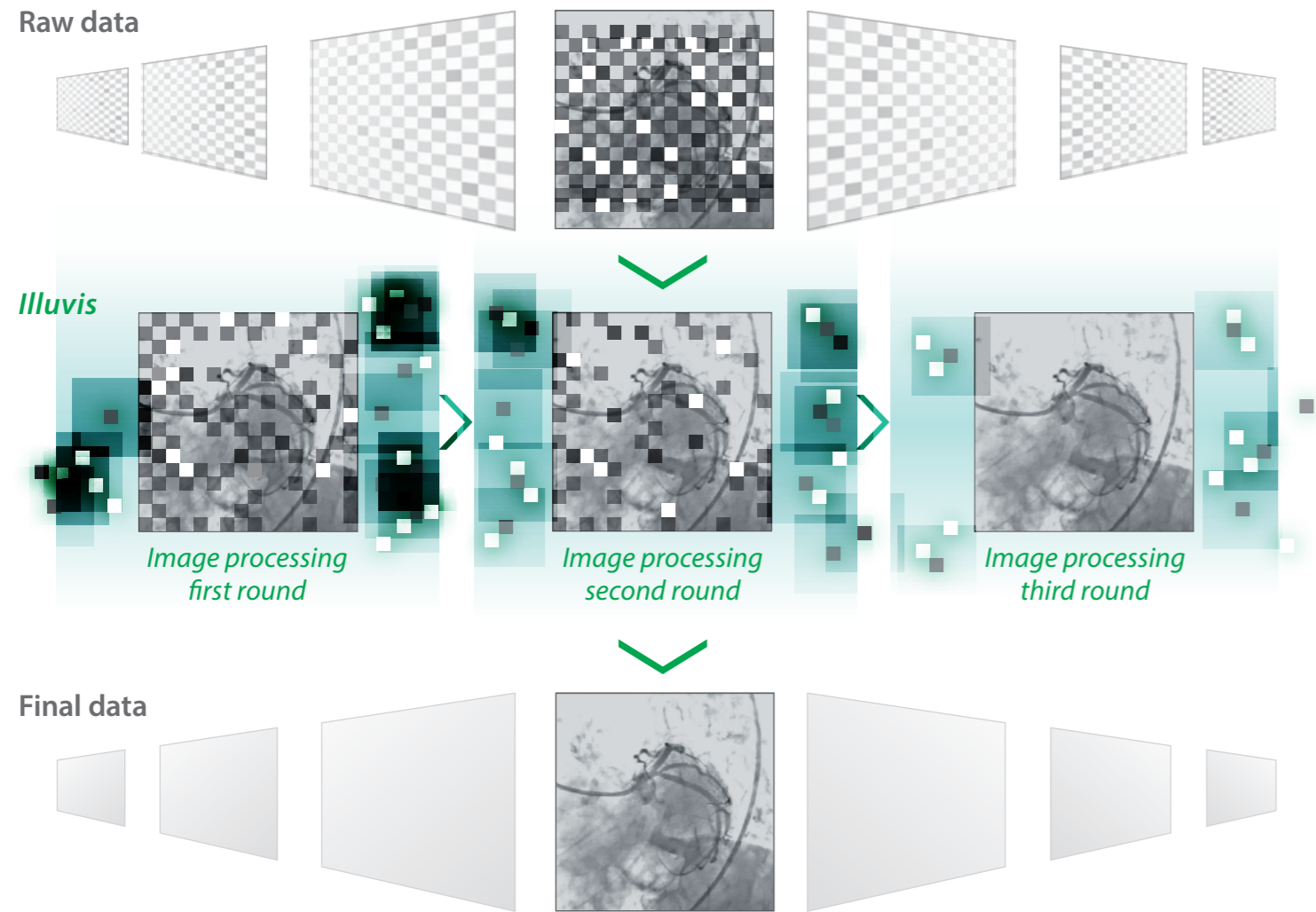This function automatically senses excessively bright areas in the ROI, such as the lung fields, and excessively dark areas, such as the vertebral bodies and the diaphragm, and calculates the appropriate X-ray conditions.
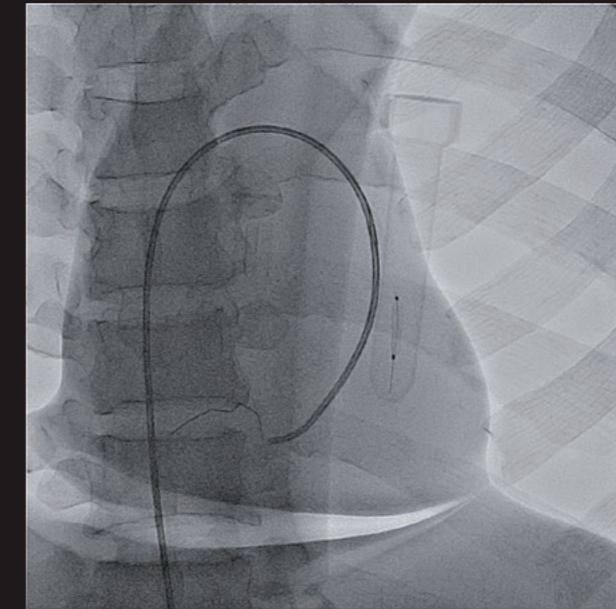
Conventional processing method
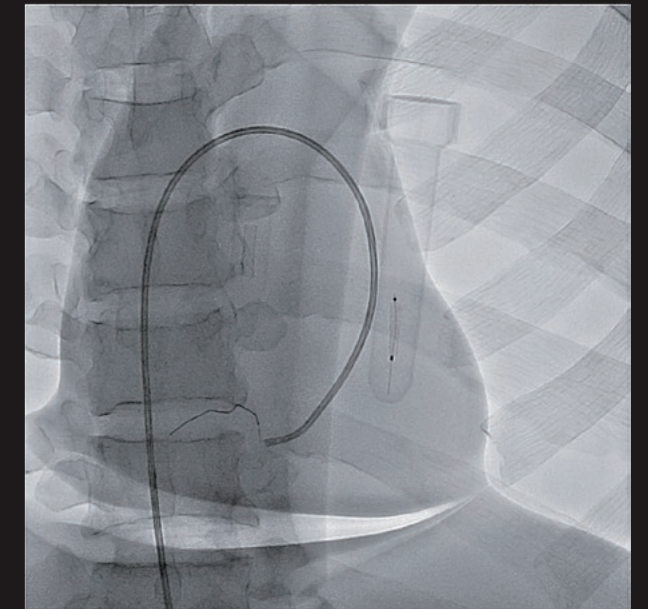
ImagingRite

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
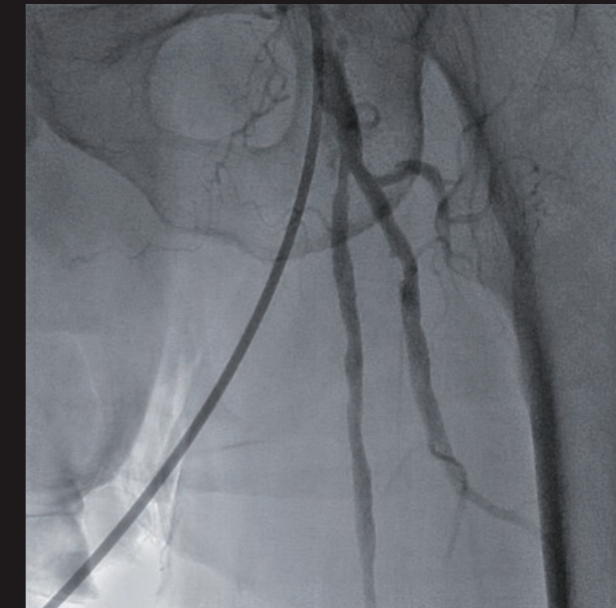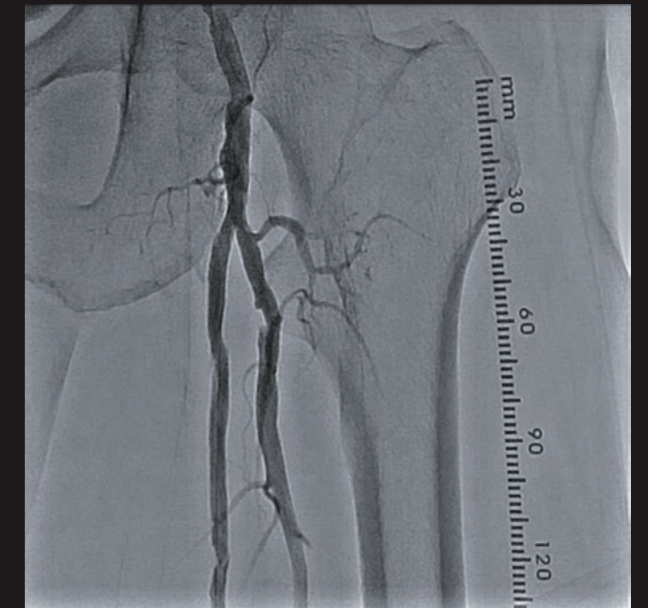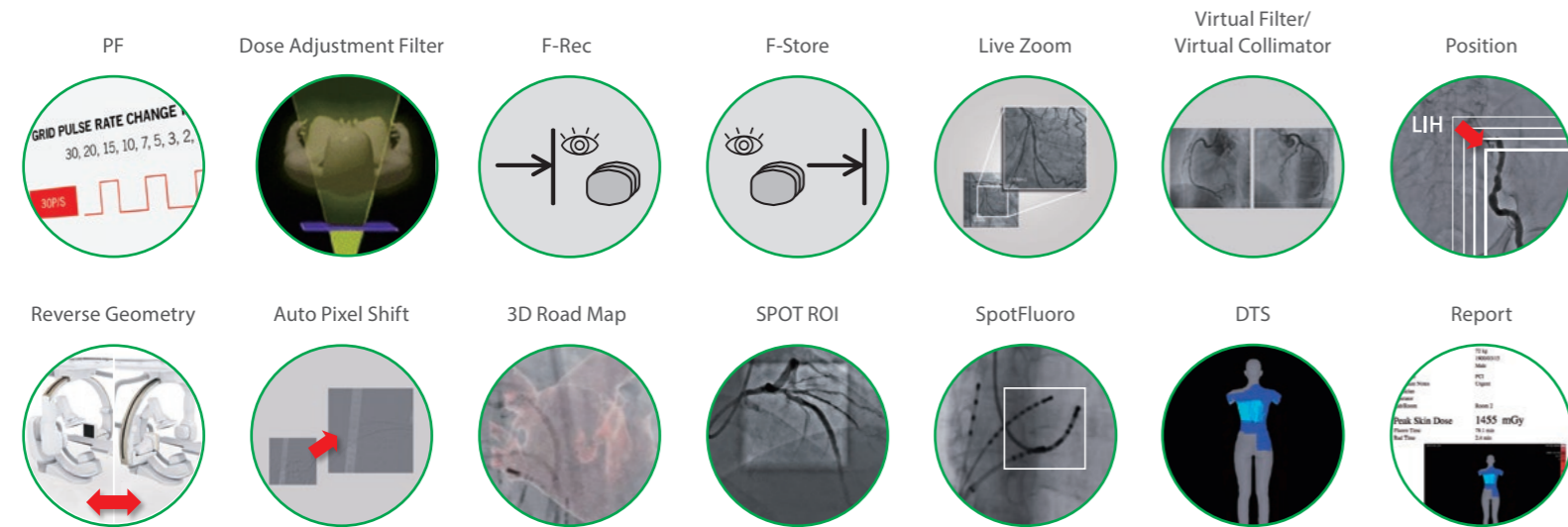- Variable dose mode to pre-programmed combinations of pulse rate, dose level and image processing parameters
- Virtual collimation and filtration to adjust collimation without additional fluoroscopy

Patient

Alphenix

Manager   Clinical staff

Dose Management for Everyone.

PF	Dose Adjustment Filter	F-Rec	F-Store	Live Zoom	Virtual Filter/ Virtual Collimator	Position

GRID PULSE RATE CHANGE
30, 20, 15, 10, 7, 5, 3, 2
30FPS

LIH

Reverse Geometry	Auto Pixel Shift	3D Road Map	SPOT ROI	SpotFluoro	DTS	Report

Peak Skin Dose 1455 mGy

Asymmetric collimation allows reductions in patient dose.
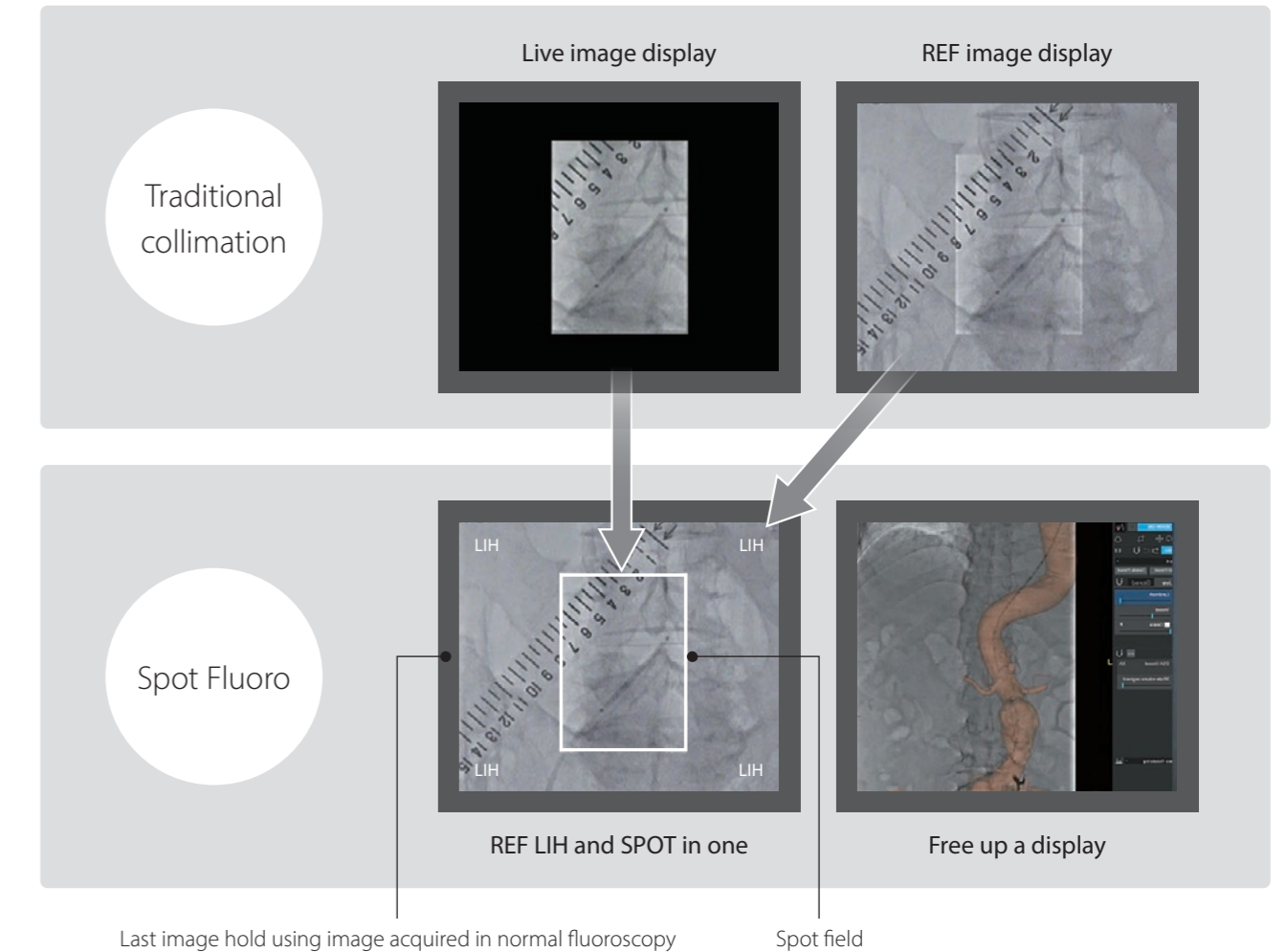
SPOT Fluoro: Industry's first spot fluoroscopy technology.

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 because the system compensates for the reduction of scatter radiation due to collimation in the ABC Region of Interest (ROI).

SPOT Fluoro can reduce the cumulative dose area product by more than 50%.
Moreover, scatter radiation can also be reduced by more that 50%.
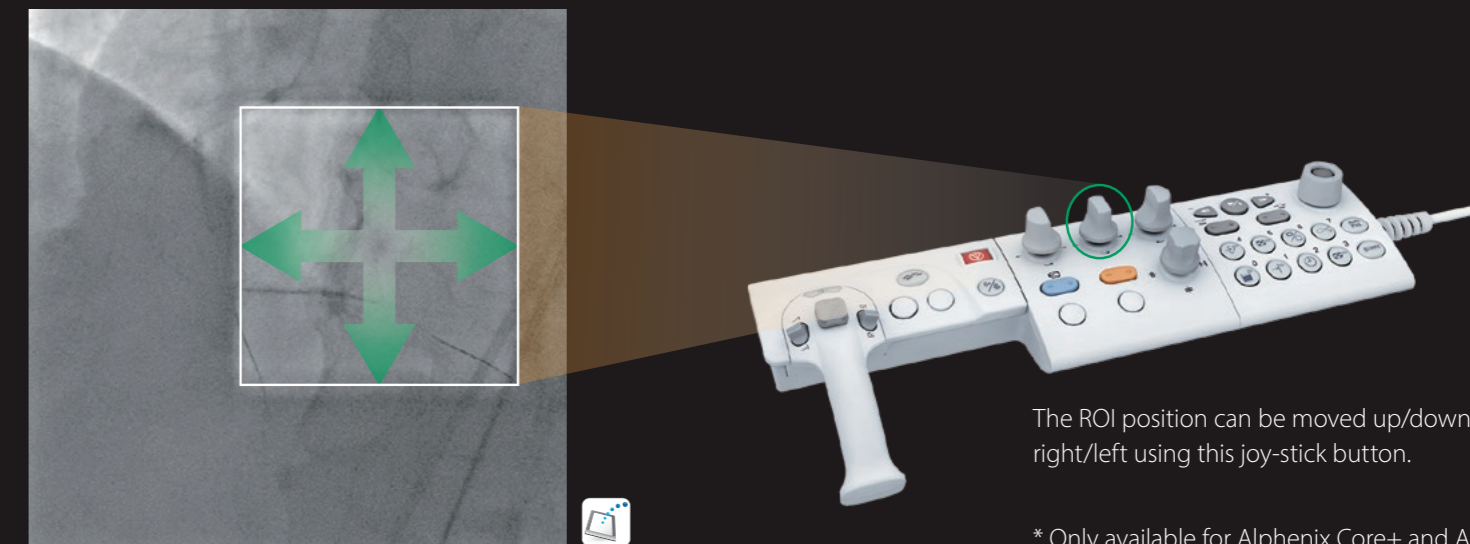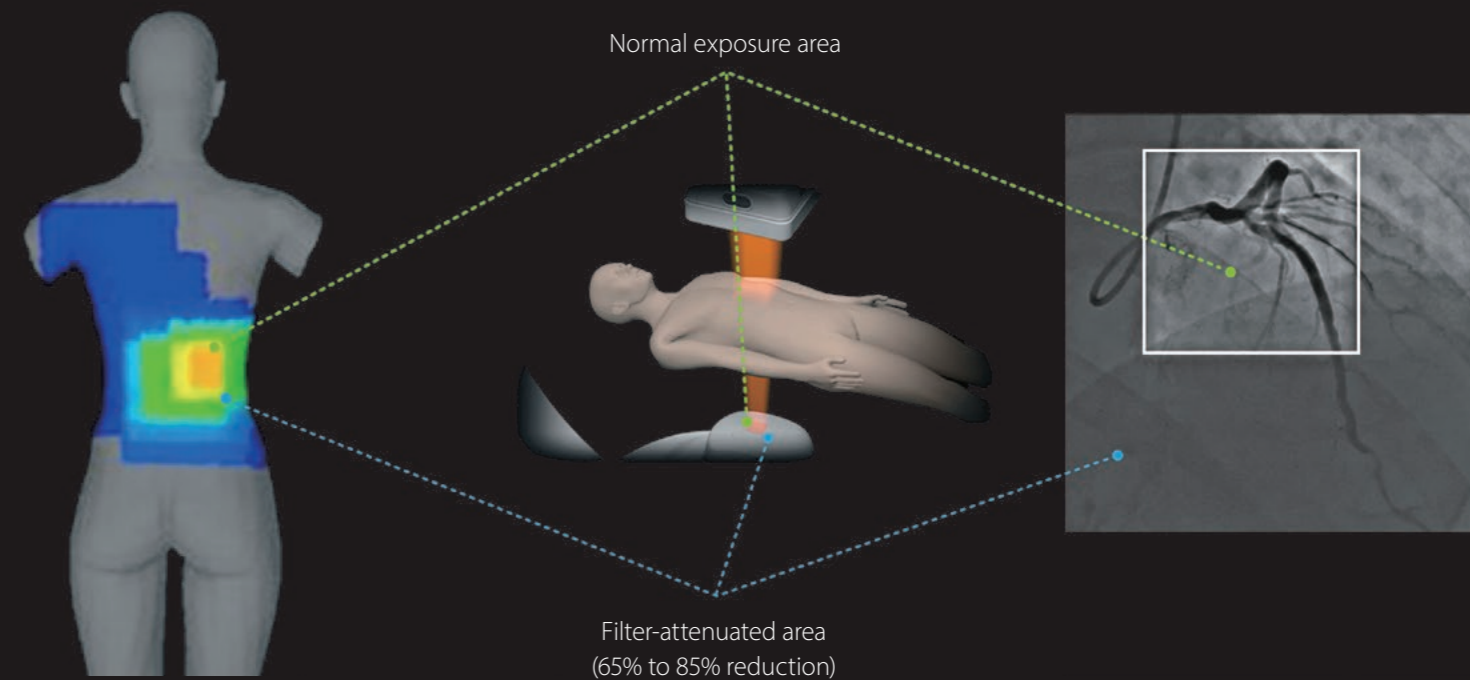SPOT Fluoro reduces unnecessary exposure and radiation burden to both the patient and the clinical staff present in the cath lab.

Live image display   REF image display

Traditional collimation

Spot Fluoro

LIH   LIH

LIH   LIH

REF LIH and SPOT in one   Free up a display

Last image hold using image acquired in normal fluoroscopy   Spot field

See more 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.
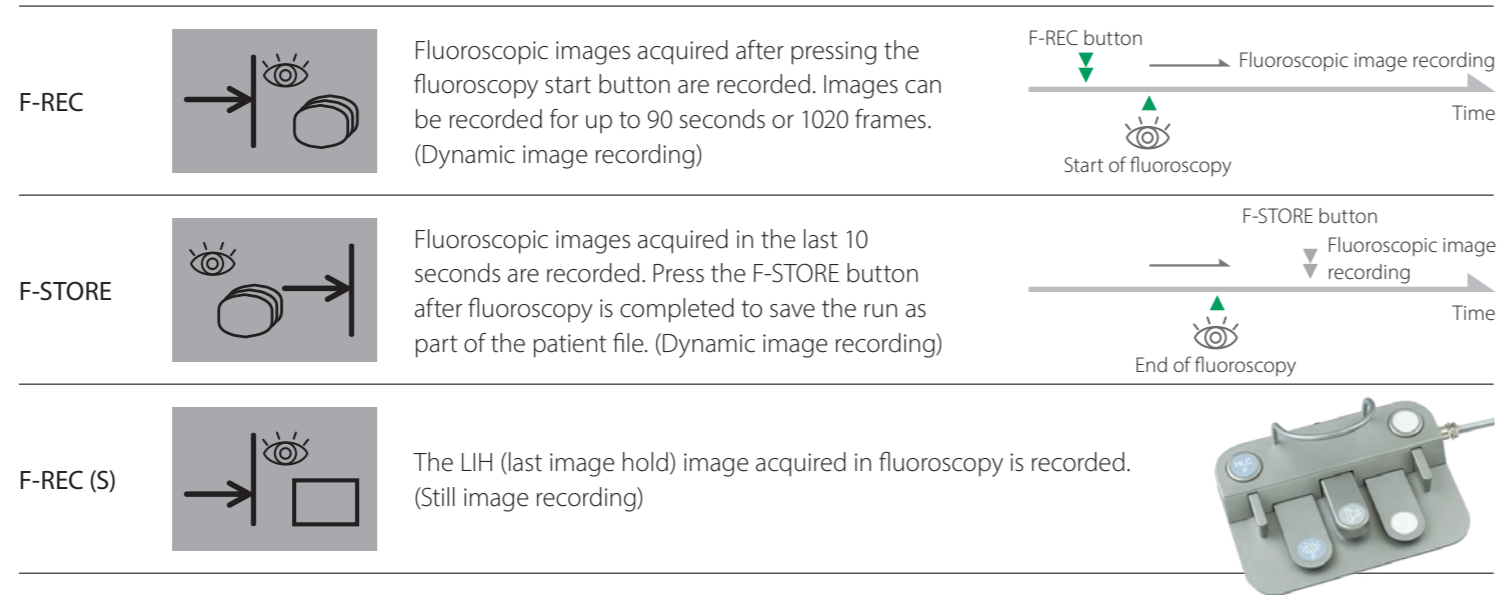

Normal exposure area

Filter-attenuated area
(65% to 85% reduction)

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

* Only available for Alphenix Core+ and Alphenix Biplane

Advanced dose management tools

Fluoroscopic acquisition

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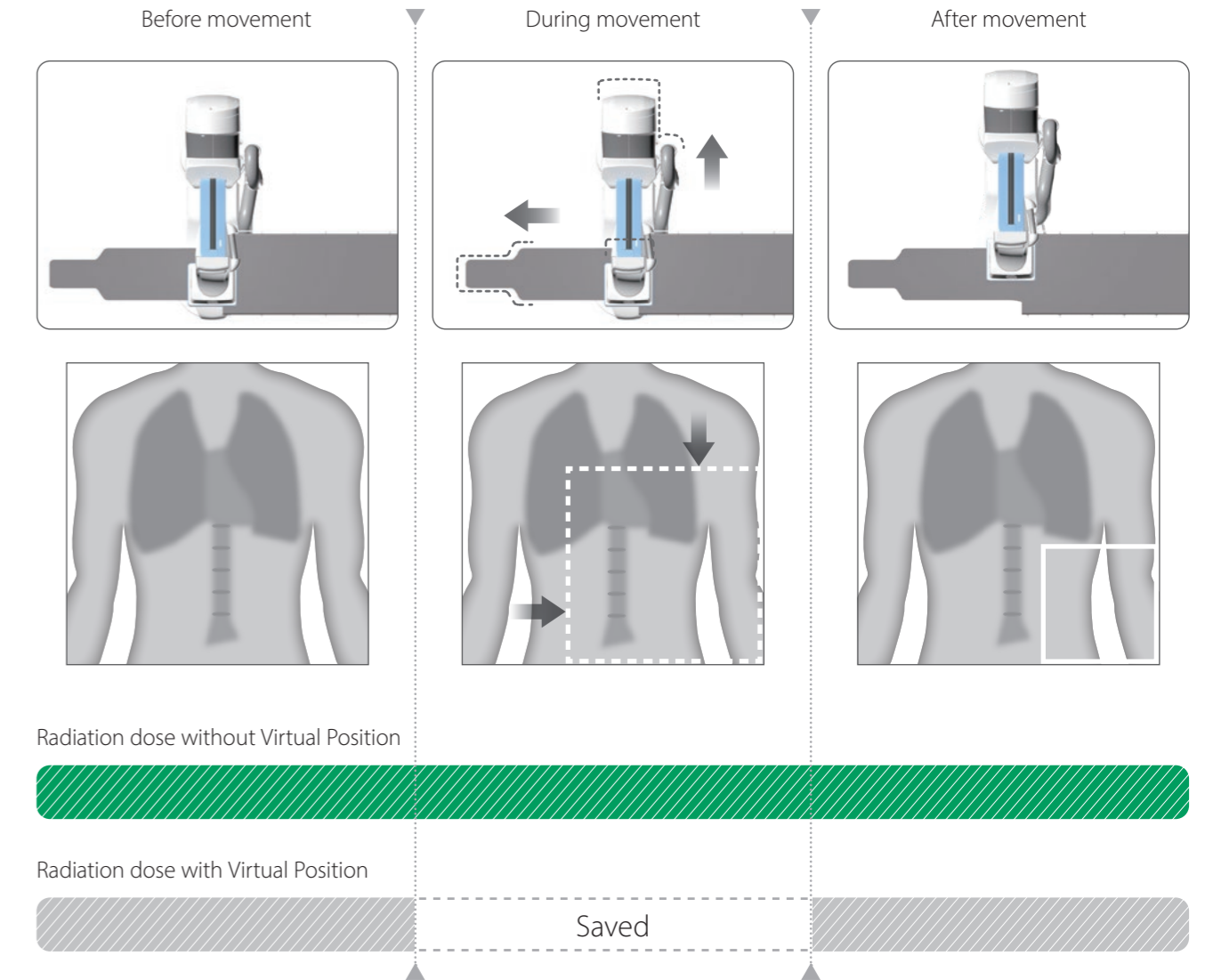
F-REC

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-REC button → Fluoroscopic image recording

Time

Start of fluoroscopy

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-STORE button → Fluoroscopic image recording

Time

End of fluoroscopy

F-REC (S)

The LIH (last image hold) image acquired in fluoroscopy is recorded. (Still image recording)

Realtime display of exposure dose

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

RAO 27°
CAU 31°
SID 107 cm
8°
0°
101 cm

1.4 min
1.5 cGy/min
0.76 mGy

1 %
M 1.4 min
1.5 mGy/min
0.76 mGy
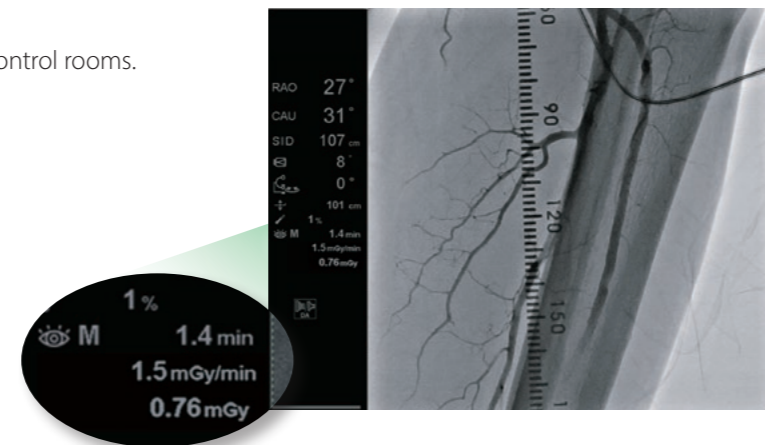
Virtual Position

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.

Before movement | During movement | After movement

Radiation dose without Virtual Position

Radiation dose with Virtual Position

Saved

Visualize estimated peak skin dose in realtime, and act on it.

Dose Tracking System* (DTS)

#### Visualize and record in realtime

Enhanced dose awareness is available through the DTS tool, providing estimated skin dose in realtime. 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.
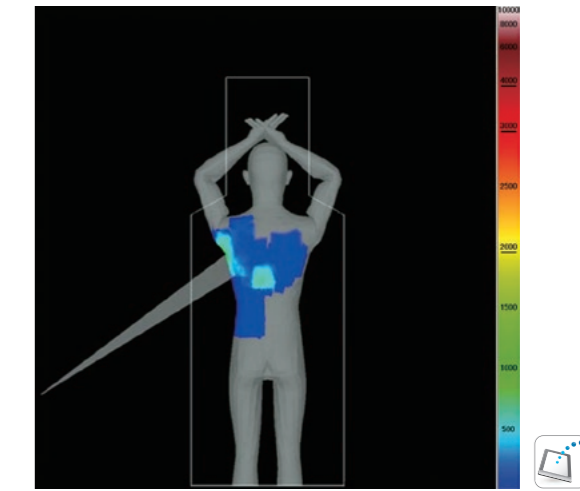
Multiple 3D patient models are defined in advance and a patient model is selected for each study.
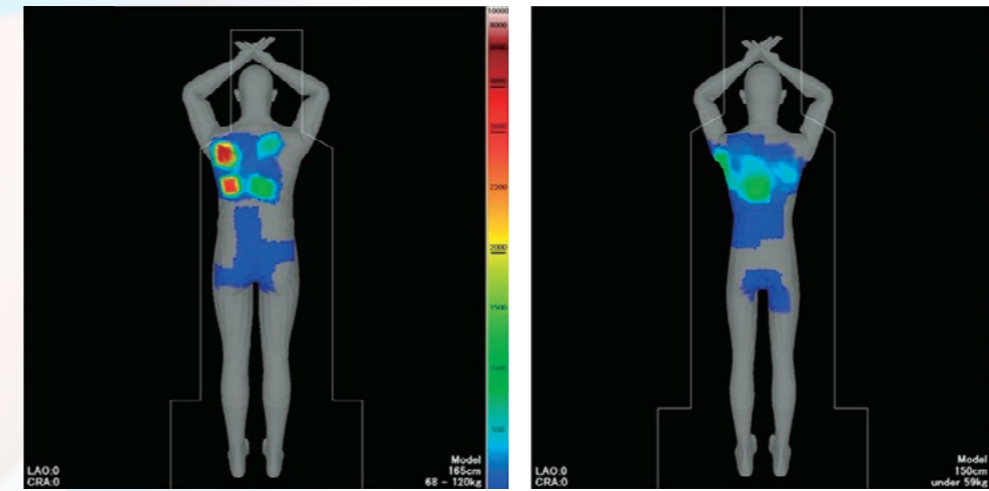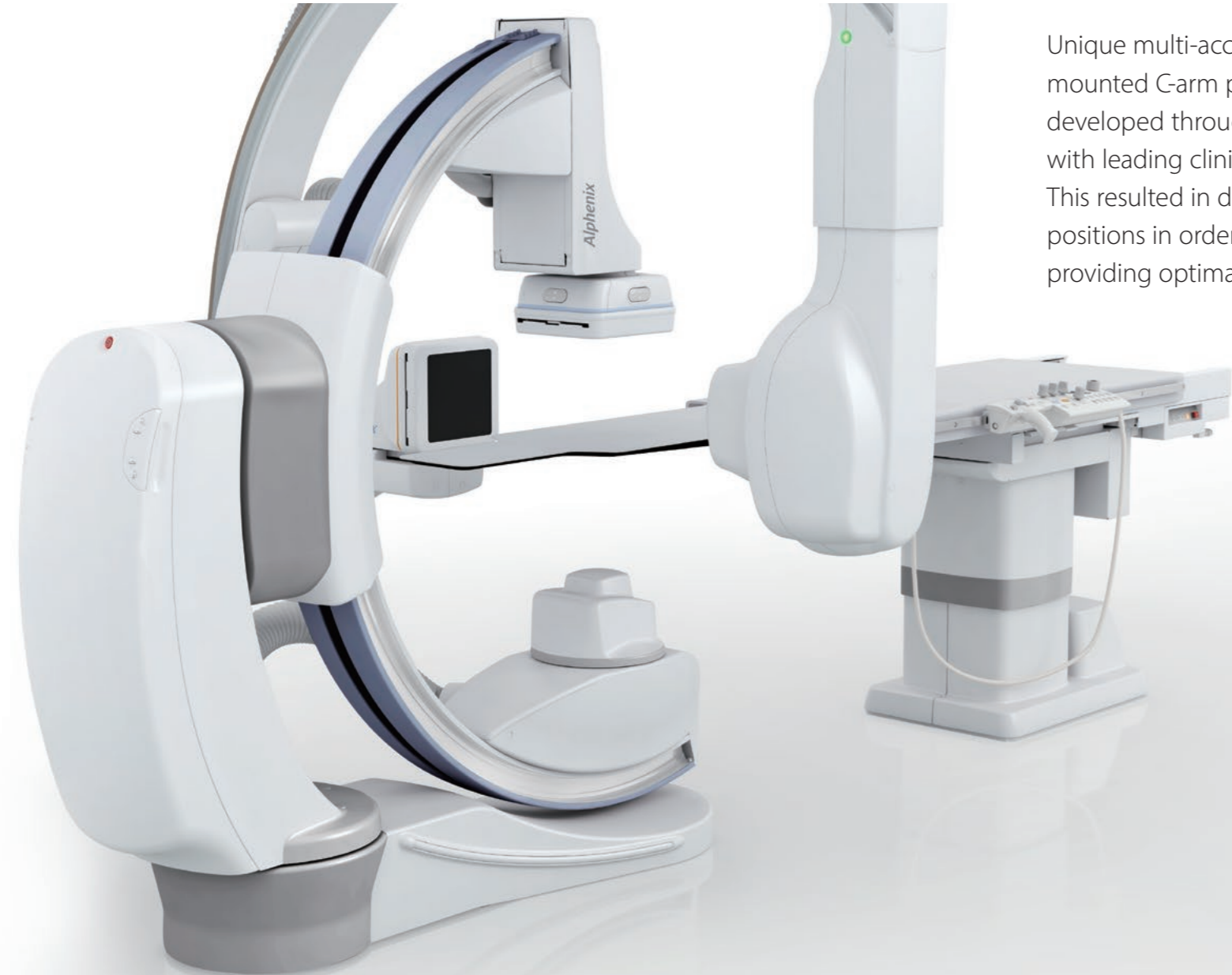
without DTS   with DTS

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

30

31

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.
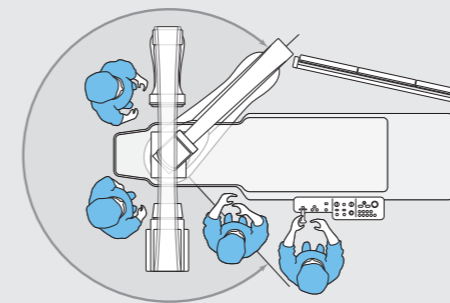
Alphenix *Core+*

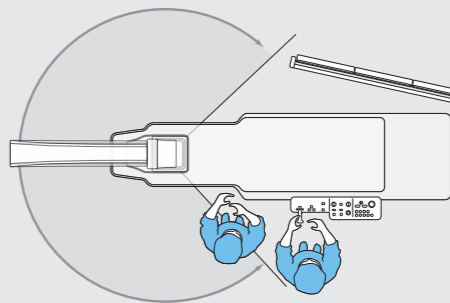### Floor-mounted multi-access single-plane system

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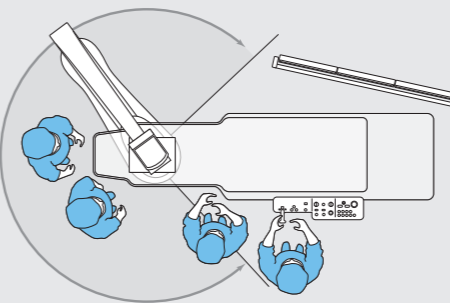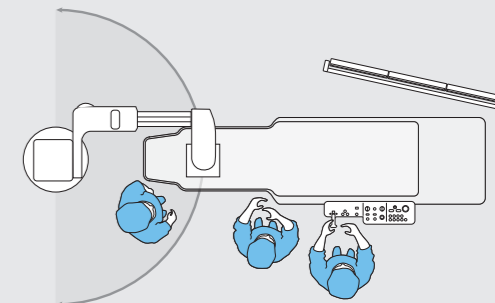

Alphenix *Sky*

Ceiling-mounted system

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

Alphenix *Core*

Floor-mounted single-plane system

The compact C-arm system to provide high-resolution images for precise interventional procedures.

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.
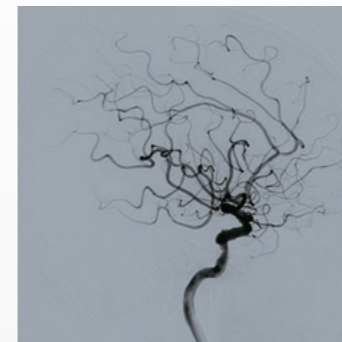
Detector size choices

Alphenix interventional angiography systems are available with a range of flat panel detector sizes to suit your coverage needs.
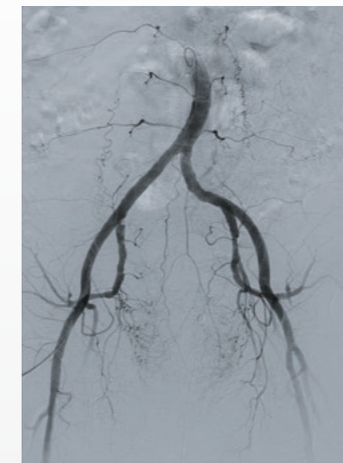
8" × 8"
(20 cm × 20 cm)

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

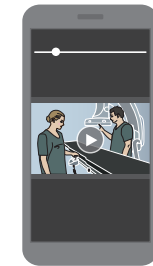Tilting type

How to Use the medicalAR App

Images with the ⬚ icon can be viewed in motion.
To download the app, scan the QR code or visit
our website:

https://global.medical.canon/about/medicalAR

① Launch the app and start AR Camera.

② Scan a page that includes image with the ⬚ icon.

③ When a trigger image is captured, linked content will be displayed.

Canon

CANON MEDICAL SYSTEMS CORPORATION

https://global.medical.canon

Disclaimer: Some features presented in this brochure may not be
commercially available on all systems shown or may require the purchase of
additional options. Please contact your local representative from Canon
Medical Systems for details.

Made For life