

**Canon**



**Aquilion<sup>TM</sup> ONE**

**GENESIS Edition**

Transforming CT

# GENESIS Edition – Transforming CT

Aquilion ONE™ / GENESIS Edition goes beyond the evolution of dynamic volume CT. Intensive, clinically focused research and innovative technological developments have culminated in a CT system with industry-leading spatial resolution and reduced radiation dose requirements.

GENESIS Edition maximizes the patient experience during CT examinations, and through intelligent examination protocols, provides excellent image quality with low radiation and contrast dose tailored to each and every patient.

Intelligent technology for increased patient safety and patient care.



ONE  
Aquilion

ONE  
Aquilion

床  
高  
+0.0 deg  
-388.0 mm  
+0.0 mm  
0.0 mm









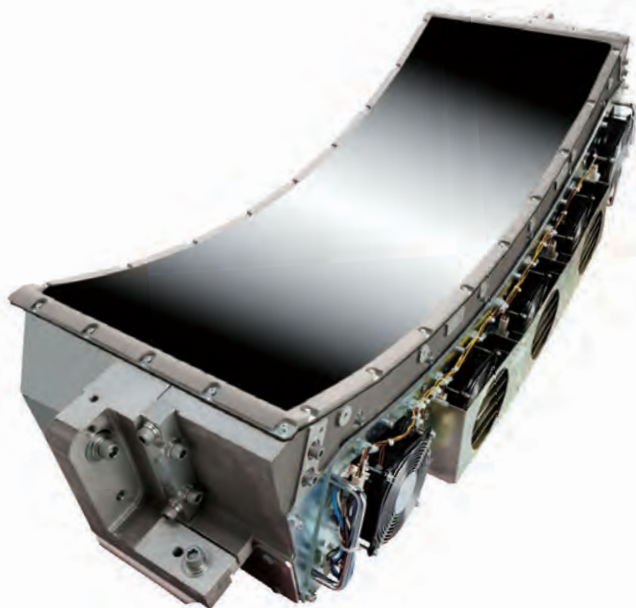


Transforming clinical confidence

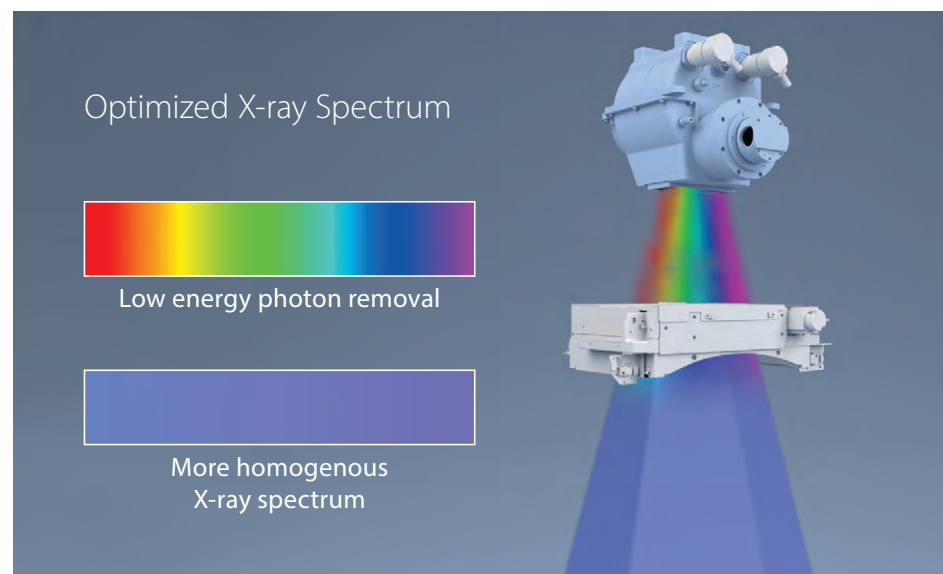
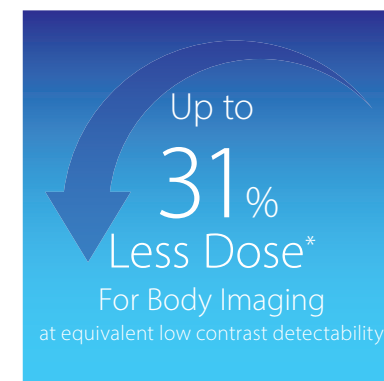
# A better balance between image quality and dose – from the youngest to the largest

PUREViSION Optics provides significantly improved imaging efficiency from photon generation to detection. An optimized beam spectrum combined with a more efficient detector result in a better balance between image quality and dose.

PUREViSION Optics transforms routine CT imaging to new levels of image detail and low contrast detectability with up to 31% less dose.\*



GENESIS' 320 row PUREViSION detector with industry-leading 0.5 mm element size delivers sharp isotropic images with a boost of 40% more light output.

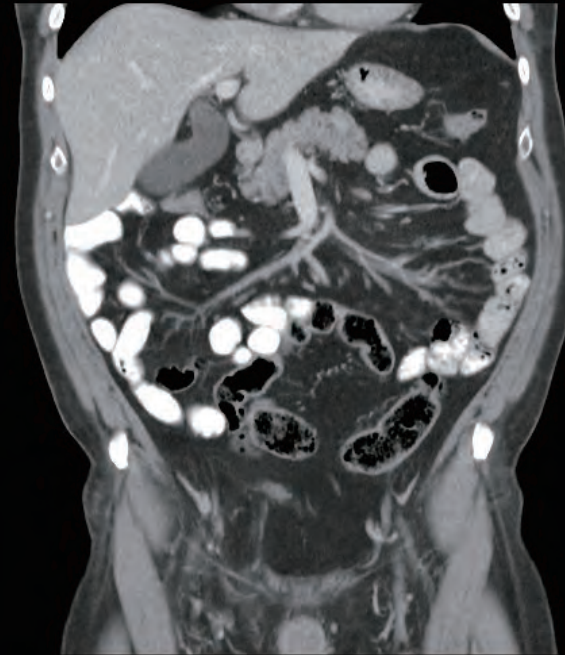
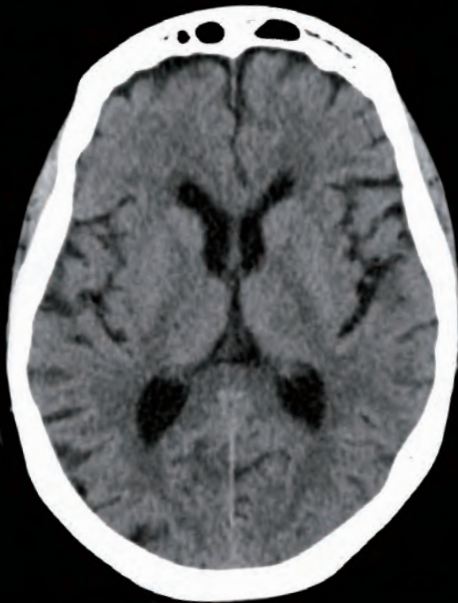


Patient-specific beam shaping filters provide an optimized X-ray spectrum and more homogenous distribution, improving low contrast detectability by up to 18% for body imaging and up to 22% for brain imaging as shown by a model observer study.\*

\*A non-prewhitening model observer study was conducted comparing Aquilion ONE / GENESIS Edition to Aquilion ONE. Maximum dose reduction values were established by comparing low contrast detectability under baseline conditions for abdominal and brain examination based on the detectability index performance metric, a measure of signal to noise that takes into account the magnitude and texture of both the signal and the noise for a given LCD task.

Brain Imaging  
With up to  
**22%**  
Better\*  
Low Contrast Detectability  
at equivalent dose

Body Imaging  
With up to  
**18%**  
Better\*  
Low Contrast Detectability  
at equivalent dose





# Removing the workflow challenges of MBIR

Sharper image detail and lower patient dose with FIRST\*, the world's first fully integrated Model Based Iterative Reconstruction (MBIR) solution that adapts to your patient with targeted modeling for the brain, body, lungs, bone and the heart.

## Integrated, easy to use and fast

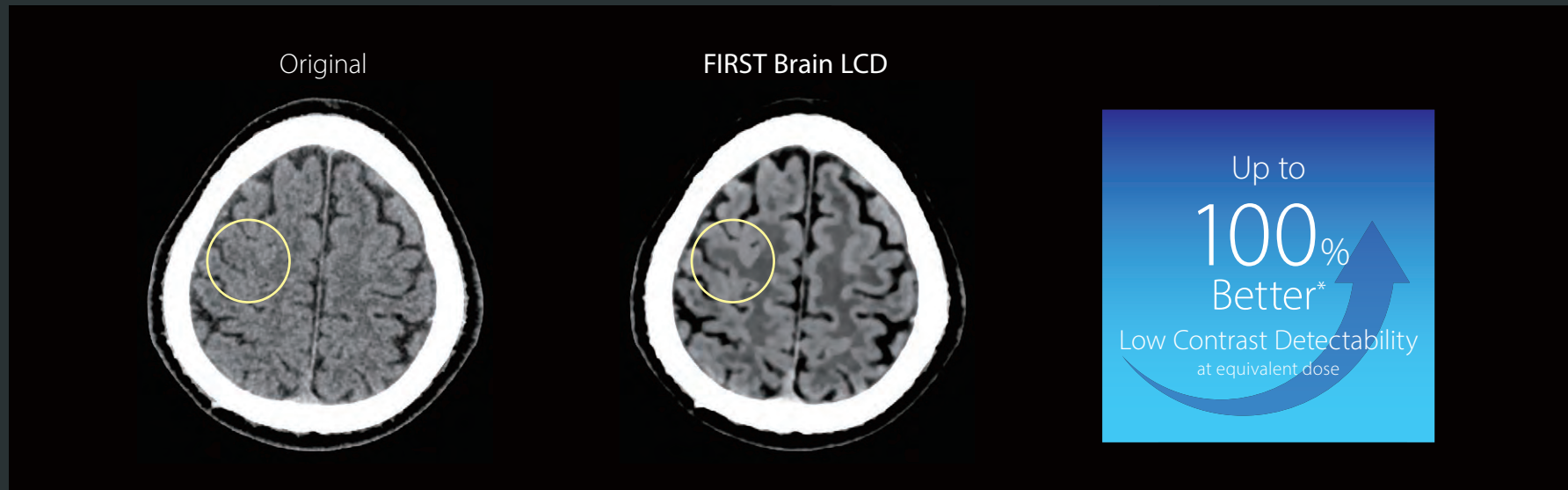
- ✓ Automatic dose reduction up to 82.4% compared to FBP
- ✓ Transforming CT to MBIR CT
- ✓ 320 images in just 3 minutes\*\*



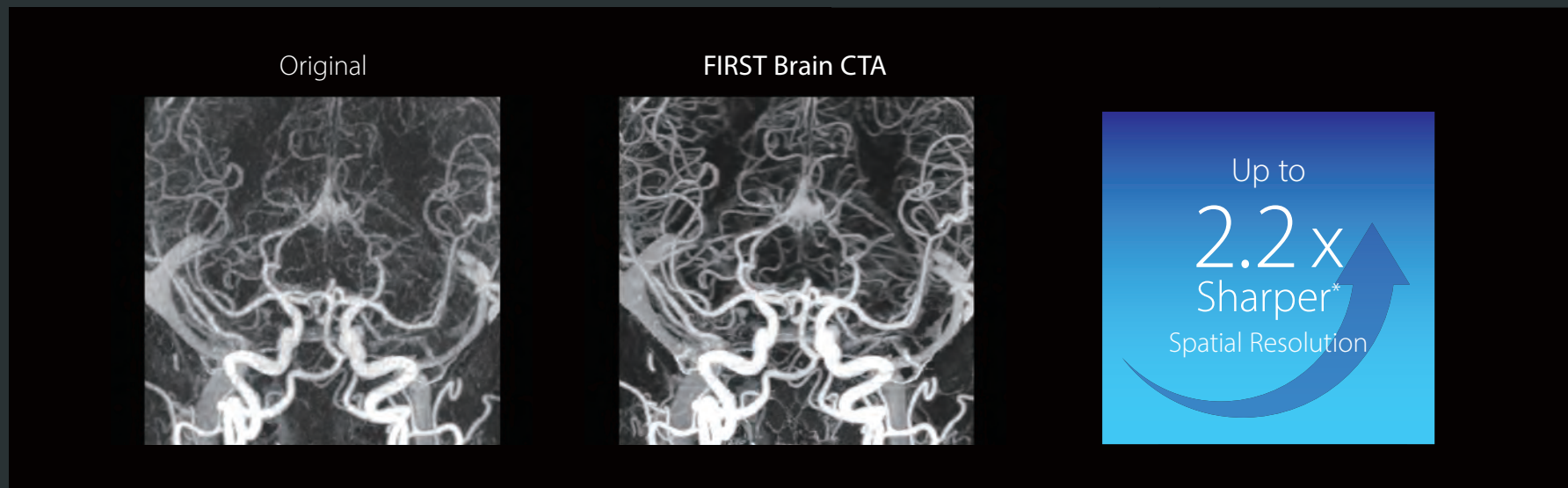
\*Option FIRST- Forward projected model-based Iterative Reconstruction SoluTion.

\*\*For volume scans.

## FIRST for Low Contrast Detectability – A new way to look at brain parenchyma



## FIRST for Resolution – An attention to image detail



# Adaptive Diagnostics

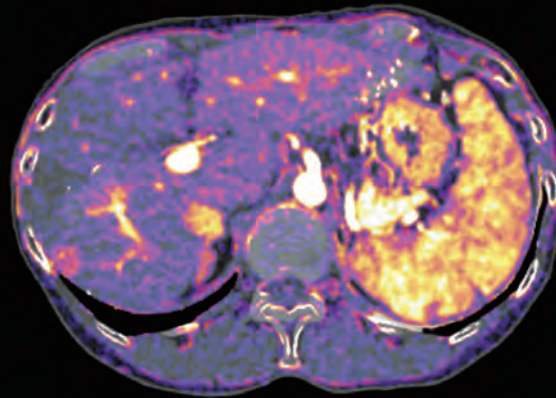
- ✓ Patient-centric imaging solutions
- ✓ Simplifying complex protocols
- ✓ Providing consistent quality results

SURE<sup>Subtraction™</sup> Angio\*



Improved visualization in CTA with true subtraction of bone and calcification.

SURE<sup>Subtraction Iodine Mapping™</sup>



Enhance your diagnostic capabilities with color iodine maps provided automatically for any multiphase abdominal protocol.

SURE<sup>Cardio™</sup> Prospective\*



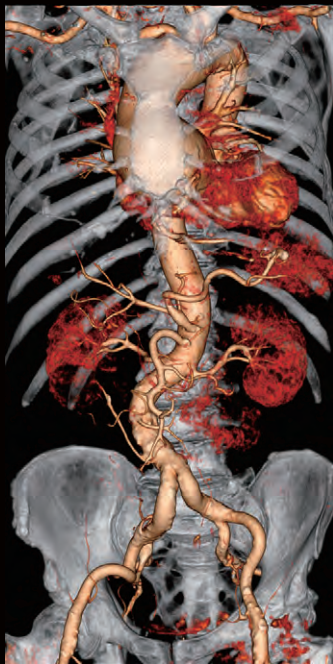
SURE<sup>Cardio</sup> Prospective reacts instantly to a change in the patient's heart rate ensuring diagnostic image quality even in patients with arrhythmia.



# The right application for a confident diagnosis

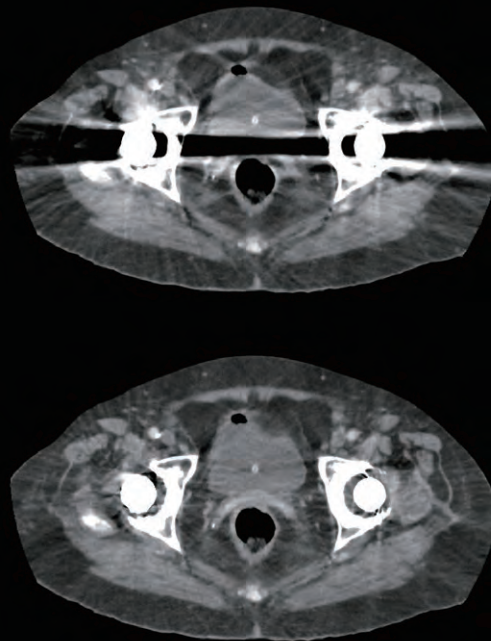
## Automated, reliable and robust

vHP\* 3 Phase  
(Three-phase variable Helical Pitch)



Improved three exams in one with vHP3.

SEMAR™  
(Single Energy Metal Artifact Reduction)



Improve visualization of bone and soft tissue with SEMAR.

Dual Energy\*

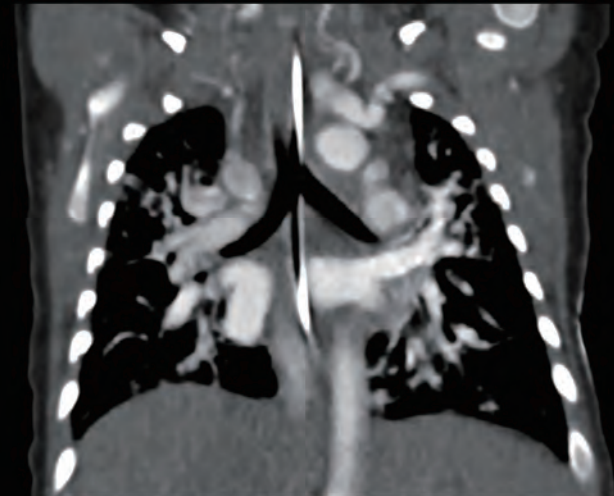
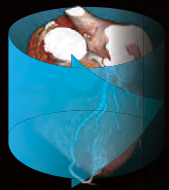


Tissue visualization with easy-to-use Dual Energy scanning.

# ONE rotation is all it takes

GENESIS Edition's 16 cm wide area detector significantly improves your ability to obtain high-quality images for routine and advanced studies. One rotation is all it takes to acquire a whole heart, a neonatal chest, a foot or an ankle exam – in a fraction of a second with less dose and great z-axis uniformity.

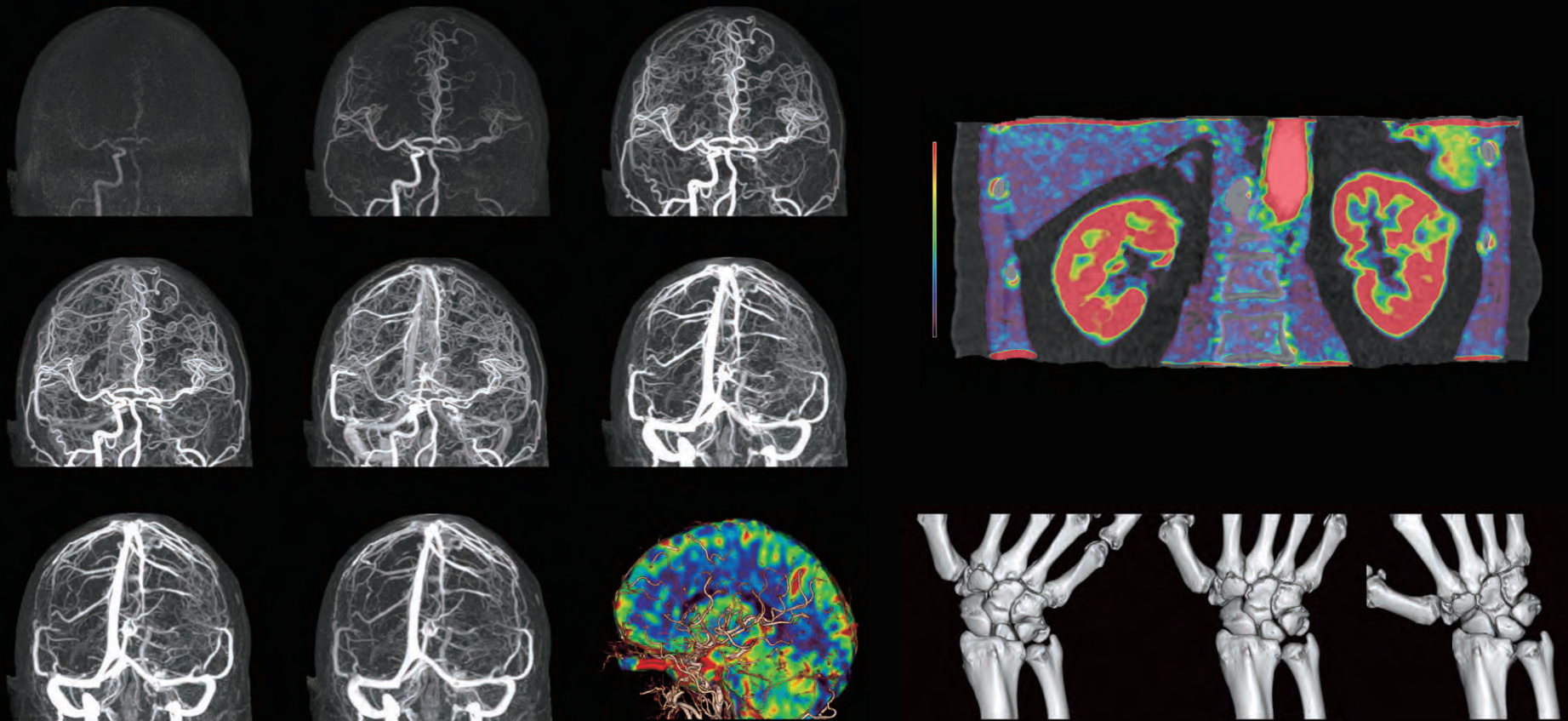
ONE Rotation Scanning



# Changing clinical pathways

Adding dynamic functional imaging to morphology can provide valuable further insights, helping you to optimize disease management and treatment plans. Advanced perfusion maps can assist in diagnosis and therapy response verification of stroke or tumors, while dynamic joint studies help identify causes of pain or immobility.

Dynamic Functional Imaging



\*Option





The background is a solid blue gradient. In the upper left corner, there is a cluster of numerous light blue, three-dimensional cubes of various sizes, some appearing to float or fall. On the far left edge, there is a vertical strip showing a portion of a white control panel with several circular buttons, some of which are blue and some are white.

Transforming patient experience

# Patient-centric design

GENESIS Edition has been designed with a unique flared gantry, providing a calming, wide-open space for a better patient experience. The short bore is safer, with improved access to the patient from the front and rear of the gantry. During trauma and interventional procedures, patients can easily be cared for from the front and rear of the gantry.



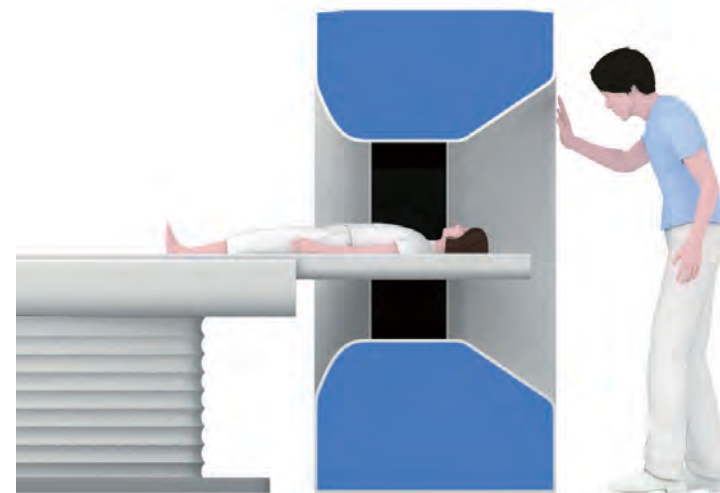
The open flared design ensures that all patients, from the youngest to the largest, will remain at ease during scanning and provides unobstructed access at all times.





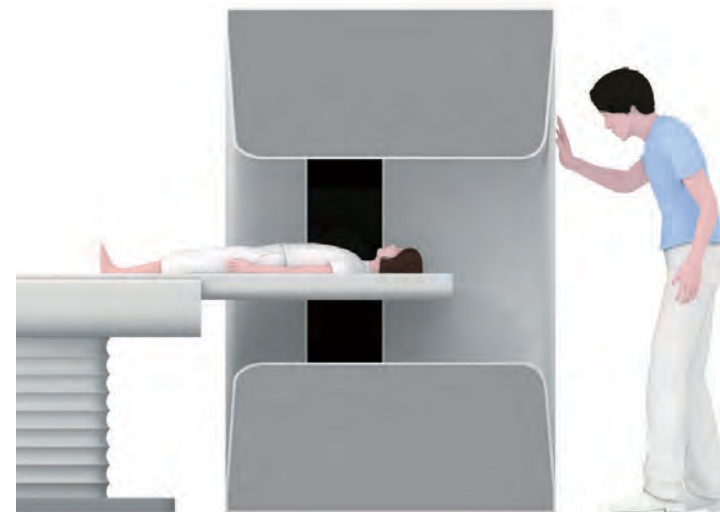


GENESIS Edition



Patient friendly open flared design

Other CTs



Long bore tunnel design

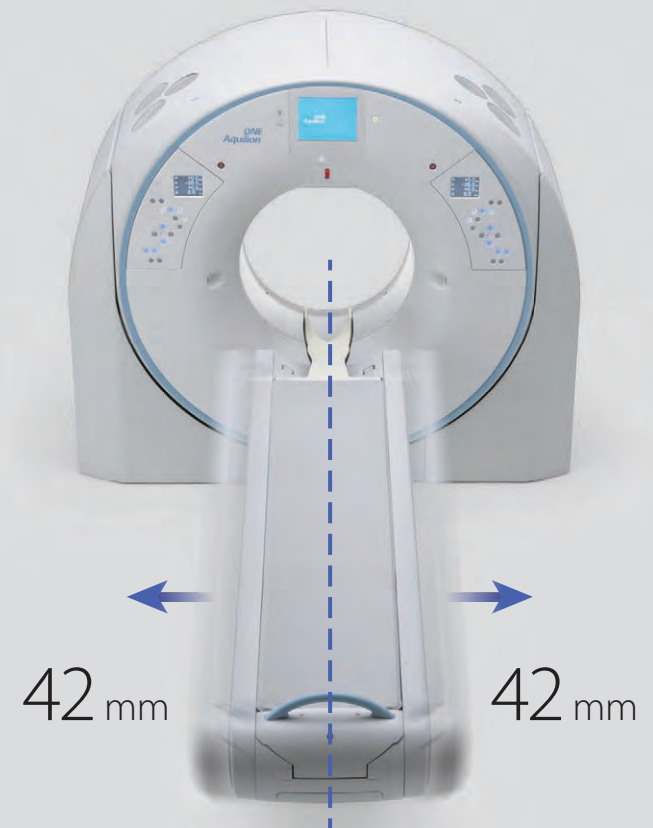
# A couch designed for patient and technologist safety

Tech Assist Lateral Slide\* improves safety and comfort for positioning patients at the push of a button.



SUREPosition remotely adjusts the patient to the exact iso-center ensuring best practice in CT accuracy – without the need for repeating the scan image.

- ✓ Faster patient setup
- ✓ Safer for technologists
- ✓ Comfortable for patients
- ✓ Accurate iso-center scanning



Once on the table, perfect positioning – No push, no pull.

\*Option



# No need to accept a premium CT system without gantry tilt

Gantry tilt is a fundamental feature of CT systems, permitting angled scanning at your desired reading plane and avoiding direct exposure to radiosensitive organs. Precision engineering equips GENESIS Edition with bidirectional gantry tilt. Highly advanced reconstruction technology overcomes the mathematical complexity of angled scanning for helical and volumetric acquisition, with no compromise in image quality.





CONE  
Aquilion



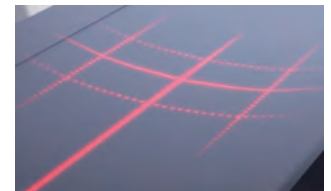




## A CT exam with the ease of plain film X-ray

Perform CT examinations with the speed and ease of taking a plain film X-ray. The GENESIS Edition Area Finder\* with laser collimation permits the scan range and field of view to be set directly at the gantry, bypassing the traditional scan planning steps.

Patients may be positioned more comfortably for a faster CT exam.









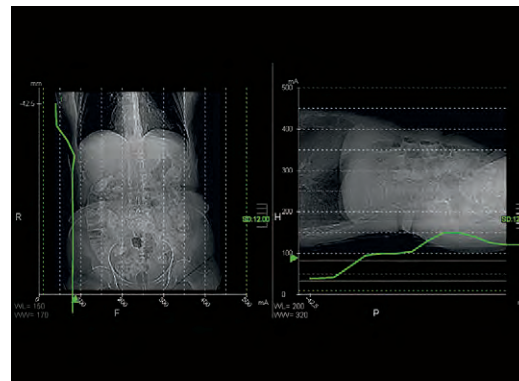


# Transforming your workspace



# Making your workflow

GENESIS Edition helps to make complex exams easier, reducing dose and improving diagnostic accuracy and reproducibility. All steps from exam planning to reconstruction and postprocessing can be combined in the same protocol. So simply selecting from the wide range of pre- or user-defined protocols is all that's needed to achieve rapid and robust results.



Powerful Protocols

Patient Adaptive Exposure

Advanced Applications

**AUTOMATED** ► ► ►



## vHP 3 Phase – Optimal Gating

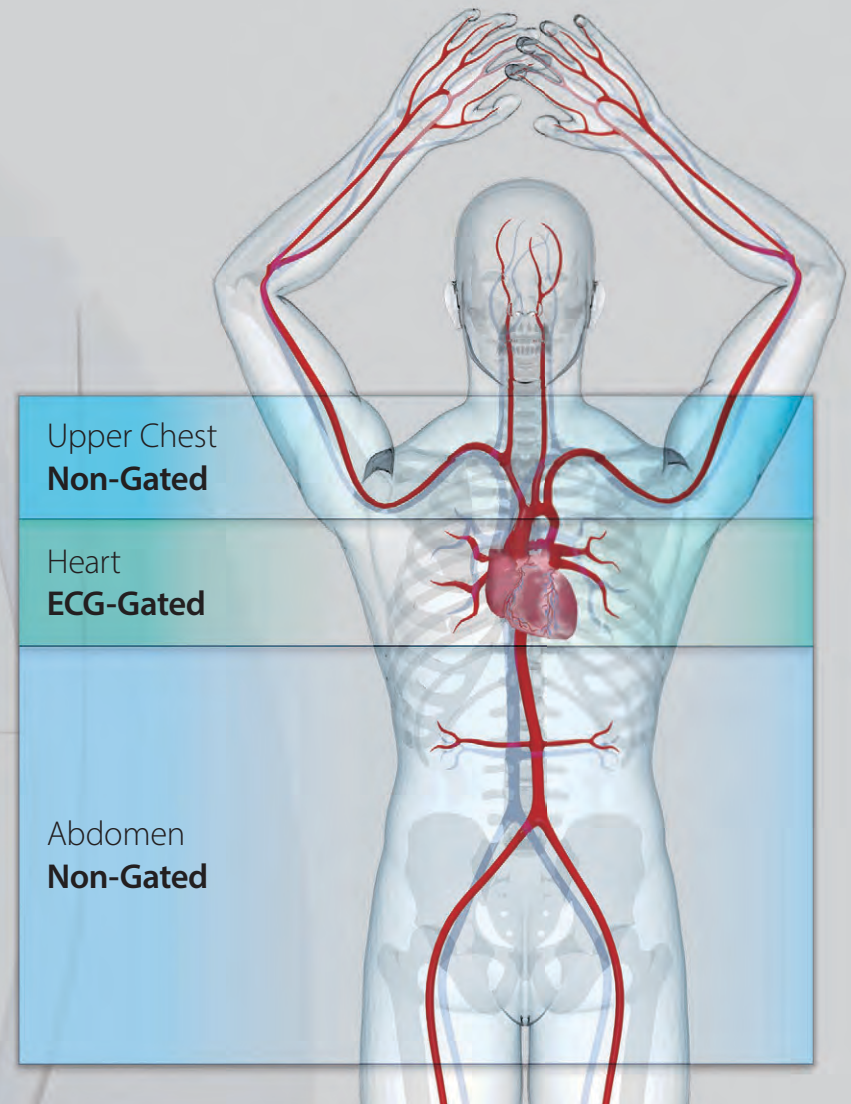
### Cardiovascular scan

# Faster, safer and optimal patient imaging

The all new vHP3\*, allows three examinations to be performed in a single acquisition, seamlessly transitioning between scan parameter settings that have been optimized for each body region.

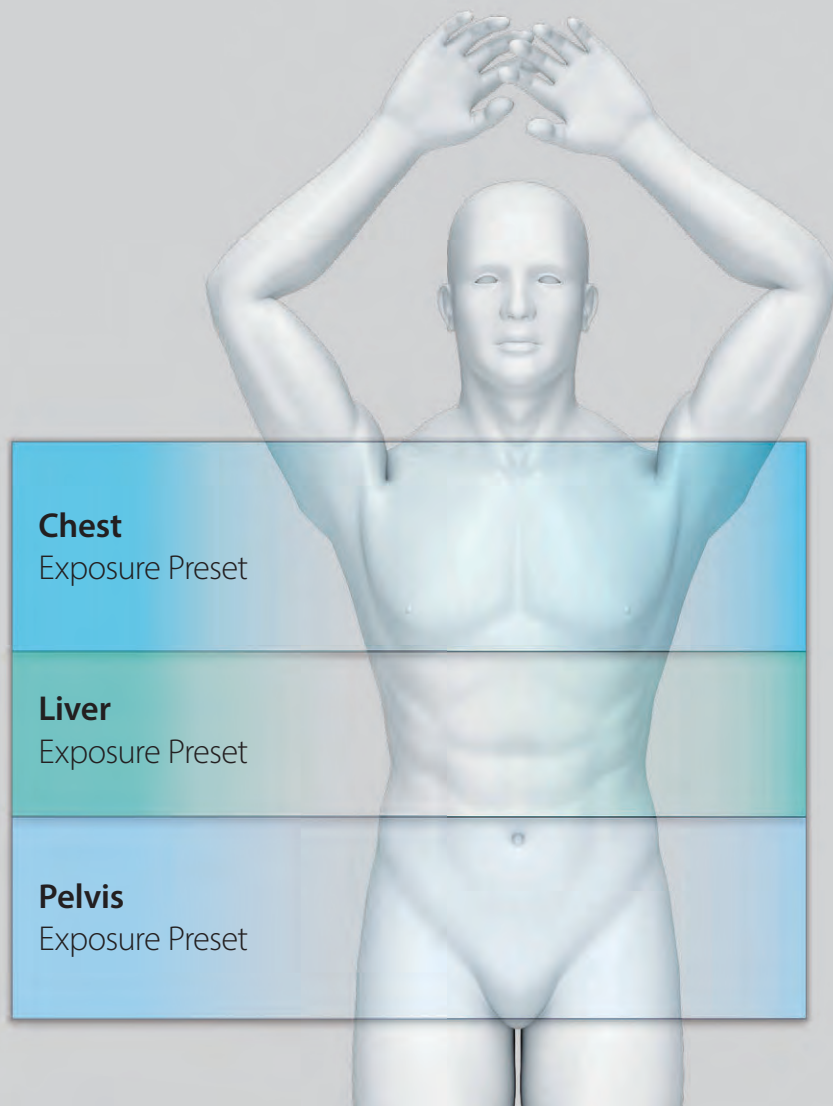
Providing the flexibility to vary between ECG gating, scan pitch and exposure control in a single uninterrupted scan, enables patient exams to be performed faster, with the potential for less contrast media and lower radiation dose.

vHP3's adaptive reconstruction engine provides high fidelity images through the entire scan range, overcoming the challenges of image reconstruction through the transition zones. With three scans in one, the single series reconstruction enables several studies to be interpreted simultaneously for faster reading.



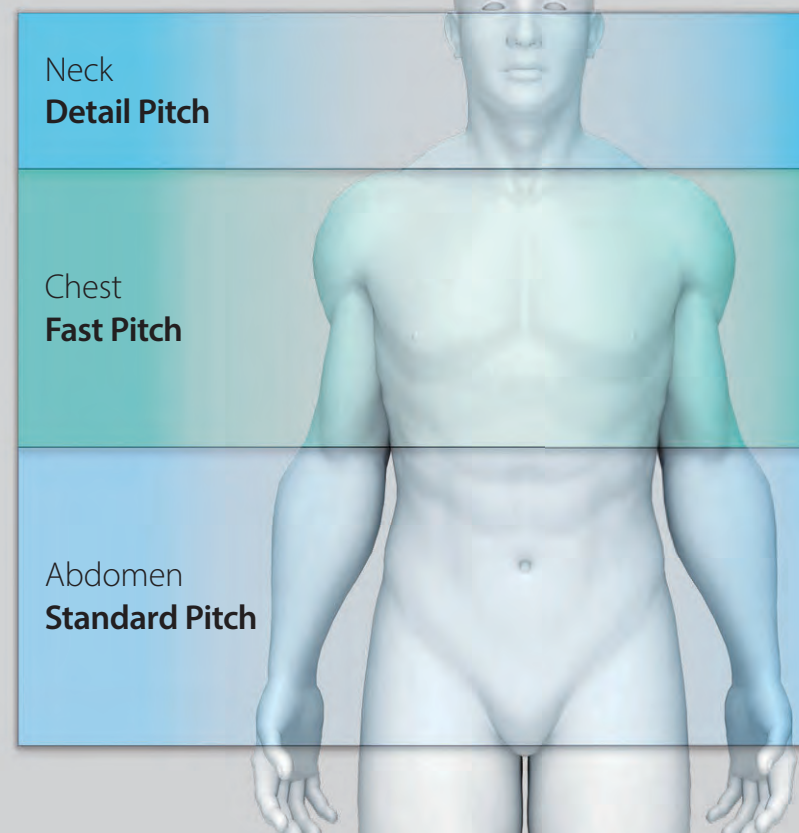
## vHP 3 Phase – Optimal Exposure

Chest, Abdomen, Pelvis



## vHP 3 Phase – Optimal Speed

Trauma scan



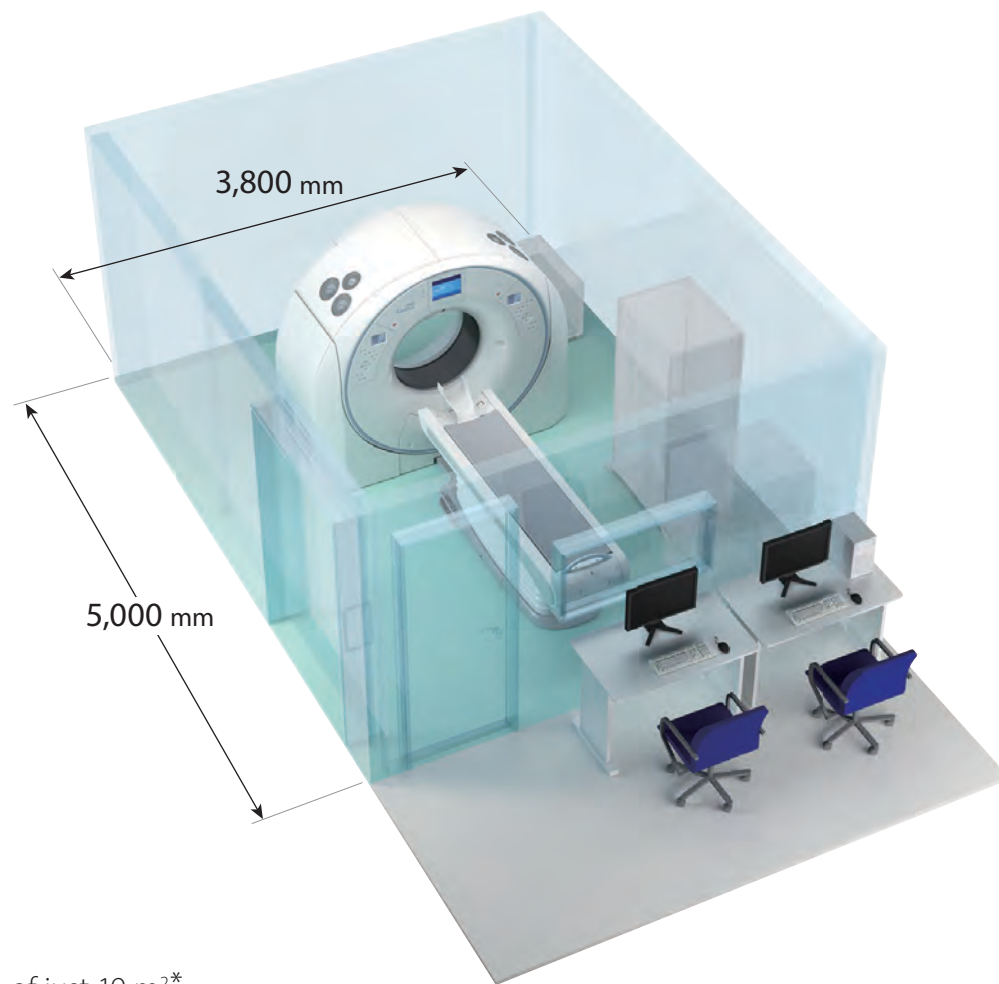
\*Option

# Economize on space, not on performance

GENESIS Edition is smaller, lighter, and requires less power than any other premium CT system. The compact design also provides more in-room space for trauma or interventional procedures.







Designed for an installation space of just 19 m<sup>2</sup>\*,  
GENESIS Edition can be installed in most existing CT  
rooms, avoiding costly renovations.



Installation Space



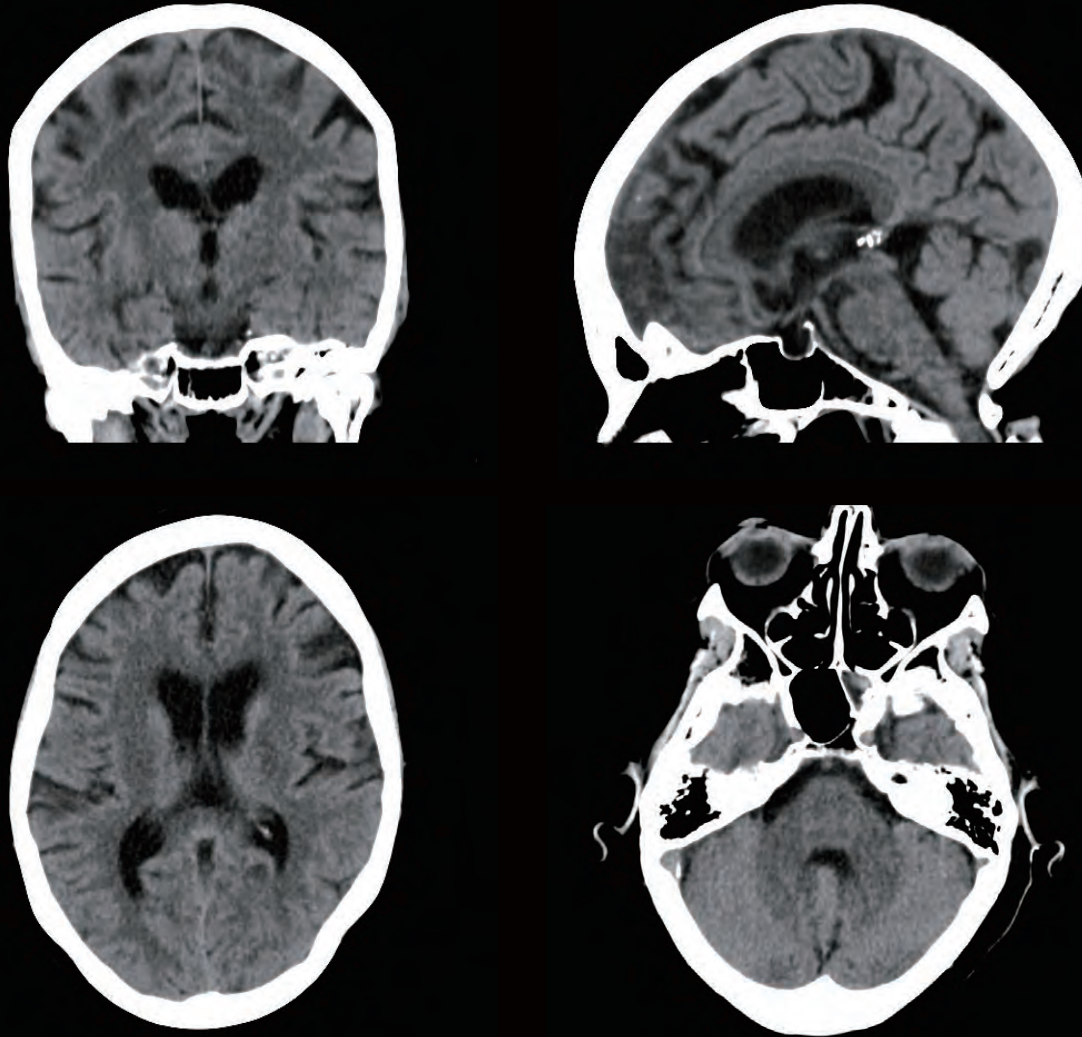
Power Capacity



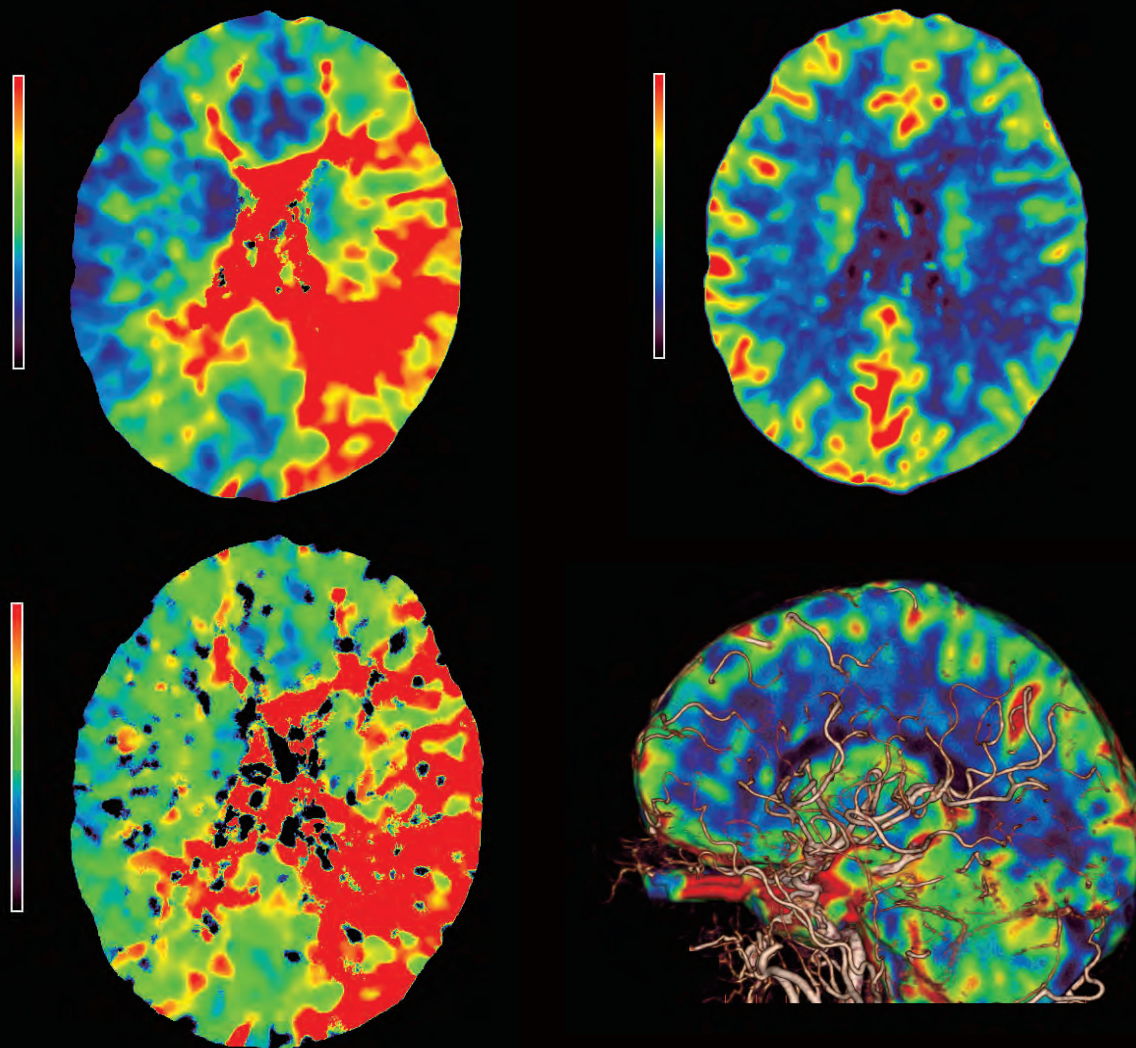
Gantry Weight

\*With short couch

# Brain Imaging



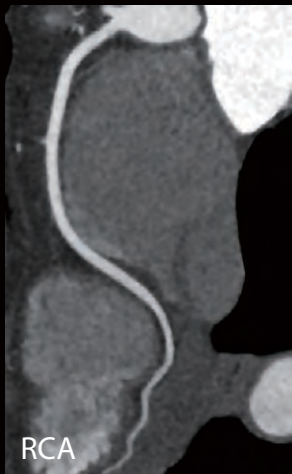
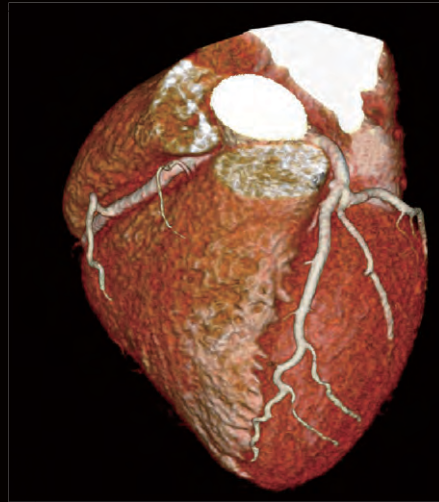
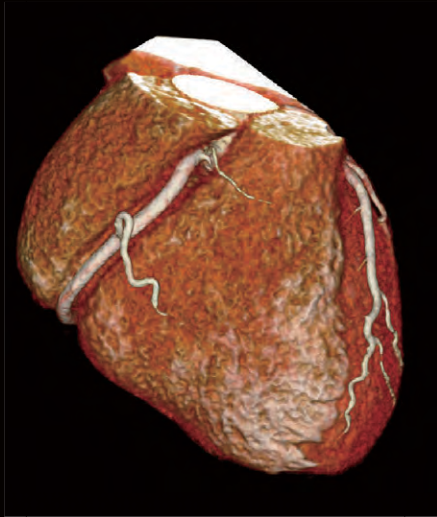
Superb brain image quality with clear grey-white matter differentiation and significantly reduced artifacts thanks to <sup>PURE</sup>VISION Optics



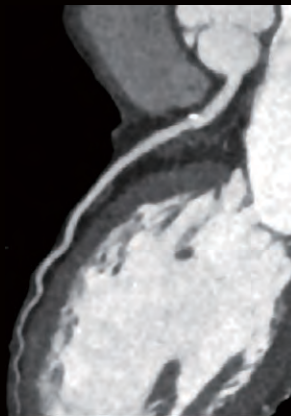
Whole-brain perfusion\* with Dynamic Volume CT



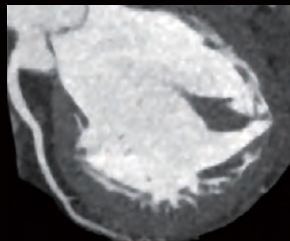
# Chest Imaging



RCA

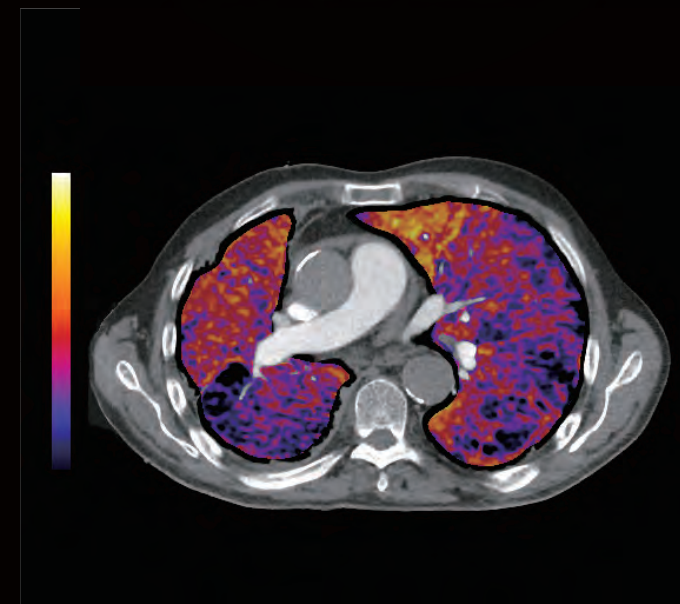


LAD

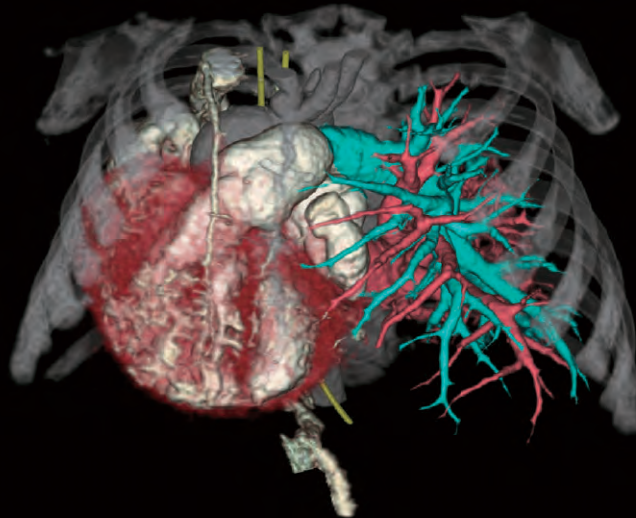


Cx

ONE beat cardiac CT with FIRST\* at only 0.36 mSv



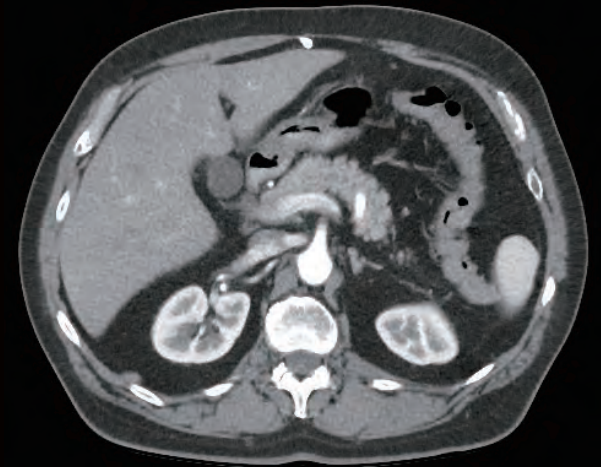
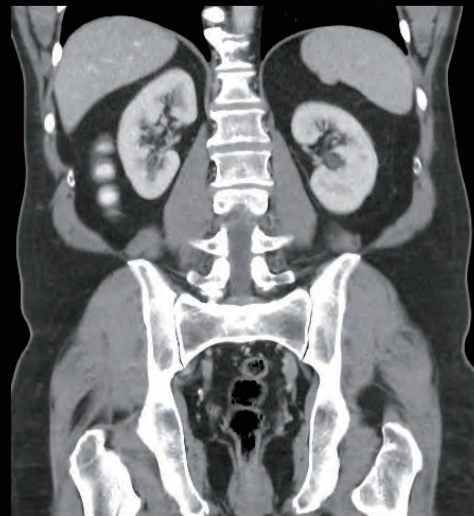
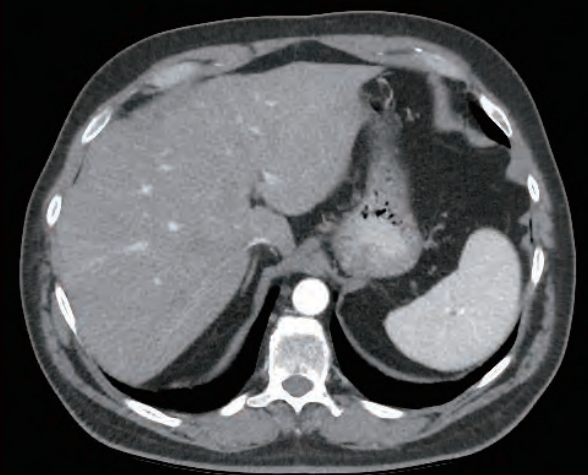
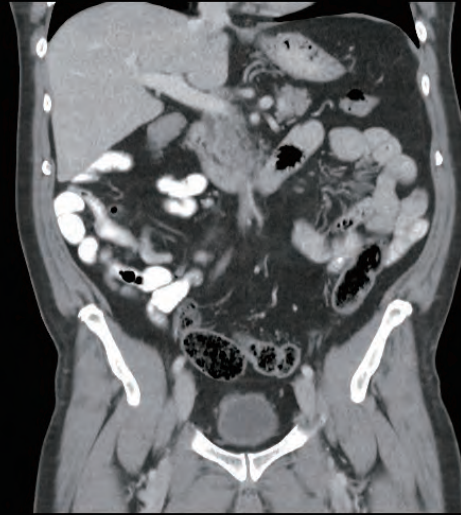
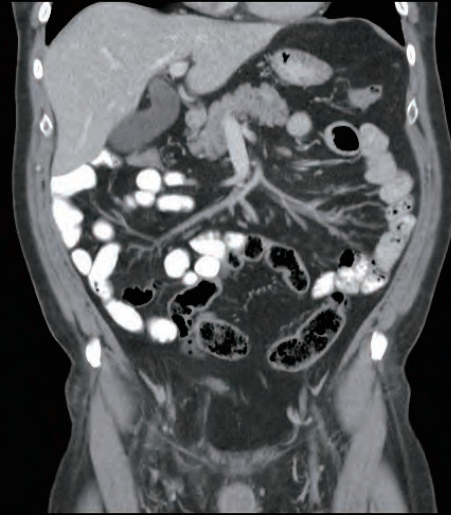
Enhanced clinical confidence with <sup>SURE</sup>Subtraction Lung\*



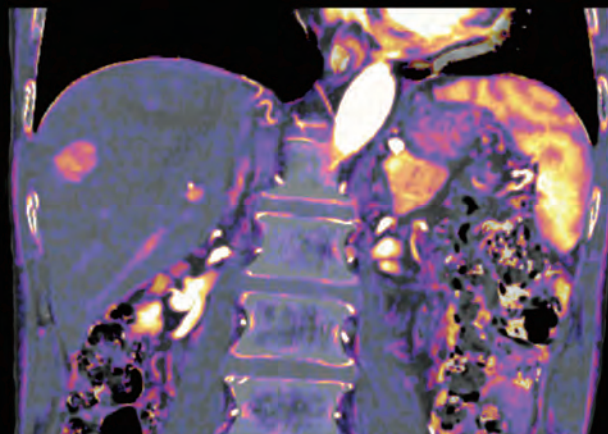
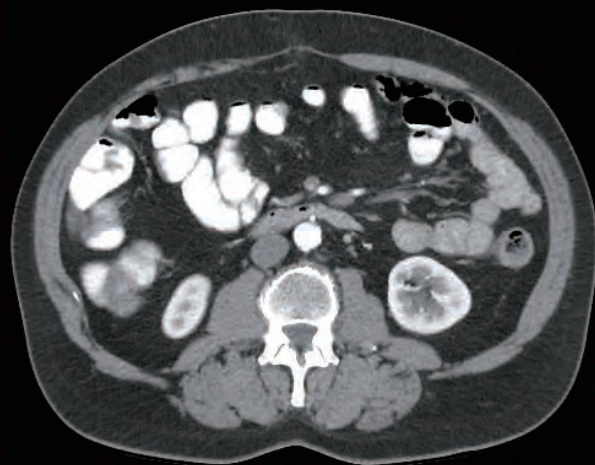
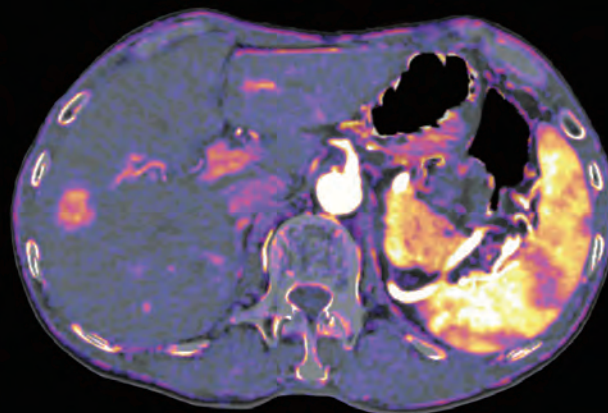
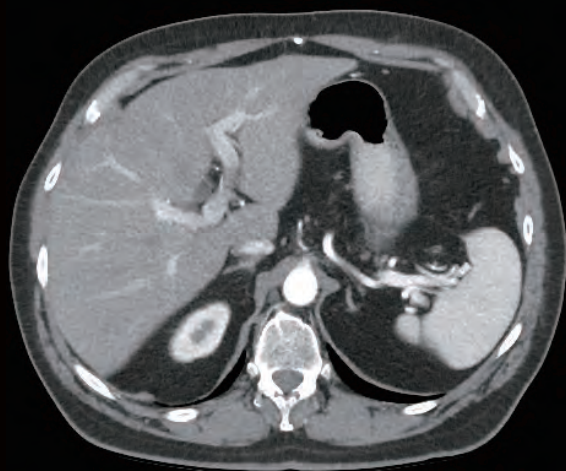
A ONE rotation ECG gated volume scan provides excellent anatomical visualization.



# Body Imaging



Excellent image detail and low contrast resolution in the abdomen



Lesion conspicuity with <sup>SURE</sup>Subtraction Iodine Mapping\*



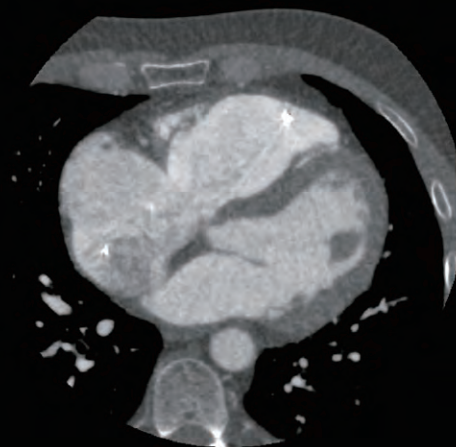
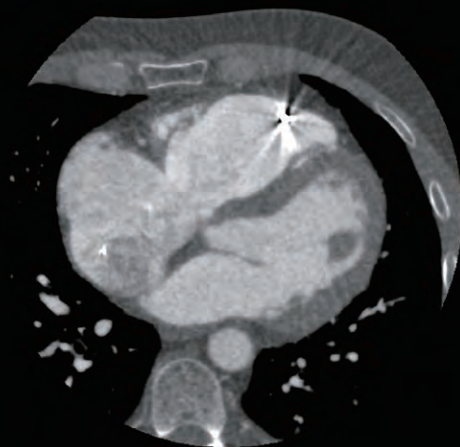
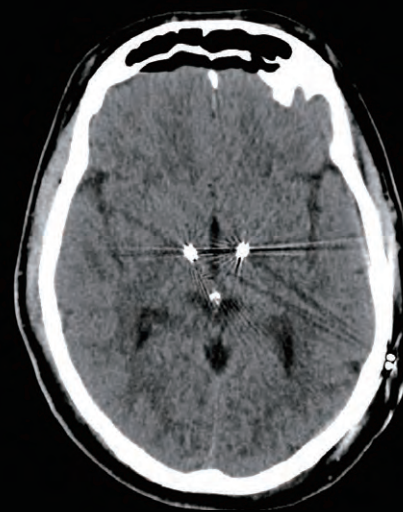
# SEMAR

Single Energy Metal Artifact Reduction

Original



SEMAR

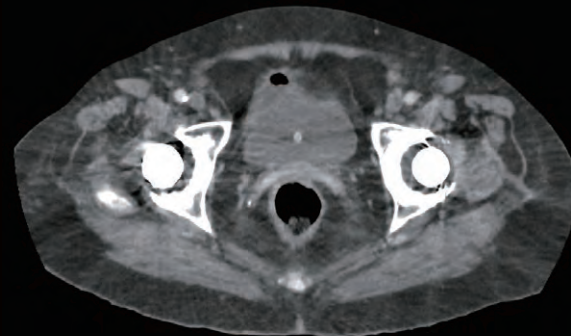
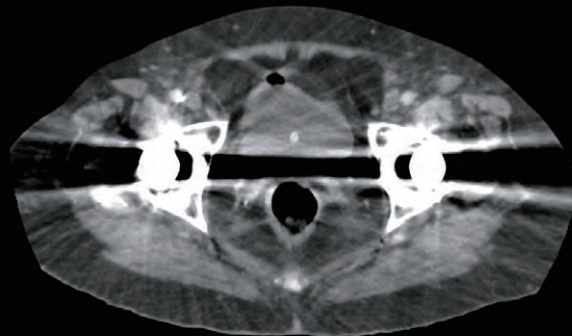
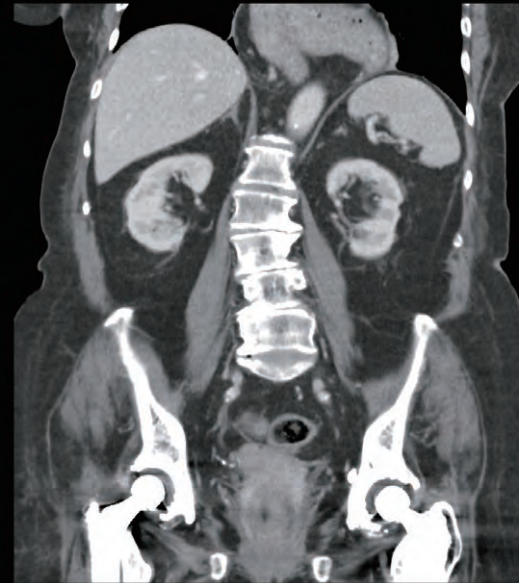




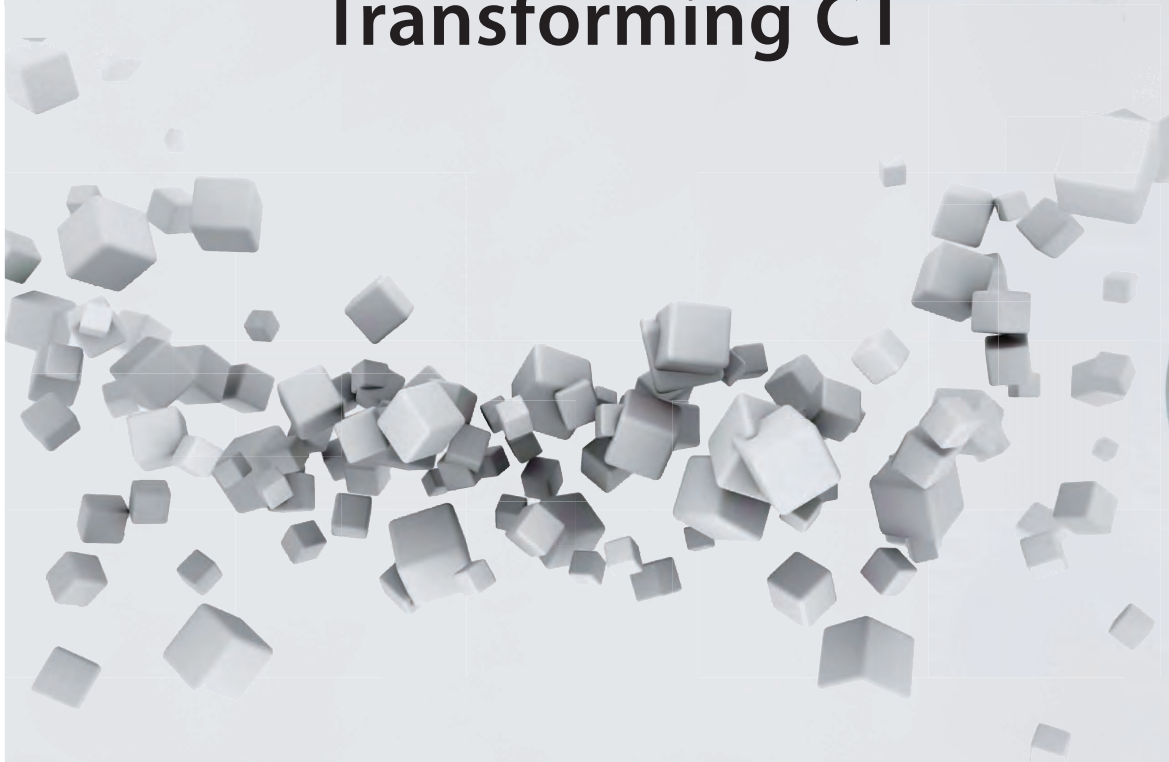
Original



SEMAR



# GENESIS Edition Transforming CT





## Main specifications

<b>Detector</b>		PUREVISION detector
		320 rows, 0.5 mm
<b>Gantry</b>	Rotation time	Min. 0.275 s <sup>*1</sup> , 0.35 s
	Bore size	78 cm
	Bore depth	38.7 cm
	Tilt	± 30°
<b>Patient couch</b>	Load	220 / 315 kg, 694 lbs <sup>*2</sup>
	Max. scan range	150–200 cm <sup>*2</sup>
<b>Reconstruction speed</b>	Volume	5 s
	Helical	Max. 80 fps
<b>Reconstruction</b>	Iterative reconstruction	AIDR 3D <sup>*3</sup> Enhanced
	MBIR	FIRST <sup>*1</sup>
<b>Installation</b>	Power capacity	125 kVA <sup>*1</sup> , 100 kVA
	Space	Min. 19 m <sup>2</sup> (short couch), 204 ft <sup>2</sup>

<sup>\*1</sup> Option

<sup>\*2</sup> Depend on system configuration

<sup>\*3</sup> Adaptive Iterative Dose Reduction 3D

**Disclaimer:** Any reference to X-ray exposure is intended as a reference guideline only. The guidelines in this document do not substitute for the judgment of a healthcare provider. Each scan requires medical judgment by the healthcare provider about exposing the patient to ionizing radiation. In clinical practice, the use of the AIDR 3D and FIRST (Forward projected model-based Iterative Reconstruction SoluTion) features may reduce CT patient dose depending on the clinical task, patient size, anatomical location and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

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Canon Medical Systems Corporation meets the Environmental Management System standard ISO 14001.

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