Transforming CT

Aquilion ONE
GENESIS Edition
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 16 cm z-axis coverage at 0.5 mm 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.

*When AIDR 3D Enhanced and or FIRST Model-based Iterative Reconstruction are used.
Aquilion ONETM / 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.

GENESIS Edition /endash.cap
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.
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.*

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.

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

Optimized X-ray Spectrum

Low energy photon removal

More homogenous X-ray spectrum

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.

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

* 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.
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

SURESubtraction™ Angio*

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

SURESubtraction Iodine Mapping*

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

SURECardio™ Prospective*

SURECardio Prospective reacts instantly to a change in the patient’s heart rate ensuring diagnostic image quality even in patients with arrhythmia.

SURE Subtraction Iodine Mapping* 
SURE Subtraction Angio* 
SURE Cardio Prospective*
The right application for a confident diagnosis
Automated, reliable and robust

**SURECardio**
- Prospective reacts instantly to a change in the patient’s heart rate ensuring diagnostic image quality even in patients with arrhythmia.
- Enhance your diagnostic capabilities with color iodine maps provided automatically for any multiphase abdominal protocol.
- Improved visualization in CTA with true subtraction of bone and calcification.

**SURECardio**
- **PROSPECTIVE**
- **SURE Subtraction Iodine Mapping**
- **SURE Subtraction**
- **Angio**
- **Dual Energy**

**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.

*Option
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.
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.
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 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.

Patient-centric design
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.

Long bore tunnel design
Patient friendly open flared design
Other CTs
Long bore tunnel design
SURE Position remotely adjusts the patient to the exact iso-center ensuring best practice in CT accuracy – without the need for repeating the scano image.

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

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

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

*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.
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.

*Option
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
Transforming your workspace
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.

Making your workflow AUTOMATED...
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.
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.
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.
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.
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.

**Economize on space, not on performance**

Designed for an installation space of just 19 m²*, GENESIS Edition can be installed in most existing CT rooms, avoiding costly renovations.

<table>
<thead>
<tr>
<th>Installation Space</th>
<th>Power Capacity</th>
<th>Gantry Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>19 m²</td>
<td>125 kVA</td>
<td>2,360 kg</td>
</tr>
</tbody>
</table>

*With short couch
Brain Imaging

Superb brain image quality with clear grey-white matter differentiation and significantly reduced artifacts thanks to PUREViSION Optics
Whole-brain perfusion* with Dynamic Volume CT

*Option
Chest Imaging

ONE beat cardiac CT with FIRST* at only 0.36 mSv

Enhanced clinical confidence with SURE Subtraction Lung*

RCA  LAD  Cx

ONE rotation ECG gated volume scan provides excellent anatomical visualization.
ONE beat cardiac CT with FIRST* at only 0.36 mSv

Chest Imaging

A ONE rotation ECG gated volume scan provides excellent anatomical visualization.
Excellent image detail and low contrast resolution in the abdomen
Lesion conspicuity with SURE Subtraction Iodine Mapping*
SEMAR  Single Energy Metal Artifact Reduction
GENESIS Edition
Transforming CT
## Main specifications

<table>
<thead>
<tr>
<th>Detector</th>
<th>PUREVISION detector</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>320 rows, 0.5 mm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Gantry</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation time</td>
<td>Min. 0.275 s*, 0.35 s</td>
</tr>
<tr>
<td>Bore size</td>
<td>78 cm</td>
</tr>
<tr>
<td>Bore depth</td>
<td>38.7 cm</td>
</tr>
<tr>
<td>Tilt</td>
<td>± 30°</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Patient couch</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Load</td>
<td>220 / 315 kg, 694 lbs**</td>
</tr>
<tr>
<td>Max. scan range</td>
<td>150–200 cm**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reconstruction speed</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Volume</td>
<td>5 s</td>
</tr>
<tr>
<td>Helical</td>
<td>Max. 80 fps</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reconstruction</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Iterative reconstruction</td>
<td>AIDR 3D** Enhanced</td>
</tr>
<tr>
<td>MBIR</td>
<td>FIRST**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Installation</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Power capacity</td>
<td>125 kVA**, 100 kVA</td>
</tr>
<tr>
<td>Space</td>
<td>Min. 19 m² (short couch), 204 ft²</td>
</tr>
</tbody>
</table>

* Option  
** Depend on system configuration  
*** 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.

Due to local regulatory processes, some of the products included in this brochure may not be available in each country. Please contact your sales representative for the most current information.