GE Healthcare

Optima* CT660

an innovation of
healthymagination

Your vision of quality care made

The Optima CT660 system helps you deliver competent, personalized care that helps fulfill your mission and please your patients. One look at the sleek, compact design tells you this CT system is different. This new-generation, intelligent Volume CT scanner combines the innovations from our Discovery* and LightSpeed* families. You get fast, high-quality acquisitions at optimized dose for patients young and old, large and small, across a wide spectrum of procedures: cardiac, angiography, brain, chest, abdomen, orthopedic, and more.

Technologists and radiologists benefit from ergonomic features and numerous enhancements in workflow efficiency and diagnostic power. The compact footprint lets the system fit your available space, while a modular design helps you choose capabilities to meet today's budget and expand as you grow.

The Optima CT660 is also environmentally friendly with a design for refurbishment and end-of-life recycling, and with electronics innovations that may cut power consumption compared to previous GE technology by 60% using the energy-saving mode. Look closely and you will see how the Optima CT660 is designed to help you provide great care to your patients by delivering low-dose, high-quality imaging.

real

Innovations with a 40-mm detector at 0.35-sec rotation speed.

Simplified workflow for quick and streamlined operation.

ASiR* technology may allow for lower mA exams throughout the body.**

128-slice axial reconstruction for improved Z-axis visualization.†

Advanced applications help clinicians make a fast and confident diagnosis.

Up to 60% lower CO_2 emissions using the energy-saving mode.

Scalable, modular design for ease of service.

** Option

† In clinical practice, the use of ASiR 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.

†Option. For 32-slice version, it enables 64 reconstructed slices per axial rotation.

The best of technology, simple to apply

The Optima CT660 brings you our latest CT workflow innovations for improved ease of use. From our proven HD technologies, we added ASiR to help you deliver dose reduction across anatomies. The system solution also features full capabilities in advanced applications such as cardiac, oncology, angiography, and dynamic imaging.

Power and performance

The Performix* 40 tube, backed by a powerful 72-kW generator, delivers peak mA capability of up to 600 mA. This helps you:

- Image small structures and see fine detail.
- Examine large patients without tradeoffs on image quality and speed.
- Experience less acoustic noise in cardiac studies and other faster-rotation scans.

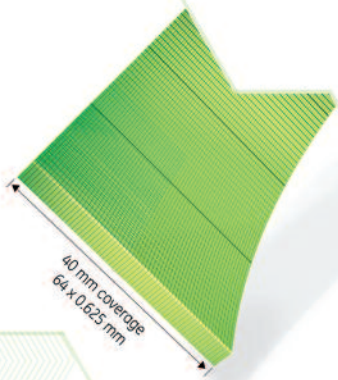
The console is built with advanced computer technology and miniaturization for optimized workflow, fast image reconstruction, and improved reliability. The quad-core CPU easily processes advanced iterative reconstruction techniques. Simultaneous data transfer helps optimize and streamline workflow between the Advantage Workstation*, PACS, and external devices such as CD writers.

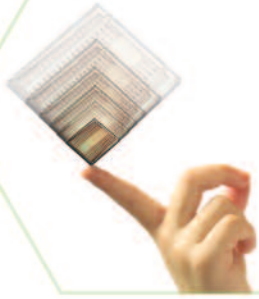
Efficient imaging

The 40-mm wide **V-Res* detector** acquires data at 0.35-mm microVoxel* resolution through GE innovations, such as:

- A fast and efficient HiLight* scintillator with 98% absorption efficiency.
- High-density interconnects.

The Optima CT660 image chain is powered by the **Volara*XT Data Acquisition System (DAS)**.





Speed and spatial resolution

GE helical reconstruction technologies and crossbeam correction work together to deliver 0.35-mm isotropic spatial resolution. Conjugate cone-beam filtered back projection utilizes two sets of counter-opposed projections to provide 128 distinct projection measurements per rotation for axial and a helical acquisition mode. For cardiac acquisitions, fast rotation speed provides excellent temporal resolution (44 msec).

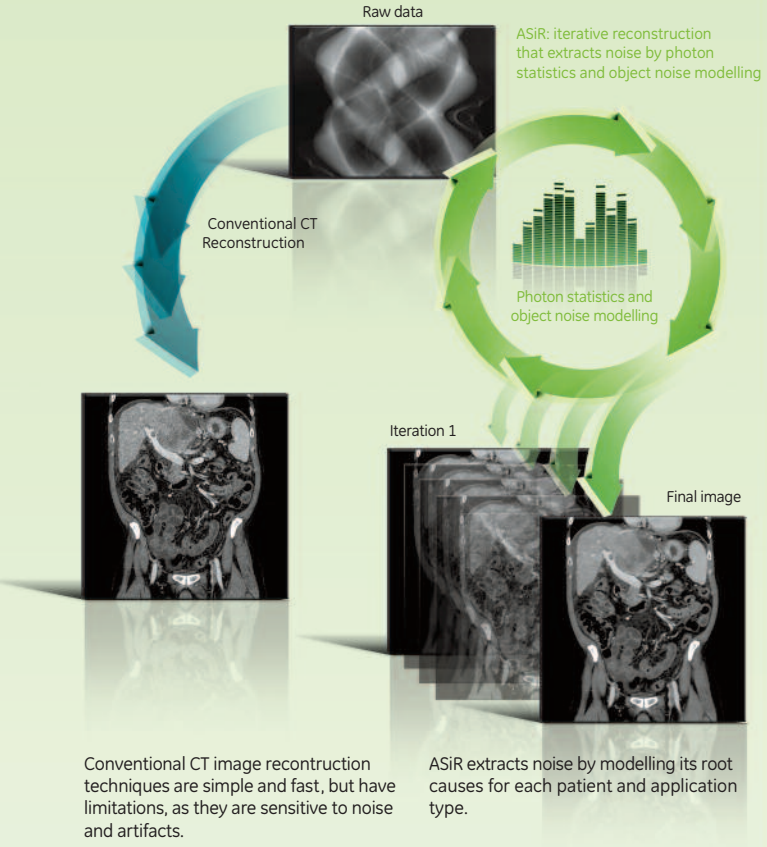
Overlapped reconstruction feature**

Enables 128 slices per rotation on a 64 slice system in axial scanning modes and delivers improved Z-axis visualization performance relative to non-overlapped reconstruction.

**Option. For 32-slice version, it enables 64 reconstructed slices per axial rotation.

Low dose, low stress

Nothing matters more than patients' welfare. The Optima CT660 provides information to clinicians to help in efficient and definitive diagnoses in low-dose exams while patients stay calm and comfortable.



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

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

ASiR** inside: A leap ahead in dose management

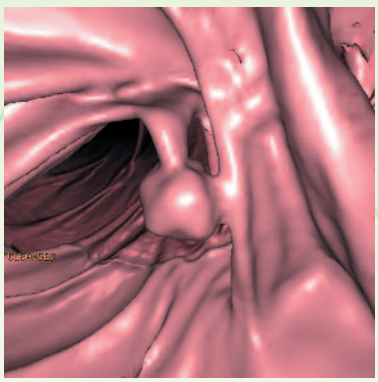
GE's ASiR dose-reduction technology: A reconstruction technology that may enable reduction in pixel noise standard deviation.

ASiR provides these important imaging benefits:

- ASiR may allow for reduced mA in the acquisition of diagnostic images, thereby reducing the dose required.†
- ASiR may enable improvement in low-contrast detectability.†
- ASiR may help clinicians achieve confident diagnoses with lower dose†

Comprehensive dose reduction with Optidose*

Dose reduction with ASiR is combined with GE's proven Optidose technology that delivers dose reduction at the source. It includes SmartTrack* dynamic collimation that keeps the X-ray beam tightly focused on the active detector cells, as well as 3D mA automatic modulation, ECG dose modulation, and X-ray filtration which is tailored for small to large patients.



** Option

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Dose check

The dose check feature provides tools to notify and alert the operating personnel, generally technologists, that prepare and set the scan parameters, prior to starting a scan, whether the estimated dose index is above the value defined and set by the operating group, practice, or institution to warrant notification to the operator. The dose check feature is designed to comply with the NEMA XR-25 standard.

A comfortable experience

The Optima CT660 enables short scan times with 40-mm thin-slice acquisitions for reliable studies. Technologists can personalize exams by displaying the patient's name on the new 12-inch touch-screen gantry display. The video of relaxing scenes or cartoons can have a calming effect on children or patients of all ages. An automated voice system provides the ability to give instructions in the patient's own language. In the low position, the exam table helps with access for patients in wheelchairs.

Complete exams with eas

By listening to technologists and radiologists, GE has created an intelligent CT scanner with a workflow for streamlined use that helps optimize patient throughput.

Enhanced table

The table allows patients as heavy as 500 lbs to be imaged through a long scannable range. The bed provides automatic positioning according to the type of exam, reducing manual positioning and streamlining workflow. Users can position the table by selecting the exam type from the touch screen, then pressing the foot pedal. The display shows pictures that help the technologist and patient understand the correct exam position, making exams more personal.

User-friendly console

The Optima CT660 workspace provides flexibility and comfort, whether sitting or standing. The console is noticeably quieter than in the past, to provide a better work environment. The graphical user interface, common to all GE CT systems, puts automated processing at your fingertips.

e and confidence

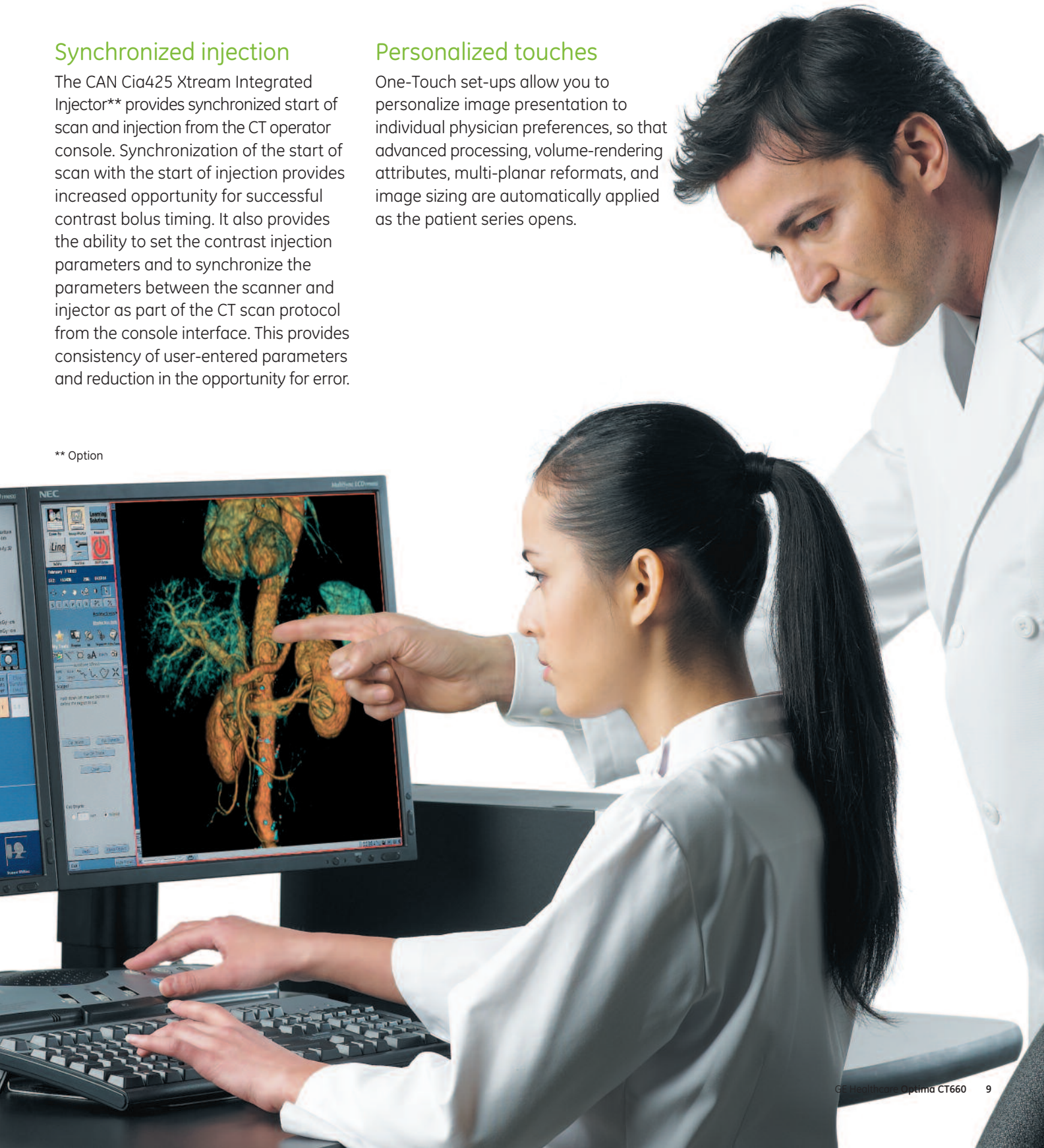
Synchronized injection

The CAN Cia425 Xtream Integrated Injector** provides synchronized start of scan and injection from the CT operator console. Synchronization of the start of scan with the start of injection provides increased opportunity for successful contrast bolus timing. It also provides the ability to set the contrast injection parameters and to synchronize the parameters between the scanner and injector as part of the CT scan protocol from the console interface. This provides consistency of user-entered parameters and reduction in the opportunity for error.

Personalized touches

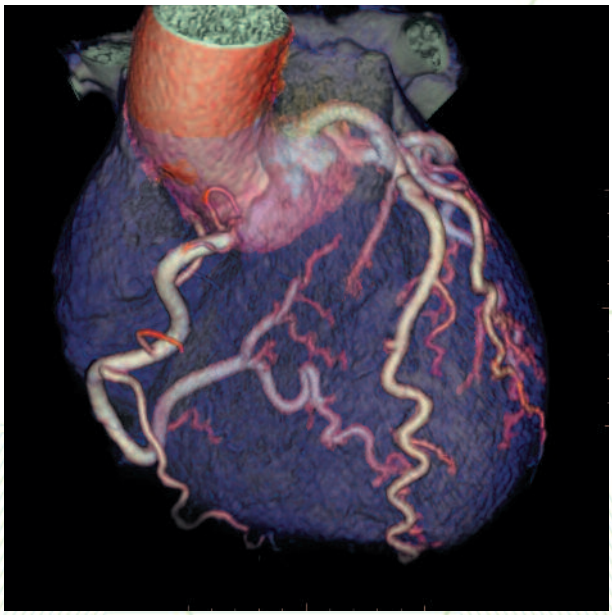
One-Touch set-ups allow you to personalize image presentation to individual physician preferences, so that advanced processing, volume-rendering attributes, multi-planar reformats, and image sizing are automatically applied as the patient series opens.

** Option



Imaging power for your m

The Optima CT660 helps radiologists perform a wide range of advanced studies efficiently and optimize dose.



5 heart-beat exam with 80 kV / 70 mAs

Cardiovascular: Comprehensive solutions for heart and vessels assessment

Delivering true 40-mm coverage per rotation, featuring a temporal resolution down to 44 ms, the Optima CT660 is designed to scan the heart in five beats. Its ample tube power combined with ASiR delivers the image quality demanded, even with large patients.

◆ Snapshot* Pulse with Adaptive Gating***

40-mm Snapshot Pulse addresses the dose burden of traditional coronary CT angiography. With the X-rays turned on only during the requested cardiac phase, the technique can routinely reduce dose compared to traditional helical techniques. Real-time adaptive scan control helps avoid scanning during irregular beats and improves overall scan reliability. ASiR technology enables dose reduction across the body.***

CT Angiography: Speed and consistent quality

With consistent 0.625-mm data acquisition, there is no trade-off between speed and high resolution. Optima CT660's speed and coverage may allow you to catch the arterial phase for assessment of most vascular segments. The Xtream Integrated Injector allows you to synchronize injection and acquisition parameters.

◆ AW cardiovascular

The Advantage Workstation cardiovascular system helps accelerate workflow with leading innovations in post-processing automation and reliability. With Autolaunch and Preprocessing, the system automatically prepares up to eight cases for reading, saving substantial time. In addition, zero-click bone removal automatically subtracts bones in angiography studies. Other enhancements include:

- Reliable coronary segmentation and tracking.
- Fully automated analysis of all four heart chambers.
- Automated vessel tracking and thrombus segmentation.

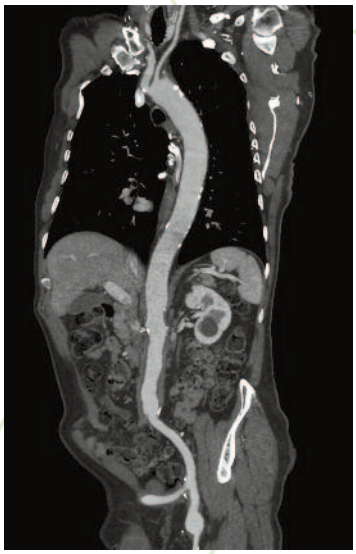
** Option

*** In clinical practice, the use of ASiR 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.

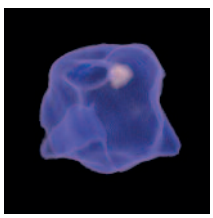
ost critical studies

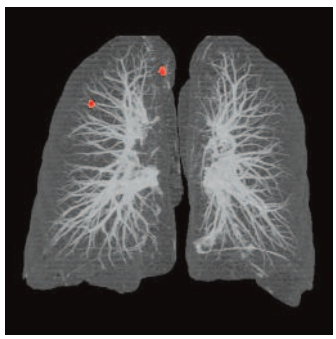
Oncology: Lesion assessment at lower dose

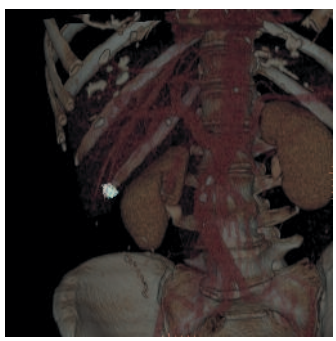
The Optima CT660 lets you complete long coverage scans quickly, which is important on non-cooperative patients or young children. Its coverage speed enables scanning of large areas in a few seconds with sub-millimeter slices. In addition, the Volume Helical Shuttle** application helps you to cover the area equivalent to a 500-slice CT scanner. Image chain design and efficiency with innovative dose management solutions like ASiR and SmartTrack work together to provide remarkable image quality. This may benefit procedures where low dose is particularly desirable such as virtual colonoscopy and for patients requiring multiple follow-up scans such as for lymphomas.

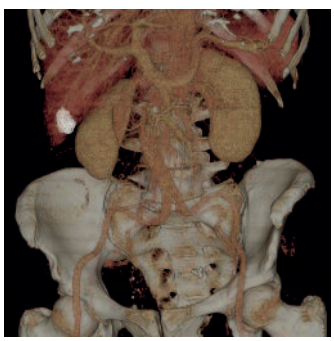


5-sec chest-abdomen-pelvis sub-millimeter acquisition









◆ Detect, characterize, and quantify lesions

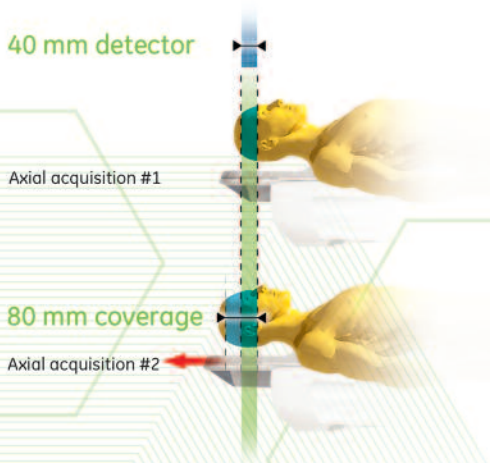
The Optima CT660 with the Advantage Workstation oncology solution streamlines your workflow for lesion detection, analysis, and follow-up. LungVCAR and ColonVCAR applications provide sensitive computer-aided reading to outline, contour, and characterize lesions and to follow changes over time. Liver lesion and lymph node analysis and follow-up are facilitated by auto-segmentation tools and registration algorithms that let you match datasets from CT, MR, and PET/CT. A CT Perfusion application seamlessly provides all the perfusion maps needed for assessment.

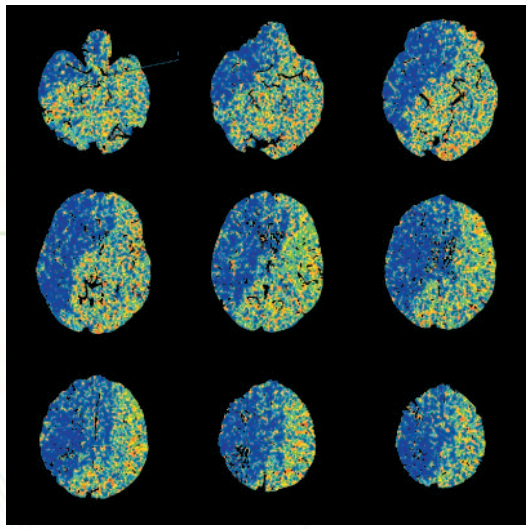
Advanced applications for dyna

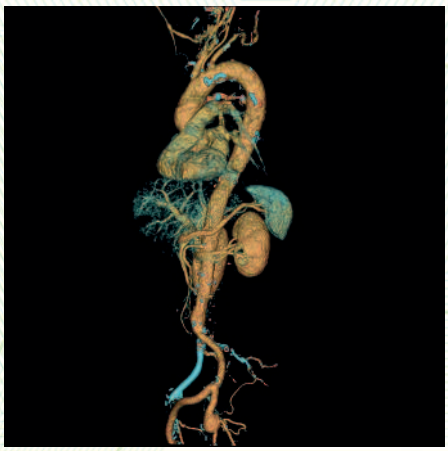
The Optima CT660 provides extended coverage for dynamic imaging with the innovative VolumeShuttle** and Volume Helical Shuttle applications.

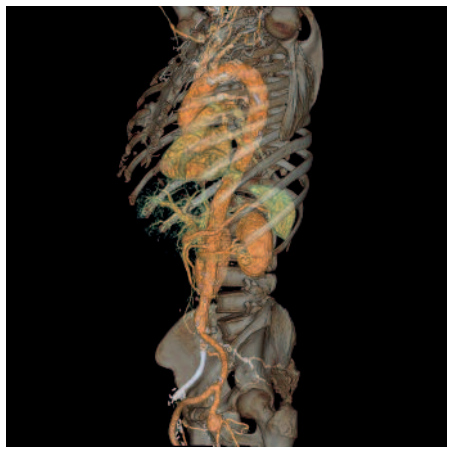
◆ VolumeShuttle*: Twice the coverage

VolumeShuttle allows for an 80 mm (2x wider coverage, 128 slice-width) acquisition scan with a single contrast injection.





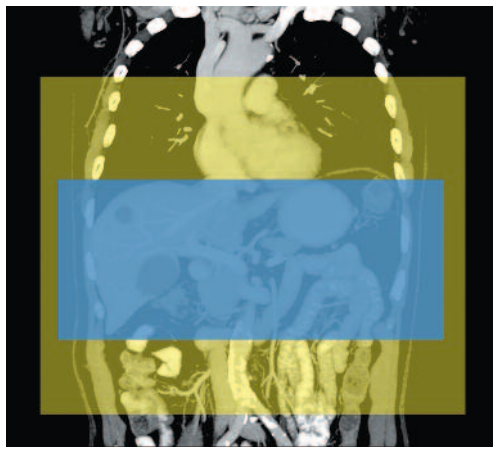




mic studies

◆ Volume Helical Shuttle**: Cover up to 500 slices

Volume Helical Shuttle** is a continuous bi-directional scan mode that extends z-coverage while providing reliable temporal sampling. GE's exceptional dynamic pitch reconstruction uses scan data acquired during table acceleration and deceleration, allowing you to perform up to 500-slice (312.5-mm) dynamic studies. This tool is used on the Optima CT660 to perform 4D-CTA dynamic studies, or to study moving joint structures, opening new applications in orthopedic imaging. In addition, Volume Helical Shuttle lets you perform perfusion studies of body organs up to 120 mm.



Emergency care: When seconds count

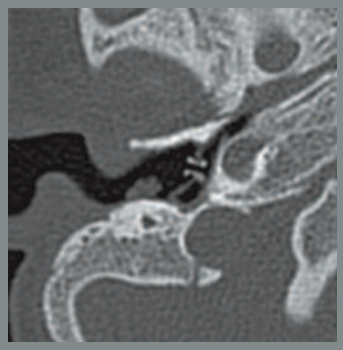
In addition to the 40-mm coverage at fast rotation, two exceptional features help you launch and finish emergency exams faster:

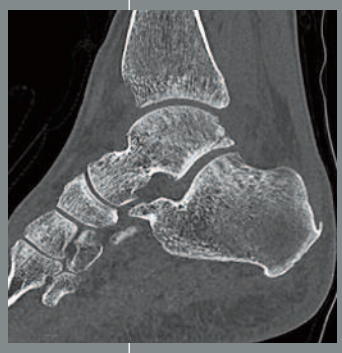
- An emergency scanning mode lets technologists set up exams with understandable symbols.
- The technologist automatically positions the bed for the chosen exam using the touch screen and foot pedal.

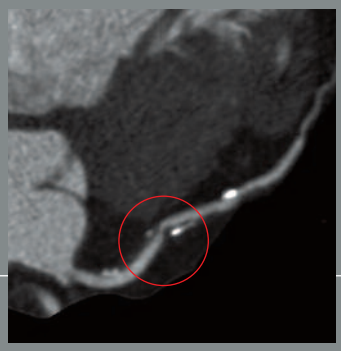
The patient can be scanned in a few minutes. In addition, simultaneous image acquisition, reconstruction, and analysis accelerate the workflow. Anatomy-specific protocols provided on the operator console facilitate efficient review.

** Option

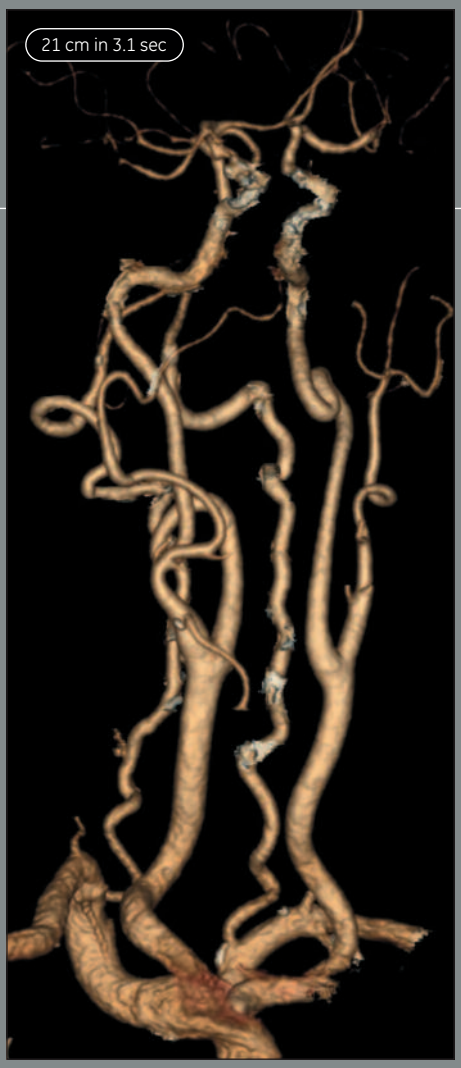
Spatial resolution

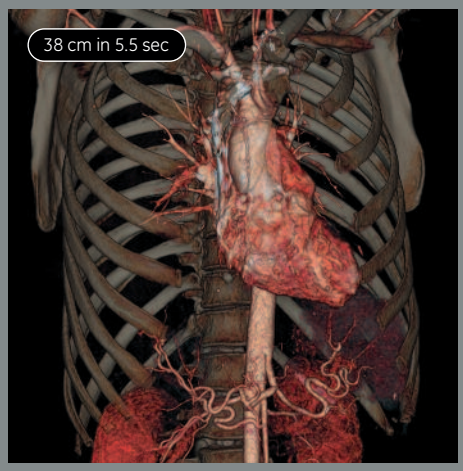


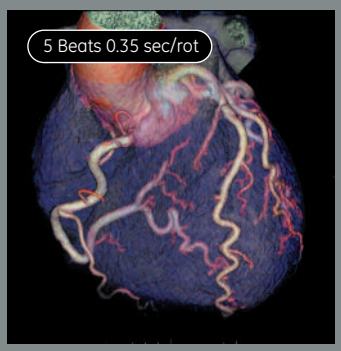


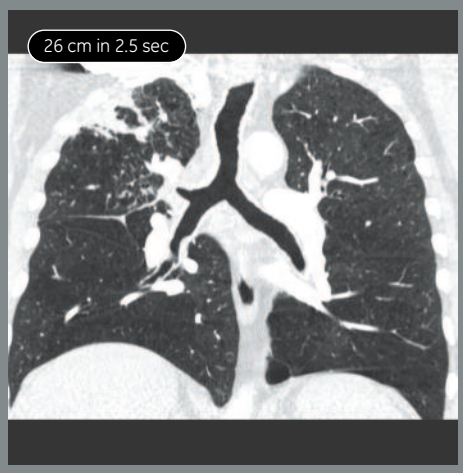


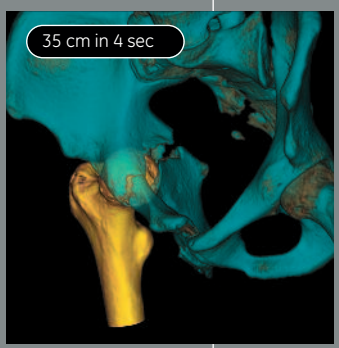
Acquisition speed

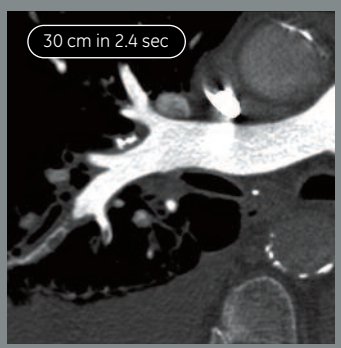




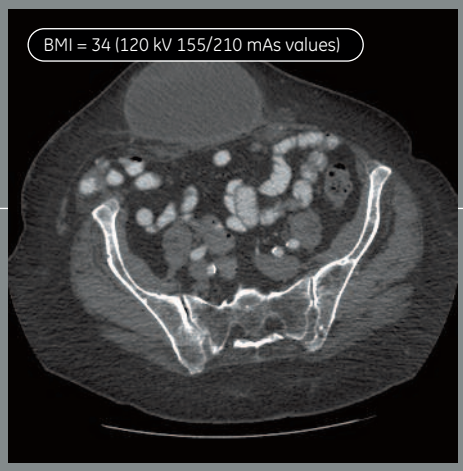


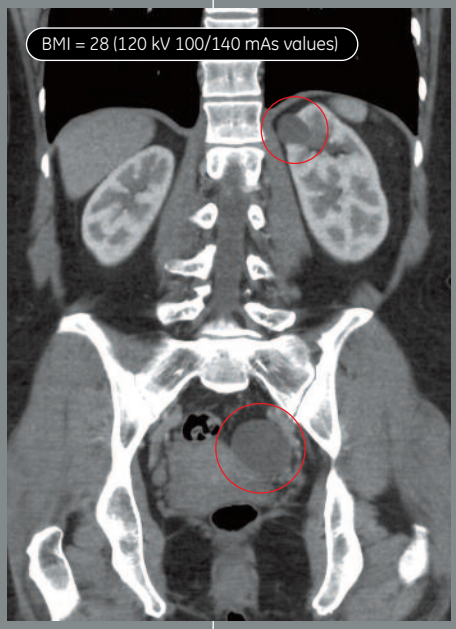


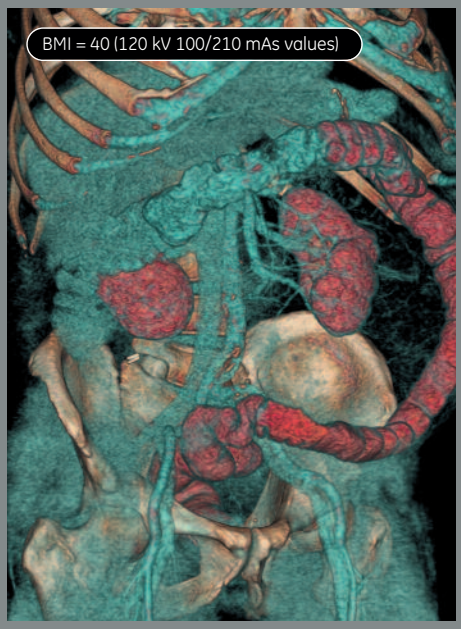


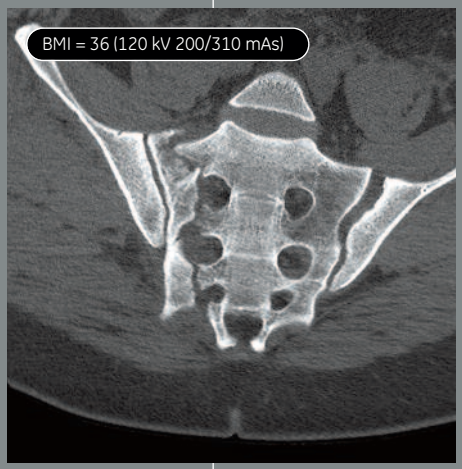


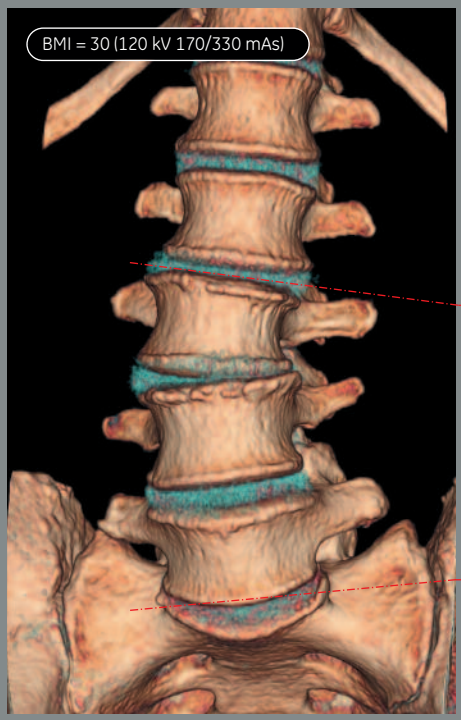
Power and performance

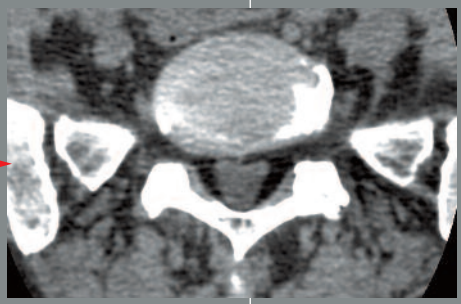






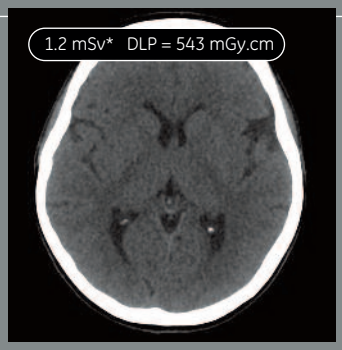


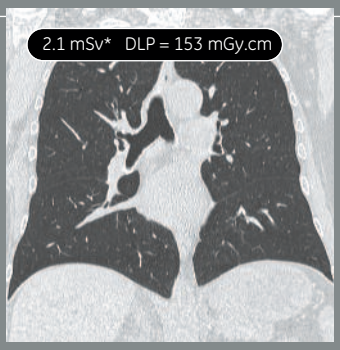


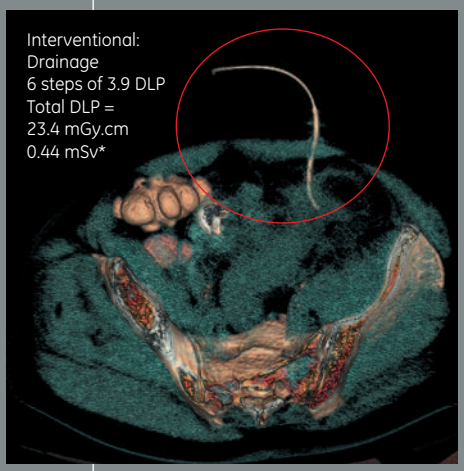


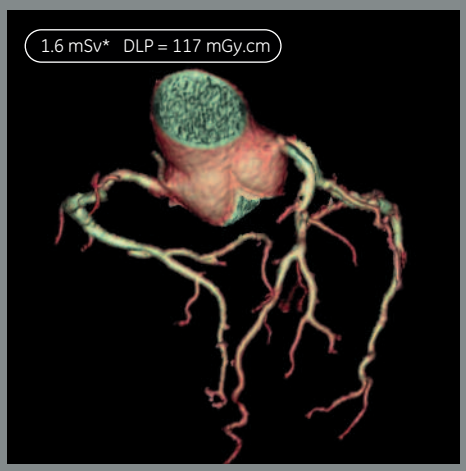
Dose optimization

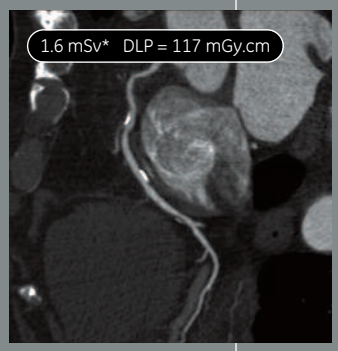
* Obtained by EUR - 16262 EN, using following factors:
Head: 0.0023 * DLP
Neck: 0.0054 * DLP
Cardiac: 0.014 * DLP
Chest: 0.017 * DLP
Abdomen: 0.015 * DLP
Pelvis: 0.019 * DLP

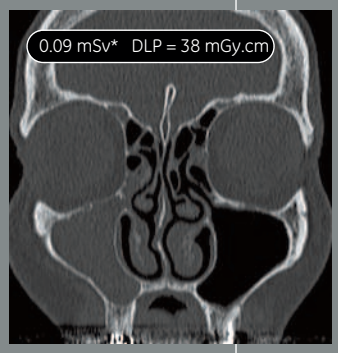


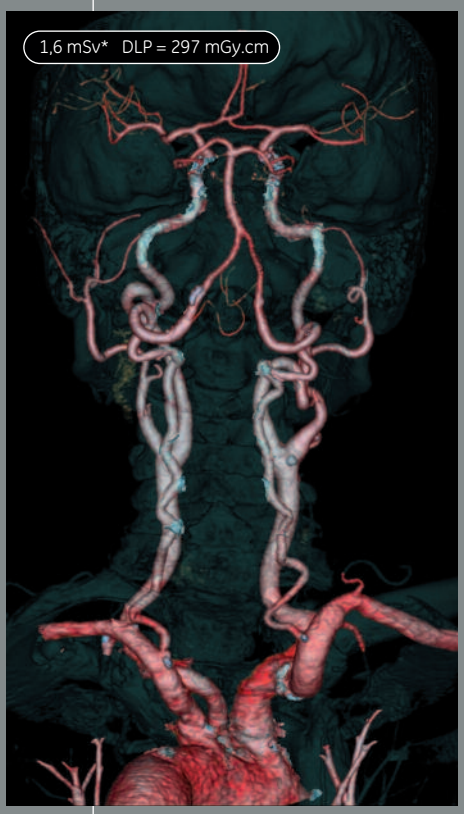


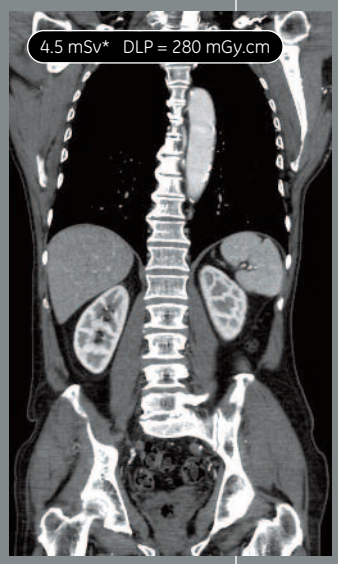












Respecting our planet and your care environment

The Optima CT660 embodies the GE commitment to affordable technologies that make quality care available to more people and help make clinicians more efficient in an environmentally conscious manner.

Kind to the earth

The Optima CT660 is among the world's most energy-efficient Volume CT systems, using about 60% less energy than our previous-generation scanners. With a thoughtful overnight "sleep" mode and electronic designs, it uses less energy both when operating and inactive. Its lighter weight reduces transportation cost. And it complies with international regulations that prohibit hazardous materials and require design for recycling.

Kind to your patients

The Optima CT660 helps clinicians provide efficient, accurate diagnostic information at lower radiation dose with ASiR.**† It accommodates patients from small children to large adults, in comfortable exams that facilitate personalized care.

Kind to your staff

With ergonomic design and new convenience features like automatic table positioning, the Optima CT660 is user friendly. Clinicians benefit from excellent image quality, customized exam previews, and streamlined workflows for reliable and repeatable exams. The Advantage Workstation quickly provides information for diagnosis, communicates with PACS, and facilitates sharing of studies with referring physicians and specialists.

Kind to your facility

The Optima CT660 helps optimize your investment through 60% lower energy consumption, up to 15% smaller overall footprint and, most importantly, the potential for high patient throughput. Proven components in the detector and other critical systems help maintain high uptime.

** Option

† In clinical practice, the use of ASiR 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.

a product of ecomagination™

GE Healthcare offers complete service plans and innovative technologies that help keep your Optima CT660 online today—and up to date for the future. The entire system is designed for easy service access. Our service contracts include timely installation of all system updates to keep you current with the latest innovations. And our service network is backed by remote capabilities that help you get the best from your scanner.

Service at the speed of digital

Your Optima CT660 comes with a broadband connection that lets GE experts diagnose problems and fix your system often without having to visit your site. Drawing on the collective experience of more than 2,000 field engineers, our online experts can resolve up to 45% of issues remotely. When a site visit is needed, your field engineer arrives with knowledge of the issue, and with the tools, and, in most cases replacement parts, needed to make a speedy repair and get you back on schedule.

One touch: Help is on the way

GE iLinq* service lets you summon technical or applications help at the touch of a button on your console screen. And when you contact us with an urgent concern, we connect you to an engineer with expertise on your system in five minutes or less.

Built for today – and tomorrow

Getting more from your assets

The iCenter* web-based asset management tool gives you on-demand access to critical information about your Optima CT660 and other imaging devices, helping you maximize efficiency and productivity. Vital information delivered to your desktop—scanner utilization, open work orders, service history, and much more—empowers you to make sound operating decisions.

Tools to build your skills

A wide range of tools helps your imaging professionals use your Optima CT660 and its advanced imaging capabilities to their full clinical potential. Our CT Masters series, offered on your site or at our training facilities, includes a comprehensive range of courses in advanced applications taught by CT experts. Our AppsLinq* service lets your people troubleshoot application issues, improve imaging techniques, and develop vital new skills, all by way of distance learning and on a flexible, convenient schedule. A GE clinical application specialist connects remotely to your system and shares control of the screen with your people, seeing exactly what they see and interacting with them in real time. It's as if the instructor is sitting in the next chair. The trainer demonstrates the process, and the trainees repeat it until they are confident in their new skills.

Discover the power

The Optima CT660 system helps your clinicians deliver high-quality, comfortable, personal patient care in a scalable, flexible package you can tailor to your needs. Find out how the Optima CT660 can benefit your facility. Contact your GE Healthcare representative today.

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About GE Healthcare

GE Healthcare provides transformational medical technologies and services that are shaping a new age of patient care. Our broad expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, biopharmaceutical manufacturing technologies, performance improvement and performance solutions services helps our customers to deliver better care to more people around the world at a lower cost. In addition, we partner with healthcare leaders, striving to leverage the global policy change necessary to implement a successful shift to sustainable healthcare systems.

Our “healthymagination” vision for the future invites the world to join us on our journey as we continuously develop innovations focused on reducing costs, increasing access, and improving quality around the world. Headquartered in the United Kingdom, GE Healthcare is a unit of General Electric Company (NYSE: GE). Worldwide, GE Healthcare employees are committed to serving healthcare professionals and their patients in more than 100 countries. For more information about GE Healthcare, visit our website at www.gehealthcare.com

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