

GE Healthcare

# Built to care

Optima™ CT660



an innovation of  
**healthymagination**

# Your vision of quality care made

The Optima CT660 system helps you deliver highly 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 scanner combines the advanced innovations from our Discovery and LightSpeed families. You get fast, high-quality acquisition 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 cut power consumption by 60 percent using the energy saving mode.

Look closely and you will see how the Optima CT660 helps you see more, know more, at less dose.



# real

Innovations  
in a 40mm detector  
at 0.35 sec  
rotation speed.

Simplified workflow  
for quick and  
streamlined  
operation.

ASiR™ technology  
for lower dose  
exams throughout  
the body.

Advanced  
applications help  
clinicians make a fast  
and confident  
diagnosis.

Up to 60% lower  
CO<sub>2</sub> emissions  
using the energy  
saving mode.

Scalable,  
modular design  
for ease of service.



# The best of technology, simple to apply

The Optima CT660 brings you our latest CT workflow innovations for improved ease to use. From our proven HD technologies, we added ASiR for exceptional dose reduction across the board. 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 72kW generator, delivers peak mA capability of up to 600 mA.

This lets you:

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

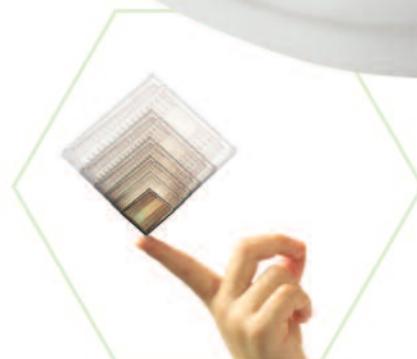
The console is built with advanced computer technology and miniaturization for optimized workflow, fast image reconstruction, and improved reliability. The quad-core CPU easily processes advanced iterative reconstruction techniques. Simultaneous data transfer helps optimize and streamline workflow between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

## Efficient imaging

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

- A fast and efficient HiLight™ scintillator with 99% absorption efficiency.
- Scalable backlit diode.
- High-density interconnects.

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



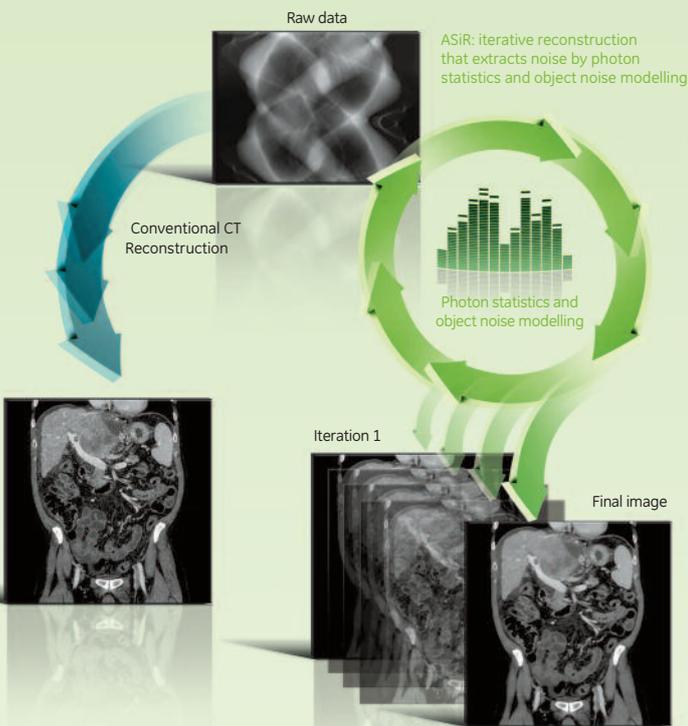
## Speed and spatial resolution

GE helical reconstruction technologies and crossbeam correction work together to deliver 0.35 mm isotropic spatial resolution. Conjugate cone-beam 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, faster rotation speed provides faster temporal resolution (44 msec).



# Low dose, low stress

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



Conventional CT image reconstruction 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.

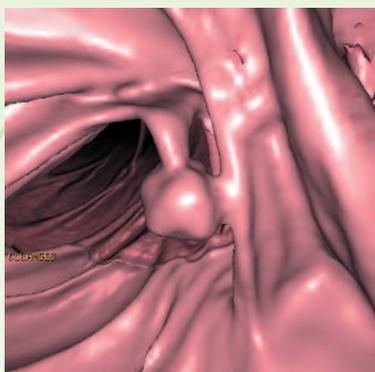
## ASiR inside: A leap ahead in dose management

GE ASiR\* helps clinicians achieve dose reductions of up to 40% while maintaining image quality\*\*.

ASiR, a projection based iterative reconstruction technology, changes the dose paradigm across many anatomies and patients. It overcomes the issues of noise and image artifact at low dose by actually removing noise instead of masking it, as image-filtering methods do.

Based on our customers' experiences using ASiR technology, they have demonstrated consistent high image quality at dramatically low dose across exam types and body regions.

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 avoids penumbra and over-radiation, as well as 3D automatic dose modulation, ECG dose modulation, and X-ray filtration which is tailored for small to large patients.



\* option

\*\* Image quality measured as image standard deviation

## A comfortable experience

The Optima CT660 enables short scan times with 40mm 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 makes access easy for patients in wheelchairs.



# Complete exams with ease

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 227 kg 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 outstanding 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 integrated injector interface\* 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 to optimize dose.

## 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

40mm Snapshot Pulse addresses the dose burden of traditional coronary CT angiography. With the X-rays turned on only during the required cardiac phase, the technique can routinely reduce dose up to 83% 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 of up to 40% across the body.

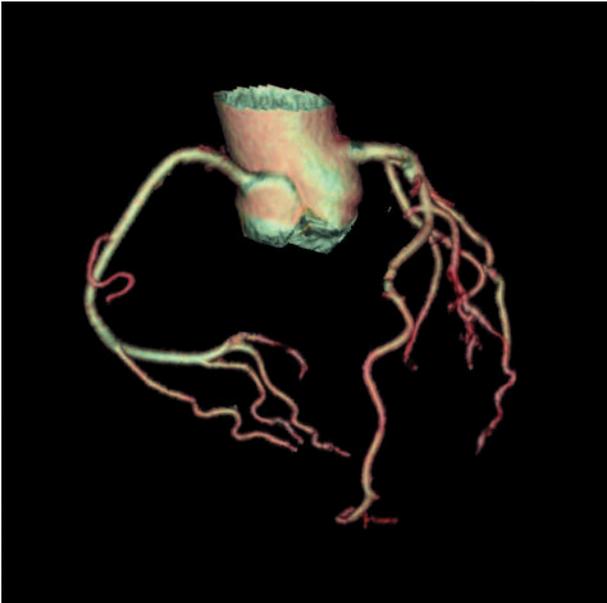
## CT Angiography: Speed and consistent quality

With consistent 0.625mm 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 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.



5 heart-beat exam with 80 kV / 70 mAs

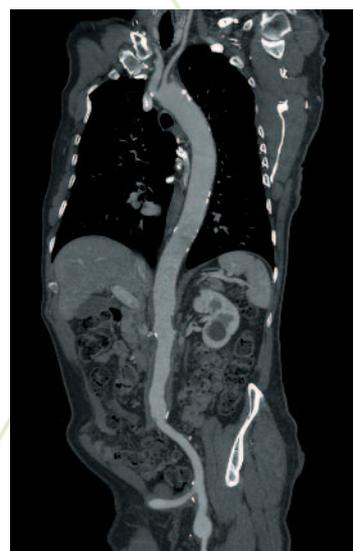


# Most critical studies

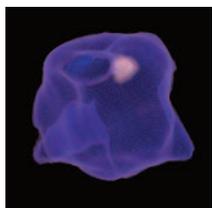
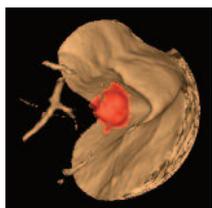
## Oncology: Lesion assessment at lower dose

The Optima CT660 lets you complete long coverage scans quicker, even on non-cooperative patients or young children. Its coverage speed enables scanning of large areas in few seconds with sub-millimeter slices. ASiR may help to improve image quality and coverage speed on heavy and large patients at equivalent dose without increasing actual generator power. 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 at up to 40% lower dose. 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 submillimeter acquisition



## ► Detect, characterize and quantify lesions

The Optima CT660 with the Advantage Workstation oncology solution streamline your workflow for lesion detection, analysis and follow-up.

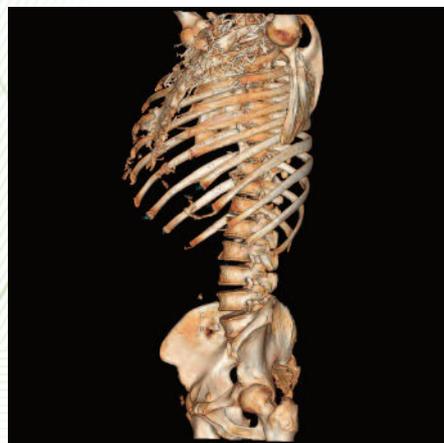
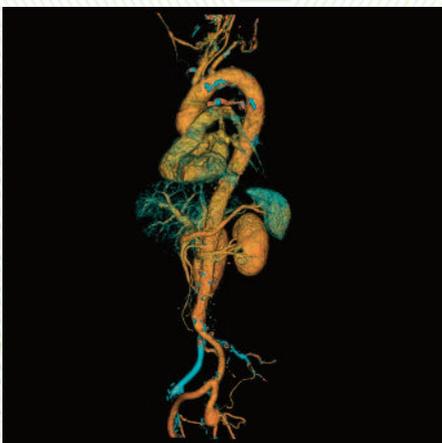
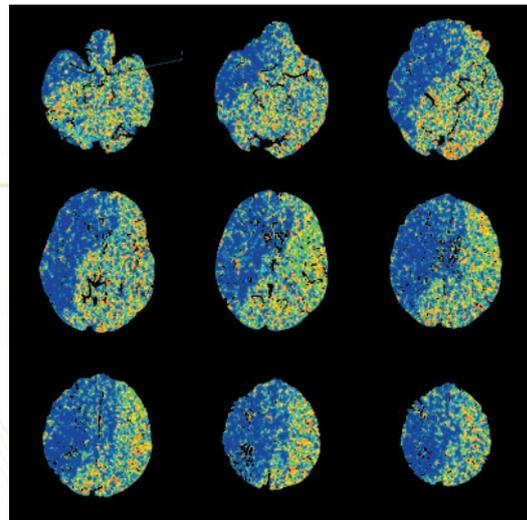
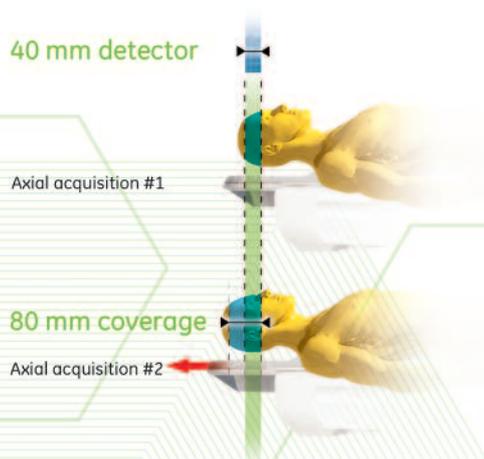
LungVCAR and ColonVCAR applications provide highly sensitive computer-aided reading to outline, contour and characterize lesions and to follow changes over time. Liver lesion and lymph node analysis and follow-up are facilitated by auto-segmentation tools and registration algorithms that let you match 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 with less dose

VolumeShuttle doubles the acquisition coverage to 80 mm while delivering less dose.



# mic studies

## ► Volume Helical Shuttle: Cover up to 500 slices

Volume Helical Shuttle\* is a continuous bi-directional scan mode that extends z-coverage and improves 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 (312.5mm) dynamic studies. This tool is used on LightSpeed VCT 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 120mm.



## Emergency care: When seconds count

In addition to the 40mm 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 easy-to-understand 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.

# 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, make clinicians more efficient, in an environmentally conscious manner.

## Kind to the earth

The Optima CT660 is among the world's most energy efficient 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 fast, accurate diagnostic information at up to 40% 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 easy for technologists to use. Clinicians benefit from excellent image quality, customized exam previews, and streamlined workflows for highly reliable and repeatable exams. The Advantage Workstation enables fast 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 24% 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.



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 clinical tools and innovative offerings. And our field service engineer network comes 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, 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.



## Learning tools to build your skills

A wide range of learning tools help 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.

Data subject to change.  
Marketing Communications GE Medical Systems  
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A General Electric company, doing business as GE Healthcare

Not for distribution in the US.  
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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 help 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 and efficiency around the world. Headquartered in the United Kingdom, GE Healthcare is a \$16 billion unit of General Electric Company (NYSE: GE). Worldwide, GE Healthcare employs more than 46,000 people 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](http://www.gehealthcare.com)

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GE imagination at work