



GE HealthCare

Definium 656 HD

Overhead tube suspension X-ray system



More is possible in X-ray

The Definium™ 656 HD digital overhead tube suspension (OTS) system is here to help you overcome today's X-ray challenges. Versatile and easy to use, this system features the widest range of clinical applications, full component automation, the fastest motorized movement, and the highest weight capacity of any GE HealthCare X-ray system.

With the help of automated features, Definium 656 HD can reduce the physical and mental strain on technologists while allowing them to perform consistent, efficient exams with correct positioning. The combination of FlashPad™ HD detectors, advanced image creation applications, and AI-driven Helix™ Advanced Image Processing software provides radiologists with the clarity, contrast, and resolution to make clinical decisions with confidence.



Like giving your technologists a personal assistant

The Definium 656 HD works with and for your radiology department. In-room exam control, a common user interface, motorized positioners, and intelligent applications converge to assist technologists, facilitate efficient workflows, and expand patient coverage.

Automation aids positioning

A 5-axis motorized OTS with fast movement assists technologists with patient positioning. Through 2-way auto-tracking, auto-centering, auto-positioning, auto-angulation, and auto-column rotation capabilities, it increases efficiency, reduces physical workloads, and helps prevent technologist injuries.

Stay close to the patient with in-room workflows

A smart tube head console with a 12-inch touchscreen provides complete in-room exam workflow control to help technologists stay close to their patients and avoid trips to the control room. This means better patient care and the ability to manage higher patient throughput.

- The remote control[†], remote foot pedal[†] and extended handswitch[†] allow technologists to operate the system in the most convenient place, reducing unnecessary movement throughout the exam
- AutoRAD[†] features Auto Protocol Assist and Auto Field-of-View, which automatically select the correct anatomy-specific protocol and collimation without any button presses after patient selection

High-capacity workflow helps you see more patients

With our dual technologist workflow, a new patient can be set up in the exam room, including auto-positioning and auto-tracking, while a second technologist processes the previous exposure and closes the exam in the control room. This increases efficiency in high-throughput scenarios.

Live video keeps the patient in view

When taking exposures outside the room, live streaming video helps technologists stay connected to their patients, monitor patient safety, and reduce rejects from patient motion or incorrect orientation.



Hardware that gives technologists a helping hand

Premium elevating table

Designed for easy operation and patient safety, the elevating table features a low loading height and fast movement to allow for the safer transfer and positioning of patients of all sizes and mobility levels. These features also help to reduce technologist physical effort and strain.

- Static weight capacity of 400 kg (882 lbs) and dynamic weight capacity of 320 kg (705 lbs)
- Lowers to just 50 cm (19.7 in) off the floor, enables easy patient loading from stretchers or wheelchairs
- In-table charging capability for detectors
- Patient coverage area of 188 cm (74 in) in the longitudinal direction and 68 cm (26.8 in) in the lateral direction for easy patient alignment

Ergonomic wall stand

Our motorized wall stands have features that can minimize technologists' steps, manual exertion, and facilitate patient alignment. They are available in three configurations to satisfy different clinical demands, room layouts, and room sizes: extended-arm tilting, standard-arm tilting, and non-tilting.

- Auto-tracking in which OTS automatically moves vertically to follow the wall stand movement
- Reverse tracking so wall stand automatically moves vertically to follow both vertical movement and changes in angulation of the OTS
- In-bin charging capability for detectors
- Tilting configurations allow detector to tilt to a complete horizontal position for simplified extremity imaging
- Extended-arm tilting configuration offers stretcher support
- Ring light indicating, system readiness (tilting wall stands only)



Minimized image variability improves diagnostic confidence

The Definium 656 HD uses high-quality detectors and AI-driven advanced image processing software to reduce variability and provide optimal image quality, with the clarity, contrast, and resolution to make decisive decisions.



Create great images with FlashPad™ HD detectors

These dose-efficient, high DQE detectors are available in three sizes and enable visualization of extraordinary anatomical detail.

- With 100 um pixels, the detectors provide 4x higher resolution than 200 micron pixel detectors, helping to distinguish fine structures
- Industry recognized high DQE of 75% at 0 lp/mm
- Can be shared between other HD detector compatible GE HealthCare fixed and mobile systems
- Enhanced with AutoGrid†, where software can optionally replace a physical grid during out-of-bin usage. This feature assists technologists by reducing set-up time by up to 24%¹
- Available sizes: 43 x 43 cm (17 x 17 in), 35 x 43 cm (14 x 17 in), 25 x 30 cm (10 x 12 in)



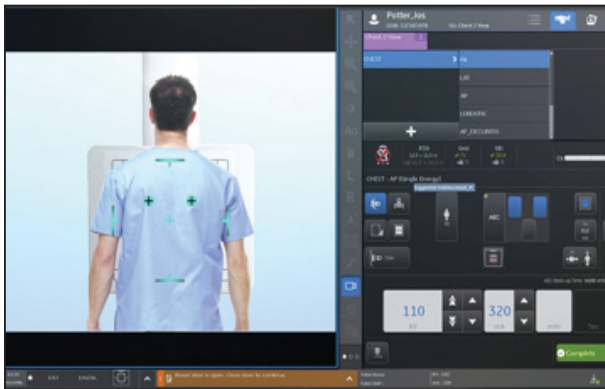
Enhance great images with AI-driven software

Helix™ 2.2 advanced imaging processing provides outstanding clarity and exceptional anatomical detail across image types with anatomy-specific image enhancement.

- **Automated AI Brightness and Contrast (AIBC)** delivers improved consistency despite variations in exposure technique and challenging exam conditions
- **Detail Preserving Noise Reduction Filter (DPNR)** offers significant noise reduction capabilities while minimizing the effect on fine details
- **Local Contrast Enhancement (LCE)** provides improved contrast for chest, ankle joint, foot, and patella images

Reduce common errors and inefficiencies with Intelligent Workflow Suite†

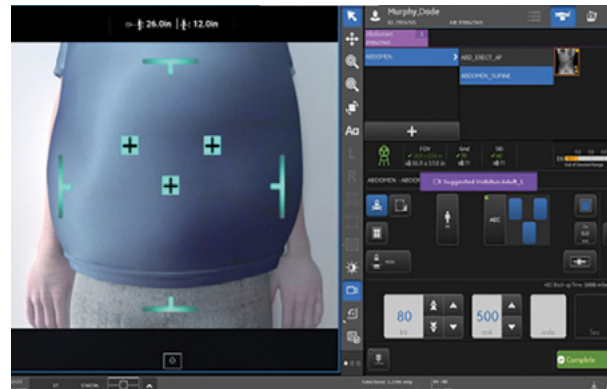
Enabled by the live streaming camera, this workflow solution combines computer vision, video analytics, and precision engineering to reduce common errors and inefficiencies. Intelligent Workflow Suite includes:



Position Assist†

Overlays detector boundaries, ion chamber locations, and the active ion chambers so you can avoid position-related retakes.

- See exactly where the ion chambers will align for confident patient positioning
- See which ion chambers are active for direct alignment to appropriate anatomy
- Works at the table or wall stand, even when the tube is angulated



Technique Assist†

Measures the thickness of the patient and, using a database of programmable sizes, suggests a size optimized to the specific patient. This helps create more consistent images for your patient population while optimizing image quality and dose.

- The system assists by suggesting the patient habitus that should be selected based on the measured unique characteristics of each patient
- The suggested habitus is displayed above the selected habitus so that the selection can easily be changed
- Each habitus is programmable for different size ranges according to site-specific needs

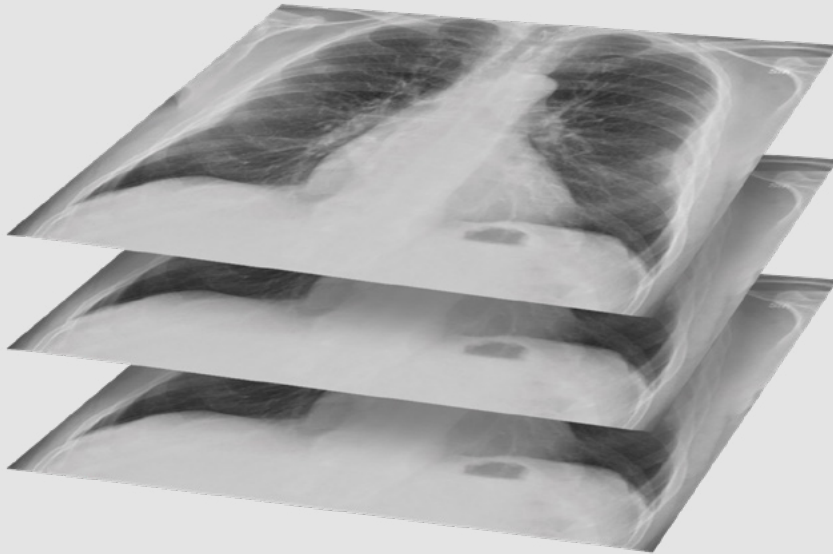


Patient Snapshot†

Takes an optical picture at the same time as the X-ray exposure. The system then optionally attaches the picture as a secondary DICOM® capture when sent to the PACS, providing context, such as foreign objects and unique exam conditions, to the radiologist.

- Presence of external objects, such as lines and clothing
- Positioning limitations and patient orientation
- Deviations from ideal imaging conditions
- Specifics of the X-ray acquisition parameters

Tackle complicated cases with Advanced Applications



VolumeRAD™ Digital Tomosynthesis† with Metal Artifact Reduction (MAR)

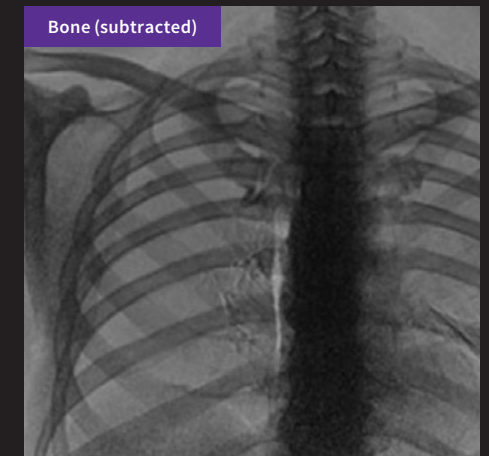
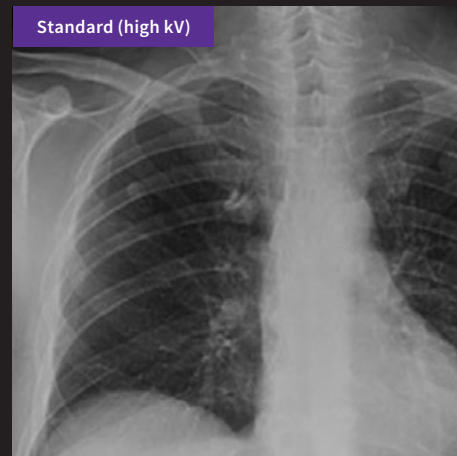
Takes multiple images in a single sweep—including chest, abdomen, extremities, spine, skull, and sinuses—to create multi-level image slice data similar to a CT at very low doses.

This helps improve clinical confidence and reduce time to diagnosis by removing overlying structures and enhancing local tissue separation. Sample use cases include:

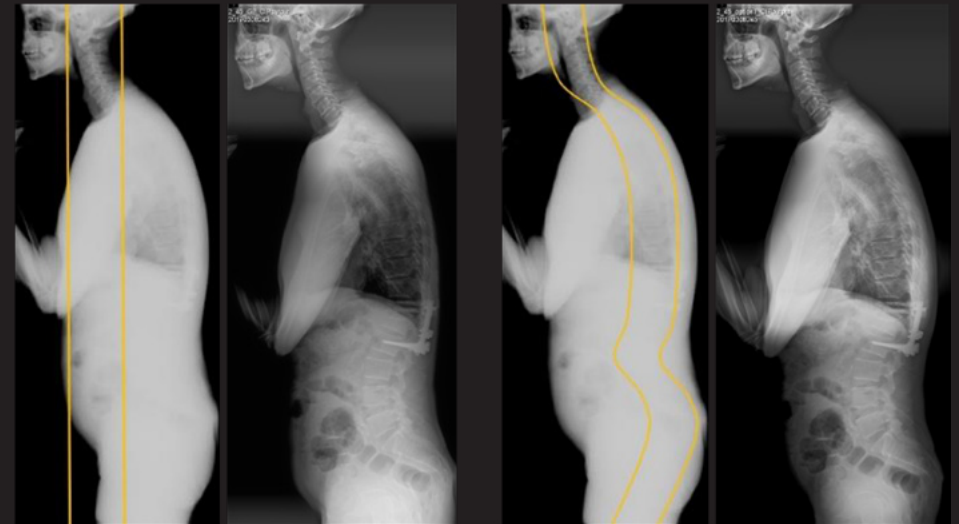
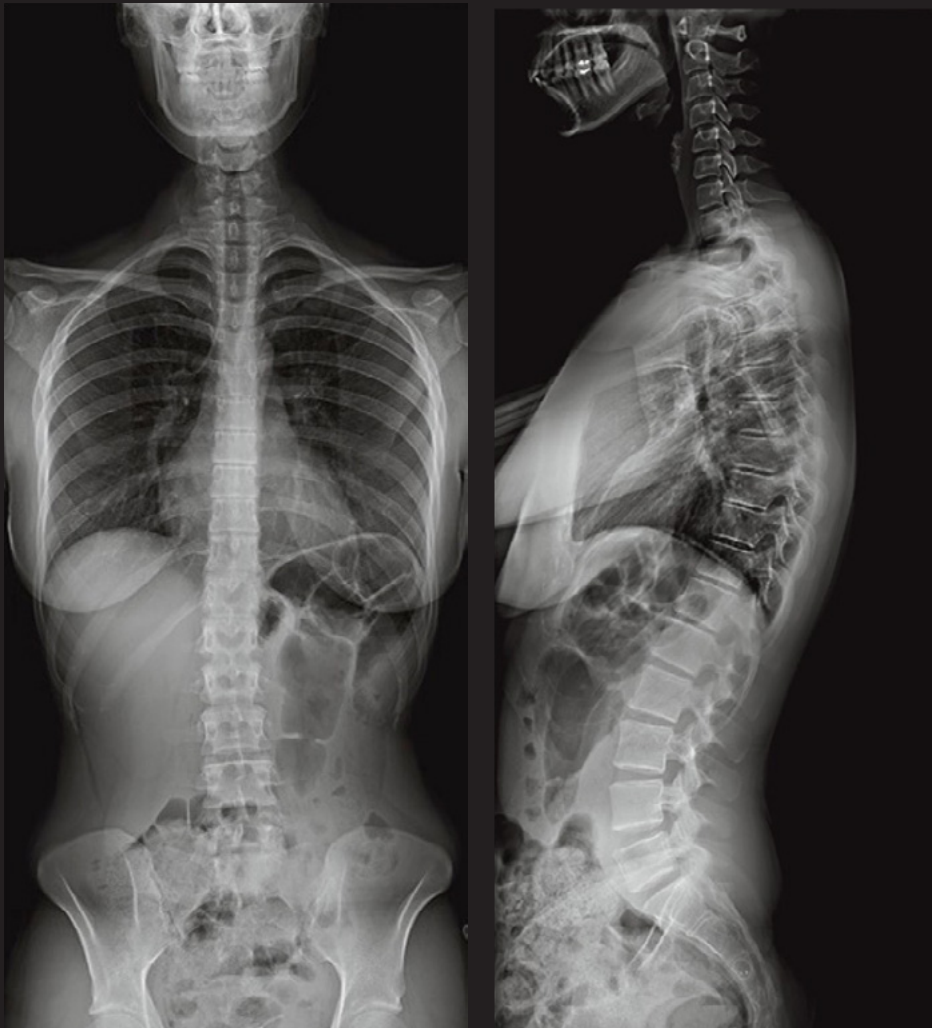
- Quickly resolve inconclusive X-rays in orthopedic and trauma cases
- Achieve superior lung nodule detection sensitivity compared to a conventional chest X-ray
- Perform weight-bearing and pediatric obstruction exams at a lower dose than CT
- More accurately determine placement of screws, cage or plate fusions with MAR

Dual Energy Subtraction†

Separates soft tissue and bone structures to allow detection of abnormalities in chest exams possibly obscured in a conventional X-ray. Exam acquires two images at different energy levels separated by just 160 milliseconds, resulting in three generated images: standard (high kv), soft tissue (low kv), and bone (subtracted).



Tackle complicated cases with Advanced Applications



Auto Spine[†]

Works with Auto Image Paste to follow the spine for vertical equalization, enabling a natural balance of brightness and contrast. This application is ideal for scoliosis exams.

Angulated Auto Image Paste[†]

Provides a fast, precise and highly-automated seamless long bone and spine image stitching at the wall stand or at the table, creating a single stitched image that extends beyond the size of the detector.

Empower staff with AI-enabled software

You can also add on AI-enabled software packages for decision support. These include:

Quality Care Suite 2.0¹

Provides real-time, on-device, automatic quality checks for X-ray for 7 anatomies, 6 views and 10 patient sizes to fix problems before images are sent to the radiologist.

Intelligent Auto Rotate

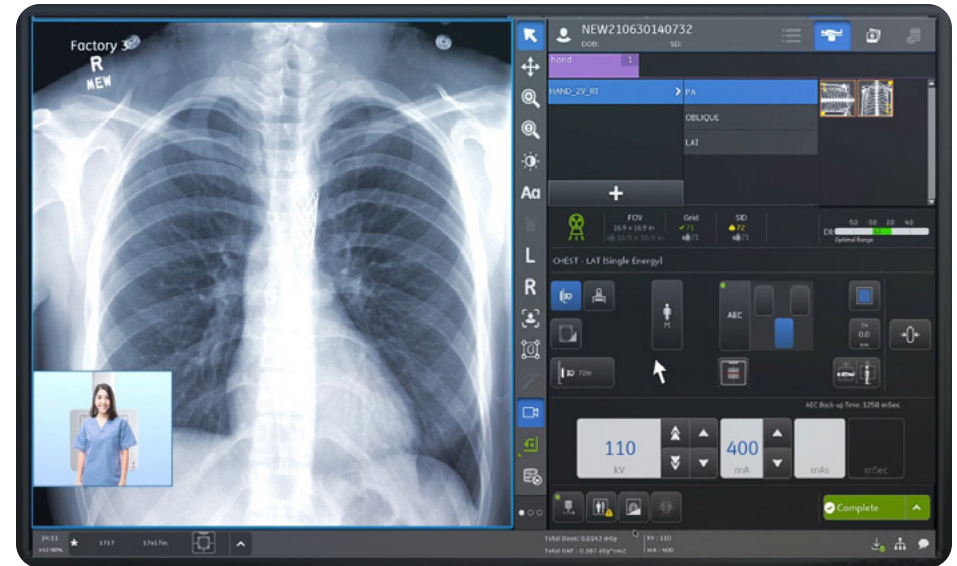
- Determines the rotation angle of X-ray images and auto-rotates the image for proper display (head-up)
- Supports most frequently done X-ray exams, including chest, abdomen, pelvis, hand, wrist, knee and foot exams, including support for pediatrics
- Saves technologists at a med-lg hospital up to 10 working days of conducting ~187,000 clicks per year²

Intelligent Protocol Check

- Detects any disagreement between the acquired image and selected anatomy/view protocol
- Assists technologists by notifying them of the mismatch, allowing corrective action to be immediately taken

Intelligent Field of View

- Detects when a lung field is clipped in a frontal chest X-ray (AUC>0.99)²
- Allows radiographers to determine if a repeat is required before sending the image to PACS²



Critical Care Suite 2.0¹

The world's first collection of on-device AI algorithms for automated measurements and case prioritization

Endotracheal tube positioning

- On-device algorithm automatically detects the presence of ET tube in AP chest X-ray images
- Provides an accurate and automated measurement of ET Tube position within seconds of image acquisition

Pneumothorax triage and notification

- Detects both large and small pneumothoraces
- Sends a secondary capture DICOM image to PACS and presents the AI results to the radiologist
- Image flags help enable worklist prioritization and have the potential to expedite review of critical findings

Thoracic Care Suite with LUNIT Insight CXR*

- Automatically analyzes images for the presence of eight abnormal radiologic findings

Get the most from your investment

The Definium 656 HD is reliability tested for hundreds of thousands of cycles to ensure smooth operations over a long product lifetime. Powerful analytics allow performance assessment of equipment and staff across your entire fleet of systems while world-renowned GE HealthCare service and support are readily available to help when needed.



A common user interface

Reduce training needs and allow technologists to easily move between GE HealthCare systems with common software layouts and workflows.

Downloadable software updates

Securely download the latest updates and cybersecurity patches from the cloud. It's fast and reliable, and it doesn't require a field service engineer.

Built-in security

Due to increased risk of cyber-attacks, malware, and security vulnerabilities, your system includes our latest security software, offering multiple levels of protection.

Features include:

- Anti-virus protection for malicious software
- Host-based intrusion detection
- Data encryption and storage
- Secure interconnection to external storage
- Network firewall
- DHCP and static IP allocations supported along with IPv6
- Secured detector network

InSite™ Remote Service Platform (RSVP)

This essential platform provides remote diagnostics and troubleshooting for fast solutions, often without a field engineer visit.

Configurable to your needs

The Definium 656 HD can be configured to meet the custom needs and room size requirements of your radiology department, including:

- OTS with table and wall stand for standard general-purpose X-ray rooms
- OTS-only system for trauma rooms
- OTS with wall stand and stretcher table for chest-specific rooms
- OTS with table-only system

Additional options include:

- Detector size and number
- Wall stand types
- Rail and bridge sizes
- Advanced clinical applications
- Intelligent workflow assistant applications
- AI applications

All configurations include cybersecurity features to help protect your system and your clinical IT environment.





About GE HealthCare Technologies Inc.

GE HealthCare is a leading global medical technology, pharmaceutical diagnostics and digital solutions innovator, dedicated to providing integrated solutions, services and data analytics to make hospitals more efficient, clinicians more effective, therapies more precise and patients healthier and happier. Serving patients and providers for more than 125 years, GE HealthCare is advancing personalized, connected and compassionate care, while simplifying the patient's journey across the care pathway. Together our Imaging, Ultrasound, Patient Care Solutions and Pharmaceutical Diagnostics businesses help improve patient care from diagnosis, to therapy, to monitoring. We are a \$19.6 billion business with approximately 51,000 colleagues working to create a world where healthcare has no limits.

Follow us on [LinkedIn](#), [X](#) (formerly Twitter), and [Insights](#) for the latest news, or visit our website gehealthcare.com for more information.

†Denotes optional features

* Not for sale in the U.S. Not approved or cleared by the U.S. FDA. Device is CE marked. May not be available in all markets. Consult with your local GE HealthCare sales representative.

References

1. Based on a GE HealthCare study where images of a chest phantom were acquired both with and without a grid and the resulting contrast levels were compared (JB77154XX).
2. Based on anonymous usage data collected from 775 GE HealthCare X-ray systems over a 6-month period ending in July 2022.

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