GE HealthCare

Definium Tempo Select

Overhead tube suspension digital X-ray system

No shortage of X-ray challenges

X-ray is often the first touch in patient care, and it makes up over 65% of imaging procedures.[1] But as important as it is, running an X-ray department is currently proving difficult for many reasons.

It starts with staffing

X-ray technologists are hard to find. A survey by a staffing company cited that 80% of healthcare provider organizations surveyed were shorthanded, and the job title with the most unfilled positions was radiologic technologist.[2] In the same study, 46% of the organizations surveyed named burnout as a major healthcare staffing challenge.[2] Add to that the fact that more than 70% of radiographers experience work-related injury[3] and you can see why building and keeping an X-ray team can be daunting.

What's X-ray up against?

Facilities that want to validate their purchasing decisions also want to keep unnecessary costs down, but challenges get in the way. Repeated and rejected X-rays affect costs. Typically caused by variability in patient positioning and exam setup, as many as 25% of images can be rejected,[4] this not only raises department costs but also increases technologist's already heavy workloads.

Another challenge is lower reimbursement rates. That's why having a system with a low total cost of ownership (TCO) is so important. With a low TCO, your facility can thrive without needing a high volume of exams. Opting for a system with low training costs, high uptime, and minimal maintenance and repair expenses can help you stay efficient and cost-effective.

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#1

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Up to 25%

of images can be rejected,[4] creating more work, which fuels staff burnout

Focus on your patients, not the process

Definium™ Tempo Select is an advanced, highly-automated, overhead tube suspension (OTS) digital X-ray system that features streamlined workflows to help decrease the physical strain on technologists. Features like automated component positioning and in-room workflows help technologists operate more efficiently while also helping reduce errors and repeat exams. Equipped with intelligent applications, Definium Tempo Select provides assistance to ease the burden on technologists and to focus on what matters most — the patient.

A system that functions like your personal assistant

You'll feel more confident in every task with automated features and guidance

1. **Tube head console UI** and **in-room workflows** – Complete workflow control on the tube head console UI allows you to stay close to the patient
2. **Automated workflows with AutoRAD**† – Automatically selects the correct anatomy-specific protocol and field-of-view on the worklist exam code
3. **Automatic motorized OTS movement** – Automatically move the wall stand, table, and OTS to custom predefined positions based on exam protocol
4. **Patient and safety accommodation features** – Double-tap safety foot pedals, safety switches, emergency stop button and electromagnetic brakes help enable secure patient transfers
5. **Synchronized tube** and **detector movement** – The tube, table bucky and wall stand follow each other's movement and the detector maintains tube alignment
6. **Automatic motorized tube angulation** – Rotate the tube head to a predetermined position based on a specific procedure
7. **Simplified detector management** and **contrast enhancement** – Detector connects and works wirelessly across multiple compatible GE HealthCare Select branded systems and AutoGrid delivers contrast enhancement without a physical grid
8. **System readiness indicators** – Located on the top of the tube head console and the optional tilting wall stand, readiness lights communicate the status of the system
9. **Common UI** – A common user interface across your GE HealthCare X-ray fleet means less training for new technologists and easier cross-training
10. **Live streaming video**† and **Intelligent Workflow Suite**† – Stay connected to the patient even when you're at a workstation, and minimize errors with a collection of AI-powered workflow enhancement tools

Experience complete workflow control in the exam room

With Definium Tempo Select, you can perform all necessary tasks at the patient's bedside without needing to leave the room, thanks to its exceptional user experience controlled via a 12-inch touchscreen at the tube head and automated component positioning. This smart tube head console allows technologists to manage the entire exam workflow in-room, reducing movement and manual work, enhancing patient care and increasing patient throughput.

AutoRAD[†], featuring Auto Protocol Assist and Auto Field-of-View, automatically selects the correct anatomy specific protocol and collimation without any button presses after patient selection.

Integrated Dose Monitoring — Dose Area Product (DAP) is automatically annotated onto the digital image for the exposure, and is displayed on the acquisition screen post exposure. This eliminates the need for a DAP meter and additional work for the technologist going into and out of the room.

Automated, synchronized components reduce manual work

Definium Tempo Select assists technologists by automatically positioning its components, reducing the need to manually move them. This saves time, reduces exertion and can make positioning more precise.

4-axis motorized OTS
X/Y/Z/angle servo driven motion assists technologists with equipment positioning

Auto positioning
The OTS, wall stand and table automatically move to pre-set or selected positions based on the selected procedure and view with just the push of a button (triggered by remote, OTS, or in control room)

Auto centering
The OTS automatically moves to the center of the wall stand or table detector's current position

Auto tracking
The tube and detector maintain alignment and SID by automatically moving to synchronize position at the table or the wall stand

Reverse tracking
The wall stand housing can automatically move to synchronize with OTS movements

Auto angulation
The OTS automatically moves to change the tube angulation to a predefined position at the push of a button

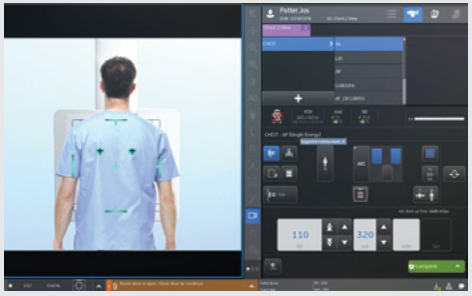
Auto Field-of-View†
Sets the size and orientation of the collimation automatically based on the procedure and view that has been selected

Stay aware of your patient's position and comfort

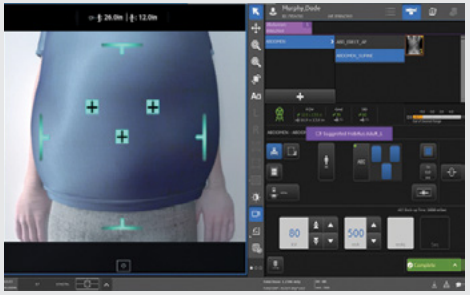
When taking exposures outside the room, live streaming video† keeps the patient in view. This feature helps technologists stay connected to their patients, monitor patient safety and helps reduce rejects resulting from patient motion or incorrect orientation. Live streaming video† is available at the table, at the wall stand and with wireless detectors

Reduce common errors with the Intelligent Workflow Suite†

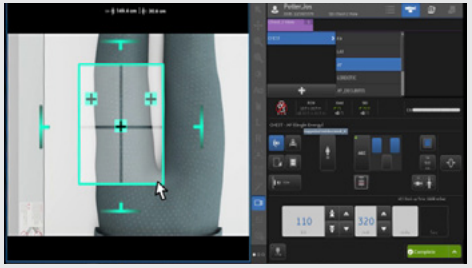
Enabled by the live streaming video 3D camera, the Intelligent Workflow Suite combines computer vision, video analytics and precision engineering to deliver a solution for common radiology department errors and inefficiencies.



Position Assist†
Shows the detector boundaries, ion chamber locations and the active ion chambers so you can avoid position-related retakes. Position Assist works at the wall stand or the table.



Technique Assist†
Measures the thickness of the patient and, using a database of programmable sizes, suggests a size optimized for the specific patient. This helps create more consistent images for your patient population. Technique Assist works at the wall stand or the table.



Collimation Assist†
Works at the wall stand and table to help ensure X-rays are focused on the right area by providing an overlay of the collimation on the patient video image. Collimation can be adjusted at the acquisition workstation with a click so there is no need to reenter the patient room.

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 to the radiologist. Patient Snapshot works at the wall stand, at the table or with wireless detectors.

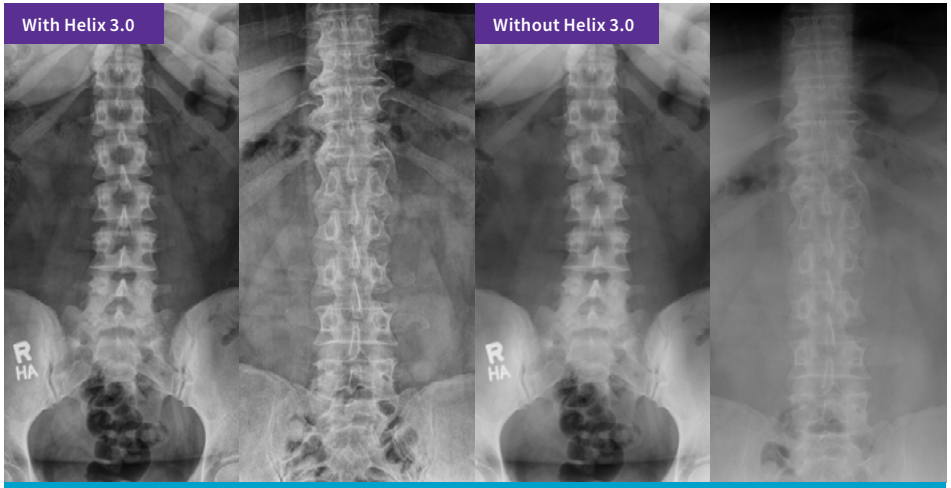
Minimized image variability improves diagnostic confidence

The Definium Tempo Select uses high-quality detectors and AI-powered advanced image processing software to reduce variability and provide optimal image quality, with the clarity, contrast and resolution to make decisive decisions. You'll also benefit from customized enhanced image looks.

Create great images with FlashPad™ Select detectors

These dose-efficient, high DQE wireless detectors enable visualization of extraordinary anatomical detail.

- With 100 um pixels, FlashPad Select detectors provide 4x higher resolution than 200 micron pixel detectors, helping to distinguish fine structures
- Industry recognized high DQE of 73.4% at 0 lp/mm
- Can be shared between other compatible, Select branded, GE HealthCare fixed and mobile systems
- Enhanced with AutoGrid software that can replace a physical grid during out-of-bin usage. This feature assists technologists by reducing set-up time by up to 24%[5]
- Available in a 43 x 43 cm (17 x 17 in) size, the system can be configured with one or two detectors
- QuickCharge allows in-bin charging whereby the FlashPad Select detectors charge when they are in the table or wall stand housing



Enhance great images with AI-powered software

Helix™ 3.0 advanced imaging processing provides outstanding clarity and exceptional anatomical detail across image types with anatomy-specific image enhancement. Helix 3.0 algorithms are designed to deliver outstanding resolution, excellent edge presentation, consistency and noise handling.

- **Automated AI Brightness and Contrast (AIBC)** delivers improved consistency despite variations in exposure technique and challenging exam conditions
- **AI Tissue Equalization† (AITE)** uses AI to dynamically estimate thick and thin regions in an image. This improves contrast and visibility in over-penetrated and under-penetrated regions without compromising the contrast in other regions of interest
- **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

Comprehensive views of long leg and spine anatomies

Angulated Auto Image Paste†

This highly automated and efficient procedure creates a single stitched image that extends beyond the size of the detector.

Angulated Auto Image Paste at the wall stand enables automated acquisition of two to four images covering up to 150 cm (59 in)*. Easy and efficient for technologists with acquisition time less than 13 seconds and a fully stitched image appearing in less than 22 seconds for a 35.4 cm (13.9 in)* coverage area, the images provide radiologists the data they need.

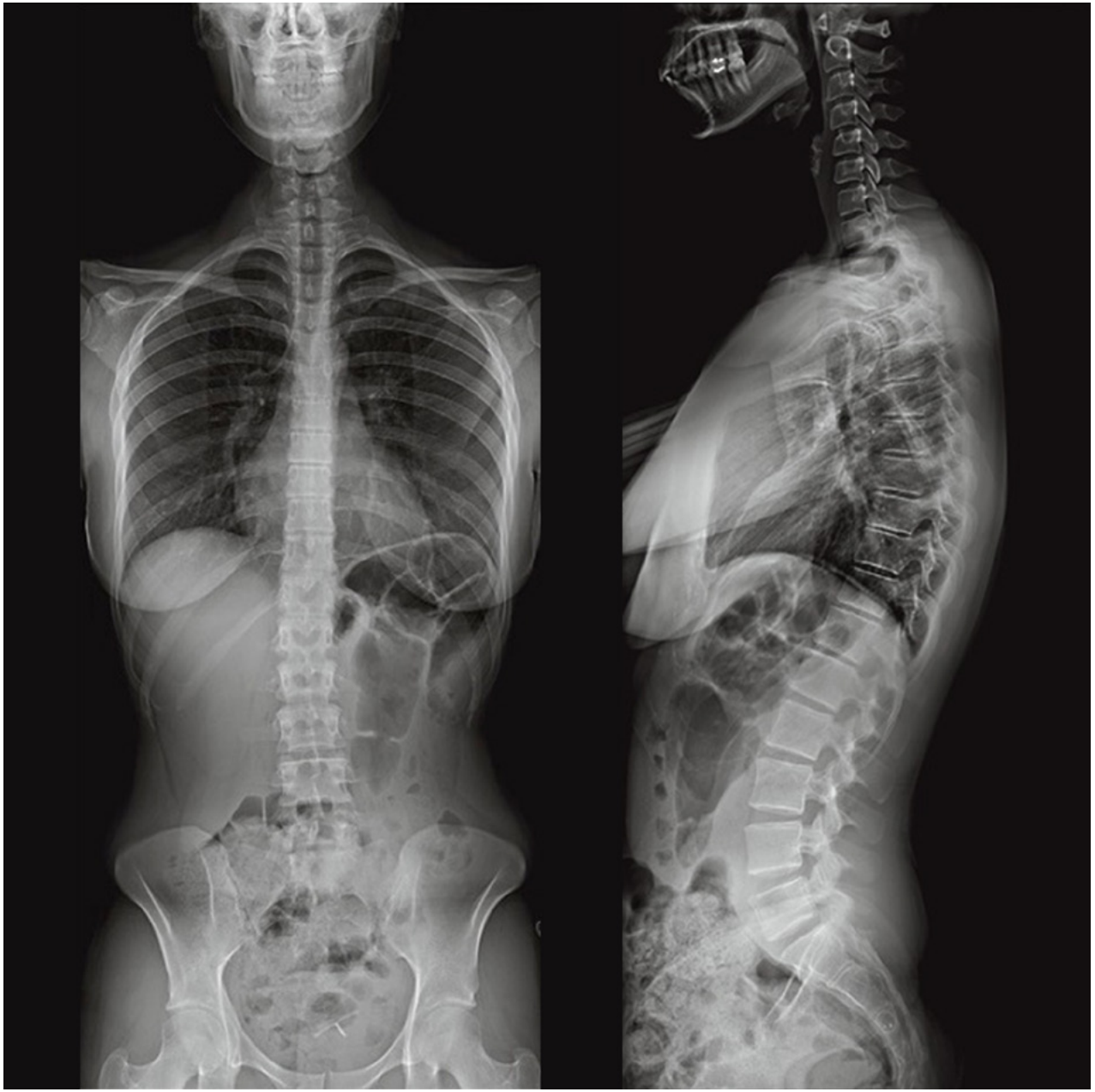
Angulated Auto Image Paste at the table enables automated acquisition of two images covering up to 76 cm (30 in)*.

Individual image dose control is provided for each sub-image in the pasting exam to provide customized control and optimization for image quality.

Angulated Auto Image Paste includes imaging of the spine for scoliosis evaluation and imaging of the legs for orthopedic evaluations. At the wall stand, an image pasting barrier helps keep the patient comfortable during acquisition.

AutoSpine algorithm

Included with Angulated Auto Image Paste, the intelligent AutoSpine algorithm follows the contour of the spine for vertical equalization to enable a natural balance of brightness and contrast along the patient's body.



*Coverage size is in the detector plane. Patient coverage will depend on the thickness/distance from the detector to the patient.

A flexible, smart system that can boost profitability

With low space requirements and flexible configurations, Definium Tempo Select is a smart option for system replacements or new installations. Reliable and easy-to-use, this system can help your department operate more efficiently.

The OTS is universal rail compatible and can be mounted on the rail of your existing system. This means lower construction costs and less install time when you switch to a GE HealthCare system.

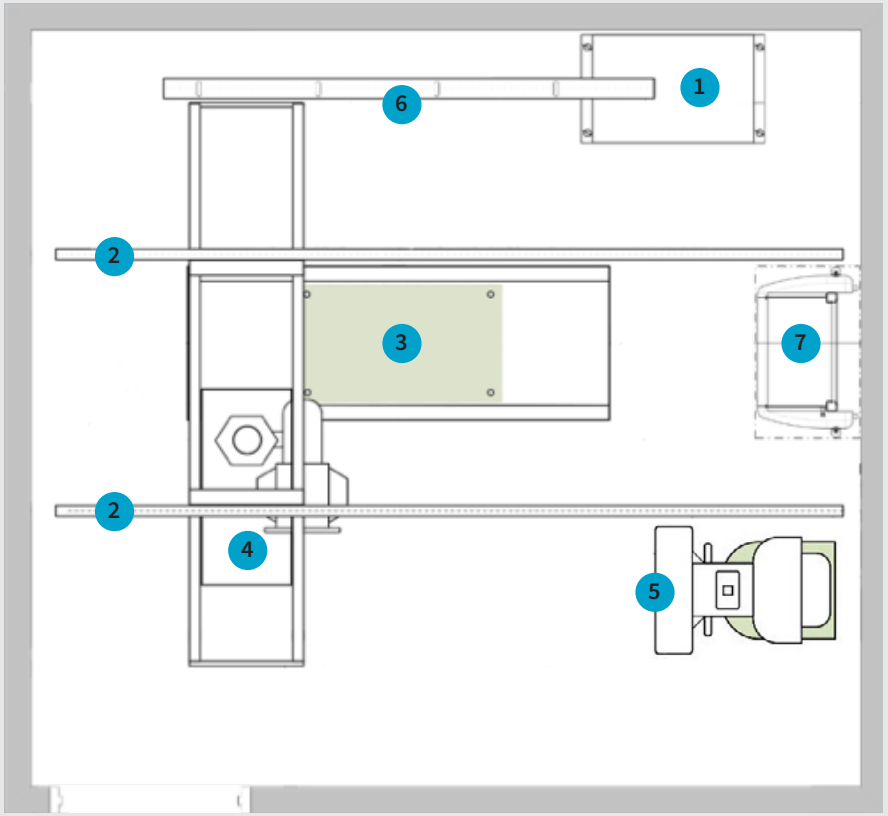
Component configurations:

- OTS only: Without table and wall stand
- Routine X-ray: Full table and wall stand
- Small room: Low ceiling heights or small dimensions
- Physical check/chest configuration: OTS and wall stand only
- Emergency room: Extended wall stand and stretcher table

Room layouts and size depend on components selected including:

- Rail size (longitudinal range)
- Bridge size (lateral travel range)
- Wall stand type: Motorized extended arm tilting, motorized non-tilting
- Table type: Performance elevating, stretcher
- Image pasting options

Standard room layout



1. System cabinet
2. Longitudinal rails
3. Elevating table
4. OTS and bridge
5. Motorized non-tilting wall stand
6. Cable drape
7. Image pasting barrier

Get the most from your investment

The Definium Tempo Select 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.

GE HealthCare

About GE HealthCare Technologies Inc.

GE HealthCare is a trusted partner and leading global healthcare solutions provider, innovating medical technology, pharmaceutical diagnostics, and integrated, cloud-first AI-enabled solutions, services and data analytics. We aim to make hospitals and health systems 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 care pathways. Together, our Imaging, Advanced Visualization Solutions, Patient Care Solutions and Pharmaceutical Diagnostics businesses help improve patient care from screening and diagnosis to therapy and monitoring. We are a $19.7 billion business with approximately 53,000 colleagues working to create a world where healthcare has no limits.

Follow us on LinkedIn, X, Facebook, Instagram, and Insights for the latest news, or visit our website gehealthcare.com for more information.

†Denotes optional features

*Coverage size is in the detector plane. Patient coverage will depend on the thickness/distance from the detector to the patient.

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1. IMV Medical Information Division, 2019 X-ray/DR/CR Market Outlook Report, 2019, https://imvinfo.com/product/2019-x-ray-dr-cr-market-outlook-report/.
2. Dave Pearson, "Radiology Techs in Especially High Demand as 85% of Hospitals Seek 'Allied' Health Workers," Radiology Business, October 23, 2022, https://radiologybusiness.com/topics/healthcare-management/healthcare-staffing/radiology-techs-especially-high-demand-85.
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4. Guly, H. R. "Diagnostic Errors in an Accident and Emergency Department." Emergency Medicine Journal 18, no. 4 (2001): 263–269. https://doi.org/10.1136/emj.18.4.263..
5. 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).

Definium Tempo Select is not commercially available in all markets. Not all features are available in all markets. Check with your local GE HealthCare representative for availability in your country.

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