



# Excellence. Day after day.

## Definium™ 646 HD X-ray system powered by Helix™ 2.0

Definium 646 HD is a commercial configuration of the Optima XR646 HD







**Definium 646 HD**  
powered by Helix 2.0

Optimize your X-ray experience  
with versatility, speed, and  
precision for all your patients.

Definium 646 HD is a versatile digital radiographic system that enables diagnostic confidence and workflow efficiency with multiple configurations that adapt to your needs.





# Get the diagnostic clarity you need from that first X-ray

Helix™ 2.0 advanced image processing leverages artificial intelligence (AI) in image quality to deliver sharp detail and consistent performance in X-ray—despite variations in exposure technique and challenging exam conditions.



**Available in three levels of enhancement. Local Contrast Enhancement delivers improved contrast for chest images, which helps in spine visualization and lung detail.**



**Detail Preserving Noise Reduction delivers significant noise-reduction capabilities, while minimizing the effect on fine details. Provides adaptive noise reduction based on the noise in the image and has three levels of reduction available.**



**AI automation delivers consistent brightness and contrast across images, regardless of variations in dose, patient positioning, field of view, and metal implants.**



**Up to 40% increase in detectability\* harnessing the ultra-high resolution and dose efficiency of FlashPad™ HD.**

\* Source: GE whitepaper: High resolution for improved visualization (DOC2045904).  
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# Don't miss a thing

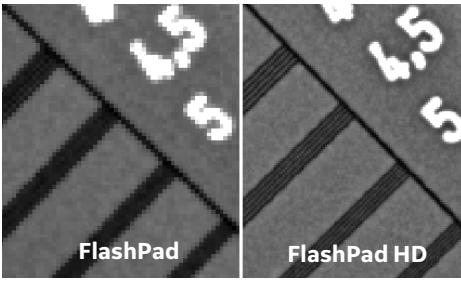
## **Extraordinary anatomical detail at low dose in every X-ray image.**

Helix 2.0 advanced image processing algorithms harness the full high-resolution power and exceptional dose efficiency of FlashPad HD detectors to deliver outstanding clarity and extraordinary anatomical detail where it matters most.



## Double your resolution

Resolution test pattern image



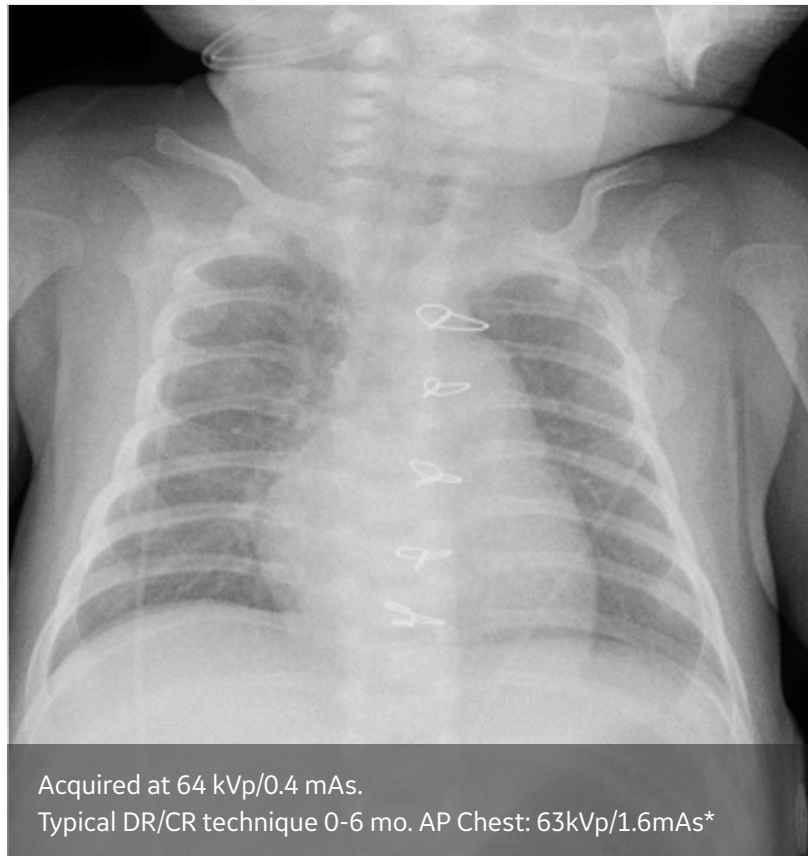
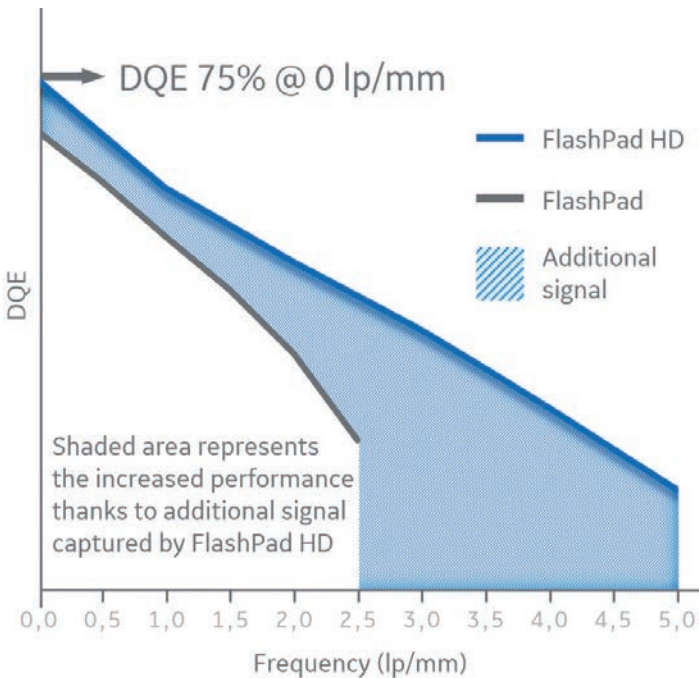
The **FlashPad HD** detectors pack four times more pixels per area for sharp X-ray images. Plus, they capture extraordinary anatomical detail at low dose. Available in 10" x 12", 14" x 17" and 17" x 17" standard cassette sizes.



5 lp/mm resolution  
100 micron pixel pitch

## Exceptional dose efficiency for your tiniest patients (and the largest ones too)

The ultra-high dose efficiency helps enhance diagnostic imaging quality at low dose for all patient types.



Acquired at 64 kVp/0.4 mAs.  
Typical DR/CR technique 0-6 mo. AP Chest: 63kVp/1.6mAs\*

# Consistent performance and presentation despite challenging exam conditions

Helix 2.0 delivers consistent brightness and contrast across variations in dose exposure with Smart Windowing and enhanced contrast restoration.

**Without Helix**

~0.25 mAs



~2 mAs



~16 mAs



**With Helix**

~0.25 mAs



~2 mAs

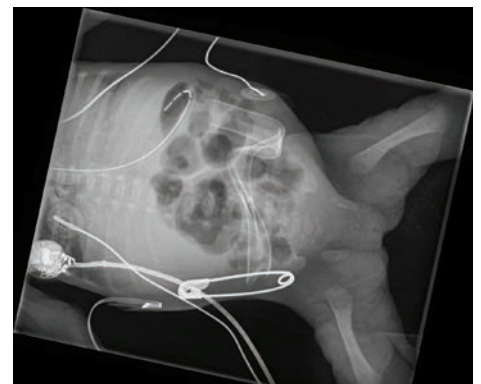
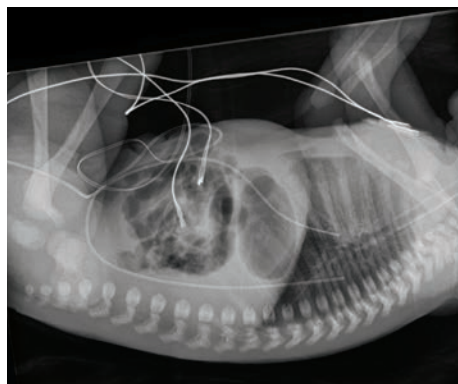


~16 mAs



## Consistent performance despite variations in collimation and patient positioning with Helix 2.0

Intelligent collimator edge detection with outstanding accuracy in pediatric applications.





# Excellent handling of metal implants

Clear bone-metal interface without halo artifact.



# We know speed and efficiency matter





## Helix workstation

The supplemental Helix workstation allows a technologist or a radiologist to edit and reprocess images without system impact, keeping the system available for patient exams. It also provides a central location to perform quality control by physicists and technologists for exams needing reprocessing.





# Fast and easy X-ray exams, effortless patient positioning

AutoGrid Suite offers an extensive set of automation and workflow enhancing features, to make exam setup fast, intuitive, and easy for X-ray technologists and comfortable for patients.



## **New user interface**

Redesigned navigation and **QuickTools** for fewer clicks and intuitive operation



## **QuickCharge**

Detector charging in the table and wall stand bucky



## **Auto field-of-view**

Predefined collimation sizes for each view



## **Auto protocol assist**

Automatic selection of anatomy and technique based on modality work list



## **High-precision auto positioning**

Preset and programmable positions for effortless exam setup



## **Auto-tracking**

Maintain SID and tube-detector alignment with table and wall stand receptor automatically



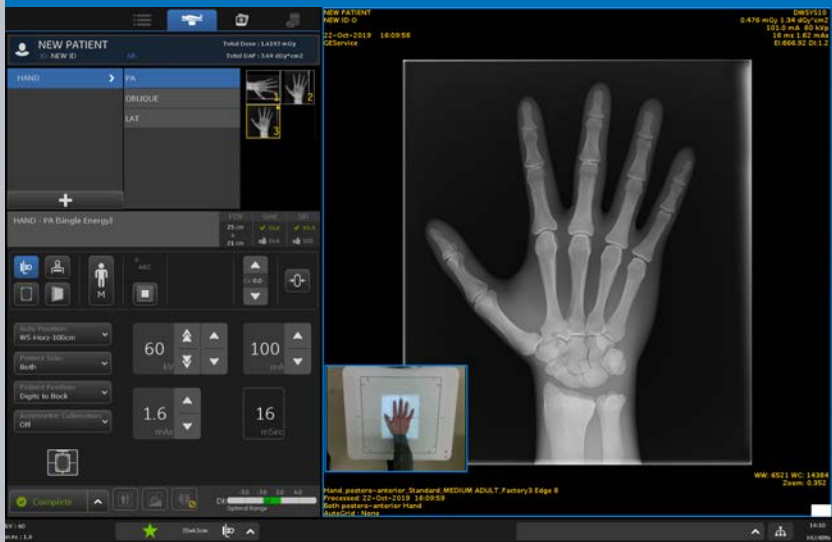
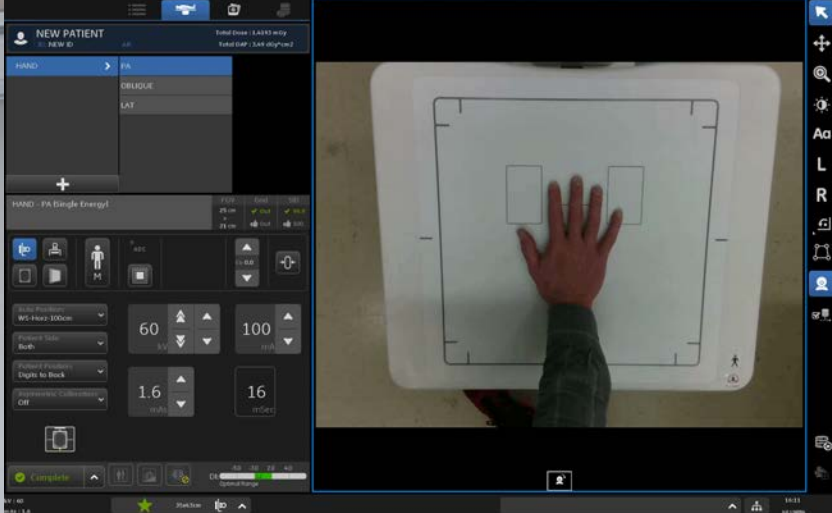
## **QuickShare**

Hassle-free sharing and pairing of multiple wireless detectors



## **QuickConnect**

Automatic wifi channel switching to avoid wireless interference



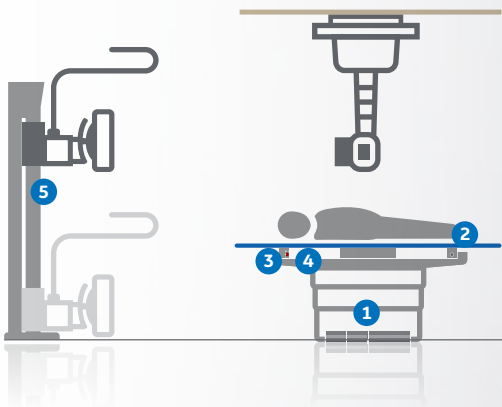
## Live Streaming Patient Video

The Definium 646 HD with live streaming patient video keeps technologists' eyes on the patient for a greater portion of the exam, helping to monitor patient safety and potentially reduce rejects that stem from patient motion.

- User interface puts the camera view front and center
- At the time of image preview, the camera view moves to a smaller area of the screen
- Streaming window can be maximized (1140x1140) or minimized (320x240)
- 720p HD resolution
- 30 frames per second

# Your patient's safety, comfort, and dignity in mind

A bariatric X-ray table capable of supporting up to 400 kg/82 lbs\* that lowers to 50cm/20 inches.



## Extensive Patient Safety Features

1. Double-tap safety foot pedals (table and wall stand)
2. Safety switches to disable motion during patient transfer
3. Two emergency stop buttons
4. Anti-collision and anti-pinch sensors on table, wall stand, and ceiling suspension
5. Electromagnetic brakes securing vertical motion of wall stand

\* Table weight limit: 400 kg/882 lb static and 320kg/705 lb dynamic (elevating).

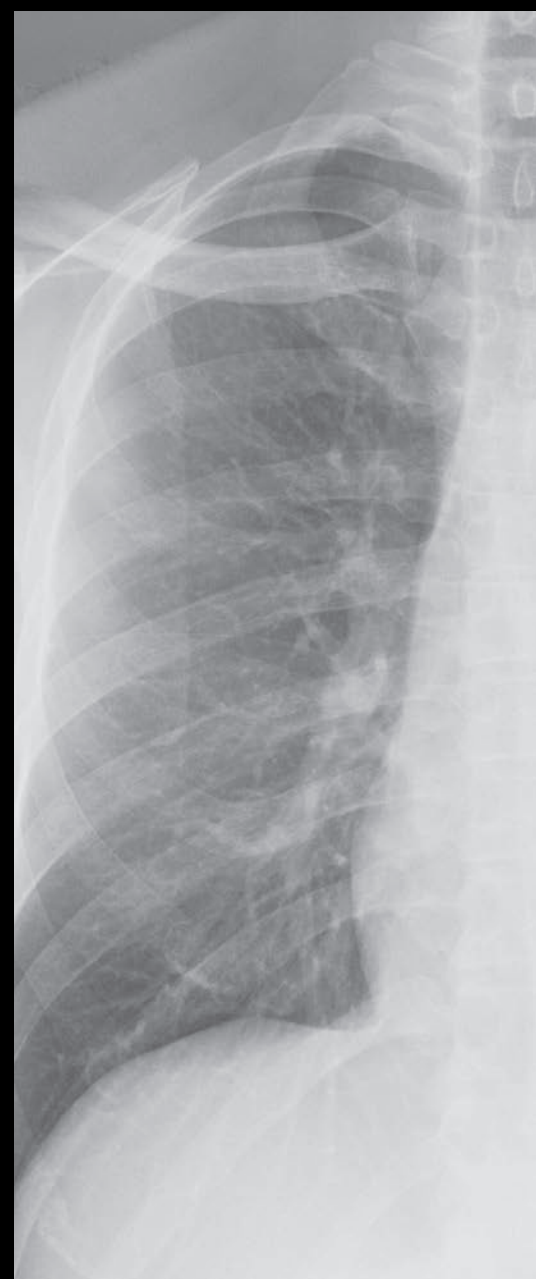
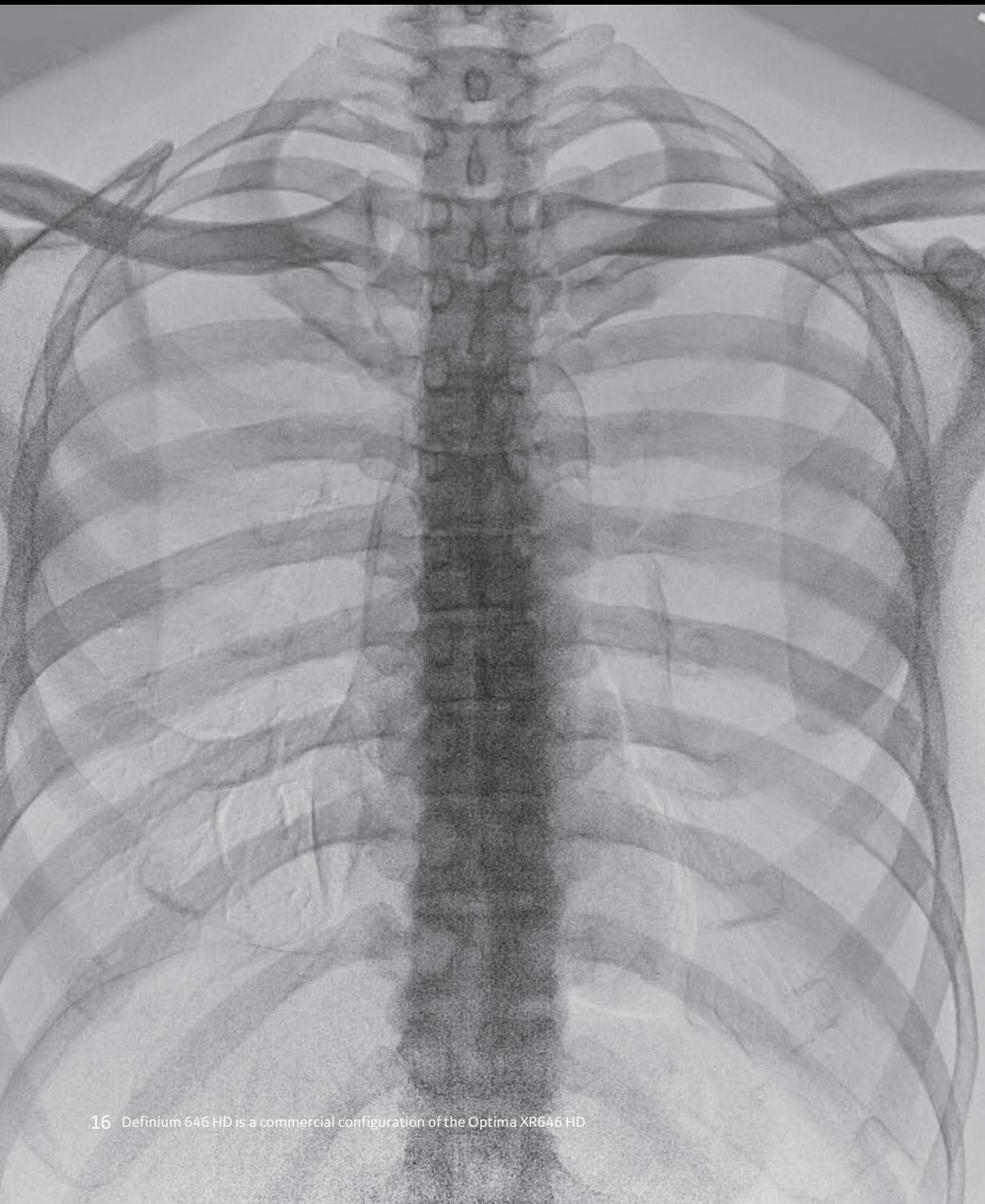






# Dual Energy Subtraction

Dual Energy Subtraction moves beyond image processing to create bone and soft-tissue images based on the physical interaction of the X-rays with the anatomy.





### **Improved assessment of chest pathology**

Dual Energy Subtraction enables physicians to remove the bones from a PA/AP chest image leading to the detection of abnormalities in the soft tissue that may have been obscured by bones in a conventional radiograph.

### **See more than in a standard radiograph**

The bone image is powerful on its own, enabling the radiologist to more clearly visualize calcified information for a given abnormality.

### **Reduced opportunity for patient movement**

Dual Energy acquisition of two images is taken 160 milliseconds apart.

**In less than a few seconds, Dual Energy Subtraction can help to eliminate obstructions from overlying bones while providing additional information on calcifications in chest studies.**

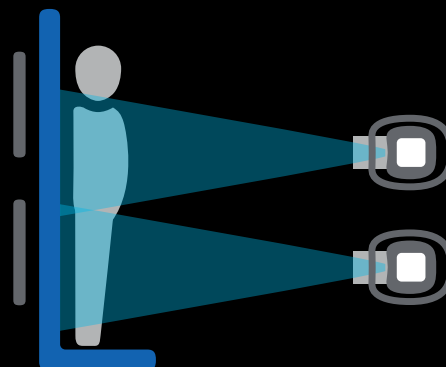






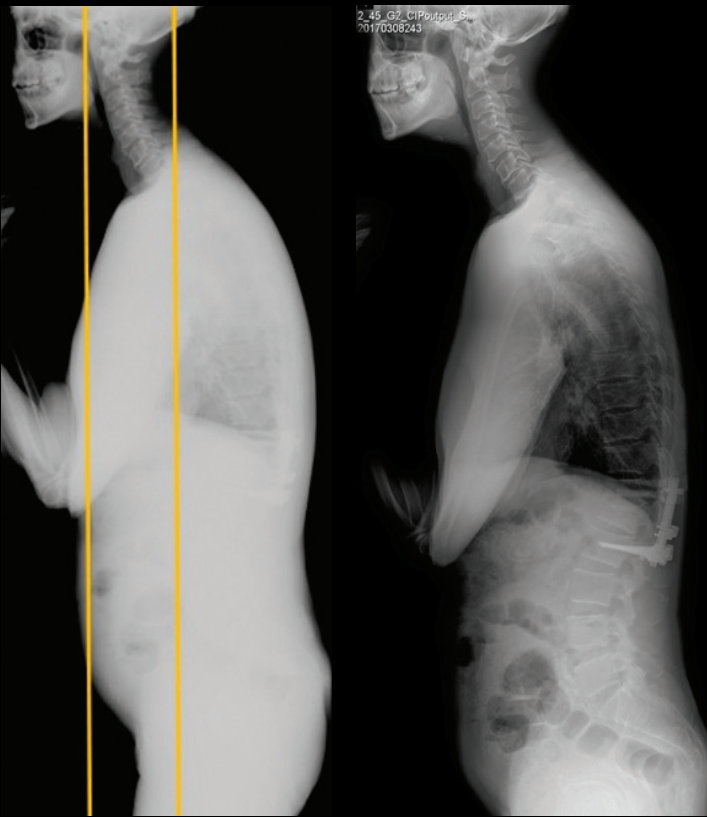
# Auto Image Paste

## Long bone and spine imaging at the wall stand

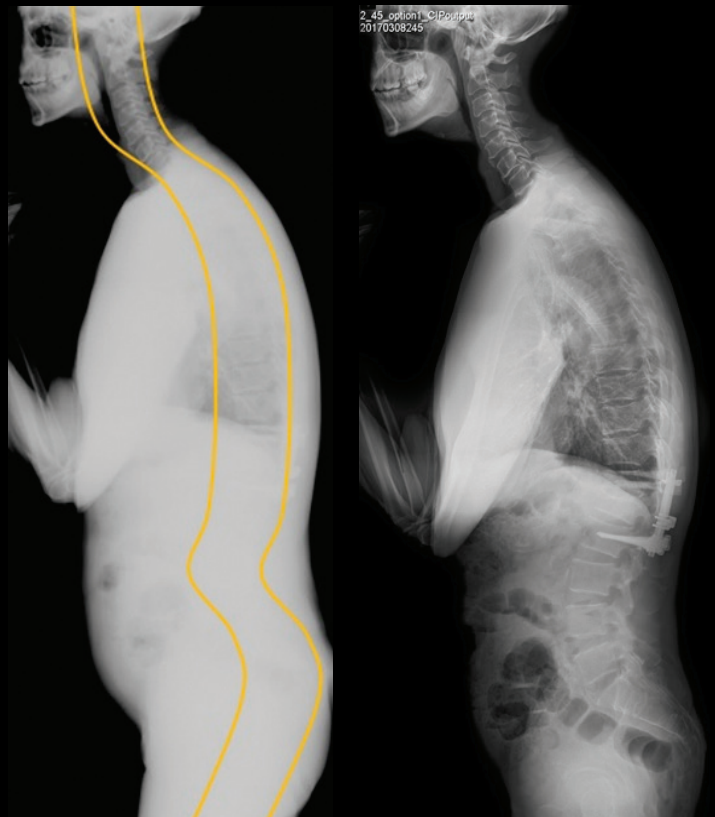


Auto Image Paste  
at wall stand

**Without AutoSpine**



**With AutoSpine**



**Auto Image Paste has been enhanced with AutoSpine**—an intelligent pasting algorithm that follows the contour of the spine for vertical equalization—enabling a natural balance of brightness and contrast along the patient body.







# Data isn't just about looking backwards—it helps you plan the future.

## X-ray Quality Application

**Identifying root causes and enabling action.**

Definium 646 HD is compatible with GE Healthcare's X-Ray Quality Application which is built upon the Edison Platform.

X-Ray Quality Application is an **on-premise enterprise solution** which automatically collects, aggregates, and reports quality assurance data to tackle X-ray rejects, exposure/deviation indices and detector QAP test results. Uncovers the root cause of rejected X-ray exams, paving the way for targeted training, improved efficiency, and reductions in unnecessary patient dose.

## iCenter asset management software platform

**Optimize utilization of your X-ray equipment. Balance workload using the full power of healthcare data analytics.**

**iCenter** empowers you with data and analytics for valuable insights into the utilization and workload of your X-ray assets—to help when making strategic decisions concerning workflow optimization.



# Ready whenever you are

## X-ray service and support

**Our X-ray systems, applications, and support never rest, so you can focus on your patients.**

GE X-ray machines are fully supported by expert field engineers you know and trust. Our advanced service technologies\* help you maximize uptime and ensure your X-ray system is ready when you are.

## InSite™ remote connectivity

Remote diagnostics and troubleshooting for fast resolutions, often without a field engineer visit.

Remote applications assistance with engineer connecting online in real time.

Proactive monitoring, helping detect issues so they can be resolved before downtime occurs.

## Education

**Get the education you and your team need to stay sharp.**

From intensive technical and clinical product training to our extensive continuing education opportunities for technologists and radiologists, we can help you meet your training needs, online and onsite.

\* Service and education offers may vary by country. Check with your local representative.







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May 2020  
JB79330XX