

# Precision™ 180

One system. Designed for all.



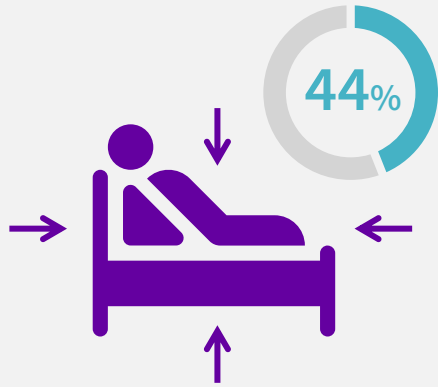
GE HealthCare

Precision 180 is a commercial configuration of the Discovery™ RF180.

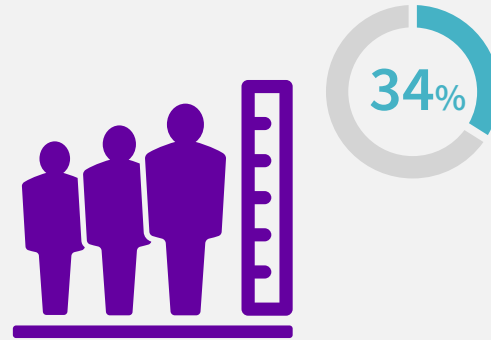
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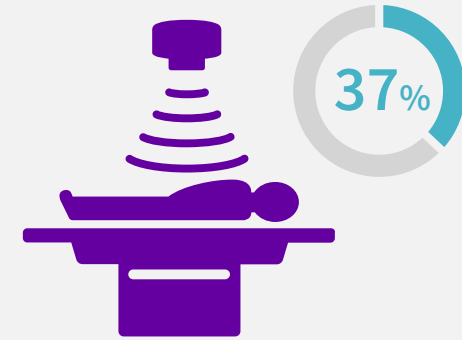
# Your challenges inspired our solution



**Have difficulty  
accessing patients  
from all sides**



**Cannot  
accommodate all  
patient sizes**



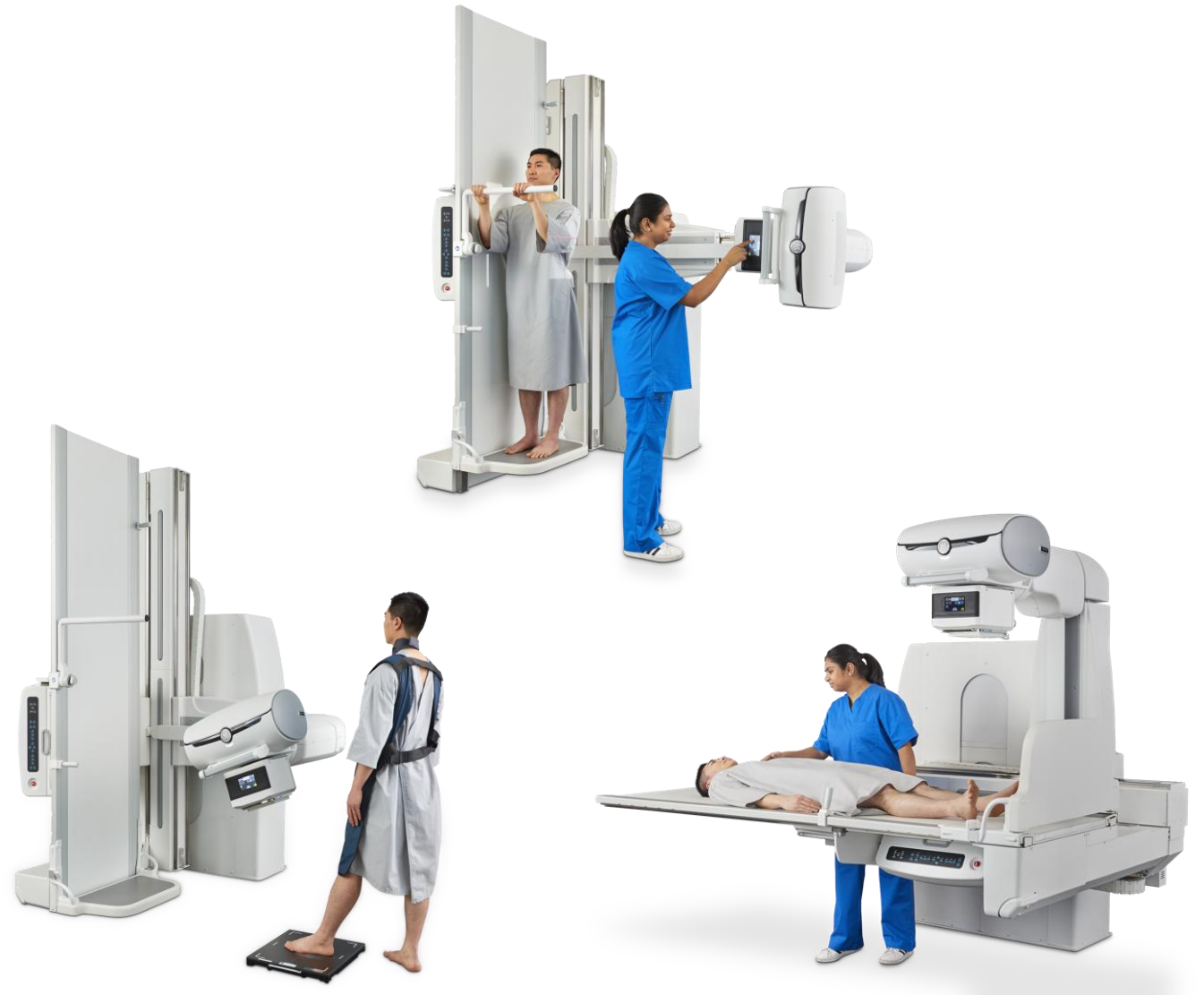
**Could not easily  
position without  
radiation concerns**

# One system. Designed for all.

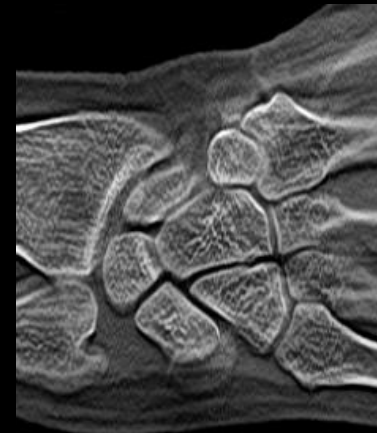
## Precision™ 180

Reinventing X-ray means designing systems that can enhance all outcomes – clinical, operational and financial. Flexible, precise and low dose, **the Precision 180 is a powerful remote imaging system that fosters great diagnostic certainty, all from the first image.**

Simple and intuitive, it provides a streamlined clinical workflow optimized for quality-infused value-based care. It's also one of the only systems that can conduct a wide variety of exams including tomosynthesis, DSA, and stitching, helping ensure unprecedented performance, uptime and fast ROI.



# One system. Designed for all.



Precision™ 180

# Addressing today's R&F challenges

# Addressing today's R&F challenges

## Challenges:



Physical strain



Changing RF environment



Patient safety and experience



Address dose and IQ concerns

## Our solution:



All about easy



All about performance



All about patients



All about confidence

Precision™ 180

# Physical strain

# Addressing today's R&F challenges



## Physical strain

During loading and positioning patients, particularly in heavier and aging populations



## All about easy

Make everyday operation easier for users

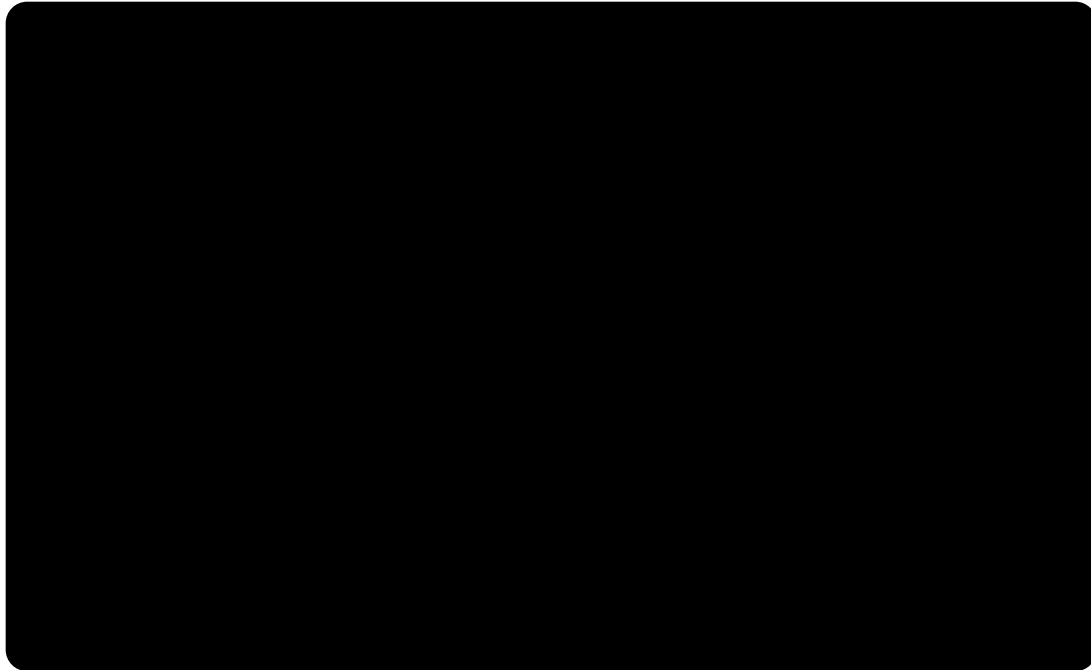


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## Transfer of patients with reduced mobility



**13%** of the population has ambulatory issues<sup>1</sup>



- The table height from 47 to 100 cm (18.5 to 39.4 in) – easy wheelchair transfer, no climbing
- The 53 cm (21 in) rear space allows 2 or 3 handlers to comfortably transfer a patient from a stretcher to the table

1. US Census Bureau. Available at: <https://www2.census.gov/library/publications/2012/demo/p70-131.pdf>  
Accessed on 11 Dec 2017.

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# System positioning from multiple locations

- Additional access from tube head and detector interface for all system movements
- Auto load and 4 auto-positions enable fast preparation for next patient exam

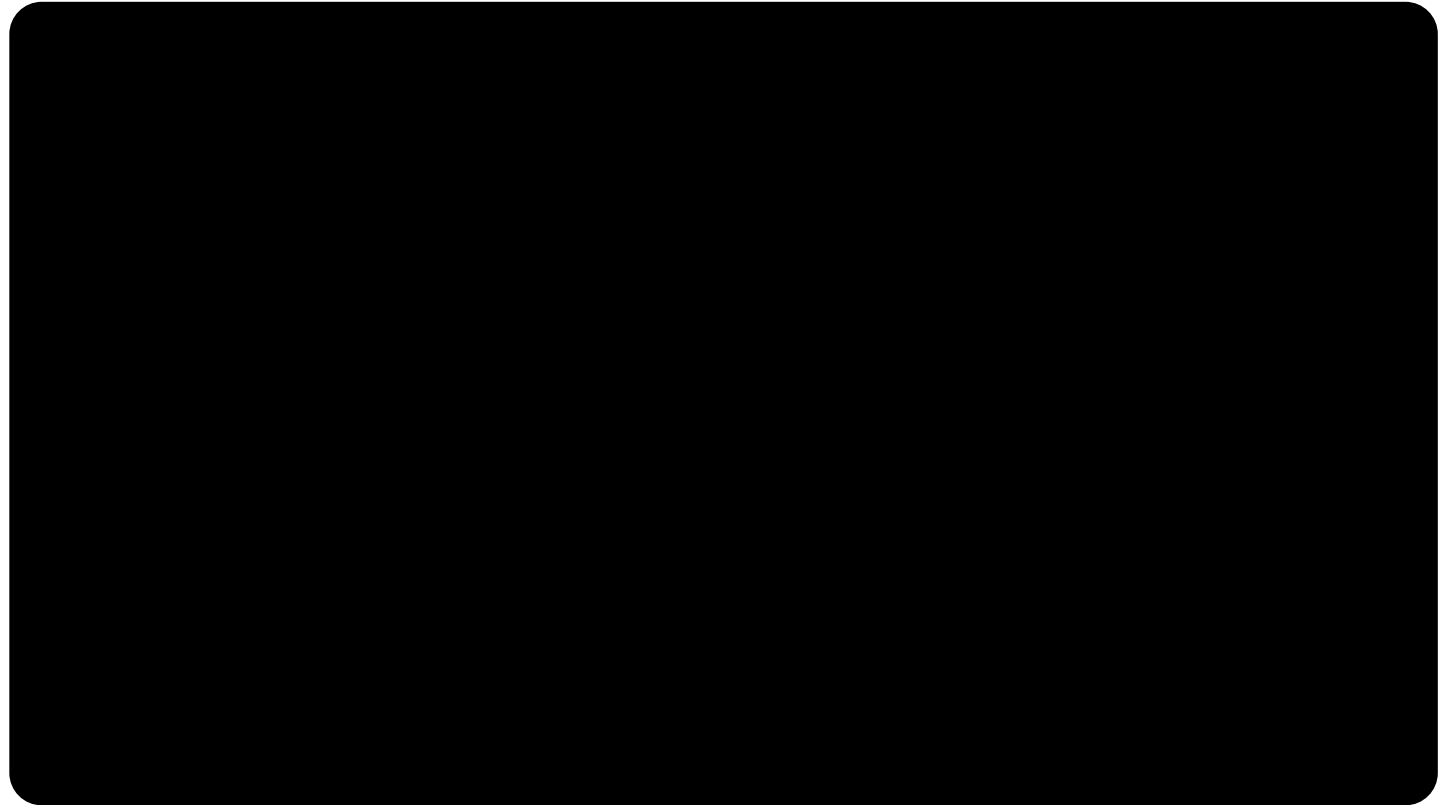
70%

of technologists report ergonomic strain during their career<sup>1</sup>



## Even lower limb exams made easier – with additional coverage

- Thanks to the longitudinal movement, the patient does not need extra steps – they can directly access the footrest (8 cm/3 in from the ground)
- The carbon footrest is lightweight (6 kgs/ 13.5 lb) and easy to position





# Freedom to focus on the patient, not the system

## Redesigned interfaces for speedy use

- Single 23 inch touch screen 2MP monitor
  - Patient selection, protocols and techniques
  - Image visualization/manipulation
  - Networking, DICOM® features
- Common icons and user features to rest of GE HealthCare X-ray portfolio
- New ergonomic joystick control, with dual speeds and permitting multiple movements simultaneously





# Automate workflow pre, during and post exam

<b>Auto protocol assist</b>	Protocol linked to RIS and opens at patient selection
<b>Auto positioning</b>	Table and tube position linked to protocol and achieved by single button push
<b>Auto FOV</b>	Collimation preset within protocol
<b>Autofocus grid</b>	Grid focuses automatically from 115 to 180 cm (42 to 71 in) SID
<b>Auto image process</b>	Pre-assigned image look applied to finalized image in less than 4 seconds
<b>Auto send</b>	Possible to DICOM send after each image/series/exam



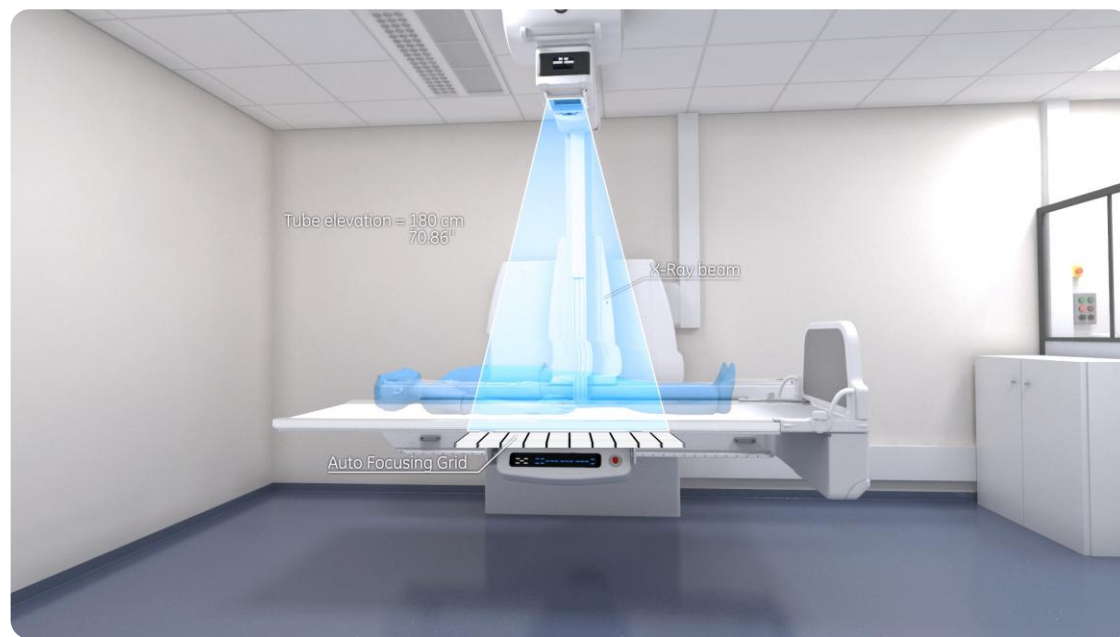


# Automate workflow pre, during and post exam

## Auto positioning



## Auto focusing grid





# Maximized table access and capacity

**Elevating table**



**Free floor space**



**Highest weight capacity**



**Full rear table access**



**Automated movements**



**180-degree rotation**





# In-room solutions: Various accessories to enable in-room operation



Monitor on cart



Radiation shielding



Overhead boom monitor and shielding



Dual foot pedal control



In-room console controls

Precision™ 180

# Changing RF environment

# Addressing today's R&F challenges



## Changing RF environment

Wider range of exams and pressure  
on every room's workload



## All about performance

Maximize type and range of exams  
and uptime



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# Quality fluoroscopy and radiography imaging of entire anatomy

## Basic fluoro

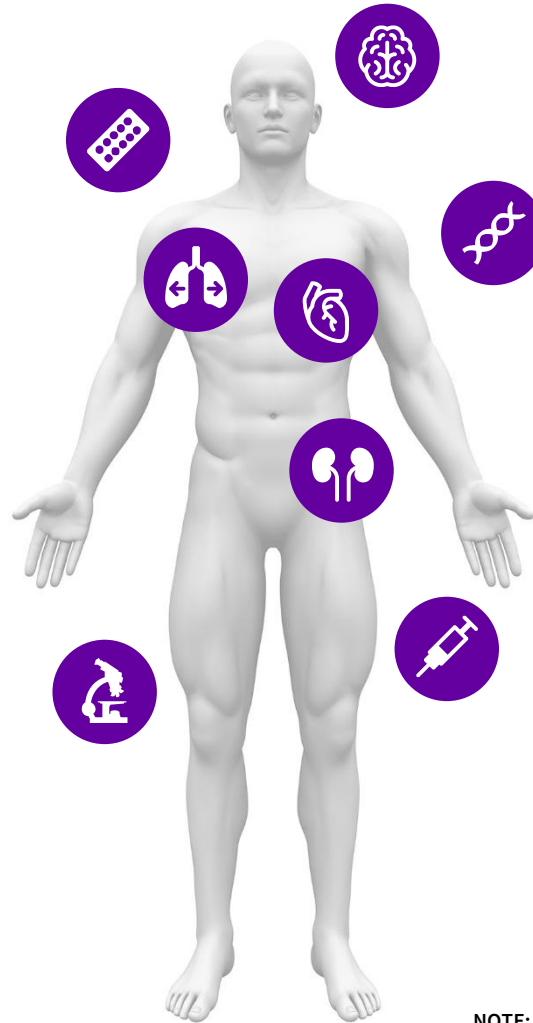
Pulsed from 1 to 30 pps  
Continuous Fluoro  
Up to 8/sec record mode

## Specialized fluoro

Accessories enable myelography,  
gynae, cysto, pediatric, etc.

## DSA

Full set of features, such as roadmapping,  
acquisition of DSA sequences and stenosis  
measurements (optional)



## All radiography exams

Standing feet and knees – Safer and easier  
with longitudinal motorization of table  
Chest exams at recommended 180 cm (71 in)

## Tomosynthesis

High quality multi-slice images  
Up to 64 projections  
Sweep angle: between 20° and 40°

## Auto image paste

Perform horizontal OR weight bearing stitching  
studies without additional equipment

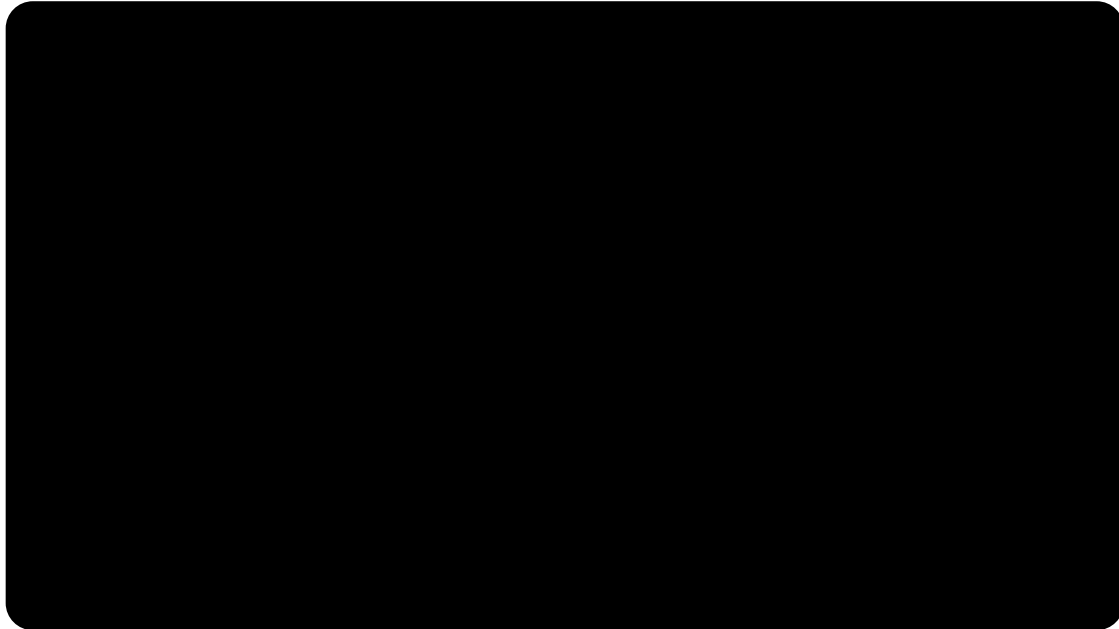
NOTE: Not all features available in all regions – Please check with local representative.

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# Maximize the patient populations you accommodate



## Bariatric patients

- Max. weight **266 kg (586 lb) dynamic** and **323 kg (712 lb) static**
- Table: 80 cm (31 in) wide

## Pediatrics

- Easy access, **specific protocols** including filters, adapted pulse rates and grid removal

## Wheelchair and stretcher patients

- Image directly on chair/stretcher – even without OTS
- **Rear access for transfers**

## Tall patients and those requiring top to toe coverage

- Max. coverage **285 cm (112 in)**

# Quality fluoroscopy and radiography imaging of entire anatomy

**30-40%** of X-rays performed are chest X-rays



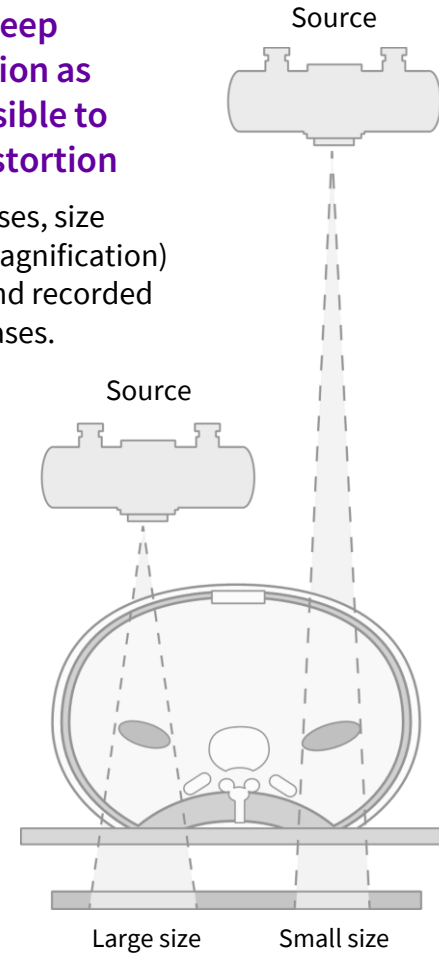
## Guideline recommendations for SID in chest X-ray

American College of Radiology	SID of <b>71 inches</b>
European Guidelines	SID of <b>180 cm</b> (140-200 cm)
Italian Association of Medical Radiology (Associazione Italiana di Radiologia Medica)	Fuoco film distance of <b>&gt;180 cm</b>
UK Clarks Positioning in Radiography	Focus-to -film distance of <b>180 cm</b>
German Medical Association for Quality Assurance (Leitlinie der Bundesärztekammer zur Qualitätssicherung)	Focus detector distance of <b>180 cm</b> (150-200 cm)
French Society of Radiology (Societe Francaise de Radiologie)	Foyer-film distance of <b>180 cm</b> (140-200 cm)

180 cm (71 in) SID is used for chest imaging as it decreases the magnification of heart and records its size more accurately

Goal is to keep magnification as low as possible to prevent distortion

As SID increases, size distortion (magnification) decreases, and recorded details increases.



Schaefer-Prokop, C., Neitzel, U., Venema, H. W., Uffmann, M., & Prokop, M. (2008) 'Digital chest radiography: an update on modern technology, dose containment and control of image quality' European Radiology 18(9) pp. 1818-1830 [Online] Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2516181/>. Precision™ 180 is a commercial configuration of the Discovery™ RF180.

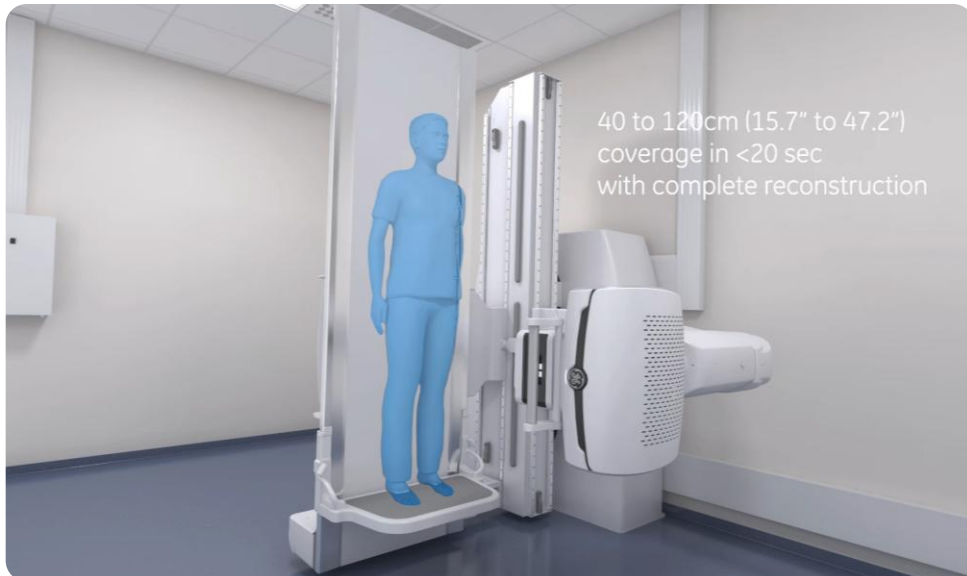
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# Auto image paste with NO additional hardware

## Automatic acquisition of full spine and long bone imaging

- The selection of the anatomy and length (60, 90, 120 cm and 24, 36, 48 in) automatically sets collimator aperture and the number of images
- Perform horizontal or weight bearing
- Automatic acquisition with tube angulation in only 20 sec.



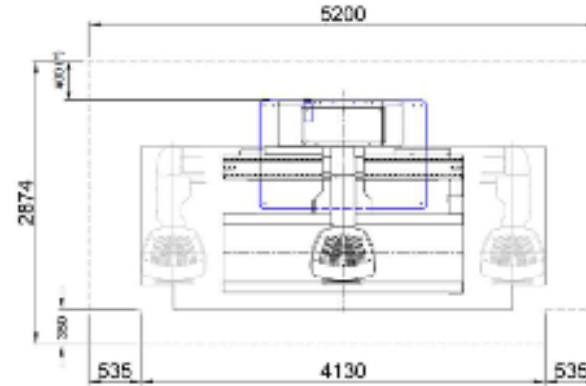
## Post-processing

Automatic seamless image pasting of finalized image can be displayed on the acquisition console monitor, processed, printed or sent over the network.





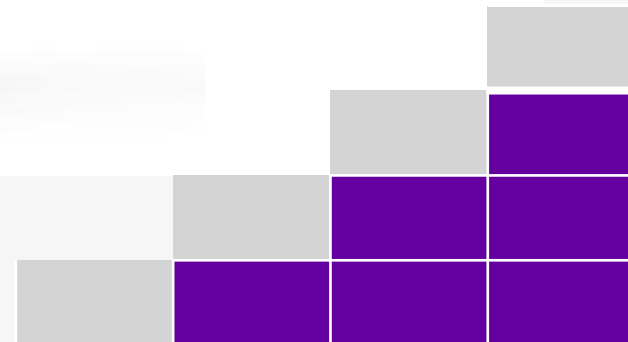
# Financial performance realized



Typical room size =  
23 m<sup>2</sup>/248 sq. ft

Easy to site in most  
existing rooms

Potential to reduce number/variety of systems needed



## Scalable solution

- Basic to advanced needs
- Additional options increase case mix potential (Overhead tube, advanced apps, additional detector...)



# Boost your performance with optional add-ons

## Overhead tube suspension

- Motorized vertical motion and tracking to wall stand
- Touch screen interface and controls
- Manual collimator and additional filters
- SID and angulations display
- Capacitive lock release

## Capacitive lock release

- Non-tilting wall stand
- Optimized grid for wireless detector
- 59 in vertical travel for wide range of applications





# Boost your performance with optional detectors

## Wireless detectors

- Sizes available: small 24 x 30 cm (10 x 12 in) or large 35 x 43 cm (14 x 17 in)
- 2 Wi-Fi detectors capability per system
- Wi-Fi detectors shareability across two Precision™ 180 systems
- 70% DQE – Maximum dose efficiency
- 148u pixel size for fine resolution
- Battery lasts up to 8 hours
- Lightweight (3.5 lbs for 10 x 12 in, 6.2 lb for 14 x 17 in)
- Supports up to 331 lbs
- Complete with batteries and clip-on grid





## Maximize uptime, minimize disruptions

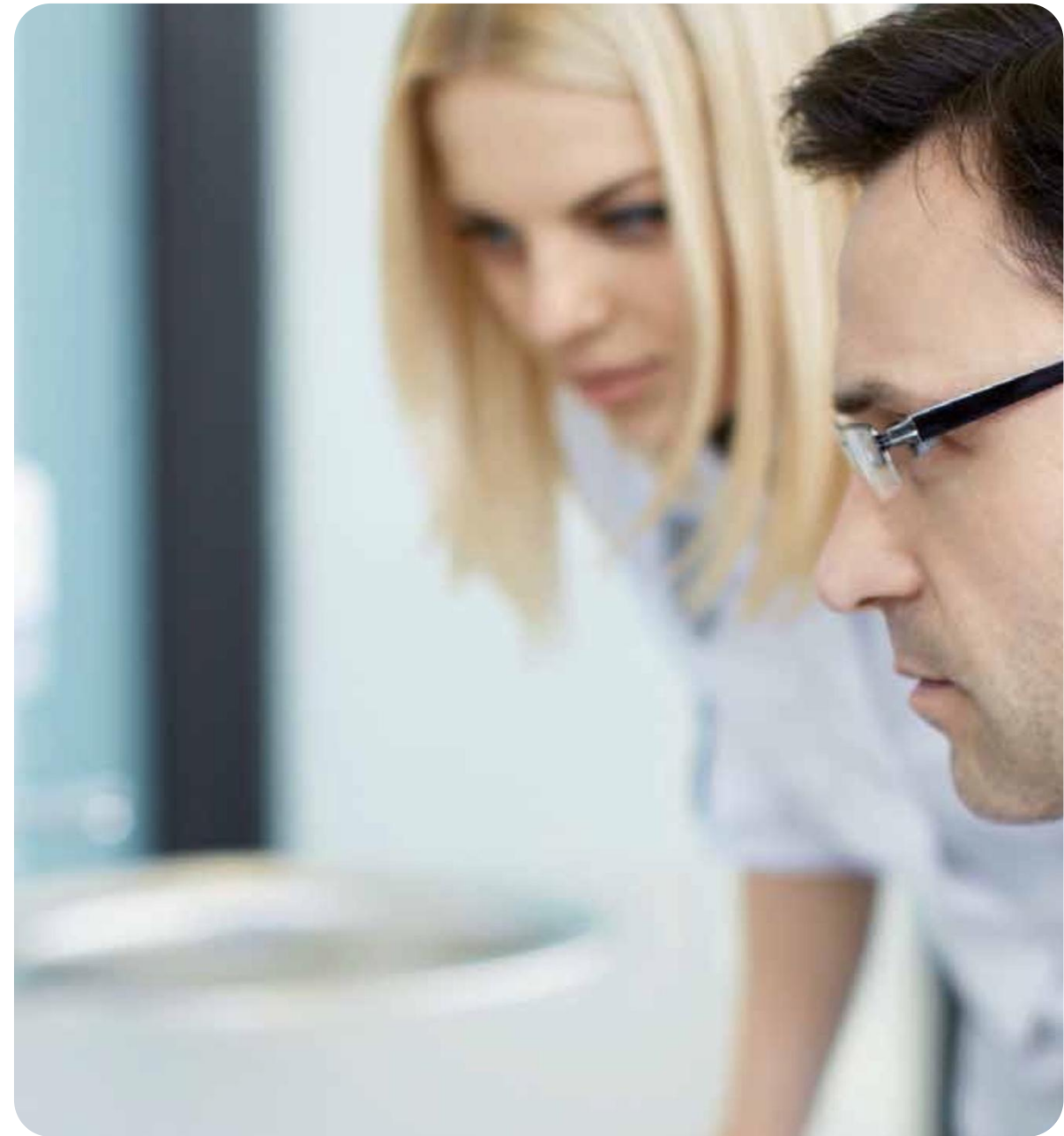
### Remote service, a faster response

- Expert service technicians directly access log history, diagnose remotely, and solve minor problems
- GE HealthCare clinical education teams use the same technology to support training and live protocol modification with manipulators

**79%** of calls are diagnosed and resolved on 1<sup>st</sup> call



*Calculated using GE HealthCare service data on fixed rad systems.*



Precision™ 180

# Patient safety and experience

# Addressing today's R&F challenges



**Patient safety and experience**  
During complex procedures



**All about patients**  
Designed for comfort and ease



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## Addresses more patients for more exams

Up to **49%** more exams enabled with less strain



- Pediatric patients
- Geriatric patients
- Bariatric patients
- Mobility impaired patients
- Stretcher patients and hoists
- Left sided examinations
- Tall patients and exams requiring long coverage



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# Improve the experience for patients with reduced mobility

## Table access simplified

- Table height as low as 47 cm (18.5 in)
- Step on at 10 cm (3 in) in vertical position
- Rear access for positioning

## Non table exams simplified

- Integrated tube works around patients
- Ability to rotate tube manually through 180°

## Never re-position

Coverage of 285 cm (112 in) head to toe exams

**19%** older persons (aged 65 or over) constitute 19% share of the population





# Improve the experience for patients

## Table capacity

- 323 kg (712 lbs) static
- 266 kg (586 lbs) dynamic
- Dimensions: 246 x 80 cm (97 x 31 in)

## Easy access for challenging patients

- Wheelchair and stretcher patients: Image directly on chair / stretcher, even without OTS
- 2- person rear table access for transfers



Bariatric patients have  
**42%** share of the population  
+9% have severe obesity





# Reduce patient anxiety

## Modern system

- Bright and clean design
- Low noise

## Open system design

- For pediatrics – Easy access around table for parents
- For bariatrics – Easy fit for all exams, 80 cm (31.5 in) wide table

## Robust system

- Open your service to patients up to 323 kg (712 lb) and 266 kg (586 lb) without movement restrictions
- Stable system to minimize downtime and patient re-scheduling



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# Address dose and IQ concerns

# Addressing today's R&F challenges



## Address dose and IQ concerns

Optimize and monitor



### All about confidence

Low dose and reporting features

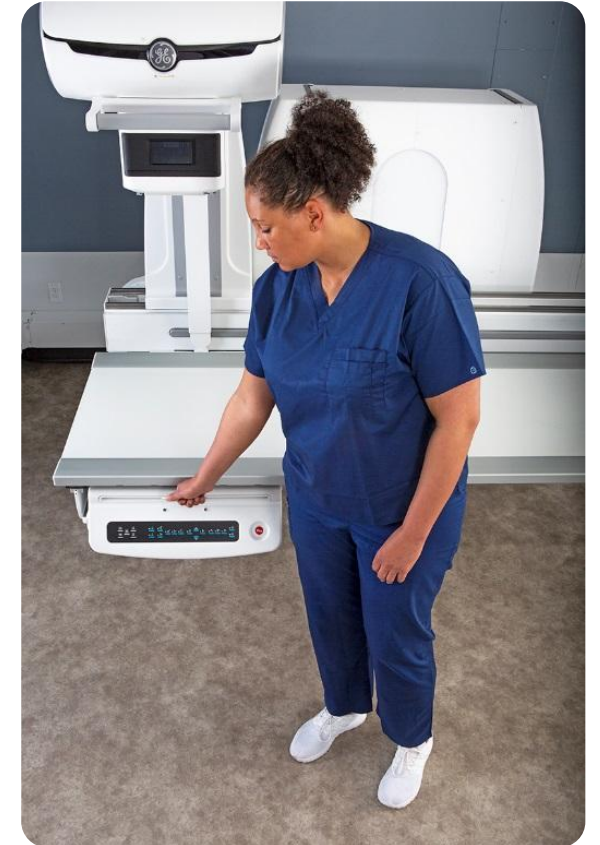




# Adaptable dose without compromise

## Principal dose benefits

- Fluoroscopy as low as 1 frame/sec
- 7 protocol patient sizes – 4 pediatric
- Motorized Cu/Al filters – built into protocol or easily added
- Removable auto-focused grid
- Coupled with 65% DQE detector and GE HealthCare's optimized imaging chain



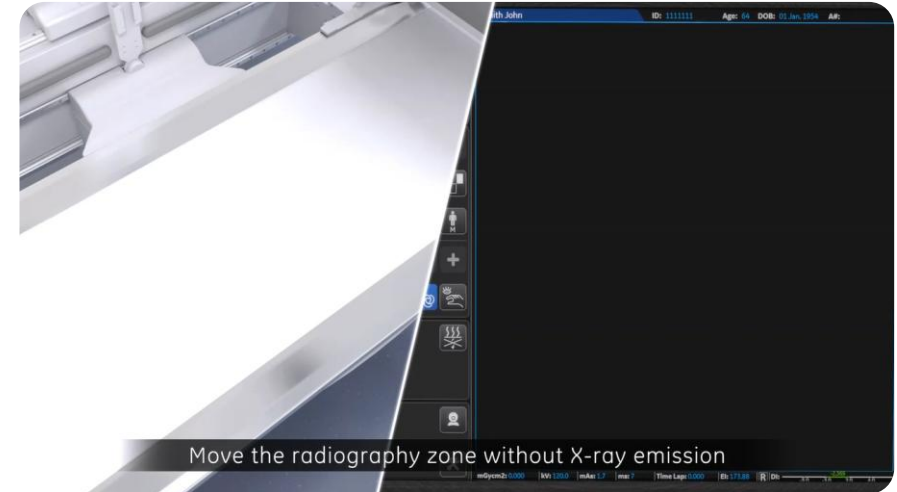


# Position without additional dose

## 3 unique ways to reduce dose

- Video camera (optional)
  - See your position and collimation live from tube head perspective
- Virtual collimation
  - Collimate on last image hold (LIH)
- Virtual scanning (optional)
  - Use LIH to center to appropriate anatomy without additional dose

**37%** of users cite **difficulty positioning** without dose



Remote R&F market research report prepared by IPSOS for GEHC, May 2017.  
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# Tomosynthesis advanced application

## Tomosynthesis, also called digital tomosynthesis (DTS)

- A method for performing high-resolution limited-angle tomography at radiation dose levels comparable with traditional radiography
- Can be used to get better visibility of the normal structures, reducing visual cluttering of the overlying anatomy



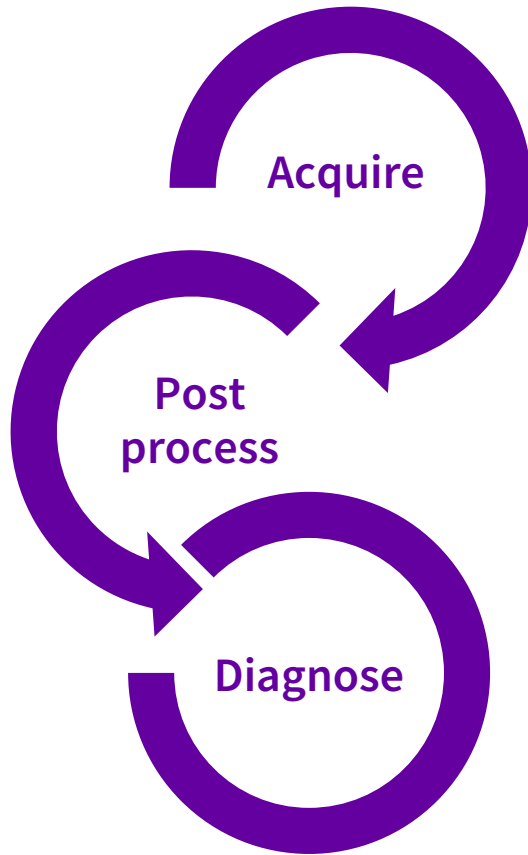
“The Tomosynthesis advanced application is fast and easy to use, encompassing both horizontal and vertical patient positioning needs.”

Nathalie Coeuret, Lead Radiographer, C.S.E –  
Centre d’Imagerie, Paris, France





# Addressing clinical needs with digital subtraction angiography (DSA)



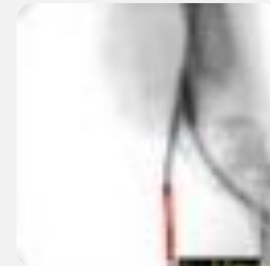
## Acquire

- Two in-room monitors on cart and ceiling
- **Road mapping** with max opacification function
- Pre-programmed automatic sequences with injector start synchronization
- Auto masking
- **Real time subtraction**



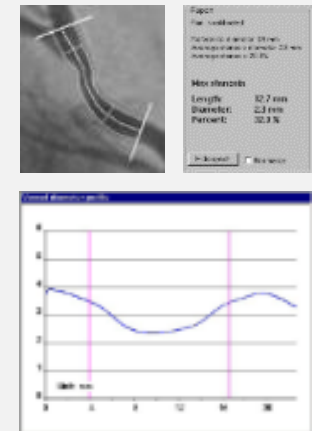
## Post process

- Remasking and pixel shifting
- Landmarking
- Image summation for vascular tree tracing



## Diagnose

- Quantitative analysis SW for vessels studying
- Reference diameter
- Min diameter within section
- Mean stenosis diameter & %



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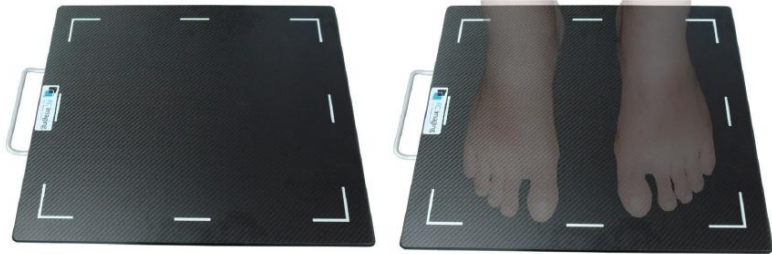
Precision™ 180

# Accessories

# Accessories

## Weight bearing cover

The cover allows 590 kg (1,300 lbs) load applied over 25 cm (9.75 in) area.



# Accessories

## Extender for chest exam

- A longer handle to perform chest exams
- Provides added stability for patient



# Accessories

## Footrest

- Supports up to 266 kg (586 lbs)
- Can be placed at either end of table and at various positions
- Can be used as seat
- Weight = 6 kg (13.2 lbs)



## Handgrips, leg support, arm safety support



# Accessories

## Removable grid

- Auto focusing – no need for short/ long focal length grids
- Removeable
- 12:1 carbon fiber
- 80 lines/cm



## Shoulder rest, compression device



# Accessories

## Compression cone





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