



GE HealthCare

Bone & Metabolic Health

Lunar iDXA[™] from GE HealthCare

A photograph of a gym interior with large windows. In the foreground, a man in a grey t-shirt is running on a treadmill, looking forward. Behind him, a woman in a pink top and another man are also running on treadmills. The scene is brightly lit by natural light from the windows.

Exceptional Precision
and Accuracy

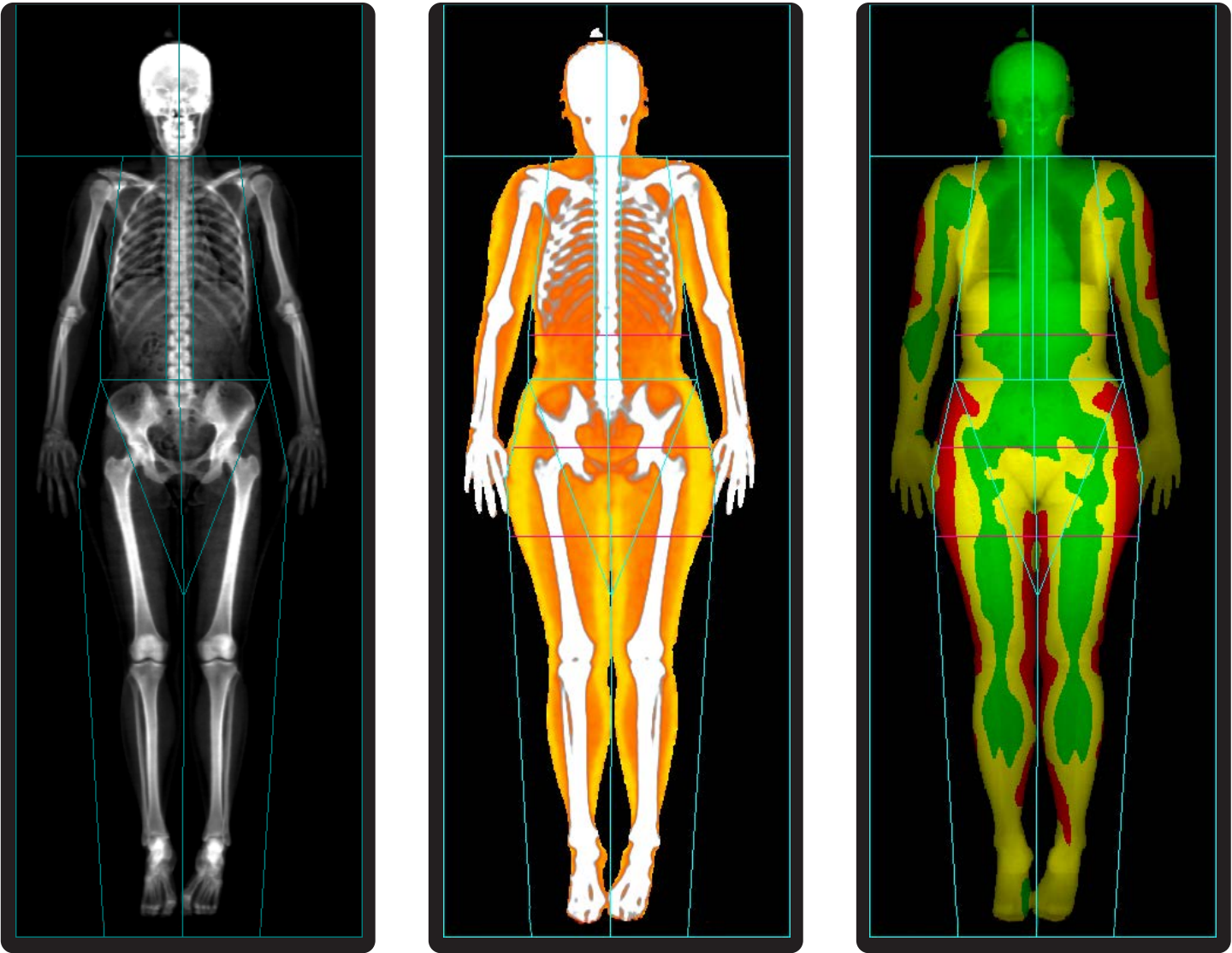
gehealthcare.com/bmh

Advanced DXA technology for bone and metabolic health assessment

Lunar iDXA offers excellent image resolution and clarity with exacting precision, designed to provide you a high degree of clinical confidence across all body types for bone health and body composition.

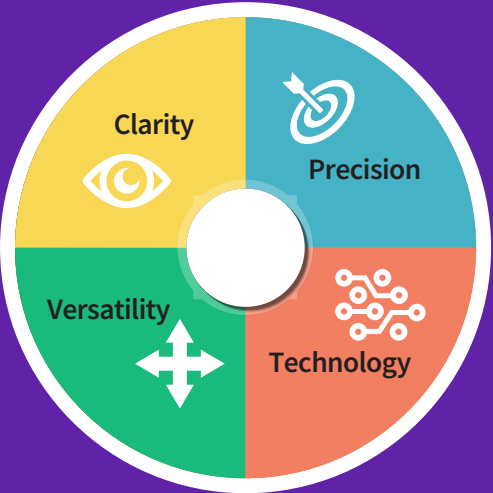


Advanced Insights into Bone and Metabolic Health



See More. Know More.

Research-grade analysis helps you manage patients with confidence. In your search for answers to a patient’s health concerns, information is everything. And with Lunar iDXA, GE HealthCare offers our most advanced system to provide the data and images you need. Whether you’re assessing bone density, fracture risk, metabolic health, pediatric development or sarcopenia, Lunar iDXA gives you a clear view inside the body.

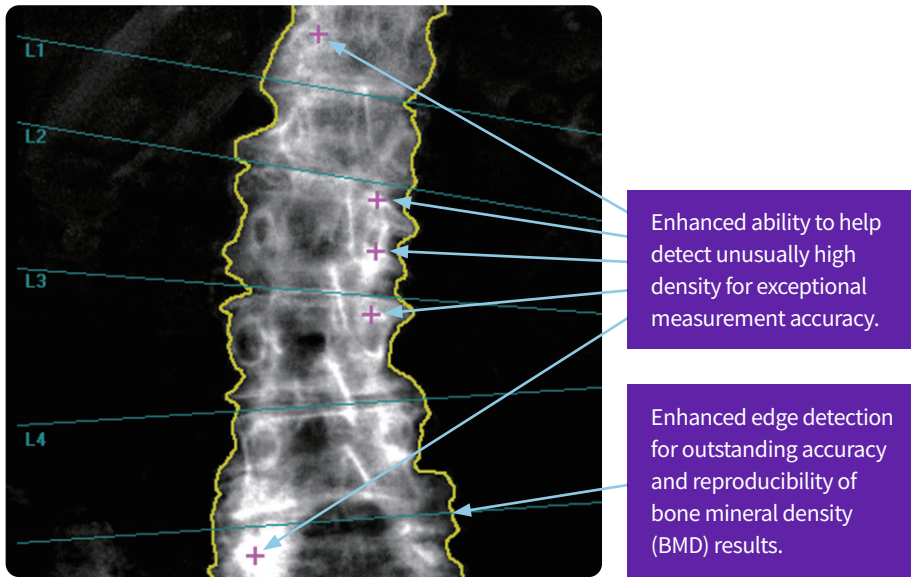


Lunar iDXA for Bone Health

Exceptional clarity.

One in four women over the age of 50 will suffer a vertebral fracture in her remaining lifetime, with severe impact on quality of life.¹

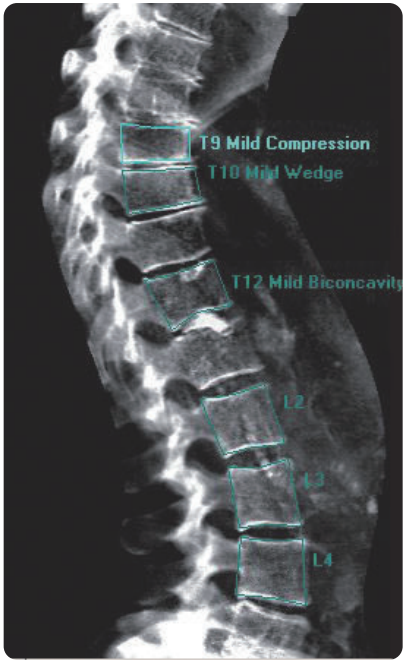
Its vertebral assessment is comparable to radiographs in identifying and classifying deformities concerning etiology, grade, and shape,¹ while using a lower dose of radiation.



High-resolution images bring anatomy into focus.

Lunar iDXA delivers crisp, high resolution images that clearly render the end plates on spine images and identify intervertebral spaces. See proximal femur details and visualize cortical thickness.

Lunar iDXA helps you detect vertebral deformations and estimate vertebral heights.



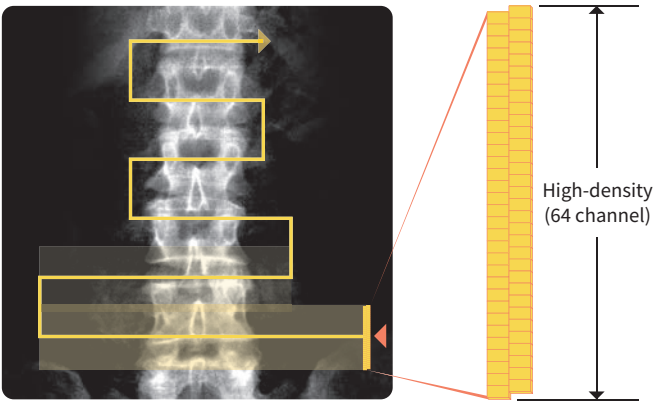
Performance comparison of DXA beam types

	Pencil Beam	Narrow Fan Beam	Wide Fan Beam
Scan time	Long	Short	Short
Bone height measured	No	Yes	No
Magnification effects	No	No	Yes
Off-center distortions	No	No	Yes
Scattered radiation	Lowest	Low	High

Detect small changes nearly twice as fast.*

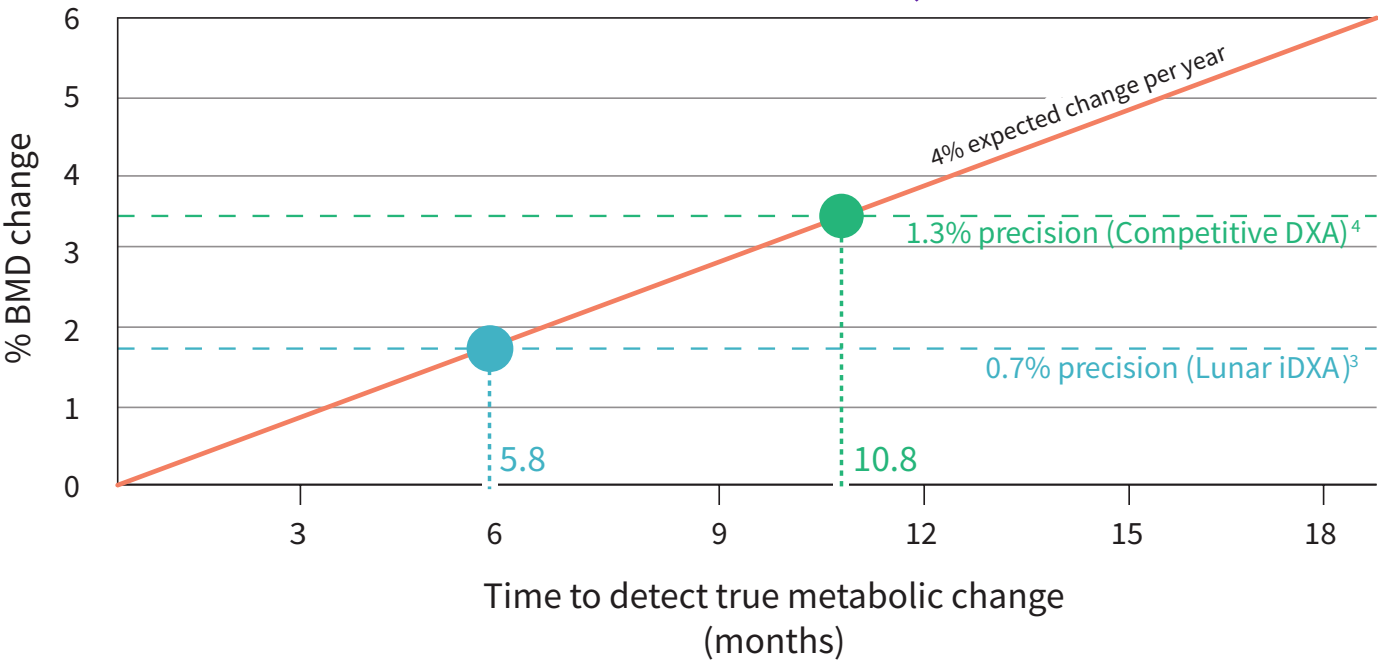
Osteoporosis treatment and other clinical interventions require time to monitor. Lunar iDXA helps with exceptional precision, due to its direct-to-digital detector plus staggered array and narrow-angle fan beam technology with Multi-View Image Reconstruction (MVIR). This prevents magnification error that is present in competitive wide-angle fan beam systems²

What's all this precision worth to you? It enables you to detect statistically significant changes sooner, which can help motivate patient compliance, guide treatment decisions and reduce sample size required for clinical trials.



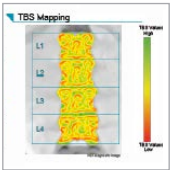
Direct-to-digital detector plus staggered array enhance precision and create high-resolution images.

*In this example, analysis shows that precision with Lunar iDXA allows clinicians to detect true metabolic change as early as 5.8 months, compared with 10.8 months for competitive equipment (95% confidence).^{3,4}

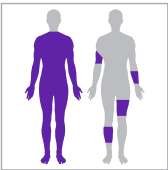


A Few of our Newest Applications

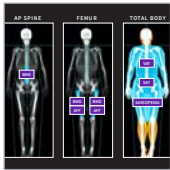
A wide breadth of applications and features



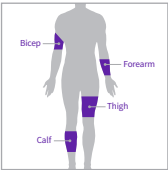
Trabecular Bone Score – Integrated TBS
Provides TBS score based on assessment of trabecular region of bone, including FRAX-adjusted TBS. Includes TBS license. Complimentary 60-day TBS software trial program available for new TBS customers.



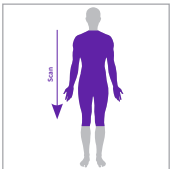
Sports Athletics Package
Includes TBLH (Total Body Less Head) for Adults and Smaller Body Comp – ROI to easily scan and report on specific Regions of Interest. Facilitates study of localized changes in body composition.



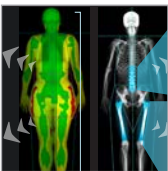
DXAVision™
Provides one unified workflow and comprehensive reporting for BMD, AFF, VAT and SAT.⁷ Designed to improve operator efficiency with a scan time up to 40% faster.⁸ Includes Total Body and Smaller Body (ROI) Composition, Total Body Less Head (TBLH) and Neck-to-Knee for Adults.



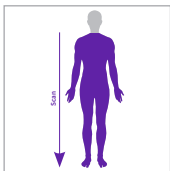
Smaller Body Composition (Regions of Interest)¹⁰
Monitor and report on Regions of Interest (ROI) including upper arm, lower arm, upper leg and lower leg, to study changes in body composition in these regions.



Neck-to-Knee for Adults⁹
Performs a faster scan by omitting head and lower legs, providing an estimate of total body composition.



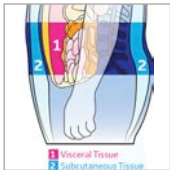
Advanced Analytics
Provides deep BMD and Body Composition insights with custom equations, metrics and ratios based on 200+ DXA bone and body composition parameters. User-defined classification thresholds, trending and reporting.



Total Body Less Head (TBLH) for Adults¹⁰
Including the skull can mask changes occurring in other areas of the skeleton; this tool automatically performs a scan from the neck down. Can also get TBLH results for scans with the head included.



Customizable Thresholds (AFF and VAT)^{12,13,14}
Enables setting of custom thresholds to search for correlations: between "beaking" and the probability of AFF, and between VAT and the probability of metabolic disorders.



CoreScan with VAT and SAT Results¹¹
CoreScan estimates Visceral and Subcutaneous Adipose Tissue (VAT and SAT) mass, volume and area within the android region. Values can be displayed in user-defined statistical formats and trends.



Composer Reporting
Provides default style sheets, which can be edited using an intuitive WYSIWYG interface to quickly produce customized reports and templates.

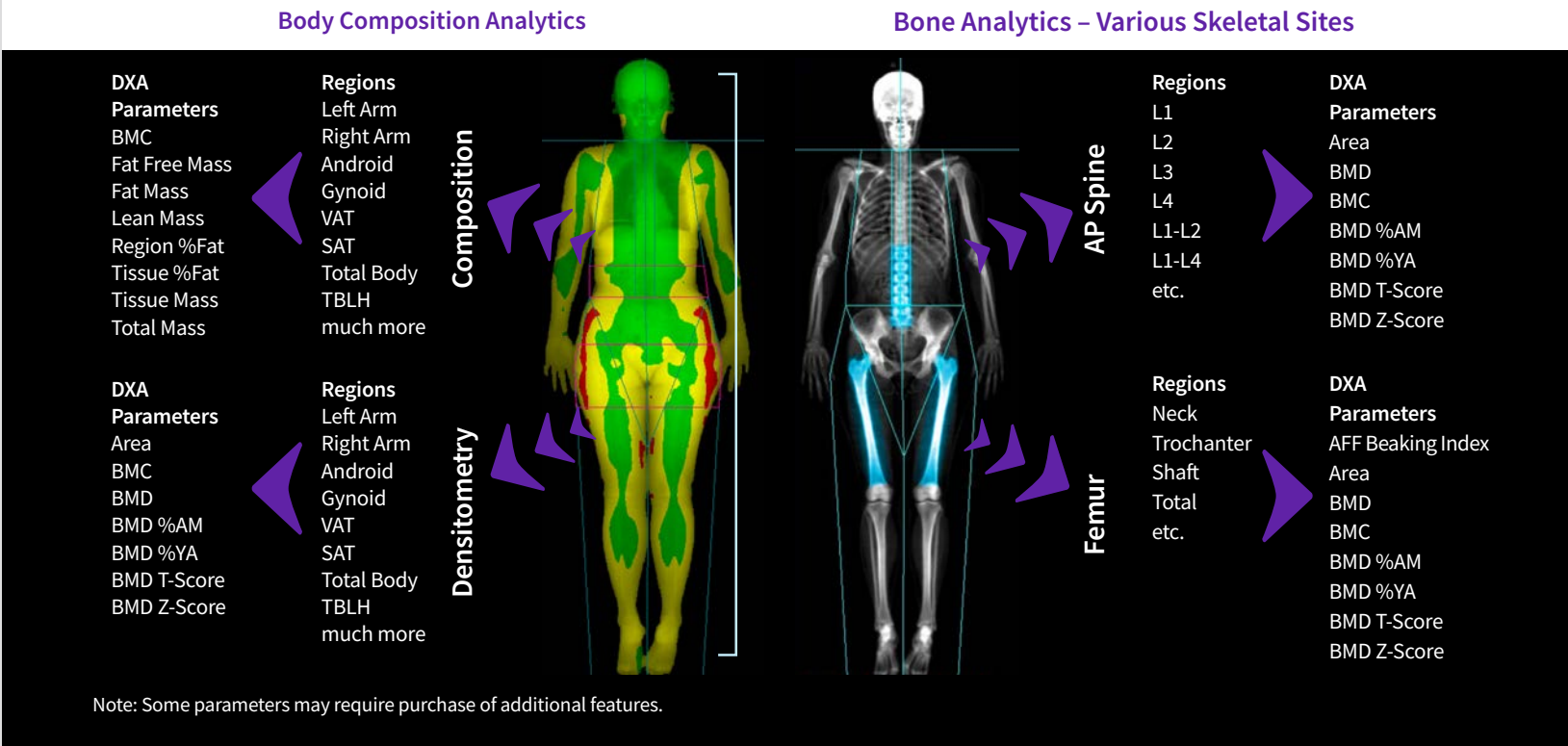
Advanced Analytics Power Deeper Insights

Create your own custom equations and ratios

Analyze data within your DXA: create custom ratios, make predictions, and pin metrics pinned on the built-in dashboard to track changes over time.

More than **200** Bone and Body Composition Parameters for Analysis.

Sample Metric = $\text{VAT Mass} / \text{Total Fat Mass}$



Custom Regions of Interest (ROI) can also be used with Advanced Analytics feature. Metrics and trending can be retrospectively performed on past data as well.

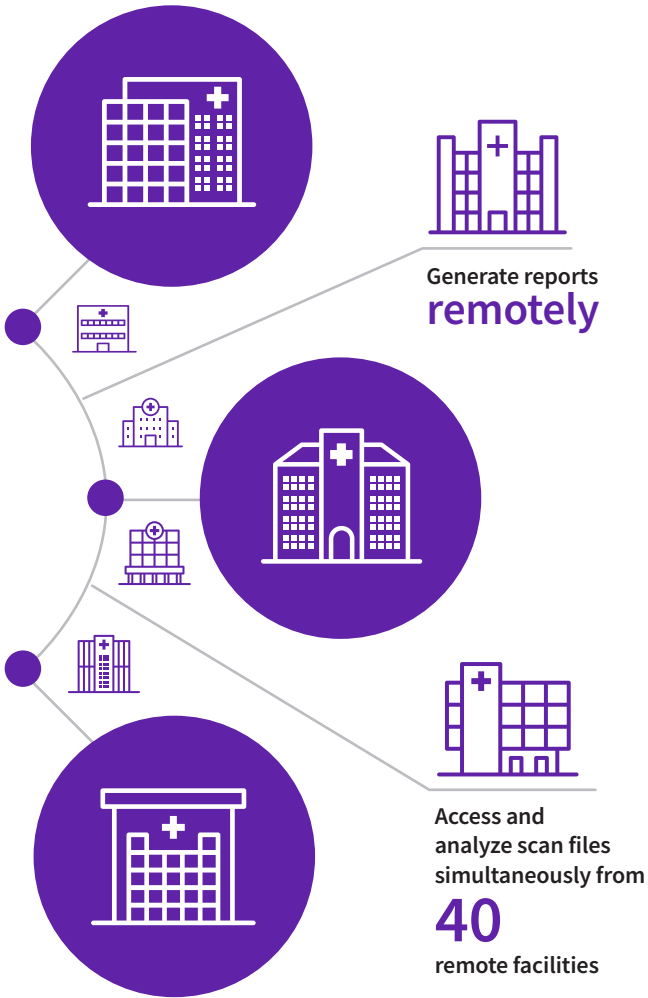


Multi-User Database with a Secure Platform

Acquire and save images from multiple GE HealthCare densitometers to a common database.



Windows® 10 Compatibility



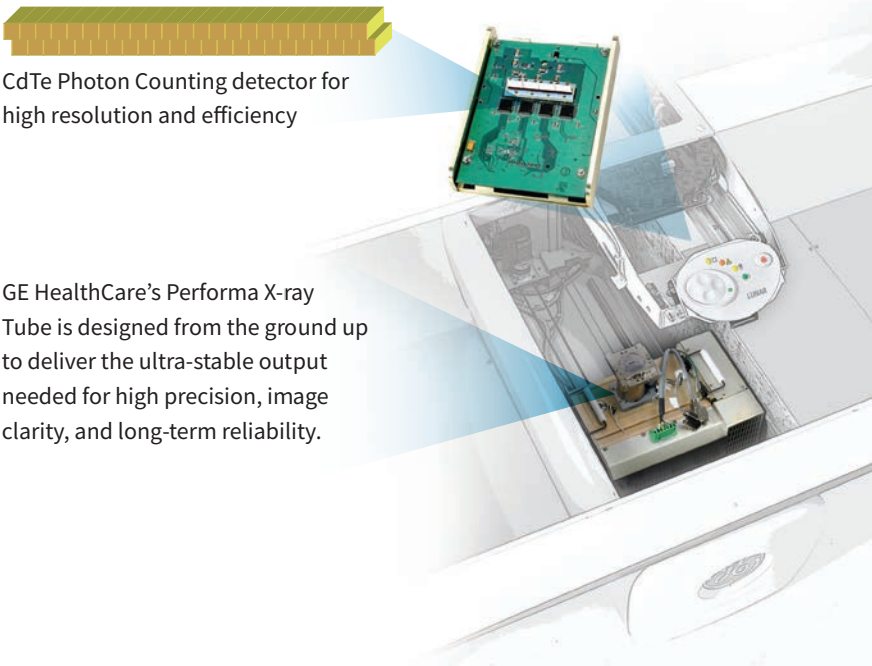
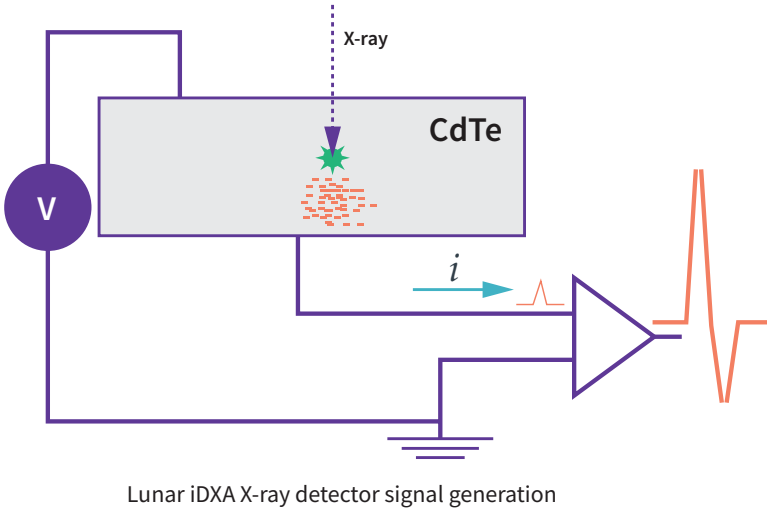
Advanced security features protect your data.

Security Feature	Provided Benefit
IPv6 for DICOM and HL7	Communication protocol integrating IPSec for better security during data exchange
FIPS 140-2 Encryption	Federally compliant encryption standard that protects patient exam files using 256-bit encryption
Audit Trails	Logs information related to: • Software configuration and user access changes, destination IP addresses • Database events including authentication, patient modification/deletion • Events supported by the DICOM Audit Trail Profile
TLS for DICOM®	Provides security at the transport layer of a DICOM transaction by using encryption and node authentication. TLS is an updated, more secure, version of the SSL protocol.

Advanced Technology. Incredible Results.

Lunar iDXA uses innovative photon-counting detector technology that provides near-radiographic image quality.

These detectors utilize solid-state Cadmium Telluride (CdTe) crystals to absorb the x-ray energy, which immediately release electrons from their atoms (i.e. direct conversion). An applied voltages pushes the electrons out of the CdTe crystal, effectively creating a current pulse with a magnitude proportional to the x-ray energy. The signal is boosted and finally identified as low or high energy.



GE HealthCare’s Performa X-ray Tube is designed from the ground up to deliver the ultra-stable output needed for high precision, image clarity, and long-term reliability.

Patented Narrow Fan Beam Scan
Combining the features of pencil beams and wide fan beams, Narrow Fan Beam technology offers a short scan time with reduced magnification error (inherent to wide-angle fan beam scans).¹⁵

Low-Dose Photon Counting Technology
Dose-efficient photon counting detector technology lowers dosage to the patient.¹⁵

Innovative SmartScan™
Our SmartScan technology reduces scan time and X-ray dosage by identifying bone regions after each transverse sweep and estimating where to begin scanning on the subsequent sweep.¹⁶

K-edge Filter
An exceptional “K-edge filter” that creates a dual energy beam and absorbs the X-rays in the middle energy range and protects the patient against unnecessary exposure.

Multi-View Image Reconstruction (MVIR)
By performing multiple transverse sweeps across the site of interest, MVIR accurately determines bone-height above the tabletop, minimizes magnification errors and provides excellent precision and accuracy.

Low Scattered Radiation
Narrow-fan beam technology results in low scatter radiation in comparison to wide-angle fan beam systems.¹⁷

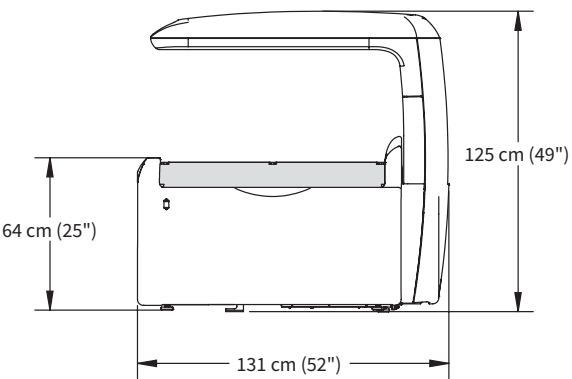
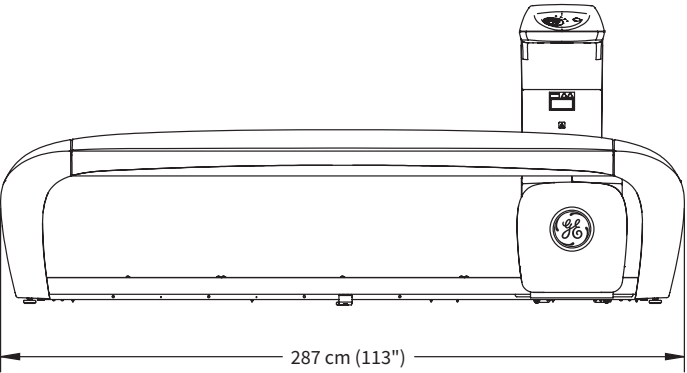
Clinical Application

New v18 Applications

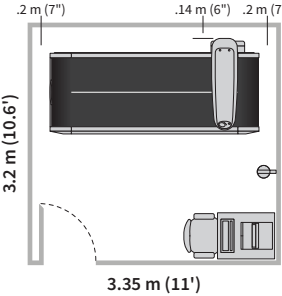
✔ Standard ● Optional ✕ Not Available	Lunar iDXA with Pro SW Package	Lunar iDXA with Advance SW Package
AP Spine	✔	✔
Femur/Dual Femur	✔	✔
Forearm/Non-seated Forearm	✔	✔
Total Body BMD	✔	✔
FRAX® Fracture Risk Tool ⁵	✔	✔
DVO Fracture Risk Tool ¹⁸	✔	✔
Multi-User Database (1-3)	✔	✔
ScanCheck	✔	✔
Practice Management	✔	✔
Composer	✔	✔
OneScan	✔	✔
OneVision	✔	✔
Pediatric – AP Spine	✔	✔
Pediatric – Femur	✔	✔
Pediatric – TB (Birth to 20 YO)	✔	✔
Total Body Comp	✔	✔
CoreScan ⁵	✔	✔
Quick View	✔	✔
DVA (Includes: LVA, APVA, Lateral BMD)	●	✔
Advanced Body Comp ¹⁹	●	✔
Orthopedic Hip	●	✔
Advanced Hip Assessment	●	✔
Orthopedic Knee	●	✔
Hand	●	✔
Multi-User Database (Up to 40)	●	✔
Spine Geometry	●	✔
Atypical Femur Fracture	●	●
Sarcopenia ⁵	●	●
Small Animal	●	●
Integrated TBS 3.1 ²⁰	●	●
DXAVision™	●	●
Sports Athletics Package	●	●
Advanced Analytics Full	●	●
Advanced Analytics Bone	●	●
Advanced Analytics Body Comp	●	●

Specifications

Scanner dimensions:



Minimum room dimensions²¹:



The Lunar iDXA is designed to have minimal impact in both installation requirements and operating space. The Lunar iDXA is shown in a 3.35 m x 3.2 m exam room with the included workstation. No operator shielding or special site preparation beyond a dedicated 100-127/200-240 VAC duplex outlet is usually required.²² Place outlet near the desired location of the operator’s console.

Scanner table specifications:

Scanner size2.87 m x 1.31 m x 1.25 m (113" x 52" x 49")
Scanner weight..... 353 kg (778 lbs)
Patient table top height..... 64 cm (25")
Maximum patient weight supported..... 227 kg (500 lbs)
Drive system stepper motor with reinforced drive belts
Active scan area..... 198 cm x 66 cm
Start position indicator.....cross laser light (class II, <1 mW power)
Pad washable patient mat, includes paper roll dispenser
Attenuation of patient support table<1.2 mm AL
Communication cableEthernet
Scanner leakage currentmeets IEC 60601-1 safety standard

Connectivity:

- Teledensitometry²³
- DICOM® interface
- HL7 interface
- SQL Server

Detector specifications:

Detector high-definition, direct-digital detector

Computer specifications:

Processor Intel® Core™ i3
Operating System Windows® 10 IoT 2021 LTSC
Memory..... RAM 8 GB
Storage..... 1 TB NVMe SSD
Optical Drive DVD-RW SATA
Monitor24" SVGA (min resolution 1920 x 1080 32-bit color)
Archive Drive (optional)1 TB USB
Document viewing Adobe® Reader® DC
Browser..... Microsoft Edge
Connector RS-232 Serial Port
Printer..... Windows®-compatible

Environmental specifications:

Power 100-127 VAC 50/60Hz 20A dedicated circuit
..... 200-240 VAC 50/60Hz 10A dedicated circuit
Consumption idling 40VA, scanning 525VA
Distortion.....sinusoidal waveform, less than 5% THD
Humidity 20%-80% non-condensing
Room temperature 18°C-27°C (65°F-81°F)
Scanner heat output..... idling 150 BTU/hr, scanning 1800 BTU/hr
Console heat output..... approx. 200 BTU/hr with 24" monitor
Ventilation.....all cooling vents must remain unblocked
Dust, fumes, debris install system in clean, ventilated area
Altitude.....tested up to 4,000 m

References:

1. Armbricht G, Felsenberg D. Diagnostic of vertebral deformities: Comparison of VFA (GE iDXA) to conventional radiographs. ASBMR 2009.
2. IDXA precision (Total Femur BMD). Ergun DL, Wacker WK, Zhou QQ, et al. Performance of the Lunar iDXA. Presented at the 17th International.
3. IDXA precision (Total Femur BMD). Ergun DL, Wacker WK, Zhou QQ, et al. Performance of the Lunar iDXA. Presented at the 17th International Bone Densitometry Workshop, Kyoto, Japan, November 2006.
4. Hologic Delphi precision (Total Left Hip BMD). Shepherd JA, Fan B, Lu Y, et al. Comparison of BMD precision for Prodigy and Delphi spine and femur scans. Osteoporos Int. 2006;17:1303-1308.
5. Not available in Japan.
6. S.M. Hunt et al, "Changing Bone Densitometers in Clinical Practice: Effect on Precision Error", Presented at the American Society for Bone and Mineral Research Annual Meeting, September 23-27, 2005, Nashville, TN, USA.
7. Requires purchase of AFF application and Corescan (for VAT and SAT) application.
8. Data on file with GE Healthcare, April 2019.
9. Requires DXAVision.
10. Requires DXAVision or Sports Athletics Package.
11. Not available in Japan.
12. Requires Advance Analytics.
13. Customizable Threshold for AFF requires AFF Application.
14. Customizable Threshold for VAT requires CoreScan application.
15. Data on file with GE Healthcare DOC2394474.
16. Data on file with GE Healthcare, March 2019.
17. Data on file with GE Healthcare, January 2017.
18. German speaking countries only.
19. Bone-Lean-Tissue Color Coding, Metabolic Results (ICW, ECW, TBW), Resting Metabolic Rate, Composer Style Sheets – Body Sports Medicine Segmental, Body Patient Weight Loss.
20. Consult for market availability.
21. A small room kit with isolation transformer may be required. Please refer to local regulations.
22. Consult and follow local X-ray regulations.
23. Additional hardware may be required for fax capabilities.