

GE Healthcare

Lunar iDXA™

intelligent DXA



GE imagination at work

imagination at work

it's what GE Healthcare is all about



incredible
innovative
intuitive
integrated
intelligent

GE Healthcare is dedicated to building the world's most imaginative, most productive, most cost-effective tools and technologies to help physicians assess and diagnose osteoporosis. Proud manufacturer of the industry standard Lunar Prodigy™, today GE Healthcare takes an enthusiastic leap into the future of bone health and total body wellness with the paradigm-shattering Lunar iDXA™. The Lunar iDXA™ is a prime example of GE Healthcare's four-part goal. Like all of our quality products, it's the easiest to use, it offers the best precision and accuracy, it incorporates tomorrow's technology today, and it comes with our world-class support.

All i's are upon it

Lunar iDXA™. The incredible, innovative, intuitive, integrated, intelligent DXA

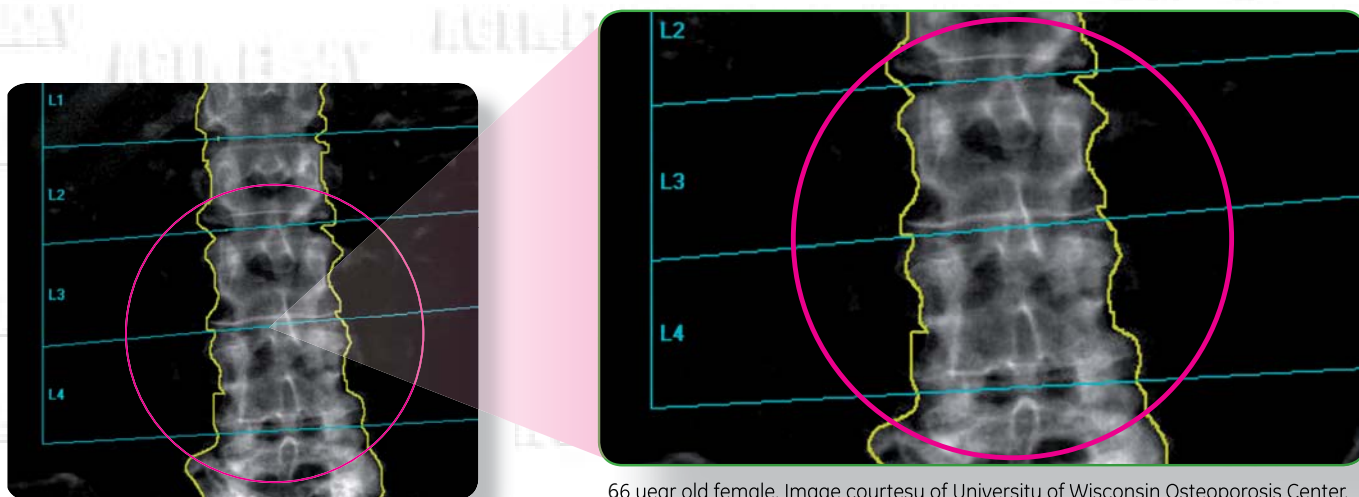
Introducing Lunar iDXA™, the intelligent DXA system. What makes it intelligent? A combination of four smart factors converges to make this the most comprehensive BMD system on earth.

Lunar iDXA™ produces unprecedented results thanks to its incredible images — with the best precision and accuracy, automated features that make operation intuitive, integrated world-class support; and innovative technology. With an eye firmly on the future, Lunar iDXA™ intelligently delivers this and more by promising you clinical confidence, reliability, and productivity.



Precision you can see

for detecting bone change faster



66 year old female. Image courtesy of University of Wisconsin Osteoporosis Center.

6-Point Calibration ensures precision & accuracy in BMD and soft tissue

The Lunar iDXA™ is up to twice as precise and accurate as competing systems thanks to an exclusive 6-Point Calibration technique. When assessing bone density, soft tissue values should be subtracted to ensure only BMD is measured. Therefore, it's critical to take into account the entire body – bone, fat, and lean tissue. Most systems today do not calibrate across the full range of BMD and fat/lean values, rather they only calibrate to average patients. This can result in an inaccurate assessment. The Lunar iDXA™ performs a 6-Point Calibration with normal, osteopenic, and osteoporotic BMD values, as well as lean, normal and obese values. The result is more clinical confidence than ever before.

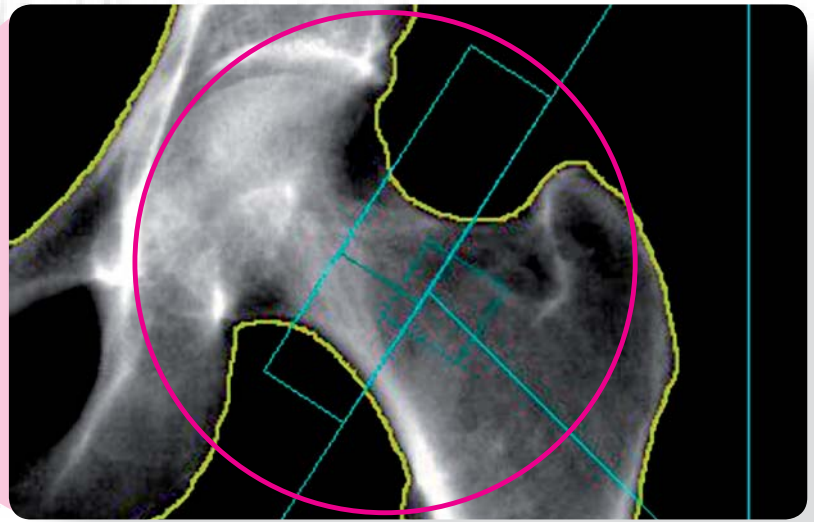
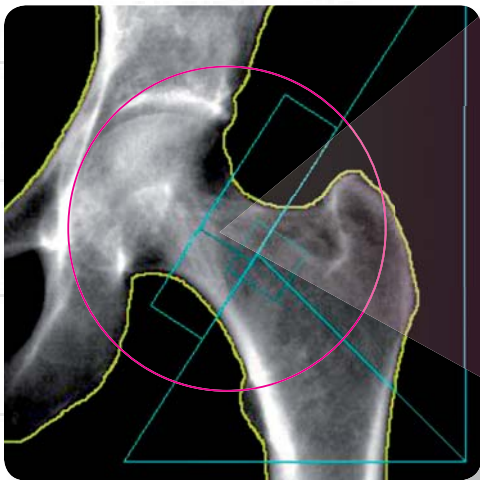
Higher precision means better patient compliance

You know that it can be challenging to motivate patients with bone deficiencies to stay on their treatment plans. Osteoporosis treatment requires time, and feedback on progress can take years.

Now, with the introduction of the new Lunar iDXA™, change can be detected faster than ever before – in fact 2 times faster than competing systems. You see, GE Healthcare's breakthrough **CZT-HD** detector creates an extremely precise measurement of the bone, allowing you to track changes that had previously been too minor to detect. You can better manage treatment plans, which promotes better patient compliance.



Automated 6-point calibration and quality assurance ensures your scanner is accurate and precise for a full range of BMD and tissue composition values.



66 year old female. Image courtesy of University of Wisconsin Osteoporosis Center.

innovative technology

enjoy clinical confidence, thanks to cutting edge thinking

The CZT-HD Direct-Digital detector

The “brains” behind Lunar iDXA™. This high-definition technology provides near-radiographic image quality, allowing you to see more clearly than ever before. The newly patented Direct-Digital CZT-HD design originally earned its reputation for precision in the Lunar Prodigy™ series densitometers, has now been expanded to a staggered array detector in the Lunar iDXA™.



Lunar Prodigy™
CZT Direct-Digital linear detector



Lunar iDXA™
CZT-HD Direct-Digital staggered array detector with high resolution

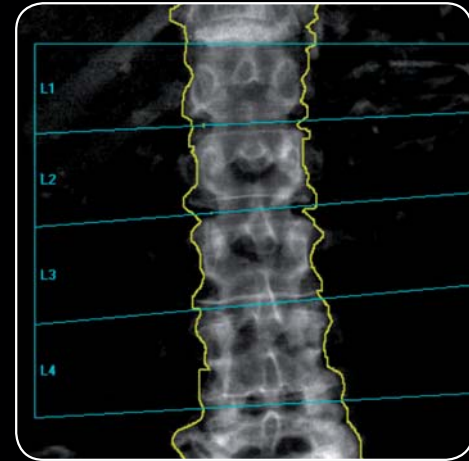
Unique Performa X-Ray Tube provides superior reliability.

GE Healthcare’s Performa X-Ray Tube is the basis of Lunar iDXA™’s unique integrated X-ray generation system, designed from the ground up to deliver the ultra-stable output needed for high precision, image clarity, and long-term reliability. The Performa X-Ray Tube delivers X-ray flux to measure and image patients up to 182 kg (400 lbs.), but still provides low-dose performance.



incredible images

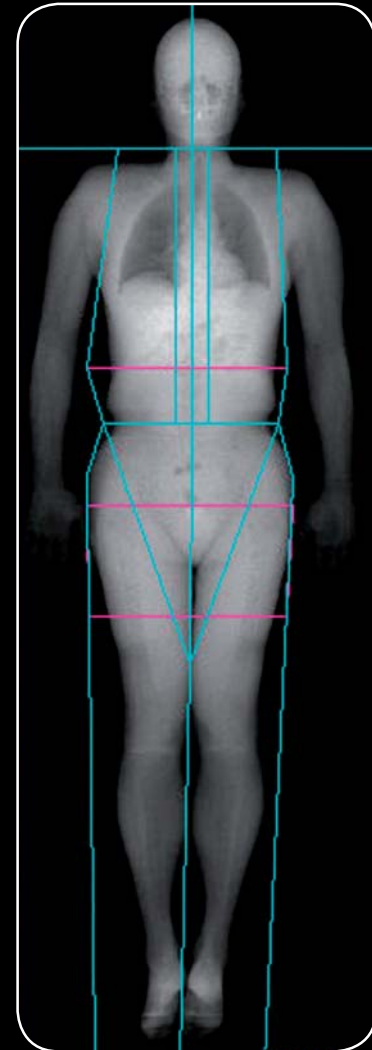
seeing is believing

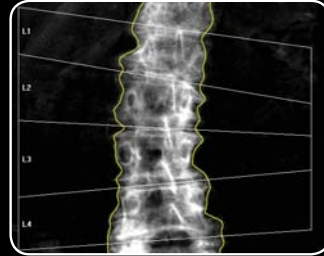
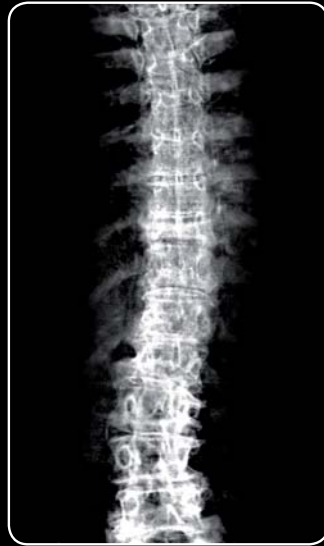


High resolution images yield unprecedented detail

Lunar iDXA™ delivers crisp, high resolution images of all skeletal sites, revealing detail never seen before. It clearly renders the end plates on Spine images and identifies intervertebral spaces easily. You can see Proximal Femur details like the Femoral Head, visualize Cortical Thickness, and see unprecedented Total Body images.

Use Dual-energy Vertebral Assessment (DVA) to expand the clinical applications available for Lunar iDXA™. Vertebral Fracture Assessment (VFA) provides rapid, Dual-energy images of the AP and Lateral Spine, allowing you to visually identify the presence of vertebral fractures. No matter what your visualization preference, Single-energy or Dual-energy, Lunar iDXA™ gives you the clearest VFA image available. This enables you to visually assess vertebral deformities with unprecedented detail, and use our automated morphometry tools.





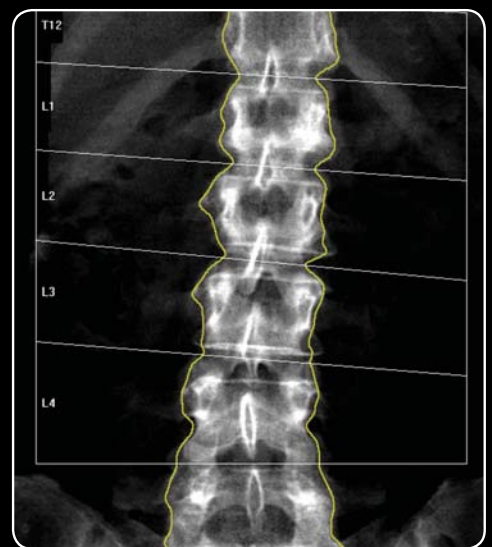
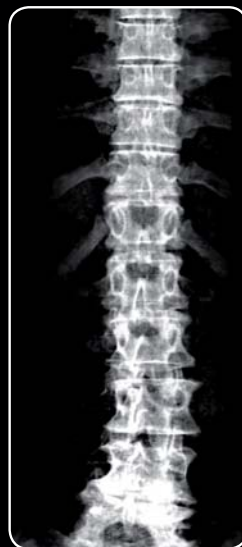
80 year old female, 1.55m (61in), 57.5kg (127lbs.)

48 year old male, 1.70m (67in), 67.1kg (148lbs.)



77 year old female, 1.60m (63in), 53.1kg (117lbs.)

74 year old, 1.56m (61.5in), 64.4kg (142 lbs.)



65 year old female, 1.68m (66in), 62.6kg (138lbs.)

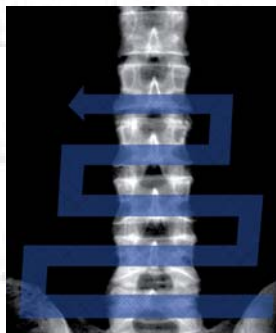
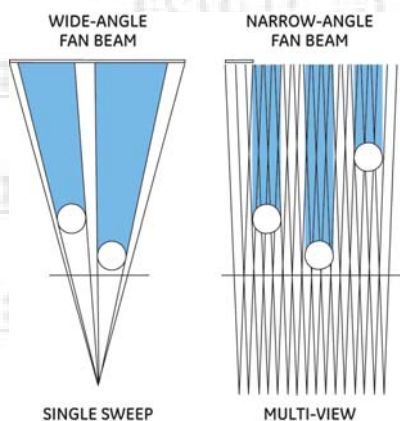
All images in this gallery are courtesy of University of Wisconsin Osteoporosis Center.

intuitive features and enhancements

automatically optimize the process
for ease of use

Advanced scanning technology to ensure precision and accurate measurement of BMD and beyond

With the wide range of body sizes seen in patients, the distance of an individual's Spine or Femur from the tabletop can vary considerably. This will cause inaccurate area and bone mineral measurements when using Wide-Angle fan-beam densitometry. TruView eliminates these inherent magnification and distortion effects in the same manner as computed tomography (CT) images are created. By overlapping the Narrow-Angle fan-beam images TruView measures the object plane distance accurately without risky assumptions, ensuring accurate and precise Area and BMC as well as geometric dimensions necessary for Femur Strength Index and Hip Axis Length. SmartFan saves time by imaging only the necessary anatomy, and so reducing absorbed dose for both patient and operator.

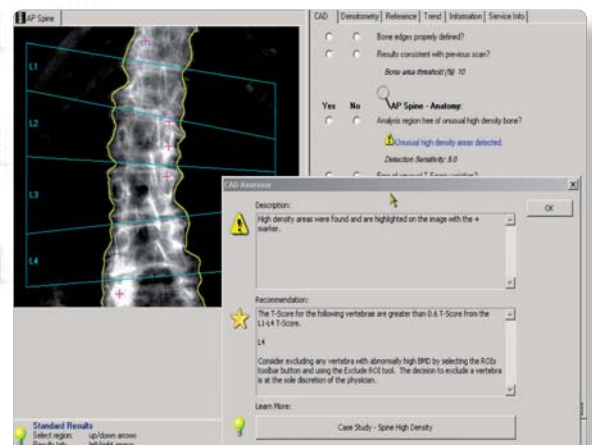


SmartFan optimizes the scan area.

CAD helps to correct scan and analysis errors

Computer Assisted Densitometry (CAD), another exclusive GE Healthcare patented technology, automatically identifies potential acquisition and analysis errors for Total Body, Forearm, AP Spine, Femur, and DualFemur scans. CAD alerts the technologist or physician to incorrect positioning, unusual patient anatomy, high-density areas, and artifacts. After identifying a potential problem, CAD makes a recommendation for correction via online multimedia help. CAD is clinically proven to concur with ISCD guidelines for osteoporosis assessments*, and saves you time and effort by reducing the number of incorrectly acquired images sent to the physician.

* JBMR 2003; 18 (Suppl 2): S201



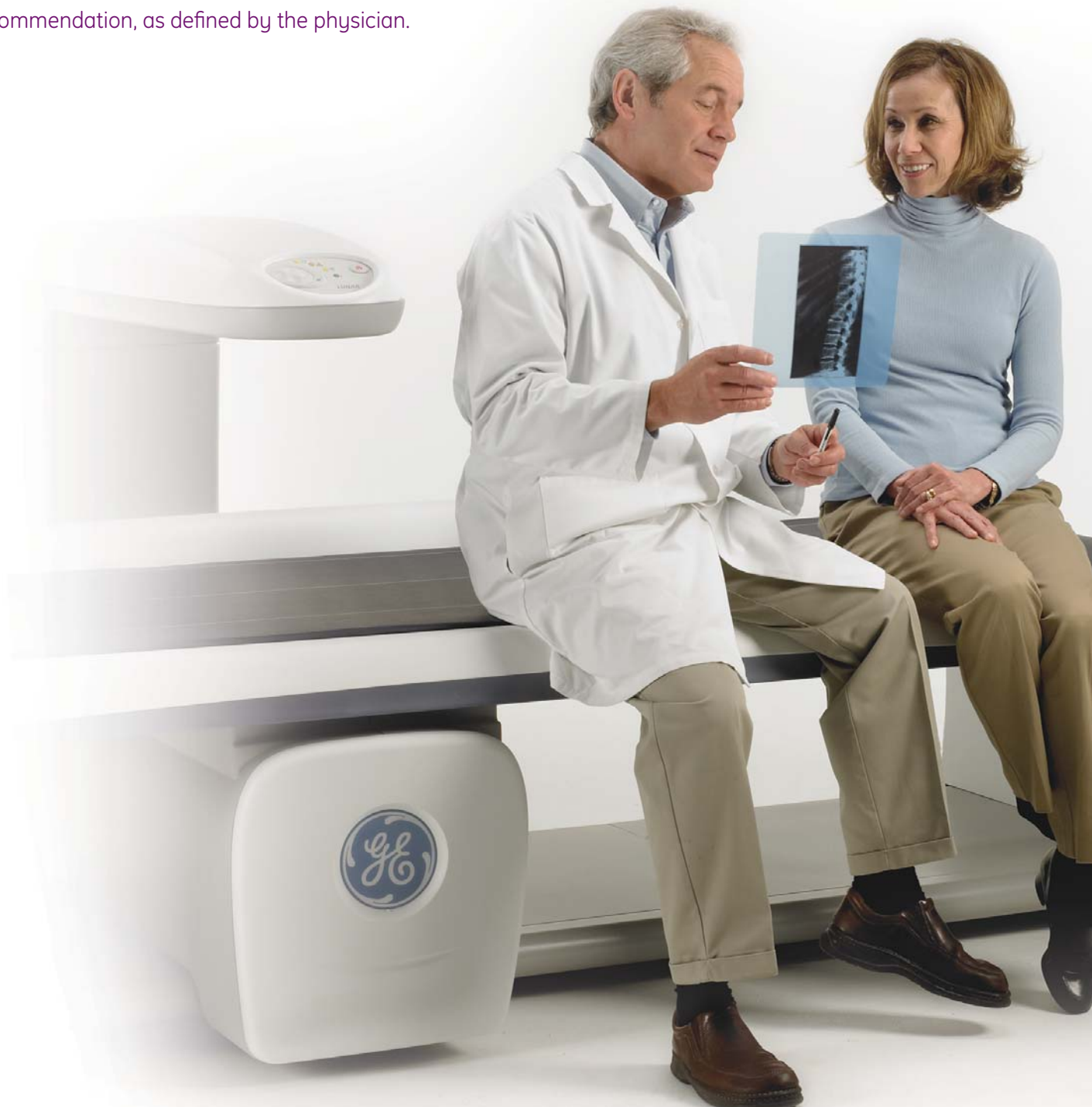
CAD detects and flags characteristics that require closer review.

Composer generates reports and offers follow up recommendations

Composer, the first ISCD compliant physician's reporting tool, automatically generates patient reports, including assessments and follow up recommendations. Scan results are based on pre-defined criteria established by the user, following the World Health Organization (WHO) and Osteoporosis societies guidelines. Based on a personalized style sheet Composer automatically builds a report including patient information, results, images, comparison to reference graphs, as well as trend features. Composer determines the lowest T-score among user-defined regions, and automatically inserts the corresponding assessment and recommendation, as defined by the physician.

The new modern styling of the Lunar iDXA™ offers patient convenience for your practice

Lunar iDXA™ can accommodate patients as heavy as 182kg (400lbs.), and features a comfortable open architecture. The larger patient portal allows for easy decubitus positioning of longer subjects, and the washable pad cleans easily with soap and water. The non-moving table design allows an optimal combination of wide scan area and small footprint that fits most rooms. Lunar iDXA™ is designed to offer the latest in scanning technology while establishing the clinical confidence that comes with the GE Healthcare name.



integrated productivity tools

increase your workflow with connectivity options

World-class support.

Count on GE Healthcare support for greater flexibility and peace of mind

Our customers' systems are maintained with precision, diagnosed with speed, and serviced with confidence. Every time customer surveys consistently categorize our support as "world-class" and point to the following reasons:

- Regular software updates and upgrade program available
- Theoretical and practical training program
- Close cooperation with the scientific community including pharmaceutical trials

DICOM facilitates your PACS connectivity

DICOM is an option flexible enough to meet any PACS connectivity requirements, and Lunar bone densitometers are the only DXA systems to achieve IHE5 compliance. Features include DICOM structured reports, image storage and commitment, DICOM worklist, and DICOM print. It sends reports and images to your PACS server in color or black and white, and can integrate with your RIS worklist and modality performance procedure step.

HL7 interfaces with your electronic records system

The flexible HL7 feature allows the Lunar iDXA™ to receive and transmit records. That includes receiving patient demographics and exporting patient exam results. This option integrates your densitometer with your existing electronic medical records, thereby closing the loop on your records and billing system. HL7 can also attach images to your compliant EMR.



MUDBA allows multiple users access to scans

The Multi-User Database Access (MUDBA) option permits multiple computer workstations to access DXA scan files simultaneously, even remotely. Multiple images from GE Healthcare Lunar bone densitometers can be saved in a common database.

TeleDensitometry emails reports directly from the workstation

The TeleDensitometry option connects the Lunar iDXA™ to existing computer networks and phone lines, so you can e-mail or fax DXA reports directly from the densitometer.

DEXTER lets you take BMD imaging with you

You can view images and results anytime, anywhere with the DEXTER option. A portable BMD review and dictation system, DEXTER gives you efficiency and portability on a PDA platform. Features include pan and zoom, which displays bone images at the same aspect ratio as a computer monitor.

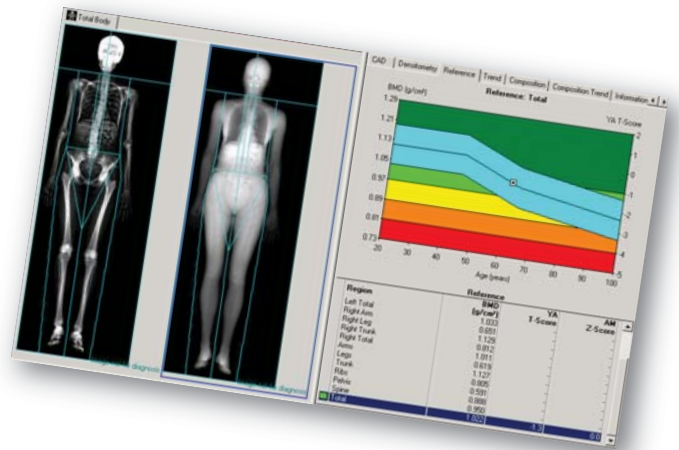


innovative applications

enjoy clinical confidence with
tomorrow's technology today

You can now assess overall body wellness – not just bone

Historically, DXA has just assessed bone – only one part of the overall body wellness picture. Lunar iDXA™, however, takes a three point assessment – bone, fat, and lean tissue – for a comprehensive view of body wellness in a single exam. This allows you to understand more than the individual's fracture risk. You can also analyze Body Composition, including fat percentage and distribution, for expanded clinical and research applications. These include weight loss management, sports medicine, fitness programs, eating disorders, and wasting diseases such as HIV or cancer.



You can gather specialized information

The Lunar iDXA™'s BMD and soft-tissue assessments provide valuable clinical information for growth disorders, metabolic diseases, and eating disorders, among other conditions. Gender-specific reference data is available along with advanced Body Composition assessment tools.



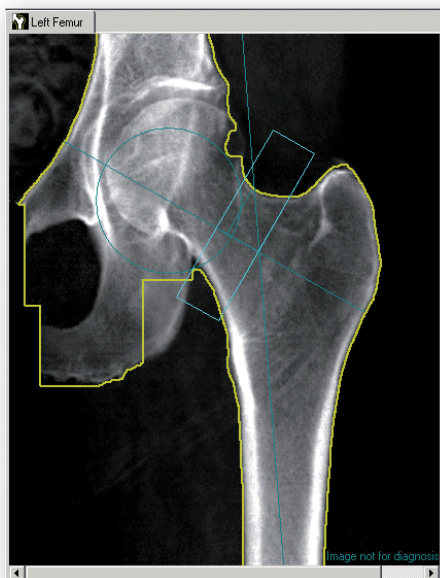
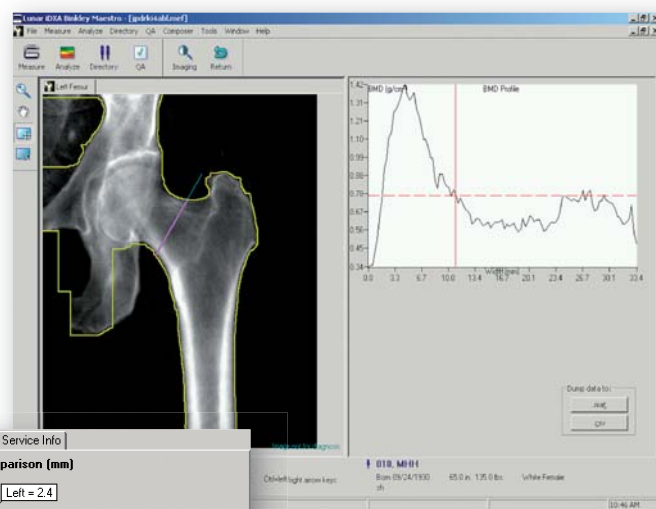
Beyond BMD to bone geometry and mapping

The Lunar iDXA™'s Advanced Hip Assessment (AHA) includes the standard femoral regions of interest, plus additional key measurements and assessments:

- **Hip Axis Length (HAL)** has been demonstrated in prospective studies as an independent adjunct to Femur bone density in predicting fracture.
- **Femur Strength Index (FSI)** is automatically calculated to provide the physician an indication of the hip strength by combining the BMD and the geometric measurements (Cross Sectional Moment of Inertia (CSMI), Cross Sectional Area (CSA), ...)
- **BMD distribution** is also participating to the global strength of the hip; therefore AHA offers unique tools like **Color Bone Mapping** and **BMD Profile** to visualize and quantify cortical thickness.

You can calculate a patient's 10-year personalized fracture risk

Lunar iDXA™'s hip BMD offers the best assessment of both hip and overall fracture risk. Based on femoral neck T-score, age, and gender, the personalized risk calculator (based on Kanis Model) estimates the patient's specific 10-year probability of fracture.



Densitometry | Reference | Trend | AHA | Information | Service Info

Hip Axis Length Comparison (mm)

Left = 2.4

Mean

Hip Axis Length Comparison Mean:
Left: 105.7 mm
108.1 mm

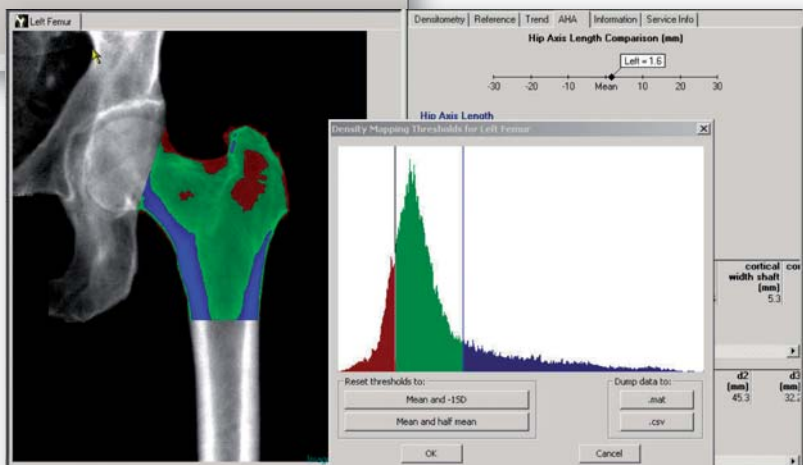
Neck Angle (deg)
Left: 60

Hip Geometry Results

Side	cortical width neck (mm)	cortical ratio neck (%)	cortical width calcar (mm)	cortical ratio calcar (%)	cortical width shaft (mm)	cortical ratio shaft (%)
Left	2.8	9.3	2.3	4.1	3.2	8.3

Hip Strength Results

Side	Strength Index	CSMI (mm ⁴)	CSA (mm ²)	d1 (mm)	d2 (mm)	d3 (mm)
Left	1.5	8,951	109	20.6	32.1	34.8



Advanced Hip Assessment

AHA allows the researcher to visualize and quantify Cortical Thickness, density distribution, and other geometric parameters, such as Femur Strength Index, Hip Axis Length (HAL) and Cross-Sectional Moment of Inertia (CSMI). All of these parameters are integrated into one, research package for clinical convenience.

Lunar iDXA™

Product information sheet

Easiest to use

- enCORE software requires 1/3 the user intervention of competitive systems¹
- CAD proven by experts to help both experienced and new densitometrists acquire excellent scans²
- OneScan improves throughput by 20%
- Composer reporting software provides customized reporting automatically
- HL7 and DICOM compatibility

¹Steinberg 2003 P 4A Int'l Soc. Clin. Dens.

²Schwartz 2004 P 165MO Int'l World Cong. Osteo.

Best precision and accuracy

- The Lunar iDXA™ bone densitometer is up to twice as precise and accurate when compared to competing systems
- The Lunar iDXA™ technology (CZT-HD, MVIR, TruView, K-edge filter and SmartFan) eliminates magnification error inherent to wide-angle fan-beam systems by overlapping scan passes to measure the object plane accurately. Measuring instead of assuming an object plane, reduces area measurement errors due to the patient's anatomy or changes in the patient's habitus
- 6-point calibration system improves precision and accuracy in the assessment of BMD as well as the Body Composition measurement over the full physiological range

Tomorrow's technology today

- Lunar iDXA™ excels not only in BMD, but takes your research and practice far beyond in the fields of Body Composition, Pediatrics and Orthopaedics
- 10-year fracture risk provides a personalized risk calculator estimating patient-specific 10-year risk (based on the Kanis model)
- Advanced Hip Assessment (AHA) combines the power of a standard BMD measurement with the integrated measure of clinically relevant geometric parameters to explore potential contributing factors to bone strength
- The superior image quality of Lunar iDXA™, thanks to the exclusive CZT-HD detector boosts your clinical confidence

World-class support

- Regular software updates and upgrade program available
- Theoretical and practical training program
- Close cooperation with the scientific community including pharmaceutical clinical trials



Available features

- AP Spine
- Single Femur
- DualFemur
- Dual-energy Vertebral Assessment (DVA)
- HIPAA SecureView
- Advanced Hip Assessment
 - Geometric parameters: Hip Axis Length (HAL) and Hip Angle
 - Femur Strength Index using BMD, Cross-Sectional Moment of Inertia (CSMI) and Cross-Sectional Area (CSA)
 - Cortical Thickness Measurement and BMD Colour Bone Mapping
- Forearm
- Total Body BMD
- Combined Report & Scan Protocols
- Composer Physician Reports
- OneScan
- Computer Assisted Densitometry (CAD)
- DICOM (print, store and worklist) - IHE5 certified
- TeleDensitometry - fax, e-mail
- Total Body Composition
- HL7
- DEXTER PDA
- Multi-User (1-3) Database
- Multi-User (1-10) Database
- Database Conversion
- Practice Management Tools
- Washable Table Pad

Technical specifications

Detector technology

CZT-HD Direct-Digital detector (Cadmium Zinc Telluride) in a staggered array.
Proprietary design.

Typical Scan Time

Site	Typical Scan Time*
DVA	2min.
Spine	30s
Femur	30s
DualFemur	60s
Forearm	20s
Total Body	4min.

* Scan time is dependent on body size.

Patient weight limit

182 kg (400 lbs)

X-ray characteristics

Constant potential power supply (100kV) and K-edge filter (Samarium) for simultaneous Dual-energy X-ray beam.

Typical Scan Exposure

Site	Typical Scan Exposure*
DVA	329 µGy
Spine	146 µGy
Femur	146 µGy
DualFemur	146 µGy
Forearm	10 µGy
Total Body	3 µGy

* Scan exposure is dependent on body size.

Radiation

At 1m the operator radiation is at <1mR / hour.

External shielding

Not required: X-ray safety requirements may vary upon destination. Please inquire with local regulatory authorities. GE Healthcare recommends consulting your local regulatory agency to comply with local ordinances.

Footprint

L x W x H

2.87m x 1.32m x 1.27m (113" x 52" x 50")

System weight

353 kg (779 lbs)

Power

100-127/200-240 VAC +/-10%, THD<5%*, 750 VAC

Power must meet IEEE 519-1992 standards

* Total harmonic distortion. The Lunar iDXA™ scanner will draw 40VA when idle and less than 750VA during a patient scan (100kV / 2.5mA). See Declarations of Immunity and Emissions table for power quality guidance.

Temperature/humidity

18 - 27°C (65 - 81 F) 20%-80% non-conditioning

Computer workstation

Windows XP® Professional Intel processor computer, printer and monitor. Contact GE Healthcare or our local representative for the detailed current configuration and optional hardware.

Heat output

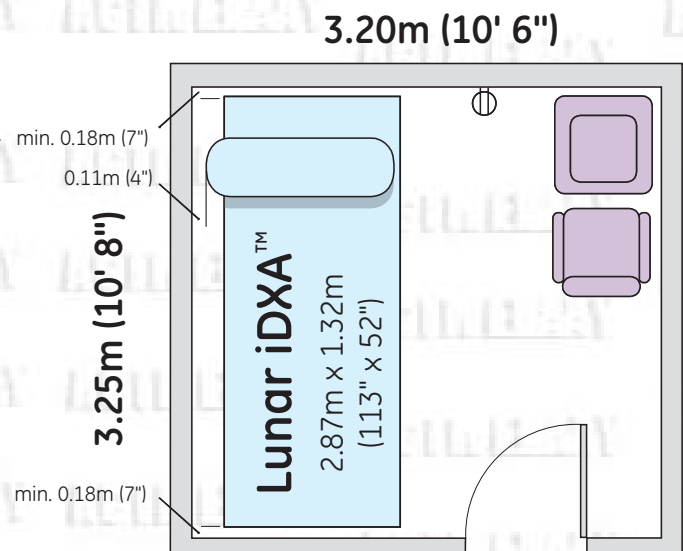
The Lunar iDXA™ scanner will output approximately 150 BTU per hour when idle and 1500 BTU per hour when actively scanning.

The Host PC (PC with 17" monitor) will output approximately 400 BTU per hour when powered on.

Minimum room size

L x W

3.25m x 3.20m (10' 8" x 10' 6")



The Lunar iDXA™ is designed to have minimal impact on your practice in both the installation requirements and required operating space. The Lunar iDXA™ is shown above in a 3.25m x 3.20m exam room, with the included workstation. For any installation, consult and follow your local X-ray regulations.

For more than 100 years, scientists and industry leaders have relied on General Electric for technology, services and productivity solutions.

So no matter what challenges your healthcare system faces – you can always count on GE to help deliver the highest quality support.

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GE imagination at work

GE Medical Systems, A General Electric Company, going to market as GE Healthcare.

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Lunar iDXA is a trademark.

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