GE Healthcare

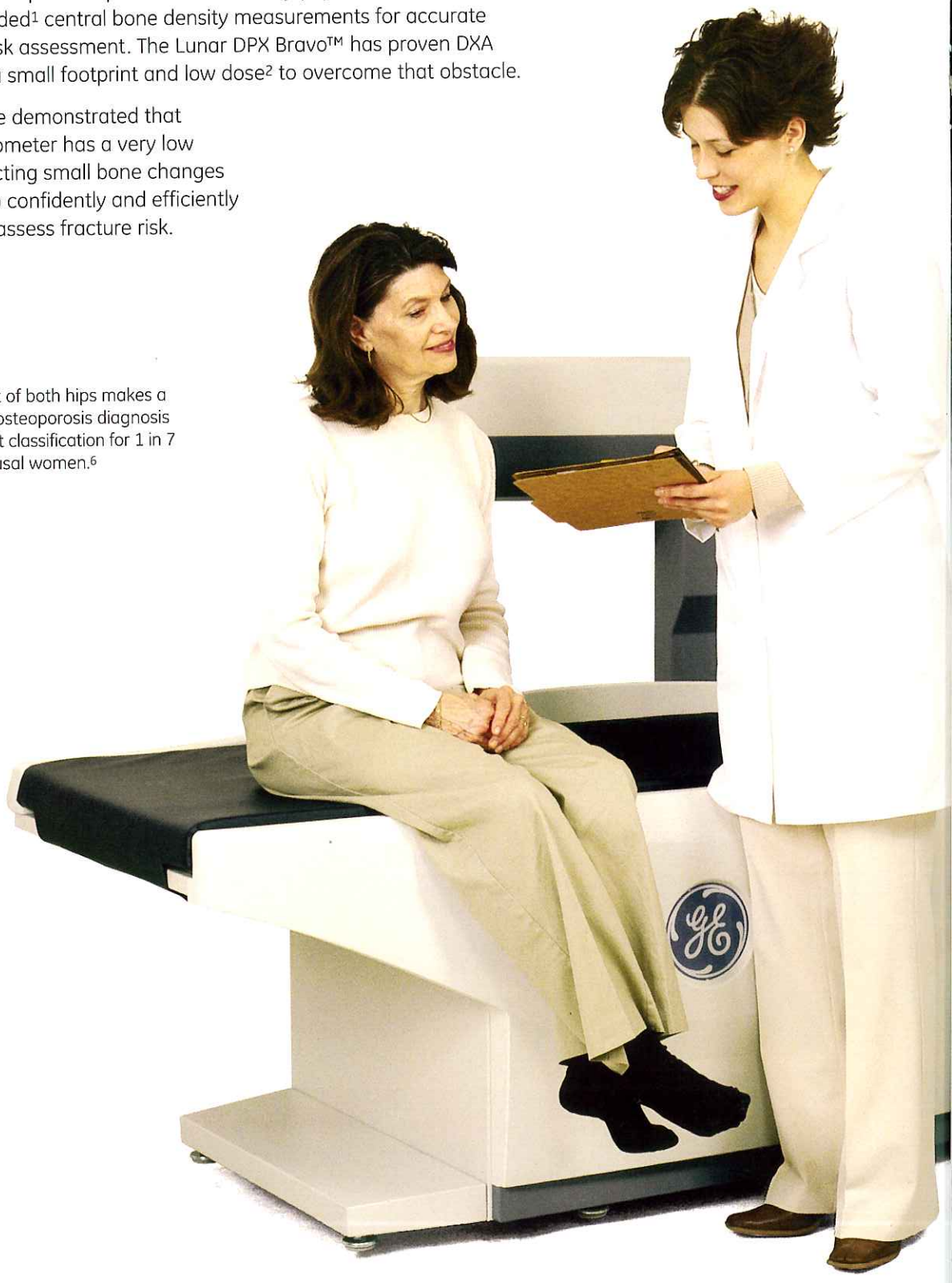
Lunar DPX Bravo

Simplicity and dedication

Bone densitometry that fits y

Due to space restrictions in hospitals or private offices, many physicians are excluded from performing recommended[1] central bone density measurements for accurate osteoporosis and fracture risk assessment. The Lunar DPX Bravo™ has proven DXA technology combined with a small footprint and low dose[2] to overcome that obstacle.

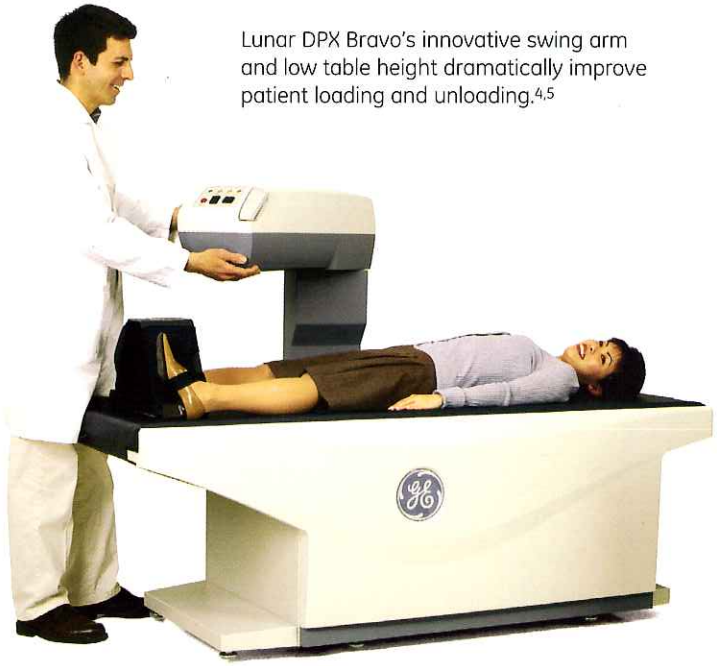
Independent studies[3,4,5] have demonstrated that the Lunar DPX Bravo densitometer has a very low precision error - key to detecting small bone changes fast - assisting physicians to confidently and efficiently diagnose osteoporosis and assess fracture risk.



Measurement of both hips makes a difference in osteoporosis diagnosis and treatment classification for 1 in 7 postmenopausal women.[6]

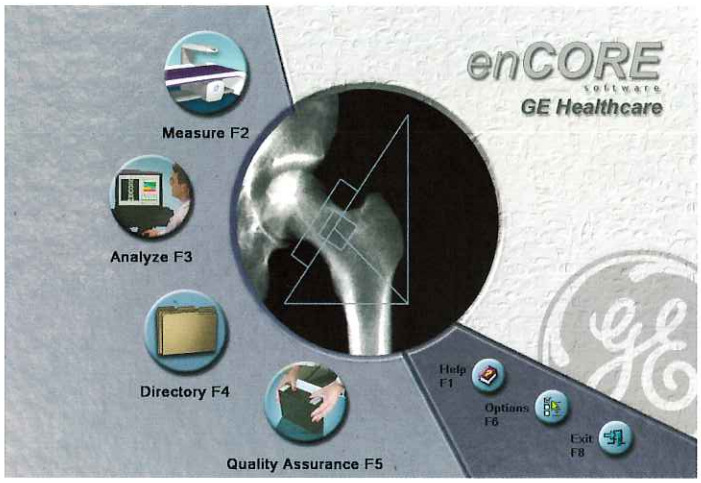
our examination room

Lunar DPX Bravo's innovative swing arm and low table height dramatically improve patient loading and unloading.[4,5]



Powerful tools in a small foot

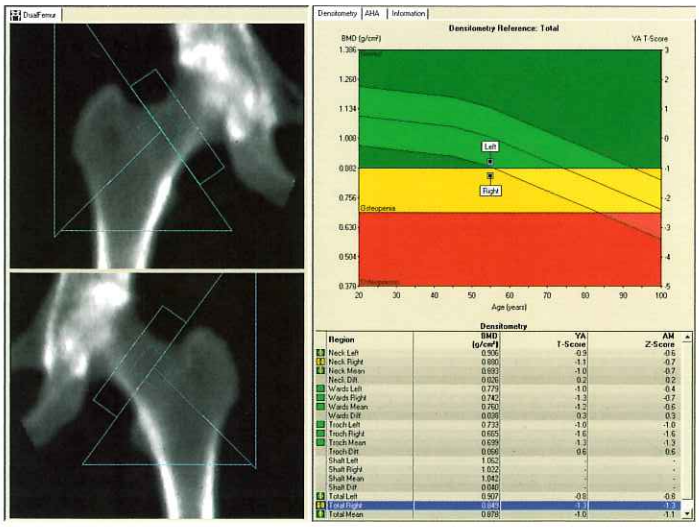
Lunar DPX Bravo offers multiple clinical applications for seamless osteoporosis assessment in a streamlined operator-friendly package, while ensuring clinical confidence and fast throughput.[7]



enCORE – brief click path in enCOREExpress™ mode

enCORE™ software platform: easy to use

Lunar DPX Bravo is fully automated by the intuitive enCORE Windows®-based software. In addition, the daily testing of the multi-point calibration and the large regional reference population databases offer you complete quality assurance.

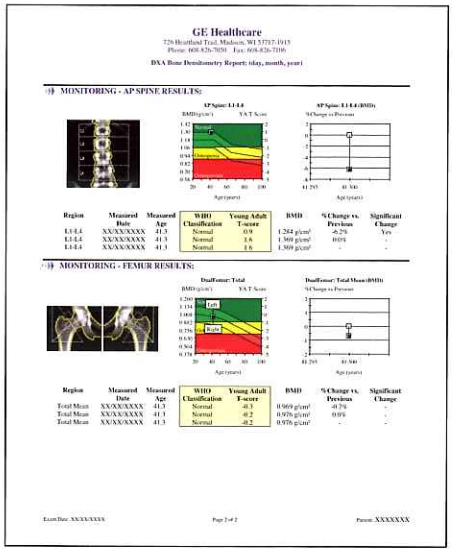


DualFemur with values per region

DualFemur: identifying the weakest femur

With the DualFemur option, both femurs are automatically scanned in one seamless acquisition without repositioning the patient. As such, DualFemur allows you to assess the density of the critical hip region, including identification of the weakest side, increasing confidence in your treatment decisions. In addition, the trending function enables seamless follow-up of change over time.[6,8]

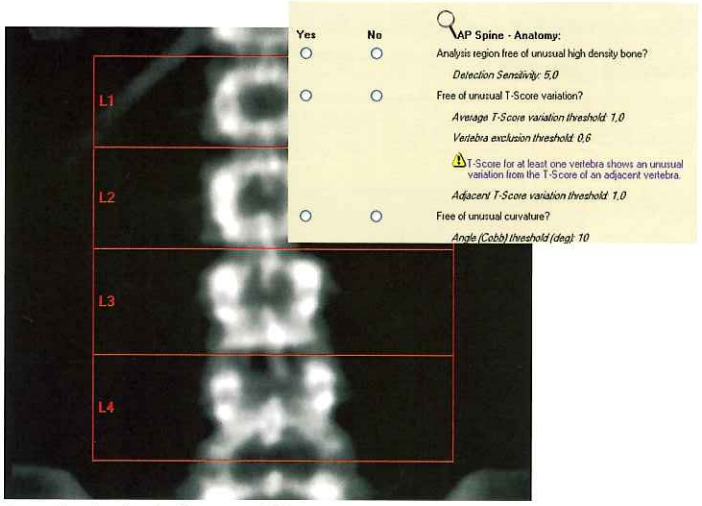
print



Composer – your single-page report

Composer: custom reports

With clinical diagnosis and treatment decisions based on a variety of pre-defined criteria and guidelines established by international and local societies[9] it might not always be that easy for your referring colleagues[10] to interpret multi-page reports. Composer allows you to automatically generate concise custom patient reports including imagery, clinician diagnosis and monitoring assessments in full accordance with the pre-defined criteria and guidelines in your locality.



ScanCheck - looks for acquisition errors

ScanCheck

ScanCheck automatically identifies potential acquisition and analysis errors and provides multimedia help. It alerts of incorrect positioning, unusual anatomy, high-density areas and artifacts, and makes recommendations for correction.

Forearm application – dedicated to expanded sites

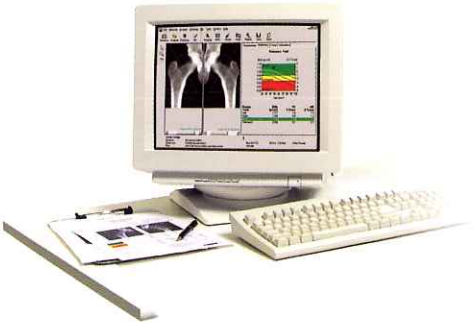
Bone evaluation at peripheral sites: opening new opportunities

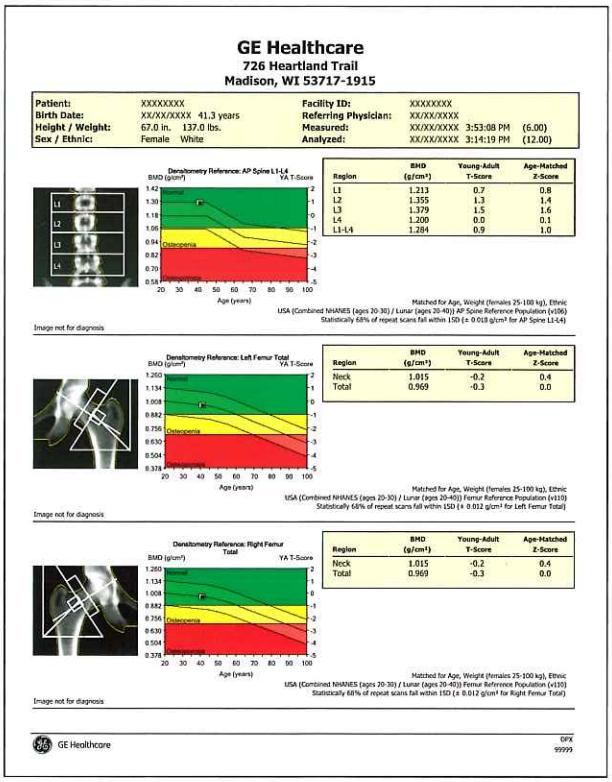
With the forearm application, you can measure the radius and ulna to provide additional clinical information on the skeletal status of your patient.

Easy to use

OneScan: three sites in one test

OneScan simplifies BMD testing by acquiring lumbar spine and bilateral femur scans in one automatic process from a single patient position, without compromising diagnostic confidence.[11]





GE Healthcare
726 Heartland Trail
Madison, WI 53717-1915

Patient:	XXXXXXXX	**Facility ID:**	XXXXXXXX
Birth Date:	XX/XX/XXXX 41.3 years	**Referring Physician:**	XX/XX/XXXX
Height / Weight:	67.0 in. 137.0 lbs.	**Measured:**	XX/XX/XXXX 3:53:08 PM (6.00)
Sex / Ethnic:	Female White	**Analyzed:**	XX/XX/XXXX 3:14:19 PM (12.00)

Densitometry Reference: AP Spine L1-L4

Region	BMD (g/cm²)	Young-Adult T-Score	Age-Matched Z-Score
L1	1.213	0.7	0.8
L2	1.355	1.3	1.4
L3	1.379	1.5	1.6
L4	1.200	0.0	0.1
L1-L4	1.284	0.9	1.0

Matched for Age, Weight (females 25-100 kg), Ethnic
USA (Combined NHANES (ages 20-30) / Lunar (ages 20-40)) AP Spine Reference Population (v106)
Statistically 68% of repeat scans fall within 1SD (± 0.018 g/cm² for AP Spine L1-L4)

Image not for diagnosis

Densitometry Reference: Left Femur Total

Region	BMD (g/cm²)	Young-Adult T-Score	Age-Matched Z-Score
Neck	1.015	-0.2	0.4
Total	0.969	-0.3	0.0

Matched for Age, Weight (females 25-100 kg), Ethnic
USA (Combined NHANES (ages 20-30) / Lunar (ages 20-40)) Femur Reference Population (v110)
Statistically 68% of repeat scans fall within 1SD (± 0.012 g/cm² for Left Femur Total)

Image not for diagnosis

Densitometry Reference: Right Femur Total

Region	BMD (g/cm²)	Young-Adult T-Score	Age-Matched Z-Score
Neck	1.015	-0.2	0.4
Total	0.969	-0.3	0.0

Matched for Age, Weight (females 25-100 kg), Ethnic
USA (Combined NHANES (ages 20-30) / Lunar (ages 20-40)) Femur Reference Population (v110)
Statistically 68% of repeat scans fall within 1SD (± 0.012 g/cm² for Right Femur Total)

Image not for diagnosis

GE Healthcare DPX 99999

Complete connectivity: easy communication and workflow in full safety[7,10]

- DICOM and HL7 connectivity seamlessly integrate densitometry results with Picture Archival and Communication Systems (PACS) and Radiology/Hospital Information Systems (RIS/HIS), respectively.
- The worklist feature in both DICOM and HL7 enables automatic use of patient information from scheduling applications, helping to reduce data entry errors.
- Multi-User Database access (MUDB) improves flexibility and productivity by offering the possibility to access and/or reanalyze scans remotely and to share with clinical partners.
- TeleDensitometry provides the ability to send paperless reports as faxes or easy e-mail attachments, viewable on any personal computer without special software.

References:

1. The International Society for Clinical Densitometry (ISCD) recommends to measure BMD at both posterior-anterior (PA) spine and hip in all patients, with forearm BMD as additional situation-specific measurement. EM Lewiecki, NB Watts, MR McClung, SM Petak, LK Bachrach, JA Shepherd, RW Downs. Position statement: Official positions of the International Society for Clinical Densitometry. J Clin Endocrinology & Metabolism. 2004 Vol. 89(8):3652-3655
2. Consult local X-ray regulation for room requirements.
3. L Del Rio, S Di Gregorio, J Rosales (2004). Performance evaluation of a compact DXA system: the Lunar Bravo. Osteoporos Int 15 (Suppl 1): S45. MC Schoeller, C Simonelli (2004). Precision and accuracy of the Bravo, a compact bone densitometer. J Clin Densitom 7:229
4. SB Broy, LG Jankowsi (2003). Performance evaluation of a new DXA system: the Lunar Bravo. J Bone Miner Res Vol. 18 (Suppl 2): S316
5. RH Nord, HS Barden, S Krepanith, KG Faulkner. 2003 Precision and accuracy of the GE Lunar DPX Bravo bone densitometer. J Bone Miner Res Vol. 18 (Suppl 2): S204.
6. RE Cole, J Larson (2006). The Effect of Measurement of the Contralateral Hip if the Spine Is Not Included in the Bone Mineral Density Analysis. J Clin Densitom 9:210-216.
7. Depending on product configuration and availability. Contact GE Healthcare or our local distributor for the detailed current configuration and optional hardware.
8. M Kamimura, H Hirabayashi, M Konishi, Q Zhou, H Kato (2006). Osteoporosis diagnosis and treatment decisions with Dual Femur in Japanese women. Presented at the 17th International Bone Densitometry Workshop, Kyoto Japan, November 2006.
9. The World Health Organization (WHO), the International Society of Clinical Densitometry (ISCD) and the National and International Osteoporosis Foundation (NOF and IOF)
10. Networking is the user's responsibility.
11. C Simonelli, L Del Rio, N Binkley. Comparison of Spine BMD Measurements from DXA With and Without Leg Elevation. Abstract Published J Bone Miner Res (2004) 19 (Suppl 1):S364. Poster Presented at ASBMR Annual Meeting, October 2004. M Kamimura, H Hirabayashi, M Konishi, Q Zhou, HS Barden, H Kato Comparison of lumbar spine BMD and T-scores with conventional and OneScan leg positioning in a Japanese population. Presented at the 17th International Bone Densitometry Workshop, Kyoto Japan, November 2006 RH Nord, DL Ergun, KG Faulkner. Effect of patient positioning devices on bone density measurements. Abstract Published J Bone Miner Res (2002) 17 (Suppl 1): S313. Poster Presented at ASBMR Annual Meeting, September 2002.
12. Follow local x-ray regulations.
13. Some sites may require power conditioning equipment. Contact GE Healthcare for details and specifications.

Lunar DPX Bravo technical specifications:

Available applications and options[7,10]

- AP spine
- Femur
- DualFemur
- OneScan
- Advanced Hip Assessment (AHA)
- ScanCheck
- Estimated Total Body %Fat
- Forearm
- Orthopedic
- OneVision
- Composer™
- TeleDensitometry (fax, e-mail)
- HIPAA SecureView
- Practice Management tools
- DICOM (worklist, color print and store)
- HL7 bidirectional interface
- Multi-User Database access (MUDB) (1-3 or 1-10 users)
- SQL database
- Remote connectivity for direct customer support

enCORE Windows-based user interface[7,10]

- Advanced intuitive graphical interface with multimedia on-line help
- Multiple languages available
- SmartScan for scan window optimization and dose reduction
- Automated scan mode selection
- AutoAnalysis for better precision
- Customized analysis for clinical flexibility
- Exam comparison process
- Multiple patient directories with database
- BMD or sBMD results, BMC and area
- Extensive reference data: >12,000 USA/Northern European subjects, as well as NHANES, and numerous regional databases.
- T-score, Z-score, % young adult and % age matched
- WHO guidelines for diagnosis of osteoporosis
- Patient trending with previous exam importation
- enCOREXpress mode for brief click path

Standard features

- Swing arm
- Paper roll dispenser
- Washable table pad

Quality assurance

- Automated test program with complete mechanical and electronic tests
- Automated QA trending with complete storage

Scanning method

- DXA pencil-beam technology with SmartScan technology
- No scout scan required, no moving table

X-ray characteristics

- Constant potential source at 76kV
- Dose efficient K-edge filter
- Tube current: 0.05 - 3.00mA

Detector technology

- NaI PM tube detector
- High pulse rate

Dimensions (L x W x H) and weight

- System: 1.86m x .86m x 1.30m - 202kg (74" x 34" x 51" - 444lbs)
- Operating space: 1.86m x 1.04m x 1.30m (74" x 41" x 51")
- Table height: .63m (25")
- Console table: .79m x .63m x .48m (31" x 25" x 19")

Patient weight limit

- 159kg (350lbs)

External shielding

- Not required: X-ray safety requirements may vary by location. Please inquire with local regulatory authorities.
- Operating scatter: < 0.2 mR/hr (2 µSv/hr) @ 1m (39") from X-ray source
- GE Healthcare recommends consulting your local regulatory agency to comply with local ordinances.

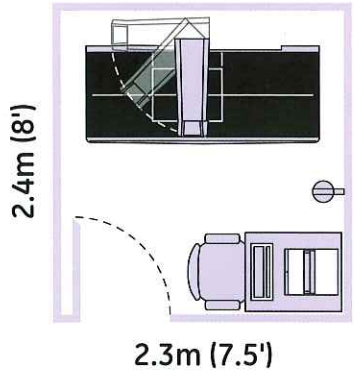
Environmental requirements

- Ambient temperature: 18-27°C (65-81°F)
- 120 VAC 50-60 Hz 20A dedicated circuit or 230-240 VAC 50-60Hz 10A dedicated circuit ±10%
- Humidity: 20%-80%, non-condensing

Computer workstation[7,10]

- Windows platform
- Computer, printer and monitor

Minimum room dimensions:



The Lunar DPX Bravo is designed to have minimal impact on your practice in both installation requirements and required operating space. The system is shown above in a 7.5' x 8' exam room, with a typical workstation. No operator shielding[12] or special site preparation beyond a dedicated 20 Amp 120VAC duplex outlet is required.[13] The outlet should be placed near the desired location of the operators console.

GE Medical Systems Ultrasound & Primary Care Diagnostics, LLC, a General Electric company, doing business as GE Healthcare.

Indications for use: The DPX Series Bravo Bone Densitometer provides an estimate of BMD at the spine, proximal femur and forearm regions. This BMD value can then be compared to a reference population at the sole discretion of the physician.

CAUTION: Federal Law restricts this device to sale by or on the order of a physician.

Lunar Product Division Americas
GE Healthcare
726 Heartland Trail
Madison, WI 53717
T: +1-608-826-7050
F: +1-608-826-7106
www.gehealthcare.com

Lunar Product Division Europe, Middle-East and Africa
GE Medical Systems Benelux NV/SA
Koutervelstraat 20
B-1831 DIEGEM, Belgium
T: +3227197203
F: +3227197205
www.gehealthcare.com
info.lunar@med.ge.com

Lunar Product Division Asia and Pacific
GE Healthcare Ultrasound & PCD Asia
Units 1101, 11th Floor, Shanghai Maxdo Centre
No. 8 Xing Yi Road, Shanghai 200336, P.R. China
T: +86-21-52574640 (Ext. 64045 or 64128)
F: +86-21-52080064
www.gehealthcare.com

Healthcare Re-imagined

GE is dedicated to helping you transform healthcare delivery by driving critical breakthroughs in biology and technology. Our expertise in medical imaging and information technologies, medical diagnostics, patient monitoring systems, drug discovery, and biopharmaceutical manufacturing technologies is enabling healthcare professionals around the world to discover new ways to predict, diagnose and treat disease earlier. We call this model of care "Early Health." The goal: to help clinicians detect disease earlier, access more information and intervene earlier with more targeted treatments, so they can help their patients live their lives to the fullest. Re-think, Re-discover, Re-invent, Re-imagine.

To receive **Lunar News** and be informed about the latest developments in Densitometry, **please register for SmartMail.** You will find the SmartMail registration link on the left side of all pages of **www.gehealthcare.com**

imagination at work

BMD-0107-03.08-EN-US