

QDR[®] 4000

Clinical Bone Densitometer

*Classic DXA Technology for the
Office-based Practice*




HOLOGIC[®]

QDR[®] 4000

Clinical Bone Densitometer

An exceptional value in DXA for

Introduced in 1987, Hologic QDR bone densitometers quickly became the standard for assessing bone mineral status. The QDR 4000 combines the reliability and economy of classic DXA technology with a unique package of value-added peripherals and software to deliver precise bone density measurements of the hip, spine and forearm and for research applications.

The QDR 4000 features high-quality imaging, low patient dose, unsurpassed precision, and a compact, low-profile design for easy patient positioning. Like all QDR instruments, the QDR 4000 utilizes the NHANES reference database to meet international standardization criteria.

Equipped with a powerful computer system, high-resolution monitor and fast color printer, the QDR 4000 package contains a SuperDisk drive for data storage and CD ROM. QDR OnePage reporting software provides concise, attractive patient reports for referring physicians and to facilitate reimbursement.



the office-based physician

QDR 4000 . . . packed with value-added features found on more advanced systems

- **Precise, reliable DXA technology**—still the “gold standard” of bone densitometry
- **Scans spine, hip, and forearm** and research applications
- **Advanced computer system and printer**, includes **modem**, **SuperDisk drive** and **CD ROM**
- **NHANES Reference Database** complies with standardization guidelines
- **QDR OnePage Fx** combines scan and analysis results with fracture risk indication based on World Health Organization criteria
- **QuickHELP** provides a virtual “walk through” of the QDR 4000’s capabilities
- **Practice Development Guide** helps promote your bone densitometry services
- **DICOM Compliant***



* *Optional*

QDR[®] 4000

Clinical Bone Densitometer

Clinical Applications



Lumbar Spine

The lumbar vertebrae represent an important clinical site for bone mineral assessment due to the presence of high-turnover trabecular bone. The QDR 4000 provides unmatched precision for lumbar spine studies using the standard 2-3 minute scanning mode.



Proximal Femur

On the QDR 4000, evaluations of the proximal femur include four separate regions-of-interest and the total hip, including a search along the entire femoral neck for a Ward's triangle (lowest density) region.

The International Committee for Standards in Bone Densitometry (ICSBD) recommends standardization based on the TOTAL HIP region, which has been shown to be equally useful for the evaluation of patients at risk for osteoporosis, but is more precise than other hip regions.



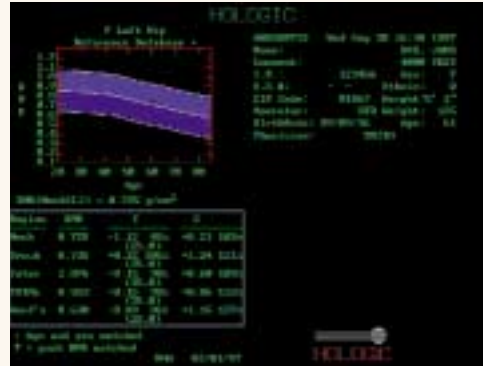
Forearm*

Forearm scans, taking three minutes, simultaneously assess 1/3, and mid- and ultra-distal regions. Results for ulna, radius or both combined can be obtained. Forearm evaluation with the QDR 4000 is faster and more accurate than other peripheral DXA devices.

*Optional

Reference Values

QDR's extensive online database of reference values simplifies interpretation of studies. It includes ethnic curves and features a utility program that allows customization of user reference values to the local patient population. Serial studies can be analyzed to determine annualized or visit-to-visit rate of gain/loss. Hip reference data are based on NHANES in compliance with standardization criteria.



Scan Comparison

This feature can be used in all QDR scan modes. The example shows a current hip exam displayed and compared simultaneously with a previous baseline study. This facilitates precise replication of regions for analysis.



Trend Reports

QDR 4000 software facilitates serial follow-up of patients. Trend reports provide an easy method to compare annualized rates of change. Significant changes in bone mineral status are automatically and clearly noted on the report to facilitate clinical management.



QDR[®] 4000

Clinical Bone Densitometer

The QDR Value-Added Package

QDR OnePage Fx

Combines image, scan analysis and reference curves into a concise, easy-to-read, visually impressive, single-page report. QDR OnePage report also contains pertinent patient information, fracture risk reporting and space for diagnosis and comments. Customize the pre-formatted page template with your clinic's name, address and phone numbers. Saves time and materials.

QDR QuickHELP

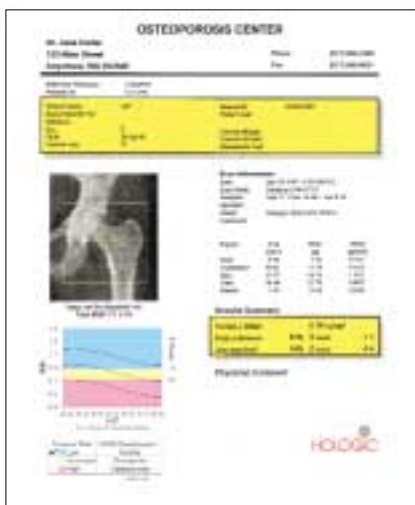
Accessed through the Hologic Main Menu, QDR QuickHELP provides an overview and virtual "walk through" in text and graphics of the QDR 4000's operation and capabilities. Just a "click" on a topic button produces a wealth of information, including instructions on scanning, analysis and data management.

Practice Development Guide

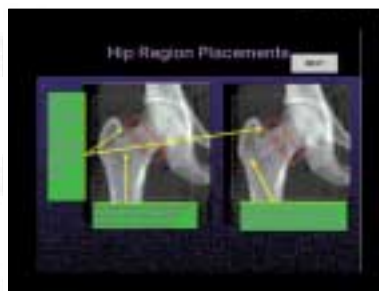
The Practice Development Guide helps you raise public awareness and take full advantage of the 4000's practice-building potential. Two CDs include ready-to-print marketing and patient education materials and tips on how to use the available array of marketing and media options to maximize the return on your investment of time, resources, and capital.

Standard package also includes . . .

- Advanced, high-speed computer system
- 3.5" SuperDisk drive accommodates standard 1.44MB floppy disks and 120MB SuperDisks for storage of scans.
- CD ROM for support programs
- Internet access-ready software provides connection to your internet service provider



QDR OnePage



QDR QuickHELP



Practice Development Guide

The QDR Series Advantage

Technological Leadership

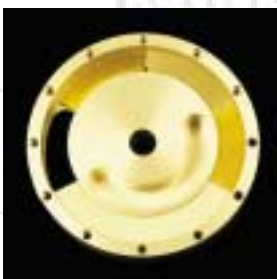
Hologic pioneered DXA technology with the introduction of the first DXA system in 1987. Since then, Hologic has developed four generations of bone densitometers all of which are completely data compatible to protect your investment and make upgrades easy.

NHANES Reference Database

NHANES (National Health and Nutrition Examination Survey)—a large, government-funded, multi-center study conducted by objective, independent investigators—has been selected by the International Committee for Standards in Bone Densitometry (ICSBD) as the standardized hip reference data. Acquired exclusively with Hologic QDR x-ray bone densitometers, the NHANES hip BMD reference data establishes values for normal, peak bone mineral density (BMD) in young men and women of various racial and ethnic backgrounds. Hologic was the first DXA manufacturer to provide the NHANES database.

Convenience and Reliability

Each QDR unit comes with an anthropomorphic spine phantom, used to perform quality control procedures. This assures consistently accurate measurements without the need for waterbaths to perform calibration procedures.



The QDR 4000's patented Automatic Internal Reference System—comprised of a rotating calibration wheel—automatically maintains pixel-by-pixel calibration without operator involvement and assures long-term precision and compatibility between all QDR systems.

Unsurpassed Precision

Hologic QDR systems surpass the precision of competitive systems where it really counts—on real patients, especially those with low bone density. The chart below compares hip and spine precision values of pre- and post-menopausal women scanned on Hologic and a competitor's system.

Comparison of in vivo precision in normal and osteoporotic patients

Skeletal Site	HOLOGIC	OTHER
	(n = 24)	(n = 24)
	CV (%)	CV (%)
Spine (L2-L4)		
Low BMD	1.1	1.8
High BMD	0.8	0.6
Neck of femur		
Low BMD	1.7	2.0
High BMD	1.4	2.5
Greater trochanter		
Low BMD	1.9	2.6
High BMD	1.3	1.7
Ward's triangle		
Low BMD	3.7	3.1
High BMD	2.6	4.7

Other studies have published significantly better precision than results shown here. However, these selected studies represent a true side-by-side comparison in clinical subjects. In all published comparisons to date, QDR's precision outperforms competitors in subjects with low bone density.

Laskey MA, Phil D, Flaxman ME, Barber RW, Trafford S, Hayball MP, Lyttle KD, Crisp AJ, Compston JE, "Comparative performance in vitro and in vivo of Lunar DPX and Hologic QDR-1000 dual energy X-ray absorptiometers," British Journal of Radiology, 64, 1023-1029.

Other Exclusive Hologic Features

- **Patient Rescan** makes obtaining the perfect scan easy. With the push of a button, operators can interrupt scanning to adjust the image on screen, eliminating the need to reposition the patient on the table. This exclusive feature saves time and assures patient comfort.
- **Reanalysis**—QDR systems store scan information as raw data that can be repeatedly reanalyzed—even a year or more later—without rescanning.
- **Scoliotic Spine Analysis** tailors vertebral BMD assessment to the unique curvature of patients with scoliosis.
- **Automatic Bone Mapping** calculates the soft tissue and bone map of any scan without operator involvement.
- **Automatic Locate** feature internally records and monitors the location of patient data saved to a storage media, eliminating the need to log patient data. This program displays the disk and location where data was archived.

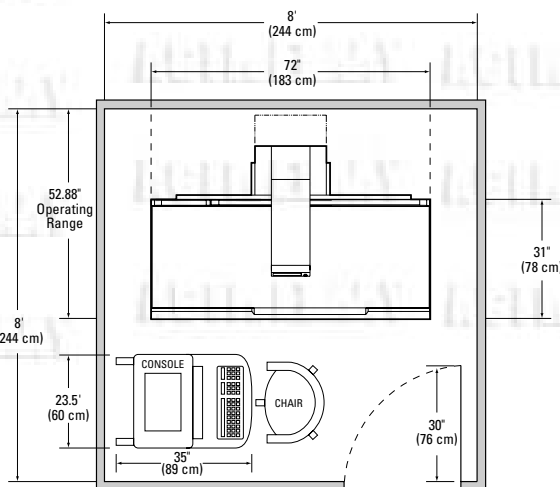
QDR 4000

Clinical Bone Densitometer

Specifications

Scanning Method	Rectilinear scan
X-ray System	Switched-pulse dual energy (140kVpeak)
Detector System	Single-element detector
Scanning Sites	Lumbar Spine • Proximal Femur (hip) • Forearm* • Decubitus Lateral BMD*
Nominal Patient Dose	5.0mR
Scatter Dose	< 0.2mR/hr nominal measured at 1m from patient
External Shielding Requirement	None†
BMD Precision	<1.0%
Calibration	Self-calibrating using patented Hologic Automatic Internal Reference System • Automated Quality Control Program • Operator calibration not required
System Weight	750lbs. (340kg)—Installed weight 900lbs. (410kg)—Shipping weight
Operating Requirements	Temperature: 60°–90°F (15°–32°C) Humidity: 20–80% relative humidity, noncondensing Power: 100VAC 12A 50/60Hz 120VAC 11.5A 50/60Hz 230VAC 5.7A 50/60Hz
Nominal Scan Time (60Hz)	Fast (F) and Performance (P) modes Spine 2 min. (F) or 4 min. (P) Hip 3 min. (F) or 6 min. (P)
Nominal Scan Time (50Hz)	Fast (F) and Performance (P) modes Spine 2.4 min. (F) or 4.8 min. (P) Hip 3.6 min. (F) or 7.2 min. (P)
Standard Configuration Hardware	• Computer work table with Pentium II CPU or better • 6GB (min) hard drive disk • 104 key-enhanced keyboard • Mouse, pad and shelf • 4MB video card • 56K modem • 17" SVGA monitor • HP Professional Series Color Deskjet printer • 3.5" SuperDisk Drive (for 1.44MB floppy disks and 120MB SuperDisks) • CD ROM • Positioning accessories
Standard Configuration—Software	• Windows 95 • QDR OnePage Report • QuickHELP program • Fracture Risk Indication
Optional Hardware	• Magneto optical disk storage • HP LaserJet B&W printer • Modem • Network
Optional Software	• Decubitus Lateral BMD • General region of interest • Forearm • Small Animal • DICOM • Prosthetic Hip

* Optional
† Installation requirements for x-ray equipment vary. Check with local regulatory authorities.



ROOM LAYOUT

U.S. Patent Nos. 5132995, 4811373
QDR is a registered trademark of HOLOGIC, INC. Windows is a registered trademark of Microsoft Inc. DeskJet and LaserJet are registered trademarks of Hewlett-Packard Corp. SuperDisk is a registered trademark of Imation, Corp. HOLOGIC, INC. reserves the right to amend product specifications without notice. SuperDisk is a registered trademark of Imation Corp.

©HOLOGIC, INC. 1999 B-131
5/01 U.S.A./International



HOLOGIC, INC.

North and South America,
Pacific Rim
35 Crosby Drive, Bedford, MA
01730-1401
Tel: 781.999.7300
Sales Fax: 781.280.0668
www.hologic.com

Europe
Horizon Park
Leuvensteeweg 510, BUS 31
1930 Zaventem, Belgium
Tel: 32.2.711.4680
Fax: 32.2.725.2087