

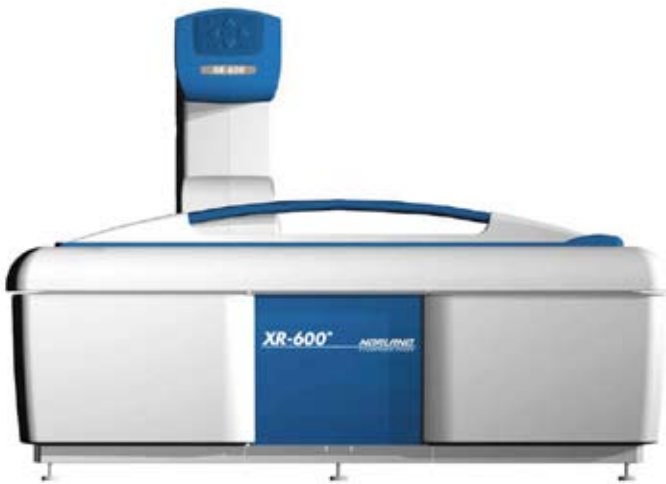
Norland Bone Densitometers

Strong DXA Scan Site Versatility Pairs with Easy Operability

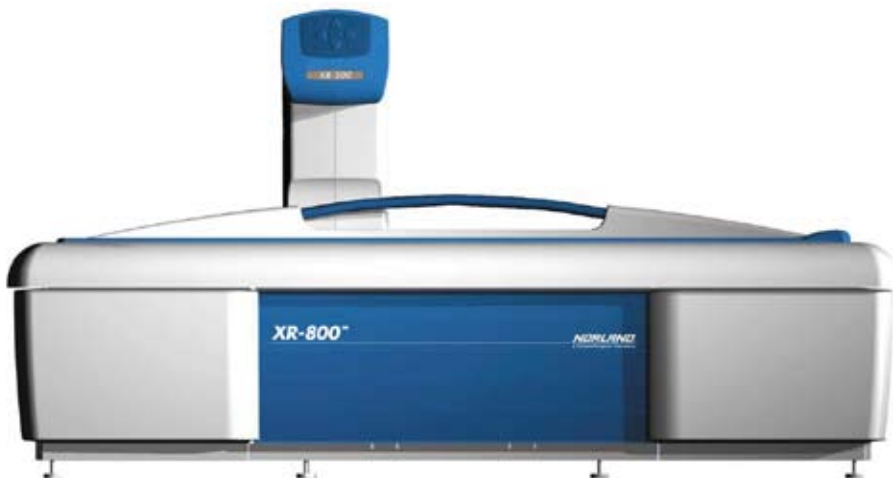
Ease and convenience all in one state-of-the-art table design

Siemens is a reseller of Norland's successful line of DXA bone densitometers, including the XR-600 and XR-800.

The XR-600 is Norland's 6-foot table, which is capable of performing the following studies: AP Spine, Lateral Spine, Hip, Forearm, Research, Small Subject, and Soft-Tissue Composition.



The XR-800 is Norland's 8-foot table. It is capable of performing Whole-Body Soft-Tissue Composition and Total Skeleton measurements, in addition to the same studies supported by the XR-600.



Exceptionally well suited for use in:

- Diagnostic Imaging Centers
- Women's Health Clinics
- Family practice and internal medicine offices
- Rheumatology and geriatric care centers
- Anti-aging medicine
- Sports medicine clinics and a host of other applications

Excellent value through patented technology

Maximum reading accuracy and precision.

EmpiriCal™ represents an advanced basis for ensuring discrimination between the varying degrees of soft tissue and bone.¹

Ease of use has been the guiding principle during the table design that led to the development of the intuitive user-interface software, Illuminatus DXA™.

Accommodating more patient conditions, regardless if patients are large, slender, or regular. DynaFlux™ ensures a more accurate measure of bone and body composition in obese and lean subjects.¹

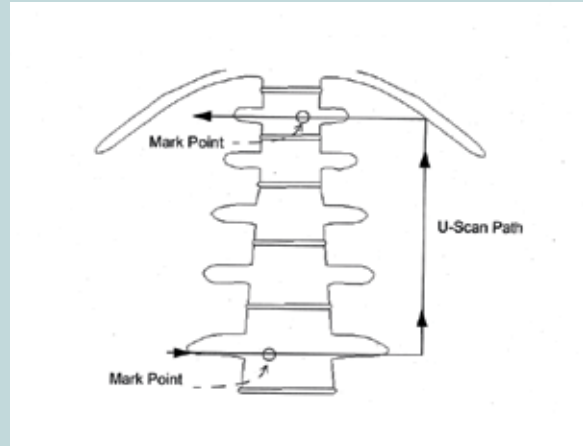
Less radiation exposure during bone mineral density (BMD) measurements. AcuBeam™ and DynaFlux technologies effectively minimize X-ray exposure for patients.

Wide Range of Scan Modalities

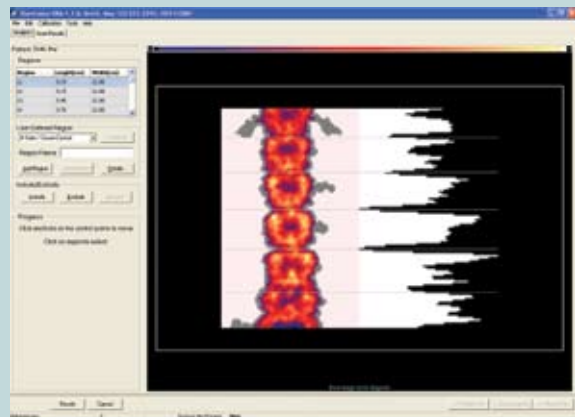
Hip – The functional hip sling and foot separator support the legs to ensure that the femur is properly and comfortably rotated while keeping the femur neck perpendicular to the X-ray beam.



AP Spine – Auto Centering through HiPrecise™ ensures that spine data will be centered in the region of interest. This will eliminate the need for time-consuming patient repositioning inherent in other technologies.



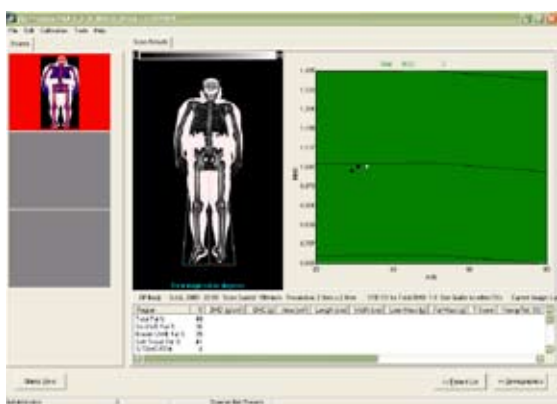
Automated Analysis makes scan evaluation quicker and more precise. In preparation for analysis, HiPrecise uses the original intervertebral spacing if a patient has been previously evaluated.



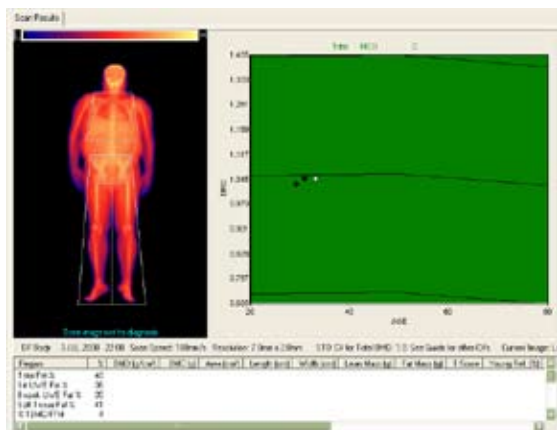
Scan Modalities in addition to AP Spine and Hip

Lateral Spine – Positioning of the patient in a lateral decubitus position on the table allows for maximum arching of the spine and minimizes influence of false ribs (11 or 12) on L2 and the iliac crest on L4.

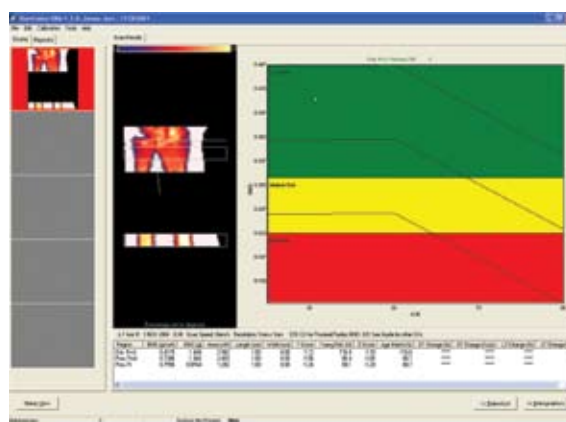
Whole Body – Quantification of Bone Mineral Density for a subject's entire body. The analysis represents the Bone Mineral Content in grams, Bone Mineral Density in g/cm², and Bone Mineral Area in cm², for the whole body as well as the head, trunk, abdomen, arms, legs, and operator-defined regions of interest. Intelligent scanning minimizes the scan time and area definition.



Soft-Tissue Composition – Works in conjunction with Whole Body, Research, and Small Subject scans to provide lean and fat soft tissue mass in addition to bone densities. Lean and fat masses are presented in grams. When examined in a Whole-Body Study, fat mass is also presented as a percent of soft tissue and a percent of total body mass. In addition, the body fat percentage is reported as Siri Equivalent and Brozak Equivalent Percent Fat.



Forearm – The functionality of Forearm scans outperformed five other leading commercially available systems for BMD measures at both proximal and distal sites (sample of 100 women).² The Norland system measured the highest density and full cortical sample at the proximal region and the lowest density and dominant trabecular measure at the distal region.



Special applications that are supported

Pediatric

Because Dynaflex regulates the X-ray signal so that it is appropriate for the pediatric body size, no additional software is needed to carry out the study.

Orthopedic

The Clear-Edge™ features of High Density Point Exclusion and Special Region Analysis allow estimation of bone surrounding an implant device, supporting plates, and nails. These features may allow the sensitive evaluation of change in bone alongside these materials. Up to seven operator-defined regions may be followed concurrently in a study.

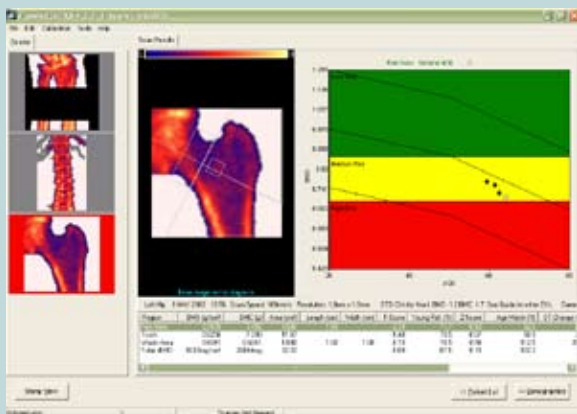
Research/Small Subject

Quantifies bone mineral or soft tissue content in any user-defined region of interest within the scanner's active scanning area. The operator may adjust scan speed, resolution, and width of the study to obtain the desired speed, precision, and accuracy. The small-subject software employs a more sensitive bone-edge detection threshold optimized to the evaluation of small samples with weight down to 100 grams.

Sophisticated Software Analysis Processing

Trended Patient Data

Illuminatus DXA software supports the trending of patient studies so that changes in patient bone density can be automatically illustrated in graphs. This tool aids both the clinician and patient to understand changes that occur over time in response to treatment, aging, or disease.

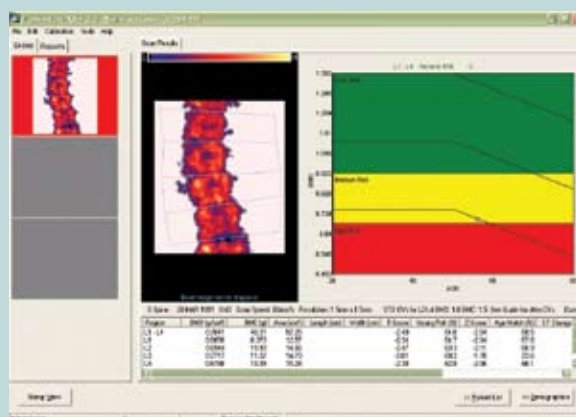


The software compares the current study to the preceding study (Short-Term Change) and to the initial study performed on the patient (Long-Term Change). It calculates the overall percent of change between the studies, as well as the percent of change per year.

ST Change (%)	ST Change (%/yr)	LT Change (%)	LT Change (%/yr)
0.0	0.0	4.8	0.5
1.1	0.9	-3.0	-0.3
6.5	5.3	7.8	0.9
1.0	0.8	2.6	0.3

ClearEdge™

ClearEdge provides the functionality needed for accuracy under many circumstances. The ClearEdge software tool provides Include/Exclude features for removing artifacts. Angulated Cursors provide for defining intervertebral separations in AP spine studies requiring more than horizontal cursor placement – in scoliotic patients, for example. User-defined Special Regions estimate bone mineral in operator-defined regions of the scan. ClearEdge's Ruler Tool displays linear measurements of anatomical features.



Intuitive Navigation through Workflow Steps

The **Illuminatus DXA™³ User Interface Software** provides an intuitive workflow and easy means to utilize advanced features in the accomplishment of procedures.

Login Portal

The user is guided through logical pathways, but retains flexibility for advanced use.



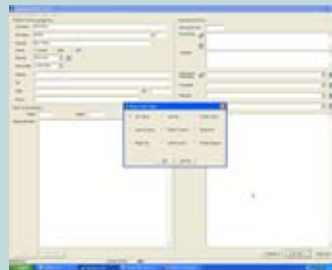
Patient List

Illuminatus DXA is customizable, flexible, and has frequent use of pull-down menus, providing a greater degree of procedure efficiency.



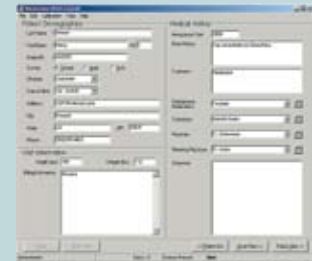
Scan Parameters

The parameter window of the scan module allows the operator to update or confirm the scan settings. The system will instruct the operator about patient positioning and execute the scan.



Select Scan Type

The type of scan procedure can easily be selected. Just one mouse click will take the operator to the desired scan module.

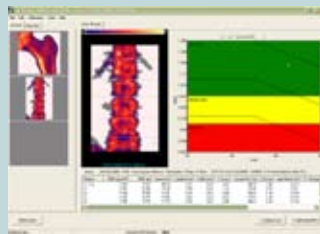


Patient Demographics

The operator is able to enter detailed administrative and clinical information into the patient record.

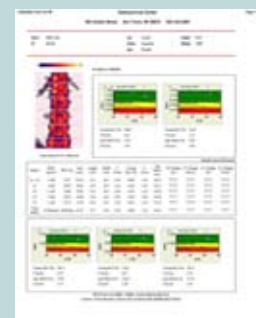
Scan Results

Illuminatus DXA places regions of interest, compares the results to any prior studies in the database, and calculates the percent changes.



Scan Reporting

The operator is able to generate detailed reports that comply with ISCD recommendations.



Norland DXA Configurations

Model	Table	Standard Scan Sites
XR-600™	6 foot	AP Spine, Left Hip, and Right Hip Optional: Forearm, Small Subject, Research, Lateral Spine, and Soft-Tissue Composition
XR-800™	8 foot	AP Spine, Left Hip, Right Hip, Forearm, Lateral Spine, and Whole Body (Soft-Tissue Composition and Total Skeleton) Optional: Research and Small Subject

Folder Mail™ and Image Mail™ Internet Communication Suite (standard) • Illuminatus DXA for Remote WorkStation (option) • New NORDICOM-DICOM Package also optional.

Norland Table Specifications

	AP Spine	Hip	Forearm	Lateral Spine	Whole Body
Scan Time	≈1 minute	1.5 minutes	3 minutes	<4 minutes	5 minutes
In-Vivo Precision	1.0%	1.4% (Femur Neck)	0.8%	2.4% (2 vertebrae)	0.8%
Line Resolution	1.5mm	1.0mm	1.0mm	1.0mm	6.5/13
Point Resolution	1.5mm	1.0mm	1.0mm	1.0mm	2.8/7.8
Scan Dose	3μSv	<15μSv	<15μSv	35μSv	0.2μSv
Accuracy	1% on bone and 2% on fat and lean based on chemical standards				

	XR-600™	XR-800™
Scanner Description	Quickscan Pencil Beam Dual Energy X-ray Absorptiometry (DXA)	
Drive System	Stepper motors with Kevlar-reinforced drive belts	
X-ray Source	Stationary anode X-ray tube oil and air cooling; 100kv constant potential, 1.3mA anode current, focal spot size: 0.5 mm	
Filtration	8-level automated samarium filtering (K-edge = 46.8 keV)—minimum filtration is 2.7 mm aluminum equivalent	
X-ray Detectors	2 NaI scintillation detectors in pulse counting mode	
Power	100-120 Vac; 220/230/240 Vac; 50/60 Hz; 700 VA maximum	
Operating Temperature	60° - 90° F/15° - 32° C	
Relative Humidity	Up to 80% non-condensing	
Dimensions:		
Recommended Dedicated Floor Space	84"L [2133.6 mm] x 84"W [2133.6 mm]	120"L [3048 mm] x 84"W [2133.6 mm]
Tabletop Size	72"L [1828 mm] x 35.5"W [902 mm] x 26"H [660 mm]	102"L [2591 mm] x 35.5"W [902 mm] x 26"H [660 mm]
Overall Size	72"L [1828 mm] x 48"W [1220 mm] x 49"H [1245 mm]	103"L [2616 mm] x 48"W [1220 mm] x 51"H [1295 mm]
Table Surface to Arm (max. patient thickness)	16" (40.6 cm)	
Weight	400 lbs [181 kg]	560 lbs [253 kg]
Active Scan Area	50" (127 cm) x 26.5" (67.3 cm)	76" (193 cm) x 26.5" (67.3 cm)
Patient Marking	Laser diode, red, Class II (FDA); Class I (EC); [less than 1 mW power]	
Patient Positioning Aids	AP spine positioning block, hip sling with foot separator, lateral positioning block, forearm positioning fixture, scout scan, laser marking system	
Calibration	Daily calibration verifies unit is operating properly Calibrated to a Wedge Phantom with 77 unique combinations of bone and soft tissue Provides calibration for the widest range in body size in the industry	
Computer*	IBM compatible, Windows® Software, pointing device (mouse), keyboard, display, modem, network card, sound system, DVD RW data back-up, color printer	
Reference Database(s)	Derived from phases 1 and 2 of NHANES III, 1988-1994 and Norland Reference Sets (refer to "Reference Set Data Sheets for Central Bone Densitometers" document published by Norland)	
Quality Assurance	Assessment of an anatomical phantom evaluates system accuracy and precision for bone, lean, and fat measurements using Shewhart Chart Analysis to confirm absolute and trending performance are within guidelines	

*Computer technology innovates rapidly. The major functionality noted above is provided with the technology available at the time and compatible with the DXA system. Please call for currently shipped configuration.

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Global Business Unit

Siemens AG
Medical Solutions
Special Systems
Henkestr. 127
DE-91052 Erlangen
Germany
Phone: +49 9131 84-4746
www.siemens.com/healthcare

Global Siemens Headquarters

Siemens AG
Wittelsbacherplatz 2
80333 Muenchen
Germany

Global Siemens Healthcare Headquarters

Siemens AG
Healthcare Sector
Henkestrasse 127
91052 Erlangen
Germany
Phone: +49 9131 84-0
www.siemens.com/healthcare

Legal Manufacturer

CooperSurgical, Inc.
95 Corporate Drive
Trumbull, CT 06611
USA

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Siemens Medical Solutions USA, Inc.
51 Valley Stream Parkway
Malvern, PA 19355-1406
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