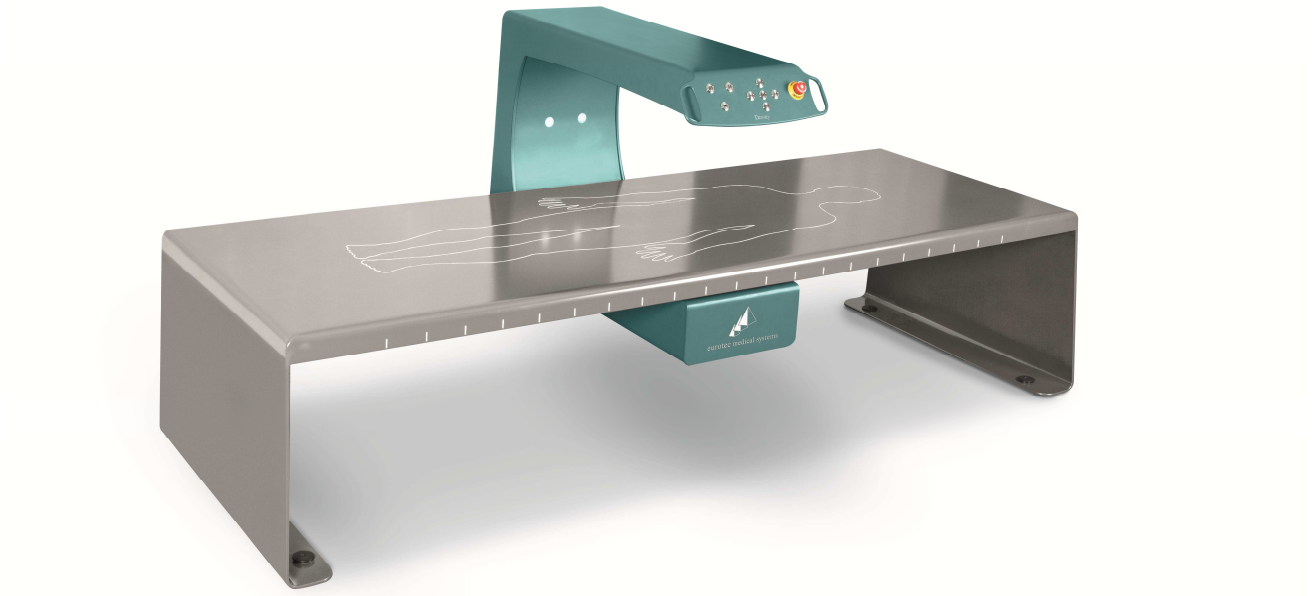
Density NFB

TECHNICAL SPECIFICATION FILE



1. Principle Of Operation

Scan type :	Narrow Fan Beam
Separation :	Samarium filtered (K-edge)
Energies :	40 keV, 75 keV
Filtration :	30.5 mm Al eq.

2. Performance

Minimum Scan time:	48s (Spine and Femur) - 34s (Forearm) - 240s (Wholebody)
Refine scan option:	Normal 130 mm/s speed - High Resolution: 57 mm/s speed
Precision :	1%
Accuracy :	1%
Bone Edge Detection :	Automatic
Reporting Results :	BMD (g/cm^2), BMC (g), area (cm^2), T-Score, Z-Score, T-Score %, Z-Score %
Reference Curves :	NHANES, local databases
Calibration :	Multiple point BMD and area
Linearity Range :	0.2 g/cm^2 to 2.0 g/cm^2

3. X-Ray Generator

Generator Type :	X-ray monobloc, high frequency, fixed anode, microprocessor controlled stability
X-Ray Output :	Voltage max.: 100 kV Current max.: 2 mA Power max.: 150 W Working condition: 86 kV fixed Minimum operating current: 0.125 mA Maximum operating current: 1.75 mA
Cooling :	Oil convection
Collimator :	Multi hole, diam. 2 mm
Beam size :	2 mm

4. X-Ray Detector

Type :	Ultra high efficiency $^{1/4}$ NaI(Tl) scintillator, integral line PMT
Detector HV :	Negative, -200 V to -1200 V , stabilized
Detector System:	The detector system is digital. Each photons reaching the detector has a precise energy level depending on absorption material. This energy generates an analog signal that with a peak detector circuit is directly translated through an ADC with 256 channels into a digital signal.

5. Mechanical characteristics

Structural Material :	Aluminium EN5038s
Dimensions :	2600 x 1125 x 1125 mm (l x w x h)
Weight :	198 kg
Scan Area maximum:	120 x 180 mm (spine and femur) 100 x 180 mm (forearm) 600 x 1980 mm (wholebody)
Patient Weight Limit :	160 kg

6. Software

Program Name :	dVision
Developing Environment :	Windows Presentation Foundation
Supported Operating Systems :	Windows 7/8/8.1/10
Results :	BMD (g/cm^2), BMC (g), area (cm^2), T-Score, Z-score, T-Score %, Z-score %
Connectivity :	Dicom 3.0 (optional)
Standard Protocols :	AP Spine (L1-L2-L3-L4, Total), Femur left and right (Neck – Trochanter - Great Trochanter – Total: Neck & Great Trochanter), Wholebody (Total), Forearm left and right (Mid. – Distal - Ultradistal)

7. PC and OS Minimum Requirements

Operating Systems :	Windows 64-bit (7/8/8.1/10)
Memory :	4 GByte
Hard Disk :	500 GByte
Display :	LCD or LED 22” , 1920 x 1080 XGA+
Data Port :	Ethernet
Printer :	Inkjet or laser color printer

8. Environmental Requirements

Temperature :	15 to 27 °C
Humidity :	15 to 80 % (non condensing)
Minimum Room Dimensions :	3 x 3 m
Power Requirements :	230 VAC, 500 W

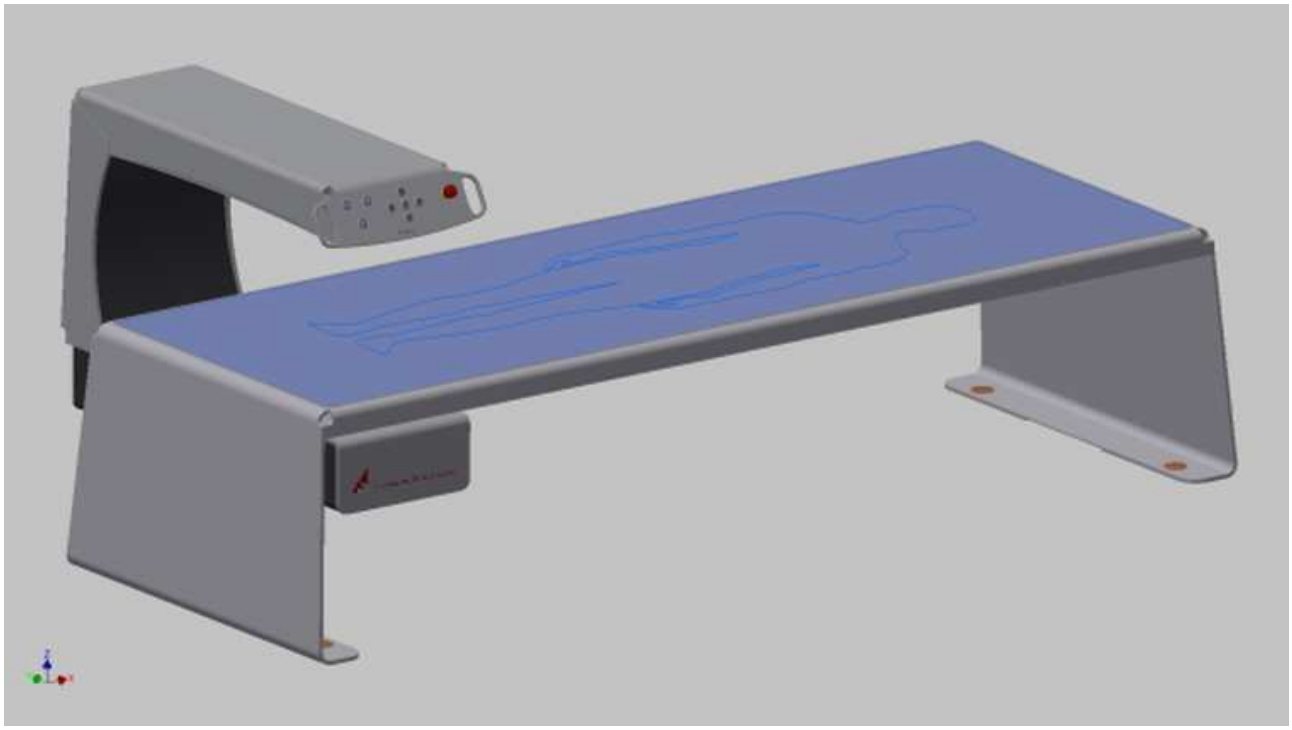
9. Electronics

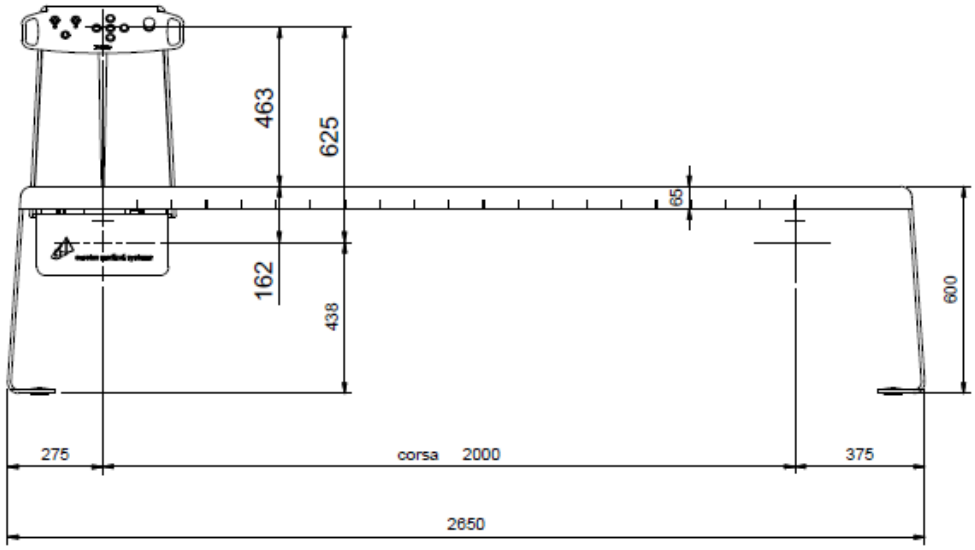
Processor Architecture:	ARM Cortex-M4 (STM32F429) , 32 bit
Signal Acquisition :	By peak holder circuit, CPU controlled reset discharge
Data Transmission :	Full-duplex RS-422, maximum data rate 2 Mbps
Patient Positioning :	Semi-automatic, assisted by laser pointer (classe II, <1mW)
Movement :	Two micro-step stepper motors

10. Firmware

Developing Platform :	IAR Embedded Workbench
Programming Language :	C
Architecture :	ARM Cortex-M4
Processor :	STM32F429 (32-bit)
Physical Support :	Internal Flash Memory
Size :	13.6 kByte

11. System Images

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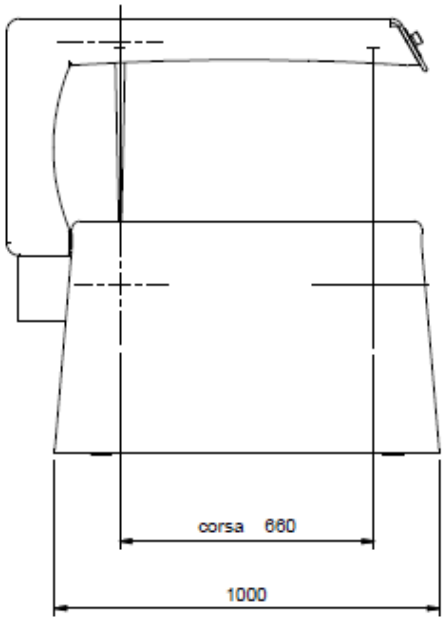
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