

# An uncompromising combination of performance, ergonomics and data management

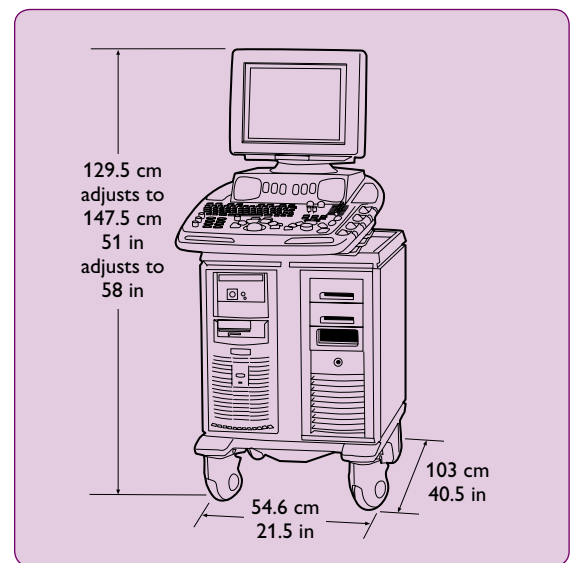
### System Overview

#### Applications

- Abdominal
- Small parts and superficial
- Pediatric
- Musculoskeletal
- Obstetrical
- Gynecological and fertility
- Prostate
- Vascular
  - Cerebrovascular
  - Peripheral vascular
  - Intraoperative vascular
- Transcranial Doppler
- Cardiac
  - Adult
  - Pediatric
  - Transesophageal
  - Stress

#### Imaging Modes

- 2D
- Color Doppler
- Color Power Angio® Imaging (CPA)
- Directional Color Power Angio Imaging
- M-mode
- Pulsed wave Doppler
- Color M-mode
- Continuous wave Doppler
- 3D (part of OB/Gyn application package)
- Dual mode
- Duplex for simultaneous 2D and Doppler
- Triplex mode for simultaneous 2D, Doppler and color/CPA
- Fusion Signal Processing
- Tissue Harmonic Imaging (THI)
- Intelligent Doppler
- Panoramic Imaging (HD system only)
- Microfine™ Focusing (HD system only)



#### Physical Dimensions

Depth: 103 cm/40.5 in; Width: 54.6 cm/21.5 in; Ground clearance: 11.4 cm/4.5 in; Height (adjustable): 129.5–147.5 cm/51–58 in; Control panel height (adjustable): 84.6–99.7 cm/33–39.3 in; Wheel base: 53.3 cm wide by 53.3 cm deep/21 in x 21 in; Wheels: 12.7 cm/5 in diameter, 9.5 cm/3.8 in wide; Weight: 100 kg/220 lbs including display (no peripherals)

# PHILIPS

### Imaging Modes *continued*

- Pulse Inversion Harmonic Imaging (HD system only)
- Adaptive Doppler (HD system only)
- Adaptive Color Doppler (HD system only)
- Tissue Doppler Imaging (HD system only)

### Control Panel and User Interface

- Control panel can be raised, lowered and rotated more than 300 degrees
- Easy-to-use control panel with primary controls readily accessible and logically grouped
- Alphanumeric keyboard: QWERTY keyboard with globalization key for conversion to local language (English, French, German, Italian and Spanish)
- Trackball with Select and Enter keys for easy navigation on the system
- Integrated stereo speakers
- Imaging mode keys: 2D, Color Power Angio, M-mode, Color Doppler, Continuous Wave Doppler (CW), Pulsed Wave Doppler (PW)
- 2D image controls: Depth, Dual Left, Dual Right, Freeze, THI, Zoom, Focus
- Image enhancement controls: Dynamic Range, Focus, Gain, Persistence, Post-processing Map, Smooth
- Patient specific optimization keys: Fusion, Probe (transducer select), THI
- Quantitative controls: Measure, Menu, Delete, Trackball
- Doppler/Color controls: Angle/Steer, Spectral, Scale, Baseline, Gain, Power, Volume, Plex
- Image acquisition keys: Review, Report, VCR, Acquire and three user-defined record keys supporting external print/video options
- Annotation controls: Label, Menu, Delete, Arrow, Bodymarker
- Secondary control group: Six soft keys whose functions change dynamically based on the currently-active mode, preset, or system function
- Function keys: Microphone, Patient, Preset, Setup
- Four option keys activated with additionally purchased features such as 3D, stress echo, panoramic and Tissue Doppler imaging
- Online Help key

- Lateral Gain Compensation (LGC) slide pot controls
- Time Gain Compensation (TGC) slide pot controls

### Monitor

- 256 x 202.5 mm/15 inch
- Raises, lowers and rotates with control panel
- Swivels +/- 120 degrees
- Tilts +15/- 10 degrees
- VGA (800 x 600 @ 75 Hz) non-interlaced RGB
- Resolution: 800 pixels per line
- 0.28 mm dot pitch
- Brightness, contrast and color temperature controls

### Gray Shades

- 256 shades of gray

### Acquisition Frame Rate

- Greater than 90 frames/second (dependent on transducer, field of view, depth and angle)

### Standard Imaging Features – available on all EnVisor systems

- 256-channel broadband digital beamformer for accurate, high-resolution imaging that supports three Fusion (patient specific optimization) settings
- Tissue Harmonic Imaging — improves grayscale image clarity by reducing clutter and sharpening tissue borders for improved image quality in difficult-to-image patients
- Triplex mode — displays tissue movement and blood flow in 2D, color/CPA and PW Doppler simultaneously
- Trapezoidal Linear Array — expands field of view up to 15 degrees on each side (available with vascular and general imaging application packages)
- Color compare — simultaneously displays real-time Color Power Angio, Color Doppler and grayscale images side by side
- 3D surface rendering (available with OB/Gyn application package)

- Automatic color invert — automatically inverts color maps to maintain selected color-coding when the linear steering angle passes through vertical
- Automatic Doppler trace — traces frozen spectral display to calculate and display user-selected measurements in most presets
- Body markers — displays body-part icons appropriate for the active preset and indicates the relative position of the transducer
- Full-screen M-mode and Doppler — improves diagnoses by enabling easier, more accurate caliper placement
- Intelligent Doppler Imaging— automatically maintains optimal angle-to-flow to assist in delivering accurate and consistent Doppler velocity measurements (available with vascular and general imaging application packages on linear transducers only)
- Multiple focal zones — brings tiny structures and fine textures into sharp focus
- Quick text — allows easy annotation at any time during an exam
- Label — places, moves, erases, modifies or appends predefined text labels, typed text or arrows
- Online help

### **Analysis and Review Features**

- Comprehensive measurements, calculations and application-specific reports with embedded images, including expanded cardiac, vascular and OB/Gyn capabilities for thorough exam documentation
- Extensive image management capability — including thumbnail image review, to view and edit images, Cineloops and reports
- CD recordable single session for archiving images
- Study manager allows user to digitally acquire, review and edit complete patient studies
- Floppy disk drive (3.5") — enables system configuration backup and retrieval, including user-defined presets and trending data for OB exams
- Ability to export AVI and BMP images to 3.5" floppy disk, CD or magneto-optical disk (MOD) for viewing on a PC
- Loop edit controls
- Ability to archive studies (images only) to MOD (with DICOM media option)

### **Cineloop Review**

- Acquisition, storage in memory, and display in real-time and duplex modes of up to 300 frames (or 30 seconds) of 2D and color images for retrospective review and image selection
- Single frames of Doppler data and M-mode images can be archived to print or electronic media
- Trackball control of frame-by-frame image selection
- Variable playback speed
- Trim capability
- Functions in 2D and Tissue Harmonic Imaging, M-mode, PW Doppler, CW Doppler, Color Doppler, Color Power Angio imaging and Tissue Doppler imaging

### **Cart Features**

- Back deck shelf to support peripherals
- Standard CD recordable and 3.5" floppy drives (3.5" MOD drive available with DICOM Media option)
- System can be configured with up to four (4) transducer connectors
- Features four full-swivel wheels, for maximum maneuverability; two-wheel swivel lock and brake

### **Performance Features – available on EnVisor HD systems**

All of the Standard Imaging Features, plus:

- 512-channel broadband digital beamformer with five Fusion (patient specific optimization) settings for added diagnostic power
- Parallel processing in 2D and color modes for faster frame rates
- Adaptive Color for automatic optimization of color or Color Power Angio frequencies, ensuring excellent sensitivity and color penetration
- Pulse Inversion Harmonic Imaging setting achieves broader bandwidths in harmonic modes for further gains in axial resolution and overall clarity
- Microfine focusing — up to eight focal zones on selected transducers
- Panoramic imaging for extended field of view
- Adaptive Doppler boosts weak signals to improve spectrum visibility and enhances pulsed-wave audio signals for precise flow assessment

### Performance Features *continued*

- Tissue Doppler Imaging (TDI) on sector transducers uses color to display direction and timing of myocardial function

## Other Options

- External video/print option:  
60 Hz NTSC/50 Hz PAL
- Stress Echo package with foot switch
- Image recorders (VCR, B/W thermal printer, color printer)
- Foot switch — includes two user definable record functions
- Biopsy kits available for the following transducers:
  - c3540
  - L1038
  - PA 4-2
  - CA 5-2
  - E6509
  - L7535
  - L5035
- DICOM
  - DICOM Media includes 3.5" MOD drive for image storage and integrated on-board image extended memory
  - DICOM Basic includes DICOM print and storage modalities with extended on-board image memory
- Additional (fourth) transducer connector

## Miscellaneous System Data

### Localization Options

- Software: English, French, German, Italian and Spanish
- Training and user documentation: English, French, German, Italian, Spanish, Japanese, simplified Chinese, Polish, Portuguese and Russian
- Online help: English, French, German, Italian, Spanish, Portuguese, Russian and Polish

### Power Requirements

- Power: 1150VA
- Frequency: 47 to 63 Hz
- Voltage: 90V to 240V AC

### Power Cords

Available for electrical standards worldwide

### Electrical Safety Standards

- CSA C22.2 No. 601.1
- IEC 60601-1
- UL-2601
- EN60601-1

### Environmental

- Temperature
  - System: 0-40 degrees C at 20-80 percent relative humidity
  - VCR and printers: 0-40 degrees C at 80 percent relative humidity (non-condensing)
- Heat Dissipation — <4000 BTUs/hour (fully loaded)

### Input/Output Ports

- Five available ports:
  - Standard USB interface for support of qualified plain paper printers
  - Composite video: output to external monitor, VCR or printer (only available with external video option)
  - External print trigger (only available with external video option)
  - LAN connector — used with DICOM Basic
  - Foot switch port (optional) — for connecting the optional foot switch

### Peripherals

- Panasonic MD835P Super-VHS video cassette recorder
  - Resolution: >400 lines
  - Video format: NTSC or PAL
  - Model number: 77616A (NTSC); 77626A (PAL)
  - Media part number: 77612-91920
  - Dimensions (h/w/d): 13.2 x 27 x 39.4 cm; (5.2 x 10.5 x 15.4 in)
  - Weight: 7.5 kg (16.5 lbs)
- B/W Thermal Printer
  - Sony UP D895MD digital black and white printer (USB input)
- Color Printer
  - UPD21-MD Sony digital color printer (USB input)
- System supports a range of plain paper printers

## Transducers

### Transducer selection

- Electronic switching of up to four transducers
- System supports up to 13 transducers to meet a wide range of clinical needs

### Transducers

#### • **PA 4-2 Broadband Sector**

- 2-4 MHz extended operating frequency range
- Provides high-resolution images for abdominal, cardiac and OB/Gyn applications
- Supports 2D, color, PW / CW Doppler, Tissue Harmonic Imaging and Color Power Angio Imaging

#### • **s4 Broadband Sector**

- Supported on EnVisor HD system only
- 2-4 MHz extended operating frequency range
- Provides high-resolution images for abdominal, cardiac and OB/Gyn applications
- Supports 2D, color, PW/ CW Doppler, Tissue Harmonic Imaging and Color Power Angio Imaging

#### • **s8 Broadband Sector**

- 3-8 MHz extended operating frequency range
- High-resolution images for pediatric and OB/Gyn applications
- Supports 2D, color, PW / CW Doppler and Color Power Angio Imaging

#### • **s12 Broadband Sector**

- 5-12 MHz extended operating frequency range
- Provides high-resolution images for pediatric echo and neonatal cephalic applications
- Supports 2D, color, PW / CW Doppler and Color Power Angio Imaging

#### • **Omni II Broadband Sector Multiplane TEE**

- 4.6-6 MHz extended operating frequency range
- Transesophageal imaging
- Supports 2D, color, PW / CW Doppler and Color Power Angio Imaging

#### • **CA 5-2 Broadband Curved**

- 2-5 MHz extended operating frequency range
- Provides high-resolution images for abdominal and OB/Gyn applications
- Supports 2D, color, PW Doppler, Tissue Harmonic Imaging and Color Power Angio Imaging

#### • **c3540 Broadband Curved**

- Supported on EnVisor HD system only
- 2-5 MHz extended operating frequency range
- Provides high-resolution images for abdominal and OB/Gyn applications
- Supports 2D, color, PW Doppler, Tissue Harmonic Imaging and Color Power Angio Imaging

#### • **E6509 Broadband Curved**

- 5-7.5 MHz extended operating frequency range
- Provides high-resolution endocavity imaging for OB/Gyn and prostate applications
- Supports 2D, color, PW Doppler, Tissue Harmonic Imaging and Color Power Angio Imaging

#### • **L1038 Broadband Linear**

- 5-12 MHz extended operating frequency range
- 10 degrees of trapezoidal imaging
- Provides high-resolution images for superficial applications
- Supports 2D, color, PW Doppler and Color Power Angio Imaging

#### • **L5035 Broadband Linear**

- 3.5-5.6 MHz extended operating frequency range
- 15 degrees of trapezoidal imaging
- Provides high-resolution images for vascular applications
- Supports 2D, color, PW Doppler and Color Power Angio Imaging

#### • **L7535 Broadband Linear**

- 4.5-7.5 MHz extended operating frequency range
- 15 degrees of trapezoidal imaging
- Provides high-resolution images for superficial imaging applications
- Supports 2D, color, PW Doppler and Color Power Angio Imaging

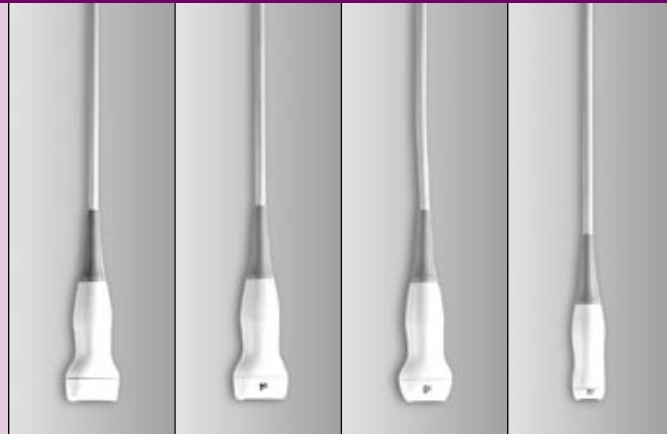
#### • **15-6L Broadband Compact Linear**

- 6-15 MHz extended operating frequency range
- 8 degrees of trapezoidal imaging
- Provides high-resolution images for intraoperative vascular applications
- Supports 2D, color, PW Doppler and Color Power Angio Imaging

#### • **D1914 Cardiac Non-imaging**

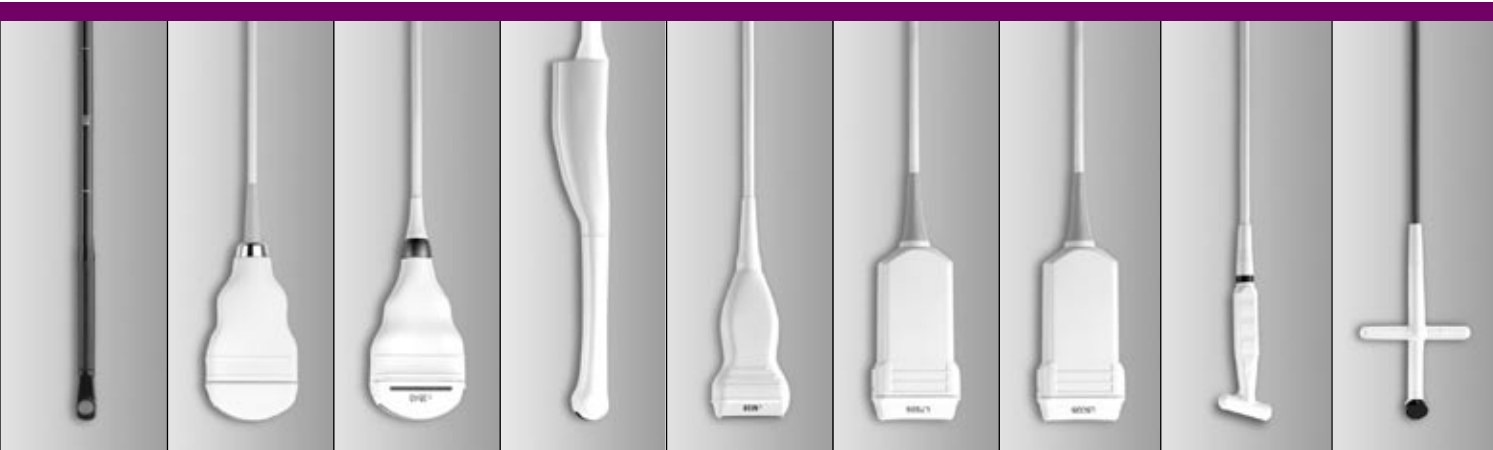
- 1.9 MHz imaging
- Non-imaging CW Doppler probe for cardiac applications

# Transducers



Transducer	PA4-2	s4*	s8	s12
Array Type	Sector	Sector	Sector	Sector
Sector Angle/Field of View	90 degrees	90 degrees	90 degrees	90 degrees
Broadband Frequency Range	4-2 MHz	4-2 MHz	8-3 MHz	12-5 MHz
<b>Application</b>				
Abdominal 0-4 cm				
Abdominal 5-10 cm	●	●		
Abdominal > 11 cm	●	●		
Gyn Vaginal (max. depth)				
Gyn Transabdominal < 10 cm				
Gyn Transabdominal > 11 cm				
OB Vaginal 6-8 cm (max. depth)				
OB 1st Trimester 10-12 cm (max. depth)	●	●		
OB 2nd Trimester 12-18 cm (max. depth)	●	●	●	
OB 3rd Trimester 15-20 cm (max. depth)	●	●	●	
Pediatrics/Neonatal Abdominal Small			●	●
Pediatrics Abdominal Large	●	●	●	
Pediatrics Cephalic			●	●
Neonatal Cephalic			●	●
Vascular 0-3 cm				
Vascular 3-8 cm				
Cardiac < 30 lbs/13.6 kg	●	●	●	●
Cardiac 20-140 lbs/13.6-63.6 kg	●	●		
Transcranial Doppler	●	●		
Small Parts < 3 cm				
Small Parts > 3 cm				
Musculoskeletal				
Prostate				
Intraoperative Vascular				
Intraoperative Cardiac				
Biopsy Guides	Reusable			

\*Available on EnVisor HD only.



Omni II	CA5-2	c3540*	E6509	L1038	L7535	L5035	15-6L	D1914
Sector	Curved	Curved	Curved	Linear	Linear	Linear	Linear	Non-Imaging
90 degrees	76 degrees	76 degrees	124 degrees	38 MM	35 MM	35 MM	23 MM	N/A
6-4.6 MHz	5-2 MHz	5-2 MHz	7.5-5 MHz	12-5 MHz	7.5-4.5 MHz	5.6-3.5 MHz	15-6 MHz	1.9 MHz

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	Reusable	Reusable	Reusable	Reusable	Reusable	Reusable		

"Microfine" is a trademark and "Color Power Angio" is a registered trademark of Philips Ultrasound.

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*North America*

Tel: 800 982 2011

*Asia Pacific*

Tel: 852 2821 5888

*Europe*

Tel: 49 40 5078 4532

*Latin America*

Tel: 954 835 2600

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