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

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)

- 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)
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

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

*Available on EnVisor HD only.*
<table>
<thead>
<tr>
<th>Omni II</th>
<th>CA5-2</th>
<th>c3540*</th>
<th>E6509</th>
<th>L1038</th>
<th>L7535</th>
<th>L503S</th>
<th>15-6L</th>
<th>D1914</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sector</td>
<td>Curved</td>
<td>Curved</td>
<td>Curved</td>
<td>Linear</td>
<td>Linear</td>
<td>Linear</td>
<td>Linear</td>
<td>Non-Imaging</td>
</tr>
<tr>
<td>90 degrees</td>
<td>76 degrees</td>
<td>76 degrees</td>
<td>124 degrees</td>
<td>38 MM</td>
<td>35 MM</td>
<td>35 MM</td>
<td>23 MM</td>
<td>N/A</td>
</tr>
<tr>
<td>6-4.6 MHz</td>
<td>5-2 MHz</td>
<td>5-2 MHz</td>
<td>7.5-5 MHz</td>
<td>12-5 MHz</td>
<td>7.5-4.5 MHz</td>
<td>5.6-3.5 MHz</td>
<td>15-6 MHz</td>
<td>1.9 MHz</td>
</tr>
<tr>
<td>Reusable</td>
<td>Reusable</td>
<td>Reusable</td>
<td>Reusable</td>
<td>Reusable</td>
<td>Reusable</td>
<td>Reusable</td>
<td>Reusable</td>
<td>Reusable</td>
</tr>
</tbody>
</table>

"Microfine" is a trademark and "Color Power Angio" is a registered trademark of Philips Ultrasound.
Philips Medical Systems is part of Royal Philips Electronics

At Philips our responsibility to the environment influences our actions globally every day. From our manufacturing and business processes to our products and their use, we constantly strive to discover new and innovative means of caring for our planet and her inhabitants.

www.ultrasound.philips.com