

Acclarix LX3 Series

Diagnostic Ultrasound

Version 1.5

Advanced Technique and Features

- TAI-Tissue Adaptive Imaging
- eSRI-Speckle Reduction Imaging
- Frequency Compounding Imaging
- Spatial Compounding Imaging
- Harmonic Imaging
- Digital Multi-Beam forming
- Trapezoid Imaging
- Adaptive Doppler imaging
- Spectrum Enhancement
- Dedicated Steer control
- Digital Zoom
- Full Screen Zoom
- Auto Doppler trace
- Needle Visualization
- Anatomic M mode
- TDI mode-Tissue Doppler Imaging
- 3D/4D Imaging
- ECG synchronization
- Color M mode
- Elastography mode
- Auto IMT
- eLearn Instruction software
- Panorama
- B mode one-key Optimization
- PW mode one-key Optimization
- Color mode one-key Optimization
- Auto IMT
- Auto OB
- Auto NT
- Auto vessel diam*



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System Overview

System Architecture

Physical Channels	64
Digital Channels	≤1382400
Gray scale	256
Beam Forming	Eight beam
Processor	ARM
Memory	2 GB
Hard Drive	120 GB/512GB/1TB SSD
Operating System	Android
System Boot-up	About 30s
Boot-up from sleep	4s
Shutdown	2s

Dimensions and Weight

Dimension	Height: 1440mm (+200mm, adjustable) Width: 544mm Depth: 665mm
Net Weight	About 55kg (no transducer and accessories)

LCD Monitor

- 21.5" high resolution LCD monitor
- Resolution: 1920 x 1080
- Image Size: 1040*780
- Tiltable angle: up 30°; down 90°
- Left/right rotation: ±90°
- View angle: right 178°, left 178°, up 178°, down 178°
- Brightness and Contrast adjustable (1-100)
- Folds down to horizontal level for transport.
- Color temperature adjustable

Transducer Ports & Holders

- Max. five active transducer ports
- (Some models equipped with only 3 transducer ports)

- Electronic transducer selection
- Ergonomic access to all transducer ports
- Dedicated cable hook
- Removable gel warmer
- Totally 5 transducer holders with removable transducer cups, including one dedicated transducer holder for endo-cavity transducer.

Battery

- Rechargeable Li-ion Battery
- Two batteries work simultaneously, each battery capacity of 6800 mAh, total 13600mAh capacity.
- Removable
- Approximately 1.5 hours of typical ultrasound exam use for two fully charged batteries.
- Two batteries fully charged in about 3 hours.
- Battery level icon displayed on the main screen.
- Battery charging indicator on the control panel.

AC Power Requirements

Voltage	100 -240 V~
Frequency	50 Hz/60 Hz

Environment Requirements

Operating Environment

Ambient temperature	0° to 40°C
Relative Humidity	15%~95% (no condensing)
Atmospheric pressure	86kPa-106kPa

Storage Environment

Ambient temperature	-20° to 55°C
Relative Humidity	15%~95% (no condensing)
Atmospheric pressure	70kPa-106kPa

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Language Supported

- English
- Chinese
- German
- French
- Italian
- Spanish
- Russian
- Portuguese
- Polish

I/O Ports

- S-Video
- USB 3.0(one)
- USB 2.0(six)
- HDMI
- Ethernet

Wheel

- Diameter: 5 inch
- 4 wheels with brakes

Options

- Transducers
- Needle Guide Bracket Kits
- Printers
- Printer holder
- Batteries
- 1TB SSD
- WIFI module
- ECG module
- Footswitch
 - Single button/Double buttons
 - User-defined Functions(Freeze, Save, Print)
- Ultrasound gel warmer
- DVD drive
- Standard PC keyboard

System Ergonomic Design

- Max. 5 active transducer ports
- 20° Tilttable touch screen
- Control panel lift via dedicated pedal: 20 cm(model depended)
- Display monitor left/right swivel: $\pm 90^\circ$
- Tilttable LCD display
- Standard PC keyboard with dedicated swivel for easy folding
- 8 segment physical TGC sliders
- Rear storage tray.
- Detachable metal frame for holding video printer and DVD Drive

User Interface

Control Panel

- Interactive back-lighting
- Plastic and Rubber Hard Keys provides tactile feedback
- User-defined hardkeys
- Physical trackball
- Up lift: 20 cm (Some models do no support lifting)
- 8 segment TGC sliders
- Standard PC keyboard with dedicated swivel for easy folding
- High-performance audio speaker integrated with the control panel.
- 5 transducer holders integrated with the control panel.
- Front and rear handles.

Touch Screen

- 14" Touch screen(resolution: 1366 x 768)
- 20°tiltable
- Gesture-control
- 6 user-defined touch screen keys
- Support visual Chinese, English QWERTY

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keyboard, German QWERTZ keyboard and French AZERTY keyboard for text input

- Brightness and color temp. adjustable

Main Screen Display

Information Field

- EDAN logo
- Hospital name
- Date
- Time
- Patient ID
- Patient Name
- Patient Gender
- Patient Age
- Transducer model
- Exam Preset
- LMP/BBT, GA, EDD
- User name

Image Field

- Mechanical Index (MI)
- Thermal Index (TI)
- Imaging parameters
- Gray Scale bar
- Depth Scale
- Center Mark
- Measured result window
- TGC curve

Measurements Menu Field

- Available generic and application measurements for current exam preset.
- Pre-categorized measurement groups.
- Consistent with the display on Measurement Touch Screen(14-inch).

Thumbnail Field(Clipboard)

- All captured static images and cine clips
- Quick viewing the thumbnail in the image area

- Shortcut keys for selecting, viewing, deleting, exporting images
- Display of catheter size reference

User Feedback Field

- Illustration of trackball and trackball keys
- Cine bar
- Exit icon for exiting RawData review status.
- The active function of user-defined key F1/F2.
- PIP display

Status Bar

- Utility Icon(access to Utilities function)
- Image Store Icon
- USB Icon
- Printer Icon
- WIFI Icon
- Network Transfer Status Icon
- Hard Drive Icon
- Battery Icon
- DVD Icon

User Login Management

- Supports User Login at boot up and at exiting the sleep mode.
- Supports user type of Administrator and Operator
- Supports switching users without powering off the system.
- Support Emergency login for emergency use.

Other Features

- eLearn instruction tool for basic scanning and nerve blocks.
 - Support instructions for OB&GYN, Nerve block, and GI(ABD, Cardiac, etc.) scanning.
 - Provides descriptions of Transducer position, Scan technique, Standard

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ultrasound image, Anatomy, Needle guide, tips, etc.

- The illustration pictures can be enlarged to full touch screen display by pressing it.
- One-key full screen zoom(3 levels) by user-defined key F1/F2 or user-defined touch screen keys.

Exam Presets

- System pre-defined exam presets include (Transducer specific) :
 - ABD
 - Abd Difficult
 - EM Abd
 - Aorta
 - Lung
 - FAST
 - Early OB
 - OB
 - EM OB
 - Fetal Echo
 - GYN
 - IVF
 - Urology
 - Prostate
 - Thyroid
 - Breast
 - Testis
 - Carotid
 - Up Ext A (Upper Extremity Artery)
 - Up Ext V (Upper Extremity Vein)
 - Low Ext A (Lower Extremity Artery)
 - Low Ext V (Lower Extremity Vein)
 - Vascular
 - Vascular Access
 - EM Vas
 - Spine
 - MSK
 - Sup MSK (Superficial MSK)

- EM MSK
- Nerve
- Sup Nerve (Superficial Nerve)
- Shoulder
- HIP
- Adult Cardiac
- Pediatric Cardiac
- EM Adult Card
- Pediatric Abdomen
- Neonatal Abdomen
- Neonatal Head
- TCD
- PICC
- Needle-SMP
- User customizable presets: Copy, Delete, Save as and rename
- Exam presets are configurable in Set-up.
- Supports a second page, up to 30 presets per transducer.
- Each preset can share comment, body mark, and measure presets.
- The display order of the exam presets of each transducer can be adjusted per user's needs.

Annotations

Comments

- User-programmable home position
- Arrow with user controlled orientation
- Five language soft keyboard: Chinese, English, French, German, Russian.
- Block move and delete for separate blocks of text
- Smart text replacement for predefined text (e.g., Long replaces Trans with one keystroke)
- 545 pre-defined comments
- User customizable
- English Comments Library is supported when the system language is not in English.

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Body Mark

- Up to 143 Body Mark graphics in library
- Support separate body mark in Dual/Quad mode.

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Imaging

Imaging Modes

B-mode

M-mode

- M-mode
- Linear Anatomic M mode
- Curved Anatomic M mode
- Color M mode

Color Doppler

- Velocity-based color Doppler
- PDI
- DPDI

PW Doppler

CW Doppler

TDI mode

- TVI
- TEI
- TVD
- TVM

3D/4D mode

Elastography Mode

Display Modes

Dual Imaging

- Available for B and Color(PDI/DPDI) mode.
- Displays two image side-by-side, two frozen or one active/one frozen.
- Allows to switch between two images.
- Measurements and calculations are supported on each image and across the dual images.
- Annotations are supported on each image.

Quad Imaging

- Available for B and Color(PDI/DPDI) mode.
- Displays images in four quadrants, four frozen or one active/three frozen.
- Allows to switch between four images.
- Measurements and calculations are supported on each image.
- Annotations are supported on each image.

Imaging Mode Combinations

- B/C(PDI or DPDI), Single
- B/C(PDI or DPDI), Dual
- B+B/C(PDI or DPDI),Dual live
- B+Color (PDI or DPDI)+M
- B+PW (Duplex)
- B+PW (Update)
- HPRF
- B/C(PDI or DPDI)+PW (Triplex)
- B/C(PDI or DPDI)+PW (Update)
- B+CW (Update)
- B/C(PDI or DPDI)+CW (Update)
- B+TVI
- B+TVI+TEI
- B+TVI+TVD(Update)
- B+TVI+TVD(Triplex)
- B+TVM (Update)
- B+E

Imaging Parameters

B- mode(Live imaging)

Image Type	Detail/General/Penetration
Auto(one-key optimization)	TGC, Gain
Digital Zoom	x0.8-x2.0
Display Depth	1-45cm
Frequency	1-17MHz Max. 5 fundamental + 5 harmonic
Frequency display	Bandwith, Frequency points
eSRI	Off, Low, Med, High
FOV	Small, Med, Large, Full
Steer	0° , ±10°
Gain	0-100dB, 1dB/step
TGC	8 segments
LGC	8 segments
Dynamic Range	40-96dB, 2dB/step
Line Density	Low, Med, High

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	≥512 lines
Frame Rate	Linear Transducer: Max. 532f/s; Convex Transducer: Max. 48f/s at 18cm depth and full FOV; Phased transducer: Max. 77f/s at 18cm depth and full FOV.
Map	11 Types
Persistence	Off, Low, Med, High
Focus Position	Max. 16 positions, adjustable
Focus Number	1-3, adjustable
Colorize	On, off
Tint	5 Types
Up/Down Flip	
Left/Right Flip	
Spatial Compounding	On, off (max 3angles)
Trapezoid	8,12,20, off (Linear transducer) Max. 10 ° left/right extended angle
Acoustic Power	10%-100%, 10%/step 0° ,90° ,180° ,270° On, Off
Quick Rotation	Real-time speed indicator
Panorama	360° rotation of Panoramic image

B- mode(Post-processing & retrospective)

- Gain
- TGC
- LGC
- Zoom
- Dynamic range
- eSRI
- Colorize

- Map
- Up/Down Flip
- Left/Right Flip
- Quick Rotation

M- mode(Live imaging)

Sweep Speed Fast/High/Med/Low/ Slow
Corresponds to sweep time of 1s, 2s, 4s, 8s and 12s per screen respectively.

Line Persist	Off, Low, Med, High
Map	11 Types
Colorize	On, off
Tint	5 Types
Gain	0-100dB, 1dB/step
Frequency	1-17MHz Max. 5 fundamental + 5 harmonic
Dynamic Range	40-96 dB, 2dB/Step
Strip size	Full, large, Med., small
Side-by-side	On(Left/Right) Off(Up/Down)
Acoustic Power	10%-100%, 10%/step
Linear Anatomic	On, off
M Mode	Up to 3 linear sample lines Adjustable angle of each sample line
Curved	On, off
Anatomic Mode	M Free-hand drawing of sample line; Sample line supports edition and deletion.

M-mode(Post-processing & retrospective)

- Gain
- TGC
- Dynamic range
- Colorize
- Map
- Stripe Size
- Side-by-side

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Color/PDI/DPDI Mode(Live imaging)	
Image Type	High Flow/Mid Flow/Low Flow
Dual Live	
ROI size/position	
Frequency	Max. 5 levels
Gain	0-100dB, 1dB/step
Line Density	Low, Med, High
Dynamic Range	10-70 dB, 5dB/step Not available for Color mode
Frame Rate	Linear Transducer: Max 350f/s; Convex Transducer: Max. 8f/s at 18cm depth, full FOV and biggest ROI; Phased transducer: Max. 14f/s at 18cm depth, full FOV and biggest ROI.
Persistence	Off, Low, Med, High
Smooth	Off, Low, Med, High
Wall Filter	Low, Med, High
Color Map	8 Types
Steer Angle	0° ,±15° , ±30° (L12-5Q,Thyroid) 0° ,±10° ,±20° (L12-5Q,Low Ext V) 0° ,±10° , ±15° (L12-5Q,Up Ext A) 0° ,±5° ,±10° (L17-7SQ,MSK)
PRF	0.6- 11.4kHz
Max.PRF	0.1-21.7 kHz (L12-5HQ, Vasc Acc)
Baseline	25 levels (Not available for PDI mode)
Threshold	0-100
Invert	On, off (Not available for PDI mode)
Acoustic Power	10%-100%, 10%/step

Color Hide	On, off
Panorama	On, Off
Real-time speed indicator	360 ° rotation of Panoramic image
Auto(one-key optimization)	Gain

Color/PDI/DPDI Mode

(Post-Processing & Retrospective)

- Zoom
- Color map
- Invert (Not available for PDI mode)
- Baseline
- Color Hide
- VelDistr

PW mode(Live imaging)

Image Type	High Flow/Mid Flow/Low Flow
HPRF	Automatic invocation to maintain gate location/scale
Auto Trace	
Trace Side	Up, down, both
Duplex	Max. FR: 43f/s, depends on transducer
Triplex	Max. FR: 11f/s, depends on transducer
Frequency	2 levels
PRF	0.9- 14.7kHz
Max.PRF	0.34 - 27.9kHz (L12-5HQ, Vasc Acc)
Gain	0-100dB, 1dB/step
Dynamic Range	10-70 dB, 5dB/step
Wall Filter	Low, Med, High
Sweep Speed	Fast/High/Med/Low/ Slow Corresponds to sweep time of 2s, 3s, 4s, 6s and 8s per screen respectively.

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Baseline	9 levels
Angle Correction	-80° to 80°
Quick Angle	-60° /-45° /-30° /-15° /0° /15° /30° /45° /60 °
Steer	0° ,±15° , ±30° (L12-5Q,Thyroid) 0° ,±10° ,±20° (L12-5Q,Low Ext V) 0° ,±10° , ±15° (L12-5Q,Up Ext A) 0° ,±5° ,±10° (L17-7SQ,MSK)
Invert	
Volume	0-99
Map	11 Types
Colorize	On, off
Tint	5 Types
Gate Size	0.5-40 mm
Strip size	Full, large, Med., small
Auto (One-key Optimization)	Gain, DR or Scale/Baseline, user configurable
Acoustic Power	10%-100%, 10%/step
PW velocity	Max. 4.5m/s (correct angle 60°); Max. 13m/s (correct angle 80°); Min. 2mm/s (Non-noise signal)
Side-by-side	On(Left/Right) Off(Up/Down)

PW Mode (Post-Processing & Retrospective)

- Gain
- Dynamic Range
- Colorize
- Map
- Baseline
- Angle Correct

- Invert
- Strip size
- Auto trace
- Trace side
- Quick Angle
- Side-by-side

CW mode(Live imaging)

Image Type	High Flow/Mid Flow/Low Flow
PRF	1- 100kHz
Gain	0-100dB, 1dB/step
Dynamic Range	10-70 dB, 5dB/step
Wall Filter	Low, Med, High
Sweep Speed	Fast/High/Med/Low/ Slow Corresponds to sweep time of 2s, 3s, 4s, 6s and 8s per screen respectively.

Baseline	9 levels
Angle Correction	-80° to 80°
Quick Angle	-60° /-45° /-30° /-15° /0° /15° /30° /45° /60 °

Invert	
Volume	0-99
Map	11 Types
Colorize	On, off
Tint	5 Types
Strip size	Full, large, Med., small
Acoustic Power	10%-100%, 10%/step
CW velocity	Max. 72m/s Min. 1cm/s

Auto Trace	
Trace Side	Up, down, both
Side-by-side	On(Left/Right) Off(Up/Down)

CW Mode (Post-Processing & Retrospective)

- Gain
- Dynamic Range
- Colorize

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- Map
- Baseline
- Angle Correction
- Invert
- Strip size
- Auto trace
- Trace side
- Quick Angle
- Side-by-side

TVI Mode (Live imaging)

Image Type	High Flow/Mid Flow/Low Flow
Dual Live	B+ TVI
ROI size/position	Adjustable
Frequency	2 levels
Gain	0-100dB, 1dB/step
Line density	Low, Med, High
Persistence	Off, Low, Med, High
Smooth	Off, Low, Med, High
Wall Filter	Low, Med, High
Color Map	10 types
PRF	0.6- 3.5kHz
Baseline	25 levels
Threshold	0-100
Invert	On, off
Acoustic Power	10%-100%,10%/step
Color Hide	On, off

TVI Mode (Post-Processing & Retrospective)

- Zoom
- Baseline
- Color map
- Invert
- Color Hide

TVD mode(Live imaging)

Image Type	High Flow /Mid Flow/Low Flow
Triplex	B+TVI+TVD

PRF	0.9- 5.9kHz
Frequency	2 levels
Gain	0-100dB, 1dB/step
Dynamic Range	10-70 dB, 5dB/step
Wall Filter	Low, Med, High
Sweep Speed	Fast/High/Med/Low/ Slow (Corresponds to sweep time of 2s, 3s, 4s, 6s and 8s per screen respectively.)
Baseline	9 levels
Angle Correction	-80° to 80°
Quick Angle	-60° /-45° /-30° /-15° /0° /15° /30° /45° /60 °
Invert	On, Off
Volume	0-99
Map	11 types
Colorize	On, off
Tint	5 Types
Gate Size	0.5-40 mm
Strip size	Full, large, Med., small
Acoustic Power	10%-100%, 10%/step
Auto Trace	
Trace Side	Up, down, both
Side-by-side	On(Left/Right) Off(Up/Down)

TVD(PW-TDI)(Post-Processing & Retrospective)

- Gain
- Dynamic Range
- Colorize
- Map
- Baseline
- Angle
- Quick Angle
- Invert
- Auto trace
- Trace side
- Gate Size
- Side-by-side

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3D/4Dmode(Live imaging)	
Acquisition modes	3D, 4D
Visualization modes	Volume rendering, Multi-Slice
Multi-Slice	Max. 21 slices can be displayed on the same screen; Distance between each slice is 0.5-10.0mm
VOI size/Position	Adjustable
Render modes	Surface, Max.
3D clip	
Cut tools	Trace, Box, Eraser
Cut functions	Undo, Undo all, Redo
Display formats	Single 3D, Dual(A-plane + 3D), Quad(A/B/C Planes + 3D)
3D parameters	Threshold, Smooth, Brightness, Contrast, Tint
eFace	EDAN auto show face
4D frame rate	Max. 6vps

Elastography mode(Live imaging)	
Opacity	1, 2, 3, 4 levels
Smooth	Off, Low, Med., High
Persistence	Off, Low, Med, High
Map	0-6
DR	0-5
Invert	On, Off

Elastography Mode (Post-Processing & Retrospective)

- Opacity
- Map
- DR
- Invert

Review and Post-Processing functions

Cine Review

- Frame by frame manual review
- Auto playback with 6-level speed adjustable
- Start frame and end frame are selectable for cine loop review
- Independent cine review in Dual/Quad mode.
- Maximum cine memory depends on transducers and image parameters:
 - 100000 frames for B mode
 - 30000 frames for Color mode
 - 180s for M mode
 - 240s for PW/CW Doppler mode

Post-Processing Features

All the image/cine is stored in Raw Data format in local disk. The following Post-Processing features are available when in image/cine review of current exam or the stored exam.

- Adjusting imaging parameters
- Measurements
- Annotations
- Storing static image/ cine loop

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Transducers and Biopsy Guide

Transducer Applications

Transducer	Applications	Transducer	Applications
C5-1Q	 <ul style="list-style-type: none"> Abdomen Fetal / Obstetrics Urology Gynecology Musculoskeletal 	C5-2Q	 <ul style="list-style-type: none"> Abdomen Fetal / Obstetrics Urology Gynecology Musculoskeletal
L17-7HQ	 <ul style="list-style-type: none"> Small Parts Peripheral Vascular Musculoskeletal 	L12-5Q	 <ul style="list-style-type: none"> Small parts Peripheral Vascular Abdomen Musculoskeletal
MC8-4Q	 <ul style="list-style-type: none"> Pediatric Abdomen Neonatal Musculoskeletal Peripheral Vascular 	L17-7SQ	 <ul style="list-style-type: none"> Intra-operative Musculoskeletal Peripheral Vascular
P7-3Q	 <ul style="list-style-type: none"> Adult Cardiac Pediatric Abdomen Pediatric Cardiac Neonatal cephalic 	MC9-3TQ	 <ul style="list-style-type: none"> Pediatric Abdomen Neonatal Musculoskeletal Peripheral Vascular
C6-2MQ	 <ul style="list-style-type: none"> Fetal / Obstetrics Abdomen Gynecology Urology 	P5-1Q	 <ul style="list-style-type: none"> Adult Cardiac Abdomen Pediatric Cardiac Adult Cephalic
E10-3BQ	 <ul style="list-style-type: none"> Fetal / Obstetrics Gynceology Trans-vaginal Trans-rectal Urology 	E8-4Q	 <ul style="list-style-type: none"> Fetal / Obstetrics Gynceology Trans-vaginal Trans-rectal Urology
E10-3HQ	 <ul style="list-style-type: none"> Fetal / Obstetrics Gynceology Trans-vaginal Trans-rectal Urology 	L12-5HQ	 <ul style="list-style-type: none"> Small Parts(Breast, Testes, Thyroid) Peripheral Vascular Musculoskeletal Abdominal

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Transducer Specifications

Transducer	C5-1Q	C5-2Q	L12-5Q
Transducer Type	Convex, Crystal	Convex	Linear
Bandwidth@ -6dB	2-5MHz	2-5MHz	5-11MHz
Central Frequency	3.25MHz	3.5MHz	8.0MHz
B Harmonic Frequencies(MHz)	H2~4/H3~5/H2~5/ H3~6	H2~4/H3~5 / H2~5/ H3~4*	H6~10/H7~12
B Fundamental Frequencies(MHz)	2~4/3~5/2~5	2~4/3~5/2~5	5~8/6~10/7~11
Spectrum Doppler Frequencies(MHz)	2.3/3.0	2.3/3.0	4.7/5.7
Color Doppler Frequencies(MHz)	2.9/3.2/3.5	2.2/2.7/3.2	5.2/5.9
Elements	160	128	128
Footprint	NA	NA	38mm
Convex Radius	50mm	60mm	NA
FOV	64°	60°	NA
Display Depth	45cm	45cm	11cm
Biopsy Guide	No	Yes	Yes
Cable Length	2.0m	2.0m	2.0m

Transducer	L17-7HQ	L17-7SQ	MC8-4Q	MC9-3TQ
Transducer Type	Linear	Linear	Micro Convex	Micro Convex
Bandwidth@ -6dB	7-15MHz	7-15MHz	4-9MHz	3-9MHz
Central Frequency	12.0MHz	12.0MHz	6.2MHz	6.4MHz
B Harmonic Frequencies(MHz)	H9~13/H10~17	H9~13/H10~17	H4~7/H5~7/H5~8/H5~10/H6~10	H5~8/H6~9
B Fundamental Frequencies(MHz)	7~11/8~13/9~15	7~11/8~13/9~15	4~5/4~6/4~7/5~8/6~9	3~6/4~7/5~9
Spectrum Doppler Frequencies(MHz)	6.7/8.0	6.7/8.0	4.2/5.0	3.6/4.5

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Color Doppler Frequencies(MHz)	6.7/8.0	6.7/8.0	4.2/5.0	3.6/4.5
Elements	192	128	128	128
Footprint	38mm	26mm	NA	NA
Convex Radius	NA	NA	15mm	10mm
FOV	NA	NA	100°	150°
Display Depth	11cm	11cm	15cm	15cm
Biopsy Guide	Yes	No	Yes	Yes
Cable Length	2.0m	2.0m	2.0m	2.0m

Transducer	P5-1Q	P7-3Q	C6-2MQ
Transducer Type	Phased	Phased	Wobbler
Bandwidth@ -6dB	1-5MHz	3-7MHz	2-5MHz
Central Frequency	2.7MHz	5.0MHz	3.9MHz
B Harmonic Frequencies(MHz)	H2~4/H3~5	H5~7/H6~8	H2~4/H3~5/H2~5
B Fundamental Frequencies(MHz)	1~3/2~4/2~5	3~5/4~6/5~7	2~4/3~5/2~5
Spectrum Doppler Frequencies(MHz)	2.0/2.2	2.7/3.8	2.6/3.0
Color Doppler Frequencies(MHz)	2.0/2.5	2.5/3.0	2.6/3.0/3.3
Elements	64	96	128
Footprint	16 mm	15 mm	NA
Convex Radius	NA	NA	40mm
FOV	90°	90°	64°
Display Depth	30cm	18cm	30cm
Biopsy Guide	Yes	No	No
Cable Length	2.0m	2.0m	2.0m

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Transducer	E8-4Q	E10-3BQ	E10-3HQ	L12-5HQ
Transducer Type	Intra-cavity	Intra-cavity	Intra-cavity	Linear
Bandwidth@ -6dB	4-8MHz	4-8MHz	4-8MHz	5-11MHz
Central Frequency	6.2MHz	6.5MHz	6.5MHz	8.0MHz
B Harmonic Frequencies(MHz)	H5~6/H5~8/ H5~10/H6~11	H5~6/H5~8/ H5~10/H6~11/ H6~13	H5~6/H5~8/H5~ 10/H6~11/ H6~13*	H6~10/H7~12/H 8~10/ H8~11/ H8~12
B Fundamental Frequencies(MHz)	4~6/4~7/5~8	4~6/4~7/5~8	4~6/4~7/5~8	5~8/6~10/7~11/ 8~10
Spectrum Doppler Frequencies(MHz)	3.6/5.0	3.6/4.8	3.6/4.8	4.7/5.2
Color Doppler Frequencies(MHz)	3.6/4.7	4.0/4.5/5.0	4.0/4.5/5.0	5.2/5.9/7.2/7.5/ 7.9
Elements	128	192	192	192
Footprint	NA	NA	NA	38mm
Convex Radius	10mm	10mm	10mm	NA
FOV	150°	190°	190°	NA
Display Depth	14cm	14cm	14cm	11cm
Biopsy Guide	Yes	Yes	Yes	Yes
Cable Length	2.0m	2.0m	2.0m	2.0m

NOTE: The asterisk "*" indicates that the frequency type is related to the transducer version. Among them: optimized C5-2Q probe (02.01.212622015) add harmonic frequency type H3~4 and optimized E10-3HQ probe (02.01.214791011) add harmonic frequency type H6~13.

Biopsy Guide

- **Needle Guide**

- Supports guide lines of multiple angles.
- Supports single and parallel guide line
- Supports depth and length mark on guide line.
- Support guide line calibration.

- **Need Visualization**

- Supports three needle inserted angles for linear transducers

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- **Center Line**

- Center Line is a vertical dotted line displayed at the middle of the image field, representing the middle of ultrasound beam. It helps to locate the position and depth of a target disease focus for out-of-plane biopsy, lithotripsy and etc

- **Supported Needle Guided Brackets**

Model	Type	Angle/Depth	Description
BGK-CR10UA	In-plane	2°	For use with the E8-4Q, Supports: 16G-18G
BGK-002	In-plane	38°, 46°, 58°	For use with the L12-5Q/L17-7HQ/L12-5HQ, Supports: 14G-23G
BGK-003	Out-of-plane	0.5cm , 1.0cm , 1.5 cm , 2.5 cm , 3.5 cm	For use with the L12-5Q/L17-7HQ/L12-5HQ, Supports: 21G-22G
BGK-004	In-plane	12°, 20°	For use with the MC9-3TQ, Supports: 14G-23G
BGK-005	In-plane	0°	For use with the E10-3BQ, Supports: 16G-18G
BGK-006	In-plane	1°	For use with the E10-3HQ, Supports: 16G-18G
BGK-007	In-plane	18°, 25°, 35°	For use with the C5-2Q, Supports: 14G-23G
BGK-008	In-plane	12°, 22°	For use with the P5-1Q Supports: 14G-23G
BGK-009	In-plane	14°, 20°, 32°	For use with the C5-1Q Supports: 14G-23G
BGK-012	In-plane	11°, 20°, 37°	For use with the MC8-4Q, Supports: 14G-23G

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Measurements

- Default measurement unit options
 - Distance: mm, or cm
 - Area: mm², or cm²
 - Volume: mm³, or cm³
- Caliper Size: switch automatically according to the distance (3 sizes)
- Dynamic display of measurement results
- Reposition caliper
- Pre-categorized measurement groups based on clinical applications; Configurable in Measure Preset. Measured results of each measurement are configurable in Measure Preset.
- Measurements displayed on main screen and touch screen are consistent.

General Measurements

B-mode

- Distance(2-point,Ratio D1/D2)
- Circumference/Area (Ellipse, Trace, Spline,Ratio A1/A2)
- Angle(3-point)
- Volume(3-distance, Ellipse+ 1 distance)
- Stenosis
 - %Dist Stenosis(Distance)
 - % Area Stenosis (Ellipse, Trace, Spline)
- Vessel
 - Vessel Diameter(2-point, Ellipse)
 - Volume flow area
 - IMT

M-mode

- Distance(2-point method)
- Ratio D1/D2(2-point method)
- Time
- Slope

- HR
- Tei index: COT, ET

Doppler mode

- PS
- ED
- RI
- PI
- PS,ED,RI,S/D
- Time
- HR
- Manual Trace
- Spline Trace
- Auto Trace(Max. 15 measured results are configurable)
- Velocity
- PGMax
- PGMean
- Volume Flow
- Tei index: COT, ET
- dp/dt

Elastography mode

- Eratio(Ellipse, Trace)

Application Measurements/calculations

Abdomen

B-mode:

- Liver
 - Length, Width, Height
 - Volume(calculation)
 - Portal Vein Diameter
 - Common Hepatic Duct
- Gallbladder
 - Length, Height
 - Gallbladder Wall Thickness

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- Common Bile Duct
- Pancreas
 - Head, Body, Tail, Duct
- Spleen
 - Length, Height
- Renal
 - Length, Width, Height
 - Volume(calculation)
 - Renal Cortex Thickness
- Aorta Diameter
- Bladder
 - Pre-void bladder (Length, Width, Height)
 - Post-void bladder Length, Width, Height)
 - Micturated Volume
 - Pre-void bladder volume
 - Post-void bladder volume

PW mode:

- Abdominal Aorta
- Superior Mesenteric Artery
- Inferior Mesenteric Artery
- Hepatic Artery
- Splenic Artery
- Renal Artery
- Portal Vein
- Inferior Vena Cava
- Main Portal Vein
- Hepatic Vein
- Middle Hepatic Vein
- Splenic Vein
- Superior Mesenteric Vein
- Inferior Mesenteric Vein

Gynecology

B-mode:

- Uterus
 - Length, Width, Height

- Endometrium Thickness
- Uterus body
- Uterus volume
- UT Cavity
- Cervix
 - Length, Width, Height
 - UT-L/CX-L(calculation)
- Ovary
 - Length, Width, Height
 - Ovary volume
- Follicle
- Cyst
- Fluid POD
- Pelvic Floor
 - BSD(R)
 - BSD(S)

PW mode:

- Uterine Artery
- Ovary Artery

Obstetrics

B-mode:

● Fetal Biometry	BPD, HC, AC, FL, HUM, CER, OFD, NF, TAD, APAD, THD, APTD, TTD, FTA
● Early Gest	CRL, BPD, FL, HUM, NT, GS, YS, AF
● Long Bones	HUM, ULNA, RAD, TIB, FIB, Foot
● Fetal Cranium	CER, NT, NF, LVW, CM, NB,PNT, BOD
● AFI	Q1, Q2,Q3,Q4
● Ovary	Ovary L, Ovary W, Ovary H
● Chamber	LV Diam, LA Diam, RV Diam, RA Diam

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• LVOT/AO	LVOT Diam, Ao Asc, Ao Arch, Ao Isthmus, Desc Ao
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• RVOT/PA	RVOT Diam, MPA Diam, Ductus A
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PW mode:

- MCA
- Umb. A
- Planenta A
- Ovary A
- Ut. A
- Fetal Ao
- Desc Aorta
- SMA
- IVC
- Ductus V
- FHR
- MV
- TV
- MPV
- Ductus A

M-mode:

- FHR

Cardiac

B-mode:

• LV Simpson	A4C Dias., A4C Sys., A2C Dias., A2C Sys.
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• LV Study	LVSTd, LVIDd, LVPWd, IVSTs, LVIDs, LVPWs
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• LV/RV	LVIDd, LVIDs, RVAWd, RVIDd
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• LA/Ao	LA, AoD
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• Aorta	Ao Asc, AoD
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• RVOT Diam	RVOT Diam
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• LVOT Diam	LVOT Diam
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• PV	PV Diam
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• RVDs	RVDs
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• LA/RA	RA length, RA Width, LA length, LA width
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• LVM(A-L) (Left Ventricular Mass)	LVAd Sax Epi, LVAd Sax Endo, LVAd Apical
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• LVM (T-E) (Left Ventricular Mass)	LVAd Sax Epi, LVAd Sax Endo, a, d
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• LVM (Cube)(Left Ventricular Mass)	LVSTd, LVIDd, LVPWd
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• MVA

• AVA

PW mode:

• Mitral Valve	E/A, MV PHT, MV VTI, IVRT, MV A Duration, MV DecT, MR Vmax, MR VTI, MV E Duration, MV HR
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• Tricuspid Valve	TV VTI, TV Vmax, TV E/A, TV HR
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• AV	LVOT VTI, LVOT Vmax, AV VTI, AV HR, AV Vmax, AV Accel Time, AV Decel Time, AR VTI, AR Vmax, AR Accel Time, AR PHT, AR Decel Time
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• PV	PV VTI, PV Vmax, PR Vmax, PV Accel Time, PV HR
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• PV Vein	PVein S Vel, PVein D Vel, PV A Vel, PV A Dur
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• Hep Veins	Hep S Vel, Hep D Vel, Hep A Vel, Hep A Dur
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• RVSP	TR Vmax ,RA Pressure
• AVA(VTI)	LVOT VTI,AV VTI
• TDI	Sa Medial, Ea Medial, Aa Medial, Sa Lateral, Ea Lateral, Aa Lateral
• PISA	MR Trace, AR Trace, TR Trace, PR Trace
• Qp/Qs	LVOT VTI,RVOT VTI
M- mode:	
• LV Study	LVSTd, LVIDd, LVPWd, IVSTs, LVIDs, LVPWs
• LV/RV	LVIDd, LVIDs,RVAWd, RVIDd
• Time	LVET, LV PEP, RV PEP
• Mitral Valve	MV D-E Exc, MV D-E Slope, E-F Slope, EPSS, MV E-E Sep, MV A-C Interval, MAPSE
• TAPSE	TAPSE
• LA/Ao	LA, AoR Diam, RVOT Diam,ACS
• HR	HR
• LVM (Cube)(Left Ventricular Mass)	LVSTd, LVIDd, LVPWd
• IVC-CI	IVCmax, IVCmin, , IVC-CI(cal)
C- mode:	
• PISA	MR Rad,MR Als. Vel,AR Rad,AR Als. Vel, TR Rad, TR Als. Vel, PR Rad, PR Als. Vel

Urology

B-mode:

- Renal
 - Length, Width, Height
 - Renal Cortex Thickness
- Bladder

- Pre-void Bladder (Length, Width, Height, volume)

- Post-void Bladder (Length, Width, Height, volume)

- Micturated Volume

- Prostate

- Length, Width, Height

- Seminal

- Length, Width, Height

- Testis

- Length, Width, Height

PW mode:

- Renal Artery

- Arcuate Artery

- Segmental Artery

- Interlobar Artery

Small Parts

B-mode:

- Thyroid

- Length, Width, Height

- Thyroid Isthmus

- Breast

- Lesion1, Lesion2, Lesion3, Lesion4, Lesion5

- Testis

- Length, Width, Height

PW mode:

- Superior Thyroid Artery

- Inferior Thyroid Artery

Vascular

B-mode:

- | | | | |
|-----------|-----------------------|-------------------------|-------------------------|
| • Carotid | Common Carotid Artery | Intima-Media Thickness, | Internal Carotid Artery |
|-----------|-----------------------|-------------------------|-------------------------|

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	Intima-Media Thickness, Carotid Artery Bifurcation Intima-Media Thickness
	PW mode: Common Carotid Artery, External Carotid Artery, Internal Carotid Artery, Vert Artery, Subclavian Artery, HR, Volume Flow
• Upper Extremity Artery	PW mode: Subclavian Artery, Axillary Artery, Brachial Artery, Ulnar Artery, Radial Artery, HR ,Volume Flow
• Upper Extremity Vein	PW mode: Subclavian Vein, AxillaryVein, Brachial Vein, Cephalic Vein, Basilic Vein, Ulnar Vein, Radial Vein, Median Cubital Vein,Volume Flow
• Lower Extremity Artery	PW mode: Common Femoral Artery, Deep Femoral Artery, Superficial Femoral Artery, Common Iliac Artery, External Iliac Artery, Internal Iliac Artery, Popliteal Artery, Peroneal Artery, Posterior Tibial Artery, Anterior Tibial Artery, Dorsalis Pedis Artery, HR,Volume Flow
• Lower Extremity Vein	PW mode: Common Femoral Vein, Deep Femoral Vein, Superficial Femoral Vein, Common Iliac Vein, External Iliac Vein, Internal Iliac Vein,Great Saphenous Vein, Popliteal Vein, Peroneal

	Vein, Posterior Tibial Vein, Anterior Tibial Vein, Small Saphenous Vein ,Volume Flow
• Cephalic	PW mode: Anterior Cerebral Artery, Middle Cerebral Artery, Posterior Cerebral Artery, Anterior Communicating Artery, Posterior Communicating Artery, Basilar Artery, Vertebral Artery, Internal Carotid Artery
• Volume Flow	B mode: Volume Flow Area
• Stenosis%	B mode: Stenosis% Distance Stenosis% Area (Ellipse, Trace, Spline)
• Vessel Diam	B mode: Vessel Diam

Pediatrics

B-mode:

- Left lateral ventricle
- Right lateral ventricle
- left trigone
- right trigone
- Hip joint(with dislocation type)
 - HIP Angle
 - HIP d/D

Emergency

- EM Abd package
- EM OB package
- EM Card package

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Reports

- Editable worksheet
- Report type: ABD, GYN, OB, URO, VAS, SMP, FETAL, CARD, PED, Nerve, MSK
- Comments/Findings section
- Supports fetal growth curve and grow bar display; supports data display of max. 4 fetus
- Supports Fetus Score *and adding Fetus Score to the report
- Supports data of multiple fetus
- User-imported Report Header
- User-defined hospital logo
- Multiple number of selected images
- Multiple layouts of image in report.
- Support select all images to add into the report
- Report Layout supports auto adjust.
- Support zoom in preview
- Support Export as PDF format
- Support print by report printer.
- Support custom report information
- Support display BMI and BSA
- Some information supports to adjust its display order in the report
- (Measurements/Growth Curve/Image/Fetus Score Result/Findings/Comment)
- Support display the time of system' s first use displayed in the report

Image Storage& Exam Archiving

Image Storage

- Static image/Cine clip is stored in local disk in Raw Data format.
- Two dedicated hard keys on the console for capturing static image and cine clips respectively.

- Cine clips supports prospective and retrospective storing.
- The length of cine clip is configurable.
- Prospective storing: max. 2 min length of clip can be stored in real-time scanning.
- Retrospective storing: all the clip data in the cine buffer can be stored in cine review mode, max.2 min.
- Supports up to 150,000(for 512GB hard disk)or300,000(for ITB hard disk) lossless single frames.
- Supports cine clips exported to USB disk of:

Exam Database

Support exam storage without patient information

Support exam query

Support review current exam or prior exam

Support review images of an exam

Support review report of an exam

Support export images as BMP, JPEG, TIFF, Raw Data or DICOM format

Support export cine clip as AVI, MP4, WMV, Raw Data or DICOM format

Support export Report as PDF format

Support export exams (including patient information, images)

Support compare images

Exam Archiving

All Clips and Static images stored on the system are stored internally in Raw Data format. They can be archived to other storage device for long-term storage as described below..

- Archived to DICOM server.
- Archived to FTP server.
- Archived to USB device.
- Note: If a clip length exceeds 3s, when

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selecting to export in DICOM format to a DICOM server or USB stick, only the last 3s of the clip will be exported for this release.

- Burned to DVD disk
- Sent to mobile devices.

Connectivity

Network

- Wired network connection
- Wi-Fi connection

DICOM 3.0 Service

- DICOM Storage
 - Connectivity to DICOM server for storage of all static images or cine clips with patient information.
 - Manual-Transfer in background on Demand.
 - Auto-Transfer when store or at exam end.
 - Transfer management UI for viewing transfer task status, retransferring or deleting the tasks manually.
 - Transfer process encrypted.
 - Supports Structured Report transferring: OB, GYN, Cardiac and Vascular.
- DICOM Modality Worklist
 - Enables query of the patient worklist schedule from hospital information system to the ultrasound system via DICOM network connection.
 - Query of worklist on demand or on start of exam.
 - Populates the Patient Information screen with patient demographic information automatically when one patient is selected.

- Displays/hides the ended exams in the worklist
- Query conditions can be configured to quickly filter exam information.
- MPPS
 - The MPPS service automatically sends the exam status to the MPPS server at the start and the end of the ultrasound exam.
 - Displays Additional Materials item on patient information page.
- Storage Commitment
 - Supports using the port information of the storage commitment server to receive storage commitment information
 - Supports the establishment of a new association for receiving storage commitment information
- DICOM Query/Retrieve
 - Supports entering key words for query prior exams from DICOM server.
 - Supports download a queried exam to local disk for reviewing.
- DICOM Print
 - Prints the images remotely via a DICOM printer which connects to a DICOM server.
 - Multiple parameters for printing are configurable.

FTP Network Store Service

- Supports to transfer exams to FTP servers for storage in the background.
- Transfer management UI for viewing transfer task status, retransferring a task or deleting a transfer task.
- A PDF report can be sent to FTP server together with the exam.

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Cloud Share

- Supports sending image/clips to mobile devices by scanning the QR code on main screen when CloudShare icon is clicked.

Time Synchronization

Sets the system time to synchronize with the network time

Supported Peripherals

Printers

The system supports the connection of Video printers and report printers. The report can be connected locally via USB connector or remotely via network connection. Printer drivers can be imported to the system for the support of more report printers.

- Video printers
 - SONY UP-X898MD
 - SONY UP-D25MD
 - SONY UP-25MD
- Local report printer
 - HP LaserJet CP1525n Color
 - HP Deskjet Ink Advantage 2010
 - HP Deskjet 1010
 - HP Deskjet 1510
 - HP DeskJet Ink Advantage Ultra 2029
 - HP DeskJet 1112
 - Canon iP2780
 - HP LaserJet Pro MFP M126nw
 - EPSON L310
 - HP DeskJet 1050
 - HP DeskJet 2050
 - HP LaserJet M252n
 - EPSON L130
 - HP Color LaserJet Pro M254nw
 - HP Color Laser 150a

- HP Color Laser 150nw
- HP Laser 103a
- EPSONL3118

- Photo printer

- Cannon CP1300

- Network report printer

Mini PC

Safety and Regulatory

The Acclarix LX3 series Diagnostic Ultrasound System have been designed, manufactured and tested to comply with the following internationally recognized standards:

- IEC 60601-1: Medical Equipment Safety
- IEC 60601-1-2: Medical Device Electromagnetic Safety
- IEC 60601-2-37: Ultrasonic Medical Equipment Safety
- IEC 62133: Battery Safety
- IEC 62304: Medical Device Software Life-cycle Process
- IEC 62366: Medical Device Usability Engineering
- EN ISO 14971: Medical Device Risk Management
- ISO 10993-1 Biological evaluation of medical devices — Part 1: Evaluation and testing within a risk management process sheet

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Revision History

Version	Revisions	Date
1.0	Initial release.	2020-7-27
1.1	Update transducer related information. See the changes highlighted with blue color.	2020-11-26
1.2	Updated for V1.10 release. See the changes highlighted with blue color.	2021-03-05
1.3	Updated for V2.00 release. See the changes highlighted with blue color.	2021-12-02
1.4	Updated for V2.10 release. See the changes highlighted with blue color.	2022-04-10
1.5	Updated for R2.20 release. See the changes highlighted with blue color.	2022-08-29

This datasheet applies to AcclarixLX3 series Diagnostic Ultrasound Systems, including AcclarixLX3, Acclarix LX3 Exp, Acclarix LX3 Super, Acclarix LX25 and Acclarix LX28 models. The configuration difference between each model is listed in the following table.

Models	Configuration Difference		
	Feature 1	Feature 2	Feature 3
	Seminal Vesicle Meas.	Testis Meas.	Fluid POD
Acclarix LX3	X	√	√
Acclarix LX3 Exp	√	X	√
Acclarix LX3 Super	√	√	√
Acclarix LX25	X	√	X
Acclarix LX28	√	X	X

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