



LOGIQ Fortis™

Data sheet



The LOGIQ Fortis is GE's premium ultrasound imaging system designed for general imaging applications including abdominal, vascular, obstetric, gynecologic, neonatal, pediatric, urological, transcranial, cardiac, and small parts applications.

General specifications

Dimensions and weight

(Dimensions given with floating keyboard stowed and display tilted for transport)

Height	1250 – 1800 mm, 49 – 71"
Width	530 mm, 20.9" (Caster) 565 mm, 22.2" (Monitor)
Depth	885 mm, 34.8"
Weight	85 kg (187.4 lb)

Electrical power

Voltage 100 – 240 VAC

Frequency 50/60 Hz

Power consumption maximum of 0.9 KVA with peripherals

Console design

4 active probe ports

1 inactive probe storage port

Integrated SSD (1 TB)

Integrated DVD-R Multi Drive

On-board storage of thermal printer

Integrated speaker

Integrated locking mechanism that provides rolling lock and caster swivel lock

Integrated cable management

Front and rear handles

Easily removable air filters

User interface

Operator keyboard

Operating keyboard, adjustable in height and rotation

Ergonomic hard key layout

Interactive back-lighting

Integrated recording keys for remote control of up to 4 peripheral or DICOM® devices

Integrated gel warmer

Touch screen

12.1" High-resolution, color, touch display screen

Interactive dynamic software menu

Brightness adjustment

User-configurable layout

Display monitor

23.8" Widescreen high-resolution HDU Display

Display translation (independent of console)

350 mm (13.7") horizontal (both directions)

120 mm (4.7") vertical

90° swivel (both directions)

Fold-down and lock mechanism for transportation

Resolution: 1920 x 1080

Anti-glare

Viewing angle 89/89/89/89°

System overview

Applications

Abdominal

Obstetrical

Gynecological

Breast

Small Parts

Peripheral Vascular

Transcranial (adult and neonatal)

Pediatric and Neonatal

Musculoskeletal (general and superficial)

Urological

Cardiac (adult and pediatric)

Interventional

Pleural

System overview *(cont.)*

Operating modes

B-Mode

M-Mode

Color Flow Mode (CFM)

B-Flow™ (Option)

Extended Field of View (LOGIQ View)

Power Doppler Imaging (PDI)

PW Doppler

CW Doppler (Option)

Volume Modes (3D/4D) (Option)	• 3D Static • 4D Real Time
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Anatomical M-Mode

Coded Contrast Imaging (Option)

Strain Elastography (Option)

B-Steer+ (Option)

Shearwave Elastography (Option)

UGAP (Option)

Scanning methods

Electronic sector

Electronic convex

Electronic linear

Mechanical volume sweep

Probe types

Sector phased array

Convex array

Micro convex array

Linear array

Matrix array

Volume probes (4D)

Split crystal

System standard features

Advanced user interface with high-resolution 12.1" display touch panel

Automatic optimization

CrossXBeam™

Speckle Reduction Imaging (SRI-HD, Advanced SRI Type 1)

Fine angle steer

Coded harmonic imaging

Virtual convex

Patient information database

Image archive on integrated CD/DVD and hard drive

Advanced 3D

Real-time automatic Doppler calculations

OB calculations

Fetal trending

Multigestational calculations

Hip dysplasia calculations

Gynecological calculations

Vascular calculations

Urological calculations

Renal calculations

Cardiac calculations

InSite™ capability

On-board electronic documentation

Auto CF/PW positioning feature

Privacy and security, including user and rights management

LOGIQView

Breast productivity package (Option)

Thyroid productivity package (Option)

External USB printer connection

Network printer support

HDMI output (available for compatible devices)

System overview *(cont.)*

Options

Tricefy®

DICOM

B-Flow

Auto IMT

Compare assistant

Scan assistant

OB measure assistant

Color quantification

Strain Elastography

Elastography quantification

Advanced privacy and security (vulnerability scan)

Power assistant and scan on battery

Storage bins

Shear wave elastography

Volume navigation

UGAP

Hepatic assistant

Coded Contrast Imaging

Stress echo

Cardiac Strain (Automatic Function Imaging)

On-board reporting

TVI

Wireless LAN

CW

DVR

Tablet tools

Advanced probes

KOIOS

SonoNT SonoIT

Advanced SRI Type 2

Peripheral options

Integrated options for

- Digital B&W thermal printer
- DVD video recorder

Digital color thermal printer

Digital A6 color thermal printer

Foot switch with programmable functionality

Console protective cover

LOGIQ smart device apps

- Photo Assistant
- Remote Control

CRF-200U card reader (for Japan)

Display modes

Live and stored display format

- Full size and split screen – both w/ thumbnails. For still and CINE.

Review image format

- 4x4, and thumbnails. For still and CINE.

Timeline display

- Independent Dual B or CrossXBeam/PW Display
- CW
- Top/bottom selectable display format
- Side/side selectable format

Virtual convex

Simultaneous capability

B or CrossXBeam/PW

B or CrossXBeam/CW (Option)

B or CrossXBeam/CFM or PDI

B/M

B/CrossXBeam

B-Flow/PW

Real-time Triplex Mode

B or CrossXBeam + CFM or PDI/PW

Selectable alternating modes

B or CrossXBeam/PW

B or CrossXBeam + CFM (PDI)/PW

B/CW (Option)

System overview *(cont.)*

Multi-image (split/quad screen)
Live and/or frozen
B or CrossXBeam + B or CrossXBeam/CFM or PDI
PW/M
Independent CINE playback

Display annotation		
Patient name: first, last, and middle		
Patient ID		
Alternate patient ID		
Age, sex, and date of birth		
Hospital name		
Date format: three types selectable	• MM/DD/YY • YY/MM/DD	• DD/MM/YY
Time format: two types selectable	• 24 hours	• 12 hours
Gestational age from	• LMP • EDD	• GA • BBT
Probe name		
Map names		
Probe orientation		
Depth scale marker		
Lateral scale marker		
Image depth		
Zoom depth		
B-Mode	• Gain • Imaging frequency • Gray map	• Dynamic range • Frame averaging • SRI-HD
M-Mode	• Gain • Time scale	• Dynamic range
Doppler Mode	• Gain • Sample volume depth and width • Spectrum inversion • Time scale • Doppler frequency	• Angle • Wall filter • Velocity and/or frequency scale • PRF

Display annotation <i>(cont.)</i>	
Color Flow Doppler Mode	• Line density • Frame averaging • Color Scale, 3 types: power, directional PDI, and symmetrical velocity imaging • Color velocity range and baseline • Color threshold marker • Color gain • PDI • Spectrum inversion • Doppler frequency
TGC curve	
Acoustic frame rate	
CINE gage, image number/frame number	
Body pattern: multiple human and animal types	
Application name	
Measurement results	
Operator message	
Displayed acoustic output	• TIS: Thermal Index Soft Tissue • TIC: Thermal Index Cranial (Bone) • TIB: Thermal Index Bone • MI: Mechanical Index
% of maximum power output	
Biopsy guideline and zone	
Heart rate	

General system parameters

System setup
Pre-programmed categories
User programmable preset capability
Factory default preset data
Languages: English, French, German, Spanish, Italian, Brazilian Portuguese, Russian, Greek, Swedish, Danish, Dutch, Finnish, Norwegian
OB report formats including Tokyo Univ., Osaka Univ., USA, Europe, ASUM, and WHO
User defined annotations
Body patterns
Customized comment home position
EZ Imaging: Simplified user interface for high volume workflow

General system parameters *(cont.)*

Complete user manual available on-board through Help (F1)

User manual and service manual are included on USB with each system. A printed manual is available upon request.

CINE memory/image memory

1 GB of CINE memory

Selectable CINE sequence for CINE review

Prospective CINE mark

Measurements/calculations and annotations on CINE playback

Scrolling timeline memory

Dual Image CINE display

Quad Image CINE display

CINE gauge and CINE image number display

CINE review loop

CINE review speed

Image storage

On-board database of patient information from past exams

Storage formats: DICOM	• Compressed/uncompressed • Single/multi-frame • Enhanced (3D/4D) • With/without raw data
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Export JPEG, JPEG 2000, WMV (MPEG 4) formats

Storage devices	• USB memory stick: 64 MB to 64 GB (for exporting individual images/clips) • CD-R storage: 700 MB • DVD storage: -R (4.7 GB) • Hard drive image storage: ~730GB
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Compare previous exam images with current exam

Reload of archived data sets

Connectivity

Ethernet network connection

Wireless LAN 802.11ac/a/b/g/n (Option)

DICOM 3.0	• Verify • Print • Store • Modality worklist • Storage commitment • Modality performed procedure step (MPPS) • Media exchange • Off network/mobile storage queue • Query/retrieve
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Public SR template

Structured Reporting – compatible with vascular, OB, cardiac, and breast standard

InSite capability

Advanced privacy and security (Option)

Physiological input panel (Option)

Physiological input	• ECG, 1 channel • PCG, 1 channel • AUX, 1 channel • Dual R-Trigger • Pre-settable ECG R delay time • Pre-settable ECG position • Adjustable ECG gain control • Pre-settable PCG position • Adjustable PCG gain control • Pre-settable AUX position • Adjustable AUX gain control
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Automatic heart rate display

Auto Ejection Fraction

Report writer (Option)

On-board reporting package automates report writing

Formats various exam results into a report suitable for printing or reviewing on a standard PC

Exam results include patient info, exam info, measurements, calculations, images, and comments with standard templates provided

Customizable templates

General system parameters *(cont.)*

Scanning parameters

Displayed imaging depth: 0 – 100 cm

Minimum depth of field: 0 – 2 cm (zoom) (probe dependent)

Maximum depth of field: 0 – 100 cm (probe dependent)

Continuous dynamic receive focus/continuous dynamic receive Aperture

Adjustable dynamic range Adjustable field of view (FOV)

Image reverse: right/left

Image rotation of 0°, 90°, 180°, 270°

Digital B-Mode

Adjustable	• Acoustic power • Dynamic range • Gray scale map • Speed of sound (application dependent) • Scanning size (FOV or Angle) – Probe type dependent; consult individual probe specifications	• Gain • Frame averaging • Frequency • Frame rate • CrossXBeam • B colorization • Reject • Suppression • SRI-HD
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Digital M-Mode

Adjustable	• Acoustic power • Dynamic range • Frequency • M colorization • Rejection	• Gain • Gray scale map • Sweep speed • M display format
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Anatomical M-Mode

M-Mode cursor adjustable at any plane

Can be activated from a CINE loop from a live or stored image

M & A capability

Available with Color Flow Mode

Digital Spectral Doppler Mode

Adjustable	• Acoustic power • Dynamic range • Transmit frequency • PW colorization • Sweep speed • Sample volume length • Spectrum inversion • Baseline shift • Time resolution • Trace direction	• Gain • Gray scale map • Wall filter • Velocity scale range • Angle correction • Steered linear • Trace method • Doppler auto trace • Compression • Trace sensitivity
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Digital Color Flow Mode

Adjustable	• Acoustic power • Gain • Velocity scale range • Wall filter • Packet size • Spatial filter • Frame average • Accumulation mode • Flash suppression • Shortcuts	• Color maps, including velocity-variance maps • Line density • Steering angle • Threshold • Auto ROI placement and steering on linear
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Digital Power Doppler Imaging

Adjustable	• Acoustic power • Gain • Velocity scale range • Wall filter • Packet size • Spatial filter • Frame average • Accumulation mode • Shortcuts	• Color maps, including velocity-variance maps • Line density • Steering angle • Threshold • Flash suppression
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Continuous Wave Doppler (Option)

Available on the following probes: M5Sc-D, P2D, P6D, 6S-D, 6Tc -RS

Steerable CW mode included

Adjustable	• Acoustic power • Dynamic range • Transmit frequency • CW colorization • Sweep speed • Angle correction • Trace method • Baseline shift • Compression • Trace direction	• Gain • Gray scale map • Wall filter • Velocity scale range • Spectrum inversion • Doppler auto trace • Trace sensitivity
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Automatic optimization

Optimize B-Mode image to help improve contrast resolution

Selectable amount of contrast resolution improvement (low, medium, high)

CTO (Continuous Tissue Optimization) – continuously adjusts B-Mode axial and lateral gain uniformity and overall gain level, suppressing the noise

Auto-spectral optimize – adjusts baseline, invert, PRF (on live image), and angle correction

Auto CF and PW positioning – adjusts ROI position, sample volume position, and steering

General system parameters *(cont.)*

Coded Harmonic Imaging

Available on all 2D and 4D probes

B-Flow (Option)

Available on the following probes: C1-6-D, C1-6VN-D, C2-7-D, C2-7VN-D, C2-9-D, C2-9VN-D, C3-10-D, L2-9-D, L2-9VN-D, L3-12-D, ML6-15-D, M5Sc-D, L8-18i-D, L6-24D

Background

Sensitivity/PRI

Acoustic power

Frequency

Line density

Frame average

Gray scale map

Tint map

Dynamic range

Rejection

Gain

Flash suppression

SRI-HD

Accumulation

Visualization

Radiantflow™

Easy, fast visualization of tiny vessels, displaying as a 3D effect

B Steer+

Available on the following probes: L2-9-D, L3-12-D, ML6-15-D, L8-18i-D, L2-9VN-D, L6-24

Coded contrast imaging (Option)

Available on the following probes: C1-6-D, C1-6VN-D, C2-9-D, C2-9VN-D, C2-7-D, C2-7VN-D, C3-10-D, IC5-9-D, L2-9-D, L2-9VN-D, L3-12-D, M5Sc-D, ML6-15-D, RAB6-D, RIC5-9-D

2 contrast timers

Timed updates: 0.05 – 10 seconds

Accumulation mode, seven levels

Maximum enhance mode

Flash

Time intensity curve (TIC) analysis

Parametric imaging

The LOGIQ Fortis is designed for compatibility with most commercially available ultrasound contrast agents. Because the availability of these agents is subject to government regulation and approval, product features intended for use with these agents may not be commercially marketed nor made available before the contrast agent is cleared for use. Contrast related product features are enabled only on systems for delivery to an authorized country or region of use.

LOGIQView

Extended field of view Imaging

Up to 160 cm (63") scan length

Available on all 2D imaging probes

For use in B-Mode

CrossXBeam is available on linear probes

Auto detection of scan direction

Pre-or post-process zoom

Rotation

Auto best fit on monitor

Measurements in B-Mode

3D

Allows unlimited rotation and planar translations

3D reconstruction from CINE sweep

Advanced 3D

Acquisition of color data

Automatic rendering

3D landscape technology

3D movie

General system parameters *(cont.)*

Real Time 4D (Option)

Acquisition modes	• Real Time 4D • Static 3D • Spatio-Temporal Image Correlation
Visualization modes	• 3D rendering (diverse surface and intensity projection modes) • Sectional planes (3 section planes perpendicular to each other) • Omniview • Volume contrast imaging – static • Volume contrast imaging – Omniview • Tomographic ultrasound imaging • Volume Analyses – VOCAL: semi-auto/manual segmentation tool (segmentation using touch screen) – 3D static only – Threshold Volume: measure volume above and below a threshold
Render mode	• Surface texture, surface smooth, max-min- and X-ray (average intensity projection), mix mode of two render modes • HDlive™

SonoRenderlive

Curved 3-point render start

3D movie

Scalpel: 3D cut tool

Display format	• Quad: A-/B-/C-Plane/3D • Dual: A-Plane/3D • Single: 3D or A- or B- or C-Plane
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Automated volume calculation – VOCAL II

Betaview

Volume navigation (Option)

Available on the following probes: C1-6VN-D, C2-9VN-D, C2-7VN-D, C3-10-D, L2-9VN-D, ML6-15-D, IC5-9-D, L8-18i-D, M5Sc-D

Sensor-based acquisition

Position markers

Needle tip tracking

Virtual tracking

Auto image registration

Tru3D feature includes:	Display of data in: main-, parallel-, angular-mode
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Render modes: gray surface, texture, min-, max-, average-intensity

Measurements: distance, angle, area, volume

3D movie

Scan assistant (Option)

Factory programs

User-defined programs

Steps include image annotations, mode transitions, basic imaging controls, and measurement initiation

Compare assistant (Option)

Allows side-by-side comparison of previous ultrasound and other modality exams during live scanning

Breast productivity package

Auto measurement

Worksheet summary includes measurements and locations for lesions and lymph nodes

Feature assessment

BI-RADS® assessment

User editable

Thyroid productivity package

Auto measurement

Worksheet summary includes measurements and locations for nodule, parathyroid, and lymph node

Feature assessment

TI-RADS assessment

User editable

Start Assistant

Automatically select category, probe, preset, or scan assistant from worklist exam description

Learn the category, probe, preset, and scan assistant based on exam description

Shear Wave Elastography (Option)

Available on the following probes: C1-6-D, C1-6VN-D, IC5-9-D, L2-9-D, L2-9VN-D, L3-12D, ML6-15-D, L8-18D

User programmable measurement display in kPa and meters per second

Single and dual view display

General system parameters *(cont.)*

Strain Elastography (Option)

Available on the following probes: ML6-15-D, L2-9-D, L2-9VN-D, L3-12-D, IC5-9-D, C2-9-D, C2-9VN-D, C1-6-D, C1-6VN-D, L8-18i-D, BE9CS-D

Relative analysis tool

UGAP (Option)

Available on the following probes: C1-6-D, C1-6VN-D, C2-9D, C2-9VN-D

Measures liver attenuation* (attenuation coefficient [dB/cm/MHz]) by auto measure algorithm with reference B-mode

Simple and 2D color map (attenuation color map and Measurement Position Indicator Map)

Quantitative flow analysis (Option)

Available in color and power Doppler

TVI (Option)

Available on the following probes: M5Sc-D, 6S-D, 6TC-RS, 6Tc-RS

Myocardial Doppler imaging with color overlay on tissue image

Tissue color overlay can be removed to show just the 2D image, still retaining the tissue velocity information

Curved anatomical M-Mode: free (curved) drawing of M-Mode generated from the cursor independent of the axial plane

Q-Analysis: multiple time-motion trace display from selected points in the myocardium

Stress echo (Option)

Advanced and flexible stress echo examination capabilities

Provides exercise and pharmacological protocol templates

6 default templates

Template editor for user configuration of existing templates or creation of new templates

Reference scan display during acquisition for stress level comparison (dual screen)

Baseline level/previous level selectable

Raw data continuous capture

Over 100 sec. available

Wall motion scoring (bulls-eye and segmental)

Smart stress: Automatically set up various scanning parameters (e.g. geometry, frequency, gain) according to same projection on previous level

Auto EF (Option)

Allows semi-automatic measurement of the global EF (Ejection Fraction)

User editable

Cardiac AFI (Option)

Allows assessment of the complete left ventricle with all segments at a glance by combining three longitudinal views into one comprehensive bulls-eye view

2D strain-based data moves into clinical practice

Virtual convex

Provides a convex field of view

Compatible with CrossXBeam

Available on all linear and sector probes

SRI-HD and Advanced SRI

Speckle reduction imaging

Provides multiple levels of speckle reduction

Compatible with side-by-side DualView display

Advanced SRI: two types selectable	• Type 1 – Compatible with all linear, convex, and sector probes • Type 2 (Option) – Compatible with OB/GYN application
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CrossXBeam

Provides variable angle spatial compounding

Live side-by-side DualView display

Compatible with	• Color mode • SRI-HD • Virtual convex	• PW • Coded harmonic imaging
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Available on all curved and linear probes

Controls available while “live”

Magnification Zoom: Magnifies the entire image on the screen without zoom ROI

Pan Zoom: Magnifies the display of the data within the ROI

HD Zoom: Magnifies the image within the zoom ROI with higher spatial resolution than original images

B/M/CrossXBeam-Mode	• Gain • Dynamic range • Framerate control • CrossXBeam angle	• TGC • Acoustic output • Sweep speed for M-Mode
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General system parameters *(cont.)*

Controls available while “live” *(cont.)*

PW-Mode	- Gain - Acoustic output - PRF - Wall filter - Sample volume gate: length, depth	- Dynamic range - Transmission frequency - Spectral averaging - Velocity scale
Color Flow Mode	- CFM gain - Acoustic output - Wall echo filter - Frame rate control - CFM frame averaging - Frequency/velocity baseline shift	- CFM velocity range - Packet size - CFM spatial filter - CFM line resolution

Controls available on “freeze” or recall

Automatic optimization

SRI-HD

CrossXBeam – display non-compounded and compounded image simultaneously in split screen

3D reconstruction from a stored CINE loop

B/M/CrossXBeam mode	- Gray map optimization - TGC - Colorized B and M - Frame average (loops only) - Dynamic range
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Anatomical M-Mode

Magnification zoom

Pan zoom

Baseline shift

Sweep speed

PW mode	- Gray map - Baseline shift - Invert spectral wave form - Colorized spectrum - Quick angle correct	- Post gain - Sweep speed - Compression - Display format - Angle correct - Auto angle correct
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Color flow	- Overall gain (loops and stills) - Color map - Transparency map - Frame averaging (loops only) - CFM display threshold - Spectral invert for color/Doppler
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Anatomical M-Mode on CINE loop

4D	- Gray map, colorize - Post gain - Change display – single, dual, quad sectional or rendered
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Measurements/calculations

General B-Mode

Depth and distance

Circumference (ellipse/trace)

Area (ellipse/trace)

Volume (ellipsoid)

% Stenosis (area or diameter)

Angle between two lines

Dual B-Mode capability

General M-Mode

M-Depth

Distance

Time

Slope

Heart rate

General Doppler measurements/calculations

Velocity

Time

A/B ratio (velocities/frequency ratio)

PS (Peak Systole)

ED (End Diastole)

PS/ED (PS/ED Ratio)

ED/PS (ED/PS Ratio)

AT (Acceleration Time)

ACCEL (Acceleration)

TAMAX (Time Averaged Maximum Velocity)

Volume flow (TAMEAN and vessel area)

Heart rate

PI (Pulsatility Index)

RI (Resistivity Index)

Real-time Doppler auto measurements/calculations

PS (Peak Systole)

ED (End Diastole)

MD (Minimum Diastole)

PI (Pulsatility Index)

RI (Resistivity Index)

Measurements/calculations *(cont.)*

Real-time Doppler auto measurements/calculations *(cont.)*

AT (Acceleration Time)

ACC (Acceleration)

PS/ED (PS/ED Ratio)

ED/PS (ED/PS Ratio)

HR (Heart Rate)

TAMAX (Time Averaged Maximum Velocity)

PVAL (Peak Velocity Value)

Volume Flow (TAMEAN and Vessel Area)

Abdominal measurements/calculations

Shear Elasto velocity

Shear Elasto stiffness

Attenuation rate

Attenuation coefficient

Summary reports

Small Parts measurements/calculations

Breast Lesion

Thyroid

Parathyroid

Lymph Node

Nodule

Isthmus AP

Shear Elasto velocity

Shear Elasto stiffness

Summary reports

OB measurements/calculations

Gestational age by

- GS (Gestational Sac)
- CRL (Crown Rump Length)
- FL (Femur Length)
- BPD (Biparietal Diameter)
- AC (Abdominal Circumference)
- HC (Head Circumference)
- APTD x TTD (Anterior/Posterior Trunk Diameter by Transverse Trunk Diameter)
- FTA (Fetal Trunk Cross-sectional Area)
- HL (Humerus Length)
- BD (Binocular Distance)
- FT (Foot Length)
- OFD (Occipital Frontal Diameter)
- TAD (Transverse Abdominal Diameter)
- TCD (Transverse Cerebellum Diameter)
- THD (Thorax Transverse Diameter)
- TIB (Tibia Length)
- ULNA (Ulna Length)
- OOD (Outer Orbital Diameter)
- IOD (Inner Orbital Diameter)
- FIB (Fibula length)
- Radius (Radius length)
- LV (Lateral Ventricle width) (= SL)

Fetal graphical trending

Growth percentiles

Multi-gestational calculations (4)

Fetal qualitative description (anatomical survey)

Fetal environmental description (biophysical profile)

Programmable OB tables

Over 20 selectable OB calculations

Expanded worksheets

Estimated fetal weight (EFW) by:

AC, BPD

AC, BPD, FL

AC, BPD, FL, HC

AC, FL

AC, FL, HC

AC, HC

BPD, APTD, TTD, FL

BPD, APTD, TTD, SL

Measurements/calculations *(cont.)*

Calculations and ratios

FL/BPD

FL/AC

FL/HC

HC/AC

CI (Cephalic Index)

AFI (Amniotic Fluid Index)

CTAR (Cardio-Thoracic Area Ratio)

Measurements/calculations by: Alexander, ASUM, ASUM 2001, Bahlmann, Baschat, Berkowitz, Bertagnoli, Brenner, Campbell, CFEF, Chervenak, Chitty, Doubilet, Ebing, Eik-Nes Goldstein, Hadlock, Hansmann, Hellman, Hill, Hohler, Jeanty, JSUM, Kramer, Kurmanavicius, Kurtz, Mari, Mayden, Mercer, Merz, Moore, Nelson, Osaka University, Paris, Pexsters, Rempen, Robinson, Shepard, Shepard/Warsoff, Sonek, Tokyo University, Tokyo/Shinozuka, WHO, Williams, Yarkoni

OB measure assistant

Allows automatic measurement of BPD, HC, FL, AC, and HL

User editable

SonoNT and SonoIT

SonoNT measures the contour detection of the NT border

SonoIT is a system supported measurement for Intracranial Translucency

GYN measurements/calculations

Right ovary length, width, height

Left ovary length, width, height

Uterus length, width, height

Cervix length, trace

Ovarian volume

ENDO (Endometrial thickness)

Ovarian RI

Uterine RI

Follicular measurements

Fibroid measurements

Summary reports

Mean Uterine Artery (Gomez) Doppler Measurement and graph

Qualitative description (anatomical survey)

Vascular measurements/calculations

SYS DCCA (Systolic Distal Common Carotid Artery)

DIAS DCCA (Diastolic Distal Common Carotid Artery)

SYS MCCA (Systolic Mid Common Carotid Artery)

DIAS MCCA (Diastolic Mid Common Carotid Artery)

SYS PCCA (Systolic Proximal Common Carotid Artery)

DIAS PCCA (Diastolic Proximal Common Carotid Artery)

SYS DICA (Systolic Distal Internal Carotid Artery)

DIAS DICA (Systolic Distal Internal Carotid Artery)

SYS MICA (Systolic Mid Internal Carotid Artery)

DIAS MICA (Diastolic Mid Internal Carotid Artery)

SYS PICA (Systolic Proximal Internal Carotid Artery)

DIAS PICA (Diastolic Proximal Internal Carotid Artery)

SYS DECA (Systolic Distal External Carotid Artery)

DIAS DECA (Diastolic Distal External Carotid Artery)

SYS PECA (Systolic Proximal External Carotid Artery)

DIAS PECA (Diastolic Proximal External Carotid Artery)

VERT (Systolic Vertebral Velocity)

SUBCLAV (Systolic Subclavian Velocity)

Automatic IMT

Summary reports

Urological calculations

Bladder volume

Prostate volume

Left/right renal volume

Generic volume

Post-void bladder volume

Pelvic floor measurements

Probes *(All Optional)*

BE9CS-D

Applications: urology

Biopsy guide: single angle, disposable (E8387M);
single angle, reusable (E8387MA)

6S-D, sector probe

Applications: cardiac, pediatric cardiac

6Tc-RS, trans-esophageal probe

Applications: cardiac

TEE RS-DLP Adapter (H46352LK)

C1-6-D, XDclear™ convex probe

Applications: abdomen, OB/GYN, pediatric, peripheral vascular, general musculoskeletal

Biopsy guide: multi-angle, disposable with a reusable bracket (H4917VB)

C1-6VN-D, VNav inside XDclear convex probe

VNav sensor inside probe for Volume Navigation tracking without sensor cables

Applications: abdomen, OB/GYN, pediatric, peripheral vascular, general musculoskeletal

Biopsy guide: multi-angle, disposable with a reusable bracket (H4917VB)

C2-7-D, micro convex biopsy probe

Applications: abdomen, pediatric

Biopsy guide: multi-angle, disposable with a reusable bracket (H40482LK); multi-angle, with a reusable stainless bracket (H40482LL)

C2-7VN-D, VNav inside micro convex biopsy probe

VNav sensor inside probe for Volume Navigation tracking without sensor cables

Applications: abdomen, pediatric

Biopsy guide: multi-angle, disposable with a reusable bracket (H40482LK); multi-angle, with a reusable stainless bracket (H40482LL)

C2-9-D, XDclear convex probe

Applications: abdomen, OB/GYN, pediatric, peripheral vascular, neonatal, neonatal transcranial, general musculoskeletal

Biopsy guide: multi-angle, disposable with a reusable bracket (H4913BA)

C2-9VN-D, VNav inside XDclear convex probe

VNav sensor inside probe for Volume Navigation tracking without sensor cables

Applications: abdomen, OB/GYN, pediatric, peripheral vascular, neonatal, neonatal transcranial, general musculoskeletal

Biopsy guide: multi-angle, disposable with a reusable bracket (H4913BA)

C3-10-D, XDclear micro convex probe

Applications: abdomen, neonatal, pediatric, peripheral vascular, neonatal transcranial, small parts

IC5-9-D, micro convex probe

Applications: OB/GYN, urology

Biopsy guide: single angle, disposable with a disposable bracket (E8385MJ) or a reusable bracket (H40412LN)

L2-9-D, XDclear linear probe

Applications: peripheral vascular, small parts, pediatric, abdomen, OB/GYN, general musculoskeletal, superficial musculoskeletal, neonatal, neonatal transcranial

Biopsy guide: multi-angle, disposable with a reusable bracket (H44901AM)

L2-9VN-D, VNav inside XDclear linear probe

VNav sensor inside probe for Volume Navigation tracking without sensor cables

Applications: peripheral vascular, small parts, pediatric, abdomen, OB/GYN, general musculoskeletal, superficial musculoskeletal, neonatal, neonatal transcranial

Biopsy guide: multi-angle, disposable with a reusable bracket (H44901AM)

L3-12-D, linear probe

Applications: abdomen, OB, general musculoskeletal, superficial musculoskeletal, neonatal, neonatal transcranial, small parts, vascular

Biopsy guide: multi-angle, disposable with a reusable bracket (H78652PA)

L6-24-D, linear probe

Applications: general musculoskeletal, superficial musculoskeletal, pediatrics, thyroid

Probes *(cont.)*

L8-18i-D, linear probe

Applications: small parts, peripheral vascular, neonatal, neonatal transcranial, general musculoskeletal, superficial musculoskeletal, intraoperative

M5Sc-D, XDclear sector probe

Applications: adult cardiac, pediatric cardiac, adult cephalic, abdominal

Biopsy guide: multi-angle, disposable with a reusable bracket (H45561FC)

ML6-15-D, matrix array linear probe

Applications: abdomen, small parts, peripheral vascular, neonatal, pediatric, neonatal transcranial, general musculoskeletal, superficial musculoskeletal

Biopsy guide: multi-angle, disposable with a reusable bracket (H40432LJ)

P2D, CW split crystal probe

Applications: adult cardiac, pediatric cardiac, peripheral vascular, adult cephalic

P6D, CW split crystal probe

Applications: adult cardiac, pediatric cardiac, peripheral vascular, adult cephalic

RAB6-D, convex volume probe

Applications: abdomen, OB/GYN, pediatric, neonatal

Biopsy guide: single angle, reusable bracket (H46701AE)

RIC5-9-D, convex volume probe

Applications: OB/GYN, urology

Biopsy guide: single angle, reusable (H46721R)

External Inputs and outputs (not including on-board peripherals)

HDMI

Ethernet

Multiple USB 3.0 ports

Safety conformance

The LOGIQ Fortis is:

Classified to ANSI/AAMI ES60601-1 2005 R1 2012 Medical Electrical Equipment, Part 1: General Requirements for Safety by a Nationally Recognized Test Lab

Certified to CSA CAN/CSA-C22.2 NO. 60601-1:14 General requirements for safety

CE Marked to EU Medical Device Regulation MDR 2017-745 and Council Directive 93/42/EEC on Medical Devices and conforms to the following standards for safety:

- IEC/EN 60601-1 Edition 3.1 Medical electrical equipment – Part 1: General requirements for basic safety and essential performance
- IEC/EN 60601-1-2 Medical electrical equipment – Parts 1-2: General requirements for safety – Collateral standard: Electromagnetic compatibility – requirements and tests
- IEC/EN 60601-1-6 Medical electrical equipment Parts 1 -6: General requirements for basic safety and essential performance – Collateral standard: usability
- IEC/EN 60601-2-37 Medical electrical equipment – Parts 2-37: Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
- IEC 61157 (Standard means for the reporting of the acoustic output of medical diagnostic ultrasonic equipment)
- IEC/EN 62366 Application of usability engineering to medical devices
- IEC/EN 62304 Software life cycle processes
- IEC/EN 62359 Ultrasonic – Field characterization – Test methods for the determination of thermal and mechanical indices related to medical diagnostic ultrasonic fields
- EN ISO 15223-1: Symbols to be used with medical device labels, labelling, and information to be supplied
- ISO 10993-1 Biological evaluation of medical devices – Part 1: Evaluation and testing
- ISO14971:2012 (Medical devices – Application of risk management to medical devices)
- EMC Emissions Group 1, Class A device requirements as per sub-clause 4.2 of CISPR 11
- WEEE (Waste Electrical and Electronic Equipment)
- ROHS according to 2011/65/EU including national deviations
- Wireless equipment shall be certified to FCC, RED, and Japan Radio Law.
- Medical Device Good Manufacturing Practice Manual issued by the FDA (Food and Drug Administration, Department of Health, USA)

Supplement: cardiac measurements/calculations

B-Mode measurements

Aorta	• Aortic Root Diameter (Ao Root Diam) • Aortic Arch Diameter (Ao Arch Diam) • Ascending Aortic Diameter (Ao Asc Diam) • Descending Aortic Diameter (Ao Desc Diam) • Aorta Isthmus (Ao Isthmus) • Aorta (Ao st junct)
Aortic valve	• Aortic Valve Cusp Separation (AV Cusp) • Aortic Valve Area Planimetry (AVA Planimetry) • Trans AVA
Left atrium	• Left Atrium Diameter (LA Diam) • LA Length (LA Major) • LA Width (LA Minor) • Left Atrium Diameter to AoRoot Diameter Ratio (LA/Ao ratio) • Left Atrium Area (LAA(d), LAA(s)) • Left Atrium Volume, Single Plane, Method of Disk (LAEDV A2C, LAESV A2C) (LAEDV A4C, LAESV A4C), (LAEDV A-L, LAEDV Index A-L, LAESV A-L, LAESV Index A-L)

B-Mode measurements (cont.)

Left ventricle	• Left Ventricle Mass (LVPWd, LVPWs) • Left Ventricle Volume, Teichholz/Cubic (LVIDd, LVI Ds) • Left Ventricle Internal Diameter (LVIDd, LVI Ds) Left Ventricle Length (LVld, LVLs) • Left Ventricle Outflow Tract Diameter (LVOT Diam) • Left Ventricle Posterior Wall Thickness (LVPWd, LVPWs) • Left Ventricle Length (LV Major) • Left Ventricle Width (LV Minor) • Left Ventricle Outflow Tract Area (LVOT) • Left Ventricle Area, Two Chamber/Four Chamber/Short Axis (LVA (d), LVA (s)) • Left Ventricle Endocardial Area, Width (LVA (d), LVA(s)) • Left Ventricle Epicardial Area, Length (LVAepi (d), LVAepi (s)) • Left Ventricle Mass Index (LVPWd, LVPWs) • Ejection Fraction, Teichholz/Cube (LVIDd, LVIDs) • Left Ventricle Posterior Wall Fractional Shortening (LVPWd, LVPWs) • Left Ventricle Stroke Index, Teichholz/ Cube (LVIDd, LVIDs and Body Surface Area) • Left Ventricle Fractional Shortening (LVIDd, LVIDs) • Left Ventricle Stroke Volume, Teichholz/ Cubic (LVIDd, LVIDs) • Left Ventricle Stroke Index, Single Plane, Two Chamber, Method of Disk (LVI Dd, LVIDs, LVSD, LVSS) • Left Ventricle Stroke Index, Single Plane, Four Chamber, Method of Disk (LVI Dd, LVIDs, LVSD, LVSS) • Left Ventricle Stroke Index, Bi-Plane, Bullet, Method of Disk (LVAd, LVAS) • Interventricular Septum (IVS) • Left Ventricle Internal Diameter (LVI D) • Left Ventricle Posterior Wall Thickness (LVPW)
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Supplement: cardiac measurements/calculations *(cont.)*

B-Mode measurements *(cont.)*

Mitral valve	- Mitral Valve Annulus Diameter (MV Ann Diam) - E-Point-to-Septum Separation (EPSS) - Mitral Valve Area Planimetry (MVA Planimetry)
Pulmonic valve	- Pulmonic Valve Area (PV Planimetry) - Pulmonic Valve Annulus Diameter (PV Annulus Diam) - Pulmonic Diameter (Pulmonic Diam)
Right atrium	- Right Atrium Diameter, Length (RAD Ma) - Right Atrium Diameter, Width (RAD Mi) - Right Atrium Area (RAA) - Right Atrium Volume, Single Plane, Method of Disk (RAAd) - Right Atrium Volume, Systolic, Single Plane, Method of Disk (RAAs)
Right ventricle	- Right Ventricle Outflow Tract Area (RVOT Planimetry) - Left Pulmonary Artery Area (LPA Area) - Right Pulmonary Artery Area (RPA Area) - Right Ventricle Internal Diameter (RVIDd, RVIDs) - Right Ventricle Diameter, Length (RVD Ma) - Right Ventricle Diameter, Width (RVD Mi) - Right Ventricle Wall Thickness (RVAWd, RVAWs) - Right Ventricle Outflow Tract Diameter (RVOT Diam) - Left Pulmonary Artery (LPA) - Main Pulmonary Artery (MPA) - Right Pulmonary Artery (RPA)
System inferior vena cava	- Systemic Vein Diameter (Systemic Diam) - Patent Ductus Arteriosis Diameter (PDA Diam) - Pericard Effusion (PEs) - Patent Foramen Ovale Diameter (PFO Diam) - Ventricular Septal Defect Diameter (VSD Diam) - Interventricular Septum (IVS) Fractional Shortening (IVSd, IVSs)
Tricuspid valve	- Tricuspid Valve Area (TV Panimetry) - Tricuspid Valve Annulus Diameter (TV Annulus Diam)

M-Mode measurements

Aorta	- Aortic Root Diameter (Ao Root Diam) - Aortic Valve - Aortic Valve Diameter (AV Diam) - Aortic Valve Cusp separation (AV Cusp) - Aortic Valve Ejection Time (LVET)
Left atrium	- Left Atrium Diameter to AoRoot Diameter Ratio (LA/Ao Ratio) - Left Atrium Diameter (LA Diam)
Left ventricle	- Left Ventricle Volume, Teichholz/Cubic (LVIDd, LVI Ds) - Left Ventricle Internal Diameter (LVIDd, LVI Ds) - Left Ventricle Posterior Wall Thickness (LVPWd, LVPWs) - Left Ventricle Ejection Time (LVET) - Left Ventricle Pre-Ejection Period (LVPEP) - Interventricular Septum (IVS) - Left Ventricle Internal Diameter (LVI D) - Left Ventricle Posterior Wall Thickness (LVPW)
Mitral valve	- E-Point-to-Septum Separation (EPSS) - Mitral Valve Leaflet Separation (D-E Excursion) - Mitral Valve Anterior Leaflet Excursion (D-E Excursion) - Mitral Valve D-E Slope (D-E Slope) - Mitral Valve E-F Slope (E-F Slope) - Mitral Annular Plane Systolic Excursion (MAPSE)
Pulmonic valve	QRS Complex to End of Envelope (Q-PV close)
Right ventricle	- Right Ventricle Internal Diameter (RVIDd, RVIDs) - Right Ventricle Wall Thickness (RVAWd, RVAWs) - Right Ventricle Outflow Tract Diameter (RVOT Diam) - Right Ventricle Ejection Time (RVET) - Right Ventricle Pre-Ejection Period (RVPEP)
System	Pericard Effusion (PE (d))
Tricuspid valve	- QRS Complex to End of Envelope (Q-TV close) - Tricuspid Annular Plane Systolic Excursion (TAPSE)

Supplement: cardiac measurements/calculations *(cont.)*

Doppler Mode measurements

Aortic valve	• Aortic Insufficiency Mean Pressure Gradient (AR Trace) • Aortic Insufficiency Peak Pressure Gradient (AR Vmax) • Aortic Insufficiency End Diastole Pressure Gradient (AR Trace) • Aortic Insufficiency Mean Velocity (AR Trace) • Aortic Insufficiency Velocity Time Integral (AR Trace) • Aortic Valve Mean Velocity (AV Trace) • Aortic Valve Velocity Time Integral (AV Trace) • Aortic Valve Mean Pressure Gradient (AV Trace) • Aortic Valve Peak Pressure Gradient (AR Vmax) • Aortic Insufficiency Peak Velocity (AR Vmax) • Aortic Insufficiency End-Diastolic Velocity (AR Trace) • Aortic Valve Peak Velocity (AV Vmax) • Aortic Valve Peak Velocity at Point E (AV Vmax) • Aorta Proximal Coarctation (Coarc Pre-Duct) • Aorta Distal Coarctation (Coarc Post-Duct) • Aortic Valve Insufficiency Pressure Half Time (AR PHT) • Aortic Valve Flow Acceleration (AV Trace) • Aortic Valve Pressure Half Time (AV Trace) • Aortic Valve Acceleration Time (AV Acc Time) • Aortic Valve Deceleration Time (AV Dec Time) • Aortic Valve Ejection Time (AVET) • Aortic Valve Acceleration to Ejection Time Ratio (AV Acc Time, AVET) • Aortic Valve Area(VTI): AVA (Vmax)
Left ventricle	• Left Ventricle Outflow Tract Peak Pressure Gradient (LVOT Vmax) • Left Ventricle Outflow Tract Peak Velocity (LVOT Vmax) • Left Ventricle Outflow Tract Mean Pressure Gradient (LVOT Trace) • Left Ventricle Outflow Tract Mean Velocity (LVOT Trace) • Left Ventricle Outflow Tract Velocity Time Integral (LVOT Trace) • Left Ventricle Ejection Time (LVET)
Mitral valve	• E' Early diastolic mitral valve annular velocity (E') • E' Averaged Early diastolic mitral valve annular velocity (E' Avg) • E' Lat Early diastolic mitral valve lateral annular velocity (E' Lat) • E' Medial Early diastolic mitral valve medial annular velocity (E' Medial) • E' Sept Early diastolic mitral valve septal annular velocity (E' Sept)

Doppler Mode measurements *(cont.)*

Mitral valve <i>(cont.)</i>	• Mitral inflow E velocity to E' ratio (E/E') • Mitral inflow E velocity to E' Avg ratio (E/E' Avg) • Mitral inflow E velocity to E' Lat ratio (E/E' Lat) • Medial Mitral inflow E velocity to E' Medial ratio (E/E') • Mitral inflow E velocity to E' Sept ratio (E/E' Sept) • Mitral Valve Regurgitant Flow Acceleration (MR Trace) • Mitral Valve Regurgitant Mean Velocity (MR Trace) • Mitral Regurgitant Mean Pressure Gradient (MR Trace) • Mitral Regurgitant Velocity Time Integral (MR Trace) • Mitral Valve Mean Velocity (MV Trace) • Mitral Valve Velocity Time Integral (MV Trace) • Mitral Valve Mean Pressure Gradient (MV Trace) • Mitral Regurgitant Peak Pressure Gradient (MR Vmax) • Mitral Valve Peak Pressure Gradient (MV Vmax) • Mitral Regurgitant Peak Velocity (MR Vmax) • Mitral Valve Peak Velocity (MV Vmax) • Mitral Valve Velocity Peak A (MV A Velocity) • Mitral Valve Velocity Peak E (MV E Velocity) • Mitral Valve Area According to PHT (MV PHT) • Mitral Valve Flow Deceleration (MV DecT) • Mitral Valve Pressure Half Time (MV PHT) • Mitral Valve Flow Acceleration (MV AccT) • Mitral Valve E-Peak to A-Peak Ratio (A-C and D-E) (MV E/ARatio) • Mitral Valve Acceleration Time (MV Acc Time) • Mitral Valve Deceleration Time (MV Dec Time) • Mitral Valve Ejection Time ((MVET) • Mitral Valve A-Wave Duration (MV A Dur) • Mitral Valve Time to Peak (MV TTP) • Mitral Valve Acceleration Time/Deceleration Time Ratio (MV Acc/Dec Time) • Stroke Volume Index by Mitral Flow (MVA Planimetry, MVTrace)
Pulmonic valve	• Pulmonic Insufficiency Peak Pressure Gradient (PR Vmax) • Pulmonic Insufficiency End-Diastolic Pressure Gradient (PR Trace) • Pulmonic Valve Peak Pressure Gradient (PV Vmax) • Pulmonic Insufficiency Peak Velocity (PR Vmax)

Supplement: cardiac measurements/calculations *(cont.)*

Doppler Mode measurements <i>(cont.)</i>	
Pulmonic valve <i>(cont.)</i>	- Pulmonic Insufficiency End-Diastolic Velocity (Prend Vmax) - Pulmonic Valve Peak Velocity (PV Vmax) - Pulmonary Artery Diastolic Pressure (PV Trace) - Pulmonic Insufficiency Mean Pressure Gradient (PR Trace) - Pulmonic Valve Mean Pressure Gradient (PV Trace) - Pulmonic Insufficiency Mean Square Root Velocity (PR Trace) - Pulmonic Insufficiency Velocity Time Integral (PR Trace) - Pulmonic Valve Mean Velocity (PV Trace) - Pulmonic Valve Velocity Time Integral (PV Trace) - Pulmonic Insufficiency Pressure Half Time (PR PHT) - Pulmonic Valve Flow Acceleration (PV Acc Time) - Pulmonic Valve Acceleration Time (PV Acc Time) - Pulmonic Valve Ejection Time (PVET) - QRS Complex to End of Envelope (Q-to-PV Close) - Pulmonic Valve Acceleration to Ejection Time Ratio (PV Acc Time, PVET)
Right ventricle	- Right Ventricle Outflow Tract Peak Pressure Gradient (RVOT Vmax) - Right Ventricle Outflow Tract Peak Velocity (RVOT Vmax) - Right Ventricle Outflow Tract Velocity Time Integral (RVOT Trace) - Right Ventricle Ejection Time (RV Trace) - Stroke Volume by Pulmonic Flow (RVOT Planimetry, RVOT Trace) - Right Ventricle Stroke Volume Index by Pulmonic Flow (RVOT Planimetry, RVOT Trace)
System	- Pulmonary Artery Peak Velocity (PV Vmax) - Pulmonary Vein Velocity Peak A (Reverse) (P Vein A) - Pulmonary Vein Peak Velocity (P Vein D, P Vein S) - Systemic Vein Peak Velocity (PDA Diastolic, PDA Systolic) - Ventricular Septal Defect Peak Velocity (VSD Vmax) - Atrial Septal Defect (ASD Diastolic, ASD Systolic) - Pulmonary Vein A-Wave Duration (P Vein A Dur) - IsoVolumetric Relaxation Time (IVRT) - IsoVolumetric Contraction Time (IVCT)

Doppler Mode measurements <i>(cont.)</i>	
System <i>(cont.)</i>	- Pulmonary Vein S/D Ratio (P Vein D, P Vein S) - Ventricular Septal Defect Peak Pressure Gradient (VSD Vmax) - Pulmonic-to-Systemic Flow Ratio (Qp/Qs)
Tricuspid valve	- Tricuspid Regurgitant Peak Pressure Gradient (TR Vmax) - Tricuspid Valve Peak Pressure Gradient (TV Vmax) - Tricuspid Regurgitant Peak Velocity (TR Vmax) - Tricuspid Valve Peak Velocity (TV Vmax) - Tricuspid Valve Velocity Peak A (TV A Velocity) - Tricuspid Valve Velocity Peak E (TV E Velocity) - Tricuspid Regurgitant Mean Pressure Gradient (TR Trace) - Tricuspid Valve Mean Pressure Gradient (TV Trace) - Tricuspid Regurgitant Mean Velocity (TR Trace) - Tricuspid Regurgitant Velocity Time Integral (TR Trace) - Tricuspid Valve Mean Velocity (TV Trace) - Tricuspid Valve Velocity Time Integral (TV Trace) - Tricuspid Valve Time to Peak (TV TTP) - Tricuspid Valve Ejection Time (TV Acc/Dec Time) - Tricuspid Valve A-Wave Duration (TV A Dur) - QRS Complex to End of Envelope (Q-TV Close) - Tricuspid Valve Pressure Half Time (TV PHT) - Stroke Volume by Tricuspid Flow (TV Planimetry, TV Trace) - Tricuspid Valve E-Peak to A-Peak Ratio (TV E/A Velocity)
Color Flow Mode measurements	
Aortic valve	- Proximal Isovelocity Surface Area: Regurgitant Orifice Area (AR Radius) - Proximal Isovelocity Surface Area: Radius of Aliased Point (AR Radius) - Proximal Isovelocity Surface Area: Regurgitant Flow (AR Trace) - Proximal Isovelocity Surface Area: Regurgitant Volume Flow (AR Trace) - Proximal Isovelocity Surface Area: Aliased Velocity (AR Vmax)

Supplement: cardiac measurements/calculations *(cont.)*

Color Flow Mode measurements *(cont.)*

Mitral valve	- Proximal Isovelocity Surface Area: Regurgitant Orifice Area (MR Radius) - Proximal Isovelocity Surface Area: Radius of Aliased Point (MR Radius) - Proximal Isovelocity Surface Area: Regurgitant Flow (MR Trace) - Proximal Isovelocity Surface Area: Regurgitant Volume Flow (MR Trace) - Proximal Isovelocity Surface Area: Aliased Velocity (MR Vmax)
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Combination Mode measurements

Aortic valve	- Aortic Valve Area (Ao Root Diam, LVOT Vmax, AV Vmax) - Aortic Valve Area by Continuity Equation by Peak Velocity (Ao Root Diam, LVOT Vmax, AV Vmax) - Stroke Volume by Aortic Flow (AVA Planimetry, AV Trace) - Cardiac Output by Aortic Flow (AVA Planimetry, AV Trace, HR) - Aortic Valve Area by Continuity Equation VTI (Ao Root Diam, LVOT Vmax, AV Trace)
Left ventricle	- Cardiac Output, Teichholz/Cubic (LVIDd, LVIDs, HR) - Cardiac Output Two-Chamber, Single Plane, Area-Length/Method of Disk (Simpson) (LVAd, LVAs, HR) - Cardiac Output Four-Chamber, Single Plane, Area-Length/Method of Disk (Simpson) (LVAd, LVAs, HR) - Ejection Fraction Two-Chamber, Single Plane, Area-Length/Method of Disk (Simpson) (LVAd, LVAs) - Ejection Fraction Four-Chamber, Single Plane, Area-Length/Method of Disk (Simpson) (LVAd, LVAs) - Left Ventricle Stroke Volume, Single Plane, Two-Chamber/Four-Chamber, Area-Length (LVAd, LVAs) - Left Ventricle Stroke Volume, Single Plane, Two-Chamber/Four-Chamber, Method of Disk (Simpson) (LVIDd, LVIDs, LVAd, LVAs) - Left Ventricle Volume, Two-Chamber/Four-Chamber, Area-Length (LVAd, LVAs)

Combination Mode measurements *(cont.)*

Left ventricle <i>(cont.)</i>	- Ejection Fraction, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH) - Left Ventricle Stroke Volume, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH) - Left Ventricle Volume, Bi-Plane, Method of Disk (LVAd, LVAs, 2CH, 4CH) - Left Ventricle Stroke Index, Single Plane, Two-Chamber/Four-Chamber, Area-Length (LVSD, LVSS and BSA) - Left Ventricle Volume, Single Plane, Two-Chamber/Four-Chamber, Method of Disk (LVAd, LVAs) - Left Ventricle Volume, Apical View, Long Axis, Method of Disk (LVAd, LVAs)
Mitral valve	- Stroke Volume by Mitral Flow (MVA Planimetry, MV Trace) - Cardiac Output by Mitral Flow (MVA Planimetry, MV Trace, HR)
Pulmonic valve	- Stroke Volume by Pulmonic Flow (PV Planimetry, PV Trace) - Cardiac Output by Pulmonic Flow (PV Planimetry, PV Trace, HR)
Tricuspid valve	Cardiac Output by Tricuspid Flow (TV Planimetry, TV Trace, HR)

Cardiac worksheet

Parameter: lists the mode, the measurement folder, and the specific measurement

Measured Value: Up to six measurement values for each item. Average, maximum, minimum, or last

Generic study in cardiology

Stroke Volume (SV)

Cardiac Output (CO)

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