



LOGIQ Focus

Data sheet

The LOGIQ™ Focus is GE HealthCare's ultrasound imaging system designed for general imaging applications including fetal/obstetrical, abdominal (including renal, gynecology/pelvic, thoracic/pleural), pediatric, small organ (breast, testes, thyroid), neonatal cephalic, adult cephalic, cardiac (adult and pediatric), peripheral vascular, musculoskeletal conventional and superficial, urology (including prostate), transrectal, transvaginal, transesophageal, intraoperative (vascular), interventional guidance (including tissue biopsy, fluid drainage, vascular and nonvascular access) applications.

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General specifications

Dimensions and weight

Height	1388 – 1878 mm (54.64" – 73.93")
Width	510 mm, 20" (caster) 565 mm, 22.3" (monitor)
Depth	840 mm (33.1")
Weight (max. load)	69 kg (152.1 lb)

Electrical power

Voltage	100 – 240 VAC
Frequency	50/60 Hz
Power consumption	Maximum of 0.65 KVA with peripherals
Off Mode	28 W
Ready to scan	190 W

Console design

4 active probe ports
1 additional probe port for pencil probe
Wireless probe connection, capable of connecting Vscan Air™
Integrated SSD (1 TB for HDU version and 512 GB for LCD version)
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
Push-push A/N keyboard
Replaceable user define key
Ergonomic hard key layout
Interactive back-lighting
Integrated gel warmer
Operator panel front LED bar
Lighted trackball (HDU version only)

Touch screen

15.6" high-resolution, color, touch display screen
Interactive dynamic software menu
Brightness adjustment
User-configurable layout
On spot configuration preset

Display monitor – HDU

23.8" widescreen high-resolution HDU display
Display translation (independent of console)
350 mm (13.7") horizontal (both directions)
150 mm (5.9") vertical
90° swivel (both directions)
Fold-down and lock mechanism for transportation
Resolution: 1920 x 1080
Anti-glare
Viewing angle 89/89/89/89°

Display monitor – LCD

23.8" widescreen high-resolution LCD display
Display translation (independent of console)
350 mm (13.7") horizontal (both directions)
150 mm (5.9") vertical
90° swivel (both directions)
Fold-down and lock mechanism for transportation
Resolution: 1920 x 1080
Anti-glare
Viewing angle 89/89/89/89°

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

HDMI
Ethernet
4 USB 3.0 type A ports, 2 USB 2.0 type A ports, 1 USB 3.0 type C ports
S-Video
2 integrated microphones

System overview

Applications

Fetal/obstetrical

Abdominal (including renal, gynecology/pelvic, thoracic/pleural)

Pediatric

Small parts (breast, testes, thyroid)

Neonatal cephalic

Adult cephalic

Cardiac (adult and pediatric)

Peripheral vascular

Musculoskeletal conventional

Musculoskeletal superficial

Urology (including prostate)

Transrectal

Transvaginal

Transesophageal

Intraoperative (vascular)

Interventional guidance

Operating modes

B-Mode

M-Mode

Color Flow Mode (CFM) and Microvascular Imaging (MVI)

Power Doppler Imaging (PDI)

B-Flow

Extended field of view (LOGIQView)

PW Doppler

CW Doppler

Volume Modes (3D/4D) (option)

- 3D Static
- 4D Real Time

Anatomical M-Mode

Contrast Imaging (option)

Strain elastography (option)

B-Steer+ (option)

Shear wave elastography (option)

UGFF/UGAP (option)

Scanning methods

Electronic sector

Electronic convex

Electronic linear

Mechanical volume sweep

Probe types

Sector/phased array

Curved linear array

Microcurved linear array

Linear array

Matrix array (linear)

Volume probes (4D)

Split crystal

TEE probe

System standard features

Advanced user interface with high-resolution 15.6" display touch panel

Automatic optimization

CrossXBeam™

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

Fine angle steer

Radiantflow™

Coded Harmonic Imaging (CHI)

Microvascular Imaging (MVI)

Virtual convex

Patient information database

Image archive on integrated hard drive and removable USB

Unified background export

Advanced 3D

Real-time automatic Doppler calculations

OB calculations

Fetal trending

Multigestational calculations

Hip dysplasia calculations

Gynecological calculations

Vascular calculations

Urological calculations

Renal calculations

System overview *(cont.)*

System standard features *(cont.)*

Cardiac calculations

InSite™ capability

On-board electronic documentation

Auto CF/PW positioning feature

Privacy and security, including user and rights management

LOGIQView

External USB printer connection

Network printer support

HDMI output (available for compatible devices)

Options

Strain elastography

Elastography quantification

Advanced privacy and security (vulnerability scan)

Battery pack

UPS

Shear wave elastography

Ultrasound Guided Fat Fraction (UGFF)/Ultrasound Guided Attenuation Parameter (UGAP)

Hepatic Assistant

Coded Contrast Imaging

Stress echo

Cardiac Strain

On-board reporting

TVI

Wireless LAN

Auto EF

Auto EF w/o ECG

ECG and ECG cables (AHA style, IEC style)

LOGIQ apps

Digital Expert

SonoNT and SonoIT

Scan Assistant

Flow QA

Auto IMT

B-Flow

Measure Assist Breast

Measure Assist OB

Options *(cont.)*

Auto Preset

Auto Abdominal Color Assistant 2.0

Data streaming

Real Time 4D

TUI

VOCAL II

VCI-Static

STIC

OmniView

HDlive™

SonoAVC

B-Steer+

Thyroid productivity

Breast productivity

Compare Assistant

IOTA (not for China)

DICOM

AppAPIRDC

Data streaming

Probe Check

eDelivery

ViewPoint™ on LOGIQ

USB footswitch 3 button

Bluetooth and wireless 2 in 1

C-TIRADS (China only)

Gel warmer

Isolation USB for AC printer

4D Module

ECG Module

Lemo Module

Vscan Air charger installation kit

Vscan Air on console charger

HDMI extension cable with ferrite core

Power cord filter (China only)

Flexible cable management hook

Operator panel rear storage

Trolley base storage

Trolley rear storage

System overview *(cont.)*

Options *(cont.)*

Trolley top storage

One side probe holder option kit

Endo probe holder

P6D probe holder

Vertical endo probe holder adapter for cardiac probe

Rear handle

A/N Keyboard (English/German/French)

Peripheral options

Integrated options for

- Digital B&W thermal printer
- Digital color thermal printer

Foot switch with programmable functionality

LOGIQ smart device apps (LOGIQ apps)

- Photo Assistant
- Remote Control

USB barcode reader Honeywell R

Video output adapter

Vscan Air on-system charger

DVD kit

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

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

Multi-image (split/quad screen)

Live and/or frozen

B or CrossXBeam + B or CrossXBeam/CFM or PDI or B-Flow

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
- Dynamic range
- Frame

M-Mode

- Gain

Doppler Mode

- Gain
- Sample volume
- Velocity and/or frequency scale
- Doppler frequency
- Angle
- Wall filter depth and width
- Time scale
- PRF



System overview *(cont.)*

Display annotation *(cont.)*

- 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
 - Color inversion
 - Doppler frequency

TGC curve

Acoustic frame rate

CINE gauge, image number/frame number

Body pattern: multiple human and animal types

Application name

Measurement results

Operator message

- Displayed acoustic % of maximum power output
 - TIS: Thermal Index Soft Tissue
 - TIC: Thermal Index Cranial (Bone)
 - TIB: Thermal Index Bone
 - MI: Mechanical Index

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, Japanese, Chinese Simplified, Russian, Greek, Swedish, Danish, Dutch, Finnish, Norwegian, Bulgarian

OB report formats including Tokyo Univ., Osaka Univ., USA, Europe, ASUM

User defined annotations

Body patterns

Customized comment home position

EZ Imaging: Simplified user interface for high volume workflow

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

DICOM viewer available during image export

Export BMP, JPEG, JPEG 2000, PNG, AVI, MP4, WMV (MPEG 4) formats

- Storage devices
 - USB memory stick: 64 MB to 64 GB (for exporting individual images/clips)
 - Hard drive (integrated SSD) image storage: ~730 GB (HDU version)

Compare previous exam images with current exam

Reload of archived data sets

Connectivity

Ethernet network connection (LAN)

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

Public SR template

Structured Reporting – compatible with vascular, OB, cardiac, breast, pediatrics urology and small parts standard

InSite capability

Advanced privacy and security (option)

General system parameters *(cont.)*

Physiological input panel (option)

- Physiological input
- ECG, 1 channel
 - Dual R-Trigger
 - Pre-settable ECG R delay time
 - Pre-settable ECG position
 - Adjustable ECG gain control

Automatic heart rate display

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

Scanning parameters

Displayed imaging depth: 0 – 100 cm

Minimum depth of field: 0 – 1 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
 - Gain
 - Dynamic range
 - Frame averaging
 - Gray scale map
 - Frequency
 - Speed of sound
 - CrossXBeam
 - B colorization
 - Reject
 - Suppression
 - SRI-HD
 - Frame rate (application dependent)
 - Scanning size (FOV or angle) – Probe type-dependent; consult individual probe specifications

Digital M-Mode

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

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

Digital Color Flow Mode

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

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

General system parameters *(cont.)*

Continuous Wave Doppler (option)

Available on the following probes: M5Sc-RS, 3Sc-RS, P6D, 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

CATO (Continuous Auto Tissue Optimization) – optimizes the image based on the B-Mode image data. Different preset levels (low, medium, high) allow users to choose a preference for contrast enhancement of the B-Mode image

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

Coded Harmonic Imaging

Available on all 2D and 4D probes

B-Flow (option)

Available on the following probes: C1-5-RS, L3-12-RS, ML6-15-D, 12L-RS, 9L-RS, L8-18i-RS

Background

Sensitivity/PRI

Acoustic power

Frequency

Line density

Frame average

Gray scale map

Tint map

Dynamic range

B-Flow (option) *(cont.)*

Rejection

Gain

Suppression

SRI-HD

Accumulation

Visualization

Radiantflow

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

B-Steer+ (option)

Available on the following probes: C1-5-RS, RAB2-6-RS, 9L-RS, ML6-15-RS, L3-12-RS, 12L-RS, L4-20t-RS

Coded contrast imaging (option)

Available on the following probes: C1-5-RS, L3-12-RS, 3Sc-RS, IC9-RS

2 contrast timers

Timed updates: 0.05 – 10 seconds

Accumulation mode, seven levels

Maximum enhance mode

Flash

Time intensity curve (TIC) analysis

The LOGIQ Focus 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

General system parameters *(cont.)*

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

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
- HD*live*

HD*live*

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

Automated volume calculation – VOCAL II

Betaview

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 (option)

Auto measurement

Worksheet summary includes measurements and locations for lesions and lymph nodes

Feature assessment

BI-RADS® assessment

User editable

Thyroid productivity package (option)

Auto measurement

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

Feature assessment

TI-RADS® assessment (global)

CTI-RADS® assessment (China)

User editable

IOTA (option) (Not for China)

Available on the following probes: C1-5-RS, IC9-RS, RAB2-6-RS, E8Cs-RS

The IOTA (International Ovarian Tumor Analysis) LR2 Worksheet contains an ovary measurement tool for women with adnexal tumors that have been selected to undergo surgery

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: C1-5-RS, IC9-RS, ML6-15-RS, L3-12-RS

User programmable measurement display in kPa and meters per second

Single and dual view display

Strain elastography (option)

Available on the following probes: C1-5-RS, 9L-RS, ML6-15-RS, L3-12-RS, 12L-RS, IC9-RS, E8Cs-RS

Relative analysis tool

General system parameters *(cont.)*

UGFF/UGAP (option)

Available on the following probe: C1-5-RS

Measures ultrasound guided fat fraction derived from multiple parameters including (attenuation coefficient [dB/cm/MHz], signal to noise ratio (SNR), and Integrated backscatter coefficient)

UGAP attenuation imaging, simple and 2D color map available

Quantitative flow analysis (option)

Available in color and power Doppler

TVI (option)

Available on the following probes: M5Sc-RS, 3Sc-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

Auto EF w/o ECG (option)

Allows semi-automatic measurement of the global EF (Ejection Fraction) without the use of ECG

User editable

Cardiac Strain (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

Data streaming (option)

Provides streaming of raw data out to 3rd-party devices designed to process this data

Virtual convex

Provides a convex field of view

Compatible with CrossXBeam

Available on all linear and sector probes

LOGIQ SRI HD

Speckle reduction imaging

Provides multiple levels of speckle reduction

Compatible with side-by-side DualView display

LOGIQ SRI HD

- Type 1
 - Compatible with all linear, convex, and sector probes

CrossXBeam

Provides variable angle spatial compounding

Live side-by-side DualView display

Compatible with

- Color mode
- SRI
- Virtual convex
- PW
- Coded harmonic imaging

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

General system parameters *(cont.)*

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

B/M/CrossXBeam-Mode	- Gain - Dynamic range - Frame rate control - CrossXBeam angle	- TGC - Acoustic output - Sweep speed for M-Mode
PW-Mode	- Gain - Acoustic output - PRF/HPRF - 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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Controls available on “freeze” or recall *(cont.)*

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)



Measurements/calculations *(cont.)*

Real-time Doppler auto measurements/calculations

PS (Peak Systole)

ED (End Diastole)

MD (Minimum Diastole)

PI (Pulsatility Index)

RI (Resistivity Index)

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

Ultrasound Guided Fat Fraction (UGFF)

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, Acharya, 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, Schaffer, Shepard, Shepard/Warsoff, Sonek, Tokyo University, Tokyo/Shinozuka, WHO, Williams, Yarkoni

Measure Assist OB (option)

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

User editable

SonoNT and SonoIT (option)

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

Convex probe



Probe (all optional)	C1-5-RS
Catalog number	H40462LA
Description	XDclear™ single crystal broad-spectrum convex probe
Number of elements	192
Array size	67.2 x 11.5 mm
Max. bandwidth (display frequency range)	1.5 – 5.0 MHz
Field of view	70°
Biopsy guide available	H40432LE – Multi-angle plastic bracket
Volume Navigation	N/A
Application	
Abdominal	X
Fetal/obstetrical	X
Gynecology	X
General musculoskeletal	X
Peripheral vascular	X
Urology	X
Pediatric	X

Linear probes



Probe (all optional)	ML6-15-RS	L3-12-RS	9L-RS
Catalog number	H40462LM	H44901AP	H40442LL
Description	Broad-spectrum linear matrix array probe	Broad-spectrum linear probe	Broad-spectrum linear probe
Number of elements	336*3	256	192
Array size	50.4 x 6 mm	51.2 x 5 mm	44.2 x 6 mm
Max. bandwidth (display frequency range)	5 – 15 MHz	3.6 – 12 MHz	3.5 – 9.4 MHz
Field of view	50.4 mm	51 mm	44 mm
Biopsy guide available	H40432LJ – Multi-angle plastic bracket	H48302AA – Multi-angle plastic bracket	H4906BK – Multi-angle plastic bracket
Volume Navigation	N/A	N/A	N/A
Application			
Abdominal	X	X	X
Fetal/obstetrical		X	X
Gynecology			X
Small parts (breast, scrotal, thyroid)	X	X	X
General and superficial musculoskeletal	X	X	X
Peripheral vascular	X	X	X
Neonatal cephalic	X	X	X
Pediatric	X	X	X
Intraoperative (vascular) (not for China)			

Linear probes *(cont.)*



Probe (all optional)	12L-RS	L4-20t-RS	L8-18i-RS
Catalog number	H40402LY	H48062AJ	H40462LF
Description	Broad-spectrum linear probe	XDclear broad-spectrum linear probe	Broad-spectrum linear probe
Number of elements	192	256	168
Array size	38.4 x 4 mm	38.4 x 3 mm	25.2 x 4 mm
Max. bandwidth (display frequency range)	4.2 – 13.0 MHz	5.6 – 20 MHz	5 – 18 MHz
Field of view	38.4 mm	38.4 mm	25.2 mm
Biopsy guide available	H48392LL – Transverse bracket H48392LT – Infinite bracket H40432LC – Multi-angle plastic bracket	H45201BLF (including 642-508) – Multi-angle plastic bracket	N/A
Volume Navigation	N/A	N/A	N/A
Application			
Abdominal	X		
Fetal/obstetrical			
Gynecology			
Small parts (breast, scrotal, thyroid)	X	X	X
General and superficial musculoskeletal	X	X	X
Peripheral vascular	X	X	X
Neonatal cephalic			X
Pediatric	X		X
Intraoperative (vascular) (not for China)			X



Sector probes



Probe (all optional)	M5Sc-RS	3Sc-RS
Catalog number	H44901AG	H45041DL
Description	XDclear broad-spectrum sector probe	Broad-spectrum phased array probe
Number of elements	80*2	64
Array size	21.6 x 13 mm	19.2 x 13 mm
Max. bandwidth	1.6 – 4.5 MHz	1.7 – 4.0 MHz
Field of view	120°	120°
Biopsy guide available	H45561FC – Multi-angle plastic bracket	H46222LC – Multi-angle plastic bracket
Volume Navigation	N/A	N/A
Application		
Abdominal	X	X
Adult cardiac	X	X
Pediatric cardiac	X	X
Adult cephalic	X	X

Real-time 4D probe



Probe (all optional)	RAB2-6-RS
Catalog number	H48681WR
Description	Broad-spectrum real-time 4D probe
Number of elements	128
Array size	55.8 x 13 mm
Max. bandwidth	2 – 6.5 MHz
Field of view	80°
Biopsy guide available	H48681ML – Multi-angle plastic bracket
Volume Navigation	N/A
Application	
Abdominal	X
Fetal/obstetrical	X
Gynecology	X
Pediatrics	X
Urology	X



Endocavitary probes



Probe (all optional)	E8Cs-RS	IC9-RS
Catalog number	H48062AF	H48691PJ
Description	Wideband microconvex ultrasound probe	Wideband microconvex intercavity array probe
Number of elements	128	192
Array size	25.6 x 4.3 mm	24.2 x 6 mm
Max. bandwidth (display frequency range)	4.0 – 10.0 MHz	3.6 –9.0 MHz
Field of view	168°	179°
Biopsy guide available	E8385MJ – Fix angle plastic bracket H40412LN – Fix angle stainless steel bracket	H48701MN – Fix angle stainless steel bracket H48691YX – Fix angle plastic bracket H48691YW – Fix angle plastic bracket
Volume Navigation	N/A	N/A
Application		
Fetal/obstetrical	X	X
Gynecology	X	X
Urology	X	X
Transrectal, transvaginal	X	X



Specialty probes



Probe (all optional)	6Tc-RS	P6D	Vscan Air CL -	Vscan Air CL -
Catalog number	H45551ZE	H4830JG	H45611DN	H45611DN
Description	TEE probe	CW split crystal pencil probe	Broad-spectrum convex probe	Broad-spectrum linear probe
Number of elements	64	2	128	192
Array size	9.28 x 9 mm	6 x 6 mm	64 x 16 mm	40 x 7 mm
Max. bandwidth (display frequency range)	2.8 – 6.5 MHz	6.2 MHz	1.9 – 4 MHz	4.5 – 12.5 MHz
Field of view	90°	N/A	60°	38.4 mm
Depth of field	≥ 9 cm	N/A	≥ 24 cm	≥ 8 cm
Biopsy guide available	N/A	N/A	N/A	N/A
Application				
Abdominal			X	
Fetal/obstetrical			X	
General and superficial musculoskeletal			X	X
Adult cardiac	X	X	X	
Pediatric cardiac		X	X	
Adult cephalic		X		
Peripheral vascular		X	X	X
Small parts (breast, scrotal, thyroid)				X
Pediatric				X



Safety conformance

The LOGIQ Focus is:

Classified to ANSI/AAMI ES60601-1 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 General requirements for safety

CE Marked to Regulation (EU) 2017/745 on Medical Devices conforms to the following standards for safety:

- IEC/EN 60601-1 Medical electrical equipment – Part 1: General requirements for basic safety and essential performance
- IEC/EN 60601-1-2 Medical electrical equipment – Part 1-2: General requirements for safety – Collateral Standard: Electromagnetic compatibility – requirements and tests
- IEC/EN 60601-1-6 Medical electrical equipment – Part 1-6: General requirements for basic safety and essential performance – Collateral Standard: Usability
- IEC/EN 60601-1-9 Medical electrical equipment – Part 1-9: General requirements for basic safety and essential performance – Collateral Standard: Requirements for environmentally conscious design
- IEC/EN 60601-2-37 Medical electrical equipment – Part 2-37: Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
- IEC/EN 62366-1 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

- ISO 17664-2 Processing of health care products – Information to be provided by the medical device manufacturer for the processing of medical devices
- ISO 14971 (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, EU Directive 2015/863 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) • 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 Ao Root 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)
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)

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

B-Mode measurements *(cont.)*

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|----------------------------------|--|
| Left ventricle
<i>(cont.)</i> | <ul style="list-style-type: none"> • 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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| Mitral valve | <ul style="list-style-type: none"> • Mitral Valve Annulus Diameter (MV Ann Diam) • E-Point-to-Septum Separation (EPSS) • Mitral Valve Area Planimetry (MVA Planimetry) |
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| Pulmonic valve | <ul style="list-style-type: none"> • Pulmonic Valve Area (PV Planimetry) • Pulmonic Valve Annulus Diameter (PV Annulus Diam) • Pulmonic Diameter (Pulmonic Diam) |
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| Right atrium | <ul style="list-style-type: none"> • 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) |
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| Right ventricle | <ul style="list-style-type: none"> • 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) |
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B-Mode measurements *(cont.)*

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| System inferior vena cava | <ul style="list-style-type: none"> • 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) |
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| Tricuspid valve | <ul style="list-style-type: none"> • Tricuspid Valve Area (TV Planimetry) • Tricuspid Valve Annulus Diameter (TV Annulus Diam) |
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M-Mode measurements

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| Aorta | <ul style="list-style-type: none"> • Aortic Root Diameter (Ao Root Diam) • Aortic Valve • Aortic Valve Diameter (AV Diam) • Aortic Valve Cusp separation (AV Cusp) • Aortic Valve Ejection Time (LVET) |
|-------|---|

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| Left atrium | <ul style="list-style-type: none"> • Left Atrium Diameter to Ao Root Diameter Ratio (LA/Ao Ratio) • Left Atrium Diameter (LA Diam) |
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| Left ventricle | <ul style="list-style-type: none"> • 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) |
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| Mitral valve | <ul style="list-style-type: none"> • 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) |
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| Pulmonic valve | <ul style="list-style-type: none"> • 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) |
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Supplement: cardiac measurements/calculations *(cont.)*

M-Mode measurements *(cont.)*

System	Pericard Effusion (PE (d))
Tricuspid valve	- QRS Complex to End of Envelope (Q-TV close) - Tricuspid Annular Plane Systolic Excursion (TAPSE)

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)

Doppler Mode measurements *(cont.)*

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

Doppler Mode measurements *(cont.)*

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|----------------|--|
| Pulmonic valve | <ul style="list-style-type: none"> • 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) • 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) |
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| Right ventricle | <ul style="list-style-type: none"> • 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) |
|-----------------|--|

Doppler Mode measurements *(cont.)*

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|-----------------|---|
| System | <ul style="list-style-type: none"> • 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) • 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 | <ul style="list-style-type: none"> • 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) |

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

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)

- 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)

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, LVI Ds, 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)

Combination Mode measurements *(cont.)*

- Left ventricle**
- 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)
 - 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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