

GE Healthcare

# LOGIQ F8

## Data Sheet



The LOGIQ\* F8 is the multipurpose ultrasound imaging system designed for Abdominal, Obstetrical, Gynecological, Small Parts, Musculoskeletal, Vascular/Peripheral Vascular, Urological, Pediatric, Transcranial and Cardiac applications.

## General specifications

Dimensions and Weight	
Height with 19" LCD	<ul style="list-style-type: none"><li>• Max 1495mm (58.9 in)</li><li>• Min 1410mm (55.5 in)</li></ul>
Width	<ul style="list-style-type: none"><li>• Keyboard: 500 mm (19.7 in)</li><li>• Caster: 720 mm (28.3 in)</li></ul>
Depth	<ul style="list-style-type: none"><li>• Maximum: 810 mm (31.9 in)</li><li>• Caster: 800 mm (31.5 in)</li></ul>
Weight (no Peripherals)	58 kg
Electrical Power	
Voltage 100-240 VAC	
Frequency 50/60 Hz	
Power consumption maximum of 400 VA with peripherals	
Console Design	
Max 4 active probe ports	
Integrated HDD	
Integrated Speakers	
Probe Holders	
Gel Holder	
Front and Rear Handles	
Probe Cable Tray	

## User interface

Operator Keyboard
Ergonomic full size keyboard
8 TGC pods
8.4" (213.4 mm) LCD touch screen
Monitor
19" (482.6 mm) high-resolution LCD
Articulating monitor arm

## System overview

Applications
Abdominal
Obstetrical
Gynecological
Small Parts
Musculoskeletal
Vascular/Peripheral Vascular
Urological
Pediatric
Transcranial
Cardiac
Scanning Methods
Electronic Convex
Electronic Linear
Electronic Micro Convex
Electronic Sector
Real Time 4D Volume Sweep
Transducer Types
Convex Array
Linear Array
Microconvex Array
Sector Phased Array
Volume Probes (4D)
Operating Modes
B-Mode
Coded Phase Inversion Harmonic Imaging
M-Mode
Color M-Mode
Color Flow Mode (CFM)
Power Doppler Imaging (PDI)
Directional PDI
PW Doppler with High PRF
Anatomical M-Mode (Option)
CW Doppler Mode (Option)
LOGIQView (Option)
TVI Mode (Option)
3D/4D Volume Modes (Option)

## System overview (continued)

### System Standard Features

AO (Automatic Optimization)

CrossXBeam\*

SRI-HD (High Definition Speckle Reduction Imaging)

B-Steer

Coded Phase Inversion Harmonic Imaging

Virtual Convex

Patient Information Database

Image Archive on integrated HDD

Raw Data Analysis

Scan Assistant

Scan Coach

Real-Time Automatic Doppler Calculations

OB Calculations

Fetal Trending

Multigestational Calculations

Hip Dysplasia Calculations

Gynecological Calculations

Vascular Calculations

Urological Calculations

Renal Calculations

Cardiac Calculations

Remote capability: InSite\* ExC

On-Board Reporting Package

MPEGVue

Network Storage

### System Options

Elastography

LOGIQView

Auto IMT

CW Doppler

Anatomical M-Mode

Tissue Velocity Imaging (TVI) with Q-Analysis

Easy 3D

Static 3D/ Realtime 4D

DICOM® 3.0 Connectivity

Extra Probe Holder

Paper Tray

### Peripheral Options

Fixture Kit for Digital UP-D711 Thermal Printer

Digital UP-D711 Thermal Printer

Digital UP-D25 Color Thermal Printer

Digital UP-D897 BW Thermal Printer

HP office jet 100 Mobile Printer

1-Pedal Type Footswitch 'Whanam FSU-1000'

Footswitch MKF 2-MED USB GP26

SanDisk USB Stick 4G

1TB Mobile USB HDD

USB Lamp

USB ECG Kits (AHA/IEC)

### Display Modes

Live and Stored Display Format: full size and split screen – both with thumbnails for still and Cine

Review Image Format: 4x4 and “thumbnails” for still and Cine

Simultaneous Capability

B or CrossXBeam/PW

B or CrossXBeam/CFM or PDI

B/M

B/CrossXBeam

Real-Time Triplex Mode (B or CrossXBeam + CFM or PDI/PW)

Selectable Alternating Modes

B or CrossXBeam/PW

B or CrossXBeam + CFM (PDI)/PW(CW(Optional))

B/CW (Option)

Multi-image (split/quad screen)

Live and/or Frozen

B or CrossXBeam + B or CrossXBeam/CFM or PDI

Independent Cine Playback

Time Line Display

Independent Dual B or CrossXBeam/PW Display

CW

Display Formats	<ul style="list-style-type: none"> <li>• Top/Bottom Selectable Format</li> <li>• Side/Side Selectable Format</li> </ul>
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Virtual Convex

Timeline Only

# System overview (continued)

Display Annotation	
Patient Name: First, Last	
Patient ID	
Other ID	
Age, Sex and Birth Date	
Hospital Name	
Date format: 3 Types Selectable	<ul style="list-style-type: none"><li>• MM/DD/YY</li><li>• DD/MM/YY</li><li>• YY/MM/DD</li></ul>
Time format: 2 Types Selectable	<ul style="list-style-type: none"><li>• 24 hours</li><li>• 12 hours</li></ul>
Gestational Age	<ul style="list-style-type: none"><li>• LMP</li><li>• GA</li><li>• EDD</li><li>• BBT</li></ul>
Displayed Acoustic Output	<ul style="list-style-type: none"><li>• TIS: Thermal Index Soft Tissue</li><li>• TIC: Thermal Index Cranial (Bone)</li><li>• TIB: Thermal Index Bone</li><li>• MI: Mechanical Index</li></ul>
% of Maximum Power Output	
Probe Name	
Map Names	
Probe Orientation	
Depth Scale Marker	
Lateral Scale Marker	
Focal Zone Markers	
Image Depth	
Zoom Depth	
B-Mode	
Gain	
Dynamic Range	
Imaging Frequency	
Frame Averaging	
Acoustic Frame Rate	
Gray Map	
SRI-HD	
M-Mode	
Gain	
Dynamic Range	
Time Scale	
Doppler Mode	
Gain	
Angle	
Sample Volume Depth and Width	

Display Annotation (continued)	
Wall Filter	
Velocity and/or Frequency Scale	
Spectrum Inversion	
Time Scale	
PRF	
Doppler Frequency	
Color Flow Mode	
Line Density	
Frame Averaging	
Packet Size	
Color Scale: 2 Types	<ul style="list-style-type: none"><li>• Power</li><li>• Directional PDI</li></ul>
Color Velocity Range and Baseline	
Color Threshold Marker	
Color Gain	
PDI	
Inversion	
Doppler Frequency	
TGC Curve	
Cine Gage, Image Number/Frame Number	
Body Pattern: Multiple human	
Application Name	
Measurement Results	
Operator Message	
Biopsy Guide Line and Zone	
Heart Rate	

# General system parameters

## System Setup

Pre-Programmable Categories

User Programmable Preset Capability

Factory Default Preset Data

Languages: English, Latin American Spanish, French, German, Italian, Brazilian Portuguese, Chinese (Simplified), Swedish, Russian, Norwegian, Danish, Dutch, Finnish, Japanese

OB Report Formats Including Tokyo Univ., Osaka Univ., USA, Europe, and ASUM

User Defined Annotations

Body Patterns

Customized Comment Home Position

## CINE Memory/Image Memory

128 MB 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

Storage Formats	DICOM – compressed/uncompressed, single/multiframe, with/without Raw Data  Export JPEG, JPEG2000, WMV (MPEG 4) and AVI formats
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Storage Devices	USB Memory Stick  DVD-RW Storage  HDD Image Storage
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## Connectivity & DICOM

Ethernet Network Connection

DICOM 3.0 (Optional)

Verify

Print

Store

Modality Worklist

Storage Commitment

Modality Performed Procedure Step (MPPS)

Query/Retrieve

Structured Reporting Template – which can be compared to vascular and OB standard values

Remote Capability InSite ExC

## Scanning Parameters

Displayed Imaging Depth: 0 – 33 cm

Minimum Depth of Field: 0 – 2 cm (Zoom) (probe dependent)

Maximum Depth of Field: 0 – 33 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°, 180°

## B-Mode

Adjustable:

Acoustic Power

Gain

Dynamic Range

Frame Averaging

Gray Scale Map

Frequency

Line Density

Scanning Size (FOV or Angle – depending on the probe, see probe specifications)

B Colorization

Reject

Suppression

SRI-HD

Edge Enhance

# General system parameters (continued)

M-Mode
Adjustable:
Acoustic Power
Gain
Dynamic Range
Gray Scale Map
Sweep Speed
M Colorization
M Display Format
Rejection

Anatomical M-Mode (Option)
M-Mode cursor adjustable at any plane
Can be activated from a Cine loop from a live or stored image
M and A Capability
Available with Color Flow Mode

Pulse Wave Doppler Mode
Adjustable:
Acoustic Power
Gain
Gray Scale Map
Transmit Frequency
Wall Filter
PW Colorization
Velocity Scale Range
Sweep Speed
Sample Volume Depth
Angle Correction
Spectrum Inversion
Trace Method
Baseline Shift
Doppler Auto Trace
Compression
Trace Direction
Trace Sensitivity

Color Flow Mode
Adjustable:
Acoustic Power
Color Maps, including velocity-variance maps
Gain
Velocity Scale Range
Wall Filter
Packet Size
Line Density
Spatial Filter
Steering Angle
Baseline Shift
Frame Average
Threshold
Accumulation Mode
Sample Volume Control
Flash Suppression

Power Doppler Imaging	
Adjustable:	
Acoustic Power	
Color Maps	<ul style="list-style-type: none"><li>• Velocity-Variance Maps</li><li>• Directional Map</li></ul>
Gain	
Velocity Scale Range	
Wall Filter	
Packet Size	
Line Density	
Spatial Filter	
Steering Angle	
Frame Average	
Threshold	
Accumulation Mode	
Sample Volume Control	
Flash Suppression	

## General system parameters (continued)

### Continuous Wave Doppler (Option)

Adjustable:

Acoustic Power

Gain

Gray Scale Map

Transmit Frequency

Wall Filter

CW Colorization

Velocity Scale Range

Sweep Speed

Angle Correction

Spectrum Inversion

Trace Method

Baseline Shift

Doppler Auto Trace

Compression

Trace Direction

Trace Sensitivity

### Auto Optimization

Optimize B-Mode image to enhance contrast resolution

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

Auto-Spectral Optimize adjusts

- Baseline
- Invert
- PRF (on live image)
- Angle correction

### Coded Harmonic Imaging

Coded Phase Inversion Harmonic Imaging

Available on all Probes

### LOGIQView (Option)

Extended Field of View Imaging

Available on 4C-RS, L6-12-RS, 8C-RS, 3Sc-RS, E8C-RS, RAB2-6-RS probes

For use in B-Mode

CrossXBeam is available on linear probe

Auto detection of scan direction

Post-process zoom

Rotation

Auto fit on monitor

Measurements in B-Mode

### Easy 3D (Option)

Allows unlimited rotation and planar translations

3D reconstruction from Cine sweep

### Static 3D/ Realtime 4D (Option)

Available on RAB2-6-RS Probe

Acquisition Modes: Realtime 4D Mode,

Static 3D Mode

Visualization Modes

3D Rendering, Sectional Planes

Render Mode: Surface Texture, Surface Smooth, Max-, Min-, X-ray

Mix Mode of two render Modes

Display Format:

Quad: A-/B-/C-Plane/3D

Dual: A-Plane/3D

Single: 3D or A- or B- or C-Plane

Curved 3point Render Start

Scalpel: 3D Cut Tool

3D Rotation Cine

3D Volume Review

4D Volume Cine

### Scan Assistant

Factory Programs

User Defined Programs

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

### Scan Coach

Modules showing basic scanning techniques with graphic of probe position, schematic of anatomy and example clinical image

### Elastography (Option)

Available on L6-12-RS

### TVI (Option)

Myocardial Doppler Imaging with color overlay on tissue image

Available on the sector probes

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

Q-Analysis: Multiple Time Motion trace display from selected points in the myocardium

### Virtual Convex

Provides a convex field of view

Compatible with CrossXBeam

Available on linear and Sector Transducers

# General system parameters (continued)

SRI-HD
High Definition Speckle Reduction Imaging
Provides multiple levels of speckle reduction
Compatible with Side by Side DualView Display
Compatible with all linear, convex and sector transducers
Compatible with B-Mode, 3D/4D imaging

CrossXBeam	
Provides 3, 5, 7 of spatial compounding	
Live Side by Side DualView Display	
Compatible with	<ul style="list-style-type: none"><li>• Color Mode</li><li>• PW</li><li>• SRI-HD</li><li>• Coded Harmonic Imaging</li><li>• Virtual Convex</li></ul>
Available on 4C-RS, L6-12-RS, E8C-RS, 8C-RS, RAB2-6-RS	

Controls Available While “Live”	
Write Zoom	
B/M/CrossXBeam-Mode	
Gain	
TGC	
Dynamic Range	
Acoustic Output	
Transmission Focus Position	
Transmission Focus Number	
Line Density Control	
Sweep Speed for M-Mode	
Number of Angles for CrossXBeam	
PW-Mode	
Gain	
Dynamic Range	
Acoustic Output	
Transmission Frequency	
PRF	
Wall Filter	
Spectral Averaging	
Sample Volume Gate	<ul style="list-style-type: none"><li>• Length</li><li>• Depth</li></ul>
Velocity Scale	
Color Flow Mode	
CFM Gain	
CFM Velocity Range	
Acoustic Output	
Wall Echo Filter	
Packet Size	
Frame Rate Control	
CFM Spatial Filter	
CFM Frame Averaging	
Frequency/Velocity Base Line Shift	



## General system parameters (continued)

### 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: Anatomical M-Mode

Sweep Speed

Gray Map

Post Gain

Baseline Shift

Sweep Speed

Invert Spectral Wave Form

Compression

Rejection

Colorized Spectrum

Display Format

Doppler Audio

Angle Correct

Quick Angle Correct

Auto Angle Correct

Overall Gain (loops and stills)

Color Map

Transparency Map

Frame Averaging (loops only)

Flash Suppression

CFM Display Threshold

Spectral Invert for Color/Doppler

Anatomical M-Mode on Cine loop

## Measurements/Calculations

### General B-Mode

Depth and Distance

Circumference (Ellipse/Trace)

Area (Ellipse/Trace)

Volume (Ellipsoid)

% Stenosis (Area or Diameter)

Angle between two lines

### 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

(continued)

## 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)

## 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)

Estimated Fetal Weight (EFW) by:

- AC, BPD
- AC, BPD, FL, HC
- AC, FL, HC
- BPD, APTD, TTD, FL

## OB Measurements/Calculations (continued)

Calculations and Ratios

- FL/BPD
- FL/HC
- CI (Cephalic Index)
- CTAR (Cardio-Thoracic Area Ratio)

Measurements/Calculations by:

ASUM, ASUM 2001, Berkowitz, Bertagnoli, Brenner, Campbell, CFEF, Chitty, Eik-Nes, Ericksen, Goldstein, Hadlock, Hansmann, Hellman, Hill, Hohler, Jeanty, JSUM, Kurtz, Mayden, Mercer, Merz, Moore, Nelson, Osaka University, Paris, Rempen, Robinson, Shepard, Shepard/Warsoff, Tokyo University, Tokyo/Shinozuka, Yarkoni

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

## 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

Summary Reports

# Measurements/Calculations

(continued)

## 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

Lt/Rt Renal Volume

Generic Volume

Post-Void Bladder Volume

# Probes

## 4C-RS

Convex Probe

Applications: Abdominal, Obstetrical, Gynecological, Pediatric, Urological

Biopsy Guide: Multi Angle, Reusable Bracket

## L6-12-RS

Linear Probe

Applications: Small parts, Vascular/Peripheral Vascular, Pediatric, Musculoskeletal

Biopsy Guide: Multi Angle, Reusable Bracket

## E8C-RS

Endo Micro Convex Probe

Applications: Obstetrical, Gynecological, Urological

Biopsy Guide: Fixed Angle, Disposable, or Reusable Bracket

## +8C-RS

Micro Convex Probe

Applications: Pediatric, Cardiac, Abdominal

Biopsy Guide: Not Available

## 3Sc-RS

Phased Array Sector Probe

Applications: Cardiac, Abdominal, Transcranial, Pediatric

Biopsy Guide: Multi Angle, Reusable Bracket

## RAB2-6-RS

Convex Volume Probe

Applications: Abdominal, Obstetrical, Gynecological, Urological

Biopsy Guide: Multi Angle, Reusable Bracket

## Inputs and Outputs

CVBS Output (BNC)

S-Video Output

VGA Output (SXGA resolution)

Audio stereo Output

100BASE-TX Ethernet (RJ45)

USB (3x in rear, 3 under keyboard)

+ 8C-RS is not available in China.

## SAFETY CONFORMANCE

The LOGIQ F8 is:

CE Marked to Council Directive 93/42/EEC on Medical Devices  
Conforms to the following standards for safety:

- IEC 60601-1 Medical electrical equipment — Part 1: General requirements for safety
- IEC 60601-1-2 Medical electrical equipment — Part 1-2 General requirements for safety — Collateral Standard: Electromagnetic compatibility — requirements and tests EMC Emissions Group 1 Class A device requirements as per CISPR 11

- IEC 60601-2-37 Medical electrical equipment — Part 2-37: Particular requirements for the safety of ultrasonic medical diagnostic and monitoring equipment
- ISO 10993-1 Biological evaluation of medical devices — Part 1 Evaluation and testing
- EN 62366 Medical devices — Application of usability engineering to medical devices

## About GE Healthcare

GE Healthcare provides transformational medical technologies and services to meet the demand for increased access, enhanced quality and more affordable healthcare around the world. GE (NYSE: GE) works on things that matter - great people and technologies taking on tough challenges. From medical imaging, software & IT, patient monitoring and diagnostics to drug discovery, biopharmaceutical manufacturing technologies and performance improvement solutions, GE Healthcare helps medical professionals deliver great healthcare to their patients.

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GE imagination at work