

# Clarius HD3 Scanners



## Technical Specifications



### Clarius HD3 Scanner Specifications

Model	Frequency	Max Depth	# Elements	Radius	Field of View	Pitch
<b>C3 HD3</b> Convex	2–6 MHz	40 cm	192	45 mm	73°	300 μm
<b>L7 HD3</b> Linear	4–13 MHz	11 cm	192	N/A	38 mm	200 μm
<b>L15 HD3</b> Linear	5–15 MHz	7 cm	192	N/A	50 mm	260 μm
<b>L20 HD3</b> Linear	8–20 MHz	4 cm	192	N/A	25 mm	130 μm
<b>C7 HD3</b> Microconvex	3–10 MHz	18 cm	192	20 mm	112°	205 μm
<b>EC7 HD3</b> Endocavity	3–10 MHz	15 cm	192	10 mm	164°	150 μm
<b>PA HD3</b> Phased Array	1–5 MHz	40 cm	80	N/A	90°	250 μm

### Imaging

#### Transmission

- 1 to 20 MHz waveforms
- Up to 20 continuous pulses
- Bi-polar output
- 10 to 70V peak-to-peak

#### Post-processing

- Adaptive speckle reduction
- Edge enhancement
- Persistence

#### Total Input Dynamic Range

- 160dB

#### Beamforming & Reception

- 8 parallel beamformers
- Synthetic aperture beamforming with virtual focal zones
- 60 MHz sampling rate @ 14 bits per channel

#### Automated Algorithms

- Time-gain-compensation (TGC)
- Frequency-depth adjustment
- Patient contact detection
- Needle enhancement
- Motion sensing
- Heart Rate

### Imaging Modes

<b>B-Mode</b>	Yes
<b>M-Mode</b>	Yes
<b>Power Doppler</b>	Yes
<b>Color Doppler</b>	Yes
<b>Pulsed-Wave Doppler</b>	Optional
<b>Needle Enhance</b> L7 HD3/L15 HD3/L20 HD3	Optional
<b>Elastography</b> C7 HD3/L20 HD3/L7 HD3/L15 HD3/C3 HD3/EC7 HD3	Optional
<b>Spatial Compounding</b> L7 HD3/L15 HD3/L20 HD3/C3 HD3	Yes
<b>Harmonic Imaging</b> C3 HD3/L7 HD3/PA HD3	Yes

## Clinical Applications†

- C3 HD3**
- Abdomen
  - Bladder
  - Cardiac
  - Hip - MSK
  - Hip Joint
  - Labour & Delivery
  - Lung
  - MSK
  - OB/GYN
  - Pelvic
  - Prostate
  - Vascular

- L15 HD3**
- Arterial
  - Aesthetics
  - Breast
  - Dermatology
  - Diagnostic Breast
  - Elbow
  - Foot/Ankle
  - Hand/Wrist
  - Interventional Breast
  - Knee
  - Lung
  - MSK
  - Nerve
  - Ocular
  - Plantar
  - Plastic Surgery
  - Shoulder
  - Small Parts
  - Thyroid
  - Vascular
  - Venous

- L20 HD3**
- Aesthetics
  - Dermatology
  - Lung
  - MSK
  - Nerve
  - Ocular
  - Plastic Surgery
  - Small Parts Vascular

- L7 HD3**
- Arterial
  - Breast
  - Diagnostic Breast
  - Elbow
  - Foot/Ankle
  - Hand/Wrist
  - Hip
  - Hip Joint
  - Interventional Breast
  - Knee
  - Lung
  - MSK
  - Nerve
  - Ocular
  - Plantar
  - Plastic Surgery
  - Shoulder
  - Small Parts
  - Spine
  - Thyroid
  - Vascular
  - Venous

- EC7 HD3**
- Early OB
  - IVF
  - Pelvic
  - Prostate

- C7 HD3**
- Abdomen
  - Bladder
  - Cardiac
  - Lung
  - MSK
  - Small Parts
  - Speech Therapy

- PA HD3**
- Abdominal
  - Bladder
  - Cardiac
  - Lung
  - OB/GYN

## Interface & Image Controls

- Depth
- Read zoom
- 3 TGC sliders or automated TGC
- Flip / mirror
- Freeze
- Color / power ROI
- Flow speed
- Doppler gate
- Doppler correction angle
- Doppler steer
- Baseline
- Invert

## Advanced Controls†

- Chroma
- Dynamic Range
- HD Zoom
- Trapezoidal
- Smoothing
- Penetration Mode

## Standard Configuration

- Scanner
- 1 Charger with global AC adapter

## Battery, Charging and Bootup

**Battery Life** ~60 min scanning

**Charge Time** ~90 min

**Bootup** Platform dependent, generally less than 30 sec

## Connectivity

**Wi-Fi** 802.11 a/b/g/n, dual band 2.4GHz & 5GHz

**Bluetooth** Bluetooth low energy 4.1

## Warranty\*

**Included** 3 year limited warranty

**Optional** Clarius Care - 1/2/3 years

- Accidental damage
- Uptime
- RMA shipping
- Hospital theft
- Battery Service

† Some Presets available via Advanced Software Packages

\* [Click here](#) to see full terms and conditions

## Internally Optimized Parameters

Clarius internally optimizes the following parameters to ensure the scanner is easy to use:

<b>Frequency Range</b>	1 to 20 MHz
<b>Focal Zones Range</b>	1 to 10
<b>Compression Dynamic Range</b>	30 to 90 dB
<b>Reject</b>	Yes
<b>Sector Width Range</b>	50% to 100%
<b>Grey + Color Maps</b>	Yes
<b>Frame Rate</b>	Up to 30 FPS

## Mechanical

<b>Enclosure</b>	<ul style="list-style-type: none"><li>- Light weight magnesium alloy</li><li>- Durable</li><li>- IP67 rated for 1 meter immersion for 30 minutes</li></ul>
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## SCANNER DIMENSIONS AND WEIGHT

<b>C3 HD3</b>	Dimensions: 146 x 76 x 38 mm Weight: 308 g
<b>L7 HD3</b>	Dimensions: 147 x 76 x 38 mm Weight: 288 g
<b>L15 HD3</b>	Dimensions: 147 x 76 x 38 mm Weight: 290 g
<b>L20 HD3</b>	Dimensions: 147 x 76 x 38 mm Weight: 290 g
<b>C7 HD3</b>	Dimensions: 169 x 78 x 38 mm Weight: 289 g
<b>EC7 HD3</b>	Dimensions: 310 x 76 x 38 mm Weight: 326 g
<b>PA HD3</b>	Dimensions: 148 x 76 x 38 mm Weight: 292 g

## CHARGER

<b>Input</b>	Wall power supply: 100-240 VAC, 50-60Hz Charger: 5 VDC, 3.2 A
<b>Output</b>	Wall power supply: 5 VDC, 3.2 A Charger: 5 VDC, 3.2 A

## Measurements and Calculations

### TOOLS

<b>Angle</b>	Yes
<b>Distance</b>	Yes
<b>Trace</b>	Yes
<b>Ellipse</b>	Yes
<b>Heart Rate</b>	Yes
<b>Time</b>	Yes
<b>Velocity</b>	Yes
<b>Volumes</b>	Yes → Manual/Automated

### CALCULATION PACKAGES

<b>Obstetrics</b>	BPD, HC, AC, FL, CRL, GS, YS, TL, FIB, HL, RAD, UL, CM, OFD, TCD, TTD, AAP, FTA, AFI, SDP, NF, NT, FHR, CxL, UA + 13 Unique Authors
<b>Carotid</b>	ICA, CCA, ECA, Bulb, Vert-A, Subc-A, Stenosis
<b>IVF/Pelvic</b>	Auto Follicle, CxL, Endo, Ovary, Uterus, Polyp, Fibroid, PFM
<b>Bladder</b>	PreV, PostV, Bladder Wall
<b>Arterial</b>	CFA, PFA, SFA, Pop, ATA, Pero, PTA, DPA, CIA, IIA, EIA, Graft
<b>Venous</b>	SFJ, GSV, SaphJ, SSV, Giac, InSaph, AAGSV, AT, PAGSV, PT, LVS, AccP
<b>Abdomen</b>	Liver, Kidney, Spleen, Pancreas, GB, Renal A, Antral CSA Labour & Delivery: HPD, HSD, PD, AoP, MLA, FHR, CxL
<b>Ocular</b>	ONSD, FB, CHLS
<b>Prostate</b>	Prostate Volume, Bladder Volume, Bladder Wall
<b>TCD</b>	MCA, ACA, PCA, TICA, OA, VA, BA
<b>Breast</b>	Lesion
<b>Cardiac</b>	LV EF (Simpsons), LV EF (Teicholz), LV FAC, RV FAC, IVS, LVID, LVPW, LVOT, SV, CO, TAPSE, EPSS

## Data Management

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Local Export	JPG/PNG/DICOM/BMP
Cloud Export	Yes
DICOM Store	Optional
DICOM Worklist	Optional

## Security and Encryption

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Wi-Fi Data Channel TLS 1.2

Bluetooth AES128 and RSA4096

## Standards Compliance

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IEC 60601-1, Medical Electrical Equipment – Part 1: General requirements for basic safety and essential performance

IEC 60601-1-2, Medical Electrical Equipment – Part 1-2: General requirements for basic safety and essential performance – Collateral Standard: Electromagnetic disturbances – Requirements and tests

IEC 60601-2-37, Medical Electrical Equipment – Part 2-37: Particular requirements for the basic safety and essential performance of ultrasonic medical diagnostic and monitoring equipment

NEMA UD-2, Acoustic Output Measurement Standard For Diagnostic Ultrasound Equipment

NEMA UD-3, Standard for Real-Time Display of Thermal and Mechanical Acoustic Output Indices on Diagnostic Ultrasound Equipment

IEC 60601-1-12, Medical electrical equipment – Part 1-12: General requirements for basic safety and essential performance – Collateral Standard: Requirements for medical electrical equipment and medical electrical systems intended for use in the emergency medical services environment

## Cleaning

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### Tested without adverse effects

- Accel® PREvention™ Wipes
- CaviWipes
- McKesson OPA/ 28 High-Level Disinfectant Solution
- MetriCide™ OPA Plus High-Level Disinfectant Solution
- Sani-Cloth® Plus Germicidal Disposable Cloth
- Tristel Trio Wipes System

FCC 47CFR Part 15, Radio frequency devices

ETSI EN 300 328 – Electromagnetic compatibility and Radio spectrum Matters (ERM)

ETSI EN 301 489-1 – Electromagnetic compatibility and Radio spectrum Matters (ERM)

ETSI EN 301 489-17 – Electromagnetic compatibility and Radio spectrum Matters (ERM)

ISO 10993-1, Biological evaluation of medical devices

IEC 60529, Degrees of protection provided by enclosures (IP Code)

IEC 62133, Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications

UN 38.3, Transport of dangerous goods – Classification procedures, test methods and criteria relating to class 9 – Lithium metal and lithium ion batteries

## About Us

Clarius Mobile Health was founded by experienced innovators who have played an instrumental role in the ultrasound industry. Our developers were the brains behind the first PC-based platform for ultrasound research. They also introduced the first touch screen ultrasound system with a simplified user interface.

We started with a simple mission: to enable more clinicians to use ultrasound to improve patient care. Thanks to the power of smart phones, advanced technology and decades of collective ultrasound experience, we've developed a high quality, Point-and-Shoot Ultrasound™ scanner that works with your smart device.

### Clarius Mobile Health

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