

# 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
<b>PAL HD3</b>	Phased + Linear	1–15 MHz	40 cm	192	N/A	90°(PA) + 29mm(LA)	260 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/L15/L20/PAL HD3	Optional
<b>Elastography</b>	Optional
<b>Spatial Compounding</b> L7/L15/L20/C3/PAL HD3	Yes
<b>Harmonic Imaging</b> C3/L7/PA/PAL HD3	Yes

† L20 HD3 tested for 6 cm Max Depth for Lung and Small Organs clinical applications.

## Clinical Applications†

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

- 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 Organs
  - Thyroid
  - Vascular
  - Venous

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

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

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

- 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 Organs
  - Spine
  - Thyroid
  - Vascular
  - Venous

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

- PAL HD3**
- Abdomen
  - Bladder
  - Breast
  - Cardiac
  - Hip & Knee
  - Knee
  - Lung (Deep/Shallow)
  - MSK
  - Nerve/Pain
  - Obstetrics
  - Ocular
  - Pelvic Floor
  - Shoulder
  - Small Organs
  - Spine
  - Vascular
  - Venous

## 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
- Penetration Mode
- Smoothing
- Trapezoidal
- Focal Zone
- Pulse-Inversion Harmonics

## 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 Membership or 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>
------------------	--

## SCANNER DIMENSIONS AND WEIGHT

<b>C3 HD3</b>	Dimensions: 146 x 76 x 32 mm Weight: 308 g
---------------	---

<b>L7 HD3</b>	Dimensions: 147 x 76 x 32 mm Weight: 288 g
---------------	---

<b>L15 HD3</b>	Dimensions: 147 x 76 x 32 mm Weight: 290 g
----------------	---

<b>L20 HD3</b>	Dimensions: 147 x 76 x 32 mm Weight: 290 g
----------------	---

<b>C7 HD3</b>	Dimensions: 151 x 76 x 32 mm Weight: 289 g
---------------	---

<b>EC7 HD3</b>	Dimensions: 310 x 76 x 32 mm Weight: 326 g
----------------	---

<b>PA HD3</b>	Dimensions: 148 x 76 x 32 mm Weight: 292 g
---------------	---

<b>PAL HD3</b>	Dimensions: 148 x 76 x 32 mm Weight: 307 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>	HC, AC, CRL, GS, AFI, CxL, UA, FHR + Up to 12 Gestations
<b>IVF/Pelvic</b>	Auto Follicle, CxL, Endo, Ovary, Uterus, Polyp, Fibroid, PFM
<b>Bladder</b>	Volume
<b>Abdomen</b>	Liver, Kidney, Spleen, Pancreas, GB
<b>Vascular</b>	Volume Flow
<b>Small Organs</b>	Thyroid, Testes
<b>Ocular</b>	ONSD, FB, CHLS
<b>Breast</b>	Lesion
<b>Cardiac</b>	LV EF (Simpsons), LV FAC, IVS, LVID, LVPW, TAPSE, MAPSE, EPSS, LVOT, HR

## Artificial Intelligence

### TOOLS

<b>Auto Preset</b>	Option C3/PA/PAL HD3
<b>MSK AI</b>	Option
<b>Voice Controls</b>	Option

## Data Management

---

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

## Security and Encryption

---

Wi-Fi Data Channel	TLS 1.2
Bluetooth	AES128 and RSA4096

## Standards Compliance

---

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

---

### 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 is on a mission to make accurate, easy-to-use, affordable ultrasound available to all medical professionals in every specialty. Our ultra-portable wireless scanners deliver best-in-class imaging with an easy-to-use app for iOS and Android that is powered by artificial intelligence and connected to the cloud. More than three million high-definition scans have been performed using Clarius wireless scanners, now available in over 90 countries worldwide.

### Clarius Mobile Health

2980 Virtual Way #205  
Vancouver, BC V5M 4X3,  
Canada  
hello@clarius.com  
Phone: 1-778-800-9975