

Clarius HD3 Scanners



Technical Specifications



Clarius HD3 Scanner Specifications

Model		Frequency	Max Depth	# Elements	Radius	Field of View	Pitch
C3 HD3	Convex	2–6 MHz	40 cm	192	45 mm	73°	300 μm
L7 HD3	Linear	4–13 MHz	11 cm	192	N/A	38 mm	200 μm
L15 HD3	Linear	5–15 MHz	7 cm	192	N/A	50 mm	260 μm
L20 HD3	Linear	8–20 MHz	4 cm [†]	192	N/A	25 mm	130 μm
C7 HD3	Microconvex	3–10 MHz	18 cm	192	20 mm	112°	205 μm
EC7 HD3	Endocavity	3–10 MHz	15 cm	192	10 mm	164°	150 μm
PA HD3	Phased Array	1–5 MHz	40 cm	80	N/A	90°	250 μm
PAL HD3	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-Mode	Yes
M-Mode	Yes
Power Doppler	Yes
Color Doppler	Yes
Pulsed-Wave Doppler	Optional
Needle Enhance L7/L15/L20/PAL HD3	Optional
Elastography	Optional
Spatial Compounding L7/L15/L20/C3/PAL HD3	Yes
Harmonic Imaging 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:

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

Mechanical

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

C3 HD3	Dimensions: 146 x 76 x 32 mm Weight: 308 g
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L7 HD3	Dimensions: 147 x 76 x 32 mm Weight: 288 g
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L15 HD3	Dimensions: 147 x 76 x 32 mm Weight: 290 g
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L20 HD3	Dimensions: 147 x 76 x 32 mm Weight: 290 g
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C7 HD3	Dimensions: 151 x 76 x 32 mm Weight: 289 g
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EC7 HD3	Dimensions: 310 x 76 x 32 mm Weight: 326 g
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PA HD3	Dimensions: 148 x 76 x 32 mm Weight: 292 g
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PAL HD3	Dimensions: 148 x 76 x 32 mm Weight: 307 g
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CHARGER

Input	Wall power supply: 100-240 VAC, 50-60Hz Charger: 5 VDC, 3.2 A
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Output	Wall power supply: 5 VDC, 3.2 A Charger: 5 VDC, 3.2 A
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Measurements and Calculations

TOOLS

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

CALCULATION PACKAGES

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

Artificial Intelligence

TOOLS

Auto Preset	Option C3/PA/PAL HD3
MSK AI	Option
Voice Controls	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.

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