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LOGIQ Totus™ Advanced Reference Manual

[Operating Documentation](#)

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Regulatory Requirement

LOGIQ Totus complies with regulatory requirements of the 2017/745 EU Medical Device Regulation concerning medical devices.



This manual is a reference for the LOGIQ Totus Version R4.

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Revision History

Reason for Change

REV	DATE (YYYY/MM/DD)	REASON FOR CHANGE
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List of Effective Pages

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Title Page	Rev. 1	Chapter 1	Rev. 1
Revision History	Rev. 1	Chapter 2	Rev. 1
Regulatory Requirements	Rev. 1	Chapter 3	Rev. 1
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Regulatory Requirements

Authorized EU Representative



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Full Listing

For a full listing of regulatory requirements, see the LOGIQ Totus User Manual, Direction 5929163-1xx.

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Chapter 1

Acoustic and Thermal Output

Provides Acoustic and Thermal Output information and tables, as well as statements regarding possible bioeffects and prudent use.

Bioeffects

Bioeffects Associated with Diagnostic Ultrasound

During a diagnostic ultrasound examination, high frequency sound waves penetrate and interact with tissue in and around the area of anatomy to be imaged. Typical values of Center Frequency and Transmit Repetition Rate for these sound pulses are, respectively, from 1 to 20 MHz and from 1000 to 30000 pulses per second (1 KHz to 30 KHz).

Only a small portion of the sound energy of each pulse is reflected all the way back to the probe for use in constructing the image while the remainder is dissipated within the tissue.

Although the generation of biological effects (aka bioeffects) is intentional with therapeutic ultrasound, it is generally undesired in diagnostic applications and may be harmful in some conditions.

The interaction of sound energy with tissue at sufficiently high levels can produce bioeffects of either a mechanical or thermal nature. Mechanical bioeffects are primarily related to the pressure amplitude of individual pulses. Thermal bioeffects are primarily related to absorbed energy, and therefore contributing factors are the amplitude and length of the pulses, as well as the spatial distribution and repetition rate of the acoustic pulse stream, and the overall dwell times of the exam.

NOTE: *The American Institute of Ultrasound in Medicine (AIUM) has published a document entitled "Medical Ultrasound Safety". This three part document covers Bioeffects and Biophysics, Prudent Use and Implementing ALARA.*

Bioeffects Associated with Diagnostic Ultrasound (continued)

Ultrasound users should read the AIUM booklet to become more familiar with Ultrasound safety. A copy of this document is included as part of the documentation package (Document 2163920-100).

To contact the AIUM concerning their publications:

- In the USA, by telephone at 1-800-638-5352.
- To write them, use the following address:

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14750 Sweitzer Lane
Suite 100
Laurel, MD, USA 20707-5906

Acoustic and Thermal Output Data

Measurement Uncertainty

Measurement uncertainty of the tools and process used to measure the acoustic and thermal output values is provided in the following table:

In accordance with IEC 60601-2-37, the measurement uncertainty are declared as expanded uncertainty corresponding to a level of confidence of 95%. The method of combining the Type A and Type B uncertainties follow the methods specified by the Guide to the Expression of Uncertainty in Measurement, International Organization for Standardization (ISO).

Table 1-1: Measurement Uncertainty (Part 1)

	Center Frequency	Acoustic Power	Acoustic Pressure and MI	Acoustic Intensity
Measurement Uncertainty	± 1.0%	± 13%	± 16%	± 32%

Table 1-2: Measurement Uncertainty (Part 2)

	TI Non-Scan Modes	TI Scan Modes	Surface Temperature	
			(external use)	(internal use)
Measurement Uncertainty	± 33%	± 13%	± 1.05 deg. C	± 0.97 deg. C

Operating Mode Summary

The Operating Modes Summary Table show all of the probes' operating modes. The following pages contain probe acoustic and thermal output tables for the noted probes.

Table 1-3: Operating Modes Summary Table

Operating Mode	Transducer Model									
	M5Sc-D	ML6-15-D	C1-6(VN)-D	C3-10-D	C2-7(VN)-D	RAB6-D	RIC5-9-D	IC5-9-D	P2D	P6D
B-Mode	X	X	X	X	X	X	X	X		
M-Mode (includes B-Mode)	X	X	X	X	X	X	X	X		
Color Flow (includes B-Mode)	X	X	X	X	X	X	X	X		
Pulsed Doppler (includes B-Mode)	X	X	X	X	X	X	X	X		
Color M-Mode (includes B-Mode)	X									
Shear wave Mode		X	X					X		
Continuous Wave Mode (includes B-Mode, except P2D, P6D and P8D)	X								X	X
2D Harmonic	X	X	X	X	X	X	X	X		
B-Flow	X	X	X	X	X					
Contrast	X	X	X	X	X	X	X	X		
3D/4D						X	X			
Strain Elastography		X	X					X		
Tissue Velocity Imaging (TVI)	X									
Tissue Velocity M-Mode (TVM)	X									
Tissue Velocity Doppler (TVD)	X									
Micro Vascular Imaging (MVI)		X	X							
Ultrasound Guided Attenuation Parameters (UGAP)			X							

Table 1-4: Operating Modes Summary Table

Operating Mode	Transducer Model					
	6S-D	L3-12-D	L6-24-D	9L-D	12S-D	V Scan Air CL
B-Mode	X	X	X	X	X	X
M-Mode (includes B-Mode)	X	X		X	X	
Color Flow (includes B-Mode)	X	X	X	X	X	X
Pulsed Doppler (includes B-Mode)	X	X	X	X	X	
Color M-Mode (includes B-Mode)	X				X	
Shear wave Mode		X		X		
Continuous Wave Mode (includes B-Mode, except P2D, P6D and P8D)	X				X	
2D Harmonic	X	X	X	X	X	
B-Flow		X	X	X		
Contrast		X				
3D/4D						
Strain Elastography		X		X		
Tissue Velocity Imaging (TVI)	X				X	
Tissue Velocity M-Mode (TVM)	X				X	
Tissue Velocity Doppler (TVD)	X				X	
Micro Vascular Imaging (MVI)		X	X	X		
Ultrasound Guided Attenuation Parameters (UGAP)						

Maximum Probe Patient Contact Temperature

Transducer face temperature measurements were performed according to the methods in IEC 60601-2-37.

Table 1-5: Maximum Probe Patient Applied Part Surface Temperature (Degrees C)

Probe	Max Temp		
	Mode	Coupled To Tissue Mimic Material	In Air (23 deg. C ambient)
6S-D	B + Color Flow	38.1	33.7
9L-D	B + Color Flow	38.3	32.4
12S-D	B-Flow	41.9	38.2
C2-7-D / C2-7VN-D	B + M-Mode	39.6	35.6
L6-24-D	B-Mode	37.6	31.6
M5Sc-D	Pulsed Doppler	40.8	37.5
P2D	Continuous Wave Doppler	34.4	28.0
P6D	Continuous Wave Doppler	35.3	29.0
RAB6-D	B + Pulsed Doppler	39.4	36.9
C1-6-D / C1-6VN-D	Contrast	38.2	32.7
RIC5-9-D	B + Color Flow	41.0	32.3
IC5-9-D	B + M-Mode	42.8	35.4
ML6-15-D	Strain Elastography	39.7	33.3
L3-12-D	Pulsed Doppler	40.4	37.4
C3-10-D	B-Mode	42.0	36.8

Maximum Probe Patient Contact Temperature (continued)

Table 1-6: Maximum Probe Temperature for Shear Wave Probes (Degrees C)

Probe	Max Temp		
	Mode	Coupled ToTissue Mimic Material	In Air (23 deg. C ambient)
9L-D	Shear Wave	40.2	35.7
C1-6-D/C1-6VN-D	Shear Wave	38.8	33.1
ML6-15-D	Shear Wave	42.4	36.9
IC5-9-D	Shear Wave	37.1	32.8
L3-12-D	Shear Wave	39.8	36.5

Acoustic Output

NOTE: Values listed in the Acoustic Parameter and Other Information portion of the MI Column are only for the component pulses resulting in the maximum MI values.

Table Key

Table 1-7: Table Key

Symbol	Term—per IEC 60601-2-37
α	Acoustic Attenuation Coefficient
A_{aprt}	-12db Output Beam Area
C_{MI}	Normalizing Coefficient
d_{eq}	Equivalent Beam Diameter
f_{awf}	Acoustic Working Frequency
I_{pa}	Pulse-Average Intensity
$I_{pa,\alpha}$	Attenuated Pulse-Average Intensity
p_{ii}	Pulse-Intensity Integral
$p_{ii,\alpha}$	Attenuated Pulse-Intensity Integral
$I_{sppa,\alpha}$	Attenuated Spatial-Peak Pulse-Average Intensity
I_{spta}	Spatial-Peak Temporal-Average Intensity
$I_{spta,\alpha}$	Attenuated Spatial-Peak Temporal-Average Intensity
I_{ta}	Temporal-Average Intensity
$I_{ta,\alpha}$	Attenuated Temporal-Average Intensity
MI	Mechanical Index
n_{pps}	Number of Pulses per Ultrasonic Scan Line
P	Output Power
P_{α}	Attenuated Output Power
P_{1x1}	Bounded-Square Output Power
p_r	Peak-Rarefactional Acoustic Pressure
$p_{r,\alpha}$	Attenuated Peak-Rarefactional Acoustic Pressure
prr	Pulse Repetition Rate
srr	Scan Repetition Rate
TI	Thermal Index
TIB	Bone Thermal Index
TIC	Cranial-Bone Thermal Index
TIS	Soft-Tissue Thermal Index

Table 1-7: Table Key (Continued)

Symbol	Term—per IEC 60601-2-37
t_d	Pulse Duration
X, Y	-12 dB Output Beam Dimensions
z_b	Depth for TIB
z_{bp}	Break-Point Depth
z_{pii}	Depth for Peak Pulse-Intensity Integral
z_{MI}	Depth for Mechanical Index
$z_{pii,\alpha}$	Depth for Peak Attenuated Pulse-Intensity Integral
z_{sii}	Depth for Peak Sum of Pulse-Intensity Integrals
$z_{sii,\alpha}$	Depth for Peak Sum of Attenuated Pulse-Intensity Integrals
z_s	Depth for TIS
-	This parameter is not applicable to the specified probe/mode combination.

Table 1-8: Meaning of Notes in the Acoustic Output Tables

Note	Meaning
Note A	The Operating Control Condition resulting in a maximum Index value for this ModeGroup has No Scanning Component.
Note B	The Operating Control Condition resulting in a maximum Index value for this ModeGroup has No Non-Scanning Component.
Note C	There are No Non-Scanning Components for this Mode Group.
Note D	There are No Scanning Components for this Mode Group.
Note E	A This Mode Group is not enabled for this Probe Model.
Note F	The maximum MI value results from a non-scanning component.
Note G	CW components do not have ' prr ', ' η_{pps} ', ' srr ' or ' t_d ' values.

NOTE: *The Acoustic Output tables are in English only.*

C1-6(VN)-D

Table 1-9: Probe Model: C1-6(VN)-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.39	0.88		1.77		2.62
Index Component Value		-	2D: 0.18 MM: 0.41	2D: 0.18 MM: 0.7	2D: 0.18 MM: 0.41	2D: 0.18 MM: 1.59	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CON: 2.37	-	-	-	-	-
	P (mW)	-	2D: 121.4 MM: 123.3		2D: 121.4 MM: 123.3		2D: 328.3
	P_{1x1} (mW)	-	2D: 17.6 MM: 40.7	-	2D: 17.6 MM: 40.7	-	-
	z_s (cm)	-	-	MM: 3.9	-	-	-
	z_b (cm)	-	-	-	-	MM: 3.9	-
	z_{MI} (cm)	CON: 3.1	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CON: 3.1	-	-	-	-	-
	f_{awf} (MHz)	CON: 2.90	2D: 2.10 MM: 2.10		2D: 2.10 MM: 2.10		2D: 2.10
Other Information	pr_r (Hz)	CON: 11.7	-	-	-	-	-
	srr (Hz)	CON: 11.7	-	-	-	-	-
	n_{pps}	CON: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/ cm ²)	CON: 325.7	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/ cm ²)	CON: 5.2	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/ cm ²)	CON: 9.7	-	-	-	-	-
	p_r at z_{pii} (MPa)	CON: 3.10	-	-	-	-	-

Table 1-9: Probe Model: C1-6(VN)-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2Dcontrast	2D MM		2D MM		2D
	Frequency (MHz)	CON: 3.0	2D: 2.0 MM: 2.0		2D: 2.0 MM: 2.0		2D: 2.0
	Focal Position (cm)	CON: 3.6	2D: 50.0 MM: 50.0		2D: 50.0 MM: 50.0		2D: 50.0
	Image Width	CON: Medium	2D: Medium		2D: Medium		2D: Medium
	Image Depth (cm)	4.1	33.1		33.1		33.1
	Frame Rate (Hz)	11.7	22.2		22.2		23.5

C1-6(VN)-D (continued)

Table 1-10: Probe Model: C1-6(VN)-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.33	0.97		1.19		1.93
Index Component Value		-	2D: 0.04 BFCHD: 0.93	2D: 0.04 BFCHD: 0.93	2D: 0.03 PW: 0.34 CF: 0.01	2D: 0.03 PW: 1.15 CF: 0.01	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 2.02	-	-	-	-	-
	P (mW)	-	2D: 30.0 BFCHD: 60.5		2D: 10.8 PW: 68.5 CF: 0.5		2D: 45.9 BFCHD: 83.9
	$P_{1 \times 1}$ (mW)	-	2D: 4.3 BFCHD: 52.6		2D: 2.8 PW: 28.5 CF: 0.5		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	PW: 4.3	-
	z_{MI} (cm)	2D: 3.9	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 3.9	-	-	-	-	-
	f_{awf} (MHz)	2D: 2.30	2D: 2.10 BFCHD: 3.70		2D: 2.35 PW: 2.50 CF: 3.80		2D: 2.10 BFCHD: 2.30
Other Information	p_{rr} (Hz)	2D: 3.9	-	-	-	-	-
	s_{rr} (Hz)	2D: 3.9	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 222.4	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 5.1	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 9.4	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 2.75	-	-	-	-	-

Table 1-10: Probe Model: C1-6(VN)-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2D PW CF	2D CFBFLOWHD		2D PW CF		2D CFBFLOW HD
	Frequency (MHz)	CF: 3.0 PW: 2.5 2D: 2.5	2D: 2.0 BFCHD: 3.7		CF: 3.0 PW: 2.5 2D: 2.5		2D: 2.0 BFCHD: 2.3
	Color / Doppler PRF (kHz)	CF: 0.16 PW: 2.19	BFCHD: 6.85		CF: 0.16 PW: 2.19		BFCHD: 8.93
	ROI_Span / Sample_Vol_Size (mm)	PW: 1.0	BFCHD: 89.9		PW: 1.0		BFCHD: 4.9
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 0.1 PW: 11.5 2D: 50.0	2D: 50.0 BFCHD: 4.6		CF: 0.1 PW: 11.5 2D: 50.0		2D: 50.0 BFCHD: 0.4
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	2D: Narrow	2D: Medium BFCHD: Narrow		2D: Narrow		2D: Medium BFCHD: Narrow
	Image Depth (cm)	33.1	33.1		33.1		33.1
	Frame Rate (Hz)	3.8	2D: 3.1 BFCHD: 200.0		3.8		2D: 4.5 BFCHD: 289.3

C1-6(VN)-D (continued)

Table 1-11: Probe Model: C1-6(VN)-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.00	1.18		2.39		1.85
Index Component Value		-	PW: 1.15	PW: 1.18	PW: 0.69	PW: 2.39	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 1.56	-	-	-	-	-
	P (mW)	-	PW: 164.2		PW: 138.8		2D: 189.8 PW: 9.6
	$P_{1 \times 1}$ (mW)	-	PW: 68.2		PW: 57.7		-
	z_s (cm)	-	-	PW: 3.5	-	-	-
	z_b (cm)	-	-	-	-	PW: 3.7	-
	z_{MI} (cm)	2D: 3.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 3.9	-	-	-	-	-
	f_{awf} (MHz)	2D: 2.40	PW: 3.55		PW: 2.50		2D: 2.40 PW: 3.60
Other Information	p_{rr} (Hz)	2D: 82.9	-	-	-	-	-
	s_{rr} (Hz)	2D: 82.9	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 139.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 107.2	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 204.7	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 2.04	-	-	-	-	-

Table 1-11: Probe Model: C1-6(VN)-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2D PW	PW		PW		2D PW
	Frequency (MHz)	PW: 3.6 2D: 2.5	PW: 3.6		PW: 2.5		PW: 3.6 2D: 2.5
	Doppler PRF (kHz)	PW: 0.91	PW: 0.93		PW: 2.19		PW: 0.91
	Sample Volume Size (mm)	PW: 1.0	PW: 4.0		PW: 1.0		PW: 1.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 1.1 2D: 50.0	PW: 30.1		PW: 11.5		PW: 1.1 2D: 50.0
	Image Width	2D: Narrow	NA		NA		2D: Narrow
	Image Depth (cm)	33.1	NA		NA		33.1
	Frame Rate (Hz)	82.8	NA		NA		82.8

C1-6(VN)-D (continued)

Table 1-12: Probe Model: C1-6(VN)-D; Mode Group: Shear Wave Elastography Mode
(See Table 1-3 : Operating Modes Summary Table)

Index label	MI	TIS		TIB		TIC
		At surface	Below surface	At surface	Below surface	
Maximum index value	1.37	0.44		1.82		1.22
Index component value		SWE: 0.26	SWE: 0.44	SWE: 0.26	SWE: 1.82	
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	SWE: 2.58				
	P (mW)		SWE: 62.7	SWE: 62.7		SWE: 125.3
	P_{1x1} (mW)	SWE: 24.3		SWE: 24.3		
	z_s (cm)		SWE: 2.7			
	z_b (cm)				SWE: 5.4	
	z_{MI} (cm)	SWE: 3.4				
	$z_{pII,\alpha}$ (cm)	SWE: 3.4				
	f_{awf} (MHz)	SWE: 3.55	SWE: 2.25	SWE: 2.55		SWE: 2.55
	p_{rr} (Hz)	SWE: 1.34				
Other Information	srr (Hz)	SWE: 0.45				
	η_{pps}	SWE: 3				
	$I_{pa,\alpha}$ at $z_{pII,\alpha}$ (W/cm2)	SWE: 288.8				
	$I_{spta,\alpha}$ at $z_{pII,\alpha}$ or $z_{sII,\alpha}$ (mW/cm2)	SWE: 240.3				
	I_{spta} at z_{pII} or z_{sII} (mW/cm2)	SWE 573.8				
	p_r at z_{pII} (MPa)	SWE: 3.55				
Operating Control Conditions	Power (%)	SWE: 100	SWE: 100	SWE: 100	SWE: 100	SWE: 100
	Frequency (MHz)	SWE: 3.5	SWE: 2.1	SWE: 2.1	SWE: 2.1	SWE: 2.1
	ROI Center (cm)	SWE: 3.1	SWE: 6.1	SWE: 6.1	SWE: 6.1	SWE: 6.1
	ROI Span (mm)	SWE: 30.0	SWE: 30.0	SWE: 30.0	SWE: 30.0	SWE: 30.0
	Type	SWE	SWE	SWE	SWE	SWE

ML6-15-D

Table 1-13: Probe Model: ML6-15-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.29	1.22		1.22		2.36
Index Component Value		-	BF: 1.22	BF: 1.22	BF: 1.22	BF: 1.22	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	BF: 3.22	-	-	-	-	-
	P (mW)	-	BF: 185.2		BF: 185.2		BF: 185.2
	P_{1x1} (mW)	-	BF: 40.4		BF: 40.4		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	Note B	-
	z_{MI} (cm)	BF: 1.1	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	BF: 1.1	-	-	-	-	-
	f_{awf} (MHz)	BF: 6.25	BF: 6.35		BF: 6.35		BF: 6.35
Other Information	p_{rr} (Hz)	BF: 27.2	-	-	-	-	-
	s_{rr} (Hz)	BF: 27.2	-	-	-	-	-
	n_{pps}	BF: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	BF: 366.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	BF: 23.5	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	BF: 37.8	-	-	-	-	-
	p_r at z_{pii} (MPa)	BF: 4.08	-	-	-	-	-

Table 1-13: Probe Model: ML6-15-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2DBF	2DBF		2DBF		2DBF
	Frequency (MHz)	BF: 9.0	BF: 9.0		BF: 9.0		BF: 9.0
	Focal Position (cm)	BF: 1.7	BF: 0.7		BF: 0.7		BF: 0.7
	Image Width	BF: Wide	BF: Wide		BF: Wide		BF: Wide
	Image Depth (cm)	12.1	1.1		1.1		1.1
	Frame Rate (Hz)	27.2	79.0		79.0		79.0

ML6-15-D (continued)

Table 1-14: Probe Model: ML6-15-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.18	0.51		0.60		0.62
Index Component Value		-	2D: 0.03 2D: 0.03 CF: 0.45	2D: 0.03 2D: 0.03 CF: 0.45	2D: 0.01 2D: 0.01 PW: 0.34 CF: 0	2D: 0.01 2D: 0.01 PW: 0.58 CF: 0	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CF: 3.39	-	-	-	-	-
	P (mW)	-	2D: 4.1 2D: 4.9 CF: 11.3		2D: 1.3 2D: 1.7 PW: 8.4 CF: 0.0		2D: 8.3 2D: 11.3 CF: 7.8
	$P_{1 \times 1}$ (mW)	-	2D: 0.9 2D: 1.0 CF: 11.3		2D: 0.3 2D: 0.4 PW: 8.4 CF: 0.0		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	PW: 0.7	-
	z_{MI} (cm)	CF: 0.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CF: 0.7	-	-	-	-	-
	f_{awf} (MHz)	CF: 8.30	2D: 7.05 2D: 6.40 CF: 8.30		2D: 7.15 2D: 6.50 PW: 8.35 CF: 5.10		2D: 6.95 2D: 6.35 CF: 8.35

Table 1-14: Probe Model: ML6-15-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Other Information	p_{rr} (Hz)	CF: 207.1	-	-	-	-	-
	s_{rr} (Hz)	CF: 23.0	-	-	-	-	-
	η_{pps}	CF: 9	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CF: 310.0	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CF: 144.6	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CF: 216.0	-	-	-	-	-
	p_r at z_{pii} (MPa)	CF: 3.77	-	-	-	-	-
Operating Control Conditions	Application	Thyroid	Thyroid		Thyroid		Carotid
	Imaging Mode	2D CF	2D CF		2D PW CF		2D CF
	Frequency (MHz)	CF: 7.3 2D: 7.0	CF: 7.3 2D: 7.0		CF: 5.1 PW: 8.3 2D: 7.0		CF: 7.3 2D: 7.0
	Color / Doppler PRF (kHz)	CF: 0.38	CF: 0.38		CF: 5.30 PW: 20.83		CF: 15.10
	ROI_Span / Sample_Vol_Size (mm)	CF: 120.0	CF: 120.0		CF: 22.2 PW: 3.0		CF: 5.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 6.1 2D: 6.1	CF: 6.1 2D: 6.1		CF: 1.6 PW: 0.6 2D: 6.1		CF: 0.3 2D: 6.1
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Narrow 2D: Wide	CF: Narrow 2D: Wide		CF: Medium 2D: Wide		CF: Narrow 2D: Wide
	Image Depth (cm)	12.1	12.1		12.1		12.1
	Frame Rate (Hz)	23.0	23.0		10.0		43.3

ML6-15-D (continued)

Table 1-15: Probe Model: ML6-15-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.00	0.63		0.88		0.99
Index Component Value		-	PW: 0.63	PW: 0.42	PW: 0.63	PW: 0.88	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 2.67	-	-	-	-	-
	P (mW)	-	PW: 15.9		PW: 15.9		PW: 15.9
	P_{1x1} (mW)	-	PW: 15.9		PW: 15.9		-
	z_s (cm)	-	-	PW: 0.7	-	-	-
	z_b (cm)	-	-	-	-	PW: 0.7	-
	z_{MI} (cm)	2D: 0.9	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 0.9	-	-	-	-	-
	f_{awf} (MHz)	2D: 7.05	PW: 8.35		PW: 8.35		PW: 8.35
Other Information	prf (Hz)	2D: 10.2	-	-	-	-	-
	srf (Hz)	2D: 10.2	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 207.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 3.1	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 4.8	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 3.32	-	-	-	-	-

Table 1-15: Probe Model: ML6-15-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table (Continued))

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Carotid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2D PW	PW		PW		PW
	Frequency (MHz)	PW: 8.3 2D: 7.0	PW: 8.3		PW: 8.3		PW: 8.3
	Doppler PRF (kHz)	PW: 20.83	PW: 20.83		PW: 20.83		PW: 20.83
	Sample Volume Size (mm)	PW: 3.0	PW: 3.0		PW: 3.0		PW: 3.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 0.6 2D: 6.1	PW: 0.6		PW: 0.6		PW: 0.6
	Image Width	2D: Wide	NA		NA		NA
	Image Depth (cm)	12.1	NA		NA		NA
	Frame Rate (Hz)	10.2	NA		NA		NA

ML6-15-D (continued)

Table 1-16: Probe Model: ML6-15-D; Mode Group: Shear Wave Elastography Mode
(See Table 1-3 : Operating Modes Summary Table)

Index label		MI	TIS		TIB		TIC
			At surface	Below surface	At surface	Below surface	
Maximum index value		1.34	0.49		0.89		0.82
Index component value			SWE: 0.49	SWE: 0.30	SWE: 0.49	SWE: 0.89	
Acoustic Parameter	$p_{r,a}$ at $z_{pi,a}$ (MPa)	SWE: 3.00					
	P (mW)		SWE: 39.7		SWE: 39.7		SWE: 39.7
	P_{1x1} (mW)		SWE: 20.7		SWE: 20.7		
	z_s (cm)			SWE: 1.3			
	z_b (cm)					SWE: 2.4	
	z_{MI} (cm)	SWE: 2.4					
	$z_{pi,a}$ (cm)	SWE: 2.4					
	f_{awf} (MHz)	SWE: 5.00	SWE: 5.00		SWE: 5.00		SWE: 5.00
Other Information	p_r (Hz)	SWE: 1.60					
	s_{rr} (Hz)	SWE: 0.32					
	n_{pps}	SWE: 5					
	$I_{pa,a}$ at $z_{pi,a}$ (W/cm2)	SWE: 434.3					
	$I_{spta,a}$ at $z_{pi,a}$ or $z_{sii,a}$ (mW/cm2)	SWE: 226.4					
	I_{spta} at z_{pi} or z_{sii} (mW/cm2)	SWE 545.2					
	p_r at z_{pi} (MPa)	SWE: 4.46					
Operating Control Conditions							
	Power (%)	SWE: 100	SWE: 100	SWE: 100	SWE: 100	SWE: 100	SWE: 100
	Frequency (MHz)	SWE: 5.0	SWE: 5.0	SWE: 5.0	SWE: 5.0	SWE: 5.0	SWE: 5.0
	ROI Center (cm)	SWE: 3.4	SWE: 3.4	SWE: 3.4	SWE: 3.4	SWE: 3.4	SWE: 3.4
	ROI Span (mm)	SWE: 20.0	SWE: 20.0	SWE: 20.0	SWE: 20.0	SWE: 20.0	SWE: 20.0
	Type	SWE	SWE	SWE	SWE	SWE	SWE

L3-12-D

Table 1-17: Probe Model: L3-12-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.11	0.34		0.34		1.12
Index Component Value		-	BF: 0.34	BF: 0.34	BF: 0.34	BF: 0.34	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	REF: 2.64	-	-	-	-	-
	P (mW)	-	BF: 72.6		BF: 72.6		BF: 72.6
	P_{1x1} (mW)	-	BF: 16.0		BF: 16.0		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	Note B	-
	z_{MI} (cm)	REF: 1.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	REF: 1.5	-	-	-	-	-
	f_{awf} (MHz)	REF: 5.65	BF: 4.40		BF: 4.40		BF: 4.40
Other Information	pr (Hz)	REF: 18.7	-	-	-	-	-
	sr (Hz)	REF: 18.7	-	-	-	-	-
	n_{pps}	REF: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	REF: 228.2	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	REF: 23.2	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	REF: 41.7	-	-	-	-	-
	p_r at z_{pii} (MPa)	REF: 2.74	-	-	-	-	-

Table 1-17: Probe Model: L3-12-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2DLowMI	2DBF		2DBF		2DBF
	Frequency (MHz)	REF: 8.0	BF: 4.0		BF: 4.0		BF: 4.0
	Focal Position (cm)	REF: 4.2	BF: 7.7		BF: 7.7		BF: 7.7
	Image Width	REF: Wide	BF: Wide		BF: Wide		BF: Wide
	Image Depth (cm)	13.1	13.1		13.1		13.1
	Frame Rate (Hz)	18.7	94.9		94.9		94.9

L3-12-D (continued)

Table 1-18: Probe Model: L3-12-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.10	1.11		1.62		1.26
Index Component Value		-	CHI: 0.02 BFCHD: 1.08	CHI: 0.02 BFCHD: 1.08	2D: 0.01 PW: 0.64 CF: 0	2D: 0.01 PW: 1.6 CF: 0	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CF: 2.45	-	-	-	-	-
	P (mW)	-	CHI: 4.0 BFCHD: 28.1		2D: 1.4 PW: 47.7 CF: 0.6		2D: 1.7 CF: 79.9
	P_{1x1} (mW)	-	CHI: 0.8 BFCHD: 27.6		2D: 0.3 PW: 32.4 CF: 0.2		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.7	-
	z_{MI} (cm)	CF: 1.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CF: 1.7	-	-	-	-	-
	f_{awf} (MHz)	CF: 4.95	CHI: 5.73 BFCHD: 8.25		2D: 6.10 PW: 4.18 CF: 5.10		2D: 6.15 CF: 4.30
Other Information	pr (Hz)	CF: 38.1	-	-	-	-	-
	sr (Hz)	CF: 19.1	-	-	-	-	-
	n_{pps}	CF: 2	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CF: 220.0	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CF: 70.2	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CF: 125.5	-	-	-	-	-
	p_r at z_{pii} (MPa)	CF: 3.01	-	-	-	-	-

Table 1-18: Probe Model: L3-12-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2D ELASTO	2DHAR CFBFLOWHD		2D PW CF		2D CF
	Frequency (MHz)	CF: 5.4 2D: 12.0	CHI: 12.0 BFCHD: 8.2		CF: 4.9 PW: 4.2 2D: 8.0		CF: 4.3 2D: 8.0
	Color / Doppler PRF (kHz)	CF: 0.57	BFCHD: 15.94		CF: 5.13 PW: 1.08		CF: 0.22
	ROI_Span / Sample_Vol_Size (mm)	CF: 5.0	BFCHD: 5.0		CF: 22.2 PW: 6.0		CF: 130.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 3.8 2D: 3.1	CHI: 3.1 BFCHD: 0.3		CF: 2.1 PW: 12.7 2D: 6.6		CF: 6.6 2D: 6.6
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Wide 2D: Wide	CHI: Wide BFCHD: Narrow		CF: Medium 2D: Wide		CF: Wide 2D: Wide
	Image Depth (cm)	4.1	4.1		13.1		13.1
	Frame Rate (Hz)	19.0	CHI: 10.1 BFCHD: 242.8		2.1		1.7

L3-12-D (continued)

Table 1-19: Probe Model: L3-12-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.07	1.05		1.68		1.19
Index Component Value		-	PW: 1.05	PW: 0.74	2D: 0.04 PW: 0.65	2D: 0.04 PW: 1.64	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 2.63	-	-	-	-	-
	P (mW)	-	PW: 52.1		2D: 7.3 PW: 48.1		2D: 7.3 PW: 48.1
	P_{1x1} (mW)	-	PW: 35.4		2D: 1.5 PW: 32.7		-
	z_s (cm)	-	-	PW: 1.7	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.7	-
	z_{MI} (cm)	2D: 1.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.5	-	-	-	-	-
	f_{awf} (MHz)	2D: 6.05	PW: 6.25		2D: 6.10 PW: 4.18		2D: 6.10 PW: 4.18
Other Information	pr (Hz)	2D: 9.4	-	-	-	-	-
	sr (Hz)	2D: 9.4	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 202.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 9.1	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 17.1	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 3.59	-	-	-	-	-

Table 1-19: Probe Model: L3-12-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2D PW	PW		2D PW		2D PW
	Frequency (MHz)	PW: 4.2 2D: 8.0	PW: 6.2		PW: 4.2 2D: 8.0		PW: 4.2 2D: 8.0
	Doppler PRF (kHz)	PW: 1.08	PW: 9.06		PW: 1.08		PW: 1.08
	Sample Volume Size (mm)	PW: 6.0	PW: 16.0		PW: 6.0		PW: 6.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 5.1 2D: 6.6	PW: 12.2		PW: 12.7 2D: 6.6		PW: 12.7 2D: 6.6
	Image Width	2D: Wide	NA		2D: Wide		2D: Wide
	Image Depth (cm)	13.1	NA		13.1		13.1
	Frame Rate (Hz)	9.4	NA		9.4		9.4

L3-12-D (continued)

Table 1-20: Probe Model: L3-12-D; Mode Group: Shear Wave Elastography Mode (See Table 1-3 : Operating Modes Summary Table)

Index label	MI	TIS		TIB		TIC
		At surface	Below surface	At surface	Below surface	
Maximum index value	1.42	0.37		0.98		0.86
Index component value		SWE: 0.37	SWE: 0.31	SWE: 0.33	SWE: 0.98	
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	SWE: 3.17				
	P (mW)		SWE: 19.6		SWE: 34.8	SWE: 19.6
	P_{1x1} (mW)		SWE: 15.4		SWE: 13.8	
	z_s (cm)		SWE: 1.2			
	z_b (cm)				SWE: 1.8	
	z_{MI} (cm)	SWE: 1.3				
	$z_{pII,\alpha}$ (cm)	SWE: 1.3				
	f_{awf} (MHz)	SWE: 5.00	SWE: 5.00	SWE: 5.00		SWE: 5.00
Other Information	p_{rr} (Hz)	SWE: 2.34				
	srr (Hz)	SWE: 1.17				
	n_{pps}	SWE: 2				
	$I_{pa,\alpha}$ at $z_{pII,\alpha}$ (W/cm2)	SWE: 491.9				
	$I_{spta,\alpha}$ at $z_{pII,\alpha}$ or $z_{sII,\alpha}$ (mW/cm2)	SWE: 186.2				
	I_{spta} at z_{pII} or z_{sII} (mW/cm2)	SWE 407.5				
	p_r at z_{pII} (MPa)	SWE: 3.17				
Operating Control Conditions						
	Power (%)	SWE: 100	SWE: 100	SWE: 100	SWE: 100	SWE: 100
	Frequency (MHz)	SWE: 5.00	SWE: 5.00	SWE: 5.00	SWE: 5.00	SWE: 5.00
	ROI Center (cm)	SWE: 4.1	SWE: 4.1	SWE: 4.1	SWE: 1.1	SWE: 4.1
	ROI Span (mm)	SWE: 20.0	SWE: 20.0	SWE: 20.0	SWE: 20.0	SWE: 20.0
	Type	SWE	SWE	SWE	SWE	SWE

C3-10-D

Table 1-21: Probe Model: C3-10-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.29	1.01		1.58		2.41
Index Component Value		-	CON: 1	CON: 1	CHI: 0.26 MMCHI: 0.46	CHI: 0.26 MMCHI: 1.33	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	BF: 2.92	-	-	-	-	-
	P (mW)	-	CON: 124.1		CHI: 34.3 MMCHI: 35.5		CON: 124.1
	P_{1x1} (mW)	-	CON: 58.8		CHI: 15.7 MMCHI: 28.8		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	MMCHI: 1.5	-
	z_{MI} (cm)	BF: 1.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	BF: 1.5	-	-	-	-	-
	f_{awf} (MHz)	BF: 5.15	CON: 3.60		CHI: 3.35 MMCHI: 3.35		CON: 3.60
Other Information	pr (Hz)	BF: 29.3	-	-	-	-	-
	sr (Hz)	BF: 29.3	-	-	-	-	-
	n_{pps}	BF: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	BF: 235.0	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	BF: 22.6	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	BF: 38.5	-	-	-	-	-
	p_r at z_{pii} (MPa)	BF: 3.82	-	-	-	-	-

Table 1-21: Probe Model: C3-10-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2DBF	2Dcontrast		2DHAR MMharmonic		2Dcontrast
	Frequency (MHz)	BF: 8.0	CON: 7.0		CHI: 6.0 MMCHI: 6.0		CON: 7.0
	Focal Position (cm)	BF: 4.6	CON: 13.4		CHI: 10.6 MMCHI: 13.4		CON: 13.4
	Image Width	BF: Wide	CON: Wide		CHI: Wide		CON: Wide
	Image Depth (cm)	14.1	14.1		14.1		14.1
	Frame Rate (Hz)	29.3	15.1		20.4		15.1

C3-10-D (continued)

Table 1-22: Probe Model: C3-10-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.22	1.48		1.48		2.11
Index Component Value		-	2D: 0.06 CF: 1.41	2D: 0.06 CF: 1.41	2D: 0.06 CF: 1.41	2D: 0.06 CF: 1.41	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 2.74	-	-	-	-	-
	P (mW)	-	2D: 5.9 CF: 101.7		2D: 5.9 CF: 101.7		CHI: 73.3 CF: 35.1
	$P_{1 \times 1}$ (mW)	-	2D: 2.6 CF: 58.7		2D: 2.6 CF: 58.7		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	Note B	-
	z_{MI} (cm)	2D: 1.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.5	-	-	-	-	-
	f_{awf} (MHz)	2D: 5.05	2D: 5.10 CF: 5.05		2D: 5.10 CF: 5.05		CHI: 3.78 CF: 3.85
Other Information	pr_r (Hz)	2D: 44.0	-	-	-	-	-
	sr_r (Hz)	2D: 44.0	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 233.8	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 42.1	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 71.0	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 3.56	-	-	-	-	-

Table 1-22: Probe Model: C3-10-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	NeoHead	Abdo		Abdo		Abdo
	Imaging Mode	2D CF	2D CF		2D CF		2DHAR ELASTO
	Frequency (MHz)	CF: 3.9 2D: 6.0	CF: 5.3 2D: 6.0		CF: 5.3 2D: 6.0		CF: 3.9 CHI: 8.0
	Color / Doppler PRF (kHz)	CF: 4.69	CF: 4.69		CF: 4.69		CF: 0.52
	ROI_Span / Sample_Vol_Size (mm)	CF: 140.0	CF: 10.0		CF: 10.0		CF: 80.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 7.1 2D: 7.1	CF: 13.6 2D: 7.1		CF: 13.6 2D: 7.1		CF: 4.1 CHI: 20.1
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Narrow 2D: Wide	CF: Medium 2D: Wide		CF: Medium 2D: Wide		CF: Medium CHI: Wide
	Image Depth (cm)	14.1	14.1		14.1		8.1
	Frame Rate (Hz)	44.0	6.8		6.8		36.3

C3-10-D (continued)

Table 1-23: Probe Model: C3-10-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.26	1.24		1.50		1.80
Index Component Value		-	CHI: 0.3 PW: 0.94	CHI: 0.3 PW: 0.54	CHI: 0.25 PW: 0.57	CHI: 0.25 PW: 1.26	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 2.29	-	-	-	-	-
	P (mW)	-	CHI: 41.3 PW: 34.9		CHI: 33.6 PW: 31.7		CHI: 58.1 PW: 25.5
	$P_{1 \times 1}$ (mW)	-	CHI: 18.9 PW: 31.6		CHI: 15.4 PW: 28.7		-
	z_s (cm)	-	-	PW: 1.5	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.5	-
	z_{MI} (cm)	CHI: 1.4	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 1.5	-	-	-	-	-
	f_{awf} (MHz)	CHI: 3.30	CHI: 3.35 PW: 6.25		CHI: 3.38 PW: 4.18		CHI: 3.80 PW: 4.18
Other Information	prr (Hz)	CHI: 25.2	-	-	-	-	-
	srr (Hz)	CHI: 25.2	-	-	-	-	-
	η_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 132.5	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 21.2	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 29.8	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 2.46	-	-	-	-	-

Table 1-23: Probe Model: C3-10-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Abdo	Abdo		Abdo		NeoHead
	Imaging Mode	2DHAR PW	2DHAR PW		2DHAR PW		2DHAR PW
	Frequency (MHz)	PW: 4.2 CHI: 6.0	PW: 6.2 CHI: 6.0		PW: 4.2 CHI: 6.0		PW: 4.2 CHI: 8.0
	Doppler PRF (kHz)	PW: 1.08	PW: 1.62		PW: 1.08		PW: 1.08
	Sample Volume Size (mm)	PW: 16.0	PW: 6.0		PW: 6.0		PW: 6.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 0.9 CHI: 10.6	PW: 11.1 CHI: 10.6		PW: 12.9 CHI: 10.6		PW: 9.5 CHI: 20.1
	Image Width	CHI: Wide	CHI: Wide		CHI: Wide		CHI: Wide
	Image Depth (cm)	14.1	14.1		14.1		9.9
	Frame Rate (Hz)	25.2	37.8		25.2		47.0

9L-D

Table 1-24: Probe Model: 9L-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.50	0.75		1.13		1.86
Index Component Value		-	CHI: 0.75	CHI: 0.75	CHI: 0.21 MMCHI: 0.44	CHI: 0.21 MMCHI: 0.92	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 3.09	-	-	-	-	-
	P (mW)	-	CHI: 136.7		CHI: 36.4 MMCHI: 20.1		CHI: 136.7
	P_{1x1} (mW)	-	CHI: 35.0		CHI: 8.9 MMCHI: 19.0		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	MMCHI: 1.6	-
	z_{MI} (cm)	CHI: 1.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 2.3	-	-	-	-	-
	f_{awf} (MHz)	CHI: 4.25	CHI: 4.53		CHI: 4.98 MMCHI: 4.85		CHI: 4.53
Other Information	p_{rr} (Hz)	CHI: 23.7	-	-	-	-	-
	s_{rr} (Hz)	CHI: 23.7	-	-	-	-	-
	η_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 268.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 93.7	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 184.1	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 3.48	-	-	-	-	-

Table 1-24: Probe Model: 9L-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2DHAR	2DHAR		2DHAR MMharmonic		2DHAR
	Frequency (MHz)	CHI: 8.0	CHI: 8.0		CHI: 7.0 MMCHI: 9.0		CHI: 8.0
	Focal Position (cm)	CHI: 9.1	CHI: 9.1		CHI: 9.1 MMCHI: 6.1		CHI: 9.1
	Image Width	CHI: Wide	CHI: Wide		CHI: Wide		CHI: Wide
	Image Depth (cm)	12.1	12.1		12.1		12.1
	Frame Rate (Hz)	23.7	23.7		14.5		23.7

9L-D (continued)

Table 1-25: Probe Model: 9L-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.42	1.17		2.54		2.25
Index Component Value		-	2D: 0.19 MM: 0.04 CM: 0.74	2D: 0.19 MM: 0.03 CM: 0.95	2D: 0.22 MM: 0.04 CM: 0.7	2D: 0.22 MM: 0.09 CM: 2.23	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 3	-	-	-	-	-
	P (mW)	-	2D: 35.9 MM: 2.2 CM: 84.4		2D: 41.6 MM: 2.1 CM: 83.2		2D: 41.6 MM: 2.1 CM: 83.2
	P_{1x1} (mW)	-	2D: 9.0 MM: 1.9 CM: 39.9		2D: 10.5 MM: 1.8 CM: 39.3		-
	z_s (cm)	-	-	MM: 1.7 CM: 1.9	-	-	-
	z_b (cm)	-	-	-	-	MM: 1.7 CM: 1.9	-
	z_{MI} (cm)	2D: 1.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 2.0	-	-	-	-	-
	f_{awf} (MHz)	2D: 4.45	2D: 4.50 MM: 4.50 CM: 3.90		2D: 4.40 MM: 4.55 CM: 3.75		2D: 4.40 MM: 4.55 CM: 3.75
Other Information	p_{rr} (Hz)	2D: 3.0	-	-	-	-	-
	s_{rr} (Hz)	2D: 3.0	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 387.6	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 6.8	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 12.5	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 3.69	-	-	-	-	-

Table 1-25: Probe Model: 9L-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2D PW CF	2D MM CM		2D MM CM		2D MM CM
	Frequency (MHz)	CF: 4.5 PW: 4.1 2D: 4.0	CM: 4.5 2D: 4.0 MM: 4.0		CM: 4.5 2D: 4.0 MM: 4.0		CM: 4.5 2D: 4.0 MM: 4.0
	Color / Doppler PRF (kHz)	CF: 4.85 PW: 1.14	CM: 5.23		CM: 5.23		CM: 5.23
	ROI_Span / Sample_Vol_Size (mm)	CF: 70.0 PW: 1.0	NA		NA		NA
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 3.6 PW: 10.1 2D: 9.1	CM: 8.5 2D: 9.1 MM: 6.1		CM: 8.5 2D: 10.6 MM: 6.1		CM: 8.5 2D: 10.6 MM: 6.1
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Medium 2D: Wide	2D: Wide		2D: Wide		2D: Wide
	Image Depth (cm)	12.1	12.1		12.1		12.1
	Frame Rate (Hz)	3.0	29.8		29.8		29.8

9L-D (continued)

Table 1-26: Probe Model: 9L-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.16	0.86		1.92		1.19
Index Component Value		-	2D: 0.02 PW: 0.84	2D: 0.02 PW: 0.73	PW: 0.78	PW: 1.92	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	PW: 2.38	-	-	-	-	-
	P (mW)	-	2D: 2.3 PW: 68.0		PW: 63.6		2D: 2.3 PW: 68.0
	P_{1x1} (mW)	-	2D: 0.6 PW: 41.6		PW: 38.9		-
	z_s (cm)	-	-	PW: 2.2	-	-	-
	z_b (cm)	-	-	-	-	PW: 2.2	-
	z_{MI} (cm)	PW: 1.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	PW: 2.2	-	-	-	-	-
	f_{awf} (MHz)	PW: 4.20	2D: 6.65 PW: 4.25		PW: 4.20		2D: 6.65 PW: 4.25
Other Information	p_{rr} (Hz)	PW: 1138.9	-	-	-	-	-
	s_{rr} (Hz)	Note A	-	-	-	-	-
	n_{pps}	Note A	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	PW: 260.8	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	PW: 270.3	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	PW: 504.4	-	-	-	-	-
	p_r at z_{pii} (MPa)	PW: 2.81	-	-	-	-	-

Table 1-26: Probe Model: 9L-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	PW	2D PW		PW		2D PW
	Frequency (MHz)	PW: 4.1	PW: 4.1 2D: 7.0		PW: 4.1		PW: 4.1 2D: 7.0
	Doppler PRF (kHz)	PW: 1.14	PW: 1.14		PW: 1.14		PW: 1.14
	Sample Volume Size (mm)	PW: 1.0	PW: 1.0		PW: 1.0		PW: 1.0
	Sample_Volume_Depth/ Focal_Position (cm)	PW: 8.1	PW: 10.0 2D: 5.1		PW: 8.1		PW: 10.0 2D: 5.1
	Image Width	NA	2D: Wide		NA		2D: Wide
	Image Depth (cm)	NA	10.1		NA		10.1
	Frame Rate (Hz)	NA	17.0		NA		17.0

9L-D (continued)

Table 1-27: Probe Model: 9L-D; Mode Group: Shear Wave Elastography Mode (See Table 1-3 : Operating Modes Summary Table)

Index label		MI	TIS		TIB		TIC
			At surface	Below surface	At surface	Below surface	
Maximum index value		1.45	0.65		1.26		1.33
Index component value			SWE: 0.65	SWE: 0.40	SWE: 0.65	SWE: 1.26	
Acoustic Parameter	$p_{r,a}$ at z_{MI} (MPa)	SWE: 3.24					
	P (mW)		SWE: 79.2		SWE: 79.2		SWE: 79.2
	P_{1x1} (mW)		SWE: 27.3		SWE: 27.3		
	z_s (cm)			SWE: 1.3			
	z_b (cm)					SWE: 1.6	
	z_{MI} (cm)	SWE: 2.1					
	$z_{pII,a}$ (cm)	SWE: 2.1					
	f_{BWF} (MHz)	SWE: 5.00	SWE: 5.00		SWE: 5.00		SWE: 5.00
Other Information	p_{rr} (Hz)	SWE: 5.04					
	s_{rr} (Hz)	SWE: 5.04					
	n_{pps}	SWE: 1					
	$I_{pa,a}$ at $z_{pII,a}$ (W/cm2)	SWE: 737.9					
	$I_{spla,a}$ at $z_{pII,a}$ or $z_{sII,a}$ (mW/cm2)	SWE: 403.8					
	I_{spla} at z_{pII} or z_{sII} (mW/cm2)	SWE: 862.8					
	p_r at z_{pII} (MPa)	SWE: 3.24					
Operating Control Conditions							
	Power (%)	SWE: 100	SWE: 100	SWE: 100	SWE: 100	SWE: 100	SWE: 100
	Frequency (MHz)	SWE: 5.00	SWE: 5.00	SWE: 5.00	SWE: 5.00	SWE: 5.00	SWE: 5.00
	ROI Center (cm)	SWE: 1.1	SWE: 2.1	SWE: 2.1	SWE: 2.1	SWE: 2.1	SWE: 2.1
	ROI Span (mm)	SWE: 20.0	SWE: 20	SWE: 20	SWE: 20	SWE: 20	SWE: 20
	Type	SWE	SWE	SWE	SWE	SWE	SWE

6S-D

Table 1-28: Probe Model: 6S-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.49	0.46		0.64		0.87
Index Component Value		-	2D: 0.42 MM: 0.04	2D: 0.42 MM: 0.03	2D: 0.35 MM: 0.10	2D: 0.35 MM: 0.29	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	MM: 3	-	-	-	-	-
	P (mW)	-	2D: 21.4 MM: 1.5		2D: 14.4 MM: 5.0		2D: 21.4 MM: 1.5
	$P_{1 \times 1}$ (mW)	-	2D: 21.4 MM: 1.5		2D: 14.4 MM: 5.0		-
	z_s (cm)	-	-	MM: 0.6	-	-	-
	z_b (cm)	-	-	-	-	MM: 1.4	-
	z_{MI} (cm)	MM: 0.6	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	MM: 1.0	-	-	-	-	-
	f_{awf} (MHz)	MM: 4.05	2D: 4.10 MM: 5.85		2D: 5.10 MM: 4.20		2D: 4.10 MM: 5.85
Other Information	pr_r (Hz)	MM: 1000.0	-	-	-	-	-
	srr (Hz)	Note A	-	-	-	-	-
	n_{pps}	Note A	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	MM: 314.9	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	MM: 102.5	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	MM: 135.6	-	-	-	-	-
	p_r at z_{pii} (MPa)	MM: 2.78	-	-	-	-	-

Table 1-28: Probe Model: 6S-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table (Continued))

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Ped	Ped		Ped		Ped
	Imaging Mode	2D MM	2D MM		2D MM		2D MM
	Frequency (MHz)	2D: 4.0 MM: 4.0	2D: 4.0 MM: 6.5		2D: 5.0 MM: 4.0		2D: 4.0 MM: 6.5
	Focal Position (cm)	2D: 1.1 MM: 1.1	2D: 1.1 MM: 0.3		2D: 1.6 MM: 1.6		2D: 1.1 MM: 0.3
	Image Width	2D: Wide	2D: Wide		2D: Wide		2D: Wide
	Image Depth (cm)	2.1	2.1		2.1		2.1
	Frame Rate (Hz)	NA	100.0		100.0		100.0

6S-D (continued)

Table 1-29: Probe Model: 6S-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.92	0.56		0.56		0.67
Index Component Value		-	CHI: 0.02 CF: 0.54	CHI: 0.02 CF: 0.54	CHI: 0.02 CF: 0.54	CHI: 0.02 CF: 0.54	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 1.86	-	-	-	-	-
	P (mW)	-	CHI: 2.0 CF: 26.9		CHI: 2.0 CF: 26.9		CHI: 11.8 CF: 7.0
	$P_{1 \times 1}$ (mW)	-	CHI: 1.3 CF: 26.9		CHI: 1.3 CF: 26.9		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	Note B	-
	z_{MI} (cm)	2D: 0.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.0	-	-	-	-	-
	f_{awf} (MHz)	2D: 4.10	CHI: 3.30 CF: 4.20		CHI: 3.30 CF: 4.20		CHI: 3.50 CF: 2.60
Other Information	pr_r (Hz)	2D: 70.7	-	-	-	-	-
	srr (Hz)	2D: 70.7	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 107.5	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 11.7	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 15.5	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 1.80	-	-	-	-	-

Table 1-29: Probe Model: 6S-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Ped	Ped		Ped		Ped
	Imaging Mode	2D CF	2DHAR CF		2DHAR CF		2DHAR CF
	Frequency (MHz)	CF: 2.7 2D: 4.0	CF: 4.2 CHI: 6.3		CF: 4.2 CHI: 6.3		CF: 2.7 CHI: 6.3
	Color / Doppler PRF (kHz)	CF: 1.53	CF: 2.41		CF: 2.41		CF: 1.53
	ROI_Span / Sample_Vol_Size (mm)	CF: 5.0	CF: 160.0		CF: 160.0		CF: 20.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 0.3 2D: 1.1	CF: 8.1 CHI: 8.1		CF: 8.1 CHI: 8.1		CF: 1.1 CHI: 1.1
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Narrow 2D: Wide	CF: Medium CHI: Wide		CF: Medium CHI: Wide		CF: Narrow CHI: Wide
	Image Depth (cm)	2.1	16.1		16.1		2.1
	Frame Rate (Hz)	70.7	2.0		2.0		54.5

6S-D (continued)

Table 1-30: Probe Model: 6S-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.11	1.18		2.49		2.32
Index Component Value		-	2D: 0.76 PW: 0.41	2D: 0.76 PW: 0.32	CHI: 0.35 PW: 0.59	CHI: 0.35 PW: 2.14	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	PW: 1.9	-	-	-	-	-
	P (mW)	-	2D: 39.5 PW: 24.5		CHI: 20.9 PW: 41.9		2D: 39.5 PW: 24.5
	$P_{1 \times 1}$ (mW)	-	2D: 39.5 PW: 24.5		CHI: 20.9 PW: 41.9		-
	z_s (cm)	-	-	PW: 1.0	-	-	-
	z_b (cm)	-	-	-	-	PW: 2.7	-
	z_{MI} (cm)	PW: 2.8	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	PW: 2.8	-	-	-	-	-
	f_{awf} (MHz)	PW: 2.95	2D: 4.05 PW: 3.55		CHI: 3.50 PW: 2.95		2D: 4.05 PW: 3.55
Other Information	p_{rr} (Hz)	PW: 1760.6	-	-	-	-	-
	s_{rr} (Hz)	Note A	-	-	-	-	-
	η_{pps}	Note A	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/ cm ²)	PW: 236.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/ cm ²)	PW: 479.2	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/ cm ²)	PW: 862.3	-	-	-	-	-
	p_r at z_{pii} (MPa)	PW: 2.47	-	-	-	-	-

Table 1-30: Probe Model: 6S-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Ped	Ped		Ped		Ped
	Imaging Mode	2DHAR PW	2D PW		2DHAR PW		2D PW
	Frequency (MHz)	PW: 2.8 CHI: 6.3	PW: 3.6 2D: 4.0		PW: 2.8 CHI: 6.3		PW: 3.6 2D: 4.0
	Doppler PRF (kHz)	PW: 1.76	PW: 2.09		PW: 1.76		PW: 2.09
	Sample Volume Size (mm)	PW: 1.0	PW: 1.0		PW: 1.0		PW: 1.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 2.0 CHI: 1.1	PW: 0.6 2D: 1.1		PW: 2.0 CHI: 1.1		PW: 0.6 2D: 1.1
	Image Width	CHI: Wide	2D: Wide		CHI: Wide		2D: Wide
	Image Depth (cm)	2.1	2.1		2.1		2.1
	Frame Rate (Hz)	27.9	104.5		27.9		104.5

12S-D

Table 1-31: Probe Model: 12S-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.31	0.76		0.90		0.97
Index Component Value		-	CHI: 0.75	CHI: 0.75	CHI: 0.42 MMCHI: 0.33	CHI: 0.42 MMCHI: 0.48	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 2.97	-	-	-	-	-
	P (mW)	-	CHI: 27.5		CHI: 17.1 MMCHI: 14.1		CHI: 17.1 MMCHI: 14.1
	P_{1x1} (mW)	-	CHI: 27.5		CHI: 17.1 MMCHI: 14.1		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	MMCHI: 1.4	-
	z_{MI} (cm)	CHI: 2.3	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 2.3	-	-	-	-	-
	f_{awf} (MHz)	CHI: 5.15	CHI: 5.80		CHI: 5.15 MMCHI: 4.85		CHI: 5.15 MMCHI: 4.85
Other Information	p_{rr} (Hz)	CHI: 45.9	-	-	-	-	-
	s_{rr} (Hz)	CHI: 45.9	-	-	-	-	-
	η_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 368.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 15.8	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 35.8	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 4.47	-	-	-	-	-

Table 1-31: Probe Model: 12S-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

	Index Label	MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	PedAbd	PedAbd		Ped		Ped
	Imaging Mode	2DHAR	2DHAR		2DHAR MMharmonic		2DHAR MMharm onic
	Frequency (MHz)	CHI: 8.0	CHI: 9.0		CHI: 7.0 MMCHI: 7.0		CHI: 7.0 MMCHI: 7.0
	Focal Position (cm)	CHI: 3.1	CHI: 6.1		CHI: 11.3 MMCHI: 13.6		CHI: 11.3 MMCHI: 13.6
	Image Width	CHI: Medium	CHI: Medium		CHI: Wide		CHI: Wide
	Image Depth (cm)	15.1	15.1		15.1		15.1
	Frame Rate (Hz)	45.9	45.9		37.0		37.0

12S-D (continued)

Table 1-32: Probe Model: 12S-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.35	0.66		1.02		1.35
Index Component Value		-	CHI: 0.03 CF: 0.63	CHI: 0.03 CF: 0.63	CHI: 0.42 MMCHI: 0.13 CM: 0.10	CHI: 0.42 MMCHI: 0.24 CM: 0.36	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 3.62	-	-	-	-	-
	P (mW)	-	CHI: 0.9 CF: 18.5		CHI: 15.8 MMCHI: 5.3 CM: 4.5		CHI: 0.6 CF: 19.0
	$P_{1 \times 1}$ (mW)	-	CHI: 0.9 CF: 18.5		CHI: 15.8 MMCHI: 5.3 CM: 4.5		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	MMCHI: 1.6 CM: 1.9	-
	z_{MI} (cm)	2D: 1.4	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.4	-	-	-	-	-
	f_{awf} (MHz)	2D: 7.20	CHI: 5.70 CF: 7.15		CHI: 5.55 MMCHI: 5.15 CM: 4.65		CHI: 5.25 CF: 6.30

Table 1-32: Probe Model: 12S-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Other Information	p_{rr} (Hz)	2D: 37.1	-	-	-	-	-
	s_{rr} (Hz)	2D: 37.1	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 390.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 6.0	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 12.1	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 5.13	-	-	-	-	-
Operating	Application	Ped	Ped		Ped		Ped
	Imaging Mode	2D MM TVM	2DHAR CF		2DHAR MMharmonic TVM		2DHAR CF
	Frequency (MHz)	CM: 4.9 2D: 7.0 MM: 7.0	CF: 7.3 CHI: 9.0		CM: 4.9 CHI: 9.0 MMCHI: 9.0		CF: 6.3 CHI: 7.0
	Color / Doppler PRF (kHz)	CM: 12.50	CF: 0.18		CM: 8.93		CF: 0.16
	ROI_Span / Sample_Vol_Size (mm)	NA	CF: 10.0		NA		CF: 10.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CM: 1.1 2D: 1.6 MM: 1.6	CF: 0.6 CHI: 1.6		CM: 3.1 CHI: 4.6 MMCHI: 4.6		CF: 0.6 CHI: 1.6
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	2D: Wide	CF: Medium CHI: Medium		CHI: Wide		CF: Medium CHI: Medium
	Image Depth (cm)	2.1	15.1		6.1		15.1
	Frame Rate (Hz)	37.1	CF: 12.8 CHI: 6.4		41.6		CF: 11.4 CHI: 5.7

12S-D (continued)

Table 1-33: Probe Model: 12S-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.37	0.54		0.99		0.74
Index Component Value		-	PW: 0.54	PW: 0.37	PW: 0.54	PW: 0.99	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 3.58	-	-	-	-	-
	P (mW)	-	PW: 22.6		PW: 22.6		PW: 22.6
	P_{1x1} (mW)	-	PW: 22.6		PW: 22.6		-
	z_s (cm)	-	-	PW: 1.1	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.6	-
	z_{MI} (cm)	2D: 1.4	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.4	-	-	-	-	-
	f_{awf} (MHz)	2D: 6.80	PW: 5.00		PW: 5.00		PW: 5.00
Other Information	p_{rr} (Hz)	2D: 15.5	-	-	-	-	-
	s_{rr} (Hz)	2D: 15.5	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 338.0	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 6.6	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 12.8	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 4.97	-	-	-	-	-

Table 1-33: Probe Model: 12S-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Ped	Ped		Ped		Ped
	Imaging Mode	2D PW	PW		PW		PW
	Frequency (MHz)	PW: 8.3 2D: 7.0	PW: 5.0		PW: 5.0		PW: 5.0
	Doppler PRF (kHz)	PW: 4.85	PW: 2.97		PW: 2.97		PW: 2.97
	Sample Volume Size (mm)	PW: 8.0	PW: 1.0		PW: 1.0		PW: 1.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 1.6 2D: 1.6	PW: 3.6		PW: 3.6		PW: 3.6
	Image Width	2D: Wide	NA		NA		NA
	Image Depth (cm)	2.1	NA		NA		NA
	Frame Rate (Hz)	15.5	NA		NA		NA

12S-D (continued)

Table 1-34: Probe Model: 12S-D; Mode Group: Continuous Wave Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.34	0.26		0.76		0.44
Index Component Value		-	CHI: 0.07 CW: 0.19	CHI: 0.07 CW: 0.15	CHI: 0.07 CW: 0.19	CHI: 0.07 CW: 0.69	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 3.08	-	-	-	-	-
	P (mW)	-	CHI: 2.6 CW: 8.1		CHI: 2.6 CW: 8.1		CHI: 2.6 CW: 8.1
	$P_{1 \times 1}$ (mW)	-	CHI: 2.6 CW: 8.1		CHI: 2.6 CW: 8.1		-
	z_s (cm)	-	-	CW: 0.8	-	-	-
	z_b (cm)	-	-	-	-	CW: 1.4	-
	z_{MI} (cm)	CHI: 2.3	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 2.3	-	-	-	-	-
	f_{awf} (MHz)	CHI: 5.30	CHI: 5.50 CW: 5.00		CHI: 5.50 CW: 5.00		CHI: 5.50 CW: 5.00
Other Information	p_{rr} (Hz)	CHI: 5.2	-	-	-	-	-
	s_{rr} (Hz)	CHI: 5.2	-	-	-	-	-
	η_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 324.8	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 2.0	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 4.6	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 4.69	-	-	-	-	-

Table 1-34: Probe Model: 12S-D; Mode Group: Continuous Wave Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	PedAbd	PedAbd		PedAbd		PedAbd
	Imaging Mode	2DHAR CW	2DHAR CW		2DHAR CW		2DHAR CW
	Frequency (MHz)	CW: 5.0 CHI: 8.0	CW: 5.0 CHI: 8.0		CW: 5.0 CHI: 8.0		CW: 5.0 CHI: 8.0
	Sample_Volume_Depth / Focal_Position (cm)	CW: 2.1	CW: 2.1		CW: 2.1		CW: 2.1
	Image Width	CHI: Medium	CHI: Medium		CHI: Medium		CHI: Medium
	Image Depth (cm)	15.1	15.1		15.1		15.1
	Frame Rate (Hz)	5.2	5.2		5.2		5.2

C2-7(VN)-D

Table 1-35: Probe Model: C2-7(VN)-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.95	0.98		1.42		1.45
Index Component Value		-	BF: 0.98	BF: 0.98	CHI: 0.56 MMCHI: 0.30	CHI: 0.56 MMCHI: 0.86	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	BF: 1.97	-	-	-	-	-
	P (mW)	-	BF: 52.8		CHI: 40.5 MMCHI: 21.0		BF: 117.3
	$P_{1 \times 1}$ (mW)	-	BF: 47.4		CHI: 36.3 MMCHI: 20.0		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	MMCHI: 1.5	-
	z_{MI} (cm)	BF: 1.3	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	BF: 1.3	-	-	-	-	-
	f_{awf} (MHz)	BF: 4.30	BF: 4.35		CHI: 3.20 MMCHI: 3.18		BF: 4.35
Other Information	p_{rr} (Hz)	BF: 65.7	-	-	-	-	-
	s_{rr} (Hz)	BF: 65.7	-	-	-	-	-
	η_{pps}	BF: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	BF: 111.0	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	BF: 27.3	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	BF: 40.2	-	-	-	-	-
	p_r at z_{pii} (MPa)	BF: 2.54	-	-	-	-	-

Table 1-35: Probe Model: C2-7(VN)-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2DBF	2DBF		2DHAR MMharmonic		2DBF
	Frequency (MHz)	BF: 4.0	BF: 4.0		CHI: 6.0 MMCHI: 6.0		BF: 4.0
	Focal Position (cm)	BF: 3.1	BF: 3.1		CHI: 3.1 MMCHI: 3.1		BF: 3.1
	Image Width	BF: Wide	BF: Narrow		CHI: Narrow		BF: Wide
	Image Depth (cm)	4.1	4.1		4.1		4.1
	Frame Rate (Hz)	65.7	202.0		76.9		85.2

C2-7(VN)-D (continued)

Table 1-36: Probe Model: C2-7(VN)-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.06	1.26		1.55		1.30
Index Component Value		-	CHI: 0.08 CF: 1.18	CHI: 0.08 CF: 1.18	CHI: 0.09 PW: 0.21 CF: 0.68	CHI: 0.09 PW: 0.78 CF: 0.68	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 1.79	-	-	-	-	-
	P (mW)	-	CHI: 5.8 CF: 66.0		CHI: 7.0 PW: 15.9 CF: 37.5		CHI: 19.3 PW: 57.6 CF: 18.3
	P_{1x1} (mW)	-	CHI: 5.2 CF: 62.8		CHI: 6.2 PW: 14.0 CF: 35.7		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	PW: 3.7	-
	z_{MI} (cm)	CHI: 3.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 3.5	-	-	-	-	-
	f_{awf} (MHz)	CHI: 2.85	CHI: 3.18 CF: 3.95		CHI: 3.20 PW: 3.20 CF: 4.00		CHI: 2.95 PW: 3.15 CF: 3.95

Table 1-36: Probe Model: C2-7(VN)-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Other Information	p_{rr} (Hz)	CHI: 1.5	-	-	-	-	-
	s_{rr} (Hz)	CHI: 1.5	-	-	-	-	-
	n_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 142.8	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 2.5	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 5.0	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 2.53	-	-	-	-	-
Operating Control Conditions	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2DHAR PW CF	2DHAR CF		2DHAR PW CF		2DHAR PW CF
	Frequency (MHz)	CF: 3.1 PW: 3.1 CHI: 6.0	CF: 3.1 CHI: 6.0		CF: 3.1 PW: 3.1 CHI: 6.0		CF: 3.1 PW: 3.1 CHI: 6.0
	Color / Doppler PRF (kHz)	CF: 0.16 PW: 1.35	CF: 0.17		CF: 1.35 PW: 1.35		CF: 0.16 PW: 1.35
	ROI_Span / Sample_Vol_Size (mm)	CF: 0.1 PW: 1.0	CF: 2.5		CF: 0.1 PW: 1.0		CF: 0.1 PW: 1.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 0.1 PW: 30.0 CHI: 22.6	CF: 4.0 CHI: 3.1		CF: 0.1 PW: 4.0 CHI: 3.1		CF: 0.1 PW: 30.0 CHI: 22.6
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Wide CHI: Wide	CF: Narrow CHI: Narrow		CF: Narrow CHI: Narrow		CF: Wide CHI: Wide
	Image Depth (cm)	30.1	4.3		4.1		30.1
	Frame Rate (Hz)	1.5	9.1		15.0		1.5

C2-7(VN)-D (continued)

Table 1-37: Probe Model: C2-7(VN)-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.03	0.89		1.46		1.31
Index Component Value		-	CHI: 0.68 PW: 0.21	CHI: 0.68 PW: 0.16	CHI: 0.68 PW: 0.21	CHI: 0.68 PW: 0.78	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 1.51	-	-	-	-	-
	P (mW)	-	CHI: 49.9 PW: 15.7		CHI: 49.9 PW: 15.7		CHI: 20.4 PW: 73.0
	$P_{1 \times 1}$ (mW)	-	CHI: 44.7 PW: 13.9		CHI: 44.7 PW: 13.9		-
	z_s (cm)	-	-	PW: 1.9	-	-	-
	z_b (cm)	-	-	-	-	PW: 3.7	-
	z_{MI} (cm)	CHI: 3.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 3.5	-	-	-	-	-
	f_{awf} (MHz)	CHI: 2.15	CHI: 3.20 PW: 3.20		CHI: 3.20 PW: 3.20		CHI: 2.13 PW: 3.15
Other Information	p_{rr} (Hz)	CHI: 2.7	-	-	-	-	-
	s_{rr} (Hz)	CHI: 2.7	-	-	-	-	-
	n_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 108.5	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 2.3	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 3.9	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 1.95	-	-	-	-	-

Table 1-37: Probe Model: C2-7(VN)-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2DHAR PW	2DHAR PW		2DHAR PW		2DHAR PW
	Frequency (MHz)	PW: 3.1 CHI: 4.0	PW: 3.1 CHI: 6.0		PW: 3.1 CHI: 6.0		PW: 3.1 CHI: 4.0
	Doppler PRF (kHz)	PW: 1.35	PW: 1.35		PW: 1.35		PW: 1.35
	Sample Volume Size (mm)	PW: 1.0	PW: 1.0		PW: 1.0		PW: 1.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 30.0 CHI: 22.6	PW: 4.0 CHI: 3.1		PW: 4.0 CHI: 3.1		PW: 30.0 CHI: 22.6
	Image Width	CHI: Wide	CHI: Narrow		CHI: Narrow		CHI: Wide
	Image Depth (cm)	30.1	4.1		4.1		30.1
	Frame Rate (Hz)	2.7	103.5		103.5		2.7

L6-24-D

Table 1-38: Probe Model: L6-24-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.86	0.25		0.33		0.37
Index Component Value		-	CHI: 0.08 MMCHI: 0.18	CHI: 0.08 MMCHI: 0.12	CHI: 0.10 MMCHI: 0.10	CHI: 0.10 MMCHI: 0.22	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 2.52	-	-	-	-	-
	P (mW)	-	CHI: 4.2 MMCHI: 6.0		CHI: 5.6 MMCHI: 2.3		CHI: 12.0
	$P_{1 \times 1}$ (mW)	-	CHI: 1.8 MMCHI: 4.2		CHI: 2.4 MMCHI: 2.3		-
	z_s (cm)	-	-	MMCHI: 1.1	-	-	-
	z_b (cm)	-	-	-	-	MMCHI: 0.7	-
	z_{MI} (cm)	CHI: 0.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 0.9	-	-	-	-	-
	f_{awf} (MHz)	CHI: 8.50	CHI: 8.73 MMCHI: 8.90		CHI: 8.68 MMCHI: 8.83		CHI: 8.68
Other Information	pr_r (Hz)	CHI: 28.5	-	-	-	-	-
	sr_r (Hz)	CHI: 28.5	-	-	-	-	-
	η_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 114.1	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 11.5	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 19.5	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 2.19	-	-	-	-	-

Table 1-38: Probe Model: L6-24-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2DHAR	2DHAR MMharmonic		2DHAR MMharmonic		2DHAR
	Frequency (MHz)	CHI: 12.0	CHI: 24.0 MMCHI: 12.0		CHI: 24.0 MMCHI: 12.0		CHI: 12.0
	Focal Position (cm)	CHI: 3.0	CHI: 3.0 MMCHI: 5.7		CHI: 3.0 MMCHI: 1.8		CHI: 3.0
	Image Width	CHI: Wide	CHI: Wide		CHI: Wide		CHI: Wide
	Image Depth (cm)	6.0	6.0		6.0		6.0
	Frame Rate (Hz)	28.5	9.3		9.3		28.5

L6-24-D (continued)

Table 1-39: Probe Model: L6-24-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.97	0.39		0.57		0.51
Index Component Value		-	CHI: 0.00 PW: 0.31 CF: 0.07	CHI: 0.00 PW: 0.17 CF: 0.07	2D: 0.00 PW: 0.19 CF: 0.05	2D: 0.00 PW: 0.52 CF: 0.05	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CF: 2.87	-	-	-	-	-
	P (mW)	-	CHI: 0.6 PW: 7.5 CF: 2.5		2D: 0.4 PW: 4.8 CF: 1.1		CHI: 2.2 CF: 14.4
	$P_{1 \times 1}$ (mW)	-	CHI: 0.3 PW: 6.4 CF: 1.8		2D: 0.1 PW: 4.8 CF: 0.8		-
	z_s (cm)	-	-	PW: 1.1	-	-	-
	z_b (cm)	-	-	-	-	PW: 0.7	-
	z_{MI} (cm)	CF: 0.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CF: 0.7	-	-	-	-	-
	f_{awf} (MHz)	CF: 8.80	CHI: 8.93 PW: 10.00 CF: 8.90		2D: 10.43 PW: 8.33 CF: 12.20		CHI: 8.70 CF: 8.90
Other Information	p_{rr} (Hz)	CF: 59.4	-	-	-	-	-
	s_{rr} (Hz)	CF: 3.5	-	-	-	-	-
	η_{pps}	CF: 17	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CF: 242.2	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CF: 23.5	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CF: 35.9	-	-	-	-	-
	p_r at z_{pii} (MPa)	CF: 2.95	-	-	-	-	-

Table 1-39: Probe Model: L6-24-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2D PW CF	2DHAR PW CF		2D PW CF		2DHAR CF
	Frequency (MHz)	CF: 9.2 PW: 8.3 2D: 12.0	CF: 9.2 PW: 10.0 CHI: 24.0		CF: 12.2 PW: 8.3 2D: 12.0		CF: 9.2 CHI: 24.0
	Color / Doppler PRF (kHz)	CF: 4.74 PW: 1.56	CF: 4.93 PW: 1.79		CF: 1.49 PW: 1.49		CF: 10.02
	ROI_Span / Sample_Vol_Size (mm)	CF: 15.0 PW: 0.5	CF: 15.0 PW: 16.0		CF: 15.0 PW: 6.0		CF: 60.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 3.0 PW: 0.5 2D: 3.0	CF: 5.0 PW: 5.2 CHI: 3.0		CF: 3.0 PW: 2.0 2D: 3.0		CF: 3.0 CHI: 3.0
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Medium 2D: Wide	CF: Medium CHI: Wide		CF: Medium 2D: Wide		CF: Wide CHI: Wide
	Image Depth (cm)	6.0	6.0		6.0		6.0
	Frame Rate (Hz)	CF: 3.5 2D: 7.3	CF: 2.8 CHI: 2.2		5.3		5.4

L6-24-D (continued)

Table 1-40: Probe Model: L6-24-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.83	0.26		0.26		0.25
Index Component Value		-	2D: 0.00 PW: 0.25	2D: 0.00 PW: 0.14	2D: 0.00 PW: 0.25	2D: 0.00 PW: 0.25	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 2.45	-	-	-	-	-
	P (mW)	-	2D: 0.5 PW: 6.2		2D: 0.5 PW: 6.2		2D: 0.5 PW: 6.2
	$P_{1 \times 1}$ (mW)	-	2D: 0.2 PW: 5.4		2D: 0.2 PW: 5.4		-
	z_s (cm)	-	-	PW: 1.1	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.1	-
	z_{MI} (cm)	CHI: 0.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 0.9	-	-	-	-	-
Other Information	f_{awf} (MHz)	CHI: 8.75	2D: 10.10 PW: 10.00		2D: 10.10 PW: 10.00		2D: 10.10 PW: 10.00
	p_{rr} (Hz)	CHI: 8.7	-	-	-	-	-
	s_{rr} (Hz)	CHI: 8.7	-	-	-	-	-
	η_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 127.9	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 2.6	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 4.4	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 2.33	-	-	-	-	-

Table 1-40: Probe Model: L6-24-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Thyroid	Thyroid		Thyroid		Thyroid
	Imaging Mode	2DHAR PW	2D PW		2D PW		2D PW
	Frequency (MHz)	PW: 12.4 CHI: 24.0	PW: 10.0 2D: 12.0		PW: 10.0 2D: 12.0		PW: 10.0 2D: 12.0
	Doppler PRF (kHz)	PW: 2.19	PW: 8.14		PW: 8.14		PW: 8.14
	Sample Volume Size (mm)	PW: 0.5	PW: 16.0		PW: 16.0		PW: 16.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 0.5 CHI: 3.0	PW: 5.2 2D: 3.0		PW: 5.2 2D: 3.0		PW: 5.2 2D: 3.0
	Image Width	CHI: Wide	2D: Wide		2D: Wide		2D: Wide
	Image Depth (cm)	6.0	6.0		6.0		6.0
	Frame Rate (Hz)	8.7	5.9		5.9		5.9

M5Sc-D

Table 1-41: Probe Model: M5Sc-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.27	0.53		1.50		2.43
Index Component Value		-	REF: 0.53	REF: 0.53	CHI: 0.18 MMCHI: 0.20	CHI: 0.18 MMCHI: 1.32	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CON: 1.85	-	-	-	-	-
	P (mW)	-	REF: 49.8		CHI: 22.3 MMCHI: 33.4		CON: 50.4
	P_{1x1} (mW)	-	REF: 31.2		CHI: 17.2 MMCHI: 24.7		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	MMCHI: 2.9	-
	z_{MI} (cm)	CON: 1.9	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CON: 1.9	-	-	-	-	-
	f_{awf} (MHz)	CON: 2.10	REF: 3.60		CHI: 2.13 MMCHI: 1.75		CON: 1.75
Other Information	p_{rr} (Hz)	CON: 15.5	-	-	-	-	-
	s_{rr} (Hz)	CON: 15.5	-	-	-	-	-
	η_{pps}	CON: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CON: 192.9	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CON: 12.6	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CON: 16.6	-	-	-	-	-
	p_r at z_{pii} (MPa)	CON: 2.12	-	-	-	-	-

Table 1-41: Probe Model: M5Sc-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2Dcontrast	2DLowMI		2DHAR MMharmonic		2Dcontrast
	Frequency (MHz)	CON: 2.0	REF: 3.5		CHI: 4.5 MMCHI: 3.3		CON: 3.2
	Focal Position (cm)	CON: 2.5	REF: 34.3		CHI: 4.6 MMCHI: 4.7		CON: 0.8
	Image Width	CON: Wide	REF: Wide		CHI: Wide		CON: Wide
	Image Depth (cm)	6.1	36.1		6.1		6.1
	Frame Rate (Hz)	15.5	32.5		18.2		31.0

M5Sc-D (continued)

Table 1-42: Probe Model: M5Sc-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.10	1.16		1.16		2.37
Index Component Value		-	CHI: 0.13 CF: 1.03	CHI: 0.13 CF: 1.03	CHI: 0.13 CF: 1.03	CHI: 0.13 CF: 1.03	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CF: 1.93	-	-	-	-	-
	P (mW)	-	CHI: 16.1 CF: 112.2		CHI: 16.1 CF: 112.2		CHI: 16.1 CF: 112.2
	$P_{1 \times 1}$ (mW)	-	CHI: 12.4 CF: 71.0		CHI: 12.4 CF: 71.0		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	Note B	-
	z_{MI} (cm)	CF: 0.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CF: 0.9	-	-	-	-	-
	f_{awf} (MHz)	CF: 3.05	CHI: 2.18 CF: 3.05		CHI: 2.18 CF: 3.05		CHI: 2.18 CF: 3.05
Other Information	p_{rr} (Hz)	CF: 834.8	-	-	-	-	-
	s_{rr} (Hz)	CF: 64.2	-	-	-	-	-
	η_{pps}	CF: 13	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CF: 89.7	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CF: 175.7	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CF: 212.3	-	-	-	-	-
	p_r at z_{pii} (MPa)	CF: 1.52	-	-	-	-	-

Table 1-42: Probe Model: M5Sc-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label	MI	TIS		TIB		TIC
		At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Abdo	Abdo	Abdo	Abdo	Abdo
	Imaging Mode	2D CF	2DHAR CF	2DHAR CF	2DHAR CF	2DHAR CF
	Frequency (MHz)	CF: 3.0 2D: 4.5	CF: 3.0 CHI: 4.5	CF: 3.0 CHI: 4.5	CF: 3.0 CHI: 4.5	CF: 3.0 CHI: 4.5
	Color / Doppler PRF (kHz)	CF: 6.85	CF: 8.93	CF: 8.93	CF: 8.93	CF: 8.93
	ROI_Span / Sample_Vol_Size (mm)	CF: 90.0	CF: 60.0	CF: 60.0	CF: 60.0	CF: 60.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 4.6 2D: 15.1	CF: 3.1 CHI: 4.6	CF: 3.1 CHI: 4.6	CF: 3.1 CHI: 4.6	CF: 3.1 CHI: 4.6
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Narrow 2D: Medium	CF: Medium CHI: Wide	CF: Medium CHI: Wide	CF: Medium CHI: Wide	CF: Medium CHI: Wide
	Image Depth (cm)	20.1	6.1	6.1	6.1	6.1
	Frame Rate (Hz)	64.2	17.0	17.0	17.0	17.0

M5Sc-D (continued)

Table 1-43: Probe Model: M5Sc-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.22	0.76		2.28		1.50
Index Component Value		-	PW: 0.48	PW: 0.76	PW: 0.48	PW: 2.28	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 1.82	-	-	-	-	-
	P (mW)	-	PW: 113.1		PW: 113.1		PW: 113.1
	P_{1x1} (mW)	-	PW: 40.3		PW: 40.3		-
	z_s (cm)	-	-	PW: 3.3	-	-	-
	z_b (cm)	-	-	-	-	PW: 6.3	-
	z_{MI} (cm)	2D: 2.1	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 2.1	-	-	-	-	-
	f_{awf} (MHz)	2D: 2.25	PW: 2.50		PW: 2.50		PW: 2.50
Other Information	p_{rr} (Hz)	2D: 9.5	-	-	-	-	-
	s_{rr} (Hz)	2D: 9.5	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 191.2	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 5.2	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 7.3	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 2.09	-	-	-	-	-

Table 1-43: Probe Model: M5Sc-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2D PW	PW		PW		PW
	Frequency (MHz)	PW: 1.7 2D: 2.0	PW: 2.5		PW: 2.5		PW: 2.5
	Doppler PRF (kHz)	PW: 0.45	PW: 0.65		PW: 0.65		PW: 0.65
	Sample Volume Size (mm)	PW: 7.0	PW: 12.0		PW: 12.0		PW: 12.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 5.4 2D: 3.1	PW: 9.1		PW: 9.1		PW: 9.1
	Image Width	2D: Wide	NA		NA		NA
	Image Depth (cm)	6.1	NA		NA		NA
	Frame Rate (Hz)	9.5	NA		NA		NA

M5Sc-D (continued)

Table 1-44: Probe Model: M5Sc-D; Mode Group: Continuous Wave Doppler Mode
(See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.59	0.84		2.48		1.80
Index Component Value		-	2D: 0.09 CW: 0.75	2D: 0.09 CW: 0.70	2D: 0.09 CW: 0.75	2D: 0.09 CW: 2.39	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 2.38	-	-	-	-	-
	P (mW)	-	2D: 8.5 CW: 81.8		2D: 8.5 CW: 81.8		2D: 8.5 CW: 81.8
	$P_{1 \times 1}$ (mW)	-	2D: 8.5 CW: 62.9		2D: 8.5 CW: 62.9		-
	z_s (cm)	-	-	CW: 1.9	-	-	-
	z_b (cm)	-	-	-	-	CW: 4.3	-
	z_{MI} (cm)	2D: 2.3	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 2.3	-	-	-	-	-
	f_{awf} (MHz)	2D: 2.25	2D: 2.25 CW: 2.50		2D: 2.25 CW: 2.50		2D: 2.25 CW: 2.50
Other Information	p_{rr} (Hz)	2D: 11.9	-	-	-	-	-
	s_{rr} (Hz)	2D: 11.9	-	-	-	-	-
	η_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 270.5	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 9.2	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 13.2	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 2.78	-	-	-	-	-

Table 1-44: Probe Model: M5Sc-D; Mode Group: Continuous Wave Doppler Mode
(See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Ped	Ped		Ped		Ped
	Imaging Mode	2D CW	2D CW		2D CW		2D CW
	Frequency (MHz)	CW: 2.5 2D: 2.0	CW: 2.5 2D: 2.0		CW: 2.5 2D: 2.0		CW: 2.5 2D: 2.0
	Sample_Volume_Depth / Focal_Position (cm)	CW: 4.3	CW: 4.3		CW: 4.3		CW: 4.3
	Image Width	2D: Wide	2D: Wide		2D: Wide		2D: Wide
	Image Depth (cm)	6.1	6.1		6.1		6.1
	Frame Rate (Hz)	11.8	11.8		11.8		11.8

P2D

Table 1-45: Probe Model: P2D; Mode Group: Continuous Wave Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.07	0.48		2.18		1.42
Index Component Value		-	CW: 0.48	CW: 0.45	CW: 0.48	CW: 2.18	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CW: 0.1	-	-	-	-	-
	P (mW)	-	CW: 56.6		CW: 56.6		CW: 56.6
	$P_{1 \times 1}$ (mW)	-	CW: 49.3		CW: 49.3		-
	z_s (cm)	-	-	CW: 1.5	-	-	-
	z_b (cm)	-	-	-	-	CW: 2.7	-
	z_{MI} (cm)	CW: 2.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CW: 2.7	-	-	-	-	-
	f_{awf} (MHz)	CW: 2.05	CW: 2.05		CW: 2.05		CW: 2.05
Other Information	prr (Hz)	Note G	-	-	-	-	-
	srr (Hz)	Note G	-	-	-	-	-
	η_{pps}	Note G	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CW: 0.3	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CW: 308.9	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CW: 474.3	-	-	-	-	-
	p_r at z_{pii} (MPa)	CW: 0.12	-	-	-	-	-

Table 1-45: Probe Model: P2D; Mode Group: Continuous Wave Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Cardiac	Cardiac		Cardiac		Cardiac
	Imaging Mode	CW	CW		CW		CW
	Frequency (MHz)	CW: 2.1	CW: 2.1		CW: 2.1		CW: 2.1
	Sample_Volume_Depth / Focal_Position (cm)	CW: 1.0	CW: 1.0		CW: 1.0		CW: 1.0
	Image Width	NA	NA		NA		NA
	Image Depth (cm)	NA	NA		NA		NA
	Frame Rate (Hz)	NA	NA		NA		NA

P6D

Table 1-46: Probe Model: P6D; Mode Group: Continuous Wave Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.03	0.23		0.58		0.43
Index Component Value		-	CW: 0.23	CW: 0.17	CW: 0.23	CW: 0.58	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CW: 0.08	-	-	-	-	-
	P (mW)	-	CW: 7.8		CW: 7.8		CW: 7.8
	$P_{1 \times 1}$ (mW)	-	CW: 7.8		CW: 7.8		-
	z_s (cm)	-	-	CW: 0.7	-	-	-
	z_b (cm)	-	-	-	-	CW: 0.7	-
	z_{MI} (cm)	CW: 0.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CW: 0.7	-	-	-	-	-
	f_{awf} (MHz)	CW: 6.25	CW: 6.25		CW: 6.25		CW: 6.25
Other Information	p_{rr} (Hz)	Note G	-	-	-	-	-
	s_{rr} (Hz)	Note G	-	-	-	-	-
	η_{pps}	Note G	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CW: 0.2	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CW: 147.3	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CW: 199.3	-	-	-	-	-
	p_r at z_{pii} (MPa)	CW: 0.08	-	-	-	-	-

Table 1-46: Probe Model: P6D; Mode Group: Continuous Wave Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Cardiac	Cardiac		Cardiac		Cardiac
	Imaging Mode	CW	CW		CW		CW
	Frequency (MHz)	CW: 6.2	CW: 6.2		CW: 6.2		CW: 6.2
	Sample_Volume_Depth / Focal_Position (cm)	CW: 1.0	CW: 1.0		CW: 1.0		CW: 1.0
	Image Width	NA	NA		NA		NA
	Image Depth (cm)	NA	NA		NA		NA
	Frame Rate (Hz)	NA	NA		NA		NA

RAB6-D

Table 1-47: Probe Model: RAB6-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.07	0.46		0.73		1.21
Index Component Value		-	2D: 0.20 MM: 0.21	2D: 0.20 MM: 0.26	2D: 0.20 MM: 0.21	2D: 0.20 MM: 0.53	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 1.88	-	-	-	-	-
	P (mW)	-	2D: 35.6 MM: 34.7		2D: 35.6 MM: 34.7		REF: 130.1
	P_{1x1} (mW)	-	2D: 12.6 MM: 13.1		2D: 12.6 MM: 13.1		-
	z_s (cm)	-	-	MM: 3.3	-	-	-
	z_b (cm)	-	-	-	-	MM: 3.3	-
	z_{MI} (cm)	CHI: 3.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 3.5	-	-	-	-	-
	f_{awf} (MHz)	CHI: 3.10	2D: 3.35 MM: 3.35		2D: 3.35 MM: 3.35		REF: 3.40
Other Information	p_{rr} (Hz)	CHI: 15.0	-	-	-	-	-
	s_{rr} (Hz)	CHI: 15.0	-	-	-	-	-
	η_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 116.5	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 6.5	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 13.7	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 2.59	-	-	-	-	-

Table 1-47: Probe Model: RAB6-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2DHAR	2D MM		2D MM		2D LowMI
	Frequency (MHz)	CHI: 8.0	2D: 3.5 MM: 3.5		2D: 3.5 MM: 3.5		REF: 3.5
	Focal Position (cm)	CHI: 50.0	2D: 50.0 MM: 50.0		2D: 50.0 MM: 50.0		REF: 50.0
	Image Width	CHI: Wide	2D: Narrow		2D: Narrow		REF: Wide
	Image Depth (cm)	30.1	30.1		30.1		3.1
	Frame Rate (Hz)	14.9	66.7		66.7		59.1

RAB6-D (continued)

Table 1-48: Probe Model: RAB6-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.24	0.31		0.31		0.92
Index Component Value		-	2D: 0.13 CF: 0.18	2D: 0.13 CF: 0.18	2D: 0.13 CF: 0.18	2D: 0.13 CF: 0.18	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CF: 2.04	-	-	-	-	-
	P (mW)	-	2D: 44.6 CF: 26.9		2D: 44.6 CF: 26.9		2D: 25.1 CF: 74.4
	$P_{1 \times 1}$ (mW)	-	2D: 8.1 CF: 12.6		2D: 8.1 CF: 12.6		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	Note B	-
	z_{MI} (cm)	CF: 2.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CF: 2.7	-	-	-	-	-
	f_{awf} (MHz)	CF: 2.70	2D: 3.30 CF: 3.00		2D: 3.30 CF: 3.00		2D: 3.20 CF: 2.75
Other Information	pr_r (Hz)	CF: 114.8	-	-	-	-	-
	srr (Hz)	CF: 8.8	-	-	-	-	-
	η_{pps}	CF: 13	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CF: 159.0	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CF: 34.9	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CF: 57.7	-	-	-	-	-
	p_r at z_{pii} (MPa)	CF: 2.48	-	-	-	-	-

Table 1-48: Probe Model: RAB6-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2D CF	2D CF		2D CF		2D CF
	Frequency (MHz)	CF: 2.8 2D: 3.5	CF: 3.5 2D: 3.5		CF: 3.5 2D: 3.5		CF: 2.8 2D: 3.5
	Color / Doppler PRF (kHz)	CF: 0.15	CF: 0.19		CF: 0.19		CF: 0.15
	ROI_Span / Sample_Vol_Size (mm)	CF: 10.0	CF: 180.0		CF: 180.0		CF: 10.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 16.1 2D: 50.0	CF: 16.1 2D: 50.0		CF: 16.1 2D: 50.0		CF: 16.1 2D: 50.0
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	2D: Wide	CF: Narrow 2D: Wide		CF: Narrow 2D: Wide		CF: Medium 2D: Wide
	Image Depth (cm)	30.1	30.1		30.1		30.1
	Frame Rate (Hz)	8.8	13.4		13.4		6.8

RAB6-D (continued)

Table 1-49: Probe Model: RAB6-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.98	0.52		1.57		1.43
Index Component Value		-	PW: 0.52	PW: 0.45	PW: 0.52	PW: 1.57	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CHI: 1.76	-	-	-	-	-
	P (mW)	-	PW: 38.5		PW: 38.5		PW: 38.5
	P_{1x1} (mW)	-	PW: 35.0		PW: 35.0		-
	z_s (cm)	-	-	PW: 1.1	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.1	-
	z_{MI} (cm)	CHI: 3.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CHI: 3.5	-	-	-	-	-
	f_{awf} (MHz)	CHI: 3.25	PW: 3.13		PW: 3.13		PW: 3.13
Other Information	p_{rr} (Hz)	CHI: 6.8	-	-	-	-	-
	s_{rr} (Hz)	CHI: 6.8	-	-	-	-	-
	n_{pps}	CHI: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CHI: 109.6	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CHI: 2.9	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CHI: 6.4	-	-	-	-	-
	p_r at z_{pii} (MPa)	CHI: 2.58	-	-	-	-	-

Table 1-49: Probe Model: RAB6-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Abdo	Abdo		Abdo		Abdo
	Imaging Mode	2DHAR PW	PW		PW		PW
	Frequency (MHz)	PW: 5.0 CHI: 8.0	PW: 3.1		PW: 3.1		PW: 3.1
	Doppler PRF (kHz)	PW: 1.25	PW: 0.81		PW: 0.81		PW: 0.81
	Sample Volume Size (mm)	PW: 1.0	PW: 16.0		PW: 16.0		PW: 16.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 15.1 CHI: 50.0	PW: 1.3		PW: 1.3		PW: 1.3
	Image Width	CHI: Wide	NA		NA		NA
	Image Depth (cm)	30.1	NA		NA		NA
	Frame Rate (Hz)	6.8	NA		NA		NA

RIC5-9-D

Table 1-50: Probe Model: RIC5-9-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.79	0.22		0.22		0.25
Index Component Value		-	2D: 0.22	2D: 0.22	2D: 0.22	2D: 0.22	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 1.72	-	-	-	-	-
	P (mW)	-	2D: 9.1		2D: 9.1		CHI: 14.0
	$P_{1 \times 1}$ (mW)	-	2D: 9.0		2D: 9.0		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	Note B	-
	z_{MI} (cm)	2D: 1.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.5	-	-	-	-	-
	f_{awf} (MHz)	2D: 4.75	2D: 5.05		2D: 5.05		CHI: 4.80
Other Information	p_{rr} (Hz)	2D: 45.1	-	-	-	-	-
	s_{rr} (Hz)	2D: 45.1	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 131.2	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 11.7	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 19.2	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 2.20	-	-	-	-	-

Table 1-50: Probe Model: RIC5-9-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Ob23	Ob23		Ob23		Ob23
	Imaging Mode	2D	2D		2D		2DHAR
	Frequency (MHz)	2D: 5.0	2D: 5.5		2D: 5.5		CHI: 9.0
	Focal Position (cm)	2D: 1.6	2D: 1.6		2D: 1.6		CHI: 11.3
	Image Width	2D: Medium	2D: Medium		2D: Medium		CHI: Wide
	Image Depth (cm)	3.1	3.1		3.1		15.1
	Frame Rate (Hz)	45.1	45.4		45.4		12.8

RIC5-9-D (continued)

Table 1-51: Probe Model: RIC5-9-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.41	0.20		0.20		0.22
Index Component Value		-	2D: 0.01 CF: 0.19	2D: 0.01 CF: 0.19	2D: 0.01 CF: 0.19	2D: 0.01 CF: 0.19	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	CF: 2.91	-	-	-	-	-
	P (mW)	-	2D: 0.5 CF: 7.1		2D: 0.5 CF: 7.1		CHI: 7.7 CF: 3.9
	$P_{1 \times 1}$ (mW)	-	2D: 0.5 CF: 7.1		2D: 0.5 CF: 7.1		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	Note B	-
	z_{MI} (cm)	CF: 1.3	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	CF: 1.3	-	-	-	-	-
	f_{awf} (MHz)	CF: 4.25	2D: 4.70 CF: 5.60		2D: 4.70 CF: 5.60		CHI: 4.78 CF: 4.35
Other Information	pr (Hz)	CF: 99.6	-	-	-	-	-
	srr (Hz)	CF: 11.1	-	-	-	-	-
	n_{pps}	CF: 9	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	CF: 380.8	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	CF: 66.6	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	CF: 97.6	-	-	-	-	-
	p_r at z_{pii} (MPa)	CF: 3.36	-	-	-	-	-

Table 1-51: Probe Model: RIC5-9-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Ob23	Ob23		Ob23		Ob23
	Imaging Mode	2D CF	2D CF		2D CF		2DHAR CF
	Frequency (MHz)	CF: 4.3 2D: 5.0	CF: 6.1 2D: 5.0		CF: 6.1 2D: 5.0		CF: 4.3 CHI: 9.0
	Color / Doppler PRF (kHz)	CF: 0.11	CF: 0.16		CF: 0.16		CF: 6.81
	ROI_Span / Sample_Vol_Size (mm)	CF: 10.0	CF: 5.0		CF: 5.0		CF: 90.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 2.6 2D: 1.6	CF: 0.3 2D: 1.6		CF: 0.3 2D: 1.6		CF: 4.6 CHI: 11.3
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	2D: Medium	CF: Medium 2D: Medium		CF: Medium 2D: Medium		CHI: Wide
	Image Depth (cm)	3.1	3.1		3.1		15.1
	Frame Rate (Hz)	11.1	14.6		14.6		15.9

RIC5-9-D (continued)

Table 1-52: Probe Model: RIC5-9-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.65	0.15		0.32		0.26
Index Component Value		-	CHI: 0.03 PW: 0.12	CHI: 0.03 PW: 0.08	CHI: 0.04 PW: 0.11	CHI: 0.04 PW: 0.29	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 1.4	-	-	-	-	-
	P (mW)	-	CHI: 3.4 PW: 6.1		CHI: 3.8 PW: 4.4		CHI: 3.8 PW: 4.4
	P_{1x1} (mW)	-	CHI: 1.3 PW: 5.2		CHI: 1.4 PW: 4.4		-
	z_s (cm)	-	-	PW: 1.7	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.5	-
	z_{MI} (cm)	2D: 1.7	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.7	-	-	-	-	-
	f_{awf} (MHz)	2D: 4.70	CHI: 4.73 PW: 5.05		CHI: 4.73 PW: 5.05		CHI: 4.73 PW: 5.05
Other Information	pr (Hz)	2D: 68.3	-	-	-	-	-
	sr (Hz)	2D: 68.3	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 82.3	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 8.3	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 14.5	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 1.85	-	-	-	-	-

Table 1-52: Probe Model: RIC5-9-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Ob23	Ob23		Ob23		Ob23
	Imaging Mode	2D PW	2DHAR PW		2DHAR PW		2DHAR PW
	Frequency (MHz)	PW: 5.0 2D: 5.0	PW: 5.0 CHI: 9.0		PW: 5.0 CHI: 9.0		PW: 5.0 CHI: 9.0
	Doppler PRF (kHz)	PW: 1.30	PW: 1.30		PW: 1.30		PW: 1.30
	Sample Volume Size (mm)	PW: 16.0	PW: 4.0		PW: 4.0		PW: 4.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 2.2 2D: 1.6	PW: 14.8 CHI: 11.3		PW: 1.1 CHI: 11.3		PW: 1.1 CHI: 11.3
	Image Width	2D: Medium	CHI: Wide		CHI: Wide		CHI: Wide
	Image Depth (cm)	3.1	15.1		15.1		15.1
	Frame Rate (Hz)	68.3	14.0		14.0		14.0

IC5-9-D

Table 1-53: Probe Model: IC5-9-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.41	0.39		0.44		0.57
Index Component Value		-	CHI: 0.38	CHI: 0.38	2D: 0.06 MM: 0.08	2D: 0.06 MM: 0.38	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 2.99	-	-	-	-	-
	P (mW)	-	CHI: 18.3		2D: 7.9 MM: 3.8		CHI: 32.2
	P_{1x1} (mW)	-	CHI: 15.2		2D: 3.0 MM: 3.8		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	MM: 1.7	-
	z_{MI} (cm)	2D: 1.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.5	-	-	-	-	-
	f_{awf} (MHz)	2D: 4.50	CHI: 5.20		2D: 4.50 MM: 4.50		CHI: 4.90
Other Information	p_{rr} (Hz)	2D: 17.5	-	-	-	-	-
	s_{rr} (Hz)	2D: 17.5	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 344.5	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 5.6	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 8.9	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 3.37	-	-	-	-	-

Table 1-53: Probe Model: IC5-9-D; Mode Group: B, M Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating	Application	Gyn	Gyn		Gyn		Gyn
	Imaging Mode	2D MM	2DHAR		2D MM		2DHAR
	Frequency (MHz)	2D: 3.9 MM: 4.5	CHI: 5.0		2D: 3.9 MM: 3.9		CHI: 9.0
	Focal Position (cm)	2D: 1.6 MM: 1.0	CHI: 5.3		2D: 1.6 MM: 1.9		CHI: 2.3
	Image Width	2D: Wide	CHI: Medium		2D: Wide		CHI: Wide
	Image Depth (cm)	3.1	7.1		3.1		3.1
	Frame Rate (Hz)	17.5	80.4		17.5		63.8

IC5-9-D (continued)

Table 1-54: Probe Model: IC5-9-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		1.44	0.29		0.71		0.58
Index Component Value		-	2D: 0.12 CF: 0.16	2D: 0.12 CF: 0.16	2D: 0.06 PW: 0.15 CF: 0.05	2D: 0.06 PW: 0.60 CF: 0.05	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	2D: 3.01	-	-	-	-	-
	P (mW)	-	2D: 3.9 CF: 5.0		2D: 7.5 PW: 7.3 CF: 2.5		2D: 7.5 PW: 7.3 CF: 2.5
	P_{1x1} (mW)	-	2D: 3.8 CF: 5.0		2D: 2.8 PW: 7.3 CF: 2.5		-
	z_s (cm)	-	-	Note B	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.5	-
	z_{MI} (cm)	2D: 1.9	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	2D: 1.9	-	-	-	-	-
	f_{awf} (MHz)	2D: 4.35	2D: 6.85 CF: 6.90		2D: 4.50 PW: 4.18 CF: 4.45		2D: 4.50 PW: 4.18 CF: 4.45
Other Information	pr (Hz)	2D: 10.0	-	-	-	-	-
	sr (Hz)	2D: 10.0	-	-	-	-	-
	n_{pps}	2D: 1	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	2D: 273.9	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	2D: 8.8	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	2D: 15.6	-	-	-	-	-
	p_r at z_{pii} (MPa)	2D: 4.00	-	-	-	-	-

Table 1-54: Probe Model: IC5-9-D; Mode Group: Color Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Gyn	Gyn		Gyn		Gyn
	Imaging Mode	2D ELASTO	2D CF		2D PW CF		2D PW CF
	Frequency (MHz)	CF: 4.6 2D: 3.9	CF: 5.9 2D: 8.0		CF: 4.6 PW: 4.2 2D: 3.9		CF: 4.6 PW: 4.2 2D: 3.9
	Color / Doppler PRF (kHz)	CF: 0.01	CF: 1.07		CF: 1.08 PW: 1.08		CF: 1.08 PW: 1.08
	ROI_Span / Sample_Vol_Size (mm)	CF: 10.0	CF: 25.0		CF: 7.7 PW: 8.0		CF: 7.7 PW: 8.0
	ROI_Center / Sample_Volume_Depth / Focal_Position (cm)	CF: 0.6 2D: 5.1	CF: 4.1 2D: 5.1		CF: 0.5 PW: 1.1 2D: 1.6		CF: 0.5 PW: 1.1 2D: 1.6
	ROI_Width / 2D_Image_Width (narrow, medium, wide)	CF: Narrow 2D: Medium	CF: Narrow 2D: Medium		2D: Wide		2D: Wide
	Image Depth (cm)	10.1	10.1		3.1		3.1
	Frame Rate (Hz)	10.0	40.0		CF: 29.2 2D: 24.6		CF: 29.2 2D: 24.6

IC5-9-D (continued)

Table 1-55: Probe Model: IC5-9-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Maximum Index Value		0.91	0.35		1.39		0.69
Index Component Value		-	PW: 0.35	PW: 0.27	PW: 0.35	PW: 1.39	-
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	PW: 1.88	-	-	-	-	-
	P (mW)	-	PW: 17.4		PW: 17.4		PW: 17.4
	$P_{1 \times 1}$ (mW)	-	PW: 17.4		PW: 17.4		-
	z_s (cm)	-	-	PW: 0.9	-	-	-
	z_b (cm)	-	-	-	-	PW: 1.5	-
	z_{MI} (cm)	PW: 1.5	-	-	-	-	-
	$z_{pii,\alpha}$ (cm)	PW: 1.5	-	-	-	-	-
	f_{awf} (MHz)	PW: 4.25	PW: 4.25		PW: 4.25		PW: 4.25
Other Information	prr (Hz)	PW: 1096.5	-	-	-	-	-
	srr (Hz)	Note A	-	-	-	-	-
	n_{pps}	Note A	-	-	-	-	-
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm ²)	PW: 188.4	-	-	-	-	-
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm ²)	PW: 435.5	-	-	-	-	-
	I_{spta} at z_{pii} or z_{sii} (mW/cm ²)	PW: 705.6	-	-	-	-	-
	p_r at z_{pii} (MPa)	PW: 2.16	-	-	-	-	-

Table 1-55: Probe Model: IC5-9-D; Mode Group: Pulsed Doppler Mode (See Table 1-3 : Operating Modes Summary Table) (Continued)

Index Label		MI	TIS		TIB		TIC
			At Surface	Below Surface	At Surface	Below Surface	
Operating Control Conditions	Application	Gyn	Gyn		Gyn		Gyn
	Imaging Mode	PW	PW		PW		PW
	Frequency (MHz)	PW: 4.2	PW: 4.2		PW: 4.2		PW: 4.2
	Doppler PRF (kHz)	PW: 1.10	PW: 1.10		PW: 1.10		PW: 1.10
	Sample Volume Size (mm)	PW: 2.0	PW: 2.0		PW: 2.0		PW: 2.0
	Sample_Volume_Depth / Focal_Position (cm)	PW: 1.1	PW: 1.1		PW: 1.1		PW: 1.1
	Image Width	NA	NA		NA		NA
	Image Depth (cm)	NA	NA		NA		NA
	Frame Rate (Hz)	NA	NA		NA		NA

IC5-9-D (continued)

Table 1-56: Probe Model: IC5-9-D; Mode Group: Shear Wave Elastography Mode (See Table 1-3 : Operating Modes Summary Table)

Index label		MI	TIS		TIB		TIC
			At surface	Below surface	At surface	Below surface	
Maximum index value		1.41	0.14		0.39		0.31
Index component value			SWE: 0.14	SWE: 0.09	SWE: 0.14	SWE: 0.39	
Acoustic Parameter	$p_{r,\alpha}$ at z_{MI} (MPa)	SWE: 2.65					
	P (mW)		SWE: 14.6		SWE: 14.6		SWE: 14.6
	P_{ix1} (mW)		SWE: 8.2		SWE: 8.2		
	z_s (cm)			SWE: 1.2			
	z_b (cm)					SWE: 2.2	
	z_{MI} (cm)	SWE: 2.3					
	$z_{pii,\alpha}$ (cm)	SWE: 2.3					
	f_{bwf} (MHz)	SWE: 3.55	SWE: 3.55		SWE: 3.55		SWE: 3.55
	p_r (Hz)	SWE: 2.00					
	srr (Hz)	SWE: 2.00					
Other Information	n_{pps}	SWE: 1					
	$I_{pa,\alpha}$ at $z_{pii,\alpha}$ (W/cm2)	SWE: 407.6					
	$I_{spta,\alpha}$ at $z_{pii,\alpha}$ or $z_{sii,\alpha}$ (mW/cm2)	SWE: 90.9					
	I_{spta} at z_{pii} or z_{sii} (mW/cm2)	SWE: 160.9					
	p_r at z_{pii} (MPa)	SWE: 3.47					
Operating Control Conditions	Power (%)	SWE: 100	SWE: 100	SWE: 100	SWE: 100	SWE: 100	SWE: 100
	Frequency (MHz)	SWE: 3.50	SWE: 3.50	SWE: 3.50	SWE: 3.50	SWE: 3.50	SWE: 3.50
	ROI Center (cm)	SWE: 3.1	SWE: 3.1	SWE: 3.1	SWE: 3.1	SWE: 3.1	SWE: 3.1
	ROI Span (mm)	SWE: 30.0	SWE: 30.0	SWE: 30.0	SWE: 30.0	SWE: 30.0	SWE: 30.0
	Type	SWE	SWE	SWE	SWE	SWE	SWE

Table Key

Table 1-57: Meaning of Notes in the Acoustic Output Tables

Note	Meaning
Note A	The Operating Control Condition resulting in a maximum Index value for this ModeGroup has No Scanning Component.
Note B	The Operating Control Condition resulting in a maximum Index value for this ModeGroup has No Non-Scanning Component.
Note C	There are No Non-Scanning Components for this Mode Group.
Note D	There are No Scanning Components for this Mode Group.
Note E	A This Mode Group is not enabled for this Probe Model.
Note F	The maximum MI value results from a non-scanning component.
Note G	CW components do not have ' <i>pr</i> ', ' <i>n_{pps}</i> ', ' <i>srr</i> ' or ' <i>t_d</i> ' values.

Table 1-58: Table Key

Symbol	Term—per IEC 60601-2-37
α	Acoustic Attenuation Coefficient
A_{aprt}	-12db Output Beam Area
C_{MI}	Normalizing Coefficient
d_{eq}	Equivalent Beam Diameter
f_{awf}	Acoustic Working Frequency
I_{pa}	Pulse-Average Intensity
$I_{pa,\alpha}$	Attenuated Pulse-Average Intensity
p_{ii}	Pulse-Intensity Integral
$p_{ii,\alpha}$	Attenuated Pulse-Intensity Integral
$I_{sppa,\alpha}$	Attenuated Spatial-Peak Pulse-Average Intensity
I_{spta}	Spatial-Peak Temporal-Average Intensity
$I_{spta,\alpha}$	Attenuated Spatial-Peak Temporal-Average Intensity
I_{ta}	Temporal-Average Intensity
$I_{ta,\alpha}$	Attenuated Temporal-Average Intensity
MI	Mechanical Index
n_{pps}	Number of Pulses per Ultrasonic Scan Line
P	Output Power

Table 1-58: Table Key (Continued)

Symbol	Term—per IEC 60601-2-37
P_{α}	Attenuated Output Power
P_{1x1}	Bounded-Square Output Power
p_r	Peak-Rarefactional Acoustic Pressure
$p_{r,\alpha}$	Attenuated Peak-Rarefactional Acoustic Pressure
pr	Pulse Repetition Rate
srr	Scan Repetition Rate
TI	Thermal Index
TIB	Bone Thermal Index
TIC	Cranial-Bone Thermal Index
TIS	Soft-Tissue Thermal Index
t_d	Pulse Duration
X, Y	-12 dB Output Beam Dimensions
z_b	Depth for TIB
z_{bp}	Break-Point Depth
z_{pii}	Depth for Peak Pulse-Intensity Integral
z_{MI}	Depth for Mechanical Index
$z_{pii,\alpha}$	Depth for Peak Attenuated Pulse-Intensity Integral
z_{sii}	Depth for Peak Sum of Pulse-Intensity Integrals
$z_{sii,\alpha}$	Depth for Peak Sum of Attenuated Pulse-Intensity Integrals
z_s	Depth for TIS
-	This parameter is not applicable to the specified probe/mode combination.

NOTE: The Acoustic Output tables are in English only.

Chapter 2

System Formulas

Reference for measurement formula tables for the various applications.

Measurement Abbreviations

Cardiac measurement abbreviation list

The following table shows the cardiac measurements available on the LOGIQ Totus.

When you make a measurement, you select the abbreviation for the measurement on the Touch Panel. Most abbreviations are made using acronyms. The following table lists acronyms used for naming cardiac measurements.

Table 2-1: Cardiac Measurements or Calculations

Abbreviation	Definition	Unit
%FS	LV Fractional Shortening, 2D	%
%FS	LV Fractional Shortening, M-mode	%
%IVS Thck	IVS Fractional Shortening, 2D	%
%IVS Thck	IVS Fractional Shortening, M-mode	%
%LVPW Thck	LV Posterior Wall Fractional Shortening, 2D	%
%LVPW Thck	LV Posterior Wall Fractional Shortening, M-mode	%
Ao Arch Diam	Aortic Arch Diameter	cm
Ao asc	Ascending Arch Diameter	cm
Ao Desc Diam	Descending Aortic Diameter	cm
Ao Isthmus	Aortic Isthmus	cm
Ao Root Diam	Aortic Root Diameter	cm
Ao Root Diam	Aortic Root Diameter, M-mode	cm
AR ERO [PISA]	Aortic Regurgitation Effective Regurgitant Orifice [Proximal Isovelocity Surface Area]	cm ²
AR Flow	PISA:Regurgitant Flow	ml/s
AR PHT	AV Insuf. Pressure Half Time	ms
AP Rad	PISA:Radius of Aliased Point	cm
AR RV	PISA:Regurgitant Volume Flow	ml
AR Vel	PISA:Aliased Velocity	m/s

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
AR Vmax	Aortic Insuf. Peak Velocity	m/s
AR VTI	Aortic Insuf. Velocity Time Integral	cm
ARed max PG	Aortic Insuf. End-Diastole Pressure Gradient	mm Hg
ARed Vmax	Aortic Insuf. End-Diastole Velocity	m/s
AV Acc Slope	Aortic Valve Flow Acceleration	m/s ²
AV Acc Time	Aortic Valve Acceleration Time	ms
AV AccT/ET	AV Acceleration to Ejection Time Ratio	
AV CO	Cardiac Output by Aortic Flow	l/min
AV Cusp	Aortic Valve Cusp Separation, 2D	cm
AV Cusp	Aortic Valve Cusp Separation, M-mode	cm
AV Dec Time	Aortic Valve Deceleration Time	ms
AV Diam	Aortic Diameter, 2D	cm
AV max PG	Aortic Valve Peak Pressure Gradient	mm Hg
AV mean PG	Aortic Valve Mean Pressure Gradient	mm Hg
AV SV	Stroke Volume by Aortic Flow	ml
AV Vmax	Aortic Valve Peak Velocity	m/s
AV VTI	Aortic Valve Velocity Time Integral	cm
AVA (Vmax)	AV Area by Continuity Equation by Peak V	cm ²
AVA (VTI)	AV Area by Continuity Equation VTI	cm ²
AVA Planimetry	Aortic Valve Area	cm ²
AVET	Aortic Valve Ejection Time	ms
CO (A-L A2C)	CO 2CH, Single Plane, Area-Length	l/min
CO (A-L A4C)	CO 4CH, Single Plane, Area-Length	l/min
CO (Biplane)	CO, Biplane, MOD	l/min
CO (Bullet)	CO, Biplane, Bullet	l/min
CO (MOD A2C)	CO 2CH, Single Plane, MOD (Simpson)	l/min
CO (MOD A4C)	CO 4CH, Single Plane, 4CH, MOD (Simpson)	l/min
CO (Cube)	Cardiac Output, 2D, Cubic	l/min
CO (Cube)	Cardiac Output, M-mode, Cubic	l/min

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
CO (Teich)	Cardiac Output, 2D, Teichholz	l/min
CO (Teich)	Cardiac Output, M-mode, Teichholz	l/min
D-E Excursion	MV Anterior Leaflet Excursion	cm
D-E Excursion	Mitral Valve D-E Slope	cm
E'	Early diastolic mitral valve annular velocity	m/s
E' Avg	Averaged early diastolic mitral valve annular velocity	m/s
E' Lat	Early diastolic mitral valve lateral annular velocity	m/s
E' Medial	Early diastolic mitral valve medial annular velocity	m/s
E' Sept	Early diastolic mitral valve septal annular velocity	m/s
E/E'	Mitral inflow E velocity to E' ratio	
E/E' Avg	Mitral inflow E velocity to E' Avg ratio	
E/E' Lat	Mitral inflow E velocity to E' Lat ratio	
E/E' Medial	Mitral inflow E velocity to E' Medial ratio	
E/E' Sept	Mitral inflow E velocity to E' Sept ratio	
EDV (Bullet)	LV Volume, Diastolic, Biplane, Bullet	ml
EDV (Cube)	Left Ventricle Volume, Diastolic, 2D, Cubic	ml
EDV (Cube)	Left Ventricle Volume, Diastolic, M-mode, Cubic	ml
EDV (Teich)	Left Ventricle Volume, Diastolic, 2D, Teichholz	ml
EDV (Teich)	Left Ventricle Volume, Diastolic, M-mode, Teichholz	ml
E-F (A-L A2C)	Ejection Fraction, 2CH, Single Plane, Area-Length	%
EF (A-L A4C)	Ejection Fraction, 4CH, Single Plane, Area-Length	%
EF (Biplane)	Ejection Fraction, Biplane, MOD	%
EF (Biplane Ellipse)	Ejection Fraction, Biplane Ellipse	%
EF (Bullet)	Ejection Fraction, 2CH, Biplane, Bullet	%
EF (MOD A2C)	Ejection Fraction, 2CH, Single Plane, MOD (Simpson)	%
EF (MOD A4C)	Ejection Fraction, 4CH, Single Plane, 4CH, MOD (Simpson)	%
E-F Slope	Mitral Valve E-F Slope	m/s
EF (Cube)	Ejection Fraction, 2D, Cubic	%
EF (Cube)	Ejection Fraction, M-mode, Cubic	%

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
EF (Teich)	Ejection Fraction, 2D, Teichholz	%
EF (Teich)	Ejection Fraction, M-mode, Teichholz	%
EPSS	E-Point-to-Septum Separation, M-mode	cm
EPSS 2D	E-Point-to-Septum Separation, 2D	cm
ERO	Effective Regurgitant Orifice	cm ²
ESV (Bullet)	LV Volume, Systolic, Biplane, Bullet	ml
ESV (Cube)	Left Ventricle Volume, Systolic, 2D, Cubic	ml
ESV (Cube)	Left Ventricle Volume, Systolic, M-mode, Cubic	ml
ESV (Teich)	Left Ventricle Volume, Systolic, 2D, Teichholz	ml
ESV (Teich)	Left Ventricle Volume, Systolic, M-mode, Teichholz	ml
HR	AV Heart Rate, Dop	bpm
HR	Heart Rate, 2D, Teichholz	bpm
HR	Heart Rate for 2CH study	bpm
HR	Heart Rate for 4CH study	bpm
HR	Heart Rate for 2CH AL study	bpm
HR	Heart Rate for 2CH MOD study	bpm
HR	Heart Rate for 4CH AL study	bpm
HR	Heart Rate for 4CH MOD study	bpm
HR	Heart Rate for Bullet study	bpm
HR	Heart Rate for Biplane MOD study	bpm
HR	LV Heart Rate, Dop	bpm
HR	Heart Rate, M-mode, Teichholz	bpm
HR	Heart Rate	bpm
IVC	Inferior Vena Cava	cm
IVCT	Isovolumic Contraction Time	ms
IVRT	Isovolumic Relaxation Time	ms
IVSd	Interventricular Septum Thickness, Diastolic, 2D	cm
IVSd	IVS Thickness, Diastolic, M-mode	cm
IVSs	Interventricular Septum Thickness, Systolic, 2D	cm
IVSs	IVS Thickness, Systolic, M-mode	cm

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
LA Diam	Left Atrium Diameter, 2D	cm
LA Diam	Left Atrium Diameter, M-mode	cm
LA Diam	Right Atrium Diameter, 2D	cm
LA Major	Left Atrium Major	cm
LA Minor	Left Atrium Minor	cm
LA/Ao	LA Diameter to AoRoot Diameter Ratio, 2D	cm
LA/Ao	LA Diameter to AoRoot Diameter Ratio, M-mode	cm
LAEDV (A-L)	LA End Diastolic Volume, Area-Length	ml
LAEDV (MOD A4C)	LA Volume, Single Plane, MOD	ml
LAEDV Index (A-L)	LA End Diastolic Volume Index, Area-Length	ml/m ²
LAEDV(MOD BP)	LA End Diastolic Volume, Biplane, MOD	ml
LAEDV Index(MOD BP)	LA End Diastolic Volume Index, Biplane, MOD	ml/m ²
LAESV (A-L)	LA End Systolic Volume, Area-Length	ml
LAESV (MOD A4C)	LA Volume, Systolic, Single Plane MOD	ml
LAESV Index (A-L)	LA End Systolic Volume Index, Area-Length	ml/m ²
LAESV(MOD BP)	LA End Systolic Volume, Biplane, MOD	ml
LAEDV Index(MOD BP)	LA End Systolic Volume Index, Biplane, MOD	ml/m ²
LIMP	Left Index of Myocardial Performance	
LVA(s)	Left Ventricular Area, Systolic, 2CH	cm ²
LVA(d) (A2C)	Left Ventricular Area, Diastolic, 2CH	cm ²
LVA(d) (A4C)	Left Ventricular Area, Diastolic, 4CH	cm ²
LVA(d) (sax)	LV area, SAX, Diastolic	cm ²
LVAend (d)	LV Endocardial Area, SAX	cm ²
LVAepi (d)	LV Epicardial Area, SAX	cm ²
LVA(s) (A4C)	Left Ventricular Area, Systolic, 4CH	cm ²
LVA(s) (sax)	LV Area, SAX, Systolic	cm ²
LVd Mass	LV Mass, Diastolic, 2D	g
LVd Mass	LV Mass, Diastolic, M-mode	g

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
LVd Mass Index	LV Mass Index, Diastolic, 2D	g/m ²
LVd Mass Index	LV Mass Index, Diastolic, M-mode	g/m ²
LVEDV (A-L A2C)	LV Volume, Diastolic, 2CH, Area-Length	ml
LVEDV (A-L A4C)	LV Volume, Diastolic, 4CH, Area-Length	ml
LVEDV (MOD A2C)	LV Volume, Diastolic, Single Plane, 2CH, MOD	ml
LVEDV (MOD A4C)	LV Volume, Diastolic, Single Plane, 4CH, MOD	ml
LVEDV (MOD BP)	LV Volume, Diastolic, Biplane, MOD	ml
LVESV (A-L A2C)	LV Volume, Systolic, 2CH, Area-Length	ml
LVESV (A-L A4C)	LV Volume, Systolic, 4CH, Area-Length	ml
LVESV (MOD A2C)	LV Volume, Systolic, Single Plane, 2CH, MOD	ml
LVESV (MOD A4C)	LV Volume, Systolic, Single Plane, 4CH, MOD	ml
LVESV (MOD BP)	LV Volume, Systolic, Biplane, MOD	ml
LVESV (MOD LAX)	LV Volume, Diastolic, Apical View, LAX MOD	ml
LVESV (MOD LAX)	LV Volume, Systolic, Apical View, LAX, MOD	ml
LVET	Left Ventricle Ejection Time	ms
LVIDd	LV Internal Dimension, Diastolic, 2D	cm
LVIDd	LV Internal Dimension, Diastolic, M-mode	cm
LVIDs	LV Internal Dimension, Systolic, 2D	cm
LVIDs	LV Internal Dimension, Systolic, M-mode	cm
LVLd (Apical)	Left Ventricular Length, Diastolic, 2D	cm
LVLs (Apical)	Left Ventricular Length, Systolic, 2D	cm
LVOT Area	Left Ventricle Outflow Tract Area	cm ²
LVOT CO	Cardiac Output by Aortic Flow	l/min
LVOT Diam	Left Ventricular Outflow Tract Diameter	cm
LVOT max PG	LVOT Peak Pressure Gradient	mmHg
LVOT mean PG	LVOT Mean Pressure Gradient	mmHg
LVOT SI	Stroke Volume Index by Aortic Flow	ml/m ²
LVOT SV	Stroke Volume by Aortic Flow	ml
LVOT Vmax	LVOT Peak Velocity	m/s

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
LVOT Vmean	LVOT Velocity Time Integral	cm
LVPWd	Left Ventricular Posterior Wall Thickness, Diastolic, 2D	cm
LVPWd	Left Ventricular Posterior Wall Thickness, Diastolic, M-mode	cm
LVPWs	Left Ventricular Posterior Wall Thickness, Systolic, 2D	cm
LVPWs	Left Ventricular Posterior Wall Thickness, Systolic, M-mode	cm
LVs Mass	LV Mass, Systolic, 2D	g
LVs Mass	LV Mass, Systolic, M-mode	g
LVs Mass Index	LV Mass Index, Systolic, 2D	g/m ²
LVs Mass Index	LV Mass Index, Systolic, M-mode	g/m ²
LAA d (A2C)	Left Atrium Area, Apical 2C	cm ²
LAA d (A4C)	Left Atrium Area, Apical 4C	cm ²
MAPSE	Mitral Annular Plane Systolic Excursion	cm
MCO	Mitral Valve Closure to Opening	ms
MP Area	Mitral Valve Prosthesis	cm ²
MR Acc Time	MV Regurg. Flow Acceleration	ms
MR ERO [PISA]	Mitral Regurgitation Effective Regurgitant Orifice [Proximal Isovelocity Surface Area]	cm ²
MR Flow	PISA: Regurgitant Flow	ml/s
MR max PG	Mitral Regurg. Peak Pressure Gradient	mmHg
MR Rad	PISA: Radius of Aliased Point	cm
MR RV	PISA: Regurgitant Volume Flow	ml
MR Vel	PISA: Aliased Velocity	m/s
MR Vmax	Mitral Regurg. Peak Velocity	m/s
MR Vmax	PISA: CW Peak Velocity	m/s
MR Vmean	Mitral Regurg. Mean Velocity	m/s
MR VTI	Mitral Regurg. Velocity Time Integral	cm
MR VTI	PISA: CW Velocity Time Integral	cm
MV A Dur	Mitral Valve A-Wave Duration	ms
MV A Velocity	MV Velocity Peak A	m/s

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
MV Acc Slope	Mitral Valve Flow Acceleration	m/s ²
MV Acc Time	Mitral Valve Acceleration Time	ms
MV Acc/Dec Time	MV: Acc.Time/Decel. Time Ratio	
MV an diam	Mitral Valve Annulus Diameter, 2D	cm
MV CO	Cardiac Output by Mitral Flow	l/min
MV Dec Slope	Mitral Valve Flow Deceleration	m/s ²
MV Dec Time	Mitral Valve Deceleration Time	ms
MV E Velocity	MV Velocity Peak E	m/s
MV E/A Ratio	Mitral Valve E-Peak to A-Peak Ratio	
MV max PG	Mitral Valve Peak Pressure Gradient	mmHg
MV mean PG	Mitral Valve Mean Pressure Gradient	mmHg
MV PHT	Mitral Valve Pressure Half Time	ms
MV SI	Stroke Volume Index by Mitral Flow	ml/m ²
MV SV	Stroke Volume by Mitral Flow	ml
MV Time to Peak	Mitral Valve Time to Peak	ms
MV Vmax	Mitral Valve Peak Velocity	m/s
MV Vmean	MV Mean Velocity	m/s
MV VTI	Mitral Valve Velocity Time Integral	cm
MVA	Mitral Valve Area	cm ²
MVA by PHT	Mitral Valve Area according to PHT	cm ²
MVA by plan	Mitral Valve Area, 2D	cm ²
MVET	Mitral Valve Ejection Time	ms
P Vein A	Pulmonary Vein Velocity Peak A (reverse)	m/s
P Vein A Dur	Pulmonary Vein A-Wave Duration	ms
P Vein D	Pulmonary Vein End-Diastolic Peak Velocity	m/s
P Vein S	Pulmonary Vein Systolic Peak Velocity	m/s
PAEDP	Pulmonary Artery End Diastolic Pressure	mmHg
PE(d)	Pericard Effusion, M-mode	cm
PEs	Pericard Effusion, 2D	cm

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
PR ERO [PISA]	Pulmonic Regurgitation Effective Regurgitant Orifice [Proximal Isovelocity Surface Area]	cm ²
PR max PG	Pulmonic Insuf. Peak Pressure Gradient	mmHg
PR mean PG	Pulmonic Insuf. Mean Pressure Gradient	mmHg
PR PHT	Pulmonic Insuf. Pressure Half Time	ms
PR Vmax	Pulmonic Insuf. Peak Velocity	m/s
PR VTI	Pulmonic Insuf. Velocity Time Integral	cm
PRend max PG	Pulmonic Insuf. End-Diastole Pressure Gradient	mmHg
PRend Vmax	Pulmonic Insuf. End-Diastolic Velocity	m/s
Pulmonic Diam	Pulmonary Artery Diameter, 2D	cm
PV Acc Slope	Pulmonic Valve Flow Acceleration	m/s ²
PV Acc Time	Pulmonic Valve Acceleration Time	ms
PV Acc Time/ET Ratio	PV Acceleration to Ejection Time Ratio	
PV an Diam	Pulmonic Valve Annulus Diameter, 2D	cm
PV Ann Area	Pulmonic Valve Area	cm ²
PV CO	Cardiac Output by Pulmonic Flow	l/min
PV max PG	Pulmonic Valve Peak Pressure Gradient	mmHg
PV mean PG	Pulmonic Valve mean Pressure Gradient	mmHg
PV SV	Stroke Volume by Pulmonic Flow	ml
PV Vmax	Pulmonary Artery Peak Velocity	m/s
PV Vmax	Pulmonic Valve Peak Velocity	m/s
PV Vmean	PV Mean Velocity	m/s
PV VTI	Pulmonic Valve Velocity Time Integral	cm
PVA (VTI)	Pulmonary Artery Velocity Time Integral	cm ²
PVein S/D Ratio	Pulmonary Vain SD Ratio	
PVET	Pulmonic Valve Ejection Time	ms
PVPEP	Pulmonic Valve Pre-Ejection Period	ms
PVPEP/ET Ratio	PV Pre-Ejection to Ejection Time Ratio	
Qp/Qs	Pulmonic-to-Systemic Flow Ratio	
RA Major	Right Atrium Major, 2D	cm

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
RA Minor	Right Atrium Minor, 2D	cm
RAEDV A2C	Right Atrium End Diastolic Volume, Apical chamber	cm ²
RAEDV A-L	RA End Diastolic Volume (A-L)	ml
RAEDV MOD	RA Volume Diastolic, Single Plan, MOD	ml
RAEDV MOD	RA End Diastolic Volume (MOD)	ml
RAESV A-L	RA End Systolic Volume (A-L)	ml
RAESV MOD	RA Volume Systolic, Single Plan, MOD	ml
RAESV MOD	RA End Systolic Volume (MOD)	ml
RALd	Right Atrium Length, Diastole	cm
RALs	RA Length, Systole	cm
RIMP	Right Index of Myocardial Performance	
RJA (A4C)	Regurgitant Jet Area	cm ²
RJA/LAA	Regurgitant Jet Area ratio RJA/LAA	
RV Major	Right Ventricle Major	cm
RV Minor	Right Ventricle Minor	cm
RV S'	Tricuspid Annulus Systolic Excursion Velocity	m/s
RVAWd	Right Ventricle Wall Thickness, Diastolic, 2D	cm
RVAWs	Right Ventricle Wall Thickness, Systolic, 2D	cm
RVET	Right Ventricle Ejection time	s
RVIDd	Right Ventricle Diameter, Diastolic, 2D	cm
RVIDd	Right Ventricle Diameter, Diastolic, M-mode	cm
RVIDs	Right Ventricle Diameter, Systolic, 2D	cm
RVIDs	Right Ventricle Diameter, Systolic, M-mode	cm
RVOT Area	Right Ventricle Outflow Tract Area	cm ²
RVOT Diam	RV Output Tract Diameter, 2D	cm
RVOT Diam	RV Output Trace Diameter, M-mode	cm
RVOT max PG	RVOT Peak Pressure Gradient	mmHg
RVOT mean PG	RVOT Mean Pressure Gradient	mmHg
RVOT SI	LV Stroke Volume Index by Pulmonic Flow	ml/m ²

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
RVOT SV	Stroke Volume by Pulmonic Flow	ml
RVOT Vmax	RVOT Peak Velocity	m/s
RVOT Vmean	RVOT Mean Velocity	m/s
RVOT VTI	RVOT Velocity Time Integral	cm
RVSP	Right Ventricle Systolic Pressure	mmHg
RVWd	Right Ventricle Wall Thickness, Diastolic, M-Mode	cm
RVWs	Right Ventricle Wall Thickness, Systolic, M-mode	cm
RAA(d)	Right Atrium Area, 2D, Diastole	cm ²
RAA(s)	Right Atrium Area, 2D, Systole	cm ²
SI (A-LA2C)	LV Stroke Index, Single Plane, 2CH, Area-Length	ml/m ²
SI (A-LA4C)	LV Stroke Index, Single Plane, 4CH, Area-Length	ml/m ²
SI (Biplane)	LV Stroke Index, Biplane, MOD	ml/m ²
SI (Bullet)	LV Stroke Index, Biplane, Bullet	ml/m ²
SI (MOD A2C)	LV Stroke Index, Single Plane, 2CH, MOD	ml/m ²
SI (MOD A4C)	LV Stroke Index, Single Plane, 4CH, MOD	ml/m ²
SI (Teich)	LV Stroke Index, Teichholz, 2D	ml/m ²
SI (Teich)	LV Stroke Index, Teichholz, M-mode	ml/m ²
SV (A-LA2C)	LV Stroke Volume, Single Plane, 2CH, Area-Length	ml
SV (A-LA4C)	LV Stroke Volume, Single Plane, 4CH, Area-Length	ml
SV (Biplane)	LV Stroke Volume, Biplane, MOD	ml
SV (Bullet)	LV Stroke Volume, Biplane, Bullet	ml
SV (MOD A2C)	LV Stroke Volume, Single Plane, 2CH, MOD (Simpson)	ml
SV (MOD A4C)	LV Stroke Volume, Single Plane, 4CH, MOD (Simpson)	ml
SV (Cube)	LV Stroke Volume, 2D, Cubic	ml
SV (Cube)	LV Stroke Volume, M-mode, CUBic	ml
SV (Teich)	LV Stroke Volume, 2D, Teichholz	ml
SV (Teich)	LV Stroke Volume, M-mode, Teichholz	ml
Systemic Diam	Systemic Vein Diameter, 2D	cm
Systemic Vmax	Systemic Vein Peak Velocity	m/s

Table 2-1: Cardiac Measurements or Calculations (Continued)

Abbreviation	Definition	Unit
Systemic VTI	Systemic Vein Velocity Time Integral	cm
TAPSE	Tricuspid Annular Plane Systolic Excursion	cm
TCO	Tricuspid Valve Closure to Opening	ms
TR ERO [PISA]	Tricuspid Regurgitation Effective Regurgitant Orifice [Proximal Isovelocity Surface Area]	cm ²
TR max PG	Tricuspid Regurg. Peak Pressure Gradient	mmHg
TR mean PG	Tricuspid Regurg. Mean Pressure Gradient	mmHg
TR Vmax	Tricuspid Regurg. Peak Velocity	m/s
TR Vmean	Tricuspid Regurg. Mean Velocity	m/s
TR VTI	Tricuspid Regurgitation Velocity Time Integral	cm
TV A Dur	Tricuspid Valve A-Wave Duration	ms
TV A Velocity	Tricuspid Valve A Velocity	m/s
TV Acc Time	Tricuspid Valve Time to Peak	ms
TV Ann Area	Tricuspid Valve Area	cm ²
TV Ann Diam	Tricuspid Valve Annulus Diameter, 2D	cm
TV Area	Tricuspid Valve Area, 2D	cm ²
TV CO	Cardiac Output by Tricuspid Flow	l/min
TV Dec Slope	Tricuspid Valve Flow Deceleration	m/s ²
TV E Velocity	TV Valve E Velocity	m/s
TV E/A Ratio	Tricuspid Valve E-Peak to A-Peak Ratio	
TV max PG	Tricuspid Valve Peak Pressure Gradient	mmHg
TV mean PG	Tricuspid Valve Mean Pressure Gradient	mmHg
TV PHT	Tricuspid Valve Pressure Half Time	ms
TV SV	Stroke Volume by Tricuspid Flow	ml
TV Vmean	TV Mean Velocity	m/s
TV VTI	Tricuspid Valve Velocity Time Integral	cm
VSD max PG	VSD Peak Pressure Gradient	mmHg
VSD Vmax	VSD Peak Velocity	m/s

Measurement Formulas

Formulas—Generic

Table 2-2: Generic Calculation Formulas

Calc Mnemonic	Calc Name	Input Measurements	Formula
MaxPG	Maximum Pressure Gradient	two Doppler blood flow peak velocities	$\text{MaxPG}[\text{mmHg}] = 4 \times (v_1^2 - v_2^2)$
MeanPG	Mean Pressure Gradient	flow velocities from one time marker to another time marker in a Doppler display	$\text{MeanPG}[\text{mmHg}] = 4 \times \sum_{i=1}^n (V_i^2) / n$
% Stenosis	Stenosis Ratio	two areas (by ellipse, trace, circle or distance)	$\% \text{ Stenosis} = [1 - (A_{\text{residual}} / A_{\text{lumen}})] \times 100$
PI	Pulsatility Index	two Doppler blood flow peak velocities and TAMAX	$\text{PI} = V_{\text{max}} - V_{\text{min}} / \text{TAMAX}$
RI	Resistivity Index	two Doppler blood flow peak velocities	$\text{RI} = V_{\text{max}} - V_{\text{diastole}} / V_{\text{max}}^a$
HR	Heart Rate (beats/minute)	one 2 beat time interval	$\text{HR}[\text{BPM}] = 120[\text{sec}] / 2\text{beat time}[\text{sec}]$
A/B Ratio	Velocities Ratio	two Doppler blood flow peak velocities	$A/B = V_1 / V_2$
TAMAX	Time Averaged Maximum Velocity (Trace Method is Peak or manual)	two time marks in a Doppler display	$\text{TAMAX} = \text{sum}\{V_t\} \text{ from } t_1 \text{ to } t_2 / (t_2 - t_1) [\text{cm/s or m/s}]$
TAMIN	Time Averaged Minimum Velocity (Trace method is Floor)	two time marks in a Doppler display	$\text{TAMIN} = \text{sum}\{V_t\} \text{ from } t_1 \text{ to } t_2 / (t_2 - t_1) [\text{cm/s or m/s}]$
TAMEAN	Time Averaged Mean Velocity (Trace method is Mean)	two time marks in a Doppler display	$\text{TAMEAN} = \text{sum}\{V_t\} \text{ from } t_1 \text{ to } t_2 / (t_2 - t_1) [\text{cm/s or m/s}]$
a. $V_{\text{diastole}} = V_{\text{min}}$ or $V_{\text{end-diastole}}$ (depends on preset selection)			

Formulas–Generic (continued)

Table 2-3: Volume Calculation Formulas

Calc Name	Input Measurements	Formula
Volume (spherical)	one distance	$\text{Vol}[\text{ml}] = (\pi/6) \times d^3$
Volume (prolate spheroidal)	two distances, $d_1 > d_2$	$\text{Vol}[\text{ml}] = (\pi/6) \times d_1 \times d_2^2$
Volume (prolate spheroidal)	one ellipse, d_1 major axis, d_2 minor axis	$\text{Vol}[\text{ml}] = (\pi/6) \times d_1 \times d_2^2$
Volume (spheroidal)	three distances	$\text{Vol}[\text{ml}] = (\pi/6) \times d_1 \times d_2 \times d_3$
Volume (spheroidal)	one distance d_1 , one ellipse, d_2 major axis, d_3 minor axis	$\text{Vol}[\text{ml}] = (\pi/6) \times d_1 \times d_2 \times d_3$

Table 2-4: Urology Calculation Formulas

Calc Name	Input Measurements	Formula
Bladder Volume	three distances	$\text{Vol}[\text{ml}] = 0.7 \times d_1 \times d_2 \times d_3$ or $\text{Vol}[\text{ml}] = (\pi/6) \times d_1 \times d_2 \times d_3$
Prostate Volume	three distances	$\text{Vol}[\text{ml}] = (\pi/6) \times d_1 \times d_2 \times d_3$
PSAD	PSA = Prostatic Specific Antigen concentration	PSA/Urology Volume
PSAD1	PPSA = Predicted PSA	Urology Volume x PPSA-Coefficient1
PSAD2	PPSA = Predicted PSA	Urology Volume x PPSA-Coefficient2
Bladder Neck Rest (BN Rest)	one distance	$\text{BN Rest} [\text{mm}] = d_1$
Bladder Neck Stress (BN Stress)	one distance	$\text{BN Stress} [\text{mm}] = d_1$
Bladder Neck Descent (BN Descent)	two one-distance measurements	$\text{BN Descent} [\text{mm}] = \text{BN Rest} [\text{mm}] - \text{BN Stress} [\text{mm}]$
Rectocele Depth	one distance	$\text{Rectocele Depth} [\text{mm}] = d_1$
Rectocele Width	one distance	$\text{Rectocele Width} [\text{mm}] = d_1$
Detrusor Wall Thickening (DWT) D1, D2, D3	three one-distance measurements	$D1 [\text{mm}] = d_1$ $D2 [\text{mm}] = d_1$ $D3 [\text{mm}] = d_1$
DWT - Mean	DWT D1, DWT D2, DWT D3	$\text{Mean} [\text{mm}] = (D1 + D2 + D3)/3$
Uterine Descent Maximum (UT Des Max)	one distance	$\text{UT Des Max} [\text{mm}] = d_1$
NOTE: PSA, PPSA-Coefficient1 and PPSA-Coefficient2 must be typed manually in the Patient menu screen.		

Table 2-4: Urology Calculation Formulas (Continued)

Calc Name	Input Measurements	Formula
Rectal Ampulla Descent Maximum (Rect Amp Des Max)	one distance	Rec Amp Des Max [mm] = d1
Residual Urine	two distances	Volume (ml) = (D1 x D2 x 5.9) - 14.9
Levator Hiatus Stress (Lev Hiatus Stress)	two distances	Area [cm ²] = 0.5 x D1 [cm] x 0.5 x D2 [cm] x π
Alpha Angle (Urethral Rotation Angle)	one angle	Alpha [degrees] = A1
Gamma Angle	one angle	Gamma [degrees] = A1
Beta Angle (RestroVesical Angle)	one angle	Beta [degrees] = A1
NOTE: PSA, PPSA-Coefficient1 and PPSA-Coefficient2 must be typed manually in the Patient menu screen.		

Table 2-5: Abdominal/Small Parts Calculation Formulas

Calc Name	Input Measurements	Formula	Notes and References
Thyroid Volume	three distances	Vol[ml]= 0.479xd1xd2xd3	Brunn et al. 1981 Brunn et al. (1981) Brunn J, Block U, Ruf G, Bos I, Kunze WP, Scriba PC. Volumetric analysis of thyroid lobes by real-time ultrasound. Deutsche Medizinische Wochenschrift. 1981;106(41):1338–1340. doi: 10.1055/s-2008-1070506.
Testicle Volume	three distances	Vol[ml]= 0.523598775xd1xd2xd3	This is normal volume, 0.523598775 is equal to ($\pi/6$).
Renal Volume	three distances	Vol[ml]= 0.49xd1xd2xd3 or Vol[ml]= ($\pi/6$)xd1xd2xd3	Paul S. Sidhu, Wui K. Chong, Keshthra Satchithananda: Measurement in Ultrasound, Second Edition. Florida: Taylor & Francis Group, LLC, 2016.

Table 2-5: Abdominal/Small Parts Calculation Formulas (Continued)

Calc Name	Input Measurements	Formula	Notes and References
Nodule Volume	three distances	$\text{Vol}[\text{ml}] = 0.479 \times d1 \times d2 \times d3$	Brunn et al. 1981 Brunn et al. (1981) Brunn J, Block U, Ruf G, Bos I, Kunze WP, Scriba PC. Volumetric analysis of thyroid lobes by real-time ultrasound. Deutsche Medizinische Wochenschrift. 1981;106(41):1338–1340. doi: 10.1055/s-2008-1070506.
Splenic Index	three distances	$\text{Index} = d1(\text{cm}) \times d2(\text{cm}) \times d3(\text{cm}) \times 0.037$	J Ultrasound Med. 1984 Jan; 3(1):19-23. Determination of a splenic volumetric index by ultrasonic scanning.
Splenic Index-JP	two distances	$\text{Index} = d1(\text{cm}) \times d2(\text{cm})$	A splenic index (SI) was calculated as the length of the longitudinal dimension $\times$ the transverse dimension in the coronal plane through the splenic hilum. Enlarged spleen detected by abdominal ultrasonography in patients with RA HASHIMOTO and TADAFUMI DOIKOJI NISHIYA, NAKO HISAKAWA, TAKANORI HOSOKAWA, KOZO Ann Rheum Dis 2000;59:750 doi:10.1136/ard.59.9.750a

Formulas—Generic (Shear wave)

The formula for Stiffness: $E = 3 * \rho * c^2$

where

- E = Young's modulus of tissue
- ρ = density of tissue (assumed to be 1 g/cc)
- c = shear wave speed in m/s

NOTE: *The conversion from shear wave speed (m/s) to Young's modulus is done under the assumption that the underlying material in which the shear wave propagates is linear, isotropic, incompressible, and homogenous.*

Formulas–OB

Table 2-6: OB Calculation Formulas

Calc Mnemonic	Calc Name	Input Measurements	Formula	Author Reference
AC	Abdominal Circumference	circumference by trace, ellipse, circle or two distances	$AC = -13.3 + 1.61 (GA) - 0.00998 (GA)^2$	Hadlock et al, Radiology, 152:497-501, 1984
AC	Abdominal Circumference	circumference by trace, ellipse, circle or two distances	Regression Formula where AC is in mm: $GA (weeks) = 8.14 + 0.0753*AC + 0.000036*AC*AC$	
BPD	Biparietal Diameter	one distance	$BPD = -3.08 + 0.41 (GA) - 0.000061 (GA)^3$	
BPD	Biparietal Diameter	one distance	Regression Formula where BPD is in mm: $GA (weeks) = 9.54 + 0.1482*BPD + 0.001676*BPD*BPD$	
CRL	Crown Rump Length	one distance	$CRL = 1.684969 + 0.315646*xd1 + 0.049306*xd1^2 + 0.004057*xd1^3 + 0.000120456*xd1^4$	
FL	Femur Length	one distance	$FL = -3.91 + 0.427 (GA) - 0.0034 (GA)^2$	
FL	Femur Length	one distance	Regression Formula where FL is in mm: $GA (weeks) = 10.35 + 0.246*FL + 0.0017*FL*FL$	
HC	Head Circumference	circumference by trace, ellipse, circle or two distances	$HC = -11.48 + 1.56 (GA) - 0.0002548 (GA)^3$	
HC	Head Circumference	circumference by trace, ellipse, circle or two distances	Regression Formula where HC is in mm: $GA (weeks) = 8.96 + 0.054*HC + 0.0000003*HC*HC*HC$	
FL	Femur Length	one distance	$GA (weeks) = 9.18 + 0.267*FL + 0.0016*FL^2$, where FL is in mm	Hohler, Communications in Brief, 143: 479-481, 1982
CTAR	Cardio-Thoracic Area Ratio	two areas by ellipse	$CTAR[\%] = CTAR(Area1) / CTAR(Area2)$	Osaka University

Table 2-6: OB Calculation Formulas (Continued)

Calc Mnemonic	Calc Name	Input Measurements	Formula	Author Reference
HC (see note below)	Head Circumference	one ellipse	$HC [mm] = 2.325 * (BPD [mm]^2 + OFD [mm]^2)^{0.5}$	Hansmann, Ultrasound Diagnosis in Obstetrics and Gynecology, 438-9, 1985
<i>NOTE: Use above HC formula for situations involving one BPD measurement or one BPD and one OFD measurement, as explained in the following examples:</i> <i>Case #1: Obtain BPD (Hansmann) measurement. Select HC (Hansmann) measurement. The OFD (Hansmann) measurement is activated and HC (Hansmann) is calculated using BPD (Hansmann) and OFD (Hansmann) with the above formula.</i> <i>Case #2: Obtain BPD (Hansmann) measurement. Obtain OFD (Hansmann) measurement. Select HC (Hansmann) measurement. There is no measurement activated. HC (Hansmann) is calculated using BPD (Hansmann) and OFD (Hansmann) with the above formula.</i>				
EF	Ejection Fraction	two distances on M-Mode (End-diastolic dimension and End-systolic dimension on M-Mode)	$EF = (1 - Ds^3 / Dd^3)$	n/a
TCD	Trans Cerebellar Diameter	one distance Range: 14 mm - 52 mm	$GA (weeks) = 6.329 + (0.4807 * TCD) + (0.01484 * TCD^2) - (0.0002474 * TCD^3)$	Goldstein et al, Am J OB/GYN, May 1987

Formulas–OB (continued)

Table 2-7: CUA Hadlock Formulas

Calc Mnemonic	Calc Name	Formula	Author Reference
CUA ^a	Composite Ultrasound Age	- CUA (BPD) = $9.54 + 1.482 * \text{BPD} + 0.1676 * \text{BPD}^2$ - CUA (HC) = $8.96 + 0.540 * \text{HC} + 0.0003 * \text{HC}^3$ - CUA (AC) = $8.14 + 0.753 * \text{AC} + 0.0036 * \text{AC}^2$ - CUA (FL) = $10.35 + 2.460 * \text{FL} + 0.170 * \text{FL}^2$ - CUA (BPD, HC) = $10.32 + 0.009 * \text{HC}^2 + 1.3200 * \text{BPD} + 0.00012 * \text{HC}^3$ - CUA (BPD, AC) = $9.57 + 0.524 * \text{AC} + 0.1220 * \text{BPD}^2$ - CUA (BPD, FL) = $10.50 + 0.197 * \text{BPD} * \text{FL} + 0.9500 * \text{FL} + 0.7300 * \text{BPD}$ - CUA (HC, AC) = $10.31 + 0.012 * \text{HC}^2 + 0.3850 * \text{AC}$ - CUA (HC, FL) = $11.19 + 0.070 * \text{HC} * \text{FL} + 0.2630 * \text{HC}$ - CUA (AC, FL) = $10.47 + 0.442 * \text{AC} + 0.3140 * \text{FL}^2 - 0.0121 * \text{FL}^3$ - CUA (BPD, HC, AC) = $10.58 + 0.005 * \text{HC}^2 + 0.3635 * \text{AC} + 0.02864 * \text{BPD} * \text{AC}$ - CUA (BPD, HC, FL) = $11.38 + 0.070 * \text{HC} * \text{FL} + 0.9800 * \text{BPD}$ - CUA (BPD, AC, FL) = $10.61 + 0.175 * \text{BPD} * \text{FL} + 0.2970 * \text{AC} + 0.7100 * \text{FL}$ - CUA (HC, AC, FL) = $10.33 + 0.031 * \text{HC} * \text{FL} + 0.3610 * \text{HC} + 0.0298 * \text{AC} * \text{FL}$ - CUA (BPD, HC, AC, FL) = $10.85 + 0.060 * \text{HC} * \text{FL} + 0.6700 * \text{BPD} + 0.1680 * \text{AC}$	Hadlock, Radiology, 1984 152:497-501
a. Formulas are used only if Hadlock HC, FL, AC and BPD are used and CUA is selected as the preset in the CUA/AUA for Hadlock preset in the System Measure Preset Menu. If other authors are used, CUA automatically changes to AUA and an average value is displayed.			

Table 2-8: EFW Calculation Formulas

Calc Mnemonic	Calc Name	Input Measurements	Formula	Author Reference
EFW	Estimated Fetal Weight	AC and HC	$\text{EFW [g]} = 10^{\wedge} (1.182 + (0.0273 * \text{HC [cm]}) + (0.07057 * \text{AC [cm]} - (0.00063 * \text{AC [cm]}^2) - (0.0002184 * \text{AC [cm]} * \text{HC [cm]}))$	Hadlock, Radiology, 150:535, 1984
EFW	Estimated Fetal Weight	BPD, AC, and FL	$\text{EFW [g]} = 10^{\wedge} (1.335 - (0.0034 * \text{AC [cm]} * \text{FL [cm]}) + (0.0316 * \text{BPD [cm]}) + (0.0457 * \text{AC [cm]}) + (0.1623 * \text{FL [cm]}))$	Hadlock, AJOG, 151:333, 1985

Table 2-8: EFW Calculation Formulas (Continued)

Calc Mnemonic	Calc Name	Input Measurements	Formula	Author Reference
EFW	Estimated Fetal Weight	AC, HC, and FL	$EFW [g] = 10^{(1.326 - (0.00326 * AC [cm] * FL [cm]) + (0.0107 * HC [cm]) + (0.0438 * AC [cm]) + (0.158 * FL [cm]))}$	Hadlock, AJOG, 151:333, 1985
EFW	Estimated Fetal Weight	AC, HC, BPD, FL	$EFW [g] = 10^{(1.3596 - (0.00386 * AC [cm] * FL [cm]) + (0.0064 * HC [cm]) + (0.00061 * BPD [cm] * AC [cm]) + (0.0424 * AC [cm]) + (0.174 * FL [cm]))}$	Hadlock, AJOG, 151:333, 1985
EFW	Estimated Fetal Weight	AC and FL	$EFW [g] = 10^{(1.3598 + 0.051 * AC [cm] + 0.1844 * FL [cm] - 0.0037 * AC [cm] * FL [cm])}$	Hadlock, Radiology, 150:535, 1984
EFW	Estimated Fetal Weight	AC and BPD <u>Bounds</u> AC: 21.8 - 36.5 cm BPD: 7 - 10.5 cm	$EFW [g] = -3200.40479 + 157.07186 * AC [cm] + 15.90391 * BPD [cm]^2$	Merz
EFW	Estimated Fetal Weight	BPD and TTD <u>Bounds</u> BPD: 6.0 - 10.9 cm TTD: 4.9 - 12.1 cm	$EFW [kg] = 0.515263 - 0.105775 * BPD [mm] + 0.000930707 * BPD [mm]^2 + 0.0649145 * TTD [mm] - 0.00020562 * TTD [mm]^2$	Hansmann
EFW	Estimated Fetal Weight	AC and BPD	$EFW [kg] = 10^{(-1.7492 + 0.166 * BPD [cm] + 0.046 * AC [cm] - 2.646 * AC [cm] * BPD [cm]/1000)}$	Shepard, AJOG, 142:47, 1982
EFW	Estimated Fetal Weight	BPD [cm] and AC [cm]	$EFW [g] = 10^{(1.7288 + 0.09184 * BPD [cm] + 0.02581 * AC [cm] + 0.00011 * BPD [cm] * AC [cm])}$	Shepard/Warsoff
EFW	Estimated Fetal Weight	AC, HC, and FL	$EFW [g] = 10^{(1.5662 - 0.0108 * HC [cm] + 0.0468 * AC [cm] + 0.171 * FL [cm] + 0.00034 * HC [cm] * HC [cm] - 0.003685 * AC [cm] * FL [cm])}$	Hadlock, Radiology, 150:537, 1984
EFW	Estimated Fetal Weight	BPD [cm] and AC [cm]	$EFW [g] = 10^{(3 - 1.7492 + (0.166 * BPD [cm]) + (0.046 * AC [cm]) - (0.002646 * AC [cm] * BPD [cm]))}$	Richards/Berkowitz

Table 2-8: EFW Calculation Formulas (Continued)

Calc Mnemonic	Calc Name	Input Measurements	Formula	Author Reference
EFW	Estimated Fetal Weight	BPD, APTD, TTD, and FL	$EFW [g] = 1.07 * BPD [cm]^3 + 3.42 * APTD [cm] * TTD [cm] * FL [cm]$	Tokyo University
EFW	Estimated Fetal Weight	BPD, AxT, FL [cm]	$EFW1 [g] = 1.07 * BPD [cm]^3 + 3.42 * AxT [cm]^2 * FL [cm]$	Tokyo Shinozuka
EFW	Estimated Fetal Weight	BPD, AC, FL [cm]	$EFW2 [g] = 1.07 * BPD [cm]^3 + 0.30 * AC [cm]^2 * FL [cm]$	Tokyo Shinozuka
EFW	Estimated Fetal Weight	BPD, AxT, SL [cm]	$EFW3 [g] = 1.07 * BPD [cm]^3 + 2.91 * AxT [cm]^2 * SL [cm]$	Tokyo Shinozuka
EFW	Estimated Fetal Weight	BPD, FTA, FL [cm]	$EFW [g] = 1.25647 * BPD [cm]^3 + 3.50655 * FTA [cm]^2 * FL [cm] + 6.3$	Osaka University Method 1989, 3 by Univ. Osaka
EFW (IUGR)	Estimated Fetal Weight	BPD, FTA, FL [cm] EFW (IUGR) is calculated when Osaka EFW-SD <= -1.5SD	$EFW [g] = 1.229 * BPD [cm]^3 + 3.063 * FTA [cm]^2 * FL [cm] - 24.6$	Osaka University Method 1989, 3 by Univ. Osaka

Table 2-9: EFW Growth Percentile (Hadlock)

Formula	Author Reference
$MEAN = \exp (0.578 + (0.332 * GA(week)) - (0.00354 * GA(week)^2))$ $SD = 0.127 * MEAN$	Radiology 1991; 181: 129-133

Amniotic Fluid Index (AFI)

The normal values are considered to be:

36-40 weeks

0-5 cm = very low

5.1-8.0 cm = low

8.1 - 18.0 cm = normal

>18.0 = high



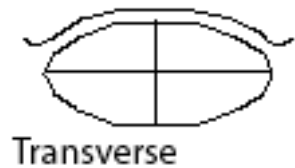
Dr. Rutherford/Dr. Phelan, *Obstetrics and Gynecology*, Volume 70, No. 3, Part 1, p.353-6, Sept. 1987.

28-40 weeks

15.0 cm = average

>20.0 - 24.0 = hydramnios

<5.0-6.0 = Oligohydramnios



Dr. C.C. Smith, *The Female Patient*, Volume 15, p.85-97, March 1990.

Formulas–GYN

Table 2-10: GYN Calculation Formulas

Calc Mnemonic	Calc Name	Input Measurements	Formula
Ut-L	Uterine Length	one distance	Ut-L[cm or mm]=d1
Ut-H	Uterine Height	one distance	Ut-H[cm or mm]=d1
Ut-W	Uterine Width	one distance	Ut-W[cm or mm]=d1
Ut-Volume	Uterine Volume	Ut-L, Ut-H, Ut-W	Ut-Volume=0.5236 x Ut-L[cm or mm] x Ut-H[cm or mm] x Ut-W[cm or mm]
UtPFD	Uterus Portio-Fundus Distance	one distance	Ut PFD [cm or mm] = d1
UtAP	Anterior-Posterior Uterus Diameter	one distance	Ut AP [cm or mm] = d1
UtQ	Transverse Uterus Diameter	one distance	Ut Q [cm or mm] = d1
Endo	Endometrium Thickness	one distance	Endo[cm or mm]=d1
Lt. Ov-L	Left Ovarian Length	one distance	Lt. Ov-L[cm or mm]=d1
Lt. Ov-H	Left Ovarian Height	one distance	Lt. Ov-H[cm or mm]=d1
Lt. Ov-W	Left Ovarian Width	one distance	Lt. Ov-W[cm or mm]=d1
Lt. Ov-Volume	Left Ovarian Volume	Lt. Ov-L, Lt. Ov-H, Lt. Ov-W	Lt. Ov-Volume=0.5236 x Lt. Ov-L[cm or mm] x Lt. Ov-H[cm or mm] x Lt. Ov-W[cm or mm]
Rt. Ov-L	Right Ovarian Length	one distance	Rt. Ov-L[cm or mm]=d1
Rt. Ov-H	Right Ovarian Height	one distance	Rt. Ov-H[cm or mm]=d1
Rt. Ov-W	Right Ovarian Width	one distance	Rt. Ov-W[cm or mm]=d1
Rt. Ov-Volume	Right Ovarian Volume	Rt. Ov-L, Rt. Ov-H, Rt. Ov-W	Rt. Ov-Volume=0.5236 x Rt. Ov-L[cm or mm] x Rt. Ov-H[cm or mm] x Rt. Ov-W[cm or mm]
Lt. Ov-RI	Left Ovarian Vessel Resistive Index	two Doppler blood flow peak velocities	Lt. Ov-RI= $ V_{\max}-V_{\text{diastole}} /V_{\max}^a$
Ut-RI	Uterine Vessel Resistive Index	two Doppler blood flow peak velocities	Ut-RI= $ V_{\max}-V_{\text{diastole}} /V_{\max}^a$
a. $V_{\text{diastole}} = V_{\min}$ or $V_{\text{end-diastole}}$ (depends on preset selection) b. To calculate LtOvFo or RtOvFo with one (or two distances), press the Clear key after the first (or second distance) measurement(s).			

Table 2-10: GYN Calculation Formulas (Continued)

Calc Mnemonic	Calc Name	Input Measurements	Formula
Rt. Ov-RI	Right Ovarian Vessel Resistive Index	two Doppler blood flow peak velocities	Rt.Ov-RI= $ V_{\max}\text{-}V_{\text{diastole}} /V_{\max}^a$
LtOvFo[ml]	Left Ovary Follicles	One distance ^b	$D1[\text{cm}]^3 \times \pi/6$
		Two distances ^b	$D1[\text{cm}]^2 \times D2[\text{cm}] \times \pi/6$: (D1 <D2)
			$D1[\text{cm}] \times D2[\text{cm}]^2 \times \pi/6$: (D2 <D1)
		Three distances	$D1[\text{cm}] \times D2[\text{cm}]\times D3[\text{cm}] \times \pi/6$
RtOvFo[ml]	Right Ovary Follicles	One distance ^b	$D1[\text{cm}]^3 \times \pi/6$
		Two distances ^b	$D1[\text{cm}]^2 \times D2[\text{cm}] \times \pi/6$: (D1 <D2)
			$D1[\text{cm}] \times D2[\text{cm}]^2 \times \pi/6$: (D2 <D1)
		Three distances	$D1[\text{cm}] \times D2[\text{cm}] \times D3[\text{cm}] \times \pi/6$
Lt Fib Vol	Left Fibroid	One distance ^b	$D1[\text{cm}]^3 \times \pi/6$
		Two distances ^b	$D1[\text{cm}]^2 \times D2[\text{cm}] \times \pi/6$: (D1 <D2)
			$D1[\text{cm}] \times D2[\text{cm}]^2 \times \pi/6$: (D2 <D1)
		Three distances	$D1[\text{cm}] \times D2[\text{cm}]\times D3[\text{cm}] \times \pi/6$
a. $V_{\text{diastole}} = V_{\text{min}}$ or $V_{\text{end-diastole}}$ (depends on preset selection) b. To calculate LtOvFo or RtOvFo with one (or two distances), press the Clear key after the first (or second distance) measurement(s).			

Table 2-10: GYN Calculation Formulas (Continued)

Calc Mnemonic	Calc Name	Input Measurements	Formula
Rt Fib Vol	Right Fibroid	One distance ^b	$D1[\text{cm}]^3 \times \pi/6$
		Two distances ^b	$D1[\text{cm}]^2 \times D2[\text{cm}] \times \pi/6$: (D1 < D2)
			$D1[\text{cm}] \times D2[\text{cm}]^2 \times \pi/6$: (D2 < D1)
		Three distances	$D1[\text{cm}] \times D2[\text{cm}] \times D3[\text{cm}] \times \pi/6$
Lt. Ov-PI	Left Ovarian Vessel Pulsatility Index	two Doppler blood flow peak velocities and TAMAX	$\text{Lt. Ov-PI} = V_{\text{max}} - V_{\text{min}} / \text{TAMAX}$
Rt. Ov-PI	Right Ovarian Vessel Pulsatility Index	two Doppler blood flow peak velocities and TAMAX	$\text{Rt. Ov-PI} = V_{\text{max}} - V_{\text{min}} / \text{TAMAX}$
a. $V_{\text{diastole}} = V_{\text{min}}$ or $V_{\text{end-diastole}}$ (depends on preset selection) b. To calculate LtOvFo or RtOvFo with one (or two distances), press the Clear key after the first (or second distance) measurement(s).			

Formulas–Vascular

Table 2-11: Vascular Calculation Formulas

Calc Mnemonic	Calc Name	Input Measurements	Formula
RT ECA	Right External Carotid Artery Velocity	one Doppler blood flow peak velocity	RT ECA=v1 [cm/s or m/s]
RT CCA	Right Common Carotid Artery Velocity	one Doppler blood flow peak velocity	RT CCA=v1 [cm/s or m/s]
RT BIFURC	Right Carotid Bifurcation Velocity	one Doppler blood flow peak velocity	RT BIFURC=v1 [cm/s or m/s]
RT ICA	Right Internal Carotid Artery Velocity	one Doppler blood flow peak velocity	RT ICA=v1 [cm/s or m/s]
RT ICA/CCA	Right Internal Carotid Artery Velocity/Common Carotid Artery Velocity Ratio	two Doppler blood flow peak velocities	RT ICA/CCA= V_{ICA}/V_{CCA}
LT ECA, LT CCA, LT BIFURC, LT ICA, LT ICA/CCA	Same as above, for Left Carotid Artery	Same as above	Same as above
RT Lindegaard ratio	RT Lindegaard ratio	two Doppler blood flow peak velocities or two Doppler blood flow TAMAX or two Doppler blood flow MFV (MFV = 1/3PS + 2/3ED)	RT Lindegaard ratio = V_{MCA}/V_{ICA} or $TAMAX_{MCA}/TAMAX_{ICA}$ or MFV_{MCA}/MFV_{ICA}
LT Lindegaard ratio	LT Lindegaard ratio	two Doppler blood flow peak velocities or two Doppler blood flow TAMAX or two Doppler blood flow MFV (MFV = 1/3PS + 2/3ED)	LT Lindegaard ratio = V_{MCA}/V_{ICA} or $TAMAX_{MCA}/TAMAX_{ICA}$ or MFV_{MCA}/MFV_{ICA}
A/B Ratio	Velocities Ratio	two Doppler blood flow peak velocities	$A/B=[V_1/V_2]$
% Stenosis	Stenosis Ratio	two areas (by ellipse, trace, circle or distance)	% Stenosis= $[1-(A_{residual}/A_{lumen})] \times 100$
a. $V_{diastole} = V_{min}$ or $V_{end-diastole}$ (depends on preset selection)			

Table 2-11: Vascular Calculation Formulas (Continued)

Calc Mnemonic	Calc Name	Input Measurements	Formula
S/D Ratio	Systolic Velocity/Diastolic Velocities Ratio	two Doppler blood flow peak velocities	$PS/ED = V_{systole}/V_{diastole} ^a$
PI	Pulsatility Index	two Doppler blood flow peak velocities and TAMAX	$PI = V_{max} - V_{min} /TAMAX$
RI	Resistivity Index	two Doppler blood flow peak velocities	$RI = V_{max} - V_{diastole} /V_{max}^a$
HR	Heart Rate (beats/minute)	one 2 beat time interval (measured manually or automatically)	$HR[BPM] = 120[sec]/2 \text{ beat time}[sec]$
a. $V_{diastole} = V_{min}$ or $V_{end-diastole}$ (depends on preset selection)			

Formulas-Cardiac

The following table lists the cardiac calculations. The folders where to find the calculations and related measurements are indicated in brackets “[]”.

Table 2-12: Cardiac Calculation Formulas

%FS [Dimension, Cube/Teichholz] Mode : 2D, CF, VR2D Formula : $\frac{((\{LVIDd\}-\{LVIDs\})/\{LVIDd\}) \times 100}{}$ Needs measurement : LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz] Measured by : LVs [2DLV], LVIDs [2DCaliper], EF (Cube) [AutoCalc]
%FS [Generic, Dimension] Mode : MM, CM, AMM, CAMM, VRMM Formula : $\frac{((\{LVIDd\}-\{LVIDs\})/\{LVIDd\}) \times 100}{}$ Needs measurement : LVIDd [Generic, Dimension], LVIDs [Generic, Dimension] Measured by : LV Study [MMLV], LVIDs [MMDISCALIPER]
%IVS Thck [Dimension] Mode: 2D:CF:VR2D Formula: $\frac{((\{IVSs\}-\{IVSd\})/\{IVSd\}) \times 100}{}$ Needs measurement: IVSs [Dimension], IVSd [Dimension] Measured by: LVs [2DLV], IVSs [2DCALIPER]
%IVS Thck [Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\frac{((\{IVSs\}-\{IVSd\})/\{IVSd\}) \times 100}{}$ Needs measurement: IVSs [Dimension], IVSd [Dimension] Measured by: IVSs [MMDISCALIPER]
%LVPW Thck [Dimension] Mode: 2D:CF:VR2D Formula: $\frac{((\{LVPWs\}-\{LVPWd\})/\{LVPWd\}) \times 100}{}$ Needs measurement: LVPWs [Dimension], LVPWd [Dimension] Measured by: LVs [2DLV], LVPWs [2DCALIPER]
%LVPW Thck [Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\frac{((\{LVPWs\}-\{LVPWd\})/\{LVPWd\}) \times 100}{}$ Needs measurement: LVPWs [Dimension], LVPWd [Dimension] Measured by: LVPWs [MMDISCALIPER]
Ao st junct/Ao [Dimension] Mode: 2D:CF:VR2D Formula: $\frac{\{Ao\ st\ junct\}}{\{Ao\ Diam\}}$ Needs measurement: Ao st junct [Dimension], Ao Diam [Dimension] Measured by: Ao st junct [2DCALIPER]
Ao/LA [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\frac{\{Ao\ Diam\}}{\{LA\ Diam\}}$ Needs measurement: Ao Diam [Generic, Dimension], LA Diam [Generic, Dimension] Measured by: LA/Ao [MMLAO]

Table 2-12: Cardiac Calculation Formulas (Continued)

AP Area [Aortic] Mode: CW:PW:VRCW:VRPW Formula: $\{LVOT\ Diam\}^2 \times 0.785 \times \{LVOT\ VTI\} / \{AP\ VTI\}$ Needs measurement: LVOT Diam [Aortic], LVOT VTI [Aortic], AP VTI [Aortic] Measured by: AP Area [SDMANTRACE]
AR RF [PISA] Mode: CF:CW:PW:VRCW:VRPW Formula: $\{AR\ RV\} / \{AV\ SV\} \times 100$ Needs measurement: AV Diam [Dimension], AV Trace [Aortic], AR Flow [PISA], AR Trace [PISA] Measured by: AR RF [AUTOCALC]
AR ERO [PISA] Mode: CF:CW:PW:VRCW:VRPW Formula: $\{AR\ Flow\} / \{AR\ Vmax\} \times 100$ Needs measurement: AR Flow [PISA], AR Vmax [PISA] Measured by: AR Trace [AUTOCALC]
AR RV [PISA] Mode: CF:CW:PW:VRCW:VRPW Formula: $\{AR\ Flow\} / \{AR\ Vmax\} \times 100 \times \{AR\ VTI\}$ Needs measurement: AR Flow [PISA], AR Vmax [PISA], AR VTI [PISA] Measured by: AR Trace [AUTOCALC]
AV Acc Time/ET Ratio [Aortic] Mode: CW:PW:VRCW:VRPW Formula: $\{AV\ AccT\} / \{AVET\}$ Needs measurement: AV AccT [Aortic], AVET [Aortic] Measured by: AVET [SDTIMECALIPER]
AV Area [Dimension] Mode: 2D:CF:VR2D Formula: $3.14 / 4 \times \{AV\ Diam\}^2$ Needs measurement: AV Diam [Dimension] Measured by: AV Diam [2DCALIPER]
AV CI [Aortic] Mode: CW:PW:VRCW:VRPW Formula: $\{ \{AV\ Diam\}^2 \times 0.785 \times \{AV\ VTI\} \} \times \{HR\} / 1000 / \{BSA\}$ Needs measurement: AV Diam [Aortic], AV VTI [Aortic], HR [Aortic] Measured by: AV Trace [SDMANTRACE]
AV CO [Aortic] Mode: CW:PW:VRCW:VRPW Formula: $\{ \{AV\ Diam\}^2 \times 0.785 \times \{AV\ VTI\} \} \times \{HR\} / 1000$ Needs measurement: AV Diam [Aortic], AV VTI [Aortic], HR [Aortic] Measured by: AV Trace [SDMANTRACE]
AV SI [Aortic] Mode: CW:PW:VRCW:VRPW Formula: $\{ \{AV\ Diam\}^2 \times 0.785 \times \{AV\ VTI\} \} / \{BSA\}$ Needs measurement: AV Diam [Aortic], AV VTI [Aortic] Measured by: AV Trace [SDMANTRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

AV SV [Aortic] Mode: CW:PW:VRCW:VRPW Formula: $\{AV \text{ Diam}\}^2 \times 0.785 \times \{AV \text{ VTI}\}$ Needs measurement: AV Diam [Aortic], AV VTI [Aortic] Measured by: AV Trace [SDMANTRACE]
AVA (VTI) [Aortic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{LVOT \text{ Diam}\}^2 \times \{LVOT \text{ VTI}\} / \{AV \text{ VTI}\} / \{BSA\}$ Needs measurement: LVOT Diam [Aortic], LVOT VTI [Aortic], AV VTI [Aortic] Measured by: AV Trace [AUTOCALC]
AVAI (VTI) [Aortic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{LVOT \text{ Diam}\}^2 \times \{LVOT \text{ VTI}\} / \{AV \text{ VTI}\}$ Needs measurement: LVOT Diam [Aortic], LVOT VTI [Aortic], AV VTI [Aortic] Measured by: AV Trace [AUTOCALC]
AVA Vmax [Aortic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{LVOT \text{ Diam}\}^2 \times \text{abs}(\{LVOT \text{ Vmax}\} / \{AV \text{ Vmax}\})$ Needs measurement: LVOT Diam [Aortic], LVOT Vmax [Aortic], AV Vmax [Aortic] Measured by: AV Vmax [AUTOCALC]
AVAI Vmax [Aortic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{LVOT \text{ Diam}\}^2 \times \text{abs}(\{LVOT \text{ Vmax}\} / \{AV \text{ Vmax}\}) / \{BSA\}$ Needs measurement: LVOT Diam [Aortic], LVOT Vmax [Aortic], AV Vmax [Aortic] Measured by: AV Trace [AUTOCALC]
AVA Vmax, Pt [Aortic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{LVOT \text{ Diam}\}^2 \times \text{abs}(\{LVOT \text{ Vmax}\} / \{AV \text{ Vmax}\})$ Needs measurement: LVOT Diam [Aortic], LVOT Vmax [Aortic], AV Vmax [Aortic] Measured by: AV Vmax [AUTOCALC]
AVAI Vmax, Pt [Aortic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{LVOT \text{ Diam}\}^2 \times \text{abs}(\{LVOT \text{ Vmax}\} / \{AV \text{ Vmax}\}) / \{BSA\}$ Needs measurement: LVOT Diam [Aortic], LVOT Vmax [Aortic], AV Vmax [Aortic] Measured by: AV Trace [AUTOCALC]
CI A-L A2C [Single Plane A2C] Mode: 2D:CF:VR2D Formula: $((\{LVEDV \text{ A-L A2C}\} - \{LVESV \text{ A-L A2C}\}) \times \{HR\} / 1000) / \{BSA\}$ Needs measurement: LVEDV A-L A2C [Single Plane A2C], LVESV A-L A2C [Single Plane A2C], HR [Single Plane A2C] Measured by: R-R [2DCALIPER], LVESV A2C [2DVOLUMETRACE]
CI A-L A2C [Single Plane A2C] Mode: 2D:CF:VR2D Formula: $((\{LVEDV \text{ A-L A2C}\} - \{LVESV \text{ A-L A2C}\}) \times \{\text{Auto HR}\} / 1000) / \{BSA\}$ Needs measurement: LVEDV A-L A2C [Single Plane A2C], LVESV A-L A2C [Single Plane A2C], HR [Single Plane A2C] Measured by: LVESV A2C [2DVOLUMETRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

CI A-L A4C [Single Plane A4C] Mode: 2D:CF:VR2D:Trace Formula: $((\{LVEDV\ A-L\ A4C\} - \{LVESV\ A-L\ A4C\}) * \{HR\} / 1000) / \{BSA\}$ Needs measurement: LVEDV A-L A4C [Single Plane A4C, AutoBiplane], LVESV A-L A4C [Single Plane A4C, AutoBiplane], HR [Single Plane A4C, AutoBiplane] Measured by: R-R [2DCALIPER], LVESV A4C [2DVOLUMETRACE]
CI A-L A4C [Single Plane A4C] Mode: 2D:CF:VR2D Formula: $((\{LVEDV\ A-L\ A4C\} - \{LVESV\ A-L\ A4C\}) * \{Auto\ HR\} / 1000) / \{BSA\}$ Needs measurement: LVEDV A-L A4C [Single Plane A4C], LVESV A-L A4C [Single Plane A4C], HR [Single Plane A4C] Measured by: LVESV A4C [2DVOLUMETRACE]
CI A-L LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $((\{LVEDV\ A-L\ LAX\} - \{LVESV\ A-L\ LAX\}) * \{Auto\ HR\} / 1000) / \{BSA\}$ Needs measurement: LVEDV A-L LAX [Single Plane LAX], LVESV A-L LAX [Single Plane LAX], HR [Single Plane LAX] Measured by: R-R [2DCALIPER], LVESV LAX [2DVOLUMETRACE]
CI A-L LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $((\{LVEDV\ A-L\ LAX\} - \{LVESV\ A-L\ LAX\}) * \{Auto\ HR\} / 1000) / \{BSA\}$ Needs measurement: LVEDV A-L LAX [Single Plane LAX], LVESV A-L LAX [Single Plane LAX], HR [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE]
CI Biplane [Biplane] Mode: 2D:CF:VR2D:Trace Formula: $((d - s) * \{HR\} / 1000) / \{BSA\}$ where: $d = \text{biplane}(\{LVLd\ A4C\}, \{LVDisksD\}, \{LVLd\ A2C\}, \{LVDisksD\})$ $s = \text{biplane}(\{LVLs\ A4C\}, \{LVDisksS\}, \{LVLs\ A2C\}, \{LVDisksS\})$ Needs measurement: LVLd A4C [Biplane], LVLd A2C [Biplane], LVLs A4C [Biplane], LVLs A2C [Biplane], HR [Biplane] Measured by: R-R [2DCALIPER]
CI bp el [Biplane Ellipse] Mode: 2D:CF:VR2D:Trace Formula: $((d - s) * \{ECG / HeartRate\} / 1000) / \{BSA\}$ where: $s = (8 / (3 * 3.14159)) * \{LVAs\ A4C\} * \{LVAs(sax\ MV)\} / \{LVIDs\}$ $d = (8 / (3 * 3.14159)) * \{LVAd\ A4C\} * \{LVAd(sax\ MV)\} / \{LVIDd\}$ Needs measurement: LVAd A4C [Biplane Ellipse], LVAd (sax MV) [Biplane Ellipse], LVIDd [Biplane Ellipse], LVAs A4C [Biplane Ellipse], LVAs sax MV [Biplane Ellipse], LVIDs [Biplane Ellipse], HR [Biplane Ellipse] Measured by: R-R [2DCALIPER]
CI bullet [Bullet] Mode: 2D:CF:VR2D:Trace Formula: $((d - s) * \{ECG / HeartRate\} / 1000) / \{BSA\}$ where: $s = 5/6 * \{LVAs(sax)\} * \{LVLs(apical)\}$ $d = 5/6 * \{LVAd(sax)\} * \{LVLd\ apical\}$ Needs measurement: LVAd sax [Bullet], LVLd apical [Bullet], LVAs sax [Bullet], LVLs apical [Bullet], HR [Bullet] Measured by: R-R [2DCALIPER]

Table 2-12: Cardiac Calculation Formulas (Continued)

CI MOD A2C [Single Plane A2C] Mode: 2D:CF:VR2D Formula: $((\{LVEDV \text{ MOD A2C}\} - \{LVESV \text{ MOD A2C}\}) * \{HR\} / 1000) / \{BSA\}$ Needs measurement: LVEDV MOD A2C [Single Plane A2C], LVESV MOD A2C [Single Plane A2C], HR [Single Plane A2C] Measured by: R-R [2DCALIPER], A2C [2DVOLUMETRACE]
CI MOD A2C [Single Plane A2C] Mode: 2D:CF:VR2D Formula: $((\{LVEDV \text{ MOD A2C}\} - \{LVESV \text{ MOD A2C}\}) * \{Auto \text{ HR}\} / 1000) / \{BSA\}$ Needs measurement: LVEDV MOD A2C [Single Plane A2C], LVESV MOD A2C [Single Plane A2C], HR [Single Plane A2C] Measured by: LVESV A2C [2DVOLUMETRACE]
CI MOD A4C [Single Plane A4C] Mode: 2D:CF:VR2D Formula: $((\{LVEDV \text{ MOD A4C}\} - \{LVESV \text{ MOD A4C}\}) * \{HR\} / 1000) / \{BSA\}$ Needs measurement: LVEDV MOD A4C [Single Plane A4C], LVESV MOD A4C [Single Plane A4C], HR [Single Plane A4C] Measured by: R-R [2DCALIPER], A4C [2DVOLUMETRACE]
CI MOD A4C [Single Plane A4C] Mode: 2D:CF:VR2D Formula: $((\{LVEDV \text{ MOD A4C}\} - \{LVESV \text{ MOD A4C}\}) * \{Auto \text{ HR}\} / 1000) / \{BSA\}$ Needs measurement: LVEDV MOD A4C [Single Plane A4C], LVESV MOD A4C [Single Plane A4C], HR [Single Plane A4C] Measured by: LVESV A4C [2DVOLUMETRACE]
CI MOD LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $((\{LVEDV \text{ MOD LAX}\} - \{LVESV \text{ MOD LAX}\}) * \{HR\} / 1000) / \{BSA\}$ Needs measurement: LVEDV MOD LAX [Single Plane LAX], LVESV MOD LAX [Single Plane LAX], HR [Single Plane LAX] Measured by: R-R [2DCALIPER], LAX [2DVOLUMETRACE]
CI MOD LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $((\{LVEDV \text{ MOD LAX}\} - \{LVESV \text{ MOD LAX}\}) * \{Auto \text{ HR}\} / 1000) / \{BSA\}$ Needs measurement: LVEDV MOD LAX [Single Plane LAX], LVESV MOD LAX [Single Plane LAX], HR [Single Plane LAX] Measured by: LAX [2DVOLUMETRACE]
CI mod sim [Modified Simpson] Mode: 2D:CF:VR2D:Trace Formula: $((d-s) * \{ECG / HeartRate\} / 1000) / \{BSA\}$ where: $s = (\{LVLs(apical)\} / 9) * ((4 * \{LVAs(sax \text{ MV})\}) + (2 * \{LVAs(sax \text{ PM})\}) + \sqrt{\{LVAs(sax \text{ MV})\} * \{LVAs(sax \text{ PM})\}})$ $d = (\{LVLd \text{ apical}\} / 9) * ((4 * \{LVAd(sax \text{ MV})\}) + (2 * \{LVAd(sax \text{ PM})\}) + \sqrt{\{LVAd(sax \text{ MV})\} * \{LVAd(sax \text{ PM})\}})$ Needs measurement: LVLd apical [Modified Simpson], LVAd (sax MV) [Modified Simpson], LVAd sax PM [Modified Simpson], LVLs apical [Modified Simpson], LVAs sax MV [Modified Simpson], LVAs sax PM [Modified Simpson], HR [Modified Simpson] Measured by: R-R [2DCALIPER]

Table 2-12: Cardiac Calculation Formulas (Continued)

CI(Cube) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D:Trace Formula: $((d-s) \times \{ECG/HeartRate\} / 1000) / \{BSA\}$ where: $s = \{2D/LVIDs\}^3$ $d = \{2D/LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz], HR [Dimension, Cube/Teichholz] Measured by: R-R [2DCALIPER]
CI(Cube) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((dv-sv) \times \{MM/HeartRate\} / 1000) / \{BSA\}$ where: $sv = \{MM/LVIDs\}^3$ $dv = \{MM/LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension], LVIDs [Generic, Dimension], HR [Generic, Dimension] Measured by: Heartrate [MMTIMECALIPER]
CI(Teich) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D:Trace Formula: $((d-s) \times \{ECG/HeartRate\} / 1000) / \{BSA\}$ where: $s = 7 / (2.4 + \{2D/LVIDs\}) \times \{2D/LVIDs\}^3$ $d = 7 / (2.4 + \{LVIDd\}) \times \{LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz], HR [Dimension, Cube/Teichholz] Measured by: R-R [2DCALIPER]
CI(Teich) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((dv-sv) \times \{MM/HeartRate\} / 1000) / \{BSA\}$ where: $sv = 7 / (2.4 + \{MM/LVIDs\}) \times \{MM/LVIDs\}^3$ $dv = 7 / (2.4 + \{LVIDd\}) \times \{LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension], LVIDs [Generic, Dimension], HR [Generic, Dimension] Measured by: Heartrate [MMTIMECALIPER]
CO A-L A2C [Single Plane A2C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ A-L\ A2C\} - \{LVESV\ A-L\ A2C\}) \times \{HR\} / 1000$ Needs measurement: LVEDV A-L A2C [Single Plane A2C], LVESV A-L A2C [Single Plane A2C], HR [Single Plane A2C] Measured by: R-R [2DCALIPER], A2C [2DVOLUMETRACE]
CO A-L A2C [Single Plane A2C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ A-L\ A2C\} - \{LVESV\ A-L\ A2C\}) \times \{Auto\ HR\} / 1000$ Needs measurement: LVEDV A-L A2C [Single Plane A2C], LVESV A-L A2C [Single Plane A2C], HR [Single Plane A2C] Measured by: LVESV A2C [2DVOLUMETRACE]
CO A-L A4C [Single Plane A4C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ A-L\ A4C\} - \{LVESV\ A-L\ A4C\}) \times \{HR\} / 1000$ Needs measurement: LVEDV A-L A4C [Single Plane A4C], LVESV A-L A4C [Single Plane A4C], HR [Single Plane A4C] Measured by: R-R [2DCALIPER], A4C [2DVOLUMETRACE]
CO A-L A4C [Single Plane A4C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ A-L\ A4C\} - \{LVESV\ A-L\ A4C\}) \times \{Auto\ HR\} / 1000$ Needs measurement: LVEDV A-L A4C [Single Plane A4C], LVESV A-L A4C [Single Plane A4C], HR [Single Plane A4C] Measured by: LVESV A4C [2DVOLUMETRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

CO A-L LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $(\{LVEDV \text{ A-L LAX}\} - \{LVESV \text{ A-L LAX}\}) * \{HR\} / 1000$ Needs measurement: LVEDV A-L LAX [Single Plane LAX], LVESV A-L LAX [Single Plane LAX], HR [Single Plane LAX] Measured by: R-R [2DCALIPER], LAX [2DVOLUMETRACE]
CO A-L LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $(\{LVEDV \text{ A-L LAX}\} - \{LVESV \text{ A-L LAX}\}) * \{Auto \text{ HR}\} / 1000$ Needs measurement: LVEDV A-L LAX [Single Plane LAX], LVESV A-L LAX [Single Plane LAX], HR [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE]
CO Biplane [Biplane] Mode: 2D:CF:VR2D:Trace Formula: $((d - s) * \{HR\} / 1000)$ where: $d = \text{biplane}(\{LVLd \text{ A4C}\}, \{LVDisksD\}, \{LVLd \text{ A2C}\}, \{LVDisksD\})$ $s = \text{biplane}(\{LVLs \text{ A4C}\}, \{LVDisksS\}, \{LVLs \text{ A2C}\}, \{LVDisksS\})$ Needs measurement: LVLd A4C [Biplane], LVLd A2C [Biplane], LVLs A4C [Biplane], LVLs A2C [Biplane], HR[Biplane] Measured by: R-R [2DCALIPER]
CO bp el [Biplane Ellipse] Mode: 2D:CF:VR2D:Trace Formula: $(d - s) * \{ECG / \text{HeartRate}\} / 1000$ where: $s = (8 / (3 * 3.14159)) * \{LVAs(A4C)\} * \{LVAs(sax \text{ MV})\} / \{2D / LVIDs\}$ $d = (8 / (3 * 3.14159)) * \{LVAd \text{ A4C}\} * \{LVAd (sax \text{ MV})\} / \{LVIDd\}$ Needs measurement: LVAd A4C [Biplane Ellipse], LVAd (sax MV) [Biplane Ellipse], LVIDd [Biplane Ellipse], LVAs A4C [Biplane Ellipse], LVAs sax MV [Biplane Ellipse], LVIDs [Biplane Ellipse], HR [Biplane Ellipse] Measured by: R-R [2DCALIPER]
CO bullet [Bullet] Mode: 2D:CF:VR2D:Trace Formula: $(d - s) * \{ECG / \text{HeartRate}\} / 1000$ where: $s = 5/6 * \{LVAs(sax)\} * \{LVLs(apical)\}$ $d = 5/6 * \{LVAd \text{ sax}\} * \{LVLd \text{ apical}\}$ Needs measurement: LVAd sax) [Bullet], LVLd apical [Bullet], LVLs apical [Bullet], HR [Bullet] Measured by: R-R [2DCALIPER]
CO MOD A2C [Single Plane A2C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV \text{ MOD A2C}\} - \{LVESV \text{ MOD A2C}\}) * \{HR\} / 1000$ Needs measurement: LVEDV MOD A2C [Single Plane A2C], LVESV MOD A2C [Single Plane A2C], HR [Single Plane A2C] Measured by: R-R [2DCALIPER], A2C [2DVOLUMETRACE]
CO MOD A2C [Single Plane A2C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV \text{ MOD A2C}\} - \{LVESV \text{ MOD A2C}\}) * \{Auto \text{ HR}\} / 1000$ Needs measurement: LVEDV MOD A2C [Single Plane A2C], LVESV MOD A2C [Single Plane A2C], HR[Single Plane A2C] Measured by: LVESV A2C [2DVOLUMETRACE]
CO MOD A4C [Single Plane A4C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV \text{ MOD A4C}\} - \{LVESV \text{ MOD A4C}\}) * \{HR\} / 1000$ Needs measurement: LVEDV MOD A4C [Single Plane A4C], LVESV MOD A4C [Single Plane, A4C], HR [Single Plane A4C] Measured by: R-R [2DCALIPER], A4C [2DVOLUMETRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

CO MOD A4C [Single Plane A4C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV \text{ MOD A4C}\} - \{LVESV \text{ MOD A4C}\}) * \{Auto \text{ HR}\} / 1000$ Needs measurement: LVEDV MOD A4C [Single Plane A4C], LVESV MOD A4C [Single Plane A4C], HR [Single Plane A4C] Measured by: LVESV A4C [2DVOLUMETRACE]
CO MOD LAX [Single Plane LAX] Mode: 2D:CF:VR2D:Trace Formula: $(\{LVEDV \text{ MOD LAX}\} - \{LVESV \text{ MOD LAX}\}) * \{HR\} / 1000$ Needs measurement: LVEDV MOD LAX [Single Plane LAX], LVESV MOD LAX [Single Plane LAX], HR [Single Plane LAX] Measured by: R-R [2DCALIPER], LAX [2DVOLUMETRACE]
CO MOD LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $(\{LVEDV \text{ MOD LAX}\} - \{LVESV \text{ MOD LAX}\}) * \{Auto \text{ HR}\} / 1000$ Needs measurement: LVEDV MOD LAX [Single Plane LAX], LVESV MOD LAX [Single Plane LAX], HR [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE]
CO mod sim [Modified Simpson] Mode: 2D:CF:VR2D:Trace Formula: $(d-s) * \{ECG / HeartRate\} / 1000$ where: $s = (\{LVLs(apical)\} / 9) * ((4 * \{LVAs(sax \text{ MV})\}) + (2 * \{LVAs(sax \text{ PM})\}) + \sqrt{\{LVAs(sax \text{ MV})\} * \{LVAs(sax \text{ PM})\}})$ $d = (\{LVLd \text{ apical}\} / 9) * ((4 * \{LVAd(sax \text{ MV})\}) + (2 * \{LVAd(sax \text{ PM})\}) + \sqrt{\{LVAd(sax \text{ MV})\} * \{LVAd(sax \text{ PM})\}})$ Needs measurement: LVLd apical [Modified Simpson], LVAd (sax MV) [Modified Simpson], LVAd sax PM [Modified Simpson], LVLs apical [Modified Simpson], LVAs sax MV [Modified Simpson], LVAs sax PM [Modified Simpson], HR [Modified Simpson] Measured by: R-R [2DCALIPER]
CO(A-L) [Generic] Mode: 2D:CF:Trace Formula: $(\{EDV(A-L)\} - \{ESV(A-L)\}) * \{HR\} / 1000$ Needs measurement: ESV(A-L) [Generic], HR [Generic] Measured by: R-R [2DCALIPER]
CO(Cube) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D:Trace Formula: $(d-s) * \{ECG / HeartRate\} / 1000$ where: $s = \{2D / LVIDs\}^3$ $d = \{2D / LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz], HR [Dimension, Cube/Teichholz] Measured by: R-R [2DCALIPER]
CO(Cube) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $(dv-sv) * \{MM / HeartRate\} / 1000$ where: $sv = \{MM / LVIDs\}^3$ $dv = \{MM / LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension], LVIDs [Generic, Dimension], HR [Generic, Dimension] Measured by: Heartrate [MMTIMECALIPER]
CO(Teich) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D:Trace Formula: $(d-s) * \{ECG / HeartRate\} / 1000$ where: $s = 7 / (2.4 + \{2D / LVIDs\}) * \{2D / LVIDs\}^3$ $d = 7 / (2.4 + \{2D / LVIDd\}) * \{2D / LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz], HR [Dimension, Cube/Teichholz] Measured by: R-R [2DCALIPER]

Table 2-12: Cardiac Calculation Formulas (Continued)

CO(Teich) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $(dv-sv) \times \{MM/HeartRate\} / 1000$ where: $sv = 7 / (2.4 + \{MM/LVIDs\}) \times \{MM/LVIDs\}^3$ $dv = 7 / (2.4 + \{MM/LVIDd\}) \times \{MM/LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension], LVIDs [Generic, Dimension], HR [Generic, Dimension] Measured by: Heartrate [MMTIMECALIPER]
EDV bp el [Biplane Ellipse] Mode: 2D:CF:VR2D Formula: $(8 / (3 \times 3.14159)) \times \{LVAd A4C\} \times \{LVAd (sax MV)\} / \{LVIDd\}$ Needs measurement: LVAd A4C [Biplane Ellipse], LVAd (sax MV) [Biplane Ellipse], LVIDd [Biplane Ellipse] Measured by: LVEF BP-EL [AUTOCALC]
EDV bullet [Bullet] Mode: 2D:CF:VR2D Formula: $5/6 \times \{LVAd sax\} \times \{LVLd apical\}$ Needs measurement: LVAd sax [Bullet], LVLd apical [Bullet] Measured by: LVEF Bullet [AUTOCALC]
EDV mod sim [Modified Simpson] Mode: 2D:CF:VR2D Formula: $(\{LVLd apical\} / 9) \times ((4 \times \{LVAd (sax MV)\}) + (2 \times \{LVAd sax PM\}) + \sqrt{\{LVAd (sax MV)\} \times \{LVAd sax PM\}})$ Needs measurement: LVLd apical [Modified Simpson], LVAd (sax MV) [Modified Simpson], LVAd sax PM [Modified Simpson] Measured by: EF mod sim [AUTOCALC]
EDV(Cube) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $\{LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz] Measured by: LVd [2DLV], LVIDd [2DCALIPER], EF(Cube) [AUTOCALC]
EDV(Cube) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension] Measured by: LV Study [MMLV], LVIDd [MMDISCALIPER]
EDV(Teich) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $7 / (2.4 + \{LVIDd\}) \times \{LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz] Measured by: LVd [2DLV], LVIDd [2DCALIPER], EF(Cube) [AUTOCALC]
EDV(Teich) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $7 / (2.4 + \{LVIDd\}) \times \{LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension] Measured by: LV Study [MMLV], LVIDd [MMDISCALIPER]
EF A-L A2C [Biplane, Single Plane A2C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV A-L A2C\} - \{LVESV A-L A2C\}) / \{LVEDV A-L A2C\}$ Needs measurement: LVEDV A-L A2C [Biplane, Single Plane A2C], LVESV A-L A2C [Biplane, Single Plane A2C] Measured by: EF SP A2C [AUTOCALC], LVESV A2C [2DVOLUMETRACE], LVEDV A2C [2DVOLUMETRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

EF A-L A4C [Biplane, Single Plane A4C] Mode: 2D:CF:VR2D Formula: $\frac{(\{LVEDV\ A-L\ A4C\} - \{LVESV\ A-L\ A4C\})}{\{LVEDV\ A-L\ A4C\}}$ Needs measurement: LVEDV A-L A4C [Biplane, Single Plane A4C], LVESV A-L A4C [Biplane, Single Plane A4C] Measured by: EF SP A4C [AUTOCALC], LVESV A4C [2DVOLUMETRACE], LVEDV A4C [2DVOLUMETRACE]
EF A-L LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $\frac{(\{LVEDV\ A-L\ LAX\} - \{LVESV\ A-L\ LAX\})}{\{LVEDV\ A-L\ LAX\}}$ Needs measurement: LVEDV A-L LAX [Single Plane LAX], LVESV A-L LAX [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE], EF SP LAX [AUTOCALC], LVEDV LAX [2DVOLUMETRACE]
EF Biplane [Biplane] Mode: 2D:CF:VR2D Formula: $(d-s)/d$ where $d = \text{biplane}(\{LVLd\ A4C\}, \{LVDisksD\}, \{LVLd\ A2C\}, \{LVDisksD\})$ $s = \text{biplane}(\{LVLs\ A4C\}, \{LVDisksS\}, \{LVLs\ A2C\}, \{LVDisksS\})$ Needs measurement: LVLd A4C [Biplane], LVLd A2C [Biplane], LVLs A4C [Biplane], LVLs A2C [Biplane] Measured by: EF Biplane [AUTOCALC]
EF mod sim [Modified Simpson] Mode: 2D:CF:VR2D Formula: $(d-s)/d$ where $d = (\{LVLd\ (apical)\}/9) * ((4 * \{LVAd\ (sax\ MV)\}) + (2 * \{LVAd\ sax\ PM\}) + \sqrt{\{LVAd\ (sax\ MV)\} * \{LVAd\ sax\ PM\}})$ $s = (\{LVLs\ (apical)\}/9) * ((4 * \{LVAs\ (sax\ MV)\}) + (2 * \{LVAs\ (sax\ PM)\}) + \sqrt{\{LVAs\ (sax\ MV)\} * \{LVAs\ (sax\ PM)\}})$ Needs measurement: LVLd apical [Modified Simpson], LVAd (sax MV) [Modified Simpson], LVAd sax PM [Modified Simpson], LVLs apical [Modified Simpson], LVAs sax MV [Modified Simpson], LVAs sax PM [Modified Simpson] Measured by: EF mod sim [AUTOCALC]
EF(A-L) [Generic] Mode: 2D:CF:VR2D Formula: $\frac{(\{EDV\ (A-L)\} - \{ESV\ (A-L)\})}{\{EDV\ (A-L)\}}$ Needs measurement: ESV(A-L) [Generic], EDV(A-L) [Generic] Measured by: EF Volume [AUTOCALC]
EF(Cube) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $(d-s)/d$ where: $s = \{2D/LVIDs\}^3$ $d = \{2D/LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz] Measured by: LVs [2DLV], LVIDs [2DCALIPER], EF(Cube) [AUTOCALC]
EF(Cube) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $(dv-sv)/dv$ where: $sv = \{MM/LVIDs\}^3$ $dv = \{MM/LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension], LVIDs [Generic, Dimension] Measured by: LV Study [MMLV], LVIDs [MMDISCALIPER]
EF(MOD) [Generic] Mode: 2D:CF:VR2D Formula: $\frac{(\{EDV\ (MOD)\} - \{ESV\ (MOD)\})}{\{EDV\ (MOD)\}}$ Needs measurement: EDV(MOD) [Generic], ESV(MOD) [Generic] Measured by: EF Volume [AUTOCALC]

Table 2-12: Cardiac Calculation Formulas (Continued)

EF(Teich) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $(d-s)/d$ where: $s = 7/(2.4 + \{2D/LVIDs\}) * \{2D/LVIDs\}^3$ $d = 7/(2.4 + \{2D/LVIDd\}) * \{2D/LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz] Measured by: LVs [2DLV], LVIDs [2DCALIPER], EF(Cube) [AUTOCALC]
EF(Teich) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $(dv-sv)/dv$ where: $sv = 7/(2.4 + \{MM/LVIDs\}) * \{MM/LVIDs\}^3$ $dv = 7/(2.4 + \{MM/LVIDd\}) * \{MM/LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension], LVIDs [Generic, Dimension] Measured by: LV Study [MMLV], LVIDs [MMDISCALIPER]
ESV bp el [Biplane Ellipse] Mode: 2D:CF:VR2D Formula: $(8/(3*3.14159)) * \{LVAs A4C\} * \{LVAs sax MV\} / \{LVIDs\}$ Needs measurement: LVAs A4C [Biplane Ellipse], LVAs sax MV [Biplane Ellipse], LVIDs [Biplane Ellipse] Measured by: LVEF BP-EL [AUTOCALC]
ESV bullet [Bullet] Mode: 2D:CF:VR2D Formula: $5/6 * \{LVAs sax\} * \{LVLs apical\}$ Needs measurement: LVAs sax [Bullet], LVLs apical [Bullet] Measured by: LVEF Bullet [AUTOCALC]
ESV mod sim [Modified Simpson] Mode: 2D:CF:VR2D Formula: $(\{LVLs apical\}/9) * ((4 * \{LVAs sax MV\}) + (2 * \{LVAs sax PM\}) + \sqrt{\{LVAs sax MV\} * \{LVAs sax PM\}})$ Needs measurement: LVLs apical [Modified Simpson], LVAs sax MV [Modified Simpson], LVAs sax PM [Modified Simpson] Measured by: EF mod sim [AUTOCALC]
ESV(Cube) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $\{LVIDs\}^3$ Needs measurement: LVIDs [Dimension, Cube/Teichholz] Measured by: LVs [2DLV], LVIDs [2DCALIPER], EF(Cube) [AUTOCALC]
ESV(Cube) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{LVIDs\}^3$ Needs measurement: LVIDs [Generic, Dimension] Measured by: LV Study [MMLV], LVIDs [MMDISCALIPER]
ESV(Teich) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $7/(2.4 + \{LVIDs\}) * \{LVIDs\}^3$ Needs measurement: LVIDs [Dimension, Cube/Teichholz] Measured by: LVs [2DLV], LVIDs [2DCALIPER], EF(Cube) [AUTOCALC]
ESV(Teich) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $7/(2.4 + \{LVIDs\}) * \{LVIDs\}^3$ Needs measurement: LVIDs [Generic, Dimension] Measured by: LV Study [MMLV], LVIDs [MMDISCALIPER]

Table 2-12: Cardiac Calculation Formulas (Continued)

HR (Generic, Dimension, Biplane, Modified Simpson, Cube/Teichholz, Single Plane A4C, Single Plane A2C, Single Plane LAX, Bullet, Biplane Ellipse) Mode: 2D:CF:Trace:VR2D Formula: $60/\{R-R\}$ Needs measurement: R-R [Generic, Dimension, Biplane, Modified Simpson, Cube/Teichholz, Single Plane A4C, Single Plane A2C, Single Plane LAX, Bullet, Biplane Ellipse] Measured by: R-R [2DCALIPER] Used to calculate: CO(A-L),CO(Teich),CI(Teich),CO(Cube),CI(Cube),CO Biplane,CI Biplane,CO mod sim,CI mod sim,CI A-L A4C,CO MOD A4C,CI MOD A4C,CI A-L A2C,CO A-L A2C,CI A-L A2C,CO MOD A2C,CI MOD A2C,CO A-L LAX,CI A-L LAX,CO MOD LAX,CI MOD LAX,CO bullet,CI bullet,CO bp el,CI bp el
HR [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $60/\{\text{Time}\}$ Needs measurement: Time [Generic, Dimension] Measured by: Heartrate [MMTIMECALIPER] Used to calculate: CO(Cube),CO(Teich),CI(Teich),CI(Cube)
HR [Generic] Mode: CW:PW:VRCW:VRPW Formula: $60/\{\text{Time}\}$ Needs measurement: Time [Generic] Measured by: Heartrate [SDTIMECALIPER]
IVSd/LVPWd [Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{IVSd\}/\{LVPWd\}$ Needs measurement: IVSd [Dimension], LVPWd [Dimension] Measured by: LVPWd [MMDISCALIPER]
LA/Ao [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{LA\ Diam\}/\{Ao\ Diam\}$ Needs measurement: LA Diam [Generic, Dimension], Ao Diam [Generic, Dimension] Measured by: LA/Ao [MMLAAO]
L-IMP [IMP=Myocardial Performance (MP) Index] Mode: CW:PW:VRCW:VRPW Formula: $\{MCO\}-\{LVOT\}/\{LVOT\}$ Needs measurement: MV Close Time [IMP], LVOT [IMP] Measured by: L-IMP [AUTOCALC]
LIMP [Mitral Valve, Aortic] Mode: CW:PW:VRCW:VRPW Formula: $\{MCO\}-\{AVET\}/\{AVET\}$ Needs measurement: MCO [Mitral Valve], AVET [Aortic] Measured by: LIMP [AUTOCALC]
LAEDV(A-L) [LA Volume] Mode: 2D:CF:VR2D Formula: $(8/(3*3.14159))*\{LAAd(A4C)\}*\{LAAd(A2C)\}/(\text{minvalue}(\{LALd(A4C)\},\{LALd(A2C)\}))$ Needs measurement: LAEDV A4C [LA Volume], LAEDV A2C [LA Volume] Measured by: LAEDV(A-L) [AUTOCALC]

Table 2-12: Cardiac Calculation Formulas (Continued)

LAEDV Index(A-L) [LA Volume] Mode: 2D:CF:VR2D Formula: $(8/(3 \times 3.14159)) \times \{LAA_d(A4C)\} \times \{LAA_d(A2C)\} / (\min\{LAL_d(A4C)\}, \{LAL_d(A2C)\}) / \{BSA\}$ Needs measurement: LAEDV A4C [LA Volume], LAEDV A2C [LA Volume] Measured by: LAEDV(A-L) [AUTOCALC]
LAEDV(MOD BP) [LA Volume] Mode: 2D:CF:VR2D Formula: $\text{biplane}(\{LAL_d(A4C)\}, \{LADisksD(A4C)\}, \{LAL_d(A2C)\}, \{LADisksD(A2C)\}) / \{BSA\}$ Needs measurement: LALd A4C [LA Volume], LADisks [LA Volume], LALd A2C [LA Volume], LADisks [LA Volume] Measured by: LA(Biplane) [AUTOCALC] Schiller et.al: "Recommendations for quantitation of the left ventricle by two-dimensional echocardiography. ASE Committee on Standards, Subcommittee on Quantitation of Two-Dimensional Echocardiograms." J Am Soc Echocardiogr 1989;2:358-367.
LAEDV Index(MOD BP) [LA Volume] Mode: 2D:CF:VR2D Formula: $(\text{biplane}(\{LAL_d(A4C)\}, \{LADisksD(A4C)\}, \{LAL_d(A2C)\}, \{LADisksD(A2C)\})) / \{BSA\}$ Needs measurement: LALd A4C [LA Volume], LADisks [LA Volume], LALd A2C [LA Volume], LADisks [LA Volume] Measured by: LA(Biplane) [AUTOCALC]
LAESV(A-L) [LA Volume] Mode: 2D:CF:VR2D Formula: $(8/(3 \times 3.14159)) \times \{LAAs(A4C)\} \times \{LAAs(A2C)\} / (\min\{LALs(A4C)\}, \{LALs(A2C)\})$ Needs measurement: LAESV A4C [LA Volume], LAESV A2C [LA Volume] Measured by: LAESV(A-L) [AUTOCALC]
LAESV Index(A-L) [LA Volume] Mode: 2D:CF:VR2D Formula: $(8/(3 \times 3.14159)) \times \{LAAs(A4C)\} \times \{LAAs(A2C)\} / (\min\{LALs(A4C)\}, \{LALs(A2C)\}) / \{BSA\}$ Needs measurement: LAESV A4C [LA Volume], LAESV A2C [LA Volume] Measured by: LAESV(A-L) [AUTOCALC]
LAESV(MOD BP) [LA Volume] Mode: 2D:CF:VR2D Formula: $\text{biplane}(\{LALs(A4C)\}, \{LADisksS(A4C)\}, \{LALs(A2C)\}, \{LADisksS(A2C)\}) / \{BSA\}$ Needs measurement: LALs A4C [LA Volume], LADisks [LA Volume], LALs A2C [LA Volume], LADisks [LA Volume] Measured by: LA(Biplane) [AUTOCALC] Schiller et.al: "Recommendations for quantitation of the left ventricle by two-dimensional echocardiography. ASE Committee on Standards, Subcommittee on Quantitation of Two-Dimensional Echocardiograms." J Am Soc Echocardiogr 1989;2:358-367.
LAESV Index(MOD BP) [LA Volume] Mode: 2D:CF:VR2D Formula: $(\text{biplane}(\{LALs(A4C)\}, \{LADisksS(A4C)\}, \{LALs(A2C)\}, \{LADisksS(A2C)\})) / \{BSA\}$ Needs measurement: LALs A4C [LA Volume], LADisks [LA Volume], LALs A2C [LA Volume], LADisks [LA Volume] Measured by: LA(Biplane) [AUTOCALC]
LVd Mass (ASE) [Generic] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((1.04 \times (\{IVS_d\} + \{LVID_d\} + \{LVPW_d\})^3 - (\{LVID_d\})^3) \times 0.8 + 0.6)$ Needs measurement: IVSd [Generic], LVIDd [Generic], LVPWd [Generic] Measured by: LV Study [MMLV]

Table 2-12: Cardiac Calculation Formulas (Continued)

LVd Mass [Dimension] Mode: 2D:CF:VR2D Formula: $((1.04 * ((IVSd) + \{LVIDd\} + \{LVPWd\})^3 - (\{LVIDd\})^3) - 13.6)$ Needs measurement: IVSd [Dimension], LVIDd [Dimension], LVPWd [Dimension], LVIDd [Dimension] Measured by: LVPWd [2DCALIPER]
LVd Mass [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((1.04 * ((IVSd) + \{LVIDd\} + \{LVPWd\})^3 - (\{LVIDd\})^3) - 13.6)$ Needs measurement: IVSd [Generic, Dimension], LVPWd [Generic, Dimension], LVIDd [Generic, Dimension] Measured by: LV Study [MMLV], LVPWs [MMDISCALIPER]
LVd Mass A-L [Mass] Mode: 2D:CF:VR2D Formula: $1.05 * 5/6 * \{LVA d(sax epi)\} * (\{LVL d(apical)\} + t) - \{LVA d(sax PM)\} * \{LVL d(apical)\}$ where: $t = \sqrt{(\{LVA d(sax EPI)\} / 3.14159) - \sqrt{(\{LVA d(sax PM)\} / 3.14159)}}$ Needs measurement: LVA d sax EPI [Mass], LVA d sax PM [Mass], LVL d apical [Mass] Measured by: LVMass(d) [AUTOCALC]
LVd Mass I A-L [Mass] Mode: 2D:CF:VR2D Formula: $m / \{BSA\}$ where: $m = 1.05 * 5/6 * \{LVA d(sax epi)\} * (\{LVL d(apical)\} + t) - \{LVA d(sax PM)\} * \{LVL d(apical)\}$ $t = \sqrt{(\{LVA d(sax EPI)\} / 3.14159) - \sqrt{(\{LVA d(sax PM)\} / 3.14159)}}$ Needs measurement: LVA d sax EPI [Mass], LVA d sax PM [Mass], LVL d apical [Mass] Measured by: LVMass(d) [AUTOCALC]
LVd Mass Ind (ASE) [Generic] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((1.04 * ((IVSd) + \{LVIDd\} + \{LVPWd\})^3 - (\{LVIDd\})^3) * 0.8 + 0.6) / \{BSA\}$ Needs measurement: IVSd [Generic], LVIDd [Generic], LVPWd [Generic] Measured by: LV Study [MMLV]
LVd Mass Index [Dimension] Mode: 2D:CF:VR2D Formula: $m / \{BSA\}$ where $m = ((1.04 * ((IVSd) + \{LVIDd\} + \{LVPWd\})^3 - (\{LVIDd\})^3) - 13.6)$ Needs measurement: IVSd [Dimension], LVIDd [Dimension], LVPWd [Dimension], LVIDd [Dimension] Measured by: LVPWd [2DCALIPER]
LVd Mass Index [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((1.04 * ((IVSd) + \{LVIDd\} + \{LVPWd\})^3 - (\{LVIDd\})^3) - 13.6) / \{BSA\}$ Needs measurement: IVSd [Generic, Dimension], LVIDd [Generic, Dimension], LVPWd [Generic, Dimension] Measured by: LV Study [MMLV], LVPWs [MMDISCALIPER]
LVEDV MOD BP [Biplane, AutoBiplane] Mode: 2D:CF:VR2D Formula: $biplane(\{LVL d A4C\}, \{LVDisk d A4C\}, \{LVL d A2C\}, \{LVDisk d A2C\})$ Needs measurement: LVL d A4C [Biplane], LVL d A2C [Biplane] Measured by: EF Biplane [AUTOCALC]

Table 2-12: Cardiac Calculation Formulas (Continued)

LVEF BP-EL [Biplane Ellipse] Mode: 2D:CF:VR2D Formula: $(d-s)/d$ where: $s = (8/(3*3.14159))*\{LVAs(A4C)\}*\{LVAs(sax\ MV)\}/\{2D/LVIDs\}$ $d = (8/(3*3.14159))*\{LVAd\ A4C\}*\{LVAd\ (sax\ MV)\}/\{LVIDd\}$ Needs measurement: LVAd A4C [Biplane Ellipse], LVAd (sax MV) [Biplane Ellipse], LVIDd [Biplane Ellipse], LVAs A4C [Biplane Ellipse], LVAs sax MV [Biplane Ellipse], LVIDs [Biplane Ellipse] Measured by: LVEF BP-EL [AUTOCALC]
LVEF Bullet [Bullet] Mode: 2D:CF:VR2D Formula: $(d-s)/d$ where: $s = 5/6*\{LVAs(sax)\}*\{LVLs(apical)\}$ $d = 5/6*\{LVAd\ sax\}*\{LVLd\ apical\}$ Needs measurement: LVAd sax [Bullet], LVLd apical [Bullet], LVLs apical [Bullet] Measured by: LVEF Bullet [AUTOCALC]
LVEF MOD A2C [Biplane, Single Plane A2C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ MOD\ A2C\}-\{LVESV\ MOD\ A2C\})/\{LVEDV\ MOD\ A2C\}$ Needs measurement: LVEDV MOD A2C [Biplane, Single Plane A2C], LVESV MOD A2C [Biplane, Single Plane A2C] Measured by: EF SP A2C [AUTOCALC], LVESV A2C [2DVOLUMETRACE], LVEDV A2C [2DVOLUMETRACE]
LVEF MOD A4C [Biplane, Single Plane A4C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ MOD\ A4C\}-\{LVESV\ MOD\ A4C\})/\{LVEDV\ MOD\ A4C\}$ Needs measurement: LVEDV MOD A4C [Biplane, Single Plane A4C], LVESV MOD A4C [Biplane, Single Plane A4C] Measured by: EF SP A4C [AUTOCALC], LVESV A4C [2DVOLUMETRACE], LVEDV A4C [2DVOLUMETRACE]
LVEF MOD LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ MOD\ LAX\}-\{LVESV\ MOD\ LAX\})/\{LVEDV\ MOD\ LAX\}$ Needs measurement: LVEDV MOD LAX [Single Plane LAX], LVESV MOD LAX [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE], EF SP LAX [AUTOCALC], LVEDV LAX [2DVOLUMETRACE]
LVESV MOD BP [Biplane] Mode: 2D:CF:VR2D Formula: $biplane(\{LVLs\ A4C\},\{LVDisksS\ A4C\},\{LVLs\ A2C\},\{LVDisksS\ A2C\})$ Needs measurement: LVLs A4C [Biplane], LVLs A2C [Biplane] Measured by: EF Biplane [AUTOCALC]
LVIDd Index [Dimension] Mode: 2D:CF:VR2D Formula: $\{LVIDd\}/\{BSA\}$ Needs measurement: LVIDd [Dimension], Measured by: LVIDd [2DCALIPER]
LVIDd Index [Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{LVIDd\}/\{BSA\}$ Needs measurement: LVIDd [Dimension] Measured by: LVIDd [MMDISCALIPER]

Table 2-12: Cardiac Calculation Formulas (Continued)

LVIDs Index [Dimension] Mode: 2D:CF:VR2D Formula: $\{\text{LVIDs}\}/\{\text{BSA}\}$ Needs measurement: LVIDs [Dimension] Measured by: LVIDs [2DCALIPER]
LVIDs Index [Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{\text{LVIDs}\}/\{\text{BSA}\}$ Needs measurement: LVIDs [Dimension] Measured by: LVIDs [MMDISCALIPER]
LVOT Area [Dimension] Mode: 2D:CF:VR2D Formula: $3.14/4 * \{\text{LVOT Diam}\}^2$ Needs measurement: LVOT Diam [Dimension] Measured by: LVOT Diam [2DCALIPER]
LVOT CI [Aortic] Mode: PW:VRPW Formula: $\{\text{LVOT Diam}\}^2 * 0.785 * \{\text{LVOT VTI}\} * \{\text{HR}\} / 1000 / \{\text{BSA}\}$ Needs measurement: LVOT Diam [Aortic], LVOT VTI [Aortic], HR [Aortic], Measured by: LVOT Trace [SDMANTRACE]
LVOT CO [Aortic] Mode: PW:VRPW Formula: $\{\text{LVOT Diam}\}^2 * 0.785 * \{\text{LVOT VTI}\} * \{\text{HR}\} / 1000$ Needs measurement: LVOT Diam [Aortic], LVOT VTI [Aortic], HR [Aortic] Measured by: LVOT Trace [SDMANTRACE]
LVOT Diam [Aortic] Mode: CW:PW:VRCW:VRPW Formula: $\{\text{LVOT Diam}\}$ Needs measurement: LVOT Diam [Aortic] Measured by: AP Area [SDMANTRACE] Used to calculate: AP Area
LVOT Diam [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{\text{LVOT Diam}\}$ Needs measurement: LVOT Diam [Mitral Valve] Measured by: MP Area [SDMANTRACE] Used to calculate: MP Area
LVOT SI [Aortic] Mode: PW:VRPW Formula: $\{\text{LVOT Diam}\}^2 * 0.785 * \{\text{LVOT VTI}\} / \{\text{BSA}\}$ Needs measurement: LVOT Diam [Aortic], LVOT VTI [Aortic], Measured by: LVOT Trace [SDMANTRACE]
LVOT SV [Aortic] Mode: PW:VRPW Formula: $\{\text{LVOT Diam}\}^2 * 0.785 * \{\text{LVOT VTI}\}$ Needs measurement: LVOT Diam [Aortic], LVOT VTI [Aortic] Measured by: LVOT Trace [SDMANTRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

LVOT VTI [Aortic] Mode: CW:PW:VRCW:VRPW Formula: {LVOT VTI} Needs measurement: LVOT VTI [Aortic] Measured by: AP Area [SDMANTRACE] Used to calculate: AP Area
LVOT VTI [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: {LVOT VTI} Needs measurement: LVOT VTI [Mitral Valve] Measured by: MP Area [SDMANTRACE] Used to calculate: MP Area
LVPEP/ET [Aortic] Mode: CW:PW:VRCW:VRPW Formula: {LVPEP}/{LVET} Needs measurement: LVPEP [Aortic], LVET [Aortic] Measured by: LVET [SDTIMECALIPER]
LVPEP/ET [Time] Mode: MM:CM:AMM:CAMM:VRMM Formula: {LVPEP}/{LVET} Needs measurement: LVPEP [Time], LVET [Time] Measured by: LVET [MMTIMECALIPER]
LVs Mass (ASE) [Generic] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((1.04 * ((\{IVSs\} + \{LVIDs\} + \{LVPWs\})^3 - (\{LVIDs\})^3)) * 0.8 + 0.6)$ Needs measurement: IVSs [Generic], LVIDs [Generic], LVPWs [Generic] Measured by: LV Study [MMLV]
LVs Mass [Dimension] Mode: 2D:CF:VR2D Formula: $((1.04 * ((\{IVSs\} + \{LVIDs\} + \{LVPWs\})^3 - (\{LVIDs\})^3)) - 13.6)$ Needs measurement: IVSs [Dimension], LVIDs [Dimension], LVPWs [Dimension] Measured by: LVPWs [2DCALIPER]
LVs Mass [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((1.04 * ((\{IVSs\} + \{LVIDs\} + \{LVPWs\})^3 - (\{LVIDs\})^3)) - 13.6)$ Needs measurement: IVSs [Generic, Dimension], LVIDs [Generic, Dimension], LVPWs [Generic, Dimension] Measured by: LV Study [MMLV], LVPWs [MMDISCALIPER]
LVs Mass A-L [Mass] Mode: 2D:CF:VR2D Formula: $1.05 * 5/6 * (\{LVAs(sax\ epi)\} * (\{LVLs(apical)\} + t) - \{LVAs(sax\ PM)\} * \{LVLs(apical)\})$ where: $t = \sqrt{(\{LVAs\ sax\ EPI\} / 3.14159) - \sqrt{(\{LVAs\ sax\ PM\} / 3.14159)}}$ Needs measurement: LVAs sax EPI [Mass], LVAs sax PM [Mass], LVLs apical [Mass] Measured by: LVMass(s) [AUTOCALC]
LVs Mass Ind (ASE) [Generic] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((1.04 * ((\{IVSs\} + \{LVIDs\} + \{LVPWs\})^3 - (\{LVIDs\})^3)) * 0.8 + 0.6) / \{BSA\}$ Needs measurement: IVSs [Generic], LVIDs [Generic], LVPWs [Generic] Measured by: LV Study [MMLV]

Table 2-12: Cardiac Calculation Formulas (Continued)

LVs Mass Ind A-L [Mass] Mode: 2D:CF:VR2D Formula: $m/\{BSA\}$ where: $m = 1.05 \cdot 5/6 \cdot (\{LVAs(sax\ epi)\} \cdot (\{LVLs(apical)\} + t) - \{LVAs(sax\ PM)\} \cdot \{LVLs(apical)\})$ $t = \sqrt{(\{LVAs\ sax\ EPI\}/3.14159) - \sqrt{(\{LVAs\ sax\ PM\}/3.14159)}}$ Needs measurement: LVAs sax EPI [Mass], LVAs sax PM [Mass], LVLs apical [Mass] Measured by: LVMass(s) [AUTOCALC]
LVs Mass Index [Dimension] Mode: 2D:CF:VR2D Formula: $m/\{BSA\}$ where: $m = ((1.04 \cdot (\{IVSs\} + \{LVIDs\} + \{LVPWs\})^3 - (\{LVIDs\})^3) - 13.6)$ Needs measurement: IVSs [Dimension], LVIDs [Dimension], LVPWs [Dimension] Measured by: LVPWs [2DCALIPER]
LVs Mass Index [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $((1.04 \cdot (\{IVSs\} + \{LVIDs\} + \{LVPWs\})^3 - (\{LVIDs\})^3) - 13.6) / \{BSA\}$ Needs measurement: IVSs [Generic, Dimension], LVIDs [Generic, Dimension], LVPWs [Generic, Dimension] Measured by: LV Study [MMLV], LVPWs [MMDISCALIPER]
MP Area [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{LVOT\ Diam\}^2 \cdot 0.785 \cdot (\{LVOT\ VTI\} / \{MP\ VTI\})$ Needs measurement: LVOT Diam [Mitral Valve], LVOT VTI [Mitral Valve], MP VTI [Mitral Valve] Measured by: MP Area [SDMANTRACE]
MR ERO [PISA] Mode: CF:CW:PW:VRCW:VRPW Formula: $\{MR\ Flow\} / (\{MR\ Vmax\} \cdot 100)$ Needs measurement: MR Flow [PISA], MR Vmax [PISA] Measured by: MR Trace [AUTOCALC]
MR RF [PISA, Mitral Valve] Mode: CF:CW:PW:VRCW:VRPW Formula: $(\{PISA/MR/Flow\} / (\{PISA/MR/Vmax\} \cdot 100) \cdot \{PISA/MR/VTI\}) / (\{2D/MV\ Annulus\ Diam\}^2 \cdot 0.785 \cdot \{MV\ VTI\})$ Needs measurement: PISA MR[PISA], MR Trace[PISA], MV Ann Diam[Mitral Valve], MV Trace[Mitral Valve] Measured by: MR RF [AUTOCALC]
MR RV [PISA] Mode: CF:CW:PW:VRCW:VRPW Formula: $\{PISA/MR/Flow\} / (\{PISA/MR/Vmax\} \cdot 100) \cdot \{PISA/MR/VTI\}$ Needs measurement: PISA MR[PISA], MR Trace[PISA] Measured by: MR ERO [AUTOCALC]
MV AccT/DecT [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV\ AccT\} / \{MV\ DecT\}$ Needs measurement: MV AccT [Mitral Valve], MV DecT [Mitral Valve] Measured by: MV AccT [SDCALIPER]
MV Area [Dimension] Mode: 2D:CF:VR2D Formula: $3.14/4 \cdot \{MV\ Ann\ Diam\}^2$ Needs measurement: MV Ann Diam [Dimension] Measured by: MV Ann Diam [2DCALIPER]

Table 2-12: Cardiac Calculation Formulas (Continued)

MV CI [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV \text{ Ann Diam}\}^2 \times 0.785 \times \{MV \text{ VTI}\} \times \{HR\} / 1000 / \{BSA\}$ Needs measurement: MV Ann Diam [Mitral Valve], MV VTI [Mitral Valve], HR [Mitral Valve] Measured by: MV Trace [SDMANTRACE]
MV CO [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV \text{ Ann Diam}\}^2 \times 0.785 \times \{MV \text{ VTI}\} \times \{HR\} / 1000$ Needs measurement: MV Ann Diam [Mitral Valve], MV VTI [Mitral Valve], HR [Mitral Valve] Measured by: MV Trace [SDMANTRACE]
MV E/A Ratio [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV \text{ E Vel}\} / \{MV \text{ A Vel}\}$ Needs measurement: MV E Vel [Mitral Valve], MV A Vel [Mitral Valve] Measured by: MV A Vel [SDPTCALIPER], MV A Vel [AUTOCALC]
MV E/Prime Ratio (E/E') [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV \text{ E Velocity}\} / \{MV \text{ Eprime Velocity}\}$ Needs measurement: MV E/A Velocity [Mitral Valve], E [Mitral Valve] Measured by: E/E [AUTOCALC]
E/E' Sept [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV \text{ E Vel}\} / \{E' \text{ Sept}\}$ Needs measurement: MV E/A Velocity [Mitral Valve], E' Sept [Mitral Valve] Measured by: E/E' Sept [AUTOCALC] Nagueh, Sherif F. et al. "Recommendations for the Evaluation of Left Ventricular Diastolic Function by Echocardiography", I Am Soc Echo, Feb 2009, Vol. 22, No. 2, p. 107
E/E' Lat [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV \text{ E Vel}\} / \{E' \text{ Lat}\}$ Needs measurement: MV E/A Velocity [Mitral Valve], E' Lat [Mitral Valve] Measured by: E/E' Lat [AUTOCALC] Nagueh, Sherif F. et al. "Recommendations for the Evaluation of Left Ventricular Diastolic Function by Echocardiography", I Am Soc Echo, Feb 2009, Vol. 22, No. 2, p. 107
E/E' Medial [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV \text{ E Vel}\} / \{E' \text{ Medial}\}$ Needs measurement: MV E/A Velocity [Mitral Valve], E' Medial [Mitral Valve] Measured by: E/E' Medial [AUTOCALC] Nagueh, Sherif F. et al. "Recommendations for the Evaluation of Left Ventricular Diastolic Function by Echocardiography", I Am Soc Echo, Feb 2009, Vol. 22, No. 2, p. 107
E' Avg [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $(\{E' \text{ Sept}\} + \{E' \text{ Lat}\}) / 2$ Needs measurement: E' Sept [Mitral Valve], E' Lat [Mitral Valve] Measured by: E/E' Avg [AUTOCALC] Nagueh, Sherif F. et al. "Recommendations for the Evaluation of Left Ventricular Diastolic Function by Echocardiography", I Am Soc Echo, Feb 2009, Vol. 22, No. 2, p. 107

Table 2-12: Cardiac Calculation Formulas (Continued)

E/E' Avg [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV\ E\ Vel\} / ((\{E'\ Sept\} + \{E'\ Lat\}) / 2)$ Needs measurement: MV E/A Velocity [Mitral Valve], E' Sept [Mitral Valve], E' Lat [Mitral Valve] Measured by: E/E' Avg [AUTOCALC] Nagueh, Sherif F. et al. "Recommendations for the Evaluation of Left Ventricular Diastolic Function by Echocardiography", I Am Soc Echo, Feb 2009, Vol. 22, No. 2, p. 107
MV SI [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV\ Ann\ Diam\}^2 * 0.785 * \{MV\ VTI\} / \{BSA\}$ Needs measurement: MV Ann Diam [Mitral Valve], MV VTI [Mitral Valve], Measured by: MV Trace [SDMANTRACE]
MV SV [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{MV\ Ann\ Diam\}^2 * 0.785 * \{MV\ VTI\}$ Needs measurement: MV Ann Diam [Mitral Valve], MV VTI [Mitral Valve] Measured by: MV Trace [SDMANTRACE]
MVA (VTI) [Mitral Valve] Mode: 2D: CW:PW:VRCW:VRPW Formula: $3.14 / 4 * \{LVOT\ Diam\}^2 * \{LVOT\ VTI\} / \{MV\ VTI\}$ Needs measurement: LVOT Diam [Mitral Valve], LVOT VTI [Mitral Valve], MV VTI [Mitral Valve] Measured by: MV Trace [AUTOCALC]
MVA By PHT [Mitral Valve] Mode: CW:PW:VRCW:VRPW Formula: $22 / (\{MV\ PHT\})$ Needs measurement: MV PHT [Mitral Valve] Measured by: MV E/A Velocity [SDEA3], MV PHT [SDCALIPER]
P Vein S/D Ratio [Pulmonary Vein] Mode: PW:VRPW Formula: $\{P\ Vein\ S\} / \{P\ Vein\ D\}$ Needs measurement: P Vein S [Pulmonary Vein], P Vein D [Pulmonary Vein] Measured by: P Vein D [SDPTCALIPER]
PAEDP [Pulmonic] Mode: CW:PW:VRCW:VRPW Formula: $\{PRend\ PG\} + \{RAP\}$ Needs measurement: PRend PG [Pulmonic], RAP [Pulmonic] Measured by: PRend Vmax [AUTOCALC]
PR ERO [PISA] Mode: CF: CW:PW:VRCW:VRPW Formula: $\{PR\ Flow\} / (\{PR\ Vmax\} * 100)$ Needs measurement: PR Flow [PISA], PR Vmax [PISA] Measured by: PR Trace [AUTOCALC]
PR RV [PISA] Mode: CF: CW:PW:VRCW:VRPW Formula: $\{PR\ Flow\} / (\{PR\ Vmax\} * 100) * \{PR\ VTI\}$ Needs measurement: PR Flow [PISA], PR Vmax [PISA], PR VTI [PISA] Measured by: PR Trace [AUTOCALC]

Table 2-12: Cardiac Calculation Formulas (Continued)

Pulmonic CO [Shunts, Congenital Heart] Mode: CW:PW:VRCW:VRPW Formula: {Pulmonic SV}*{Pulmonic HR}/1000 Needs measurement: Pulmonic SV [Shunts, Congenital Heart], Pulmonic HR [Shunts, Congenital Heart] Measured by: Pulmonic VTI [SDMANTRACE]
Pulmonic SV [Shunts, Congenital Heart] Mode: CW:PW:VRCW:VRPW Formula: $3.14159/4 * \{Pulmonic\ Diam\}^2 * \{Pulmonic\ VTI\}$ Needs measurement: Pulmonic Diam [Shunts, Congenital Heart], Pulmonic VTI [Shunts, Congenital Heart] Measured by: Pulmonic VTI [SDMANTRACE], Pulmonic VTI [SDMANTRACE] Used to calculate: Pulmonic CO
PV A/MV A Dur [Pulmonary Vein] Mode: PW:VRPW Formula: {P Vein A Dur}/{MV A Dur} Needs measurement: P Vein A Dur [Pulmonary Vein], MV A Dur [Pulmonary Vein] Measured by: P Vein A Dur [SDTIMECALIPER]
PV A/MV VTI [Pulmonary Vein] Mode: PW:VRPW Formula: {P Vein A Dur}/{MV VTI} Needs measurement: P Vein A Dur [Pulmonary Vein], MV VTI [Pulmonary Vein] Measured by: P Vein A Dur [SDTIMECALIPER]
PV AccT/ET [Pulmonic] Mode: CW:PW:VRCW:VRPW Formula: {PV AccT}/{PVET} Needs measurement: PV AccT [Pulmonic], PVET [Pulmonic] Measured by: PVET [SDTIMECALIPER]
PV A-MV A Dur [Pulmonary Vein] Mode: PW:VRPW Formula: {P Vein A Dur}-{MV A Dur} Needs measurement: P Vein A Dur [Pulmonary Vein], MV A Dur [Pulmonary Vein] Measured by: P Vein A Dur [SDTIMECALIPER]
PV Area [Dimension] Mode: 2D:CF:VR2D Formula: $3.14/4 * \{PV\ Ann\ Diam\}^2$ Needs measurement: PV Ann Diam [Dimension] Measured by: PV Ann Diam [2DCALIPER]
PV CI [Pulmonic, Valvular PS] Mode: CW:PW:VRCW:VRPW Formula: $((\{PV\ Ann\ Diam\}^2 * 0.785 * \{PV\ VTI\}) * \{HR\} / 1000) / \{BSA\}$ Needs measurement: PV Ann Diam [Pulmonic, Valvular PS], PV VTI [Pulmonic, Valvular PS], HR [Pulmonic, Valvular PS] Measured by: PV Trace [SDMANTRACE]
PV CO [Pulmonic, Valvular PS] Mode: CW:PW:VRCW:VRPW Formula: $(\{PV\ Ann\ Diam\}^2 * 0.785 * \{PV\ VTI\}) * \{HR\} / 1000$ Needs measurement: PV Ann Diam [Pulmonic, Valvular PS], PV VTI [Pulmonic, Valvular PS], HR [Pulmonic, Valvular PS] Measured by: PV Trace [SDMANTRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

PV SI [Pulmonic, Valvular PS] Mode: CW:PW:VRCW:VRPW Formula: $\{(PV \text{ Ann Diam})^2 \times 0.785 \times (PV \text{ VTI})\} / \{BSA\}$ Needs measurement: PV Ann Diam [Pulmonic, Valvular PS], PV VTI [Pulmonic, Valvular PS] Measured by: PV Trace [SDMANTRACE]
PV SV [Pulmonic, Valvular PS] Mode: CW:PW:VRCW:VRPW Formula: $\{(PV \text{ Ann Diam})^2 \times 0.785 \times (PV \text{ VTI})\}$ Needs measurement: PV Ann Diam [Pulmonic, Valvular PS], PV VTI [Pulmonic, Valvular PS] Measured by: PV Trace [SDMANTRACE]
PVA (Vmax) [Pulmonic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{RVOT \text{ Diam}\}^2 \times \{RVOT \text{ Vmax}\} / \{PV \text{ Vmax}\}$ Needs measurement: RVOT Diam [Pulmonic], RVOT Vmax [Pulmonic], PV Vmax [Pulmonic] Measured by: PV Vmax [AUTOCALC]
PVA (Vmax) [Pulmonic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{RVOT \text{ Diam}\}^2 \times \{RVOT \text{ Vmax}\} / \{PV \text{ Vmax}\}$ Needs measurement: RVOT Diam [Pulmonic], RVOT Vmax [Pulmonic], PV Vmax [Pulmonic] Measured by: PV Trace [AUTOCALC]
PVA (VTI) [Pulmonic] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14/4 \times \{RVOT \text{ Diam}\}^2 \times \{RVOT \text{ VTI}\} / \{PV \text{ VTI}\}$ Needs measurement: RVOT Diam [Pulmonic], RVOT VTI [Pulmonic], PV VTI [Pulmonic] Measured by: PV Trace [AUTOCALC]
Qp/Qs [Shunts, Congenital Heart] Mode: CW:PW:VRCW:VRPW Formula: $3.14159/4 \times \{Pulmonic \text{ Diam}\}^2 \times \{Pulmonic \text{ VTI}\} / (3.14159/4 \times \{Systemic \text{ Diam}\}^2 \times \{Systemic \text{ VTI}\})$ Needs measurement: Pulmonic Diam [Shunts, Congenital Heart], Pulmonic VTI [Shunts, Congenital Heart], Systemic Diam [Shunts, Congenital Heart], Systemic VTI [Shunts, Congenital Heart] Measured by: Qp/Qs [AUTOCALC]
R-IMP [IMP=Myocardial Performance (MP) Index] Mode: CW:PW:VRCW:VRPW Formula: $\{(TCO) - \{RVOT\}\} / \{RVOT\}$ Needs measurement: TV Close Time [IMP], RVOT [IMP] Measured by: R-IMP [AUTOCALC]
RIMP [Pulmonic, Tricuspid Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{(TCO) - \{PVET\}\} / \{PVET\}$ Needs measurement: TCO [Tricuspid Valve], PVET [Pulmonic] Measured by: RIMP [AUTOCALC]
RVOT Area [Dimension] Mode: 2D:CF:VR2D Formula: $3.14/4 \times \{RVOT \text{ Diam}\}^2$ Needs measurement: RVOT Diam [Dimension] Measured by: RVOT Diam [2DCALIPER]

Table 2-12: Cardiac Calculation Formulas (Continued)

RVOT CI [Pulmonic, Valvular PS] Mode: PW:VRPW Formula: $((\{RVOT\ Diam\}^2 * 0.785 * \{RVOT\ VTI\}) * \{HR\} / 1000) / \{BSA\}$ Needs measurement: RVOT Diam [Pulmonic, Valvular PS], RVOT VTI [Pulmonic, Valvular PS], HR [Pulmonic, Valvular PS], Measured by: RVOT Trace [SDMANTRACE]
RVOT CO [Pulmonic, Valvular PS] Mode: PW:VRPW Formula: $(\{RVOT\ Diam\}^2 * 0.785 * \{RVOT\ VTI\}) * \{HR\} / 1000$ Needs measurement: RVOT Diam [Pulmonic, Valvular PS], RVOT VTI [Pulmonic, Valvular PS], HR [Pulmonic, Valvular PS] Measured by: RVOT Trace [SDMANTRACE]
RVOT SI [Pulmonic, Valvular PS] Mode: PW:VRPW Formula: $(\{RVOT\ Diam\}^2 * 0.785 * \{RVOT\ VTI\}) / \{BSA\}$ Needs measurement: RVOT Diam [Pulmonic, Valvular PS], RVOT VTI [Pulmonic, Valvular PS], Measured by: RVOT Trace [SDMANTRACE]
RVOT SV [Pulmonic, Valvular PS] Mode: PW:VRPW Formula: $\{RVOT\ Diam\}^2 * 0.785 * \{RVOT\ VTI\}$ Needs measurement: RVOT Diam [Pulmonic, Valvular PS], RVOT VTI [Pulmonic, Valvular PS] Measured by: RVOT Trace [SDMANTRACE]
RVPEP/ET [Pulmonic] Mode: CW:PW:VRCW:VRPW Formula: $\{RVPEP\} / \{RVET\}$ Needs measurement: RVPEP [Pulmonic], RVET [Pulmonic] Measured by: RVET [SDTIMECALIPER]
RVPEP/ET [Time] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{RVPEP\} / \{RVET\}$ Needs measurement: RVPEP [Time], RVET [Time] Measured by: RVET [MMTIMECALIPER]
RVSP [Tricuspid Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{TR\ maxPG\} + \{RAP\}$ Needs measurement: TR maxPG [Tricuspid Valve], RAP [Tricuspid Valve] Measured by: TR Vmax [AUTOCALC]
SI A-L A2C [Biplane, Single Plane A2C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ A-L\ A2C\} - \{LVESV\ A-L\ A2C\}) / \{BSA\}$ Needs measurement: LVEDV A-L A2C [Biplane, Single Plane A2C], LVESV A-L A2C [Biplane, Single Plane A2C] Measured by: EF SP A2C [AUTOCALC], LVESV A2C [2DVOLUMETRACE], LVEDV A2C [2DVOLUMETRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

SI A-L A4C [Biplane, Single Plane A4C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ A-L\ A4C\} - \{LVESV\ A-L\ A4C\}) / \{BSA\}$ Needs measurement: LVEDV A-L A4C [Biplane, Single Plane A4C], LVESV A-L A4C [Biplane, Single Plane A4C] Measured by: EF SP A4C [AUTOCALC], LVESV A4C [2DVOLUMETRACE], LVEDV A4C [2DVOLUMETRACE]
SI A-L LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ A-L\ LAX\} - \{LVESV\ A-L\ LAX\}) / \{BSA\}$ Needs measurement: LVEDV A-L LAX [Single Plane LAX], LVESV A-L LAX [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE], EF SP LAX [AUTOCALC], LVEDV LAX [2DVOLUMETRACE]
SI Biplane [Biplane] Mode: 2D:CF:VR2D Formula: $(d-s) / \{BSA\}$ where $d = \text{biplane}(\{LVLd\ A4C\}, \{LVDiskd\ A4C\}, \{LVLd\ A2C\}, \{LVDiskd\ A2C\})$ $s = \text{biplane}(\{LVLs\ A4C\}, \{LVDiskd\ A4C\}, \{LVLs\ A2C\}, \{LVDiskd\ A2C\})$ Needs measurement: LVLd A4C [Biplane], LVLd A2C [Biplane], LVLs A4C [Biplane], LVLs A2C [Biplane] Measured by: EF Biplane [AUTOCALC]
SI bp el [Biplane Ellipse] Mode: 2D:CF:VR2D Formula: $(d-s) / \{BSA\}$ where: $s = (8 / (3 * 3.14159)) * \{LVAs\ A4C\} * \{LVAs\ (sax\ MV)\} / \{2D/LVIDs\}$ $d = (8 / (3 * 3.14159)) * \{LVAd\ A4C\} * \{LVAd\ (sax\ MV)\} / \{2D/LVIDd\}$ Needs measurement: LVAd A4C [Biplane Ellipse], LVAd (sax MV) [Biplane Ellipse], LVIDd [Biplane Ellipse], LVAs A4C [Biplane Ellipse], LVAs sax MV [Biplane Ellipse], LVIDs [Biplane Ellipse] Measured by: LVEF BP-EL [AUTOCALC]
SI bullet [Bullet] Mode: 2D:CF:VR2D Formula: $(d-s) / \{BSA\}$ where: $s = 5/6 * \{LVAs(sax)\} * \{LVLs(apical)\}$ $d = 5/6 * \{LVAd\ sax\} * \{LVLd\ apical\}$ Needs measurement: LVAd sax [Bullet], LVLd apical [Bullet], LVLs apical [Bullet] Measured by: LVEF Bullet [AUTOCALC]
SI MOD A2C [Biplane, Single Plane A2C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ MOD\ A2C\} - \{LVESV\ MOD\ A2C\}) / \{BSA\}$ Needs measurement: LVEDV MOD A2C [Biplane, Single Plane A2C], LVESV MOD A2C [Biplane, Single Plane A2C] Measured by: EF SP A2C [AUTOCALC], LVESV A2C [2DVOLUMETRACE], LVEDV A2C [2DVOLUMETRACE]
SI MOD A4C [Biplane, Single Plane A4C] Mode: 2D:CF:VR2D Formula: $(\{LVEDV\ MOD\ A4C\} - \{LVESV\ MOD\ A4C\}) / \{BSA\}$ Needs measurement: LVEDV MOD A4C [Biplane, Single Plane A4C], LVESV MOD A4C [Biplane, Single Plane A4C] Measured by: EF SP A4C [AUTOCALC], LVESV A4C [2DVOLUMETRACE], LVEDV A4C [2DVOLUMETRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

SI MOD LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: $(\{LVEDV \text{ MOD LAX}\} - \{LVESV \text{ MOD LAX}\}) / \{BSA\}$ Needs measurement: LVEDV MOD LAX [Single Plane LAX], LVESV MOD LAX [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE], EF SP LAX [AUTOCALC], LVEDV LAX [2DVOLUMETRACE]
SI mod sim [Modified Simpson] Mode: 2D:CF:VR2D Formula: $d - s / \{BSA\}$ where: $s = (\{LVLs(\text{apical})\} / 9) * ((4 * \{LVAs(\text{sax MV})\}) + (2 * \{LVAs(\text{sax PM})\}) + \sqrt{\{LVAs(\text{sax MV})\} * \{LVAs(\text{sax PM})\}})$ $d = (\{LVLd \text{ apical}\} / 9) * ((4 * \{LVAd (\text{sax MV})\}) + (2 * \{LVAd \text{ sax PM}\}) + \sqrt{\{LVAd (\text{sax MV})\} * \{LVAd \text{ sax PM}\}})$ Needs measurement: LVLd apical [Modified Simpson], LVAd (sax MV) [Modified Simpson], LVAd sax PM [Modified Simpson], LVLs apical [Modified Simpson], LVAs sax MV [Modified Simpson], LVAs sax PM [Modified Simpson] Measured by: EF mod sim [AUTOCALC]
SI(A-L) [Generic] Mode: 2D:CF:VR2D Formula: $(\{EDV(A-L)\} - \{ESV(A-L)\}) / \{BSA\}$ Needs measurement: ESV(A-L) [Generic] Measured by: EF Volume [AUTOCALC]
SI(Cube) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $(d - s) / \{BSA\}$ where: $s = \{2D/LVIDs\}^3$ $d = \{2D/LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz] Measured by: LVs [2DLV], LVIDs [2DCALIPER], EF(Cube) [AUTOCALC]
SI(Cube) [Generic] Mode: MM:CM:AMM:CAMM:VRMM Formula: $(dv - sv) / \{BSA\}$ where: $sv = \{MM/LVIDs\}^3$ $dv = \{MM/LVIDd\}^3$ Needs measurement: LVIDd [Generic], LVIDs [Generic], Measured by: LV Study [MMLV]
SI(MOD) [Generic] Mode: 2D:CF:VR2D Formula: $(\{EDV(MOD)\} - \{ESV(MOD)\}) / \{BSA\}$ Needs measurement: EDV(MOD) [Generic], ESV(MOD) [Generic] Measured by: EF Volume [AUTOCALC]
SI(Teich) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $(d - s) / \{BSA\}$ $s = 7 / (2.4 + \{2D/LVIDs\}) * \{2D/LVIDs\}^3$ $d = 7 / (2.4 + \{2D/LVIDd\}) * \{2D/LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz] Measured by: LVs [2DLV], LVIDs [2DCALIPER], EF(Cube) [AUTOCALC]
SI(Teich) [Generic] Mode: MM:CM:AMM:CAMM:VRMM Formula: $(dv - sv) / \{BSA\}$ where: $sv = 7 / (2.4 + \{MM/LVIDs\}) * \{MM/LVIDs\}^3$ $dv = 7 / (2.4 + \{MM/LVIDd\}) * \{MM/LVIDd\}^3$ Needs measurement: LVIDd [Generic], LVIDd [Generic], LVIDs [Generic] Measured by: LV Study [MMLV]

Table 2-12: Cardiac Calculation Formulas (Continued)

SV A-L A2C [Biplane, Single Plane A2C] Mode: 2D:CF:VR2D Formula: {LVEDV A-L A2C}-{LVESV A-L A2C} Needs measurement: LVEDV A-L A2C [Biplane, Single Plane A2C], LVESV A-L A2C [Biplane, Single Plane A2C] Measured by: EF SP A2C [AUTOCALC], LVESV A2C [2DVOLUMETRACE], LVEDV A2C [2DVOLUMETRACE]
SV A-L A4C [Biplane, Single Plane A4C] Mode: 2D:CF:VR2D Formula: {LVEDV A-L A4C}-{LVESV A-L A4C} Needs measurement: LVEDV A-L A4C [Biplane, Single Plane A4C], LVESV A-L A4C [Biplane, Single Plane A4C] Measured by: EF SP A4C [AUTOCALC], LVESV A4C [2DVOLUMETRACE], LVEDV A4C [2DVOLUMETRACE]
SV A-L LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: {LVEDV A-L LAX}-{LVESV A-L LAX} Needs measurement: LVEDV A-L LAX [Single Plane LAX], LVESV A-L LAX [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE], EF SP LAX [AUTOCALC], LVEDV LAX [2DVOLUMETRACE]
SV Biplane [Biplane] Mode: 2D:CF:VR2D Formula: d-s where d = biplane({LVLd A4C},{LVDIsksD A4C},{LVLd A2C},{LVDIsksD A2C}) s = biplane({LVLs A4C},{LVDIsksS A4C},{LVLs A2C},{LVDIsksS A2C}) Needs measurement: LVLd A4C [Biplane], LVLd A2C [Biplane], LVLs A4C [Biplane], LVLs A2C [Biplane] Measured by: EF Biplane [AUTOCALC]
SV bp el [Biplane Ellipse] Mode: 2D:CF:VR2D Formula: d-s where d = $(8/(3*3.14159))*\{LVAd A4C\}*\{LVAd (sax MV)\}/\{LVIDd\}$ s = $(8/(3*3.14159))*\{LVAs A4C\}*\{LVAs (sax MV)\}/\{LVIDs\}$ Needs measurement: LVAd A4C [Biplane Ellipse], LVAd (sax MV) [Biplane Ellipse], LVIDd [Biplane Ellipse], LVAs A4C [Biplane Ellipse], LVAs sax MV [Biplane Ellipse], LVIDs [Biplane Ellipse] Measured by: LVEF BP-EL [AUTOCALC]
SV bullet [Bullet] Mode: 2D:CF:VR2D Formula: d-s where: s = $5/6*\{LVAs(sax)\}*\{LVLs(apical)\}$ d = $5/6*\{LVAd sax\}*\{LVLd apical\}$ Needs measurement: LVAd sax [Bullet], LVLd apical [Bullet], LVLs apical [Bullet] Measured by: LVEF Bullet [AUTOCALC]
SV MOD A2C [Biplane, Single Plane A2C] Mode: 2D:CF:VR2D Formula: {LVEDV MOD A2C}-{LVESV MOD A2C} Needs measurement: LVEDV MOD A2C [Biplane, Single Plane A2C], LVESV MOD A2C [Biplane, Single Plane A2C] Measured by: EF SP A2C [AUTOCALC], LVESV A2C [2DVOLUMETRACE], LVEDV A2C [2DVOLUMETRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

SV MOD A4C [Biplane, Single Plane A4C] Mode: 2D:CF:VR2D Formula: {LVEDV MOD A4C}-{LVESV MOD A4C} Needs measurement: LVEDV MOD A4C [Biplane, Single Plane A4C], LVESV MOD A4C [Biplane, Single Plane A4C] Measured by: EF SP A4C [AUTOCALC], LVESV A4C [2DVOLUMETRACE], LVEDV A4C [2DVOLUMETRACE]
SV MOD LAX [Single Plane LAX] Mode: 2D:CF:VR2D Formula: {LVEDV MOD LAX}-{LVESV MOD LAX} Needs measurement: LVEDV MOD LAX [Single Plane LAX], LVESV MOD LAX [Single Plane LAX] Measured by: LVESV LAX [2DVOLUMETRACE], EF SP LAX [AUTOCALC], LVEDV LAX [2DVOLUMETRACE]
SV mod sim [Modified Simpson] Mode: 2D:CF:VR2D Formula: $d-s$ where $d = \left(\frac{\{LVld\ apical\}}{9} \right) * \left(\frac{4 * \{LVAd\ (sax\ MV)}}{9} \right) + (2 * \{LVAd\ sax\ PM}) + \sqrt{\{LVAd\ (sax\ MV)} * \{LVAd\ sax\ PM}} \}$ $s = \left(\frac{\{LVLs\ apical\}}{9} \right) * \left(\frac{4 * \{LVAs\ (sax\ MV)}}{9} \right) + (2 * \{LVAs\ sax\ PM}) + \sqrt{\{LVAs\ (sax\ MV)} * \{LVAs\ sax\ PM}} \}$ Needs measurement: LVLd apical [Modified Simpson], LVAd (sax MV) [Modified Simpson], LVAd sax PM [Modified Simpson], LVLs apical [Modified Simpson], LVAs sax MV [Modified Simpson], LVAs sax PM [Modified Simpson] Measured by: EF mod sim [AUTOCALC]
SV(A-L) [Generic] Mode: 2D:CF:VR2D Formula: {EDV(A-L)}-{ESV(A-L)} Needs measurement: ESV(A-L) [Generic] Measured by: EF Volume [AUTOCALC]
SV(Cube) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $d-s$ where: $s = \{2D/LVIDs\}^3$ $d = \{2D/LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz] Measured by: LVs [2DLV], LVIDs [2DCALIPER], EF(Cube) [AUTOCALC]
SV(Cube) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $dv-sv$ where: $sv = \{MM/LVIDs\}^3$ $dv = \{MM/LVIDd\}^3$ Needs measurement: LVIDd [Generic, Dimension], LVIDs [Generic, Dimension] Measured by: LV Study [MMLV], LVIDs [MMDISCALIPER]
SV(MOD) [Generic] Mode: 2D:CF:VR2D Formula: {EDV(MOD)}-{ESV(MOD)} Needs measurement: EDV(MOD) [Generic], ESV(MOD) [Generic] Measured by: EF Volume [AUTOCALC]
SV(Teich) [Dimension, Cube/Teichholz] Mode: 2D:CF:VR2D Formula: $d-s$ where: $s = 7 / (2.4 + \{2D/LVIDs\}) * \{2D/LVIDs\}^3$ $d = 7 / (2.4 + \{2D/LVIDd\}) * \{2D/LVIDd\}^3$ Needs measurement: LVIDd [Dimension, Cube/Teichholz], LVIDs [Dimension, Cube/Teichholz] Measured by: LVs [2DLV], LVIDs [2DCALIPER], EF(Cube) [AUTOCALC]

Table 2-12: Cardiac Calculation Formulas (Continued)

SV(Teich) [Generic, Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $dv-sv$ where: $sv = 7 / (2.4 + \{MM/LVIDs\} * \{MM/LVIDs\}^3)$ $dv = 7 / (2.4 + \{MM/LVIDd\} * \{MM/LVIDd\}^3)$ Needs measurement: LVIDd [Generic, Dimension], LVIDs [Generic, Dimension] Measured by: LV Study [MMLV], LVIDs [MMDISCALIPER]
Systemic CO [Shunts, Congenital Heart] Mode: CW:PW:VRCW:VRPW Formula: $\{Systemic\ SV\} * \{Systemic\ HR\} / 1000$ Needs measurement: Systemic SV [Shunts, Congenital Heart], Systemic HR [Shunts, Congenital Heart] Measured by: Systemic VTI [SDMANTRACE]
Systemic SV [Shunts, Congenital Heart] Mode: CW:PW:VRCW:VRPW Formula: $3.14159 / 4 * \{Systemic\ Diam\}^2 * \{Systemic\ VTI\}$ Needs measurement: Systemic Diam [Shunts, Congenital Heart], Systemic VTI [Shunts, Congenital Heart] Measured by: Systemic VTI [SDMANTRACE], Systemic VTI [SDMANTRACE] Used to calculate: Systemic CO
TR ERO [PISA] Mode: CF:CW:PW:VRCW:VRPW Formula: $\{TR\ Flow\} / (\{TR\ Vmax\} * 100)$ Needs measurement: TR Flow [PISA], TR Vmax [PISA] Measured by: TR Trace [AUTOCALC]
TR RV [PISA] Mode: CF:CW:PW:VRCW:VRPW Formula: $\{TR\ Flow\} / (\{TR\ Vmax\} * 100) * \{TR\ VTI\}$ Needs measurement: TR Flow [PISA], TR Vmax [PISA], TR VTI [PISA] Measured by: TR Trace [AUTOCALC]
TV AccT/DecT [Tricuspid Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{TV\ AccT\} / \{TV\ Dec\ Time\}$ Needs measurement: TV AccT [Tricuspid Valve], TV Dec Time [Tricuspid Valve] Measured by: TV AccT [SDCALIPER]
TV Area [Dimension] Mode: 2D:CF:VR2D Formula: $3.14 / 4 * \{TV\ Ann\ Diam\}^2$ Needs measurement: TV Ann Diam [Dimension] Measured by: TV Ann Diam [2DCALIPER]
TV CI [Tricuspid Valve] Mode: CW:PW:VRCW:VRPW Formula: $((\{TV\ Ann\ Diam\}^2 * 0.785 * \{TV\ VTI\}) * \{HR\} / 1000) / \{BSA\}$ Needs measurement: TV Ann Diam [Tricuspid Valve], TV VTI [Tricuspid Valve], HR [Tricuspid Valve] Measured by: TV Trace [SDMANTRACE]
TV CO [Tricuspid Valve] Mode: CW:PW:VRCW:VRPW Formula: $(\{TV\ Ann\ Diam\}^2 * 0.785 * \{TV\ VTI\}) * \{HR\} / 1000$ Needs measurement: TV Ann Diam [Tricuspid Valve], TV VTI [Tricuspid Valve], HR [Tricuspid Valve] Measured by: TV Trace [SDMANTRACE]

Table 2-12: Cardiac Calculation Formulas (Continued)

TV E/A Ratio [Tricuspid Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{TV\ E\ Vel\}/\{TV\ A\ Vel\}$ Needs measurement: TV E Vel [Tricuspid Valve], TV A Vel [Tricuspid Valve] Measured by: TV A Vel [SDPTCALIPER]
TV SI [Tricuspid Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{TV\ Ann\ Diam\}^2 * 0.785 * \{TV\ VTI\} / \{BSA\}$ Needs measurement: TV Ann Diam [Tricuspid Valve], TV VTI [Tricuspid Valve] Measured by: TV Trace [SDMANTRACE]
TV SV [Tricuspid Valve] Mode: CW:PW:VRCW:VRPW Formula: $\{TV\ Ann\ Diam\}^2 * 0.785 * \{TV\ VTI\}$ Needs measurement: TV Ann Diam [Tricuspid Valve], TV VTI [Tricuspid Valve] Measured by: TV Trace [SDMANTRACE]
TVA (Vmax) [Tricuspid Valve] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14 / 4 * \{RVOT\ Diam\}^2 * \{RVOT\ Vmax\} / \{TV\ Vmax\}$ Needs measurement: RVOT Diam [Tricuspid Valve], RVOT Vmax [Tricuspid Valve], TV Vmax [Tricuspid Valve] Measured by: TV Vmax [AUTOCALC]
TVA (Vmax) [Tricuspid Valve] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14 / 4 * \{RVOT\ Diam\}^2 * \{RVOT\ Vmax\} / \{TV\ Vmax\}$ Needs measurement: RVOT Diam [Tricuspid Valve], RVOT Vmax [Tricuspid Valve], TV Vmax [Tricuspid Valve] Measured by: TV Trace [AUTOCALC]
TVA (VTI) [Tricuspid Valve] Mode: 2D:CW:PW:VRCW:VRPW Formula: $3.14 / 4 * \{RVOT\ Diam\}^2 * \{RVOT\ VTI\} / \{TV\ VTI\}$ Needs measurement: RVOT Diam [Tricuspid Valve], RVOT VTI [Tricuspid Valve], TV VTI [Tricuspid Valve] Measured by: TV Trace [AUTOCALC]
Vcf mean [Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{LVIDd\} - \{LVIDs\} / (\{LVIDd\} * \{LVET\})$ Needs measurement: LVIDd [Dimension], LVIDs [Dimension], LVET [Dimension] Measured by: Vcf [MMTIMECALIPER]
Vcf mn (corr) [Dimension] Mode: MM:CM:AMM:CAMM:VRMM Formula: $\{LVIDd\} - \{LVIDs\} / (\{LVIDd\} * (\{LVET\} / \sqrt{\{Time\}}))$ Needs measurement: LVIDd [Dimension], LVIDs [Dimension], LVET [Dimension], Time [Dimension] Measured by: Vcf [MMTIMECALIPER]

DICOM SR Measurements

Structured Reporting

DICOM Structured Reporting (SR) provides the results of a procedure as structured data elements (well-defined fields) as opposed to unstructured data (large amounts of text undifferentiated by individual fields). This greatly improves query capability. DICOM Structured Reporting creates coded clinical data that can be used for clinical research, outcomes analysis, and disease management.

DICOM Structured Reporting is a standardized format for medical results. LOGIQ Totus supports the following templates.

- OB-GYN Report Templates
- Vascular Ultrasound Report Templates
- Cardiac Report Templates
- Abdomen Report Templates
- Breast Report Templates
- Thyroid Report Templates

These templates do not support all M&A results for the LOGIQ Totus.

Supported parameters

The DICOM supported parameters are listed in the DICOM Conformance Statement at the following website under DICOM - Ultrasound:

<http://www.gehealthcare.com/usen/interoperability/dicom/>

Supported parameters (continued)

NOTE: When the value is displayed as "<#%", ">#%", or out of range "OOR", that value cannot be sent via DICOM SR. The "<#%" and ">#%" values normally are used for GP calculations.

Affected parameters are as follows:

1. <3% or >97%

Hadlock: BPD-GP/AC-GP/HC-GP/FL-GP.

CFEF: BPD-GP/AC-GP/FL-GP/HC-GP/TAD-GP

Chitty: AC-GP

2. <5% or >95%

Jeanty: CRL-GP/BPD-GP/AC-GP/HC-GP/FL-GP/FIB-GP/

Radius-GP/OFD-GP/BOD-GP/ULNA-GP

Merz: BPD-GP/AC-GP/HC-GP/FL-GP

Paris: CRL-GP/BPD-GP/TAD-GP/Ft-GP/FL-GP

Kurtz: BPD-GP

Robinson: CRL-GP

Chitty: OFD-GP

Bertagnoli: KID-GP/KID-AP-GP.

ASUM: BPD-GP/OFD-GP/FL-GP/HC-GP/AC-GP/HL-GP

WHO: AC-GP/BPD-GP/FL-GP/HC-GP/HL-GP

Pexsters: CRL-GP

Sonek: NBL-GP

Chervenak: HC-GP

3. <10% or >90%

Hansmann: GS-GP/BPD-GP/CRL-GP/OFD-GP/HC-GP/

TAD-GP/ThD-GP/FL-GP/AC-GP

Rempen: GS-GP/CRL-GP/BPD-GP

Chapter 3

OB Tables

Reference for Obstetric Measurement Tables.

Alexander

Table 3-1: Estimated Fetal Weight (EFW) Alexander (Fetal Growth)

weeks	grams			weeks	grams		
	10%	Mean	90%		10%	Mean	90%
20.00	275.00	412.00	772.00	33.00	1725.00	2458.00	3370.00
21.00	314.00	433.00	790.00	34.00	1950.00	2667.00	3502.00
22.00	376.00	496.00	826.00	35.00	2159.00	2831.00	3596.00
23.00	440.00	582.00	882.00	36.00	2354.00	2974.00	3668.00
24.00	498.00	674.00	977.00	37.00	2541.00	3117.00	3755.00
25.00	558.00	779.00	1138.00	38.00	2714.00	3263.00	3867.00
26.00	625.00	899.00	1362.00	39.00	2852.00	3400.00	3980.00
27.00	702.00	1035.00	1635.00	40.00	2929.00	3495.00	4060.00
28.00	798.00	1196.00	1977.00	41.00	2948.00	3527.00	4094.00
29.00	925.00	1394.00	2361.00	42.00	2935.00	3522.00	4098.00
30.00	1085.00	1637.00	2710.00	43.00	2907.00	3505.00	4096.00
31.00	1278.00	1918.00	2986.00	44.00	2885.00	3491.00	4096.00
32.00	1495.00	2203.00	3200.00				

Reference

Alexander GR, Himes JH, Kaufman RB, Mor J, Kogan M. A United States National Reference for Fetal Growth. Obstet Gynecol 1996; 87: 163-168

ASUM

Table 3-2: AC: ASUM, Deler (Fetal Age)

Unit: AC (mm); Age (Days); 2SD (Days)											
AC	Age	2SD	AC	Age	2SD	AC	Age	2SD	AC	Age	2SD
<35	n/a	—	126	126	10	228	189	14	331	252	18
35	70	8	137	133	10	240	196	14	342	259	18
46	77	8	149	140	10	251	203	14	354	266	20
57	84	8	160	147	10	263	210	14	365	273	20
69	91	8	171	154	10	274	217	14	377	280	20
80	98	9	183	161	10	285	224	16	>377	n/a	—
92	105	9	194	168	12	297	231	16			
103	112	9	206	175	12	308	238	18			
114	119	9	217	182	12	320	245	18			

ASUM (continued)

Table 3-3: BPD: ASUM, Aust NZ, Obstet Gynaecol 1989: 29:26 (Fetal Age)

Unit: BPD (mm); Age (Days); 2SD (Days)											
BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD
<20	n/a	—	40	123	8	61	171	13	82	225	18
20	84	4	41	126	9	62	173	13	83	228	18
21	86	4	42	128	9	63	176	14	84	231	19
22	88	4	43	130	9	64	178	14	85	234	19
23	90	4	44	132	9	65	181	14	86	237	19
24	92	5	45	134	9	66	183	14	87	240	19
25	94	5	46	136	10	67	186	15	88	244	20
26	95	5	47	139	10	68	188	15	89	247	20
27	97	5	48	141	10	69	191	15	90	251	20
28	99	5	49	143	10	70	193	15	91	255	20
29	101	6	50	145	11	71	196	16	92	259	21
30	103	6	51	147	11	72	199	16	93	264	21
31	105	6	52	149	11	73	201	16	94	270	21
32	107	6	53	152	11	74	204	16	95	276	21
33	109	7	54	154	12	75	206	17	96	284	21
34	111	7	55	157	12	76	209	17	97	292	22
35	113	7	56	159	12	77	212	17	98	301	22
36	115	7	57	161	12	78	214	17	>98	n/a	—
37	117	8	58	164	13	79	217	17			
38	119	8	59	166	13	80	220	18			
39	121	8	60	169	13	81	222	18			

Table 3-4: CRL: ASUM, Silva et al 1991.6 (Fetal Age)

Unit: CRL (mm); Age (Days); 2SD (* No Data available)											
CRL	Age	2SD	CRL	Age	2SD	CRL	Age	2SD	CRL	Age	2SD
<2	n/a	—	16	56	*	34	71	*	58	86	*
2	42	*	17	57	*	36	72	*	60	87	*
3	43	*	18	58	*	37	73	*	62	88	*
4	44	*	19	59	*	38	74	*	64	89	*
5	45	*	20	60	*	40	75	*	66	90	*
6	46	*	22	61	*	41	76	*	68	91	*
7	47	*	23	62	*	43	77	*	70	92	*
8	48	*	24	63	*	45	78	*	72	93	*
9	49	*	25	64	*	46	79	*	74	94	*
10	50	*	26	65	*	48	80	*	76	95	*
11	51	*	27	66	*	50	81	*	78	96	*
12	52	*	29	67	*	51	82	*	80	97	*
13	53	*	30	68	*	53	83	*	82	98	*
14	54	*	31	69	*	55	84	*	>82	n/a	—
15	55	*	33	70	*	57	85	*			

ASUM (continued)

Table 3-5: ASUM2001/AC Table/Fetal Age

Unit: meas (mm); mean(week); SD (day) Table Type=SD Table Range=1SD, Graph Range=1SD								
Meas	Mean	1SD	Meas	Mean	1SD	Meas	Mean	1SD
52	11	7	176	22	10	294	33	21
63	12	7	186	23	10	305	34	21
74	13	7	201	24	10	315	35	21
84	14	7	212	25	10	325	36	28
96	15	7	223	26	14	333	37	28
106	16	7	230	27	14	342	38	28
120	17	7	242	28	14	356	39	28
131	18	10	259	29	14	362	40	28
140	19	10	262	30	14	367	41	28
151	20	10	272	31	21			
164	21	10	283	32	21			

Table 3-6: ASUM2001/AC Table/Fetal Growth

Unit: AGE (week); mean(mm); SD (mm) Table Type=SD, Table Range=2SD, Graph Range=2SD								
Meas	Mean	2SD	Meas	Mean	2SD	Meas	Mean	2SD
11	52	10	22	176	20	33	294	30
12	63	10	23	186	20	34	305	30
13	74	10	24	201	20	35	315	30
14	84	10	25	212	20	36	325	35
15	96	10	26	223	25	37	333	35
16	106	10	27	230	25	38	342	35
17	120	15	28	242	25	39	356	35
18	131	15	29	259	25	40	362	35
19	140	15	30	262	25	41	367	35
20	151	15	31	272	30			
21	164	20	32	283	30			

ASUM (continued)

Table 3-7: ASUM2001/BPD Table/Fetal Age

Unit: meas (mm); mean(week); SD (day) Table Type=SD, Table Range=1SD, Graph Range=1SD								
Meas	Mean	1SD	Meas	Mean	1SD	Meas	Mean	1SD
16	11	4	52	22	10	84	33	21
20	12	7	57	23	10	86	34	21
24	13	7	60	24	10	88	35	21
28	14	7	64	25	10	90	36	21
31	15	7	67	26	12	92	37	24
36	16	7	68	27	12	93	38	24
39	17	10	72	28	12	95	39	28
42	18	10	75	29	12	96	40	28
45	19	10	76	30	14	98	41	28
47	20	10	80	31	16			
49	21	10	81	32	16			

Table 3-8: ASUM2001/BPD Table/Fetal Growth

Unit: AGE (week); mean(mm); SD (mm) Table Type=SD, Table Range=2SD, Graph Range=2SD								
Meas	Mean	2SD	Meas	Mean	2SD	Meas	Mean	2SD
11	16	2	22	52	5	33	84	6
12	20	4	23	57	5	34	86	6
13	24	4	24	60	6	35	88	6.5
14	28	4	25	64	6	36	90	6
15	31	4	26	67	4	37	92	6.5
16	36	5	27	68	5	38	93	6
17	39	5	28	72	4	39	95	8
18	42	4	29	75	4	40	96	8
19	45	5	30	76	4	41	98	8
20	47	4	31	80	6			
21	49	4	32	81	4			

ASUM (continued)

Table 3-9: ASUM2001/CRL Table/Fetal Age

Unit: meas (mm); mean(week/day)							
Meas	Mean	Meas	Mean	Meas	Mean	Meas	Mean
1	5+2	15	7+6	38	10+3	68	13+0
2	5+3	17	8+0	39	10+4	70	13+1
3	5+4	18	8+1	39	10+5	72	13+2
3	5+5	19	8+2	40	10+6	74	13+3
4	5+6	20	8+3	44	11+0	76	13+4
4	6+0	21	8+4	45	11+1	77	13+5
5	6+1	22	8+5	47	11+2	80	13+6
6	6+2	22	8+6	48	11+3	81	14+0
7	6+3	23	9+0	52	11+4	84	14+1
8	6+4	24	9+1	55	11+5	85	14+2
9	6+5	26	9+2	56	11+6	86	14+3
10	6+6	27	9+3	57	12+0	87	14+4
11	7+0	28	9+4	58	12+1		
11	7+1	29	9+5	60	12+2		
12	7+2	31	9+6	61	12+3		
12	7+3	34	10+0	63	12+4		
13	7+4	36	10+1	64	12+5		
14	7+5	37	10+2	65	12+6		

Table 3-10: ASUM2001/CRL Table/Fetal Growth

Unit: meas (week/day); mean(mm)							
Meas	Mean	Meas	Mean	Meas	Mean	Meas	Mean
5+2	1	7+6	15	10+3	38	13+0	68
5+3	2	8+0	17	10+4	39	13+1	70
5+4	3	8+1	18	10+5	39	13+2	72
5+5	3	8+2	19	10+6	40	13+3	74
5+6	4	8+3	20	11+0	44	13+4	76
6+0	4	8+4	21	11+1	45	13+5	77
6+1	5	8+5	22	11+2	47	13+6	80
6+2	6	8+6	22	11+3	48	14+0	81
6+3	7	9+0	23	11+4	52	14+1	84
6+4	8	9+1	24	11+5	55	14+2	85
6+5	9	9+2	26	11+6	56	14+3	86
6+6	10	9+3	27	12+0	57	14+4	87
7+0	11	9+4	28	12+1	58		
7+1	11	9+5	29	12+2	60		
7+2	12	9+6	31	12+3	61		
7+3	12	10+0	34	12+4	63		
7+4	13	10+1	36	12+5	64		
7+5	14	10+2	37	12+6	65		

NOTE: 2000 table represents as "2001" on the system.

ASUM (continued)

Table 3-11: ASUM2001/FL Table/Fetal Age

Unit: meas (mm); mean(week); SD (day) Table Type=SD, Table Range=1SD, Graph Range=1SD								
Meas	Mean	1SD	Meas	Mean	1SD	Meas	Mean	1SD
8	11	7	37	22	14	65	33	21
10	12	7	43	23	14	66	34	21
11	13	7	45	24	14	67	35	21
15	14	7	48	25	14	69	36	21
17	15	7	49	26	14	72	37	21
22	16	7	50	27	14	73	38	21
25	17	7	54	28	14	75	39	21
28	18	10	55	29	18	76	40	21
30	19	10	58	30	18	77	41	21
32	20	10	59	31	18			
34	21	14	62	32	21			

Table 3-12: ASUM2001/FL Table/Fetal Growth

Unit: AGE (week); mean(mm); SD (mm) Table Type=SD, Table Range=2SD, Graph Range=2SD								
Meas	Mean	2SD	Meas	Mean	2SD	Meas	Mean	2SD
11	8	2	22	37	5	33	65	4
12	10	2.5	23	43	5	34	66	4
13	11	2.5	24	45	4	35	67	6
14	15	3	25	48	5	36	69	6
15	17	3.5	26	49	5	37	72	5
16	22	4	27	50	5	38	73	5.5
17	25	4	28	54	4	39	75	6
18	28	5	29	55	5.5	40	76	4
19	30	5	30	58	6	41	77	5
20	32	6	31	59	5.5			
21	34	6	32	62	6			

ASUM (continued)

Table 3-13: ASUM2001/HC Table/Fetal Age

Unit: meas (mm); mean(week); SD (day) Table Type=SD, Table Range=1SD, Graph Range=1SD								
Meas	Mean	1SD	Meas	Mean	1SD	Meas	Mean	1SD
59	11	7	188	22	14	300	33	24
70	12	7	210	23	14	305	34	28
84	13	7	220	24	14	310	35	28
96	14	10	231	25	14	317	36	28
108	15	10	238	26	14	321	37	28
128	16	10	250	27	18	328	38	28
141	17	10	263	28	18	336	39	28
151	18	14	269	29	21	340	40	28
160	19	14	274	30	21	344	41	28
170	20	14	284	31	21			
176	21	14	288	32	24			

Table 3-14: ASUM2001/HC Table/Fetal Growth

Unit: AGE(week); mean(mm); SD (mm) Table Type=SD, Table Range=2SD, Graph Range=2SD								
Meas	Mean	2SD	Meas	Mean	2SD	Meas	Mean	2SD
11	59	15	22	188	20	33	300	25
12	70	15	23	210	20	34	305	25
13	84	15	24	220	20	35	310	25
14	96	15	25	231	20	36	317	25
15	108	15	26	238	20	37	321	25
16	128	15	27	250	20	38	328	25
17	141	15	28	263	20	39	336	25
18	151	20	29	269	25	40	340	25
19	160	20	30	274	25	41	344	25
20	170	20	31	284	25			
21	176	20	32	288	25			

ASUM (continued)

Table 3-15: ASUM2001/HL Table/Fetal Age

Unit: meas (mm); mean(week); SD (day) Table Type=SD, Table Range=1SD, Graph Range=1SD								
Meas	Mean	1SD	Meas	Mean	1SD	Meas	Mean	1SD
8	11	7	35	22	14	57	33	21
9	12	7	38	23	14	59	34	21
11	13	7	40	24	14	60	35	21
14	14	7	43	25	14	62	36	21
17	15	7	44	26	14	63	37	28
21	16	7	47	27	14	64	38	28
25	17	10	50	28	18	65	39	28
27	18	10	51	29	18	66	40	28
29	19	14	52	30	21	68	41	28
31	20	14	54	31	21			
32	21	14	56	32	21			

Table 3-16: ASUM2001/HL Table/Fetal Growth

Unit: AGE (week); mean(mm); SD (mm) Table Type=SD, Table Range=2SD, Graph Range=2SD								
Meas	Mean	2SD	Meas	Mean	2SD	Meas	Mean	2SD
11	8	3	22	35	6	33	57	6
12	9	2	23	38	4	34	59	5.5
13	11	3	24	40	6	35	60	6
14	14	4	25	43	5	36	62	5
15	17	5.5	26	44	4	37	63	6
16	21	4	27	47	4	38	64	6
17	25	5	28	50	5	39	65	5.5
18	27	5.5	29	51	5	40	66	6
19	29	5	30	52	5	41	68	6
20	31	5	31	54	5			
21	32	6	32	56	5			

ASUM (continued)

Table 3-17: ASUM2001/OFD Table/Fetal Age

Unit: meas (mm); mean(week); SD (day) Table Type=SD, Table Range=1SD, Graph Range=1SD								
Meas	Mean	1SD	Meas	Mean	1SD	Meas	Mean	1SD
21	11	5	68	22	7	107	33	14
24	12	5	76	23	7	108	34	18
29	13	5	79	24	10	109	35	18
34	14	5	82	25	10	112	36	21
38	15	5	84	26	10	113	37	21
46	16	5	86	27	10	116	38	21
50	17	5	95	28	10	119	39	21
54	18	7	97	29	10	120	40	21
57	19	7	98	30	14	122	41	21
61	20	7	101	31	14			
63	21	7	102	32	14			

Table 3-18: ASUM2001/OFD Table/Fetal Growth

Unit: AGE (week); mean(mm); SD (mm) Table Type=SD, Table Range=2SD, Graph Range=2SD								
Meas	Mean	2SD	Meas	Mean	2SD	Meas	Mean	2SD
11	21	2	22	68	3.5	33	107	5.5
12	24	2	23	76	4	34	108	5.5
13	29	3	24	79	4	35	109	5.5
14	34	3	25	82	4.5	36	112	5.5
15	38	3	26	84	4.5	37	113	6
16	46	3	27	86	4.5	38	116	5.5
17	50	3	28	95	5	39	119	6
18	54	3.5	29	97	5.5	40	120	6
19	57	3.5	30	98	5.5	41	122	6
20	61	3.5	31	101	5			
21	63	4	32	102	5			

Bahlmann

Table 3-19: Middle Cerebral PI (MCA PI) Bahlmann (Fetal Growth)

weeks	Index			weeks	Index		
	5%	Mean	95%		5%	Mean	95%
18.00	1.01	1.51	2.02	31.00	1.4	1.9	2.45
19.00	1.13	1.59	2.11	32.00	1.37	1.88	2.43
20.00	1.19	1.67	2.18	33.00	1.33	1.84	2.39
21.00	1.26	1.73	2.25	34.00	1.29	1.8	2.35
22.00	1.31	1.78	2.3	35.00	1.23	1.74	2.3
23.00	1.35	1.83	2.35	36.00	1.17	1.68	2.24
24.00	1.39	1.87	2.4	37.00	1.09	1.61	2.17
25.00	1.41	1.9	2.43	38.00	1.01	1.53	2.1
26.00	1.43	1.92	2.45	39.00	0.92	1.45	2.02
27.00	1.44	1.93	2.47	40.00	0.83	1.35	1.92
28.00	1.45	1.94	2.48	41.00	0.72	1.25	1.82
29.00	1.44	1.94	2.48	42.00	0.61	1.14	1.72
30.00	1.43	1.92	2.47				

Reference

Bahlmann F, Reinhard I, Krummenauer F, Neubert S, Macchiella D, Wellek S. Blood flow velocity waveforms of the fetal middle cerebral artery in a normal population: reference values from 18 weeks to 42 weeks of gestation. J Perinat Med 2002; 30: 490-501

Table 3-20: Middle Cerebral RI (MCA RI) Bahlmann (Fetal Growth)

weeks	Index			weeks	Index		
	5%	Mean	95%		5%	Mean	95%
18.00	0.544	0.687	0.787	31.00	0.652	0.798	0.907
19.00	0.574	0.708	0.808	32.00	0.645	0.792	0.902
20.00	0.592	0.727	0.828	33.00	0.636	0.783	0.894
21.00	0.608	0.744	0.846	34.00	0.625	0.773	0.885
22.00	0.622	0.758	0.861	35.00	0.612	0.761	0.873
23.00	0.633	0.771	0.874	36.00	0.597	0.747	0.86
24.00	0.643	0.782	0.886	37.00	0.579	0.73	0.844
25.00	0.651	0.79	0.895	38.00	0.56	0.712	0.826
26.00	0.656	0.796	0.902	39.00	0.539	0.692	0.807
27.00	0.659	0.801	0.907	40.00	0.515	0.669	0.785
28.00	0.661	0.803	0.91	41.00	0.489	0.644	0.761
29.00	0.66	0.803	0.911	42.00	0.462	0.618	0.735
30.00	0.657	0.801	0.91				

Reference

Bahlmann F, Reinhard I, Krummenauer F, Neubert S, Macchiella D, Wellek S. Blood flow velocity waveforms of the fetal middle cerebral artery in a normal population: reference values from 18 weeks to 42 weeks of gestation. J Perinat Med 2002; 30: 490-501

Baschat

Table 3-21: Ductus Venosus PVIV (DV PVIV) Baschat (Fetal Growth)

weeks	Index			weeks	Index		
	-2 SD	Mean	2 SD		-2 SD	Mean	2 SD
20.00	0.34	0.58	0.82	31.00	0.3334	0.5734	0.8134
21.00	0.3394	0.5794	0.8194	32.00	0.3328	0.5728	0.8128
22.00	0.3388	0.5788	0.8188	33.00	0.3322	0.5722	0.8122
23.00	0.3382	0.5782	0.8182	34.00	0.3316	0.5716	0.8116
24.00	0.3376	0.5776	0.8176	35.00	0.331	0.571	0.811
25.00	0.337	0.577	0.817	36.00	0.3304	0.5704	0.8104
26.00	0.3364	0.5764	0.8164	37.00	0.3298	0.5698	0.8098
27.00	0.3358	0.5758	0.8158	38.00	0.3292	0.5692	0.8092
28.00	0.3352	0.5752	0.8152	39.00	0.3286	0.5686	0.8086
29.00	0.3346	0.5746	0.8146	40.00	0.328	0.568	0.808
30.00	0.334	0.574	0.814				

$$DV\ PVIV = 0.592 - 0.0006 * GA$$

Standard Deviation (+/-): 1SD = 0.12

Reference

Baschat AA. Relationship between placental blood flow resistance and precordial venous Doppler indices. Ultrasound Obstet Gynecol 2003; 22: 561-566

Table 3-22: Ductus Venosus PIV (DV PI) Baschat (Fetal Growth)

weeks	Index			weeks	Index		
	-2 SD	Mean	2 SD		-2 SD	Mean	2 SD
20.00	0.3625	0.6425	0.9225	31.00	0.3515	0.6315	0.9115
21.00	0.3615	0.6415	0.9215	32.00	0.3505	0.6305	0.9105
22.00	0.3605	0.6405	0.9205	33.00	0.3495	0.6295	0.9095
23.00	0.3595	0.6395	0.9195	34.00	0.3485	0.6285	0.9085
24.00	0.3585	0.6385	0.9185	35.00	0.3475	0.6275	0.9075
25.00	0.3575	0.6375	0.9175	36.00	0.3465	0.6265	0.9065
26.00	0.3365	0.6365	0.9165	37.00	0.3455	0.6255	0.9055
27.00	0.3355	0.6355	0.9155	38.00	0.3445	0.6245	0.9045
28.00	0.3545	0.6345	0.9145	39.00	0.3435	0.6235	0.9035
29.00	0.3535	0.6335	0.9135	40.00	0.3425	0.6225	0.9025
30.00	0.3525	0.6325	0.9125				

$$DV\ PI = 0.6625 - 0.001 * GA$$

Standard Deviation (+/-): 1SD = 0.14

Reference

Baschat AA. Relationship between placental blood flow resistance and precordial venous Doppler indices. Ultrasound Obstet Gynecol 2003; 22: 561-566

Berkowitz

Table 3-23: BD: Berkowitz (Fetal Age)

Unit: BD (mm); Age (Day); SD (mm)											
BD	Age	SD	BD	Age	SD	BD	Age	SD	BD	Age	SD
<13	n/a	—	25	112	0	38	155	0	51	217	0
13	81	0	26	116	0	39	159	0	52	223	0
14	82	0	27	120	0	40	162	0	53	230	0
15	84	0	28	124	0	41	166	0	54	237	0
16	86	0	29	128	0	42	169	0	55	244	0
17	88	0	30	130	0	43	173	0	56	251	0
18	91	0	31	132	0	44	179	0	57	258	0
19	95	0	32	135	0	45	185	0	58	266	0
20	98	0	33	138	0	46	191	0	59	275	0
21	102	0	34	142	0	47	197	0	>59	n/a	—
22	105	0	35	145	0	48	202	0			
23	109	0	36	149	0	49	207	0			
24	110	0	37	152	0	50	212	0			

Bertagnoli

Table 3-24: Bertagnoli Kidney (Fetal Growth)

Age (weeks)/-2SD/Mean/+2SD (mm)							
Age	-2SD	Mean	+2SD	Age	-2SD	Mean	+2SD
24	22.0	24.5	27.0	34	29.6	32.2	34.7
25	22.6	25.1	27.7	35	30.5	33.1	35.6
26	23.3	25.8	28.3	36	31.5	34.0	36.5
27	24.0	26.5	29.0	37	32.4	35.0	37.5
28	24.7	27.2	29.8	38	33.4	36.0	38.5
29	25.5	28.0	30.5	39	34.5	37.0	39.5
30	26.3	28.8	31.3	40	35.5	38.0	40.5
31	27.1	29.6	32.1	41	36.6	39.1	41.6
32	27.9	30.4	32.9	42	37.7	40.2	42.7
33	28.8	31.3	33.8				

Table 3-25: Bertagnoli Kidney Antero-Posterior (AP)

Age (weeks)/-2SD/Mean/+2SD (mm)							
Age	-2SD	Mean	+2SD	Age	-2SD	Mean	+2SD
22	8.9	11.3	13.7	32	14.8	17.2	19.6
23	9.3	11.7	14.1	33	15.6	18.0	20.4
24	9.7	12.1	14.5	34	16.5	18.9	21.3
25	10.2	12.6	15.0	35	17.5	19.9	22.3
26	10.7	13.1	15.5	36	18.5	20.9	23.3
27	11.3	13.7	16.1	37	19.5	21.9	24.4
28	11.9	14.3	16.7	38	20.7	23.1	25.5
29	12.5	15.0	17.4	39	21.8	24.3	26.7
30	13.2	15.6	18.0	40	23.1	25.5	27.9
31	14.0	16.4	18.8				

Brenner

Table 3-26: EFW: Brenner (Fetal Growth) GP, Table/Graph Range = 10%: 90%

Age (Weeks); Mini/Mean/Max (grams)							
Age	Min	Mean	Max	Age	Min	Mean	Max
21.0	280	410	860	33.0	1480	2010	2690
22.0	320	480	920	34.0	1670	2220	2880
23.0	370	550	990	35.0	1870	2430	3090
24.0	420	640	1080	36.0	2190	2650	3290
25.0	490	740	1180	37.0	2310	2870	3470
26.0	570	860	1320	38.0	2510	3030	3610
27.0	660	990	1470	39.0	2680	3170	3750
28.0	770	1130	1660	40.0	2750	3280	3870
29.0	890	1310	1890	41.0	2800	3360	3980
30.0	1030	1460	2100	42.0	2830	3410	4060
31.0	1180	1630	2290	43.0	2840	3420	4100
32.0	1310	1810	2500	44.0	2790	3390	4110
NOTE: Brenner uses Hadlock's EFW formula and then may calculate his EFW if you have set the preset to use Brenner.							

Campbell

Table 3-27: HC/AC Ratio: Campbell, Br J Obstet Gynaecol 1977, 84:165-174 (Fetal Growth)

Unit: GA (Weeks); Min/Max (Index)								
GA	Min	Max	GA	Min	Max	GA	Min	Max
<13	n/a	—	23	1.05	1.21	35	0.93	1.11
13	1.14	1.31	25	1.04	1.22	37	0.92	1.05
15	1.05	1.39	27	1.05	1.22	39	0.87	1.06
17	1.07	1.29	29	0.99	1.21	41	0.93	1.00
19	1.09	1.26	31	0.96	1.17	>41	n/a	n/a
21	1.06	1.25	33	0.96	1.11			

Chervenak

Table 3-28: Head circumference (HC) Chervenak (Fetal Growth)

weeks	mm			weeks	mm		
	-2 SD	50%	2 SD		-2 SD	50%	2 SD
20.00	145	175	204	32.00	268	297	327
21.00	157	187	216	33.00	276	305	334
22.00	169	198	228	34.00	283	312	341
23.00	180	210	239	35.00	289	319	348
24.00	191	221	250	36.00	295	325	354
25.00	202	232	261	37.00	301	330	360
26.00	213	242	271	38.00	306	335	364
27.00	223	252	282	39.00	310	339	369
28.00	233	262	291	40.00	314	343	372
29.00	242	271	301	41.00	316	346	375
30.00	251	281	310	42.00	319	348	377
31.00	260	289	318				

Reference

Chervenak FA, Jeanty P, Cantraine F, Chitkara U, Venus I, Berkowitz RL and Hobbins JC. The diagnosis of fetal microcephaly. Am J Obstet Gynecol 1984;149:512-7

Chitty

Table 3-29: AC : Chitty et al. Br J Obstetric Gynecology 1994 Vol.101

Unit: GA(week):AC(cm) Input Unit :w(weeks); Output Unit:cm; Min Range:12.0weeks; Max Range:42.0weeks							
GA	AC			GA	AC		
	3 rd centile	Median	97 th centile		3 rd centile	Median	97 th centile
12	4.77	5.89	7.02	28	21.41	23.91	26.41
13	5.87	7.09	8.30	29	22.36	24.94	27.53
14	6.97	8.27	9.57	30	23.29	25.96	28.63
15	8.06	9.45	10.83	31	24.20	26.96	29.72
16	9.15	10.62	12.09	32	25.10	27.95	30.80
17	10.22	11.78	13.33	33	25.99	28.92	31.85
18	11.29	12.93	14.57	34	26.86	29.88	32.90
19	12.35	14.08	15.81	35	27.71	30.82	33.92
20	13.40	15.21	17.03	36	28.55	31.74	34.93
21	14.44	16.34	18.24	37	29.37	32.64	35.92
22	15.47	17.46	19.44	38	30.17	33.53	36.89
23	16.49	18.56	20.63	39	30.95	34.40	37.85
24	17.50	19.66	21.81	40	31.72	35.25	38.78
25	18.50	20.74	22.98	41	32.46	36.08	39.70
26	19.48	21.81	24.14	42	33.18	36.89	40.60
27	20.45	22.87	25.28				

Table 3-30: Abdominal Circumference:
Chitty et al Br J Obstetric Gynaecology 1994, Vol1

Unit: AC (cm); GA (Weeks)							
AC Median	GA	AC Median	GA	AC Median	GA	AC Median	GA
5.89	12	15.21	20	23.91	28	31.74	36
7.09	13	16.34	21	24.94	29	32.64	37
8.27	14	17.46	22	25.96	30	33.53	38
9.45	15	18.56	23	26.96	31	34.40	39
10.62	16	19.66	24	27.95	32	35.25	40
11.78	17	20.74	25	28.92	33	36.08	41
12.93	18	21.81	26	29.88	34	36.89	42
14.08	19	22.87	27	30.82	35		

NOTE: AC and GA values are taken from Fetal Growth table; AC (50% values) are used as Input and GA as output.

Chitty (continued)

Table 3-31: BPD: Altmann D.G; Chitty L.S.; "New charts for ultrasound dating of pregnancy", Ultrasound in Obstetrics and Gynecology Vol.10:174-191, 1997

Unit: BPD (cm); GA (Weeks + days)							
BPD	GA			BPD	GA		
	5%	50%	95%		5%	50%	95%
2.20	11w5d	12w4d	13w4d	5.70	20w5d	22w5d	24w5d
2.30	12w0d	12w6d	13w6d	5.80	21w0d	23w0d	25w1d
2.40	12w1d	13w1d	14w1d	5.90	21w2d	23w2d	25w4d
2.50	12w3d	13w3d	14w3d	6.00	21w4d	23w5d	25w6d
2.60	12w5d	13w4d	14w5d	6.10	21w6d	24w0d	26w2d
2.70	12w6d	13w6d	15w0d	6.20	22w1d	24w2d	26w5d
2.80	13w1d	14w1d	15w2d	6.30	22w4d	24w5d	27w0d
2.90	13w3d	14w3d	15w4d	6.40	22w6d	25w0d	27w3d
3.00	13w4d	14w5d	15w6d	6.50	23w1d	25w2d	27w6d
3.10	13w6d	15w0d	16w1d	6.60	23w3d	25w5d	28w2d
3.20	14w1d	15w2d	16w3d	6.70	23w5d	26w0d	28w4d
3.30	14w3d	15w4d	16w5d	6.80	24w0d	26w3d	29w0d
3.40	14w4d	15w5d	17w0d	6.90	24w2d	26w5d	29w3d
3.50	14w6d	16w0d	17w2d	7.00	24w4d	27w1d	29w6d
3.60	15w1d	16w2d	17w5d	7.10	25w0d	27w3d	30w2d
3.70	15w3d	16w4d	18w0d	7.20	25w2d	27w6d	30w4d
3.80	15w4d	16w6d	18w2d	7.30	25w4d	28w1d	31w0d
3.90	15w6d	17w1d	18w4d	7.40	25w6d	28w4d	31w3d
4.00	16w1d	17w3d	19w0d	7.50	26w2d	28w6d	31w6d
4.10	16w3d	17w5d	19w2d	7.60	26w4d	29w2d	32w2d
4.20	16w4d	18w0d	19w4d	7.70	26w6d	29w5d	32w5d
4.30	16w6d	18w2d	19w6d	7.80	27w1d	30w0d	33w1d
4.40	17w1d	18w4d	20w2d	7.90	27w4d	30w3d	33w4d
4.50	17w3d	19w0d	20w4d	8.00	27w6d	30w5d	34w0d
4.60	17w5d	19w2d	20w6d	8.10	28w1d	31w1d	34w3d
4.70	18w0d	19w4d	21w2d	8.20	28w3d	31w4d	34w6d
4.80	18w2d	19w6d	21w4d	8.30	28w6d	31w6d	35w2d
4.90	18w4d	20w1d	22w0d	8.40	29w1d	32w2d	35w6d
5.00	18w5d	20w3d	22w2d	8.50	29w4d	32w5d	36w2d
5.10	19w0d	20w5d	22w4d	8.60	29w6d	33w1d	36w5d
5.20	19w2d	21w1d	23w0d	8.70	30w1d	33w3d	37w1d
5.30	19w4d	21w3d	23w2d	8.80	30w4d	33w6d	37w4d
5.40	19w6d	21w5d	23w5d	8.90	30w6d	34w2d	38w1d
5.50	20w1d	22w0d	24w0d	9.00	31w1d	34w5d	38w4d
5.60	20w3d	22w2d	24w3d	9.10	31w4d	35w1d	39w0d

Chitty (continued)

Table 3-32: FL:Altmann D.G.;Chitty L.S. "New charts for ultrasound dating of pregnancy" Ultrasound in Obstetrics and Gynecology Vol. 10:174-191. 1997

Unit: FL(cm); GA(weeks+days)							
FL	GA			FL	GA		
	5%	50%	95%		5%	50%	95%
1.00	12w1d	13w0d	13w6d	3.90	20w5d	22w4d	24w3d
1.10	12w3d	13w2d	14w1d	4.00	21w1d	22w6d	24w6d
1.20	12w5d	13w4d	14w4d	4.10	21w3d	23w2d	25w2d
1.30	13w0d	13w6d	14w6d	4.20	21w6d	23w5d	25w5d
1.40	13w1d	14w1d	15w1d	4.30	22w1d	24w1d	26w1d
1.50	13w3d	14w3d	15w3d	4.40	22w4d	24w3d	26w4d
1.60	13w5d	14w5d	15w6d	4.50	22w6d	24w6d	27w1d
1.70	14w0d	15w0d	16w1d	4.60	23w2d	25w2d	27w4d
1.80	14w2d	15w2d	16w3d	4.70	23w4d	25w5d	28w0d
1.90	14w4d	15w5d	16w6d	4.80	24w0d	26w1d	28w3d
2.00	14w6d	16w0d	17w1d	4.90	24w3d	26w4d	29w0d
2.10	15w1d	16w2d	17w3d	5.00	24w5d	27w0d	29w3d
2.20	15w3d	16w4d	17w6d	5.10	25w1d	27w3d	30w0d
2.30	15w5d	16w6d	18w1d	5.20	25w4d	27w6d	30w3d
2.40	16w0d	17w2d	18w4d	5.30	26w0d	28w2d	31w0d
2.50	16w2d	17w4d	18w6d	5.40	26w2d	28w5d	31w3d
2.60	16w4d	17w6d	19w2d	5.50	26w5d	29w2d	32w0d
2.70	16w6d	18w2d	19w5d	5.60	27w1d	29w5d	32w3d
2.80	17w1d	18w4d	20w0d	5.70	27w4d	30w1d	33w0d
2.90	17w4d	18w6d	20w3d	5.80	28w0d	30w4d	33w4d
3.00	17w6d	19w2d	20w5d	5.90	28w3d	31w1d	34w1d
3.10	18w1d	19w4d	21w1d	6.00	28w6d	31w4d	34w4d
3.20	18w3d	20w0d	21w4d	6.10	29w2d	32w1d	35w1d
3.30	18w5d	20w2d	22w0d	6.20	29w5d	32w4d	35w5d
3.40	19w1d	20w5d	22w2d	6.30	30w1d	33w1d	36w2d
3.50	19w3d	21w0d	22w5d	6.40	30w4d	33w4d	36w6d
3.60	19w5d	21w3d	23w1d	6.50	31w0d	34w1d	37w3d
3.70	20w1d	21w5d	23w4d	6.60	31w3d	34w4d	38w0d
3.80	20w3d	22w1d	24w0d	6.70	32w0d	35w1d	38w5d

Chitty (continued)

Table 3-33: HC : Altmann D.G.; Chitty L.S. "New charts for ultrasound dating of pregnancy" Ultrasound in Obstetrics and Gynecology Vol.10:174-191, 1997

Unit: HC (cm); GA (Weeks + days)							
HC	GA			HC	GA		
	5%	50%	95%		5%	50%	95%
8.50	12w1d	12w6d	13w4d	21.00	21w2d	22w6d	24w4d
9.00	12w4d	13w2d	14w0d	21.50	21w5d	23w2d	25w0d
9.50	12w6d	13w5d	14w3d	22.00	22w0d	23w5d	25w4d
10.00	13w2d	14w0d	14w6d	22.50	22w3d	24w1d	26w0d
10.50	13w4d	14w3d	15w2d	23.00	22w6d	24w4d	26w3d
11.00	14w0d	14w6d	15w6d	23.50	23w1d	25w0d	27w0d
11.50	14w3d	15w2d	16w2d	24.00	23w4d	25w3d	27w3d
12.00	14w5d	15w5d	16w5d	24.50	24w0d	25w6d	28w0d
12.50	15w1d	16w1d	17w1d	25.00	24w3d	26w3d	28w3d
13.00	15w3d	16w3d	17w4d	25.50	24w6d	26w6d	29w0d
13.50	15w6d	16w6d	18w0d	26.00	25w2d	27w3d	29w4d
14.00	16w1d	17w2d	18w3d	26.50	25w5d	27w6d	30w1d
14.50	16w4d	17w5d	18w6d	27.00	26w2d	28w3d	30w5d
15.00	17w0d	18w1d	19w2d	27.50	26w5d	29w0d	31w2d
15.50	17w2d	18w3d	19w5d	28.00	27w2d	29w4d	32w0d
16.00	17w5d	18w6d	20w1d	28.50	27w5d	30w1d	32w4d
16.50	18w0d	19w2d	20w4d	29.00	28w2d	30w5d	33w2d
17.00	18w3d	19w5d	21w0d	29.50	28w6d	31w2d	34w0d
17.50	18w5d	20w0d	21w3d	30.00	29w3d	32w0d	34w5d
18.00	19w1d	20w3d	21w6d	30.50	30w0d	32w5d	35w3d
18.50	19w3d	20w6d	22w2d	31.00	30w5d	33w3d	36w2d
19.00	19w6d	21w2d	22w6d	31.50	31w2d	34w1d	37w1d
19.50	20w1d	21w5d	23w2d	32.00	32w0d	34w6d	38w0d
20.00	20w4d	22w0d	23w5d	32.50	32w5d	35w5d	38w6d
20.50	20w6d	22w3d	24w1d				

NOTE: HC measured (not derived from diameters).

Chitty (continued)

Table 3-34: OFD : Chitty et al. Br J Obstetric Gynecology 1994 Vol.101

Unit: GA(week):OFD(cm) Input Unit :w(weeks); Output Unit:cm; Min Range:12.0weeks; Max Range:42.0weeks							
GA	OFD			GA	OFD		
	5 th centile	Median	95 th centile		5 th centile	Median	95 th centile
12	2.23	2.62	3.01	28	8.89	9.48	10.07
13	2.51	2.97	3.43	29	9.38	9.96	10.54
14	3.15	3.58	4.01	30	9.57	10.16	10.75
15	3.37	3.86	4.35	31	9.79	10.55	11.31
16	4.01	4.39	4.77	32	9.89	10.68	11.47
17	4.13	4.72	5.31	33	10.19	10.98	11.77
18	4.71	5.29	5.87	34	10.33	11.09	11.85
19	5.30	5.81	6.32	35	10.27	11.24	12.21
20	5.44	6.10	6.76	36	10.72	11.72	12.72
21	6.17	6.66	7.15	37	11.00	11.67	12.34
22	6.29	6.88	7.47	38	10.19	11.74	13.29
23	6.63	7.32	8.01	39	11.04	11.80	12.56
24	7.36	7.90	8.44	40	10.62	12.07	13.52
25	7.68	8.22	8.76	41	11.24	12.41	13.58
26	7.94	8.68	9.42	42	11.02	12.06	13.10
27	8.45	9.08	9.71				

Table 3-35: OFD : Chitty et al. Br J Obstetric Gynecology 1994 Vol. 101

Unit: OFD(cm); GA (Weeks)							
OFD Median	GA	OFD Median	GA	OFD Median	GA	OFD Median	GA
2.62	12	6.10	20	9.48	28	11.72	36
2.97	13	6.66	21	9.96	29	11.67	37
3.58	14	6.88	22	10.16	30	11.74	38
3.86	15	7.32	23	10.55	31	11.80	39
4.39	16	7.90	24	10.68	32	12.07	40
4.72	17	8.22	25	10.98	33	12.41	41
5.29	18	8.68	26	11.09	34	12.06	42
5.81	19	9.08	27	11.24	35		

NOTE: OFD and GA values are taken from Fetal Growth Table; OFD (50% value) are used as Input and GA as Output!

Chitty (continued)

Table 3-36: TCD : Altmann D.G. ; Chitty L.S. "New charts for ultrasound dating of pregnancy" Ultrasound in Obstetrics and Gynecology Vol.10 : 174-191, 1997

Unit: Cereb(cm); GA(weeks+days)							
TCD	GA			TCD	GA		
	5%	50%	95%		5%	50%	95%
1.30	13w1d	14w3d	16w0d	2.50	22w2d	24w2d	26w3d
1.40	14w0d	15w2d	16w6d	2.60	23w0d	25w0d	27w3d
1.50	14w6d	16w2d	17w5d	2.70	23w4d	25w6d	28w2d
1.60	15w4d	17w0d	18w4d	2.80	24w1d	26w4d	29w2d
1.70	16w3d	17w6d	19w3d	2.90	24w5d	27w2d	30w2d
1.80	17w2d	18w5d	20w2d	3.00	25w1d	28w0d	31w2d
1.90	18w0d	19w4d	21w1d	3.10	25w5d	28w6d	32w2d
2.00	18w6d	20w3d	22w0d	3.20	26w1d	29w4d	33w3d
2.10	19w4d	21w1d	22w6d	3.30	26w4d	30w2d	34w4d
2.20	20w2d	22w0d	23w5d	3.40	26w6d	31w0d	35w5d
2.30	21w0d	22w5d	24w4d	3.50	27w2d	31w5d	36w6d
2.40	21w5d	23w4d	25w4d	3.60	27w4d	32w3d	38w1d

Daya

Reference

Daya S. Accuracy of gestational age estimation by means of fetal crown-rump length measurement. Am J Obstet Gynecol 1993; 168: 903-908

$$GA = 40.447 + 1.125 * CRL - 0.0058 * CRL^2$$

Table values are calculated with the equations above.

Table 3-37: Crown-rump length CRL (Daya)

Input Unit: mm; Output Unit: days; Min. Range: 2; Max. Range: 80					
mm	Days	mm	Days	mm	Days
	Mean		Mean		Mean
2	43	32	71	62	88
7	48	37	74	67	90
12	53	42	77	72	91
17	58	47	81	77	93
22	62	52	83	80	93
27	67	57	86		

Doubilet

Table 3-38: Estimated Fetal Weight (EFW) Doubilet (Fetal Growth)

weeks	grams			weeks	grams		
	5%	Mean	95%		5%	Mean	95%
25.00	450.00	660.00	968.00	35.00	1804.00	2383.00	3148.00
26.00	523.00	760.00	1103.00	36.00	2006.00	2622.00	3428.00
27.00	609.00	875.00	1257.00	37.00	2210.00	2859.00	3698.00
28.00	707.00	1005.00	1430.00	38.00	2409.00	3083.00	3947.00
29.00	820.00	1153.00	1623.00	39.00	2595.00	3288.00	4164.00
30.00	947.00	1319.00	1836.00	40.00	2762.00	3462.00	4340.00
31.00	1090.00	1502.00	2070.00	41.00	2900.00	3597.00	4462.00
32.00	1249.00	1702.00	2321.00	42.00	3002.00	3685.00	4523.00
33.00	1422.00	1918.00	2587.00	43.00	3061.00	3717.00	4515.00
34.00	1608.00	2146.00	2865.00				

Reference

Doubilet PM, Benson CB, Nadel AS, Ringer SA. Improved Birth Weight Table for Neonates Developed from Gestations Dated by Early Ultrasonography. J Ultrasound Med 1997; 16:241-249

Ebbing

Table 3-39: Middle Cerebral PI (MCA PI) Ebbing (Fetal Growth)

weeks	5%	Mean	95%	weeks	5%	Mean	95%
21.00	1.18	1.60	2.19	31.00	1.62	2.16	2.90
22.00	1.25	1.69	2.30	32.00	1.61	2.14	2.87
23.00	1.32	1.78	2.41	33.00	1.58	2.10	2.82
24.00	1.38	1.86	2.52	34.00	1.53	2.04	2.74
25.00	1.44	1.94	2.62	35.00	1.47	1.96	2.64
26.00	1.50	2.01	2.71	36.00	1.39	1.86	2.52
27.00	1.55	2.06	2.78	37.00	1.30	1.75	2.38
28.00	1.58	2.11	2.84	38.00	1.20	1.63	2.22
29.00	1.61	2.15	2.88	39.00	1.10	1.49	2.05
30.00	1.62	2.16	2.90				

Reference

Reference: Ebbing C, Rasmussen S, Kiserud T. Middle cerebral artery blood flow velocities and pulsatility index and the cerebroplacental pulsatility ratio: longitudinal reference ranges and terms for serial measurements. *Ultrasound Obstet Gynecol* 2007; 30: 287-296

Table 3-40: Middle Cerebral Artery Pulsatility Index Over Umbilical Artery Pulsatility Index Ratio (MCA CP) Ebbing (Fetal Growth)

weeks	5%	Mean	95%	weeks	5%	Mean	95%
21.00	0.90	1.41	2.11	31.00	1.62	2.32	3.23
22.00	0.98	1.52	2.25	32.00	1.64	2.35	3.27
23.00	1.07	1.63	2.39	33.00	1.65	2.36	3.29
24.00	1.16	1.74	2.52	34.00	1.63	2.35	3.29
25.00	1.24	1.85	2.65	35.00	1.60	2.32	3.26
26.00	1.32	1.95	2.78	36.00	1.55	2.27	3.20
27.00	1.40	2.05	2.90	37.00	1.48	2.19	3.12
28.00	1.47	2.14	3.00	38.00	1.40	2.09	3.01
29.00	1.53	2.21	3.09	39.00	1.29	1.97	2.88
30.00	1.58	2.28	3.17				

Reference

Ebbing C, Rasmussen S, Kiserud T. Middle cerebral artery blood flow velocities and pulsatility index and the cerebroplacental pulsatility ratio: longitudinal reference ranges and terms for serial measurements. *Ultrasound Obstet Gynecol* 2007; 30: 287-296

Ebbing (continued)

Table 3-41: Umbilical artery PI (UmbArt PI) Ebbing (Fetal Growth)

weeks	5%	Mean	95%	weeks	5%	Mean	95%
21.00	0.89	1.15	1.46	31.00	0.71	0.94	1.21
22.00	0.87	1.13	1.43	32.00	0.70	0.92	1.19
23.00	0.85	1.10	1.40	33.00	0.68	0.90	1.16
24.00	0.83	1.08	1.38	34.00	0.66	0.88	1.14
25.00	0.81	1.06	1.35	35.00	0.64	0.86	1.11
26.00	0.80	1.04	1.33	36.00	0.62	0.84	1.09
27.00	0.78	1.02	1.31	37.00	0.60	0.81	1.06
28.00	0.76	1.00	1.28	38.00	0.59	0.79	1.03
29.00	0.75	0.98	1.26	39.00	0.57	0.77	1.00
30.00	0.73	0.96	1.24				

Table values are calculated with the following equations

$$\text{UmbArt PI} = (25.1753 + 1.014423 - 0.000002093986 * \text{GA}^3)^{1/0.366}$$

5%:

$$\text{UmbArt PI} = (25.1753 + 0.919405202667079 - 0.000002093986 * \text{GA}^3)^{1/0.366}$$

95%:

$$\text{UmbArt PI} = (25.1753 + 1.10944079733292 - 0.000002093986 * \text{GA}^3)^{1/0.366}$$

Reference

Ebbing C, Rasmussen S, Kiserud T. Middle cerebral artery blood flow velocities and pulsatility index and the cerebroplacental pulsatility ratio: longitudinal reference ranges and terms for serial measurements. *Ultrasound Obstet Gynecol* 2007; 30: 287-296

Eik-Nes

Table 3-42: BPD: Eik-Nes (Fetal Age)

Unit: meas (mm); mean (WeekDay); SD (mm) Table type = SD, Table range = 1SD, Graph range = 1SD								
Meas	Mean	SD	Meas	Mean	SD	Meas	Mean	SD
29	13+1	0	54	21+0	0	78	28+3	0
30	13+3	0	55	21+2	0	79	28+5	0
31	13+5	0	56	21+4	0	80	29+1	0
32	14+1	0	57	21+6	0	81	29+4	0
33	14+3	0	58	22+1	0	82	29+6	0
34	14+5	0	59	22+3	0	83	30+2	0
35	15+0	0	60	22+5	0	84	30+5	0
36	15+3	0	61	23+0	0	85	31+1	0
37	15+5	0	62	23+2	0	86	31+4	0
38	16+1	0	63	23+4	0	87	31+7	0
39	16+3	0	64	23+7	0	88	32+3	0
40	16+6	0	65	24+2	0	89	32+6	0
41	17+1	0	66	24+4	0	90	33+3	0
42	17+3	0	67	24+6	0	91	33+6	0
43	17+5	0	68	25+1	0	92	34+3	0
44	17+7	0	69	25+3	0	93	34+7	0
45	18+2	0	70	25+5	0	94	35+4	0
46	18+5	0	71	26+1	0	95	36+1	0
47	19+0	0	72	26+3	0	96	36+5	0
48	19+2	0	73	26+5	0	97	37+3	0
49	19+4	0	74	27+0	0	98	37+7	0
50	19+6	0	75	27+3	0	99	38+5	0
51	20+1	0	76	27+5	0	100	39+3	0
52	20+3	0	77	28+0	0	101	39+7	0
53	20+5	0						

Table 3-43: BPD: Eik-Nes (Fetal Growth)

Unit: AGE (WeekDay); mean(mm)									
AGE	Meas	AGE	Meas	AGE	Meas	AGE	Meas	AGE	Meas
13+1	29	17+7	44	22+3	59	27+0	74	32+6	89
13+3	30	18+2	45	22+5	60	27+3	75	33+3	90
13+5	31	18+5	46	23+0	61	27+5	76	33+6	91
14+1	32	19+0	47	23+2	62	28+0	77	34+3	92
14+3	33	19+2	48	23+4	63	28+3	78	34+7	93
14+5	34	19+4	49	23+7	64	28+5	79	35+4	94
15+0	35	19+6	50	24+2	65	29+1	80	36+1	95
15+3	36	20+1	51	24+4	66	29+4	81	36+5	96
15+5	37	20+3	52	24+6	67	29+6	82	37+3	97
16+1	38	20+5	53	25+1	68	30+2	83	37+7	98
16+3	39	21+0	54	25+3	69	30+5	84	38+5	99
16+6	40	21+2	55	25+5	70	31+1	85	39+3	100
17+1	41	21+4	56	26+1	71	31+4	86	39+7	101
17+3	42	21+6	57	26+3	72	31+7	87		
17+5	43	22+1	58	26+5	73	32+3	88		

Eik-Nes (continued)

Table 3-44: MAD:Eik-Nes (Fetal Age)

Unit: meas (mm); mean(WeekDay); SD (mm) Table type = SD, Table range = 1SD, Graph range = 1SD								
Meas	Mean	SD	Meas	Mean	SD	Meas	Mean	SD
36	15+6	0	62	24+7	0	88	32+2	0
37	16+3	0	63	25+2	0	89	32+4	0
38	16+6	0	64	25+4	0	90	32+6	0
39	17+2	0	65	25+6	0	91	33+1	0
40	17+5	0	66	26+1	0	92	33+3	0
41	18+1	0	67	26+3	0	93	33+5	0
42	18+4	0	68	26+5	0	94	34+0	0
43	18+7	0	69	26+7	0	95	34+2	0
44	19+3	0	70	27+2	0	96	34+5	0
45	19+5	0	71	27+4	0	97	34+7	0
46	20+1	0	72	27+5	0	98	35+2	0
47	20+3	0	73	28+0	0	99	35+5	0
48	20+6	0	74	28+2	0	100	36+0	0
49	21+1	0	75	28+4	0	101	36+3	0
50	21+3	0	76	28+6	0	102	36+6	0
51	21+5	0	77	29+1	0	103	37+2	0
52	22+0	0	78	29+3	0	104	37+5	0
53	22+3	0	79	29+5	0	105	38+1	0
54	22+5	0	80	29+7	0	106	38+4	0
55	22+7	0	81	30+2	0	107	39+0	0
56	23+2	0	82	30+4	0	108	39+4	0
57	23+4	0	83	30+6	0	109	40+1	0
58	23+6	0	84	31+1	0	110	40+5	0
59	24+1	0	85	31+3	0	111	41+2	0
60	24+3	0	86	31+5	0			
61	24+5	0	87	31+7	0			

Eik-Nes (continued)

Table 3-45: MAD: Eik-Nes (Fetal Growth)

Unit: AGE (WeekDay); mean(mm);									
AGE	Meas	AGE	Meas	AGE	Meas	AGE	Meas	AGE	Meas
15+6	36	22+0	52	26+3	67	30+4	82	34+7	97
16+3	37	22+3	53	26+5	68	30+6	83	35+2	98
16+6	38	22+5	54	26+7	69	31+1	84	35+5	99
17+2	39	22+7	55	27+2	70	31+3	85	36+0	100
17+5	40	23+2	56	27+4	71	31+5	86	36+3	101
18+1	41	23+4	57	27+5	72	31+7	87	36+6	102
18+4	42	23+6	58	28+0	73	32+2	88	37+2	103
18+7	43	24+1	59	28+2	74	32+4	89	37+5	104
19+3	44	24+3	60	28+4	75	32+6	90	38+1	105
19+5	45	24+5	61	28+6	76	33+1	91	38+4	106
20+1	46	24+7	62	29+1	77	33+3	92	39+0	107
20+3	47	25+2	63	29+3	78	33+5	93	39+4	108
20+6	48	25+4	64	29+5	79	34+0	94	40+1	109
21+1	49	25+6	65	29+7	80	34+2	95	40+5	110
21+3	50	26+1	66	30+2	81	34+5	96	41+2	111
21+5	51								

Eriksen

Table 3-46: TAD: Eriksen (Fetal Age)

Unit: TAD (mm); Age (Day); SD (mm)											
TAD	Age	SD	TAD	Age	SD	TAD	Age	SD	TAD	Age	SD
<23	n/a	—	45	134	0	68	182	0	91	232	0
23	91	0	46	136	0	69	184	0	92	234	0
24	93	0	47	138	0	70	186	0	93	236	0
25	95	0	48	140	0	71	188	0	94	239	0
26	97	0	49	142	0	72	190	0	95	241	0
27	99	0	50	144	0	73	192	0	96	243	0
28	101	0	51	146	0	74	195	0	97	245	0
29	103	0	52	148	0	75	197	0	98	247	0
30	105	0	53	150	0	76	199	0	99	250	0
31	107	0	54	152	0	77	201	0	100	252	0
32	109	0	55	154	0	78	203	0	101	254	0
33	111	0	56	156	0	79	206	0	102	256	0
34	113	0	57	158	0	80	208	0	103	259	0
35	115	0	58	161	0	81	210	0	104	261	0
36	117	0	59	163	0	82	212	0	105	263	0
37	119	0	60	165	0	83	214	0	106	266	0
38	120	0	61	167	0	84	217	0	107	268	0
39	122	0	62	169	0	85	219	0	108	270	0
40	124	0	63	171	0	86	221	0	109	273	0
41	126	0	64	173	0	87	223	0	110	275	0
42	128	0	65	175	0	88	225	0	111	277	0
43	130	0	66	177	0	89	228	0	112	280	0
44	132	0	67	179	0	90	230	0	>112	n/a	—

French College of Fetal Ultrasound (CFEF)

Table 3-47: AC: French College of Fetal Ultrasound

Unit: mm					
GA (weeks)	3%	10%	50%	90%	97%
15	80.70	85.30	95.00	104.40	108.80
16	91.30	96.10	106.40	116.80	121.60
17	101.70	106.80	118.00	129.00	134.00
18	111.80	117.40	129.20	141.00	146.60
19	122.00	128.00	140.40	153.00	158.80
20	132.00	138.00	151.40	164.70	171.00
21	141.60	148.20	162.30	176.30	183.00
22	151.40	158.20	173.00	187.80	194.70
23	160.90	168.20	183.60	199.00	206.30
24	170.20	177.80	194.00	210.30	218.00
25	179.30	187.30	204.40	221.30	229.30
26	188.40	196.70	214.50	232.30	240.60
27	197.30	206.00	224.50	243.00	251.60
28	206.20	215.10	234.40	253.60	262.60
29	214.70	224.00	244.00	264.00	273.30
30	223.20	232.80	253.60	274.20	283.70
31	231.60	241.60	263.00	284.20	294.40
32	239.70	250.00	272.20	294.30	304.60
33	247.80	258.40	281.20	304.00	314.80
34	255.60	266.70	290.20	313.80	324.80
35	263.20	274.70	298.80	323.30	334.50
36	271.00	282.60	307.40	332.50	344.30
37	278.30	290.30	316.00	341.70	353.80
38	285.60	298.00	324.70	350.70	363.00
39	292.70	305.30	332.40	359.60	372.20
40	298.00	311.00	339.00	367.00	380.00

French College of Fetal Ultrasound (CFEF) (continued)

Table 3-48: BPD: French College of Fetal Ultrasound

Unit: mm					
GA (weeks)	3%	10%	50%	90%	97%
11	12.08	13.12	15.36	17.60	18.63
12	15.81	16.96	19.40	21.81	22.92
13	19.47	20.71	23.30	25.92	27.12
14	23.05	24.36	27.14	29.92	31.23
15	26.56	27.93	30.89	33.82	35.23
16	29.97	31.41	34.53	37.62	39.08
17	33.32	34.85	38.12	41.35	42.87
18	36.55	38.15	41.58	44.97	46.56
19	39.76	41.46	45.00	48.52	50.18
20	42.85	44.56	48.22	51.90	53.64
21	45.86	47.66	51.43	55.23	57.00
22	48.79	50.61	54.53	58.44	60.30
23	51.63	53.48	57.51	61.54	63.45
24	54.38	56.31	60.42	64.57	66.50
25	57.04	59.00	63.25	67.48	69.42
26	59.62	61.64	65.94	70.24	72.27
27	62.12	64.15	68.55	72.62	75.00
28	64.50	66.61	71.03	75.52	77.60
29	66.84	68.98	73.50	77.97	80.09
30	69.07	71.21	75.80	80.37	82.52
31	71.22	73.39	78.00	82.63	84.80
32	73.30	75.49	80.16	84.80	87.00
33	75.24	77.46	82.14	86.84	89.04
34	77.14	79.36	84.07	88.80	91.00
35	78.94	81.14	85.90	90.61	92.83
36	80.64	82.88	87.61	92.35	94.56
37	82.27	84.50	89.24	93.97	96.19
38	83.78	86.00	90.70	95.42	97.66
39	85.22	87.43	92.10	96.86	99.05
40	86.57	88.78	93.45	98.13	100.31
41	87.00	89.00	94.00	99.00	101.00

French College of Fetal Ultrasound (CFEF) (continued)

Table 3-49: FL: French College of Fetal Ultrasound

Unit: mm					
GA (weeks)	3%	10%	50%	90%	97%
12	2.76	3.89	6.33	8.79	10.00
13	6.09	7.29	9.88	12.42	13.65
14	9.40	10.65	13.33	16.00	17.27
15	12.56	13.87	16.66	19.44	20.77
16	15.70	17.00	19.95	22.80	24.18
17	18.74	20.12	23.12	26.13	27.53
18	21.69	23.14	26.23	29.30	30.80
19	24.59	26.06	29.25	32.44	33.91
20	27.42	28.94	32.23	35.48	37.03
21	30.12	31.72	35.05	38.41	40.00
22	32.83	34.39	37.87	41.30	42.91
23	35.34	37.00	40.50	44.03	45.71
24	37.89	39.58	43.16	46.75	48.42
25	40.33	42.04	45.69	49.36	51.08
26	42.66	44.40	48.17	51.88	53.62
27	44.95	46.72	50.53	54.32	56.09
28	47.13	48.94	52.80	56.64	58.45
29	49.22	51.06	54.94	58.91	60.72
30	51.30	53.14	57.13	61.08	62.92
31	53.26	55.13	59.15	63.14	65.04
32	55.12	57.04	61.11	65.19	67.07
33	56.96	58.87	63.00	67.10	69.03
34	58.69	60.62	64.76	68.88	70.84
35	60.33	62.29	66.47	70.65	72.63
36	61.90	63.89	68.13	72.34	74.30
37	63.40	65.36	69.63	73.91	75.89
38	64.81	66.79	71.11	75.38	77.41
39	66.16	68.19	72.48	76.81	78.84
40	67.42	69.47	73.79	78.14	80.17
41	68.00	70.00	74.00	79.00	81.00

French College of Fetal Ultrasound (CFEF) (continued)

Table 3-50: HC: French College of Fetal Ultrasound

Unit: mm					
GA (weeks)	3%	10%	50%	90%	97%
16	105.80	110.58	120.86	131.25	136.11
17	118.67	123.78	134.49	145.38	150.39
18	131.08	136.36	147.55	158.92	164.11
19	143.00	148.53	160.29	172.14	177.48
20	154.53	160.21	172.47	184.86	190.54
21	165.41	171.49	184.21	197.12	203.09
22	176.12	182.35	195.74	208.91	215.15
23	186.32	192.31	206.64	220.26	226.76
24	196.19	203.00	217.18	231.39	238.00
25	205.50	212.40	227.32	241.91	248.81
26	214.44	221.57	236.72	252.00	259.23
27	222.87	230.33	246.00	261.75	269.13
28	231.00	238.56	254.77	271.00	278.57
29	238.40	246.35	263.00	279.71	287.56
30	245.86	253.74	270.84	288.13	296.00
31	252.54	260.81	278.33	296.00	304.27
32	258.86	267.22	285.29	303.54	312.00
33	264.62	278.38	292.00	310.40	319.10
34	270.14	279.00	298.10	317.00	325.91
35	275.33	284.23	303.62	323.00	332.16
36	279.79	289.00	308.81	328.75	338.00
37	283.90	293.32	313.52	334.00	343.34
38	287.63	297.29	317.88	338.64	348.29
39	290.88	300.76	321.86	343.00	352.67
40	293.00	303.00	324.00	346.00	356.00

French College of Fetal Ultrasound (CFEF) (continued)

Table 3-51: TAD: French College of Fetal Ultrasound

Unit: mm					
GA (weeks)	3%	10%	50%	90%	97%
11	9.68	11.00	13.50	16.00	17.25
12	12.68	14.00	17.00	20.00	21.46
13	15.60	17.25	20.56	24.00	25.51
14	18.69	20.41	24.00	27.84	29.56
15	21.76	23.64	27.69	31.74	33.61
16	25.00	27.00	31.21	35.53	37.48
17	28.23	30.34	34.70	39.21	41.39
18	31.54	33.64	38.31	42.89	45.14
19	34.78	37.00	41.69	46.42	48.59
20	38.16	40.26	45.21	50.00	52.20
21	41.14	43.46	48.34	53.22	55.63
22	44.21	46.61	51.57	56.75	59.08
23	47.00	49.47	54.72	60.00	62.46
24	49.77	52.39	57.88	63.43	66.00
25	52.54	55.18	61.00	66.74	69.44
26	55.17	58.00	64.00	70.12	72.89
27	57.72	60.73	67.11	73.42	76.42
28	60.43	63.58	70.27	76.80	79.87
29	63.13	66.36	73.27	80.17	83.33
30	65.80	69.17	76.17	83.45	86.75
31	68.35	71.88	79.25	86.68	90.13
32	70.90	74.43	82.10	89.76	93.36
33	73.08	76.75	84.78	92.89	96.64
34	75.25	79.08	87.55	95.89	99.86
35	77.00	81.10	90.00	99.00	103.00
36	78.48	82.90	92.36	102.00	106.31
37	79.79	84.60	94.81	105.00	109.67
38	80.92	86.10	97.00	108.19	113.29
39	81.85	87.41	99.33	111.34	117.00
40	82.58	88.59	101.64	114.52	120.70
41	82.80	89.20	103.00	117.00	123.00

Goldstein

Table 3-52: TCD: Goldstein et al, Am J OB/GYN, May 1987 (Fetal Growth)

Unit: TCD (Weeks); Age/Quat1/Mean/Quat3/Max (mm)					
Age	Min	Quat1	Mean	Quat3	Max
15	10	12	14	15	16
16	14	16	16	16	17
17	16	17	17	18	18
18	17	18	18	19	19
19	18	18	19	19	22
20	18	19	20	20	22
21	19	20	22	23	24
22	21	23	23	24	24
23	22	23	24	25	26
24	22	24	25	27	28
25	23	21.5	28	28	29
26	25	28	29	30	32
27	26	28.5	30	31	32
28	27	30	31	32	34
29	29	32	34	36	38
30	31	32	35	37	40
31	32	35	38	39	43
32	33	36	38	40	42
33	32	36	40	43	44
34	33	38	40	41	44
35	31	37	40.5	43	47
36	36	29	43	52	55
37	37	37	45	52	55
38	40	40	48.5	52	55
39	52	52	52	55	55

Gomez

Input unit	weeks
Output unit	
Min. Range	11.0
Max. Range	41.0

Table 3-53: Uterine artery PI (UtArt PI)

weeks				weeks			
	5%	Mean	95%		5%	Mean	95%
11.0	1.18	1.79	2.70	27.0	0.58	0.84	1.21
12.0	1.11	1.68	2.53	28.0	0.56	0.81	1.17
13.0	1.05	1.58	2.38	29.0	0.55	0.79	1.13
14.0	0.99	1.49	2.24	30.0	0.54	0.77	1.10
15.0	0.94	1.41	2.11	31.0	0.52	0.75	1.06
16.0	0.89	1.33	1.99	32.0	0.51	0.73	1.04
17.0	0.85	1.27	1.88	33.0	0.50	0.71	1.01
18.0	0.81	1.20	1.79	34.0	0.50	0.70	0.99
19.0	0.78	1.15	1.70	35.0	0.49	0.69	0.97
20.0	0.74	1.10	1.61	36.0	0.48	0.68	0.95
21.0	0.71	1.05	1.54	37.0	0.48	0.67	0.94
22.0	0.69	1.00	1.47	38.0	0.47	0.66	0.92
23.0	0.66	0.96	1.41	39.0	0.47	0.65	0.91
24.0	0.64	0.93	1.35	40.0	0.47	0.65	0.90
25.0	0.62	0.89	1.30	41.0	0.47	0.65	0.89
26.0	0.60	0.86	1.25				

NOTE: Gomez O, Figueras F, Fernandez S, Bennasar M, Martinez JM, Puerto B, Gratacos E. Reference ranges for uterine artery mean pulsatility index at 11-41 weeks of gestation. *Ultrasound Obstet Gynecol* 2008; 32: 128-132

Hadlock

Table 3-54: AC: Hadlock, Radiology 1984, Vol. 152:497 (Fetal Age)

Unit: AC (mm); Age (Week); 2SD (Week)											
AC	Age	2SD	AC	Age	2SD	AC	Age	2SD	AC	Age	2SD
<50	n/a	—	135	19.0	2.06	225	26.9	2.18	315	35.4	2.96
50	12.0	1.66	140	19.4	2.06	230	27.4	2.18	320	35.9	2.96
55	12.4	1.66	145	19.8	2.06	235	27.8	2.18	321	36.0	3.04
60	12.8	1.66	150	20.2	2.06	240	28.3	2.18	325	36.4	3.04
65	13.2	1.66	155	20.7	2.06	245	28.7	2.18	330	36.9	3.04
70	13.6	1.66	160	21.1	2.06	250	29.2	2.18	335	37.4	3.04
75	14.0	1.66	165	21.5	2.06	255	29.7	2.18	340	37.9	3.04
80	14.4	1.66	170	22.0	2.06	258	30.0	2.96	345	38.4	3.04
85	14.8	1.66	175	22.4	2.06	259	30.1	2.96	350	38.9	3.04
90	15.2	1.66	180	22.9	2.06	260	30.2	2.96	355	39.4	3.04
95	15.6	1.66	185	23.3	2.06	265	30.6	2.96	360	39.9	3.04
100	16.0	1.66	190	23.7	2.06	270	31.1	2.96	365	40.4	3.04
105	16.4	1.66	192	23.9	2.06	275	31.6	2.96	370	40.9	3.04
110	16.9	1.66	193	24.0	2.18	280	32.0	2.96	375	41.4	3.04
115	17.3	1.66	195	24.2	2.18	285	32.5	2.96	380	42.0	3.04
120	17.7	1.66	200	24.6	2.18	290	33.0	2.96	385	42.5	3.04
123	17.9	1.66	205	25.1	2.18	295	33.5	2.96	>385	n/a	—
124	18.0	2.06	210	25.5	2.18	300	34.0	2.96			
125	18.1	2.06	215	26.0	2.18	305	34.5	2.96			
130	18.5	2.06	220	26.4	2.18	310	34.9	2.96			

Table 3-55: AC: Hadlock, AJR; 139: 367-370; 1982 (Fetal Age)

Unit: AC (mm); Age (Days); SD (Days)											
AC	Age	SD	AC	Age	SD	AC	Age	SD	AC	Age	SD
<47	n/a	—	138	133	14	230	189	15	305	241	21
47	84	13	144	136	14	235	192	15	310	245	21
53	87	13	151	140	14	241	196	15	314	248	21
60	91	13	157	143	14	246	199	15	319	252	21
67	94	13	163	147	14	251	203	15	323	255	18
74	98	13	174	154	14	256	206	15	328	259	18
80	101	13	180	157	14	261	210	15	332	262	18
87	105	13	186	161	14	266	213	21	337	266	18
93	106	13	192	164	14	271	217	21	341	269	18
100	112	13	197	168	14	276	220	21	344	273	18
106	115	13	203	171	15	281	224	21	349	276	18
113	119	13	208	175	15	286	227	21	353	280	18
119	122	13	214	178	15	291	231	21	>353	n/a	—
126	126	13	219	182	15	296	234	21			
132	129	14	225	185	15	300	238	21			

Hadlock (continued)

Table 3-56: BPD: Hadlock, Radiology 1984, Vol. 152:497 (Fetal Age) [a]

Unit: BPD (mm); Age (Week); 2SD (Week)											
BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD
<14	n/a	—	36	17.0	1.19	59	24.1	2.18	82	33.0	3.08
14	11.9	1.19	37	17.3	1.19	60	24.5	2.18	83	33.4	3.08
15	12.1	1.19	38	17.6	1.19	61	24.8	2.18	84	33.8	3.08
16	12.3	1.19	39	17.9	1.19	62	25.2	2.18	85	34.2	3.08
17	12.5	1.19	40	18.1	1.73	63	25.5	2.18	86	34.7	3.08
18	12.8	1.19	41	18.4	1.73	64	25.9	2.18	87	35.1	3.08
19	13.0	1.19	42	18.7	1.73	65	26.3	2.18	88	35.6	3.08
20	13.2	1.19	43	19.0	1.73	66	26.6	2.18	89	36.0	3.20
21	13.4	1.19	44	19.3	1.73	67	27.0	2.18	90	36.5	3.20
22	13.6	1.19	45	19.6	1.73	68	27.4	2.18	91	36.9	3.20
23	13.8	1.19	46	19.9	1.73	69	27.7	2.18	92	37.4	3.20
24	14.1	1.19	47	20.2	1.73	70	28.1	2.18	93	37.8	3.20
25	14.3	1.19	48	20.5	1.73	71	28.5	2.18	94	38.3	3.20
26	14.5	1.19	49	20.8	1.73	72	28.9	2.18	95	38.7	3.20
27	14.8	1.19	50	21.1	1.73	73	29.3	2.18	96	39.2	3.20
28	15.0	1.19	51	21.5	1.73	74	29.7	2.18	97	39.7	3.20
29	15.2	1.19	52	21.8	1.73	75	30.1	3.08	98	40.2	3.20
30	15.5	1.19	53	22.1	1.73	76	30.5	3.08	99	40.6	3.20
31	15.7	1.19	54	22.4	1.73	77	30.9	3.08	100	41.1	3.20
32	16.0	1.19	55	22.8	1.73	78	31.3	3.08	101	41.6	3.20
33	16.3	1.19	56	23.1	1.73	79	31.7	3.08	102	42.1	3.20
34	16.5	1.19	57	23.4	1.73	80	32.1	3.08	103	42.6	3.20
35	16.8	1.19	58	23.8	1.73	81	32.5	3.08	>103	n/a	—
[a] Variability of GA estimate by BPD at term is ± 2 SD (6 weeks)											

Hadlock (continued)

Table 3-57: BPD: Hadlock, J Ultrasound Med 1:97-104, April 1982 (Fetal Age)

Unit: BPD (mm); Age (Days); 2SD (Days)											
BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD
<20	n/a	—	40	126	10	61	175	9	82	233	14
20	85	6	41	128	10	62	177	9	83	237	14
21	88	6	42	130	10	63	180	9	84	239	14
22	90	6	43	132	10	64	183	9	85	243	14
23	92	6	44	134	10	65	185	9	86	246	14
24	93	6	45	137	10	66	188	9	87	249	14
25	95	6	46	139	10	67	190	9	88	253	25
26	97	6	47	141	10	68	193	9	89	256	25
27	99	6	48	144	10	69	196	9	90	259	25
28	102	6	49	146	10	70	198	9	91	263	25
29	103	6	50	148	10	71	201	9	92	266	25
30	105	6	51	151	10	72	204	9	93	270	25
31	107	6	52	153	10	73	207	9	94	272	25
32	109	6	53	155	10	74	209	9	95	276	25
33	111	6	54	158	10	75	213	14	96	279	25
34	113	6	55	160	10	76	216	14	97	284	25
35	116	6	56	162	10	77	218	14	98	287	25
36	118	6	57	163	10	78	221	14	99	291	25
37	120	6	58	167	10	79	224	14	100	294	25
38	122	6	59	169	9	80	228	14	>100	n/a	—
39	124	6	60	172	9	81	230	14			

Table 3-58: CI: Hadlock, AJR, 137: 83, 1981 (Fetal Growth)

Min (Index)	Max (Index)
70	86

Hadlock (continued)

Table 3-59: CRL: Hadlock, Radiology 1992, Vol. 182:501 (Fetal Age)

Unit: CRL (mm); Age (Week); SD (Week)											
CRL	Age	SD	CRL	Age	SD	CRL	Age	SD	CRL	Age	SD
<2	n/a	—	32	10.1	± 0.5	63	12.7	± 0.6	94	15.3	± 0.7
2	5.7	± 0.3	33	10.2	± 0.5	64	12.8	± 0.6	95	15.3	± 0.7
3	5.9	± 0.3	34	10.3	± 0.5	65	12.8	± 0.6	96	15.4	± 0.7
4	6.1	± 0.3	35	10.4	± 0.5	66	12.9	± 0.6	97	15.5	± 0.7
5	6.2	± 0.3	36	10.5	± 0.5	67	13.0	± 0.6	98	15.6	± 0.7
6	6.4	± 0.3	37	10.6	± 0.5	68	13.1	± 0.6	99	15.7	± 0.7
7	6.6	± 0.3	38	10.7	± 0.5	69	13.1	± 0.6	100	15.9	± 0.7
8	6.7	± 0.3	39	10.8	± 0.5	70	13.2	± 0.6	101	16.0	± 0.7
9	6.9	± 0.3	40	10.9	± 0.5	71	13.3	± 0.6	102	16.1	± 0.7
10	7.1	± 0.3	41	11.0	± 0.5	72	13.4	± 0.6	103	16.2	± 0.7
11	7.2	± 0.3	42	11.1	± 0.5	73	13.4	± 0.6	104	16.3	± 0.7
12	7.4	± 0.3	43	11.2	± 0.5	74	13.5	± 0.6	105	16.4	± 0.7
13	7.5	± 0.3	44	11.2	± 0.5	75	13.6	± 0.6	106	16.5	± 0.7
14	7.7	± 0.3	45	11.3	± 0.5	76	13.7	± 0.6	107	16.6	± 0.7
15	7.9	± 0.4	46	11.4	± 0.5	77	13.8	± 0.6	108	16.7	± 0.7
16	8.0	± 0.4	47	11.5	± 0.5	78	13.8	± 0.6	109	16.8	± 0.7
17	8.1	± 0.4	48	11.6	± 0.5	79	13.9	± 0.6	110	16.9	± 0.8
18	8.3	± 0.4	49	11.7	± 0.5	80	14.0	± 0.6	111	17.0	± 0.8
19	8.4	± 0.4	50	11.7	± 0.5	81	14.1	± 0.6	112	17.1	± 0.8
20	8.6	± 0.4	51	11.8	± 0.5	82	14.2	± 0.6	113	17.2	± 0.8
21	8.7	± 0.4	52	11.9	± 0.5	83	14.2	± 0.6	114	17.3	± 0.8
22	8.9	± 0.4	53	12.0	± 0.5	84	14.3	± 0.6	115	17.4	± 0.8
23	9.0	± 0.4	54	12.0	± 0.5	85	14.4	± 0.6	116	17.5	± 0.8
24	9.1	± 0.4	55	12.1	± 0.5	86	14.5	± 0.6	117	17.6	± 0.8
25	9.2	± 0.4	56	12.2	± 0.5	87	14.6	± 0.6	118	17.7	± 0.8
26	9.4	± 0.4	57	12.3	± 0.5	88	14.7	± 0.7	119	17.8	± 0.8
27	9.5	± 0.4	58	12.3	± 0.5	89	14.8	± 0.7	120	17.9	± 0.8
28	9.6	± 0.4	59	12.4	± 0.6	90	14.9	± 0.7	121	18.0	± 0.8
29	9.7	± 0.4	60	12.5	± 0.6	91	15.0	± 0.7	>121	n/a	—
30	9.9	± 0.4	61	12.6	± 0.6	92	15.1	± 0.7			
31	10.0	± 0.4	62	12.6	± 0.6	93	15.2	± 0.7			

Hadlock (continued)

Table 3-60: EFW: Hadlock, Radiology 1991: 181: 129-133 (Fetal Age)

Unit: EFW (grams); Mean (Weeks); 2SD (grams)								
EFW	Mean	2SD	EFW	Mean	2SD	EFW	Mean	2SD
<35	n/a	—	399	21	102	2162	33	550
35	10	8	478	22	122	2377	34	604
45	11	12	568	23	144	2595	35	660
58	12	14	670	24	170	2813	36	714
73	13	18	785	25	202	3028	37	770
93	14	24	913	26	232	3236	38	822
117	15	30	1055	27	268	3435	39	872
146	16	38	1210	28	308	3619	40	920
181	17	46	1379	29	350	3787	41	962
223	18	56	1559	30	396	>3787	n/a	—
273	19	70	1751	31	444			
331	20	84	1953	32	496			

Table 3-61: FL: Hadlock, Radiology 1984, Vol. 152:497 (Fetal Age)

Unit: FL (mm); Age (Week); 2SD (Week)											
FL	Age	2SD	FL	Age	2SD	FL	Age	2SD	FL	Age	2SD
<6	n/a	—	25	17.6	1.38	45	24.9	2.08	65	33.5	2.96
6	11.9	1.38	26	17.9	1.38	46	25.3	2.08	66	34.0	2.96
7	12.2	1.38	27	18.2	1.80	47	25.7	2.08	67	34.5	2.96
8	12.4	1.38	28	18.6	1.80	48	26.1	2.08	68	34.9	2.96
9	12.7	1.38	29	18.9	1.80	49	26.5	2.08	69	35.4	2.96
10	13.0	1.38	30	19.3	1.80	50	26.9	2.08	70	35.9	2.96
11	13.3	1.38	31	19.6	1.80	51	27.3	2.08	71	36.4	3.12
12	13.5	1.38	32	20.0	1.80	52	27.7	2.08	72	36.9	3.12
13	13.8	1.38	33	20.3	1.80	53	28.2	2.08	73	37.4	3.12
14	14.1	1.38	34	20.7	1.80	54	28.6	2.08	74	37.9	3.12
15	14.4	1.38	35	21.0	1.80	55	29.0	2.08	75	38.4	3.12
16	14.7	1.38	36	21.4	1.80	56	29.5	2.08	76	38.9	3.12
17	15.0	1.38	37	21.8	1.80	57	29.9	2.08	77	39.4	3.12
18	15.3	1.38	38	22.2	1.80	58	30.3	2.96	78	39.9	3.12
19	15.6	1.38	39	22.5	1.80	59	30.8	2.96	79	40.4	3.12
20	16.0	1.38	40	22.9	1.80	60	31.2	2.96	80	40.9	3.12
21	16.3	1.38	41	23.3	1.80	61	31.7	2.96	81	41.4	3.12
22	16.6	1.38	42	23.7	1.80	62	32.1	2.96	82	42.0	3.12
23	16.9	1.38	43	24.1	2.08	63	32.6	2.96	83	42.5	3.12
24	17.2	1.38	44	24.5	2.08	64	33.1	2.96	>83	n/a	—

Hadlock (continued)

Table 3-62: FL: Hadlock, AJR 138: 875-878, May 1982 (Fetal Age)

Unit: FL (mm); Age (Days); 2SD (Days)											
FL	Age	2SD	FL	Age	2SD	FL	Age	2SD	FL	Age	2SD
<10	n/a	—	27	125	6	45	171	10	63	226	10
10	90	6	28	127	6	46	174	10	64	230	10
11	92	6	29	130	6	47	177	10	65	233	10
12	94	6	30	132	6	48	180	10	66	237	10
13	95	6	31	134	6	49	183	10	67	239	10
14	97	6	32	137	6	50	185	10	68	243	10
15	99	6	33	139	6	51	189	10	69	246	10
16	101	6	34	142	6	52	192	10	70	250	10
17	104	6	35	145	6	53	195	10	71	253	11
18	106	6	36	147	6	54	197	10	72	257	11
19	108	6	37	150	6	55	201	10	73	260	11
20	110	6	38	153	6	56	204	10	74	264	11
21	112	6	39	155	6	57	207	10	75	268	11
22	114	6	40	157	6	58	210	10	76	272	11
23	116	6	41	160	6	59	213	10	77	275	11
24	118	6	42	163	6	60	216	10	78	279	11
25	120	6	43	166	6	61	220	10	79	283	11
26	123	6	44	169	10	62	223	10	>79	n/a	—

Table 3-63: HC: Hadlock, Radiology 1984, Vol. 152:497 (Fetal Age)

Unit: HC (mm); Age (Week); 2SD (Week)											
HC	Age	2SD	HC	Age	2SD	HC	Age	2SD	HC	Age	2SD
<55	n/a	—	135	17.0	1.19	215	23.6	1.48	290	31.9	2.98
55	12.0	1.19	140	17.3	1.19	219	23.9	1.48	295	32.6	2.98
60	12.3	1.19	145	17.7	1.19	220	24.0	2.06	300	33.3	2.98
65	12.6	1.19	149	18.0	1.48	225	24.5	2.06	305	33.9	2.98
70	12.8	1.19	150	18.1	1.48	230	25.0	2.06	310	34.6	2.98
75	13.1	1.19	155	18.4	1.48	235	25.5	2.06	315	35.3	2.98
80	13.4	1.19	160	18.8	1.48	240	26.1	2.06	319	35.9	2.98
85	13.7	1.19	165	19.2	1.48	245	26.6	2.06	320	36.1	2.70
90	14.0	1.19	170	19.6	1.48	250	27.1	2.06	325	36.8	2.70
95	14.3	1.19	175	20.0	1.48	255	27.7	2.06	330	37.6	2.70
100	14.7	1.19	180	20.4	1.48	260	28.3	2.06	335	38.3	2.70
105	15.0	1.19	185	20.8	1.48	265	28.9	2.06	340	39.1	2.70
110	15.3	1.19	190	21.3	1.48	270	29.4	2.06	345	39.9	2.70
115	15.6	1.19	195	21.7	1.48	274	29.9	2.06	350	40.7	2.70
120	16.0	1.19	200	22.2	1.48	275	30.0	2.98	355	41.6	2.70
125	16.3	1.19	205	22.6	1.48	280	30.7	2.98	360	42.4	2.70
130	16.6	1.19	210	23.1	1.48	285	31.3	2.98	>360	n/a	—

Hadlock (continued)

Table 3-64: HC: Hadlock, AJR 138: 649-653, 1982 (Fetal Age)

Unit: HC (mm); Age (Days); 2SD (Days)											
HC	Age	2SD	HC	Age	2SD	HC	Age	2SD	HC	Age	2SD
<69	n/a	—	169	136	11	260	196	16	322	252	19
69	84	9	175	140	11	264	199	16	325	255	24
75	87	9	181	143	11	269	203	16	328	259	24
81	91	9	187	147	11	273	206	16	331	262	24
88	94	9	193	150	11	278	210	16	334	266	24
96	98	9	198	154	11	282	213	19	337	269	24
103	101	9	204	157	11	286	217	19	340	273	24
110	105	9	209	161	11	291	220	19	343	276	24
117	108	9	215	164	11	294	224	19	345	280	24
124	112	9	220	168	11	298	227	19	348	283	24
131	115	9	225	171	16	302	231	19	351	287	24
137	119	9	230	175	16	306	234	19	353	290	24
144	122	9	240	182	16	309	238	19	354	294	24
150	126	9	245	185	16	312	241	19	>354	n/a	—
157	129	11	250	189	16	316	245	19			
163	133	11	255	192	16	319	248	19			

Table 3-65: FL/HC Ratio: Hadlock, J Ultrasound Med 1984, 3: 439-442 (Fetal Growth)

Unit: GA (Weeks)								
GA	Min	Max	GA	Min	Max	GA	Min	Max
<15	n/a	—	24	18.7	20.9	34	19.4	21.8
15	15.3	17.1	25	18.7	20.3	35	20.1	22.3
16	13.3	16.5	26	18.6	20.4	36	20.1	22.1
17	14.6	17.6	27	18.6	20.4	37	20.8	22.6
18	15.8	18.0	28	18.8	20.6	38	20.9	22.7
19	16.1	18.3	29	19.6	20.8	39	20.6	23.4
20	16.8	19.8	30	19.2	21.4	40	20.7	22.5
21	15.9	20.3	31	19.3	21.3	41	21.6	23.2
22	18.4	20.2	32	19.1	21.3	42	20.1	23.9
23	19.2	20.8	33	19.9	21.5	>42	n/a	n/a

Table 3-66: FL/AC Ratio: Hadlock (Fetal Growth)

Unit: Age (Weeks)		
Age	Min (Index)	Max (Index)
21	20	24
42	20	24

Hansmann

Table 3-67: AC: Hansmann (Fetal Age)
(Hansmann:M & Al:Geburtsh, u, Frauenheilk 39:656, 1979)

Unit: AC (mm); Age (Weeks/Days); SD (mm)											
AC	Age	SD	AC	Age	SD	AC	Age	SD	AC	Age	SD
<53	n/a	—	100	15w3d	0	148	20w3d	0	196	25w4d	0
53	11w1d	0	101	15w4d	0	149	20w3d	0	197	25w5d	0
54	11w2d	0	102	15w5d	0	150	20w4d	0	198	25w5d	0
55	11w2d	0	103	15w5d	0	151	20w4d	0	199	25w6d	0
56	11w3d	0	104	15w6d	0	152	20w5d	0	200	26w0d	0
57	11w3d	0	105	16w0d	0	153	20w6d	0	201	26w0d	0
58	11w4d	0	106	16w0d	0	154	21w0d	0	202	26w1d	0
59	11w4d	0	107	16w1d	0	155	21w1d	0	203	26w2d	0
60	11w5d	0	108	16w2d	0	156	21w2d	0	204	26w3d	0
61	11w6d	0	109	16w3d	0	157	21w2d	0	205	26w3d	0
62	12w0d	0	110	16w3d	0	158	21w3d	0	206	26w4d	0
63	12w1d	0	111	16w4d	0	159	21w3d	0	207	26w5d	0
64	12w2d	0	112	16w5d	0	160	21w4d	0	208	26w6d	0
65	12w2d	0	113	16w6d	0	161	21w4d	0	209	26w6d	0
66	12w3d	0	114	16w6d	0	162	21w5d	0	210	27w0d	0
67	12w3d	0	115	17w0d	0	163	21w6d	0	211	27w1d	0
68	12w4d	0	116	17w1d	0	164	22w0d	0	212	27w2d	0
69	12w5d	0	117	17w2d	0	165	22w1d	0	213	27w2d	0
70	12w5d	0	118	17w2d	0	166	22w2d	0	214	27w3d	0
71	12w6d	0	119	17w3d	0	167	22w3d	0	215	27w4d	0
72	12w6d	0	120	17w3d	0	168	22w4d	0	216	27w4d	0
73	13w0d	0	121	17w4d	0	169	22w5d	0	217	27w5d	0
74	13w0d	0	122	17w4d	0	170	22w5d	0	218	27w5d	0
75	13w1d	0	123	17w5d	0	171	22w6d	0	219	27w6d	0
76	13w2d	0	124	17w6d	0	172	23w0d	0	220	28w0d	0
77	13w2d	0	125	18w0d	0	173	23w1d	0	221	28w0d	0
78	13w3d	0	126	18w1d	0	174	23w2d	0	222	28w1d	0
79	13w3d	0	127	18w2d	0	175	23w2d	0	223	28w2d	0
80	13w4d	0	128	18w3d	0	176	23w3d	0	224	28w3d	0
81	13w4d	0	129	18w3d	0	177	23w3d	0	225	28w4d	0
82	13w5d	0	130	18w4d	0	178	23w4d	0	226	28w5d	0
83	13w6d	0	131	18w5d	0	179	23w4d	0	227	28w5d	0
84	14w0d	0	132	18w6d	0	180	23w5d	0	228	28w6d	0
85	14w1d	0	133	18w6d	0	181	23w6d	0	229	29w0d	0
86	14w2d	0	134	19w0d	0	182	24w0d	0	230	29w1d	0
87	14w2d	0	135	19w1d	0	183	24w1d	0	231	29w2d	0
88	14w3d	0	136	19w2d	0	184	24w2d	0	232	29w2d	0
89	14w3d	0	137	19w2d	0	185	24w3d	0	233	29w3d	0
90	14w4d	0	138	19w3d	0	186	24w4d	0	234	29w3d	0
91	14w5d	0	139	19w3d	0	187	24w5d	0	235	29w4d	0
92	14w5d	0	140	19w4d	0	188	24w5d	0	236	29w4d	0
93	14w6d	0	141	19w4d	0	189	24w6d	0	237	29w5d	0
94	14w6d	0	142	19w5d	0	190	25w0d	0	238	29w6d	0
95	15w0d	0	143	19w6d	0	191	25w1d	0	239	30w0d	0
96	15w0d	0	144	20w0d	0	192	25w2d	0	240	30w1d	0
97	15w1d	0	145	20w1d	0	193	25w2d	0	241	30w2d	0
98	15w2d	0	146	20w2d	0	194	25w3d	0	242	30w3d	0
99	15w2d	0	147	20w2d	0	195	25w4d	0	243	30w3d	0

Table 3-67: AC: Hansmann (Fetal Age) (Continued)
(Hansmann:M & Al:Geburtsh, u, Frauenheilk 39:656, 1979)

Unit: AC (mm); Age (Weeks/Days); SD (mm)											
AC	Age	SD	AC	Age	SD	AC	Age	SD	AC	Age	SD
244	30w4d	0	264	32w4d	0	284	34w5d	0	304	36w6d	0
245	30w5d	0	265	32w5d	0	285	34w6d	0	305	37w0d	0
246	30w6d	0	266	32w6d	0	286	35w0d	0	306	37w1d	0
247	30w6d	0	267	33w0d	0	287	35w1d	0	307	37w2d	0
248	31w0d	0	268	33w1d	0	288	35w2d	0	308	37w3d	0
249	31w1d	0	269	33w2d	0	289	35w3d	0	309	37w3d	0
250	31w2d	0	270	33w3d	0	290	35w3d	0	310	37w4d	0
251	31w3d	0	271	33w3d	0	291	35w4d	0	311	37w5d	0
252	31w3d	0	272	33w4d	0	292	35w5d	0	312	37w6d	0
253	31w4d	0	273	33w5d	0	293	35w6d	0	313	37w6d	0
254	31w5d	0	274	33w6d	0	294	35w6d	0	314	38w0d	0
255	31w6d	0	275	33w6d	0	295	36w0d	0	315	38w1d	0
256	31w6d	0	276	34w0d	0	296	36w1d	0	316	38w2d	0
257	32w0d	0	277	34w1d	0	297	36w2d	0	317	38w4d	0
258	32w1d	0	278	34w2d	0	298	36w2d	0	318	38w5d	0
259	32w2d	0	279	34w2d	0	299	36w3d	0	319	39w0d	0
260	32w2d	0	280	34w3d	0	300	36w3d	0	320	39w1d	0
261	32w3d	0	281	34w3d	0	301	36w4d	0	>320	n/a	—
262	32w3d	0	282	34w4d	0	302	36w4d	0			
263	32w4d	0	283	34w4d	0	303	36w5d	0			

Hansmann (continued)

Table 3-68: BPD: Hansmann (Fetal Age)
 Ultrasound Diagnosis in Obstetrics & Gynecology, 438-439, 1985

Known LMP (left)—Unknown LMP (right) Unit: BPD (mm); Age (Weeks/Days); 2SD (mm [Known LMP] or day [Unknown LMP])											
BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD
<14	n/a	—	60	22w6d	5	<14	n/a	—	60	23w2d	10
14	10w0d	0	61	23w1d	5	14	9w1d	7	61	23w4d	10
15	10w1d	0	62	23w4d	5	15	9w3d	7	62	24w0d	10
16	10w2d	0	63	23w6d	5	16	9w5d	7	63	24w2d	10
17	10w5d	0	64	24w1d	6	17	10w0d	7	64	24w4d	10
18	10w6d	0	65	24w4d	6	18	10w2d	7	65	24w6d	10
19	11w1d	0	66	24w6d	6	19	10w4d	7	66	25w1d	11
20	11w3d	0	67	25w1d	6	20	10w6d	7	67	25w3d	12
21	11w5d	0	68	25w3d	6	21	11w1d	7	68	25w6d	10
22	12w0d	0	69	25w5d	6	22	11w3d	7	69	26w1d	10
23	12w2d	0	70	26w1d	6	23	11w5d	7	70	26w3d	10
24	12w4d	5	71	26w3d	6	24	12w0d	7	71	26w5d	12
25	12w6d	5	72	26w6d	6	25	12w2d	7	72	27w1d	11
26	13w1d	5	73	27w1d	6	26	12w4d	7	73	27w3d	13
27	13w2d	5	74	27w3d	6	27	12w6d	7	74	27w6d	12
28	13w4d	4	75	27w6d	6	28	13w1d	7	75	28w1d	12
29	13w6d	4	76	28w1d	6	29	13w3d	8	76	28w4d	13
30	14w1d	4	77	28w4d	6	30	13w5d	7	77	28w6d	13
31	14w3d	4	78	28w6d	6	31	14w0d	8	78	29w2d	15
32	14w4d	4	79	29w2d	6	32	14w2d	8	79	29w5d	16
33	14w6d	4	80	29w5d	6	33	14w4d	9	80	30w0d	15
34	15w2d	4	81	30w0d	6	34	15w0d	9	81	30w3d	15
35	15w4d	4	82	30w3d	6	35	15w2d	8	82	31w0d	15
36	15w6d	4	83	30w5d	6	36	15w4d	9	83	31w2d	16
37	16w1d	4	84	31w2d	6	37	16w0d	8	84	31w6d	17
38	16w3d	4	85	31w5d	6	38	16w2d	9	85	32w2d	17
39	16w5d	4	86	32w1d	6	39	16w4d	9	86	32w5d	18
40	17w0d	4	87	32w4d	6	40	17w0d	9	87	33w2d	20
41	17w2d	4	88	33w0d	7	41	17w2d	9	88	33w5d	19
42	17w4d	4	89	33w3d	7	42	17w4d	9	89	34w2d	19
43	17w6d	4	90	33w6d	7	43	17w6d	9	90	34w5d	19
44	18w1d	4	91	34w3d	7	44	18w1d	9	91	35w1d	25
45	18w3d	4	92	34w6d	7	45	18w4d	9	92	35w6d	24
46	18w5d	4	93	35w3d	7	46	18w6d	9	93	36w5d	21
47	19w0d	4	94	36w0d	7	47	19w1d	10	94	37w3d	19
48	19w2d	5	95	36w3d	7	48	19w3d	10	95	38w3d	22
49	19w4d	5	96	37w1d	7	49	19w5d	10	96	38w6d	25
50	19w6d	5	97	37w6d	7	50	20w0d	10	97	39w0d	22
51	20w1d	5	98	38w4d	7	51	20w3d	10	98	39w2d	20
52	20w3d	5	99	39w3d	7	52	20w5d	10	99	39w3d	22
53	20w6d	5	100	40w3d	7	53	21w0d	11	100	39w4d	20
54	21w1d	5	101	41w3d	7	54	21w3d	10	101	39w5d	20
55	21w2d	5	>101	n/a	—	55	21w5d	10	102	39w6d	19
56	21w4d	5				56	22w0d	9	103	40w0d	19
57	21w6d	5				57	22w2d	9	104	40w1d	19
58	22w2d	5				58	22w5d	9	105	40w2d	17
59	22w4d	5				59	23w0d	10	>105	n/a	—

Hansmann (continued)

Table 3-69: CRL: Hansmann (Fetal Age)
 Ultrasound Diagnosis in Obstetrics & Gynecology, 438-439, 1985

Unit: CRL (mm); Age (Weeks/Days); 2SD (mm [Known LMP] or day [Unknown LMP])											
CRL	Age	2SD	CRL	Age	2SD	CRL	Age	2SD	CRL	Age	2SD
Known LMP											
<13	n/a	—	54	12w0d	15	96	15w3d	11	138	19w2d	15
13	7w4d	0	55	12w1d	16	97	15w3d	11	139	19w3d	15
14	7w5d	0	56	12w1d	16	98	15w4d	11	140	19w4d	15
15	8w0d	0	57	12w2d	16	99	15w4d	11	141	19w4d	16
16	8w1d	0	58	12w2d	16	100	15w5d	11	142	19w5d	16
17	8w2d	0	59	12w3d	16	101	15w5d	10	143	19w5d	16
18	8w3d	0	60	12w3d	16	102	15w6d	10	144	19w6d	16
19	8w4d	7	61	12w4d	15	103	15w6d	10	145	20w0d	16
20	8w5d	7	62	12w4d	15	104	16w0d	10	146	20w1d	17
21	8w6d	8	63	12w5d	15	105	16w1d	10	147	20w2d	17
22	9w0d	8	64	12w5d	15	106	16w2d	10	148	20w2d	17
23	9w1d	10	65	12w6d	15	107	16w2d	10	149	20w3d	17
24	9w2d	10	66	12w6d	15	108	16w3d	10	150	20w4d	17
25	9w3d	11	67	13w0d	15	109	16w3d	10	151	20w4d	0
26	9w4d	11	68	13w1d	15	110	16w4d	10	152	20w5d	0
27	9w4d	11	69	13w1d	15	111	16w4d	11	153	20w5d	0
28	9w5d	11	70	13w2d	15	112	16w5d	11	154	20w6d	0
29	9w6d	11	71	13w3d	15	113	16w5d	11	155	21w0d	0
30	10w0d	12	72	13w3d	15	114	16w6d	11	156	21w0d	0
31	10w0d	12	73	13w4d	15	115	17w0d	11	157	21w1d	0
32	10w1d	12	74	13w4d	15	116	17w1d	12	158	21w1d	0
33	10w2d	12	75	13w5d	15	117	17w2d	12	159	21w2d	0
34	10w3d	12	76	13w5d	15	118	17w2d	12	160	21w3d	0
35	10w3d	13	77	13w6d	15	119	17w3d	12	161	21w3d	0
36	10w4d	13	78	13w6d	15	120	17w3d	12	162	21w4d	0
37	10w5d	13	79	14w0d	15	121	17w4d	13	163	21w4d	0
38	10w5d	13	80	14w0d	15	122	17w5d	13	164	21w5d	0
39	10w6d	13	81	14w1d	13	123	17w5d	13	165	21w6d	0
40	10w6d	13	82	14w1d	13	124	17w6d	13	166	21w6d	0
41	11w0d	14	83	14w2d	13	125	18w0d	13	167	22w0d	0
42	11w1d	14	84	14w2d	13	126	18w1d	14	168	22w0d	0
43	11w1d	14	85	14w3d	13	127	18w1d	14	169	22w1d	0
44	11w2d	14	86	14w3d	13	128	18w2d	14	170	22w1d	0
45	11w2d	14	87	14w4d	13	129	18w2d	14	171	22w2d	0
46	11w3d	14	88	14w4d	13	130	18w3d	15	172	22w2d	0
47	11w3d	15	89	14w5d	13	131	18w4d	15	173	22w3d	0
48	11w4d	15	90	14w6d	13	132	18w4d	15	174	22w3d	0
49	11w4d	15	91	14w6d	12	133	18w5d	15	175	22w4d	0
50	11w5d	15	92	15w0d	12	134	18w6d	15	>175	n/a	—
51	11w5d	15	93	15w0d	12	135	19w0d	15			
52	11w6d	15	94	15w1d	12	136	19w1d	15			
53	11w6d	15	95	15w2d	12	137	19w1d	15			

Table 3-69: CRL: Hansmann (Fetal Age) (Continued)
 Ultrasound Diagnosis in Obstetrics & Gynecology, 438-439, 1985

Unit: CRL (mm); Age (Weeks/Days); 2SD (mm [Known LMP] or day [Unknown LMP])											
CRL	Age	2SD	CRL	Age	2SD	CRL	Age	2SD	CRL	Age	2SD
Unknown LMP											
<6	n/a	—	22	9w1d	7	54	12w3d	9	106	16w2d	13
6	6w1d	7	23	9w2d	7	56	12w4d	9	110	16w4d	14
7	6w2d	7	24	9w3d	7	58	12w5d	9	113	17w0d	14
8	6w4d	7	26	9w5d	7	60	12w6d	9	116	17w2d	14
9	6w6d	7	28	10w0d	8	63	13w0d	10	120	17w4d	14
10	7w0d	7	30	10w2d	8	66	13w2d	10	123	18w0d	14
11	7w2d	7	32	10w3d	8	70	13w3d	10	126	18w2d	14
12	7w3d	7	34	10w5d	8	73	13w5d	11	130	18w6d	14
13	7w4d	7	36	10w6d	8	76	13w6d	11	133	19w1d	15
14	7w6d	7	38	11w1d	8	80	14w1d	11	136	19w4d	16
15	8w0d	7	40	11w2d	8	83	14w2d	12	140	20w0d	16
16	8w2d	7	42	11w3d	8	86	14w4d	12	143	20w3d	16
17	8w3d	7	44	11w4d	9	90	14w6d	12	146	20w6d	16
18	8w4d	7	46	11w6d	9	93	15w1d	12	150	21w3d	15
19	8w5d	7	48	12w0d	9	96	15w3d	12	>150	n/a	—
20	8w6d	7	50	12w1d	9	100	15w5d	12			
21	9w0d	7	52	12w2d	9	103	16w0d	13			

Hansmann (continued)

Table 3-70: FL: Hansmann (Fetal Age)
 Ultrasound Diagnosis in Obstetrics and Gynecology, 438-439, 1985

Known/Unknown LMP; Unit: FL (mm); Age (Weeks/Days); 2SD (mm)											
FL	Age	2SD	FL	Age	2SD	FL	Age	2SD	FL	Age	2SD
<12	n/a	—	28	18w4d	4	45	24w6d	5	62	32w1d	5
12	13w4d	0	29	18w6d	4	46	25w2d	5	63	32w5d	5
13	13w6d	0	30	19w2d	4	47	25w4d	5	64	33w1d	6
14	14w1d	0	31	19w4d	4	48	26w0d	5	65	33w5d	6
15	14w3d	0	32	20w0d	4	49	26w3d	5	66	34w1d	6
16	14w5d	5	33	20w3d	4	50	26w6d	5	67	34w5d	6
17	15w1d	5	34	20w5d	4	51	27w3d	5	68	35w1d	6
18	15w2d	4	35	21w1d	5	52	27w5d	5	69	35w5d	6
19	15w5d	4	36	21w3d	5	53	28w1d	5	70	36w1d	6
20	16w0d	4	37	21w6d	5	54	28w4d	5	71	36w5d	6
21	16w2d	4	38	22w1d	5	55	29w0d	5	72	37w2d	6
22	16w4d	4	39	22w4d	5	56	29w3d	6	73	37w6d	6
23	16w6d	4	40	22w6d	5	57	29w6d	6	74	38w3d	7
24	17w2d	4	41	23w2d	5	58	30w2d	6	75	39w0d	7
25	17w4d	4	42	23w5d	5	59	30w5d	5	>75	n/a	—
26	17w6d	4	43	24w0d	5	60	31w2d	5			
27	18w2d	4	44	24w3d	5	61	31w5d	5			

Table 3-71: GS: Hansmann (Fetal Age)
 Hansmann: M and Al: Geburtsh, u, Frauenheilk 39: 656, 1979

Unit: GS (mm); Age (Days); SD (mm)											
GS	Age	SD	GS	Age	SD	GS	Age	SD	GS	Age	SD
<10	n/a	—	24	47	5	39	61	5	54	76	5
10	33	5	25	48	5	40	62	5	55	77	5
11	34	5	26	49	5	41	63	5	56	78	5
12	35	5	27	50	5	42	64	5	57	79	5
13	36	5	28	51	5	43	65	5	58	80	5
14	37	5	29	52	5	44	66	5	59	81	5
15	38	5	30	53	5	45	67	5	60	82	5
16	39	5	31	54	5	46	68	5	61	83	5
17	40	5	32	55	5	47	69	5	62	84	5
18	41	5	33	56	5	48	70	5	63	85	5
19	42	5	34	57	5	49	71	5	64	86	5
20	43	5	35	58	5	50	72	5	65	87	5
21	44	5	36	58	5	51	73	5	>65	n/a	—
22	45	5	37	59	5	52	74	5			
23	46	5	38	60	5	53	75	5			

Hansmann (continued)

Table 3-72: GS (Gestational sac diameter) Hansmann (Fetal Age)

cm	days	cm	days
	Mean		Mean
0.70	34	1.50	47
0.90	40	2.40	52
1.00	42	2.80	58
1.30	44	3.40	63

Reference Hansmann M, Hackelöer BJ, Staudach A. Ultrasound Diagnosis in Obstetrics and Gynecology. Berlin, Heidelberg, New York, Tokyo: Springer, 1986

Table 3-73: HC: Hansmann (Fetal Age)
 Ultrasound Diagnosis in Obstetrics and Gynecology, 438-439, 1985

Known/Unknown LMP; Unit: HC (mm); Age (Weeks/Days); 2SD (mm)											
HC	Age	2SD	HC	Age	2SD	HC	Age	2SD	HC	Age	2SD
<105	n/a	—	165	18w4d	16	230	23w5d	18	295	29w5d	19
105	13w3d	0	170	19w0d	16	235	24w1d	18	300	30w2d	19
110	14w0d	0	175	19w3d	16	240	24w4d	18	305	30w5d	19
115	14w3d	14	180	19w5d	16	245	25w0d	18	310	31w2d	19
120	14w6d	14	185	20w1d	17	250	25w3d	18	315	32w1d	20
125	15w3d	14	190	20w4d	17	255	25w6d	18	320	32w5d	20
130	15w5d	14	195	21w0d	17	260	26w2d	18	325	33w3d	20
135	16w1d	14	200	21w2d	17	265	26w5d	18	330	34w2d	20
140	16w4d	14	205	21w5d	17	270	27w1d	18	335	35w1d	20
145	17w0d	15	210	22w1d	17	275	27w4d	19	340	36w2d	20
150	17w3d	15	215	22w4d	17	280	28w1d	19	345	37w6d	20
155	17w6d	16	220	23w0d	17	285	28w5d	19	>345	n/a	—
160	18w1d	16	225	23w3d	17	290	29w1d	19			

Hansmann (continued)

Table 3-74: OFD: Hansmann (Fetal Age)
 Ultrasound Diagnosis in Obstetrics and Gynecology, 438-439, 1985

Known/Unknown LMP; Unit: OFD (mm); Age (Weeks/Days); 2SD (mm)											
OFD	Age	2SD	OFD	Age	2SD	OFD	Age	2SD	OFD	Age	2SD
<34	n/a	—	54	18w4d	5	75	23w2d	7	96	29w0d	8
34	13w3d	0	55	18w6d	5	76	23w4d	7	97	29w3d	8
35	13w5d	0	56	19w0d	6	77	23w6d	7	98	29w5d	8
36	14w0d	0	57	19w2d	6	78	24w1d	7	99	30w0d	8
37	14w2d	0	58	19w3d	6	79	24w2d	7	100	30w3d	8
38	14w4d	5	59	19w5d	6	80	24w4d	7	101	30w5d	8
39	14w6d	5	60	20w0d	6	81	24w6d	7	102	31w1d	8
40	15w1d	5	61	20w1d	6	82	25w1d	7	103	31w4d	8
41	15w3d	5	62	20w2d	6	83	25w2d	7	104	32w0d	8
42	15w5d	5	63	20w4d	6	84	25w4d	7	105	32w3d	8
43	16w0d	5	64	20w6d	6	85	25w6d	7	106	32w6d	8
44	16w1d	5	65	21w0d	6	86	26w1d	7	107	33w3d	8
45	16w3d	5	66	21w2d	6	87	26w3d	7	108	33w6d	8
46	16w4d	5	67	21w4d	6	88	26w5d	7	109	34w3d	8
47	16w6d	5	68	21w5d	6	89	27w0d	7	110	35w0d	8
48	17w1d	5	69	22w0d	6	90	27w2d	7	111	35w4d	8
49	17w3d	5	70	22w1d	7	91	27w4d	8	112	36w2d	8
50	17w4d	5	71	22w3d	7	92	27w6d	8	113	37w0d	8
51	17w6d	5	72	22w4d	7	93	28w1d	8	114	38w0d	8
52	18w1d	5	73	22w6d	7	94	28w3d	8	115	39w0d	8
53	18w2d	5	74	23w1d	7	95	28w5d	8	>115	n/a	—

Hansmann (continued)

Table 3-75: TAD: Hansmann (Fetal Age)
Hansmann: M and AI: Geburtsh, u, Frauenheilk 39: 656, 1979

Unit: TAD (mm); Age (Days); SD (mm)											
TAD	Age	SD	TAD	Age	SD	TAD	Age	SD	TAD	Age	SD
<20	n/a	—	41	130	4	63	179	4	85	232	5
20	87	4	42	132	4	64	182	4	86	235	5
21	89	4	43	135	4	65	184	4	87	237	5
22	91	4	44	137	4	66	186	4	88	240	5
23	93	4	45	139	4	67	188	4	89	242	5
24	95	4	46	141	4	68	191	5	90	245	5
25	97	4	47	143	4	69	193	5	91	247	5
26	99	4	48	146	4	70	195	5	92	250	5
27	101	4	49	148	4	71	198	5	93	252	5
28	103	4	50	150	4	72	200	5	94	255	5
29	105	4	51	152	4	73	203	5	95	258	5
30	107	4	52	155	4	74	205	5	96	261	5
31	109	4	53	157	4	75	208	5	97	264	5
32	111	4	54	159	4	76	210	5	98	267	5
33	113	4	55	161	4	77	212	5	99	270	5
34	115	4	56	164	4	78	215	5	100	273	5
35	117	4	57	166	4	79	217	5	101	276	5
36	119	4	58	168	4	80	220	5	102	279	5
37	122	4	59	170	4	81	222	5	103	282	5
38	124	4	60	173	4	82	225	5	>103	n/a	—
39	126	4	61	175	4	83	227	5			
40	128	4	62	177	4	84	230	5			

Hansmann (continued)

Table 3-76: ThD: Hansmann (Fetal Age)
 Ultrasound Diagnosis in Obstetrics and Gynecology, 438-439, 1985

Known/Unknown LMP; Unit: ThD (mm); Age (Weeks/Days); 2SD (mm)											
ThD	Age	2SD	ThD	Age	2SD	ThD	Age	2SD	ThD	Age	2SD
<20	n/a	—	41	18w5d	5	63	25w5d	7	85	33w1d	9
20	12w4d	0	42	19w0d	5	64	26w1d	7	86	33w4d	9
21	12w6d	0	43	19w3d	5	65	26w3d	7	87	33w6d	9
22	13w1d	0	44	19w5d	5	66	26w5d	7	88	34w2d	9
23	13w3d	0	45	19w6d	5	67	27w0d	7	89	34w4d	9
24	13w4d	4	46	20w2d	5	68	27w3d	8	90	35w0d	9
25	13w6d	4	47	20w4d	6	69	27w5d	8	91	35w3d	10
26	14w1d	4	48	20w6d	6	70	28w0d	8	92	35w5d	10
27	14w3d	4	49	21w2d	6	71	28w3d	8	93	36w1d	10
28	14w6d	4	50	21w4d	6	72	28w5d	8	94	36w3d	10
29	15w1d	4	51	21w6d	6	73	29w1d	8	95	36w6d	10
30	15w2d	4	52	22w1d	6	74	29w3d	8	96	37w1d	10
31	15w4d	4	53	22w4d	6	75	29w5d	8	97	37w4d	10
32	15w6d	4	54	22w6d	6	76	30w1d	8	98	38w1d	11
33	16w2d	4	55	23w1d	6	77	30w3d	8	99	38w4d	11
34	16w4d	4	56	23w3d	6	78	30w5d	8	100	38w6d	11
35	16w6d	4	57	23w6d	7	79	31w1d	8	101	39w3d	12
36	17w1d	5	58	24w1d	7	80	31w3d	8	102	39w6d	14
37	17w3d	5	59	24w3d	7	81	31w5d	8	103	40w2d	14
38	17w5d	5	60	24w6d	7	82	32w1d	9	104	40w5d	14
39	18w1d	5	61	25w1d	7	83	32w4d	9	105	41w2d	14
40	18w3d	5	62	25w3d	7	84	32w6d	9	>105	n/a	—

Table 3-77: TTD: Hansmann (Fetal Age)
 Ultrasound Diagnosis in Obstetrics and Gynecology, 431, 1986

Unit: TTD (mm); Age (Weeks/Days); Table Type = SD					
TTD	Age	TTD	Age	TTD	Age
17	12w0d	50	22w0d	81	32w0d
20	13w0d	53	23w0d	83	33w0d
24	14w0d	56	24w0d	86	34w0d
27	15w0d	59	25w0d	89	35w0d
31	16w0d	62	26w0d	92	36w0d
34	17w0d	65	27w0d	94	37w0d
37	18w0d	69	28w0d	97	38w0d
40	19w0d	72	29w0d	99	39w0d
44	20w0d	74	30w0d	101	40w0d
47	21w0d	78	31w0d	102	41w0d

Hellman

Table 3-78: GS: Hellman (Fetal Age) A/OG 103: 789, 1969

Unit: GS (mm); Age (Week); SD (Week)											
GS	Age	SD	GS	Age	SD	GS	Age	SD	GS	Age	SD
<10	n/a	—	23	6.9	± 1.0	37	8.9	± 1.0	51	10.9	± 1.0
10	5.0	± 1.0	24	7.0	± 1.0	38	9.0	± 1.0	52	11.0	± 1.0
11	5.2	± 1.0	25	7.2	± 1.0	39	9.2	± 1.0	53	11.2	± 1.0
12	5.3	± 1.0	26	7.3	± 1.0	40	9.3	± 1.0	54	11.3	± 1.0
13	5.5	± 1.0	27	7.5	± 1.0	41	9.5	± 1.0	55	11.5	± 1.0
14	5.6	± 1.0	28	7.6	± 1.0	42	9.6	± 1.0	56	11.6	± 1.0
15	5.8	± 1.0	29	7.8	± 1.0	43	9.7	± 1.0	57	11.7	± 1.0
16	5.9	± 1.0	30	7.9	± 1.0	44	9.9	± 1.0	58	11.9	± 1.0
17	6.0	± 1.0	31	8.0	± 1.0	45	10.0	± 1.0	59	12.0	± 1.0
18	6.2	± 1.0	32	8.2	± 1.0	46	10.2	± 1.0	60	12.2	± 1.0
19	6.3	± 1.0	33	8.3	± 1.0	47	10.3	± 1.0	>60	n/a	—
20	6.5	± 1.0	34	8.5	± 1.0	48	10.5	± 1.0			
21	6.6	± 1.0	35	8.6	± 1.0	49	10.6	± 1.0			
22	6.8	± 1.0	36	8.8	± 1.0	50	10.7	± 1.0			

Hill

Table 3-79: TCD: Hill (Fetal Age) Obstet Gyn, 75: 981-984, 1990

Unit: TCD (mm); Age (Weeks); SD (Week)								
TCD	Age	SD	TCD	Age	SD	TCD	Age	SD
<14	n/a	—	28	24.9	± 1.01	43	33.9	± 1.2
14	15.2	± 0.5	29	25.5	± 1.01	44	34.4	± 1.2
15	15.8	± 0.5	30	26.2	± 1.01	45	34.8	± 1.2
16	16.5	± 0.5	31	26.9	± 1.01	46	35.3	± 1.2
17	17.2	± 0.5	32	27.5	± 1.01	47	35.7	± 1.2
18	17.9	± 0.5	33	28.1	± 1.01	48	36.1	± 1.6
19	18.6	± 0.9	34	28.8	± 1.01	49	36.5	± 1.6
20	19.3	± 0.9	35	29.4	± 1.01	50	36.8	± 1.6
21	20.0	± 0.9	36	30.0	± 1.2	51	37.2	± 1.6
22	20.7	± 0.9	37	30.6	± 1.2	52	37.5	± 1.6
23	21.4	± 0.9	38	31.2	± 1.2	54	38.0	± 1.6
24	22.1	± 0.9	39	31.8	± 1.2	55	38.3	± 1.6
25	22.8	± 0.9	40	32.3	± 1.2	56	38.5	± 1.6
26	23.5	± 0.9	41	32.8	± 1.2	>56	n/a	—
27	24.2	± 1.01	42	33.4	± 1.2			

Hohler

Table 3-80: FL/BPD: Hohler (Fetal Growth)
Communications in Brief, 143: 479-481, 1982

Age (Weeks)	Min (Index)	Max (Index)
23	71	87
40	71	87

Jeanty

Table 3-81: AC: Jeanty (Fetal Age)Jeanty, Radiology 143: 513, 1982

Unit: AC (mm); Age (Day); SD (mm)											
AC	Age	SD	AC	Age	SD	AC	Age	SD	AC	Age	SD
<50	n/a	—	115	122	22	185	169	22	255	218	22
50	79	22	120	125	22	190	172	22	260	222	22
55	82	22	125	129	22	195	176	22	265	226	22
60	85	22	130	132	22	200	179	22	270	230	22
65	89	22	135	135	22	205	182	22	275	234	22
70	92	22	140	139	22	210	186	22	280	239	22
75	95	22	145	142	22	215	189	22	285	244	22
80	99	22	150	146	22	220	192	22	290	249	22
85	102	22	155	149	22	225	196	22	295	254	22
90	105	22	160	152	22	230	199	22	300	259	22
95	109	22	165	156	22	235	203	22	305	265	22
100	112	22	170	159	22	240	206	22	310	272	22
105	115	22	175	162	22	245	210	22	315	279	22
110	119	22	180	166	22	250	214	22	>315	n/a	—

Table 3-82: BD: Jeanty (Fetal Age)Jeanty, Radiology 143: 513, 1982

Unit: BD (mm); Age (Days); SD (mm)											
BD	Age	SD	BD	Age	SD	BD	Age	SD	BD	Age	SD
<15	n/a	—	28	127	0	42	185	0	56	243	0
15	73	0	29	131	0	43	189	0	57	247	0
16	77	0	30	135	0	44	193	0	58	251	0
17	81	0	31	139	0	45	197	0	59	256	0
18	85	0	32	143	0	46	201	0	60	260	0
19	89	0	33	147	0	47	206	0	61	264	0
20	93	0	34	152	0	48	210	0	62	268	0
21	97	0	35	156	0	49	214	0	63	272	0
22	102	0	36	160	0	50	218	0	64	276	0
23	106	0	37	164	0	51	222	0	65	281	0
24	110	0	38	168	0	52	226	0	>65	n/a	—
25	114	0	39	172	0	53	231	0			
26	118	0	40	177	0	54	235	0			
27	122	0	41	181	0	55	239	0			

Jeanty (continued)

Table 3-83: BOD (Extra-orbital diameter) Jeanty (Fetal Age)

cm	days			cm	days		
	5%	Mean	95%		5%	Mean	95%
1.50	50	73	97	4.10	158	181	204
1.60	54	77	101	4.20	162	186	209
1.70	58	81	105	4.30	167	190	213
1.80	62	85	109	4.40	171	194	217
1.90	67	90	113	4.50	175	198	221
2.00	71	94	117	4.60	179	202	225
2.10	75	98	121	4.70	183	207	230
2.20	79	102	125	4.80	188	211	234
2.30	83	106	130	4.90	191	215	238
2.40	88	111	134	5.00	195	219	242
2.50	92	115	138	5.10	200	223	246
2.60	96	119	142	5.20	204	228	251
2.70	100	123	146	5.30	208	231	255
2.80	104	127	151	5.40	212	235	259
2.90	109	132	155	5.50	216	239	263
3.00	113	136	159	5.60	221	244	267
3.10	116	140	163	5.70	225	248	271
3.20	120	144	167	5.80	229	252	275
3.30	125	148	172	5.90	233	256	279
3.40	129	152	176	6.00	237	260	284
3.50	133	156	180	6.10	242	265	288
3.60	137	160	184	6.20	246	269	292
3.70	141	165	188	6.30	250	273	296
3.80	146	169	192	6.40	254	277	300
3.90	150	173	196	6.50	258	281	305
4.00	154	177	200				

Reference

Hansmann M, Hackelöer BJ, Staudach A. Ultrasound Diagnosis in Obstetrics and Gynecology. Berlin, Heidelberg, New York, Tokyo: Springer, 1986; Dating: Jeanty P et al. J Ultrasound Med 1984; 3: 241-243

Jeanty (continued)

Table 3-84: BOD (Extra-orbital diameter) Jeanty (Fetal Growth)

weeks	cm			weeks	cm		
	5%	Mean	95%		5%	Mean	95%
12.00	1.10	1.60	2.00	27.00	4.00	4.50	4.90
13.00	1.40	1.80	2.30	28.00	4.20	4.60	5.10
14.00	1.60	2.00	2.50	29.00	4.30	4.80	5.20
15.00	1.80	2.30	2.70	30.00	4.50	4.90	5.30
16.00	2.00	2.50	2.90	31.00	4.60	5.00	5.50
17.00	2.20	2.70	3.10	32.00	4.70	5.20	5.60
18.00	2.40	2.90	3.30	33.00	4.90	5.30	5.70
19.00	2.60	3.10	3.50	34.00	5.00	5.40	5.80
20.00	2.80	3.30	3.70	35.00	5.10	5.50	6.00
21.00	3.00	3.50	3.90	36.00	5.20	5.60	6.10
22.00	3.20	3.60	4.10	37.00	5.30	5.70	6.20
23.00	3.40	3.80	4.30	38.00	5.40	5.80	6.30
24.00	3.50	4.00	4.40	39.00	5.50	5.90	6.40
25.00	3.70	4.20	4.60	40.00	5.60	6.00	6.40
26.00	3.90	4.30	4.70				

Reference

Hansmann M, Hackelöer BJ, Staudach A. Ultrasound Diagnosis in Obstetrics and Gynecology. Berlin, Heidelberg, New York, Tokyo: Springer, 1986; Dating: Jeanty P et al. J Ultrasound Med 1984; 3: 241-243

Jeanty (continued)

Table 3-85: BPD: Jeanty (Fetal Age) Jeanty: Radiology 143: 513, 1982

Unit: Meas (mm); Min/Mean/Max (Weeks/Days); Table/Graph Range: 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<10	n/a	n/a	n/a	53	18w4d	21w1d	23w6d
10	6w4d	9w1d	11w6d	54	18w6d	21w4d	24w1d
11	6w6d	9w4d	12w1d	55	19w1d	21w6d	24w4d
12	7w0d	9w5d	12w3d	56	19w4d	22w1d	24w6d
13	7w2d	10w0d	12w5d	57	19w6d	22w4d	25w1d
14	7w4d	10w2d	12w6d	58	20w1d	22w6d	25w4d
15	7w6d	10w4d	13w1d	59	20w4d	23w1d	25w6d
16	8w1d	10w6d	13w3d	60	20w6d	23w4d	26w1d
17	8w3d	11w1d	13w5d	61	21w1d	23w6d	26w4d
18	8w4d	11w2d	14w0d	62	21w4d	24w1d	26w6d
19	8w6d	11w4d	14w1d	63	21w6d	24w4d	27w1d
20	9w1d	11w6d	14w4d	64	22w1d	24w6d	27w4d
21	9w3d	12w1d	14w6d	65	22w4d	25w2d	27w6d
22	9w5d	12w3d	15w0d	66	22w6d	25w4d	28w2d
23	9w6d	12w4d	15w2d	67	23w2d	26w0d	28w4d
24	10w1d	12w6d	15w4d	68	23w5d	26w3d	29w0d
25	10w4d	13w1d	15w6d	69	24w0d	26w5d	29w3d
26	10w5d	13w3d	16w1d	70	24w3d	27w1d	29w6d
27	11w0d	13w5d	16w3d	71	24w6d	27w4d	30w1d
28	11w2d	14w0d	16w4d	72	25w1d	27w6d	30w4d
29	11w4d	14w1d	16w6d	73	25w4d	28w2d	30w6d
30	11w6d	14w4d	17w1d	74	26w0d	28w5d	31w2d
31	12w1d	14w6d	17w3d	75	26w3d	29w1d	31w5d
32	12w2d	15w1d	17w5d	76	26w6d	29w4d	32w1d
33	12w4d	15w2d	18w0d	77	27w1d	29w6d	32w4d
34	12w6d	15w4d	18w2d	78	27w4d	30w2d	33w0d
35	13w1d	15w6d	18w4d	79	28w0d	30w5d	33w3d
36	13w4d	16w1d	18w6d	80	28w4d	31w1d	33w6d
37	13w5d	16w3d	19w1d	81	28w6d	31w4d	34w2d
38	14w0d	16w5d	19w3d	82	29w2d	32w0d	34w5d
39	14w2d	17w0d	19w5d	83	29w6d	32w4d	35w1d
40	14w4d	17w2d	19w6d	84	30w1d	32w6d	35w4d
41	14w6d	17w4d	20w1d	85	30w5d	33w3d	36w0d
42	15w1d	17w6d	20w4d	86	31w1d	33w6d	36w4d
43	15w3d	18w1d	20w6d	87	31w4d	34w2d	37w0d
44	15w5d	18w3d	21w1d	88	32w1d	34w6d	37w3d
45	16w0d	18w5d	21w3d	89	32w4d	35w2d	37w6d
46	16w2d	19w0d	21w5d	90	33w0d	35w5d	38w3d
47	16w4d	19w2d	22w0d	91	33w4d	36w1d	38w6d
48	16w6d	19w4d	22w2d	92	34w0d	36w5d	39w3d
49	17w1d	19w6d	22w4d	93	34w4d	37w1d	39w6d
50	17w4d	20w2d	22w6d	94	35w0d	37w5d	40w3d
51	17w6d	20w4d	23w1d	95	35w4d	38w2d	40w6d
52	18w1d	20w6d	23w4d	>95	n/a	n/a	n/a

Jeanty (continued)

Table 3-86: BPD: Jeanty (Fetal Growth) Jeanty: Radiology 143: 513, 1982

Unit: Age (Weeks/Days); Min/Mean/Max (mm); Table/Graph Range: 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
10.0+0	9	14	18	26.0+0	62	67	71
11.0+0	13	17	22	27.0+0	65	70	74
12.0+0	16	21	25	28.0+0	68	72	77
13.0+0	20	24	29	29.0+0	70	75	79
14.0+0	23	28	32	30.0+0	73	77	82
15.0+0	27	31	36	31.0+0	75	79	84
16.0+0	30	35	39	32.0+0	77	82	86
17.0+0	34	38	43	33.0+0	79	84	88
18.0+0	37	42	46	34.0+0	81	86	90
19.0+0	40	45	49	35.0+0	83	87	92
20.0+0	44	48	53	36.0+0	84	89	93
21.0+0	47	51	56	37.0+0	86	90	95
22.0+0	50	55	59	38.0+0	87	91	96
23.0+0	53	58	62	39.0+0	88	93	97
24.0+0	56	61	65	40.0+0	89	93	98
25.0+0	59	64	68				

Table 3-87: CRL: Jeanty (Fetal Age) Jeanty: Radiology 143: 513, 1982

Unit: CRL (mm); Age (Days); SD (mm)											
CRL	Age	SD	CRL	Age	SD	CRL	Age	SD	CRL	Age	SD
<5	n/a	—	17	58	5	30	69	7	43	77	7
5	44	4	18	59	5	31	70	7	44	78	7
6	45	4	19	60	5	32	70	7	45	79	7
7	46	4	20	61	5	33	71	7	46	79	7
8	48	4	21	62	6	34	72	7	47	80	7
9	50	4	22	63	6	35	73	7	48	81	7
10	51	4	23	64	6	36	73	7	49	81	7
11	52	4	24	65	6	37	74	7	50	82	7
12	53	4	25	66	6	38	75	7	51	83	7
13	54	4	26	67	7	39	76	7	52	83	7
14	55	4	27	67	7	40	76	7	53	84	7
15	56	5	28	67	7	41	76	7	54	85	7
16	57	5	29	68	7	42	77	7	>54	n/a	—

Jeanty (continued)

Table 3-88: FIB: Jeanty (Fetal Growth)
Fetal Limb Biometry (Letter), Radiology 147:602, 1983

Unit: Age (Weeks); Min/Mean/Max (mm); Table/Graph Range: 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
11	2	2	2	26	32	39	43
12	5	5	5	27	35	41	47
13	8	8	8	28	36	43	47
14	6	11	10	29	40	45	50
15	10	14	18	30	38	47	52
16	6	17	22	31	40	48	57
17	7	19	31	32	40	50	56
18	10	22	28	33	43	51	59
19	18	24	30	34	46	52	56
20	18	27	30	35	51	54	57
21	24	29	34	36	51	55	56
22	21	31	37	37	55	56	58
23	23	33	44	38	54	57	59
24	26	35	41	39	55	58	62
25	33	37	42	40	54	59	62

Jeanty (continued)

Table 3-89: FIB (Fibula) Jeanty (Fetal Age)

mm	weeks	mm	weeks	mm	weeks
	Mean		Mean		Mean
6	12.00	33	22.00	52	32.00
9	13.00	35	23.00	54	33.00
12	14.00	37	24.00	55	34.00
15	15.00	40	25.00	57	35.00
18	16.00	42	26.00	58	36.00
21	17.00	44	27.00	59	37.00
23	18.00	45	28.00	61	38.00
26	19.00	47	29.00	62	39.00
28	20.00	49	30.00	63	40.00
31	21.00	51	31.00		

NOTE: FIB and GA values are taken from Fetal Growth Table. FIB (mean values) are used as input and GA as output. See Table 3-90 on page 3-61 for more information.

Reference

Jeanty P, Romero R. Critical Reading of the Biometry Literature. In: Hansmann M, Hackelöer BJ, Staudach A. Ultrasound Diagnosis in Obstetrics and Gynecology. Berlin, Heidelberg, New York, Tokyo: Springer, 1986. pages 161-188

Table 3-90: FIB (Fibula) Jeanty (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
12.00	0	6	0	27.00	37	44	50
13.00	0	9	0	28.00	38	45	53
14.00	6	12	19	29.00	41	47	54
15.00	9	15	21	30.00	43	49	56
16.00	13	18	23	31.00	42	51	59
17.00	13	21	28	32.00	42	52	63
18.00	15	23	31	33.00	46	54	62
19.00	19	26	33	34.00	46	55	65
20.00	21	28	36	35.00	51	57	62
21.00	24	31	37	36.00	54	58	63
22.00	27	33	39	37.00	54	59	65
23.00	28	35	42	38.00	56	61	65
24.00	29	37	45	39.00	56	62	67
25.00	34	40	45	40.00	59	63	67
26.00	36	42	47				

Reference

Jeanty P, Romero R. Critical Reading of the Biometry Literature. In: Hansmann M, Hackelöer BJ, Staudach A. Ultrasound Diagnosis in Obstetrics and Gynecology. Berlin, Heidelberg, New York, Tokyo: Springer, 1986. pages 161-188

Jeanty (continued)

Table 3-91: FL: Jeanty (Fetal Age) Jeanty: Radiology 143: 513, 1982

Unit: Meas (mm); Min/Mean/Max (Weeks/Days); Table/Graph Range: 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<14	n/a	n/a	n/a	48	24w0d	26w1d	28w3d
14	11w5d	13w6d	16w1d	49	24w3d	26w4d	28w6d
15	12w0d	14w1d	16w3d	50	24w6d	27w0d	29w1d
16	12w3d	14w4d	16w6d	51	25w1d	27w3d	29w4d
17	12w5d	14w6d	17w1d	52	25w4d	27w6d	30w0d
18	13w0d	15w1d	17w3d	53	26w0d	28w1d	30w3d
19	13w3d	15w4d	17w6d	54	26w3d	28w4d	30w6d
20	13w5d	15w6d	18w1d	55	26w6d	29w1d	31w2d
21	14w1d	16w2d	18w4d	56	27w2d	29w4d	31w5d
22	14w3d	16w4d	18w6d	57	27w5d	29w6d	32w1d
23	14w5d	16w6d	19w1d	58	28w1d	30w2d	32w4d
24	15w1d	17w2d	19w4d	59	28w4d	30w5d	32w6d
25	15w3d	17w4d	19w6d	60	28w6d	31w1d	33w2d
26	15w6d	18w0d	20w1d	61	29w3d	31w4d	33w6d
27	16w1d	18w2d	20w4d	62	29w6d	32w0d	34w1d
28	16w4d	18w5d	20w6d	63	30w1d	32w3d	34w4d
29	16w6d	19w0d	21w1d	64	30w5d	32w6d	35w1d
30	17w1d	19w3d	21w4d	65	31w1d	33w2d	35w4d
31	17w4d	19w6d	22w0d	66	31w4d	33w5d	35w6d
32	17w6d	20w1d	22w2d	67	32w0d	34w1d	36w3d
33	18w2d	20w4d	22w5d	68	32w3d	34w4d	36w6d
34	18w5d	20w6d	23w1d	69	32w6d	35w0d	37w1d
35	19w0d	21w1d	23w3d	70	33w2d	35w4d	37w5d
36	19w3d	21w4d	23w6d	71	33w5d	35w6d	38w1d
37	19w6d	22w0d	24w1d	72	34w1d	36w3d	38w4d
38	20w1d	22w3d	24w4d	73	34w4d	36w6d	39w0d
39	20w4d	22w5d	24w6d	74	35w1d	37w2d	39w4d
40	20w6d	23w1d	25w2d	75	35w4d	37w5d	39w6d
41	21w2d	23w4d	25w5d	76	36w0d	38w1d	40w3d
42	21w5d	23w6d	26w1d	77	36w3d	38w4d	40w6d
43	22w1d	24w2d	26w4d	78	36w6d	39w1d	41w2d
44	22w4d	24w5d	26w6d	79	37w2d	39w4d	41w5d
45	22w6d	25w0d	27w1d	80	37w6d	40w0d	42w1d
46	23w1d	25w3d	27w4d	>80	n/a	n/a	n/a
47	23w4d	25w6d	28w0d				

Jeanty (continued)

Table 3-92: FL: Jeanty (Fetal Growth) Jeanty: Radiology 143: 513, 1982

Unit: Age (Weeks/Days); Min/Mean/Max (mm); Table/Graph Range: 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
12.0+0	4	8	13	27.0+0	45	49	54
13.0+0	6	11	16	28.0+0	47	52	56
14.0+0	9	14	18	29.0+0	50	54	59
15.0+0	12	17	21	30.0+0	52	56	61
16.0+0	15	20	24	31.0+0	54	59	63
17.0+0	18	23	27	32.0+0	56	61	65
18.0+0	21	25	30	33.0+0	58	63	67
19.0+0	24	28	33	34.0+0	60	65	69
20.0+0	26	31	36	35.0+0	62	67	71
21.0+0	29	34	38	36.0+0	64	68	73
22.0+0	32	36	41	37.0+0	65	70	74
23.0+0	35	39	44	38.0+0	67	71	76
24.0+0	37	42	46	39.0+0	68	73	77
25.0+0	40	44	49	40.0+0	70	74	79
26.0+0	42	47	51				

Jeanty (continued)

Table 3-93: FL (Femur length) Jeanty (Fetal Age)

mm	weeks			mm	weeks		
	-2 SD	Mean	2 SD		-2 SD	Mean	2 SD
10	9.82	12.62	15.42	50	24.23	27.03	29.83
15	11.44	14.24	17.04	55	26.26	29.06	31.86
20	13.11	15.91	18.71	60	28.35	31.15	33.95
25	14.83	17.63	20.43	65	30.48	33.28	36.08
30	16.61	19.41	22.21	70	32.67	35.47	38.27
35	18.43	21.23	24.03	75	34.92	37.72	40.52
40	20.31	23.11	25.91	80	37.21	40.01	42.81
45	22.24	25.04	27.84				

Table values are calculated with the following equations:

$$GA = 9.5411757 + 0.29774510 * FL + 0.0010388013 * FL^2$$

Standard Deviation (+/-): 1SD = 1.40 weeks

Reference

Jeanty P, Cousaert E, Cantraine F, Hobbins JC, Tack B, Struyven J. A longitudinal study of fetal limb growth. Am Perinatol 1984; 1: 136-144; Dating: Jeanty P et al. J Ultrasound Med 1984; 3: 75-79

Table 3-94: FL (Femur length) Jeanty (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
12.00	4	8	13	27.00	45	49	54
13.00	6	11	16	28.00	47	52	56
14.00	9	14	18	29.00	50	54	59
15.00	12	17	21	30.00	52	56	61
16.00	15	20	24	31.00	54	59	63
17.00	18	23	27	32.00	56	61	65
18.00	21	25	30	33.00	58	63	67
19.00	24	28	33	34.00	60	65	69
20.00	26	31	36	35.00	62	67	71
21.00	29	34	38	36.00	64	68	73
22.00	32	36	41	37.00	65	70	74
23.00	35	39	44	38.00	67	71	76
24.00	37	42	46	39.00	68	73	77
25.00	40	44	49	40.00	70	74	79
26.00	42	47	51				

Reference

Jeanty P, Cousaert E, Cantraine F, Hobbins JC, Tack B, Struyven J. A longitudinal study of fetal limb growth. Am J Perinatol 1984; 1: 136-144; Dating: Jeanty P et al. J Ultrasound Med 1984; 3: 75-79

Jeanty (continued)

Table 3-95: HC: Jeanty (Fetal Age) Jeanty: Radiology 143: 513, 1982

Unit: Meas (mm); Min/Mean/Max (Weeks/Days); Table/Graph Range: 10%:90%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<80	n/a	n/a	n/a	225	22w3d	24w3d	26w2d
80	11w3d	13w2d	15w2d	230	22w6d	24w6d	26w6d
85	11w5d	13w5d	15w4d	235	23w3d	25w3d	27w2d
90	11w7d	13w7d	15w6d	240	23w6d	25w6d	27w6d
95	12w2d	14w2d	16w2d	245	24w3d	26w3d	28w2d
100	12w4d	14w4d	16w4d	250	24w7d	26w6d	28w6d
105	12w7d	14w6d	16w6d	255	25w4d	27w3d	29w3d
110	13w2d	15w2d	17w1d	260	26w0d	28w0d	29w7d
115	13w4d	15w4d	17w4d	265	26w4d	28w4d	30w4d
120	13w6d	15w6d	17w6d	270	27w1d	29w1d	31w1d
125	14w2d	16w2d	18w1d	275	27w6d	29w5d	31w5d
130	14w4d	16w4d	18w4d	280	28w3d	30w2d	32w2d
135	14w7d	16w6d	18w6d	285	28w7d	30w7d	32w6d
140	15w2d	17w2d	19w2d	290	29w4d	31w4d	33w4d
145	15w5d	17w4d	19w4d	295	30w2d	32w1d	34w1d
150	16w0d	17w7d	19w7d	300	30w6d	32w6d	34w6d
155	16w3d	18w3d	20w2d	305	31w4d	33w4d	35w3d
160	16w6d	18w5d	20w5d	310	32w2d	34w1d	36w1d
165	17w1d	19w1d	21w1d	315	32w6d	34w6d	36w6d
170	17w4d	19w4d	21w3d	320	33w4d	35w4d	37w4d
175	17w7d	19w6d	21w6d	325	34w2d	36w2d	38w2d
180	18w3d	20w2d	22w2d	330	35w0d	37w0d	38w7d
185	18w6d	20w5d	22w5d	335	35w6d	37w5d	39w5d
190	19w1d	21w1d	23w1d	340	36w4d	38w4d	40w3d
195	19w4d	21w4d	23w4d	345	37w2d	39w2d	41w2d
200	20w1d	22w0d	23w7d	350	38w1d	40w0d	42w0d
205	20w4d	22w3d	24w3d	355	38w6d	40w6d	42w6d
210	20w7d	22w7d	24w6d	360	39w5d	41w5d	43w4d
215	21w3d	23w3d	25w3d	>360	n/a	n/a	n/a
220	21w6d	23w6d	25w6d				

Jeanty (continued)

Table 3-96: HC: Jeanty (Fetal Growth) Jeanty: Radiology 143: 513, 1982

Unit: Age (Weeks/Days); Min/Mean/Max (mm); Table/Graph Range: 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
12.0+0	51	75	100	27.0+0	228	252	277
13.0+0	64	88	112	28.0+0	238	262	286
14.0+0	76	101	125	29.0+0	247	271	296
15.0+0	89	113	138	30.0+0	256	281	305
16.0+0	101	126	150	31.0+0	265	289	313
17.0+0	114	138	163	32.0+0	273	297	322
18.0+0	126	151	175	33.0+0	281	305	329
19.0+0	138	163	187	34.0+0	288	312	336
20.0+0	150	175	199	35.0+0	294	319	343
21.0+0	162	187	211	36.0+0	300	325	349
22.0+0	174	198	223	37.0+0	306	330	355
23.0+0	185	210	234	38.0+0	311	335	359
24.0+0	196	221	245	39.0+0	315	339	364
25.0+0	207	232	256	40.0+0	319	343	367
26.0+0	218	242	266				

Jeanty (continued)

Table 3-97: HL: Jeanty (Fetal Age) Obstetrical Ultrasound, Table 13.9, 1984

Unit: Meas (mm); Min/Mean/Max (Weeks/Days); Table/Graph Range: 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<10	n/a	n/a	n/a	40	21w4d	24w2d	27w1d
10	9w6d	12w4d	15w2d	41	22w0d	24w6d	27w4d
11	10w1d	12w6d	15w4d	42	22w4d	25w2d	28w0d
12	10w3d	13w1d	15w6d	43	23w0d	25w5d	28w4d
13	10w6d	13w4d	16w1d	44	23w4d	26w1d	29w0d
14	11w1d	13w6d	16w4d	45	24w0d	26w5d	29w4d
15	11w3d	14w1d	16w6d	46	24w4d	27w1d	30w0d
16	11w6d	14w4d	17w2d	47	25w0d	27w5d	30w4d
17	12w1d	14w6d	17w4d	48	25w4d	28w1d	31w0d
18	12w4d	15w1d	18w0d	49	26w0d	28w6d	31w4d
19	12w6d	15w4d	18w2d	50	26w4d	29w2d	32w0d
20	13w1d	15w6d	18w5d	51	27w1d	29w6d	32w4d
21	13w4d	16w2d	19w1d	52	27w4d	30w2d	33w1d
22	13w6d	16w5d	19w3d	53	28w1d	30w6d	33w4d
23	14w2d	17w1d	19w6d	54	28w5d	31w3d	34w1d
24	14w5d	17w3d	20w1d	55	29w1d	32w0d	34w5d
25	15w1d	17w6d	20w4d	56	29w6d	32w4d	35w2d
26	15w4d	18w1d	21w0d	57	30w2d	33w1d	35w6d
27	15w6d	18w4d	21w3d	58	30w6d	33w4d	36w3d
28	16w2d	19w0d	21w6d	59	31w3d	34w1d	36w6d
29	16w5d	19w3d	22w1d	60	32w0d	34w6d	37w4d
30	17w1d	19w6d	22w4d	61	32w4d	35w2d	38w1d
31	17w4d	20w2d	23w0d	62	33w1d	35w6d	38w5d
32	18w0d	20w5d	23w4d	63	33w6d	36w4d	39w2d
33	18w3d	21w1d	23w6d	64	34w3d	37w1d	39w6d
34	18w6d	21w4d	24w2d	65	35w0d	37w5d	40w4d
35	19w2d	22w0d	24w6d	66	35w4d	38w2d	41w1d
36	19w5d	22w4d	25w1d	67	36w1d	38w6d	41w5d
37	20w1d	22w6d	25w5d	68	36w6d	39w4d	42w2d
38	20w4d	23w3d	26w1d	69	37w3d	40w1d	42w6d
39	21w1d	23w6d	26w4d	>69	n/a	n/a	n/a

Jeanty (continued)

Table 3-98: OFD (Occipito-frontal diameter) Jeanty (Fetal Age)

mm	weeks	mm	weeks	mm	weeks
	Mean		Mean		Mean
14	10.00	61	21.00	99	32.00
18	11.00	65	22.00	102	33.00
23	12.00	69	23.00	104	34.00
27	13.00	72	24.00	106	35.00
31	14.00	76	25.00	109	36.00
36	15.00	80	26.00	111	37.00
40	16.00	83	27.00	112	38.00
44	17.00	87	28.00	114	39.00
48	18.00	90	29.00	115	40.00
53	19.00	93	30.00		
57	20.00	96	31.00		

Reference

Jeanty P, Cousaert E, Hobbins JC, Tack B, Bracken M, Cantraine F. A longitudinal study of fetal head biometry. Am J Perinatol 1984; 1: 118-128

Table 3-99: OFD (Occipito-frontal diameter) Jeanty (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
10.00	7	14	21	26.00	73	80	87
11.00	11	18	25	27.00	76	83	90
12.00	16	23	30	28.00	80	87	94
13.00	20	27	34	29.00	83	90	97
14.00	24	31	38	30.00	86	93	100
15.00	29	36	43	31.00	89	96	103
16.00	33	40	47	32.00	92	99	106
17.00	37	44	51	33.00	95	102	108
18.00	41	48	55	34.00	97	104	111
19.00	46	53	60	35.00	99	106	113
20.00	50	57	64	36.00	102	109	116
21.00	54	61	68	37.00	104	111	118
22.00	58	65	72	38.00	105	112	119
23.00	62	69	76	39.00	107	114	121
24.00	65	72	79	40.00	108	115	122
25.00	69	76	83				

Reference

Jeanty P, Cousaert E, Hobbins JC, Tack B, Bracken M, Cantraine F. A longitudinal study of fetal head biometry. Am J Perinatol 1984; 1: 118-128

Jeanty (continued)

Table 3-100: Radius: Jeanty (Fetal Growth)
Fetal Limb Biometry (Letter), Radiology 147:602, 1983

Unit: Age (weeks); Min/Mean/Max (mm); Table/Graph Range: 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
<11	n/a	n/a	n/a	26	30	37	41
11	5	5	5	27	33	39	45
12	7	7	7	28	33	40	45
13	10	10	10	29	36	42	47
14	8	13	12	30	34	43	49
15	12	15	19	31	34	44	53
16	9	18	21	32	37	45	51
17	11	20	29	33	41	46	51
18	14	22	26	34	39	47	53
19	20	24	29	35	38	48	57
20	21	27	28	36	41	48	54
21	25	29	32	37	45	49	53
22	24	31	34	38	45	49	53
23	26	32	39	39	46	50	54
24	27	34	38	40	46	50	54
25	31	36	40	>40	n/a	n/a	n/a

Jeanty (continued)

Table 3-101: RAD (Radius) Jeanty (Fetal Age)

mm	weeks	mm	weeks	mm	weeks
	Mean		Mean		Mean
5	11.00	27	20.00	42	29.00
7	12.00	29	21.00	43	30.00
10	13.00	31	22.00	44	31.00
13	14.00	32	23.00	45	32.00
15	15.00	34	24.00	46	33.00
18	16.00	36	25.00	47	34.00
20	17.00	37	26.00	48	36.00
22	18.00	39	27.00	49	38.00
24	19.00	40	28.00	50	40.00

NOTE: RAD and GA values are taken from Fetal Growth Table. RAD (mean values) are used as input and GA as output. See Table 3-102 on page 3-70 for more information.

Reference Jeanty P. Fetal limb biometry. Radiology 1983; 147: 601-602 - and personal communication

Table 3-102: RAD (Radius) Jeanty (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
11.00	0	4.52	0	26.00	28.1	37.35	46.59
12.00	0	7.32	0	27.00	29.59	38.84	48.09
13.00	0	10.03	0	28.00	31.40	40.24	49.49
14.00	3.41	12.65	21.9	29.00	32.32	41.56	50.81
15.00	5.94	15.19	24.44	30.00	33.55	42.79	52.04
16.00	8.39	17.64	26.89	31.00	34.69	43.94	53.18
17.00	10.76	20.29	29.25	32.00	35.74	44.99	54.24
18.00	13.03	22.28	31.53	33.00	36.71	45.96	55.21
19.00	15.22	24.47	33.71	34.00	37.59	46.84	56.09
20.00	17.32	26.57	35.82	35.00	38.39	47.64	56.88
21.00	19.34	28.58	37.83	36.00	39.1	48.34	57.59
22.00	21.26	30.51	39.76	37.00	39.72	48.96	58.21
23.00	23.1	32.35	41.6	38.00	40.25	49.5	58.74
24.00	24.86	34.1	43.35	39.00	40.7	49.94	59.19
25.00	26.52	35.77	45.02	40.00	41.05	50.3	59.55

Reference Jeanty P. Fetal limb biometry. Radiology 1983; 147: 601-602 - and personal communication

Jeanty (continued)

Table 3-103: TIB: Jeanty (Fetal Age) Obstetrical Ultrasound, Table 13.9, 1984

Unit: Meas (mm); Min/Mean/Max (Weeks/Days); Table/Graph Range: 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<10	n/a	n/a	n/a	40	22w3d	25w2d	28w1d
10	10w4d	13w3d	16w2d	41	22w6d	25w5d	28w4d
11	10w6d	13w5d	16w4d	42	23w2d	26w1d	29w1d
12	11w1d	14w1d	17w0d	43	23w5d	26w4d	29w4d
13	11w4d	14w3d	17w2d	44	24w1d	27w1d	30w0d
14	11w6d	14w6d	17w5d	45	24w4d	27w4d	30w4d
15	12w1d	15w1d	18w0d	46	25w1d	28w0d	30w6d
16	12w4d	15w4d	18w3d	47	25w4d	28w4d	31w3d
17	13w0d	15w6d	18w6d	48	26w1d	29w0d	31w6d
18	13w2d	16w1d	19w1d	49	26w4d	29w3d	32w2d
19	13w5d	16w4d	19w4d	50	27w0d	29w6d	32w6d
20	14w1d	17w0d	19w6d	51	27w4d	30w3d	33w2d
21	14w4d	17w3d	20w2d	52	28w0d	30w6d	33w6d
22	14w6d	17w6d	20w5d	53	28w4d	31w3d	34w2d
23	15w1d	18w1d	21w1d	54	29w0d	31w6d	34w6d
24	15w4d	18w4d	21w3d	55	29w4d	32w3d	35w2d
25	16w0d	18w6d	21w6d	56	30w0d	32w6d	35w6d
26	16w3d	19w2d	22w1d	57	30w4d	33w3d	36w2d
27	16w6d	19w5d	22w4d	58	31w0d	33w6d	36w6d
28	17w1d	20w1d	23w0d	59	31w4d	34w3d	37w2d
29	17w4d	20w4d	23w4d	60	32w0d	34w6d	37w6d
30	18w1d	21w0d	23w6d	61	32w4d	35w3d	38w2d
31	18w4d	21w3d	24w2d	62	33w0d	35w6d	38w6d
32	18w6d	21w6d	24w5d	63	33w4d	36w4d	39w3d
33	19w2d	22w1d	25w1d	64	34w1d	37w0d	39w6d
34	19w5d	22w4d	25w4d	65	34w4d	37w4d	40w3d
35	20w1d	23w1d	26w0d	66	35w1d	38w0d	41w0d
36	20w4d	23w4d	26w3d	67	35w5d	38w4d	41w4d
37	21w0d	23w6d	26w6d	68	36w1d	39w1d	42w0d
38	21w4d	24w3d	27w2d	69	36w6d	39w5d	42w4d
39	21w6d	24w6d	27w5d	>69	n/a	n/a	n/a

Jeanty (continued)

Table 3-104: ULNA: Jeanty (Fetal Age) Obstetrical Ultrasound, Table 13.9, 1984

Unit: Meas (mm); Min/Mean/Max (Weeks/Days); Table/Graph Range: 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<10	n/a	n/a	n/a	38	22w1d	25w1d	28w1d
10	10w1d	13w1d	16w1d	39	22w4d	25w4d	28w5d
11	10w4d	13w4d	16w4d	40	23w1d	26w1d	29w1d
12	10w6d	13w6d	16w6d	41	23w4d	26w5d	29w5d
13	11w1d	14w1d	17w2d	42	24w1d	27w1d	30w2d
14	11w4d	14w4d	17w5d	43	24w5d	27w5d	30w6d
15	11w6d	15w0d	18w0d	44	25w1d	28w2d	31w2d
16	12w2d	15w3d	18w3d	45	25w6d	28w6d	31w6d
17	12w5d	15w5d	18w6d	46	26w2d	29w3d	32w3d
18	13w1d	16w1d	19w1d	47	26w6d	29w6d	33w0d
19	13w4d	16w4d	19w4d	48	27w3d	30w4d	33w4d
20	13w6d	16w6d	20w0d	49	28w0d	31w1d	34w1d
21	14w2d	17w2d	20w3d	50	28w4d	31w4d	34w5d
22	14w5d	17w5d	20w6d	51	29w1d	32w1d	35w2d
23	15w1d	18w1d	21w1d	52	29w5d	32w6d	35w6d
24	15w4d	18w4d	21w4d	53	30w2d	33w3d	36w3d
25	16w0d	19w0d	22w1d	54	30w6d	34w0d	37w0d
26	16w3d	19w3d	22w4d	55	31w4d	34w4d	37w5d
27	16w6d	19w6d	22w6d	56	32w1d	35w1d	38w2d
28	17w2d	20w2d	23w3d	57	32w6d	35w6d	38w6d
29	17w5d	20w6d	23w6d	58	33w3d	36w3d	39w4d
30	18w1d	21w1d	24w2d	59	34w0d	37w1d	40w1d
31	18w4d	21w5d	24w6d	60	34w4d	37w5d	40w6d
32	19w1d	22w1d	25w1d	61	35w2d	38w2d	41w3d
33	19w4d	22w5d	25w5d	62	35w6d	39w0d	42w0d
34	20w1d	23w1d	26w1d	63	36w4d	39w4d	42w5d
35	20w4d	23w4d	26w5d	64	37w1d	40w2d	43w2d
36	21w1d	24w1d	27w1d	>64	n/a	n/a	n/a
37	21w4d	24w4d	27w5d				

Jeanty (continued)

Table 3-105: ULNA (Ulna) Jeanty (Fetal Age)

cm	days			cm	days		
	5%	Mean	95%		5%	Mean	95%
1.00	71	92	113	3.80	155	176	197
1.10	74	95	116	3.90	158	179	201
1.20	76	97	118	4.00	162	183	204
1.30	78	99	121	4.10	165	187	208
1.40	81	102	124	4.20	169	190	212
1.50	83	105	126	4.30	173	194	216
1.60	86	108	129	4.40	176	198	219
1.70	89	110	132	4.50	181	202	223
1.80	92	113	134	4.60	184	206	227
1.90	95	116	137	4.70	188	209	231
2.00	97	118	140	4.80	192	214	235
2.10	100	121	143	4.90	196	218	239
2.20	103	124	146	5.00	200	221	243
2.30	106	127	148	5.10	204	225	247
2.40	109	130	151	5.20	208	230	251
2.50	112	133	155	5.30	212	234	255
2.60	115	136	158	5.40	216	238	259
2.70	118	139	160	5.50	221	242	264
2.80	121	142	164	5.60	225	246	268
2.90	124	146	167	5.70	230	251	272
3.00	127	148	170	5.80	234	255	277
3.10	130	152	174	5.90	238	260	281
3.20	134	155	176	6.00	242	264	286
3.30	137	159	180	6.10	247	268	290
3.40	141	162	183	6.20	251	273	294
3.50	144	165	187	6.30	256	277	299
3.60	148	169	190	6.40	260	282	303
3.70	151	172	194				

Reference

Jeanty P, Cousaert E, Cantraine F, Hobbins JC, Tack B, Struyven J. A longitudinal study of fetal limb growth. Am J Perinatol 1984; 1: 136-144; Dating: Jeanty P et al. J Ultrasound Med 1984; 3: 75-79

Jeanty (continued)

Table 3-106: ULNA (Ulna) Jeanty (Fetal Growth)

weeks	cm			weeks	cm		
	5%	Mean	95%		5%	Mean	95%
12.00	0.30	0.70	1.10	27.00	3.90	4.30	4.70
13.00	0.50	1.00	1.40	28.00	4.10	4.50	4.90
14.00	0.80	1.30	1.70	29.00	4.30	4.70	5.10
15.00	1.10	1.50	2.00	30.00	4.40	4.80	5.30
16.00	1.40	1.80	2.20	31.00	4.60	5.00	5.40
17.00	1.60	2.10	2.50	32.00	4.70	5.20	5.60
18.00	1.90	2.30	2.80	33.00	4.90	5.30	5.70
19.00	2.20	2.60	3.00	34.00	5.00	5.50	5.90
20.00	2.40	2.80	3.30	35.00	5.20	5.60	6.00
21.00	2.60	3.10	3.50	36.00	5.30	5.70	6.10
22.00	2.90	3.30	3.70	37.00	5.40	5.80	6.30
23.00	3.10	3.50	3.90	38.00	5.50	5.90	6.40
24.00	3.30	3.70	4.20	39.00	5.60	6.00	6.50
25.00	3.50	3.90	4.40	40.00	5.70	6.10	6.60
26.00	3.70	4.10	4.60				

Reference

Jeanty P, Coussaert E, Cantraine F, Hobbins JC, Tack B, Struyven J. A longitudinal study of fetal limb growth. Am J Perinatol 1984; 1: 136-144; Dating: Jeanty P et al. J Ultrasound Med 1984; 3: 75-79

JSUM

Table 3-107: JSUM, AC, J Med Ultrasound Vol.28 No.5 (2001)

Unit: AC (cm); Age (w+d); SD (cm)							
Age	AC	Age	1SD	Age	AC	Age	1SD
16	10.4	16+0	0.57	30	24.2	30+0	1.24
17	11.4	17+0	0.62	31	25.1	31+0	1.29
18	12.5	18+0	0.67	32	25.9	32+0	1.33
19	13.5	19+0	0.71	33	26.8	33+0	1.38
20	14.5	20+0	0.76	34	27.6	34+0	1.43
21	15.5	21+0	0.81	35	28.4	35+0	1.48
22	16.5	22+0	0.86	36	29.2	36+0	1.52
23	17.5	23+0	0.90	37	29.9	37+0	1.57
24	18.5	24+0	0.95	38	30.6	38+0	1.62
25	19.5	25+0	1.00	39	31.3	39+0	1.67
26	20.5	26+0	1.05	40	31.9	40+0	1.71
27	21.4	27+0	1.10	41	32.5	41+0	1.76
28	22.4	28+0	1.14	42	33.1	42+0	1.81
29	23.3	29+0	1.19				

Table 3-108: JSUM2009, AC, Jpn J Med Ultrasonics Vol. 36 No. 5 (2009)

Unit: AC (cm); Age (w+d); SD (cm)							
Age	AC	Age	1SD	Age	AC	Age	1SD
16	10.4	16+0	0.95	30	24.2	30+0	1.62
17	11.4	17+0	1.00	31	25.1	31+0	1.67
18	12.5	18+0	1.05	32	25.9	32+0	1.71
19	13.5	19+0	1.09	33	26.8	33+0	1.76
20	14.5	20+0	1.14	34	27.6	34+0	1.81
21	15.5	21+0	1.19	35	28.4	35+0	1.86
22	16.5	22+0	1.24	36	29.2	36+0	1.90
23	17.5	23+0	1.28	37	29.9	37+0	1.95
24	18.5	24+0	1.33	38	30.6	38+0	2.00
25	19.5	25+0	1.38	39	31.3	39+0	2.05
26	20.5	26+0	1.43	40	31.9	40+0	2.09
27	21.4	27+0	1.48	41	32.5	41+0	2.14
28	22.4	28+0	1.52	42	33.1	42+0	2.19
29	23.3	29+0	1.57				

JSUM (continued)

Table 3-109: JSUM, BPD, J Med Ultrasound Vol.28 No.5 (2001)

Unit: BPD (mm); Age (w+d); SD (mm)							
Age	BPD	Age	1SD	Age	BPD	Age	1SD
10	12.6	10+0	2.29	27	67.4	27+0	3.23
11	15.9	11+0	2.34	28	70.1	28+0	3.29
12	19.3	12+0	2.40	29	72.6	29+0	3.35
13	22.7	13+0	2.45	30	75.1	30+0	3.40
14	26.1	14+0	2.51	31	77.4	31+0	3.46
15	29.5	15+0	2.57	32	79.6	32+0	3.51
16	32.9	16+0	2.62	33	81.7	33+0	3.57
17	36.3	17+0	2.68	34	83.6	34+0	3.62
18	39.6	18+0	2.73	35	85.3	35+0	3.68
19	43.0	19+0	2.79	36	86.9	36+0	3.74
20	46.2	20+0	2.84	37	88.3	37+0	3.79
21	49.5	21+0	2.90	38	89.6	38+0	3.85
22	52.6	22+0	2.96	39	90.6	39+0	3.90
23	55.7	23+0	3.01	40	91.5	40+0	3.96
24	58.8	24+0	3.07	41	92.2	41+0	4.01
25	61.7	25+0	3.12	42	92.6	42+0	4.07
26	64.6	26+0	3.18				

Table 3-110: JSUM, CRL, J Med Ultrasound Vol.28 No.5 (2001)

Unit: GA (week+day); CRL (mm)					
GA	CRL				
	5%	10%	50%	90%	95%
7W+0	5.7	6.8	10.1	16.0	17.2
7W+2	6.0	7.3	10.5	15.7	16.4
7W+4	6.5	8.1	11.3	16.0	16.6
7W+6	7.2	9.0	12.5	17.0	17.5
8W+1	8.1	10.2	14.0	18.4	19.1
8W+3	9.1	11.6	15.8	20.4	21.3
8W+5	10.3	13.1	17.8	22.7	24.0
9W+0	11.7	14.9	20.0	25.4	27.0
9W+2	13.3	16.7	22.5	28.3	30.3
9W+4	15.1	18.7	25.0	31.4	33.7
9W+6	17.1	20.9	27.6	34.6	37.3
10W+1	19.2	23.1	30.3	37.8	40.7
10W+3	21.5	25.4	33.1	41.0	44.1
10W+5	24.1	27.9	35.8	44.1	47.1
11W+0	26.7	30.4	38.4	47.0	49.8
11W+2	29.6	32.9	40.9	49.6	52.1
11W+4	32.7	35.5	43.3	51.9	53.8

JSUM (continued)

Table 3-111: JSUM, EFW, J Med Ultrasound Vol.28 No.5 (2001)

Unit: EFW (g); Age (w+d); 1SD (g)							
Age	EFW	Age	1SD	Age	EFW	Age	1SD
18	187	18+0	30.13	30	1,470	30+0	185.98
19	247	19+0	40.47	31	1,635	31+0	202.09
20	313	20+0	51.30	32	1,805	32+0	218.68
21	387	21+0	62.61	33	1,980	33+0	235.75
22	469	22+0	74.39	34	2,156	34+0	253.30
23	560	23+0	86.66	35	2,333	35+0	271.33
24	660	24+0	99.41	36	2,507	36+0	289.84
25	771	25+0	112.64	37	2,676	37+0	308.83
26	892	26+0	126.35	38	2,838	38+0	328.30
27	1,023	27+0	140.53	39	2,989	39+0	348.25
28	1,163	28+0	155.20	40	3,125	40+0	368.68
29	1,313	29+0	170.35	41	3,244	41+0	389.59

Table 3-112: JSUM, FL, J Med Ultrasound Vol.28 No.5 (2001)

Unit: FL (mm); Age (w+d); SD (mm)							
Age	FL	Age	1SD	Age	FL	Age	1SD
16	20.1	16+0	2.64	30	53.8	30+0	3.11
17	22.7	17+0	2.67	31	55.8	31+0	3.15
18	25.3	18+0	2.71	32	57.8	32+0	3.18
19	27.8	19+0	2.74	33	59.6	33+0	3.21
20	30.4	20+0	2.77	34	61.4	34+0	3.25
21	32.9	21+0	2.81	35	63.0	35+0	3.28
22	35.4	22+0	2.84	36	64.6	36+0	3.31
23	37.9	23+0	2.88	37	66.0	37+0	3.35
24	40.3	24+0	2.91	38	67.4	38+0	3.38
25	42.7	25+0	2.94	39	68.6	39+0	3.42
26	45.0	26+0	2.98	40	69.6	40+0	3.45
27	47.3	27+0	3.01	41	70.6	41+0	3.48
28	49.6	28+0	3.04	42	71.4	42+0	3.52
29	51.7	29+0	3.08				

JSUM (continued)

Table 3-113: MCA PI values with advance in gestation
JSUM, J Med Ultrasound Vol. 28 No.5 (2001)

Unit: Index											
Age	5%	10%	50%	90%	95%	Age	5%	10%	50%	90%	95%
20	1.271	1.270	1.440	1.880	1.990	31	1.446	1.515	1.933	2.436	2.489
21	1.318	1.329	1.537	1.986	2.091	32	1.425	1.493	1.915	2.420	2.468
22	1.359	1.381	1.623	2.080	2.182	33	1.397	1.464	1.887	2.394	2.435
23	1.393	1.426	1.699	2.164	2.261	34	1.363	1.427	1.849	2.356	2.390
24	1.421	1.463	1.765	2.236	2.328	35	1.324	1.383	1.800	2.308	2.335
25	1.444	1.493	1.820	2.298	2.385	36	1.277	1.331	1.741	2.248	2.268
26	1.459	1.515	1.865	2.348	2.430	37	1.225	1.272	1.671	2.178	2.191
27	1.469	1.530	1.899	2.388	2.465	38	1.167	1.205	1.591	2.096	2.102
28	1.473	1.537	1.923	2.416	2.488	39	1.102	1.131	1.501	2.004	2.001
29	1.470	1.537	1.937	2.434	2.499	40	1.031	1.050	1.400	1.900	1.890
30	1.461	1.530	1.940	2.440	2.500	41	0.954	0.961	1.289	1.786	1.767

Table 3-114: MCA RI values with advance in gestation
JSUM, J Med Ultrasound Vol. 28 No.5 (2001)

Unit: Index											
Age	5%	10%	50%	90%	95%	Age	5%	10%	50%	90%	95%
20	0.717	0.718	0.775	0.842	0.871	31	0.769	0.789	0.865	0.922	0.928
21	0.731	0.735	0.793	0.857	0.883	32	0.762	0.783	0.862	0.920	0.925
22	0.742	0.749	0.808	0.871	0.894	33	0.755	0.775	0.857	0.916	0.920
23	0.753	0.761	0.821	0.883	0.903	34	0.745	0.766	0.851	0.911	0.914
24	0.761	0.772	0.833	0.894	0.911	35	0.733	0.754	0.843	0.904	0.907
25	0.767	0.780	0.843	0.903	0.918	36	0.720	0.740	0.833	0.895	0.898
26	0.772	0.787	0.851	0.910	0.923	37	0.705	0.725	0.821	0.885	0.888
27	0.775	0.791	0.857	0.916	0.927	38	0.688	0.707	0.808	0.873	0.876
28	0.776	0.793	0.862	0.920	0.929	39	0.669	0.688	0.793	0.859	0.863
29	0.775	0.794	0.865	0.922	0.930	40	0.649	0.666	0.775	0.844	0.849
30	0.773	0.792	0.865	0.923	0.930	41	0.627	0.643	0.757	0.827	0.833

JSUM (continued)

Table 3-115: UMA PI values with advance in gestation
JSUM, J Med Ultrasound Vol. 28 No.5 (2001)

Unit: Index											
Age	5%	10%	50%	90%	95%	Age	5%	10%	50%	90%	95%
20	1.118	1.144	1.390	1.620	1.688	31	0.766	0.821	0.986	1.161	1.285
21	1.075	1.106	1.340	1.565	1.641	32	0.747	0.802	0.965	1.135	1.261
22	1.034	1.069	1.293	1.513	1.597	33	0.731	0.785	0.947	1.112	1.238
23	0.996	1.034	1.249	1.464	1.554	34	0.716	0.770	0.931	1.091	1.218
24	0.959	1.001	1.207	1.417	1.514	35	0.704	0.757	0.918	1.073	1.199
25	0.925	0.970	1.168	1.373	1.475	36	0.694	0.746	0.907	1.057	1.182
26	0.893	0.941	1.131	1.331	1.438	37	0.686	0.736	0.899	1.044	1.168
27	0.863	0.913	1.097	1.292	1.404	38	0.681	0.728	0.893	1.033	1.155
28	0.836	0.887	1.065	1.255	1.371	39	0.677	0.722	0.890	1.025	1.145
29	0.810	0.863	1.036	1.221	1.341	40	0.676	0.718	0.890	1.020	1.136
30	0.787	0.841	1.010	1.190	1.312	41	0.677	0.716	0.892	1.017	1.129

Table 3-116: UMA RI values with advance in gestation
JSUM, J Med Ultrasound Vol. 28 No.5 (2001)

Unit: Index											
Age	5%	10%	50%	90%	95%	Age	5%	10%	50%	90%	95%
20	0.698	0.722	0.778	0.820	0.846	31	0.535	0.589	0.648	0.700	0.746
21	0.680	0.707	0.763	0.808	0.836	32	0.524	0.580	0.640	0.690	0.738
22	0.663	0.692	0.749	0.796	0.826	33	0.513	0.573	0.632	0.681	0.730
23	0.646	0.679	0.735	0.785	0.816	34	0.503	0.565	0.625	0.672	0.723
24	0.630	0.665	0.722	0.774	0.807	35	0.494	0.559	0.619	0.663	0.716
25	0.615	0.653	0.710	0.763	0.798	36	0.485	0.552	0.613	0.654	0.708
26	0.600	0.640	0.698	0.752	0.788	37	0.477	0.547	0.608	0.645	0.702
27	0.586	0.629	0.687	0.741	0.780	38	0.469	0.542	0.603	0.636	0.695
28	0.572	0.618	0.676	0.730	0.771	39	0.462	0.538	0.599	0.628	0.688
29	0.559	0.608	0.666	0.720	0.762	40	0.456	0.534	0.596	0.620	0.682
30	0.547	0.598	0.657	0.710	0.754	41	0.450	0.531	0.593	0.612	0.676

Kramer

Table 3-117: EFW: Kramer et al. (male) DOI: 10.1542/peds.108.2.e35

weeks	Percentile in grams			weeks	Percentile in grams		
	10	50	90		10	50	90
22	401	490	587	33	1648	2127	2580
23	475	589	714	34	1866	2360	2851
24	547	690	844	35	2091	2600	3132
25	617	795	981	36	2321	2845	3411
26	686	908	1125	37	2552	3080	3665
27	763	1033	1278	38	2766	3290	3877
28	853	1173	1445	39	2942	3465	4049
29	964	1332	1629	40	3079	3613	4200
30	1099	1507	1837	41	3179	3733	4328
31	1259	1698	2069	42	3233	3815	4433
32	1444	1906	2319	43	3249	3864	4528
NOTE: Kramer uses Hadlock's EFW formula and then may calculate his EFW if you have set the preset to use Kramer.							

Table 3-118: EFW: Kramer et al. Kramer (female) DOI: 10.1542/peds.108.2.e35

weeks	Percentile in grams			weeks	Percentile in grams		
	10	50	90		10	50	90
22	385	466	552	33	1548	2035	2494
23	450	557	669	34	1768	2266	2761
24	513	651	790	35	1998	2506	3037
25	578	751	918	36	2227	2744	3307
26	645	858	1060	37	2452	2968	3543
27	717	976	1218	38	2658	3169	3738
28	802	1109	1390	39	2825	3334	3895
29	903	1259	1578	40	2955	3470	4034
30	1022	1427	1783	41	3051	3576	4154
31	1168	1613	2004	42	3114	3655	4251
32	1346	1817	2242	43	3159	3717	4333
NOTE: Kramer uses Hadlock's EFW formula and then may calculate his EFW if you have set the preset to use Kramer.							

Kessler

Table 3-119: Ductus Venosus Pulsatility Index (DV PI) Kessler (Fetal Growth)

weeks	Index			weeks	Index		
	5%	50%	95%		5%	50%	95%
21.00	0.32	0.57	0.83	31.00	0.28	0.53	0.79
22.00	0.32	0.57	0.83	32.00	0.28	0.53	0.78
23.00	0.32	0.57	0.83	33.00	0.27	0.52	0.77
24.00	0.32	0.57	0.83	34.00	0.26	0.51	0.76
25.00	0.32	0.57	0.83	35.00	0.25	0.50	0.75
26.00	0.31	0.57	0.82	36.00	0.24	0.49	0.74
27.00	0.31	0.56	0.82	37.00	0.23	0.48	0.73
28.00	0.31	0.56	0.81	38.00	0.22	0.46	0.72
29.00	0.30	0.55	0.81	39.00	0.21	0.45	0.71
30.00	0.29	0.54	0.80				

Reference: Kessler, J., Rasmussen, S., Hnson, M., & Kiserud, T. Longitudinal reference ranges for ductus venous flow velocities and waveform indices. Ultrasound Obstet Gynecol, 2006. 28:890-898

Kurmanavicius

Table 3-120: UmbArt RI (Umbilical artery RI) Kurmanavicius

weeks	Index			weeks	Index		
	5%	Mean	95%		5%	Mean	95%
24.00	0.6152	0.7168	0.8276	34.00	0.5082	0.6188	0.7416
25.00	0.6045	0.707	0.819	35.00	0.4975	0.609	0.733
26.00	0.5938	0.6972	0.8104	36.00	0.4868	0.5992	0.7244
27.00	0.5831	0.6874	0.8018	37.00	0.4761	0.5894	0.7158
28.00	0.5724	0.6776	0.7932	38.00	0.4654	0.5796	0.7072
29.00	0.5617	0.6678	0.7846	39.00	0.4547	0.5698	0.6986
30.00	0.551	0.658	0.776	40.00	0.444	0.56	0.69
31.00	0.5403	0.6482	0.7674	41.00	0.4333	0.5502	0.6814
32.00	0.5296	0.6384	0.7588	42.00	0.4226	0.5404	0.6728
33.00	0.5189	0.6286	0.7502				

Table values are calculated with the following equations:

$$\text{UmbArt RI} = 0.952 - 0.0098 * \text{GA}$$

5%:

$$\text{UmbArt RI} = 0.872 - 0.0107 * \text{GA}$$

95%:

$$\text{UmbArt RI} = 1.034 - 0.0086 * \text{GA}$$

Reference	Kurmanavicius J, Florio I, Wisser J, Hebisch G, Zimmermann R, Müller R, Huch R, Huch A. Reference resistance indices of the umbilical, fetal middle cerebral and uterine arteries at 24-42 weeks of gestation. Ultrasound Obstet. Gynecol. 1997; 10: 112-120
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Kurtz

Table 3-121: BPD: Kurtz (Fetal Age) Journal of Clinical Ultrasound, 8: 319-326, 1980

Unit: BPD (mm); Age (Days); SD (mm)											
BPD	Age	SD	BPD	Age	SD	BPD	Age	SD	BPD	Age	SD
<21	n/a	—	40	125	4	60	168	5	80	222	5
21	84	4	41	127	4	61	170	5	81	225	5
22	87	4	42	129	4	62	173	5	82	229	5
23	91	4	43	131	4	63	175	5	83	232	5
24	93	4	44	133	4	64	178	5	84	235	5
25	95	4	45	135	4	65	181	5	85	238	5
26	97	4	46	137	4	66	183	5	86	241	5
27	99	4	47	139	4	67	186	5	87	244	5
28	101	4	48	141	4	68	188	5	88	248	5
29	103	4	49	143	4	69	191	5	89	252	5
30	105	4	50	145	4	70	194	5	90	257	5
31	107	4	51	147	4	71	196	5	91	262	5
32	109	4	52	149	4	72	199	5	92	267	5
33	111	4	53	151	4	73	201	5	93	272	5
34	113	4	54	153	4	74	204	5	94	276	5
35	115	4	55	155	5	75	207	5	95	280	5
36	117	4	56	157	5	76	210	5	96	284	5
37	119	4	57	160	5	77	213	5	97	288	5
38	121	4	58	162	5	78	216	5	98	293	5
39	123	4	59	165	5	79	219	5	>98	n/a	—

Mari

Table 3-122: MCA PS (Middle Cerebral Vmax.sys) Mari (Fetal Growth)

weeks	centimeters per sec			weeks	centimeters per sec		
	1.29 MoM	1.50 MoM	1.55 MoM		1.29 MoM	1.50 MoM	1.55 MoM
18.00	29.90	34.80	36.00	30.00	52.20	60.70	62.80
20.00	32.80	38.20	39.50	32.00	57.30	66.60	68.90
22.00	36.00	41.90	43.30	34.00	62.90	73.10	75.60
24.00	39.50	46.00	47.50	36.00	69.00	80.20	82.90
26.00	43.30	50.40	52.10	38.00	75.70	88.00	91.00
28.00	47.60	55.40	57.20	40.00	83.00	96.60	99.80

Reference

Mari G et al. Noninvasive diagnosis by Doppler ultrasonography of fetal anemia due to maternal red-cell alloimmunization. Collaborative Group for Doppler Assessment of the Blood Velocity in Anemic Fetuses. N Engl J Med 2000; 342: 9-14

Mayden

Table 3-123: IOD: Mayden (Fetal Age) Am J Obstet Gynecol 144:289, 1982

Unit: Meas (mm); Mean (Weeks)							
Meas	Mean	Meas	Mean	Meas	Mean	Meas	Mean
5	11.6	11	17.9	16	24.3	19	32.5
5	11.6	12	18.4	16	24.7	19	33.0
6	12.1	12	18.9	16	25.2	19	33.5
6	12.6	12	19.4	16	25.2	19	34.0
6	12.6	13	19.4	17	25.7	19	34.4
7	13.1	13	19.9	17	26.2	19	35.0
7	13.6	13	20.4	17	26.2	19	35.4
7	13.6	13	20.4	17	26.7	19	35.9
8	14.1	14	20.9	17	27.2	19	36.4
8	14.6	14	21.3	17	27.6	19	36.9
8	14.6	14	21.3	17	28.1	19	37.3
9	15.0	14	21.8	18	28.6	19	37.8
9	15.5	14	22.3	18	29.1	19	38.3
9	15.5	15	22.3	18	29.6	19	38.3
10	16.0	15	22.8	18	30.0	19	39.3
10	16.5	15	23.3	18	30.6	19	39.8
10	16.5	15	23.3	18	31.0		
10	17.0	15	23.8	18	31.5		
11	17.5	16	24.3	18	32.0		

Table 3-124: OOD: Mayden (Fetal Age) Am J Obstet Gynecol 144:289, 1982

Unit: Meas (mm); Mean (Weeks)							
Meas	Mean	Meas	Mean	Meas	Mean	Meas	Mean
13	11.6	28	17.9	42	24.3	52	32.5
14	11.6	30	18.4	43	24.7	53	33.0
15	12.1	31	18.9	43	25.2	54	33.5
16	12.6	32	19.4	44	25.2	54	34.0
17	12.6	32	19.4	44	25.7	54	34.4
17	13.1	33	19.9	45	26.2	55	35.0
18	13.6	34	20.4	45	26.2	55	35.4
19	13.6	34	20.4	46	26.7	56	35.9
20	14.1	35	20.9	46	27.2	56	36.4
21	14.6	36	21.3	47	27.6	57	36.9
21	14.6	36	21.3	47	28.1	57	37.3
22	15.0	37	21.8	48	28.6	58	37.8
23	15.5	38	22.3	48	29.1	58	38.3
24	15.5	38	22.3	49	29.6	58	38.3
25	16.0	39	22.8	50	30.0	59	39.3
25	16.5	40	23.3	50	30.6	59	39.8
26	16.5	40	23.3	51	31.0		
27	17.0	41	23.8	51	31.5		
27	17.5	41	24.3	52	32.0		

Mercer

Table 3-125: Ft: Mercer (Fetal Age) Am J Obstet Gynecol, 156: 350-355, 1987

Unit: Meas (mm); Min/Mean/Max (Weeks); Table/Graph Range: 2SD							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<10	n/a	n/a	n/a	50	24.3	26.4	28.4
10	11.5	12.5	13.5	52	24.9	27.1	29.3
12	12.1	13.1	14.2	54	25.7	27.9	30.1
14	12.7	13.8	14.9	56	26.4	28.4	30.9
16	13.3	14.4	15.5	58	27.1	29.4	31.8
18	13.9	15.1	16.3	60	27.8	30.2	32.6
20	14.5	15.7	17.0	62	28.5	31.0	33.5
22	15.1	16.4	17.7	64	29.3	31.8	34.3
24	15.7	17.1	18.4	66	30.0	32.6	35.2
26	16.3	17.7	19.1	68	30.7	33.4	36.1
28	16.9	18.4	19.9	70	31.5	34.2	36.9
30	17.6	19.1	20.6	72	32.2	35.0	37.8
32	18.2	19.8	21.4	74	33.0	35.9	38.7
34	18.9	20.5	22.1	76	33.8	36.8	39.6
36	19.5	21.2	22.9	78	34.5	37.5	40.5
38	20.2	21.9	23.7	80	35.3	38.4	41.4
40	20.8	22.7	24.5	82	36.1	39.2	42.4
42	21.5	23.4	25.2	84	36.9	40.1	43.3
44	22.2	24.1	26.0	86	37.7	41.0	44.2
46	22.9	24.9	26.8	>86	n/a	n/a	n/a
48	23.6	25.6	27.6				

Merz

Table 3-126: AC: Merz (Fetal Age)
Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: Meas (mm); Min/Mean/Max (Weeks/Days); Table/Graph Range: 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<56	n/a	n/a	n/a	150	19w4d	21w1d	22w4d
56	10w6d	12w1d	13w2d	152	19w5d	21w1d	22w6d
58	11w1d	12w2d	13w4d	154	19w6d	21w3d	23w0d
60	11w2d	12w4d	13w5d	156	20w1d	21w4d	23w1d
62	11w4d	12w5d	13w6d	158	20w1d	21w6d	23w3d
64	11w5d	12w6d	14w1d	160	20w3d	22w0d	23w4d
66	11w6d	13w1d	14w2d	162	20w4d	22w1d	23w6d
68	12w0d	13w2d	14w4d	164	20w6d	22w3d	24w0d
70	12w1d	13w4d	14w5d	166	21w0d	22w4d	24w1d
72	12w3d	13w4d	14w6d	168	21w1d	22w6d	24w3d
74	12w4d	13w6d	15w1d	170	21w2d	23w0d	24w4d
76	12w6d	14w0d	15w2d	172	21w4d	23w1d	24w6d
78	12w6d	14w1d	15w4d	174	21w5d	23w2d	25w0d
80	13w1d	14w3d	15w5d	176	21w6d	23w4d	25w1d
82	13w2d	14w4d	15w6d	178	22w1d	23w5d	25w3d
84	13w4d	14w6d	16w1d	180	22w1d	23w6d	25w4d
86	13w5d	15w0d	16w2d	182	22w3d	24w1d	25w6d
88	13w6d	15w1d	16w4d	184	22w4d	24w2d	26w0d
90	14w0d	15w3d	16w5d	186	22w6d	24w4d	26w1d
92	14w1d	15w4d	16w6d	188	23w0d	24w5d	26w3d
94	14w3d	15w5d	17w1d	190	23w1d	24w6d	26w4d
96	14w4d	15w6d	17w2d	192	23w2d	25w0d	26w6d
98	14w6d	16w1d	17w4d	194	23w4d	25w1d	27w0d
100	14w6d	16w2d	17w5d	196	23w5d	25w3d	27w1d
102	15w1d	16w4d	17w6d	198	23w6d	25w4d	27w3d
104	15w2d	16w5d	18w1d	200	24w1d	25w6d	27w4d
106	15w4d	16w6d	18w2d	202	24w2d	26w0d	27w6d
108	15w5d	17w1d	18w3d	204	24w3d	26w1d	27w6d
110	15w6d	17w2d	18w4d	206	24w4d	26w3d	28w1d
112	16w0d	17w3d	18w6d	208	24w6d	26w4d	28w2d
114	16w1d	17w4d	19w0d	210	25w0d	26w6d	28w4d
116	16w3d	17w6d	19w1d	212	25w1d	27w0d	28w5d
118	16w4d	18w0d	19w3d	214	25w2d	27w1d	28w6d
120	16w6d	18w1d	19w4d	216	25w4d	27w2d	29w1d
122	17w0d	18w3d	19w6d	218	25w5d	27w4d	29w2d
124	17w1d	18w4d	20w0d	220	25w6d	27w5d	29w4d
126	17w2d	18w6d	20w1d	222	26w1d	27w6d	29w5d
128	17w4d	19w0d	20w3d	224	26w2d	28w1d	29w6d
130	17w5d	19w1d	20w4d	226	26w3d	28w2d	30w1d
132	17w6d	19w2d	20w6d	228	26w4d	28w4d	30w2d
134	18w0d	19w4d	21w0d	230	26w6d	28w5d	30w4d
136	18w1d	19w5d	21w1d	232	27w0d	28w6d	30w5d
138	18w3d	19w6d	21w3d	234	27w1d	29w0d	30w6d
140	18w4d	20w1d	21w4d	236	27w3d	29w1d	31w1d
142	18w6d	20w2d	21w6d	238	27w4d	29w3d	31w2d
144	19w0d	20w4d	22w0d	240	27w5d	29w4d	31w4d
146	19w1d	20w5d	22w1d	242	27w6d	29w6d	31w5d
148	19w2d	20w6d	22w3d	244	28w1d	30w0d	31w6d

Table 3-126: AC: Merz (Fetal Age) (Continued)
Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: Meas (mm); Min/Mean/Max (Weeks/Days); Table/Graph Range: 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
246	28w2d	30w1d	32w1d	300	33w1d	35w2d	37w3d
248	28w3d	30w3d	32w2d	302	33w3d	35w4d	37w4d
250	28w4d	30w4d	32w4d	304	33w4d	35w5d	37w6d
252	28w6d	30w6d	32w5d	306	33w5d	35w6d	38w0d
254	29w0d	30w6d	32w6d	308	33w6d	36w1d	38w1d
256	29w1d	31w1d	33w1d	310	34w1d	36w2d	38w3d
258	29w3d	31w2d	33w2d	312	34w2d	36w4d	38w4d
260	29w4d	31w4d	33w4d	314	34w4d	36w4d	38w6d
262	29w5d	31w5d	33w5d	316	34w4d	36w6d	39w0d
264	29w6d	31w6d	33w6d	318	34w6d	37w0d	39w1d
266	30w1d	32w1d	34w1d	320	35w0d	37w1d	39w3d
268	30w2d	32w2d	34w2d	322	35w1d	37w3d	39w4d
270	30w4d	32w4d	34w4d	324	35w3d	37w4d	39w6d
272	30w4d	32w5d	34w5d	326	35w4d	37w6d	40w0d
274	30w6d	32w6d	34w6d	328	35w5d	38w0d	40w1d
276	31w0d	33w0d	35w1d	330	35w6d	38w1d	40w3d
278	31w1d	33w1d	35w2d	332	36w1d	38w3d	40w4d
280	31w3d	33w3d	35w4d	334	36w2d	38w4d	40w6d
282	31w4d	33w4d	35w5d	336	36w4d	38w5d	41w0d
284	31w5d	33w6d	35w6d	338	36w5d	38w6d	41w1d
286	31w6d	34w0d	36w1d	340	36w6d	39w1d	41w3d
288	32w1d	34w1d	36w2d	342	37w0d	39w2d	41w4d
290	32w2d	34w3d	36w4d	344	37w1d	39w4d	41w6d
292	32w4d	34w4d	36w5d	346	37w3d	39w5d	42w0d
294	32w4d	34w5d	36w6d	348	37w4d	39w6d	42w1d
296	32w6d	34w6d	37w1d	>348	n/a	n/a	n/a
298	33w0d	35w1d	37w1d				

Merz (continued)

Table 3-127: AC: Merz (Fetal Growth)
Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: Age (Weeks); Min/Mean/Max (mm); Table/Graph Range 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
12.5	50	62	74	27.5	202	222	242
13.0	55	67	80	28.0	207	227	247
13.5	60	73	85	28.5	212	232	252
14.0	65	78	91	29.0	217	237	257
14.5	71	83	96	29.5	221	242	263
15.0	76	89	102	30.0	226	247	268
15.5	81	94	108	30.5	231	252	273
16.0	86	100	114	31.0	235	257	278
16.5	91	105	119	31.5	240	262	283
17.0	96	111	125	32.0	244	266	288
17.5	102	116	131	32.5	249	271	293
18.0	107	122	136	33.0	253	276	298
18.5	112	127	142	33.5	258	280	303
19.0	117	132	148	34.0	262	285	308
19.5	122	138	153	34.5	266	289	313
20.0	127	143	159	35.0	270	294	317
20.5	133	149	165	35.5	275	298	322
21.0	138	154	170	36.0	279	303	327
21.5	143	159	176	36.5	283	307	331
22.0	148	165	181	37.0	287	311	336
22.5	153	170	187	37.5	290	315	340
23.0	158	175	193	38.0	294	319	344
23.5	163	181	198	38.5	298	323	348
24.0	168	186	204	39.0	301	327	352
24.5	173	191	209	39.5	305	331	356
25.0	178	196	215	40.0	308	334	360
25.5	183	202	220	40.5	311	338	364
26.0	188	207	226	41.0	314	341	367
26.5	193	212	231	41.5	317	343	370
27.0	198	217	236				

Merz (continued)

Table 3-128: BPD: Merz (Fetal Age)
 Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: BPD (mm); % Age (Weeks/Days)							
BPD	5%	50%	95%	BPD	5%	50%	95%
<21	n/a	n/a	n/a	62	22w1d	24w1d	26w1d
21	10w5d	12w1d	13w5d	63	22w4d	24w4d	26w4d
22	10w6d	12w3d	13w6d	64	22w6d	24w6d	26w6d
23	11w1d	12w5d	14w1d	65	23w1d	25w1d	27w1d
24	11w4d	13w0d	14w4d	66	23w4d	25w4d	27w4d
25	11w5d	13w1d	14w5d	67	23w6d	25w6d	27w6d
26	12w0d	13w4d	15w0d	68	24w1d	26w1d	28w2d
27	12w1d	13w6d	15w3d	69	24w3d	26w4d	28w4d
28	12w4d	14w1d	15w5d	70	24w5d	26w6d	28w6d
29	12w5d	14w2d	15w6d	71	25w1d	27w1d	29w2d
30	13w0d	14w4d	16w1d	72	25w4d	27w4d	29w5d
31	13w2d	14w6d	16w4d	73	25w6d	27w6d	30w0d
32	13w4d	15w1d	16w6d	74	26w1d	28w2d	30w3d
33	13w6d	15w3d	17w0d	75	26w4d	28w4d	30w5d
34	14w0d	15w5d	17w3d	76	26w6d	29w0d	31w1d
35	14w2d	16w0d	17w5d	77	27w1d	29w3d	31w4d
36	14w4d	16w2d	18w0d	78	27w4d	29w6d	32w0d
37	14w6d	16w4d	18w1d	79	27w6d	30w1d	32w2d
38	15w1d	16w6d	18w4d	80	28w2d	30w4d	32w5d
39	15w3d	17w1d	18w6d	81	28w5d	30w6d	33w1d
40	15w5d	17w3d	19w1d	82	29w1d	31w2d	33w4d
41	15w6d	17w5d	19w4d	83	29w4d	31w5d	33w6d
42	16w1d	18w0d	19w6d	84	29w6d	32w1d	34w2d
43	16w4d	18w2d	20w1d	85	30w2d	32w4d	34w6d
44	16w6d	18w4d	20w3d	86	30w5d	32w6d	35w1d
45	17w1d	18w6d	20w5d	87	31w0d	33w2d	35w4d
46	17w3d	19w1d	21w0d	88	31w4d	33w6d	36w1d
47	17w4d	19w3d	21w1d	89	31w6d	34w1d	36w4d
48	17w6d	19w5d	21w4d	90	32w2d	34w4d	36w6d
49	18w1d	20w0d	21w6d	91	32w6d	35w1d	37w3d
50	18w4d	20w3d	22w1d	92	33w1d	35w4d	37w6d
51	18w6d	20w5d	22w4d	93	33w4d	35w6d	38w1d
52	19w1d	21w0d	22w6d	94	34w0d	36w3d	38w6d
53	19w3d	21w2d	23w1d	95	34w4d	36w6d	39w2d
54	19w5d	21w4d	23w4d	96	34w6d	37w2d	39w5d
55	20w0d	21w6d	23w6d	97	35w3d	37w6d	40w1d
56	20w2d	22w1d	24w1d	98	35w6d	38w2d	40w5d
57	20w4d	22w4d	24w3d	99	36w3d	38w6d	41w1d
58	20w6d	22w6d	24w5d	100	36w6d	39w2d	41w6d
59	21w1d	23w1d	25w1d	101	37w2d	39w6d	42w2d
60	21w4d	23w4d	25w4d	102	37w6d	40w2d	42w6d
61	21w6d	23w6d	25w6d	>102	n/a	n/a	n/a

Merz (continued)

Table 3-129: BPD: Merz (Fetal Growth)
Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: Age (Weeks); Min/Mean/Max (mm); Table/Graph Range 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
12.5	21	25	29	27.5	68	73	78
13.0	23	26	30	28.0	69	74	79
13.5	24	28	31	28.5	71	76	81
14.0	25	29	33	29.0	72	77	82
14.5	27	31	35	29.5	73	78	84
15.0	28	32	36	30.0	74	80	85
15.5	30	34	38	30.5	76	81	86
16.0	31	35	39	31.0	77	82	88
16.5	33	37	41	31.5	78	83	89
17.0	35	39	43	32.0	79	85	90
17.5	36	40	45	32.5	80	86	91
18.0	38	42	46	33.0	81	87	92
18.5	40	44	48	33.5	82	88	93
19.0	41	46	50	34.0	83	89	95
19.5	43	47	52	34.5	84	90	96
20.0	45	49	53	35.0	85	91	97
20.5	46	51	55	35.5	86	92	97
21.0	48	52	57	36.0	87	92	98
21.5	49	54	59	36.5	87	93	99
22.0	51	56	60	37.0	88	94	100
22.5	53	57	62	37.5	89	95	101
23.0	54	59	64	38.0	89	95	101
23.5	56	61	65	38.5	90	96	102
24.0	57	62	67	39.0	90	96	103
24.5	59	64	69	39.5	91	97	103
25.0	61	65	70	40.0	91	97	103
25.5	62	67	72	40.5	91	97	104
26.0	64	68	73	41.0	91	98	104
26.5	65	70	75	41.5	92	98	104
27.0	66	71	77				

Merz (continued)

Table 3-130: FL: Merz (Fetal Age)
Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: FL (mm); % Age (Weeks/Days); Table/Graph Range 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<10	n/a	n/a	n/a	46	23w4d	25w3d	27w1d
10	11w1d	12w2d	13w4d	47	24w0d	25w6d	27w4d
11	11w4d	12w5d	13w6d	48	24w3d	26w1d	28w0d
12	11w6d	13w0d	14w1d	49	24w5d	26w4d	28w2d
13	12w1d	13w2d	14w4d	50	25w1d	26w6d	28w5d
14	12w3d	13w5d	15w0d	51	25w4d	27w2d	29w1d
15	12w5d	14w0d	15w2d	52	25w6d	27w5d	29w4d
16	13w1d	14w3d	15w5d	53	26w1d	28w1d	30w0d
17	13w3d	14w5d	16w0d	54	26w4d	28w4d	30w4d
18	13w6d	15w1d	16w3d	55	27w0d	29w0d	31w0d
19	14w1d	15w3d	16w5d	56	27w3d	29w3d	31w3d
20	14w4d	15w6d	17w1d	57	27w6d	29w6d	31w6d
21	14w6d	16w1d	17w3d	58	28w1d	30w1d	32w1d
22	15w1d	16w4d	17w6d	59	28w4d	30w4d	32w4d
23	15w3d	16w6d	18w1d	60	29w0d	31w0d	33w0d
24	15w6d	17w1d	18w4d	61	29w4d	31w4d	33w4d
25	16w1d	17w4d	19w1d	62	29w6d	31w6d	33w6d
26	16w3d	17w6d	19w3d	63	30w2d	32w2d	34w2d
27	16w6d	18w2d	19w6d	64	30w6d	32w6d	34w6d
28	17w1d	18w4d	20w1d	65	31w1d	33w1d	35w1d
29	17w4d	19w0d	20w4d	66	31w4d	33w4d	35w4d
30	17w6d	19w3d	20w6d	67	32w0d	34w1d	36w1d
31	18w1d	19w5d	21w1d	68	32w3d	34w4d	36w4d
32	18w4d	20w1d	21w4d	69	32w6d	35w0d	37w1d
33	18w6d	20w4d	22w1d	70	33w2d	35w3d	37w4d
34	19w1d	20w6d	22w3d	71	33w6d	35w6d	38w0d
35	19w4d	21w1d	22w6d	72	34w1d	36w2d	38w3d
36	20w0d	21w4d	23w1d	73	34w4d	36w6d	39w0d
37	20w2d	21w6d	23w4d	74	35w1d	37w2d	39w4d
38	20w5d	22w2d	23w6d	75	35w4d	37w5d	39w6d
39	21w0d	22w5d	24w3d	76	36w0d	38w1d	40w3d
40	21w3d	23w1d	24w6d	77	36w4d	38w5d	40w6d
41	21w5d	23w3d	25w1d	78	37w0d	39w1d	41w3d
42	22w1d	23w6d	25w4d	79	37w3d	39w4d	41w6d
43	22w4d	24w1d	25w6d	80	37w6d	40w1d	42w2d
44	22w6d	24w4d	26w3d	>80	n/a	n/a	n/a
45	23w1d	25w0d	26w6d				

Merz (continued)

Table 3-131: FL: Merz (Fetal Growth)
Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: Age (Weeks); Min/Mean/Max (mm); Table/Graph Range 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
12.5	6	9	12	27.5	48	52	57
13.0	8	11	14	28.0	49	53	58
13.5	10	13	16	28.5	50	55	59
14.0	11	15	18	29.0	51	56	60
14.5	13	16	20	29.5	52	57	61
15.0	15	18	21	30.0	53	58	62
15.5	16	20	23	30.5	54	59	63
16.0	18	21	25	31.0	55	60	64
16.5	19	23	26	31.5	56	61	66
17.0	21	24	28	32.0	57	62	67
17.5	22	26	29	32.5	58	63	68
18.0	24	27	31	33.0	59	64	69
18.5	25	29	32	33.5	60	65	70
19.0	27	30	34	34.0	61	66	71
19.5	28	32	35	34.5	62	67	72
20.0	29	33	37	35.0	63	68	73
20.5	31	35	38	35.5	64	69	74
21.0	32	36	40	36.0	65	70	74
21.5	33	37	41	36.5	66	70	75
22.0	35	39	42	37.0	66	71	76
22.5	36	40	44	37.5	67	72	77
23.0	37	41	45	38.0	68	73	78
23.5	39	43	46	38.5	69	74	79
24.0	40	44	48	39.0	69	74	79
24.5	41	45	49	39.5	70	75	80
25.0	42	46	50	40.0	71	76	81
25.5	43	48	52	40.5	71	76	81
26.0	45	49	53	41.0	72	77	82
26.5	46	50	54	41.5	72	77	83
27.0	47	51	55				

Merz (continued)

Table 3-132: HC: Merz (Fetal Age)
Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: HC (mm); % Age (Weeks/Days); Table/Graph Range 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
<72	n/a	n/a	n/a	160	16w6d	18w3d	19w6d
72	11w0d	12w1d	13w1d	162	17w0d	18w4d	20w0d
74	11w1d	12w2d	13w4d	164	17w1d	18w5d	20w1d
76	11w1d	12w3d	13w4d	166	17w2d	18w6d	20w2d
78	11w2d	12w4d	13w5d	168	17w4d	19w0d	20w4d
80	11w4d	12w5d	13w6d	170	17w4d	19w1d	20w4d
82	11w4d	12w6d	14w0d	172	17w6d	19w2d	20w6d
84	11w5d	12w6d	14w1d	174	17w6d	19w3d	20w6d
86	11w6d	13w1d	14w2d	176	18w0d	19w4d	21w1d
88	12w0d	13w1d	14w3d	178	18w1d	19w6d	21w3d
90	12w1d	13w2d	14w4d	180	18w2d	19w6d	21w4d
92	12w2d	13w4d	14w5d	182	18w4d	20w1d	21w5d
94	12w3d	13w4d	14w6d	184	18w4d	20w1d	21w6d
96	12w4d	13w5d	14w6d	186	18w6d	20w3d	22w0d
98	12w5d	13w6d	15w1d	188	19w0d	20w4d	22w1d
100	12w6d	14w0d	15w1d	190	19w1d	20w5d	22w2d
102	12w6d	14w1d	15w4d	192	19w2d	20w6d	22w4d
104	13w0d	14w2d	15w4d	194	19w4d	21w1d	22w5d
106	13w1d	14w3d	15w5d	196	19w4d	21w1d	22w6d
108	13w2d	14w4d	15w6d	198	19w5d	21w3d	23w0d
110	13w3d	14w5d	16w0d	200	19w6d	21w4d	23w2d
112	13w4d	14w6d	16w1d	202	20w0d	21w5d	23w3d
114	13w5d	15w0d	16w2d	204	20w1d	21w6d	23w4d
116	13w6d	15w1d	16w3d	206	20w3d	22w1d	23w6d
118	14w0d	15w2d	16w4d	208	20w4d	22w1d	23w6d
120	14w1d	15w3d	16w5d	210	20w5d	22w3d	24w1d
122	14w1d	15w4d	17w0d	212	20w6d	22w4d	24w2d
124	14w2d	15w5d	17w1d	214	21w0d	22w5d	24w3d
126	14w3d	15w6d	17w1d	216	21w1d	22w6d	24w4d
128	14w4d	16w0d	17w3d	218	21w3d	23w1d	24w6d
130	14w5d	16w1d	17w4d	220	21w4d	23w2d	25w0d
132	14w6d	16w2d	17w5d	222	21w6d	23w4d	25w1d
134	15w0d	16w3d	17w6d	224	21w6d	23w4d	25w2d
136	15w1d	16w4d	18w0d	226	22w1d	23w6d	25w4d
138	15w2d	16w5d	18w1d	228	22w1d	24w0d	25w6d
140	15w4d	16w6d	18w2d	230	22w3d	24w1d	26w0d
142	15w4d	17w0d	18w3d	232	22w4d	24w3d	26w1d
144	15w6d	17w1d	18w4d	234	22w5d	24w4d	26w2d
146	15w6d	17w2d	18w5d	236	22w6d	24w5d	26w4d
148	16w0d	17w4d	19w0d	238	23w1d	24w6d	26w5d
150	16w1d	17w4d	19w1d	240	23w2d	25w1d	26w6d
152	16w2d	17w6d	19w2d	242	23w4d	25w2d	27w1d
154	16w3d	17w6d	19w3d	244	23w5d	25w4d	27w2d
156	16w4d	18w1d	19w4d	246	23w6d	25w5d	27w4d
158	16w5d	18w1d	19w5d	248	24w1d	25w6d	27w5d

Table 3-132: HC: Merz (Fetal Age) (Continued)
 Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: HC (mm); % Age (Weeks/Days); Table/Graph Range 5%:95%							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
250	24w1d	26w0d	27w6d	310	30w4d	32w4d	34w4d
252	24w3d	26w1d	28w0d	312	30w6d	32w6d	34w6d
254	24w4d	26w3d	28w1d	314	31w1d	33w1d	35w1d
256	24w6d	26w4d	28w3d	316	31w3d	33w3d	35w3d
258	25w0d	26w6d	28w4d	318	31w4d	33w4d	35w4d
260	25w1d	27w0d	28w6d	320	31w6d	33w6d	36w0d
262	25w3d	27w1d	29w0d	322	32w0d	34w1d	36w1d
264	25w4d	27w3d	29w1d	324	32w2d	34w3d	36w4d
266	25w6d	27w4d	29w3d	326	32w4d	34w5d	36w6d
268	26w0d	27w6d	29w4d	328	32w6d	34w6d	37w0d
270	26w1d	28w1d	30w0d	330	33w1d	35w1d	37w2d
272	26w3d	28w2d	30w1d	332	33w2d	35w4d	37w5d
274	26w4d	28w4d	30w3d	334	33w4d	35w6d	38w0d
276	26w6d	28w5d	30w4d	336	33w6d	36w1d	38w2d
278	27w0d	28w6d	30w6d	338	34w1d	36w3d	38w4d
280	27w1d	29w1d	31w0d	340	34w3d	36w4d	38w6d
282	27w3d	29w2d	31w1d	342	34w5d	36w6d	39w1d
284	27w5d	29w4d	31w4d	344	35w0d	37w1d	39w3d
286	27w6d	29w6d	31w5d	346	35w2d	37w4d	39w5d
288	28w1d	30w0d	31w6d	348	35w4d	37w6d	40w1d
290	28w2d	30w1d	32w1d	350	35w6d	38w1d	40w4d
292	28w4d	30w4d	32w3d	352	36w1d	38w4d	40w6d
294	28w6d	30w5d	32w4d	354	36w4d	38w6d	41w1d
296	29w0d	30w6d	32w6d	356	36w6d	39w1d	41w3d
298	29w1d	31w1d	33w0d	358	37w1d	39w4d	41w6d
300	29w3d	31w3d	33w3d	360	37w4d	39w6d	42w1d
302	29w4d	31w4d	33w4d	362	37w6d	40w1d	42w3d
304	29w6d	31w6d	33w6d	364	38w1d	40w4d	42w6d
306	30w1d	32w1d	34w1d	>364	n/a	n/a	n/a
308	30w2d	32w2d	34w2d				

Merz (continued)

Table 3-133: HC: Merz (Fetal Growth)
Habilitationsschrift, Mainz University Women's Hospital, 1988

Unit: Age (Weeks); Min/Mean/Max (mm); Table/Graph Range 5%:95%							
Age	Min	Mean	Max	Age	Min	Mean	Max
12.5	80	92	104	27.5	253	268	284
13.0	84	96	108	28.0	258	273	289
13.5	89	101	113	28.5	263	278	294
14.0	94	106	119	29.0	268	283	299
14.5	100	112	124	29.5	272	288	303
15.0	105	118	130	30.0	277	292	308
15.5	111	124	137	30.5	281	297	313
16.0	117	130	143	31.0	285	301	317
16.5	123	136	149	31.5	289	305	321
17.0	130	143	156	32.0	293	309	325
17.5	136	149	162	32.5	297	313	329
18.0	142	155	168	33.0	300	316	333
18.5	148	162	175	33.5	303	320	336
19.0	155	168	181	34.0	307	323	340
19.5	161	174	188	34.5	310	326	343
20.0	167	181	194	35.0	313	329	346
20.5	173	187	201	35.5	315	332	349
21.0	180	193	207	36.0	318	335	352
21.5	186	200	214	36.5	320	337	354
22.0	192	206	220	37.0	322	339	356
22.5	198	212	226	37.5	324	341	359
23.0	204	218	232	38.0	326	343	361
23.5	210	224	238	38.5	327	345	362
24.0	216	230	244	39.0	329	346	364
24.5	221	236	250	39.5	330	348	365
25.0	227	241	256	40.0	331	349	366
25.5	232	247	262	40.5	332	349	367
26.0	238	253	267	41.0	332	350	368
26.5	243	258	273	41.5	332	350	369
27.0	248	263	278				

Merz (continued)

Table 3-134: UmbArt PI (Umbilical artery PI) Merz (Fetal Growth)

weeks	Index			weeks	Index		
	5%	50%	95%		5%	50%	95%
18.00	1.018	1.361	1.652	31.00	0.732	0.997	1.272
19.00	0.972	1.25	1.539	32.00	0.716	0.98	1.254
20.00	0.94	1.216	1.505	33.00	0.7	0.963	1.236
21.00	0.913	1.189	1.476	34.00	0.684	0.946	1.218
22.00	0.89	1.165	1.45	35.00	0.668	0.928	1.199
23.00	0.869	1.142	1.427	36.00	0.651	0.91	1.18
24.00	0.849	1.122	1.405	37.00	0.634	0.891	1.16
25.00	0.831	1.102	1.385	38.00	0.615	0.872	1.139
26.00	0.813	1.084	1.365	39.00	0.595	0.851	1.117
27.00	0.797	1.065	1.346	40.00	0.573	0.828	1.093
28.00	0.78	1.048	1.327	41.00	0.547	0.801	1.065
29.00	0.764	1.031	1.308	42.00	0.513	0.765	1.028
30.00	0.748	1.014	1.29				

Reference

Merz E. Ultrasound in Obstetrics and Gynecology, Vol. 1:
Obstetrics. Stuttgart, New York: Georg Thieme Verlag, 2005

Table 3-135: UmbArt RI (Umbilical artery RI) Merz (Fetal Growth)

weeks	Index			weeks	Index		
	5%	50%	95%		5%	50%	95%
18.00	0.591	0.713	0.825	31.00	0.474	0.6	0.715
19.00	0.577	0.7	0.812	32.00	0.465	0.592	0.707
20.00	0.567	0.69	0.802	33.00	0.457	0.584	0.7
21.00	0.557	0.68	0.793	34.00	0.449	0.576	0.692
22.00	0.548	0.671	0.784	35.00	0.44	0.567	0.684
23.00	0.539	0.663	0.776	36.00	0.431	0.559	0.675
24.00	0.53	0.655	0.768	37.00	0.422	0.55	0.667
25.00	0.522	0.646	0.76	38.00	0.412	0.54	0.657
26.00	0.514	0.639	0.752	39.00	0.402	0.53	0.648
27.00	0.506	0.631	0.745	40.00	0.39	0.519	0.637
28.00	0.498	0.623	0.737	41.00	0.377	0.506	0.624
29.00	0.49	0.615	0.73	42.00	0.36	0.49	0.608
30.00	0.482	0.608	0.723				

Reference

Merz E. Ultrasound in Obstetrics and Gynecology, Vol. 1:
Obstetrics. Stuttgart, New York: Georg Thieme Verlag, 2005

Merz (continued)

Table 3-136: UtArt PI (Uterine artery PI) Merz (Fetal Growth)

weeks	Index			weeks	Index		
	5%	50%	95%		5%	50%	95%
18.00	0.509	0.888	1.407	31.00	0.349	0.711	1.207
19.00	0.46	0.838	1.356	32.00	0.345	0.705	1.199
20.00	0.436	0.812	1.328	33.00	0.341	0.7	1.192
21.00	0.42	0.795	1.309	34.00	0.337	0.695	1.185
22.00	0.407	0.781	1.293	35.00	0.333	0.69	1.178
23.00	0.397	0.769	1.28	36.00	0.33	0.684	1.171
24.00	0.388	0.759	1.268	37.00	0.326	0.679	1.164
25.00	0.381	0.751	1.258	38.00	0.322	0.674	1.157
26.00	0.374	0.743	1.248	39.00	0.318	0.669	1.15
27.00	0.369	0.736	1.239	40.00	0.313	0.663	1.143
28.00	0.363	0.729	1.23	41.00	0.308	0.657	1.134
29.00	0.358	0.722	1.222	42.00	0.302	0.649	1.125
30.00	0.354	0.716	1.214				

Reference

Merz E. Ultrasound in Obstetrics and Gynecology, Vol. 1:
Obstetrics. Stuttgart, New York: Georg Thieme Verlag, 2005

Table 3-137: UtArt RI (Uterine artery RI) Merz (Fetal Growth)

Index	Index			Index	Index		
	5%	50%	95%		5%	50%	95%
18.00	0.222	0.447	0.659	31.00	0.15	0.372	0.581
19.00	0.204	0.429	0.641	32.00	0.147	0.37	0.578
20.00	0.194	0.419	0.63	33.00	0.145	0.368	0.576
21.00	0.186	0.411	0.622	34.00	0.144	0.366	0.574
22.00	0.18	0.405	0.615	35.00	0.142	0.364	0.571
23.00	0.175	0.4	0.61	36.00	0.14	0.362	0.569
24.00	0.171	0.395	0.605	37.00	0.139	0.36	0.567
25.00	0.167	0.391	0.601	38.00	0.137	0.358	0.566
26.00	0.163	0.387	0.597	39.00	0.136	0.357	0.564
27.00	0.16	0.384	0.593	40.00	0.135	0.355	0.562
28.00	0.157	0.38	0.59	41.00	0.134	0.354	0.561
29.00	0.154	0.378	0.587	42.00	0.133	0.353	0.559
30.00	0.152	0.375	0.584				

Reference

Merz E. Ultrasound in Obstetrics and Gynecology, Vol. 1:
Obstetrics. Stuttgart, New York: Georg Thieme Verlag, 2005

Moore

Table 3-138: AFI: Moore (Fetal Age)

Unit: Age (Week); Min(cm); Mean(cm); Max (cm) Table type = GP, Table/Graph Range (2.5%: 97.5%)											
Age	Min	Mean	Max	Age	Min	Mean	Max	Age	Min	Mean	Max
16	7.3	12.1	20.1	25	8.9	14.7	24.0	34	7.2	14.2	27.8
17	7.7	12.7	21.1	26	8.9	14.7	24.2	35	7.0	14.0	27.9
18	8.0	13.3	22.0	27	8.5	14.6	24.5	36	6.8	13.8	27.9
19	8.3	13.7	22.5	28	8.6	14.6	24.9	37	6.6	13.5	27.5
20	8.6	14.1	23.0	29	8.4	14.5	25.4	38	6.5	13.2	26.9
21	8.8	14.3	23.3	30	8.2	14.5	25.8	39	6.4	12.7	25.5
22	8.9	14.5	23.5	31	7.9	14.4	26.3	40	6.3	12.3	24.0
23	9.0	14.6	23.7	32	7.7	14.4	26.9	41	6.3	11.6	21.6
24	9.0	14.7	23.8	33	7.4	14.3	27.4	42	6.3	11.0	19.2

Nelson

Table 3-139: CRL: Nelson (Fetal Age) Journal of Clinical Ultrasound, 9: 67-70, 1981

Unit: CRL (mm); GA (Days)									
CRL	GA	CRL	GA	CRL	GA	CRL	GA	CRL	GA
14	59	34	71	54	83	74	95	94	107
15	60	35	72	55	84	75	96	95	108
16	61	36	73	56	85	76	97	96	109
17	61	37	73	57	85	77	97	97	109
18	62	38	74	58	86	78	98	98	110
19	62	39	74	59	86	79	98	99	110
20	63	40	75	60	87	80	99	100	111
21	64	41	76	61	88	81	100	101	112
22	64	42	76	62	88	82	100	102	112
23	65	43	77	63	89	83	101	103	113
24	65	44	77	64	89	84	101	104	113
25	66	45	78	65	90	85	102	105	114
26	67	46	79	66	91	86	103	106	115
27	67	47	79	67	91	87	103	107	115
28	68	48	80	68	92	88	104	108	116
29	68	49	80	69	92	89	104	109	116
30	69	50	81	70	93	90	105	110	117
31	70	51	82	71	94	91	106	111	118
32	70	52	82	72	94	92	106		
33	71	53	83	73	95	93	107		

Osaka

Table 3-140: BPD: Osaka (Fetal Age)
Osaka University Method 1989, 3 by Univ. Osaka

Unit: BPD (mm); Age (Days); SD (mm)											
BPD	Age	SD	BPD	Age	SD	BPD	Age	SD	BPD	Age	SD
<13	n/a	—	33	107	2.4	54	152	3.0	75	203	3.5
13	70	1.9	34	109	2.5	55	154	3.0	76	206	3.5
14	71	1.9	35	112	2.5	56	157	3.0	77	209	3.5
15	73	1.9	36	114	2.5	57	159	3.1	78	212	3.5
16	75	1.9	37	116	2.5	58	161	3.1	79	214	3.6
17	77	2.0	38	118	2.6	59	164	3.1	80	217	3.6
18	78	2.0	39	120	2.6	60	166	3.1	81	220	3.6
19	80	2.0	40	122	2.6	61	168	3.2	82	224	3.6
20	82	2.1	41	124	2.7	62	171	3.2	83	227	3.6
21	84	2.1	42	126	2.7	63	173	3.2	84	230	3.7
22	86	2.1	43	128	2.7	64	175	3.2	85	234	3.7
23	88	2.1	44	130	2.7	65	178	3.3	86	237	3.7
24	90	2.2	45	132	2.8	66	180	3.3	87	238	3.7
25	92	2.2	46	135	2.8	67	182	3.3	88	245	3.7
26	94	2.2	47	137	2.8	68	185	3.3	89	249	3.8
27	96	2.3	48	139	2.8	69	187	3.3	90	254	3.8
28	98	2.3	49	141	2.9	70	190	3.4	91	259	3.8
29	99	2.3	50	143	2.9	71	193	3.4	92	265	3.8
30	101	2.3	51	145	2.9	72	195	3.4	93	273	3.9
31	103	2.4	52	148	2.9	73	198	3.4	94	280	3.9
32	105	2.4	53	150	3.0	74	200	3.5	>94	n/a	—

Table 3-141: CRL: Osaka (Fetal Age)
Osaka University Method 1989, 3 by Univ. Osaka

Unit: CRL (mm); Age (Days); SD (mm)											
CRL	Age	SD	CRL	Age	SD	CRL	Age	SD	CRL	Age	SD
<9	n/a	—	23	65	4.0	38	75	5.5	53	84	6.9
9	50	1.7	24	66	4.1	39	76	5.7	54	85	7.0
10	52	2.0	25	66	4.1	40	76	5.7	55	85	7.0
11	53	2.2	26	67	4.3	41	77	5.8	56	86	7.2
12	55	2.5	27	68	4.5	42	77	5.8	57	86	7.2
13	56	2.6	28	69	4.6	43	78	6.0	58	87	7.3
14	57	2.8	29	69	4.6	44	79	6.1	59	87	7.3
15	58	2.9	30	70	4.8	45	79	6.1	60	88	7.5
16	59	3.1	31	71	4.9	46	80	6.3	61	89	7.6
17	60	3.2	32	71	4.9	47	80	6.3	62	89	7.6
18	61	3.4	33	72	5.1	48	81	6.4	63	90	7.8
19	62	3.5	34	73	5.2	49	82	6.6	>63	n/a	—
20	63	3.7	35	73	5.2	50	83	6.7			
21	63	3.7	36	74	5.4	51	83	6.7			
22	64	3.8	37	74	5.4	52	83	6.7			

Osaka (continued)

Table 3-142: EFW: Osaka (Fetal Age)
Osaka University Method 1989, 3 by Univ. Osaka

Unit: EFW (grams); Age (Days); SD (grams)											
EFW	Age	SD	EFW	Age	SD	EFW	Age	SD	EFW	Age	SD
<137	n/a	—	590	160	81	1420	203	171	2360	242	268
137	112	29	600	160	81	1440	204	174	2380	243	271
140	113	29	610	161	83	1460	205	176	2400	244	274
150	115	29	620	162	85	1480	206	178	2420	245	276
160	116	30	630	162	85	1500	207	181	2440	245	276
170	118	30	640	163	87	1520	208	183	2460	246	279
180	120	31	650	164	89	1540	209	185	2480	247	282
190	121	32	660	164	89	1560	210	188	2500	248	285
200	123	33	670	165	91	1580	210	188	2520	249	288
210	124	34	680	165	91	1600	211	190	2540	249	288
220	126	35	690	166	92	1620	212	192	2560	250	290
230	127	36	700	167	94	1640	213	195	2580	251	293
240	128	37	720	168	96	1660	214	197	2600	252	296
250	130	39	740	169	98	1680	215	200	2620	253	299
260	131	40	760	170	100	1700	216	202	2640	254	302
270	132	41	780	171	102	1720	216	202	2660	254	302
280	133	42	800	173	106	1740	217	204	2680	255	305
290	134	43	820	174	108	1760	218	207	2700	256	308
300	135	44	840	175	110	1780	219	209	2720	257	311
310	136	45	860	176	112	1800	220	212	2740	258	314
320	137	46	880	177	114	1820	220	212	2760	259	317
330	138	48	900	178	116	1840	221	214	2780	259	317
340	139	49	920	179	118	1860	222	217	2800	260	320
350	140	50	940	180	120	1880	223	219	2820	261	323
360	141	51	960	181	123	1900	224	222	2840	262	326
370	142	53	980	182	125	1920	224	222	2860	263	329
380	143	54	1000	183	127	1940	225	224	2880	264	332
390	144	56	1020	185	131	1960	226	227	2900	265	335
400	145	57	1040	186	133	1980	227	229	2920	266	339
410	146	58	1060	187	135	2000	228	232	2940	266	339
420	147	60	1080	188	138	2020	229	234	2960	267	342
430	148	61	1100	189	140	2040	229	234	2980	268	345
440	149	63	1120	190	142	2060	230	237	3000	269	348
450	149	63	1140	191	144	2080	231	239	3020	270	352
460	150	65	1160	192	146	2100	232	242	3040	271	355
470	151	66	1180	193	149	2120	233	244	3060	272	358
480	152	68	1200	194	151	2140	233	244	3080	273	362
490	153	69	1220	195	153	2160	234	247	3100	274	365
500	153	69	1240	195	153	2180	235	250	3120	275	369
510	154	71	1260	196	155	2200	236	252	3140	276	372
520	155	73	1280	197	158	2220	236	252	3160	277	376
530	155	73	1300	198	160	2240	237	255	3180	278	379
540	156	74	1320	199	162	2260	238	257	3200	279	383
550	157	76	1340	200	164	2280	239	260	3220	280	387
560	157	76	1360	201	167	2300	240	263	>3220	n/a	—
570	158	78	1380	202	169	2320	241	265			
580	159	80	1400	203	171	2340	241	265			

Osaka (continued)

Table 3-143: FL: Osaka (Fetal Age) Osaka University Method 1989, 3 by Univ. Osaka

Unit: FL (mm); Age (Days); SD (mm)											
FL	Age	SD	FL	Age	SD	FL	Age	SD	FL	Age	SD
<9	n/a	—	25	127	2.3	42	172	2.6	59	227	2.9
9	91	2.1	26	130	2.3	43	175	2.6	60	230	2.9
10	93	2.1	27	132	2.3	44	178	2.6	61	235	2.9
11	95	2.1	28	135	2.4	45	181	2.6	62	239	2.9
12	97	2.2	29	137	2.4	46	184	2.6	63	242	3.0
13	99	2.2	30	140	2.4	47	186	2.6	64	247	3.0
14	102	2.2	31	142	2.4	48	190	2.7	65	250	3.0
15	104	2.2	32	145	2.4	49	193	2.7	66	255	3.0
16	106	2.2	33	147	2.4	50	196	2.7	67	258	3.0
17	108	2.2	34	150	2.4	51	199	2.7	68	260	3.1
18	110	2.2	35	152	2.5	52	202	2.7	69	269	3.1
19	113	2.2	36	155	2.5	53	205	2.8	70	274	3.1
20	115	2.3	37	158	2.5	54	209	2.8	71	279	3.2
21	118	2.3	38	162	2.5	55	212	2.8	>71	n/a	—
22	120	2.3	39	163	2.5	56	216	2.8			
23	122	2.3	40	166	2.5	57	220	2.8			
24	125	2.3	41	169	2.6	58	223	2.9			

Table 3-144: FTA: Osaka (Fetal Age)
Osaka University Method 1989, 3 by Univ. Osaka

Unit: FTA (mm ²); Age (Days); SD (mm ²)											
FTA	Age	SD	FTA	Age	SD	FTA	Age	SD	FTA	Age	SD
<560	n/a	—	2600	159	330	4800	205	560	7000	246	800
560	98	120	2700	162	340	4900	207	570	7100	248	820
600	100	120	2800	164	350	5000	209	580	7200	250	830
700	103	130	2900	166	360	5100	211	590	7300	252	840
800	108	150	3000	168	370	5200	213	600	7400	254	860
900	113	160	3100	170	380	5300	215	610	7500	256	870
1000	115	170	3200	173	390	5400	216	620	7600	258	880
1100	117	170	3300	175	400	5500	218	630	7700	260	900
1200	122	190	3400	177	410	5600	220	640	7800	262	910
1300	125	200	3500	179	420	5700	222	650	7900	264	930
1400	128	210	3600	181	430	5800	224	670	8000	265	930
1500	130	220	3700	183	440	5900	226	680	8100	268	960
1600	134	230	3800	185	450	6000	227	680	8200	270	970
1700	137	240	3900	187	460	6100	229	700	8300	273	990
1800	139	250	4000	189	470	6200	231	710	8400	274	1000
1900	142	260	4100	191	480	6300	233	720	8500	276	1010
2000	145	270	4200	193	490	6400	235	730	8600	279	1040
2100	147	280	4300	195	500	6500	237	750	8660	280	1040
2200	150	290	4400	197	510	6600	238	750	>8660	n/a	—
2300	152	300	4500	199	520	6700	240	760			
2400	155	310	4600	201	530	6800	242	780			
2500	157	330	4700	203	540	6900	244	790			

Osaka (continued)

Table 3-145: HL: Osaka (Fetal Age)
Osaka University Method 1989, 3 by Univ. Osaka

Unit: HL (mm); Age (Days); SD (mm)											
HL	Age	SD	HL	Age	SD	HL	Age	SD	HL	Age	SD
<10	n/a	—	23	123	2.2	37	164	2.4	51	217	2.6
10	91	2.0	24	126	2.2	38	167	2.4	52	222	2.6
11	93	2.0	25	129	2.2	39	170	2.4	53	227	2.7
12	96	2.0	26	132	2.2	40	174	2.4	54	232	2.7
13	98	2.1	27	134	2.2	41	178	2.4	55	237	2.7
14	100	2.1	28	137	2.2	42	182	2.5	56	242	2.7
15	103	2.1	29	140	2.3	43	185	2.5	57	248	2.8
16	105	2.1	30	143	2.3	44	188	2.5	58	254	2.8
17	108	2.1	31	145	2.3	45	192	2.5	59	260	2.8
18	110	2.1	32	149	2.3	46	196	2.5	60	267	2.9
19	113	2.1	33	151	2.3	47	200	2.5	61	275	2.9
20	115	2.1	34	155	2.3	48	204	2.6	62	280	2.9
21	117	2.1	35	158	2.3	49	208	2.6	>62	n/a	—
22	121	2.2	36	161	2.4	50	213	2.6			

Paris

Table 3-146: BPD: Paris (Fetal Age)

Unit: BPD (mm); Age (Days); SD (mm)											
BPD	Age	SD	BPD	Age	SD	BPD	Age	SD	BPD	Age	SD
<13	n/a	—	33	110	3	54	158	4	75	210	5
13	77	3	34	113	3	55	161	4	76	213	5
14	78	3	35	115	3	56	163	4	77	217	5
15	79	3	36	117	3	57	165	4	78	220	5
16	80	3	37	119	3	58	168	4	79	224	5
17	81	3	38	121	3	59	170	4	80	227	5
18	82	3	39	123	3	60	172	4	81	231	5
19	83	3	40	126	4	61	175	4	82	234	5
20	84	3	41	128	4	62	177	4	83	238	5
21	85	3	42	130	4	63	179	4	84	242	5
22	87	3	43	133	4	64	182	4	85	247	5
23	89	3	44	135	4	65	184	4	86	252	5
24	91	3	45	137	4	66	187	4	87	256	5
25	93	3	46	140	4	67	189	4	88	261	5
26	95	3	47	142	4	68	192	4	89	266	5
27	97	3	48	144	4	69	194	4	90	287	5
28	100	3	49	147	4	70	197	4	>90	n/a	—
29	102	3	50	149	4	71	199	4			
30	104	3	51	151	4	72	202	4			
31	106	3	52	154	4	73	204	4			
32	108	3	53	156	4	74	207	4			

Table 3-147: CRL: Paris (Fetal Age)

Unit: CRL (mm); Age (Days); SD (mm)											
CRL	Age	SD	CRL	Age	SD	CRL	Age	SD	CRL	Age	SD
<5	n/a	—	25	64	7	46	78	7	67	90	7
5	42	4	26	65	7	47	79	7	68	90	7
6	43	4	27	66	7	48	79	7	69	91	7
7	44	4	28	66	7	49	80	7	70	91	7
8	46	4	29	67	7	50	80	7	71	91	7
9	47	4	30	68	7	51	81	7	72	92	7
10	49	4	31	69	7	52	82	7	73	92	7
11	50	4	32	70	7	53	82	7	74	93	7
12	51	4	33	70	7	54	83	7	75	93	7
13	52	4	34	71	7	55	84	7	76	94	7
14	53	4	35	71	7	56	84	7	77	94	7
15	54	4	36	72	7	57	85	7	78	94	7
16	55	5	37	73	7	58	85	7	79	95	7
17	56	5	38	73	7	59	86	7	80	95	7
18	57	5	39	74	7	60	86	7	81	96	7
19	58	6	40	74	7	61	87	7	82	96	7
20	59	6	41	75	7	62	87	7	83	97	7
21	60	6	42	76	7	63	88	7	84	97	7
22	61	6	43	76	7	64	88	7	85	98	7
23	63	6	44	77	7	65	89	7	>85	n/a	—
24	63	7	45	77	7	66	89	7			

Paris (continued)

Table 3-148: FL: Paris (Fetal Age)

Unit: FL (mm); Age (Days); SD (mm)											
FL	Age	SD	FL	Age	SD	FL	Age	SD	FL	Age	SD
<15	n/a	—	31	137	5	48	183	5	65	238	5
15	98	4	32	139	5	49	186	5	66	241	5
16	100	4	33	142	5	50	189	5	67	245	5
17	102	4	34	145	5	51	192	5	68	248	5
18	105	4	35	148	5	52	194	5	69	252	5
19	107	4	36	150	5	53	197	5	70	255	5
20	109	4	37	153	5	54	200	5	71	259	5
21	112	4	38	156	5	55	203	5	72	262	5
22	114	4	39	159	5	56	206	5	73	266	5
23	116	4	40	161	5	57	210	5	74	271	5
24	119	4	41	164	5	58	213	5	75	276	5
25	121	4	42	167	5	59	217	5	76	281	5
26	123	4	43	170	5	60	219	5	77	287	5
27	126	5	44	172	5	61	221	5	>77	n/a	—
28	128	5	45	175	5	62	224	5			
29	131	5	46	178	5	63	231	5			
30	134	5	47	181	5	64	234	5			

Table 3-149: Ft: Paris (Fetal Age)

Unit: Ft (mm); Age (Days); SD (mm)											
Ft	Age	SD	Ft	Age	SD	Ft	Age	SD	Ft	Age	SD
<13	n/a	—	29	133	4	46	173	4	63	221	4
13	91	2	30	135	4	47	175	4	64	224	4
14	94	2	31	137	4	48	178	4	65	227	4
15	97	2	32	140	4	49	180	4	66	231	5
16	100	2	33	142	4	50	183	4	67	234	5
17	103	3	34	144	4	51	185	4	68	238	5
18	106	3	35	147	4	52	188	4	69	242	5
19	109	3	36	149	4	53	190	4	70	246	5
20	112	4	37	151	4	54	193	4	71	250	5
21	114	4	38	154	4	55	196	4	72	254	5
22	116	4	39	156	4	56	199	4	73	258	5
23	119	4	40	158	4	57	202	4	74	262	5
24	121	4	41	161	4	58	205	4	75	266	6
25	123	4	42	163	4	59	208	4	>75	n/a	—
26	126	4	43	165	4	60	211	4			
27	128	4	44	168	4	61	215	4			
28	130	4	45	170	4	62	218	4			

Paris (continued)

Table 3-150: TAD: Paris (Fetal Age)

Unit: TAD (mm); Age (Days); SD (mm)											
TAD	Age	SD	TAD	Age	SD	TAD	Age	SD	TAD	Age	SD
<10	n/a	0	32	116	0	55	171	0	78	229	0
10	84	0	33	118	0	56	174	0	79	232	0
11	84	0	34	120	0	57	176	0	80	234	0
12	85	0	35	122	0	58	179	0	81	237	0
13	86	0	36	124	0	59	181	0	82	239	0
14	87	0	37	126	0	60	184	0	83	242	0
15	87	0	38	128	0	61	186	0	84	245	0
16	88	0	39	131	0	62	189	0	85	248	0
17	89	0	40	133	0	63	191	0	86	252	0
18	90	0	41	136	0	64	194	0	87	255	0
19	91	0	42	138	0	65	196	0	88	259	0
20	92	0	43	141	0	66	199	0	89	262	0
21	94	0	44	143	0	67	201	0	90	266	0
22	96	0	45	146	0	68	204	0	91	269	0
23	98	0	46	148	0	69	207	0	92	273	0
24	100	0	47	151	0	70	209	0	93	276	0
25	102	0	48	153	0	71	212	0	94	280	0
26	104	0	49	156	0	72	214	0	95	283	0
27	106	0	50	158	0	73	217	0	96	287	0
28	108	0	51	161	0	74	219	0	>96	n/a	—
29	110	0	52	163	0	75	222	0			
30	112	0	53	166	0	76	224	0			
31	114	0	54	169	0	77	227	0			

Pexsters

Table 3-151: CRL (Crown-rump length) Pexsters (Fetal Age)

mm	days	mm	days	mm	days
	50%		50%		50%
0.40	40	20.00	60	49.50	80
1.10	41	21.20	61	51.30	81
1.90	42	22.50	62	53.00	82
2.70	43	23.80	63	54.80	83
3.50	44	25.10	64	56.60	84
4.30	45	26.40	65	58.50	85
5.20	46	27.80	66	60.30	86
6.10	47	29.20	67	62.20	87
7.00	48	30.60	68	64.10	88
8.00	49	32.00	69	66.10	89
8.90	50	33.50	70	68.00	90
9.90	51	35.00	71	70.00	91
10.90	52	36.50	72	72.00	92
12.00	53	38.10	73	74.00	93
13.10	54	39.60	74	76.10	94
14.20	55	41.20	75	78.20	95
15.30	56	42.80	76	80.30	96
16.40	57	44.50	77	82.40	97
17.60	58	46.10	78	84.60	98
18.80	59	47.80	79		

Reference

Pexsters A, Daemen A, Bottomley C, Van Schoubroeck D, De Catte L, De Moor B, D'Hooghe T, Lees C, Timmerman D, Bourne T. New crown-rump length curve based on over 3500 pregnancies. Ultrasound Obstet Gynecol 2010; 35: 650-655

Pexsters (continued)

Table 3-152: CRL (Crown-rump length) Pexsters (Fetal Growth)

days	mm			days	mm		
	5%	50%	95%		5%	50%	95%
40	0.00	0.40	2.70	70	25.90	33.50	39.20
41	0.00	1.10	3.60	71	27.20	35.00	40.70
42	0.40	1.90	4.50	72	28.50	36.50	42.30
43	1.00	2.70	5.40	73	30.00	38.10	44.00
44	1.50	3.50	6.40	74	31.30	39.60	45.60
45	2.10	4.30	7.30	75	32.70	41.20	47.30
46	2.80	5.20	8.30	76	34.10	42.80	49.00
47	3.40	6.10	9.40	77	35.60	44.50	50.70
48	4.10	7.00	10.40	78	37.00	46.10	52.40
49	4.80	8.00	11.50	79	38.50	47.80	54.20
50	5.60	8.90	12.50	80	40.10	49.50	56.00
51	6.30	9.90	13.70	81	41.70	51.30	57.80
52	7.10	10.90	14.80	82	43.20	53.00	59.60
53	7.90	12.00	15.90	83	44.90	54.80	61.40
54	8.80	13.10	17.10	84	46.50	56.60	63.30
55	9.60	14.20	18.30	85	48.20	58.50	65.20
56	10.50	15.30	19.60	86	49.90	60.30	67.10
57	11.50	16.40	20.80	87	51.60	62.20	69.10
58	12.40	17.60	22.10	88	53.40	64.10	71.10
59	13.40	18.80	23.40	89	55.10	66.10	73.10
60	14.40	20.00	24.70	90	57.00	68.00	75.10
61	15.40	21.20	26.00	91	58.80	70.00	77.10
62	16.50	22.50	27.40	92	61.00	72.00	79.20
63	17.60	23.80	28.80	93	62.50	74.00	81.30
64	18.70	25.10	30.20	94	64.40	76.10	83.40
65	19.80	26.40	31.60	95	66.40	78.20	85.50
66	21.00	27.80	33.10	96	68.30	80.30	87.70
67	22.20	29.20	34.60	97	70.30	82.40	89.80
68	23.40	30.60	36.10	98	72.40	84.60	92.00
69	24.60	32.00	37.60				

Reference

Pexsters A, Daemen A, Bottomley C, Van Schoubroeck D, De Catte L, De Moor B, D'Hooghe T, Lees C, Timmerman D, Bourne T. New crown-rump length curve based on over 3500 pregnancies. *Ultrasound Obstet Gynecol* 2010; 35: 650-655

Rempen

Table 3-153: BPD: Rempen (Fetal Age) Der Frauenarzt 32, 4 (1991) 425-30

Known LMP (left)—Unknown LMP (right) Unit: BPD (mm); Age (Weeks/Days); 2SD (mm [Known LMP] or day [Unknown LMP])											
BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD	BPD	Age	2SD
<2	n/a	—	15	10w2d	4	<3	n/a	—	16	10w4d	8
2	6w2d	4	16	10w5d	4	3	6w6d	8	17	10w6d	8
3	6w4d	4	17	11w0d	4	4	7w1d	8	18	11w1d	8
4	6w6d	4	18	11w2d	4	5	7w3d	8	19	11w3d	8
5	7w1d	4	19	11w5d	4	6	7w5d	8	20	11w5d	8
6	7w4d	4	20	12w0d	4	7	8w0d	8	21	12w0d	8
7	7w6d	4	21	12w2d	4	8	8w2d	8	22	12w2d	8
8	8w1d	4	22	12w4d	4	9	8w4d	8	23	12w4d	8
9	8w3d	4	23	13w0d	4	10	8w6d	8	24	12w6d	8
10	8w5d	4	24	13w2d	4	11	9w1d	8	25	13w1d	8
11	9w1d	4	>24	n/a	—	12	9w3d	8	26	13w3d	8
12	9w3d	4				13	9w5d	8	27	13w5d	8
13	9w5d	4				14	10w0d	8	>27	n/a	—
14	10w0d	4				15	10w2d	8			

Table 3-154: BPD: Rempen (Fetal Growth) Der Frauenarzt 32, 4 (1991) 425-30

Unit: Age (Weeks/Days); Mean (mm); Range (mm); Table/Graph Range (5%:95%)								
Age	Mean	Range	Age	Mean	Range	Age	Mean	Range
6w2d	2.0	3.7	8w5d	9.8	3.7	11w1d	17.4	3.7
6w3d	2.5	3.7	8w6d	10.3	3.7	11w2d	17.9	3.7
6w4d	3.0	3.7	9w0d	10.7	3.7	11w3d	18.3	3.7
6w5d	3.4	3.7	9w1d	11.2	3.7	11w4d	18.7	3.7
6w6d	3.9	3.7	9w2d	11.6	3.7	11w5d	19.2	3.7
7w0d	4.3	3.7	9w3d	12.1	3.7	11w6d	19.6	3.7
7w1d	4.8	3.7	9w4d	12.5	3.7	12w0d	20.0	3.7
7w2d	5.3	3.7	9w5d	13.0	3.7	12w1d	20.5	3.7
7w3d	5.7	3.7	9w6d	13.4	3.7	12w2d	20.9	3.7
7w4d	6.2	3.7	10w0d	13.9	3.7	12w3d	21.3	3.7
7w5d	6.7	3.7	10w1d	14.3	3.7	12w4d	21.8	3.7
7w6d	7.1	3.7	10w2d	14.8	3.7	12w5d	22.2	3.7
8w0d	7.6	3.7	10w3d	15.2	3.7	12w6d	22.6	3.7
8w1d	8.0	3.7	10w4d	15.7	3.7	13w0d	23.1	3.7
8w2d	8.5	3.7	10w5d	16.1	3.7	13w1d	23.5	3.7
8w3d	8.9	3.7	10w6d	16.5	3.7	13w2d	23.9	3.7
8w4d	9.4	3.7	11w0d	17.0	3.7			

Rempen (continued)

Table 3-155: CRL: Rempen (Fetal Age) Der Frauenarzt 32, 4 (1991) 425-30

Known LMP (left)—Unknown LMP (right)											
Unit: CRL (mm); Age (Weeks/Days); 2SD (mm [Known LMP] or day [Unknown LMP])											
CRL	Age	2SD	CRL	Age	2SD	CRL	Age	2SD	CRL	Age	2SD
<1	n/a	—	40	10w5d	8	<2	n/a	—	41	10w5d	7
1	5w5d	8	41	10w6d	8	2	6w0d	6	42	10w6d	6
2	5w6d	8	42	11w0d	8	3	6w1d	6	43	11w0d	7
3	6w0d	8	43	11w0d	8	4	6w2d	6	44	11w0d	7
4	6w1d	8	44	11w1d	8	5	6w3d	6	45	11w1d	6
5	6w2d	8	45	11w2d	8	6	6w4d	6	46	11w2d	7
6	6w3d	8	46	11w2d	8	7	6w5d	6	47	11w2d	7
7	6w4d	8	47	11w3d	8	8	6w6d	6	48	11w3d	6
8	6w6d	8	48	11w4d	8	9	7w0d	6	49	11w4d	7
9	6w6d	8	49	11w4d	8	10	7w1d	6	50	11w4d	6
10	7w0d	8	50	11w5d	8	11	7w2d	6	51	11w5d	6
11	7w2d	8	51	11w6d	8	12	7w3d	6	52	11w5d	7
12	7w2d	8	52	12w0d	8	13	7w4d	7	53	11w6d	6
13	7w4d	8	53	12w0d	8	14	7w5d	7	54	12w0d	7
14	7w4d	8	54	12w1d	8	15	7w6d	7	55	12w0d	7
15	7w5d	8	55	12w2d	8	16	7w6d	7	56	12w1d	6
16	7w6d	8	56	12w2d	8	17	8w0d	7	57	12w1d	7
17	8w0d	8	57	12w3d	8	18	8w1d	6	58	12w2d	6
18	8w1d	8	58	12w3d	8	19	8w2d	6	59	12w3d	7
19	8w2d	8	59	12w4d	8	20	8w3d	6	60	12w3d	6
20	8w3d	8	60	12w5d	8	21	8w4d	7	61	12w4d	7
21	8w4d	8	61	12w5d	8	22	8w5d	7	62	12w4d	6
22	8w5d	8	62	12w6d	8	23	8w5d	7	63	12w5d	7
23	8w6d	8	63	13w0d	8	24	8w6d	7	64	12w5d	7
24	8w6d	8	64	13w0d	8	25	9w0d	6	65	12w6d	6
25	9w0d	8	65	13w1d	8	26	9w1d	6	66	12w6d	7
26	9w1d	8	66	13w2d	8	27	9w2d	7	67	13w0d	6
27	9w2d	8	>66	n/a	—	28	9w3d	7	68	13w0d	7
28	9w3d	8				29	9w3d	7	69	13w1d	6
29	9w4d	8				30	9w4d	7	70	13w1d	7
30	9w4d	8				31	9w5d	7	71	13w2d	7
31	9w5d	8				32	9w6d	7	72	13w2d	6
32	9w6d	8				33	9w6d	7	73	13w3d	7
33	10w0d	8				34	10w0d	6	74	13w3d	6
34	10w1d	8				35	10w1d	6	75	13w4d	7
35	10w1d	8				36	10w2d	7	76	13w4d	6
36	10w2d	8				37	10w2d	7	77	13w4d	7
37	10w3d	8				38	10w3d	6	78	13w5d	6
38	10w4d	8				39	10w4d	6	>78	n/a	—
39	10w4d	8				40	10w5d	7			

Rempen (continued)

Table 3-156: CRL: Rempen (Fetal Growth) Der Frauenarzt 32, 4 (1991) 425-30

Unit: Age (Weeks/Days); Mean (mm); Range (mm); Table/Graph Range (5%:95%)								
Age	Mean	Range	Age	Mean	Range	Age	Mean	Range
5w5d	1.2	7.8	8w2d	18.9	7.8	10w6d	41.3	7.8
5w6d	2.1	7.8	8w3d	20.0	7.8	11w0d	42.6	7.8
6w0d	3.0	7.8	8w4d	21.1	7.8	11w1d	44.0	7.8
6w1d	3.8	7.8	8w5d	22.3	7.8	11w2d	45.4	7.8
6w2d	4.7	7.8	8w6d	23.5	7.8	11w3d	46.9	7.8
6w3d	5.7	7.8	9w0d	24.6	7.8	11w4d	48.3	7.8
6w4d	6.6	7.8	9w1d	25.8	7.8	11w5d	49.8	7.8
6w5d	7.5	7.8	9w2d	27.0	7.8	11w6d	51.2	7.8
6w6d	8.5	7.8	9w3d	28.3	7.8	12w0d	52.7	7.8
7w0d	9.5	7.8	9w4d	29.5	7.8	12w1d	54.2	7.8
7w1d	10.5	7.8	9w5d	30.7	7.8	12w2d	55.7	7.8
7w2d	11.5	7.8	9w6d	32.0	7.8	12w3d	57.3	7.8
7w3d	12.5	7.8	10w0d	33.3	7.8	12w4d	58.8	7.8
7w4d	13.5	7.8	10w1d	34.6	7.8	12w5d	60.3	7.8
7w5d	14.6	7.8	10w2d	35.9	7.8	12w6d	61.9	7.8
7w6d	15.6	7.8	10w3d	37.2	7.8	13w0d	63.5	7.8
8w0d	16.7	7.8	10w4d	38.5	7.8	13w1d	65.1	7.8
8w1d	17.8	7.8	10w5d	39.9	7.8	13w2d	66.7	7.8

Rempen (continued)

Table 3-157: CRL (Crown-rump length) Rempen (Fetal Age)

cm	days			cm	days		
	5%	Mean	95%		5%	Mean	95%
0.20	37	42	46	3.20	63	69	74
0.30	39	43	47	3.30	64	69	75
0.40	40	44	49	3.40	64	70	76
0.50	41	45	50	3.50	65	71	77
0.60	42	46	51	3.60	66	72	77
0.70	43	47	52	3.70	67	72	78
0.80	44	48	53	3.80	67	73	79
0.90	45	49	54	3.90	68	74	80
1.00	46	50	55	4.00	69	75	81
1.10	46	51	56	4.10	70	75	81
1.20	47	52	57	4.20	70	76	82
1.30	48	53	58	4.30	71	77	83
1.40	49	54	59	4.40	72	78	84
1.50	50	55	60	4.50	72	78	84
1.60	51	56	61	4.60	73	79	85
1.70	52	56	62	4.70	74	80	86
1.80	52	57	63	4.80	75	81	87
1.90	53	58	63	4.90	75	81	87
2.00	54	59	64	5.00	76	82	88
2.10	55	60	65	5.10	77	83	89
2.20	55	61	66	5.20	77	83	90
2.30	56	61	67	5.30	78	84	90
2.40	57	62	68	5.40	79	85	91
2.50	58	63	69	5.50	79	86	92
2.60	59	64	69	5.60	80	86	93
2.70	59	65	70	5.70	81	87	94
2.80	60	65	71	5.80	82	88	94
2.90	61	66	72	5.90	82	89	95
3.00	62	67	73	6.00	83	89	96
3.10	62	68	73				

Reference

Rempen A., Chaoui R., Kozłowski P., Häusler M., Terinde R.,
Wisser J. Standards zur Ultraschalluntersuchung in der
Frühschwangerschaft. Deutsche Gesellschaft für Gynäkologie
und Geburtshilfe. Leitlinien, Empfehlungen, Stellungnahmen.
2004; 1-8

Rempen (continued)

Table 3-158: Gestational sac diameter GS (Fetal Age)

Input unit: cm, Output unit: days; Min. Range: 0.2, Max. Range: 7.3							
cm	days			cm	cm		
	- 1 SD	Mean	1SD		-1 SD	Mean	1 SD
0.20	24	34	44	4.00	56	66	76
0.30	25	35	45	4.10	57	67	77
0.40	26	36	46	4.20	58	68	78
0.50	27	37	47	4.30	59	69	79
0.60	27	37	47	4.40	59	69	79
0.70	28	38	48	4.50	60	70	80
0.80	29	39	49	4.60	61	71	81
0.90	30	40	50	4.70	62	72	82
1.00	30	40	50	4.80	63	73	83
1.10	31	41	51	4.90	64	74	84
1.20	32	42	52	5.00	65	75	85
1.30	33	43	53	5.10	66	76	86
1.40	34	44	54	5.20	67	77	87
1.50	34	44	54	5.30	68	78	88
1.60	35	45	55	5.40	69	79	89
1.70	36	46	56	5.50	70	80	90
1.80	37	47	57	5.60	71	81	91
1.90	38	48	58	5.70	72	82	92
2.00	38	48	58	5.80	73	83	93
2.10	39	49	59	5.90	74	84	94
2.20	40	50	60	6.00	75	85	95
2.30	41	51	61	6.10	76	86	96
2.40	42	52	62	6.20	77	87	97
2.50	43	53	63	6.30	78	88	98
2.60	43	53	63	6.40	79	89	99
2.70	44	54	64	6.50	80	90	100
2.80	45	55	65	6.60	81	91	101
2.90	46	56	66	6.70	82	92	102
3.00	47	57	67	6.80	83	93	103
3.10	48	58	68	6.90	84	94	104
3.20	49	59	69	7.00	85	95	105
3.30	49	59	69	7.10	86	96	106
3.40	50	60	70	7.20	88	98	108
3.50	51	61	71	7.30	89	99	109
3.60	52	62	72				
3.70	53	63	73				
3.80	54	64	74				
3.90	55	65	75				

Reference

Rempen A. Biometrie in der Fruhgraviditat (I. Trimenon). DER FRAUENARZT 1991; 32: 425-428

Rempen (continued)

Table 3-159: GS: Rempen (Fetal Growth) Der Frauenarzt 32, 4 (1991) 425-30

Unit: Age (Weeks/Days); Mean (mm); Range (mm); Table/Graph Range (5%:95%)								
Age	Mean	Range	Age	Mean	Range	Age	Mean	Range
4w4d	0.5	10.5	7w4d	26.2	10.5	10w4d	46.6	10.5
4w5d	1.8	10.5	7w5d	27.3	10.5	10w5d	47.4	10.5
4w6d	3.2	10.5	7w6d	28.4	10.5	10w6d	48.2	10.5
5w0d	4.5	10.5	8w0d	29.5	10.5	11w0d	49.0	10.5
5w1d	5.8	10.5	8w1d	30.5	10.5	11w1d	49.8	10.5
5w2d	7.1	10.5	8w2d	31.6	10.5	11w2d	50.6	10.5
5w3d	8.4	10.5	8w3d	32.6	10.5	11w3d	51.4	10.5
5w4d	9.7	10.5	8w4d	33.6	10.5	11w4d	52.1	10.5
5w5d	10.9	10.5	8w5d	34.6	10.5	11w5d	52.9	10.5
5w6d	12.2	10.5	8w6d	35.6	10.5	11w6d	53.6	10.5
6w0d	13.4	10.5	9w0d	36.6	10.5	12w0d	54.3	10.5
6w1d	14.6	10.5	9w1d	37.6	10.5	12w1d	55.1	10.5
6w2d	15.9	10.5	9w2d	38.5	10.5	12w2d	55.8	10.5
6w3d	17.1	10.5	9w3d	39.5	10.5	12w3d	56.4	10.5
6w4d	18.3	10.5	9w4d	40.4	10.5	12w4d	57.1	10.5
6w5d	19.4	10.5	9w5d	41.3	10.5	12w5d	57.8	10.5
6w6d	20.6	10.5	9w6d	42.2	10.5	12w6d	58.4	10.5
7w0d	21.7	10.5	10w0d	43.1	10.5	13w0d	59.1	10.5
7w1d	22.9	10.5	10w1d	44.0	10.5	13w1d	59.7	10.5
7w2d	24.0	10.5	10w2d	44.9	10.5	13w2d	60.3	10.5
7w3d	25.1	10.5	10w3d	45.7	10.5			

Robinson

Table 3-160: CRL: Robinson (Fetal Age) Br J Gynecol, 82: 702, 1975

Unit: CRL (mm); Age (Days); SD (mm)											
CRL	Age	SD	CRL	Age	SD	CRL	Age	SD	CRL	Age	SD
<7	n/a	—	26	64	5	46	78	7	66	90	7
7	45	4	27	65	5	47	79	7	67	90	7
8	46	4	28	66	6	48	79	7	68	91	7
9	47	4	29	67	6	49	80	7	69	91	7
10	48	4	30	68	6	50	81	7	70	91	7
11	50	4	31	69	7	51	82	7	71	92	7
12	52	4	32	69	7	52	83	7	72	92	7
13	53	4	33	70	7	53	83	7	73	93	7
14	54	4	34	70	7	54	83	7	74	93	7
15	55	4	35	71	7	55	84	7	75	93	7
16	56	4	36	72	7	56	84	7	76	94	7
17	57	4	37	72	7	57	84	7	77	94	7
18	58	4	38	73	7	58	85	7	78	95	7
19	59	4	39	74	7	59	85	7	79	95	7
20	60	4	40	74	7	60	86	7	80	96	7
21	60	4	41	75	7	61	86	7	81	97	7
22	61	4	42	75	7	62	87	7	82	98	7
23	62	4	43	76	7	63	88	7	>82	n/a	—
24	63	5	44	77	7	64	89	7			
25	64	5	45	77	7	65	90	7			

Sonek

Table 3-161: NBL (Nasal Bone Length) Sonek (Fetal Growth)

weeks	mm			weeks	mm		
	5%	50%	95%		5%	50%	95%
11.00	1.40	2.30	3.30	26.00	7.40	8.90	10.90
12.00	1.80	2.80	4.20	27.00	7.50	9.20	11.30
13.00	2.30	3.10	4.60	28.00	7.60	9.80	12.10
14.00	2.50	3.80	5.30	29.00	7.70	9.80	11.80
15.00	3.00	4.30	5.70	30.00	7.90	10.00	12.60
16.00	3.40	4.70	6.20	31.00	8.20	10.40	12.60
17.00	4.00	5.30	6.60	32.00	8.60	10.50	13.60
18.00	4.30	5.70	7.00	33.00	8.70	10.80	12.80
19.00	5.00	6.30	7.90	34.00	9.10	10.90	12.80
20.00	5.20	6.70	8.30	35.00	8.50	11.00	14.10
21.00	5.60	7.10	9.00	36.00	7.80	10.80	12.80
22.00	5.80	7.50	9.30	37.00	8.70	11.40	14.50
23.00	6.40	7.90	9.60	38.00	9.30	11.70	15.70
24.00	6.80	8.30	10.00	39.00	9.20	10.90	14.00
25.00	6.50	8.50	10.70	40.00	10.40	12.10	14.50

Reference

Sonek JD, McKenna D, Webb D, Croom C, Nicolaides K. Nasal bone length throughout gestation: normal ranges based on 3537 fetal ultrasound measurements. *Ultrasound Obstet Gynecol* 2003; 21: 152-155

Tokyo

Table 3-162: BPD: Tokyo (Fetal Age)
Tokyo University Method 1986, 6 by University Tokyo

Unit: BPD (mm); Age (Days); SD (Days)											
BPD	Age	SD	BPD	Age	SD	BPD	Age	SD	BPD	Age	SD
<20	n/a	—	38	123	± 5	57	164	± 6	76	213	± 8
20	85	± 6	39	125	± 5	58	167	± 6	77	216	± 8
21	87	± 6	40	127	± 5	59	169	± 6	78	218	± 8
22	89	± 6	41	129	± 5	60	171	± 6	79	221	± 8
23	92	± 6	42	131	± 5	61	174	± 7	80	225	± 8
24	94	± 6	43	133	± 5	62	176	± 7	81	228	± 8
25	96	± 6	44	135	± 5	63	179	± 7	82	231	± 8
26	98	± 6	45	138	± 6	64	181	± 7	83	234	± 9
27	100	± 6	46	140	± 6	65	183	± 7	84	238	± 9
28	102	± 6	47	142	± 6	66	186	± 7	85	241	± 9
29	102	± 6	48	144	± 6	67	188	± 7	86	245	± 9
30	106	± 5	49	146	± 6	68	191	± 7	87	249	± 9
31	108	± 5	50	148	± 6	69	194	± 7	88	253	± 9
32	110	± 5	51	151	± 6	70	196	± 7	89	258	± 9
33	112	± 5	52	153	± 6	71	199	± 8	90	262	± 9
34	114	± 5	53	154	± 6	72	201	± 8	>90	n/a	—
35	116	± 5	54	157	± 6	73	204	± 8			
36	118	± 5	55	160	± 6	74	207	± 8			
37	120	± 5	56	162	± 6	75	210	± 8			

Table 3-163: CRL: Tokyo (Fetal Age)
Tokyo University Method 1986, 6 by University Tokyo

Unit: CRL (mm); Age (Days); SD (Days)											
CRL	Age	SD	CRL	Age	SD	CRL	Age	SD	CRL	Age	SD
<13	n/a	—	22	64	± 7	32	73	± 7	42	81	± 7
13	55	± 8	23	65	± 7	33	74	± 7	43	81	± 7
14	56	± 9	24	66	± 7	34	74	± 7	44	82	± 7
15	57	± 10	25	67	± 7	35	75	± 7	45	83	± 7
16	58	± 8	26	68	± 7	36	76	± 7	46	84	± 7
17	59	± 9	27	68	± 7	37	77	± 7	47	84	± 7
18	60	± 10	28	69	± 7	38	78	± 7	48	85	± 7
19	61	± 8	29	70	± 7	39	78	± 7	49	86	± 7
20	62	± 9	30	71	± 7	40	79	± 7	50	86	± 7
21	63	± 7	31	72	± 7	41	80	± 7	>50	n/a	—

Tokyo (continued)

Table 3-164: FL: Tokyo (Fetal Age)
Tokyo University Method 1986, 6 by University Tokyo

Unit: FL (mm); Age (Days); SD (Days)											
FL	Age	SD	FL	Age	SD	FL	Age	SD	FL	Age	SD
<33	n/a	—	43	175	± 6	54	210	± 7	65	251	± 8
33	143	± 6	44	178	± 6	55	214	± 7	66	256	± 8
34	146	± 6	45	181	± 6	56	217	± 7	67	260	± 8
35	149	± 6	46	185	± 7	57	220	± 7	68	266	± 7
36	153	± 6	47	188	± 7	58	224	± 7	69	271	± 7
37	156	± 6	48	191	± 7	59	228	± 8	70	278	± 7
38	159	± 6	49	194	± 7	60	231	± 8	71	286	± 6
39	162	± 6	50	197	± 7	61	235	± 8	>71	n/a	—
40	166	± 6	51	200	± 7	62	239	± 8			
41	169	± 6	52	204	± 7	63	243	± 8			
42	172	± 6	53	207	± 7	64	247	± 8			

Table 3-165: GS: Tokyo (Fetal Age)
Tokyo University Method 1986, 6 by University Tokyo

Unit: GS (mm); Age (Days); SD (Days)											
GS	Age	SD	GS	Age	SD	GS	Age	SD	GS	Age	SD
<12	n/a	—	22	43	± 7	33	56	± 0	44	66	± 0
12	31	± 7	23	44	± 7	34	57	± 0	45	67	± 0
13	32	± 7	24	46	± 7	35	58	± 0	46	68	± 0
14	33	± 7	25	47	± 7	36	59	± 0	47	69	± 0
15	34	± 7	26	48	± 8	37	60	± 0	48	70	± 0
16	36	± 7	27	49	± 9	38	61	± 0	49	71	± 0
17	37	± 7	28	50	± 10	39	62	± 0	50	72	± 0
18	38	± 7	29	51	± 0	40	63	± 0	>50	n/a	—
19	40	± 7	30	52	± 0	41	64	± 0			
20	41	± 7	31	53	± 0	42	65	± 0			
21	42	± 7	32	55	± 0	43	65	± 0			

Tokyo (continued)

Table 3-166: SL: Tokyo (Fetal Age)
Tokyo University Method 1986, 6 by University Tokyo

Unit: SL (mm); Age (Days); SD (Days)											
SL	Age	SD	SL	Age	SD	SL	Age	SD	SL	Age	SD
<44	n/a	—	55	181	± 7	67	217	± 10	79	260	± 10
44	154	± 5	56	183	± 8	68	220	± 10	80	264	± 10
45	157	± 5	57	186	± 8	69	224	± 10	81	267	± 10
46	159	± 5	58	189	± 8	70	227	± 11	82	271	± 10
47	161	± 5	59	192	± 8	71	231	± 11	83	275	± 10
48	163	± 5	60	195	± 9	72	234	± 11	84	278	± 10
49	166	± 6	61	198	± 9	73	238	± 11	85	282	± 10
50	168	± 6	62	201	± 9	74	241	± 11	86	285	± 10
51	171	± 6	63	204	± 9	75	245	± 11	>86	n/a	—
52	173	± 6	64	207	± 10	76	249	± 11			
53	176	± 7	65	210	± 10	77	252	± 11			
54	178	± 7	66	213	± 10	78	256	± 11			

Tokyo Shinozuka

Table 3-167: AC: Tokyo Shinozuka (Fetal Age)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: AC (cm); Age (Weeks/Days); SD (cm)								
AC	Age	1SD	AC	Age	1SD	AC	Age	1SD
<10	n/a	—	18	23w3d	0.9	27	33w1d	1.4
10	15w3d	0.5	19	24w3d	1.0	28	34w2d	1.4
11	16w4d	0.6	20	25w3d	1.0	29	35w4d	1.5
12	17w4d	0.6	21	26w3d	1.1	30	37w0d	1.6
13	18w4d	0.7	22	27w3d	1.1	31	38w2d	1.6
14	19w4d	0.7	23	28w4d	1.2	32	39w6d	1.7
15	20w3d	0.8	24	29w4d	1.2	33	41w2d	1.8
16	21w3d	0.8	25	30w5d	1.3	>33	n/a	—
17	22w3d	0.9	26	31w6d	1.3			

Table 3-168: AC: Tokyo Shinozuka (Fetal Growth)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: Age (Weeks); Min/Mean/Max (cm); Table/Graph Range: 1.64SD							
Age	Min	Mean	Max	Age	Min	Mean	Max
16	9.3	10.9	12.5	30	22.0	24.7	27.3
17	10.3	12.0	13.6	31	22.8	25.6	28.3
18	11.2	13.0	14.7	32	23.5	26.5	29.2
19	12.2	14.0	15.8	33	24.3	27.3	30.1
20	13.1	15.1	16.9	34	25.0	28.1	31.0
21	14.0	16.1	18.0	35	25.7	28.9	31.9
22	15.0	17.1	19.1	36	26.4	29.7	32.7
23	15.9	18.1	20.2	37	27.0	30.4	33.5
24	16.8	19.1	21.2	38	27.6	31.1	34.3
25	17.7	20.1	22.3	39	28.2	31.8	35.0
26	18.6	21.0	23.3	40	28.8	32.4	35.7
27	19.5	22.0	24.4	41	29.3	33.0	36.4
28	20.3	22.9	25.4	42	29.7	33.6	37.0
29	21.1	23.8	26.4				

Tokyo Shinozuka (continued)

Table 3-169: AxT (APTDxTTD): Tokyo Shinozuka (Fetal Age)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: AxT (cm ²); Age (Weeks/Days); SD (cm ²)								
AxT	Age	1SD	AxT	Age	1SD	AxT	Age	1SD
<10	n/a	—	38	25w6d	5.5	68	33w3d	8.8
10	16w1d	2.5	40	26w3d	5.7	70	33w6d	9.1
12	17w0d	2.7	42	27w0d	6.0	72	34w2d	9.3
14	17w6d	2.9	44	27w3d	6.1	74	34w6d	9.6
16	18w4d	3.1	46	28w0d	6.4	76	35w3d	9.9
18	19w3d	3.4	48	28w4d	6.6	78	35w6d	10.1
20	20w1d	3.6	50	29w0d	6.8	80	36w3d	10.2
22	20w6d	3.8	52	29w3d	7.0	82	37w0d	10.7
24	21w4d	4.0	54	30w0d	7.2	84	37w4d	11.0
26	22w2d	4.3	56	30w3d	7.4	86	38w1d	11.3
28	22w6d	4.4	58	31w0d	7.7	88	38w5d	11.7
30	23w4d	4.7	60	31w3d	7.9	90	39w2d	12.0
32	24w1d	4.9	62	31w6d	8.1	>90	n/a	—
34	24w5d	5.1	64	32w3d	8.4			
36	25w2d	5.3	66	32w6d	8.6			

Table 3-170: AxT (APTDxTTD): Tokyo Shinozuka (Fetal Growth)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: Age (Weeks); Min/Mean/Max (cm ²); Table/Graph Range: 1.64SD							
Age	Min	Mean	Max	Age	Min	Mean	Max
16	7.0	11.2	15.5	30	43.5	55.7	68.0
17	8.7	13.3	18.0	31	46.8	59.7	72.7
18	10.5	15.6	20.7	32	50.0	63.8	77.6
19	12.5	18.1	23.6	33	53.3	67.8	82.4
20	14.7	20.8	26.8	34	56.5	71.9	87.3
21	17.1	23.6	30.2	35	59.7	75.9	92.2
22	19.6	26.7	33.8	36	62.8	79.9	97.0
23	22.2	29.9	37.5	37	65.9	83.9	101.9
24	25.0	33.2	41.5	38	68.8	87.7	106.7
25	27.9	36.7	45.6	39	71.6	91.5	111.4
26	30.9	40.3	49.8	40	74.3	95.1	116.0
27	33.9	44.1	54.2	41	76.8	98.6	120.5
28	37.1	47.9	58.7	42	79.1	102.0	124.8
29	40.3	51.8	63.3				

Tokyo Shinozuka (continued)

Table 3-171: BPD: Tokyo Shinozuka (Fetal Age)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: BPD (mm); Age (Weeks/Days); SD (mm)								
BPD	Age	1SD	BPD	Age	1SD	BPD	Age	1SD
<13	n/a	—	39	17w6d	2.7	66	26w3d	3.2
13	10w1d	2.3	40	18w1d	2.7	67	26w6d	3.2
14	10w3d	2.3	41	18w3d	2.8	68	27w2d	3.3
15	10w5d	2.3	42	18w5d	2.8	69	27w4d	3.3
16	11w0d	2.3	43	19w0d	2.8	70	28w0d	3.3
17	11w2d	2.4	44	19w2d	2.8	71	28w3d	3.3
18	11w4d	2.4	45	19w4d	2.8	72	28w5d	3.3
19	11w6d	2.4	46	20w0d	2.8	73	29w1d	3.4
20	12w1d	2.4	47	20w2d	2.9	74	29w4d	3.4
21	12w3d	2.4	48	20w4d	2.9	75	30w0d	3.4
22	12w6d	2.4	49	20w6d	2.9	76	30w3d	3.4
23	13w1d	2.5	50	21w1d	2.9	77	30w6d	3.4
24	13w3d	2.5	51	21w3d	2.9	78	31w2d	3.5
25	13w5d	2.5	52	21w6d	2.9	79	31w5d	3.5
26	14w0d	2.5	53	22w1d	3.0	80	32w1d	3.5
27	14w2d	2.5	54	22w3d	3.0	81	32w5d	3.6
28	14w4d	2.5	55	22w5d	3.0	82	33w1d	3.6
29	14w6d	2.6	56	23w1d	3.0	83	33w5d	3.6
30	15w1d	2.6	57	23w3d	3.0	84	34w2d	3.6
31	15w3d	2.6	58	23w5d	3.1	85	34w6d	3.7
32	15w5d	2.6	59	24w1d	3.1	86	35w3d	3.7
33	16w0d	2.6	60	24w3d	3.1	87	36w0d	3.7
34	16w2d	2.6	61	24w5d	3.1	88	36w5d	3.8
35	16w4d	2.7	62	25w1d	3.1	89	37w4d	3.8
36	16w6d	2.7	63	25w3d	3.1	90	38w3d	3.9
37	17w1d	2.7	64	25w5d	3.2	>90	n/a	—
38	17w4d	2.7	65	26w1d	3.2			

Tokyo Shinozuka (continued)

Table 3-172: BPD: Tokyo Shinozuka (Fetal Growth)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: Age (Weeks); Min/Mean/Max (mm); Table/Graph Range: 1.64SD							
Age	Min	Mean	Max	Age	Min	Mean	Max
10	10.5	14.3	18.1	27	63.4	68.7	74.1
11	13.7	17.6	21.5	28	65.9	71.4	76.8
12	17.0	21.0	25.0	29	68.3	73.9	79.4
13	20.4	24.4	28.5	30	70.6	76.3	81.9
14	23.7	27.8	32.0	31	72.8	78.5	84.2
15	27.0	31.2	35.5	32	74.8	80.6	86.5
16	30.3	34.6	39.0	33	76.7	82.6	88.5
17	33.5	38.0	42.4	34	78.5	84.5	90.4
18	36.8	41.3	45.8	35	80.1	86.1	92.2
19	40.0	44.6	49.2	36	81.5	87.6	93.8
20	43.2	47.9	52.6	37	82.7	89.0	95.2
21	46.3	51.1	55.9	38	83.8	90.1	96.5
22	49.3	54.2	59.1	39	84.6	91.1	97.5
23	52.3	57.3	62.3	40	85.3	91.8	98.4
24	55.2	60.3	65.3	41	85.8	92.4	99.0
25	58.0	63.2	68.4	42	86.0	92.8	99.5
26	60.8	66.0	71.3				

Table 3-173: CRL: Tokyo Shinozuka (Fetal Age)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: CRL (mm); Age (Weeks/Days); SD (mm)								
CRL	Age	1SD	CRL	Age	1SD	CRL	Age	1SD
<5	n/a	—	20	8w6d	3.7	36	10w6d	5.9
5	6w3d	1.1	21	9w0d	3.9	37	11w0d	6.0
6	6w4d	1.3	22	9w1d	4.0	38	11w0d	6.0
7	6w6d	1.6	23	9w2d	4.2	39	11w1d	6.2
8	7w0d	1.7	24	9w3d	4.3	40	11w2d	6.3
9	7w1d	1.9	25	9w4d	4.5	41	11w3d	6.5
10	7w2d	2.0	26	9w4d	4.5	42	11w3d	6.5
11	7w3d	2.2	27	9w5d	4.6	43	11w4d	6.6
12	7w4d	2.3	28	9w6d	4.8	44	11w5d	6.8
13	7w5d	2.5	29	10w0d	4.9	45	11w6d	6.9
14	7w6d	2.6	30	10w1d	5.1	46	11w6d	6.9
15	8w1d	2.9	31	10w2d	5.2	47	12w0d	7.1
16	8w2d	3.1	32	10w3d	5.4	48	12w1d	7.2
17	8w3d	3.3	33	10w4d	5.5	49	12w1d	7.2
18	8w4d	3.4	34	10w5d	5.7	50	12w2d	7.4
19	8w5d	3.6	35	10w6d	5.9	>50	n/a	—

Tokyo Shinozuka (continued)

Table 3-174: CRL: Tokyo Shinozuka (Fetal Growth)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: Age (Weeks/Days); Mean (mm); SD (mm); Table Range: 1SD; Graph Range: 1.64SD								
Age	Mean	SD	Age	Mean	SD	Age	Mean	SD
7w0d	7.9	1.7	9w1d	21.2	4.0	11w2d	40.0	6.3
7w1d	8.6	1.9	9w2d	22.3	4.2	11w3d	41.4	6.5
7w2d	9.3	2.0	9w3d	23.4	4.3	11w4d	42.9	6.6
7w3d	10.1	2.2	9w4d	24.5	4.5	11w5d	44.4	6.8
7w4d	10.9	2.3	9w5d	25.7	4.6	11w6d	45.9	6.9
7w5d	11.7	2.5	9w6d	26.8	4.8	12w0d	47.4	7.1
7w6d	12.5	2.6	10w0d	28.0	4.9	12w1d	49.0	7.2
8w0d	13.4	2.8	10w1d	29.3	5.1	12w2d	50.6	7.4
8w1d	14.3	2.9	10w2d	30.5	5.2	12w3d	52.2	7.5
8w2d	15.2	3.1	10w3d	31.8	5.4	12w4d	53.9	7.7
8w3d	16.1	3.3	10w4d	33.1	5.5	12w5d	55.5	7.8
8w4d	17.1	3.4	10w5d	34.4	5.7	12w6d	57.2	8.0
8w5d	18.1	3.6	10w6d	35.8	5.9	13w0d	58.9	8.2
8w6d	19.1	3.7	11w0d	37.1	6.0			
9w0d	20.1	3.9	11w1d	38.5	6.2			

Table 3-175: EFW: Tokyo Shinozuka (Fetal Age)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: EFW (grams); Age (Weeks/Days); SD (grams)								
EFW	Age	1SD	EFW	Age	1SD	EFW	Age	1SD
<250	n/a	—	1200	28w3d	162	2200	34w2d	258
250	19w3d	45	1250	28w5d	166	2250	34w4d	264
300	20w0d	51	1300	29w1d	173	2300	34w6d	269
350	20w4d	58	1350	29w3d	177	2350	35w1d	274
400	21w2d	66	1400	29w5d	181	2400	35w3d	279
450	21w5d	71	1450	30w0d	186	2450	35w5d	284
500	22w2d	78	1500	30w2d	191	2500	35w7d	290
550	22w6d	85	1550	30w5d	197	2550	36w2d	295
600	23w2d	90	1600	30w7d	202	2600	36w4d	301
650	23w6d	98	1650	31w2d	207	2650	36w6d	306
700	24w2d	103	1700	31w4d	211	2700	37w2d	314
750	24w5d	109	1750	31w6d	216	2750	37w4d	320
800	25w2d	116	1800	32w1d	221	2800	37w6d	325
850	25w5d	122	1850	32w3d	226	2850	38w1d	331
900	26w1d	128	1900	32w5d	231	2900	38w4d	340
950	26w4d	134	1950	32w7d	236	2950	38w6d	345
1000	26w6d	138	2000	33w1d	238	3000	39w2d	354
1050	27w2d	145	2050	33w3d	243	>3000	n/a	—
1100	27w5d	151	2100	33w5d	248			
1150	28w0d	155	2150	34w0d	253			

Tokyo Shinozuka (continued)

Table 3-176: FL: Tokyo Shinozuka (Fetal Age)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: FL (mm); Age (Weeks/Days); SD (mm)								
FL	Age	1SD	FL	Age	1SD	FL	Age	1SD
<20	n/a	—	37	22w2d	2.9	55	30w5d	3.1
20	16w1d	2.6	38	22w5d	2.9	56	31w2d	3.2
21	16w3d	2.7	39	23w1d	2.9	57	31w6d	3.2
22	16w6d	2.7	40	23w4d	2.9	58	32w3d	3.2
23	17w1d	2.7	41	24w0d	2.9	59	33w0d	3.2
24	17w3d	2.7	42	24w3d	2.9	60	33w3d	3.2
25	17w6d	2.7	43	24w6d	2.9	61	34w0d	3.2
26	18w1d	2.7	44	25w3d	3.0	62	34w4d	3.3
27	18w3d	2.7	45	25w6d	3.0	63	35w1d	3.3
28	18w6d	2.7	46	26w2d	3.0	64	35w5d	3.3
29	19w1d	2.7	47	26w5d	3.0	65	36w2d	3.3
30	19w4d	2.8	48	27w2d	3.0	66	37w0d	3.3
31	20w0d	2.8	49	27w5d	3.0	67	37w4d	3.4
32	20w2d	2.8	50	28w2d	3.1	68	38w1d	3.4
33	20w5d	2.8	51	28w5d	3.1	69	38w5d	3.4
34	21w1d	2.8	52	29w2d	3.1	70	39w3d	3.4
35	21w3d	2.8	53	29w5d	3.1	>70	n/a	—
36	21w6d	2.8	54	30w2d	3.1			

Table 3-177: FL: Tokyo Shinozuka (Fetal Growth)
Shinozuka Jpn J Med Ultrasonics vol 23: 12 1996

Unit: Age (Weeks); Min/Mean/Max (mm); Table/Graph Range: 1.64SD							
Age	Min	Mean	Max	Age	Min	Mean	Max
16	17.1	21.4	25.8	30	49.7	54.8	60.0
17	19.6	24.0	28.4	31	51.6	56.8	62.0
18	22.1	26.5	31.0	32	53.5	58.7	64.0
19	24.6	29.1	33.6	33	55.2	60.5	65.8
20	27.1	31.6	36.2	34	56.9	62.2	67.6
21	29.5	34.1	38.8	35	58.4	63.8	69.2
22	31.9	36.6	41.3	36	59.9	65.3	70.8
23	34.3	39.1	43.8	37	61.2	66.7	72.2
24	36.7	41.5	46.3	38	62.4	68.0	73.6
25	39.0	43.9	48.7	39	63.5	69.1	74.7
26	41.3	46.2	51.1	40	64.4	70.1	75.8
27	43.5	48.4	53.4	41	65.3	71.0	76.7
28	45.6	50.6	55.7	42	65.9	71.7	77.5
29	47.7	52.8	57.9				

Williams

Table 3-178: EFW: Williams (Fetal Growth)

Unit: Age (Weeks); Min/Mean/Max (grams); Table/Graph Range: 10%: 90%							
Age	Min	Mean	Max	Age	Min	Mean	Max
22.0	320	513	746	34.0	1728	2394	3132
23.0	365	589	861	35.0	1974	2628	3333
24.0	417	675	989	36.0	2224	2849	3521
25.0	477	773	1132	37.0	2455	3052	3706
26.0	546	882	1289	38.0	2642	3227	3867
27.0	627	1005	1463	39.0	2790	3364	3994
28.0	720	1143	1653	40.0	2881	3462	4080
29.0	829	1298	1859	41.0	2946	3524	4127
30.0	955	1484	2136	42.0	3011	3589	4185
31.0	1100	1695	2402	43.0	3044	3626	4221
32.0	1284	1920	2673	44.0	3043	3633	4233
33.0	1499	2155	2910				
NOTE: Williams uses Hadlock's EFW formula and then may calculate his EFW if you have set the preset to use Williams.							

WHO (World Health Organization)

Table 3-179: AC (Abdominal circumference) WHO (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
14.00	71	81	92	28.00	220	240	260
15.00	81	92	103	29.00	229	250	271
16.00	91	103	115	30.00	238	260	282
17.00	102	114	127	31.00	246	269	292
18.00	113	126	139	32.00	254	279	303
19.00	124	138	152	33.00	262	288	313
20.00	136	150	164	34.00	270	298	324
21.00	147	162	177	35.00	279	307	335
22.00	159	173	189	36.00	287	317	346
23.00	170	185	202	37.00	296	328	358
24.00	181	197	214	38.00	306	338	371
25.00	191	208	226	39.00	316	350	384
26.00	201	219	238	40.00	327	363	399
27.00	211	230	249				

Reference

Torvid Kiserud, Gilda Piaggio, Guillermo Carroli, Mariana Widmer, Jose Carvalho, Lisa Neerup Jensen, Daniel Giordano, Jose Guilherme Cecatti, Hany Abdel Aleem, Sameera A. Talegawkar, Alexandra Benachi, Anke Diemert, Antoinette Tshefu Kitoto, Jadsada Thinkhamrop, Pisake Lumbiganon, Ann Tabor, Alka Kriplani, Rogelio Gonzalez Perez, Kurt Hecher, Mark A. Hanson, A. Metin Gulmezoglu, Lawrence D. Platt; The World Health Organization Fetal Growth Charts: A Multinational Longitudinal Study of Ultrasound Biometric Measurements and Estimated Fetal Weight; PLOS Medicine | DOI:10.1371/journal.pmed.1002220 January 24, 2017

WHO (World Health Organization) (continued)

Table 3-180: BPD (Biparietal diameter) WHO (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
14.00	24	27	30	28.00	66	72	77
15.00	27	30	33	29.00	68	74	80
16.00	30	33	37	30.00	71	77	82
17.00	33	36	40	31.00	73	79	85
18.00	36	40	44	32.00	75	81	87
19.00	39	43	47	33.00	77	83	89
20.00	42	47	51	34.00	79	85	91
21.00	45	50	54	35.00	80	87	93
22.00	48	53	58	36.00	82	89	95
23.00	52	57	61	37.00	84	90	96
24.00	55	60	65	38.00	85	92	98
25.00	58	63	68	39.00	87	94	100
26.00	60	66	71	40.00	88	96	101
27.00	63	69	74				

Reference

Torvid Kiserud, Gilda Piaggio, Guillermo Carroli, Mariana Widmer, Jose Carvalho, Lisa Neerup Jensen, Daniel Giordano, Jose Guilherme Cecatti, Hany Abdel Aleem, Sameera A. Talegawkar, Alexandra Benachi, Anke Diemert, Antoinette Tshefu Kitoto, Jadsada Thinkhamrop, Pisake Lumbiganon, Ann Tabor, Alka Kriplani, Rogelio Gonzalez Perez, Kurt Hecher, Mark A. Hanson, A. Metin Gulmezoglu, Lawrence D. Platt; The World Health Organization Fetal Growth Charts: A Multinational Longitudinal Study of Ultrasound Biometric Measurements and Estimated Fetal Weight; PLOS Medicine | DOI:10.1371/journal.pmed.1002220 January 24, 2017

WHO (World Health Organization) (continued)

Table 3-181: EFW (Estimated Fetal Weight) WHO (Fetal Growth)

weeks	grams			weeks	grams		
	5%	Mean	95%		5%	Mean	95%
14.00	73.00	90.00	109.00	28.00	977.00	1189.00	1429.00
15.00	93.00	114.00	138.00	29.00	1108.00	1350.00	1622.00
16.00	117.00	144.00	174.00	30.00	1247.00	1523.00	1828.00
17.00	146.00	179.00	217.00	31.00	1394.00	1707.00	2046.00
18.00	181.00	222.00	268.00	32.00	1548.00	1901.00	2276.00
19.00	223.00	272.00	328.00	33.00	1708.00	2103.00	2516.00
20.00	271.00	330.00	399.00	34.00	1872.00	2312.00	2764.00
21.00	327.00	398.00	481.00	35.00	2038.00	2527.00	3018.00
22.00	392.00	476.00	575.00	36.00	2205.00	2745.00	3277.00
23.00	465.00	565.00	682.00	37.00	2372.00	2966.00	3538.00
24.00	548.00	665.00	803.00	38.00	2536.00	3186.00	3799.00
25.00	641.00	778.00	938.00	39.00	2696.00	3403.00	4058.00
26.00	743.00	902.00	1087.00	40.00	2849.00	3617.00	4312.00
27.00	855.00	1039.00	1251.00				

Reference Torvid Kiserud, Gilda Piaggio, Guillermo Carroli, Mariana Widmer, Jose Carvalho, Lisa Neerup Jensen, Daniel Giordano, Jose Guilherme Cecatti, Hany Abdel Aleem, Sameera A. Talegawkar, Alexandra Benachi, Anke Diemert, Antoinette Tshefu Kitoto, Jadsada Thinkhamrop, Pisake Lumbiganon, Ann Tabor, Alka Kriplani, Rogelio Gonzalez Perez, Kurt Hecher, Mark A. Hanson, A. Metin Gulmezoglu, Lawrence D. Platt; The World Health Organization Fetal Growth Charts: A Multinational Longitudinal Study of Ultrasound Biometric Measurements and Estimated Fetal Weight; PLOS Medicine | DOI:10.1371/journal.pmed.1002220 January 24, 2017

WHO (World Health Organization) (continued)

Table 3-182: FL (Femur length) WHO (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
14.00	10	13	16	28.00	48	52	56
15.00	13	16	19	29.00	50	54	58
16.00	16	19	22	30.00	52	56	60
17.00	19	22	26	31.00	54	59	63
18.00	22	26	29	32.00	56	61	65
19.00	26	29	32	33.00	58	63	67
20.00	29	32	35	34.00	60	65	69
21.00	32	35	38	35.00	62	67	71
22.00	35	38	41	36.00	64	69	73
23.00	37	41	44	37.00	66	70	75
24.00	40	43	47	38.00	67	72	77
25.00	42	46	49	39.00	68	73	78
26.00	44	48	51	40.00	68	73	78
27.00	46	50	54				

Reference

Torvid Kiserud, Gilda Piaggio, Guillermo Carroli, Mariana Widmer, Jose Carvalho, Lisa Neerup Jensen, Daniel Giordano, Jose Guilherme Cecatti, Hany Abdel Aleem, Sameera A. Talegawkar, Alexandra Benachi, Anke Diemert, Antoinette Tshefu Kitoto, Jadsada Thinkhamrop, Pisake Lumbiganon, Ann Tabor, Alka Kriplani, Rogelio Gonzalez Perez, Kurt Hecher, Mark A. Hanson, A. Metin Gulmezoglu, Lawrence D. Platt; The World Health Organization Fetal Growth Charts: A Multinational Longitudinal Study of Ultrasound Biometric Measurements and Estimated Fetal Weight; PLOS Medicine | DOI:10.1371/journal.pmed.1002220 January 24, 2017

WHO (World Health Organization) (continued)

Table 3-183: FL/BPD (Femur Length/Biparietal Diameter) Ratio by Percentile

weeks	5%	Mean	95%	weeks	5%	Mean	95%
14.00	0.41	0.48	0.57	28.00	0.67	0.74	0.80
15.00	0.46	0.53	0.61	29.00	0.68	0.74	0.80
16.00	0.50	0.57	0.65	30.00	0.68	0.74	0.81
17.00	0.54	0.61	0.69	31.00	0.68	0.74	0.81
18.00	0.57	0.64	0.72	32.00	0.69	0.75	0.82
19.00	0.60	0.66	0.74	33.00	0.69	0.75	0.82
20.00	0.62	0.68	0.76	34.00	0.70	0.76	0.83
21.00	0.64	0.70	0.77	35.00	0.70	0.76	0.84
22.00	0.65	0.71	0.78	36.00	0.71	0.77	0.84
23.00	0.66	0.72	0.79	37.00	0.71	0.77	0.85
24.00	0.66	0.72	0.79	38.00	0.71	0.78	0.85
25.00	0.67	0.73	0.79	39.00	0.71	0.78	0.85
26.00	0.67	0.73	0.80	40.00	0.71	0.78	0.85
27.00	0.67	0.73	0.80				

Reference

24 Mar 2017: Kiserud T, Piaggio G, Carroli G, Widmer M, Carvalho J, et al. (2017) Correction: The World Health Organization Fetal Growth Charts: A Multinational Longitudinal Study of Ultrasound Biometric Measurements and Estimated Fetal Weight. PLOS Medicine 14(3): e1002284.

WHO (World Health Organization) (continued)

Table 3-184: FL/HC (Femur Length/Head Circumference) Ratio by Percentile

weeks	5%	Mean	95%	weeks	5%	Mean	95%
14.00	0.11	0.13	0.15	28.00	0.18	0.20	0.22
15.00	0.12	0.14	0.16	29.00	0.18	0.20	0.22
16.00	0.14	0.15	0.17	30.00	0.19	0.20	0.22
17.00	0.15	0.16	0.18	31.00	0.19	0.20	0.22
18.00	0.16	0.17	0.19	32.00	0.19	0.20	0.22
19.00	0.16	0.18	0.20	33.00	0.19	0.21	0.22
20.00	0.17	0.18	0.20	34.00	0.19	0.21	0.23
21.00	0.17	0.19	0.20	35.00	0.19	0.21	0.23
22.00	0.18	0.19	0.21	36.00	0.20	0.21	0.23
23.00	0.18	0.19	0.21	37.00	0.20	0.22	0.23
24.00	0.18	0.19	0.21	38.00	0.20	0.22	0.23
25.00	0.18	0.20	0.21	39.00	0.20	0.22	0.24
26.00	0.18	0.20	0.21	40.00	0.20	0.22	0.24
27.00	0.18	0.20	0.21				

Reference

24 Mar 2017: Kiserud T, Piaggio G, Carroli G, Widmer M, Carvalho J, et al. (2017) Correction: The World Health Organization Fetal Growth Charts: A Multinational Longitudinal Study of Ultrasound Biometric Measurements and Estimated Fetal Weight. PLOS Medicine 14(3): e1002284.

WHO (World Health Organization) (continued)

Table 3-185: HC (Head circumference) WHO (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
14.00	88	100	110	28.00	247	264	280
15.00	99	111	122	29.00	256	273	290
16.00	111	123	134	30.00	264	281	299
17.00	123	135	147	31.00	271	289	307
18.00	135	148	160	32.00	278	296	315
19.00	147	161	173	33.00	284	303	322
20.00	159	173	186	34.00	290	309	328
21.00	172	186	199	35.00	296	315	335
22.00	184	198	212	36.00	301	321	340
23.00	196	210	224	37.00	306	326	345
24.00	207	222	236	38.00	311	332	350
25.00	218	233	248	39.00	316	337	355
26.00	228	244	259	40.00	321	342	360
27.00	238	254	270				

Reference

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WHO (World Health Organization) (continued)

Table 3-186: HL (Humerus Length) WHO (Fetal Growth)

weeks	mm			weeks	mm		
	5%	Mean	95%		5%	Mean	95%
14.00	11	14	16	28.00	44	48	52
15.00	13	16	19	29.00	46	49	53
16.00	16	19	22	30.00	47	51	55
17.00	19	23	25	31.00	49	53	57
18.00	22	26	28	32.00	50	54	59
19.00	25	28	31	33.00	52	56	60
20.00	28	31	34	34.00	53	58	62
21.00	31	34	37	35.00	55	59	63
22.00	33	36	39	36.00	56	61	65
23.00	35	38	42	37.00	57	62	66
24.00	37	41	44	38.00	58	63	67
25.00	39	42	46	39.00	59	64	68
26.00	41	44	48	40.00	58	64	69
27.00	43	46	50				

Reference

Torvid Kiserud, Gilda Piaggio, Guillermo Carroli, Mariana Widmer, Jose Carvalho, Lisa Neerup Jensen, Daniel Giordano, Jose Guilherme Cecatti, Hany Abdel Aleem, Sameera A. Talegawkar, Alexandra Benachi, Anke Diemert, Antoinette Tshefu Kitoto, Jadsada Thinkhamrop, Pisake Lumbiganon, Ann Tabor, Alka Kriplani, Rogelio Gonzalez Perez, Kurt Hecher, Mark A. Hanson, A. Metin Gulmezoglu, Lawrence D. Platt; The World Health Organization Fetal Growth Charts: A Multinational Longitudinal Study of Ultrasound Biometric Measurements and Estimated Fetal Weight; PLOS Medicine | DOI:10.1371/journal.pmed.1002220 January 24, 2017

Yarkoni

Table 3-187: CLA: Yarkoni S, Journal of Ultrasound in Medicine, 4:467-470, 1985 (Fetal Age)

Unit: Meas (mm); Min/Mean/Max (Weeks/Days)							
Meas	Min	Mean	Max	Meas	Min	Mean	Max
11	8w3d	13w6d	17w2d	29	23w2d	28w5d	32w1d
12	9w1d	14w4d	18w1d	30	24w0d	29w4d	34w0d
13	10w0d	14w3d	19w6d	31	25w6d	29w2d	34w6d
14	11w6d	15w2d	20w5d	32	26w5d	30w1d	35w4d
15	12w5d	16w1d	21w4d	33	27w4d	31w0d	35w3d
16	12w3d	18w0d	21w3d	34	27w3d	32w6d	36w2d
17	13w2d	18w5d	22w2d	35	28w1d	33w5d	37w1d
18	14w1d	19w4d	23w0d	36	29w0d	33w3d	39w0d
19	16w0d	19w3d	24w6d	37	30w6d	34w2d	39w5d
20	16w6d	20w2d	25w5d	38	31w5d	35w1d	40w4d
21	17w4d	21w1d	26w4d	39	32w4d	37w0d	40w3d
22	17w3d	22w6d	26w2d	40	32w2d	37w6d	41w2d
23	18w2d	23w5d	27w1d	41	33w1d	38w4d	42w0d
24	19w1d	24w4d	28w0d	42	35w0d	38w3d	43w6d
25	21w0d	24w3d	29w6d	43	35w6d	39w2d	44w5d
26	21w5d	25w1d	30w5d	44	36w5d	40w1d	45w4d
27	22w4d	26w0d	30w3d	45	36w3d	41w6d	45w3d
28	22w3d	27w6d	31w2d				

Table 3-188: Estimated Fetal Weight (EFW) Yarkoni (Fetal Growth)

weeks	grams			weeks	grams		
	5%	Mean	95%		5%	Mean	95%
16.00	132.00	154.00	207.00	28.00	789.00	1244.00	1774.00
17.00	173.00	215.00	249.00	29.00	900.00	1395.00	1883.00
18.00	214.00	276.00	291.00	30.00	1011.00	1546.00	1992.00
19.00	223.00	300.00	412.00	31.00	1198.00	1693.00	2392.00
20.00	232.00	324.00	534.00	32.00	1385.00	1840.00	2793.00
21.00	275.00	432.00	705.00	33.00	1491.00	2032.00	3000.00
22.00	319.00	540.00	876.00	34.00	1597.00	2224.00	3208.00
23.00	347.00	598.00	880.00	35.00	1703.00	2427.00	3336.00
24.00	376.00	656.00	885.00	36.00	1809.00	2631.00	3465.00
25.00	549.00	793.00	1118.00	37.00	2239.00	2824.00	3679.00
26.00	722.00	931.00	1352.00	38.00	2669.00	3017.00	3894.00
27.00	755.00	1087.00	1563.00				

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