



KONICA MINOLTA

ULTRASOUND SYSTEM SONIMAGE HS1

Version 1.31

Acoustic Power Manual



CE 0197



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EN

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Acoustic Output Reference

Track 3, FDA 510(k) Acoustic Output Reporting

Data presented in Track 3 format represents the average MI/TI values for transducers measured under worst-case acoustic output conditions. The onscreen MI/TI values are based on measurements on one transducer under worst-case acoustic output conditions - rounded up to the nearest display increment. It is possible that the values displayed on screen may exceed the MI/TI values presented in the Track 3 format.

Summary Table for Acoustic Output

An acoustic output table is supplied for each transducer/mode combination. The followings apply to the summary table:

- B B-mode
- M, BM M-mode, or simultaneous use of B-mode and M-mode
- D, BD PW Doppler-mode, or simultaneous use of B-mode and PW Doppler-mode
- Bc Color (CFM / PDI)-mode
- Mc, BcMc Mc-mode, or simultaneous use of Color (CFM / PDI)-mode and Mc-mode
- BcD Simultaneous use of Color (CFM / PDI)-mode and PW Doppler-mode
- CW CW Doppler-mode

* "Simultaneous use" refers to "mixed mode".

Definitions

Symbol	Definition	Units
MI	Mechanical Index	N/A
TIS scan	Soft Tissue Thermal Index in auto scanning mode	N/A
TIS non-scan	Soft Tissue Thermal Index in non-auto scanning mode	N/A
TIB	Bone Thermal Index	N/A
TIC	Cranial Thermal Index	N/A
$I_{spta,3}$	The derated spatial-peak temporal-average intensity	mW/cm ²
A_{aprt}	Area of the active aperture	cm ²
$P_{r,3}$	Derated peak rarefactional pressure	MPa
Wo	Ultrasonic power, except for TIS Scan, in which case it is the ultrasonic power passing through a one centimeter window	mW
$W_3(z1)$	Derated ultrasonic power at axial distance z1	mW
$I_{TA,3}(z1)$	Derated spatial-peak, temporal-average intensity at axial distance z1	mW/cm ²
z1	Axial distance corresponding to the location of the max [W.3(z1), I _{TA,3} (z) x 1 cm ²], where z > zbp	cm
zbp	1.69 (Aaprt) ^{1/2}	cm
zsp	The axial distance at which TIB is a maximum (i.e., zsp = zB.3).	cm

Acoustic Output Reference

Symbol	Definition	Units
$z@PII.3 \text{ max}$	The axial distance corresponding to the maximum of the derated spatial-peak pulse intensity integral	cm
$d_{eq} \text{ (zsp)}$	Equivalent beam diameter as a function of axial distance, and is equal to where $ITA(z)$ is the temporal-average intensity as a function of z	cm
f_c	Center frequency	MHz
Dim. of A_{aprt}	Active aperture dimensions for the azimuth and elevational planes	cm
PD	Pulse duration	μs
PRF	Pulse repetition frequency	Hz
$P_r @ PII \text{ max}$	Peak rarefactional pressure at the point where the free-field, spatial-peak pulse intensity integral is a maximum	MPa
$d_{eq}@ PII \text{ max}$	Equivalent beam diameter at the point where the free-field, spatial-peak pulse intensity integral is a maximum	cm
FL	Focal Length, or azimuthal and elevational lengths, if different	cm
$I_{pa.3} @ MI \text{ max}$	Derated pulse-average intensity at the point of global maximum	W/cm^2

Acoustic Output Reporting Table : C5-2

● B-mode

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: C5-2Operating Mode: B

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.7	1.3	---	---	---	5.3	96
P _{r,3} (MPa)	2.8						
Wo (mW)		200	#		#	210	
Min of [W ₃ (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	1.7						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	3.0	3.3	#	#	#	3.1	
Dim. of A _{aprt}	X (cm)		2.7	#	#	#	0.70
	Y (cm)		1.2	#	#	#	1.2

Other information

PD (μs)	0.41						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	3.1						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		13	#	#		2.5
	FLy (cm)		5.3	#	#		5.3
I _{pa,3} @MI _{max} (W/cm ²)	230						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	25	125				25	25

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **M, BM-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: C5-2

Operating Mode: M, BM

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.7	---	---	2.3	4.1	5.8	540
P _{r,3} (MPa)	2.8						
Wo (mW)		#	#		500	190	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				150			
z1 (cm)				3.4			
zbp (cm)				3.4			
zsp (cm)					0.20		
z@PII.3max (cm)	1.7						
d _{eq} (zsp) (cm)					1.7		
f _c (MHz)	3.0	#	#	2.9	2.9	2.3	
Dim. of A _{aprt}	X (cm)	#	#	3.4	3.4	0.47	
	Y (cm)	#	#	1.2	1.2	1.2	

Other information

PD (μs)	0.41						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	3.1						
d _{eq} @PII _{max} (cm)					0.63		
Focal Length	FLx (cm)	#	#	16		1.5	
	FLy (cm)	#	#	5.3		5.3	
I _{pa,3} @MI _{max} (W/cm ²)	230						

Operating Control Conditions

TX-Level (%)	100			100	100	100	100
Focus (mm)	25			160	160	15	75

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **D, BD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: C5-2Operating Mode: D, BD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.7	---	---	2.3	4.1	5.3	650
$P_{r,3}$ (MPa)	2.8						
W_o (mW)		#	#		150	210	
Min of [$W_{s,3}(z1)$, $I_{TA,3}(z1)$] (mW)				150			
$z1$ (cm)				3.3			
z_{bp} (cm)				3.3			
z_{sp} (cm)					4.8		
$z@PII.3max$ (cm)	1.7						
$d_{eq}(zsp)$ (cm)					0.44		
f_c (MHz)	3.0	#	#	2.9	2.0	3.1	
Dim. of A_{aprt}	X (cm)	#	#	3.4	1.6	0.70	
	Y (cm)	#	#	1.2	1.2	1.2	

Other information

PD (μs)	0.41						
PRF (Hz)	1300						
$P_r@PII_{max}$ (MPa)	3.1						
$d_{eq}@PII_{max}$ (cm)					0.41		
Focal Length	FLx (cm)	#	#	16		2.5	
	FLy (cm)	#	#	5.3		5.3	
$I_{pa,3}@MI_{max}$ (W/cm ²)	230						

Operating Control Conditions

TX-Level (%)	100			100	100	100	100
Focus (mm)	25			160	75	25	75
PRF (Hz)	1300			20000	16200	20000	6900

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **Bc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: C5-2

Operating Mode: Bc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.7	1.7	---	---	---	5.5	180
P _{r,3} (MPa)	2.8						
Wo (mW)		110	#		#	140	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	1.7						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	3.0	3.6	#	#	#	2.6	
Dim. of A _{aprt}	X (cm)		0.31	#	#	#	0.31
	Y (cm)		1.2	#	#	#	1.2

Other information

PD (μs)	0.41						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	3.1						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		1.5	#	#		1.5
	FLy (cm)		5.3	#	#		5.3
I _{pa,3} @MI _{max} (W/cm ²)	230						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	25	15				15	125
PRF (Hz)	1300	4400				16200	1700

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Mc, BcMc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: C5-2

Operating Mode: Mc, BcMc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.7	---	---	2.3	4.8	5.8	660
P _{r,3} (MPa)	2.8						
Wo (mW)		#	#		160	190	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				150			
z1 (cm)				3.4			
zbp (cm)				3.4			
zsp (cm)					4.7		
z@PII.3max (cm)	1.7						
d _{eq} (zsp) (cm)					0.40		
f _c (MHz)	3.0	#	#	2.9	2.1	2.3	
Dim. of A _{aprt}	X (cm)	#	#	3.4	1.5	0.47	
	Y (cm)	#	#	1.2	1.2	1.2	

Other information

PD (μs)	0.41						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	3.1						
d _{eq} @PII _{max} (cm)					0.37		
Focal Length	FLx (cm)	#	#	16		1.5	
	FLy (cm)	#	#	5.3		5.3	
I _{pa,3} @MI _{max} (W/cm ²)	230						

Operating Control Conditions

TX-Level (%)	100			100	100	100	100
Focus (mm)	25			160	75	15	40
PRF (Hz)	1300			1300	20000	16200	1300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **BcD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: C5-2

Operating Mode: BcD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.7	---	---	2.3	4.1	5.5	650
P _{r,3} (MPa)	2.8						
Wo (mW)		#	#		150	140	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				150			
z1 (cm)				3.3			
zbp (cm)				3.3			
zsp (cm)					4.8		
z@PII.3max (cm)	1.7						
d _{eq} (zsp) (cm)					0.44		
f _c (MHz)	3.0	#	#	2.9	2.0	2.6	
Dim. of A _{aprt}	X (cm)	#	#	3.4	1.6	0.31	
	Y (cm)	#	#	1.2	1.2	1.2	

Other information

PD (μs)	0.41						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	3.1						
d _{eq} @PII _{max} (cm)					0.41		
Focal Length	FLx (cm)	#	#	16		1.5	
	FLy (cm)	#	#	5.3		5.3	
I _{pa,3} @MI _{max} (W/cm ²)	230						

Operating Control Conditions

TX-Level (%)	100			100	100	100	100
Focus (mm)	25			160	75	15	75
PRF (Hz)	1300			20000	16200	16200	6900

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reporting Table : L18-4

● B-mode (Including Elastography mode)

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L18-4Operating Mode: B

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.2	---	---	---	4.4	200
$P_{r,3}$ (MPa)	3.6						
W_o (mW)		89	#		#	100	
Min of [$W_{,3}(z1)$, $I_{TA,3}(z1)$] (mW)				#			
$z1$ (cm)				#			
z_{bp} (cm)				#			
z_{sp} (cm)					#		
$z@PII.3max$ (cm)	0.90						
$d_{eq}(zsp)$ (cm)					#		
f_c (MHz)	6.9	9.4	#	#	#	6.9	
Dim. of A_{aprt}	X (cm)		1.7	#	#	#	0.96
	Y (cm)		0.30	#	#	#	0.30

Other information

PD (μs)	0.33						
PRF (Hz)	650						
$P_r@PII_{max}$ (MPa)	4.5						
$d_{eq}@PII_{max}$ (cm)					#		
Focal Length	FLx (cm)		4.0	#	#		4.0
	FLy (cm)		1.5	#	#		1.5
$I_{pa,3}@MI_{max}$ (W/cm ²)	420						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	10	40				40	40

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **M, BM-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L18-4

Operating Mode: M, BM

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	1.9	---	1.4	5.4	620
P _{r,3} (MPa)	3.6						
Wo (mW)		#	130		45	130	
Min of [W _s (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					0.90		
z@PII.3max (cm)	0.90						
d _{eq} (zsp) (cm)					0.31		
f _c (MHz)	6.9	#	6.9	#	6.9	6.9	
Dim. of A _{aprt}	X (cm)	#	0.96	#	0.96	0.96	
	Y (cm)	#	0.30	#	0.30	0.30	

Other information

PD (μs)	0.33						
PRF (Hz)	1000						
P _r @PII _{max} (MPa)	4.5						
d _{eq} @PII _{max} (cm)					0.24		
Focal Length	FLx (cm)	#	4.0	#		4.0	
	FLy (cm)	#	1.5	#		1.5	
I _{pa,3} @MI _{max} (W/cm ²)	420						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	10		40		40	40	14

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **D, BD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L18-4Operating Mode: D, BD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	1.8	---	2.9	4.4	540
$P_{r,3}$ (MPa)	3.1						
W_o (mW)		#	57		55	100	
Min of [$W_{s,3}(z1)$, $I_{TA,3}(z1)$] (mW)				#			
$z1$ (cm)				#			
z_{bp} (cm)				#			
z_{sp} (cm)					0.80		
$z@PII.3max$ (cm)	0.50						
$d_{eq}(zsp)$ (cm)					0.33		
f_c (MHz)	5.2	#	6.1	#	5.2	6.9	
Dim. of A_{aprt}	X (cm)	#	1.1	#	1.1	0.96	
	Y (cm)	#	0.30	#	0.30	0.30	

Other information

PD (μs)	0.75						
PRF (Hz)	1300						
$P_r@PII_{max}$ (MPa)	3.4						
$d_{eq}@PII_{max}$ (cm)					0.23		
Focal Length	FLx (cm)	#	4.0	#		4.0	
	FLy (cm)	#	1.5	#		1.5	
$I_{pa,3}@MI_{max}$ (W/cm ²)	200						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	5		40		40	40	20
PRF (Hz)	1300		20000		20000	20000	3600

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **Bc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L18-4

Operating Mode: Bc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	2.6	---	---	---	4.7	670
P _{r,3} (MPa)	3.6						
Wo (mW)		60	#		#	39	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	0.90						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	6.9	10	#	#	#	7.1	
Dim. of A _{aprt}	X (cm)		0.96	#	#	#	0.12
	Y (cm)		0.30	#	#	#	0.30

Other information

PD (μs)	0.33						
PRF (Hz)	650						
P _r @PII _{max} (MPa)	4.5						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		4.0	#	#		0.30
	FLy (cm)		1.5	#	#		1.5
I _{pa,3} @MI _{max} (W/cm ²)	420						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	10	40				3	40
PRF (Hz)	1300	4000				20000	9100

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Mc, BcMc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L18-4Operating Mode: Mc, BcMc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	2.0	---	2.8	5.4	670
P _{r,3} (MPa)	3.6						
Wo (mW)		#	50		50	130	
Min of [W _s (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					0.90		
z@PII.3max (cm)	0.90						
d _{eq} (zsp) (cm)					0.26		
f _c (MHz)	6.9	#	7.9	#	7.9	6.9	
Dim. of A _{aprt}	X (cm)	#	0.96	#	0.96	0.96	
	Y (cm)	#	0.30	#	0.30	0.30	

Other information

PD (μs)	0.33						
PRF (Hz)	1000						
P _r @PII _{max} (MPa)	4.5						
d _{eq} @PII _{max} (cm)					0.22		
Focal Length	FLx (cm)	#	4.0	#		4.0	
	FLy (cm)	#	1.5	#		1.5	
I _{pa,3} @MI _{max} (W/cm ²)	420						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	10		40		40	40	40
PRF (Hz)	1300		6300		6300	6900	3600

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **BcD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L18-4

Operating Mode: BcD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	2.6	---	---	2.9	4.7	670
P _{r,3} (MPa)	3.1						
Wo (mW)		60	#		55	39	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					0.80		
z@PII.3max (cm)	0.50						
d _{eq} (zsp) (cm)					0.33		
f _c (MHz)	5.2	10	#	#	5.2	7.1	
Dim. of A _{aprt}	X (cm)		0.96	#	#	1.1	0.12
	Y (cm)		0.30	#	#	0.30	0.30

Other information

PD (μs)	0.75						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	3.4						
d _{eq} @PII _{max} (cm)					0.23		
Focal Length	FLx (cm)		4.0	#	#		0.30
	FLy (cm)		1.5	#	#		1.5
I _{pa,3} @MI _{max} (W/cm ²)	200						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	5	40			40	3	40
PRF (Hz)	1300	4000			20000	20000	9100

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reporting Table : S4-2

● B-mode

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: S4-2Operating Mode: B

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	2.7	---	---	---	3.6	580
P _{r,3} (MPa)	2.0						
Wo (mW)		120	#		#	130	
Min of [W ₃ (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	5.6						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	2.1	2.1	#	#	#	2.0	
Dim. of A _{aprt}	X (cm)		0.50	#	#	#	0.50
	Y (cm)		1.3	#	#	#	1.3

Other information

PD (μs)	0.75						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	2.9						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		1.5	#	#		1.5
	FLy (cm)		4.5	#	#		4.5
I _{pa,3} @MI _{max} (W/cm ²)	210						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	75	15				15	15

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **M, BM-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: S4-2

Operating Mode: M, BM

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	2.8	---	---	3.8	4.9	620
P _{r,3} (MPa)	2.0						
Wo (mW)		130	#		340	340	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					3.1		
z@PII.3max (cm)	5.6						
d _{eq} (zsp) (cm)					0.84		
f _c (MHz)	2.1	2.1	#	#	1.9	1.9	
Dim. of A _{aprt}	X (cm)		0.50	#	#	2.0	2.0
	Y (cm)		1.3	#	#	1.3	1.3

Other information

PD (μs)	0.75						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	2.9						
d _{eq} @PII _{max} (cm)					0.59		
Focal Length	FLx (cm)		1.5	#	#		13
	FLy (cm)		4.5	#	#		4.5
I _{pa,3} @MI _{max} (W/cm ²)	210						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	75	15			125	125	60

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **D, BD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: S4-2

Operating Mode: D, BD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	2.7	---	---	5.1	3.6	630
P _{r,3} (MPa)	2.0						
Wo (mW)		120	#		170	130	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					5.6		
z@PII.3max (cm)	5.6						
d _{eq} (zsp) (cm)					0.35		
f _c (MHz)	2.1	2.1	#	#	2.1	2.0	
Dim. of A _{aprt}	X (cm)		0.50	#	#	2.0	0.50
	Y (cm)		1.3	#	#	1.3	1.3

Other information

PD (μs)	0.75						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	2.9						
d _{eq} @PII _{max} (cm)					0.33		
Focal Length	FLx (cm)		1.5	#	#		1.5
	FLy (cm)		4.5	#	#		4.5
I _{pa,3} @MI _{max} (W/cm ²)	210						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	75	15			75	15	30
PRF (Hz)	1300	20000			20000	20000	1700

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **Bc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: S4-2

Operating Mode: Bc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	3.6	---	---	---	3.7	650
P _{r,3} (MPa)	2.0						
Wo (mW)		88	#		#	100	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	5.6						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	2.1	2.5	#	#	#	2.1	
Dim. of A _{aprt}	X (cm)		0.31	#	#	#	0.31
	Y (cm)		1.3	#	#	#	1.3

Other information

PD (μs)	0.75						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	2.9						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		1.5	#	#		1.5
	FLy (cm)		4.5	#	#		4.5
I _{pa,3} @MI _{max} (W/cm ²)	210						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	75	15				15	15
PRF (Hz)	1300	20000				20000	8300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Mc, BcMc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: S4-2

Operating Mode: Mc, BcMc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	2.8	---	---	4.9	4.9	650
P _{r,3} (MPa)	2.0						
Wo (mW)		130	#		220	340	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					6.3		
z@PII.3max (cm)	5.6						
d _{eq} (zsp) (cm)					0.41		
f _c (MHz)	2.1	2.1	#	#	2.1	1.9	
Dim. of A _{aprt}	X (cm)		0.50	#	#	2.0	2.0
	Y (cm)		1.3	#	#	1.3	1.3

Other information

PD (μs)	0.75						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	2.9						
d _{eq} @PII _{max} (cm)					0.36		
Focal Length	FLx (cm)		1.5	#	#		13
	FLy (cm)		4.5	#	#		4.5
I _{pa,3} @MI _{max} (W/cm ²)	210						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	75	15			100	125	15
PRF (Hz)	1300	20000			20000	1300	8300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **BcD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: S4-2

Operating Mode: BcD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	3.6	---	---	5.1	3.7	650
P _{r,3} (MPa)	2.0						
Wo (mW)		88	#		170	100	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					5.6		
z@PII.3max (cm)	5.6						
d _{eq} (zsp) (cm)					0.35		
f _c (MHz)	2.1	2.5	#	#	2.1	2.1	
Dim. of A _{aprt}	X (cm)		0.31	#	#	2.0	0.31
	Y (cm)		1.3	#	#	1.3	1.3

Other information

PD (μs)	0.75						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	2.9						
d _{eq} @PII _{max} (cm)					0.33		
Focal Length	FLx (cm)		1.5	#	#		1.5
	FLy (cm)		4.5	#	#		4.5
I _{pa,3} @MI _{max} (W/cm ²)	210						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	75	15			75	15	15
PRF (Hz)	1300	20000			20000	20000	8300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● CW-mode

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: S4-2

Operating Mode: CW

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	0.2	---	0.8	---	3.4	1.8	630
P _{r,3} (MPa)	0.12						
Wo (mW)		#	70		75	75	
Min of [W _s (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					3.2		
z@PII.3max (cm)	3.4						
d _{eq} (zsp) (cm)					0.34		
f _c (MHz)	2.0	#	2.0	#	2.0	2.0	
Dim. of A _{aprt}	X (cm)	#	0.78	#	0.84	0.84	
	Y (cm)	#	1.3	#	1.3	1.3	

Other information

PD (μs)	10						
PRF (Hz)	-						
P _r @PII _{max} (MPa)	0.15						
d _{eq} @PII _{max} (cm)					0.33		
Focal Length	FLx (cm)	#	4.5	#		6.0	
	FLy (cm)	#	4.5	#		4.5	
I _{pa,3} @MI _{max} (W/cm ²)	0.49						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	65		45		65	60	65

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reporting Table : L14-4

● **B-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L14-4

Operating Mode: B

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	0.8	---	---	---	4.7	120
P _{r,3} (MPa)	4.2						
Wo (mW)		91	#		#	60	
Min of [W ₃ (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	1.0						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	9.2	6.5	#	#	#	6.7	
Dim. of A _{aprt}	X (cm)		1.5	#	#	#	0.20
	Y (cm)		0.42	#	#	#	0.42

Other information

PD (μs)	0.15						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.7						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		4.0	#	#		0.50
	FLy (cm)		1.4	#	#		1.4
I _{pa,3} @MI _{max} (W/cm ²)	640						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	10	40				5	40

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **M, BM-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L14-4

Operating Mode: M, BM

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	2.3	---	1.5	5.2	490
P _{r,3} (MPa)	4.2						
Wo (mW)		#	110		88	66	
Min of [W _s (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.1		
z@PII.3max (cm)	1.0						
d _{eq} (zsp) (cm)					0.55		
f _c (MHz)	9.2	#	6.5	#	6.5	6.7	
Dim. of A _{aprt}	X (cm)	#	1.5	#	1.5	0.20	
	Y (cm)	#	0.42	#	0.42	0.42	

Other information

PD (μs)	0.15						
PRF (Hz)	1300						
P _i @PII _{max} (MPa)	5.7						
d _{eq} @PII _{max} (cm)					0.31		
Focal Length	FLx (cm)	#	4.0	#		0.50	
	FLy (cm)	#	1.4	#		1.4	
I _{pa,3} @MI _{max} (W/cm ²)	640						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	10		40		40	5	20

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **D, BD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L14-4

Operating Mode: D, BD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	0.8	---	---	1.4	4.7	640
P _{r,3} (MPa)	4.2						
Wo (mW)		91	#		23	60	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.3		
z@PII.3max (cm)	1.0						
d _{eq} (zsp) (cm)					0.23		
f _c (MHz)	9.2	6.5	#	#	6.2	6.7	
Dim. of A _{aprt}	X (cm)		1.5	#	#	0.80	0.20
	Y (cm)		0.42	#	#	0.42	0.42

Other information

PD (μs)	0.15						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.7						
d _{eq} @PII _{max} (cm)					0.22		
Focal Length	FLx (cm)		4.0	#	#		0.50
	FLy (cm)		1.4	#	#		1.4
I _{pa,3} @MI _{max} (W/cm ²)	640						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	10	40			40	5	20
PRF (Hz)	1300	20000			20000	20000	2300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Bc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L14-4

Operating Mode: Bc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.4	---	---	---	4.7	390
P _{r,3} (MPa)	4.2						
Wo (mW)		32	#		#	60	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	1.0						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	9.2	7.9	#	#	#	6.7	
Dim. of A _{aprt}	X (cm)		0.08	#	#	#	0.20
	Y (cm)		0.42	#	#	#	0.42

Other information

PD (μs)	0.15						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.7						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		0.30	#	#		0.50
	FLy (cm)		1.4	#	#		1.4
I _{pa,3} @MI _{max} (W/cm ²)	640						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	10	3				5	40
PRF (Hz)	1300	10200				20000	6900

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Mc, BcMc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L14-4

Operating Mode: Mc, BcMc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	2.3	---	1.7	5.2	630
P _{r,3} (MPa)	4.2						
Wo (mW)		#	110		27	66	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.3		
z@PII.3max (cm)	1.0						
d _{eq} (zsp) (cm)					0.24		
f _c (MHz)	9.2	#	6.5	#	5.7	6.7	
Dim. of A _{aprt}	X (cm)	#	1.5	#	0.80	0.20	
	Y (cm)	#	0.42	#	0.42	0.42	

Other information

PD (μs)	0.15						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.7						
d _{eq} @PII _{max} (cm)					0.22		
Focal Length	FLx (cm)	#	4.0	#		0.50	
	FLy (cm)	#	1.4	#		1.4	
I _{pa,3} @MI _{max} (W/cm ²)	640						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	10		40		40	5	15
PRF (Hz)	1300		2300		20000	18100	2300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **BcD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L14-4

Operating Mode: BcD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.4	---	---	1.4	4.7	640
P _{r,3} (MPa)	4.2						
Wo (mW)		32	#		23	60	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.3		
z@PII.3max (cm)	1.0						
d _{eq} (zsp) (cm)					0.23		
f _c (MHz)	9.2	7.9	#	#	6.2	6.7	
Dim. of A _{aprt}	X (cm)		0.08	#	#	0.80	0.20
	Y (cm)		0.42	#	#	0.42	0.42

Other information

PD (μs)	0.15						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.7						
d _{eq} @PII _{max} (cm)					0.22		
Focal Length	FLx (cm)		0.30	#	#		0.50
	FLy (cm)		1.4	#	#		1.4
I _{pa,3} @MI _{max} (W/cm ²)	640						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	10	3			40	5	20
PRF (Hz)	1300	10200			20000	20000	2300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reporting Table : EC9-3

● **B-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: EC9-3

Operating Mode: B

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.4	---	---	---	2.4	91
P _{r,3} (MPa)	3.1						
Wo (mW)		51	#		#	81	
Min of [W ₃ (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	2.9						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	5.2	6.2	#	#	#	5.9	
Dim. of A _{aprt}	X (cm)		1.0	#	#	#	1.0
	Y (cm)		0.60	#	#	#	0.60

Other information

PD (μs)	0.25						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.0						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		6.0	#	#		4.0
	FLy (cm)		2.0	#	#		2.0
I _{pa,3} @MI _{max} (W/cm ²)	770						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	30	60				40	60

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **M, BM-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: EC9-3

Operating Mode: M, BM

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.7	---	---	1.5	2.7	430
P _{r,3} (MPa)	3.1						
Wo (mW)		63	#		70	92	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.8		
z@PII.3max (cm)	2.9						
d _{eq} (zsp) (cm)					0.41		
f _c (MHz)	5.2	6.2	#	#	4.6	5.9	
Dim. of A _{aprt}	X (cm)		1.0	#	#	1.0	1.0
	Y (cm)		0.60	#	#	0.60	0.60

Other information

PD (μs)	0.25						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.0						
d _{eq} @PII _{max} (cm)					0.28		
Focal Length	FLx (cm)		6.0	#	#		4.0
	FLy (cm)		2.0	#	#		2.0
I _{pa,3} @MI _{max} (W/cm ²)	770						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	30	60			40	40	30

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **D, BD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: EC9-3

Operating Mode: D, BD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	1.4	---	1.9	2.4	560
P _{r,3} (MPa)	3.1						
Wo (mW)		#	51		42	81	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.8		
z@PII.3max (cm)	2.9						
d _{eq} (zsp) (cm)					0.30		
f _c (MHz)	5.2	#	5.1	#	5.1	5.9	
Dim. of A _{aprt}	X (cm)	#	1.3	#	0.97	1.0	
	Y (cm)	#	0.60	#	0.60	0.60	

Other information

PD (μs)	0.25						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.0						
d _{eq} @PII _{max} (cm)					0.24		
Focal Length	FLx (cm)	#	8.0	#		4.0	
	FLy (cm)	#	2.0	#		2.0	
I _{pa,3} @MI _{max} (W/cm ²)	770						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	30		80		40	40	15
PRF (Hz)	1300		16200		20000	6900	20000

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Bc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: EC9-3Operating Mode: Bc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.4	---	---	---	2.4	160
$P_{r,3}$ (MPa)	3.1						
W_o (mW)		51	#		#	81	
Min of [$W_{s,3}(z1)$, $I_{TA,3}(z1)$] (mW)				#			
$z1$ (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
$z@PII.3max$ (cm)	2.9						
$d_{eq}(zsp)$ (cm)					#		
f_c (MHz)	5.2	6.2	#	#	#	5.9	
Dim. of A_{aprt}	X (cm)		1.0	#	#	#	1.0
	Y (cm)		0.60	#	#	#	0.60

Other information

PD (μs)	0.25						
PRF (Hz)	1300						
$P_r@PII_{max}$ (MPa)	5.0						
$d_{eq}@PII_{max}$ (cm)					#		
Focal Length	FLx (cm)		6.0	#	#		4.0
	FLy (cm)		2.0	#	#		2.0
$I_{pa,3}@MI_{max}$ (W/cm ²)	770						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	30	60				40	80
PRF (Hz)	1300	4400				6900	2100

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Mc, BcMc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: EC9-3

Operating Mode: Mc, BcMc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.7	---	---	1.9	2.7	560
P _{r,3} (MPa)	3.1						
Wo (mW)		63	#		42	92	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.8		
z@PII.3max (cm)	2.9						
d _{eq} (zsp) (cm)					0.30		
f _c (MHz)	5.2	6.2	#	#	5.1	5.9	
Dim. of A _{aprt}	X (cm)		1.0	#	#	0.97	1.0
	Y (cm)		0.60	#	#	0.60	0.60

Other information

PD (μs)	0.25						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	5.0						
d _{eq} @PII _{max} (cm)					0.24		
Focal Length	FLx (cm)		6.0	#	#		4.0
	FLy (cm)		2.0	#	#		2.0
I _{pa,3} @MI _{max} (W/cm ²)	770						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	30	60			40	40	15
PRF (Hz)	1300	4400			20000	6900	20000

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **BcD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: EC9-3Operating Mode: BcD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	1.4	---	1.9	2.4	560
$P_{r,3}$ (MPa)	3.1						
W_o (mW)		#	51		42	81	
Min of [$W_{s,3}(z1)$, $I_{TA,3}(z1)$] (mW)				#			
$z1$ (cm)				#			
z_{bp} (cm)				#			
z_{sp} (cm)					1.8		
$z@PII.3max$ (cm)	2.9						
$d_{eq}(zsp)$ (cm)					0.30		
f_c (MHz)	5.2	#	5.1	#	5.1	5.9	
Dim. of A_{aprt}	X (cm)	#	1.3	#	0.97	1.0	
	Y (cm)	#	0.60	#	0.60	0.60	

Other information

PD (μs)	0.25						
PRF (Hz)	1300						
$P_r@PII_{max}$ (MPa)	5.0						
$d_{eq}@PII_{max}$ (cm)					0.24		
Focal Length	FLx (cm)	#	8.0	#		4.0	
	FLy (cm)	#	2.0	#		2.0	
$I_{pa,3}@MI_{max}$ (W/cm ²)	770						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	30		80		40	40	15
PRF (Hz)	1300		16200		20000	6900	20000

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reporting Table : MC10-3

● **B-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: MC10-3

Operating Mode: B

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	1.7	---	---	---	5.0	200
P _{r,3} (MPa)	3.2						
Wo (mW)		74	#		#	71	
Min of [W ₃ (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	2.0						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	5.1	6.1	#	#	#	6.0	
Dim. of A _{aprt}	X (cm)		1.3	#	#	#	0.21
	Y (cm)		0.50	#	#	#	0.50

Other information

PD (μs)	0.24						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	4.4						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		6.0	#	#		0.50
	FLy (cm)		1.8	#	#		1.8
I _{pa,3} @MI _{max} (W/cm ²)	680						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	20	60				5	80

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **M, BM-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: MC10-3

Operating Mode: M, BM

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	---	3.9	---	2.3	5.5	690
P _{r,3} (MPa)	3.2						
Wo (mW)		#	150		130	78	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.6		
z@PII.3max (cm)	2.0						
d _{eq} (zsp) (cm)					0.43		
f _c (MHz)	5.1	#	6.1	#	5.8	6.0	
Dim. of A _{aprt}	X (cm)	#	1.3	#	1.3	0.21	
	Y (cm)	#	0.50	#	0.50	0.50	

Other information

PD (μs)	0.24						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	4.4						
d _{eq} @PII _{max} (cm)					0.28		
Focal Length	FLx (cm)	#	6.0	#		0.50	
	FLy (cm)	#	1.8	#		1.8	
I _{pa,3} @MI _{max} (W/cm ²)	680						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	20		60		45	5	30

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **D, BD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: MC10-3

Operating Mode: D, BD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	---	2.4	---	2.5	5.0	690
P _{r,3} (MPa)	3.2						
Wo (mW)		#	87		66	71	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.5		
z@PII.3max (cm)	2.0						
d _{eq} (zsp) (cm)					0.41		
f _c (MHz)	5.1	#	5.5	#	4.2	6.0	
Dim. of A _{aprt}	X (cm)	#	1.7	#	1.3	0.21	
	Y (cm)	#	0.50	#	0.50	0.50	

Other information

PD (μs)	0.24						
PRF (Hz)	1300						
P _i @PII _{max} (MPa)	4.4						
d _{eq} @PII _{max} (cm)					0.37		
Focal Length	FLx (cm)	#	8.0	#		0.50	
	FLy (cm)	#	1.8	#		1.8	
I _{pa,3} @MI _{max} (W/cm ²)	680						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	20		80		60	5	15
PRF (Hz)	1300		16200		20000	20000	2300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Bc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: MC10-3

Operating Mode: Bc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	1.7	---	---	---	5.0	310
P _{r,3} (MPa)	3.2						
Wo (mW)		74	#		#	71	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	2.0						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	5.1	6.1	#	#	#	6.0	
Dim. of A _{aprt}	X (cm)		1.3	#	#	#	0.21
	Y (cm)		0.50	#	#	#	0.50

Other information

PD (μs)	0.24						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	4.4						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		6.0	#	#		0.50
	FLy (cm)		1.8	#	#		1.8
I _{pa,3} @MI _{max} (W/cm ²)	680						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	20	60				5	60
PRF (Hz)	1300	2100				20000	2500

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Mc, BcMc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: MC10-3

Operating Mode: Mc, BcMc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	---	3.9	---	2.5	5.5	690
P _{r,3} (MPa)	3.2						
Wo (mW)		#	150		66	78	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.5		
z@PII.3max (cm)	2.0						
d _{eq} (zsp) (cm)					0.41		
f _c (MHz)	5.1	#	6.1	#	4.2	6.0	
Dim. of A _{aprt}	X (cm)	#	1.3	#	1.3	0.21	
	Y (cm)	#	0.50	#	0.50	0.50	

Other information

PD (μs)	0.24						
PRF (Hz)	1300						
P _i @PII _{max} (MPa)	4.4						
d _{eq} @PII _{max} (cm)					0.37		
Focal Length	FLx (cm)	#	6.0	#		0.50	
	FLy (cm)	#	1.8	#		1.8	
I _{pa,3} @MI _{max} (W/cm ²)	680						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	20		60		60	5	15
PRF (Hz)	1300		1900		20000	18100	2300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **BcD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: MC10-3

Operating Mode: BcD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.6	---	2.4	---	2.5	5.0	690
P _{r,3} (MPa)	3.2						
Wo (mW)		#	87		66	71	
Min of [W _s (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.5		
z@PII.3max (cm)	2.0						
d _{eq} (zsp) (cm)					0.41		
f _c (MHz)	5.1	#	5.5	#	4.2	6.0	
Dim. of A _{aprt}	X (cm)	#	1.7	#	1.3	0.21	
	Y (cm)	#	0.50	#	0.50	0.50	

Other information

PD (μs)	0.24						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	4.4						
d _{eq} @PII _{max} (cm)					0.37		
Focal Length	FLx (cm)	#	8.0	#		0.50	
	FLy (cm)	#	1.8	#		1.8	
I _{pa,3} @MI _{max} (W/cm ²)	680						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	20		80		60	5	15
PRF (Hz)	1300		16200		20000	20000	2300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reporting Table : L11-3

● **B-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L11-3

Operating Mode: B

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	2.0	---	---	---	5.0	200
P _{r,3} (MPa)	2.9						
Wo (mW)		170	#		#	62	
Min of [W ₃ (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	2.4						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	4.4	8.8	#	#	#	5.1	
Dim. of A _{aprt}	X (cm)		1.7	#	#	#	0.16
	Y (cm)		0.50	#	#	#	0.50

Other information

PD (μs)	0.29						
PRF (Hz)	650						
P _r @PII _{max} (MPa)	4.0						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		8.0	#	#		0.50
	FLy (cm)		1.9	#	#		1.9
I _{pa,3} @MI _{max} (W/cm ²)	280						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	80	80				5	80

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **M, BM-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L11-3

Operating Mode: M, BM

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	5.1	---	2.6	5.5	630
P _{r,3} (MPa)	2.9						
Wo (mW)		#	210		180	97	
Min of [W _s (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.7		
z@PII.3max (cm)	2.4						
d _{eq} (zsp) (cm)					0.44		
f _c (MHz)	4.4	#	7.3	#	7.0	7.3	
Dim. of A _{aprt}	X (cm)	#	1.5	#	1.4	0.32	
	Y (cm)	#	0.50	#	0.50	0.50	

Other information

PD (μs)	0.29						
PRF (Hz)	1000						
P _i @PII _{max} (MPa)	4.0						
d _{eq} @PII _{max} (cm)					0.32		
Focal Length	FLx (cm)	#	8.0	#		1.0	
	FLy (cm)	#	1.9	#		1.9	
I _{pa,3} @MI _{max} (W/cm ²)	280						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	80		80		60	10	15

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **D, BD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L11-3

Operating Mode: D, BD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	2.9	---	3.2	5.0	630
P _{r,3} (MPa)	2.9						
Wo (mW)		#	100		69	62	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.8		
z@PII.3max (cm)	2.4						
d _{eq} (zsp) (cm)					0.32		
f _c (MHz)	4.4	#	5.8	#	3.8	5.1	
Dim. of A _{aprt}	X (cm)	#	1.6	#	1.1	0.16	
	Y (cm)	#	0.50	#	0.50	0.50	

Other information

PD (μs)	0.29						
PRF (Hz)	650						
P _r @PII _{max} (MPa)	4.0						
d _{eq} @PII _{max} (cm)					0.24		
Focal Length	FLx (cm)	#	8.0	#		0.50	
	FLy (cm)	#	1.9	#		1.9	
I _{pa,3} @MI _{max} (W/cm ²)	280						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	80		80		52	5	12
PRF (Hz)	1300		20000		20000	20000	6900

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Bc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L11-3Operating Mode: Bc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	2.6	---	---	---	5.4	580
$P_{r,3}$ (MPa)	2.9						
W_o (mW)		210	#		#	130	
Min of [$W_{s,3}(z1)$, $I_{TA,3}(z1)$] (mW)				#			
$z1$ (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
$z@PII.3max$ (cm)	2.4						
$d_{eq}(zsp)$ (cm)					#		
f_c (MHz)	4.4	7.6	#	#	#	5.7	
Dim. of A_{aprt}	X (cm)		1.6	#	#	#	0.64
	Y (cm)		0.50	#	#	#	0.50

Other information

PD (μs)	0.29						
PRF (Hz)	650						
$P_r@PII_{max}$ (MPa)	4.0						
$d_{eq}@PII_{max}$ (cm)					#		
Focal Length	FLx (cm)		8.0	#	#		3.0
	FLy (cm)		1.9	#	#		1.9
$I_{pa,3}@MI_{max}$ (W/cm ²)	280						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	80	80				30	52
PRF (Hz)	1300	2100				12800	8300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Mc, BcMc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L11-3

Operating Mode: Mc, BcMc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	5.1	---	3.2	5.5	630
P _{r,3} (MPa)	2.9						
Wo (mW)		#	210		69	97	
Min of [W _s (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.8		
z@PII.3max (cm)	2.4						
d _{eq} (zsp) (cm)					0.32		
f _c (MHz)	4.4	#	7.3	#	3.8	7.3	
Dim. of A _{aprt}	X (cm)	#	1.5	#	1.1	0.32	
	Y (cm)	#	0.50	#	0.50	0.50	

Other information

PD (μs)	0.29						
PRF (Hz)	1000						
P _i @PII _{max} (MPa)	4.0						
d _{eq} @PII _{max} (cm)					0.24		
Focal Length	FLx (cm)	#	8.0	#		1.0	
	FLy (cm)	#	1.9	#		1.9	
I _{pa,3} @MI _{max} (W/cm ²)	280						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	80		80		52	10	15
PRF (Hz)	1300		1500		20000	18100	1500

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **BcD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: L11-3Operating Mode: BcD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	2.9	---	3.2	5.4	630
$P_{r,3}$ (MPa)	2.9						
W_o (mW)		#	100		69	130	
Min of [$W_{s,3}(z1)$, $I_{TA,3}(z1)$] (mW)				#			
$z1$ (cm)				#			
z_{bp} (cm)				#			
z_{sp} (cm)					1.8		
$z@PII.3max$ (cm)	2.4						
$d_{eq}(z_{sp})$ (cm)					0.32		
f_c (MHz)	4.4	#	5.8	#	3.8	5.7	
Dim. of A_{aprt}	X (cm)	#	1.6	#	1.1	0.64	
	Y (cm)	#	0.50	#	0.50	0.50	

Other information

PD (μs)	0.29						
PRF (Hz)	650						
$P_r@PII_{max}$ (MPa)	4.0						
$d_{eq}@PII_{max}$ (cm)					0.24		
Focal Length	FLx (cm)	#	8.0	#		3.0	
	FLy (cm)	#	1.9	#		1.9	
$I_{pa,3}@MI_{max}$ (W/cm ²)	280						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	80		80		52	30	12
PRF (Hz)	1300		20000		20000	12800	6900

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reporting Table : HL18-4

● **B-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: HL18-4

Operating Mode: B

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.3	---	---	---	5.0	240
P _{r,3} (MPa)	3.5						
Wo (mW)		74	#		#	48	
Min of [W ₃ (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	1.5						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	6.8	8.5	#	#	#	6.7	
Dim. of A _{aprt}	X (cm)		1.7	#	#	#	0.16
	Y (cm)		0.30	#	#	#	0.30

Other information

PD (μs)	0.34						
PRF (Hz)	650						
P _r @PII _{max} (MPa)	4.7						
d _{eq} @PII _{max} (cm)					#		
Focal Length	FLx (cm)		4.0	#	#		0.70
	FLy (cm)		1.5	#	#		1.5
I _{pa,3} @MI _{max} (W/cm ²)	630						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	20	40				7	40

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **M, BM-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: HL18-4

Operating Mode: M, BM

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	1.8	---	1.5	5.5	650
P _{r,3} (MPa)	3.5						
Wo (mW)		#	79		52	52	
Min of [W _s (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					1.0		
z@PII.3max (cm)	1.5						
d _{eq} (zsp) (cm)					0.33		
f _c (MHz)	6.8	#	6.9	#	6.9	6.7	
Dim. of A _{aprt}	X (cm)	#	0.96	#	0.96	0.16	
	Y (cm)	#	0.30	#	0.30	0.30	

Other information

PD (μs)	0.34						
PRF (Hz)	1000						
P _r @PII _{max} (MPa)	4.7						
d _{eq} @PII _{max} (cm)					0.23		
Focal Length	FLx (cm)	#	4.0	#		0.70	
	FLy (cm)	#	1.5	#		1.5	
I _{pa,3} @MI _{max} (W/cm ²)	630						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	20		40		40	7	20

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **D, BD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: HL18-4

Operating Mode: D, BD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	1.5	---	2.5	5.0	630
P _{r,3} (MPa)	3.3						
Wo (mW)		#	46		46	48	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					0.90		
z@PII.3max (cm)	1.6						
d _{eq} (zsp) (cm)					0.30		
f _c (MHz)	6.3	#	6.3	#	6.3	6.7	
Dim. of A _{aprt}	X (cm)	#	0.80	#	0.80	0.16	
	Y (cm)	#	0.30	#	0.30	0.30	

Other information

PD (μs)	0.55						
PRF (Hz)	1300						
P _r @PII _{max} (MPa)	4.7						
d _{eq} @PII _{max} (cm)					0.23		
Focal Length	FLx (cm)	#	4.0	#		0.70	
	FLy (cm)	#	1.5	#		1.5	
I _{pa,3} @MI _{max} (W/cm ²)	410						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	26		40		40	7	6
PRF (Hz)	1300		16200		16200	20000	18100

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **Bc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: HL18-4

Operating Mode: Bc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.9	---	---	---	5.6	490
P _{r,3} (MPa)	3.3						
Wo (mW)		47	#		#	38	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					#		
z@PII.3max (cm)	1.6						
d _{eq} (zsp) (cm)					#		
f _c (MHz)	6.3	7.9	#	#	#	6.9	
Dim. of A _{aprt}	X (cm)		0.12	#	#	#	0.08
	Y (cm)		0.30	#	#	#	0.30

Other information

PD (μs)	0.55						
PRF (Hz)	1300						
P _r @PIImax (MPa)	4.7						
d _{eq} @PIImax (cm)					#		
Focal Length	FLx (cm)		0.60	#	#		0.30
	FLy (cm)		1.5	#	#		1.5
I _{pa,3} @MIImax (W/cm ²)	410						

Operating Control Conditions

TX-Level (%)	100	100				100	100
Focus (mm)	26	6				3	10
PRF (Hz)	1300	18100				20000	14300

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Acoustic Output Reference

● **Mc, BcMc-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: HL18-4

Operating Mode: Mc, BcMc

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	---	1.8	---	2.5	5.5	650
P _{r,3} (MPa)	3.3						
Wo (mW)		#	79		46	52	
Min of [W _{s,3} (z1), I _{TA,3} (z1)] (mW)				#			
z1 (cm)				#			
zbp (cm)				#			
zsp (cm)					0.90		
z@PII.3max (cm)	1.6						
d _{eq} (zsp) (cm)					0.30		
f _c (MHz)	6.3	#	6.9	#	6.3	6.7	
Dim. of A _{aprt}	X (cm)	#	0.96	#	0.80	0.16	
	Y (cm)	#	0.30	#	0.30	0.30	

Other information

PD (μs)	0.55						
PRF (Hz)	1300						
P _i @PII _{max} (MPa)	4.7						
d _{eq} @PII _{max} (cm)					0.23		
Focal Length	FLx (cm)	#	4.0	#		0.70	
	FLy (cm)	#	1.5	#		1.5	
I _{pa,3} @MI _{max} (W/cm ²)	410						

Operating Control Conditions

TX-Level (%)	100		100		100	100	100
Focus (mm)	26		40		40	7	10
PRF (Hz)	1300		3000		16200	20000	6900

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

● **BcD-mode**

ACOUSTIC POWER DATA TABLE

UNIT: SONIMAGE HS1

Transducer Model: HL18-4Operating Mode: BcD

Associated Acoustic Parameters

Index Label	MI	TIS			TIB	TIC	Ispta.3 mW/cm ²
		scan	non-scan		non-scan		
			Aaprt ≤ 1	Aaprt > 1			
Maximum Index Value	1.5	1.9	---	---	2.5	5.6	630
$P_{r,3}$ (MPa)	3.3						
W_o (mW)		47	#		46	38	
Min of [$W_{s,3}(z1)$, $I_{TA,3}(z1)$] (mW)				#			
$z1$ (cm)				#			
zbp (cm)				#			
zsp (cm)					0.90		
$z@PII.3max$ (cm)	1.6						
$d_{eq}(zsp)$ (cm)					0.30		
f_c (MHz)	6.3	7.9	#	#	6.3	6.9	
Dim. of A_{aprt}	X (cm)		0.12	#	#	0.80	0.08
	Y (cm)		0.30	#	#	0.30	0.30

Other information

PD (μs)	0.55						
PRF (Hz)	1300						
$P_r@PII_{max}$ (MPa)	4.7						
$d_{eq}@PII_{max}$ (cm)					0.23		
Focal Length	FLx (cm)		0.60	#	#		0.30
	FLy (cm)		1.5	#	#		1.5
$I_{pa,3}@MI_{max}$ (W/cm ²)	410						

Operating Control Conditions

TX-Level (%)	100	100			100	100	100
Focus (mm)	26	6			40	3	6
PRF (Hz)	1300	18100			16200	20000	18100

Footnotes:

Information need not be provided for any formulation of TIS not yielding the maximum value of TIS for that mode.

Transducer Surface Temperature Limits

The following table provides the maximum surface temperature of the transducers compatible with the system.

● Maximum Transducer Surface Temperature

Maximum Transducer Surface Temperature is in accordance with IEC 60601-2-37.

Transducer Model	Maximum Transducer Surface Temperature	
	Simulated Use (°C)	Still Air (°C)
C5-2	< 41.0	< 41.0
L18-4	< 41.0	< 41.0
S4-2	< 41.0	< 41.0
L14-4	< 41.0	< 41.0
EC9-3	< 41.0	< 41.0
MC10-3	41.2 ± 1.4	< 41.0
L11-3	41.5 ± 1.4	< 41.0
HL18-4	< 41.0	< 41.0



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