Test report

Material to be tested: Medibino Neo gel ring
Test method: Pressure measurement using a pressure measurement foil according to customer protocol.

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1. Samples

Medibino Neo gel ring, size L, 1 pc.

Figure 1: Medibino Neo gel ring

2. Questions

- How high is the pressure reduction in the >back of the head< of a head model when it is when it is supported in a head support ring?
- What are the absolute pressure values in each case, visualised?
- Can the head support ring prevent new pressure points with high pressure values? be avoided?

3. Test method

A flexible pressure sensing foil is positioned underneath a realistic model of an infant's head (Fig.2), as wrinkle-free as possible, on a gel bearing ring provided (Setting A) or a base provided (Setting B). With the help of the pressure sensor foil, the pressures occurring between the head model and a gel bearing ring are recorded in setting A. In setting B, the pressures occurring between the head model and the gel bearing ring are recorded. In Setting B, the pressures occurring between the head model and a flat, hard base are recorded. The measurements are repeated three times per setting and the occurring pressures are recorded.

Figure 2: Test arrangement with head support ring (Setting A, left) and without head support ring (Setting B).

It is to be expected that Setting A produces a pressure image that represents lower pressure values in the form of a horseshoe than in Setting B, where higher pressure values are assumed in the form of a circle.
Details of the measuring equipment used for the pressure measurement can be found in the appendix.

Figure 3: Experimental set-up for measuring the pressure load. Shown is the
The test set-up for measuring the pressure between the head model and the gel cushion or the flat base is shown.

4. Results

The pressure measurements for setting A resulted in maximum pressure values in the range between 0.76 N/cm2 and 1.28 N/cm2 (Table 1). For setting B, maximum pressures ranged from 1.97 N/cm2 to 2.95 N/cm2 (Table 2).

Table 1: Pressures in setting A, with gel pad as head support.

Measurement	1	2	3
Max. Pressure (N/cm2)	1,1	0,76	1,28

Table 2: Pressures in setting B, without gel pad as head support.

Measurement	1	2	3
Max. Pressure (N/cm2)	2,95	1,97	2,06

Detailed descriptions of the pressure distributions can be found in the appendix. 5.

5. Summary

The pressure tests showed a reduced maximum pressure in setting A compared to setting B. The maximum pressure was reduced from 2.33±0.54 N/cm2 in setting A. The maximum pressure was reduced from 2.33±0.54 N/cm2 in Setting B to 1.05±0.26 N/cm2 in Setting A. This was a reduction of the maximum pressure in Setting A. Thus, a reduction of the maximum pressure by 54.9 % could be determined for setting A, compared to setting B.

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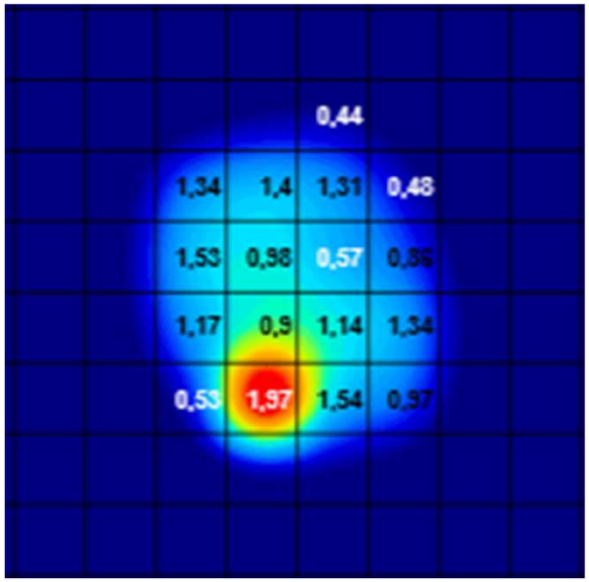
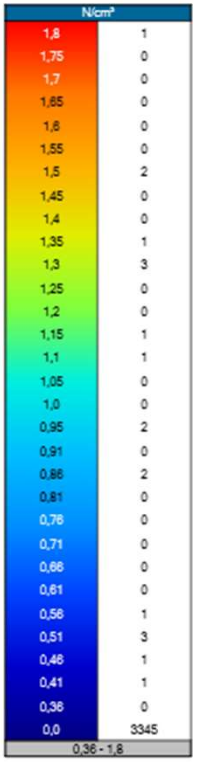
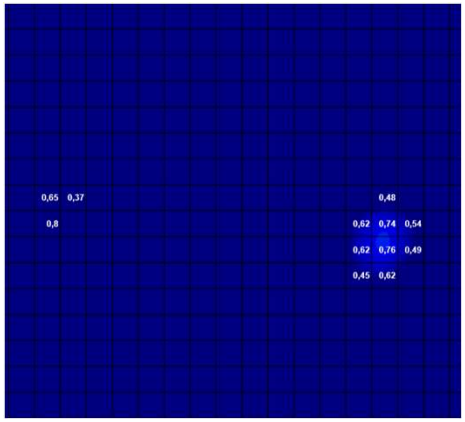




Statistics	Value
XSENSOR 58 x 58 S0001	
Avg Pres.	1,03
Peak Pres.	1,97
Min Pres.	0,44
Area (cm²)	0,22

Without MedibinoNeo

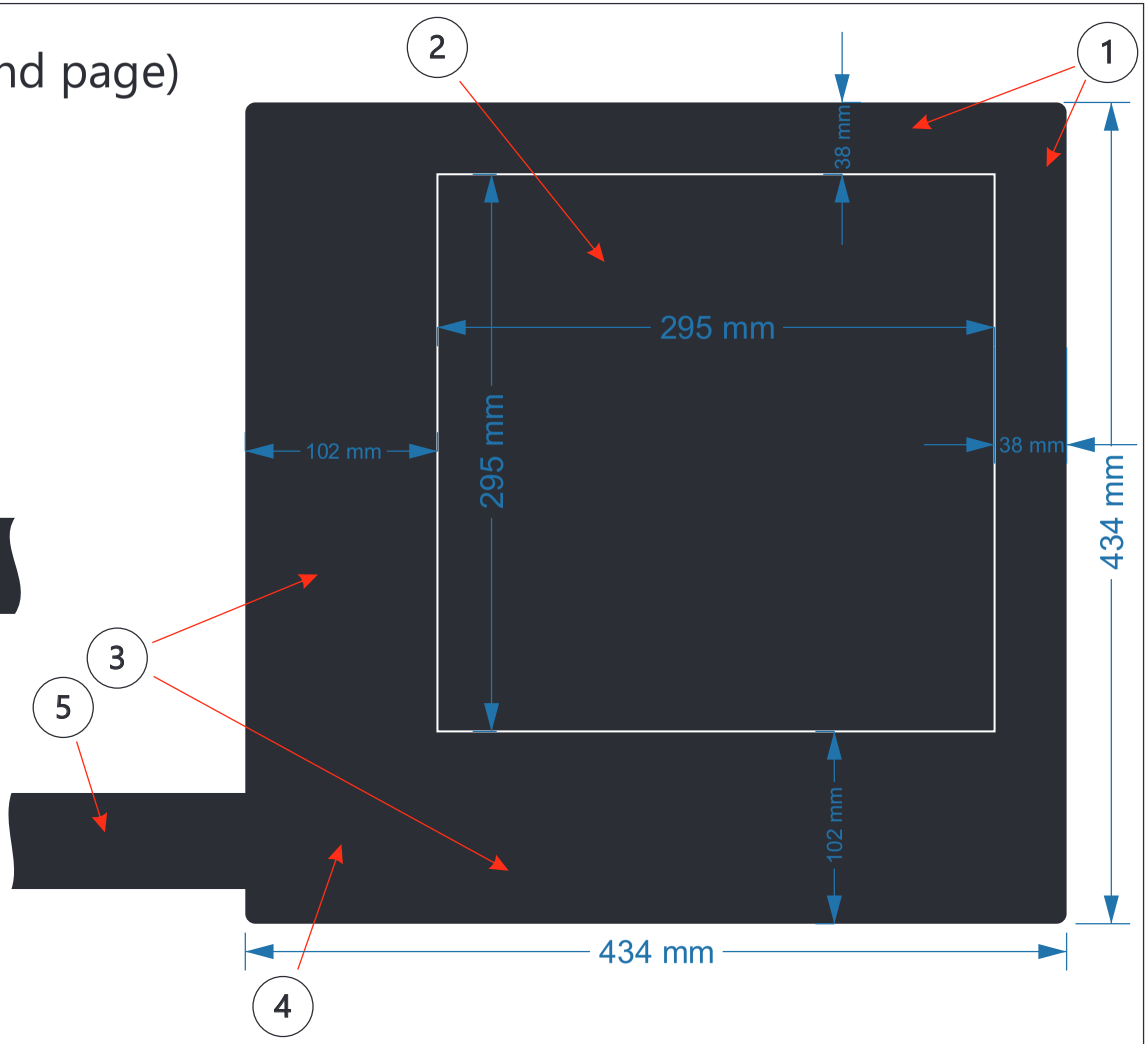


Statistics	Value
XSENSOR 58 x 58 S0001	
Avg Pres.	0,58
Peak Pres.	0,8
Min Pres.	0,37
Area (cm²)	0,16

With MedibinoNeo

The MedibinoNeo was tested at the Chair of Ergonomics at the Technical University of München with a pressure sensor mat. A doll (weight analogous to a newborn) was positioned once without a head support ring and once with a head support ring. Without the head support ring, there was a clear pressure point at the back of the head. By using the MedibinoNeo, no pressure could be detected at the back of the head and both the pressure peaks and the pressure average values could be reduced considerably (if the values are rounded up, **both pressure values were halved**).

View Without Printed Artwork (See 2nd page)



Sensor Specifications	
Overall Dimensions (not including cabling)	434mm x 434mm
Sensing Area Dimensions	295mm x 295mm
Sensor Cell Resolution	5.08mm x 5.08mm

1	Border Thickness (non cabling side)	0.5 - 1.0mm
2	Sensing Area Thickness	<1.1mm
3	Border Thickness (cabling side)	<1.4
4	Cable Neck Thickness	<2mm
5	Cable Thickness	<1.5mm

Sensor Cover Material	300 Denier Coated Polyester (0.14mm thickness)
Sensor Area Markings	Printed Grid (See Page 2)
Cable Dimensions	1000mm x 50mm x 1.5mm
Connector & SPK Dimensions	73mm x 121mm x 23mm
Pressure Range	0.1-30psi
Calibration Accuracy	+/- 10% FS

	Name	Date
Drawn	GF	20/11/23
Eng Appr		
Mgr Appr.		
QA		

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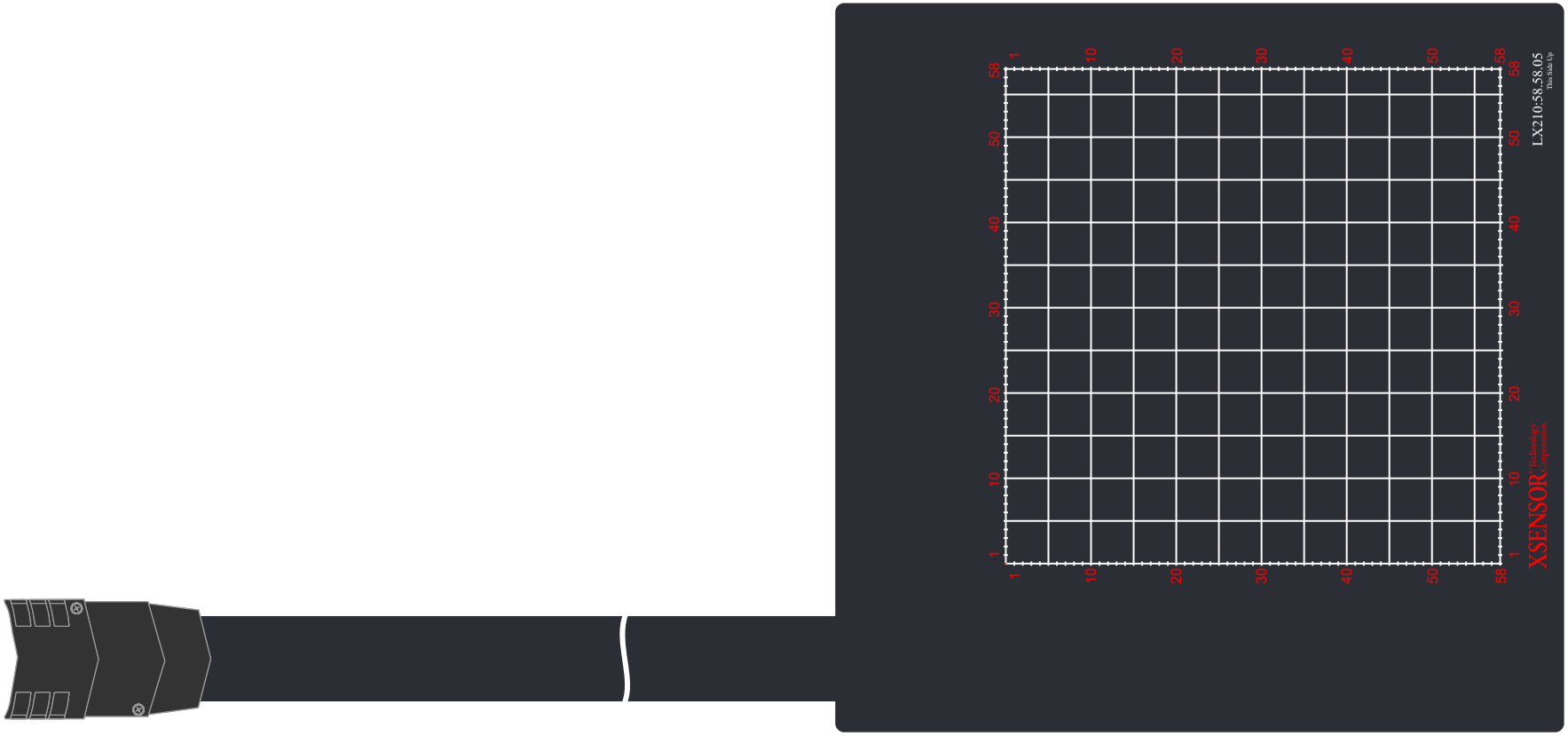
Innovators in Pressure Imaging

Sensor Name & Description
LX210.58.58.05 Sensor Dimensions

Size	Drawing Number	Rev
A	LX210.58.58.05	0

Unless otherwise specified: Dimensions are in mm

View with Printed Cover



	Name	Date
Drawn	GF	20/11/23
Eng Appr		
Mgr Appr.		
QA		

XSENSOR™ Technology Corporation
Innovators in Pressure Imaging

Sensor Name & Description
LX210.58.58.05 With Printed Cover

Size	Drawing Number	Rev
A	LX210.58.58.05	0

Unless otherwise specified: Dimensions are in mm

Scale: 1:4	DOC-07-00056-01	Sheet 2 of 2

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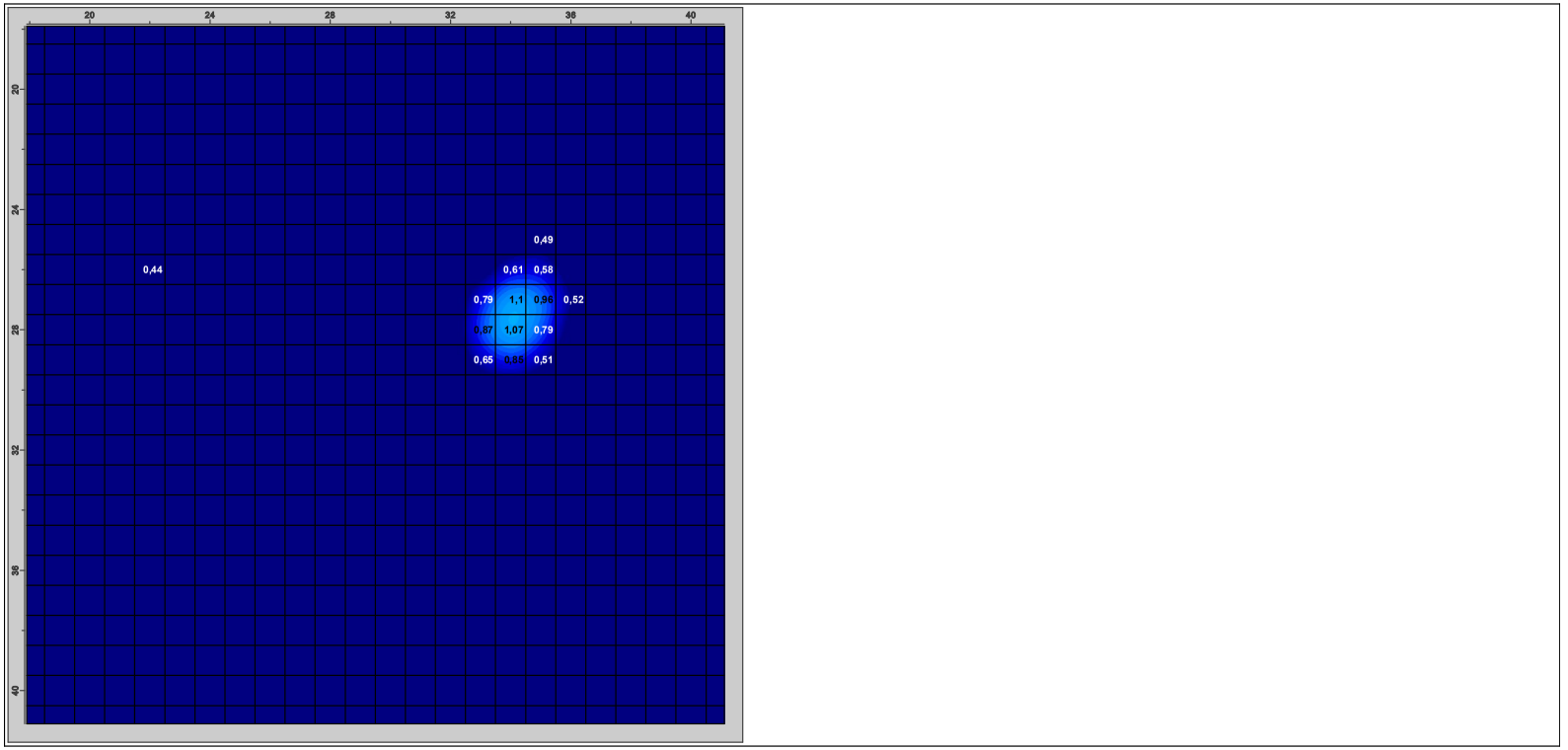
File: Kluba_medical_mitKissen_01
Frame 86
Range: 0,14 to 22,06 N/cm²

Avg/Peak: 0,72 / 1,1 N/cm²
Area: 0,23 cm²

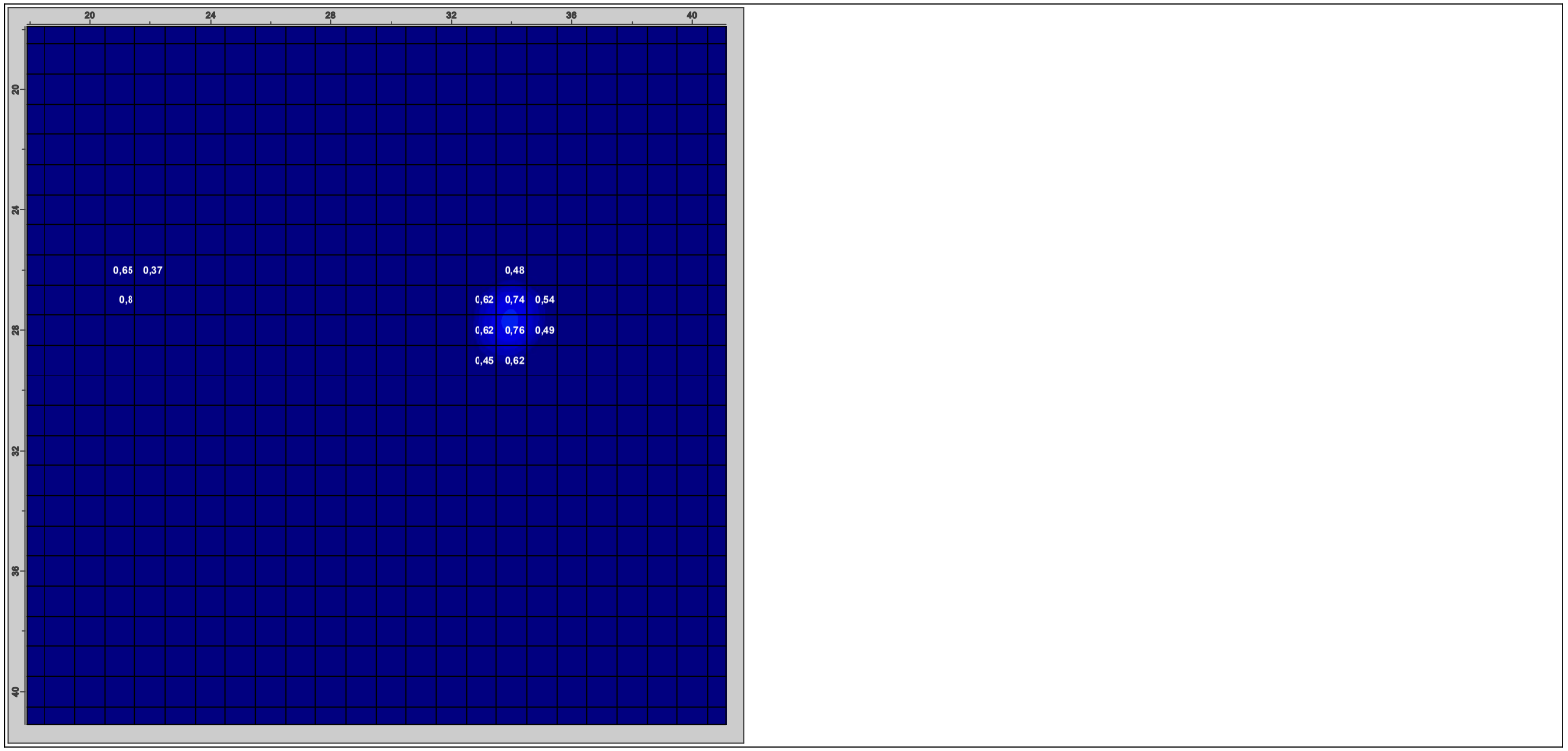


N/cm²	
1,8	0
1,75	0
1,7	0
1,65	0
1,6	0
1,55	0
1,5	0
1,45	0
1,4	0
1,35	0
1,3	0
1,25	0
1,2	0
1,15	0
1,1	0
1,05	2
1,0	0
0,95	2
0,91	0
0,86	1
0,81	2
0,76	2
0,71	0
0,66	0
0,61	3
0,56	3
0,51	2
0,46	2
0,41	1
0,36	0
0,0	3344
0,36 - 1,8	

Statistics	Value
XSENSOR 5ft x 5ft 5000	
Avg Pres.	0,72
Peak Pres.	1,1
Min Pres.	0,44
Area (cm²)	0,23

XSENSOR® Technology Corporation

File: Kluba_medical_mitKissen_02
Frame 57
Range: 0,14 to 22,06 N/cm²
Avg/Peak: 0,58 / 0,8 N/cm²
Area: 0,16 cm²



N/cm²	
1,8	0
1,75	0
1,7	0
1,65	0
1,6	0
1,55	0
1,5	0
1,45	0
1,4	0
1,35	0
1,3	0
1,25	0
1,2	0
1,15	0
1,1	0
1,05	0
1,0	0
0,95	0
0,91	0
0,86	0
0,81	0
0,76	2
0,71	1
0,66	0
0,61	4
0,56	0
0,51	2
0,46	3
0,41	1
0,36	1
0,0	3350
0,36 - 1,8	

Statistics	Value
XSENSOR 58 x 58 5001	
Avg Pres:	0,58
Peak Pres:	0,8
Min Pres:	0,37
Area (cm²):	0,16

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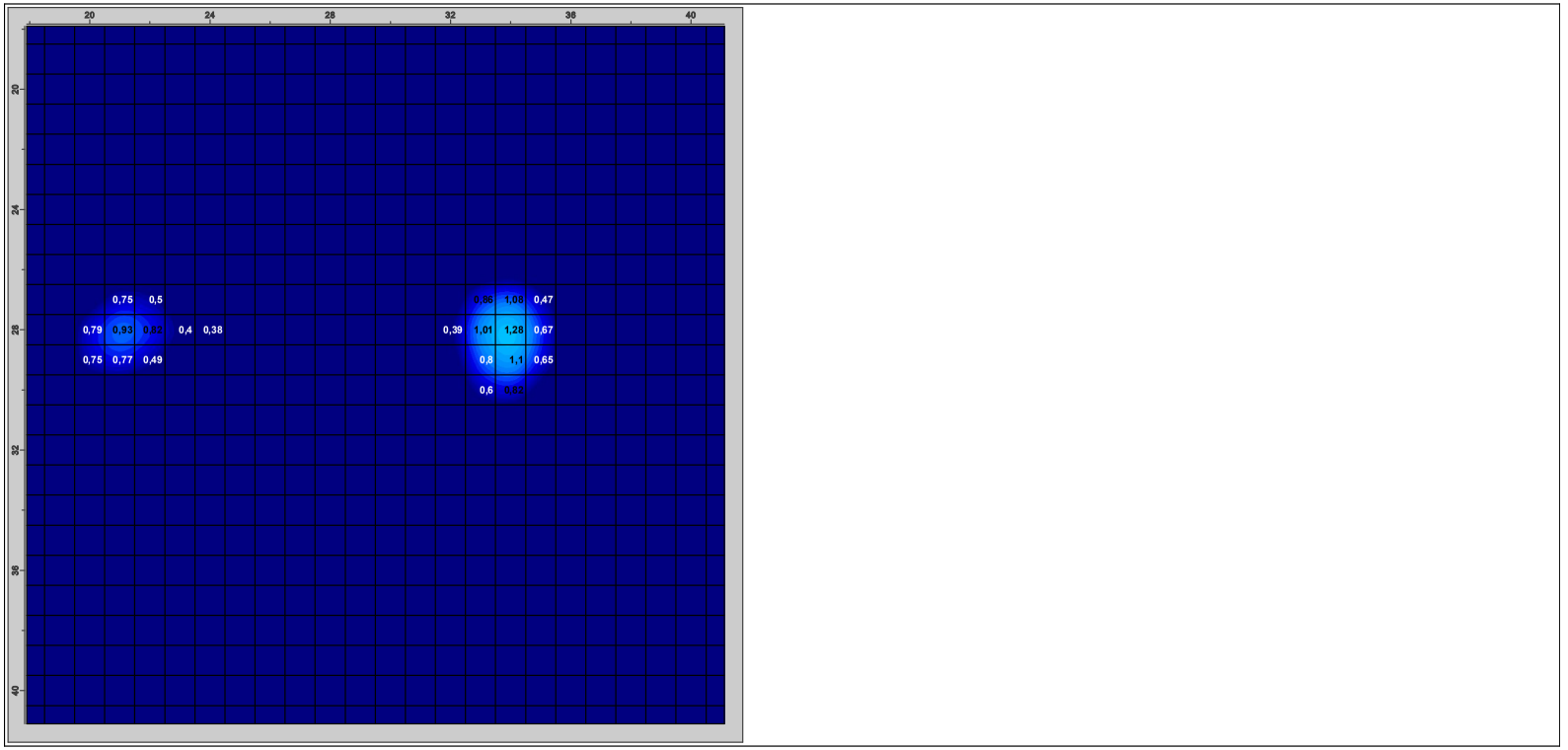
File: Kluba_medical_mitKissen_03
Frame 29
Range: 0,14 to 22,06 N/cm²

Avg/Peak: 0,74 / 1,28 N/cm²
Area: 0,26 cm²

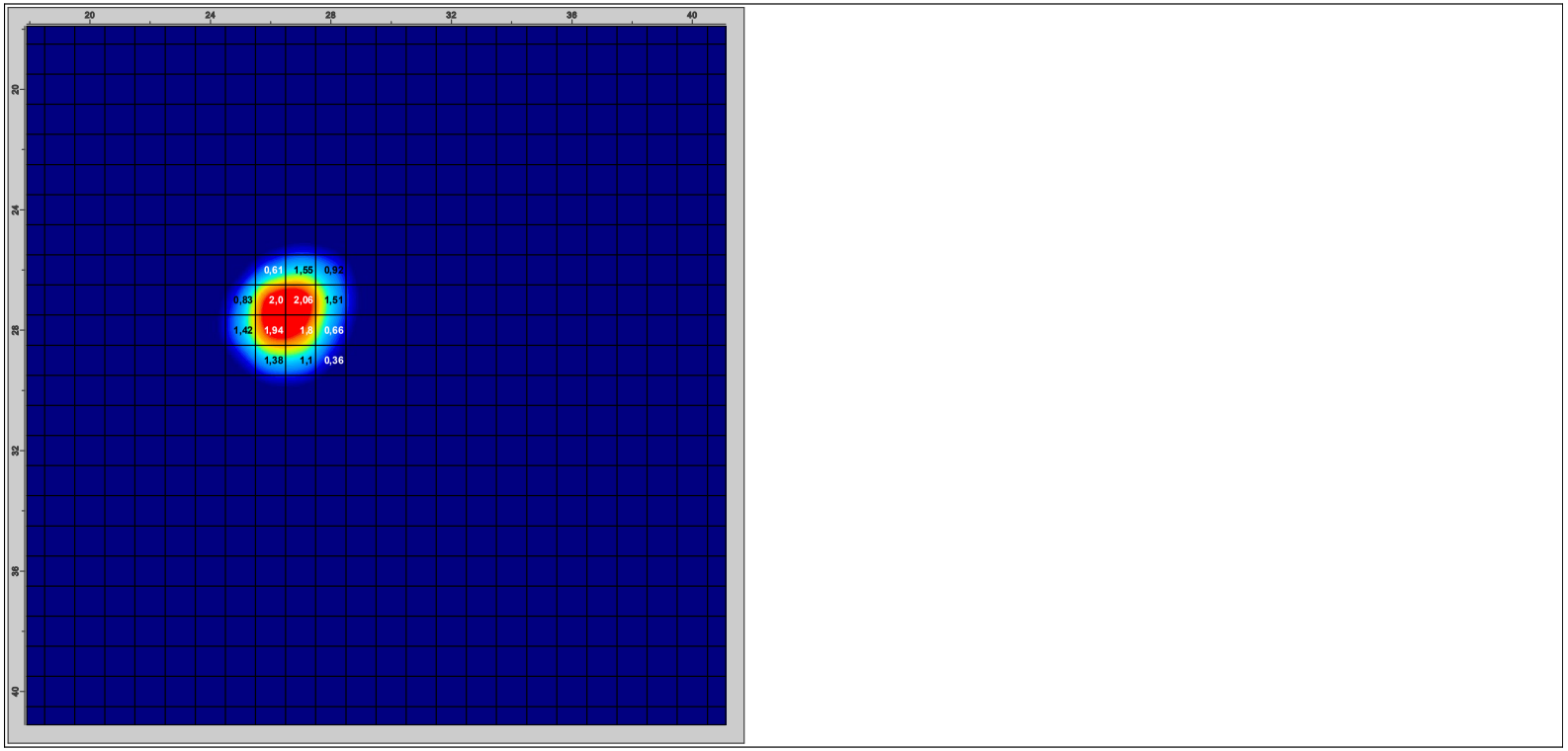


N/cm²	
1,8	0
1,75	0
1,7	0
1,65	0
1,6	0
1,55	0
1,5	0
1,45	0
1,4	0
1,35	0
1,3	0
1,25	1
1,2	0
1,15	0
1,1	0
1,05	2
1,0	1
0,95	0
0,91	1
0,86	0
0,81	3
0,76	3
0,71	2
0,66	1
0,61	1
0,56	1
0,51	0
0,46	3
0,41	0
0,36	3
0,0	3342
0,36 - 1,8	

Statistics	Value
XSENSOR 58 x 58 5001	
Avg Pres.	0,74
Peak Pres.	1,28
Min Pres.	0,38
Area (cm²)	0,26

XSENSOR® Technology Corporation

File: Kluba_medical_ohneKissen_01
Frame 85
Range: 0,14 to 22,06 N/cm²
Avg/Peak: 1,07 / 2,06 N/cm²
Area: 0,24 cm²



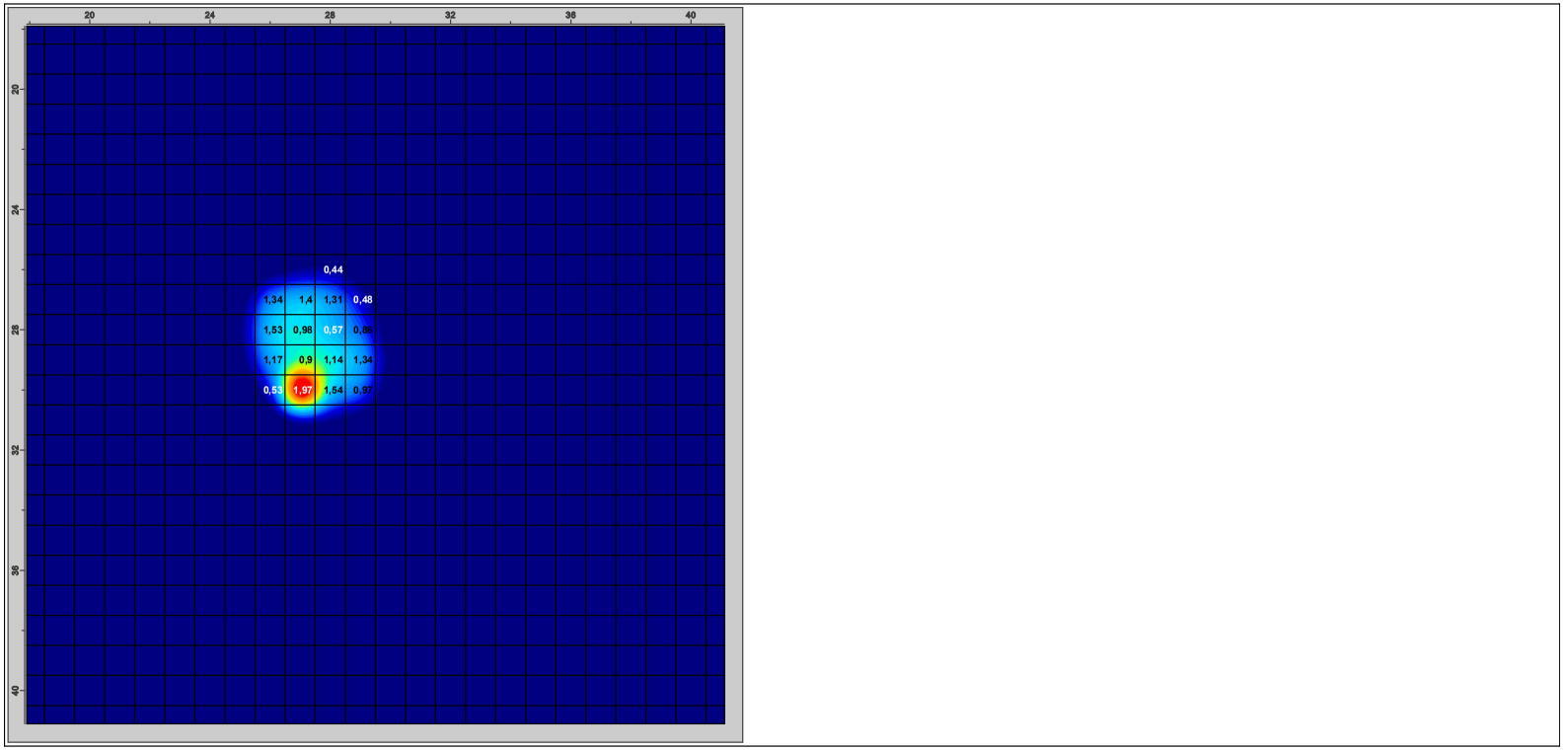
N/cm²	
1,8	3
1,75	1
1,7	0
1,65	0
1,6	0
1,55	0
1,5	2
1,45	0
1,4	1
1,35	1
1,3	0
1,25	0
1,2	0
1,15	0
1,1	0
1,05	1
1,0	0
0,95	0
0,91	1
0,86	0
0,81	2
0,76	0
0,71	0
0,66	2
0,61	2
0,56	2
0,51	1
0,46	0
0,41	0
0,36	2
0,0	3343
0,36 - 1,8	

Statistics	Value
XSENSOR 58 x 58 5001	
Avg Pres: 1,07	
Peak Pres: 2,06	
Min Pres: 0,36	
Area (cm²) 0,24	

XSENSOR® Technology Corporation

File: Kluba_medical_ohneKissen_02
Frame 95
Range: 0,14 to 22,06 N/cm²

Avg/Peak: 1,03 / 1,97 N/cm²
Area: 0,22 cm²



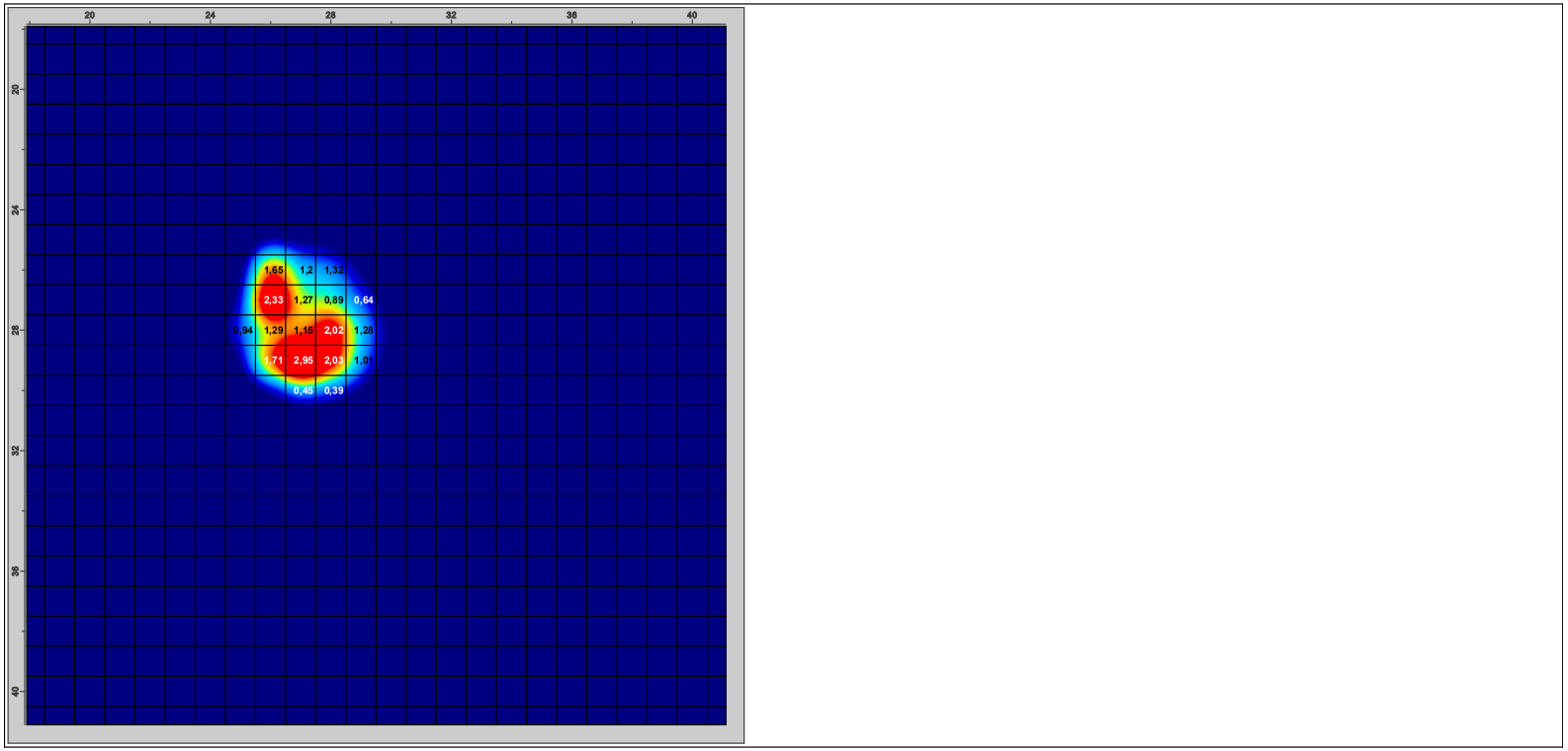
N/cm²	
1,8	1
1,75	0
1,7	0
1,65	0
1,6	0
1,55	0
1,5	2
1,45	0
1,4	0
1,35	1
1,3	3
1,25	0
1,2	0
1,15	1
1,1	1
1,05	0
1,0	0
0,95	2
0,91	0
0,86	2
0,81	0
0,76	0
0,71	0
0,66	0
0,61	0
0,56	1
0,51	3
0,46	1
0,41	1
0,36	0
0,0	3345

0,36 - 1,8

Statistics	Value
XSENSOR 58 x 58 5001	
Avg Pres.	1,03
Peak Pres.	1,97
Min Pres.	0,44
Area (cm²)	0,22

XSENSOR® Technology Corporation

File: Kluba_medical_ohneKissen_03
Frame 82
Range: 0,14 to 22,06 N/cm²
Avg/Peak: 1,23 / 2,95 N/cm²
Area: 0,26 cm²



N/cm²	
1,8	4
1,75	0
1,7	1
1,65	1
1,6	0
1,55	0
1,5	0
1,45	0
1,4	0
1,35	0
1,3	1
1,25	3
1,2	1
1,15	0
1,1	1
1,05	0
1,0	1
0,95	0
0,91	1
0,86	1
0,81	0
0,76	1
0,71	0
0,66	0
0,61	2
0,56	1
0,51	1
0,46	0
0,41	1
0,36	1
0,0	3342
0,36 - 1,8	

Statistics	Value
XSENSOR 58 x 58 5001	
Avg Pres.	1,23
Peak Pres.	2,95
Min Pres.	0,39
Area (cm²)	0,26