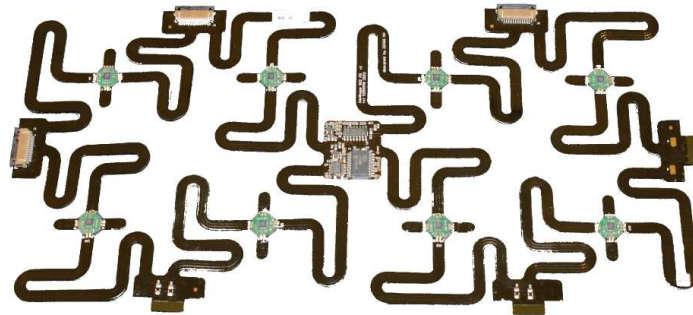


IDO SHAPE SENSOR

General properties:

The IdoShape sensor contains sensors specifically designed for the use in layered flexible materials such as mattresses and car seats:

- Light, thin, flexible, stretchable and porous
- Mechanical characteristics of the tested setup largely remain unaltered by the measurement
- Modular system composed of a set of identical measurement units
- Redundant RS485 bus topology
- Measuring hub with galvanic isolation (communication lines and power supply)



Technical data:

Sensor specifications

Range	± 2 g
Sensitivity	4096 cts/g
Sensitivity accuracy	± 2.64 %
Zero-g offset accuracy	± 20 mg

Unit specifications

Length	285 mm (11,22 inch)
Width	145 mm (5,71 inch)
Inter sensor distance	70 mm (2,76 inch)
Max units	128 (x 8 sensors)

Measuring hub

Operating voltage	AC 100-240 V
Maximal power	18 W
Sensor mat connections	1
Sample rate	max 15Hz

Environmental conditions

Operating temperature	5°C to 60°C
Storage temperature	10°C to 50°C (0°C to 80°C peak)
Operating humidity	25% RH to 75% RH
Storage humidity	35% RH to 60% RH

Deformation characteristics:

Cylindrical deformation

	Curvature ρ			
	mm		inch	
Pure elastic	∞	40	∞	1,6
Reversible permanent	40	15	1,6	0,6
Irreversible permanent	15	0	0,6	0,0

Unidirectional stretch

	Relative elongation %	
	mm	inch
Pure elastic	0	7
Reversible permanent	7	12
Irreversible permanent	12	∞





Technical data:

General properties

Sensors	240
Sample rate	~ 1 Hz
Inter sensor distance (ISD)	70 mm (2,76 inch)
Surface	2000 mm x 900 mm
Active area	1680 mm x 700 mm
Sleeve fabric	Top: TS24128 (80%PES + 14%VI) Bottom: BT TC7123 (100%PES)

Sensitivity

Lazy indentation wide object ($\rho > 200\text{mm}$)	6 mm
Lazy indentation small object ($\rho > 50\text{mm}$)	25 mm
Repeatability active area beyond lazy indentation	< 1 mm
Precision active area beyond lazy indentation	< 8 mm

Boundary conditions

General inclination	< 20°
Regular grid variance (X-Y)	< 10%

Measuring hub

Operating voltage	AC 100-240 V
Maximal power	18 W
Sensor mat connections	1
Sample rate	max 15 Hz

Environmental conditions

Operating temperature	0°C to 60°C
Storage temperature	10°C to 50°C (0°C to 80°C peak)
Operating humidity	5% RH to 95% RH
Storage humidity	20% RH to 60% RH

Usage guidelines:

- Avoid the use of an uneven subsurface like metal grids or similar directly underneath the sensor mat; apply a pressure distributing material when necessary.
- Always use the carbon rods in the tunnels when using the sensormat on top of a mattress to prevent crinkling of the sensormat
- Roll the sensormat around the PU foam cylinder when moving the sensormat



Technical data:

General properties

Sensors	160
Sample rate	~ 1,5 Hz
Inter sensor distance (ISD)	70 mm (2,76 inch)
Surface	2000 mm x 900 mm
Active area	1400 mm x 560 mm
Sleeve fabric	Top: TS24128 (80%PES + 14%VI) Bottom: BT TC7123 (100%PES)

Sensitivity

Lazy indentation wide object ($\rho > 200\text{mm}$)	6 mm
Lazy indentation small object ($\rho > 50\text{mm}$)	25 mm
Repeatability active area beyond lazy indentation	< 1 mm
Precision active area beyond lazy indentation	< 8 mm

Boundary conditions

General inclination	< 20°
Regular grid variance (X-Y)	< 10%

Measuring hub

Operating voltage	AC 100-240 V
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- Roll the sensormat around the PU foam cylinder when moving the sensormat