

pliance strip sensor



strip sensor

The **pliance** strip sensor may be required for special pressure distribution applications with limited hand area, for example on one finger. The strip sensor consists of 10 sensors arranged in a single row.

Technical data for strip sensor

number of sensors	10
total sensor area (mm ²)	100 x 10
size of one sensor element (mm ²)	10 x 10
thickness (without coating) (mm)	< 1.2
thickness of the coating (mm)	0.1 - 0.6
pressure range (kPa)	2-100 / 10-1000

pliance hand mat sensor



hand mat sensor

The **pliance** hand mat sensor is a high spatial resolution matrix which allows a detailed investigation of specific hand and finger regions.

This pressure measurement can be used for example to follow the recovery during physiotherapy of an injured hand or to evaluate the possible progression of diseases affecting the hand.

Technical data for elastisens HA 50/1024

number of sensors	1024
total sensor area (mm ²)	160 x 160
size of one sensor element (mm ²)	5 x 5
thickness (without coating)(mm)	< 1.2
pressure range (kPa)	5-60

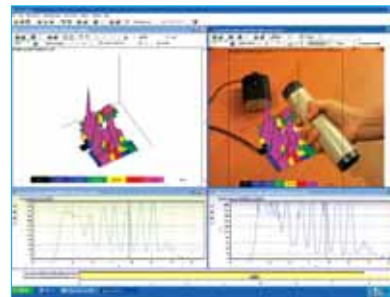
pliance-x analyser



The **pliance-x** electronic analyser connects up to 1024 sensors to a desktop, notebook PC or handheld PDA. The software is written for Windows operating systems and allows a wide range of scientific analysis. Collected data can be stored on the flash memory or transmitted online to a PC or Pocket PC (PDA) via the built-in telemetry.

Technical data for pliance-x

dimensions (mm)	150x100x40
weight (g)	360
number of sensors (max)	256 (1024)
measurement frequency	20,000 sensors/second
storage type	8MB internal flash
operating system	Windows
power supply	Li-Ion battery
computer interface	fiber optic/USB and Bluetooth™
sync option	fiber optic/TTL, in and out



pliance hand measurement data synchronised with a video file

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All systems from **novel** operate with high quality, calibrated sensors and provide reliable and reproducible long term measurements. **pedograph**®, **emed**®, **pedar**®, **pliance**®, **trublu**® and the **novel logo**(colored foot) are the registered trademarks of **novel^{gmbh}** © 2004

pliance

hand

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handsensor eng02_july22/2004

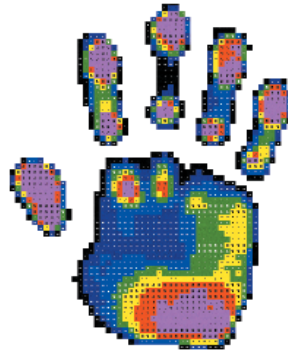
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pliance hand sensors

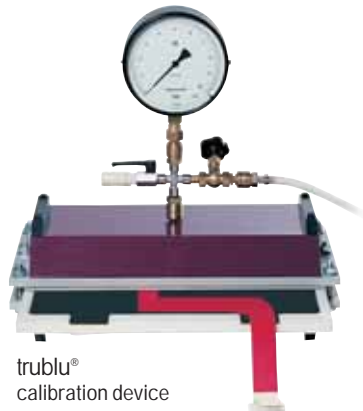
The **pliance hand sensor** family has been designed for:

- accurate and functional diagnostics of hand pre- and post surgery
- evaluation of rehabilitation progress
- ergonomic assessment during occupational activities
- biomechanic and orthopaedic research



2-d pressure picture

novel systems are based on calibrated, accurate and reliable capacitive sensors. The individual sensor elements are elastic and arranged in a matrix, which conforms to 3-dimensional shapes. The sensor matrix is connected to the **novel pliance** electronics hardware. The pressure analysis can be done on- or off-line by a PC or a handheld personal digital assistant (PDA).



trublu®
calibration device

pliance cylinder sensors



cylinder sensor

The **pliance cylinder mats** are specifically designed for measurement of pressure distribution and contact forces while gripping a cylinder. This measurement can be used for standardising functional diagnostics at different

hand locations. A definitive comparison of hand function pre- and post surgery is possible and the progress during rehabilitation can be objectively evaluated.

The mats are available in various sizes so the user can select different cylinder diameters to accommodate hand size or other testing requirements.

Technical data for elastisens HA 87

number of sensors	256
total sensor area (mm ²)	140 x 140
size of one sensor element (mm ²)	8.75 x 8.75
thickness (without coating) (mm)	< 1.2
pressure range (kPa)	3-200

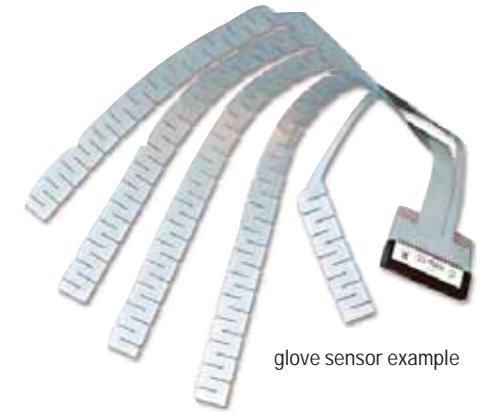
Technical data for elastisens HA 78

number of sensors	256
total sensor area (mm ²)	125 x 125
size of one sensor element (mm ²)	7.8 x 7.8
thickness (without coating) (mm)	< 1.2
pressure range (kPa)	3-200

Technical data for elastisens HA 44

number of sensors	256
total sensor area (mm ²)	70.4 x 70.4
size of one sensor element (mm ²)	4.4 x 4.4
thickness (without coating)(mm)	< 1.2
pressure range (kPa)	5-200

pliance glove sensor



glove sensor example

The **pliance glove sensors** are primarily designed for measurement of pressure distribution at a hand-machine interface. The unique design of the sensors conforms to the shape of the hand allowing various handgrips to be tested in different situations (e.g. jackhammers, road drills, chainsaws, etc.)

Technical data for glove sensor

number of sensors	125
total sensor area (mm ²)	12,896
size of one sensor element (mm ²)	6 x 16
thickness (without coating) (mm)	< 1



2D pressure picture

3D pressure picture